



PARKS CANADA AGENCY
(PCA)

**ROOF REPAIRS AT THE
LOCKMASTER'S HOUSE**

Saint-Ours Canal

PCA project # : COUR-1466
Arch. project # : Q16-2270F

Specifications for tenders

Architecture
BGLA architecte + design urbain
Engineering
SNC-LAVALIN Inc.

ARCHITECTURE

00 01 10 Table of Content
01 00 10 General instructions
01 11 00 Summary of work
01 29 00 Payment procedures
01 29 83 Testing laboratory services
01 32 16.07 Construction progress schedule – Bar (GANTT) chart
01 33 00 Submittal procedures
01 35 00.06 Special procedures for traffic control
01 35 29.06 Health and safety requirements.....
01 35 35 DND fire safety requirements.....
01 35 43 Environmental procedures
01 41 00 Regulatory requirements.....
01 45 00 Quality control
01 51 00 Temporary utilities.....
01 52 00 Construction facilities
01 56 00 Temporary barriers and enclosures.....
01 61 00 Common product requirements.....
01 73 00 Execution
01 74 11 Cleaning
01 78 00 Closeout submittals.....
02 41 16 Structure demolition
04 05 00 Common work results for masonry.....
06 10 00.02 Carpentry products.....
07 21 29.03 Sprayed insulation – polyurethane foam.....
07 61 00 Sheet metal roofing.....
07 62 00 Sheet metal flashing and trim
07 92 00 Joint sealants
08 50 00.01 Traditional wood windows and louvers
09 21 16 Gypsum board assemblies.....
09 91 99.01 Painting

END OF SECTION

NUMBER
OF PAGES

DIVISION 00**PROCUREMENT AND CONTRACTING REQUIREMENTS**

00 01 07	Seals page.....	1
00 01 10	Table of contents.....	2

DIVISION 01**GENERAL REQUIREMENTS**

01 00 10	General instructions.....	8
01 11 00	Summary of work.....	3
01 29 00	Payment procedures.....	5
01 29 83	Testing laboratory services.....	2
01 32 16.07	Construction progress -/ Schedule – BAR (GANTT) chart.....	3
01 33 00	Submittal procedures.....	5
01 35 00.06	Special procedures for traffic control.....	3
01 35 29.06	Health and safety requirements.....	5
01 35 35	DND Fire safety requirements.....	6
01 35 43	Environmental procedures.....	13
01 41 00	Regulatory requirements.....	1
01 45 00	Quality control.....	4
01 51 00	Temporary utilities.....	2
01 52 00	Construction facilities.....	2
01 56 00	Temporary barriers and enclosures.....	3
01 61 00	Common product requirements.....	5
01 73 00	Execution.....	3
01 74 11	Cleaning.....	3
01 78 00	Closeout submittals.....	7

DIVISION 02**EXISTING CONDITIONS**

02 41 16	Structure demolition	3
----------	----------------------	---

Technical specification for asbestos-containing material removalRoof repair work – Lockmaster's house

261

02 82 00.00	Technical specification – Material drilling procedure with a dust collector bin	
02 82 00.03	Work in asbestos condition – High-Risk work procedure	
02 82 00.04	Work in asbestos condition – Exterior High-Risk work procedure	
Appendix A	Rapport de caractérisation Englobe Réf. 040-P-0012240-0-02-260-HI-R-0300-00	
Appendix B	Complementary characterization report P19-4176-5 (MHV,2019)	

		NUMBER OF PAGES
DIVISION 04	MASONRY	
04 05 00	Common work results for masonry.....	5
DIVISION 06	WOOD, PLASTICS, AND COMPOSITES	
06 10 00.02	Carpentry products.....	5
DIVISION 07	THERMAL AND MOISTURE PROTECTION	
07 21 29.03	Sprayed insulation – Polyurethane foam.....	4
07 61 00	Sheet metal roofing.....	9
07 62 00	Sheet metal flashing and trim.....	3
07 92 00	Joint sealants.....	6
DIVISION 08	OPENINGS	
08 50 00.01	Traditional wood windows and louvers.....	6
DIVISION 09	FINISHES	
09 21 16	Gypsum board assemblies.....	3
09 91 99.01	Painting.....	9
DIVISION 22	PLUMBING	
22 13 18	Plumbing.....	1

END OF SECTION

1 GENERAL

1.01 BID DOCUMENTS

- .1 Parks Canada Agency General Conditions;
- .2 Architecture and engineering plans and specifications.

1.02 CODES AND STANDARDS

- .1 The construction standards included in the 2015 edition of the National Building Code published by the National Research Council of Canada, Ottawa, apply to the work described in these specifications and indicated on the drawings.
- .2 The work must be in accordance with at least the applicable requirements of the standards (latest edition) of the CGSB, the BNQ, the ASTM, the CSA and other standards and codes specified herein.
- .3 Always use the latest edition or revision of standards specified in the specifications.

1.03 WORK ORGANIZATION

- .1 Contractor is responsible for familiarizing himself with existing conditions. Contractor shall note that the work in this project is adjacent to occupied tourist spaces in operation and must remain so throughout the performance of the work.
- .2 Contractor must provide all the labour, tools, equipment and materials necessary to organize the site, including the circulation of personnel working on the site, the entry of materials, the removal of waste, protection measures for workers, employees and users, adjacent spaces during performance of work, the areas where these people must work and circulate inside and outside the building and certain contingencies which the Contractor must take into account during the work.
- .3 Organize work schedules and construction activities to limit disturbances caused to occupants by noise. All noisy work must not be performed outside normal working hours, but during the work planned schedule which will be from 8am to 3pm, unless coordinated and approved by Departmental Representative.
- .4 Maintain vehicle exhaust systems and machinery in good condition.
- .5 As such, Contractor must consult Departmental Representative and Architect prior to organizing the site, and present his construction implementation program for approval.
- .6 If an interruption of services is planned, Contractor must notify the person in charge of the project at least 3 business days before planned date and this interruption must be done in the morning during normal working hours.

1.04 PROGRESSION OF THE WORK

- .1 Contractor must perform the work without interruption, in accordance with the fixed program and follow the schedule that was submitted and accepted following Contract signature.
- .2 No delay will be granted to the Contractor due to poor co-ordination. Contractor is therefore responsible for taking the necessary measures to ensure schedules are fully respected. Contractor is responsible, just as his subcontractors, for the co-ordination of the work.

1.05 PROJECT CO-ORDINATION

- .1 Co-ordinate the progress of the work, schedules, parts to submit, use of the site, temporary utilities and site preparation. Contractor must be independent in electricity and will not have access to drinking water or client's sanitary installations.

1.06 CUTTING AND PATCHING

- .1 Authorization
 - .1 Submit a written request at least 5 working days ahead for cutting or modification work that will have an impact on:
 - .1 The structural integrity of a project element;
 - .2 The integrity of elements exposed to inclement weather or water-repellent elements;
 - .3 The performance, maintenance or safety of an operating element;
 - .4 The esthetic qualities of exposed elements;
 - .5 Client's work on other asset on site.
- .2 Inspection
 - .1 Verify existing conditions, including elements likely to be damaged or moved during cutting and patching work.
 - .2 After uncovering work, inspect conditions that risk hindering the performance of the work.
 - .3 Beginning the cutting and patching work implies acceptance of existing conditions.
- .3 Performance of the work
 - .1 Perform the cutting, adjusting and patching work to obtain a finished work without damaging adjacent surfaces. As needed, repair adjacent surfaces affected by the work.
 - .2 Perform the work so as to prevent damaging other work.
 - .3 Prepare surfaces to ensure they are ready for patching and finishing work.
 - .4 Cut rigid materials using masonry saw or drill. Using pneumatic or striking tools is prohibited.
 - .5 Refurbish work using new products in accordance with Contract Document requirements.
 - .6 Adjust work to be watertight around openings, pipes, sleeves, conduits, ducts and other openings.

- .7 Finish surfaces to ensure uniformity with adjacent finishes. For continuous surfaces, perform finishing until nearest junction; for assembly, finish completely.

1.07 MEETINGS

- .1 The co-ordination and smooth operation of the site will be ensured by site meetings held weekly or as frequently as Departmental Representative decides.

These meetings will include:

- Departmental Representative;
 - General Contractor;
 - Other stakeholders whose attendance is deemed necessary by Departmental Representative.
- .2 Departmental Representative shall convene and lead meetings.
 - .3 Consultant will prepare and distribute meeting minutes.
 - .4 These meetings shall not serve as arbitration between General Contractor and subcontractors. These disputes shall be discussed in Contractor/subcontractor meetings.
 - .5 All persons in attendance must take notes of information that affects them and execute them in the following days for bi-weekly meeting. The minutes will be distributed via email and handed out at following meeting. Any corrections will appear in the following minutes.
 - .6 A person who is absent from the previous meeting must confirm approval of minutes in writing.
 - .7 At this meeting, Contractor must provide all notes necessary for the analysis of activities.

1.08 PARTS TO SUBMIT

- .1 Administrative duties
 - .1 Submit required parts to Professional for verification within a reasonable timeframe and following the appropriate order to prevent delaying the performance of the work.
 - .2 The work affected by parts to submit must not be undertaken until all parts have been verified.
 - .3 Review parts to submit before submitting them to Professional. This review means that the necessary requirements have been determined and verified, or that they will be, and that each part submitted has been examined and meets the requirements of the work and the Contract Documents.
 - .4 Verify proposed dimensions on the site and ensure that the work on adjacent works is co-ordinated.
- .2 Shop drawings, descriptions of products and samples: see provisions of section 01 33 00.

1.09 PROTECTION OF THE PUBLIC AND WORKERS

- .1 Every protection measure must comply with safety codes in force.
- .2 In the event of Contractor negligence in ensuring safety, Departmental Representative shall have the right, without prior notice, to implement the safety work required by the situation. Fees incurred by this work shall be borne by Contractor.

1.10 CONTRACTOR USE OF PREMISES

- .1 Contractor shall be limited to use of planned areas delimited in plans for entire duration of the work, for the receipt and storage of materials. Contractor will respect limits of this area. Contractor may not use any additional area without prior approval of Departmental Representative.
- .2 During performance of work, access roads, building entrances and parking lots must be kept free of all materials, equipment and other obstruction, clean and usable, to not hinder the normal use of the building and the various activities of its occupants and users.

1.11 SITE PREPARATION

- .1 Access to site:
 - .1 Contractor will have to access site from the dam. Access through lock will be available only to pedestrians. No material or equipment can be transported through the lock.
 - .2 The contractor must also inform PCA two (2) working days beforehand to allow delivery of materials or free access without delay by the dam.
 - .3 Without any previous arrangements, contractor will have to plan a 1 hour delay per passage over the dam.
 - .4 Contractor will have access to site at any time (during normal working hours) with a service vehicle (van) through the dam. However, the contractor will be responsible to lock the barrier after each passage and must comply with the load limits.
 - .5 The APC reserves the right to block access to the lock gates from time to time at any time for maintenance reasons.
- .2 Container installation:
 - .1 The location of the container must be validated and co-ordinated with Departmental Representative.
 - .2 Provide a container that can be secured at the end of each work day.
- .3 Installation and removal of temporary works:
 - .1 Provide and install the site material and temporary works necessary to perform the work without delay.
 - .2 Once work is completed, remove all temporary works from site.
- .4 Dust flaps:
 - .1 Provide and install dust flaps or protection to prevent the spread of dust during dust-producing work and to protect public, workers and finished work areas.
 - .2 Maintain and move protections until work is completed.
 - .3 Locate dust flaps to enclose the work space and avoid hindering circulations and

access to exits.

- .5 Storage and allowable loads:
 - .1 Workers must perform work while respecting limits indicated by Departmental Representative regarding their activities and movements. Do not unreasonably obstruct premises with materials.
 - .2 Do not load or allow the loading of a part of the work with a weight or force that could threaten its integrity.
- .6 Meeting room:
 - .1 General Contractor will have access to a room (construction trailer or other facility) to hold site meetings and store project documents, at the disposal of Professionals.
- .7 Sanitary facilities:
 - .1 Contractor should have his own sanitary facilities.
- .8 Temporary electricity:
 - .1 Contractors and subcontractors shall not use power directly from existing building services during performance of the work. Contractor must provide autonomous power supply.
- .9 Storage of equipment, materials and tools:
 - .1 Subcontractor and Contractor equipment, materials and tools must be stored in a secure and dry location, within the confines of the work site.
- .10 Site cleanliness:
 - .1 Maintain site in clean and tidy condition, free of accumulated waste materials and debris.
 - .2 Pick up waste materials and debris, place in containers and remove from site at the end of each work day to location designated by Departmental Representative.
 - .3 Fires, burning and burial of waste and waste materials on the site are prohibited.
 - .4 Establish cleaning schedules to ensure that dust does not fall on recently performed work nor contaminate waste systems.
 - .5 General Contractor must remove all construction debris and materials from site and cover the costs.

1.12 FULL-SCALE DETAILS

- .1 When Contractor needs full-scale detailed drawings or drawing details, notify Departmental Representative in writing sufficiently in advance for them to be prepared.
- .2 These additional drawings will have the same significance and scope as if they were included in Contract drawings and specifications.

1.13 LABOUR

- .1 Labour shall be specialized for each type of work and all incompetent workers will be dismissed from site.
- .2 Contractor must prioritize hiring of local labour for all specialties when available.

- .3 Contractor must provide sufficient quantity of all labour to complete work within set timeframe.
- .4 Work will be performed in accordance with Departmental Representative directives, using most appropriate equipment, and following recommendations of manufacturers recognized and approved by Departmental Representative.

1.14 DEPARTMENTAL REPRESENTATIVE AND CONTRACTOR

- .1 Departmental Representative is the most competent to interpret the Contract and judge its performance. Departmental Representative shall use his power under Contract to ensure full execution by all parties.

1.15 INSPECTION

- .1 Contractor must have inspected work categories that require inspection by national, provincial, local or other authorities and provide proof and results before signature of certificate of final payment.
- .2 Contractor must provide evidence that he complied with requirements of laws and regulations governing the construction industry and of standards from all competent authorities.

1.16 RELATED WORK

- .1 The paragraph titled Related Work at the beginning of specification sections do not limit the responsibilities of the various trades and shall not be interpreted as dealing with excluded work; these paragraphs provide information to Contractor regarding section numbers where works that relate to the given section is specified only.

1.17 KEYS AND BUILDING ACCESS

- .1 Contractor is responsible for building keys and access cards provided by the organization and the resulting restrictions. In the event of lost keys or cards, Contractor must immediately notify the person in charge for the organization. Contractor must assume total cost of replacing locks, if applicable, work performed by the company designated by the organization.
- .2 Contractor will have to change locks of main entrance door and basement side door. He will have to give 2 key duplicates to PCA for the whole duration of job on site. Contractor will have to reinstall PCA locks at the end of job. Contractor will have to repair, at his expense, all damage caused by the installation or removal of these locks.
- .3 Contractor cannot make duplicates of keys without the written approval of building management director.
- .4 Contractor must never, without prior authorization, transfer keys or magnetic cards to anyone.

- .5 At the end of the Contract, Contractor must give person in charge for the organization all duplicates of keys, building keys and magnetic cards under the agreement.
- .6 At no time may Contractor employees open the door to anyone. If they do, they must direct such persons to the person in charge for the organization.

1.18 DIMENSIONS ON PLANS

- .1 Before performing the work, study and carefully verify all measurements on plans to determine exactitude or omission of such measurements.
- .2 Notify Professionals before performing the work of all errors or omissions. Do not begin performance of the work until having received their instructions.
- .3 Do not measure any dimensions directly on drawings or plans.
- .4 All measurements must be verified on site before ordering any finished product that must be incorporated into the work. In the event of measurement errors, additional charges will be borne by Contractor.

1.19 PARKING

- .1 Contractor is the only person responsible for parking his vehicles and those of his employees and subcontractors. Contractor must make an agreement with Departmental Representative for the use of parking areas.
- .2 Contractor cannot at any time allow his workers and those of his subcontractors to park in access roads or areas where parking is prohibited.
- .3 Three parking spaces will be reserved for the use of the contractor on the shore of the lock side. Access to the site from these parking lots is not guaranteed at all times (see specification 1.11.1).
- .4 Respect municipal parking rules in force on the street or elsewhere.

1.20 SCAFFOLDING, TEMPORARY HOISTS AND WASTE CHUTES

- .1 Provide, install and maintain in service and in good condition, for use during construction period, all required general temporary moving equipment including hoists, stairs, ramps, ladders, scaffolding, sidewalks, walkways, etc., required for efficient performance of the work in general and for general use of all workers.
- .2 Temporary service equipment must comply with laws and regulations regarding the presentation of workplace accidents of the C.N.E.S.S.T. and respect CSA S269.2 – Access Scaffolding for Construction Purposes.
- .3 Protect all scaffolding, step ladders and ladders from unauthorized access.

1.21 RESTRICTION REGARDING TOBACCA USE

- .1 Comply with applicable restrictions regarding use or tobacco inside buildings and on entire site.

- .2 Use of tobacco is prohibited on construction site.

1.22 HISTORICAL SURVEY

- .1 During demolition phase, anticipate interruption of the work for 15 minutes every 4 hours to allow historians designated by Departmental Representative to perform a survey of historical elements discovered.
- .2 In the event of unplanned discoveries of cultural resources made in the absence of an archeologist, the person in charge of the project and/or the general contractor will imperatively have to stop all work in the discovery's immediate area and inform PCA's project manager.
- .3 There is a high archeological resources potential under the ground's surface (around 200mm deep) around the building. Mitigation measures should be used in the areas where there will be important circulation or machinery, workers, containers or other elements that could affect the ground and expose remnants. In these areas, install a ground protection made of plywood boards that will be used as walkways and supports for equipment, containers or other elements that could affect the ground's surface.

END OF SECTION

1 GENERAL

1.01 SECTION CONTENTS

- .1 Work assignment and description
- .2 Work sequence
- .3 Contractor use of premises
- .4 Parks Canada Agency occupancy
- .5 Partial Parks Canada Agency occupancy

1.02 PRIORITY

- .1 For work performed for the federal government, the Division 1 sections have priority over the technical sections of the other specifications divisions of the project.

1.03 RELATED SECTIONS

- .1 Section 01 33 00 – Submittal Procedures.
- .2 Section 01 78 00 – Closeout Submittals.

1.04 WORK COVERED BY CONTRACT DOCUMENTS

- .1 Work of this Contract comprises, without being limited to, supply of all materials, labour, tooling and equipment for roof repairs and the works of removal of materials containing asbestos on second floor at the Lockmaster's House, Saint-Ours Canal.

1.05 WORK SEQUENCE

- .1 Construct Work in stages to accommodate Parks Canada Agency's use of premises during construction.
- .2 Co-ordinate Progress Schedule and co-ordinate with Parks Canada Agency Occupancy during construction.
- .3 Construct Work in stages to provide for continuous public usage. Do not close off public usage of facilities until use of one stage of Work will provide alternate usage.
- .4 Maintain fire access/control.

1.06 CONTRACTOR USE OF PREMISES

- .1 The contractor must comply with city regulations regarding hours of noisy work. Parks Canada Agency has no limitation on working hours.

- .2 Execute work on non-holiday weekdays. Work is forbidden on weekends and statutory holidays.
- .3 Departmental Representative alone may authorize the execution of work outside permitted periods. As needed, ask Departmental Representative for authorization five (5) days in advance.
- .4 For all work that could hinder operations, Contractor must send written authorization to Departmental Representative (at least 72 hours prior to execution) indicating the nature of work to perform, time required for execution and date on which work must be performed. Contractor must wait for Departmental Representative authorization before proceeding and must perform work based on schedule accepted by Departmental Representative.
- .5 All work requiring full service disruptions must be formed outside normal operating hours. Sectoral disruptions of more than four (4) hours must be executed outside normal operating hours. Contractor must send Owner written request for authorization as described above for every power disruption.
- .6 The price for executing all overtime work must be included in bid. No additional compensation will be granted subsequently.
- .7 Co-ordinate use of premises under direction of Departmental Representative.
- .8 After having obtained required authorizations, find and pay for additional work or storage areas required to execute the work under this Contract.

1.07 PARKS CANADA AGENCY OCCUPANCY

- .1 Parks Canada Agency will occupy premises during entire construction period for execution of normal operations.
- .2 Site will be open to navigation from May 15th, 2020.
- .3 Co-operate with Departmental Representative in scheduling operations to minimize conflict and to facilitate Parks Canada Agency usage.

1.08 PARTIAL PARKS CANADA AGENCY OCCUPANCY

- .1 Schedule and substantially complete designated portions of Work for Parks Canada Agency occupancy prior to Substantial Performance of entire Work.
- .2 Execute Partial Interim Certificate of Completion for each designated portion of Work prior to Parks Canada Agency partial occupancy. Contractor shall allow:
 - .1 Access for Parks Canada Agency personnel;
 - .2 Use of parking facilities;
 - .3 Operation of HVAC and electrical systems;

1.09 WORK SCHEDULE

- .1 Work schedule must be kept up to date and given to Departmental Representative at every

job meeting as well as at the time of every payment request.

- .2 Work schedule must show full sequencing of activities, with start and end date. Sequencing must be co-ordinated with Departmental Representative.
- .3 Schedule :
 - .1 Work length is estimated at 5 to 6 weeks.
 - .2 Authorized beginning of works : **march 30th, 2020**
 - .3 End of works : **may 29th, 2020**
 - .1 At this end of the work date, work must be completed, deficiencies corrected and the contractor must be completely demobilized.

1.10 DAILY REPORT

- .1 Contractor must produce a daily work log indicating number of Contractor employees, trade employees, subcontractor employees, machinery, etc., including brief description of work performed (specialities, locations) and materials received during the day. All daily reports must be submitted to Departmental Representative no later than the first business day of the following week.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

- .1 Not used.

END OF SECTION

1 GENERAL

1.1 REFERENCES

- .1 Owner / Contractor agreement.
- .2 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2-[1994], Stipulated Price Contract.

1.2 UNIT PRICE OR FIXED PRICE

- .1 The total contract amount is broken down according to a description of paid work on a fixed price basis (Bid information sheets).
- .2 Each broken down fixed price must include all expenses, works (materials and labor), disbursements, payments, direct or indirect costs, mobilizations, demobilizations and acts, all deeds, as well as all responsibilities, obligations, omissions and mistakes made by the Contractor and related to Work completion. These prices also include transport and execution of materials, documents to be submitted for approval, as well as all business overhead expenses: administration, insurance, contributions, interests, rents, taxes and other incidental expenses. It must cover losses and damage that can result from the nature of works, from prices and salaries fluctuation, from business risks, from strikes, from delays not attributable to Ministry Representative, from restrictions relating to transportation, from accidents and from acts of natural elements.
- .3 Payment of this contract is solely based on fixed prices.

1.3 DEFINITIONS

- .1 Fixed price: when works are precisely determined and detailed and that a price is agreed upon and accepted by both parties for the whole.
- .2 Unit price: when specifications relating to works are precisely determined and detailed and that all quantities in information sheets are provided for approximation purposes.

1.4 DESCRIPTION OF COST BREAKDOWN TABLE ITEMS (FIXED PRICES)

- .1 General requirements and Construction site management (item 1.1):
 - .1 Item 1.1 includes, amongst other things, the following elements;
 - .1 Mobilization and demobilization of Place of Work;
 - .2 Temporary signage, signalmen, construction facilities, signposts, dust suppressants installation, protection of existing utilities, access boxes;
 - .3 Sanitary facilities for Contractor's employees;
 - .4 Construction site electrical supply;
 - .5 All temporary facilities necessary for the protection of the environment or of the health and safety of workers, employees and visitors;
 - .6 Provision of construction timetable as well as its updates, of drawings, of procedures and of other Contractor documents;

- .7 Land and/or spaces renting costs, if applicable;
- .8 Protection of existing private and public properties. If Contractor damages these properties during Work, he must repair them at his own expense and satisfactory to the PCA Representative.
- .9 Work surfaces layout and removal, reparation of grass areas that were there before works with turf and site reclamation, satisfactory to the PCA Representative;
- .10 Snow and ice removal for work areas and access roads used by Contractor;
- .11 Waste materials removal from site;
- .12 Contractor's engineering, laboratory and surveying costs (if applicable);
- .13 All items described in Division 1 (General Requirements), as well as in Division 00 (Contractual Requirements).
- .2 This item also includes all other works that are not an integral part of other items in the information sheets.
- .3 Payment of this item will be made according to the following terms :
 - .1 25 % with the first monthly payment.
 - .2 50 % equally distributed with subsequent steps.
 - .3 25 % with payment issued at the "(Provisional) Certificate of Substantial Completion of Work" issuance.
- .2 Demolition (item 2.1) :
 - .1 All works of demolition, dismantling or temporary removal identified in documents or necessary to the global achievement of the project.
 - .2 This article doesn't include asbestos removal works and the disposal of materials containing asbestos. These are described in the items below.
- .3 Works in asbestos conditions – exterior (item 2.2) :
 - .1 All works relating to the removal of exterior materials containing asbestos as described in documents or necessary to the global achievement of the project.
- .4 Works in asbestos conditions – interior (item 2.3) :
 - .1 All works relating to the removal of interior materials containing asbestos as described in documents or necessary to the global achievement of the project.
- .5 Masonry (item 4.1)
 - .1 All demolition works of masonry on the higher part of the exterior wall (between rafters) to allow for roof ventilation and all other masonry intervention identified in documents or necessary for the global achievement of the project.
- .6 Carpentry (item 6.1)
 - .1 All works necessary to roof ventilation, to support of roofing and of other woodworks, to interior finishes support, to the construction or mounting of related works, and to all other carpentry work identified in documents or necessary to the global achievement of the project.
 - .2 All works necessary for construction or repair of fine woodworks (such as wood fascias and soffits), interior woodworks (such as doorframe repairs) and all other woodworking intervention identified in documents or necessary to the global achievement of the project.

- .7 Polyurethane insulation (item 7.1)
 - .1 All roof insulation works and all other insulation intervention identified in documents or necessary to the global achievement of the project.

- .8 Metal cladding (item 7.2)
 - .1 All roof sealing works (such as membranes and fillers) acting as undercoat for the new roof cladding and all other sealing intervention identified in documents or necessary for the global achievement of the project.
 - .2 All stapled "à la canadienne" metal roof cladding works and all other metal cladding intervention identified in documents and necessary for the global achievement of the project.
 - .3 All tinsmith works associated with the installation of the new roof cladding (such as flashings, valleys, drips, etc.) and all other tinsmith intervention identified in documents or necessary for the global achievement of the project.
 - .4 Provision and installation of snow guards and all other fabricated metals and metallic fastening intervention identified in documents or necessary for the global achievement of the project.

- .9 Joint sealants (item 7.3)
 - .1 All sealing works (such as sealants and fillers) necessary for tightness (air and water) of the work (except for those included in specific items) and all other sealing intervention identified in documents or necessary to the global achievement of the project.

- .10 All traditional wood windows and louvers (item 8.1)
 - .1 All works relating to the provision and installation of openings integrated to dormers and all other intervention relating to roof openings identified in documents or necessary to the global achievement of the project.

- .11 Gypsum panels and plaster (item 9.1)
 - .1 All works relating to the provision and installation of interior covering and all other intervention relating to plasterboards identified in documents or necessary to the global achievement of the project.

- .12 Interior painting (item 9.2)
 - .1 All interior coating finish works and all other interior painting intervention identified in documents or necessary to the global achievement of the project.

- .13 Exterior painting (item 9.3)
 - .1 All exterior siding finish works and all other exterior painting intervention identified in documents or necessary to the global achievement of the project.

- .14 Plumbing (item 22.1)
 - .1 All plumbing works (such as the provision, installation and attachment of roof vent) and all other plumbing intervention identified in documents or necessary to the global achievement of the project.

- .15 Administration & profit

- .1 All amounts relating to the salaries necessary for the administration and management of the project, for subcontractors, and for the coordination with the client and other professionals.
- .2 All amounts relating to Contractor's profits on the executed work.

1.5 STATEMENT OF THE FEES DUE

- .1 The statement of the fees due must be set in conformity with what the Ministry Representative can reasonably require regarding with supporting documentation. Once approved by the Ministry Representative, the statement of the fees due can be used as a basis for payment requests.
- .2 With every payment request, provide a status based on the statement of the fees due.
- .3 Requests relating to products that have been delivered on site, but that haven't yet been incorporated into the Work, must be supported with all proofs that the Ministry Representative can reasonably require to set the products' value and attest their delivery.

1.6 PROGRESS PAYMENT

- .1 At the end of each month, submit a payment request corresponding to progress of Work.
 - .1 For every payment request, submit statutory declaration that accounts for labour, subcontracts, products, construction machinery and equipment, and other indebtedness which may have been incurred in Substantial Completion of Work and for which Owner might in be held responsible have been paid in full, except for amounts properly retained as holdback or as identified amount in dispute.
- .2 No later than ten (10) days after receiving a payment request, the Ministry Representative will issue and send to the Client a certificate for payment set to the requested amount or to any other amount deemed due by the Ministry Representative.

1.7 SUBSTANTIAL COMPLETION OF WORK

- .1 When substantial scope of Work is achieved or, if a liens legislation applicable to Construction site allows for it, part of the Work that the Ministry Representative agrees to accept separately is substantially completed, prepare and submit to the Ministry Representative a comprehensive list of items to be completed or corrected and apply for a review by the Ministry Representative to establish Substantial Completion of Work or substantial completion of the designated Work. Failure to include items on list does not alter responsibility to complete Contract.
- .2 No later than ten (10) days after receiving the list and application, the Ministry Representative will review Work to verify validity of application and, not later than seven (7) days after completing review, will notify Contractor if Work or designated portion of Work is substantially completed.
- .3 Ministry Representative will issue a certificate indicating date of Substantial Completion of Work or designated portion of Work.

- .4 Immediately following issuance of certificate of Substantial Completion of Work, in consultation with Ministry Representative, establish a reasonable date for finishing Work.

1.8 PAYMENT OF HOLDBACK UPON SUBSTANTIAL COMPLETION OF WORK

- .1 After issuance of certificate of Substantial Completion of Work :
 - .1 Submit application for payment of holdback amount.
 - .2 Submit statutory declaration that accounts for labour, subcontracts, products, construction machinery and equipment, and other indebtedness which may have been incurred in Substantial Completion of Work and for which Owner might in be held responsible have been paid in full, except for amounts properly retained as holdback or as identified amount in dispute.
- .2 After receipt of application for payment and sworn statement, Ministry Representative will issue certificate for payment of holdback amount.
- .3 Amount authorized by certificate for payment of holdback amount is due and payable on day following expiration of holdback period stipulated in lien legislation applicable to Place of Work. Where lien legislation does not exist or apply, holdback amount is due and payable in accordance with other legislation, industry practice, or provisions which may be agreed to between parties. Owner may retain out of holdback amount sums required by law to satisfy liens against Work or, if permitted by lien legislation applicable to Place of Work, other third party monetary claims against Contractor which are enforceable against Client.

1.9 PROGRESSIVE RELEASE OF HOLDBACK

- .1 Where legislation allows it, if Ministry Representative has certified that Work of subcontractor or supplier has been performed prior to Substantial Completion of Work, Client shall pay holdback amount retained for such subcontract Work, or products supplied by such supplier, on day following expiration of holdback period for such Work stipulated in lien legislation applicable to Place of Work.
- .2 In addition to provisions of preceding paragraph, and certificate wording, Contractor must ensure that such subcontract Work or products is protected pending issuance of final certificate for payment and be responsible for correction of defects or Work not performed regardless of whether or not such was apparent when such certificates were issued

1.10 FINAL PAYMENT

- .1 Contractor must submit application for final payment when Work is completed.
- .2 Ministry Representative will, no later than ten [10] days after receipt of application for final payment, review Work to verify validity of application. Ministry Representative will give notification to Contractor that application is valid or give reasons why it is not valid, no later than seven [7] days after reviewing Work.
- .3 Ministry Representative will issue final certificate for payment when application for final payment is found valid.

2 PRODUCTS

2.01 NOT USED

.1 Not used.

3 EXECUTION

3.01 NOT USED

.1 Not used.

END OF SECTION

1 GENERAL

1.01 SECTION CONTENTS

- .1 Inspections and tests by inspection companies or testing laboratories designated by the Departmental Representative.

1.02 RELATED REQUIREMENTS

- .1 Particular requirements for inspection and testing to be carried out by testing laboratory designated by Departmental Representative are specified under various specifications sections.

1.03 APPOINTMENT AND PAYMENT

- .1 Parks Canada Agency Departmental Representative will appoint and pay for services of testing laboratory except follows:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
 - .4 Mill tests and certificates of compliance.
 - .5 Tests specified to be carried out by Contractor under supervision of Departmental Representative.
 - .6 Additional tests specified in the following paragraph.
- .2 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, Contractor must pay costs for additional tests or inspections as required by Parks Canada Agency Departmental Representative to verify acceptability of corrected work.

1.04 CONTRACTOR'S RESPONSIBILITIES

- .1 Provide labour, equipment and facilities to:
 - .1 Provide access to Work for inspection and testing;
 - .2 Facilitate inspections and tests;
 - .3 Make good Work disturbed by inspection and test;
- .2 Notify Departmental Representative sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.
- .3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- .4 Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and approved by Departmental Representative.

2 PRODUCTS

2.01 NOT USED

.1 Not used.

3 EXECUTION

3.01 NOT USED

.1 Not used.

END OF SECTION

1 GENERAL

1.01 PRIORITY

- .1 For work performed for the federal government, the Division 1 sections have priority over the technical sections of the other specifications divisions of the project.

1.02 DEFINITIONS

- .1 Activity: element of Work performed during course of Project. Activity normally has expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.
- .2 Bar Chart (GANTT Chart): graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.
- .3 Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.
- .4 Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.
- .6 Milestone: significant event in project, usually completion of major deliverable.
- .7 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.

1.03 REQUIREMENTS

- .1 Ensure Project Schedule is practical and remains within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

1.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit Project Schedule to Departmental Representative within thirty (30) working days of Award of Contract. Project Schedule will be used for planning, monitoring and reporting of project progress.

1.05 PROJECT MILESTONES

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).
- .2 Departmental Representative will review and return revised schedules within five (5) working days.
- .3 Revise impractical schedule and resubmit within five (5) working days.
- .4 Accepted revised schedule will be used as baseline for updates.

1.06 PROJECT SCHEDULE

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
 - .1 Award;
 - .2 Shop Drawings, Samples;
 - .3 Permits;
 - .4 Mobilization;
 - .5 Asbestos removal
 - .6 Foundation parging;
 - .7 Wood soffit;
 - .8 Couverture ;
 - .9 Windows;
 - .10 Gutters;
 - .11 Snow guards;
 - .12 Piping;
 - .13 Testing and Commissioning;
 - .14 Supplied equipment long delivery items;
 - .15 Engineer supplied equipment required dates;
 - .16 Defective work corrections.

1.07 PROJECT SCHEDULE REPORTING

- .1 Update Project Schedule every two (2) weeks to reflect activity changes and completions, as well as activities in progress.

1.08 PROJECT MEETINGS

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.
- .2 Weather related delays with their remedial measures will be discussed and negotiated.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

- .1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 ADMINISTRATIVE

- .1 Submit to the Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 In no case shall the Contractor use a full reproduction of the Departmental Representative's plans to submit his own shop drawings. Should the Contractor fail to comply with this requirement, the shop drawings will immediately be returned to the Contractor and they will need to be resubmitted to the Departmental Representative.**
- .6 The Departmental Representative will not send any electronic plans (.dwg) to Subcontractors or to the Contractor for the preparation of shop drawings. Shop drawings must be produced by Subcontractors or the Contractor.**
- .7 Review submittals prior to submittal to the Departmental Representative. This review confirms that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as being specific to the project shall be returned without being examined and considered rejected.
- .8 Notify the Departmental Representative, in writing at time of submittal, of any deviations from requirements of Contract Documents, stating reasons for deviations.
- .9 Verify field measurements and affected adjacent Work are coordinated.
- .10 Contractor's responsibility for complete and exact works is not relieved by the Departmental Representative's review of submittals.
- .11 Contractor's responsibility for providing works that comply with Contract Documents is not relieved by the Departmental Representative's review of submittals.
- .12 Keep one reviewed copy of each submittal on site.

1.2 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of a portion of Work.
- .2 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Quebec, Canada.

- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Allow seven (7) days for the Departmental Representative's review of each submittal.
- .5 Adjustments made on shop drawings by the Departmental Representative are not intended to change the Contract Price. If adjustments affect value of work, state such in writing to the Departmental Representative prior to proceeding with work.
- .6 Make changes to shop drawings as requested by the Departmental Representative, in accordance to Contract Document requirements. When resubmitting, notify the Departmental Representative in writing of revisions other than those requested.
- .7 Submittals must include a "Transmittal Form – Document Review" with the following information:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .8 Submittals must include:
 - .1 Date and revision dates.
 - .2 Project title and 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 submittals, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies of shop drawings and product data sheets.

- .10 Submit two (2) hard copies or, upon the Departmental Representative's approval, one (1) electronic copy of shop drawings and product data sheets as requested in the Specifications' technical sections and as requested by the Departmental Representative. Plans may be sent electronically; they must comply with the following requirements:
 - .1 Restrictions on electronic submittals:
 - .1 The maximum accepted format is Ledger (280 mm x 432 mm). Shop drawings exceeding this format must be submitted as hard copies, in quantities indicated above.
 - .2 Electronic file names must include the following information:
 - .1 Project number (COUR-1466 for this project).
 - .2 Relevant specification section.
 - .3 Item(s) affected.
 - .1 Ex.: **COUR-1466-06 40 00-woodwork.pdf**
 - .3 Submit original product data sheets in PDF format, produced by each specialized trade.
 - .4 Clearly indicate affected elements if the product data sheet proposes several alternatives or options.
 - .5 Do not submit TIFF, PNG or JPG formats.
 - .6 Documents that do not meet these conditions, or those whose format or legibility are unacceptable, shall be returned and marked "Refused – Resubmit."
 - .11 Submit one (1) electronic copy of product data sheets or brochures for requirements requested in specification sections and as requested by the Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
 - .12 Submit one (1) electronic copy of test reports for requirements requested in specification sections and as requested by the Departmental Representative.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within three (3) years of date of contract award for project.
 - .13 Submit one (1) electronic copy of certificates for requirements requested in specification sections and as requested by the Departmental Representative.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project contract complete with project name.
 - .14 Submit one (1) hard copy and one (1) electronic copy of manufacturer's instructions, as indicated in Specifications' technical sections and as requested by the Departmental Representative.
 - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.

- .15 Submit one (1) electronic copy of manufacturer's Field Reports for requirements requested in specification sections and as requested by the Departmental Representative.
- .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .17 Submit one (1) electronic copy of Operation and Maintenance Data for requirements requested in specification sections and as requested by the Departmental Representative.
- .18 Delete information not applicable to project.
- .19 Supplement standard information to provide details applicable to project.
- .20 If, upon review by the Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of work may proceed. If shop drawings are rejected, noted copy will be returned and resubmittal of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .21 The review of shop drawings by the Departmental Representative is for the sole purpose of ascertaining conformance with general concept.
 - .1 This review shall not mean that the Departmental Representative approves detail design inherent in shop drawings, the responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
 - .2 Without restricting generality of foregoing, the 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 coordination of Work of sub-trades.

1.3

SAMPLES

- .1 Submit two (2) product samples for review, as requested in the Specifications' technical sections. Label samples with origin and intended use.
- .2 Send postage paid samples to the Departmental Representative's office.
- .3 Upon presentation of product samples, notify the Departmental Representative in writing of any deviations from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Changes to samples made by the Departmental Representative shall not affect Contract Price. If adjustments affect value of work, state such in writing to the Departmental Representative prior to proceeding with work.
- .6 Make adjustments to samples as requested by the Departmental Representative, while complying with Contract Document requirements.
- .7 Reviewed and accepted samples will become standards of workmanship and material against which installed Work will be verified.

1.4

MOCK-UPS

- .1 Produce samples of Work in accordance with Section 01 45 00 – Quality Control.

1.5 CERTIFICATES AND MINUTES

- .1 Submit documents required by the *Commission de la santé et de la sécurité au travail* (Quebec Workmen's Compensation Commission) immediately after award of Contract.
- .2 Submit copies of insurance policies immediately after award of Contract.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

1 GENERAL

1.01 SECTION CONTENTS

- .1 Traffic protection and regulation.
- .2 Signs and warning devices.

1.02 PRIORITY

- .1 For work performed for the federal government, the Division 1 sections have priority over the technical sections of the other specifications divisions of the project.

1.03 REFERENCES

- .1 Uniform Traffic Control Devices for Canada (UTCD) (distributed by Transportation Association of Canada.

1.04 PROTECTION OF PUBLIC TRAFFIC

- .1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.
- .2 Close lanes of road only after receipt of written approval from Parks Canada Agency. Before re-routing traffic erect suitable signs and devices, in accordance with instructions in part D of UTCD.
- .3 Keep travelled way graded, free from pot holes and of sufficient width for required number of lanes of traffic.
- .4 Provide and maintain road access and egress to property fronting along Work under Contract and in other areas as indicated, except where other means of road access exist that meet approval of Departmental Representative.
- .5 Clear roadways used by Contractor vehicles.

1.05 INFORMATIONAL AND WARNING DEVICES

- .1 Provide and maintain signs and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.
- .2 Supply and erect signs, delineators, barricades and miscellaneous warning devices in accordance with stipulations in part D, "Temporary Conditions Signs and Devices" of UTCD.
- .3 Place signs and other devices in locations recommended in UTCD.

- .4 Meet with Departmental Representative prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of Departmental Representative.
- .5 Continually maintain traffic control devices in use:
 - .1 Check signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance;
 - .2 Remove or cover signs which do not apply to conditions existing from day to day.

1.06 CONTROL OF PUBLIC TRAFFIC

- .1 Provide competent flag personnel, trained in accordance with, and properly equipped to UTCD for situations as follows:
 - .1 When public traffic is required to pass working vehicles or equipment that block all or part of travelled roadway.
 - .2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.
 - .3 When workmen or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning;
 - .4 Where temporary protection is required while other traffic control devices are being erected or taken down;
 - .5 For emergency protection when other traffic control devices are not readily available;
 - .6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.

2 PRODUCTS

2.01 SITE SIGNALIZATION

- .1 Site signalization (2 coroplast panels, 4 'x 6' size, in color) will be provided by the contractor.
 - .1 PCA will provide the electronic file of the panel according to its brand image and the contractor will have to print and install the panel at the time of mobilization in the location designated by the ministry representative.
 - .2 Details will be provided by PCA ten (10) working days before mobilization.
- .2 No other signage or logo will be allowed on site without prior authorization from Parks Canada Agency.

3 EXECUTION

3.01 NOT USED

.1 Not used.

END OF SECTION

1 GENERAL

1.01 RELATED SECTIONS

- .1 Section 01 33 00 Submittal procedures
- .2 Section 02 82 00.00 Technical specification – Material drilling procedure with a dust collector bin
- .3 Section 02 82 00.03 Work in asbestos condition – High-Risk work procedure
- .4 Section 02 82 00.04 Work in asbestos condition – Exterior High-Risk work procedure

1.02 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit to Departmental Representative copies of following documents, including published updates:
 - .1 Before commencement of work, submit Health and Safety Plan, as specified in paragraph 1.9.
 - .2 Submit copies of reports or directions issued by competent authorities as soon as they are received.
 - .3 Submit copies of incident and accident reports within 24 hours.
- .2 Submit other data, information and documents upon request of Departmental Representative, as stipulated elsewhere in this section.

1.03 COMPLIANCE REQUIREMENTS

- .1 Comply with latest version of Québec Act respecting occupational health and safety, and regulations made pursuant to the Act.
- .2 Observe and enforce construction safety measures required by:
 - .1 National Building Code of Canada (latest version).
 - .2 The Commission de la santé et de la sécurité au travail (or equivalent organization) of the province or territory in question.
 - .3 Municipal statutes and ordinances.
- .3 In event of conflict between any provisions of above authorities the most stringent provision will apply.
- .4 Provide and maintain workers compensation coverage for all employees, for duration of Contract work. Before commencement of work, at time of provisional execution and before final payment, submit to CDC Representative a letter (certificate) from the Commission de la santé et de la sécurité au travail (or equivalent organization), certifying that Contractor's account is in good standing.
 - .1 If Contractor is sole owner, give Departmental Representative documentary evidence, in a format acceptable to Departmental Representative, of other personal

insurance coverage that meets or exceeds requirements stated above for workers' compensation insurance

1.04 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
- .3 Should any unforeseen or peculiar safety-related factor, hazard or condition become evident during performance of work, immediate measures must be taken to correct the situation and prevent any damage or injury. Inform Departmental Representative verbally and in writing of danger or situation.

1.05 SITE CONTROL AND ACCESS

- .1 Control work site and entry points to construction areas. Delineate and isolate construction areas from other areas of site Facility by use of appropriate means to maintain control of all site entry points.
- .2 Approve and grant access to site only to workers and authorized persons. Access authorization procedures must comply with Québec Act respecting occupational health and safety, regulations made pursuant to the Act and the Contractor's Health and Safety Plan.
- .3 Ensure persons granted access to site wear minimum personal protective equipment (PPE) specified in Contractor's Health and Safety Plan. Provide PPE to authorized persons who require access, the characteristics of which are more rigorous than minimal equipment indicated previously, and are designed specifically for construction site operations, ensure authorized persons have received training to use the PPE they wear. Ensure effectiveness of PPE provided, the characteristics of which are more rigorous than the stated minimum equipment.
- .4 Post notices and signage at entry points and at other strategic locations identifying entrance onto site to be restricted to authorized persons only. Signage must be professionally made and display internationally understood graphic symbols. Signs must not be used for advertising purposes, but for the express use of specifying information on site safety and main resource persons.
 - .1 Information to display on signage:
 - .2 Project name and description;
 - .3 Contractor name;
 - .4 Name and telephone number of project superintendent.
- .5 Secure site at all times to extent required to protect against unauthorized entry.

- .6 Contractor must provide for traffic lanes around construction site to also be used by visitors.
- .7 Contractor should keep an access way to site for PCA employees to allow for inspections.

1.06 FILING OF NOTICE

- .1 File Notice of Project with Provincial or Territorial authorities prior to beginning of Work and submit 1 (1) copy to Departmental Representative.

1.07 PERMITS

- .1 Obtain permits, licences and compliance certificates when and as frequently specified by competent authorities.
- .2 Post all permits, licences and compliance certificates on the site and provide copies to Departmental Representative.

1.08 PROJECT/SITE CONDITIONS

- .1 The following are known or potential project related health, environmental and safety hazards at site which must be properly managed if encountered during course of work:
 - .1 Contractors must take into account known hazardous substances and conditions and must include in their price proposal all work that must be performed in or near the danger zone in the presence of hazardous substances.
 - .2 See sections 02 82 00.00 -Technical specification – Material drilling procedure with a dust collector bin, 02 82 00.03 - Work in asbestos condition – High-Risk work procedure and 02 82 00.04 - Work in asbestos condition – Exterior High-Risk work procedure
- .2 Above list shall not be construed as being complete and inclusive of potential health, and safety hazards encountered during work. Include above items into hazard assessment process.

1.09 MEETINGS

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work. Ensure presence of Contractor's Site Superintendent. Departmental Representative must specify time, date and location of meeting and draft and distribute minutes.
- .2 Hold site-specific Health and Safety meetings as required by the Québec Act respecting occupational health and safety and the regulations made pursuant to the Act.
- .3 Draft and post in on site the minutes of all meetings. Ensure that Departmental Representative can obtain copies upon request.

1.10 HEALTH AND SAFETY PLAN

- .1 Under the Québec Act respecting occupational health and safety and the regulations made pursuant to the Act, Contractors must have a Health and Safety Plan. Compliance requirements regarding content, details and implementation of the plan are under

provincial/territorial jurisdiction. For the purposes of this Contract, Health and Safety Plan must include a site-specific Health and Safety Plan that recognizes, assesses and discusses the known hazardous substances and conditions specified in 1.7 above, as well as ongoing assessments of hazards executed during performance of work, and documenting, new or eventual, unknown and previously unidentified health and safety risks.

- .2 Before commencement of work, give Departmental Representative one (1) copy of Health and Safety Plan. The copy given to Departmental Representative must serve to review the plan based on Contract requirements regarding known hazardous substances and conditions. The review must not be interpreted to suggest that Departmental Representative approves the plan as complete, accurate and legally compliant to the Québec Act respecting occupational health and safety and regulations made pursuant to the Act, and must not release Contractor of his legal obligations under said Act.

1.11 ACCIDENT REPORTING

- .1 Investigate and report incidents and accidents as required under Québec Act respecting occupational health and safety, and regulations made pursuant to the Act.
- .2 For the purposes of this Contract, immediately investigate accidents or incidents involving the following situations and submit report to Departmental Representative:
 - .1 Injury requiring medical aid or not, but resulting in lost work time for the injured person(s);
 - .2 Exposure to toxic substances or chemical products;
 - .3 Material damages, and
 - .4 Interruption of operations within the infrastructure or adjacent to it likely to result in losses.
- .3 During investigation and reporting of incidents and accidents, Contractor is bound to intervene quickly in order to correct the actions deemed as being the cause of the accident or incident and must provide a written notice of measures taken to prevent the incident or accident from recurring.

1.12 SITE RECORDS

- .1 Maintain on site one (1) copy of all health and safety documentation and reports specified to be produced as part of the work and received from authorities having jurisdiction.
- .2 Upon request, make available to Departmental Representative.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

.1 Not used.

END OF SECTION

1 GENERAL

1.01 PRIORITY

- .1 For work performed for the federal government, the Division 1 sections have priority over the technical sections of the other specifications divisions of the project.

1.02 CONSTRUCTION FIRE SAFETY

- .1 Contractor shall provide construction fire safety in accordance with the National Fire Code of Canada.

1.03 FIRE DEPARTMENT BRIEFING

- .1 PCA will inform fire service that work will be down on the Superintendent's House, but Contractor will remain responsible for building's fire safety during job.
- .2 After Contract award, Departmental Representative will take necessary measures to organize briefing before work is commenced. Fire Chief or representative will hold briefing on Fire Safety for contractor at pre-work conference by before work is commenced.

1.04 REPORTING FIRES

- .1 Before commencing work, verify location of nearest fire alarm box/emergency telephone, and memorize telephone number to call in case of emergency.
 - .1 In case of fire or medical emergency: 911 (on internal telephone).
- .2 Report immediately fire incidents to Fire Department as follows:
 - .1 Activate nearest fire alarm box;
 - .2 Telephone, specifying name or number of building;
 - .3 Try to fight the fire, but do not put your life at risk;
 - .4 Evacuate the scene;
 - .5 When the firefighters arrive, state the nature of the fire or medical emergency and the exact location.
- .3 Person activating fire alarm pull station will evacuate premises and report to Fire Department upon arrival, in order to direct firefighters to scene of fire or accident, depending on the case.
- .4 When reporting fire by telephone, give location of fire, name or number of building and be prepared to verify information provided.
- .5 The Contractor shall inform the Departmental Representative and Fire Chief of all fire incidents at the construction site, regardless of size.
- .6 When reporting fire by telephone, give location of fire, name or number of building and be prepared to verify location.

1.05 FIRE SAFETY PLAN

- .1 Submit a fire safety plan for the construction site prior to commencement of construction work. The fire safety plan shall conform to the National Fire Code of Canada.
- .2 The fire safety plan shall be submitted to the DCC representative for review by local fire department. Any comments by local fire department shall be implemented by the Contractor.
- .3 The fire safety plan shall be limited to the area of construction only. Contractor is not responsible for amending fire safety plans in existing buildings.
- .4 Post the fire safety plan at the entrance to the construction site or near the construction site's health and safety board.
- .5 The fire safety plan shall conform to the National Fire Code of Canada, and shall contain, at minimum.
 - .1 Emergency procedures to be used in case of fire, including:
 - .1 Sounding the fire alarm;
 - .2 Notifying the fire department;
 - .3 Instructing occupants on procedures to be followed when the fire alarm sounds;
 - .4 Evacuating occupants, including special provisions for persons requiring assistance; and
 - .5 Confining, cooling and extinguishing fires.
 - .2 The appointment and organization of designated supervisory staff to carry out fire safety duties.
 - .3 The training of supervisory staff and other occupants in their responsibilities for fire safety.
 - .4 Documents including diagrams, showing the type, location and operation of building fire emergency systems.
 - .5 The holding of fire drills (where applicable).
 - .6 The control of fire hazards in the building.
 - .7 The inspection and maintenance of building facilities provided for the safety of occupants.

1.06 FIRE WARNING SYSTEMS

- .1 A fire warning shall be provided to notify construction personnel of a fire emergency in the construction area.
- .2 The system used shall be capable of being heard throughout the building and should be connected to the central.

1.07 INTERIOR AND EXTERIOR FIRE PROTECTION AND ALARM SYSTEMS

- .1 Fire protection and alarm system will not be:
 - .1 Obstructed;
 - .2 Shut-off;
 - .3 Left inactive at end of working day or shift without authorization from Fire Chief.

- .2 Fire hydrants, standpipes and hose systems will not be used for other than fire-fighting purposes unless authorized by Fire Chief.

1.08 FIRE PROTECTION SYSTEM IMPAIRMENT

- .1 Notify the Departmental Representative and the Fire Chief 48 hours prior to shutting down any active supply, fire suppression, fire detection and life safety systems.
- .2 Where a fire protection system that provides fire alarm monitoring is impaired in an existing building, a fire watch may be required at the discretion of the Fire Chief.
- .3 Implement all fire protection system impairments in accordance with the National Fire Code of Canada and Base Fire Orders. Fire Orders will be provided at the Pre-Commencement Meeting.

1.09 FIRE EXTINGUISHERS

- .1 In addition to other requirements of this specification, supply fire extinguishers, as scaled by the Fire Chief, necessary to protect work in progress and contractor's physical plant on site.
- .2 Fire extinguishers may be required in the following areas as directed by the Fire Chief:
 - .1 Adjacent to hot works;
 - .2 In areas where combustibles are stored;
 - .3 Near or on any internal combustion engines;
 - .4 Adjacent to areas where flammable liquids or gases are stored or handled;
 - .5 Adjacent to temporary oil fired or gas fired equipment; and
 - .6 Adjacent to bitumen heating equipment.
- .3 Extinguishers shall be sized as 4-A:40-B:C (20 lbs) unless otherwise directed by the Fire Chief.
- .4 Extinguishers shall be of the dry chemical type unless otherwise required by the hazard being protected.
- .5 The Contractor may assume the quantity of extinguishers based on a maximum travel distance between extinguishers of 75 feet.

1.10 ACCESS FOR FIRE FIGHTING

- .1 Access for firefighting shall be provided in accordance with the National Fire Code of Canada.
- .2 Advise the Fire Chief of work that would impede fire apparatus response. This includes violation of minimum horizontal and overhead clearance, as prescribed by the Fire Chief, erecting of barricades and digging of trenches.
- .3 Minimum horizontal clearance: clear width of not less than 5m, or as defined by the Fire Chief.
- .4 Minimum vertical clearance: overhead height of not less than 6m, or as defined by the Fire Chief.

1.11 SMOKING PRECAUTIONS

- .1 Smoking is prohibited in all buildings. Observe posted smoking restrictions near existing buildings.

1.12 RUBBISH AND WASTE MATERIALS

- .1 Keep rubbish and waste materials at minimum quantities.
- .2 Burning of rubbish is prohibited.
- .3 Remove rubbish from work site at end of work day or shift or as directed.
- .4 Storage
 - .1 Store oily waste in approved receptacles to ensure maximum cleanliness and safety.
 - .2 Deposit greasy or oily rags and materials subject to spontaneous combustion in approved receptacles and remove specified.

1.13 FLAMMABLE AND COMBUSTIBLE LIQUIDS

- .1 Handling, storage and use of flammable and combustible liquids governed by current National Fire Code of Canada.
- .2 Keep flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use in quantities not exceeding 45 litres provided they are stored in approved safety cans bearing Underwriters' Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires permission of Fire Chief.
- .3 Transfer of flammable and combustible liquids is prohibited within buildings or jetties.
- .4 Transfer of flammable and combustible liquids will not be carried out in vicinity of open flames or any type of heat-producing devices.
- .5 Do not use flammable liquids having flash point below 38 degrees C such as naphtha or gasoline as solvents or cleaning agents.
- .6 Store flammable and combustible waste liquids, for disposal, in approved containers located in safe ventilated area. Keep quantities minimum and Fire Department is to be notified when disposal is required.

1.14 HOT WORKS

- .1 The Contractor shall implement a hot works program in accordance with the National Fire Code of Canada and NFPA 51 Standard for Fire Prevention during Welding, Cutting and Other Hot Work.
- .2 The Contractor shall obtain from the Fire Chief a "Hot Work" permit for all hot works in the construction area. Frequency of renewal for hot works permits is at the discretion of the Fire Chief.

- .3 When Work is carried out in dangerous or hazardous areas involving use of heat, provide fire watchers equipped with sufficient fire extinguishers. Determination of dangerous or hazardous areas along with level of protection necessary for Fire Watch is at discretion of the Fire Chief.
- .4 Provide fire watch service for work on scale established and in conjunction with the Fire Chief as defined in the Fire Department Briefing. Fire watchers shall be trained in the use of fire extinguishing equipment.
- .5 Area of hot works
 - .1 Hot works shall be carried out in an area free of combustible and flammable content.
 - .2 Where 1.14.5.1 is not possible
 - .1 All flammable and combustible materials within 15m of the hot works shall be protected in accordance with the National Fire Code of Canada.
 - .2 A fire watch shall be provided during the hot work and for a period of not less than 60 minutes unless otherwise directed by the Fire Chief.
 - .3 A final inspection of the hot work area shall be conducted not less than 4 hours after the completion of hot works unless otherwise directed by the Fire Chief.
 - .3 Where there is a possibility of sparks leaking onto combustible materials in areas adjacent to the areas where the hot work is carried out:
 - .1 Openings in walls, floors or ceilings shall be covered or closed to prevent the passage of sparks to such adjacent areas, or
 - .2 Sentence 1.14.5.2 shall apply for those areas.
- .6 Protection of flammable and combustible materials
 - .1 Any combustible or flammable material, dust or residue shall be:
 - .1 Removed from the area where hot works is carried out; or
 - .2 Protected from ignition by non-combustible materials.
- .7 Fire extinguisher
 - .1 A fire extinguisher shall be provided within 3 m of all hot works. Minimum size shall be 20lbs ABC unless otherwise directed by Fire Chief.

1.15 HAZARDOUS SUBSTANCES

- .1 Work entailing use of toxic or hazardous materials, chemicals and/or explosives, or otherwise creating hazard to life, safety or health, in accordance with National Fire Code of Canada.
- .2 Provide ventilation where flammable liquids, such as lacquers or urethanes are used, eliminate sources of ignition. Inform Fire Chief prior to and at cessation of such work.

1.16 PARTIAL OCCUPANCY

- .1 Implement partial occupancy procedures as defined in the drawings and specifications. Partial occupancy is where construction occurs adjacent to work areas occupied by Parks Canada Agency employees. This includes:
 - .1 Renovation or recapitalization of an existing building;

- .2 Where partial occupancy occurs, Contractor shall implement requirements as found in the drawings and specifications. This may include construction of a rated fire separation between occupied and construction areas as required by the National Fire Code.
- .3 A watch, with tours at intervals of not less than one hour, shall be provided throughout demolition sites when there are occupants in the portion of the building not being demolished.
- .4 Except where a building is provided with a fire alarm system or similar equipment, a watch, with tours at intervals of not more than one hour, shall be provided when a portion of the building is occupied while construction operations are taking place.

1.17 QUESTIONS AND/OR CLARIFICATION

- .1 Direct questions or clarification on Fire Safety in addition to above requirements to Departmental Representative.
- .2 Parks Canada Agency is responsible to obtain clarifications from the Fire Chief. The Contractor is not to liaise directly with the Fire Chief for notification, authorization or any requests unless the situation constitutes an immediate emergency.

1.18 FIRE INSPECTION

- .1 Co-ordinate site inspections by Fire Chief through Departmental Representative.
- .2 Allow Fire Chief unrestricted access to work site.
- .3 Co-operate with Fire Chief during routine fire safety inspection of work site.
- .4 Immediately remedy unsafe fire situations observed by Fire Chief.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

- .1 Not used.

END OF SECTION

1 GENERAL

1.01 REFERENCES

- .1 Canadian Environmental Protection Act (1999) (S.C. 1999, c. 33)
- .2 Historic Canals Regulations (SOR/93-220)
- .3 Transportation of Dangerous Goods Act (S.C. (1992), c. 34)
- .4 Canadian Environmental Quality Guidelines (CEQGs, 1999).
- .5 Fisheries Act
- .6 Clean Air Regulation (Q-2, r. 4.1)
- .7 Regulation respecting hazardous materials (Q-2, r. 32)
- .8 Regulation respecting solid waste (Q-2, r. 13)
- .9 Regulation respecting the landfilling and incineration of residual materials (ch. Q-2, r. 19)
- .10 Surface water quality criteria (MDDELCC, 2015)

1.02 DEFINITIONS

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally, and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. The prevention of pollution and damage to the environment includes the protection of soil, water, air, biological and cultural resources; it also includes the management of visual aesthetics, noise and vibration, solid, chemical, gaseous and liquid waste, radiant energy, radioactive materials and other pollutants.

1.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature, and data sheets that include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .3 Before mobilization on site, submit Environmental Protection Plan (EPP) for review and

approval by the Agency Representative.

- .1 The Environmental Protection Plan shall include comprehensive overview of known or potential environmental issues to be addressed during construction.
- .2 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .3 The actions included in the Environmental Protection Plan shall be presented with a level of detail that is consistent with the environmental concerns and the construction works to be performed.
- .4 Contractor is free to use this format or his own format of Environmental Protection Plan (EPP).
- .5 Include in Environmental Protection Plan :
 - .1 Names of persons responsible for ensuring adherence to Environmental Protection Plan.
 - .2 Names and qualifications of persons responsible for manifesting hazardous waste to be removed from site.
 - .3 Names and qualifications of persons responsible for training site personnel.
 - .4 Descriptions of environmental protection personnel training program.
 - .5 Sediment Erosion and Sediment Prevention Plan, outlining measures to be implemented, including work monitoring and reporting to verify compliance with federal laws and regulations. Provincial and Municipal, and EPA 832 / R-92-005, Chapter 3.
 - .6 Drawings showing the location of temporary excavations or site trails landscaped with backfill, the crossing of rivers, materials, construction, sanitation facilities, deposits of surplus materials or contaminated materials; drawings showing the methods to be used to control runoff and to contain materials on the site.
 - .7 Traffic Control Plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather.
 - .1 Plans to include measures to minimize amount of material transported onto paved public roads by vehicles or runoff.
 - .8 A plan of the work area, showing the activities planned in each part of the work area and indicating the restricted use areas as well as the prohibited areas of use.
 - .1 This plan shall include measures to mark the limits of useable areas and methods of protection of elements within authorized work areas and to be preserved.
 - .9 Spill Control Plan to include procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance in addition to the Parks Canada Agency Supervisor and Project Authority, contact the following organizations without delay: Environment Canada: 1-866-283-2333, Urgence-Environnement du Québec: 1-866-694-5454 and La Garde Coastal Region: 1-800-363-4735.
 - .10 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
 - .11 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, are contained on project site.
 - .12 Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction

- of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
- .13 Waste Water Management Plan identifying methods and procedures for management discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines.
 - .14 A historical, archaeological, cultural resources biological resources and wetlands protection plan.
- .4 Submit other data, information and documents upon request from the Departmental Representative, as stipulated elsewhere in this document

1.04 ENVIRONMENTAL MITIGATION MEASURES

- .1 Contractor must execute all mitigation measures prescribed for each activity according to the following lists:
- .2 List of general mitigation measures
 - .1 Conditions specific to work area/gathering area/storage area:
 - .1 On an already disrupted parcel (i.e. road, gravel surface, disrupted area with strong resilience), delineate gathering areas, unloading areas for equipment, as well as parking, and specify their length of use. Otherwise, these areas must have been approved by a designated Parks Canada agency for non-disrupted parcels.
 - .2 Use roads, trails, disrupted areas or other existing parcels approved by Parks Canada designated staff to access site, move and execute interventions on it.
 - .3 Spray dry materials, if possible, and cover wastes to avoid wind lifting up dust or debris. Restrain dust on roads being used by workers (including temporary roads).
 - .4 Cover construction equipment with weighed down tarps if necessary. Restrict damage caused to adjacent vegetation and execute repair works if need be.
 - .5 Clearly delineate Work site and restricted areas as per specifications.
 - .6 Reduce disruptive traces as much as possible and restrain access to essential vehicles only.
 - .7 Make sure that visible scars created by construction work (i.e. ruts, holes, pits, compacted areas) are correctly leveled and backfilled with topsoil, reconfigured and covered with native species.
 - .2 Use of equipment :
 - .1 Chose equipment suitable for the nature of work to be executed (i.e. avoid using heavy machinery if hand tools or small machinery are sufficient).
 - .2 Before arrival on site, make sure that equipment is correctly adjusted, clean and free from contaminants, functional, free from leakage (i.e. gas, oil or grease) and equipped with spark arrestors and standard emission controls.
 - .3 To avoid introducing invasive plants or non-native species inside the site area, all machinery components (loaders, trucks, hydraulic excavators,

- compactors, etc.) must be free from mud, organic materials and vegetation debris at their arrival.
- .4 Store, maintain and fuel machinery on a flat surface, outside of tree foliage edges and at a minimal distance of 30m from any body of water.
 - .5 Fuel on a waterproof refueling mat with a berm or inside a container. Clean leaks and spills that happen during refueling and dispose of contaminated materials appropriately. Never dispose of or drop fuel in the environment or in a body of water.
 - .6 Execute tools and equipment cleaning outside or Work site. If it is necessary to do it on site, cleaning must be made at a minimal distance of 30m from any body of water.
 - .7 Immobilize gas powered equipment to avoid movement while their being used and put them over a waterproof refueling mat with a berm or inside a container that can receive 110% of fuel volume.
 - .8 Reduce time of idling engines to a minimum, provided requirements relating to operating instructions and temperature are met.
- .3 Public safety and visitor experience
- .1 The most possible, schedule loud activities in order to minimize their impact on visitors, especially around urban allotments, campgrounds and other busy locations.
 - .2 Make sur that access paths and trails for visitors in the construction area are free from construction materials, waste, machinery or equipment.
- .4 Action plan in case of spillage and management of hazardous materials:
- .1 Develop an action plan in case of spillage before starting Work.
 - .2 Make sure that all workers on site know the action plan in case of spillage, that they know the location of cleaning kits and of containment systems, and that they use them.
 - .3 Action plan in case of spillage must, at least, include the following items:
 - .1 List of products and materials considered or defined as hazardous or toxic for the environment. These products include oils.
 - .2 Equipment required on site.
 - .3 Size, type and location of cleaning kits in case of spillage.
 - .4 Refueling procedures, fuel storage.
 - .5 Spillage prevention procedures (that is containment and storage of materials, safety, handling, usage and disposal of empty containers, product surplus or waste created by their application, as required by federal and provincial current regulations).
 - .6 Procedure in case of spillage (that is containment, cleaning, disposal of contaminated materials, etc.).
 - .7 Spillage report procedure.
 - .8 Up-to-date list of contacts in case of emergency interventions, including the necessary information to report spillage.
 - .4 Follow all regulations and codes applicable to the management and handling of hazardous waste.
 - .5 Index all hazardous or toxic substances and handle as required by the Canadian Environmental Protection Act, by the Transportation of Dangerous Goods Act and by the Workplace Hazardous Materials Information System.
 - .6 Dispose of all contaminated materials at landfills authorized by the

- provincial government and outside land managed by Parks Canada.
- .7 Have access to spillage containment equipment on site. Make sure that there is an emergency intervention kit in case of spillage, containing absorbent material and berms necessary to contain 110% of the biggest possible spillage during Work (in areas where equipment is used and in fueling, greasing and repair stations).
 - .8 Contain and clean any spillage as soon as it possible to do so safely. In case of a major spillage, stop works until spillage has been properly contained and cleaned.
 - .9 Immediately inform Parks Canada designated staff and emergency contact for every spillage. Also report the situation to Environment Canada emergency services (1-866-283-2323).
 - .10 Retrieve the source and dispose of any contaminant as required by current laws, policies and regulations. Work site will be inspected by a Parks Canada employee to make sure that works have been completed in accordance with set criteria.
 - .11 Hazardous materials must be stored in dedicated and contained areas, in accordance with the Regulation respecting hazardous materials (Q-2, r.32) terms.
 - .12 Store petrochemical products, paints and chemical products at a minimal distance of 30m from any body of water. If left on site at night, store them in a safe, locked, area.
 - .13 On all sites, provide containers suitable for safe and temporary storage of hazardous waste, which must be separated by category.
 - .14 Make sure that no harmful substance is immersed or rejected in an aquatic environment or placed in an area that could contaminate an aquatic environment, as required by Fisheries Act, article 36(3), and by the Migratory Birds Convention Act of 1994, article 5.1.
- .5 Wild life management :
- .1 Make sure that workers on site are aware of endangered species and that they immediately inform Parks Canada's designated staff in case of any incidental finding.
 - .2 In case of discovery of nests, dens or dormitories, stop works and immediately communicate with Parks Canada's designated staff to obtain instructions.
 - .3 Never approach or harass wild animals (i.e. feeding, baiting, lures).
 - .4 If animals are observed inside or near Work site, enable them to leave the area and move away from potential conflict areas. Immediately notify Parks Canada's designated staff of any incidental finding of endangered species.
 - .5 Immediately inform Parks Canada's designated staff of any potential conflict (i.e. aggressive behavior or constant intrusion) as well as of any animal death or distress.

- .6 Vegetation and invasive exotic species
 - .1 Make sure that machinery is clean and free from any invasive species or harmful weeds at its arrival on site, and to keep it in that state afterwards. At the end of works, clean machinery that has been in contact with invasive exotic species to avoid them from spreading in other areas. Proof of execution of such mitigation measures could be required.
 - .2 Make sure that soil, gravel, untreated construction wood, erosion and sedimentation control products (i.e. hay, straw, mulch) or other applicable materials originating from outside the historical site are from a certified source of supply that is free from weeds and approved by Parks Canada's designated staff.
 - .3 Never burn vegetation in a protected heritage area.
 - .4 Set and delineate a protection area around trees and shrubs to be preserved (i.e. fences, flagging tape, gates, etc.) to avoid damaging or affecting root system. If not possible, install a protection system for trunks and root system (wood planks, compacting material with geotextile, etc.). A tree cannot be used as support under any circumstance.
 - .5 Branches that could be damaged by machinery must be protected or pruned.
 - .6 If trees are damaged during works, provide a report by a forestry engineer that includes an assessment of the affected trees' survival chances. If trees' survival is affected by damages, they must be replaced as instructed by Parks Canada's Representative.
 - .7 Any work of vegetation removal must be approved by Parks Canada's designated staff beforehand.
 - .8 Minimize disturbances caused on ground and the amount of vegetation being removed, except for practical considerations or to meet project's requirements.
 - .9 Remove as little vegetation as possible : fell trees only if necessary for proper performance of Work or for visitors' and staff's safety.
 - .10 Clearly delineated areas where vegetation will be removed and mark important trees to avoid their removal.
 - .11 Remove all vegetal debris from right of way as quickly as possible. Prevent organic materials and debris to enter into a body of water.
 - .12 As requested by Parks Canada's Representative, trees and shrubs to be felled must be replaced during site's reclamation at the end of works.
 - .13 As instructed by Parks Canada, plant / transplant shrubs and small trees being displaced during vegetation removal works and construction works.
 - .14 Stabilize disrupted parcels as soon as possible and revegetate with native plants and seed mixtures, or with species approved by Parks Canada's designated staff, and soil free from contaminants and weeds. If growing season is too far advanced, stabilize land (i.e. cover exposed areas with erosion control mats to avoid ground motion) to avoid erosion and wait until spring to restore vegetation.
 - .15 Watch disrupted and revegetated parcels until Parks Canada's designated staff determines that native vegetation grows properly and that spreading of invasive exotic species is prevented.
 - .16 If invasive exotic species are introduced during works, quickly eradicate

- individuals with recognized technical standards for said species.
- .7 Fight against erosion and sedimentation :
 - .1 Establish measures of fight against erosion and sedimentation, in areas subject to erosion, especially when under 30 meters of any body of water. Measures must be suitable for the scope of intervention and for associated risks.
 - .2 Avoid activities that can disrupt ground during periods where ground is saturated, where rain is abundant and where there is runoff, strong winds or wet snow. Temporarily stop works if ground humidity contributes to erosion or to sediment movement.
 - .3 Plan activities being executed as part of the project in order to minimize movement of equipment on bare ground as well as on steep or unstable slopes that are subject to erosion.
 - .4 Regularly examine and maintain works of fight against erosion and sedimentation during all project stages and modify them if need be. In case of inefficiency of measures of fight against erosion and sedimentation, stop all works until measures are modified to be appropriate.
 - .5 As much as possible, use products of fight against erosion and sedimentation that are made of 100% biodegradable materials (i.e. burlap, sisal or coconut fibre). Ensure that support materials also are biodegradable.
 - .6 Avoid using hay or straw for fighting erosion and sedimentation; these materials could attract wild animals and could contain invasive species; their use must be approved by Parks Canada's designated staff.
 - .7 Manage runoff towards Work site, if needed for the project :
 - .1 Divert runoff away from exposed areas;
 - .2 Filter pumped or diverted water. Avoid pumping water loaded with suspended matters directly into a body of water (i.e. pump or diver water towards a vegetated parcel at a minimal distance of 30 m from any body of water, towards a tailing pond or towards another filtration system.
 - .8 Site cleaning and waste management:
 - .1 Contain and stabilize residual materials (i.e. waste and construction materials, vegetation) at a minimal distance of 30 m of any body of water or in a hermetic container.
 - .2 Unless indicated otherwise, contain materials/wastes and bring them to an approved landfill outside of Parks Canada's land; cover materials and waste during transportation. Remove all materials and wastes from site at the end of project.
 - .3 Do not burn anything on site.
 - .4 If need be, regularly maintain portable sanitary facilities and dispose of accumulated waste in an appropriate disposal facility. Portable facilities must have sufficient capacity and be managed in order to avoid any waste being released into the environment.
 - .5 Ensure that sewage created by facilities and site operations (i.e. water used for cleaning equipment) are contained and recovered. Before releasing them into the environment, these waters must be sampled and treated (if need be) to meet applicable release standards, namely Canadian Environmental Quality Guidelines (CCME) guidelines – protection of

aquatic life, Surface water quality criteria (MDDELCC) –protection of aquatic life (acute), regulation 2008-47 (CMM) regarding suspended matters, pH and C10-C50. It will be Contractor's responsibility to prove that these standards are met.

- .6 If waters do not meet applicable standards and can't be treated on site, they must be moved into hermetic containers and moved to an area authorized by MELCC.
- .7 Any water discharge into the environment must be authorized by Parks Canada's Representative beforehand.

.3 List of specific mitigation measures:

.1 Demolition

- .1 Use all appropriate methods of retrieving and containment to isolate work area and avoid releasing asbestos into water, air or ground.
- .2 Establish appropriate measures for:
- .3 Retrieve all residues and materials containing asbestos;
- .4 Store residues and materials hermetically;
- .5 Dispose of residues and materials in locations authorized by MELCC.
- .6 Remove, reuse and recycle all recyclable, incombustible and safe materials as much as possible. Dispose of remaining materials considered as waste and of demolition debris in approved facilities.
- .7 Separate all hazardous materials (treated wood, lead paint, paint, etc.) and all pollutants like gas and solvents and send them to approved disposal facilities.
- .8 Abstain from burning or burying hazardous materials or any materials (i.e. plastics) that could be harmful for the environment.
- .9 If any undocumented contamination is discovered, immediately stop all works and communicate with Parks Canada's designated staff.
- .10 Prevent waste created by demolition works to enter into any body of water (i.e. use tarps to retrieve debris). Immediately retrieve any waste that has entered into a body of water.
- .11 Cover and contain materials during transportation.
- .12 Use work methods that create as least dust as possible.
- .13 If need be, use dust control shields for works near canal, bike path or areas used by visitors.
- .14 Abide by current regulations relating to demolition works.
- .15 Any temporary pile of unbound materials located at less than 30 m of an aquatic environment and left there for more than 24 hours must be protected by a sediment barrier or covered with geotextile to avoid sediments from moving into a body of water.

.2 Cultural resources:

- .1 Apply any mitigation measure previously set for Work site by a cultural resources management advisor or by a Parks Canada archeologist.
- .2 Archeological surveillance during works is strongly advised to allow documentation, protection and, possibly, showcasing of archeological elements of the National Historic Site of Saint-Ours Canal.
- .3 If modifications are made to the project, all additional information sources and implementation plans will be submitted to a cultural resources management advisor as well as to Parks Canada's Build Heritage and

- Terrestrial Archeology teams for review.
- .4 To avoid any damage to known or potential cultural resources, vehicle access roads and mobilization areas will be limited to existing paths and parking as well as to other Parks Canada disturbed areas. If undisturbed areas must be used, protection measures will be necessary – by the installation of geotextile fabric and gravel. Machinery must stay on gravel during installation and removal of mobilization area to avoid ruts.
 - .5 If remnants or artifacts were to be discovered on Parks Canada's land during works and in the absence of an archeologist, immediately stop work around the discovery and inform Parks Canada's Terrestrial Archeology team which will assess the discovery and take appropriate mitigation measures to protect it.

1.05 FIRES

- .1 Fires and burning of rubbish on site are not permitted.

1.06 DISPOSAL OF WASTE

- .1 Do not bury any kind of materials on Parks Canada Agency territory.
- .2 Do not dispose of waste or any kind of materials into waterway, storm sewers or sanitary sewers.
- .3 Waste must be disposed of outside Parks Canada Agency property while respecting federal and provincial regulations for the protection of the environment. Waste includes: demolition materials not kept by Parks Canada Agency, hazardous materials (liquid and solid), and water containing suspended solids.

1.07 TREE, SHRUB, AND PLANT PROTECTION

- .1 Protect trees, shrubs, and plants on site and adjacent properties where indicated by delimiting a protection area around the trees and shrubs to be preserved (eg fences, ribbons, barriers, etc.) in order to preserve them from damage or impact to the root network. If this is not possible, install a system to protect the trunks and the root system (wooden planks on rubber, non-compacting material with geotextile, etc.). In no case can a tree be used as a support. Any plants Departmental Representative deems sufficiently damaged by Contractor, putting in doubt the plant's ability to survive, must be replaced by Contractor, with 2 equivalent plants for every damaged plant.
- .2 Obtain the approval of Ministry Representative before felling / pruning / moving vegetation. If necessary, clearly delimit the area where the vegetation will be felled / pruned / moved and mark the trees to be preserved.
- .3 Execute felling/pruning/moving of vegetation outside of migratory birds breeding season, which goes from the beginning of April to the end of August for most species in the southern part of Quebec.
 - .1 If work must be executed during birds breeding season, a survey must be made by a qualified professional no longer than one week before said work that could affect nests. If nests were to be discovered, a protection area must be established until

chicks have left the nest.

- .4 Obtain the approval of Parks Canada Agency Representative before pruning. During pruning works, use recognized methods and observe NQ 0605-200 norm requirements. Good method examples include :
 - .1 Cut branches above collar, and branch anchor point on trunk and avoid leaving snags on tree.
 - .1 Cut branches of more than 3cm in diameter in three steps:
 - .2 Cut at around 30-40 cm of trunk at a depth similar to a third of branch diameter.
 - .3 Saw the whole branch a few centimeters above incision.
 - .4 Saw snag making sure branch edge and collar are protected.
 - .2 For branches of more than 10 cm in diameter, progressively cut (in logs) from treetop to trunk to diminish weight when branch falls and avoid hurting the tree.
 - .3 Make sure that cuts are clean (without ripping) and minimize cutting area (straight vs angled)
 - .4 For small branches, bevel cut 0,5 cm above bud at a 30° angle in the same direction as bud.
 - .5 Size of branches should prevent water build-up on wound as much as possible, which would allow for mold, parasites or fungi growth.
 - .6 To ensure tree survival, pruning measures will also be identified by PCA and Contractor must execute them at his own expense.
- .5 If plants have to be moved with a transplanting cup, they should be placed in a gunny bag with enough soil to contain all roots and ensure their appropriate protection. Keep soil wet at all time. Keep away from sun. Once work is completed, replant at the initial location, or where indicated by Parks Canada Agency Representative.
- .6 For any damage to a tree or shrub, the contractor must provide a report from a forest engineer and perform the work required by his recommendations.

1.08 WORK ADJACENT TO WATERWAYS

- .1 Do not extract natural or human material from waterways bed, or from areas close to them.
- .2 Do not dump any excavated soil, waste material or debris in the aquatic environment. Immediately remove any debris dumped in the aquatic environment by accident.
- .3 Contractor must plan for control measures regarding erosion and shore sedimentation, to avoid disturbing the aquatic environment.
- .4 Do not skid logs or construction materials across waterways.
- .5 Do not blast under water or within 100 m of indicated spawning beds.

1.09 ATMOSPHERIC POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment and plant to local, federal, provincial, and municipal

authorities emission requirements.

- .3 Unless expressly authorized by Parks Canada Agency Representative, to let a vehicle idle is prohibited.
- .4 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.
- .5 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

1.10 SOIL AND WATER POLLUTION CONTROL

- .1 Contractor and subcontractors carrying work, which requires the use of motorized equipment, equipment for transfilling fuel or that uses hazardous products, must know and apply procedures in case of spill. Display on work premises the procedures so that all employees see them.
- .2 Make sure that machinery, tools, and equipment to be used during work are safe, clean and in good working condition. Parks Canada Agency Representative can deny access or expel machinery, tools and equipment from site if they do not meet requirements. Equipment in visible bad condition, and that show signs or risks of leakage will be sent back at the expenses of the Contractor or the equipment's owner (free of charge for the Client).
- .3 Place retention tanks with a capacity of at least 110% of stored volume near storage premises if the storage of hazardous material and hydrocarbon is required.
- .4 Have an emergency response kit on work premises to respond to environmental emergencies.
- .5 Emergency response kit must include, but not limited to, a minimum of equipment and devices suitable to contain spill as to minimize risks of propagation of contamination caused by the spill of hydrocarbons, hazardous products, or other contaminants. The kit must be identified as EMERGENCY – ENVIRONMENT and include:
 - .1 One absorbent sock, 3 inches in diameter, 12 feet in length;
 - .2 One absorbent sock, 3 inches in diameter, 4 feet in length;
 - .3 Twenty-five absorbent pads;
 - .4 Two 7-litre absorbent bags (sphagnum moss type);
 - .5 One epoxy stick;
 - .6 Two DANGER signs;
 - .7 Three plastic collection bags;
 - .8 TDG self-adhesive stickers (transportation of dangerous goods), class 4.1;
 - .9 One permanent marker;
 - .10 Two pairs of rubber gloves;
 - .11 Two pairs of safety glasses;
 - .12 Duct tape ;
 - .13 A few tools: cutting pliers and screwdrivers;

1.11 PROCEDURES FOR SPILL OF HYDROCARBONS, HAZARDOUS GOOD, OR OTHER CONTAMINANT

- .1 Contractor must abide by the following procedure for emergency response operations and cleaning of premises where spill occurred:
 - .1 Ensure public safety and promptly recover spill.
- .2 In case of spill, immediately report the situation to appropriate actors or to Environment Canada emergency services (1-866-283-2323) in case of land source spill.
- .3 Report to Coast Guard for any sea source spill (1-800-363-4735).
- .4 In case of an environmental incident, manage leak, contain spilled product to avoid it from spilling further and from damaging sensitive areas, pick up spoiled materials and send to an authorized site authorized by the MECC.
- .5 Contractor will bear responsibility for any spill of product deemed harmful to Parks Canada Agency's territory or properties. If applicable, implement at once, and to the Contractor's expenses, remedial measures prescribed by Parks Canada Agency Representative or the Environmental Officer.
- .6 Failing to take action properly or to Parks Canada Agency's satisfaction given the scale and type of spill will result in payment by the Contractor of supplementary intervention costs requiring Parks Canada Agency's personnel or equipment.
- .7 Intervention Report: In case of intervention, fill in the statement of events form at once (Environmental Incident Report provided by Parks Canada Agency Representative at the preliminary meeting before commencement of work) and hand it to Parks Canada Agency Representative.

1.12 TEMPORARY STORAGE OF HAZARDOUS MATERIALS

- .1 Gather in small piles, separated by a horizontal length of 1 m, hazardous materials. Separate incompatible products by a horizontal length of 3 m. Place piles at least 30 m from trees/shrubs line and at least 6 m from areas covered by herbaceous/ graminaceous plants. Respect safety distances: 30 m from waterways, 15 m from tents, and 3 m from combustible material and roads. Plan access for emergency responders.
- .2 Oil products and hazardous materials storage as well as maintenance, refueling and cleaning of equipment must be done further than 30m of any body of water, in an area prepared for such purpose and where there is no risk of contamination of ground, underground water or surface water.
- .3 Lock access to any hazardous material left on site outside of working hours.
- .4 Do not store any residual hazardous material on site and remove them from site according to applicable regulations.
- .5 Portable tanks must comply with road standards. Ground tank truck during fuel transfer. Link the refuelled vehicle or reservoir to the tank truck using a grounding cable while

making sure contact is done on bare metal.

- .6 Storage areas are equipped with a liquid retention or capture system (Polyspill pallets, basin, impermeable coatings, saddles, trenches, and drains blocked or connected to a collection system). Rainwater is regularly drained, or the storage area is protected to prevent accumulation of rainwater.
- .7 Store flammable or combustible liquid containers in an upright position.
- .8 Promptly dispose, outside of Parks Canada Agency territory, containers that are in bad conditions, in accordance with the most restrictive environmental standards. Identify containers in accordance with WHMIS.
- .9 Indicate risks of hazardous material that is stored temporarily with TDG signs (Transportation of Dangerous Goods).
- .10 All closed containers with a capacity exceeding 230L used for the storage of petroleum products and similar products must comply with Transportation of Dangerous Goods Regulations (TDGR) and designed to CAN/CGSB 43.146-2002.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

- .1 Not used.

END OF SECTION

1 GENERAL

1.01 SECTION CONTENTS

- .1 References and codes.
- .2 Asbestos discovery.

1.02 PRIORITY

- .1 For work performed for the federal government, the Division 1 sections have priority over the technical sections of the other specifications divisions of the project.

1.03 REFERENCES AND CODES

- .1 Perform Work in accordance with National Building Code of Canada (NBC) including amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Meet or exceed requirements of:
 - .1 Contract documents;
 - .2 Specified standards, codes and referenced documents.

1.04 HAZARDOUS MATERIAL DISCOVERY

- .1 Asbestos: demolition of spray or trowel-applied asbestos is hazardous to health. Stop work immediately when material resembling spray or trowel-applied asbestos other than plaster-cement in wardrobes, vinyl tiles and exterior parging is encountered during demolition work. Notify Departmental Representative.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

- .1 Not used.

END OF SECTION

1 GENERAL

1.01 SECTION CONTENTS

- .1 Inspections et essais, exigences administratives et opérationnelles.
- .2 Essais et formules de dosage.
- .3 Échantillons d'ouvrages.
- .4 Essais en usine.
- .5 Réglage et équilibrage des appareils et des systèmes.

1.02 RELATED SECTIONS

- .1 Section 01 33 00 Submittal Procedures.
- .2 Section 01 78 00 Closeout Submittals.

1.03 INSPECTION

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents.

1.04 ADDITIONAL FIELD CONSULTATIONS

- .1 If, during performance of work, Contractor wants to request the presence of Departmental Representative at certain times for additional explanations on interpretation of drawings and specifications, Contractor cannot claim additional fees for late work unless otherwise and previously agreed upon with Departmental Representative.
- .2 All claims for additional amounts are also inadmissible in the event Departmental Representative requires tests and review of work performed and/or materials already used by control laboratory. Reasonable delays thus caused are borne by Contractor.

1.05 INDEPENDENT INSPECTION AGENCIES

- .1 Independent Inspection/Testing Agencies will be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Departmental Representative.
- .2 If results of such analysis are negative, Contractor must pay fees. The amount of these fees incurred will be deducted from Contract amount so the Owner can reimburse the affected Professional for fees incurred.
- .3 Provide equipment required for executing inspection and testing by appointed agencies.
- .4 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .5 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Professional's instructions, at no cost to Parks Canada Agency Representative. Pay costs for retesting and reinspection.

1.06 ACCESS TO WORK

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

1.07 PROCEDURES

- .1 Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.08 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by [Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.

1.09 REPORTS

- .1 Submit three (3) copies of inspection and test reports to Departmental Representative.
- .2 Provide copies to subcontractor of work being inspected or tested.

1.10 TESTS AND MIX DESIGNS

- .1 Furnish test results and mix designs as requested.
- .2 Cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by Departmental Representative and may be authorized as recoverable.

1.11 MOCK-UPS

- .1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of Sections required to provide mock-ups.
- .2 Construct in locations acceptable to Professional.
- .3 Prepare mock-ups for Departmental Representative's review with reasonable promptness and in orderly sequence, to not cause delays in Work.
- .4 Failure to prepare mock-ups in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .5 If requested, Departmental Representative will assist in preparing schedule fixing dates for preparation.
- .6 Remove mock-up at conclusion of Work or when acceptable to Departmental Representative.
- .7 Mock-ups may remain as part of Work.
- .8 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed and when.
- .9 Once reviewed and approved, mock-ups will serve as quality standard for purposes of this Work.

1.12 FIELD TESTING

- .1 Departmental Representative reserves the right to use any piece of mechanical or electrical equipment installed in accordance with conditions of this agreement, for required duration and at necessary points in time, and to subject them to comprehensive and thorough testing prior to complete execution and acceptance of work. Such tests shall not be interpreted as evidence that any part of the Work is accepted and it shall be understood and agreed that the Contractor will make no damage due to damage or breakage caused to any part whatsoever by abovementioned tests, be the cause attributable to lack of resistance or weakness of parts, defective materials or defective work of any kind.

- .2 Main equipment parts shall be verified in the presence of a manufacturer representative and Departmental Representative. They must be notified sufficiently in advance to participate in tests and perform adequate inspection.

1.13 MILL TESTS

- .1 Submit mill test certificates as required of specification Sections.

1.14 EQUIPMENT AND SYSTEMS

- .1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.

1.15 INSPECTION VISITS

- .1 If, upon provisional acceptance of work, Departmental Representative, due to Contractor negligence, must make more inspection visits than agreed upon in the Contract, he shall be entitled to additional professional fees, paid at the hourly rate recognized by his professional order.
- .2 For the purposes of previous provision, the Client may then hold back from Contractor the amount payable to the Professional for additional inspection visits.

1.16 QUALITY CONTROL MANUAL

- .1 Contractor must complete Quality Control Manual provided in appendix and return to Departmental Representative every week during performance of work.
- .2 Contractor must examine the manual every day with Departmental Representative to assess the points to keep in mind at each step of construction.
- .3 The checklist is not exhaustive and Departmental Representative can add check points.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

- .1 Not used.

END OF SECTION

1 GENERAL

1.01 SECTION CONTENTS

- .1 Temporary utilities.

1.02 PRIORITY

- .1 For work performed for the federal government, the Division 1 sections have priority over the technical sections of the other specifications divisions of the project.

1.03 RELATED SECTIONS

- .1 Section 01 52 00 – Construction Facilities.
- .2 Section 01 56 00 – Temporary Barriers and Enclosures.

1.04 INSTALLATION AND REMOVAL

- .1 Provide temporary utilities controls in order to execute work expeditiously.
- .2 Remove from site all such work after use.

1.05 HEATING AND VENTILATION

- .1 Ventilation
 - .1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.
 - .2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
 - .3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
 - .4 Ventilate storage spaces containing hazardous or volatile materials.
 - .5 Ventilate temporary sanitary facilities.
 - .6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.
- .2 Permanent heating system of building not to be used.
- .3 Maintain strict supervision of operation of heating and ventilating equipment to:
 - .1 Conform with applicable codes and standards.
 - .2 Enforce safe practices.
 - .3 Prevent abuse of services.
 - .4 Prevent damage to finishes.
 - .5 Vent direct-fired combustion units to outside.

- .4 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

- .1 Not used.

END OF SECTION

1 GENERAL

1.01 SECTION CONTENTS

- .1 Construction aids.
- .2 Parking areas.
- .3 Field office and storage.

1.02 PRIORITY

- .1 For work performed for the federal government, the Division 1 sections have priority over the technical sections of the other specifications divisions of the project.

1.03 RELATED SECTIONS

- .1 Section 01 51 00 – Temporary Utilities.
- .2 Section 01 56 00 - Temporary Barriers and Enclosures.

1.04 REFERENCES

- .1 Safety Code for the construction industry, L.R.Q. S-2.1, r.6 (last revision).
- .2 First-aid Minimum Standards Regulation.

1.05 INSTALLATION AND REMOVAL

- .1 Provide construction facilities in order to execute work expeditiously.
- .2 Remove from site all such work after u.

1.06 SCAFFOLDING

- .1 Provide and maintain scaffolding, ramps, ladders, swing staging, platforms, temporary stairs and all other necessary temporary facilities required to execute the Work, and ensure maintenance.

1.07 HOISTING

- .1 Provide, operate and maintain hoists and cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists.
- .2 Hoists and cranes to be operated by qualified operator.

1.08 SITE STORAGE/LOADING

- .1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.

- .2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

1.09 CONSTRUCTION PARKING

- .1 Parking will be permitted on site, provided it does not disrupt performance of Work.
- .2 Provide and maintain adequate access to project site.
- .3 Build and maintain temporary roads where indicated or directed by Parks Canada Agency Representative and provide snow removal during period of Work.
- .4 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractor's use of roads.

1.10 OFFICES

- .1 Contractor must comply with relevant ordinances and regulations regarding the field office in order to provide workers with premises for eating meals.
- .2 The location of construction trailer will be determined during start-up meeting, after contract is awarded to Contractor.
- .3 Provide a clearly marked and fully stocked first-aid case in a readily available location. Contents of first-aid case must comply with First-aid Minimum Standards Regulation.
- .4 Take necessary steps to connect network to that of relevant utilities company, and assume all installation, maintenance and disconnection fees.

1.11 SANITARY FACILITIES

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.12 EQUIPMENT, TOOL AND MATERIALS STORAGE

- .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.

END OF SECTION

1 GENERAL

1.01 SECTION CONTENTS

- .1 Barriers and hoardings;
- .2 Weather enclosures and dust tight screens;
- .3 Traffic flow devices;
- .4 Access roads for emergency vehicles.

1.02 PRIORITY

- .1 For work performed for the federal government, the Division 1 sections have priority over the technical sections of the other specifications divisions of the project.

1.03 RELATED SECTIONS

- .1 Section 01 51 00 – Temporary Utilities.
- .2 Section 01 52 00 – Construction Facilities.

1.04 INSTALLATION AND REMOVAL

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.

1.05 HOARDING

- .1 Erect temporary site enclosures using Omega type fence, 1.8 m high. Provide lockable truck entrance gates.
- .2 Contractor must install hoardings at start of work.
- .3 Provide and install cloth on site fence.

1.06 GUARD RAILS AND BARRICADES

- .1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs.
- .2 Provide as required by governing authorities and as indicated.

1.07 WEATHER ENCLOSURES

- .1 Provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.
- .2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat.
- .3 Design enclosures to withstand wind pressure and snow loading.

1.08 DUST TIGHT SCREENS

- .1 Provide dust tight screens or partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public.
- .2 Maintain and relocate protection until such work is complete.

1.09 ACCESS TO SITE

- .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

1.10 PUBLIC TRAFFIC FLOW

- .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public. If manoeuvres happen outside of area allocated for job on site, the presence of an MTQ signalman will be mandatory.

1.11 FIRE ROUTES

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.

1.12 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

- .1 Protect surrounding private and public property from damage during performance of Work.
- .2 Be responsible for damage incurred.

1.13 PROTECTION OF BUILDING FINISHES

- .1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- .2 Provide necessary screens, covers, and hoardings.
- .3 Confirm with Departmental Representative locations and installation schedule 3 days prior to installation.

.4 Be responsible for damage incurred due to lack of or improper protection.

2 PRODUCTS

2.01 NOT USED

.1 Not used.

3 EXECUTION

3.01 NOT USED

.1 Not used.

END OF SECTION

1 GENERAL

1.01 SECTION CONTENTS

- .1 Quality, availability, storage, handling, protection and transportation of products;
- .2 Manufacturer's instructions;
- .3 Implementation, co-ordination and fastenings;
- .4 Existing facilities.

1.02 PRIORITY

- .1 For work performed for the federal government, the Division 1 sections have priority over the technical sections of the other specifications divisions of the project.

1.03 RELATED SECTIONS

- .1 Section 01 42 00 - References;
- .2 Section 01 73 03 – Supplementary Conditions.

1.04 REFERENCE STANDARDS

- .1 References to relevant standards may be made in each specification section. A list of organizations that draft standards is provided in section 01 42 00 - References.
- .2 Conform to these reference standards, in whole or in part as specifically requested in specifications.
- .3 If there is question as to whether products or systems are in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.
- .4 Cost for such testing will be born by PCA, or by Contractor in event of non-conformance.
- .5 If no specific date or edition is mentioned, comply with most recent standards in effect at time of bid submission.

1.05 QUALITY

- .1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.

- .2 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .3 Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .4 Sauf indication contraire dans le devis, favoriser une certaine uniformité en s'assurant que les matériaux ou les éléments d'un même type proviennent du même fabricant.
- .5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.06 AVAILABILITY

- .1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2 In event of failure to notify Departmental Representative, at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Canada Parks Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.07 STORAGE, HANDLING AND PROTECTION

- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials and lumber on flat, solid supports and keep clear of ground. Slope to shed moisture on.
- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.

- .8 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.
- .9 Touch-up damaged factory finished surfaces to satisfaction of Departmental Representative. Use touch-up materials to match original. Do not paint over name plates.

1.08 TRANSPORTATION

- .1 Pay costs of transportation of products required in performance of Work.

1.09 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative will establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

1.10 QUALITY OF WORK

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely Departmental Representative, whose decision is final.

1.11 CO-ORDINATION

- .1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.12 CONCEALMENT

- .1 In finished areas conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

- .2 Before installation inform Departmental Representative if there is interference. Install as directed by Engineer.

1.13 REMEDIAL WORK

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.14 LOCATION OF FIXTURES

- .1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.
- .2 Inform Departmental Representative of conflicting installation. Install as directed.
- .3 Co-operate with Departmental Representative to establish work calendars in order to reduce conflicts and facilitate use of premises by Canada Parks Agency.

1.15 FASTENINGS

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 Prevent electrolytic action between dissimilar metals and materials.
- .3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.
- .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.16 FASTENINGS - EQUIPMENT

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.
- .3 Bolts may not project more than one diameter beyond nuts.

- .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.17 PROTECTION OF WORK IN PROGRESS

- .1 Prevent overloading of parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Departmental Representative.

1.18 EXISTING UTILITIES

- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, building occupants and pedestrian and vehicular traffic.
- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

- .1 Not used.

END OF SECTION

1 GENERAL

1.01 SECTION CONTENTS

- .1 Requirements and restrictions regarding cutting and patching work.

1.02 PRIORITY

- .1 For work performed for the federal government, the Division 1 sections have priority over the technical sections of the other specifications divisions of the project.

1.03 RELATED SECTIONS

- .1 Section 01 11 00 – Summary of Work;
- .2 Section 01 33 00 – Submittal Procedures;
- .3 Relevant technical sections of specifications regarding cutting and patching related to Work. Give advance warning to affected trades.

1.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit written request in advance of cutting or alteration which affects:
 - .1 Structural integrity of elements of project.
 - .2 Integrity of weather-exposed or moisture-resistant elements.
 - .3 Efficiency, maintenance, or safety of operational elements.
 - .4 Visual qualities of sight-exposed elements.
 - .5 Work of PCA or separate contractor.
- .2 Include in request:
 - .1 Identification of project.
 - .2 Location and description of affected Work.
 - .3 Statement on necessity for cutting or alteration.
 - .4 Description of proposed Work, and products to be used.
 - .5 Alternatives to cutting and patching.
 - .6 Effect on Work of Canada Parks Agency or separate contractor;
 - .7 Written permission of affected separate contractor.
 - .8 Date and time work will be executed.

1.05 MATERIALS

- .1 Required for original installation.
- .2 Change in Materials: Submit request for substitution in accordance with Section 01 33 00 - Submittal Procedures.

1.06 PREPARATION

- .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- .2 After uncovering, inspect conditions affecting performance of Work.
- .3 Beginning of cutting or patching means acceptance of existing conditions.
- .4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
- .5 Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.

1.07 EXECUTION

- .1 Execute cutting, fitting, and patching, including excavation and fill, to complete Work.
- .2 Fit several parts together, to integrate with other Work.
- .3 Uncover Work to install ill-timed Work.
- .4 Remove and replace defective and non-conforming W.
- .5 Remove samples of installed Work for testing.
- .6 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.
- .7 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .8 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.
- .9 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.

- .10 Restore work with new products in accordance with requirements of Contract Documents.
- .11 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .12 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with firestopping material, full thickness of the construction element.
- .13 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.
- .14 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

- .1 Not used.

END OF SECTION

1 GENERAL

1.01 SECTION CONTENTS

- .1 Cleaning to perform during work.
- .2 Final cleaning.

1.02 PRIORITY

- .1 For work performed for the federal government, the Division 1 sections have priority over the technical sections of the other specifications divisions of the project.

1.03S RELATED SECTIONS

- .1 Section 01 77 00 – Closeout Procedures.

1.04 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative.
- .3 Clear snow and ice from access to building. Bank/pile snow in designated areas only.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide on-site containers for collection of waste materials and debris.
- .6 Provide and use marked separate bins for recycling.
- .7 Dispose of waste materials and debris at designated dumping areas off site.
- .8 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .9 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .10 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.05 FINAL CLEANING

- .1 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .2 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .3 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .4 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fittings, walls, and floors.
- .5 Clean lighting reflectors, lenses, and other lighting surfaces.
- .6 Vacuum clean and dust building interiors, behind grilles, louvres and screens.
- .7 Wax, seal, shampoo or prepare floor finishes, as recommended by manufacturer.
- .8 Inspect finishes, fittings and equipment and ensure specified workmanship and operation.
- .9 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .10 Remove dirt and other disfiguration from exterior surfaces.
- .11 Clean and sweep roofs, gutters.
- .12 Sweep and wash clean paved areas.
- .13 Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.
- .14 Clean roofs, downspouts, and drainage systems.
- .15 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.
- .16 Remove snow and ice from access to building.
- .17 Repair sodding.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

.1 Not used.

END OF SECTION

1 GENERAL

1.01 SECTION CONTENTS

- .1 Project record, samples and specifications.
- .2 Materials and equipment.
- .3 Data sheets, materials, finishes and related information.
- .4 Operating and maintenance manuals.
- .5 Extra stock materials, special tools and spare parts.
- .6 Warranties and bonds.

1.02 RELATED SECTIONS

- .1 Section 01 00 10 –General Instructions.
- .2 Section 01 33 00 - Submittal Procedures.
- .3 Section 01 45 00 Quality Control.

1.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Two weeks prior to Substantial Performance of the Work, submit to the Departmental Representative two (2) final copies of operating and maintenance manuals in French.
- .2 Provide spare parts, maintenance materials requested in specification.
- .3 Spare tools requested in specifications.
- .4 Assume cost of delivering these items.

1.04 PRESENTATION - PROJECT RECORD DOCUMENTS

- .1 The instructions must be prepared by competent persons with the required knowledge regarding the operation and maintenance of the products described.
- .2 Organize data as instructional manual.
- .3 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- .4 When multiple binders are used correlate data into related consistent groupings. Identify contents of each binder on spine.

- .5 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .6 Arrange content by systems, under Section numbers and sequence of Table of Contents.
- .7 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .8 Text: manufacturer's printed data, or typewritten data.
- .9 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

1.05 CONTENTS - PROJECT RECORD DOCUMENTS

- .1 Field annotated Construction Drawings.
- .2 Maintenance manual for products and materials included in a first volume, including:
 - .1 Data sheets for each product, examined by Departmental Representative: mark each data sheet to clearly identify the specific products and parts as well as installation information;
 - .2 Shop drawings examined by Departmental Representative: illustrate the relationship between the various material and system elements, including control and schematic diagrams;
 - .3 Maintenance instructions and methods in typed print, to complete the data sheets. Provide instructions in logical order for each intervention, adding the manufacturer specified in section 01 45 00 – Quality Control;
 - .4 Warranties specific to each product and material when requested in specifications: comply with timeframes and start date indicated in specifications;
- .3 Operating manual of equipment and systems included in a second volume, including:
 - .1 Instructions and description of operating methods in typed print, to complete data sheets. Provide instructions in logical order for each intervention, adding the manufacturer specified in section 01 45 00 – Quality Control;
 - .2 Warranties specific to each equipment and system when requested in specifications: comply with timeframes and start date indicated in specifications;
- .4 Table of Contents for Each Volume:
 - .1 provide title of project;
 - .2 Date of submission; names;
 - .3 Addresses, and telephone numbers of Departmental Representative and Contractor, with name of responsible parties;
 - .4 Schedule of products and systems, indexed to content of volume.
- .5 For each product or system:
 - .1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

1.06 PROJECT RECORD DOCUMENTS AND SAMPLES TO KEEP ON SITE

- .1 Maintain, in addition to requirements in General Conditions, at site for Departmental Representative one record copy of:
 - .1 Contract Drawings;
 - .2 Change Orders and other modifications to Contract;
 - .3 Reviewed shop drawings, product data, and samples;
 - .4 Field test records;
 - .5 Inspection certificates;
 - .6 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition.
- .5 Keep record documents and samples available for inspection by Departmental Representative.

1.07 FIELD ANNOTATED DRAWINGS

- .1 Record field data on Contract Drawings and shop drawings.
- .2 Data must be recorded on a set of black and white drawings and in a copy of project record provided by Departmental Representative.
- .3 Record data in red for corrections and in green for omissions.
- .4 Record data as work progresses. Do not conceal work until required information has been noted.
- .5 Indicate each information legibly, to show the Work as it is, including the following:
 - .1 Location of utilities ducts and interior accessories, measured against visible and accessible construction elements.
 - .2 Changes made in the field regarding dimensions and work details.
 - .3 Changes made following change orders.
 - .4 Details that do not appear on original Contract Documents.
 - .5 References to shop drawings and related changes.
- .6 Drawings must be annotated in the field, by hand, when changes are made on the site. The set of annotated drawings must be provided in this state at the end of the work. No set of drawings annotated after completion of work shall be accepted.
- .7 Other documents: keep manufacturer certificates, inspection certificates, log of tests performed on site specified in each technical specifications section.

1.08 MAINTENANCE MANUAL: DATA SHEETS, SHOP DRAWINGS AND MAINTENANCE METHOD

- .1 Construction materials, finishes and other products to apply: provide data sheets and shop drawings. Indicate catalog number, dimensions, composition and designation of colours and textures of products and materials, Provide necessary information to order special products.
- .2 Provide instructions regarding cleaning agents and methods as well as recommended cleaning and maintenance schedules, and indicate precautions to take against harmful methods and products.
- .3 Water-repellent products and products exposed to inclement weather: provide manufacturer recommendations regarding cleaning agents and methods as well as recommended cleaning and maintenance schedules, and indicate precautions to take against harmful methods and products.
- .4 Additional requirements: per provisions in various technical specifications sections.

1.09 OPERATING MANUAL

- .1 For each item of equipment and each system include description of unit or system, and component parts.
 - .1 Give function, normal operation characteristics and limiting conditions.
 - .2 Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- .2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
- .3 Include installed colour coded wiring diagrams.
- .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences:
 - .1 Include regulation, control, stopping, shut-down, and emergency instructions;
 - .2 Include summer, winter, and any special operating instructions.
- .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- .6 Provide servicing and lubrication schedule, and list of lubricants required.
- .7 Include manufacturer's printed operation and maintenance instructions.
- .8 Include sequence of operation by controls manufacturer.
- .9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .10 Provide installed control diagrams by controls manufacturer.

- .11 Provide Contractor's co-ordination drawings, with installed colour coded piping diagrams.
- .12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- .13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .14 Include test and balancing reports as specified in Section 01 45 00 - Quality Control.
- .15 Aboveground storage tank inspection documentation, registration, forms, decommissioning and removal in accordance with CEPA SOR/2008-197, under CEPA.
- .16 Additional requirements: as specified in individual specification sections.

1.10 WARRANTIES AND BONDS

- .1 Separate each warranty or bond using tabbed fly leaf based on list provided in table of contents.
- .2 Provide list to subcontractors, suppliers and manufacturers, with the name, address, telephone number of respective designated person in charge.
- .3 Obtain warranties and bonds signed in duplicate from subcontractors, suppliers and manufacturers, in a timely fashion to be incorporated into the project record.
- .4 Except with regard to elements commissioned with the Client's authorization, do not modify the effective date of warranty requested in Section 01 00 10 – General Instructions.
- .5 Verify that documents are in proper form, contain full information, and are notarized.
- .6 Co-execute submittals when required.
- .7 Retain warranties and bonds until time specified for submittal.

1.11 SPARE PARTS

- .1 Provide spare parts, in quantities specified in individual specification sections.
- .2 Provide items of same manufacture and quality as items in Work.
- .3 Deliver to location as directed; place and store.
- .4 Receive and catalogue items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.
- .5 Obtain receipt for delivered products and submit prior to final payment.

1.12 EXTRA STOCK MATERIALS

- .1 Provide maintenance and extra materials, in quantities specified in individual specification sections.
- .2 Provide items of same manufacture and quality as items in Work.
- .3 Defective products will be rejected, even if they were previously subject to an inspection, and must be replaced at no additional cost.
- .4 Deliver to location as directed; place and store.
- .5 Receive and catalogue items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.
- .6 Obtain receipt for delivered products and submit prior to final payment.
- .7 Upon request, provide documents confirming the type, procurement source and quality of products supplied.

1.13 SPECIAL TOOLS

- .1 Provide special tools, in quantities specified in individual specification section.
- .2 Provide items with tags identifying their associated function and equipment.
- .3 Deliver to location as directed; place and store.
- .4 Receive and catalogue items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.

1.14 DELIVERY, STORAGE AND HANDLING

- .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in a heated and ventilated room.
- .5 Remove and replace damaged products at own expense and for review by Departmental Representative.

1.15 SUBMISSION OF DOCUMENTS

- .1 Documents and elements to submit (project record, spare parts/extra stock materials, or special tools) must be submitted at time indicated in section 01 00 10 – General Instructions.

- .2 Instruction bulletins or manuals, certificates of compliance for the installation, operation and maintenance must be provided as well as written warranties with regard to requirements in RFP documents.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

- .1 Not used.

END OF SECTION

1 GENERAL

1.01 RELATED SECTIONS

- .1 Sections from Division 01
- .2 02 82 00.00 - Technical specification – Material drilling procedure with a dust collector bin
- .3 02 82 00.03 - Work in asbestos condition – High-Risk work procedure
- .4 02 82 00.04 - Work in asbestos condition – Exterior High-Risk work procedure

1.02 REFERENCES

- .1 Comply with National Building Code of Canada, Part 8, Safety Measures at Construction and Demolition Sites, and with those of provincial regulations, latest editions.
- .2 Canadian Council of Ministers of the Environment (CCME)
 - .1 PN 1327-[2003], Environmental code of practice for aboveground and underground storage tank systems containing petroleum and allied petroleum products.
- .3 Canadian Standards Association (CSA)
 - .1 CSA S350-[M1980(R2003)], Code of Practice for Safety in Demolition of Structures.

1.03 PROTECTION

- .1 Provide required bracing, shoring and underpinning to prevent movement, settlement or damage of adjacent structures during demolition of architectural, structural and electro-mechanical elements.
- .2 Take precautions to support structures.

1.04 SCOPE OF WORK

- .1 Provide labour, materials, equipment and tools to execute demolition, disassembly and removal work that precedes construction works.
- .2 Structure demolition includes architectural, electro-mechanical and structural elements specified in the respective speciality's drawings.

2 PRODUCTS

2.01 EQUIPMENT

- .1 Use only tools in good condition designed for disassembly and demolition work.

3 EXECUTION

3.01 MESURES DE PROTECTION

- .1 Prevent movement, settlement or damage of adjacent structures, services, walks, paving, trees, landscaping, adjacent grades parts of existing building to remain.
- .2 Provide and install required bracing and shoring elements.
- .3 Ensure that demolition work does not adversely affect adjacent watercourses, as well as mechanical and electrical systems which must remain in operation.
- .4 Support affected structures and, if safety of structure being demolished or adjacent structures or services appears to be endangered cease operations and notify Architect.
- .5 If applicable, repair damaged works during demolition as directed by Architect.

3.02 PREPARATORY MEASURES

- .1 Inspect building facades to determine which elements must be removed, unclashed and stripped and those that must remain in place.

3.03 SAFETY

- .1 Using dynamite to perform demolition work is prohibited.

3.04 DEMOLITION

- .1 Avoid touching adjacent works that must remain in place.
- .2 Perform disassembly and demolition work so as to avoid disturbing works in which elements to conserve are built or present.
- .3 Carefully remove works containing materials to be recovered.
- .4 At end of each day's work, leave Work in safe and stable condition and protect from exterior elements at all times.
- .5 Do not remove shoring and drop cloths until new elements are in place to withstand the loads and seal underlying or adjacent spaces.
- .6 Take necessary measures to prevent displacement or settling of parts of works to be conserved, and to prevent them from being damaged.
- .7 Provide and install required shoring elements and tarps during demolition work.
- .8 Perform necessary demolition work to enable execution of specified work.
- .9 Remove materials, ducts and other elements that disturb the refurbishment or repair of existing surfaces, and put re-install them as work progresses.

- .10 Demolish in a manner to minimize dusting. Keep dusty materials wetted in accordance with Architect's instructions.
- .11 Contain all fibrous materials (e.g. Insulation) to minimize release of airborne fiber while being transported within the facilities.
- .12 It is prohibited to bring these materials to a landfill or to add them to waste bound for a landfill.
- .13 Dispose of demolished materials off site except where noted otherwise in accordance with requirements of competent authorities.
- .14 Use natural lighting to work by wherever possible.
- .15 Shut off all lighting except those required for security purposes at the end of each day.

3.05 DISPOSALS

- .1 Install junction panels between scaffolding platforms and top of exterior walls to catch all demolition materials on scaffolding platforms to prevent breaking underlying glazing.
- .2 Remove demolition debris from platforms at the end of each day and place in recycling containers in accordance with procedures.
- .3 Remove interior demolition waste at the end of each day.

END OF SECTION

Parks Canada

TECHNICAL SPECIFICATION FOR ASBESTOS-CONTAINING MATERIAL REMOVAL ROOF REPAIR WORK – LOCKMASTER’S HOUSE


**Saint-Ours Canal
located at 2930, des Patriotes
in Saint-Ours (Quebec)**

JANUARY 2020


040-P-0019568-0-01-260-HS-S-0100-01

ISSUED FOR TENDER



Prepared by: 

Marie-Ève Bélanger, M. Sc. SEST
Project Manager
Hygiene, Health & Safety

Revised by: 

Marie-France Malo, M. Sc. Env.
Project Manager
Hygiene, Health & Safety

Registre des émissions		
N° de révision	Date	Description
01	2020-01-27	Document issued for tender
00	2019-07-12	Document issued for tender

Property and Confidentiality

“This report can only be used for the purposes stated therein. Any use of the report must take into consideration the object and scope of the mandate by virtue of which the report was prepared, as well as the limitations and conditions specified therein and the state of scientific knowledge at the time the report was prepared. Englobe Corp. provides no warranty and makes no representations other than those expressly contained in the report.

This document is the work product of Englobe Corp. Any reproduction, distribution or adaptation, partial or total, is strictly forbidden without the prior written authorization of Englobe and its Client. For greater certainty, use of any and all extracts from the report is strictly forbidden without the written authorization of Englobe and its Client, given that the report must be read and considered in its entirety.

No information contained in this report can be used by any third party without the prior written authorization of Englobe and its Client. Englobe Corp. disclaims any responsibility or liability for any unauthorized reproduction, distribution, adaptation or use of the report.

If tests have been carried out, the results of these tests are valid only for the sample described in this report.

Englobe’s subcontractors who have carried out on-site or laboratory work are duly assessed according to the purchase procedure of our quality system. For further information, please contact your project manager.”

TABLE OF CONTENT

TECHNICAL SPECIFICATION FOR ASBESTOS-CONTAINING MATERIAL REMOVAL ROOF REPAIR WORK – LOCKMASTER'S HOUSE SAINT-OURS CANAL (QUEBEC)

N° de section	Description	Nb de pages
02 82 00.00	Technical specification – Material Drilling Procedure with a Dust Collector Bin	2
02 82 00.03	Work in asbestos condition – High-Risk Work Procedure	19
02 82 00.04	Work in asbestos condition – Exterior High-Risk Work Procedure	16

Appendix

Appendix A – Characterization report 040-P-0012240-0-02-261-HI-R-0300-00 (Englobe, 2017)

Appendix B – Complementary characterization report P19-4176-5 (MHV, 2019)

END OF SECTION

**02 82 00.00 – Technical specification
Material Drilling Procedure with a Dust Collector Bin**

**Technical specification –
Material drilling procedure with a dust collector bin**

- .1 This procedure is complementary to the architectural, structural and mechanical/electrical plans. Issued documents by other professionals must be consulted to know the exact nature of the interventions and scope of work.
- .2 The Contractor must use this procedure for any drilling (hole, anchoring, fastening, etc.) performed in an asbestos-containing material (ACM) or crystalline silica containing material by using tools equipped with a dust collector.
- .3 This procedure must be applied when the drilling to be completed has a diameter that is inferior to the one from the tool equipped with a dust collector and only if the drilling is performed with tools equipped with a dust collector.
- .4 For this roof repair work on the lockmaster's house located at Saint-Ours Canal, the following work must be performed, without limitation, according to the requirements stated in this procedure:
 - .1 Drillings on four (4) exterior walls of the building, which are covered with cement plaster that contains asbestos, to allow the installation of anchorages or fasteners for the new finishing moulding.
 - .2 Any other drilling, anchoring or fastening performed in an asbestos-containing material or crystalline silica containing material. Refer to other professionals plans to know the exact nature of the interventions and scope of work.
- .5 According to the suspected asbestos-containing material survey report prepared by Englobe and dated September 2017 (Ref.: 040-P-0012240-0-02-260-HI-R-0300-00) and the complementary a asbestos-containing material survey report prepared by MHV and dated November 2019 (Ref.: P19-4176-5), the following materials are considered as containing asbestos :
 - .1 Cardboard insulation debris present on the floor in the basement of the Lockmaster' house (0.1-1% of chrysotile asbestos);
 - .2 Cement and plaster ceiling on the second floor of the building (0.1-1% of chrysotile asbestos – Joint compound phase of the material);
 - .3 Beige vinyl floor tiles with brown spots (9 in x 9 in) covering the floor in the closets on the second floor (0.3% of chrysotile asbestos);
 - .4 Glue located underneath the beige vinyl floor tiles with spots (9 in x 9 in) covering the floor in the closets on the second floor (2.34% of chrysotile asbestos);
 - .5 Cement plaster and decorative plaster finish covering the exterior walls and roof dormers (1-5% of chrysotile asbestos – Decorative finish phase of the material);
 - .6 Grey sealants and black tarred coating present around the exterior windows of the building (0.1-1% of chrysotile asbestos in the sealant material and 5-10% of chrysotile asbestos in the tarred coating material);
 - .7 Vermiculite present in the attic and possibly in the wall cavities of the building (0.1-1% of actinolite/tremolite asbestos);

**Technical specification –
Material drilling procedure with a dust collector bin**

- .8 Asphalt shingles located on the roof of the building (main building and balconies) (3.48% of chrysotile asbestos).
- .6 This procedure must be strictly followed. Every worker entering the work site must have received a proper training concerning the risks associated with asbestos and crystalline silica dust exposure, the usage of personal protection equipment, entering and exiting contaminated areas, and appropriate work procedures.
- .7 Workers must wear personal protection equipment, at minimum, disposable protective clothing («Tyvek»), respiratory half-mask with P-100 cartridges and appropriate gloves.
- .8 Sequencing of the intervention:
 - .1 Determine and isolate the work area with cautionary tape;
 - .2 Install a warning sign that indicates work in the presence of asbestos and/or crystalline silica dust;
 - .3 If needed, protect surfaces and equipment inside the work area with polyethylene sheets;
 - .1 Wear the proper personal protection equipment listed above.
 - .4 Properly wet the drilling location (or dismantling locating) or apply a sealing product on it;
 - .5 Connect the HEPA vacuum hose to the dust collector collar installed on the drill and start the HEPA vacuum;
 - .6 Perform the drilling. In the case that concrete needs to be cut, clear off the entire area of concrete that must be cut by performing a series of holes using a drill equipped with a dust collector;
 - .7 Gently remove the drill, and clean the dust collector with a HEPA vacuum, and a damp cloth;
 - .8 Clean the surroundings of the newly drilled or stripped hole using a HEPA vacuum, and apply a sealing product on the asbestos-containing material remaining in place;
 - .9 Wrap up the contaminated materials as the work progresses, and identify the bags correctly as asbestos debris;
 - .10 Vacuum and clean all debris generated by the work as it progresses using a HEPA vacuum and a damp cloth.
 - .11 Once the work is completed:
 - .1 Clean all the surfaces in the work area. If needed, remove used polyethylene sheets;
 - .2 Clean personal protection equipment with a HEPA vacuum or a damp cloth;
 - .3 Remove disposable protective clothing and dispose of them in waste bags identified as asbestos debris;

**Technical specification –
Material drilling procedure with a dust collector bin**

- .4 Remove the respiratory protection equipment;
- .5 Remove warning signs and cautionary tape;
- .6 Dispose of waste bags (debris, dust, disposable protective clothing);
- .7 Wash hands and face.

**02 82 00.03 – Work in asbestos condition
High-risk work procedure**

PART 1 **GENERALITIES**

1.1 **DESCRIPTION OF WORK**

- .1 This section of the technical specification is complementary to the architectural, structural and mechanical/electrical plans. Issued documents by other professionals must be consulted to know the exact nature of the interventions and scope of work.
- .2 As part of the roof repair project of the lockmaster’s house, the following work, without limitation, must be executed as a high-risk work site condition as established in Article 3.23.16 of the *Safety Code for the Construction Industry*:
 - .1 Removal of plaster cement on wooden slats on the ceiling of the second floor (bathroom, kitchenette and closets);
 - .2 Removal of beige vinyl floor tiles with brown spots 9 in x 9 in, as well as the glue underneath, covering the floors in the closets on the second floor;
 - .3 Removal of vermiculite on the attic’s floor, as well as in the empty cavities and spaces underneath the roof. Refer to the architectural plans for more details on the scope of work for the vermiculite removal;
- .3 The Contractor must seal their work area by adding, if required, protective polyethylene sheets on the ceiling of the second floor of the building. The Contractor must also ensure that the vapor barrier to be preserved on the attic’s floor is airtight and that no vermiculite is enclosed underneath it. In the case where vermiculite is observed underneath the vapor barrier, Parks Canada must be advised, and the scope of work could possibly include the removal of the vermiculite located underneath the vapor barrier.
- .4 According to the report on the characterization of hazardous materials and substances prepared by Englobe, and dated January 2017 (Ref.: 045-P-0009275-0-13-260-01-HI-R-0100-00) and the complementary characterization report prepared by MHV in November 2019 (Ref.: P19-4176-5), the following materials are considered as asbestos-containing materials:
 - .1 Cardboard insulation debris present on the floor in the basement of the building (0.1-1% of Chrysotile asbestos);
 - .2 Cement and plaster ceiling on the second floor of the building (0.1-1% of Chrysotile asbestos – Joint compound phase of the material);
 - .3 Beige vinyl floor tiles with brown spots (9 in x 9 in) covering the floor in the closets on the second floor (0.3% of Chrysotile asbestos);
 - .4 Glue located underneath the beige vinyl floor tiles with spots (9 in x 9 in) covering the floor in the closets on the second floor (2.34% of chrysotile asbestos);
 - .5 Cement plaster and decorative plaster finish covering the exterior walls and roof dormers (1-5% of Chrysotile asbestos – Decorative finish phase of the material);

**Work in presence of asbestos
High Risk Work Procedure**

- .6 Grey sealants and black tarred coating present around the exterior windows of the building (0.1-1% of Chrysotile asbestos in the sealant material and 5-10% of Chrysotile asbestos in the tarred coating material);
- .7 Vermiculite present in the attic and possibly in the wall cavities of the building (0.1-1% of Actinolite/Tremolite asbestos);
- .8 Asphalt shingles located on the roof of the building (main building and balconies) (3.48% of chrysotile asbestos).

1.2 SECTION CONTENT

- .1 Requirements and technicalities related to asbestos-containing material removal in high-risk work conditions according to the requirements of Article 3.23.16 of the *Safety Code for the Construction Industry*.
- .2 This section complies with the following regulations:
 - .1 *Regulation Respecting Occupational Health and Safety* (S-2.1, r.19.01);
 - .2 *Safety Code for the Construction Industry* (S-2.1, r.4).

1.3 RELATED REQUIREMENTS

- .1 The Contractor must submit a sketch, for approbation by Parks Canada, illustrating the site facilities, including the positioning of the containment walls and the decontamination chambers permitting the workers to enter and exit the work area, as well as for the waste evacuation.
- .2 The Contractor must submit their waste disposal method for approbation by Parks Canada.
- .3 The asbestos removal work to be performed as part of this project must comply with the general terms and clauses as defined by Parks Canada.
- .4 The Contractor must install temporary lightning to the work site, if needed.
- .5 Once started, the work must continue until completed. The Contractor his not allowed to leave the ongoing work without notifying Parks Canada and Englobe. The Contractor must also have enough workers to complete the work within the scheduled time period.
- .6 To reduce the contamination risks and facilitate the final cleaning work, it is recommended that the Contractor protects all electrical and mechanical equipment (breakers/lightning panels, etc.) with reinforced polyethylene sheets sealed with adhesive tape.
- .7 The Contractor must repair damaged surfaces and replace damaged materials or equipment to the Owner’s satisfaction in the event where damages result from the work executed by the Contractor.
- .8 All asbestos waste must be disposed of daily in appropriate containers (see Article 2.1.8 Asbestos Waste Containers of the Present Technical Specification), and then delivered to the waste bin reserved for this purpose.

**Work in presence of asbestos
High Risk Work Procedure**

- .9 The Contractor must manually encapsulate all damaged and exposed asbestos-containing materials with a sealing product (ex.: Bakor 120-19) after the work is completed (if required).
- .10 The Contractor must consider that the costs associated with air testing during the asbestos-containing material removal work are under the client’s responsibility.

1.4 REGULATING AUTHORITY

- .1 Comply with the requirements of the local administration as well as federal and provincial governments on protection against asbestos. In case of discrepancy between these requirements and the requirements present in this Technical Specification, the most restrictive requirements will prevail.
- .2 The Owner as well as all contractors, employers and workers involved in the project must comply with the *Safety Code for the Construction Industry* (S-2.1, r. 4), at all time and place.

1.5 REFERENCES

- .1 Canadian Environmental Protection Act (CEPA) (1999).
- .2 Act Respecting Occupational Health and Safety (AROH) (L.R.Q., c.S-2.1) (1979):
 - .1 Regulation Respecting Occupational Health and Safety (S-2.1, r.19.01);
 - .2 Safety Code for the Construction Industry (S-2.1, r. 4).
- .3 Commission des Normes, de l’Équité, de la Santé et de la sécurité du travail (CNESST).
- .4 Workplace Hazardous Materials Information System (WHMIS)/Health Canada:
 - .1 Material Safety Data Sheets (MSDS).
- .5 Transport Canada (TC):
 - .1 Transportation of Dangerous Goods Act, 1992 (TDG Act).
- .6 Underwriters Laboratories of Canada (ULC).
- .7 Canadian Standards Association (CSA)/CSA International.
- .8 Canadian General Standards Board (CGSB):
 - .1 CAN/CGSB-1.205-2003, Sealer for application to asbestos-fibre-releasing materials.

1.6 DEFINITIONS

- .1 Asbestos-Containing Material (ACM): Material containing 0.1 % or more of asbestos in weight of dry material. Determining asbestos concentrations in a material must be performed according to the analytical Method 244-3 established by the Institut de recherche en santé et sécurité du Québec (IRSST).
- .2 Friable Material: Material that, once dry, can be crumbled, pulverized or powdered by hand.
- .3 Non-Friable Material: Material that, once dry, cannot be crumbled, pulverized or

**Work in presence of asbestos
High Risk Work Procedure**

powdered by hand.

- .4 **Occupied area:** Any part of a building or site that is outside the asbestos removal work area.
- .5 **Asbestos work area:** Location where work takes place that can result in the moving of asbestos materials.
- .6 **Decontamination chambers:** System typically consisting of two (2) curtained doorways at least 2 meters apart allowing personnel to enter and exit a work area without permitting any air movement between a contaminated area and an uncontaminated area.
- .7 **Negative pressure:** Negative pressure in a work area from which air is extracted using negative air units and evacuated directly outside through a High Efficiency Particulate Air (HEPA) filtering system.
 - .1 The depressurization system must maintain a pressure differential ranging between 1 and 4 Pascals between the work area and the adjacent areas.
- .8 **Competent worker:** for a specific work, means a worker:
 - .1 Who, because of their knowledge, training and experience, is qualified to perform the work.
- .9 **Authorized visitors:** Consultants or their designated representatives or representatives of regulatory agencies.

1.7 DOCUMENTS TO BE SUBMITTED

- .1 Comply with the instructions listed below before starting the work:
 - .1 Obtain all necessary permits for asbestos waste transportation and disposal from the applicable regulatory agency and submit to Parks Canada. Ensure that the operator of the landfill is well informed of the risks associated with the materials they will be receiving and that they are aware of the applicable disposal methods. Submit to Parks Canada the documents demonstrating that applicable arrangements have been made for the proper reception and disposal of asbestos waste.
 - .2 Submit documents demonstrating to Parks Canada that all asbestos workers have the proper training related to the risks associated to asbestos exposure, personal hygiene and modalities on entering and exiting asbestos removal areas, how to use, clean and dispose of the personal protective equipment needed to work in asbestos removal areas. Submit documents demonstrating that the workers have the proper training.
 - .3 Submit documents demonstrating that the personnel in charge of supervising has a training on asbestos removal that is approved by Parks Canada. At least one supervisor for every ten (10) workers or less must be assigned.
 - .4 Submit to Parks Canada for approval the proposed decontamination chambers and decontamination enclosure plans.

**Work in presence of asbestos
High Risk Work Procedure**

- .5 Submit the notice of opening the project involving asbestos handling to the CNESST.
- .6 Submit the documents demonstrating that the Contractor has a liability insurance covering asbestos removal work.
- .7 Submit the documents with the information required by the *Worker's Compensation Board* and confirming the subscribed insurance.
- .8 Submit relevant documentation, including test results, data related to fire and material flammability hazards, the Safety Data Sheets (SDS) of the material and chemical products that will be used, namely:
 - .1 Encapsulation products.
 - .2 Low drying sealant products.
- .9 Submit the detailed schedule for the planned work to Parks Canada for approval.

1.8 REQUIREMENTS RELATED TO HEALTH AND SAFETY

- .1 Clothing and protective equipment worn by workers when they enter the asbestos removal areas include the following:
 - .1 Respiratory device equipped with a full mask and P-100 particle filters, given to each employee, bearing a mark indicating its efficiency and use, ensuring a proper protection against asbestos fibers and authorized by applicable provincial and federal authorities. The respiratory device must provide a tight seal on the person's face. The respiratory device must be cleaned, disinfected and inspected after each shift change or more often if needed, when it is given for use to only one worker or after each usage if it is used by more than one worker. Any part of the respiratory device that is damaged or deteriorated must be replaced before it is used again. When the respiratory device is not used, it must be stored in a convenient, clean and sanitary location.
 - .2 Disposable protective clothing that does not trap asbestos fibres or allow them to penetrate. Protective clothing must be provided by the employer and worn by each worker entering the work area. Clothing must include a full coverall with hood and bands ensuring a tight adjustment to the wrists, ankles and neck to prevent asbestos fibres from reaching the clothes and the skin under the protective clothing, as well as adapted boots. Torn protective clothing must be replaced.
- .2 Instructions on how to enter and exit the work area:
 - .1 Each worker must remove their personal clothes in the non-contaminated changing room and put a respiratory device equipped with a new or previously inspected filter as well as a clean coverall and hood before entering the asbestos removal area. Personal clothes, shoes, towels and other non-contaminated personal effects must be left in the clean changing room.

**Work in presence of asbestos
High Risk Work Procedure**

- .2 Before leaving the work area, the worker must dispose of the dust and asbestos materials from their clothing, go to the first chamber to remove all their clothes, except for their respiratory device. Protective clothing as well as contaminated materials must be placed in containers provided for this purpose. Except for the respiratory device, all reusable items must be left in the contaminated room. The worker, free of all clothing, must go to the shower, thoroughly wash the exterior part of their respiratory device before removing it, and wash their body and hair with water and soap. Then, they must remove the filters from their respiratory device and wet them before throwing them away in the container provided for this purpose; then, they must wash and rinse the interior part of their respiratory device. The work boots must be stored in the contaminated room when they are not used in the work area. Once the asbestos removal work is finished, the boots must be disposed of as if they were asbestos waste, or thoroughly washed inside and outside with water and soap before exiting the asbestos removal area and the decontamination chambers.
- .3 After showering and drying off, the worker must go the clean changing room, put on their clothing or a clean coverall before eating, smoking or drinking. If the worker must go back to the work area, they must follow the aforementioned instructions.
- .4 Waste and materials must be removed, from the holding room of the container and equipment decontamination enclosure system, by the workers from a non-contaminated zone and this worker must be wearing clean coveralls. Workers must not use this system as means to leave or enter the work area.
- .3 Eating, drinking, chewing gum, and smoking are not allowed in the asbestos removal area.
- .4 Ensure that workers are fully protected with respiratory devices and protective clothing during preparation of the work area.
- .5 Provide, in the clean Changing Room and in the Equipment and Access room, the procedures described in this Section, in French.
- .6 Ensure that everyone required to enter an asbestos removal area does not have hair or facial hair affecting the seal between the respiratory device and their face.
- .7 Visitor's protection:
 - .1 Provide disposable protective clothing and a respiratory device (with adjustment testing performed by a specialized company) to all authorized visitors into the work area.
 - .2 Instruct the authorized visitors on how to use the protective clothing and respiratory device, and the procedures for entering and exiting work areas.
 - .3 Ensure that all visitors have their training on *General Health and Safety on Construction Sites* from the ASP Construction, as well as the required protective equipment (safety helmet, boots and glasses).

**Work in presence of asbestos
High Risk Work Procedure**

- .4 Instruct authorized visitors on proper procedures to be followed for entering and exiting an asbestos removal zone.

1.9 WASTE MANAGEMENT AND DISPOSAL

- .1 Ensure that asbestos waste generated by the asbestos removal work is disposed of in compliance with the relevant federal, provincial and municipal regulations. Dispose of asbestos waste in doubled and sealed 0.15 mm bags or leak proof drums/containers. Identify bags or leak proof drums/containers using the appropriate warning labels such as required in the Section 3.23.13 of the *Safety Code for the Construction Industry*.
- .2 Unless prescribed otherwise, all the materials that must be removed becomes the Contractor's property who must dispose of it outside of the site according to the established regulations and guidelines.
- .3 Transportation of asbestos waste is regulated under the *Transportation of Dangerous Substances Regulation (C-24.2, r.4.2)*, as asbestos materials are part the *Class 9.1 Various dangerous goods*. It implies that the driver of a vehicle transporting asbestos waste must have a training on the transportation of dangerous goods. In addition, for each shipping, the driver must have on hand the licence attesting that they have the training as well as the shipping document with the relevant information on the transported products. Finally, if the quantity of asbestos in the vehicle exceeds 500 kg (1,100 lb.), the latter must be equipped with a plate identifying the class of dangerous goods.
- .4 Provide the list and the description of waste generated during work and ensure that the carrier of the waste containers is using approved means toward a licensed landfill site for future burying.

1.10 EXISTING CONDITIONS

- .1 Certificate of analysis for the asbestos-containing materials to be handled, removed, or otherwise disturbed, and disposed as part of the work can be consulted on demand. These are for general information only and are not necessarily representative of asbestos materials included in the scope of work.
- .2 Asbestos-containing materials targeted by this work are listed in Article 1.1 Description of work of the present section.
- .3 Notify Parks Canada of the discovery of any materials suspected to contain asbestos during work that are not included in the drawings, technical specifications, or reports. Do not handle such material until instructed by Parks Canada.
- .4 Notify all construction trades and subcontractors of the presence of asbestos-containing materials, in compliance with the article on the existing conditions.

**Work in presence of asbestos
High Risk Work Procedure**

1.11 PERSONAL TRAINING

- .1 Before beginning work, provide Parks Canada with satisfactory proof that every worker has had instructions and training on risks related to asbestos exposure, the personal hygiene procedures including the protective clothing and showers, the procedures for entering and exiting an asbestos work area, the appropriate work procedures, including glove bag procedures, and rules that have to be followed, including using, cleaning, and disposal of respiratory devices and disposable protective clothing.
- .2 Instructions and training related to respiratory devices should include at least:
 - .1 Proper fitting of equipment.
 - .2 Inspection and maintenance of equipment.
 - .3 Disinfecting/Cleaning of equipment.
 - .4 Limitations of equipment.
- .3 Instructions and training must be provided by competent, qualified persons.
- .4 Supervisory personnel must also complete the required training.

PART 2 **PRODUCTS**

2.1 **MATERIALS**

- .1 Reinforced polyethylene sheets: Woven and reinforced with fibres at least 0.15 mm thick.
- .2 Tape: Fiber-glass reinforce adhesive tape (duct tape type) that can seal polyethylene sheets, and that can be used in both dry environment and water-treated environment.
- .3 Polyethylene sheets sealed with tape: Polyethylene sheets with edges, tear and all other necessary places are sealed with tape to obtain a continuous membrane capable to protect covered surfaces against future damages caused by water or sealing products, and to prevent asbestos fibres from migrating to a clean zone.
- .4 Curtained door: System that allows entering and exiting from one room to another while allowing minimal air movement between rooms, generally built as followed:
 - .1 Place two (2) polyethylene sheets next to each other, overlapped in the middle, and secure them at the top of an existing or temporary door so the exterior edges are both attached to the frame;
 - .2 Reinforce free edges of the sheets with duct tape and put weight on the bottom of the sheets to ensure a tight closure;
 - .3 Each polyethylene sheet must overlap the opening at least 1.5 m on each side.
- .5 Wetting agent: Solution of 50 % polyoxyethylene ester and 50% polyoxyethylene ether, or other product approved by Parks Canada, mixed with enough water to provide adequate penetration and wetting of asbestos-containing materials.
- .6 Treated water: Water to which a non-ionic surfactant wetting agent is added, used to reduce the superficial tension and to allow a good penetration of asbestos fibres.
- .7 Sprayer: Gardening sprayer or other spraying device capable of producing mist or spray. The sprayer flow must be adapted to the work.
- .8 Asbestos waste containers:
 - .1 The inner layer of the container must be a polyethylene sheet at least 0.15 mm thick.
 - .2 The outer layer of the container in which the inner container will be placed must be sealable made of fibres or metal that if the waste has sharp edges it does not tear; if that is not the case, the outer container may be a regular sealable bag made of fibres or metal, or a second 0.15 mm thick sealable polyethylene bag.

**Work in presence of asbestos
High Risk Work Procedure**

- .3 Labelling requirements: Post a printed cautionary asbestos warning, in French, on all asbestos waste containers so it is visible once the container is sealed. The containers must be labelled in accordance with the Controlled Products Regulations. The label must include the following permanent and legible indications and signs:
 - .1 Asbestos-containing materials.
 - .2 Toxic by inhalation.
 - .3 Keep container tightly closed.
- .9 HEPA vacuum: Vacuum equipped with a High Efficiency Filtration System (HEPA), designed to collect and hold 99.97 % of fibres with dimensions exceeding 0.3 micrometre.
- .10 DOP test: Testing method used to determine the integrity of a Negative Pressure unit using dioctyl phthalate (DOP) (HEPA-filter leak test).
- .11 Manometer: Instrument designed to continuously monitor and register the pressure difference inside and outside the work area.
- .12 Slow drying sealing product: Clear product that does not stain, disperses in water, remains sticky for at least eight (8) hours after application, and designed to confine residual asbestos fibres:
 - .1 The sealing product must present a flame-spread rating and a smoke developed index below 50.
- .13 Encapsulation product: Penetrant type 2 product, aqueous-based Category A product, complying with the CAN/CGSB-1.205 Standard, approved by the Fire Commissioner of Canada (e.g.: Bakor 120-19).

PART 3 **EXECUTION**

3.1 **PREPARATION**

.1 Work areas:

- .1 If needed, shut down and isolate air handling and ventilation systems to prevent fibre dispersal to other areas in the building during work. Conduct smoke tests to ensure that ducts are airtight. Seal and caulk joints and seams of active return air ducts within the asbestos removal zone.
- .2 Pre-clean moveable furniture located within the proposed work area using HEPA vacuum and remove from work area to a temporary location predetermined by the project manager.
- .3 Pre-clean fixed equipment within the work area using a HEPA vacuum and cover with polyethylene sheets and seal with tape.
- .4 Clean the different surfaces within the proposed work area using a HEPA vacuum. Wet cleaning method is also permitted. Do not use cleaning methods that will cause dust to rise, such as dry sweeping, or vacuuming using anything other than a HEPA vacuum.
- .5 The following means must be implemented to prevent dust from dispersing into work zones:
 - .1 An enclosure of reinforced polyethylene or any other suitable material that is resistant to asbestos fibres must be built if the work area is not enclosed by walls; if the enclosure material is opaque, one or several clear windows must be planned to allow for observation of the entire work area;
 - .2 Curtains of polyethylene sheets or other suitable material that is resistant to asbestos fibres, fitted on each side of each entrance or exit of the work area.
- .6 Put in depressurization systems (negative air units) and let them run continuously from the moment the first reinforced polyethylene sheets dedicated to seal the openings are installed until full completion of work including the final cleaning. A manometer must be installed to monitor the pressure difference between the work area and the rest of the building or adjacent areas. The system must generate and maintain, inside the enclosed area, a negative air pressure comprised between 1 and 4 Pascals in comparison with the air outside the enclosed area. The ventilation system must be inspected and maintained by a competent person before each use to ensure that there is no air leakage, and if the filter is damaged or defective, it must be replaced before the system is used again. Unless the air discharge of the depressurization equipment is located outside the building, a DOP test must be performed before starting and using such devices. The DOP test must be performed on-site with Parks Canada .

Work in presence of asbestos
High Risk Work Procedure

- .7 Cover all surfaces and openings, namely corridors, doorways, windows, electrical fixtures, air ducts, grids and diffusers with reinforced polyethylene sheets, and seal with adhesive tape.
- .8 Cover floors and walls with reinforced polyethylene sheets and seal with tape. Cover floors first, ensuring that the sheets extend at least 300 mm up the walls, then cover walls to overlap the floor sheeting.
- .9 Build decontamination chambers at all entrances and exits of a work area so the area is always closed off by one curtained doorway when workers enter or exit.
- .10 The work site must be properly surrounded with warning signs indicating asbestos work. Before starting the work, a sign must be installed at each access to the work site. The sign must be yellow, 500 mm high and 350 mm wide and indicate in black characters the following information with font size:

	Font Size
ASBESTOS	50 mm
HAZARD	40 mm
Do not breathe dust	15 mm
Protective Equipment is Mandatory	15 mm
Entry Prohibited	15 mm
Inhalation of asbestos dust may be harmful to your health	10 mm

- .11 After the work area is confined, remove heating, ventilating, and air conditioning filters, and dispose in a sealed 0.15 mm thick plastic bag and treat as contaminated asbestos waste. Remove ceiling-mounted objects such as lights, partitions, other fixtures not previously sealed off, and other objects that interfere with asbestos removal, as directed by Parks Canada. Use water to wet the materials before and during the removal to reduce fibre dispersal.
- .12 Maintain emergency and fire exits free from any obstructions, or establish alternative exits satisfactory to the *Fire Commissioner of Canada*.
- .13 Where application of water is required for wetting asbestos-containing materials, shut off electrical power, provide 24-volt safety lighting and ground fault interrupter circuits on power sources for electrical tools, in accordance with applicable CSA Standard. Ensure that installation of electrical lines and equipment are safe.
- .14 When work zones and decontamination enclosures are prepared, carry out asbestos removal work, then dispose of contaminated waste from the work area in containers provided for this purpose. As the work progresses, spray treated water on asbestos debris and on adjacent surfaces to limit the dispersion of asbestos dust.

**Work in presence of asbestos
High Risk Work Procedure**

**Work in presence of asbestos
High Risk Work Procedure****.2 Worker Decontamination Enclosure System**

- .1 Build a decontamination enclosure system including an Equipment and Access Room, a Shower Room and a clean Changing Room:
 - .1 Equipment and Access Room: build an Equipment and Access Room between the Shower Room and the work area that will be equipped with two (2) curtained doorways, one to the Shower Room and one to the asbestos removal work area. Install a portable toilet, a waste receptor as well as storage facilities for washable equipment. The Equipment and Access Room must be large enough to house requested equipment and to allow at least one worker to undress.
 - .2 Shower Room: build a Shower Room between the clean Changing Room and the Equipment and Access room. The Shower Room must include two (2) curtained doorways, one to the clean Changing Room and one to the Equipment and Access Room. Install one shower per ten (10) of each gender workers or less in one room where a minimum temperature of 20 °C is maintained and a minimum lighting of 250 lux. Provide constant supply of warm potable water. Provide soap, clean towels and suitable containers for disposal of dirty respiratory device filters. Provide piping and do necessary connections for water supply and water discharge systems. Before being discharged to the sewer, waste water must be pumped through a filtration system equipped with 5-micrometre filters. Clean and disinfect showers at least once during a work shift when they are used.
 - .3 Clean Changing Room: build a clean Changing Room between the Shower Room and the clean zones located outside the decontamination enclosure. The Changing Room must include two (2) curtained doorways, one to the Shower Room and one outside the decontamination enclosure. It must be installed in a room with a minimum temperature of 20 °C and a minimum lighting of 250 lux. It must be supplied with potable water, compartments for drying clothing and individual locker to store clothing. Each locker must include a storage area of at least 0.14 m³ and a clear distance of at least 600 mm in front of it. Provide a storage area for non-contaminated protective clothing and respiratory devices. Install a mirror to allow workers to adjust their respiratory device.

**Work in presence of asbestos
High Risk Work Procedure****.3 Container and equipment decontamination enclosure system**

.1 The container and equipment decontamination enclosure systems include a Pre-cleaning Room located in the work area, a Washing Room, a Holding Room and an Unloading Room. The purpose of the system is to decontaminate asbestos waste containers, scaffolding, vacuum and spray equipment, and any other materials that cannot be decontaminated within the decontamination enclosure system. The container and equipment decontamination enclosure system must include the following compartments:

- .1 Pre-cleaning Room: install a Pre-cleaning Room inside the work area for gross removal of materials and waste containers, labelling and sealing of containers, and their temporary storage while waiting for their disposal toward the washing room. The Pre-cleaning Room must be equipped with one curtained doorway to the Washing room.
- .2 Washing Room: build a Washing Room between the Pre-cleaning Room and the Holding Room that is equipped with two (2) curtained doorways, one to the Pre-cleaning Room and one to the Holding Room. The Washing Room must be equipped with high pressure and low flow sprayers for cleaning the waste and equipment containers. Pump waste water through a 5-micrometer filter system before directing to the water and sewage networks.
- .3 Holding Room: Build a Holding Room between the Washing Room and the Unloading Room that is equipped with two (2) curtained doorways, one to the Washing Room and one to the Unloading Room. The Holding Room must be sized to accommodate at least two (2) containers and the larger materials and equipment.
- .4 Unloading Room: build an Unloading Room between the Holding Room and outside with two (2) curtained doorways, one to the Holding Room and one to the exterior.

.4 Construction of decontamination enclosures

- .1 Build suitable framing for enclosures or use existing room when convenient. Cover the framing with two (2) reinforced polyethylene sheets sealed with tape. Use two (2) layers of reinforced polyethylene to cover the floor.
- .2 Build curtained doorways between rooms and enclosures so that at least one doorway of each room is closed when workers, waste containers or materials are moved through.

**Work in presence of asbestos
High Risk Work Procedure**

- .5 Maintenance of enclosures:
 - .1 Always maintain enclosures in clean and tidy conditions
 - .2 Ensure that barriers and reinforced polyethylene sheets are effectively sealed with tape. Repair damaged sheets and correct defects.
 - .3 Visually inspect enclosures at the beginning of each work shift.
 - .4 When asked by Parks Canada, use smoke tests to verify the containment integrity.
- .6 Do not begin asbestos removal work until:
 - .1 Arrangements have been made for the disposal of waste.
 - .2 Arrangements have been made for the waste water storage, filtration and disposal for wet stripping techniques.
 - .3 Work areas and decontamination enclosures have been effectively isolated from one another.
 - .4 Tools, equipment, materials and waste containers are on site.
 - .5 Arrangements have been made for the building's security.
 - .6 Warning signs have been installed at access points to contaminated zones.
 - .7 Parks Canada gave their authorization to start work.

3.2 SECURITY FOR ELECTRICAL INSTALLATIONS

- .1 All electrical circuits of the work area must be turned off by a qualified electrician.
- .2 All electric circuits and power supplied equipment must be completely protected so no water or dust infiltration is possible.
- .3 When needed, the ceiling fixtures and other electrical equipment must be dismantled before starting the work and re-installed by a qualified electrician after the work is completed.
- .4 The Contractor must have an electrician install circuits that are protected by a Ground Fault Interrupter (GFI) for power supply of electric tools and temporary lightning. Provide a safety lightning system powered by a 24 V supply with a level of lightning of 400 lux.
- .5 The installation and equipment must comply with relevant CSA standard requirements. Ensure that lines and electrical equipment are installed safely by qualified persons.

3.3 SUPERVISION

- .1 At least one supervisor must be designated for each group of ten (10) workers or less.
- .2 One authorized supervisor must remain on site at all times when asbestos-containing materials are moved, removed or handled.

**Work in presence of asbestos
High Risk Work Procedure****3.4 ASBESTOS REMOVAL**

- .1 Instruction for asbestos removal work:
 - .1 Prepare the site.
 - .2 Spray asbestos material with water containing specified wetting agent, using spraying equipment capable of providing a "mist" to prevent the release of fibres. Saturate asbestos-containing material sufficiently to wet the substrate without causing excess dripping. Spray asbestos-containing material repeatedly during work process to maintain saturation and to minimize asbestos fibre dispersion.
 - .3 Remove water saturated asbestos-containing material. Do not allow saturated asbestos to dry out as it is packed in sealable plastic bags of 0.15 mm of thickness for transport.
 - .4 Seal filled containers. Clean external surfaces thoroughly with water. Remove containers from the asbestos removal zone and place them in the Pre-cleaning Room; clean external surfaces thoroughly again with water before moving them to the Holding Room, to the Unloading Room and then outside. Ensure that the containers are removed from the Holding Room by workers from a non-contaminated zone and that the worker is wearing a coverall that is also non-contaminated.
 - .5 After completion of the stripping work, wire brush and clean surfaces from which asbestos has been removed to completely remove any visible materials with water. During this work keep all surfaces wet.
 - .6 After wire brushing and cleaning all surfaces to remove all visible traces of asbestos-containing materials, and after encapsulating asbestos-containing material that is impossible to remove, clean the entire work area with water, including the Equipment and Access Room as well as all of the equipment. Allow air-borne asbestos dust to settle, then clean the work area and aforementioned materials with water a second time. After inspection and approval of the completion of the work by Parks Canada, apply a coat of slow drying sealing product on all treated surfaces. This operation must be followed by a period of a minimum duration of 12 hours during which work and access to site must be suspended; the depressurization system must remain in operation during this period.
 - .7 Work will be subject to visual inspection and air analysis. If a visual inspection or air analysis reveals that surrounding areas have been contaminated, they will be required to be completely enclosed and cleaned-up.
- .2 Clean-up during work:
 - .1 Frequently during work and immediately after completion of work, clean up dust and asbestos-containing material using a HEPA vacuum or damp cloth.

**Work in presence of asbestos
High Risk Work Procedure**

- .2 Place dust, debris and asbestos waste in sealed waste bags. Treat polyethylene sheets and disposable protective clothing as asbestos waste; wet and fold them to contain dust and place them in waste bags.
- .3 Clean each bag containing waste with damp cloths or HEPA vacuum immediately before their removal from the asbestos work area and place them in a non-contaminated waste bag.
- .4 Seal waste bags and remove waste from site. Dispose of asbestos waste according to the applicable requirements from federal and provincial authorities. Supervise disposal and ensure that the disposal operator is fully aware of the hazardous nature of the materials to be disposed and that the guidelines and regulations for asbestos disposal are followed.
- .5 Perform a final thorough clean-up of the asbestos work area and affected adjacent areas using a HEPA vacuum.

3.5 DISMANTLEMENT OF WORK ZONE

- .1 Start the dismantlement of the work area only once the cleaning prescribed in Article 3.4.1.6 of this technical specification is finished and that air analysis has demonstrated that asbestos dust concentration inside the containment enclosures do not exceed 0.01 fibre by cm³ of air.
- .2 Wait for Parks Canada's authorization before starting the dismantlement of the work area.
- .3 Remove polyethylene sheets by rolling them away from the walls to the centre of the work area. Vacuum visible asbestos containing particles and debris observed during cleanup, immediately, using a HEPA vacuum.
- .4 Place polyethylene seals, tapes, cleaning materials, clothing, and other contaminated wastes in plastic bags. Seal the waste bags and label them before disposing as asbestos waste into the containers for transport.
- .5 Clean asbestos removal zone, Equipment and Access Room, Washing Room, Shower Room and any other enclosure that is likely to be contaminated.
- .6 Clean sealed waste containers as well as all used equipment, and then in a timely manner, transport them outside the work area via the container and equipment decontamination enclosure system.
- .7 Proceed to a final check to ensure that all surfaces are free of accumulated dust or particles from the dismantling operations.
- .8 As work progresses, and to prevent exceeding available storage capacity on site, remove sealed and labelled containers containing asbestos waste, and dispose of them in an authorized disposal area in accordance with requirements of disposal authorities.

3.6 RE-ESTABLISHMENT OF ELEMENTS AND SERVICES

- .1 Once the dismantlement of the work area is completed, the following must be performed:
 - .1 Put back in place various objects, devices and furniture that have been moved and stored throughout the duration of the work.
 - .2 Put back in place and secure fixed objects and devices in their former positions.
 - .3 Re-establish mechanical and electrical systems in proper working order. Install new filters.
 - .4 Repair or replace objects that were damaged during the work, as directed by the Client.

3.7 AIR MONITORING

- .1 The Contractor or his representant must take air samples on a daily basis inside and outside of the work area enclosures in accordance with provincial regulations on occupational health and safety.
- .2 Use the results of the air analysis inside the working areas to determine the required type of respiratory devices:
 - .1 Suspend asbestos removal work if fibre levels exceed the safety factor of the respiratory devices (50 fibres/ml (cm³)) for asbestos chrysotile or actinolite fibres and 10 fibres/ml (cm³) for asbestos amosite fibres. Use a proper dust disposal method and higher safety factor in respiratory protection for workers inside enclosures.
 - .2 If the air analysis shows that areas outside the work area enclosures are contaminated, enclose these areas, maintain and clean these areas, in same manner as the ones applicable to work areas.
- .3 Final air monitoring must be conducted as follows: Once the asbestos removal area has been visually inspected and approved, and the cleaning prescribed in Article 3.4.1.6 is completed, Parks Canada will perform air monitoring inside the asbestos removal area:
 - .1 Final air monitoring results must show fibre levels below 0.01 fibre/ml (cm³).
 - .2 If air monitoring results show fibre levels exceeding 0.01 fibre/ml (cm³), the Contractor must re-clean the work area and re-apply a coat of low drying sealing product on the surfaces inside the enclosures.
 - .3 Repeat as necessary until fibre levels are less than 0.01 fibre/ ml (cm³).

**Work in presence of asbestos
High Risk Work Procedure**

3.8 INSPECTION

- .1 Perform an inspection of the asbestos removal area to confirm its compliance with specifications and governing authority requirements. Disparity from the requirements that have not been approved in writing by Parks Canada may result in work interruption.
- .2 Parks Canada will inspect the work to ensure that the following conditions have been respected:
 - .1 Compliance to the specific procedures and materials.
 - .2 Final cleanliness of site and completion of work.
 - .3 No additional costs will be allowed for additional labour or materials required to complete the work.
- .3 Parks Canada will suspend work if asbestos particles or asbestos-containing material leaks occur outside the work area:
 - .1 Labour, equipment and additional required procedures to ensure work is completed must be provided at no cost.

END OF SECTION

**02 82 00.04 – Work in asbestos condition
Exterior high-risk work procedure**

PART 1 **GENERALITIES**

1.1 **DESCRIPTION OF WORK**

- .1 This section of the technical specification is complementary to the architectural, structural and mechanical/electrical plans. Issued documents by other professionals must be consulted to know the exact nature of the interventions and scope of work.
- .2 As part of the roof repair project of the lockmaster’s house, the following work, without limitation, must be executed as an exterior high-risk site condition as established in the article 3.23.16 of the *Safety Code for the Construction Industry*:
 - .1 Removal of decorative finish and cement plaster containing asbestos and present around the roof dormers.
 - .2 Removal of asphalt shingles on the main roof and balconies;
 - .3 Cutting and/or stripping of approximately 150 mm high of exterior wall covered with decorative finish and cement plaster, at the junction of the existing roof, in order to install the new metal flashings.
 - .4 Removal of the grey scellant and the black tarred coating present around the outside of the two (2) dormers of the building.
- .3 According to the report on the characterization of hazardous material and substances prepared by Englobe, and dated January 2017 (Ref.: 045-P-0009275-0-13-260-01-HI-R-0100-00) and the complementary characterization report prepared by MHV and dated November 2019 (Ref.: P19-4176-5), the following materials are considered as asbestos-containing materials:
 - .1 Cardboard insulation debris present on the floor in the basement of the building (0.1-1% of Chrysotile asbestos);
 - .2 Cement and plaster ceiling on the second floor of the building (0.1-1% of Chrysotile asbestos – Joint compound phase of the material);
 - .3 Beige vinyl floor tiles with brown spots (9 in x 9 in) covering the floor in the closets on the second floor (0.3% of Chrysotile asbestos);
 - .4 Glue located underneath the beige vinyl floor tiles with spots (9 in x 9 in) covering the floor in the closets on the second floor (2.34% of chrysotile asbestos);
 - .5 Cement plaster and decorative plaster finish covering the exterior walls and roof dormers (1-5% of Chrysotile asbestos – Decorative finish phase of the material);
 - .6 Grey sealants and black tarred coating present around the exterior windows of the building (0.1-1% of Chrysotile asbestos in the sealant material and 5-10% of Chrysotile asbestos in the tarred coating material);
 - .7 Vermiculite present in the attic and possibly in the wall cavities of the building (0.1-1% of Actinolite/Tremolite asbestos);
 - .8 Asphalt shingles located on the roof of the building (main building and balconies) (3.48% of chrysotile asbestos).

**Work in presence of asbestos
Exterior High Risk Work Procedure**

1.2 SECTION CONTENT

- .1 Requirements and technicalities related to asbestos-containing material removal in exterior high-risk site condition according to the requirements of Article 3.23.16 of the *Safety Code for the Construction Industry*.
- .2 This section complies with the following regulations:
 - .1 Regulation Respecting Occupational Health and Safety (S-2.1, r.19.01);
 - .2 Safety Code for the Construction Industry (S-2.1, r.4).

1.3 RELATED REQUIREMENTS

- .1 The Contractor must submit a sketch, for approbation by Parks Canada, illustrating the site facilities, including the positioning of the containment walls and the decontamination chambers permitting the workers to enter and exit the work area, as well as for the waste evacuation.
- .2 When performing exterior high-risk work, the Contractor must build a containment enclosure that exceeds at least 1.5 m the maximum height of the building and must be built so it withstands the wind. The containment enclosure is not required to have a ceiling.
- .3 The Contractor must consider that the job will include working at heights and from the roof of the building. The Contractor must plan to have secured access to the work area as well as railings around the roof, if applicable.
- .4 As part of this exterior high-risk work condition, daily air samples will be collected and will be under the Contractor’s responsibility for all the duration of the decontamination work. No final air sampling is required as part of an exterior high-risk work condition.
- .5 The Contractor must wait for Parks Canada authorization before beginning the work.
- .6 The Contractor must provide decontamination facilities (construction site trailer) or use Changing Rooms and decontamination chambers.
- .7 When performing work, the Contractor’s foreman must be present at all times and must remain outside the work area.
- .8 Unless exceptional circumstances occur, the same foreman must remain until the completion of work. Once started, the work must be completed in one sequence, and cannot be interrupted until accepted by Parks Canada .
- .9 The Contractor must designate an employee who will oversee the daily inspection of the quality of containment facilities. This inspection must be performed at the beginning of each work shift as specified in Article 3.1.5 Maintenance of Enclosures of the Present Technical Specification.
- .10 All asbestos waste must be disposed of daily in appropriate containers (see Article 2.1.8 Asbestos waste containers of the present Technical Specification), and then transported to the waste bin reserved for this purpose. A sketch showing the location of the containment enclosures, the decontamination enclosures and the waste containers must be submitted to Parks Canada for approval before starting the work.

1.4 **REGULATING AUTHORITIES**

- .1 The Owner as well as all contractors, employers and workers involved in the project must comply with the *Safety Code for the Construction Industry* (S-2.1, r. 4), at all time and place.

1.5 **REFERENCES**

- .1 Canadian Environmental Protection Act (CEPA) (1999).
- .2 Act Respecting Occupational Health and Safety (AROHs) (L.R.Q., c.S-2.1) (1979):
 - .1 Regulation respecting occupational health and safety (S-2.1, r.19.01;
 - .2 Safety Code for the construction industry (S-2.1, r. 4).
- .3 Commission des Normes, de l'Équité, de la Santé et de la Sécurité du Travail (CNESST.)
- .4 Workplace Hazardous Materials Information System (WHMIS)/Health Canada:
 - .1 Safety data sheets (SDS).
- .5 Transport Canada (TC):
 - .1 Transportation of Dangerous Goods Act, 1992 (TDG Act).
- .6 Underwriters Laboratories of Canada (ULC).
- .7 Canadian Standards Association (CSA)/CSA International.
- .8 Canadian General Standards Board (CGSB):
 - .1 CAN/CGSB-1.205-2003, Sealer for application to asbestos-fibre-releasing materials.

1.6 **DEFINITIONS**

- .1 **Asbestos-Containing Material (ACM)**: Material containing 0.1 % or more of asbestos in weight of dry material. Determining asbestos concentrations in a material must be performed according to the analytical Method 244-3 established by the Institut de recherche en santé et sécurité du Québec (IRSST).
- .2 **Friable Material**: Material that, once dry, can be crumbled, pulverized or powdered by hand.
- .3 **Non-Friable Material**: Material that, once dry, cannot be crumbled, pulverized or powdered by hand.
- .4 **Occupied area**: Any part of a building or site that is outside the asbestos removal work area.
- .5 **Asbestos work area**: Location where work takes place that can result in the moving of asbestos material.

- .6 Decontamination chambers: System typically consisting of two (2) curtained doorways at least 2 meters apart allowing personnel to enter and exit a work area without permitting any air movement between a contaminated area and an uncontaminated area.
- .7 Competent worker: for a specific work, means a worker:
 - .1 Who, because of their knowledge, training and experience, is qualified to perform the work.
- .8 Authorized visitors: Consultants or their designated representatives or representatives of regulatory agencies

1.7 DOCUMENTS TO BE SUBMITTED

- .1 Comply with the instructions listed below before starting the work:
 - .1 Obtain all necessary permits for asbestos waste transportation and disposal from the applicable regulatory agency and submit to Parks Canada. Ensure that the operator of the landfill is well informed of the risks associated with the materials they will be receiving and that they are aware of the applicable disposal methods. Submit to Parks Canada the documents demonstrating that applicable arrangements have been made for the proper reception and disposal of asbestos waste.
 - .2 Submit documents demonstrating to Parks Canada that all asbestos workers have the proper training related to the risks associated to asbestos exposure, personal hygiene and modalities on entering and exiting asbestos removal areas, how to use, clean and dispose of the personal protective equipment needed to work in asbestos removal areas. Submit documents demonstrating that the workers have the proper training.
 - .3 Submit documents demonstrating that the personnel in charge of supervising has a training on asbestos removal that is approved by Parks Canada. At least one supervisor for every ten (10) workers or less must be assigned.
 - .4 Submit to Parks Canada for approval the proposed decontamination chambers and decontamination enclosure plans.
 - .5 Submit the notice of opening the project involving asbestos handling to the CNESST.
 - .6 Submit the documents demonstrating that the Contractor has a liability insurance covering asbestos removal work.
 - .7 Submit the documents with the information required by the *Worker's Compensation Board* and confirming the subscribed insurance.

**Work in presence of asbestos
Exterior High Risk Work Procedure**

- .8 Submit relevant documentation, including test results, data related to fire and material flammability hazards, the Safety Data Sheets (SDS) of the material and chemical products that will be used, namely:
 - .1 Encapsulation products.
 - .2 Slow drying sealing products.
- .9 Submit the detailed schedule for the planned work to Parks Canada for approval.

1.8 REQUIREMENTS RELATED TO HEALTH AND SAFETY

- .1 Clothing and protective equipment worn by workers when they enter the asbestos removal areas include the following:
 - .1 Respiratory device equipped with a full mask and P-100 particle filters, given to each employee, bearing a mark indicating its efficiency and use, ensuring a proper protection against asbestos fibers and authorized by applicable provincial and federal authorities. The respiratory device must provide a tight seal on the person’s face. The respiratory device must be cleaned, disinfected and inspected after each shift change or more often if needed, when it is given for use to only one worker or after each usage if it is used by more than one worker. Any part of the respiratory device that is damaged or deteriorated must be replaced before it is used again. When the respiratory device is not used, it must be stored in a convenient, clean and sanitary location.
 - .2 Disposable protective clothing that does not trap asbestos fibres or allow them to penetrate. Protective clothing must be provided by the employer and worn by each worker entering the work area. Clothing must include a full coverall with hood and bands ensuring a tight adjustment to the wrists, ankles and neck to prevent asbestos fibres from reaching the clothes and the skin under the protective clothing, as well as adapted boots. Torn protective clothing must be replaced.
- .2 Instructions on how to enter and exit the work area:
 - .1 Each worker must remove their personal clothes in the non-contaminated changing room and put a respiratory device equipped with a new or previously inspected filter as well as a clean coverall and hood before entering the asbestos removal area. Personal clothes, shoes, towels and other non-contaminated personal effects must be left in the clean changing room.

Work in presence of asbestos
Exterior High Risk Work Procedure

- .2 Before leaving the work area, the worker must dispose of the dust and asbestos materials from their clothing, go to the first chamber to remove all their clothes, except for their respiratory device. Protective clothing as well as contaminated materials must be placed in containers provided for this purpose. Except for the respiratory device, all reusable items must be left in the contaminated room. The worker, free of all clothing, must go to the shower, thoroughly wash the exterior part of their respiratory device before removing it, and wash their body and hair with water and soap. Then, they must remove the filters from their respiratory device and wet them before throwing them away in the container provided for this purpose; then, they must wash and rinse the interior part of their respiratory device. The work boots must be stored in the contaminated room when they are not used in the work area. Once the asbestos removal work is finished, the boots must be disposed of as if they were asbestos waste, or thoroughly washed inside and outside with water and soap before exiting the asbestos removal area and the decontamination chambers.
- .3 After showering and drying off, the worker must go the clean changing room, put on their clothing or a clean coverall before eating, smoking or drinking. If the worker must go back to the work area, he must follow the aforementioned instructions.
- .4 Waste and materials must be removed, from the holding room of the container and equipment decontamination enclosure system, by the workers from a non-contaminated zone and this worker must be wearing clean coveralls. Workers must not use this system as means to leave or enter the work area.
- .3 Eating, drinking, chewing gum, and smoking are not allowed in the asbestos removal area.
- .4 Ensure that workers are fully protected with respiratory device and protective clothing during preparation of the work area.
- .5 Provide, in clean Changing Room and in the Equipment and Access room, the procedures described in this Section, in French.
- .6 Ensure that everyone required to enter an asbestos removal area does not have hair or facial hair affecting the seal between the respiratory device and their face.
- .7 Visitor's protection:
 - .1 Provide disposable protective clothing and a respiratory device (with adjustment testing performed by a specialized company) to all authorized visitors into the work area.
 - .2 Instruct the authorized visitors on how to use the protective clothing and respiratory device, and the procedures for entering and exiting work areas.
 - .3 Ensure that all visitors have their training on *General Health and Safety on Construction Sites* from the ASP Construction, as well as the required protective equipment (safety helmet, boots and glasses).

**Work in presence of asbestos
Exterior High Risk Work Procedure**

- .4 Instruct authorized visitors on proper procedures to be followed for entering and exiting an asbestos removal zone.

1.9 WASTE MANAGEMENT AND DISPOSAL

- .1 Ensure that asbestos waste generated by the asbestos removal work is disposed of in compliance with the relevant federal, provincial and municipal regulations. Dispose of asbestos waste in doubled and sealed 0.15 mm bags or leak proof drums/containers. Identify bags or leak proof drums/containers using the appropriate warning labels such as required in the Section 3.23.13 of the *Safety Code for the Construction Industry*.
- .2 Unless prescribed otherwise, all the materials that must be removed becomes the Contractor’s property who must dispose of it outside of the site according to the established regulations and guidelines.
- .3 Transportation of asbestos waste is regulated under the *Transportation of Dangerous Substances Regulation (C-24.2, r.4.2)*, as asbestos materials are part the *Class 9.1 Various dangerous goods*. It implies that the driver of a vehicle transporting asbestos waste must have a training on the transportation of dangerous goods. In addition, for each shipping, the driver must have on hand the licence attesting that they have the training as well as the shipping document with the relevant information on the transported products. Finally, if the quantity of asbestos in the vehicle exceeds 500 kg (1,100 lb.), the latter must be equipped with a plate identifying the class of dangerous goods.
- .4 Provide the list and the description of waste generated during work and ensure that the carrier of the waste containers is using approved means toward a licensed landfill site for future burying.

1.10 EXISTING CONDITIONS

- .1 Certificate of analysis for the asbestos-containing materials to be handled, removed, or otherwise disturbed, and disposed as part of the work can be consulted on demand. These are for general information only and are not necessarily representative of asbestos materials included in the scope of work.
- .2 Asbestos-containing materials targeted by this work are listed in Article 1.1 Description of work of the present section.
- .3 Notify Parks Canada of the discovery of any materials suspected to contain asbestos during work that are not included in the drawings, technical specifications, or reports. Do not handle such material until instructed by Parks Canada.
- .4 Notify all construction trades and subcontractors of the presence of asbestos-containing materials, in compliance with the article on the existing conditions.

Work in presence of asbestos
Exterior High Risk Work Procedure

1.11 PERSONAL TRAINING

- .1 Before beginning work, provide Parks Canada with satisfactory proof that every worker has had instructions and training on risks related to asbestos exposure, the personal hygiene procedures including the protective clothing and showers, the procedures for entering and exiting an asbestos work area, the appropriate work procedures, including glove bag procedures, and rules that have to be followed, including using, cleaning, and disposal of respiratory devices and disposable protective clothing.
- .2 Instructions and training related to respiratory devices should include at least:
 - .1 Proper fitting of equipment.
 - .2 Inspection and maintenance of equipment.
 - .3 Disinfecting of equipment.
 - .4 Limitations of equipment.
- .3 Instructions and training must be provided by competent, qualified persons.
- .4 Supervisory personnel must also complete the required training.

**Work in presence of asbestos
Exterior High Risk Work Procedure**

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Reinforced polyethylene sheets: Woven and reinforced with fibres at least 0.15 mm thick.
- .2 Tape: Fiber-glass reinforce adhesive tape (duct tape type) that can seal polyethylene sheets, and that can be used in both dry environment and water-treated environment.
- .3 Polyethylene sheets sealed with tape: Polyethylene sheets with edges, tear and all other necessary places are sealed with tape to obtain a continuous membrane capable to protect covered surfaces against future damages caused by water or sealing products, and to prevent asbestos fibres from migrating to a clean zone.
- .4 Curtained door: System that allows entering and exiting from one room to another while allowing minimal air movement between rooms, generally built as followed:
 - .1 Place two (2) polyethylene sheets next to each other, overlapped in the middle, and secure them at the top of an existing or temporary door so the exterior edges are both attached to the frame;
 - .2 Reinforce free edges of the sheets with duct tape and put weight on the bottom of the sheets to ensure a tight closure;
 - .3 Each polyethylene sheet must overlap the opening at least 1.5 m on each side.
- .5 Wetting agent: Solution of 50 % polyoxyethylene ester and 50% polyoxyethylene ether, or other product approved by Parks Canada, mixed with enough water to provide adequate penetration and wetting of asbestos-containing materials.
- .6 Treated water: Water to which a non-ionic surfactant wetting agent is added, used to reduce the superficial tension and to allow a good penetration of asbestos fibres.
- .7 Sprayer: Gardening sprayer or other spraying device capable of producing mist or spray. The sprayer flow must be adapted to the work.
- .8 Asbestos waste containers: Place waste in double layered containers:
 - .1 The inner layer of the container must be a polyethylene sheet at least 0.15 mm thick.
 - .2 The outer layer of the container in which the inner container will be placed must be sealable made of fibres or metal that if the waste has sharp edges it does not tear; if that is not the case, the outer container may be a regular sealable bag made of fibres or metal, or a second 0.15 mm thick sealable polyethylene bag.

**Work in presence of asbestos
Exterior High Risk Work Procedure**

- .3 Labelling requirements: Post a printed cautionary asbestos warning, in French, on all asbestos waste containers so it is visible once the container is sealed. The containers must be labelled in accordance with the Controlled Products Regulations. The label must include the following permanent and legible indications and signs:
 - .1 Asbestos-containing materials
 - .2 Toxic by inhalation
 - .3 Keep container tightly closed
- .9 HEPA vacuum: Vacuum equipped with a High Efficiency Filtration System (HEPA), designed to collect and hold 99.97 % of fibres with dimensions exceeding 0.3 micrometre.
- .10 Slow drying sealing product: Clear product that does not stain, disperses in water, remains sticky for at least eight (8) hours after application, and designed to confine residual asbestos fibres:
 - .1 The sealing product must present a flame-spread rating and a smoke developed index below 50.
- .11 Encapsulation product: Penetrant type 2 product, aqueous-based Category A product, complying with the CAN/CGSB-1.205 Standard, approved by the Fire Commissioner of Canada (e.g.: Bakor 120-19).

**Work in presence of asbestos
Exterior High Risk Work Procedure**

PART 3 EXECUTION

3.1 PREPARATION

.1 Work areas:

.1 The following means must be implemented to prevent generated dust from dispersing into work areas:

.1 An enclosure of reinforced polyethylene or any other suitable material that is resistant to asbestos fibres must be built if the work area is not enclosed by walls; if the enclosure material is opaque, one or several clear windows must be planned to allow for observation of the entire work area;

.2 Curtains of polyethylene sheets or other suitable material that is resistant to asbestos fibres, fitted on each side of each entrance or exit of the work area.

.2 Build decontamination chambers at all entrances and exits of a work area so the area is always closed off by one curtained doorway when workers enter or exit.

.3 The work site must be properly surrounded with warning signs indicating asbestos work. Before starting the work, a sign must be installed at each access to the work site. The sign must be yellow, 500 mm high and 350 mm wide and indicate in black characters the following information with font size:

	Font Size
ASBESTOS	50 mm
HAZARD	40 mm
Do not breathe dust	15 mm
Protective Equipment is Mandatory	15 mm
Entry Prohibited	15 mm
Inhalation of asbestos dust may be harmful to your health	10 mm

.4 After the work area is isolated, remove heating, ventilating, and air conditioning filters, and dispose in a sealed plastic bag at least 0.15 mm thick and treat as contaminated asbestos waste. Remove ceiling-mounted objects such as lights, partitions, other fixtures not previously sealed off, and other objects that interfere with asbestos removal, as directed by Parks Canada. Use water to wet the materials before and during the removal to reduce fibre dispersal.

.5 Maintain emergency and fire exits free from any obstructions, or establish alternative exits satisfactory to the *Fire Commissioner of Canada*.

**Work in presence of asbestos
Exterior High Risk Work Procedure**

- .6 Where application of water is required for wetting asbestos-containing materials, shut off electrical power, provide 24-volt safety lighting and ground fault interrupter circuits on power sources for electrical tools, in accordance with applicable CSA Standard. Ensure that installation of electrical lines and equipment are safe.
- .7 When work zones and decontamination enclosures are prepared, carry out asbestos removal work, then dispose of contaminated waste from the work area in containers provided for this purpose. As the work progresses, spray treated water on asbestos debris and on adjacent surfaces to limit the dispersion of asbestos dust.
- .2 Worker Decontamination Enclosure System
 - .1 Build a decontamination enclosure system including an Equipment and Access Room, a Shower Room and a clean Changing Room:
 - .1 Equipment and Access Room: build an Equipment and Access Room between the Shower Room and the work area that will be equipped with two (2) curtained doorways, one to the Shower Room and one to the asbestos removal work area. Install a portable toilet, a waste receptor as well as storage facilities for washable equipment. The Equipment and Access Room must be large enough to house requested equipment and to allow at least one worker to undress.
 - .2 Shower Room: build a Shower Room between the clean Changing Room and the Equipment and Access room. The Shower Room must include two (2) curtained doorways, one to the clean Changing Room and one to the Equipment and Access Room. Install one shower per ten (10) of each gender workers or less in one room where a minimum temperature of 20 °C is maintained and a minimum lighting of 250 lux. Provide constant supply of warm potable water. Provide soap, clean towels and suitable containers for disposal of dirty respiratory device filters. Provide piping and do necessary connections for water supply and water discharge systems. Before being discharged to the sewer, waste water must be pumped through a filtration system equipped with 5-micrometre filters. Clean and disinfect showers at least once during a work shift when they are used.
 - .3 Clean Changing Room: build a clean Changing Room between the Shower Room and the clean zones located outside the decontamination enclosure. The Changing Room must include two (2) curtained doorways, one to the Shower Room and one outside the decontamination enclosure. It must be installed in a room with a minimum temperature of 20 °C and a minimum lighting of 250 lux. It must be supplied with potable water, compartments for drying clothing and individual locker to store clothing. Each locker must include a storage area of at least 0.14 m³ and a clear distance of at least 600 mm in front of it. Provide a storage area for non-contaminated protective clothing and respiratory devices. Install a mirror to allow workers to adjust their respiratory device.

Work in presence of asbestos
Exterior High Risk Work Procedure

- .3 Container and equipment decontamination enclosure system
 - .1 The container and equipment decontamination enclosure systems include a Pre-cleaning Room located in the work area, a Washing Room, a Holding Room and an Unloading Room. The purpose of the system is to decontaminate asbestos waste containers, scaffolding, vacuum and spray equipment, and any other materials that cannot be decontaminated within the decontamination enclosure system. The container and equipment decontamination enclosure system must include the following compartments:
 - .1 Pre-cleaning Room: install a Pre-cleaning Room inside the work area for gross removal of materials and waste containers, labelling and sealing of containers, and their temporary storage while waiting for their disposal toward the washing room. The Pre-cleaning Room must be equipped with one curtained doorway to the Washing room.
 - .2 Washing Room: build a Washing Room between the Pre-cleaning Room and the Holding Room that is equipped with two (2) curtained doorways, one to the Pre-cleaning Room and one to the Holding Room. The Washing Room must be equipped with high pressure and low flow sprayers for cleaning the waste and equipment containers. Pump waste water through a 5-micrometer filter system before directing to the water and sewage networks.
 - .3 Holding Room: Build a Holding Room between the Washing Room and the Unloading Room that is equipped with two (2) curtained doorways, one to the Washing Room and one to the Unloading Room. The Holding Room must be sized to accommodate at least two (2) containers and the larger materials and equipment.
 - .4 Unloading Room: build an Unloading Room between the Holding Room and outside with two (2) curtained doorways, one to the Holding Room and one to the exterior.
- .4 Construction of decontamination enclosures
 - .1 Build suitable framing for enclosures or use existing room when convenient. Cover the framing with two (2) reinforced polyethylene sheets sealed with tape. Use two (2) layers of reinforced polyethylene to cover the floor.
 - .2 Build curtained doorways between rooms and enclosures so that at least one doorway of each room is closed when workers, waste containers or materials are moved through.
- .5 Maintenance of enclosures:
 - .1 Always maintain enclosures in clean and tidy conditions.
 - .2 Ensure that barriers and reinforced polyethylene sheets are effectively sealed with tape. Repair damaged sheets and correct defects.
 - .3 Visually inspect enclosures at the beginning of each work shift.

Work in presence of asbestos
Exterior High Risk Work Procedure

- .4 When asked by Parks Canada, use smoke tests to verify the containment integrity.
- .6 Do not begin asbestos removal work until:
 - .1 Arrangements have been made for the disposal of waste.
 - .2 Arrangements have been made for the waste water storage, filtration and disposal for wet stripping techniques.
 - .3 Work areas and decontamination enclosures have been effectively isolated from one another.
 - .4 Tools, equipment, materials and waste containers are on site.
 - .5 Arrangements have been made for the building's security.
 - .6 Warning signs have been installed at access points to contaminated zones.
 - .7 Parks Canada gave their authorization to start work.

3.2 SECURITY FOR ELECTRICAL INSTALLATIONS

- .1 All electrical circuits of the work area must be turned off by a qualified electrician.
- .2 All electric circuits and power supplied equipment must be completely protected so no water or dust infiltration is possible.
- .3 When needed, the ceiling fixtures and other electrical equipment must be dismantled before starting the work and re-installed by a qualified electrician after the work is completed.
- .4 The Contractor must have an electrician install circuits that are protected by a Ground Fault Interrupter (GFI) for power supply of electric tools and temporary lightning. Provide a safety lightning system powered by a 24 V supply with a level of lightning of 400 lux.
- .5 The installation and equipment must comply with relevant CSA standard requirements. Ensure that lines and electrical equipment are installed safely by qualified persons.

3.3 SUPERVISION

- .1 At least one supervisor must be designated for each group of ten (10) workers or less.
- .2 One authorized supervisor must remain on site at all times when asbestos-containing materials are moved, removed or handled.

3.4 ASBESTOS REMOVAL

- .1 Prepare the site.
- .2 Spray asbestos material with water containing specified wetting agent, using spraying equipment capable of providing a "mist" to prevent the release of fibres. Saturate asbestos-containing material sufficiently to wet the substrate without causing excess dripping. Spray asbestos-containing material repeatedly during work process to maintain saturation and to minimize asbestos fibre dispersion.

Work in presence of asbestos
Exterior High Risk Work Procedure

- .3 Remove water saturated asbestos-containing material. Do not allow saturated asbestos to dry out as it is packed in sealable plastic bags of 0.15 mm of thickness for transport.
- .4 Seal filled containers. Clean external surfaces thoroughly with water. Remove containers from the asbestos removal zone and place them in the Pre-cleaning Room; clean external surfaces thoroughly again with water before moving them to the Holding Room, to the Unloading Room and then outside. Ensure that the containers are removed from the Holding Room by workers from a non-contaminated zone and that the worker is wearing a coverall that is also non-contaminated.
- .5 After removing debris and cleaning all surfaces to remove all visible traces of asbestos-containing materials, and after encapsulating asbestos-containing materials that are impossible to remove, clean the entire work area with water, including the Equipment and Access Room as well as all of the equipment. Allow air-borne asbestos dust to settle, then clean the work area and aforementioned materials with water a second time. After inspection and approval of the completion of the work by Parks Canada, apply a coat of slow drying sealing product on all treated surfaces. This operation must be followed by a period of a minimum duration of 12 hours during which work and access to site must be suspended
- .6 Work will be subject to visual inspection and air analysis. If a visual inspection or air analysis reveals that surrounding areas have been contaminated, they will be required to be completely enclosed and cleaned-up.

3.5 DISMANTLEMENT OF WORK ZONE

- .1 Start the dismantlement of the work area only once the cleaning prescribed in Article 3.3.5 of this technical specification is finished and Parks Canada authorized the dismantlement of the containment.
- .2 Remove polyethylene sheets by rolling them away from the walls to the centre of the work area. Vacuum visible asbestos containing particles and debris observed during cleanup, immediately, using a HEPA vacuum.
- .3 Place polyethylene seals, tapes, cleaning materials, clothing, and other contaminated wastes in plastic bags. Seal the waste bags and label them before disposing as asbestos waste into the containers for transport.
- .4 Clean asbestos removal zone, Equipment and Access Room, Washing Room, Shower Room and any other enclosure that is likely to be contaminated.
- .5 Clean sealed waste containers as well as all used equipment, and then in a timely manner, transport them outside the work area via the container and equipment decontamination enclosure system.
- .6 Proceed to a final check to ensure that all surfaces are free of accumulated dust or particles from the dismantling operations.
- .7 As work progresses, and to prevent exceeding available storage capacity on site, remove sealed and labelled containers containing asbestos waste, and dispose of them in an authorized disposal area in accordance with requirements of disposal authorities.

**Work in presence of asbestos
Exterior High Risk Work Procedure**

3.6 AIR MONITORING

- .1 Parks Canada must take air samples on a daily basis inside and outside of the work area enclosures in accordance with provincial regulations on occupational health and safety.
- .2 Use the results of the air analysis inside the working areas to determine the required type of respiratory devices:
 - .1 Suspend asbestos removal work if fibre levels exceed the safety factor of the respiratory devices (50 fibres/ml (cm³)) for asbestos chrysotile or actinolite fibres and 10 fibres/ml (cm³) for asbestos amosite fibres. Use a proper dust disposal method and higher safety factor in respiratory protection for workers inside enclosures.
 - .2 If the air analysis shows that areas outside the work area enclosures are contaminated, enclose these areas, maintain and clean these areas, in same manner as the ones applicable to work areas.
 - .3 In an exterior high-risk asbestos-containing material removal site, no final air testing is required by the CNESST after the work is completed.

3.7 INSPECTION

- .1 Perform an inspection of the asbestos removal area to confirm its compliance with specification and governing authority requirements. Disparity from the requirements that have not been approved in writing by Parks Canada may result in work interruption.
- .2 Parks Canada will inspect the work to ensure that the following conditions have been respected:
 - .1 Compliance to the specific procedures and materials.
 - .2 Final cleanliness of site and completion of work.
 - .3 No additional costs will be allowed for additional labour or materials required to complete the work.
- .3 Parks Canada will suspend work if asbestos particles or asbestos-containing material leaks occur outside the work area:
 - .1 Labour, equipment and additional required procedures to ensure work is completed must be provided at no cost.

END OF SECTION

**Appendix A – Characterization report
040-P-0012240-0-02-261-HI-R-0300-00 (Englobe, 2017)**



Englobe

Sols Matériaux Environnement

**Travaux publics et Services gouvernementaux Canada
(TPSGC) – Région du Québec**

**Lieu historique national du Canal-de-Saint-Ours
Saint-Ours (Québec)**

**Caractérisation des matériaux susceptibles
de contenir de l'amiante et des peintures susceptibles
de contenir du plomb**

Date : 27 septembre 2017
N/Réf. : 040-P-0012240-0-02-261-HI-R-0300-00

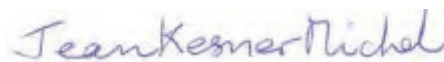
Travaux publics et Services gouvernementaux Canada (TPSGC) – Région du Québec

Lieu historique national du Canal-de-Saint-Ours Saint-Ours (Québec)

Caractérisation des matériaux susceptibles de contenir de l'amiante et des peintures susceptibles de contenir du plomb

Rapport final | 040-P-0012240-0-02-261-HI-R-0300-00

Préparé par :



Jean Kesner Michel, M. Sc. SEST

Professionnel en hygiène industrielle

Révisé et
Approuvé par :



Marie-France Malo, M. Sc. Env.

Chargée de projet – Hygiène industrielle

TABLE DES MATIÈRES

1	INTRODUCTION	1
2	DESCRIPTION GÉNÉRALE DU SITE.....	2
3	MÉTHODOLOGIE.....	3
3.1	Échantillonnage de matériaux susceptibles de contenir de l'amiante	3
3.2	Échantillonnage des peintures susceptibles de contenir du plomb	4
3.3	Observations générales et description des bâtiments ciblés.....	5
	3.3.1 <i>Atelier (25275)</i>	5
	3.3.2 <i>Entrepôt à poutrelles (25278)</i>	6
	3.3.3 <i>Entrepôt (25279)</i>	6
	3.3.4 <i>Garage (25280)</i>	6
	3.3.5 <i>Logette de contrôle amont (25281)</i>	6
	3.3.6 <i>Logette éclusier (25282)</i>	7
	3.3.7 <i>Logette de contrôle aval (25283)</i>	7
	3.3.8 <i>Maison maître-éclusier (25284)</i>	7
	3.3.9 <i>Poste de contrôle du barrage (25289)</i>	9
	3.3.10 <i>Poste de contrôle du niveau d'eau (25290)</i>	9
	3.3.11 <i>Pilier 6</i>	9
3.4	Évaluation de l'état des matériaux contenant de l'amiante.....	9
	3.4.1 <i>Matériaux ignifugeants, isolants et finis texturés pulvérisés</i>	10
	3.4.2 <i>Isolants mécaniques</i>	10
	3.4.3 <i>Matériaux non friables se comportant comme des matériaux friables</i>	11
3.5	Évaluation de l'accessibilité des matériaux contenant de l'amiante	11
3.6	Débris de matériaux contenant de l'amiante	12
	3.6.1 <i>Débris de MCA friables</i>	12
	3.6.2 <i>Débris de MCA non friables endommagés</i>	12
3.7	Liste et description des méthodes d'intervention	12
4	RÉSULTATS ET DISCUSSION	16
4.1	Matériaux susceptibles de contenir de l'amiante	16
	4.1.1 <i>Atelier (25275)</i>	16
	4.1.2 <i>Entrepôt à poutrelles (25278)</i>	17
	4.1.3 <i>Entrepôt (25279)</i>	17
	4.1.4 <i>Garage (25280)</i>	19
	4.1.5 <i>Logette de contrôle amont (25281)</i>	20
	4.1.6 <i>Logette éclusier (25282)</i>	21
	4.1.7 <i>Logette de contrôle aval (25283)</i>	23
	4.1.8 <i>Maison maître-éclusier (25284)</i>	23
	4.1.9 <i>Poste de commande du barrage (25289)</i>	32
	4.1.10 <i>Poste de contrôle du niveau d'eau (25290)</i>	34
	4.1.11 <i>Pilier 6</i>	34
4.2	Peintures susceptibles de contenir du plomb	34

5	MESURES D'INTERVENTION	37
6	CONCLUSION ET RECOMMANDATIONS.....	38
6.1	Matériaux contenant de l'amiante	38
6.2	Peintures contenant du plomb	39

Tableaux

Tableau 1 :	Description des MSCA échantillonnés dans l'atelier et résultats analytiques	16
Tableau 2 :	Description des MSCA échantillonnés dans l'entrepôt et résultats analytiques	18
Tableau 3 :	Description des MSCA échantillonnés dans le garage et résultats analytiques	19
Tableau 4 :	Description des MSCA échantillonnés dans la logette de contrôle amont et résultats analytiques.....	20
Tableau 5 :	Description des MSCA échantillonnés dans la logette de l'éclusier et résultats analytiques.....	21
Tableau 6 :	Description des MSCA échantillonnés dans la maison du maître-éclusier et résultats analytiques	23
Tableau 7 :	Description des MSCA échantillonnés dans le poste de commande du barrage et résultats analytiques	32
Tableau 8 :	Description des MSCA échantillonnés dans le poste de contrôle du niveau d'eau et résultats analytiques	34
Tableau 9 :	Résultats analytiques des PSCP échantillonnées dans les bâtiments et installations	35
Tableau 10 :	Mesures d'intervention selon la PM 057 de TPSGC	37

Annexes

Annexe 1	Relevé photographique
Annexe 2	Plans de localisation des échantillons et des MCA
Annexe 3	Formulaires d'envoi des échantillons au laboratoire
Annexe 4	Certificats d'analyses - amiante
Annexe 5	Certificats d'analyses - peinture
Annexe 6	Registre sur la gestion sécuritaire de l'amiante
Annexe 7	Clauses limitatives

Propriété et confidentialité

« Ce document d'ingénierie est la propriété d'Englobe Corp. et est protégé par la loi. Ce rapport est destiné exclusivement aux fins qui y sont mentionnées. Toute reproduction ou adaptation, partielle ou totale, est strictement prohibée sans avoir préalablement obtenu l'autorisation écrite d'Englobe et de son Client.

Si des essais ont été effectués, les résultats de ces essais ne sont valides que pour l'échantillon décrit dans le présent rapport.

Les sous-traitants d'Englobe qui auraient réalisé des travaux au chantier ou en laboratoire sont dûment qualifiés selon la procédure relative à l'approvisionnement de notre manuel qualité. Pour toute information complémentaire ou de plus amples renseignements, veuillez communiquer avec votre chargé de projet. »

REGISTRE DES RÉVISIONS ET ÉMISSIONS		
N° de révision	Date	Description de la modification et/ou de l'émission
0A	2017-03-06	Émission du rapport
00	2017-09-27	Rapport 040-P-0012240-0-02-261-HI-R-0300-00

1 INTRODUCTION

La firme Englobe Corp. (ci-après « Englobe ») a été mandatée par Travaux publics et Services gouvernementaux Canada (ci-après « TPSGC »), pour le compte de l'Agence Parcs Canada (ci-après « Parcs Canada », afin de réaliser une caractérisation des matériaux susceptibles de contenir de l'amiante (ci-après « MSCA ») et des peintures susceptibles de contenir du plomb (ci-après « PSCP ») au lieu historique national du Canal-de-Saint-Ours situé au 2930, chemin des Patriotes, à Saint-Ours au Québec. Au total, 10 bâtiments présents sur le site ont été visés par ce mandat, conformément à la liste fournie par Parcs Canada.

Les travaux de terrain ont été réalisés du 10 au 12 janvier 2017 par messieurs Jean Kesner Michel et Mathieu Courchesne, respectivement professionnel et technicien en hygiène industrielle d'Englobe. Le mandat consistait à identifier des matériaux pouvant contenir de l'amiante dans le bâtiment présent sur le site à l'étude et, le cas échéant, procéder à un échantillonnage de ces matériaux selon les recommandations de la Commission des normes, de l'équité, de la santé et la sécurité du travail (ci-après « CNESST »). Il s'agissait aussi de relever et d'échantillonner les peintures susceptibles de contenir du plomb dans les bâtiments concernés sur le site.

Ce rapport présente un résumé des observations faites lors de l'inspection des bâtiments ainsi que la méthodologie d'échantillonnage des MSCA et des PSCP, les résultats analytiques des échantillons prélevés, la conclusion et les recommandations applicables. Un relevé photographique, le plan de localisation des échantillons, les demandes d'analyses ainsi que les certificats d'analyses de laboratoire sont également insérés dans ce rapport.

2 DESCRIPTION GÉNÉRALE DU SITE

Le lieu historique national du Canada du Canal-de-Saint-Ours se trouve sur la rive est de la rivière Richelieu, à 52 km de Chambly et 23 km de Sorel au Québec. Situé dans un parc de 5 hectares, il est constitué principalement d'une écluse fermée entre la rive est de la rivière Richelieu et l'île Darvard, ainsi qu'un barrage.

Le canal de Saint-Ours a été construit à des fins commerciales par la Commission des travaux du Canada-Uni dans les années 1844-1849, mais l'écluse actuelle date des rénovations effectuées en 1930-1933. D'autres modifications ont été faites en 1960-1969 et 1974.

Description tirée du site internet Lieux patrimoniaux du Canada (www.historicplaces.ca).

3 MÉTHODOLOGIE

3.1 ÉCHANTILLONNAGE DE MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE

La méthode d'échantillonnage des MSCA consiste à prélever un morceau pour ensuite le placer dans un sac de type « Ziploc », identifié selon la localisation du point de prélèvement, la nature du matériau et un numéro séquentiel.

Matériaux non homogènes

Lors de l'échantillonnage, des matériaux mélangés sur place, par exemple, un plâtre et ciment couvrant les murs, le nombre d'échantillons nécessaires pour déterminer avec assurance qu'ils ne contiennent pas d'amiante est estimé selon les probabilités de révéler la présence d'amiante dans ces matériaux. Il est parfois difficile de déceler la présence d'amiante dans ces matériaux, car l'amiante était ajouté manuellement au mélange en petite quantité afin d'obtenir une certaine cohésion du matériau lors de l'application. Cela rend la distribution de l'amiante relativement aléatoire dans ce type de matériau.

Pour la caractérisation exhaustive des matériaux mélangés sur place, l'échantillonnage doit être effectué selon les exigences américaines décrites dans le rapport « *Statistical support document for Asbestos in Buildings : Simplified Sampling Scheme for Friable Surfacing Materials* » (EPA 560/5-85-030b, Washington, 1985) produit par la United States Environmental Protection Agency (USEPA). Cette méthode d'échantillonnage est exigée par la CNESST depuis l'adoption du *Règlement modifiant le Règlement sur la santé et la sécurité du travail* et le *Code de sécurité pour les travaux de construction* en date du 6 juin 2013. De ce fait, chaque zone présentant des similitudes d'ouvrage (ZPSO) doit être divisée en neuf sous-zones de même superficie et un échantillon du MSCA doit être prélevé dans chacune de ces sous-zones.

Ainsi, un total de neuf échantillons doit être prélevé pour chaque MSCA et mélangé sur place par ZPSO. Notez que la CNESST fait des flocages (ou isolant giclé) une exception à cette règle : pour ce type de matériau, un total de deux échantillons prélevés à chaque extrémité de la surface couverte est suffisant pour déterminer l'absence ou la présence d'amiante dans ce matériau si celui-ci apparaît uniforme et homogène.

Une ZPSO est un secteur dont les limites physiques sont définies par les matériaux identiques qui le composent et construit à une même époque.

Si un échantillon d'un type de matériau mélangé sur place s'avère contenir de l'amiante dans une ZPSO, alors tous les matériaux de nature similaire présents dans cette ZPSO doivent aussi être considérés comme contenant de l'amiante. À l'inverse, si aucun des échantillons analysés dans une ZPSO ne s'avère contenir de l'amiante, il est alors jugé que le matériau visé est exempt d'amiante dans cette ZPSO.

Matériaux homogènes

En ce qui a trait aux matériaux manufacturés (ex. : les tuiles de plancher en vinyle, gypse et composés à joint, joint d'étanchéité, matériaux goudronnés), la méthode d'échantillonnage requiert le prélèvement d'un échantillon seulement par type de matériau pour confirmer ou infirmer la présence d'amiante dans ces matériaux. Une identification positive en laboratoire fait en sorte que tous les matériaux de même nature seront déclarés comme contenant de l'amiante.

Dans la mesure où les échantillons prélevés s'avèrent tous ne pas contenir d'amiante, il est permis d'affirmer que tous les matériaux similaires trouvés dans cette même aire homogène sont aussi exempts de fibres d'amiante. Par contre, si l'un des échantillons provenant d'une aire d'échantillonnage est identifié comme contenant de l'amiante, tous les matériaux similaires présents dans cette aire d'échantillonnage seront considérés comme contenant de l'amiante.

Les échantillons des MSCA ont été analysés au laboratoire Eurofins (anciennement Exova) à Pointe-Claire, qui est dûment accrédité par l'Institut de recherche Robert-Sauvé en santé et sécurité au travail (IRSST), selon les méthodes combinées de dispersion et de microscopie à lumière polarisante (méthode 244-3 de l'IRSST). L'analyse de l'échantillon de tuile de plancher de vinyle a été faite par le laboratoire ALS à Cincinnati en Ohio (USA) qui est dûment accrédité pour réaliser l'identification des matériaux d'amiante en microscopie électronique à transmission (MET) selon la méthode ELAP (198.4).

Dans le cadre de cette étude, 152 échantillons de matériaux non homogènes et homogènes (joints de mortier de pierre et de brique, plâtre ciment, crépi de ciment, composés à joints et gypse, tuiles acoustiques au plafond et tuiles de vinyle au plancher, joints d'étanchéité, bardeaux d'asphalte) ont été prélevés sur le site et envoyés pour analyse au laboratoire. En fonction d'une demande adressée au laboratoire pour un arrêt des analyses au premier positif, un total de 144 échantillons ont été analysés.

Les formulaires de demande d'analyse des MSCA sont présentés à l'annexe 3 et les certificats d'analyse sont présentés à l'annexe 4 du présent rapport.

3.2 ÉCHANTILLONNAGE DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB

Pour chaque bâtiment, un relevé complet des PSCP est réalisé. L'échantillonnage de peinture est effectué conformément au *Guide d'échantillonnage à des fins d'analyses environnementales, cahier 8 : Échantillonnage des matières dangereuses* (MDDEP, cahier 8, 1998) et selon les lignes directrices du *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*, U.S. Department of Housing and Urban Development (HUD), Chapter 7 - Lead-Based Paint Inspection (1997).

La méthode d'échantillonnage consiste à prélever des morceaux de peinture à la surface des planchers, des murs ou de structures quelconques recouvertes de vieilles peintures de type industriel. Pour ce faire, il s'agit de gratter la surface visée ou d'en décoller un morceau à l'aide d'un marteau et d'un poinçon en acier, de manière à soulever une certaine quantité de matériau (approximativement 5 g, soit l'équivalent d'une surface d'environ 25 cm²). Pour chaque bâtiment, un seul échantillon de peinture est prélevé pour chaque couleur visuellement apparente à la surface des murs, plafonds et planchers et par secteur susceptible d'avoir été construit/rénové à une année donnée. Les morceaux de peinture récoltés sont ensuite placés dans un sac de type « Ziploc » préalablement identifié avec le numéro d'échantillon, la date et le numéro de projet. Les échantillons en vrac prélevés sont analysés par Exova à Pointe-Claire, un laboratoire indépendant détenant des accréditations dûment reconnues auprès de l'IRSST.

3.3 OBSERVATIONS GÉNÉRALES ET DESCRIPTION DES BÂTIMENTS CIBLÉS

Cette section présente les observations générales faites sur les bâtiments et installations visés par ce projet. Au total, 11 bâtiments et installations ont été inspectés sur le site du lieu historique national du Canal-de-Saint-Ours.

Du côté nord de l'écluse (sur l'Île d'Avard), on trouve la résidence du maître éclusier (aussi appelée maison du maître éclusier), l'entrepôt d'huile et d'essence, l'atelier ainsi que le kiosque de commande (aussi appelé poste de contrôle) du barrage et le poste de contrôle du niveau d'eau. Du côté sud de l'écluse, se trouvent les logettes de contrôle en amont et en aval, l'entrepôt à poutrelles, la logette de l'éclusier ainsi que le garage.

Au niveau du barrage de Saint-Ours, du côté ouest du site, on retrouve six piliers similaires. Seul le pilier 6 fait partie de la présence étude.

3.3.1 Atelier (25275)

Il s'agit d'un bâtiment de forme rectangulaire. Les murs extérieurs sont en pierres naturelles avec un joint de mortier. La toiture est constituée de bardeaux de fente et un toit plat en asphalte et gravier. La porte d'entrée est en bois avec une vitre et un grillage métallique. La porte est peinte en blanc et le cadre de porte en vert. Des joints d'étanchéité sont observés au pourtour extérieur de la porte d'entrée et au toit.

À l'intérieur, les murs sont en béton ou en contreplaqué, recouverts de peinture beige. Le plancher est en béton et le plafond en contreplaqué. Il y a un grenier accessible par une trappe situé au milieu du plafond et dans lequel se trouvent un flochage et de la laine minérale.

Dans cette étude, l'ensemble de l'atelier a été considéré comme une unique zone présentant des similitudes d'ouvrage (ZPSO).

3.3.2 Entrepôt à poutrelles (25278)

Il s'agit d'une structure souterraine en béton, non couverte, qui sert à entreposer les poutrelles. Au moment de notre inspection, les poutrelles n'étaient pas dans l'entrepôt, mais plutôt dans des abris temporaires proches où s'effectuaient des travaux de soudage. L'espace de l'entrepôt était clôturé avec une structure temporaire en acier.

Aucune présence de MSCA n'a été observée. Les poutrelles placées dans les abris sont recouvertes d'une peinture grise.

3.3.3 Entrepôt (25279)

L'entrepôt d'huile et d'essence est un bâtiment carré. Les murs extérieurs sont en pierres naturelles avec un joint de mortier. La toiture inclinée est en bardeaux de cèdre. La porte d'entrée est en bois peint en blanc et le cadre est peint en vert. Les fenêtres et les corniches sont peintes en blanc et les cadres de fenêtres en vert. Un joint d'étanchéité est présent au niveau des fenêtres.

À l'intérieur, le plancher est en béton, le plafond en bois et les murs sont recouverts d'un plâtre ciment. Certaines parties des murs sont très endommagées.

Dans cette étude, l'ensemble de l'entrepôt a été considéré comme une unique zone présentant des similitudes d'ouvrage (ZPSO).

3.3.4 Garage (25280)

Le garage est un bâtiment rectangulaire avec une toiture en bardeaux d'asphalte à deux versants. Les murs extérieurs sont en bois, peints en blanc tout comme les portes et les fenêtres. Les cadres de portes et de fenêtres sont peints en vert foncé, sauf pour une porte dont le cadre est recouvert d'une peinture vert-pâle. Des joints d'étanchéité sont observés autour des portes et des fenêtres extérieures.

À l'intérieur, les murs, planchers et plafond sont en béton.

Dans cette étude, l'ensemble du garage a été considéré comme une unique zone présentant des similitudes d'ouvrage (ZPSO).

3.3.5 Logette de contrôle amont (25281)

La logette de contrôle amont est un petit bâtiment rectangulaire situé à côté de la logette de l'éclusier. Les murs sont constitués de plastique et de vitres. Le plancher est en béton et le plafond en structure métallique.

Un joint d'étanchéité gris est observé au pourtour du mur extérieur, proche du plancher. Aucune peinture susceptible de contenir du plomb n'est présente.

Dans cette étude, l'ensemble de la logette de contrôle amont a été considéré comme une unique zone présentant des similitudes d'ouvrage (ZPSO).

3.3.6 Logette éclusier (25282)

La logette de l'éclusier est un bâtiment rectangulaire construit sur deux étages et doté d'un toit plat en asphalte. Les murs extérieurs sont en briques jointés avec un mortier. Les portes extérieures sont peintes en blanc et des joints d'étanchéité sont observés autour des portes et des fenêtres.

Au rez-de-chaussée, dans la salle de bain, les murs et les plafonds sont en gypse et le plancher en céramique. Dans le bureau, les murs et les plafonds sont en gypse et le plancher est recouvert de tuiles de vinyle 12" x 12" de couleur beige et blanc. Le plancher du couloir ainsi que l'escalier est recouvert du même type de tuiles de vinyle. En face de la porte de la salle de bain, se trouve une trappe d'environ 1 m de hauteur qui donne accès à un local qui sert d'entrepôt et de salle électrique-mécanique; dans ce local, le plancher et le plafond sont en bois et les murs en contreplaqué. On y observe des conduits de tuyauterie non isolés. Du côté est du bâtiment, se trouvent deux salles de bain dans lesquelles les murs et les plafonds sont en gypse et les planchers sont en céramique. Les bas de murs sont aussi en céramique.

À l'étage, les murs en gypse peints en bleu clair. Le plafond est en gypse peint en blanc. Le plancher est recouvert de tuiles de vinyle 12" x 12" de couleur beige et blanc, identiques à celles retrouvées dans l'escalier et le couloir du rez-de-chaussée.

Dans cette étude, l'ensemble de la logette de l'éclusier a été considéré comme une unique zone présentant des similitudes d'ouvrage (ZPSO).

3.3.7 Logette de contrôle aval (25283)

La logette de contrôle aval est un petit bâtiment rectangulaire. Les murs sont constitués de plastique et de vitres. Le plancher est en béton et le plafond en structure métallique.

Aucune présence de MSCA n'a été observée, ni de peinture susceptible de contenir du plomb.

3.3.8 Maison maître-éclusier (25284)

La maison (ou résidence) du maître éclusier est aussi appelée « résidence du surintendant ». Il s'agit d'un bâtiment comprenant un sous-sol, un rez-de-chaussée, un étage et un grenier accessible par une trappe au plafond de l'étage (au-dessus de la cage d'escalier). Les murs extérieurs sont constitués d'un matériau composite (crépi de ciment avec conglomérats de pierre et fini décoratif, sur treillis métallique). Les murs de fondation sont recouverts d'un crépi de ciment. Quelques fissures sont observées tant sur les murs périphériques qu'au niveau des murs de fondation. Des joints d'étanchéité sont présents autour des portes et fenêtres du bâtiment. La toiture est constituée de bardeaux d'asphalte.

Au sous-sol, les murs sont constitués de pierres avec du mortier. Certaines parties des murs sont recouvertes de plâtre-ciment. Les murs du sous-sol sont très endommagés par endroits. On observe la présence de tuyauteries isolées avec de la laine minérale et des coudes en PVC. Un morceau de canevas de tuyauterie d'environ 50 cm de longueur a été retrouvé au plancher, possiblement un débris qui n'a pas été correctement disposé lors des travaux antérieurs de remplacement de la tuyauterie.

Au rez-de-chaussée, les murs et le plafond sont en gypse jointé, le plancher est en bois. Selon le représentant de Parcs Canada sur place, il y avait eu des travaux de rénovation partielle dans le bâtiment. Une partie du plâtre-ciment, enlevé lors de ces travaux, a été remis à Englobe. Certains murs du rez-de-chaussée ont encore du plâtre-ciment derrière le gypse. Les murs et plafonds du rez-de-chaussée sont peints en beige. Les marches de l'escalier menant à l'étage sont peintes en gris. Aux extrémités est et ouest de la salle d'exposition au rez-de-chaussée, se trouve une cheminée avec des murs de briques et un mortier. Des salles de bain ont été réaménagées au rez-de-chaussée, accessibles par la galerie du côté est et du côté ouest. Dans ces salles de bain, les murs et les plafonds sont en gypse et les planchers sont en céramique.

L'étage comprend un bureau, un vestiaire, une cuisinette, des garde-robes ainsi qu'une salle de bain et une petite cuisine réaménagée. Dans le bureau, les murs et les plafonds sont en gypse, le plancher est recouvert de tuile de vinyle de dimension 12" x 12" de couleur brune et beige marbrée. Dans le vestiaire, les murs et les plafonds sont en gypse, le plancher est recouvert de tuiles de vinyle de dimension 9" x 9" de couleur beige tachetée brune. Ces mêmes tuiles se retrouvent dans le couloir, la cuisinette et les garde-robes. Les tuiles de plancher sont endommagées dans les garde-robes, mais en bon état dans les autres locaux. Dans la cuisinette (ou salle à manger), les murs et les plafonds sont en gypse. Dans les garde-robes, les murs et plafonds sont en plâtre-ciment sur lattes de bois. Beaucoup de dommages sont observés dans ces locaux, tant au niveau des murs qu'au plafond. Dans la salle de bain, les murs et le plafond sont en gypse et le plancher en céramique. Dans la petite cuisine devant la salle de bain, les murs sont en gypse, le plancher en céramique, mais le plafond en pente est constitué de plâtre-ciment comme dans les garde-robes. Cependant, ce plâtre-ciment est en bon état.

Dans le grenier, se trouve de la vermiculite au plancher ainsi que de la laine minérale. Un échantillon de ce matériau prélevé et analysé en janvier 2013 a révélé qu'il contient de l'amiante de type actinolite/trémolite. Le certificat d'analyse est joint au présent rapport. Le plafond et le plancher sont en bois. On observe également les murs de briques des cheminées des côtés est et ouest dans le grenier.

Dans cette étude, chaque étage de la maison du maître éclusier a été considéré comme une zone présentant des similitudes d'ouvrage (ZPSO).

3.3.9 Poste de contrôle du barrage (25289)

Aussi appelé « kiosque de commande du barrage », ce bâtiment de forme rectangulaire est situé à l'extrémité ouest de l'Île d'Avard, au bout du barrage de Saint-Ours. Les murs extérieurs sont constitués d'un revêtement métallique. La toiture est constituée de structure métallique. La porte d'entrée est recouverte d'une peinture verte des deux côtés. Un joint d'étanchéité gris est observé au pourtour des murs extérieurs.

L'intérieur du bâtiment est divisé en deux parties : un poste de commande et un local d'entreposage. Les murs sont en métal ou recouverts de contreplaqués peints en gris. Le plancher est composé d'un ciment de recouvrement, peint en gris. Le plafond est en métal. Le cadre de la porte d'entrée, du côté intérieur, est recouvert d'une peinture vert-pâle.

Dans cette étude, l'ensemble du poste de commande du barrage a été considéré comme une unique zone présentant des similitudes d'ouvrage (ZPSO).

3.3.10 Poste de contrôle du niveau d'eau (25290)

Le poste de contrôle du niveau d'eau est un petit bâtiment carré situé juste à côté du poste de commande du barrage. Les murs extérieurs sont constitués d'un revêtement métallique. La toiture est constituée de structure métallique. La porte d'entrée est recouverte d'une peinture verte. Un joint d'étanchéité gris est observé au bas du mur extérieur, en dessous de la porte.

À l'intérieur, les murs sont en préfinis; le plafond est constitué de tuiles acoustiques 12" x 12" et le plancher est en béton.

Dans cette étude, l'ensemble du poste de contrôle du niveau d'eau a été considéré comme une unique zone présentant des similitudes d'ouvrage (ZPSO).

3.3.11 Pilier 6

Le pilier 6 est de forme cylindrique composé de quatre niveaux, dont deux en dessous de la surface de la rivière. Les murs du premier niveau sont recouverts d'un isolant en polyuréthane. La porte d'entrée est peinte en vert, tout comme les barres des échelles et les tuyaux aux différents niveaux. Le reste des murs ainsi que les planchers sont en béton.

3.4 ÉVALUATION DE L'ÉTAT DES MATÉRIAUX CONTENANT DE L'AMIANTE

Selon la *Politique ministérielle 057* (PM 057) de TPSGC, Annexe C, Appendice 1 - Évaluation des matériaux contenant de l'amiante (MCA) et recommandations sur leur gestion, l'évaluation de l'état des MCA se fait comme décrit dans les sous-sections suivantes.

3.4.1 Matériaux ignifugeants, isolants et finis texturés pulvérisés

BON : La surface des matériaux ne montre pas de signes importants de dommages, de détérioration ou de décollement. Dans cette cote, la proportion maximale admissible de la surface endommagée est de 1 %. Pour évaluer l'état des matériaux ignifugeants pulvérisés, l'enquêteur doit savoir que les produits d'amiante pulvérisés présentent une surface très irrégulière. L'état des matériaux ignifugeants ou des finis texturés non encapsulés ou non peints est considéré si ces derniers ne présentent pas de signe de décollement ou de dommages et sont encapsulés, même endommagés ou décollés, lorsque l'encapsulation a été réalisée après coup.

MAUVAIS : Les matériaux pulvérisés montrent des signes de dommages, de décollement de détérioration. Plus de 1 % de la surface des MCA pulvérisés est endommagé.

Les dommages observés dans des endroits isolés peuvent entrer dans les deux catégories, soit BON et MAUVAIS. L'importance des dommages ou la proportion de la surface atteinte est enregistrée sur le formulaire d'enquête ou de réévaluation.

NOTE : La cote PASSABLE n'est pas utilisée ni considérée comme un critère valable dans l'évaluation des matériaux ignifugeants, des isolants ou des finis texturés.

L'évaluation des MCA appliqués par pulvérisation à des fins d'ignifugation et d'isolation thermique, ou les finis texturés, décoratifs ou insonorisants qui se trouvent dans les vides de plafond est parfois limitée par le nombre d'observation possible ou par la présence d'éléments du bâtiment comme des conduits ou des murs à pleine hauteur d'étage. Les personnes qui ont à pénétrer dans ces endroits doivent prendre soin de vérifier au préalable s'il n'y a pas de DÉBRIS de MCA avant de s'y engager ou de travailler dans les vides de plafond où des MCA se trouvent, quel que soit leur état.

3.4.2 Isolants mécaniques

BON : Les isolants sont entièrement entourés d'une gaine et ne montrent aucun signe apparent de dommages ou de détérioration. Aucun isolant n'est apparent. Cette cote est attribuée même si les gaines présentent des dommages superficiels mineurs (p.ex., éraflures ou taches), sans perforation.

PASSABLE : Petites perforations de la gaine des isolants (coupures, déchirures, entailles, détérioration ou décollement) ou isolants sans gaine non endommagés. L'isolant est apparent, mais ne montre pas de détérioration de sa surface. La quantité d'isolants manquants va de minime à nulle.

MAUVAIS : La gaine d'origine de l'isolant est manquante, endommagée, détériorée ou décollée. L'isolant est apparent et de grandes parties ont été déplacées. Les dommages ne peuvent être facilement réparés.

L'évaluation des isolants mécaniques est parfois limitée par le nombre d'observation possible ou par la présence d'éléments du bâtiment comme des conduits ou des murs à pleine hauteur d'étage, auquel cas, il n'est pas possible d'examiner sous tous les angles la surface entière de l'isolant.

3.4.3 Matériaux non friables se comportant comme des matériaux friables

En général, les matériaux non friables ont peu tendance à laisser échapper des fibres dans l'air, même s'ils subissent une rupture mécanique. Par contre, certains d'entre eux, par exemple les produits extérieurs d'amiante-ciment, peuvent être dans un état de détérioration tel que le liant se désagrège et libère des fibres d'amiante. Dans ce cas, les matériaux non friables très détériorés doivent être traités comme des produits friables.

3.5 ÉVALUATION DE L'ACCESSIBILITÉ DES MATÉRIAUX CONTENANT DE L'AMIANTE

Selon la *Politique ministérielle 057 (PM 057)* de TPSGC, Annexe C, Appendice 1 - Évaluation des matériaux contenant de l'amiante (MCA) et recommandations sur leur gestion, l'évaluation de l'accessibilité des matériaux contenant de l'amiante se fait comme suit :

ACCESSIBILITÉ (A) : Parties du bâtiment à la portée de tous les occupants (depuis le plancher). Comprend aussi les locaux comme les gymnases, les ateliers et les aires de stockage, dans lesquels les utilisateurs peuvent déranger les MCA qui sont normalement hors de portée depuis le plancher.

ACCESSIBILITÉ (B) : Aires réservés au personnel d'entretien et auxquelles il peut accéder sans l'aide d'une échelle, ce qui comprend les saignées, les tunnels et les aires de service ou les aires accessibles à l'aide d'une échelle fixe ou d'une passerelle, par exemple, le dessus des équipements, les mezzanines.

ACCESSIBILITÉ AUX MATÉRIAUX APPARENTS (C) : Aires du bâtiment se trouvant au-dessus de 8' de hauteur accessibles à l'aide d'une échelle. Se rapporte uniquement aux MCA exposés à la vue depuis le plancher ou une échelle, sans avoir à enlever des éléments comme les carreaux de plafond ou les trappes ou portes d'accès. Ne comprend pas les aires de service peu visitées.

ACCESSIBILITÉ AUX MATÉRIAUX DISSIMULÉS (C) : Aires du bâtiment auxquelles on a accès en enlevant des éléments, comme, entre autres, les plafonds suspendus et les panneaux d'accès des plafonds rigides. Comprend les vides sanitaires, les combles, etc., peu visités. Les observations se limitent aux matériaux visibles depuis les points d'accès.

ACCESSIBILITÉ (D) : Aires du bâtiment se trouvant derrière les plafonds rigides, les murs ou l'équipement mécanique, etc., et nécessitant la démolition de ces derniers pour atteindre les MCA. L'évaluation de l'état et de la quantité des matériaux contenant de l'amiante est limitée, voire impossible à effectuer, selon que le vérificateur peut voir ou non les matériaux.

3.6 DÉBRIS DE MATÉRIAUX CONTENANT DE L'AMIANTE

Selon la *Politique ministérielle 057 (PM 057)* de TPSGC, Annexe C, Appendice 1 - Évaluation des matériaux contenant de l'amiante (MCA) et recommandations sur leur gestion, l'évaluation des débris de matériaux contenant de l'amiante se fait tel que décrit dans les sous-sections suivantes.

3.6.1 Débris de MCA friables

Les MCA détachés sont enregistrés séparément de la source présumée de matériaux friables (matériaux ignifugeants, calorifuges, finis texturés, décoratifs ou insonorisants pulvérisés ou isolants mécaniques) et classés sous la désignation DÉBRIS.

3.6.2 Débris de MCA non friables endommagés

Les MCA détachés provenant de matériaux non friables endommagés sont enregistrés séparément de la source des MCA non friables. Seuls les MCA non friables détachés, qui sont devenus friables, sont désignés DÉBRIS. La détermination de l'emplacement exact ou de la présence de DÉBRIS sur les carreaux de plafonds est limitée par le nombre d'observation possible et la présence d'éléments du bâtiment comme les conduits ou des murs pleine hauteur d'étage. Les ouvriers doivent vérifier s'il y a des DÉBRIS avant de pénétrer dans les vides de plafond ou de travailler à proximité d'isolants mécaniques dans les aires du bâtiment où se trouvent des MCA, que des DÉBRIS aient été signalés ou non.

3.7 LISTE ET DESCRIPTION DES MÉTHODES D'INTERVENTION

Voici les mesures d'intervention exigées en vertu du Programme de gestion de l'amiante de TPSGC :

- ▶ enlèvement immédiat des DÉBRIS susceptibles d'être dérangés;
- ▶ enlèvement, réparation ou encapsulation des MCA friables dont l'état est classé BON ou PASSABLE si leur détérioration continue peut générer des DÉBRIS susceptibles d'être dérangés.

Voici les facteurs à prendre en compte lorsqu'il s'agit de recommander des mesures visant à assurer la conformité aux règlements et de mettre en œuvre le programme de gestion de l'amiante de TPSGC :

1. Les MCA en MAUVAIS état ne sont pas facilement réparables sur place. S'il est nécessaire de neutraliser les effets nocifs de l'amiante, la mesure recommandée est l'enlèvement (l'encapsulation des matériaux est une autre solution possible dans des circonstances inhabituelles).
2. Les isolants mécaniques dont l'état est jugé PASSABLE seront réparés ou enlevés selon les recommandations générales suivantes qui s'appliquent au cas par cas.
 - réparer les isolants mécaniques contenant de l'amiante dont l'état est PASSABLE et qui se trouvent dans des endroits dont la cote d'ACCESSIBILITÉ est (B) ou (C) (matériaux apparents);

- enlever les isolants mécaniques contenant de l'amiante dont l'état est PASSABLE et qui se trouvent dans des endroits dont la cote d'ACCESSIBILITÉ est (B) et (C) (matériaux apparents), si ces matériaux sont exposés à des dommages subséquents;
 - enlever les isolants mécaniques contenant de l'amiante dont l'état est PASSABLE et qui se trouvent dans des endroits dont la cote d'ACCESSIBILITÉ est (A) afin d'éliminer les risques des dommages subséquents dus aux activités des utilisateurs du bâtiment.
3. La gestion des MCA jugés en BON état qui se trouvent dans des endroits dont la cote d'ACCESSIBILITÉ est (A) peut prendre la forme d'une surveillance, aussi longtemps que ces matériaux ne seront pas dérangés par des travaux de rénovation, d'entretien ou de démolition. L'enlèvement proactif des MCA se trouvant dans des endroits à cote d'ACCESSIBILITÉ (A) sera envisagé s'ils sont exposés à des dommages dus aux activités (accidentelles ou délibérées) des occupants.
4. Les produits non friables ou les produits fabriqués sont assujettis aux mesures d'intervention suivantes :
- les produits non friables et les produits fabriqués jugés en MAUVAIS état ou les DÉBRIS friables provenant de la détérioration de MCA non friables sont traités comme des matériaux friables. La mesure d'intervention appropriée, compte tenu de leur accessibilité, est choisie dans la liste des mesures d'intervention visant les MCA friables;
 - pour les produits non friables ou les produits fabriqués jugés en BON état, on recommande la mesure n° 7 (surveillance), quelle qu'en soit l'accessibilité.
5. Enlever tous les MCA des endroits où de petites quantités d'amiante sont présentes. Cette intervention aura pour conséquence de soustraire les endroits visés par le Programme de gestion de l'amiante. Le tableau des mesures d'intervention reproduit plus bas énumère les mesures de contrôle recommandées. Une description complète des MESURES D'INTERVENTION suit dans le tableau présenté à la page suivante.

Mesures d'intervention du Programme de gestion de l'amiante de TPSGC

MESURES D'INTERVENTION				
MCA friables				
Accessibilité	Condition			Débris
	Bon	Passable	Mauvais	
(A)	Mesure 5/7 ¹	Mesure 5/6 ²	Mesure 3	Mesure 1
(B)	Mesure 7	Mesure 6/5 ³	Mesure 3	Mesure 1
(C) Apparent	Mesure 7	Mesure 6	Mesure 4	Mesure 2
(C) Dissimulé	Mesure 7	Mesure 7	Mesure 4	Mesure 2
(D)	Mesure 7	Mesure 7	Mesure 7	Mesure 7

¹ MESURE 7 exigée si les matériaux à cote d'ACCESSIBILITÉ (A) BON ÉTAT ne sont pas enlevés.

² MESURE 6 exigée si les matériaux à cote d'ACCESSIBILITÉ (A) ÉTAT PASSABLE ne sont pas enlevés.

³ Enlever les MCA à cote d'ACCESSIBILITÉ (B) ÉTAT PASSABLE qui risquent d'être dérangés.

MESURE 1 – Nettoyage immédiat des débris risquant fortement d'être dérangés

Restreindre les accès au cours desquels les DÉBRIS de MCA ont de fortes chances d'être dérangés et nettoyer immédiatement ceux-ci. Utiliser les méthodes de gestion de l'amiante adéquates. Cette mesure est prescrite dans le but d'assurer la conformité aux exigences réglementaires. L'inspecteur devrait informer immédiatement le coordonnateur régional chargé des questions d'amiante lorsque cette mesure est appliquée.

MESURE 2 – Accès dans des aires souillées par des débris de MCA – Mesures de précaution de type 2

Aux endroits où il est possible d'isoler les DÉBRIS de MCA au lieu de les enlever ou de les nettoyer, employer des moyens appropriés pour en restreindre l'accès. Restreindre aussi l'accès de ces aires aux personnes qui appliquent les mesures de précaution de type 2 et appliquer ces mesures jusqu'à ce que les DÉBRIS aient été nettoyés et leur source neutralisée ou éliminée.

MESURE 3 – Enlèvement des MCA aux fins de la conformité aux règlements

Enlever les MCA afin d'assurer la conformité aux exigences des règlements qui s'appliquent. Utiliser les méthodes qui conviennent à la portée des travaux d'enlèvement de l'amiante.

MESURE 4 – Accès aux aires où se trouvent des MCA qui risquent d'être dérangés - Mesures de précaution de type 2

Employer les mesures de précaution de type 2 lorsque l'entrée ou l'accès dans une aire risque de déranger les MCA qui s'y trouvent. Appliquer la MESURE 4 jusqu'à ce que les MCA aient été enlevés (appliquer les mesures 1 ou 2 si des DÉBRIS sont présents).

MESURE 5 – Enlèvement proactif des MCA

Enlever les MCA au lieu de les réparer, ou aux endroits où la présence d'amiante même en BON état n'est pas acceptable.

MESURE 6 – Réparation des MCA

Réparer les MCA dont l'état est jugé PASSABLE et qui ne risquent pas d'être endommagés davantage ou déplacés du simple fait que l'aire ou la pièce est occupée. Une fois les réparations terminées, traiter les MCA comme des matériaux en BON état et appliquer la MESURE 7. Si des MCA sont susceptibles d'être endommagés ou dérangés du fait de l'utilisation normale de l'aire ou de la pièce, appliquer la MESURE 5.

MESURE 7 – Surveillance régulière

Établir une surveillance régulière des MCA. Les ouvriers ou les entrepreneurs dûment formés doivent utiliser les mesures de précaution appropriées (types 1, 2 ou 3) s'ils entrent en contact avec des MCA.

4 RÉSULTATS ET DISCUSSION

4.1 MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE

4.1.1 Atelier (25275)

Les résultats analytiques de l'échantillonnage des MSCA dans l'atelier sont présentés dans le tableau 1 ci-dessous.

Tableau 1 : Description des MSCA échantillonnés dans l'atelier et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01A	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	1
TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01B	Ciment gris et brun	Extérieur du mur périphérique	Non détectée	Non	1
TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01C	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	1
TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01D	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	1
TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01E	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	1
TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01F	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	1
TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01G	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	1
TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01H	Ciment gris et brun	Extérieur du mur périphérique	Non détectée	Non	1
TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01I	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	1
TPSGC-COUR-25275-ATELIER-GRENIER-FL-02A	Laine isolante beige, grise et brune, présence de bois, de bardeau d'asphalte et de ciment	Plancher du grenier	Non détectée	Non	6
TPSGC-COUR-25275-ATELIER-GRENIER-FL-02B	Laines isolantes beiges, rose et grise, présence de bois, de carton, de revêtement goudronné, d'un treillis de filaments continus de fibres de verre et de ciment	Plancher du grenier	Non détectée	Non	6

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25275-ATELIER-EXT.-CALFEUTRAGE-03	Joint d'étanchéité blanc, présence de bois et de ciment	Pourtour de la porte d'entrée	Non détectée	Non	2
TPSGC-COUR-25275-ATELIER-EXT.-TOITURE-BARDEAU-04	Bardeau d'asphalte noir, gris et blanc	Toiture	Non détectée	Non	7
TPSGC-COUR-25275-ATELIER-EXT.-TOITURE-JE-05	Joint d'étanchéité brun, présence de ciment	Toiture	Non détectée	Non	8

Selon ces résultats :

- ▶ les neuf échantillons de joints de mortier (TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01A@ 01I) prélevés sur l'extérieur des murs périphériques de l'atelier ne contiennent pas d'amiante. Par conséquent, il est considéré que les joints de mortier de pierre sur l'extérieur des murs périphériques de l'atelier ne contiennent pas d'amiante;
- ▶ les deux échantillons de flocage (TPSGC-COUR-25275-ATELIER-GRENIER-FL-02A et TPSGC-COUR-25275-ATELIER-GRENIER-FL-02B) prélevés au plancher du grenier ne contiennent pas d'amiante. Par conséquent, il est considéré que le flocage présent dans le grenier de l'atelier ne contient pas d'amiante;
- ▶ l'échantillon de joint d'étanchéité blanc (TPSGC-COUR-25275-ATELIER-EXT.-CALFEUTRAGE-03) prélevé au pourtour extérieur de la porte d'entrée ne contient pas d'amiante; par conséquent, il est considéré que les joints d'étanchéité blancs présents dans l'atelier ne contiennent pas d'amiante;
- ▶ l'échantillon de bardeau d'asphalte (TPSGC-COUR-25275-ATELIER-EXT.-TOITURE-BARDEAU-04) prélevé au niveau de la toiture ne contient pas d'amiante. Par conséquent, il est considéré que la toiture de l'atelier recouverte de bardeau d'asphalte ne contient pas d'amiante;
- ▶ l'échantillon de joint d'étanchéité noir (TPSGC-COUR-25275-ATELIER-EXT.-TOITURE-JE-05) prélevé sur le toit ne contient pas d'amiante. Par conséquent, il est considéré que les joints d'étanchéité noirs présents dans l'atelier ne contiennent pas d'amiante.

4.1.2 Entrepôt à poutrelles (25278)

Aucun échantillon de MSCA n'a été prélevé dans l'entrepôt à poutrelles, car aucun MSCA n'a été observé.

4.1.3 Entrepôt (25279)

Les résultats analytiques de l'échantillonnage des MSCA dans l'entrepôt sont présentés dans le tableau 2 ci-dessous.

Tableau 2 : Description des MSCA échantillonnés dans l'entrepôt et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01A	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	11
TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01B	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	11
TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01C	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	11
TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01D	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	11
TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01E	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	11
TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01F	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	11
TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01G	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	11
TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01H	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	11
TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01I	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	11
TPSGC-COUR-25279-ENTREPÔT-P/C-M-02A	Ciment gris et brun et plâtre blanc	Mur périphérique	Non détectée	Non	16, 17 et 18
TPSGC-COUR-25279-ENTREPÔT-P/C-M-02B	Ciment gris et brun et plâtre blanc	Mur périphérique	Non détectée	Non	16, 17 et 18
TPSGC-COUR-25279-ENTREPÔT-P/C-M-02C	Ciment gris et brun et plâtre blanc	Mur périphérique	Non détectée	Non	16, 17 et 18
TPSGC-COUR-25279-ENTREPÔT-P/C-M-02D	Ciment gris et brun et plâtre blanc et beige	Mur périphérique	Non détectée	Non	16, 17 et 18
TPSGC-COUR-25279-ENTREPÔT-P/C-M-02E	Ciment gris et brun et plâtre blanc	Mur périphérique	Non détectée	Non	16, 17 et 18
TPSGC-COUR-25279-ENTREPÔT-P/C-M-02F	Ciment gris, brun et vert, présence de plâtre	Mur périphérique	Non détectée	Non	16, 17 et 18
TPSGC-COUR-25279-ENTREPÔT-P/C-M-02G	Ciment gris et brun et plâtre blanc	Mur périphérique	Non détectée	Non	16, 17 et 18
TPSGC-COUR-25279-ENTREPÔT-P/C-M-02H	Ciment gris et brun et plâtre blanc et beige	Mur périphérique	Non détectée	Non	16, 17 et 18
TPSGC-COUR-25279-ENTREPÔT-P/C-M-02I	Ciment gris et brun, présence de plâtre	Mur périphérique	Non détectée	Non	16, 17 et 18

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25279-ENTREPÔT-EXT.-FENÊTRE-JE-03	Joint d'étanchéité beige, gris et brun	Pourtour extérieur de fenêtre	Non détectée	Non	12

Selon ces résultats :

- ▶ les neuf échantillons de joints de mortier (TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01A@ 01I) prélevés sur l'extérieur des murs périphériques ne contiennent pas d'amiante. Par conséquent, il est considéré que les joints de mortier de pierre sur l'extérieur des murs périphériques de l'entrepôt ne contiennent pas d'amiante;
- ▶ les neuf échantillons de plâtre-ciment (TPSGC-COUR-25279-ENTREPÔT-P/C-M-02A@ 02I) prélevés sur les murs périphériques ne contiennent pas d'amiante. Par conséquent, il est considéré que les murs périphériques de l'entrepôt recouverts de plâtre-ciment ne contiennent pas d'amiante;
- ▶ l'échantillon de joint d'étanchéité beige (TPSGC-COUR-25279-ENTREPÔT-EXT.-FENÊTRE-JE-03) prélevé au pourtour extérieur d'une fenêtre ne contient pas d'amiante. Par conséquent, il est considéré que les joints d'étanchéité beiges au pourtour des fenêtres de l'entrepôt ne contiennent pas d'amiante.

4.1.4 Garage (25280)

Les résultats analytiques de l'échantillonnage des MSCA dans le garage sont présentés dans le tableau 3 ci-dessous.

Tableau 3 : Description des MSCA échantillonnés dans le garage et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25280-GARAGE-EXT-JE BLANC-01	Joint d'étanchéité blanc, beige et gris	Pourtour extérieur de porte	Non détectée	Non	22
TPSGC-COUR-25280-GARAGE-EXT-JE BEIGE-02	Joint d'étanchéité beige, gris et vert	Pourtour extérieur de porte	Non détectée	Non	N/A
TPSGC-COUR-25280-GARAGE-EXT-JE VERT-03	Joint d'étanchéité vert, présence de mousse isolante	Pourtour extérieur de porte	Non détectée	Non	N/A
TPSGC-COUR-25280-GARAGE-EXT-FENÊTRE-JE BLANC-04	Matériau beige et brun	Pourtour extérieur de fenêtre	Non détectée	Non	21
TPSGC-COUR-25280-GARAGE-TOIT-BARDEAU-05	Bardeau d'asphalte noir, gris et blanc	Toiture	Non détectée	Non	20

Selon ces résultats :

- ▶ l'échantillon de joint d'étanchéité blanc (TPSGC-COUR-25280-GARAGE-EXT-JE BLANC-01) prélevé au pourtour extérieur d'une porte ne contient pas d'amiante. Par conséquent, il est considéré que les joints d'étanchéité blancs au pourtour des portes du garage contiennent pas d'amiante;
- ▶ l'échantillon de joint d'étanchéité beige (TPSGC-COUR-25280-GARAGE-EXT-JE BEIGE-02) prélevé au pourtour extérieur d'une porte ne contient pas d'amiante. Par conséquent, il est considéré que les joints d'étanchéité beiges au pourtour des portes du garage contiennent pas d'amiante;
- ▶ l'échantillon de joint d'étanchéité blanc (TPSGC-COUR-25280-GARAGE-EXT-JE VERT-03) prélevé au pourtour extérieur d'une porte ne contient pas d'amiante. Par conséquent, il est considéré que les joints d'étanchéité vert au pourtour des portes du garage contiennent pas d'amiante;
- ▶ l'échantillon de joint d'étanchéité blanc (TPSGC-COUR-25280-GARAGE-EXT-FENÊTRE-JE BLANC-04) prélevé au pourtour extérieur d'une porte ne contient pas d'amiante. Par conséquent, il est considéré que les joints d'étanchéité blancs au pourtour des portes du garage contiennent pas d'amiante;
- ▶ l'échantillon de bardeau d'asphalte (TPSGC-COUR-25280-GARAGE-TOIT-BARDEAU-05) prélevé au niveau de la toiture ne contient pas d'amiante. Par conséquent, il est considéré que la toiture du garage recouverte de bardeau d'asphalte ne contient pas d'amiante.

4.1.5 Logette de contrôle amont (25281)

Les résultats analytiques de l'échantillonnage des MSCA dans la logette de contrôle amont sont présentés dans le tableau 4 ci-dessous.

Tableau 4 : Description des MSCA échantillonnés dans la logette de contrôle amont et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25281-LOGETTE DE CONTRÔLE-AMONT-J.E.-01	Joint d'étanchéité gris	Pourtour extérieur du mur (bas de mur)	0,1-1 % Chrysotile	Oui	30

Selon ces résultats :

- ▶ l'échantillon de joint d'étanchéité (TPSGC-COUR-25281-LOGETTE DE CONTRÔLE-AMONT-J.E.-01) prélevé au pourtour du mur périphérique (bas de mur) contient de 0,1 à 1 % de fibres d'amiante de type chrysotile. Par conséquent, il est considéré que les joints d'étanchéité gris présents autour des murs périphériques de la logette de contrôle amont contiennent de l'amiante.

4.1.6 Logette éclusier (25282)

Les résultats analytiques de l'échantillonnage des MSCA dans la logette de l'éclusier sont présentés dans le tableau 5 ci-après.

Tableau 5 : Description des MSCA échantillonnés dans la logette de l'éclusier et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC- Cour-25282- Logette-RDC-PL-TVA- 01	Tuile de vinyle beige et brune 12 x 12	Plancher du rez-de-chaussée	Non détectée	Non	N/A
TPSGC-COUR-25282- LOGETTE-RDC-TOILETTE- CÀJ-PF-02	Composés à joints beiges, présence de cartons et d'un treillis de filaments continus de fibres de verre	Plafond salle de bain au rez-de-chaussée	Non détectée	Non	36
TPSGC-COUR-25282- LOGETTE-RDC-BUREAU- CÀJ-MUR-03	Gypse beige et composés à joints beiges, présence de carton	Mur du bureau au rez-de-chaussée	Non détectée	Non	38
TPSGC-COUR-25282- LOGETTE-EXT-MORTIER- 04A	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	33
TPSGC-COUR-25282- LOGETTE-EXT-MORTIER- 04B	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	33
TPSGC-COUR-25282- LOGETTE-EXT-MORTIER- 04C	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	33
TPSGC-COUR-25282- LOGETTE-EXT-MORTIER- 04D	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	33
TPSGC-COUR-25282- LOGETTE-EXT-MORTIER- 04E	Ciment gris	Extérieur du mur périphérique	Non détectée	Non	33
TPSGC-COUR-25282- LOGETTE-EXT-MORTIER- 04F	Ciment gris et brun, présence de terre cuite	Extérieur du mur périphérique	Non détectée	Non	33
TPSGC-COUR-25282- LOGETTE-EXT-MORTIER- 04G	Ciment gris, présence de terre cuite	Extérieur du mur périphérique	Non détectée	Non	33
TPSGC-COUR-25282- LOGETTE-EXT-MORTIER- 04H	Ciment gris, présence de terre cuite	Extérieur du mur périphérique	Non détectée	Non	33
TPSGC-COUR-25282- LOGETTE-EXT-MORTIER- 04I	Ciment gris, présence de terre cuite	Extérieur du mur périphérique	Non détectée	Non	33
TPSGC- Cour-25282- Logette-RDC-PL- TVA- 05	Tuile de vinyle blanche 12 x 12	Plancher du rez-de-chaussée	Non détectée	Non	37 et 41

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25282-LOGETTE-TOIT-EXT-BARDEAU-06	Bardeau d'asphalte noir, gris, blanc et brun	Toiture	Non détectée	Non	34
TPSGC-COUR-25282-LOGETTE-EXT-JE BLANC-07	Joint d'étanchéité blanc, gris et brun, présence de ciment	Pourtour de porte	Non détectée	Non	33
TPSGC-COUR-25282-LOGETTE-EXT-JE GRIS-08	Joints d'étanchéité gris	Pourtour extérieur de fenêtre	Non détectée	Non	32
TPSGC-COUR-25282-LOGETTE-EXT-JE CLAIR-09	Joint d'étanchéité translucide, gris et vert	Pourtour porte étage	Non détectée	Non	44
TPSGC-COUR-25282-LOGETTE-EXT-JE BRUN-10	Joint d'étanchéité brun, présence de terre cuite	Pourtour des portes des deux salles de bains	Non détectée	Non	N/A

Selon ces résultats :

- ▶ l'échantillon de tuile de vinyle de dimension 12" x 12" de couleur beige et brune (TPSGC-COUR-25282-LOGETTE-RDC-PL-TVA-01) prélevé au plancher du couloir au rez-de-chaussée ne contient pas d'amiante. Par conséquent, il est considéré que les tuiles de vinyle de même dimension et de même couleur au plancher de la logette de l'éclusier ne contiennent pas d'amiante;
- ▶ l'échantillon de gypse et composé à joint (TPSGC-COUR-25282-LOGETTE-RDC-TOILETTE-CAJ-PF-02) prélevé au plafond de la salle de bain au rez-de-chaussée ne contient pas d'amiante. Par conséquent, il est considéré que les plafonds de gypse de la logette de l'éclusier ne contiennent pas d'amiante;
- ▶ l'échantillon de gypse et composé à joint (TPSGC-COUR-25282-LOGETTE-RDC-BUREAU-CAJ-MUR-03) prélevé au mur du bureau au rez-de-chaussée ne contient pas d'amiante. Par conséquent, il est considéré que les murs de gypse de la logette de l'éclusier ne contiennent pas d'amiante;
- ▶ les neuf échantillons de mortier de brique (TPSGC-COUR-25282-LOGETTE-EXT-MORTIER-04A @ 04I) prélevés sur l'extérieur des murs périphériques ne contiennent pas d'amiante. Par conséquent, il est considéré que le mortier de brique des murs périphériques de la logette de l'éclusier ne contiennent pas d'amiante;
- ▶ l'échantillon de tuile de vinyle de dimension 12 pouces x 12 pouces de couleur blanche (TPSGC-COUR-25282-LOGETTE-RDC-PL-TVA-05) prélevé au plancher du couloir au rez-de-chaussée ne contient pas d'amiante. Par conséquent, il est considéré que les tuiles de vinyle de même dimension et de même couleur au plancher de la logette de l'éclusier ne contiennent pas d'amiante;

- ▶ l'échantillon de bardeau d'asphalte (TPSGC-COUR-25282-LOGETTE-TOIT-BARDEAU-06) prélevé sur la toiture ne contient pas d'amiante. Par conséquent, il est considéré que la toiture de la logette de l'éclusier constituée de bardeaux d'asphalte ne contient pas d'amiante;
- ▶ l'échantillon de joint d'étanchéité blanc (TPSGC-COUR-25282-LOGETTE-EXT-JE BLANC-07) prélevé au pourtour extérieur d'une porte au rez-de-chaussée ne contient pas d'amiante. Par conséquent, il est considéré que les joints d'étanchéité blancs au pourtour des portes de la logette de l'éclusier ne contiennent pas d'amiante;
- ▶ l'échantillon de joint d'étanchéité gris (TPSGC-COUR-25282-LOGETTE-EXT-JE GRIS-08) prélevé au pourtour extérieur d'une fenêtre ne contient pas d'amiante. Par conséquent, il est considéré que les joints d'étanchéité gris au pourtour des fenêtres de la logette de l'éclusier ne contiennent pas d'amiante;
- ▶ l'échantillon de joint d'étanchéité clair (TPSGC-COUR-25282-LOGETTE-EXT-JE CLAIR-09) prélevé au pourtour extérieur de la porte de l'étage ne contient pas d'amiante. Par conséquent, il est considéré que les joints d'étanchéité clair au pourtour des portes de la logette de l'éclusier ne contiennent pas d'amiante;
- ▶ l'échantillon de joint d'étanchéité brun (TPSGC-COUR-25282-LOGETTE-EXT-JE BRUN-10) prélevé au pourtour extérieur d'une porte de salle de bain au rez-de-chaussée ne contient pas d'amiante. Par conséquent, il est considéré que les joints d'étanchéité bruns au pourtour des portes de la logette de l'éclusier ne contiennent pas d'amiante.

4.1.7 Logette de contrôle aval (25283)

Aucun échantillon de matériau susceptible de contenir de l'amiante n'a été prélevé dans la logette de contrôle aval, car aucun MSCA n'y a été observé.

4.1.8 Maison maître-éclusier (25284)

Les résultats analytiques de l'échantillonnage des MSCA dans la maison du maître-éclusier de l'éclusier sont présentés dans le tableau 6 ci-dessous.

Tableau 6 : Description des MSCA échantillonnés dans la maison du maître-éclusier et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25284-RÉSIDENTE ME-SS-MORTIER-M-01A	Ciment gris et blanc	Mur sous-sol	Non détectée	Non	53
TPSGC-COUR-25284-RÉSIDENTE ME-SS-MORTIER-M-01B	Ciment gris, blanc et beige	Mur sous-sol	Non détectée	Non	53

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01C	Ciment gris, blanc, beige et brun	Mur sous-sol	Non détectée	Non	53
TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01D	Ciment gris, blanc et brun	Mur sous-sol	Non détectée	Non	53
TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01E	Ciment gris et blanc	Mur sous-sol	Non détectée	Non	53
TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01F	Ciment gris et blanc	Mur sous-sol	Non détectée	Non	53
TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01G	Ciment gris et blanc	Mur sous-sol	Non détectée	Non	53
TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01H	Ciment gris, blanc et brun	Mur sous-sol	Non détectée	Non	53
TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01I	Ciment gris, blanc et brun	Mur sous-sol	Non détectée	Non	53
TPSGC-COUR-25284-RÉSIDENCE ME-SS-P/C-M-02A	Ciment gris et brun et plâtre blanc et beige	Mur sous-sol	Non détectée	Non	51
TPSGC-COUR-25284-RÉSIDENCE ME-SS-P/C-M-02B	Ciment gris et brun et plâtre blanc et beige	Mur sous-sol	Non détectée	Non	51
TPSGC-COUR-25284-RÉSIDENCE ME-SS-P/C-M-02C	Ciment gris et plâtre blanc et beige	Mur sous-sol	Non détectée	Non	51
TPSGC-COUR-25284-RÉSIDENCE ME-SS-P/C-M-02D	Ciment gris et brun et plâtre blanc et beige	Mur sous-sol	Non détectée	Non	51
TPSGC-COUR-25284-RÉSIDENCE ME-SS-P/C-M-02E	Ciment gris et plâtre blanc et beige	Mur sous-sol	Non détectée	Non	51
TPSGC-COUR-25284-RÉSIDENCE ME-SS-P/C-M-02F	Ciment gris et brun et plâtre blanc et beige	Mur sous-sol	Non détectée	Non	51
TPSGC-COUR-25284-RÉSIDENCE ME-SS-P/C-M-02G	Ciment gris et brun et plâtre blanc et beige	Mur sous-sol	Non détectée	Non	51
TPSGC-COUR-25284-RÉSIDENCE ME-SS-P/C-M-02H	Ciment gris et brun et plâtre blanc	Mur sous-sol	Non détectée	Non	51

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25284-RÉSIDENCE ME-SS-P/C-M-02I	Ciment gris et brun et plâtre blanc, beige et gris	Mur sous-sol	Non détectée	Non	51
TPSGC-COUR-25284-RÉSIDENCE ME-SS-DÉBRIS CANEVAS-03	Carton gris et brun (papier-amiante), présence de laines isolantes	Débris au plancher du sous-sol	0,1-1 % Chrysotile	Oui	52
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-CÀJ-M-04	Gypse beige et composé à joints beige, présence de carton	Mur rez-de-chaussée	Non détectée	Non	55
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-CÀJ-PF-05	Composés à joints beiges, présence de carton	Plafond rez-de-chaussée	Non détectée	Non	56
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06A	Ciment gris, blanc et brun	Mur rez-de-chaussée	Non détectée	Non	N/A
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06B	Ciment gris, blanc et brun	Mur rez-de-chaussée	Non détectée	Non	N/A
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06C	Ciment gris, blanc et brun	Mur rez-de-chaussée	Non détectée	Non	N/A
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06D	Ciment gris, blanc et brun	Mur rez-de-chaussée	Non détectée	Non	N/A
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06E	Ciment gris et brun et plâtre blanc, beige et gris	Mur rez-de-chaussée	Non détectée	Non	N/A
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06F	Ciment gris et blanc	Mur rez-de-chaussée	Non détectée	Non	N/A
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06G	Ciment gris, blanc et brun et plâtre blanc et beige	Mur rez-de-chaussée	Non détectée	Non	N/A
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06H	Ciments gris, blanc et brun et plâtre blanc et beige	Mur rez-de-chaussée	Non détectée	Non	N/A
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06I	Ciment gris, blanc et brun et plâtre blanc et beige	Mur rez-de-chaussée	Non détectée	Non	N/A
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07A	Ciment gris, présence de terre cuite	Mur de brique cheminée rez-de-chaussée	Non détectée	Non	57

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07B	Ciment gris, présence de terre cuite	Mur de brique cheminée rez-de-chaussée	Non détectée	Non	57
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07C	Terre cuite rouge et ciment gris	Mur de brique cheminée rez-de-chaussée	Non détectée	Non	57
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07D	Ciments gris, présence de terre cuite	Mur de brique cheminée rez-de-chaussée	Non détectée	Non	57
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07E	Ciment gris, présence de terre cuite	Mur de brique cheminée rez-de-chaussée	Non détectée	Non	57
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07F	Terre cuite rouge et ciment gris, présence de bois, de carton et de mousse isolante	Mur de brique cheminée rez-de-chaussée	Non détectée	Non	57
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07G	Ciment gris et brun	Mur de brique cheminée rez-de-chaussée	Non détectée	Non	57
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07H	Ciment gris et brun	Mur de brique cheminée rez-de-chaussée	Non détectée	Non	57
TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07I	Ciment gris, présence de terre cuite	Mur de brique cheminée rez-de-chaussée	Non détectée	Non	57
TPSGC-Cour-25284-Résidence ME-TVA-08	Tuile de vinyle marbrée brune et beige	Plancher bureau à l'étage	Non détectée	Non	N/A
TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09A	Ciment gris et brun et plâtre blanc	Mur garde-robes à l'étage	Non détectée	Non	62
TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09B	Ciment gris et brun et plâtre blanc	Mur garde-robes à l'étage	Non détectée	Non	62
TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09C	Ciment gris et plâtre blanc et gris	Mur garde-robes à l'étage	Non détectée	Non	62
TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09D	Ciment gris et plâtre blanc et gris	Mur garde-robes à l'étage	Non détectée	Non	62
TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09E	Ciment gris et brun et plâtre blanc et gris	Mur garde-robes à l'étage	Non détectée	Non	62
TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09F	Ciment gris et plâtre blanc et gris	Mur garde-robes à l'étage	Non détectée	Non	62

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25284-RÉSIDENTE ME-ÉTAGE-P/C-M-09G	Ciment gris et plâtre blanc et gris	Mur garde-robes à l'étage	Non détectée	Non	62
TPSGC-COUR-25284-RÉSIDENTE ME-ÉTAGE-P/C-M-09H	Ciment gris et brun et plâtre blanc et gris	Mur garde-robes à l'étage	Non détectée	Non	62
TPSGC-COUR-25284-RÉSIDENTE ME-ÉTAGE-P/C-M-09I	Ciment gris et plâtre blanc et gris	Mur garde-robes à l'étage	Non détectée	Non	62
TPSGC-COUR-25284-RÉSIDENTE ME-ÉTAGE-P/C-PF-10A	Ciment gris et brun et plâtre blanc et gris	Plafond petite cuisine à l'étage	Non détectée	Oui, en raison de l'échantillon 10G	61
TPSGC-COUR-25284-RÉSIDENTE ME-ÉTAGE-P/C-PF-10B	Ciment gris et brun et plâtre blanc et gris	Plafond petite cuisine à l'étage	Non détectée	Oui, en raison de l'échantillon 10G	61
TPSGC-COUR-25284-RÉSIDENTE ME-ÉTAGE-P/C-PF-10C	Ciment gris et brun et plâtre blanc et gris	Plafond garde-robes à l'étage	Non détectée	Oui, en raison de l'échantillon 10G	61
TPSGC-COUR-25284-RÉSIDENTE ME-ÉTAGE-P/C-PF-10D	Ciment gris et brun et plâtre blanc	Plafond garde-robes à l'étage	Non détectée	Oui, en raison de l'échantillon 10G	61
TPSGC-COUR-25284-RÉSIDENTE ME-ÉTAGE-P/C-PF-10E	Ciment gris et brun et plâtre blanc et beige	Plafond garde-robes à l'étage	Non détectée	Oui, en raison de l'échantillon 10G	61
TPSGC-COUR-25284-RÉSIDENTE ME-ÉTAGE-P/C-PF-10F	Ciment gris et brun et plâtre blanc et beige	Plafond garde-robes à l'étage	Non détectée	Oui, en raison de l'échantillon 10G	61
TPSGC-COUR-25284-RÉSIDENTE ME-ÉTAGE-P/C-PF-10G	Ciment gris et brun, plâtre blanc et beige et composé à joints beige	Plafond garde-robes à l'étage	0,1-1 % chrysotile (phase composé à joint)	Oui	61
TPSGC-COUR-25284-RÉSIDENTE ME-ÉTAGE-P/C-PF-10H	Ciment gris et brun et plâtre blanc et gris	Plafond garde-robes à l'étage	Non détectée	Oui, en raison de l'échantillon 10G	61
TPSGC-COUR-25284-RÉSIDENTE ME-ÉTAGE-P/C-PF-10I	Ciment gris et brun, plâtre blanc et gris et composé à joints beige	Plafond garde-robes à l'étage	Non détectée	Oui, en raison de l'échantillon 10G	61

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25284-RÉSIDENTE ME-ÉTAGE-CÀJ-PF-11	Gypse beige, composé à joints beige et matériau beige, présence de carton et d'un treillis de filaments continus de fibres de verre	Plafond du vestiaire à l'étage	Non détectée	Non	60
TPSGC-COUR-25284-RÉSIDENTE ME-ÉTAGE-CÀJ-M-12	Gypse beige et composé à joints beige, présence de cartons	Mur du vestiaire à l'étage	Non détectée	Non	60
TPSGC-Cour-25284-Résidence ME-TVA-13	Tuile de vinyle beige tachetée brun 9 x 9	Plancher garde-robes à l'étage	0,3054 % Chrysotile	Oui	59
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-MUR FONDATION-CRÉPI-14A	Ciment gris et brun	Extérieur mur fondation	Traces (moins de 0,1%)	Non	50
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-MUR FONDATION-CRÉPI-14B	Ciment gris et brun	Extérieur mur fondation	Non détectée	Non	50
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-MUR FONDATION-CRÉPI-14C	Ciment gris et brun	Extérieur mur fondation	Non détectée	Non	50
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-MUR FONDATION-CRÉPI-14D	Ciment gris et brun	Extérieur mur fondation	Non détectée	Non	50
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-MUR FONDATION-CRÉPI-14E	Ciment gris et brun	Extérieur mur fondation	Non détectée	Non	50
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-MUR FONDATION-CRÉPI-14F	Ciment gris et brun	Extérieur mur fondation	Non détectée	Non	50
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-MUR FONDATION-CRÉPI-14G	Ciments gris, bruns et blanc	Extérieur mur fondation	Non détectée	Non	50
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-MUR FONDATION-CRÉPI-14H	Ciment gris et brun	Extérieur mur fondation	Non détectée	Non	50
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-MUR FONDATION-CRÉPI-14I	Ciment gris et brun	Extérieur mur fondation	Non détectée	Non	50
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-M-15A	Ciment gris et brun et fini décoratif blanc, gris et brun	Extérieur murs périphériques	1-5 % chrysotile (phase fini décoratif)	Oui	49
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-M-15B	Ciment gris et brun et fini décoratif blanc, gris et brun	Extérieur murs périphériques	Échantillon non analysé	Oui, en fonction de l'échantillon 15A	49

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-M-15C	Ciment gris et brun et fini décoratif blanc, gris et brun	Extérieur murs périphériques	Échantillon non analysé	Oui, en fonction de l'échantillon 15A	49
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-M-15D	Ciment gris et brun et fini décoratif blanc, gris et brun	Extérieur murs périphériques	Échantillon non analysé	Oui, en fonction de l'échantillon 15A	49
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-M-15E	Ciment gris et brun et fini décoratif blanc, gris et brun	Extérieur murs périphériques	Échantillon non analysé	Oui, en fonction de l'échantillon 15A	49
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-M-15F	Ciment gris et brun et fini décoratif blanc, gris et brun	Extérieur murs périphériques	Échantillon non analysé	Oui, en fonction de l'échantillon 15A	49
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-M-15G	Ciment gris et brun et fini décoratif blanc, gris et brun	Extérieur murs périphériques	Échantillon non analysé	Oui, en fonction de l'échantillon 15A	49
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-M-15H	Ciment gris et brun et fini décoratif blanc, gris et brun	Extérieur murs périphériques	Échantillon non analysé	Oui, en fonction de l'échantillon 15A	49
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-M-15I	Ciment gris et brun et fini décoratif blanc, gris et brun	Extérieur murs périphériques	Échantillon non analysé	Oui, en fonction de l'échantillon 15A	49
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-JE-FENÊTRE-16	Joints d'étanchéité gris et beige et revêtement goudronné noir	Pourtour extérieur fenêtre	0,1-1 % chrysotile (phase joint d'étanchéité) 5-10 % chrysotile (phase revêtement goudronné)	Oui	N/A
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-BARDEAU-TOIT-17	Bardeau d'asphalte noir, gris, brun et bleu	Toiture	Non détectée	Non	N/A
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-JE-18	Joint d'étanchéité translucide et fini décoratif blanc, gris et vert	Pourtour extérieur fenêtre	1-5 % chrysotile (phase fini décoratif)	Oui	N/A
TPSGC-COUR-25284-RÉSIDENTE ME-EXT.-JE-19	Matériau beige et gris	Pourtour extérieur fenêtre	Non détectée	Non	N/A

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
001-Vermiculite (réf. Laboratoire Pinchin Environnemental)	Matériau Homogène, gris, beige et brun, fragments en vrac, matériau ayant l'apparence du mica	Grenier étage	0,1-1 % actinolite/tré molite	Oui	64

Selon ces résultats :

- ▶ les neuf échantillons de mortier de pierres (TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01A @ 011) prélevés sur les murs du sous-sol ne contiennent pas d'amiante. Par conséquent, il est considéré que le mortier de pierres des murs du sous-sol de la maison du maître éclusier ne contiennent pas d'amiante;
- ▶ les neuf échantillons de plâtre-ciment (TPSGC-COUR-25284-RÉSIDENCE ME-SS-P/C-M-02A @ 021) prélevés sur les murs du sous-sol ne contiennent pas d'amiante. Par conséquent, il est considéré que les murs du sous-sol de la maison du maître éclusier recouverts de plâtre-ciment ne contiennent pas d'amiante;
- ▶ **l'échantillon de canevas (TPSGC-COUR-25284- RÉSIDENCE ME-SS-DÉBRIS CANEVAS-03) retrouvé au plancher du sous-sol contient 0,1 à 1 % de fibres d'amiante de type chrysotile. Par conséquent, il est considéré que le morceau de canevas d'environ 50 cm de long retrouvé au plancher du sous-sol contient de l'amiante;**
- ▶ l'échantillon de gypse et composé à joint (TPSGC-COUR-2528-RÉSIDENCE ME-RDC-CAJ-M-04) prélevé au mur de la salle d'exposition au rez-de-chaussée ne contient pas d'amiante. Par conséquent, il est considéré que les murs de gypse du rez-de-chaussée de la maison du maître éclusier ne contiennent pas d'amiante;
- ▶ l'échantillon de gypse et composé à joint (TPSGC-COUR-2528-RÉSIDENCE ME-RDC-CAJ-PF-05) prélevé au plafond de la salle d'exposition au rez-de-chaussée ne contient pas d'amiante. Par conséquent, il est considéré que les plafonds de gypse du rez-de-chaussée de la maison du maître éclusier ne contiennent pas d'amiante;
- ▶ les neuf échantillons de plâtre-ciment (TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06A @ 061) prélevés sur les murs du rez-de-chaussée ne contiennent pas d'amiante. Par conséquent, il est considéré que les murs du rez-de-chaussée en plâtre-ciment de la maison du maître éclusier ne contiennent pas d'amiante;
- ▶ les neuf échantillons de mortier de briques (TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-07A @ 071) prélevés sur les deux bases de cheminée du rez-de-chaussée ne contiennent pas d'amiante. Par conséquent, il est considéré que le mortier de brique des murs de cheminée au rez-de-chaussée de la maison du maître éclusier ne contient pas d'amiante;

- ▶ l'échantillon de tuile de vinyle de dimension 12" x 12" de couleur beige et brune (TPSGC-COUR-25284-RÉSIDENCE ME-PL-TVA-08) prélevé au plancher du bureau à l'étage ne contient pas d'amiante. Par conséquent, il est considéré que les tuiles de vinyle de même dimension et de même couleur au plancher de l'étage de la logette de l'éclusier ne contiennent pas d'amiante;
- ▶ les neuf échantillons de plâtre-ciment (TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09A @ 09I) prélevés sur certains murs de l'étage ne contiennent pas d'amiante. Par conséquent, il est considéré que les murs de l'étage recouverts de plâtre-ciment de la maison du maître éclusier ne contiennent pas d'amiante;
- ▶ **les neuf échantillons de plâtre-ciment (TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-PF-10A @ 10I) prélevés sur certains plafonds de l'étage contiennent 0,1 à 1 % de fibres d'amiante de type chrysotile. Par conséquent, il est considéré que les plafonds de l'étage recouverts de plâtre-ciment de la maison du maître éclusier contiennent de l'amiante (dans la phase composé à joint), notamment les plafonds en pente des garde-robes et la petite cuisine devant la salle de bain. Des dommages sont observés au plafond des garde-robes. Des débris sont également présents au plancher. Ces débris sont mélangés avec des morceaux de plâtre-ciment provenant des murs également endommagés;**
- ▶ l'échantillon de gypse et composé à joint (TPSGC-COUR-2528-RÉSIDENCE ME-ÉTAGE-CAJ-PF-11) prélevé au plafond du vestiaire à l'étage ne contient pas d'amiante. Par conséquent, il est considéré que les plafonds de gypse à l'étage de la maison du maître éclusier ne contiennent pas d'amiante;
- ▶ l'échantillon de gypse et composé à joint (TPSGC-COUR-2528-RÉSIDENCE ME-RDC-CAJ-M-12) prélevé au mur du vestiaire à l'étage ne contient pas d'amiante. Par conséquent, il est considéré que les murs de gypse à l'étage de la maison du maître éclusier ne contiennent pas d'amiante;
- ▶ **l'échantillon de tuile de vinyle de dimension 9" x 9" de couleur beige tachetée brun (TPSGC-COUR-25284-RÉSIDENCE ME-PL-TVA-13) prélevé au plancher de garde-robe à l'étage contient 0,3054 % de fibres d'amiante de type chrysotile. Par conséquent, il est considéré que les tuiles de vinyle de même dimension et de même couleur au plancher de l'étage de la logette de l'éclusier contiennent de l'amiante. Cette tuile est présente au plancher des garde-robes, dans la cuisinette, le vestiaire ainsi que dans le couloir de l'étage. Des dommages sont observés dans les garde-robes, mais les tuiles sont en bon état dans les autres locaux;**
- ▶ les neuf échantillons de crépi de ciment (TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-MUR FONDATION CRÉPI-14A @ 14I) prélevés les murs de fondation ne contiennent pas d'amiante. Par conséquent, il est considéré que les murs de fondation de la maison du maître éclusier recouverts de crépi de ciment ne contiennent pas d'amiante;

- ▶ **les neuf échantillons de crépi de ciment avec agglomérats de roches (TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-M-15A @ 15l) prélevés les façades extérieures des murs périphériques contiennent 1-5 % de fibres d’amiante de type chrysotile (phase fini décoratif). Par conséquent, il est considéré que les façades extérieures des murs périphériques de la maison du maître éclusier recouverts de crépi de ciment avec agglomérats de roches contiennent de l’amiante;**
- ▶ **l’échantillon de joint d’étanchéité gris (TPSGC-COUR-25284- RÉSIDENCE ME-EXT-JE FENÊTRE-16) prélevé au pourtour extérieur d’une fenêtre au rez-de-chaussée contient 0,1 à 1 % de fibre d’amiante de type chrysotile dans la phase joint d’étanchéité et 5 à 10 % de fibre d’amiante de type chrysotile dans la phase revêtement goudronné. Par conséquent, il est considéré que les joints d’étanchéité gris au pourtour des fenêtres de la maison du maître éclusier contiennent de l’amiante;**
- ▶ l’échantillon de bardeau d’asphalte (TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-BARDEAU-TOIT-17) prélevé sur la toiture ne contient pas d’amiante. Par conséquent, il est considéré que la toiture de la maison du maître éclusier constituée de bardeaux d’asphalte ne contient pas d’amiante;
- ▶ l’échantillon de joint d’étanchéité clair (TPSGC-COUR-25284- RÉSIDENCE ME-EXT-JE-18) prélevé au pourtour extérieur d’une fenêtre au rez-de-chaussée ne contient pas d’amiante. Par conséquent, il est considéré que les joints d’étanchéité clairs au pourtour des fenêtres de la maison du maître éclusier ne contiennent pas d’amiante;
- ▶ l’échantillon de joint d’étanchéité beige (TPSGC-COUR-25284- RÉSIDENCE ME -EXT-JE-19) prélevé au pourtour extérieur d’une fenêtre ne contient pas d’amiante. Par conséquent, il est considéré que les joints d’étanchéité beige au pourtour des fenêtres de la maison du maître éclusier ne contiennent pas d’amiante;
- ▶ **l’échantillon de vermiculite (001-Vermiculite Réf. Laboratoire Pinchin Environnemental) observé au plancher du grenier contient 0,1 à 1 % de fibres d’amiante de type actinolite/trémolite. Par conséquent, il est considéré que la vermiculite observée au plancher du grenier contient de l’amiante.**

4.1.9 Poste de commande du barrage (25289)

Les résultats analytiques de l’échantillonnage des MSCA dans le poste de commande du barrage sont présentés dans le tableau 7 ci-dessous.

Tableau 7 : Description des MSCA échantillonnés dans le poste de commande du barrage et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01A	Ciment gris et brun	Plancher	Non détectée	Non	68

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01B	Ciment gris et brun	Plancher	Non détectée	Non	68
TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01C	Ciment gris	Plancher	Non détectée	Non	68
TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01D	Ciment gris	Plancher	Non détectée	Non	68
TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01E	Ciment gris	Plancher	Non détectée	Non	68
TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01F	Ciment gris	Plancher	Non détectée	Non	68
TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01G	Ciment gris et brun	Plancher	Non détectée	Non	68
TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01H	Ciment gris et brun	Plancher	Non détectée	Non	68
TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01I	Ciment gris et brun	Plancher	Non détectée	Non	68
TPSGC-COUR-25289-KIOSQUE DE COMMANDE-EXT.-JE-02	Joint d'étanchéité gris	Extérieur – bas du mur	Non détectée	Non	66

Selon ces résultats :

- ▶ les neuf échantillons de ciment de surfacage (TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01A@01I) prélevés au plancher ne contiennent pas d'amiante. Par conséquent, il est considéré que le revêtement de ciment au plancher du poste de contrôle du barrage ne contient pas d'amiante;
- ▶ l'échantillon de joint d'étanchéité gris (TPSGC-COUR-25289-KIOSQUE DE COMMANDE-EXT.-JE-02) prélevé au pourtour extérieur du bas du mur périphérique ne contient pas d'amiante. Par conséquent, il est considéré que les joints d'étanchéité gris au pourtour du mur périphérique du poste de contrôle du barrage ne contiennent pas d'amiante.

4.1.10 Poste de contrôle du niveau d'eau (25290)

Les résultats analytiques de l'échantillonnage des MSCA dans le poste de contrôle du niveau d'eau sont présentés dans le tableau 8 ci-dessous.

Tableau 8 : Description des MSCA échantillonnés dans le poste de contrôle du niveau d'eau et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)	NUMÉRO DE PHOTO
TPSGC-COUR-25290-CONTRÔLE NIVEAU EAU-PF-TA-01	Tuile acoustique brune et blanche et joint d'étanchéité blanc	Plafond	Non détectée	Non	71
TPSGC-COUR-25290-CONTRÔLE NIVEAU EAU-EXT-JE-02	Joint d'étanchéité gris	Extérieur – bas du mur	Non détectée	Non	69

Selon ces résultats :

- ▶ l'échantillon de tuile acoustique (TPSGC-COUR-25290-CONTRÔLE NIVEAU EAU-PF-TA-01) prélevé au plafond ne contient pas d'amiante. Par conséquent, il est considéré que le plafond en tuile acoustique du poste de contrôle du niveau d'eau ne contient pas d'amiante;
- ▶ l'échantillon de joint d'étanchéité gris (TPSGC-COUR-25290-CONTRÔLE NIVEAU EAU-EXT.-JE-02) prélevé au pourtour extérieur du bas du mur périphérique ne contient pas d'amiante. Par conséquent, il est considéré que les joints d'étanchéité gris au pourtour du mur périphérique du poste de contrôle du niveau d'eau ne contiennent pas d'amiante.

4.1.11 Pilier 6

Aucun échantillon de MSCA n'a été prélevé dans le pilier 6, car aucun MSCA n'y a été observé.

4.2 PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB

Les résultats analytiques de l'échantillonnage des PSCP (peintures sèches) dans les bâtiments et installations du lieu historique national du Canal-de-Saint-Ours sont présentés dans le tableau 9 ci-dessous.

Tableau 9 : Résultats analytiques des PSCP échantillonnées dans les bâtiments et installations

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DE LA PEINTURE ÉCHANTILLONNÉE	CONCENTRATION TOTALE DE PLOMB (mg/kg)
Atelier (25275)		
TPSGC-cour-25275-atelier-mur-peint-beige-01	Peinture beige sur les murs et plafonds	569
TPSGC-cour-25275-atelier-ext-peint-blanc-02	Peinture blanche sur la porte	1030
TPSGC-cour-25275-atelier-ext-peint-verte-03	Peinture verte sur le cadre de la porte	1410
Entrepôt poutrelles (25278)		
TPSGC-cour-25278-Entrepôt poutrelles-peint-grise-01	Peinture grise sur les poutrelles	2260
Entrepôt (25279)		
25279-entrepôt-ext-peint-blanc-01	Peinture blanche sur porte et fenêtres	24000
25279-entrepôt-ext-peint-verte-02	Peinture verte sur cadres de porte et de fenêtres	574
Garage (25280)		
TPSGC-cour-25280-garage-ext-peint-blanc-01	Peinture blanche sur parement extérieur en bois	7
TPSGC-cour-25280-garage-ext-peint-vert-clair-02	Peinture vert-clair sur cadre de porte	5
TPSGC-cour-25280-garage-ext-peint-verte-03	Peinture verte sur cadre de portes et fenêtres	5
Logette de l'éclusier (25282)		
TPSGC-cour-25282-logetterdc-peint-mauve-01	Peinture mauve mur bureau rez-de-chaussée	11
TPSGC-cour-25282-logette-rdc-peint-beige-02	Peinture beige mur couloir et plafond rez-de-chaussée	7
TPSGC-cour-25282-logette-étage-peint-bleu clair-03	Mur cuisinette étage	677
TPSGC-cour-25282-logette étage-peint-blanc-04	Plafond cuisinette et mur salle de bain rez-de-chaussée	2
Maison du maître éclusier (25284)		
TPSGC-cour-25284-résid. ME-SS-peint-blanc crème-01	Peinture blanc-crème mur sous-sol	100
TPSGC-cour-25284-résid. ME-étage-peint-beige-02	Peinture beige mur étage et rez-de-chaussée	17500
TPSGC-cour-25284-résid. ME-RDC-escalier-peint-grise-03	Peinture grise sur l'escalier menant à l'étage	53200
TPSGC-cour-25284-résid. ME-ext-peint-blanc-04	Peinture blanche fenêtres	53100
TPSGC-cour-25284-résid. ME ext-peint-verte-05	Peinture verte sur portes et persiennes	647
Poste de contrôle du barrage (25289)		
TPSGC-cour-25289-kiosque commande-peint grise-01	Peinture grise sur murs de contreplaqués	2330
TPSGC-cour-25289-kiosque commande-peint-gris foncé-02	Peinture grise au plancher	8
TPSGC-cour-25289-kiosque commande-peint-vert pâle-03	Peinture verte pâle cadre côté intérieur de la porte	5710

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DE LA PEINTURE ÉCHANTILLONNÉE	CONCENTRATION TOTALE DE PLOMB (mg/kg)
TPSGC-cour-25289-kiosque commande-ext-peint-verte-04	Peinture verte des deux côtés de la porte	106
Poste de contrôle du niveau d'eau (25290)		
TPSGC-cour-25290-cont-niveaueau-ext-peint-verte-01	Peinture verte côté extérieur de la porte	236
Pilier 6		
TPSGC-cour-pilier 6-peint-grise-01	Peinture grise murs	47
TPSGC-cour-pilier 6-peint-verte-02	Peinture verte côté intérieur de la porte, tuyaux et escaliers	6980

5 MESURES D'INTERVENTION

Les mesures d'intervention à appliquer au niveau des MCA en vertu du Programme de gestion de l'amiante de TPSGC sont présentées dans le tableau 10 ci-dessous.

Tableau 10 : Mesures d'intervention selon la PM 057 de TPSGC

MATÉRIAU CONTENANT DE L'AMIANTE (MCA)	ÉTAT	DÉBRIS	QUANTITÉ DE MCA ENDOMMAGÉS	MESURE D'INTERVENTION
Logette de contrôle amont (bâtiment 25281)				
Le joint d'étanchéité gris au pourtour des panneaux extérieurs	Bon	Non	-	7
Maison maître éclusier (bâtiment 25284)				
Le canevas d'isolant de tuyauterie rectiligne retrouvé sur le plancher au sous-sol	Mauvais	Oui	Environ 50 centimètres de longueur	3
Le plâtre et ciment au plafond dans les garde-robes à l'étage	Mauvais	Oui	Environ 10 m ²	1 et 3
Les tuiles de vinyle de couleur beige tachetées brun et de dimension 9" x 9" dans les garde-robes à l'étage	Mauvais	Non	Environ 10 m ²	3
Les tuiles de vinyle de couleur beige tachetées brun et de dimension 9" x 9" dans le couloir, le bureau et le vestiaire à l'étage	Bon	Non	-	7
Le crépi de ciment avec agglomérats de roches sur les façades extérieures (fissures par endroits)	Bon	Non	-	6 et 7
Le joint d'étanchéité gris au pourtour extérieur des fenêtres	Bon	Non	-	7
L'isolant de type vermiculite présent au grenier à l'étage	Bon	Oui	Environ 1 à 2 m ³	3

6 CONCLUSION ET RECOMMANDATIONS

6.1 MATÉRIAUX CONTENANT DE L'AMIANTE

Les travaux de caractérisation des MSCA dans les bâtiments du lieu historique national du Canal-de-Saint-Ours, situé à Saint-Ours, ont permis de déceler la présence de matériaux contenant de l'amiante dans deux (2) des onze (11) bâtiments et installations visés par cette étude, soit :

Logette de contrôle amont (bâtiment 25281)

- ▶ le joint d'étanchéité gris au pourtour des panneaux extérieurs.

Maison maître éclusier (bâtiment 25284)

- ▶ le canevas d'isolant de tuyauterie rectiligne retrouvé sur le plancher au sous-sol (débris);
- ▶ le plâtre et ciment au plafond dans les garde-robes à l'étage (dans la phase composé à joints);
- ▶ le crépi de ciment avec agglomérats de roches sur les façades extérieures (dans la phase fini décoratif);
- ▶ le joint d'étanchéité au pourtour extérieur des fenêtres (phase revêtement goudronné);
- ▶ les tuiles de vinyle de couleur beige tachetées brun et de dimension 9" x 9", présentes au plancher à l'étage (garde-robes, couloir, bureau et vestiaire);
- ▶ l'isolant de type vermiculite présent au grenier, accessible par le 2^e étage (réf. Certificat d'analyse Pinchin Environmental, janvier 2013).

Dans la plupart des cas, les matériaux étaient en bon état au moment de notre inspection. Cependant, dans la maison du maître éclusier, des dommages importants ont été observés au niveau du plafond en plâtre et ciment dans les garde-robes à l'étage. Les tuiles de vinyle de couleur beige tachetées brun et de dimension 9" x 9" sont également endommagées au plancher des garde-robes. L'isolant de type vermiculite au plancher du grenier du 2^e étage est en bon état, mais friable. Enfin, quelques fissures sont présentes sur le crépi de ciment avec agglomérats de roches sur les façades extérieures du bâtiment.

À la lumière de ce qui précède, nous formulons les recommandations suivantes :

- ▶ l'enlèvement et la disposition du débris de canevas d'isolant de tuyauterie rectiligne retrouvé sur le plancher au sous-sol dans la maison du maître éclusier;
- ▶ le nettoyage des débris et l'enlèvement du plâtre-ciment endommagé au plafond et des tuiles de vinyle 9" x 9" endommagées au plancher des garde-robes à l'étage ainsi que l'isolant de type vermiculite au plancher du grenier du 2^e étage de la maison du maître éclusier, conformément aux mesures d'intervention 1 et 3 de la PM 057 de TPSGC;
- ▶ concernant les matériaux en bon état au moment de notre inspection, une surveillance périodique et l'élaboration d'un programme de gestion des MCA, conformément à la mesure d'intervention 7 de la PM 057 de TPSGC.

Si des travaux de rénovation impliquant des MCA sont prévus dans le futur, ceux-ci devront être exécutés selon les procédures de travail édictées au *Code de sécurité pour les travaux de construction* (article 3.23). De plus, lors de tels travaux, un devis spécifique aux travaux en condition d'amiante devrait être rédigé afin de se conformer aux procédures énoncées dans le *Code de sécurité pour les travaux de construction*. Ces travaux devront être effectués par des professionnels formés et expérimentés pour ce type d'intervention.

6.2 PEINTURES CONTENANT DU PLOMB

Les travaux de caractérisation des peintures susceptibles de contenir du plomb dans les bâtiments du lieu historique national du Canal-de-Saint-Ours ont permis de déceler la présence de plomb dans plusieurs des peintures échantillonnées dans huit des 11 bâtiments et installations visés par cette étude.

Si des travaux de rénovation prévus impliquent des peintures contenant du plomb, un devis spécifique aux travaux en présence de plomb devrait être rédigé afin de se conformer aux procédures énoncées dans le *Code de sécurité pour les travaux de construction du Québec*. Le risque d'exposition au plomb durant ces éventuels travaux sera alors géré en fonction des méthodes et procédures de travail appliquées et selon la réglementation en vigueur au niveau municipal, provincial ou fédéral.

Annexe 1 Relevé photographique

ATELIER (25275)



Photo 1: Extérieur, vue de la façade avant
Joint de mortier de pierre ne contient pas d'amiante
Peinture blanche sur la porte d'entrée



Photo 2: Joint d'étanchéité au pourtour de la porte d'entrée ne contient pas d'amiante



Photo 3: Vue de l'intérieur de l'atelier
Murs et plancher en béton
Peinture beige sur les murs



Photo 4: Vue de l'intérieur de l'atelier
Murs et plancher en béton
Peinture beige sur les murs



Photo 5: Vue du grenier
Conduit non isolé



Photo 6: Flocage au plancher du grenier ne contient pas d'amiante



Photo 7: Toiture en asphalte ne contient pas d'amiante



Photo 8: Joint d'étanchéité de toiture ne contient pas d'amiante

ENTREPÔT À POUTRELLES (25278)



Photo 9: Vue de l'entrepôt à poutrelles clôturé



Photo 10: Poutrelles peintes en gris, entreposées dans des abris temporaires

ENTREPÔT (25279)



Photo 11: Vue de l'Entrepôt
Murs extérieurs en pierres et mortier - le mortier ne contient pas d'amiante
Peinture verte et blanche sur la porte et la fenêtre



Photo 12: Vue d'une fenêtre de l'entrepôt
Le joint d'étanchéité au pourtour extérieur de la fenêtre ne contient pas d'amiante



Photo 13: Vue de l'intérieur de l'entrepôt
Plancher en carreaux de béton



Photo 14: Vue de l'intérieur de l'entrepôt
Plafond en bois

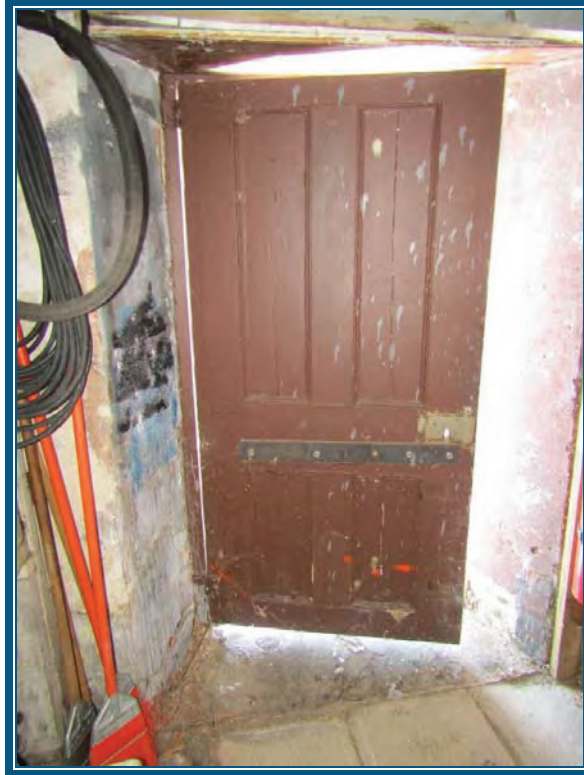


Photo 15: Porte d'entrée de l'entrepôt peinte en brun



Photo 16: Mur de l'entrepôt
Le plâtre-ciment des murs périphériques ne contiennent pas d'amiante



Photo 17: Mur de l'entrepôt – fissures
Le plâtre-ciment des murs périphériques ne contiennent pas d'amiante



Photo 18: Mur de l'entrepôt – fissures
Le plâtre-ciment des murs périphériques ne contiennent pas d'amiante

GARAGE (25280)



Photo 19: Vue du garage
Mur extérieur en bois, peints en blanc
Portes de garage peintes en blanc, cadres peints en vert



Photo 20: Toiture du garage
les bardeaux d'asphalte ne contiennent pas d'amiante



Photo 21: le joint d'étanchéité de fenêtre du garage ne contient pas d'amiante



Photo 22: le joint d'étanchéité au pourtour de la porte du garage ne contient pas d'amiante

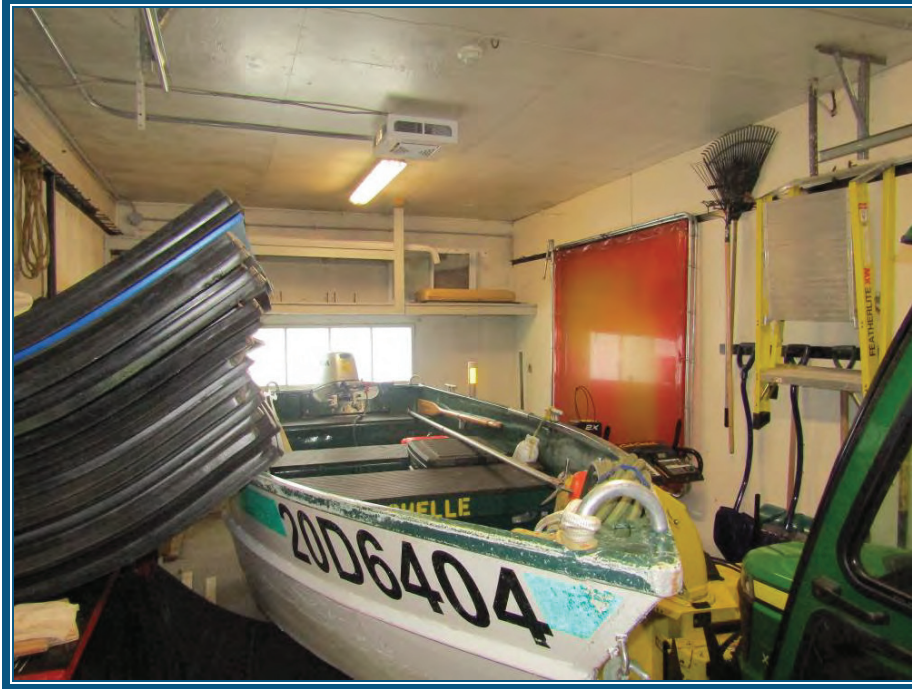


Photo 23: Vue de l'intérieur du garage
Murs, plancher et plafond en béton



Photo 24: Vue de l'intérieur du garage
Murs et plafond en béton

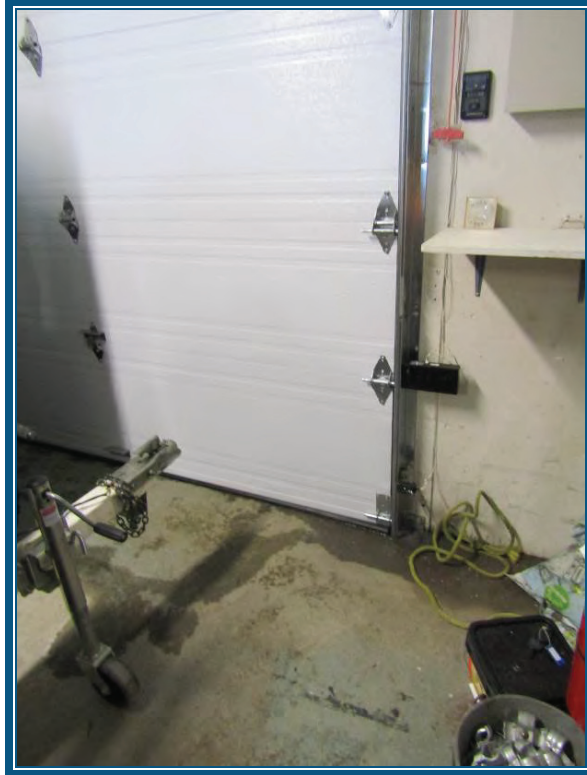


Photo 25: Plancher en béton



Photo 26: Vue de l'intérieur du garage
Murs, plancher et plafond en béton

LOGETTE DE CONTRÔLE – AMONT (25281)



Photo 27: Vue de la logette de contrôle – amont
Murs extérieurs en vitres et plastiques



Photo 28: Logette contrôle amont
Plancher béton



Photo 29 : Logette contrôle amont
Plafond en métal



Photo 30: Logette contrôle amont
le joint d'étanchéité au bas du mur contient de l'amiante

LOGETTE DE L'ÉCLUSIER (25282)



Photo 31: Vue de la logette de l'éclusier
Mur en briques



Photo 32: Logette de l'éclusier
Le joint d'étanchéité au pourtour des fenêtres ne contient pas d'amiante



Photo 33: Façade principale de la logette de l'éclusier)
le joint d'étanchéité au pourtour des portes ne contient pas d'amiante



Photo 34: Les bardeaux d'asphalte de la toiture de la logette de l'éclusier ne contiennent pas d'amiante

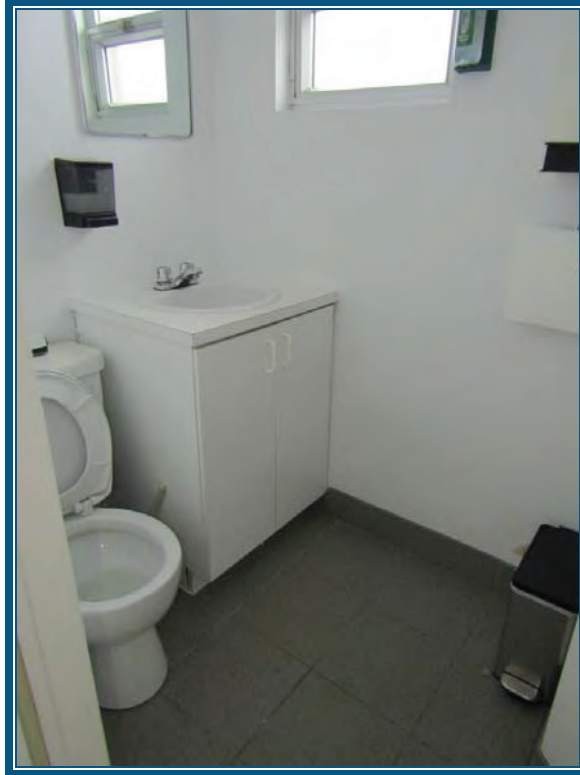


Photo 35: Vue de la salle de bain au rez-de-chaussée
Mur en gypse - Plancher en céramiques

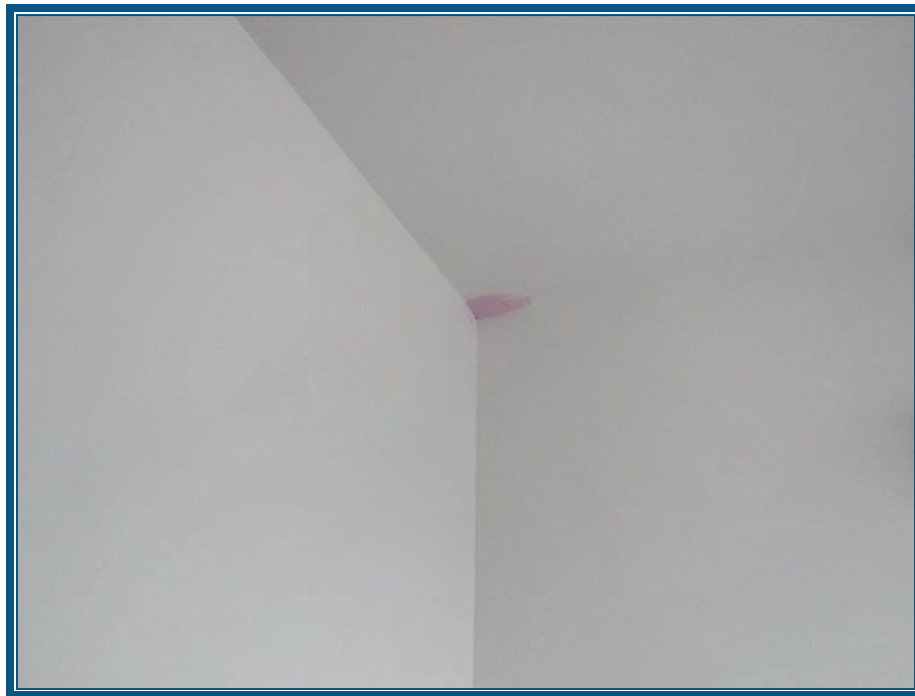


Photo 36: Vue de la salle de bain au rez-de-chaussée
Plafond en gypse – ne contient pas d’amiante



Photo 37: Les tuiles de vinyle au plancher du couloir ne contiennent pas d'amiante



Photo 38: Le mur en gypse du bureau au rez-de-chaussée ne contient pas d'amiante



Photo 39: Trappe d'accès au local d'entreposage au rez-de-chaussée



Photo 40: Local d'entreposage au rez-de-chaussée
Mur en béton, plancher et plafond en bois
Tuyaux non isolés



Photo 41: Escalier

Les tuiles de vinyle au plancher de l'escalier ne contiennent pas d'amiante



Photo 42: Vue de l'étage – coin cuisine

Murs et plafond en gypse ne contiennent pas d'amiante



Photo 43: Vue de l'étage – coin bureau



Photo 44: Porte de l'étage
Le joint d'étanchéité au pourtour de la porte ne contient pas d'amiante



Photo 45: Vue salles de bain façade principale
Plancher et bas de mur en céramique, murs et plafond en gypse



Photo 46 : Vue salles de bain façade principale
Plancher et bas de mur en céramique, murs et plafond en gypse

LOGETTE DE CONTRÔLE – AVAL (25283)



Photo 47: Vue de la logette de contrôle –aval



Photo 48: Plancher de béton
Murs en structure de plastique et vitres

MAISON DU MÂTRE ÉCLUSIER (25284)



Photo 49: Vue de la façade principale de la maison du maître éclusier
Le crépi de ciment avec agglomérats de pierre des murs extérieurs contiennent de l'amiante (phase fini décoratif)



Photo 50: Vue de la façade est de la maison du maître éclusier
Le crépi de ciment avec agglomérats de pierre des murs extérieurs contiennent de l'amiante (phase fini décoratif)
Le crépi de ciment du mur de fondation ne contient pas d'amiante



Photo 51: Vue du sous-sol
Mur en plâtre-ciment ne contient pas d'amiante



Photo 52: Débris de canevas contenant de l'amiante retrouvé au sous-sol



Photo 53: Le mortier de pierre au sous-sol ne contient pas d'amiante



Photo 54: Tuyaux au sous-sol en PVC



Photo 55: Rez-de-chaussée
Mur en gypse ne contient pas d'amiante
Plancher en bois



Photo 56: Rez-de-chaussée
plafond en gypse ne contient pas d'amiante



Photo 57: Rez-de-chaussée
Le mortier de brique de la cheminée ne contient pas d'amiante

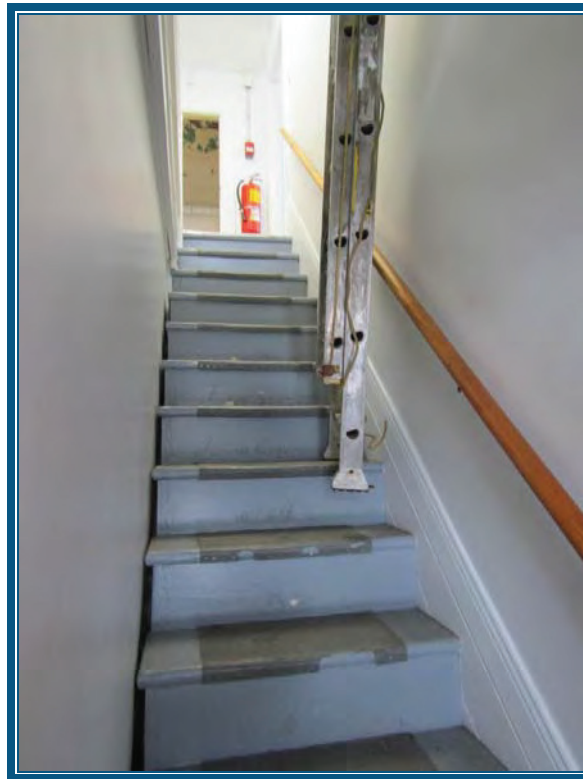


Photo 58: Escalier vers l'étage



Photo 59: Tuiles de vinyle 9 pouces x 9 pouces au plancher du couloir à l'étage contiennent de l'amiante



Photo 60: Murs et plafond de gypse dans le vestiaire à l'étage ne contiennent pas d'amiante



Photo 61: Plâtre-ciment au plafond dans les garde-robes à l'étage contient de l'amiante
Endommagé par endroits



Photo 62: Plâtre-ciment sur les murs de garde-robes ne contient pas d'amiante
Les tuiles de vinyle au plancher contiennent de l'amiante – dommages par endroits



Photo 63: Matériaux fournis par Parcs Canada prélevé lors des travaux de rénovation sur les murs extérieurs. La phase « fini décoratif » de ce matériau contient de l'amiante



Photo 64: Vermiculite contenant de l'amiante présente dans le grenier de l'étage

POSTE DE CONTRÔLE DU BARRAGE (25289)



Photo 65: Vue de la façade principale



Photo 66: Joint d'étanchéité ne contient pas d'amiante



Photo 67: Vue de l'intérieur du poste de contrôle du barrage



Photo 68: Ciment de recouvrement au plancher ne contient pas d'amiante

POSTE DE CONTRÔLE DU NIVEAU D'EAU (25290)



Photo 69: Vue du poste de contrôle du niveau d'eau
Joint d'étanchéité au bas du mur extérieur ne contient pas d'amiante



Photo 70: Vue de l'intérieur du poste de contrôle du niveau d'eau
Plancher en béton
Mur en préfinis



Photo 71: Vue de l'intérieur du poste de contrôle du niveau d'eau
Plafond en tuiles acoustiques ne contient pas d'amiante

PILIER 6



Photo 72: Porte d'entrée au pilier 6



Photo 73: Murs isolés avec du polyuréthane

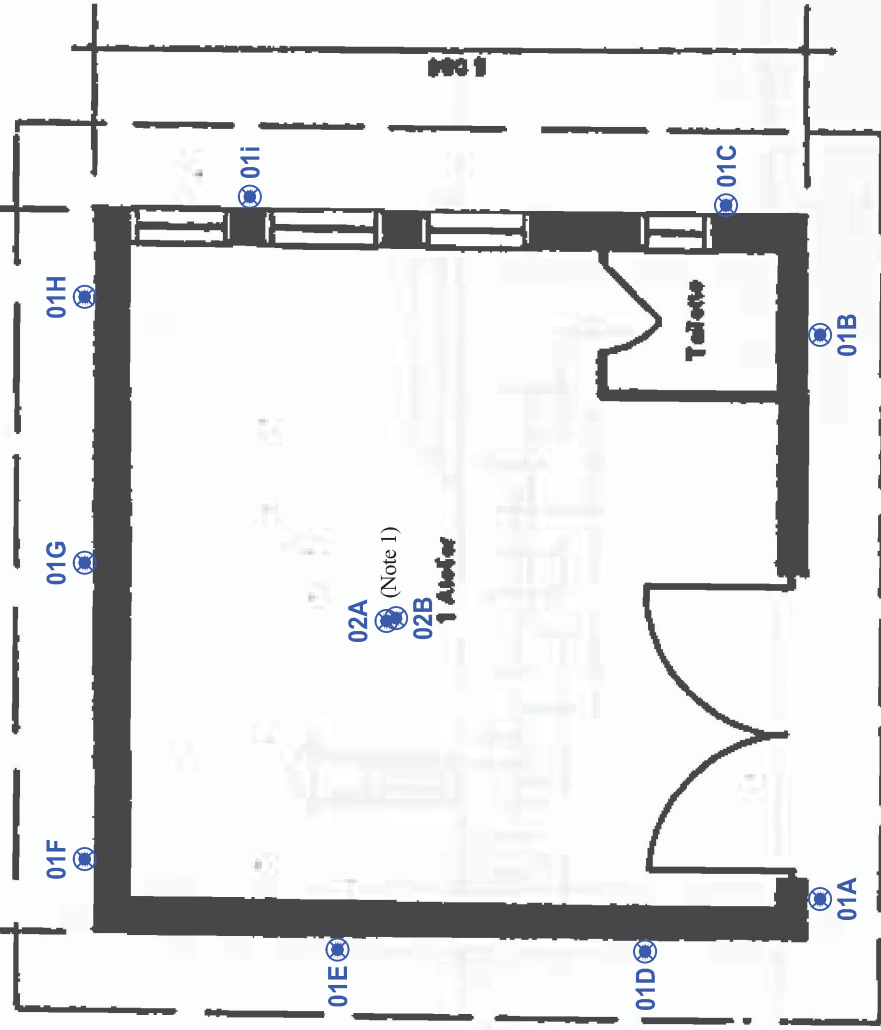


Photo 74: Escalier métallique dans le pilier 6

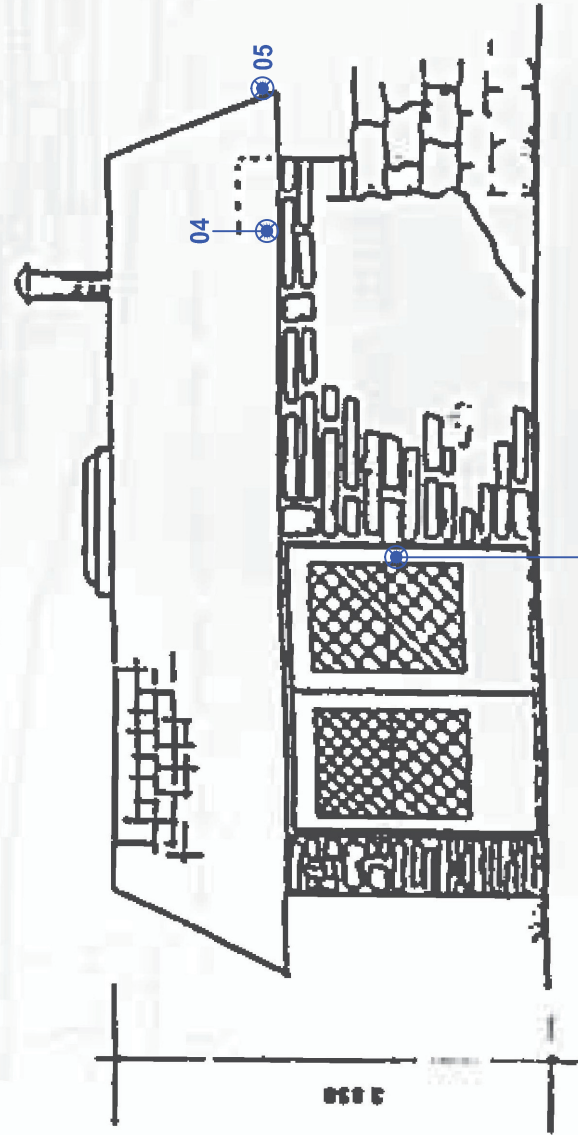


Photo 75: Tuyauterie dans le pilier 6

Annexe 2 Plans de localisation des échantillons et des MCA



Rez-de-chaussée



NOTE :
1. ÉCHANTILLON
LE GRENIER

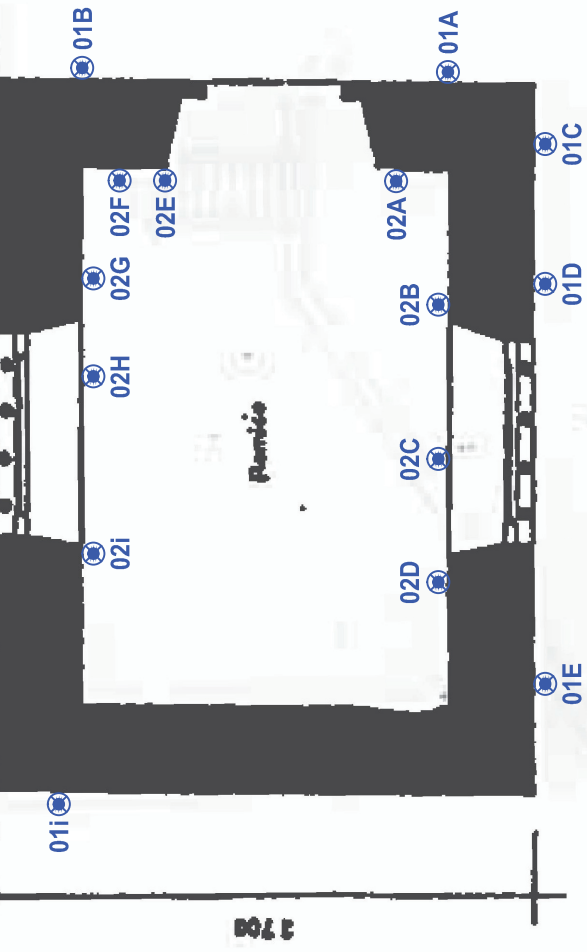
Client
GOUVERNEMENT

Projet
**CANALISATION
SUSCEPTIBLES
DE PEINTURES**

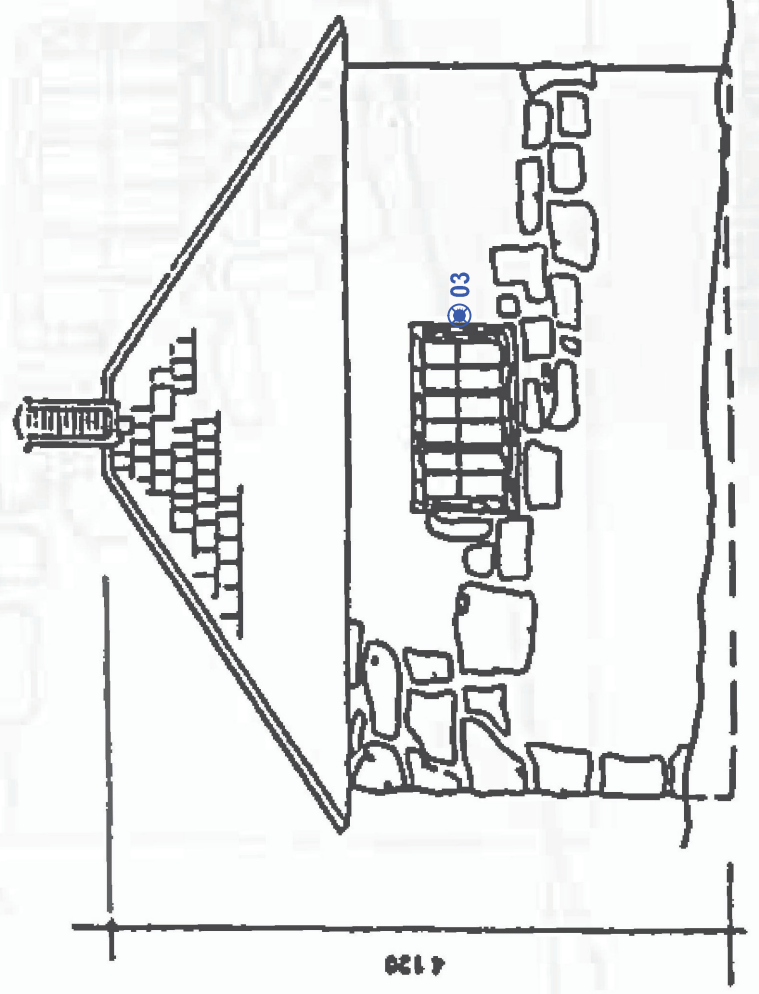
Titre
LOCALISATION



E



Rez-de-chaussée

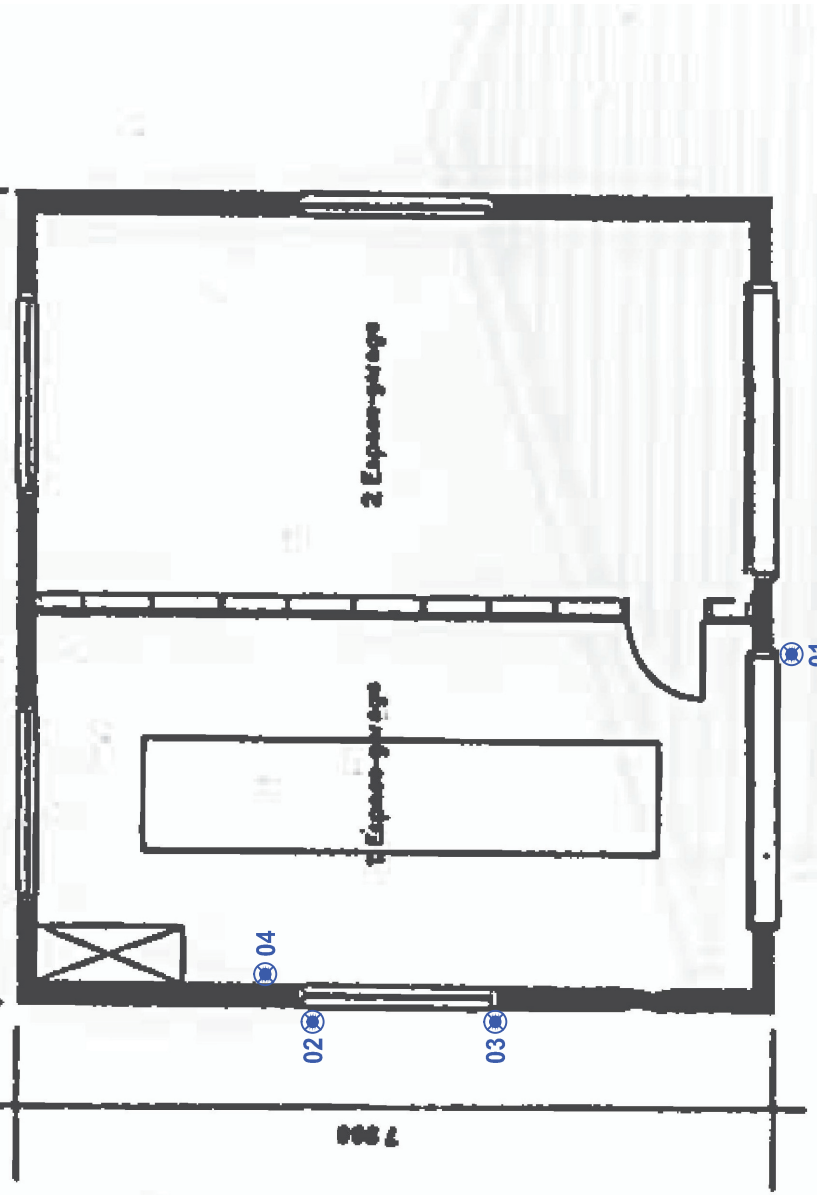


Client
GOUVERN

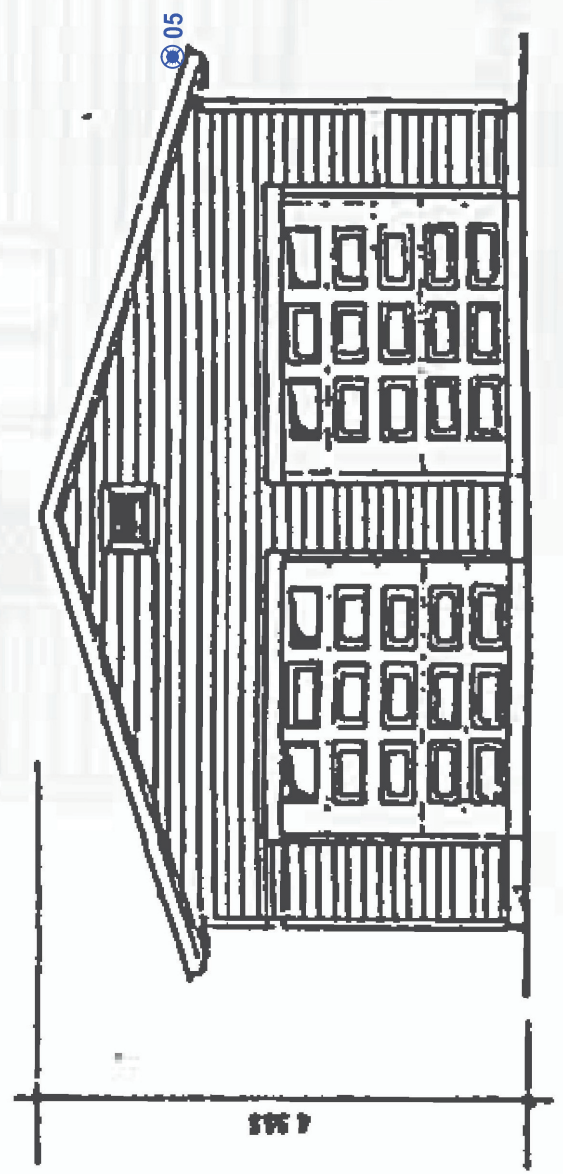
Projet
**CANALISATION
SUSCEPTIBLES
DE
PEINTURES**

Titre
LOCALISATION





Rez-de-chaussée

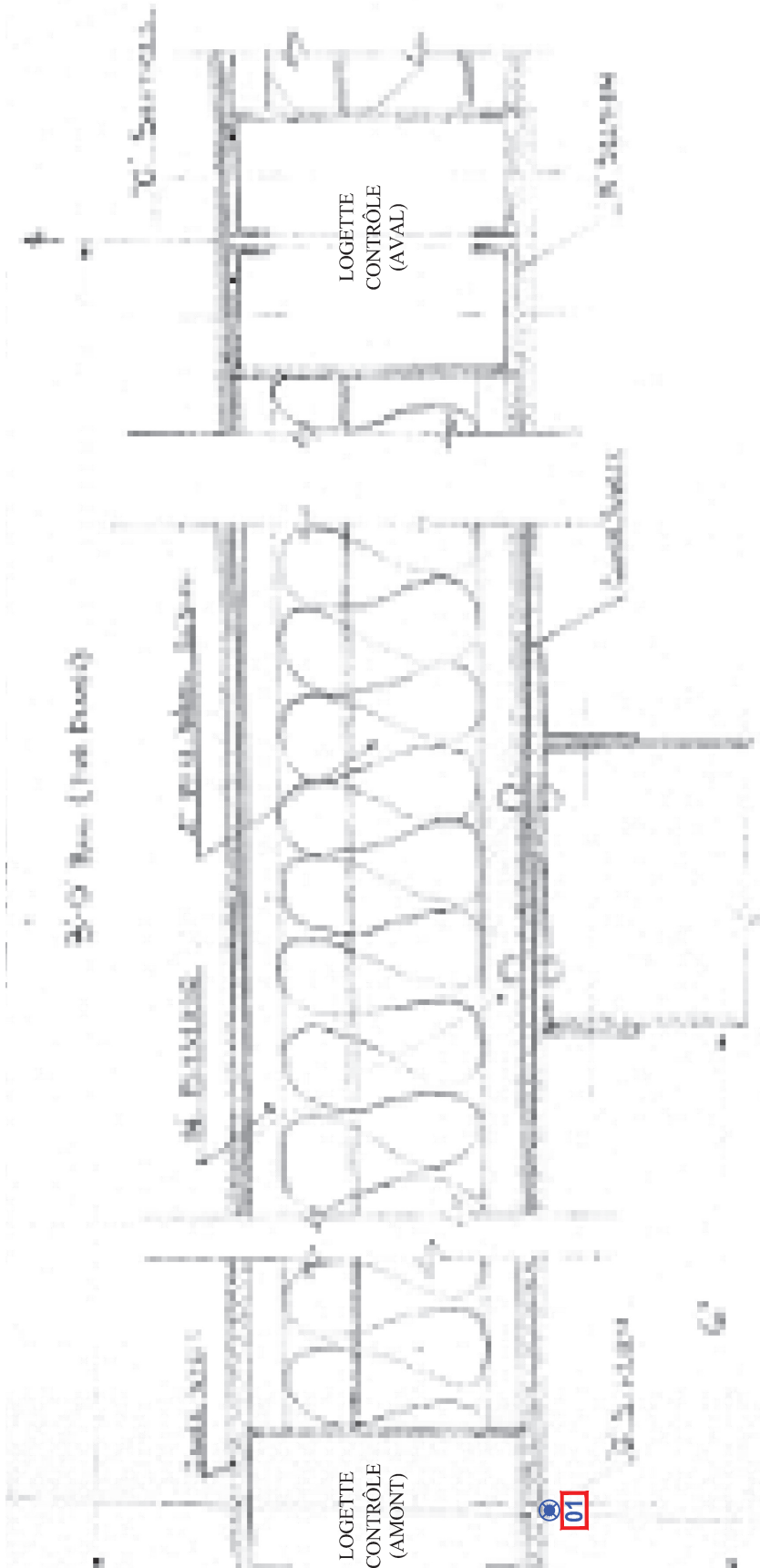


Client
GOUVERN

Projet
**CANALISATION
SUSCEPTIBLES
DE PEINTURES**

Titre
LOCAL



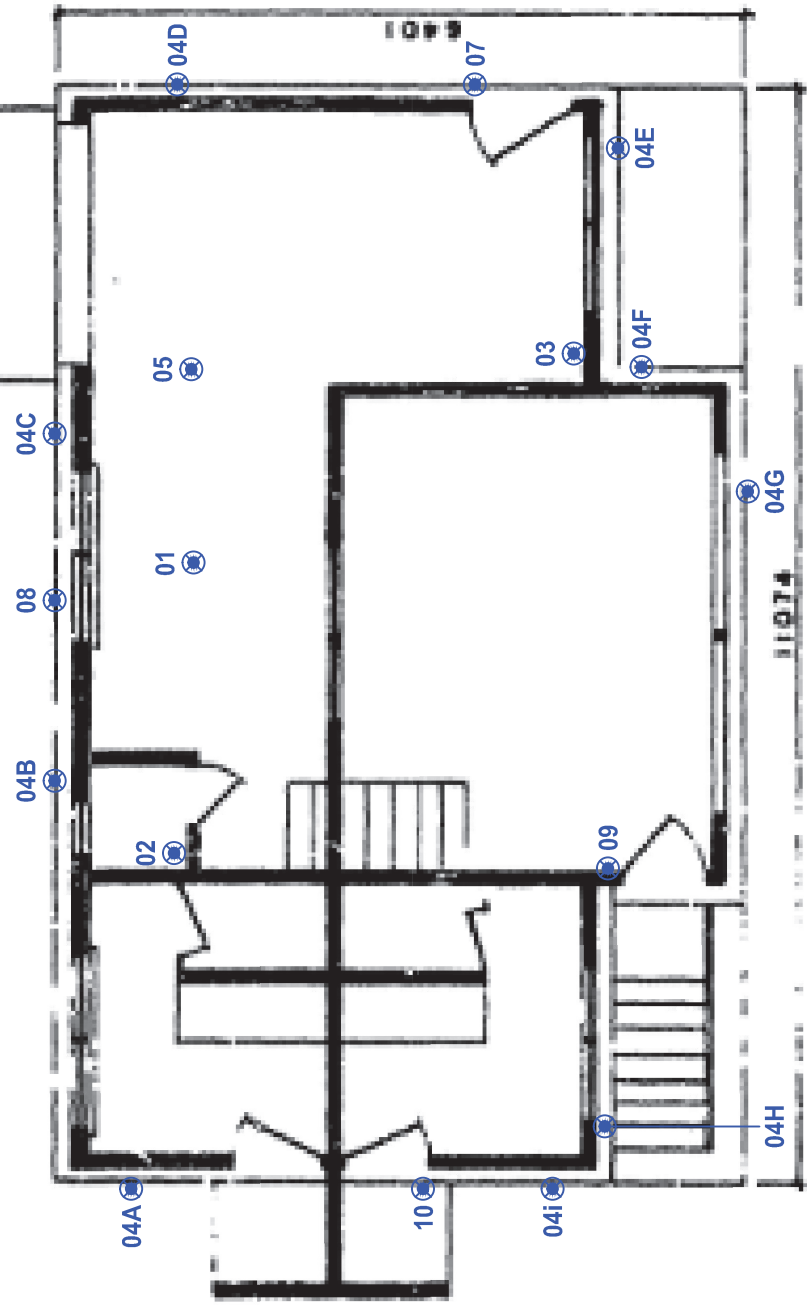


Client
GOUVERN

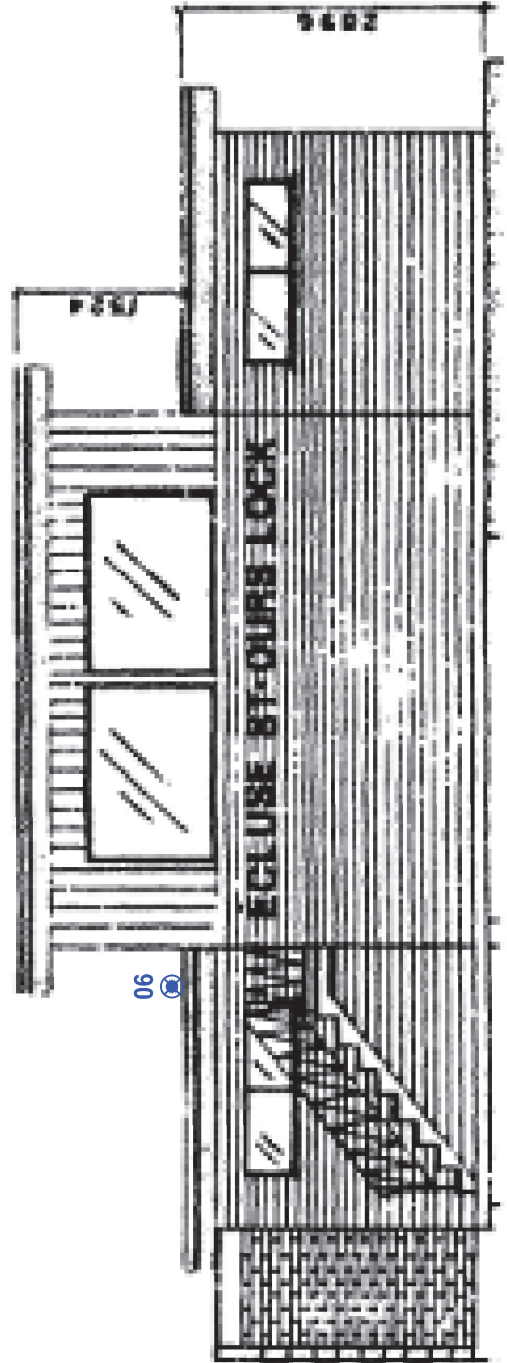
Projet
**CANAL
SUSCEPTIBLE
DE
PEINTURES
CANAL-F**

Titre
**LOCA
(25)**





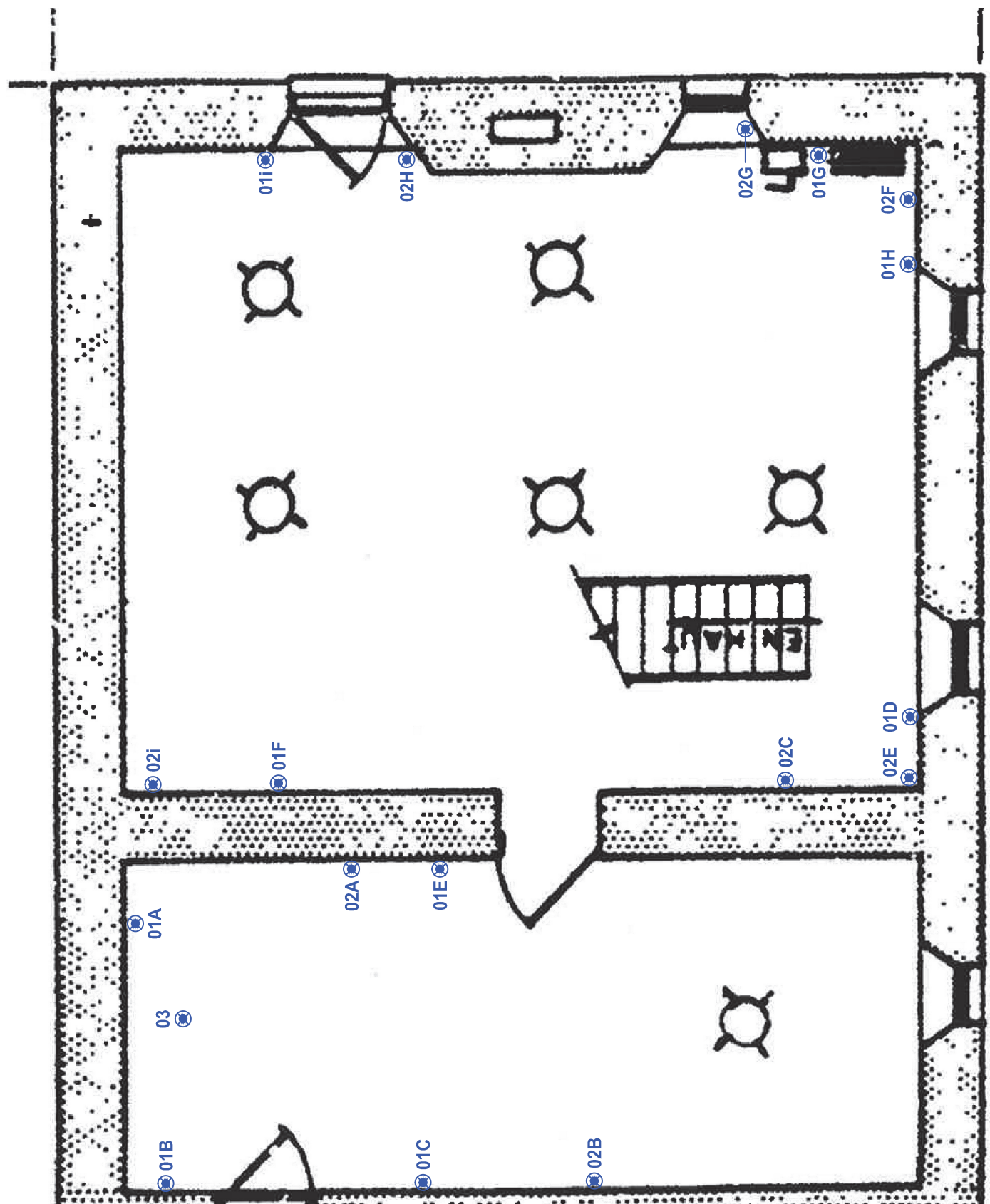
Plan du rez-de-chaussée

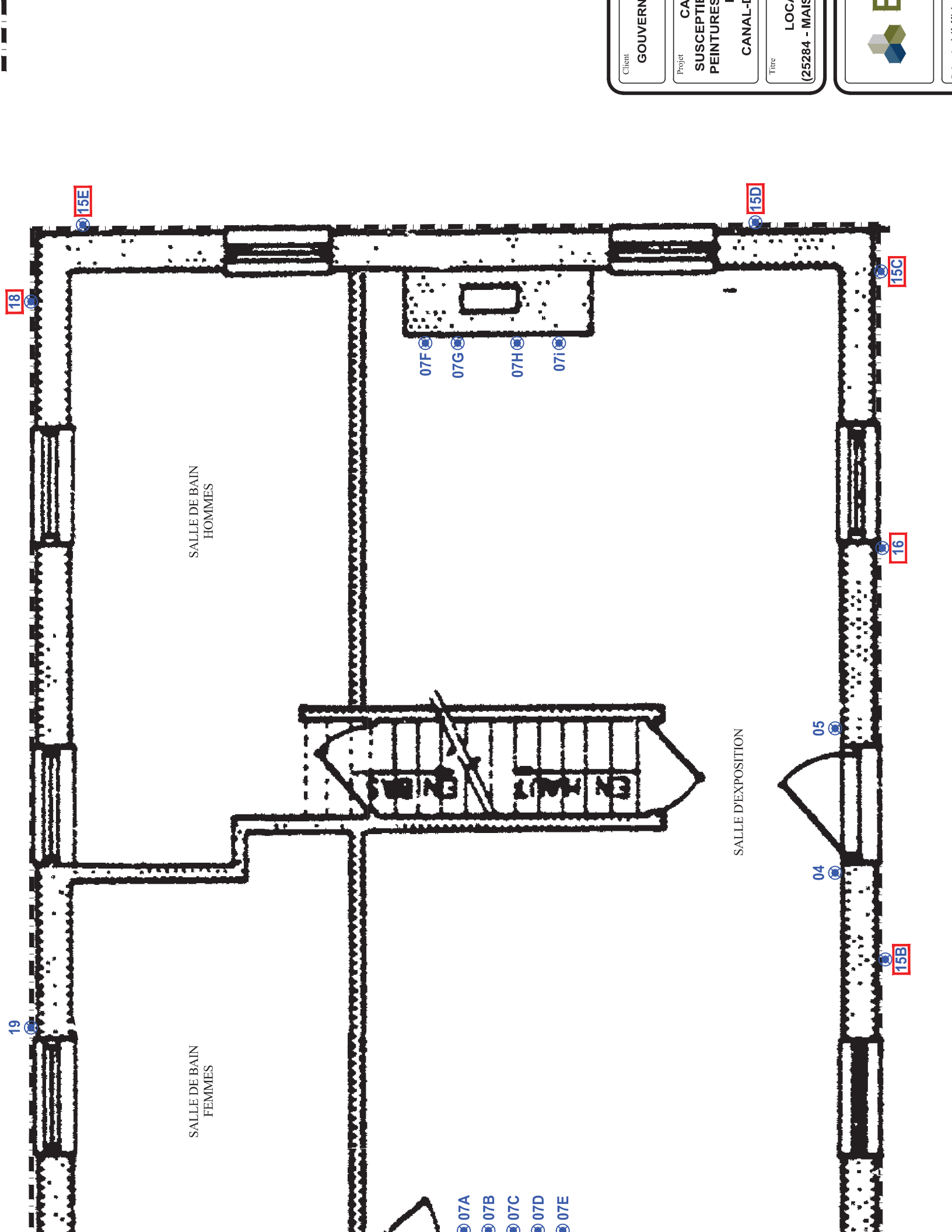


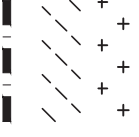
Client
GOUVERN

Projet
**CANALISATION
SUSCEPTIBLES
DE PRENDRE
PEINTURES**

Titre
**LOCALISATION
(25284 -**



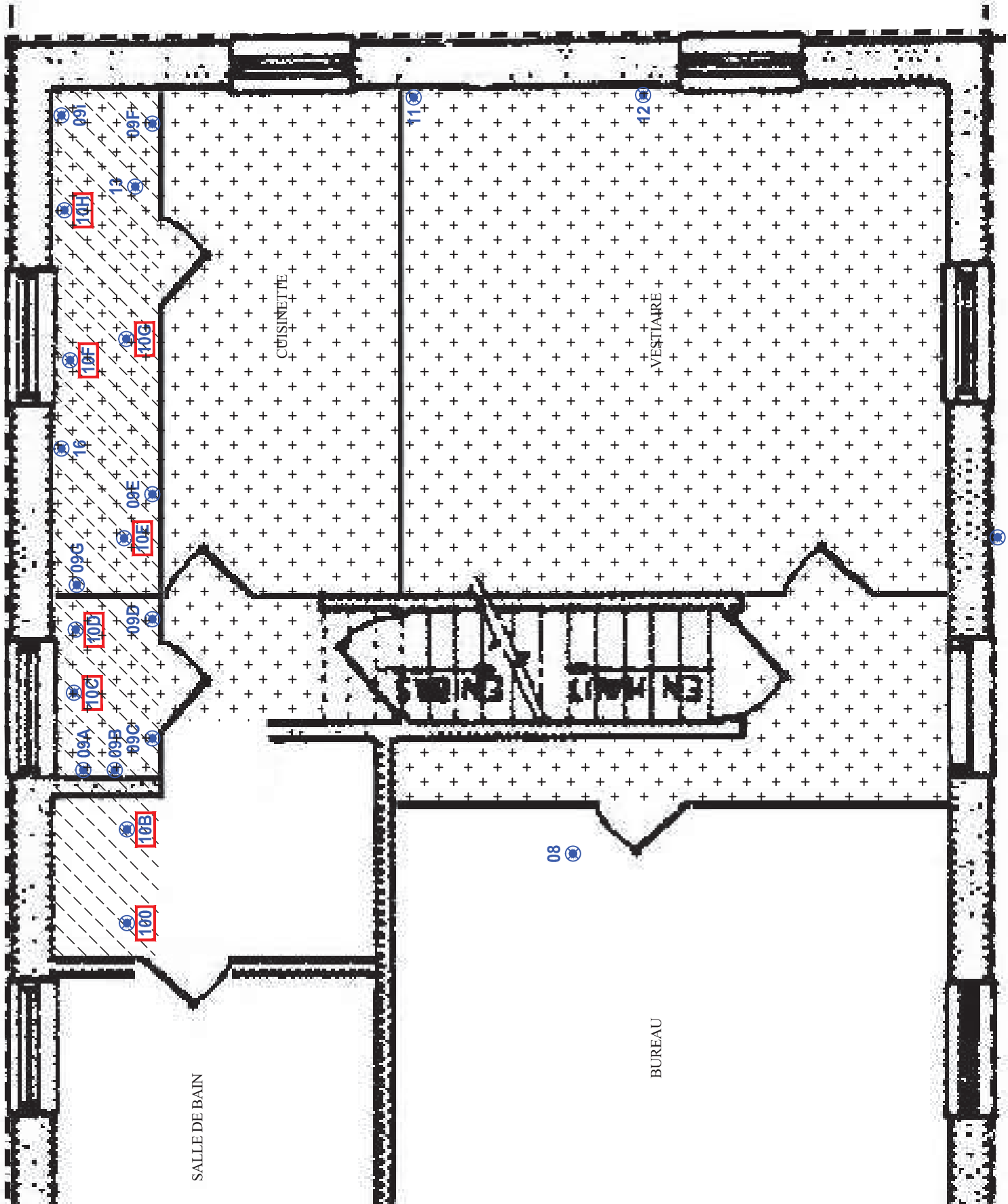


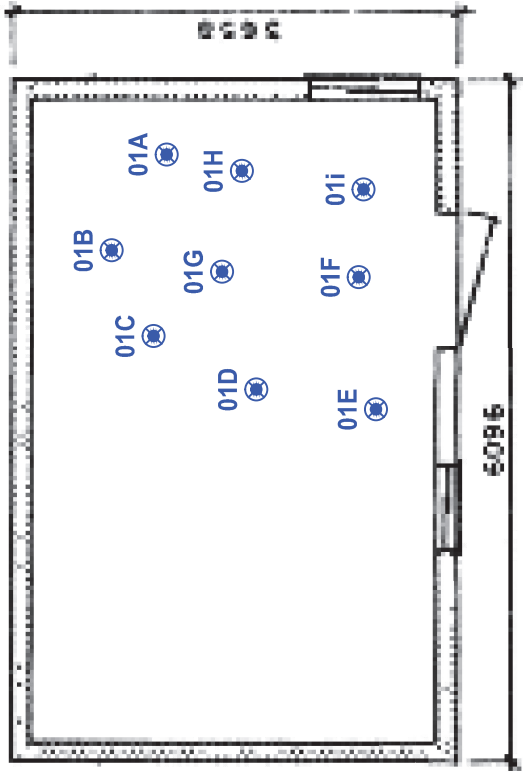


Client
GOUVERNEMENT

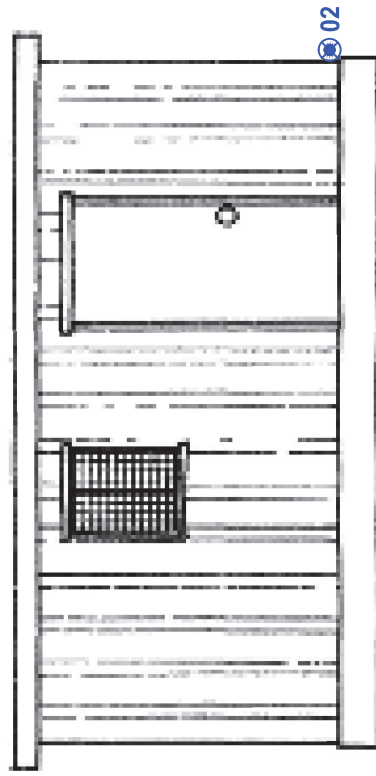
Projet
**CANALISATION
SUSCEPTIBLES
PEINTURES**

Titre
**LOCALISATION
(25284)**





Plan du rez-de-chaussée



Élévation principale

Client

GOUVERN

Projet

CA

SUSCEPTIF

PEINTURES

CANAL-L

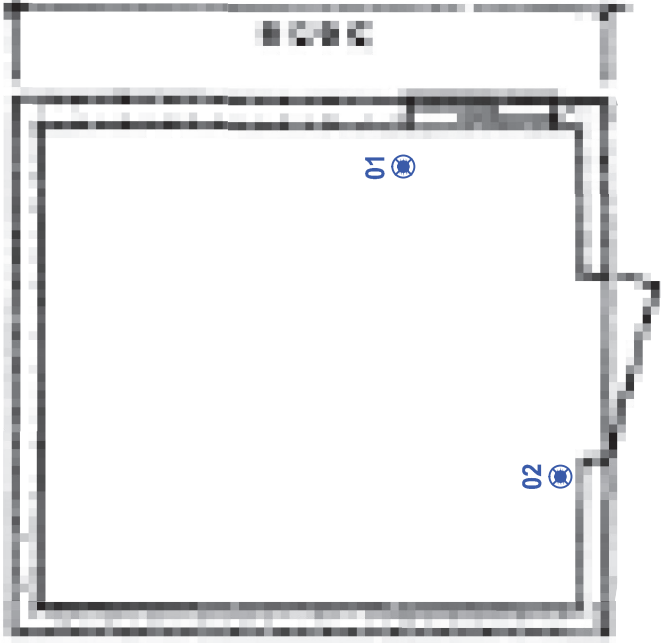
Titre

LOCA

(25289 - I



E



Plan du rez-de-chaussée

Client

GOUVERN

Projet

CANALISATION
SUSCEPTIBLE
DE PEINTURES

Titre

LOCA
(25290)



E

Annexe 3 Formulaires d'envoi des échantillons au laboratoire

Demande d'Analyse Microscopie / Microscopy Request for Analysis

Date : 2017 /01 /12		INFO CLIENT / CLIENT INFO	
Nom Complet / Complete Name		Rapport en : / Report in :	
Mathieu Courchesne		<input checked="" type="checkbox"/> Français <input type="checkbox"/> Les deux / Both <input type="checkbox"/> English (+25\$)	
Compagnie / Company		Résultats par : / Result by :	
Englobe		<input type="checkbox"/> Appel / Call <input type="checkbox"/> Courriel (PDF)	
Adresse / Address	Ville / Town	Province	Code Postal Code
1080 côte du Beaver Hall	Montréal	Qc	
Votre Projet / Your Project / Site Prélèvement / Sampling Site		Tél. ou Cellulaire / Tel. or Cell	
P-0012240-0-02-261 Lieu historique national du Canal-de-Saint-Ours		450.881.1566	
Courriel / E-Mail		Télécopieur / Fax	
mathieu.courchesne@englobecorp.com			

ANALYSES / ANALYSIS

Type d'analyse / Type of analysis		
<input type="checkbox"/> MLP (244) Identification Amiante dans Solide <input checked="" type="checkbox"/> PLM (244) Asbestos Identification in Solid	<input type="checkbox"/> MCP (243-1) Décompte fibres dans l' Air <input type="checkbox"/> PCM (243-1) Fibre Count in Air	<input type="checkbox"/> MET Tuile ou autre <input type="checkbox"/> TEM Tile or other
Délai d'analyse / Turnaround time		
<input type="checkbox"/> Jour-Même / Same-Day	<input type="checkbox"/> 24 heures / 24 hours	<input type="checkbox"/> 48 heures / 48 hours <input checked="" type="checkbox"/> Normal 5+ jours/5+ days

ÉCHANTILLONS / SAMPLES

#	Nom d'échantillon (client) / Sample ID (client)	Stop Positif *	Tuile Tile	Volume Air
1	TPSGC-COUR-25284-RESIDENCE ME-SS-MORTIER-M-01 A@I	<input checked="" type="checkbox"/>	<input type="checkbox"/>	L
2	TPSGC-COUR-25284-RESIDENCE ME-SS-PC-M-02 A@I	<input checked="" type="checkbox"/>	<input type="checkbox"/>	L
3	TPSGC-COUR-25284-RESIDENCE ME-SS-DEBRIS CANEVAS-03	<input type="checkbox"/>	<input type="checkbox"/>	L
4	TPSGC-COUR-25284-RESIDENCE ME-RDC-CAJ-M-04	<input type="checkbox"/>	<input type="checkbox"/>	L
5	TPSGC-COUR-25284-RESIDENCE ME-RDC-CAJ-PF-05	<input type="checkbox"/>	<input type="checkbox"/>	L
6	TPSGC-COUR-25284-RESIDENCE ME-RDC-P/C-M-06 A@I	<input checked="" type="checkbox"/>	<input type="checkbox"/>	L
7	TPSGC-COUR-25284-RESIDENCE ME-RDC-MORTIER FOYER-M-07 A@I	<input checked="" type="checkbox"/>	<input type="checkbox"/>	L
8	TPSGC-COUR-25284-RESIDENCE ME-ETAGE-PL-TVA-08	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L
9	TPSGC-COUR-25284-RESIDENCE ME-ETAGE-P/C-M-09 A@I	<input type="checkbox"/>	<input type="checkbox"/>	L
10	TPSGC-COUR-25284-RESIDENCE ME-ETAGE-P/C-PF-10 A@I	<input type="checkbox"/>	<input type="checkbox"/>	L

Commentaires / Comments
* Arrêt 1 ^{er} Positif / Stop 1 st Positive – SVP identifier clairement les séries / Clearly identify the series

PAIEMENT ET SIGNATURE / PAYMENT AND SIGNATURE

Méthode de paiement / Method of Payment			
<input type="checkbox"/> Carte de crédit (Visa ou MC seulement) <input type="checkbox"/> Credit Card (Visa or MC only)	<input type="checkbox"/> Chèque Certifié <input type="checkbox"/> Certified Check	<input checked="" type="checkbox"/> Bon de commande <input checked="" type="checkbox"/> Purchase Order #	
Numéro Carte de crédit / Credit Card #		Exp.	Code
			25841
J'autorise tout travail tel qu'indiqué ci-haut : I authorize all work as indicated above :		Signature: Mathieu Courchesne	

#	Nom d'échantillon (client) / Sample ID (client)	Stop Positif *	Tuile Tile	Volume Air
11	TPSGC-COUR-25284-RESIDENCE ME-ETAGE-CAJ-PF-11			
12	TPSGC-COUR-25284-RESIDENCE ME-ETAGE-CAJ-M-12			
13	TPSGC-COUR-25284-RESIDENCE ME-ETAGE-PL-TVA-13		X	
14	TPSGC-COUR-25284-RESIDENCE ME-EXT.-MUR FONDATION-CRÉPI-14 A@I	X		
15	TPSGC-COUR-25284-RESIDENCE ME-EXT.-M-15 A@I	X		
16	TPSGC-COUR-25284-RESIDENCE ME-EXT.-JE-FENÊTRE-16			
17	TPSGC-COUR-25284-RESIDENCE ME-EXT.BARDEAU-TOIT-17			
18	TPSGC-COUR-25284-RESIDENCE ME-EXT.-JE-18			
19	TPSGC-COUR-25284-RESIDENCE ME-EXT.-JE-19			
20	TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01 A@I	X		
21	TPSGC-COUR-25275-ATELIER-GRENIER.-FL-02 A@B	X		
22	TPSGC-COUR-25275-ATELIER-EXT.-CALFEUTRAGE-03			
23	TPSGC-COUR-25275-ATELIER-EXT.-TOITURE-BARDEAU-04			
24	TPSGC-COUR-25275-ATELIER-EXT.-TOITURE-JE-05			
25	TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01 A@I	X		
26	TPSGC-COUR-25279-ENTREPÔT-P/C.-M-02 A@I	X		
27	TPSGC-COUR-25279-ENTREPÔT-EXT.-FENETRE-J.E.-03			
28	TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01 A@I	X		
29	TPSGC-COUR-25289-KIOSQUE DE COMMANDE-EXT.-JE-02			
30	TPSGC-COUR-25281-LOGETTE DE CONTRÔLE-AMONT-J.E.-01			
31	TPSGC-COUR-25290-CONTRÔLE NIVEAU EAU-PF-TA-01			
32	TPSGC-COUR-25290-CONTRÔLE NIVEAU EAU-EXT-JE-02			
33	TPSGC-COUR-25280-GARAGE-EXT-JE BLANC-01			
34	TPSGC-COUR-25280-GARAGE-EXT-JE BEIGE-02			
35	TPSGC-COUR-25280-GARAGE-EXT-JE VERT-03			
36	TPSGC-COUR-25280-GARAGE-EXT- FENÊTRE-JE BLANC-04			
37	TPSGC-COUR-25280-GARAGE-TOIT-BARDEAU-05			
38	TPSGC-COUR-25282-LOGETTE-RDC-COULOIR-PL-TVA-01		X	
39	TPSGC-COUR-25282-LOGETTE-RDC-TOILETTE-CAJ-PF-02			
40	TPSGC-COUR-25282-LOGETTE-RDC-BUREAU-CAJ-MUR-03			
41	TPSGC-COUR-25282-LOGETTE-EXT-MORTIER-04 A@I	X		
42	TPSGC-COUR-25282-LOGETTE-RDC-COULOIR-PL-TVA-05		X	
43	TPSGC-COUR-25282-LOGETTE-TOIT-EXT-BARDEAU-06			
44	TPSGC-COUR-25282-LOGETTE-EXT-JE BLANC-07			
45	TPSGC-COUR-25282-LOGETTE-EXT-JE GRIS-08			
46	TPSGC-COUR-25282-LOGETTE-EXT-JE CLAIR-09			
47	TPSGC-COUR-25282-LOGETTE-EXT-JE BRUN-10			

804 0607

Utilisez prendre note que selon la politique d'Eurofins, tout échantillon reçu après 16h sera considéré reçu et traité en date du prochain jour ouvrable

Numéro de demande

Nom du Client: **ENGLOBE**
 Demandeur: **Pearl Kemner Nichel**
 Délai d'analyse: 12 Hrs 24 Hrs 48Hrs 72Hrs Normal Autre

Adresse: **1080, Côte du Beaver Hall**
 Ville: **Montreal** Code Postal:
 Courriel: **Saukerner.Nichel@Emblecorp.com**
 Téléphone: **514-281-5151 Ext 222907**
 #BC / #PO: **25 84 1** Prélevé par: **N. Sourchesne/JSK.**
 Numéro de soumission: **Nichel**

Industries papeteries et minières :
 Code SENV (sections réservées aux industries minières et papeteries):
 Lieu SENV :

Informations des échantillons

Identification des échantillons	Méthode de prélèvement (Code SENV)	Nb contenants	Matrice	Date / heure de prélèvement
TPSGC-COOR-25284-Residence NE-				2017-10/11
55-Paint blanc-crème - O1				
TPSGC-COOR-25284-Residence NE-				
Etage - Paint beige - O2				
TPSGC-COOR-25284-Residence NE-				
RDC - Escalier - Paint gris - O3				
TPSGC-COOR-25284-Residence NE				
Ext - Paint blanche - O4				
TPSGC-COOR-25284-Residence NE-				
Ext - Paint verte - O5				
TPSGC-COOR-25284-Extremité -				
Ext - Paint blanche - O1				

Risque de contamination élevée (si oui SVP préciser)

Huiles et Graisses : Totales Minérales
 Hyd C10-C50 Identification Produits Pétroliers
 HAC HAM COV (HAC+HAM) BTEX THM
 Hydrocarbures Aromatiques Polycycliques (HAP)
 BPC Aroclors BPC Congénères
 Phénols GC-MS Indice phénols (colorimétrie)
 Métaux : * Extractibles Totaux Dissous Solubles à l'acide
 Mercure (Hg)
 Cyanures totaux Disponibles Oxydables
 Azote ammoniacal (NH3) NH3 Non Ionisé NH3 Ionisé
 Phosphore total Azote total Kjeldahl
 Chlorures Fluorures Sulfates Phosphates
 NO2 NO3 NO2+NO3
 Chrome Hexavalent (Cr VI)
 pH Turbidité
 DBO5 Totale Carbonée Soluble Carbonée Soluble
 DCO DCO Soluble
 Solides totaux Solides dissous MES MESV
 Sulfures (H2S)
 Daphnies : Méthode fédérale Méthode provinciale
 Truites Concentration unique Truites CL50
 Coliformes fécaux BHAA 35°C
 Coliformes Totaux E. Coli Entérocoques fécaux
 Salmonelles
 Régl. sur les matières dangereuses : RMD-LIX
 CMM Annexe 1 : Colonne A ou B Colonne C
 Plomb total

Certificat : Français Anglais Critères ABC Préliminaire requis

Lieu de prélèvement : **Lieu his torique national du Canal-de-St-James - O05**
 Remarques particulières : **Trouver au plomb exprimé en mg/L**

Numéro séquentiel : **Dessaisi** **Reçu** **Reçu**

Merci de nous fournir toutes informations pertinentes aux analyses afin d'éviter des problèmes analytiques notifiés ou des détails d'analyses supplémentaires.

Sols : 13 14 Eaux : 17

Métaux solubles à filtrer par Eurofins
 Métaux solubles filtrés sur le terrain



DEMANDE D'ANALYSE

Eurofins Pointe-Claire	121 boul. Hydrus
Pointe-Claire	Québec
HFR 1E6	HFR 1E6

Eurofins Saint-Augustin	227 rue de Luperon
Saint-Augustin-de-Desmaures	Québec
GSA 208	GSA 208

Veuillez prendre note que selon la politique d'Eurofins, tout échantillon reçu après 18h sera considéré reçu et traité en date du prochain jour ouvrable

Numéro de demande

Nom du Client: _____

Demandeur: _____

Code SENV (sections réservées aux industries minières et papeteries): _____

Lieu SENV: _____

Industries papeteries et minières: _____

Informations des échantillons

Adresse: _____

Ville: _____

Code Postal: _____

Courriel: _____

Téléphone: _____

#BC / #PO: _____

Prélevé par: _____

Numéro de soumission: _____

Si non fourni, les tarifs de votre soumission générale s'appliquent

Identification des échantillons	Méthode de prélèvement (Code SENV)	Nb contenants	Matrice	Date / heure de prélèvement	Risque de contamination élevée (si oui SVP préciser)	
					Organique	Inorganique
TPSGC-COOR-25279-Entrepôt - Ext - Peint verte 02				2017/01/11		
TPSGC-COOR-25275-Atelier - Pur - Peint beige - 01						
TPSGC-COOR-25278-Atelier - Ext - Peint blanche - 02						
TPSGC-COOR-25275-Atelier - Ext - Peint verte - 03						
TPSGC-COOR-25289-Kiosque de commande - Peint grise - 01						
TPSGC-COOR-25289-Kiosque de commande - Peint grise - 01						
de commande - Peint gris - Fosse - 02						

Huiles et Graisses: Totales Minérales

Hyd C10-C50 Identification Produits Pétroliers

HAC HAM COV (HAC+HAM) BTEX THM

Hydrocarbures Aromatiques Polycycliques (HAP)

BPC Aroclors BPC Congénères

Phénols GC-MS Indice phénols (colorimétrie)

Métaux: * Extractibles Totaux Dissous Solubles à l'acide

Mercure (Hg)

Cyanures totaux Disponibles Oxydables

Azote ammoniacal (NH3) NH3 Non Ionisé NH3 Ionisé

Phosphore total Azote total Kjeldahl

Chlorures Fluorures Sulfates Phosphates

NO2 NO3 NO2+NO3

Chrome Hexavalent (Cr VI)

pH Turbidité

DBO5 Totale Carbonée Soluble Carbonée Soluble

DCO DCO Soluble

Solides totaux Solides dissous MES MESV

Sulfures (H2S)

Daphnies: Méthode fédérale Méthode provinciale

Truites Concentration unique Truites CL50

Coliformes fécaux BHAA 35°C

Coliformes Totaux E. Coli Entérocoques fécaux

Salmonelles

Régl. sur les matières dangereuses: RMD-LIX

CMM Annexe 1: Colonne A ou B Colonne C

Plomb total

Matrice: A = absorbant, S = sol, EP = eau potable, ES = eau souterraine, EA = eau de surface, EM = eau de mine, EU = eau usée, L = eau de lavage, LIQ = liquide, SE = sédiment, B = boue, H = huile, F = froissé, C = échantillon, FI = filtre, AI = air

Certificat: Français Anglais

Critères ABC Préliminaire requis

Lieu de prélèvement: Canal - de - Saint - Ours

Remarques particulières: *Trouver en plomb ex primaires en*

Numéro séquentiel: _____

Dessais: _____

Reçu: _____

Date: _____

Reçu: _____

Date: _____

Soils: 13 14 17

Eaux: 13 14 17

Métaux solubles à filtrer par Eurofins

Métaux solubles filtrés sur le terrain

État de l'échantillon: Micro conforme = 1 / Micro non-conforme = 2
 DBO5 congelé = 3 / DBO5 non-congelé = 4 / Espace d'air = 5 / Bouteille trop remplie = 6
 (À l'usage du laboratoire seulement)

DEMANDE D'ANALYSE



Eurofins Pointe-Claire
121 Boul. Hymus
Pointe-Claire
Québec
H9R 1E6

Eurofins Saint-Augustin
237 rue de Liverpool
Saint-Augustin-de-Desmaures
Québec
G3H 2C8

Eurofins Québec
T. 418-878-4927
Sans taxe 1-866-365-2310
F. 418-878-2185
www.eurofins.ca/ETV

Numéro de demande
Veuillez prendre note que selon la politique de Eurofins, tout échantillon reçu après 16h sera considéré reçu et traité en date du prochain jour ouvrable

Nom du Client : _____
Demandeur : _____
Certificat : _____
Ville : _____ Code Postal : _____
Courriel : _____
Téléphone : _____
#BC / #PO : _____ Prélevé par : _____
Numéro de soumission : _____ Si non fourni, les tarifs de votre soumission générale s'appliquent

Industries papetières et minières :
Code SENV (sections réservées aux industries minières et papetières) : PI = Instantané, PC = composite 24h à fréquence fixe, PT = composite 24h proportionnel au débit

Informations des échantillons
Matrice : A = absorbant, S = sol, EP = eau potable, ES = eau souterraine, EA = eau de surface, EM = eau de mine, EU = eau usée, L = eau de lavage, LIQ = Liquide, SE = sédiment, B = boue, H = huile, F = floccs, C = échanton, FI = filtre, AI = air

Identification des échantillons	Méthode de prélèvement (code SENV)	Nb contenants	Matrice	Date / heure de prélèvement	Risque de contamination élevée (si oui SVP préciser)
TPSGC-COOR-25289-Kiosque de Gammande - peint-vert-pâle-03				2017/01/11	
TPSGC-COOR-25289-Kiosque de Gammande - peint-vert-04					
TPSGC-COOR-Pillar 6 - peint gris-01					
TPSGC-COOR-Pillar 6 - peint vert-02					
TPSGC-COOR-25289-Logote RDC - peint. blanc-01				2017/02/12	
TPSGC-COOR-25289-Logote RDC - peint. blanc-02					
TPSGC-COOR-25289-Logote RDC - peint. blanc-03					

Organique
Huiles et Graisses : Totales Minérales
 Hyd C10-C50 Identification Produits Pétroliers
 HAC HAM COV (HAC+HAM) BTEX THM
 Hydrocarbures Aromatiques Polycycliques (HAP)
 BPC Aroclors BPC Congénères
 Phénols GC-MS Indice phénols (colorimétrie)

Inorganique
Métaux : * Extractibles Totaux Dissous Solubles à l'acide
 Mercure (Hg)
 Cyanures totaux Disponibles Oxydables
 Azote ammoniacal (NH3) NH3 Non Ionisé NH3 Ionisé
 Phosphore total Azote total Kjeldahl
 Chlorures Fluorures Sulfates Phosphates
 NO2 NO3 NO2+NO3
 Chrome Hexavalent (Cr VI)
 pH Turbidité
 DBO5 Totale Carbonée Soluble Carbonée Soluble
 DCO DCO Soluble
 Solides totaux Solides dissous MES MESV
 Sulfures (H2S)

Ecotox
Daphnies : Méthode fédérale Méthode provinciale
 Truites Concentration unique Truites CL50
 Coliformes fécaux BHAA 35°C
 Coliformes Totaux E. Coli Entérocoques fécaux
 Salmonelles
 Régl. sur les matières dangereuses : RMD-LIX
 CMM Annexe 1 : Colonne A ou B Colonne C

Certificat : Français Anglais Critères ABC Préliminaire requis

Lieu de prélèvement : **Canal-de-Saint-Denis**
 Remarques particulières : **Teneur en plomb exprimée en mg/l**

Numéro séquentiel : **Dessais :** _____ **Reçu :** _____ **Date :** _____
Dessais : _____ **Reçu :** _____ **Date :** _____

Sols : 13 14 Eaux : 17

Métaux solubles à filtrer par Eurofins
 Métaux solubles filtrés sur le terrain

État de l'échantillon : Micro conforme = 1 / Micro non-conforme = 2
 DBO5 congelé = 3 / DBO5 non-congelé = 4 / Espace d'air = 5 / Bouteille trop remplie = 6
 (À l'usage du laboratoire seulement)



Eurofins Pointe-Claire 121 Boul. Hyrus Pointe-Claire Québec H8R 1E6	Eurofins Saint-Augustin 237 rue de Liverpool Saint-Augustin-de-Desmaures Québec G3A 2C8	T: 418-978-4927 Sans frais: 1-866-965-2470 F: 418-978-7165 www.eurofins.ca/env
---	---	---

DEMANDE D'ANALYSE

Veuillez prendre note que selon la politique d'Eurofins, tout échantillon reçu après 16h sera considéré reçu et traité en date du prochain jour ouvrable

Numéro de demande

Nom du Client		Délai d'analyse:	<input type="checkbox"/> 12 Hrs	<input type="checkbox"/> 24 Hrs	<input type="checkbox"/> 48Hrs	<input type="checkbox"/> 72Hrs	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Autre
Demandeur		Nom du projet:						

Adresse		Code Postal	
Ville			
Courriel			
Téléphone			
#BC / #PO		Prélevé par	
Numéro de soumission	Si non fourni, les tarifs de votre soumission générale s'appliquent		

Industries papetières et minières :
Code SENV (actions réservées aux industries minières et papetières): PI = Instantané, PC = composite 24h à fréquence fixe, PT = composite 24h proportionnel au débit

Lieu SENV :

Informations des échantillons

Matrics : A = absorbant, S = sol, EP = eau potable, ES = eau souterraine, EA = eau de surface, EM = eau de mine, EU = eau usée, L = eau de lavage, LIQ = liquide, SE = sédiment, B = boue, H = huile, F = frotis, C = charbon, FI = fibre, AI = air

Identification des échantillons	Méthode de prélèvement (Code SENV)	Nb contenants	Matrice	Date / heure de prélèvement	Risque de contamination élevée (si oui SVP préciser)
TPSGC-COOR-25282-Logite- Etage- peint. blanche - 04				201310/11/2	
TPSGC-COOR-25278-Entrebât					
Poutrelles - Peint. grise					
TPSGC-COOR-25280-Garage					
Ext. Peint. blanche - 01					
TPSGC-COOR-25280-Garage					
Ext - Peint. vert-bleu - 02					
TPSGC-COOR-25280-Garage					
Ext - Peint. verte - 03					
TPSGC-COOR-25290-Bois					
Niveau d'eau - Ext - Peint vert - 01					

Huiles et Graisses :	<input type="checkbox"/> Totales	<input type="checkbox"/> Minérales
<input type="checkbox"/> Hyd C10-C50	<input type="checkbox"/> Identification Produits Pétroliers	
<input type="checkbox"/> HAC	<input type="checkbox"/> HAM	<input type="checkbox"/> COV (HAC+HAM) <input type="checkbox"/> BTEX <input type="checkbox"/> THM
<input type="checkbox"/> Hydrocarbures Aromatiques Polycycliques (HAP)		
<input type="checkbox"/> BPC Aroclors <input type="checkbox"/> BPC Congénères		
<input type="checkbox"/> Phénols GC-MS <input type="checkbox"/> Indice phénols (colorimétrie)		
Métaux :	<input type="checkbox"/> Extractibles Totaux <input type="checkbox"/> Dissous <input type="checkbox"/> Solubles à l'acide	
<input type="checkbox"/> Mercure (Hg)		
<input type="checkbox"/> Cyanures totaux	<input type="checkbox"/> Disponibles	<input type="checkbox"/> Oxydables
<input type="checkbox"/> Azote ammoniacal (NH3)	<input type="checkbox"/> NH3 Non Ionisé	<input type="checkbox"/> NH3 Ionisé
<input type="checkbox"/> Phosphore total	<input type="checkbox"/> Azote total Kjeldahl	
<input type="checkbox"/> Chlorures	<input type="checkbox"/> Fluorures	<input type="checkbox"/> Sulfates <input type="checkbox"/> Phosphates
<input type="checkbox"/> NO2	<input type="checkbox"/> NO3	<input type="checkbox"/> NO2+NO3
<input type="checkbox"/> Chrome Hexavalent (Cr VI)		
<input type="checkbox"/> pH	<input type="checkbox"/> Turbidité	
<input type="checkbox"/> DBO5	<input type="checkbox"/> Totale	<input type="checkbox"/> Carbonée <input type="checkbox"/> Soluble <input type="checkbox"/> Carbonée Soluble
<input type="checkbox"/> DCO	<input type="checkbox"/> DCO Soluble	
<input type="checkbox"/> Solides totaux	<input type="checkbox"/> Solides dissous	<input type="checkbox"/> MES <input type="checkbox"/> MESV
<input type="checkbox"/> Sulfures (H2S)		
Daphnies :	<input type="checkbox"/> Méthode fédérale <input type="checkbox"/> Méthode provinciale	
<input type="checkbox"/> Truites Concentration unique	<input type="checkbox"/> Truites CL50	
<input type="checkbox"/> Coliformes fécaux <input type="checkbox"/> BHAA 35°C		
<input type="checkbox"/> Coliformes Totaux	<input type="checkbox"/> E. Coli	<input type="checkbox"/> Entérocoques fécaux
<input type="checkbox"/> Salmonelles		
<input type="checkbox"/> Régl. sur les matières dangereuses : RMD-LIX		
CMM Annexe 1 :	<input type="checkbox"/> Colonne A ou B <input type="checkbox"/> Colonne C	
<input type="checkbox"/> Plomb total		

Organique		Inorganique	

Ecotox		Micro.	

Régl.		Autres	

Soils :	<input type="checkbox"/> 13	<input type="checkbox"/> 14	<input type="checkbox"/> 17
----------------	-----------------------------	-----------------------------	-----------------------------

Merci de nous fournir toutes informations pertinentes aux analyses afin d'éviter des problèmes analytiques potentiels ou de délais d'analyses supplémentaires.

Lieu de prélèvement : Canal de Saint-Ours

Remarques particulières : Tenue en plomb et primaires en

Préliminaire requis : Français Anglais Critères ABC Préliminaire requis

Soils : 13 métaux : Ag, As, Ba, Cd, Cr, Co, Cu, Ni, Mn, Pb, Zn, 14 métaux : Ag, As, Ba, Cd, Cr, Co, Cu, Ni, Mn, Pb, Zn, Se, Eau : 17 métaux : Al, Si, As, Ba, Ca, Cd, Cr, Co, Cu, Ni, Mn, Pb, Zn, Se

Numero sequentiel : Dessaisi: Reçu: Reçu:

Date :

État de l'échantillon : Micro conforme = 1 / Micro non-conforme = 2
 DBO5 congelé = 3 / DBO5 non-congelé = 4 / Espace d'air = 5 / Bouteille trop remplie = 6
 (À l'usage du laboratoire seulement)

Annexe 4 Certificats d'analyses - amiante



Contact: Martin Gravelle
Company: Eurofins Essals Environnementaux
Address: 121, boul. Hymus
Pointe-Claire, Quebec H9R 1E6

REFERENCE DATA

Project / Location: 17-803952

PO Number: 000008

ALS Work Order: 1701333

TEM Bulk Narrative: Analysis was performed on FEI Tecnai TEM with integrated EDXA capabilities. Morphology, EDXA, and SAED measurements used to determine fiber species. Representative EDXA spectra of each asbestos type detected included. Asbestos percentage based on estimate by area in final residue. All sample collection is performed outside ALS and is the responsibility of the client. If sample collection or requested preparation or analysis procedures deviate from method requirements, interpretation of the results under strict EPA guidelines cannot be made. Samples disposed after 60 days. TEM grids archived 3 years. Results apply only to portions analyzed. Asbestos reported as "0.00" is equivalent to ND (None Detected).

Bulk Method Codes: EPA/600/R-93/116 includes detailed preparation and analytical procedures for asbestos in bulk building materials by stereo microscope, PLM, Gravimetry, XRD, and/or electron microscopy. Specific prep/analysis procedures elected according to material type and client request. "EPA 600" refers to samples directly prepared by grinding with mortar and pestle. Materials that cannot be prepared directly may require ashing in a muffle furnace, acid digestion, or both. "EPA 600 ASH" refers to resinous or flexible material ashed to burn off interfering organics. "EPA 600 ACID" refers to cementitious material treated with acid to dissolve mineral carbonates. "ELAP 198.4" refers to those prepared using both ashing and acid treatment due to material type or client requirements. "ELAP 198.6" refers to samples analyzed by PLM requiring TEM confirmation. "ELAP 198.1" refers to samples analyzed by PLM that do not require TEM analysis. "EPA 600/R-04" refers to a modified version of method EPA 600/R-04/004, known as The Cincinnati Method, for analysis of asbestos in vermiculite by PLM/TEM where fine material remaining from ND PLM analyses may be analyzed by TEM upon client request. This qualitative method reports asbestos as PRESENT or ABSENT only; no quantitative data supplied. "ENV 004" refers to the ALS SOP for analysis of asbestos in soil by PLM/TEM in which fines from ND PLM soils may be analyzed by TEM upon request. "+STOP" denotes samples not analyzed at client request because a previous sample in a homogeneous group was determined to be ACM (asbestos containing material).

NOTES: NA=Not Applicable, ND=None Detected, NON-ACM=Weight % of residue <1*,
TRACE=<1% for samples collected in US or <0.1% for samples collected in Canada,

† Act-Tremolite concentrations include Actinolite as well as the Libby Amphiboles;
Tremolite, Winchite, & Richterite.

*NON-ACM samples examined by TEM regardless of weight percent of residue.

TEM ANALYSIS DATA

EDXA Resolution: <175 eV
Accelerating Voltage: 100keV
Prep Start Date: 1/17/2017

Calibration Constant (10,000x): 1.02 µm/cm
Camera Constant: 129.25mm-Å
Analysis Start Date: 1/18/2017

Angela Sohn

Angela Sohn
ALS TEM Analyst

Shawn Smythe

Shawn Smythe
ALS Project Manager

This report shall not be reproduced except in full without written approval of ALS.

SAMPLE IDENTIFICATION

	TPSGC- Cour- 25284-	TPSGC- Cour- 25284-
	Residence ME-	Residence ME-
Client Sample ID:	TVA- 08	TVA- 13
ALS Sample ID:	1701333-01	1701333-02
Method Code:	ELAP 198.4	ELAP 198.4

SAMPLE DESCRIPTION

Homogeneity:	Inseparable	Inseparable
Color:	Beige/ Black Compact/	Beige/ Black Compact/
Texture:	Resinous	Resinous
Description:	Tile/ Mastic	Tile/ Mastic

GRAVIMETRIC DATA

Starting Weight (g):	0.6412	0.5875
Final Weight (g):	0.0168	0.0915
Weight % Residue:	2.6201	15.5745

% ASBESTOS IN SAMPLE

Chrysotile:	0.0000	0.3054
Amosite:	0.0000	0.0000
Crocidolite:	0.0000	0.0000
Act-Tremolite ^T :	0.0000	0.0000
Anthophyllite:	0.0000	0.0000
Total Asbestos:	0.0000	0.3054

NOTES

NONE.

EDXA SPECTRA

NOTE: Spurious peaks may originate from low background sample holder, column pole pieces, TEM grids, prep solutions or matrix materials.

EDAX is down. EDAX confirmation will be done once repaired. The Chrysotile identification has been confirmed with SAED.

PHOTOMICROGRAPHS

Collected using Gatan Digital Micrograph.

NONE.



Contact: Martin Gravelle
Company: Eurofins Essals Environnementaux
Address: 121, boul. Hymus
Pointe-Claire, Quebec H9R 1E6

REFERENCE DATA

Project / Location: 17-803952

PO Number: 000008

ALS Work Order: 1701418

TEM Bulk Narrative: Analysis was performed on FEI Tecnai TEM with integrated EDXA capabilities. Morphology, EDXA, and SAED measurements used to determine fiber species. Representative EDXA spectra of each asbestos type detected included. Asbestos percentage based on estimate by area in final residue. All sample collection is performed outside ALS and is the responsibility of the client. If sample collection or requested preparation or analysis procedures deviate from method requirements, interpretation of the results under strict EPA guidelines cannot be made. Samples disposed after 60 days. TEM grids archived 3 years. Results apply only to portions analyzed. Asbestos reported as "0.00" is equivalent to ND (None Detected).

Bulk Method Codes: EPA/600/R-93/116 includes detailed preparation and analytical procedures for asbestos in bulk building materials by stereo microscope, PLM, Gravimetry, XRD, and/or electron microscopy. Specific prep/analysis procedures elected according to material type and client request. "EPA 600" refers to samples directly prepared by grinding with mortar and pestle. Materials that cannot be prepared directly may require ashing in a muffle furnace, acid digestion, or both. "EPA 600 ASH" refers to resinous or flexible material ashed to burn off interfering organics. "EPA 600 ACID" refers to cementitious material treated with acid to dissolve mineral carbonates. "ELAP 198.4" refers to those prepared using both ashing and acid treatment due to material type or client requirements. "ELAP 198.6" refers to samples analyzed by PLM requiring TEM confirmation. "ELAP 198.1" refers to samples analyzed by PLM that do not require TEM analysis. "EPA 600/R-04" refers to a modified version of method EPA 600/R-04/004, known as The Cincinnati Method, for analysis of asbestos in vermiculite by PLM/TEM where fine material remaining from ND PLM analyses may be analyzed by TEM upon client request. This qualitative method reports asbestos as PRESENT or ABSENT only; no quantitative data supplied. "ENV 004" refers to the ALS SOP for analysis of asbestos in soil by PLM/TEM in which fines from ND PLM soils may be analyzed by TEM upon request. "+STOP" denotes samples not analyzed at client request because a previous sample in a homogeneous group was determined to be ACM (asbestos containing material).

NOTES: NA=Not Applicable, ND=None Detected, NON-ACM=Weight % of residue <1*,
TRACE=<1% for samples collected in US or <0.1% for samples collected in Canada,
† Act-Tremolite concentrations include Actinolite as well as the Libby Amphiboles;
Tremolite, Winchite, & Richterite.

*NON-ACM samples examined by TEM regardless of weight percent of residue.

TEM ANALYSIS DATA

EDXA Resolution: <175 eV
Accelerating Voltage: 100keV
Prep Start Date: 1/17/2017

Calibration Constant (10,000x): 1.02 µm/cm
Camera Constant: 129.25mm-Å
Analysis Start Date: 1/18/2017

Angela Sohn

Angela Sohn
ALS TEM Analyst

Shawn Smythe

Shawn Smythe
ALS Project Manager

This report shall not be reproduced except in full without written approval of ALS.

SAMPLE IDENTIFICATION

	TPSGC- Cour- 25282- Logette-	TPSGC- Cour- 25282- Logette-
Client Sample ID:	Cout- TVA- 01	Cout- TVA- 05
ALS Sample ID:	1701418-01	1701418-02
Method Code:	ELAP 198.4	ELAP 198.4

SAMPLE DESCRIPTION

Homogeneity:	Inseparable	Inseparable
Color:	Beige/ Black Compact/	Beige/ Black Compact/
Texture:	Resinous	Resinous
Description:	Tile/ Mastic	Tile/ Mastic

GRAVIMETRIC DATA

Starting Weight (g):	0.7797	0.4608
Final Weight (g):	0.3026	0.0161
Weight % Residue:	38.8098	3.4939

% ASBESTOS IN SAMPLE

Chrysotile:	0.0000	0.0000
Amosite:	0.0000	0.0000
Crocidolite:	0.0000	0.0000
Act-Tremolite [†] :	0.0000	0.0000
Anthophyllite:	0.0000	0.0000
Total Asbestos:	0.0000	0.0000

NOTES

NONE.

EDXA SPECTRA

NOTE: Spurious peaks may originate from low background sample holder, column pole pieces, TEM grids, prep solutions or matrix materials.

NONE.

PHOTOMICROGRAPHS

Collected using Gatan Digital Micrograph.

NONE.

Monsieur Mathieu Péladeau
EnGlobe Corp.
 1080, Beaver Hall, Bureau 300
 Montréal (Québec)
 H2Z 1S8

CERTIFICAT D'ANALYSE

CERTIFICAT # 17-0030A VERSION 1.0

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ors
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

CARACTÉRISATION MINÉRALOGIQUE EN MICROSCOPIE POLARISANTE ET DISPERSION DE COULEURS MÉTHODE IRSST 244

Quatre-vingt-un (81) échantillons ont été soumis pour fins d'analyse par microscopie polarisante et dispersion de couleurs, mais à la demande du client, seulement que soixante-treize (73) ont été analysés. Les échantillons ont été préparés et observés en respectant la méthode suivante :

Un fragment de chaque échantillon a été isolé. Selon le cas et afin d'extraire les fibres, les échantillons ont subi un léger broyage mécanique. Les particules et les fibres produites ont été transférées sur lames, recouvertes d'une lamelle et baignées dans des liquides d'indice de réfraction appropriés afin d'observer la dispersion de couleurs. Les propriétés optiques orthoscopiques et conoscopiques des échantillons sont également utilisées si elles permettent de compléter la caractérisation. Les résultats se résument comme suit :

TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01A	
Ciment gris et blanc	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01B	
Ciment gris, blanc et beige	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01C	
Ciment gris, blanc, beige et brun	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	< 1 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01D	
Ciment gris, blanc et brun	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01E	
Ciments gris et blanc	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01F	
Ciments gris et blanc	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01G	
Ciments gris et blanc	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres de laine de verre	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01H	
Ciment gris, blanc et brun	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	< 1 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01I	
Ciment gris, blanc et brun	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-SS-PC-M-02A *	
Ciments gris et brun et plâtre blanc et beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres de laine de verre	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-SS-PC-M-02B *	
Ciments gris et brun et plâtre blanc et beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres de laine de verre	< 1 %
Fibres de laine de roche / laine de laitier	< 1 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-SS-PC-M-02C *	
Ciments gris et plâtre blanc et beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres de laine de verre	< 1 %
Fibres de laine de roche / laine de laitier	< 1 %
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-SS-PC-M-02D *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres de laine de verre	Traces
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-SS-PC-M-02E *	
Ciment gris et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-SS-PC-M-02F *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-SS-PC-M-02G *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client :	EnGlobe Corp.	Numéro B.C. :	25841
Notre Projet :	17-803952	Votre Projet :	P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception :	Le 13 janvier 2017	Date analyse :	Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-SS-PC-M-02H *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres de laine de verre	Traces
Fibres de laine de roche / laine de laitier	Traces
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-SS-PC-M-02I *	
Ciment gris et brun et plâtre blanc, beige et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-SS-DÉBRIS CANEVAS-03	
Carton gris et brun (papier-amiante), présence de laines isolantes	
Fibres d'amiante CHRYSOTILE	80 – 85 %
Fibres synthétiques	< 1 %
Poils	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	15 – 20 %

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-CÀJ-M-04 *	
Gypse beige et composé à joints beige, présence de carton	
<i>Phase gypse</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Poils	< 1 %
Fibres organiques naturelles (cellulose)	15 – 20 %
Particules anguleuses, fragments et autres	80 – 85 %
<i>Phase composé à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-CÀJ-PF-05	
Composés à joints beiges, présence de carton	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06A	
Ciment gris, blanc et brun	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06B	
Ciments gris, blanc et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06C	
Ciments gris, blanc et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06D	
Ciment gris, blanc et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06E *	
Ciments gris et brun et plâtre blanc, beige et gris	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres de laine de roche / laine de laitier	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06F	
Ciment gris et blanc	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06G *	
Ciment gris, blanc et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06H *	
Ciments gris, blanc et brun et plâtre blanc et beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06I *	
Ciment gris, blanc et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07A	
Ciment gris, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07B	
Ciments gris, présence de terre cuite	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07C *	
Terre cuite rouge et ciment gris	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07D	
Ciments gris, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07E	
Ciment gris, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07F *	
Terre cuite rouge et ciment gris, présence de bois, de carton et de mousse isolante	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07G	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres de laine de verre	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07H	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07I	
Ciment gris, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09A *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09B *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09C *	
Ciment gris et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09D *	
Ciment gris et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09E *	
Ciment gris et brun et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09F *	
Ciment gris et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09G *	
Ciment gris et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09H *	
Ciment gris et brun et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09I *	
Ciment gris et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-PF-10A *	
Ciment gris et brun et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-PF-10B *	
Ciment gris et brun et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres de laine de verre	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-PF-10C *	
Ciment gris et brun et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-PF-10D *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client :	EnGlobe Corp.	Numéro B.C. :	25841
Notre Projet :	17-803952	Votre Projet :	P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception :	Le 13 janvier 2017	Date analyse :	Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-PF-10E *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-PF-10F *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres de laine de verre	< 1 %
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-PF-10G *	
Ciment gris et brun, plâtre blanc et beige et composé à joints beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres de laine de verre	< 1 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composé à joints</i>	
Fibres d'amiante CHRYSOTILE	< 1 % **
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

** La concentration de fibres d'amiante est évaluée être supérieure à 0,1%.

Client :	EnGlobe Corp.	Numéro B.C. :	25841
Notre Projet :	17-803952	Votre Projet :	P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception :	Le 13 janvier 2017	Date analyse :	Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-PF-10H *	
Ciment gris et brun et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-PF-10I *	
Ciment gris et brun, plâtre blanc et gris et composé à joints beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composé à joints</i>	
Fibres d'amiante CHRYSOTILE	< 1 % **
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

** La concentration de fibres d'amiante est évaluée être supérieure à 0,1%.

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-CAJ-PF-11 *	
Gypse beige, composé à joints beige et matériau beige, présence de carton et d'un treillis de filaments continus de fibres de verre	
<i>Phase gypse</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composé à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase matériau</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-CÀJ-M-12 *	
Gypse beige et composé à joints beige, présence de cartons	
<i>Phase gypse</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composé à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-MUR FONDATION-CRÉPI-14A	
Ciments gris et bruns	
Fibres d'amiante CHRYSOTILE	Traces *
Fibres de laine de verre	Traces
Fibres de laine de roche / laine de laitier	Traces
Fibres synthétiques	Traces
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* La concentration de fibres d'amiante est évaluée être inférieure à 0,1%.

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-MUR FONDATION-CRÉPI-14B	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-MUR FONDATION-CRÉPI-14C	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-MUR FONDATION-CRÉPI-14D	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-MUR FONDATION-CRÉPI-14E	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-MUR FONDATION-CRÉPI-14F	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	< 1 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-MUR FONDATION-CRÉPI-14G	
Ciments gris, bruns et blanc	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-MUR FONDATION-CRÉPI-14H	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-MUR FONDATION-CRÉPI-14I	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres de laine de roche / laine de laitier	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-M-15A *	
Ciment gris et brun et fini décoratif blanc, gris et brun	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres de laine de verre	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase fini décoratif</i>	
Fibres d'amiante CHRYSOTILE	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-JE-FENÊTRE-16 *	
Joints d'étanchéité gris et beige et revêtement goudronné noir	
<i>Phase joints d'étanchéité</i>	
Fibres d'amiante CHRYSOTILE	< 1 % **
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase revêtement goudronné</i>	
Fibres d'amiante CHRYSOTILE	5 – 10 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	85 – 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-BARDEAU-TOIT-17	
Bardeau d'asphalte noir, gris, brun et bleu	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	35 – 40 %
Particules anguleuses, fragments et autres	60 – 65 %

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-JE-18 *	
Joint d'étanchéité translucide et fini décoratif blanc, gris et vert	
<i>Phase joint d'étanchéité</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase fini décoratif</i>	
Fibres d'amiante CHRYSOTILE	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-JE-19	
Matériau beige et gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Résultats du contrôle de qualité

Le contrôle de qualité consiste à la reprise de 10% des échantillons analysés. Une différence en terme des pourcentages est normale puisqu'il s'agit d'une analyse visuelle semi-quantitative.

TPSGC-COUR-25284-RÉSIDENCE ME-SS-MORTIER-M-01C – CQ *	
Ciment gris, blanc, beige et brun	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	< 1 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

Résultats du contrôle de qualité (suite)

TPSGC-COUR-25284-RÉSIDENCE ME-SS-PC-M-02D * – CQ **	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-P/C-M-06B – CQ *	
Ciments gris, blanc et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

TPSGC-COUR-25284-RÉSIDENCE ME-RDC-MORTIER FOYER-M-07C * – CQ **	
Terre cuite rouge et ciment gris	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-M-09D * – CQ **	
Ciment gris et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Les 16 et 17 janvier 2017

Résultats du contrôle de qualité (suite)

TPSGC-COUR-25284-RÉSIDENCE ME-ÉTAGE-P/C-PF-10E * – CQ **	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-MUR FONDATION-CRÉPI-14D – CQ *	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

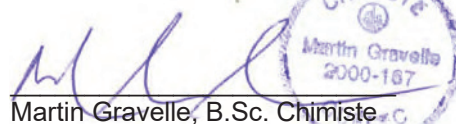
TPSGC-COUR-25284-RÉSIDENCE ME-EXT.-JE-19	
Matériau beige et gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Analysé par :




Annie Garand, Technicienne

Vérifié par :



Martin Gravelle, B.Sc. Chimiste



Notes : Il est reconnu que l'analyse par MLP ne peut déceler l'amiante dans un faible pourcentage d'échantillons contenant de l'amiante. Donc, un résultat négatif par MLP ne peut pas être garanti. Cette méthode analytique est semi-quantitative. Le domaine d'applicabilité de la méthode varie de <1 % à 100 % (v/v). Eurofins suggère que certains échantillons reportés comme « non détectées », « traces » ou « <1% » soient analysés par MET. Le présent certificat se rapporte seulement aux échantillons analysés. Ce certificat ne peut être reproduit, sauf en totalité, sans la permission écrite d'Eurofins. Le laboratoire n'est pas responsable de la précision des résultats lorsqu'une séparation physique des phases est requise. Le laboratoire n'est pas responsable de la représentativité de l'échantillon fourni. Les échantillons seront conservés pour une période de 60 jours ou selon les instructions écrites du client.

EUROFINS POINTE-CLAIRE PARTICIPE AU PROGRAMME AIHA PAT POUR L'IDENTIFICATION DE L'AMIANTE

Monsieur Mathieu Péladeau
EnGlobe Corp.
 1080, Beaver Hall, Bureau 300
 Montréal (Québec)
 H2Z 1S8

CERTIFICAT D'ANALYSE

CERTIFICAT # 17-0034A VERSION 1.0

Client :	EnGlobe Corp.	Numéro B.C. :	25841
Notre Projet :	17-803952	Votre Projet :	P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception :	Le 13 janvier 2017	Date analyse :	Le 18 janvier 2017

CARACTÉRISATION MINÉRALOGIQUE EN MICROSCOPIE POLARISANTE ET DISPERSION DE COULEURS MÉTHODE IRSST 244

Un (1) échantillon a été soumis pour fins d'analyse par microscopie polarisante et dispersion de couleurs. L'échantillon a été préparé et observé en respectant la méthode suivante :

Un fragment de chaque échantillon a été isolé. Selon le cas et afin d'extraire les fibres, les échantillons ont subi un léger broyage mécanique. Les particules et les fibres produites ont été transférées sur lames, recouvertes d'une lamelle et baignées dans des liquides d'indice de réfraction appropriés afin d'observer la dispersion de couleurs. Les propriétés optiques orthoscopiques et conoscopiques des échantillons sont également utilisées si elles permettent de compléter la caractérisation. Les résultats se résument comme suit :

TPSGC-COUR-25281-LOGETTE DE CONTRÔLE-AMONT-J.E.-01	
Joint d'étanchéité gris	
Fibres d'amiante CHRYSOTILE	< 1 % *
Fibres synthétiques	< 1 %
Poils	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* La concentration de fibres d'amiante est évaluée être supérieure à 0,1%.

Analysé par : 
 Annie Garand, Technicienne

Vérifié par : 
 Martin Gravelle, B.Sc. Chimiste

Notes : Il est reconnu que l'analyse par MLP ne peut déceler l'amiante dans un faible pourcentage d'échantillons contenant de l'amiante. Donc, un résultat négatif par MLP ne peut pas être garanti. Cette méthode analytique est semi-quantitative. Le domaine d'applicabilité de la méthode varie de <1 % à 100 % (v/v). Eurofins suggère que certains échantillons reportés comme « non détectées », « traces » ou « <1% » soient analysés par MET. Le présent certificat se rapporte seulement aux échantillons analysés. Ce certificat ne peut être reproduit, sauf en totalité, sans la permission écrite d'Eurofins. Le laboratoire n'est pas responsable de la précision des résultats lorsqu'une séparation physique des phases est requise. Le laboratoire n'est pas responsable de la représentativité de l'échantillon fourni. Les échantillons seront conservés pour une période de 60 jours ou selon les instructions écrites du client.

EUROFINS POINTE-CLAIRE PARTICIPE AU PROGRAMME AIHA PAT POUR L'IDENTIFICATION DE L'AMIANTE

Monsieur Mathieu Péladeau
EnGlobe Corp.
 1080, Beaver Hall, Bureau 300
 Montréal (Québec)
 H2Z 1S8

CERTIFICAT D'ANALYSE
 CERTIFICAT # 17-0035A VERSION 1.0

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 18 janvier 2017

**CARACTÉRISATION MINÉRALOGIQUE EN MICROSCOPIE
 POLARISANTE ET DISPERSION DE COULEURS
 MÉTHODE IRSST 244**

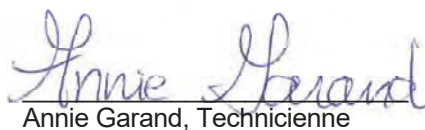
Deux (2) échantillons ont été soumis pour fins d'analyse par microscopie polarisante et dispersion de couleurs. Les échantillons ont été préparés et observés en respectant la méthode suivante :

Un fragment de chaque échantillon a été isolé. Selon le cas et afin d'extraire les fibres, les échantillons ont subi un léger broyage mécanique. Les particules et les fibres produites ont été transférées sur lames, recouvertes d'une lamelle et baignées dans des liquides d'indice de réfraction appropriés afin d'observer la dispersion de couleurs. Les propriétés optiques orthoscopiques et conoscopiques des échantillons sont également utilisées si elles permettent de compléter la caractérisation. Les résultats se résument comme suit :

TPSGC-COUR-25290-CONTRÔLE NIVEAU EAU-PF-TA-01 *	
Tuile acoustique brune et blanche et joint d'étanchéité blanc	
<i>Phase tuile acoustique</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (bois)	90 – 95 %
Particules anguleuses, fragments et autres	5 – 10 %
<i>Phase joint d'étanchéité</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25290-CONTRÔLE NIVEAU EAU-EXT-JE-02	
Joint d'étanchéité gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Analysé par : 
 Annie Garand, Technicienne

Vérfié par :  
 Martin Gravelle, B.Sc. Chimiste

Notes : Il est reconnu que l'analyse par MLP ne peut déceler l'amiante dans un faible pourcentage d'échantillons contenant de l'amiante. Donc, un résultat négatif par MLP ne peut pas être garanti. Cette méthode analytique est semi-quantitative. Le domaine d'applicabilité de la méthode varie de <1 % à 100 % (v/v). Eurofins suggère que certains échantillons reportés comme « non détectées », « traces » ou « <1% » soient analysés par MET. Le présent certificat se rapporte seulement aux échantillons analysés. Ce certificat ne peut être reproduit, sauf en totalité, sans la permission écrite d'Eurofins. Le laboratoire n'est pas responsable de la précision des résultats lorsqu'une séparation physique des phases est requise. Le laboratoire n'est pas responsable de la représentativité de l'échantillon fourni. Les échantillons seront conservés pour une période de 60 jours ou selon les instructions écrites du client.

EUROFINS POINTE-CLAIRE PARTICIPE AU PROGRAMME AIHA PAT POUR L'IDENTIFICATION DE L'AMIANTE

Monsieur Mathieu Péladeau
EnGlobe Corp.
 1080, Beaver Hall, Bureau 300
 Montréal (Québec)
 H2Z 1S8

CERTIFICAT D'ANALYSE

CERTIFICAT # 17-0036A VERSION 1.0

Client :	EnGlobe Corp.	Numéro B.C. :	25841
Notre Projet :	17-803952	Votre Projet :	P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception :	Le 13 janvier 2017	Date analyse :	Le 18 janvier 2017

CARACTÉRISATION MINÉRALOGIQUE EN MICROSCOPIE POLARISANTE ET DISPERSION DE COULEURS MÉTHODE IRSST 244

Cinq (5) échantillons ont été soumis pour fins d'analyse par microscopie polarisante et dispersion de couleurs. Les échantillons ont été préparés et observés en respectant la méthode suivante :

Un fragment de chaque échantillon a été isolé. Selon le cas et afin d'extraire les fibres, les échantillons ont subi un léger broyage mécanique. Les particules et les fibres produites ont été transférées sur lames, recouvertes d'une lamelle et baignées dans des liquides d'indice de réfraction appropriés afin d'observer la dispersion de couleurs. Les propriétés optiques orthoscopiques et conoscopiques des échantillons sont également utilisées si elles permettent de compléter la caractérisation. Les résultats se résument comme suit :

TPSGC-COUR-25280-GARAGE-EXT-JE BLANC-01	
Joints d'étanchéité blanc, beige et gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25280-GARAGE-EXT-JE BEIGE-02	
Joint d'étanchéité beige, gris et vert	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %


TPSGC-COUR-25280-GARAGE-EXT-JE VERT-03	
Joint d'étanchéité vert, présence de mousse isolante	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres de laine de roche / laine de laitier	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 18 janvier 2017


TPSGC-COUR-25280-GARAGE-EXT-FENÊTRE-JE BLANC-04	
Matériaux beiges et brun	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25280-GARAGE-TOIT-BARDEAU-05	
Bardeau d'asphalte noir, gris et blanc	
Fibres d'amiante	Non détectées
Filaments continus de fibres de verre	15 – 20 %
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	80 – 85 %

Analysé par :


 Annie Garand, Technicienne

Vérifié par :


 Martin Gravelle, B.Sc. Chimiste


Notes : Il est reconnu que l'analyse par MLP ne peut déceler l'amiante dans un faible pourcentage d'échantillons contenant de l'amiante. Donc, un résultat négatif par MLP ne peut pas être garanti. Cette méthode analytique est semi-quantitative. Le domaine d'applicabilité de la méthode varie de <1 % à 100 % (v/v). Eurofins suggère que certains échantillons reportés comme « non détectées », « traces » ou « <1% » soient analysés par MET. Le présent certificat se rapporte seulement aux échantillons analysés. Ce certificat ne peut être reproduit, sauf en totalité, sans la permission écrite d'Eurofins. Le laboratoire n'est pas responsable de la précision des résultats lorsqu'une séparation physique des phases est requise. Le laboratoire n'est pas responsable de la représentativité de l'échantillon fourni. Les échantillons seront conservés pour une période de 60 jours ou selon les instructions écrites du client.

EUROFINS POINTE-CLAIRE PARTICIPE AU PROGRAMME AIHA PAT POUR L'IDENTIFICATION DE L'AMIANTE

Monsieur Mathieu Péladeau
EnGlobe Corp.
 1080, Beaver Hall, Bureau 300
 Montréal (Québec)
 H2Z 1S8

CERTIFICAT D'ANALYSE

CERTIFICAT # 17-0037A VERSION 1.0

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 18 janvier 2017

CARACTÉRISATION MINÉRALOGIQUE EN MICROSCOPIE POLARISANTE ET DISPERSION DE COULEURS MÉTHODE IRSST 244

Dix (10) échantillons ont été soumis pour fins d'analyse par microscopie polarisante et dispersion de couleurs. Les échantillons ont été préparés et observés en respectant la méthode suivante :

Un fragment de chaque échantillon a été isolé. Selon le cas et afin d'extraire les fibres, les échantillons ont subi un léger broyage mécanique. Les particules et les fibres produites ont été transférées sur lames, recouvertes d'une lamelle et baignées dans des liquides d'indice de réfraction appropriés afin d'observer la dispersion de couleurs. Les propriétés optiques orthoscopiques et conoscopiques des échantillons sont également utilisées si elles permettent de compléter la caractérisation. Les résultats se résument comme suit :

TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01A	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01B	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01C	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 18 janvier 2017

TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01D	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01E	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01F	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01G	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01H	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01I	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25289-KIOSQUE DE COMMANDE-EXT.-JE-02	
Joint d'étanchéité gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

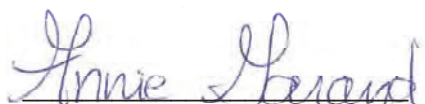
Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 18 janvier 2017

Résultats du contrôle de qualité

Le contrôle de qualité consiste à la reprise de 10% des échantillons analysés. Une différence en terme des pourcentages est normale puisqu'il s'agit d'une analyse visuelle semi-quantitative.

TPSGC-COUR-25289-KIOSQUE DE COMMANDE-PL-CIMENT-01C – CQ *	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

Analysé par : 
Annie Garand, Technicienne

Vérfié par : 
Martin Gravelle, B.Sc. Chimiste



Notes : Il est reconnu que l'analyse par MLP ne peut déceler l'amiante dans un faible pourcentage d'échantillons contenant de l'amiante. Donc, un résultat négatif par MLP ne peut pas être garanti. Cette méthode analytique est semi-quantitative. Le domaine d'applicabilité de la méthode varie de <1 % à 100 % (v/v). Eurofins suggère que certains échantillons reportés comme « non détectées », « traces » ou « <1% » soient analysés par MET. Le présent certificat se rapporte seulement aux échantillons analysés. Ce certificat ne peut être reproduit, sauf en totalité, sans la permission écrite d'Eurofins. Le laboratoire n'est pas responsable de la précision des résultats lorsqu'une séparation physique des phases est requise. Le laboratoire n'est pas responsable de la représentativité de l'échantillon fourni. Les échantillons seront conservés pour une période de 60 jours ou selon les instructions écrites du client.

EUROFINS POINTE-CLAIRE PARTICIPE AU PROGRAMME AIHA PAT POUR L'IDENTIFICATION DE L'AMIANTE

Monsieur Mathieu Péladeau
EnGlobe Corp.
 1080, Beaver Hall, Bureau 300
 Montréal (Québec)
 H2Z 1S8

CERTIFICAT D'ANALYSE

CERTIFICAT # 17-0038A VERSION 1.0

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 18 janvier 2017

CARACTÉRISATION MINÉRALOGIQUE EN MICROSCOPIE POLARISANTE ET DISPERSION DE COULEURS MÉTHODE IRSST 244

Quatorze (14) échantillons ont été soumis pour fins d'analyse par microscopie polarisante et dispersion de couleurs. Les échantillons ont été préparés et observés en respectant la méthode suivante :

Un fragment de chaque échantillon a été isolé. Selon le cas et afin d'extraire les fibres, les échantillons ont subi un léger broyage mécanique. Les particules et les fibres produites ont été transférées sur lames, recouvertes d'une lamelle et baignées dans des liquides d'indice de réfraction appropriés afin d'observer la dispersion de couleurs. Les propriétés optiques orthoscopiques et conoscopiques des échantillons sont également utilisées si elles permettent de compléter la caractérisation. Les résultats se résument comme suit :

TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01A	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres de laine de verre	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01B	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01C	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01D	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 18 janvier 2017

TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01E	
Ciments gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01F	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres de laine de verre	< 1 %
Fibres de laine de roche / laine de laitier	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01G	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01H	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01I	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25275-ATELIER-GRENIER-FL-02A	
Laine isolante beige, grise et brune, présence de bois, de bardeau d'asphalte et de ciment	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	75 – 80 %
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	20 – 25 %

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 18 janvier 2017

TPSGC-COUR-25275-ATELIER-GRENIER-FL-02B	
Laines isolantes beiges, rose et grise, présence de bois, de carton, de revêtement goudronné, d'un treillis de filaments continus de fibres de verre et de ciment	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	70 – 75 %
Fibres de laine de verre	1 – 5 %
Fibres synthétiques	< 1 %
Poils	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	20 – 30 %

TPSGC-COUR-25275-ATELIER-EXT.-CALFEUTRAGE-03	
Joint d'étanchéité blanc, présence de bois et de ciment	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres de laine de roche / laine de laitier	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25275-ATELIER-EXT.-TOITURE-BARDEAU-04	
Bardeau d'asphalte noir, gris et blanc	
Fibres d'amiante	Non détectées
Fibres synthétiques	30 – 35 %
Fibres de laine de roche / laine de laitier	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	65 – 70 %

TPSGC-COUR-25275-ATELIER-EXT.-TOITURE-JE-05	
Joint d'étanchéité brun, présence de ciment	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	Traces
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Résultats du contrôle de qualité

Le contrôle de qualité consiste à la reprise de 10% des échantillons analysés. Une différence en terme des pourcentages est normale puisqu'il s'agit d'une analyse visuelle semi-quantitative.

TPSGC-COUR-25275-ATELIER-EXT.-MORTIER-01C – CQ *	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

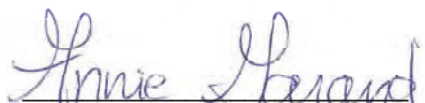
* Résultats acceptables : oui non

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 18 janvier 2017

Résultats du contrôle de qualité (suite)

TPSGC-COUR-25275-ATELIER-EXT.-TOITURE-BARDEAU-04 – CQ *	
Bardeau d'asphalte noir, gris et blanc	
Fibres d'amiante	Non détectées
Fibres synthétiques	30 – 35 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	65 – 70 %

* Résultats acceptables : oui non

Analysé par : 
Annie Garand, Technicienne

Vérfié par : 
Martin Gravelle, B.Sc. Chimiste 

Notes : Il est reconnu que l'analyse par MLP ne peut déceler l'amiante dans un faible pourcentage d'échantillons contenant de l'amiante. Donc, un résultat négatif par MLP ne peut pas être garanti. Cette méthode analytique est semi-quantitative. Le domaine d'applicabilité de la méthode varie de <1 % à 100 % (v/v). Eurofins suggère que certains échantillons reportés comme « non détectées », « traces » ou « <1% » soient analysés par MET. Le présent certificat se rapporte seulement aux échantillons analysés. Ce certificat ne peut être reproduit, sauf en totalité, sans la permission écrite d'Eurofins. Le laboratoire n'est pas responsable de la précision des résultats lorsqu'une séparation physique des phases est requise. Le laboratoire n'est pas responsable de la représentativité de l'échantillon fourni. Les échantillons seront conservés pour une période de 60 jours ou selon les instructions écrites du client.

EUROFINS POINTE-CLAIRE PARTICIPE AU PROGRAMME AIHA PAT POUR L'IDENTIFICATION DE L'AMIANTE

Monsieur Mathieu Péladeau
EnGlobe Corp.
 1080, Beaver Hall, Bureau 300
 Montréal (Québec)
 H2Z 1S8

CERTIFICAT D'ANALYSE

CERTIFICAT # 17-0039A VERSION 1.0

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 18 janvier 2017

CARACTÉRISATION MINÉRALOGIQUE EN MICROSCOPIE POLARISANTE ET DISPERSION DE COULEURS MÉTHODE IRSST 244

Seize (16) échantillons ont été soumis pour fins d'analyse par microscopie polarisante et dispersion de couleurs. Les échantillons ont été préparés et observés en respectant la méthode suivante :

Un fragment de chaque échantillon a été isolé. Selon le cas et afin d'extraire les fibres, les échantillons ont subi un léger broyage mécanique. Les particules et les fibres produites ont été transférées sur lames, recouvertes d'une lamelle et baignées dans des liquides d'indice de réfraction appropriés afin d'observer la dispersion de couleurs. Les propriétés optiques orthoscopiques et conoscopiques des échantillons sont également utilisées si elles permettent de compléter la caractérisation. Les résultats se résument comme suit :

TPSGC-COUR-25282-LOGETTE-RDC-TOILETTE-CÀJ-PF-02	
Composés à joints beiges, présence de cartons et d'un treillis de filaments continus de fibres de verre	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25282-LOGETTE-RDC-BUREAU-CÀJ-MUR-03 *	
Gypse beige et composés à joints beiges, présence de carton	
<i>Phase gypse</i>	
Fibres d'amiante	Non détectées
Filaments continus de fibres de verre	5 – 10 %
Fibres synthétiques	Traces
Poils	Traces
Fibres organiques naturelles (cellulose)	5 – 10 %
Particules anguleuses, fragments et autres	80 – 90 %
<i>Phase composés à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25282-LOGETTE-EXT-MORTIER-04A	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 18 janvier 2017

TPSGC-COUR-25282-LOGETTE-EXT-MORTIER-04B	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25282-LOGETTE-EXT-MORTIER-04C	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25282-LOGETTE-EXT-MORTIER-04D	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25282-LOGETTE-EXT-MORTIER-04E	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25282-LOGETTE-EXT-MORTIER-04F	
Ciments gris et brun, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25282-LOGETTE-EXT-MORTIER-04G	
Ciment gris, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	Traces
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25282-LOGETTE-EXT-MORTIER-04H	
Ciment gris, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 18 janvier 2017

TPSGC-COUR-25282-LOGETTE-EXT-MORTIER-04I	
Ciment gris, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25282-LOGETTE-TOIT-EXT-BARDEAU-06	
Bardeau d'asphalte noir, gris, blanc et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	30 – 35 %
Fibres de laine de verre	< 1 %
Filaments continus de fibres de verre	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	65 – 70 %

TPSGC-COUR-25282-LOGETTE-EXT-JE BLANC-07	
Joint d'étanchéité blanc, gris et brun, présence de ciment	
Fibres d'amiante	Non détectées
Fibres de laine de verre	< 1 %
Fibres synthétiques	< 1 %
Poils	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25282-LOGETTE-EXT-JE GRIS-08	
Joints d'étanchéité gris	
Fibres d'amiante	Non détectées
Filaments continus de fibres de verre	1 – 5 %
Fibres de laine de roche / laine de laitier	< 1 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25282-LOGETTE-EXT-JE CLAIR-09	
Joint d'étanchéité translucide, gris et vert	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25282-LOGETTE-EXT-JE BRUN-10	
Joint d'étanchéité brun, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

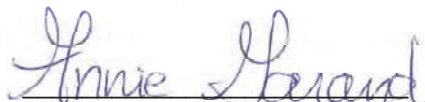
Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 18 janvier 2017

Résultats du contrôle de qualité

Le contrôle de qualité consiste à la reprise de 10% des échantillons analysés. Une différence en terme des pourcentages est normale puisqu'il s'agit d'une analyse visuelle semi-quantitative.

TPSGC-COUR-25282-LOGETTE-EXT-MORTIER-04G – CQ *	
Ciment gris, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

Analysé par : 
Annie Garand, Technicienne

Vérifié par : 
Martin Gravelle, B.Sc. Chimiste



Notes : Il est reconnu que l'analyse par MLP ne peut déceler l'amiante dans un faible pourcentage d'échantillons contenant de l'amiante. Donc, un résultat négatif par MLP ne peut pas être garanti. Cette méthode analytique est semi-quantitative. Le domaine d'applicabilité de la méthode varie de <1 % à 100 % (v/v). Eurofins suggère que certains échantillons reportés comme « non détectées », « traces » ou « <1% » soient analysés par MET. Le présent certificat se rapporte seulement aux échantillons analysés. Ce certificat ne peut être reproduit, sauf en totalité, sans la permission écrite d'Eurofins. Le laboratoire n'est pas responsable de la précision des résultats lorsqu'une séparation physique des phases est requise. Le laboratoire n'est pas responsable de la représentativité de l'échantillon fourni. Les échantillons seront conservés pour une période de 60 jours ou selon les instructions écrites du client.

EUROFINS POINTE-CLAIRE PARTICIPE AU PROGRAMME AIHA PAT POUR L'IDENTIFICATION DE L'AMIANTE

Monsieur Mathieu Péladeau
EnGlobe Corp.
 1080, Beaver Hall, Bureau 300
 Montréal (Québec)
 H2Z 1S8

CERTIFICAT D'ANALYSE

CERTIFICAT # 17-0041A VERSION 1.0

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 19 janvier 2017

CARACTÉRISATION MINÉRALOGIQUE EN MICROSCOPIE POLARISANTE ET DISPERSION DE COULEURS MÉTHODE IRSST 244

Dix-neuf (19) échantillons ont été soumis pour fins d'analyse par microscopie polarisante et dispersion de couleurs. Les échantillons ont été préparés et observés en respectant la méthode suivante :

Un fragment de chaque échantillon a été isolé. Selon le cas et afin d'extraire les fibres, les échantillons ont subi un léger broyage mécanique. Les particules et les fibres produites ont été transférées sur lames, recouvertes d'une lamelle et baignées dans des liquides d'indice de réfraction appropriés afin d'observer la dispersion de couleurs. Les propriétés optiques orthoscopiques et conoscopiques des échantillons sont également utilisées si elles permettent de compléter la caractérisation. Les résultats se résument comme suit :

TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01A	
Ciments gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01B	
Ciments gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01C	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01D	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01E	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 19 janvier 2017

TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01F	
Ciments gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01G	
Ciments gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01H	
Ciments gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01I	
Ciments gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25279-ENTREPÔT-P/C-M-02A *	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25279-ENTREPÔT-P/C-M-02B *	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 19 janvier 2017

TPSGC-COUR-25279-ENTREPÔT-P/C-M-02C *	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25279-ENTREPÔT-P/C-M-02D *	
Ciments gris et brun et plâtre blanc et beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25279-ENTREPÔT-P/C-M-02E *	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25279-ENTREPÔT-P/C-M-02F	
Ciments gris, brun et vert, présence de plâtre	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 19 janvier 2017

TPSGC-COUR-25279-ENTREPÔT-P/C-M-02G *	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25279-ENTREPÔT-P/C-M-02H *	
Ciments gris et brun et plâtre blanc et beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-COUR-25279-ENTREPÔT-P/C-M-02I	
Ciments gris et brun, présence de plâtre	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-COUR-25279-ENTREPÔT-EXT.-FENÊTRE-JE-03	
Joint d'étanchéité beige, gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

Résultats du contrôle de qualité

Le contrôle de qualité consiste à la reprise de 10% des échantillons analysés. Une différence en terme des pourcentages est normale puisqu'il s'agit d'une analyse visuelle semi-quantitative.

TPSGC-COUR-25279-ENTREPÔT-EXT.-MORTIER-01C – CQ *	
Ciments gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

Client : EnGlobe Corp.	Numéro B.C. : 25841
Notre Projet : 17-803952	Votre Projet : P-0012240-0-02-261 – Lieu Historique du Canal-de-St-Ours
Date réception : Le 13 janvier 2017	Date analyse : Le 19 janvier 2017

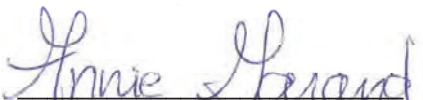
Résultats du contrôle de qualité (suite)

TPSGC-COUR-25279-ENTREPÔT-P/C-M-02D * – CQ **	
Ciments gris et brun et plâtre blanc et beige	
Phase ciments	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
Phase plâtre	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

Analysé par :



Annie Garand, Technicienne

Vérifié par :



Martin Gravelle, B.Sc. Chimiste



Notes : Il est reconnu que l'analyse par MLP ne peut déceler l'amiante dans un faible pourcentage d'échantillons contenant de l'amiante. Donc, un résultat négatif par MLP ne peut pas être garanti. Cette méthode analytique est semi-quantitative. Le domaine d'applicabilité de la méthode varie de <1 % à 100 % (v/v). Eurofins suggère que certains échantillons reportés comme « non détectées », « traces » ou « <1% » soient analysés par MET. Le présent certificat se rapporte seulement aux échantillons analysés. Ce certificat ne peut être reproduit, sauf en totalité, sans la permission écrite d'Eurofins. Le laboratoire n'est pas responsable de la précision des résultats lorsqu'une séparation physique des phases est requise. Le laboratoire n'est pas responsable de la représentativité de l'échantillon fourni. Les échantillons seront conservés pour une période de 60 jours ou selon les instructions écrites du client.

EUROFINS POINTE-CLAIRE PARTICIPE AU PROGRAMME AIHA PAT POUR L'IDENTIFICATION DE L'AMIANTE



Laboratoire d'amiante de Pinchin Environmental *Certificat d'analyse*

ANALYSE DES ÉCHANTILLONS EN VRAC AFIN DE DÉTERMINER LA PRÉSENCE D'AMIANTE PAR LA MICROSCOPIE À LUMIÈRE POLARISÉE ET LA DISPERSION COLORANTE

Nom de Projet: Parc Canada, Maison Du Surintendant St-Ours
Le Groupe Gesfor Poirier, Pinchin inc.

N° de Projet: M04-25083-395
Préparé pour: Barbara Lindsay
**N° de Référence
du Laboratoire:** b95642

Date: 25 janvier 2013
Analyste(s): A. Wells

Nbre d'échantillons soumis: 1
Nbre de phases analysées: 1

Les procédures de préparation et d'analyse sont en accord avec la méthode IRSST 244-2 datée de 1999 et U.S. EPA méthode 600/R-93/116 datée de juillet, 1993. Les fibres d'amiante sont identifiées à l'aide de la combinaison de leur morphologie, couleur, indice de réfraction, extinction, signe d'élongation, biréfringence, et la dispersion des couleurs. Un estimation visuelle de la quantité d'amiante qui se trouve dans l'échantillon est fait. Chaque phase d'un échantillon multi-phases est sujet à une analyse séparée.

Pinchin Environnement Ltée est accrédité par le "National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (NMLAP Code 101270-0)" en ce qui concerne les méthodes d'essais sélectives d'identification de l'amiante dans les échantillons en vrac et rencontre aussi les exigences de ISO/IEC 17025:2005.

Ce rapport d'essais se rapporte seulement aux échantillons analysés.

Les résultats sont présentés dans le table ci-joint.

NOTE: Les tuiles de plancher en vinyle peuvent contenir des fibres très fines d'amiante qui peuvent être manquées par certains laboratoires qui utilisent la méthode MLP. Des études internes de vérification réalisées par Pinchin indiquent que la chance de manquer la présence d'amiante dans une tuile de plancher en vinyle n'est pas supérieure à environ 2%. Documentation supplémentaire est disponible sur demande. Les résultats d'analyse (MLP) des échantillons de poussiéreux ne peuvent pas être utilisés comme référence du niveau présent ou passé des fibres d'amiante aéroportées.

Laboratoire d'amiante de Pinchin Environmental Certificat d'analyse

Nom de Project: Parc Canada, Maison Du Surintendant St-Ours
Le Groupe Gesfor Poirier, Pinchin inc.

N° de Projet: M04-25083-395
Préparé pour: Barbara Lindsay
N° de Référence du Laboratoire: b95642
Date de l'analyse: 25 janvier 2013

ANALYSE D'ÉCHANTILLONS EN VRAC

IDENTIFICATION D'ÉCHANTILLONS	DESCRIPTION D'ÉCHANTILLONS	COMPOSITION (%) (ESTIMATION VISUELLE)	
		AMIANTE	AUTRES
0001 Vermiculite	Homogène, gris, beige et brun, fragments en vrac, matériau ayant l'apparence du mica.	Actinolite/Trémolite > 0,1%	Vermiculite > 75%
Commentaires:	L'aspect de l'échantillon correspond à celui de la vermiculite provenant des mines de Libby (Montana, É. U.) (une source connue pour être contaminée par de l'amiante de la famille des amphiboles). L'analyse de cet échantillon par microscopie en lumière polarisée (MLP) a permis de confirmer qu'il contenait des fibres d'amiante. Le laboratoire indique une concentration en amiante supérieure à 0,1 %, qui est la valeur à partir de laquelle le Code de sécurité pour les travaux de construction, applicable au Québec, considère un matériau comme contenant de l'amiante. Aucune fourchette de pourcentage n'est donnée dans la mesure où la teneur en amiante de la vermiculite provenant des mines de Libby peut grandement varier d'un échantillon à l'autre, y compris à un même emplacement, en raison entre autres facteurs de la tendance de l'amiante à migrer vers le fond.		

ANALYSTE



Annexe 5 Certificats d'analyses - peinture

Numéro de demande d'analyse: **17-804067**



Demande d'analyse reçue le: 2017-01-13

Date d'émission du certificat: 2017-01-20

Numéro de version du certificat: 1

- Certificat d'analyse officiel
- Certificat d'analyse préliminaire

Requérant

Englobe Corp.

1080, Côte du Beaver Hall, Suite 300
 Montréal, Québec, Canada
 H2Z 1S8
 Téléphone : (514) 281-5173
 Télécopieur : (514) 798-8790

Bon de commande	Votre Projet	Chargé de Projet
25841	P0012240-0-02-261	Jean Kesner Michel

Commentaires

Les critères du "nouveau Guide d'intervention par rapport à la Protection des sols et réhabilitation des terrains contaminés" inclus dans ce certificat sont à titre indicatif seulement.

Les critères A pour les métaux correspondent à ceux de la région des Basses-Terres du St-Laurent.

Les critères D correspondant au "Règlement sur l'enfouissement des sols contaminés" sont inclus dans ce certificat à titre indicatif seulement.

Cette version remplace et annule toute version antérieure, le cas échéant.

NA : Information non-fournie et/ou non-applicable

AVIS DE CONFIDENTIALITÉ : Ce document est à l'usage exclusif du requérant ci-dessus et est confidentiel. Si vous n'êtes pas le destinataire, soyez avisé que tout usage, reproduction, ou distribution de ce document est strictement interdit. Si vous avez reçu ce document par erreur, veuillez nous en informer immédiatement. / **CONFIDENTIALITY NOTICE :** This document is intended for the addressee only and is considered confidential. If you are not the addressee, you are hereby notified that any use, reproduction or distribution of this document is strictly prohibited. If you have received this document by error, please notify us immediately.



Client: **Englobe Corp.**

 Numéro de demande: **17-804067**

Bon de commande	Votre Projet	Chargé de Projet
25841	P0012240-0-02-261	Jean Kesner Michel

Échantillon(s)

No Labo.	3293822	3293823	3293824	3293825
Votre Référence	TPSGC-cour-25284-résid. ME-SS-peint-blanc-crème-01	TPSGC-cour-25284-résid. ME-etage-peint-beige-02	TPSGC-cour-25284-résid. ME-rdc-escalier-peint-aris	TPSGC-cour-25284-résid. ME-ext-peint-blanche-04
Matrice	Peinture sèche	Peinture sèche	Peinture sèche	Peinture sèche
Prélevé par	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel
Lieu de prélèvement	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours
Prélevé le	2017-01-11	2017-01-11	2017-01-11	2017-01-11
Reçu Labo	2017-01-13	2017-01-13	2017-01-13	2017-01-13

Paramètre(s)

Méthode

Référence

Plomb (Pb) extractible total	Préparation	2017-01-17	2017-01-17	2017-01-17	2017-01-17
Métaux par ICP. Résultats sur base sèche. (Accrédité)	Analyse	2017-01-18	2017-01-18	2017-01-18	2017-01-18
E-A-EN-EN-CHI-PC-MD017 (REF: MA. 200 - Mét 1.2)	No. séquence	571849	571849	571849	571849
Plomb	mg/kg	100 (A-B)	175000 (>D)	53200 (>D)	53100 (>D)



Client: **Englobe Corp.**

 Numéro de demande: **17-804067**

Bon de commande	Votre Projet	Chargé de Projet
25841	P0012240-0-02-261	Jean Kesner Michel

Échantillon(s)

No Labo.	3293826	3293827	3293828	3293829
Votre Référence	TPSGC-cour-25284-résid. ME-ext-peint-verte-05	TPSGC-cour-25279-entrepôt-ext-peint-blanche-01	TPSGC-cour-25279-entrepôt-ext-peint-verte-02	TPSGC-cour-25275-atelier-mur-peint-beige-01
Matrice	Peinture sèche	Peinture sèche	Peinture sèche	Peinture sèche
Prélevé par	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel
Lieu de prélèvement	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours
Prélevé le	2017-01-11	2017-01-11	2017-01-11	2017-01-11
Reçu Labo	2017-01-13	2017-01-13	2017-01-13	2017-01-13

Paramètre(s)

Méthode

Référence

Plomb (Pb) extractible total	Préparation	2017-01-17	2017-01-17	2017-01-17	2017-01-17
Métaux par ICP. Résultats sur base sèche. (Accrédité)	Analyse	2017-01-18	2017-01-18	2017-01-18	2017-01-18
E-A-EN-EN-CHI-PC-MD017 (REF: MA. 200 - Mét 1.2)	No. séquence	571849	571849	571849	571849
Plomb	mg/kg	647 (B-C)	24000 (>D)	574 (B-C)	569 (B-C)



Client: **Englobe Corp.**

 Numéro de demande: **17-804067**

Bon de commande	Votre Projet	Chargé de Projet
25841	P0012240-0-02-261	Jean Kesner Michel

Échantillon(s)

No Labo.	3293830	3293831	3293832	3293833
Votre Référence	TPSGC-cour-25275-atelier-ext-peint-blanche 02	TPSGC-cour-25275-atelier-ext-peint-verte-03	TPSGC-cour-25289-kiosque commande-peint-prise-01	TPSGC-cour-25289-kiosque comm.-peint-gris-foncé-02
Matrice	Peinture sèche	Peinture sèche	Peinture sèche	Peinture sèche
Prélevé par	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel
Lieu de prélèvement	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours
Prélevé le	2017-01-11	2017-01-11	2017-01-11	2017-01-11
Reçu Labo	2017-01-13	2017-01-13	2017-01-13	2017-01-13

Paramètre(s)

Méthode

Référence

Plomb (Pb) extractible total	Préparation	2017-01-17	2017-01-17	2017-01-17	2017-01-17
Métaux par ICP. Résultats sur base sèche. (Accrédité)	Analyse	2017-01-18	2017-01-18	2017-01-18	2017-01-18
E-A-EN-EN-CHI-PC-MD017 (REF: MA. 200 - Mét 1.2)	No. séquence	571849	571849	571849	571849
Plomb	mg/kg	1030 (C-D)	1410 (C-D)	2330 (C-D)	8 (<A)



Client: **Englobe Corp.**

 Numéro de demande: **17-804067**

Bon de commande	Votre Projet	Chargé de Projet
25841	P0012240-0-02-261	Jean Kesner Michel

Échantillon(s)

No Labo.	3293834	3293835	3293836	3293837
Votre Référence	TPSGC-cour-25289-kiosque comm-peint-vert-pâle-03	TPSGC-cour-25289-kiosque comm-ext-peint-verte-04	TPSGC-cour-pilier 6-peint-grise-01	TPSGC-cour-pilier 6-peint-verte-02
Matrice	Peinture sèche	Peinture sèche	Peinture sèche	Peinture sèche
Prélevé par	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel
Lieu de prélèvement	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours
Prélevé le	2017-01-11	2017-01-11	2017-01-11	2017-01-11
Reçu Labo	2017-01-13	2017-01-13	2017-01-13	2017-01-13

Paramètre(s)

Méthode

Référence

Plomb (Pb) extractible total	Préparation	2017-01-17	2017-01-17	2017-01-17	2017-01-17
Métaux par ICP. Résultats sur base sèche. (Accrédité)	Analyse	2017-01-18	2017-01-18	2017-01-18	2017-01-20
E-A-EN-EN-CHI-PC-MD017 (REF: MA. 200 - Mét 1.2)	No. séquence	571849	571849	571849	571849
Plomb	mg/kg	5710 (>D)	106 (A-B)	47 (<A)	6980 (>D)



Client: **Englobe Corp.**

 Numéro de demande: **17-804067**

Bon de commande	Votre Projet	Chargé de Projet
25841	P0012240-0-02-261	Jean Kesner Michel

Échantillon(s)

No Labo.	3293838	3293839	3293840	3293841
Votre Référence	TPSGC-cour-25282-logette-rdcpeint-mauve-01	TPSGC-cour-25282-logette-rdcpeint-beige-02	TPSGC-cour-25282-logette-étage-peint-bleu-clair-03	TPSGC-cour-25282-logette-étage-peint-blanche-04
Matrice	Peinture sèche	Peinture sèche	Peinture sèche	Peinture sèche
Prélevé par	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel
Lieu de prélèvement	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours
Prélevé le	2017-01-12	2017-01-12	2017-01-12	2017-01-12
Reçu Labo	2017-01-13	2017-01-13	2017-01-13	2017-01-13

Paramètre(s)

Méthode

Référence

Plomb (Pb) extractible total	Préparation	2017-01-17	2017-01-17	2017-01-17	2017-01-17
Métaux par ICP. Résultats sur base sèche. (Accrédité)	Analyse	2017-01-18	2017-01-18	2017-01-18	2017-01-18
E-A-EN-EN-CHI-PC-MD017 (REF: MA. 200 - Mét 1.2)	No. séquence	571849	571850	571850	571850
Plomb	mg/kg	11 (<A)	7 (<A)	677 (B-C)	2 (<A)



Client: **Englobe Corp.**

 Numéro de demande: **17-804067**

Bon de commande	Votre Projet	Chargé de Projet
25841	P0012240-0-02-261	Jean Kesner Michel

Échantillon(s)

No Labo.	3293842	3293843	3293844	3293845
Votre Référence	TPSGC-cour-25278-Entrepôt-poutrelles-peinturise-01	TPSGC-cour-25280-garage-ext-peint-blanche-01	TPSGC-cour-25280-garage-ext-peint-vert-clair-02	TPSGC-cour-25280-garage-ext-peint-verte-03
Matrice	Peinture sèche	Peinture sèche	Peinture sèche	Peinture sèche
Prélevé par	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel	M. Courchesne/J-K Michel
Lieu de prélèvement	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours	Lieu historique national canal St-Ours
Prélevé le	2017-01-12	2017-01-12	2017-01-12	2017-01-12
Reçu Labo	2017-01-13	2017-01-13	2017-01-13	2017-01-13

Paramètre(s)

Méthode

Référence

Plomb (Pb) extractible total	Préparation	2017-01-17	2017-01-17	2017-01-17	2017-01-17
Métaux par ICP. Résultats sur base sèche. (Accrédité)	Analyse	2017-01-18	2017-01-18	2017-01-18	2017-01-18
E-A-EN-EN-CHI-PC-MD017 (REF: MA. 200 - Mét 1.2)	No. séquence	571850	571850	571850	571850
Plomb	mg/kg	2260 (C-D)	7 (<A)	5 (<A)	5 (<A)



Client: **Englobe Corp.**

 Numéro de demande: **17-804067**

Bon de commande	Votre Projet	Chargé de Projet
25841	P0012240-0-02-261	Jean Kesner Michel

Échantillon(s)

No Labo.	3293846
Votre Référence	TPSGC-cour-25290cont-niveau eau-ext-peint-verte-01
Matrice	Peinture sèche
Prélevé par	M. Courchesne/J-K Michel
Lieu de prélèvement	Lieu historique national canal St-Ours
Prélevé le	2017-01-12
Reçu Labo	2017-01-13

Paramètre(s)

Méthode

Référence

Plomb (Pb) extractible total

Métaux par ICP. Résultats sur base sèche. (Accrédité)

E-A-EN-EN-CHI-PC-MD017 (REF: MA. 200 - Mét 1.2)

Plomb

Préparation	2017-01-17
Analyse	2017-01-18
No. séquence	571850
mg/kg	236 (A-B)

Note 1 : Ces résultats et commentaires, le cas échéant, ne se rapportent qu'aux échantillons soumis pour les analyses réalisées au site de Pointe-Claire (#307).



2015-113

Fatima Sobh, chimiste



Client: **Englobe Corp.**

 Numéro de demande: **17-804067**

Bon de commande	Votre Projet	Chargé de Projet
25841	P0012240-0-02-261	Jean Kesner Michel

Résultats du Contrôle de Qualité (CQ)

Paramètres (No.Séquence)	Unité	LDR	Blanc	Contrôle certifié	
				Obtenu	Attendu (Intervalle)
Plomb (Pb) extractible total					
No Séquence: 571849					
Plomb	mg/kg	< 1	< 1	48	36.5 - 54.8
Plomb (Pb) extractible total					
No Séquence: 571850					
Plomb	mg/kg	< 1	< 1	46	36.5 - 54.8

Commentaires CQ

LDR : Limite de détection rapportée

Annexe 1 du certificat no.767625 - Page 1 de 1

Ce certificat ne doit pas être reproduit, sinon en entier, sans l'autorisation écrite du laboratoire. La version officielle de ce certificat est protégée contre toutes modifications. Les échantillons mentionnés plus haut seront conservés pendant 30 jours à partir de la date d'émission du Certificat, à l'exception des paramètres microbiologiques ou selon les instructions écrites du client.

237 rue de Liverpool
 Saint-Augustin-de-Desmaures
 Québec, Canada
 G3A 2C8

Sans Frais | 866-365-2310
 T | 418-878-4927
 F | 418-878-7185
www.Eurofins.ca/Env

121 Boulevard Hymus T | 514-697-3273
 Pointe-Claire F | 514-697-2090
 Québec, Canada www.Eurofins.ca/Env
 H9R 1E6

Annexe 6 Registre sur la gestion sécuritaire de l'amiante

Annexe 7 Clauses limitatives

CLAUSES LIMITATIVES

Englobe Corp. (ci-après « Englobe ») a mené une recherche diligente et raisonnable pour assurer la réalisation de la présente évaluation, selon les règles de l'art applicables.

Les constatations présentées dans ce rapport sont strictement limitées au moment de l'étude. Les conclusions présentées sont basées sur les informations et documents disponibles, les observations lors de la visite du site, de même que sur les renseignements fournis par les intervenants rencontrés. L'interprétation fournie dans ce rapport se limite à ces données.

Englobe ne se tient pas responsable des conclusions erronées dues à la dissimulation volontaire ou à la non-disponibilité d'une information pertinente. Toute opinion concernant la conformité aux lois et règlements qui serait exprimée dans le texte est technique; elle n'est pas et ne doit, en aucun temps, être considérée comme un avis juridique.

Englobe a préparé ce rapport uniquement pour l'utilisation par TPSGC et ses mandataires pour les fins auxquelles il est destiné. Toute utilisation de ce rapport par un tiers, de même que toute décision basée sur ce rapport, est l'unique responsabilité de celui-ci. Englobe ne saurait être tenue responsable pour d'éventuels dommages subis par un tiers résultant d'une décision prise ou basée sur ce rapport.

**Appendix B – Complementary characterization report
P19-4176-5 (MHV, 2019)**

Laval, le 19 novembre 2019

Monsieur Éric Audet, chimiste et hygiéniste industriel
Spécialiste en environnement
Direction générale des biens immobiliers
Services publics et Approvisionnement Canada
Place Bonaventure, portail sud-ouest
800, rue de La Gauchetière Ouest
Bureau 7300
Montréal (Québec)
H5A 1L6

**OBJET: Caractérisation complémentaire d'échantillons de matériaux
susceptibles de contenir de l'amiante**

SITE : Canal de Saint-Ours

Projet SPAC : R.100471.001

NOTRE NUMÉRO DE PROJET: P19-4176-5

Monsieur,

Vous trouverez ci-joint notre rapport concernant la caractérisation complémentaire des matériaux susceptibles de contenir de l'amiante au canal de Saint-Ours.

Demeurant à votre disposition pour toute information que vous jugerez nécessaire, je vous prie d'accepter l'expression de nos sentiments les meilleurs.

MHV Services d'hygiène industrielle Inc.,

A handwritten signature in black ink, reading 'Valérie Turcotte'. The signature is written in a cursive, flowing style.

Valérie Turcotte, M.Sc.(A)
Hygiéniste industrielle

**CARACTÉRISATION COMPLÉMENTAIRE DES MATÉRIAUX
SUSCEPTIBLES DE CONTENIR DE L'AMIANTE**

**PARCS CANADA
CANAL DE SAINT-OURS**

pour

SERVICES PUBLICS ET APPROVISIONNEMENT CANADA
Montréal (Québec)

Projet SPAC : R.100471.001

par

MHV Services d'hygiène industrielle Inc.
Laval (Québec)

Notre numéro de projet : P19-4176-5

A handwritten signature in black ink, reading 'Valérie Turcotte'.

Valérie Turcotte, M.Sc. (A)
Hygiéniste industrielle

A handwritten signature in black ink, reading 'M. a H.'.

Marc-André Huberdeau, M.Sc.(A)
Chimiste et hygiéniste industrielle



Novembre 2019

Version 2 – version finale



TABLE DES MATIÈRES

1. INTRODUCTION ET MISE EN SITUATION.....	3
2. MÉTHODOLOGIE	4
3. LIMITATION DU RELEVÉ.....	5
4. OBSERVATIONS	6
5. RÉSULTATS	7
5.1 Résultats dans le cadre du présent mandat.....	7
6. CONCLUSION.....	10
6.1 Conclusion	10
6.2 Recommandations	11

ANNEXE A Dossier photographique

ANNEXE B Certificats d'analyses

ANNEXE C Plans des localisations d'échantillonnage

ANNEXE D Plans des matériaux contenant de l'amiante lors de la caractérisation complémentaire

ANNEXE E Registre des matériaux susceptibles de contenir de l'amiante



1. INTRODUCTION ET MISE EN SITUATION

Dans le cadre d'un mandat confié par Services publics et Approvisionnement Canada, MHV Services d'hygiène industrielle inc. a réalisé la caractérisation complémentaire des matériaux susceptibles de contenir de l'amiante au canal de Saint-Ours pouvant être touchés par les travaux dans le cadre du projet *Réfection de la toiture de la maison du surintendant – Canal-de-Saint-Ours*.

La caractérisation des matériaux a été réalisée le 18 octobre 2019 par M^{me} Valérie Turcotte, M.Sc.(A), hygiéniste industrielle et M. Marc-André Huberdeau, M.Sc.(A), chimiste et hygiéniste industriel, selon le plan de travail décrit ci-après.

Plan de travail

Le plan de travail a été établi en conformité aux exigences et informations mentionnées dans les documents suivants :

- *Règlement canadien sur la santé et la sécurité au travail (RCSST)*;
- *Code canadien du travail – Partie II*;
- Directive du Secrétariat du Conseil du Trésor concernant la santé et la sécurité au travail;
- *Loi sur la santé et sécurité du travail (L.R.Q., chapitre S-2.1)*;
- *Règlement sur la santé et la sécurité du travail, S-2.1, r.13*;
- *Code de sécurité pour les travaux de construction, S-2.1, r.4*;
- Guide explicatif sur les nouvelles dispositions réglementaires *Gestion sécuritaire de l'amiante* (CNESST).



2. MÉTHODOLOGIE

Dans le cadre de ce mandat, les activités suivantes ont été réalisées :

.1 Identification et évaluation des matériaux contenant de l'amiante pouvant être touchés par les travaux dans le cadre du projet *Réfection de la toiture de la maison du surintendant – Canal-de-Saint-Ours*.

- Caractérisation complémentaire de matériaux susceptibles de contenir de l'amiante dans la maison du maître-éclusier (25284). Vingt-six échantillons ont été prélevés.

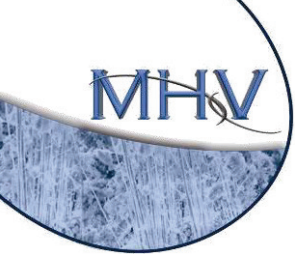
Le nombre d'échantillons de matériaux prélevés a été déterminé en fonction du guide *Gestion sécuritaire de l'amiante*, publié en 2013, sur lequel s'appuie au Québec la Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST).

Le prélèvement des échantillons représentatifs de matériaux susceptibles de contenir de l'amiante consistait à effectuer une coupe transversale complète, c'est-à-dire de la couche extérieure jusqu'à la surface intérieure, pour s'assurer de recueillir chaque phase du matériau, considérant que chaque phase peut être analysée en microscopie.

Chaque échantillon a été analysé pour identifier le type d'amiante et son pourcentage dans le matériau, en conformité avec la méthode IRSST 244-3 intitulée *Caractérisation des fibres dans les poussières déposées ou dans les matériaux en vrac*. Les échantillons ont été analysés séparément pour en identifier les constituants.

L'analyse des échantillons de carton isolant, de scellant, de membrane, de bardeau et de colle de plancher a été réalisée en microscopie électronique à transmission (MET) et dispersion des énergies en rayons X, en conformité avec la méthode ELAP 198.4 *Microscopie électronique à transmission pour l'identification et la quantification de l'amiante dans les échantillons en vrac non friables liés par des matériaux organiques* afin d'évaluer spécifiquement la présence d'amiante avec une précision accrue.

- Rédaction d'un rapport d'échantillonnage.
- Mise à jour du registre afin d'inclure les résultats de cet échantillonnage.

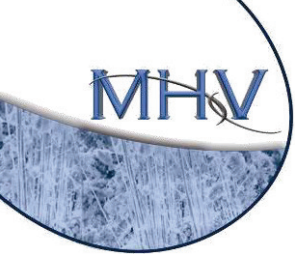


3. LIMITATION DU RELEVÉ

Notre caractérisation était limitée aux matériaux susceptibles de contenir de l'amiante pouvant être touchés par les travaux dans le cadre du projet *Réfection de la toiture de la maison du surintendant – Canal-de-Saint-Ours*.

Aucun échantillon ou relevé n'a été effectué sur d'autres matériaux ou dans d'autres secteurs que ceux identifiés dans le cadre du présent projet. Par conséquent, les résultats de cet échantillonnage ne sauraient permettre d'infirmer ou de confirmer la présence d'amiante dans les autres matériaux ou secteurs du bâtiment.

L'inspection des différents secteurs et structures permet d'identifier des matériaux susceptibles de contenir de l'amiante qui sont accessibles et visibles. Aucune inspection n'a été effectuée sur des matériaux qui auraient nécessité leur destruction ou sur tout autre matériau existant qui pouvait recouvrir le matériau suspecté de contenir de l'amiante.



4. OBSERVATIONS

Lors de la caractérisation complémentaire, nous avons réalisé une inspection du grenier de la maison du maître-éclusier. On peut observer que la structure du toit et du grenier est constituée de bois. On note sur le plancher du grenier et le plafond de l'étage la présence d'isolant en vrac de type vermiculite (contenant de l'amiante). Un carton ciré (ne contenant pas d'amiante) est aussi présent au plancher sur les panneaux de gypse du plafond. Dans les ouvertures présentes au périmètre du grenier, on peut observer de l'isolant de type vermiculite. Nous pouvons supposer que l'isolant peut s'être introduit à l'intérieur des plafonds en pente de l'étage et possiblement des murs. On peut observer les murs et les cheminées de briques à deux extrémités du grenier.

À l'étage, les plafonds en pente sont constitués de matériaux cimentaires et plâtre (contenant de l'amiante) sur lattis de bois. Les plafonds droits sont constitués de panneaux de gypse. Les murs sont constitués de panneaux de gypse derrière lesquels on peut observer les anciens murs de matériaux cimentaires et plâtre (ne contenant pas d'amiante) sur lattis de bois. Les planchers sont recouverts de tuiles de vinyle de 12 pouces sur 12 pouces (ne contenant pas d'amiante) ou de tuiles de 9 pouces sur 9 pouces (contenant de l'amiante).

La toiture du bâtiment est recouverte de trois couches de bardeaux (dont la dernière couche contient de l'amiante) et d'une membrane (ne contenant pas d'amiante). On note la présence de scellant gris (ne contenant pas d'amiante) autour des fenêtres et la présence de scellant goudronné noir (contenant de l'amiante) autour de différentes structures.



5. RÉSULTATS

5.1 Résultats dans le cadre du présent mandat

RÉSULTATS DES MATÉRIAUX ÉCHANTILLONNÉS

Échantillon	Localisation	Description du matériau	Fibres d'amiante	%
4176-5-A1-01	Maison maître-éclusier (25284) Grenier Plancher	Carton isolant	Non détectées	
4176-5-A2-01	Maison maître-éclusier (25284) Extérieur Toit, autour de la fenêtre	Scellant gris	Non détectées	
4176-5-A3-01	Maison maître-éclusier (25284) Extérieur Toit, à la jonction de la toiture et de la fenêtre en mansarde	Scellant noir	Chrysotile	5,58
4176-5-T1-01	Maison maître-éclusier (25284) Extérieur Toiture	Membrane	Non détectée	
4176-5-T2-01	Maison maître-éclusier (25284) Extérieur Toiture	Bardeau	Non détectée	
4176-5-T2-02	Maison maître-éclusier (25284) Extérieur Toiture	Bardeau	Non détectée	
4176-5-T2-03	Maison maître-éclusier (25284) Extérieur Toit	Bardeau	Chrysotile	3,48
4176-5-Pr1-01	Maison maître-éclusier (25284) Étage, corridor Plancher	Colle des tuiles de vinyle de 9 pouces sur 9 pouces, beige tachetées de brun	Chrysotile	2,34
4176-5-M1-01	Maison maître-éclusier (25284) Étage, vestiaire Mur de périmètre extérieur	Matériau cimentaire et plâtre	Non détectée	
4176-5-M1-02	Maison maître-éclusier (25284) Étage, vestiaire Mur de périmètre extérieur	Matériau cimentaire et plâtre	Non détectée	



RÉSULTATS DES MATÉRIAUX ÉCHANTILLONNÉS

Échantillon	Localisation	Description du matériau	Fibres d'amiante	%
4176-5-M1-03	Maison maître-éclusier (25284) Étage, bureau	Matériau cimentaire et plâtre	Non détectée	
	Mur de périmètre extérieur			
4176-5-M1-04	Maison maître-éclusier (25284) Étage, bureau	Matériau cimentaire et plâtre	Non détectée	
	Mur de périmètre extérieur			
4176-5-M1-05	Maison maître-éclusier (25284) Étage, espace de cuisinette/salle de bain	Matériau cimentaire et plâtre	Non détectée	
	Mur de périmètre extérieur			
4176-5-M1-06	Maison maître-éclusier (25284) Étage, espace de cuisinette/salle de bain	Matériau cimentaire et plâtre	Non détectée	
	Mur de périmètre extérieur			
4176-5-M1-07	Maison maître-éclusier (25284) Étage, cuisine	Matériau cimentaire et plâtre	Non détectée	
	Mur de périmètre extérieur			
4176-5-M1-08	Maison maître-éclusier (25284) Étage, cuisine	Matériau cimentaire et plâtre	Non détectée	
	Mur de périmètre extérieur			
4176-5-M1-09	Maison maître-éclusier (25284) Étage, cuisine	Matériau cimentaire et plâtre	Non détectée	
	Mur de division intérieure			
4176-5-M2-01	Maison maître-éclusier (25284) Grenier	Mortier	Non détectée	
	Cheminée			
4176-5-M2-02	Maison maître-éclusier (25284) Grenier	Mortier	Non détectée	
	Cheminée			
4176-5-M2-03	Maison maître-éclusier (25284) Grenier	Mortier	Non détectée	
	Cheminée			
4176-5-M2-04	Maison maître-éclusier (25284) Grenier	Mortier	Non détectée	
	Mur			
4176-5-M2-05	Maison maître-éclusier (25284) Grenier	Mortier	Non détectée	
	Mur			



RÉSULTATS DES MATÉRIAUX ÉCHANTILLONNÉS

Échantillon	Localisation	Description du matériau	Fibres d'amiante	%
4176-5-M2-06	Maison maître-éclusier (25284) Grenier Mur	Mortier	Non détectée	
4176-5-M2-07	Maison maître-éclusier (25284) Grenier Cheminée	Mortier	Non détectée	
4176-5-M2-08	Maison maître-éclusier (25284) Grenier Cheminée	Mortier	Non détectée	
4176-5-M2-09	Maison maître-éclusier (25284) Grenier Cheminée	Mortier	Non détectée	



6. CONCLUSION

6.1 Conclusion

Dans le cadre de ce mandat confié par Services publics et Approvisionnement Canada, nous avons procédé à la caractérisation complémentaire des matériaux susceptibles de contenir de l'amiante au canal de Saint-Ours pouvant être touchés par les travaux dans le cadre du projet *Réfection de la toiture de la maison du surintendant – Canal-de-Saint-Ours*.

Nous constatons que les matériaux suivants sont identifiés comme contenant de l'amiante dans la maison du maître-éclusier (25284):

- Scellant goudronné noir de la toiture
- Bardeau de la toiture (3^e couche)
- Colle des tuiles de vinyle de 9 pouces sur 9 pouces beige tachetée de brun des planchers de l'étage.

Nous constatons que les matériaux suivants sont identifiés comme ne contenant pas d'amiante dans la maison du maître-éclusier (25284):

- Carton isolant sur le plancher du grenier
- Scellant gris de la toiture
- Membrane de la toiture
- Matériau cimentaire et plâtre des murs de l'étage
- Mortier des briques dans le grenier.



6.2 Recommandations

1. Établir et définir une portée des travaux et des exigences pour les travaux en présence d'amiante.
2. S'assurer que tous les travaux d'intervention ou d'élimination de matériaux identifiés comme contenant de l'amiante soient réalisés selon des procédures sécuritaires de travail pour les travaux en présence d'amiante en conformité avec les exigences du *Code de sécurité pour les travaux de construction, S-2.1, r.4* ou du *Règlement canadien sur la santé et sécurité au travail*.



ANNEXE A

Dossier photographique



Projet :
Nom du client :
Site :

P19-4176-5
SPAC - Parcs Canada
Canal Saint-Ours

PHOTO 1

Échantillon : **4176-5-A1-01**
Localisation : Maison maître-éclusier (25284),
Grenier
Description : Carton isolant sur le plancher



PHOTO 2

Échantillon : **4176-5-A2-01, 4176-5-A3-01,
4176-5-T1-01 et 4176-5-T2-01 à
4176-5-T2-03**
Localisation : Maison maître-éclusier (25284),
Extérieur, toit
Description : Scellant gris, scellant noir,
membrane et bardeaux



PHOTO 3

Échantillon : **4176-5-Pr1-01**
Localisation : Maison maître-éclusier (25284),
Étage, corridor
Description : Colle des tuiles de vinyle de 9
pouces sur 9 pouces, beige
tachetées de brun





PHOTO 4

Échantillon : **4176-5-M1-01**
Localisation : Maison maître-éclusier (25284),
Étage, vestibule
Description : Matériau cimentaire et plâtre d'un
mur



PHOTO 5

Échantillon : **4176-5-M1-02**
Localisation : Maison maître-éclusier (25284),
Étage, vestibule
Description : Matériau cimentaire et plâtre d'un
mur



PHOTO 6

Échantillon : **4176-5-M1-03**
Localisation : Maison maître-éclusier (25284),
Étage, bureau
Description : Matériau cimentaire et plâtre d'un
mur





PHOTO 7

Échantillon : **4176-5-M1-04**

Localisation : Maison maître-éclusier (25284),
Étage, bureau

Description : Matériau cimentaire et plâtre d'un
mur



PHOTO 8

Échantillon : **4176-5-M1-05**

Localisation : Maison maître-éclusier (25284),
Étage, espace cuisinette/salle de
bain

Description : Matériau cimentaire et plâtre d'un
mur



PHOTO 9

Échantillon : **4176-5-M1-06**

Localisation : Maison maître-éclusier (25284),
Étage, espace cuisinette/salle de
bain

Description : Matériau cimentaire et plâtre d'un
mur





PHOTO 10

Échantillon : **4176-5-M1-07**

Localisation : Maison maître-éclusier (25284),
Étage, cuisine

Description : Matériau cimentaire et plâtre d'un
mur



PHOTO 11

Échantillon : **4176-5-M1-08**

Localisation : Maison maître-éclusier (25284),
Étage, cuisine

Description : Matériau cimentaire et plâtre d'un
mur



PHOTO 12

Échantillon : **4176-5-M2-01 à 4176-5-M2-05**

Localisation : Maison maître-éclusier (25284),
Entretoit

Description : Mortier de la cheminée et du mur
de briques





PHOTO 13

Échantillon : 4176-5-M2-06 à 4176-5-M2-09
Localisation : Maison maître-éclusier (25284),
Entreitoit
Description : Mortier de la cheminée et du mur
de briques



PHOTO 14

Localisation : Maison maître-éclusier (25284),
Extérieur
Description : Vue générale



PHOTO 15

Localisation : Maison maître-éclusier (25284),
Entreitoit
Description : Vue générale, présence de
vermiculite





PHOTO 16

Localisation : Maison maître-éclusier (25284),
Entretoit

Description : Vue générale, présence de
vermiculite



PHOTO 17

Localisation : Maison maître-éclusier (25284),
Entretoit

Description : Vue générale, présence de
vermiculite



PHOTO 18

Localisation : Maison maître-éclusier (25284),
Entretoit

Description : Vue générale, présence de
vermiculite dans la cavité





PHOTO 19

Localisation : Maison maître-éclusier (25284),
Entretoit

Description : Vue générale, présence de
vermiculite dans la cavité



PHOTO 20

Localisation : Maison maître-éclusier (25284),
Entretoit

Description : Vue générale, présence de
vermiculite





ANNEXE B
Certificats d'analyses

CERTIFICAT D'ANALYSE

Client :	MHV Services d'Hygiène Industrielle inc.	Date réception :	21 octobre 2019
Notre Dossier :	19-1021002	Date d'analyse :	25 octobre 2019
Votre Dossier :	P19-4176-5	Nombre éch. reçu(s) :	18
# Commande :	Non disponible	Nombre éch. analysé(s) :	18
# Certificat :	LS19-4285	# Version :	1

ANALYSE ET APPLICATION

Méthode Analytique IRSST 244 – *Caractérisation des fibres dans les poussières déposées ou les matériaux en vrac.*

Contrôle Qualité Interlaboratoire – *Laboratoire Silica inc. participe au programme BAPAT de l'AIHA.*

Certificat d'Analyse – Ce certificat ne se rapporte qu'aux échantillons analysés et ne doit pas être reproduit, sinon en entier, sans autorisation.

Conservation des Échantillons – Les échantillons seront conservés pour une période de 60 jours sauf avis contraire du client soumis par écrit.

Responsabilité – Laboratoire Silica inc. ne peut être tenue responsable d'un résultat rapporté sur un échantillon non-conforme ou non-représentatif.

Limite d'Applicabilité – Le domaine d'application de la méthode varie de < 1 % à 100 % (v/v) et est déterminée de façon semi-quantitative. Il est possible que l'analyse par MLP ne puisse détecter l'amiante dans certains échantillons. Ainsi, L'IRSST suggère que certains échantillons portant la mention « Non détectées » ou « Traces » soient analysés par MET (Réf. : IRSST 244, Sect. 1.6).

Veuillez adresser toute question concernant le certificat à : info@laboratoiresilica.com, (514) 321-1295.

RÉSULTATS

4176-5 – M1 – 01		
Ciment beige et plâtre blanc		
Catégorie	Type	Concentration (en %)
<i>Couche 1 : Ciment</i>		
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	< 1 %
Fibres organiques	Poils	< 1 %
Particules non-fibreuses	Anguleuses et autres	> 90 %
<i>Couche 2 : Plâtre</i>		
Fibres d'amiante	S/O	Non détectées
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M1 – 02		
Ciment beige et plâtre blanc, présence de composé à joints, de gypse, de carton et d'un treillis de filament continu de fibres de verre		
Catégorie	Type	Concentration (en %)
<i>Couche 1 : Ciment</i>		
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	< 1 %
Fibres organiques	Poils	< 1 %
Particules non-fibreuses	Anguleuses et autres	> 90 %
<i>Couche 2 : Plâtre</i>		
Fibres d'amiante	S/O	Non détectées
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M1 – 03		
Ciment beige et plâtre blanc, présence de gypse et de carton		
Catégorie	Type	Concentration (en %)
<i>Couche 1 : Ciment</i>		
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	< 1 %
Fibres organiques	Poils	1 – 5 %
Particules non-fibreuses	Anguleuses et autres	> 90 %
<i>Couche 2 : Plâtre</i>		
Fibres d'amiante	S/O	Non détectées
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M1 – 04		
Ciment beige et plâtre blanc, présence de gypse et de carton		
Catégorie	Type	Concentration (en %)
<i>Couche 1 : Ciment</i>		
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	< 1 %
Fibres organiques	Poils	< 1 %
Particules non-fibreuses	Anguleuses et autres	> 90 %
<i>Couche 2 : Plâtre</i>		
Fibres d'amiante	S/O	Non détectées
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M1 – 05		
Ciment beige, plâtre blanc et composé à joints blanc, présence de gypse et de carton		
Catégorie	Type	Concentration (en %)
<i>Couche 1 : Ciment</i>		
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	< 1 %
Fibres organiques	Poils	< 1 %
Particules non-fibreuses	Anguleuses et autres	> 90 %
<i>Couche 2 : Plâtre</i>		
Fibres d'amiante	S/O	Non détectées
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M1 – 06		
Ciment beige et plâtre blanc, présence de gypse et de carton		
Catégorie	Type	Concentration (en %)
<i>Couche 1 : Ciment</i>		
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	< 1 %
Fibres organiques	Poils	< 1 %
Particules non-fibreuses	Anguleuses et autres	> 90 %
<i>Couche 2 : Plâtre</i>		
Fibres d'amiante	S/O	Non détectées
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M1 – 07		
Ciment beige et plâtre blanc, présence de gypse et de carton		
Catégorie	Type	Concentration (en %)
<i>Couche 1 : Ciment</i>		
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	< 1 %
Fibres organiques	Poils	< 1 %
Particules non-fibreuses	Anguleuses et autres	> 90 %
<i>Couche 2 : Plâtre</i>		
Fibres d'amiante	S/O	Non détectées
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M1 – 08		
Ciment beige et plâtre blanc, présence de gypse et de carton		
Catégorie	Type	Concentration (en %)
<i>Couche 1 : Ciment</i>		
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	< 1 %
Fibres organiques	Poils	< 1 %
Particules non-fibreuses	Anguleuses et autres	> 90 %
<i>Couche 2 : Plâtre</i>		
Fibres d'amiante	S/O	Non détectées
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M1 – 09		
Ciment beige et plâtre blanc, présence de gypse et de carton		
Catégorie	Type	Concentration (en %)
<i>Couche 1 : Ciment</i>		
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	< 1 %
Fibres organiques	Poils	1 – 5 %
Particules non-fibreuses	Anguleuses et autres	> 90 %
<i>Couche 2 : Plâtre</i>		
Fibres d'amiante	S/O	Non détectées
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M2 – 01		
Ciment beige, présence de plâtre		
Catégorie	Type	Concentration (en %)
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	Traces
Fibres organiques	Bois	< 1 %
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M2 – 02		
Ciment beige, présence de plâtre		
Catégorie	Type	Concentration (en %)
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	Traces
Fibres organiques	Bois	< 1 %
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M2 – 03		
Ciment beige		
Catégorie	Type	Concentration (en %)
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	Traces
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M2 – 04		
Ciment beige		
Catégorie	Type	Concentration (en %)
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	Traces
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M2 – 05		
Ciment beige		
Catégorie	Type	Concentration (en %)
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	Traces
Fibres organiques	Bois	< 1 %
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M2 – 06		
Ciment beige		
Catégorie	Type	Concentration (en %)
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	Traces
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M2 – 07		
Ciment beige		
Catégorie	Type	Concentration (en %)
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	Traces
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M2 – 08		
Ciment beige, présence de plâtre		
Catégorie	Type	Concentration (en %)
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	Traces
Particules non-fibreuses	Anguleuses et autres	> 90 %

4176-5 – M2 – 09		
Ciment beige		
Catégorie	Type	Concentration (en %)
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	Traces
Particules non-fibreuses	Anguleuses et autres	> 90 %

Résultats Contrôle Qualité

Le contrôle qualité consiste à la reprise de 10% des échantillons analysés. Une différence en terme des pourcentages est possible puisqu'il s'agit d'une analyse visuelle semi-quantitative.

Reprise Contrôle Qualité – 4176-5 – M1 – 07		
Ciment beige et plâtre blanc, présence de gypse et de carton		
Catégorie	Type	Concentration (en %)
<i>Couche 1 : Ciment</i>		
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	< 1 %
Fibres organiques	Poils	< 1 %
Particules non-fibreuses	Anguleuses et autres	> 90 %
<i>Couche 2 : Plâtre</i>		
Fibres d'amiante	S/O	Non détectées
Particules non-fibreuses	Anguleuses et autres	> 90 %

Reprise Contrôle Qualité – 4176-5 – M2 – 08		
Ciment beige, présence de plâtre		
Catégorie	Type	Concentration (en %)
Fibres d'amiante	S/O	Non détectées
Fibres organiques	Cellulose	Traces
Particules non-fibreuses	Anguleuses et autres	> 90 %

Analysé par :


 Arnaud Grimault, Analyste

Vérfié par :


 Sabrina Ait Slimane, Coordonnatrice



Contact: Sabrina Ait Slimane
Company: Laboratoire Silica
Address: 10013 Avenue de Bruxelles,
Montreal, H1H 4R1

REFERENCE DATA

Project / Location: 19-1021002

PO Number: NA

ALS Work Order: 1910980

NARRATIVE: Analysis performed on FEI Tecnai G2 Spirit TEM equipped with EDAX Octane T Plus Silicon Drift Detector and Z2 Analyzer. Morphology, SAED, and EDXA used to determine fiber species. All sample collection is performed outside ALS and is the sole responsibility of the client. If collection or submission deviates from method requirements then interpretation of results via the method cannot be made. Asbestos reported as a percentage is based on average calibrated visual estimates by area in the final prepared sample. Samples disposed after 60 days. TEM grids archived 3 years. Results apply only to portions of samples analyzed.

METHOD CODES: "EPA 600" refers to samples directly prepared by grinding with mortar and pestle prior to analysis by TEM according to EPA/600/R-93/116 and results are reported in percentage ranges. Materials which cannot be prepared directly may require ashing, acid digestion, or both prior to analysis. "EPA 600 ASH" refers to resinous or flexible samples ashed in a muffle furnace to remove interfering organics. "EPA 600 ACID" refers to cementitious samples treated with acid to dissolve mineral carbonates. And "ELAP 198.4" refers to samples prepared using both ashing and acid treatment prior to TEM analysis due either to the sample type or to client requirements. "ELAP 198.6" refers to ND PLM samples requiring TEM confirmation. All gravimetric samples are reported as percent asbestos present after correcting for mass loss due to ashing, acid treatment, or both. "EPA 600/R-04" refers to ND PLM vermiculite fines analyzed by a modified qualitative version of EPA Method 600/R-04/004 and reported as present or absent only. "ENV 004" refers ND PLM soil fines analyzed by TEM according to ALS SOP ENV 004 which reports the percentage of asbestos present within the total of all materials observed in the final preparation. "7521 QUAL" refers to the qualitative analysis of ND PLM soil fines by ASTM D7521-16 reported as present or absent only. "7521 QUANT%" refers to the quantitative analysis of ND PLM soil fines reported as ACM by the qualitative TEM procedure. These are gravimetrically prepared and analyzed by TEM using visual area estimate (VAE) for percent asbestos by weight. "7521 QUANT" refers to the quantitative analysis of ND PLM soil fines reported as ND by the qualitative TEM procedure. These are also gravimetrically prepared but are analyzed by TEM using the structure count procedure. The analytical sensitivity (AS) for this method is based on the detection of 1 confirmed asbestos structure in the total area analyzed which according to ASTM Method D7521-16 must be $>0.2\text{mm}^2$ of the final filter. Results for the structure count analysis are reported in structures/ μg based on the sub sample weight. Finally, "+STOP" indicates "positive stop analysis" requested by the client and denotes samples not analyzed because a previous sample in a homogeneous series was determined to be ACM (asbestos containing material).
NA=Not Applicable, ND=None Detected, NON-ACM=Weight % of residue <1, STR=Structure, TRACE=<1% for samples collected in US or <0.1% for samples collected in Canada.*

*All samples from Canada are examined regardless of weight percent of residue.

ALS is accredited for NY ELAP Method 198.4 through New York ELAP (Lab#11371).

TEM ANALYSIS DATA

EDXA Resolution: <175 eV
Accelerating Voltage: 100keV

Calibration Constant (10,000x): 1.02 $\mu\text{m}/\text{cm}$
150mm CL Camera Constant: 8.46mm

Pamela M. Hizar

Pamela M. Hizar
ALS TEM Analyst

This report shall not be reproduced except in full without written approval of ALS.
4388 Glendale-Milford Rd Cincinnati, Oh 45242
513-733-5336 www.alsglobal.com

SAMPLE IDENTIFICATION

Client Sample ID:	4176-5-A1-01	4176-5-A2-01	4176-5-A3-01	4176-5-T1-01	4176-5-T2-01
ALS Sample ID:	1910980-01	1910980-02	1910980-03	1910980-04	1910980-05
Date Analyzed:	10/25/2019	10/25/2019	10/25/2019	10/25/2019	10/25/2019
Method Code:	ELAP 198.4	ELAP 198.4	ELAP 198.4	ELAP 198.4	ELAP 198.4
Reporting Units:	%	%	%	%	%
AS:	0.1%	0.1%	0.1%	0.1%	0.1%

SAMPLE DESCRIPTION

Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous	Homogeneous
Color:	Black	Grey	Black	Black	Black
Texture:	Flexible	Flexible	Compact	Resinous	Resinous
Description:	Material	Material	Material	Material	Material

GRAVIMETRIC DATA

Starting Weight (g):	0.1556	0.3345	0.5327	0.3245	0.5128
Final Weight (g):	0.0171	0.0230	0.1040	0.0585	0.1905
Weight % Residue:	10.9897	6.8759	19.5232	18.0277	37.1490

ASBESTOS

Chrysotile:	0.00	0.00	5.58	0.00	0.00
Amosite:	0.00	0.00	0.00	0.00	0.00
Crocidolite:	0.00	0.00	0.00	0.00	0.00
Actinolite:	0.00	0.00	0.00	0.00	0.00
Tremolite:	0.00	0.00	0.00	0.00	0.00
Anthophyllite:	0.00	0.00	0.00	0.00	0.00
Total Asbestos:	0.00	0.00	5.58	0.00	0.00

SAMPLE IDENTIFICATION

Client Sample ID:	4176-5-T2-02	4176-5-T2-03	4176-5-Pr1-01
ALS Sample ID:	1910980-06	1910980-07	1910980-08
Date Analyzed:	10/25/2019	10/25/2019	10/25/2019
Method Code:	ELAP 198.4	ELAP 198.4	ELAP 198.4
Reporting Units:	%	%	%
AS:	0.1%	0.1%	0.1%

SAMPLE DESCRIPTION

Homogeneity:	Homogeneous	Homogeneous	Homogeneous
Color:	Black	Black	Black
Texture:	Resinous	Resinous	Resinous
Description:	Material	Material	Material

GRAVIMETRIC DATA

Starting Weight (g):	0.8078	0.4763	0.2115
Final Weight (g):	0.2077	0.1546	0.0198
Weight % Residue:	25.7118	32.4585	9.3617

ASBESTOS

Chrysotile:	0.00	3.48	2.34
Amosite:	0.00	0.00	0.00
Crocidolite:	0.00	0.00	0.00
Actinolite:	0.00	0.00	0.00
Tremolite:	0.00	0.00	0.00
Anthophyllite:	0.00	0.00	0.00
Total Asbestos:	0.00	3.48	2.34

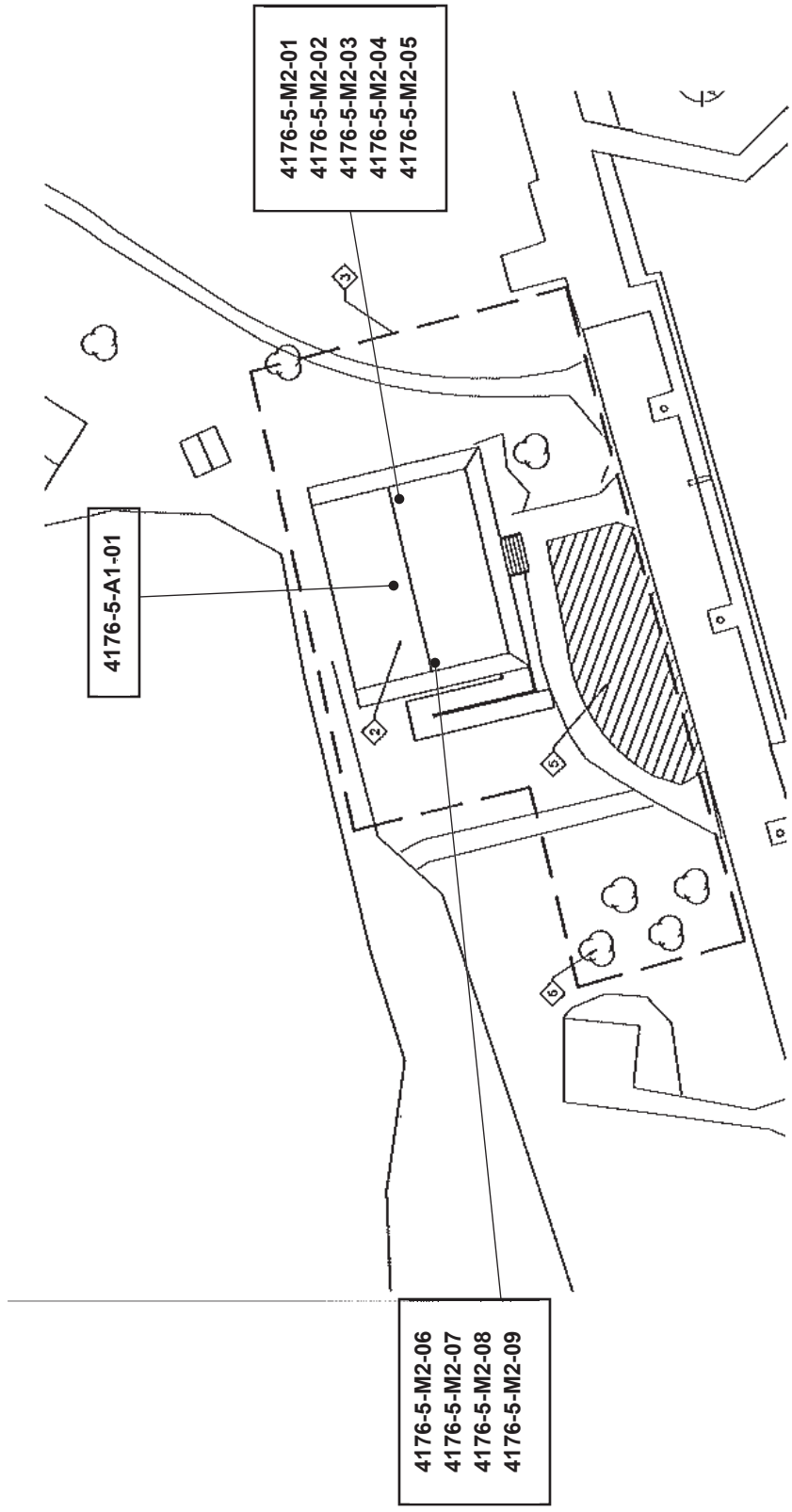


ANNEXE C

Plans des localisations d'échantillonnage



PLAN DE LOCALISATION DES ÉCHANTILLONS – MAISON MAÎTRE-ÉCLUSIER (25284), GRENIER

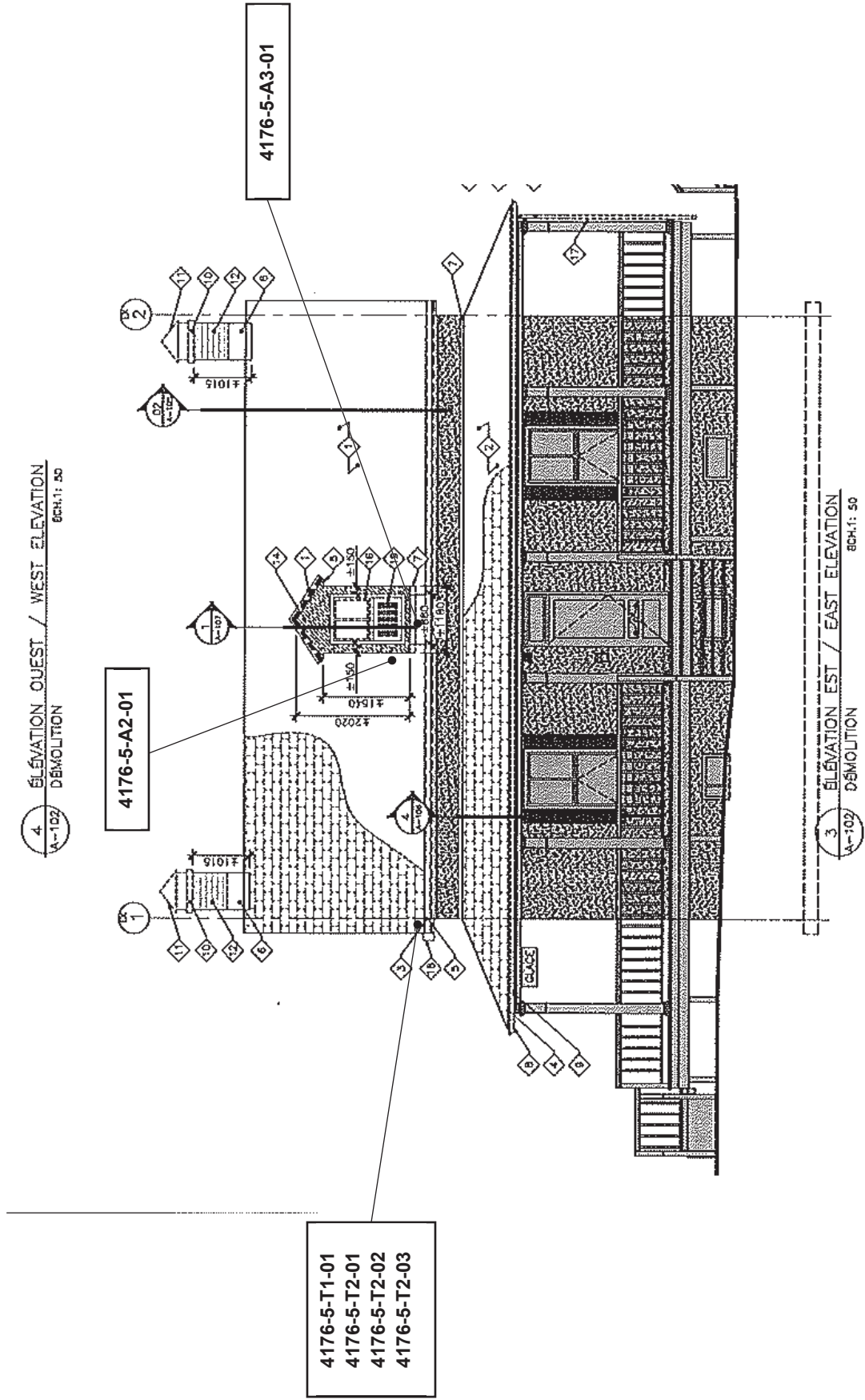


4176-5-A1-01

4176-5-M2-01
4176-5-M2-02
4176-5-M2-03
4176-5-M2-04
4176-5-M2-05

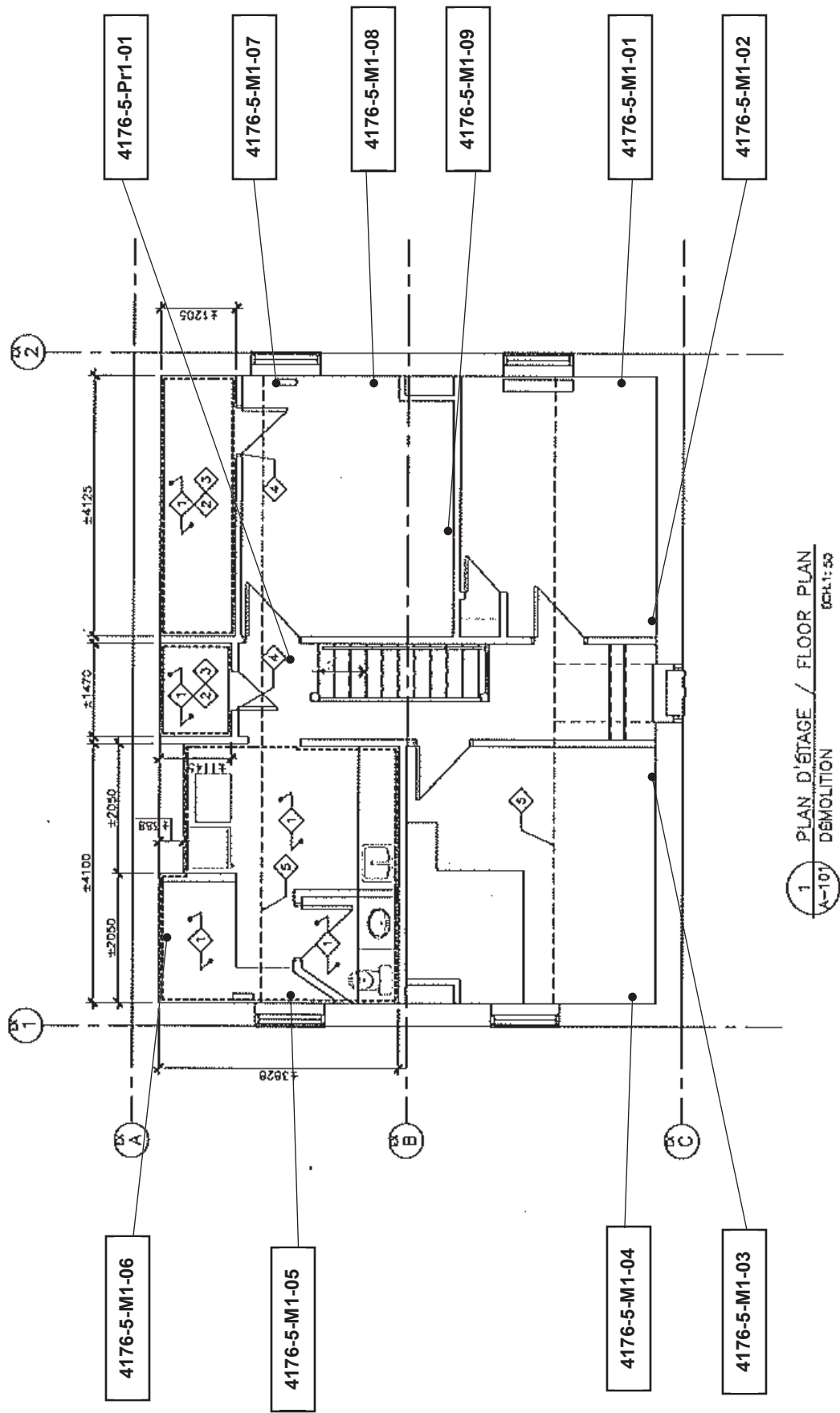
4176-5-M2-06
4176-5-M2-07
4176-5-M2-08
4176-5-M2-09

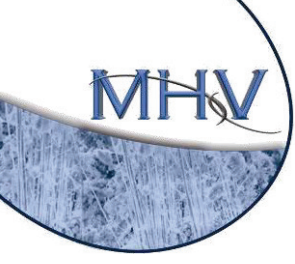
PLAN DE LOCALISATION DES ÉCHANTILLONS – MAISON MAÎTRE-ÉCLUSIER (25284), EXTÉRIEUR. TOIT





PLAN DE LOCALISATION DES ÉCHANTILLONS – MAISON MAÎTRE-ÉCLUSIER (25284), ÉTAGE



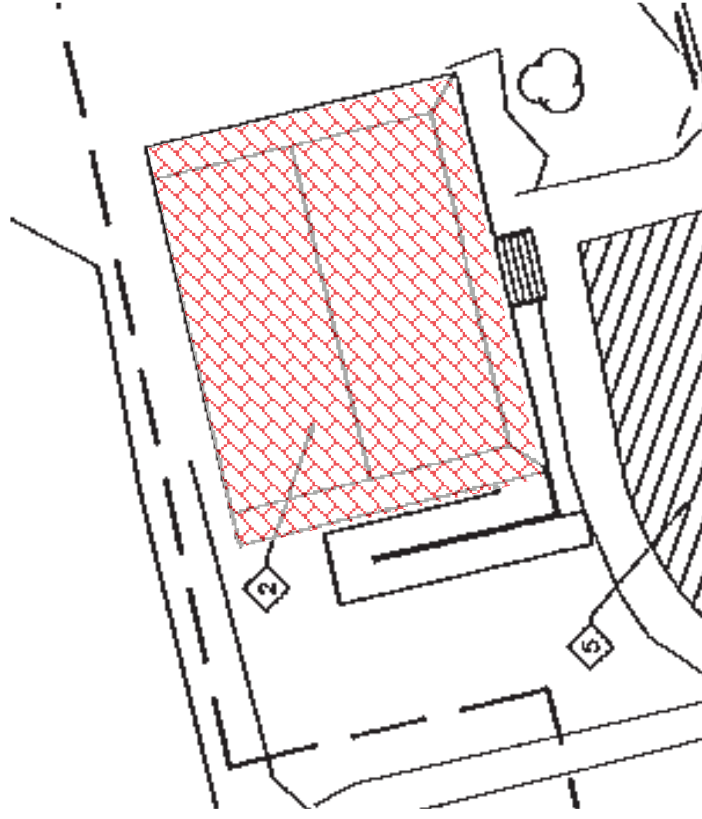


ANNEXE D

Plans des matériaux contenant de l'amiante lors de la caractérisation complémentaire



PLAN DE LOCALISATION DES MATÉRIEAUX CONTENANT DE L'AMIANTE LORS DE LA CARACTÉRISATION COMPLÉMENTAIRE - TOITURE



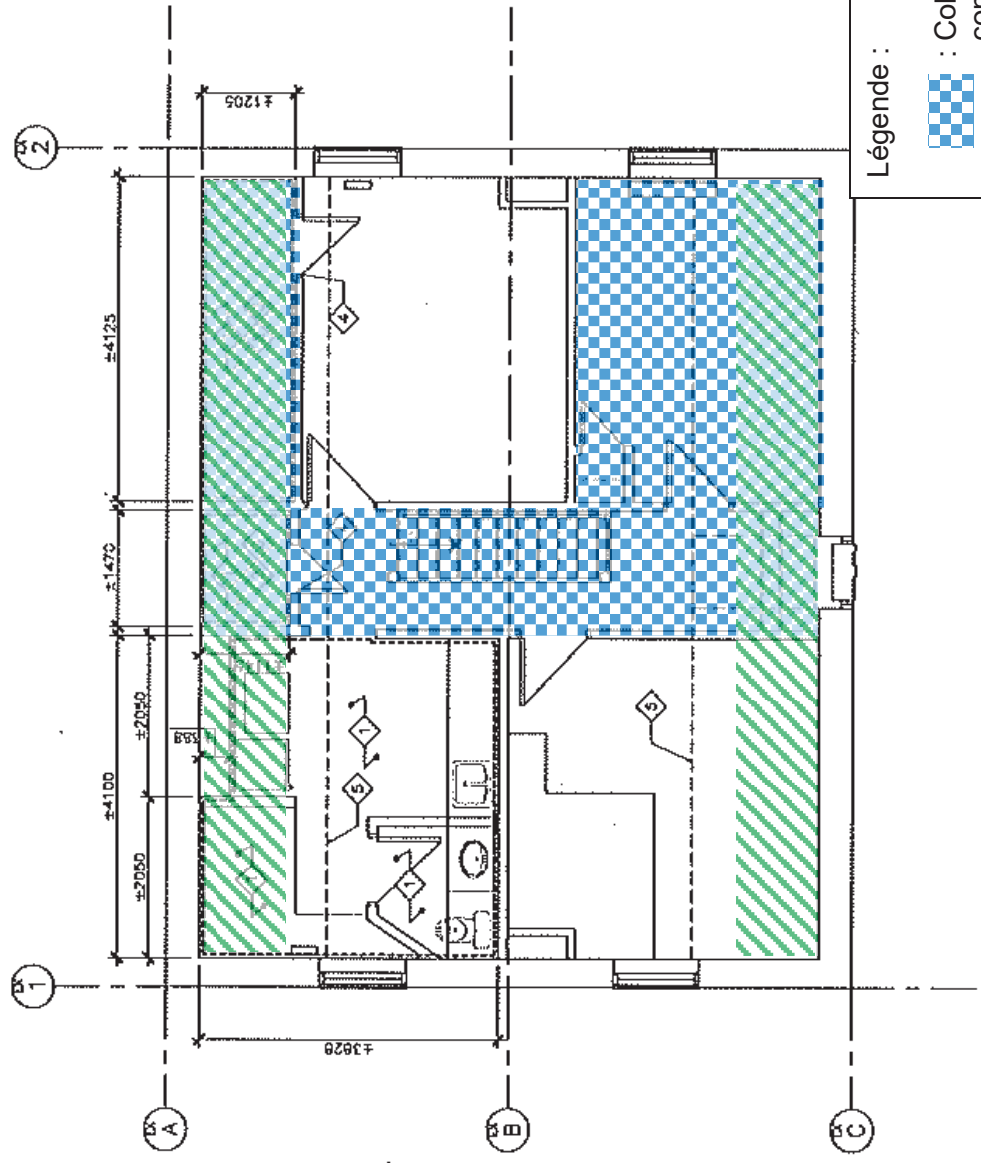
Légende :

 : Bardeaux de la toiture
contenant de l'amiante



* Présence d'un scellant goudronné
noir contenant de l'amiante sur la
toiture.



PLAN DE LOCALISATION DES MATÉRIAUX CONTENANT DE L'AMIANTE LORS DE LA CARACTÉRISATION COMPLÉMENTAIRE - ÉTAGE



Légende :

-  : Colle des tuiles de vinyle contenant de l'amiante
-  : Matériau cimentaire et plâtre des plafonds en pente contenant de l'amiante

1 PLAN D'ÉTAGE / FLOOR PLAN
A-107 DÉMOLITION
SCH.1:50



ANNEXE E

Registre des matériaux susceptibles de contenir de l'amiante

2019-10-18	Mauvaise	Prévisible	C (dispositifs)	Moyens	Du	r 400	15	Actuariat/Prémiate	0,1-1-%	2	Certificat de conformité
2019-10-18	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	Non défectue	S.O.	S.O.	Report/MV/7
2017-10-01	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	Report/MV/7
2017-10-01	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	Report/MV/7
2017-10-01	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	Report/MV/7
2017-10-01	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	Report/MV/7
2019-10-18	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	S.O.	Non défectue	S.O.	S.O.	SPAC-Cane de
											Classification

1 GENERAL

1.01 RELATED SECTIONS

- .1 Section 02 41 16 – Structure Demolition.
- .2 Section 06 10 10 – Carpentry;
- .3 Section 07 62 00 – Sheet Metal Flashing and Trim;
- .4 Section 07 92 10 – Joint Sealants.

1.02 REFERENCES

- .1 Canadian Standards Association (CSA International):
 - .1 CSA A179 94 (R1999), Mortar and Grout for Unit Masonry, and
 - .2 CSA A371 94 (R1999), Masonry Construction for Buildings.
- .2 International Masonry Industry All-Weather Council (IMIAC)
 - .1 Recommended Practices and Guide Specification for Cold Weather Masonry Construction.

1.03 SCOPE OF WORK

- .1 Generally but without being limited to, and other than those specified in demolition, masonry work consists in:
 - .1 Providing and installing all materials, scaffolding, tools, equipment and labour required to perform the work;
 - .2 Demolition of masonry at top of the exterior wall between the rafters to allow ventilation of the roof.
 - .3 All other work described in the documents or necessary to obtain finished Work.

1.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit required samples in accordance with Client's general conditions and specified instructions.
- .2 Submit masons' competency cards.

1.05 MOCK-UPS

- .1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.
- .2 Construct mock-up panel required in sections of this division.
- .3 Construct mock-up panel of plaster wall showing colours and textures.
- .4 Construct mock-up where directed.

- .5 Before commencing work, give Departmental Representative 24 hours to carry out inspection of mock-ups.
- .6 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of finished work.

1.06 WORK METHOD

- .1 Before commencing work, Masonry Contractor must provide a work plan indicated proposed method for dismantling top of top of wall.
- .2 Work plan must be approved by Departmental Representative before commencement of work.

1.07 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Protect work from damage due to inclement weather or construction work, to CSA S304.1.
- .4 Protect parts of work or dismantled segments of work from damage due to inclement weather.
- .5 Materials delivered to site must be dry.
- .6 Keep materials dry until use except where wetting of bricks is specified.
- .7 Store under waterproof cover on pallets or plank platforms held off ground by means of plank or timber skids.

1.08 SITE CONDITIONS

- .1 Cold weather application must comply with provisions of this section, relevant standards and product manufacturer requirements that apply to masonry work, based on temperature, heating and protection requirements.
- .2 It is forbidden to use antifreeze or salts to lower mortar freezing point. It is also forbidden to use calcium chloride or other accelerating agents.
- .3 During application of masonry during cold weather, ensure that insulation in substrate framework is in place to create a barrier to maintain temperature in shelter. If for some reason out of his control, the framework insulation is not done in time, Masonry Contractor will take necessary steps to maintain the prescribed temperature as soon as the mortar begins to set.

- .4 Cold weather requirements
 - .1 Refer to minimal CSA A371-04 requirements and the following :
 - .2 Never expose Work to winds exceeding 25 km/hr, use wind shelters as soon as winds exceed this speed.
 - .3 Execute work when the temperature of the existing masonry (walls or elements affected by masonry work) and the ambient temperature are above 5°C. This prescribed minimal temperature has to be 10°C when applying finishing mortars.
 - .4 Provide temporary shelters and heating equipment that are necessary to maintain the prescribed minimal temperature.
 - .5 Maintain ambient temperature of masonry work and its constituent materials above 5°C, day and night.
 - .6 Never use frozen materials including masonry elements. All materials should have a minimal temperature of 5°C during application.
 - .7 When ambient temperature is below 10°C, pre-mixed mortar and water have to be heated between 20 et 30°C.
 - .8 When applying mortar, its temperature has to be at least 15°C and no more than 30°C.

- .5 Protection after application
 - .1 Refer to minimal CSA A371-04 requirements and the following:
 - .2 Maintain temperature of masonry and of air within shelter above 5°C during curing period using supplemental heating.
 - .3 Prevent mortar from drying for a curing period of 72 hrs.
 - .4 Following curing period, gradually reduce temperature in shelter over 4 additional days.

- .6 Heating and protection requirements
 - .1 Refer to minimal CSA A371 requirements and the following:
 - .2 Preheat shelters at least 72h before applying mortar.
 - .3 The inside of shelters has to be kept at the prescribed temperature for a minimal curing period of 72 hrs after application.
 - .4 Keep the temperature inside shelters above freezing point for another 4 days after the 72 hrs curing period.
 - .5 Heat the inside of the shelter using indirect heating, to prevent heat from being directed to masonry work.
 - .6 Control humidity within heated shelter to prevent mortar from drying too quickly.
 - .7 Heated shelter must be monitored continuously (24 hrs a day).

- .7 Hot weather requirements
 - .1 Protect freshly laid masonry from drying too rapidly, by means of waterproof, non-staining coverings.
 - .2 Keep masonry dry using waterproof, non-staining coverings that extend over walls and down sides sufficient to protect walls from wind driven rain, until masonry work is completed and protected by flashings or other permanent construction.
 - .3 Protect masonry and other work from marking and other damage. Protect completed work from mortar droppings. Use non-staining coverings.

1.09 PROTECTION OF WORK

- .1 Protect masonry work and adjacent work from scratches and any other damage. Protect completed work from mortar splatter. Use non-staining tarps.
- .2 Protect walls near ground from soil splatter before sodding or any other landscaping work.
- .3 Support masonry work until lateral and permanent supports are in place.

2 PRODUCTS

2.01 WARRANTY

- .1 Masonry materials are specified elsewhere in related Sections mentioned in 1.1.

3 EXECUTION

3.01 GENERAL

- .1 Unless otherwise indicated, perform masonry work in compliance with CSA A371.
- .2 Perform masonry work plumb, level and aligned, by making well aligned vertical joints.
- .3 Arrange and place courses at an appropriate height and maintain continuity above and under bays, by cutting a minimum number of masonry units.

3.02 SITE TOLERANCES

- .1 Tolerances in article 5.3 notes to CSA A371 apply.
- .2 Assume full responsibility for accuracy of dimensions, plumbness and levelling of work and perform constant checks using a graduated stem.

3.03 WORK AFFECTING EXISTING WORKS

- .1 Refurbish existing works; for this purpose, use materials that match those already in place.

3.04 COLLABORATION WITH OTHER TRADES

- .1 Make openings in masonry where required or specified.
- .2 Carefully execute, in appropriate locations and according to specified dimensions, duct housings and openings.
- .3 When masonry includes conduits or piping, ensure desired levelling in prescribed manner. Never close an opening or pipe or conduit housing without being certain that the inspection and tests have been conducted.

- .4 Check with other trades if items that must be incorporated in masonry walls are present or if they must be installed in advance or during the construction of the wall. As such, also verify mechanical, electrical and structural documents or documents from any other consultant.

3.05 FINAL CLEANING

- .1 Once masonry work completed, remove all mortar stains, splatter or surplus using wood pallets.
- .2 If needed, smooth or replace defective mortar using fresh mortar that matches the one already in place, based on provisions of this specification.

END OF SECTION

1 GENERAL

1.01 RELATED SECTIONS

- .1 Section 07 61 00 – Sheet Metal Roofing;
- .2 Section 07 62 00 – Sheet Metal Flashing and Trim;
- .3 Section 07 92 10 – Joint Sealants
- .4 Section 08 50 50 – Traditional Wood Windows and louvers.

1.02 REFERENCES

- .1 CSA B111 1974 (R1998), Wire Nails, Spikes and Staples.
- .2 CAN/CSA G164 FM92 (C1998), Hot Dip Galvanizing of Irregularly Shaped Articles.
- .3 CSA O121 FM1978 (C1998), Douglas Fir Plywood.
- .4 CAN/CSA O141 F91 (C1999), Softwood Lumber.
- .5 CSA O151 FM1978 (C1998), Canadian Softwood Plywood.
- .6 CAN/CSA-O80 SERIES-08 (R2012) CONSOLIDATED - Wood Preservation
- .7 CAN/CSA O325.0 F92 (C1998), Construction Sheathing.
- .8 ASTM D-3201, Standard Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Based Products
- .9 NLGA Standard Grading Rules for Canadian Lumber, 2000.

1.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit samples in accordance with Client's general conditions and as specified.

1.04 QUALITY ASSURANCE

- .1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood in accordance with CSA standards.

1.05 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Pile wood in separate rows separated by sticks to enable air circulation.
- .3 Store prefabricated works in ventilated area protected from humidity or extreme temperature variations.

2 PRODUCTS

2.01 CONSTRUCTION LUMBER

- .1 Wood other than what is specified in Engineering.
- .2 Structural timber: Unless otherwise indicated, must be softwood, S4S finish (surfaced all four sides), moisture content not exceeding 19 %, and in accordance with:
 - .1 ACNOR O141;
 - .2 NLGA, (Standard Grading Rules for Canadian Lumber), 1987 edition.
- .3 Shop lumber, to CSA 0141 and National Lumber Grades Authority requirements, maximum water content of 6% for interior work, 12% for exterior work, choice sawmill product for painted finish, pine, compliant to AWMAC special category.
- .4 Furrings, spacers, nailing strips, nailing base, nailing, subframes, battens.
 - .1 S2S finish elements are acceptable.
 - .2 Dim wood: light framing classification, standard or superior category.
 - .3 Boards: Standard or superior category.
- .5 MSR lumber based on acceptable constraint for all work.
- .6 Abutting glued elements (finger-jointed) are not acceptable.

2.02 SOFFITS AND WOOD FASCIA BOARDS

- .1 White pine:
 - .1 Category: select;
 - .2 Density : 368 kg/m³;
 - .3 Flexural strength (oven dried): 65 MPa;
 - .4 Elasticity modulus: 9380 MPa;
 - .5 Janka hardness: 1650;
 - .6 Drying shrinkage: 8%;
- .2 Soffits:
 - .1 V joint matchboard, 19x152mm.
- .3 Fascia boards:
 - .1 19mm board x width shown on drawings.

2.03 MOULDINGS

- .1 Profile shown on drawings, select solid pine.

2.04 PANELS

- .1 Douglas fir plywood, exterior type: to ACNOR O121, with specified thickness.
- .2 Canadian softwood plywood: to ACNOR O151, construction classification, standard category.

2.05 ACCESSORIES

- .1 Joint sealing tape: Adhesive tape, airtight, applied with pressure, type recommended by vapour barrier manufacturer, 75mm wide.
- .2 Screen: In stainless steel, 44% opening percentage.
- .3 Filter medium: Fiberglass or polyester fibre snowbreak, dimension shown in drawings, $\pm 30\%$ opening percentage.

2.06 FASTENERS

- .1 Nails, pins and clips: to ACNOR B111.
- .2 Nails for bridging (existing boards and new plywood): drive screws, 4.05mm in diameter x 86 mm long, for pneumatic nail gun.
- .3 Bolts: with nuts and washers and, unless otherwise specified, 12.5mm in diameter.
- .4 Trademarked fasteners: toggle bolts, expansion shields with lag screws, lead or inorganic fibre bushings with screws, approved by Architect.
- .5 Fasteners: galvanized steel for exterior work.

2.07 WOOD PRESERVATION PRODUCTS

- .1 All structural lumber used to construct exterior elements (fascia boards, mouldings and soffits) must be pressure treated.

2.08 FABRICATION – SOFFITS & FASCIA BOARDS

- .1 Soffits and fascia boards must be surfaced on all apparent sides.
- .2 Soffit boards must be milled in order to tongue and groove boards together and expose a V joint.
- .3 Soffit and fascia boards must be sanded with #80 grain sandpaper on all sides before being painted.

2.09 PAINT

- .1 See section 09 91 23 – Interior Painting.

3 EXECUTION

3.01 EXAMINATION

- .1 Vérifier si les supports et les ouvertures murales sont prêts à recevoir les éléments. S'assurer que les supports sont de niveau, d'aplombs, solides et aptes à recevoir les éléments.
- .2 Report all defects to Professional. Proceed with installation only after unacceptable conditions have been remedied.

3.02 PREPARATION

- .1 Install fascia boards, mouldings and wood soffits.
- .2 Nail mouldings level, plumb and square, overlap ends and seal with sealant.

3.03 MANUFACTURER INSTRUCTIONS

- .1 Comply with written manufacturer requirements, recommendations and specifications, including all technical bulletins available, handling, storage and application instructions of products, and information on data sheets.

3.04 ASSEMBLY OF ELEMENTS

- .1 Comply with requirements of part 9 of NBC, 2005 edition and with provisions hereafter.
- .2 Install elements based on lines, elevations and levels indicated.
- .3 Build continuous elements using maximum possible lengths.
- .4 Where applicable, the domed or curved face of elements resting on framework support points must be on top part of work.

3.05 TEMPORARY PROTECTION

- .1 Construct all protective work for workers, such as parapets, ladders, ramps, platforms, tiers, walkways, etc.; Change, move and repair as needed during performance of work in accordance with requirements in of applicable regulations in force.
- .2 Provide and install all temporary partitions and enclosures required to prevent loss of heat, unauthorized intrusion and inconveniences caused by inclement weather, weather variations or dispersion of debris and dust.

3.06 NEW SECTION OF PLYWOOD BRIDGING

- .1 Install first row of exterior plywood vertically and as shown on drawings.
- .2 Fasten plywood perimeter to existing bridging boards using nails shown, at 150 mm c/c intervals.

- .3 Fasten centre of panels to each existing bridging board, using two nails per rafter.
- .4 Install second row of exterior plywood vertically, by staggering panel joints with panels from first row.
- .5 Fasten panels from second row in the same manner as the first row.

3.07 EXISTING BRIDGING

- .1 Fasten existing loose bridging boards using two nails per rafter. Use type of nails shown.

3.08 FURRINGS AND SPACERS

- .1 Install furrings and spacers necessary to remove from wall and support sashes, heating cabinets, wall and ceiling finishing elements, overlays, borders, soffits, sidings and any other type of work.
- .2 Install elements plumb, aligned and level. Maximum admissible deviation is 1:600.

3.09 SUBFRAMES AND NAILING BASES

- .1 Provide and install all filler pieces, subframes and nailing bases required for work from other trades, including for windows, soffits and all other elements requiring solid and rigid fastening.
- .2 Cut and adjust filler pieces and nailing bases to underlying framing elements.
- .3 All elements installed must be verified and accepted by Architect before being concealed by other work.

3.10 FASTENERS

- .1 Assemble, anchor, fasten, attach and brace elements to ensure required solidity and rigidity.
- .2 Unless otherwise indicated, fasteners must be installed in accordance with requirements of part 9 of NBD.
- .3 As needed, countersink holes so bolt heads are below surface.

3.11 VARIOUS WORK

- .1 Perform all work necessary for complete performance of project.

3.12 CLEANING

- .1 Upon completion remove surplus materials, rubbish, tools and equipment and safety barriers.

END OF SECTION

1 GENERAL

1.01 RELATED SECTIONS

- .1 Section 06 20 00 – Carpentry.

1.02 REFERENCES

- .1 Canadian Urethane Foam Contractors' Association (CUFCA)
- .2 Underwriters Laboratories of Canada (ULC)
 - .1 CAN/ULC S101 89, Standard Methods of Fire Tests of Building Construction and Materials.
 - .2 CAN/ULC S102 1988 C2000, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
 - .3 CAN/ULC S705.1 01, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Material Specification. Includes Amendment 1.2.
 - .4 CAN/ULC S705.2- Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Application .
 - .5 CCMC 13244-L, Spray-Applied Rigid Polyurethane Foam Insulation.
 - .6 AIR INS inc. Report AS-00201-A Water Vapour Transmission
 - .7 AIR INS inc. Report A1-02627-A Air Barrier
 - .8 GREENGUARD Certification level, school and child

1.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit product descriptions, samples and data sheets in accordance with Client's general conditions.

1.04 QUALITY ASSURANCE

- .1 Applicators to conform to CUFCA Quality Assurance Program.
- .2 Upon request of Department Representative, apply insulation to a section at least 10 m² in size with typical characteristics of entire project; this sample may be part of the final Work.

1.05 DELIVERY, STORAGE AND HANDLING

- .1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name, product, expiration date, weight, applicable standards and other instructions or appropriate technical reference.
- .2 Store materials and in accordance with manufacturer's temperature recommendations.
- .3 Remove off-site empty isocyanate and resin containers as specified in CAN/ULC S705.2.

1.06 SITE CONDITIONS

- .1 At commencement of work and at all times during performance of work, allow access to site to representative or any other people designated by Departmental Representative so they may provide required technical assistance.
- .2 Perform work from this section when temperature of surfaces and ambient air temperature fall within requirements in the manufacturer's technical bulletin.
- .3 Perform work from this section when relative ambient air humidity is below 80%.
- .4 Prepare surfaces in accordance with CAN/ULC S705.2 and with manufacturer recommendations.

1.07 PROTECTION

- .1 Ensure adequate ventilation in zone in which insulation is applied to guarantee safe work environment.
- .2 Ensure protection of workers in accordance with local regulations and manufacturer standards and recommendations.
- .3 Protect adjacent surfaces and material from damage likely to be caused by projection outside planned limits.

2 PRODUCTS

2.01 ENVIRONMENTAL REQUIREMENTS

- .1 Product must not contain any CFCs and HCFCs and no Ozone-depleting Substances, ZERO ODS.
- .2 Product must comply with GREENGUARD certification, level, school and child requirements.

2.02 MATERIALS

- .1 Spray applied polyurethane foam insulation to CAN/ULC S705.1-05 TYPE 2 (including modifications 1 & 2) by respecting following performance objectives:
 - .1 Density ASTM D1622 Min. 33 Kg/m³
 - .2 Thermal strength ASTM C518, 180 j /230C Min.1,17/25mm RSI
 - .3 CCMC air barrier material 07273 (25mm free) Max.:0.00004 L/s•m²@ 75 Pa
 - .4 Water vapour permeance: 86.6 ng/Pa.sm² maximum
- .2 Primers: in accordance with manufacturer's recommendations and CAN/ULC S-705.2, given the nature and state of various surfaces to be insulated.

3 EXECUTION

3.01 APPLICATION

- .1 Apply insulation to clean surfaces in accordance with CAN/ULC S705 and manufacturer's printed instructions. Use primer where recommended by manufacturer.
- .2 Apply insulation to areas shown in plan details to ensure uniform thermal insulation of building elements.

3.02 VERIFICATION

- .1 Verify whether work already performed is in a condition to receive work described in this section. Report any anomaly or non-concordance. Only undertake work once corrective actions have been taken.
- .2 To provisions of CAN/ULC S705.2 and following requirements, verify these conditions:
 - .1 Surfaces that must be covered with thermal foam insulation must be free of excess humidity, frost, oil, rust and any other foreign matter that could have a negative impact on the product's adherence. In case of doubt, apply primer.
 - .2 Ensure the complete curing of substrates: concrete, mortar, sealers, membranes, primers or any other potential surfaces, before spraying foam.
 - .3 Ensure adherence of membranes and sealers to various substrates is adequate by taking into account weather conditions for applying membranes, sealers and spray insulation.
- .3 Respect acceptable humidity levels for the different materials.
- .4 In the event of particular conditions, report situation in writing and follow manufacturer recommendations.
- .5 Ensure that all work that must be completed before application of insulation is completed.

3.03 INSTALLATION

- .1 Follow recommendations of CAN/ULC S705.2 with regard to use of primer.
- .2 Apply insulation to clean and dry surfaces when weather conditions comply with prescriptions of CAN/ULC S705.2 and manufacturer instructions.
- .3 Spray insulation in successive layers at least 15mm thick each in order to obtain a minimum total thickness indicated in drawings.
- .4 Do not spray insulation closer to 75 mm (3 in) from chimneys, vapour conduits, built-in light fixtures and other heat sources.

3.04 TOLERANCE

- .1 Apply product to have a total average thickness (9 readings on a 1 m² surface) of \pm 6mm based on specifications in drawings. Perform at least one test every 150 m² of sprayed surface.
- .2 Apply insulation to ensure that insulating value is uniform across entire surface, as stipulated in NBC 1995 article 9.25.2.3. 1).

3.05 FIELD QUALITY CONTROL

- .1 Upon request of consultant, manufacturer must prepare field quality control report.

3.06 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
 - .1 Remove insulation material spilled during installation and leave work area ready for application of wall board.

END OF SECTION

1 GENERAL

1.01 RELATED SECTIONS

- .1 Section 06 10 10 – Carpentry.
- .2 Section 07 62 00 – Sheet Metal Flashing and Trim.
- .3 Section 07 92 10 – Joint Sealants.

1.02 REFERENCE STANDARDS

- .1 Unless otherwise specified, Work must comply with industry and trade best practices, recommendations of the Association des Maîtres couvreurs du Québec.
- .2 ASTM International
 - .1 ASTM A 167, Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
 - .2 ASTM A 240/A 240M, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
 - .3 ASTM A 653/A 653M, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .4 ASTM A 792/A 792M, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot Dip Process.
 - .5 ASTM B 32, Standard Specification for Solder Metal.
 - .6 ASTM B 370, Standard Specification for Copper Sheet and Strip for Building Construction.
 - .7 ASTM D 523-Standard Test Method for Specular Gloss.
 - .8 ASTM D 822-Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
- .3 CSA International
 - .1 CSA A123.3, Asphalt Saturated Organic Roofing Felt.
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-37.5, Cutback Asphalt Plastic Cement.
 - .2 CAN/CGSB-37.29, Rubber-Asphalt Sealing Compound.
 - .3 CAN/CGSB-51.32, Sheathing, Membrane, Breather Type.
- .5 Underwriters Laboratories Inc., R13399, Class A fire classification under fiberglass shingles and Class C under organic felt shingles (to ASTM E108/UL 790);
- .6 Underwriters Laboratories Inc., Classified Sheathing Material.
- .7 ASTM D1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.

1.03 SAMPLES

- .1 Provide samples in accordance with Client's general conditions.
- .2 Submit 300mm x300mm sample of each type of sheet metal and gauge proposed.

1.04 MOCK-UPS

- .1 Fabricate mock-ups in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Fabricate 1200mm x 1200mm sample roofing panel using identical project materials and methods to include typical seam.
- .3 Approved mock-up may remain as part of finished Work.
- .4 Allow 48 hours for inspection of mock-up by Departmental Representative before proceeding with sheet metal flashing work.

1.05 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Client's general conditions.
- .2 Shop drawings must indicate materials, arrangement of sheets and joints, types of fasteners and their respective location, as well as any particular shape that must be created, types of materials used and their thickness.
- .3 The snow-guards drawings must be signed and sealed by an engineer, a member in good standing of the Ordre des ingénieurs du Québec.

1.06 CONTRACTOR QUALIFICATIONS

- .1 Roofing Contractor must, at time of bids and during performance of work, be officially recognized as a Roofing Contractor.
- .2 Work under this section must be implemented by a Roofing Contractor regularly employed in installing roofs and sheet metal of similar complexity than those described in this section. Contractor must demonstrate minimum experience in five (5) major steel sheet «à la Canadienne» roof projects.
- .3 Foreman must have the necessary experience to conduct work of his team. The foreman and other workers on site must have certificates of competence (training and CCQ card) required to perform roofing work.
- .4 The Departmental Representative has the right to refuse any worker that does not show the adequate level of thoroughness and required abilities for such work.

1.07 WARRANTY

- .1 Upon acceptance of Work, provide a written guarantee, signed and issued in the name of the Owner, stating that the work from this section will remain without defect of material or

installation for a period of five (5) years from the date of final acceptance of the work. The warranty must stipulate that any watertightness defect, premature wear or other problem will be repaired immediately to the satisfaction of the Owner and without any cost to Owner.

1.08 MAINTENANCE INFORMATION

- .1 Provide necessary instructions for roofing maintenance and add to maintenance manual.

1.09 CO-ORDINATION

- .1 Co-ordinate related carpentry work or work of other specialties to enable performance of their work without discontinuity in temporary or permanent roof watertightness.

1.10 DELIVERY, STORAGE AND HANDLING

- .1 All materials will be delivered and stored in original packaging bearing manufacturer name, quality, weight, applicable standards and any other instruction or standard reference.
- .2 Materials will be adequately protected and stored in dry and ventilated shelter, protected from the sun. Only materials used in one day will be removed from shelter. During winter, materials will be stored in shelter heated to at least 10° C and taken out as they are needed. Keep away from open flames and welding sparks.
- .3 Materials delivered in rolls will be carefully store upright; flashing and cap flashing must be stored to be protected from nicks, scratches, blemishes and other damage. Avoid damaging roll ends.
- .4 Avoid accumulation of materials on roofs that could, in specific locations, compromise the solidity of these roofs with loads that exceed set loads. Use a wide strap to raise materials to the roof.
- .5 All altered material and/or material exposed to inclement weather will be removed from construction site upon recommendation of inspector assigned to monitor roofing.

1.11 SITE CONDITIONS

- .1 Install underlay materials at temperatures of at least 4°C under dry conditions.
- .2 Inspect all surfaces that must receive underlay membrane to ensure they are clean, dry, sound, smooth and uniform.

1.12 TEMPORARY WATERTIGHTNESS

- .1 Ensure every time work is interrupted for whatsoever reason that the roof remains perfectly watertight to protect roofing materials and other materials already in place, inside and outside, to prevent any penetration of water into the building and any subsequent damage.

2 PRODUCTS

2.01 MATERIALS

- .1 Adhesive underlay membrane: Membrane composed of rubberized asphalt adhesive, protected with removable release film, and with a high-performance polymer film that blocks UV rays, antiskid finish, strong resistance to high temperatures, such as GRACE ICE & WATER SHIELD® HT from GRACE, or other acceptable product:
 - .1 Thickness: 1.02 mm, ASTM D3767, method A;
 - .2 resistance to high temperatures: up to 115°C,
 - .3 Tensile strength: MD 33 lb/in; CD 31 lb/in, ASTM D412 ((Die C modified);
 - .4 Ultimate elongation of rubberized asphalt: 250% maximum, ASTM D412 ((Die C modified);
 - .5 Low temperature flexibility at -29°C: Unaffected, ASTM D1970;
 - .6 Adhesion to plywood: 525 N/m, ASTM D903;
 - .7 Permeance: 2.9ng/m² Pa (0.05 Perms) maximum, ASTM E96;
 - .8 Primer: based on recommendations of membrane manufacturer, for plywood substrate.
- .2 Sheet metal, unless stated otherwise, all items indicated in steel on the drawings shall conform to the following specifications: Plain stainless steel sheet, to ASTM A167 and ASTM A240/A240M, type 304, finish 2B; gauge as required in following items:
 - .1 Sheet metal will be in sheets, dimensions shown on drawings, cut and bent to respect dimensions and shapes shown on drawings;
 - .2 Field of roof and clips: 28 gauge;
 - .3 Fascia boards, flashings, valleys and roof edges: 26 gauge;
 - .4 Gutters: gutters with welded joints on longest useful length, 26 gauge;
 - .5 Downspouts with welded joints on longest useful length, 26 gauge;
 - .6 Fastenings and support brackets for gutters and downspouts: 12 gauge sheet metal;
 - .7 Snow guards: based on dimensions and profiles shown on drawings.

2.02 JOINERY

- .1 Structural timber: Unless otherwise indicated, softwood, S4S finish (surfaced all four sides), construction grade, moisture content not exceeding 19 %, and in accordance with: CAN/CSA-0141 and NLGA, Standard Grading Rules For Canadian Lumber.
- .2 Douglas fir plywood, to ACNOR 01211-M1978, construction classification, standard category, tongue and groove, exterior type.
- .3 Other wood blocks: white or grey pine, clear, 12% dried, shop dressed to exact profile of original elements, treated to resist decay in accordance with ACNOR 080 and EPA approved, without arsenic or derived product.
- .4 Tabs: same material and thickness as sheet metal used, at least 50mm wide.

2.03 ACCESSORIES

- .1 Fasteners: concealed.
- .2 Nails, screws and washers: 304 stainless steel, dimensions and types appropriate for the work. Flat head spiral roofing nails and flat head screws, length and gauge appropriate for roofing and sheet metal cladding.
- .3 Wood screws: black steel, no. 10, floor type, countersunk, Robertson model, length required to penetrate 30mm into substrate.
- .4 Lag screws and washers: 304 stainless steel, 13mm diameter, and length appropriate for nailing base (minimum 75mm).
- .5 Bolts, nuts and washers: 304 stainless steel, diameter shown, and length appropriate for nailing base.
- .6 Seal washers: neoprene, 70 hardness.
- .7 Welding: to ASTM B32, composed of 50% pure tin and 50% lead.
- .8 Fluxing agent or welding flux: commercial preparation, brand approved by manufacturer of metal being welded.
- .9 Sealant: in accordance with provisions of section 07 90 00 – Joint Sealants.
- .1 Screen: In stainless steel, 44% opening percentage.

2.04 FABRICATION

- .1 The quality of the work and the methods used for dimpling, fashioning, anchoring, interlocking, expansion and contraction of sheet metal must comply with applicable details and provisions in current edition of the SMACNA manual, unless otherwise specified in plans and specifications.
- .2 Fashion sheet metal works in accordance with profiles and dimensions shown on plans.
- .3 Fashion all elements while taking into account thermal movements. Reinforce elements as needed to prevent buckling of flat surfaces.
- .4 All sheets will be cut straight and level with appropriate modern tools. Sheets will all be bent using power brakes. The bending angle and folds to clip sheets will be made using mechanical shapers and so as to allow free expansion of sheets once installation is completed.
- .5 Use and fashion sheets of appropriate dimensions as patterns shown on drawings for Steel sheet «à la Canadienne» roofs.
- .6 Fashion sheet metal flashings and mouldings as per Québec Master Roofers Association provisions, in compliance with drawings.

- .7 Use longest lengths of sheet metal without exceeding 2440mm for flashings, borders and other accessories based on profiles indicated.
- .8 Begin on each side with sheet ridges that must be welded.

2.05 WELDING

- .1 Soft surfaces to be welded must be made rough using emery paper or sandpaper. Apply acid solution to surfaces to be welded.
- .2 After assembling parts by nailing, weld them continuously with one or more repetitive operations. Heat metal properly so that welding is fully introduced under full contact surface by capillary action.
- .3 Use welding only for purposes of filling and not for mechanical resistance purposes.
- .4 All traces of acid solution must be cleaned immediately after joints have been welded, using a 10% sodium bicarbonate solution and then thoroughly rinsed.
- .5 All welds will be done in two (2) steps:
- .6 solution first step consists in making a smooth and continuous weld;
- .7 The second step consists in making a welding rod, reinforced on top of the first weld.

2.06 SNOW GUARDS

- .1 Construct snow guards using stainless steel profiles, as shown on drawings.

3 EXECUTION

3.01 GENERAL

- .1 Inspect all substrates and ensure they are securely fastened, straight and flat. Warn Departmental Representative immediately of any defect that could hinder installation or appearance of the work.
- .2 Sweep and clean substrates. They must be completely clean and free of dust or other material that could affect the adhesion of the underlay membrane.
- .3 Roofing work must be performed in ongoing manner as surfaces are ready and weather conditions allow.
- .4 Protect adjacent surfaces from damage caused by roofing work.
- .5 Complete each installation step of materials in one day; if weather conditions prevent such completion, apply temporary waterproofing materials to ensure that no water or snow ingress will damage other materials already in place.

- .6 Using an electronic humidity sensor, continually check humidity of surfaces to cover or those recently covered with roofing materials; do not continue work until excessive humidity has dropped to an acceptable level.
- .7 Contractor must establish perfect co-ordination of his work with those of other specialties to ensure permanent watertightness of roof during performance of work.
- .8 Contractor must take all necessary measures to provide and install temporary protections to ensure evacuation of rainwater toward building exterior.
- .9 Contractor must take responsibility for damage caused inside building and must take necessary corrective actions to repair damaged materials and goods.
- .10 Maintain equipment and tools to perform roofing work in good working condition.
- .11 Use tools recommended by manufacturers of various roofing materials.
- .12 Respect configuration of assemblies shown on plans for all roofing and cladding elements.
- .13 Flat surfaces must not present any deformation, ripples, torsion, warping or other visible defect.
- .14 The finished work must be completely watertight under any condition. Fashion joints in direction of water flow.
- .15 Clipped joints must be pounded using a piece of wood the length of the joint.
- .16 All pinched folds must be at least 13mm wide, and more if specified.

3.02 JOINERY APPLICATION

- .1 Screw boards or other supports with sufficient force to obtain adequate tightening. Any screw not properly fastened must be moved 50mm to the side, by pre-drilling once again.
- .2 Install tilting fillets (bevelled wood blocking) where shown on drawings, as well as in junctions between field of roof and vertical walls.

3.03 APPLICATION OF UNDERLAYS

- .1 Prime surfaces that must receive self-adhesive membranes based on manufacturer recommendations. Primed surface must be covered with membrane as soon as possible, within the same day.
- .2 Install the self-adhesive underlay membrane over entire Steel sheet «à la Canadienne» roof and where shown on drawings.
- .3 Install the membrane from the bottom of all pitches and unroll by pulling on release film.
- .4 Continue with subsequent rolls by aligning them on overlap line of previous strip and ensuring 100mm overlap. Stagger end joints and ensure 150mm overlap.

- .5 Immediately after installing the membrane, ensure continuous adherence by rolling with hand roller.
- .6 Where vertical parts meet, install membrane on all vertical surfaces and ensure 150mm overlap with horizontal parts.
- .7 Apply black paper under air intake sheet and under interior sheet.
- .8 Overlap to facilitate water runoff.

3.04 STEEL SHEET «À LA CANADIENNE» ROOF

- .1 Execute steel sheet «à la Canadienne» roof based on contemporary pattern. Perform work in accordance with industry and trade practices and as shown on drawings.
- .2 Install metal sheets for roof, starting with eaves. Fasten sheets without bending them, into valley flashings and edge strips of eaves and gables.
- .3 Ridges: Use wide strip of continuous sheet metal, width shown on plans and maximum possible length. Clip transvers joints. Plan to cover gutter fasteners over ± 20 mm.
- .4 Field of roof: Use factory folded strips, wide enough to respect covering shown in drawings. The exposed dimension of factory folded sheets and width of fold must comply with instructions on drawings. Install strips based on angle shown on drawings. Each exposed sheet must be fastened using clip nailed to bridging. Each sheet is then folded down and clipped to the next sheet. All strip ends must be folded and clipped to bridging. Install top strips to cover bottom strips, as instructed on drawings.

3.05 RIDGES, VALLEYS, VENTS AND RISERS

- .1 For ridges, cover wood pieces with 2440mm sheet, with clipped joint. Joints must be arranged in opposite direction to prevailing winds.
- .2 Fashion valleys without exceeding 3m in length. Make overlapping joints every 150mm in direction of water flow. Extend valley sheets over a width of at least 150mm under roof sheets. At end of valleys, do a double clip in valley sheets and roof sheets, then fasten with tabs set at 450mm c/c.
- .3 Valleys will be open, made of sheet metal folded in centre, 600mm exposed. Roof sheet will overlap valley sheet over at least 150mm and fastened using clips. Each section will be 2400mm long, les joints in direction of water flow.
- .4 Raise sheet on vertical parts over a minimum height of 100mm.
- .5 Install des manchons avec capuchons ou les ventilateurs, welded to roofing sheet.

3.06 FLASHING AND METAL TRIM

- .1 Fashion metal flashing and other sheet metal elements in accordance with drawings.

- .2 Fashion pieces with maximum length of 2440mm and clip joints with single fold. Execute joints in direction of water flow.
- .3 Fold exposed edges by 12mm on lower side.

3.07 GUTTERS AND DOWNSPOUTS

- .1 Fashion gutters and downspouts based on profile shown on drawings.
- .2 Use maximum length of sheets.
- .3 Longitudinal joints are prohibited.
- .4 Fasten gutters and downspouts as shown on drawings. Gutters and downspouts must be fastened no more than 1200 mm c/c.
- .5 Along roof edge, extend gutter cladding by at least 150 mm under the metal cover and finish with 20 mm clip fixed in place with strips. Clip bottom of sheet or roofing sheet metal to edge strip to form 20 mm wide joint.

3.08 SNOW GUARDS

- .1 Snow guards must be securely fastened to roof without altering its watertightness. Install fasteners as indicated on drawings.

3.09 PROTECTION

- .1 Roofing material: Contractor must take precautions to protect exposed surface of metal cladding from scratches, grooves, dents and perforations.
- .2 Tools: Contractor must keep clean and in good condition all tools used from cutting and bending of sheet metal roofing.

3.10 FINISH

- .1 On completion of work from this division, clean metal to remove any stain or rust. Also clean and repair adjacent work that may be soiled or damaged following work from this division.
- .2 Periodically remove from site waste and surplus materials from work from this division and avoid accumulation.

3.11 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

END OF SECTION

1 GENERAL

1.01 RELATED SECTIONS

- .1 Section 06 20 20 – Carpentry;
- .2 Section 07 92 10 – Joint Sealants;
- .3 Section 07 61 00 – Sheet Metal Roofing.

1.02 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM A 167, Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
 - .2 ASTM A 240/A 240M, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
 - .3 ASTM A 606, Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance.
 - .4 ASTM A 653/A 653M, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .5 ASTM A 792/A 792M, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
 - .6 ASTM B 32, Standard Specification for Solder Metal.
 - .7 ASTM B 370, Standard Specification for Copper Sheet and Strip for Building Construction.
 - .8 ASTM D 523, Standard Test Method for Specular Gloss.
 - .9 ASTM D 822, Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
- .2 Canadian Standards Association (CSA International)
 - .1 CSA A123.3, Asphalt Saturated Organic Roofing Felt.
 - .2 CSA B111 1974(R2003), Wire Nails, Spikes and Staples.

1.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Client's general conditions.
- .2 Submit manufacturer's printed product literature for sheet metal flashing systems materials, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Drawings must show profiles, dimensions, types of materials and finishes, thickness of all elements used and must indicate where they will be installed.

- .4 Submit duplicate 300 mm x 300 mm samples of each type of sheet metal material, finishes and colours.

1.04 COMPATIBILITY OF MATERIALS

- .1 Materials must be protected from damaging chemical and electrolytic reactions.

1.05 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.

2 PRODUCTS

2.01 SHEET METAL MATERIALS

- .1 Sheet metal: Unless otherwise indicated in drawings, all sheet metal must comply with:
 - .1 Stainless steel sheet: to ASTM A167 and ASTM A240/A240M, type 304, finish 2B.
- .2 Tabs: same material, same dip and same thickness as sheet metal, at least 50mm wide.
- .3 Zinc coated steel sheet (if necessary): hot galvanized steel sheet, thickness shown in drawings and minimum 24 (.7mm) gauge, commercial quality, to ASTM A653/A653M, with Z275 designation zinc coating.
- .4 Thickness indicated for pre-finished sheets is that of pure metal.

2.02 ACCESSORIES

- .1 Fasteners: of same material as sheet metal, to CSA B111, flat head roofing nails of length and thickness suitable for application.
- .2 Wood screws: stainless steel, countersunk head, length required depending on material.
- .3 Bolts, nuts: stainless steel, size shown on drawings.
- .4 Sheet metal nails for copper: stainless steel, 12 gauge, 4.5mm head, 32mm long.
- .5 Sealants: See section 07 92 00 – Joint Sealants.
- .6 Washers: of same material as sheet metal, 1 mm thick with rubber packings.

2.03 FABRICATION

- .1 Fabricate metal flashings and other sheet metal work in accordance with indications on drawings, and with Canadian Roofing Contractors Association (CRCA) standards.
- .2 Form pieces in 2400 mm maximum lengths.
 - .1 Make allowance for expansion at joints.
- .3 Hem exposed edges on underside 12 mm.
 - .1 Mitre and seal corners with sealant.
- .4 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- .5 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

3 EXECUTION

3.01 INSTALLATION

- .1 Install sheet metal work in accordance with details.
- .2 Use concealed fastenings except where approved by Departmental Representative before installation.
- .3 Install surface mounted reglets true and level, and caulk top of reglet with sealant at 300mm maximum centres.
- .4 Close end joints and seal with sealant.
- .5 Make joints in direction of water flow and make watertight.
- .6 Caulk flashing at with sea.

3.02 CLEANING

- .1 Leave work areas clean, free from grease, finger marks and stains.
- .2 Periodically remove surplus materials, excess materials and rubbish to prevent accumulation.

END OF SECTION

1 GENERAL

1.01 RELATED SECTIONS

- .1 Sealants and caulking.
- .2 Paragraph for completing other sections with provisions regarding sealing or caulking of work.
- .3 When caulking work with sealant materials are shown in cross section or on details, it is understood that the joint(s) must be sealed around entire perimeter and/or length of work to be sealed.

1.02 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CGSB 19-GP-5M, Sealing Compound, One Component, Acrylic Base, Solvent Curing (Issue of 1976 reaffirmed, incorporating Amendment No. 1).
 - .2 CAN/CGSB-19.13, Sealing Compound, One-component, Elastomeric, Chemical Curing.
 - .3 CGSB 19-GP-14M, Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing (Reaffirmation of April 1976).
 - .4 CAN/CGSB-19.17, One-Component Acrylic Emulsion Base Sealing Compound.
 - .5 CAN/CGSB-19.24, Multi-component, Chemical Curing Sealing Compound.

1.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit required data sheets in accordance with Client's general conditions.
- .2 Manufacturer's data sheets to describe:
 - .1 Caulking compound.
 - .2 Primers.
 - .2 Sealing compound, each type, including compatibility when different sealants are in contact with each other.
- .3 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .4 Submit 2 samples of each type of material and colour.
- .5 Cured samples of exposed sealants for each colour where required to match adjacent material.
- .6 Submit manufacturer's instructions in accordance with 01 33 00 - Submittal Procedures.

1.04 QUALITY ASSURANCE/COMPETENCE

- .1 Installer competence: company specialized in performance of work described in this section.
- .2 In addition to manufacturer specifications, ensure that sealing work meets requirements of Applicator Training Manual from the Sealant, Waterproofing & Restoration Institute (SWR Institute).
- .3 Workers on site will need to possess the required competence certificates (CCQ training and cards) to execute work in this section.
- .4 The Departmental representative can reject any worker that does not demonstrate the adequate competence or thoroughness for this type of work.

1.05 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name. Store materials off ground and protect against water, humidity and frost.

1.06 SITE CONDITIONS

- .1 Ambient Conditions
 - .1 Proceed with installation of joint sealants only when:
 - .1 Ambient and substrate temperature conditions are within limits permitted by joint sealant manufacturer or are above 5 degrees Celsius;
 - .2 Joint substrates are dry.
- .2 Joint-Width Conditions
 - .1 Proceed with installation of joint sealants only where joint widths are more than those allowed by joint sealant manufacturer for applications indicated or more than 6 mm.
- .3 Joint-Substrate Conditions
 - .1 Proceed with installation of joint sealants only after contaminants capable of interfering with adhesion are removed from joint substrates.

2 PRODUCTS

2.01 SEALANT MATERIALS - GENERAL

- .1 Sealant materials for each location must be of same type and from same manufacturer.
- .2 For sealant materials that must be used with primer, use primer recommended by manufacturer.

- .3 Unless otherwise specified, the colour of each sealant material for each location will be chosen by Departmental Representative from standard manufacturer colours.
- .4 The list of products below is not limitative and does not constitute a list of quantities or a list of single source products. The products are provided as a guide to establish the type, function, quality and finish of required items. All other acceptable product corresponding to same requirements may be approved by Departmental Representative.
- .5 The list is an exhaustive list of sealant materials, verify the application of these products according to instructions on drawings and article 2.4 *Sealant Materials - Location*. Also provide and install any product that is not on this list but is required to complete the work as intended in documents.

2.02 SEALANT MATERIALS – DESCRIPTION

- .1 Type 1: Two- or three-component sealant, polyurethane based, to CAN/CGSB-19.24, colour chosen by Departmental Representative.
 - .1 Acceptable products: Dymeric 240 from Tremco, Sikaflex 2c NS/SL from Sika.
- .2 Type 2: Single-component sealant, polyurethane based, to CAN/CGSB-19.13, colour chosen by Departmental Representative.
 - .1 Acceptable products: Dymonic from Tremco, Sikaflex 1a from Sika.
- .3 Type 3: Two-component sealant, polysulphide based, non-sag, to ASTM C920 or CAN/CGSB-19.13, colour chosen by Departmental Representative.
 - .1 Acceptable products: THC 900 from Tremco, Sikaflex 1c SL from Sika.
- .4 Type 4: Single-component sealant, acrylic based, to CAN/CGSB-19-GP-5M, colour chosen by Departmental Representative.
 - .1 Acceptable product: Tremflex 834 from Tremco.
- .5 Type 5: Mildew-resistant sealant, colour chosen by Departmental Representative.
 - .1 Acceptable products: Tremsil 200 from Tremco, Dow Corning 786, General Electric SCS 1700.
- .6 Type 6: Sealant for acoustic insulation.
 - .1 Acceptable product: Acoustical Sealant from Tremco.
- .7 Type 7: Single-component sealant, silicone based, to CAN/CGSB-19.13, colour chosen by Departmental Representative.
 - .1 Acceptable product: Proglaze from Tremco.
- .8 Type 8: Sealant for vapour barrier: certified Eco-Logo, VOC content not exceeding 5% in weight, asbestos-free, compatible with vapour barrier used, and recommended by vapour barrier manufacturer.
- .9 Type 9: Latex-based sealant, paintable. Colour chosen by Departmental Representative.
- .10 Type 10: Single-component sealant, silicone based, to ASTM C920 Type S, Grade NS,

Class 50, Use NT, M, G, A and O, colour chosen by Departmental Representative.

.1 Product acceptable: Spectrem 2 from Tremco.

2.03 COMPRESSIBLE AND NON-COMPRESSIBLE PREFORMED BACKER RODS

- .1 Backup strips must be compatible with appropriate sealant materials and be the type recommended by manufacturer.
- .2 Foam polyethylene, urethane, neoprene or vinyl elements.
 - .1 Closed-cell extruded foam backer rods.
 - .2 Oversized elements by 30 to 50%.
- .3 Neoprene or butyl rubber elements.
 - .1 Round and full backer rods, Shore A hardness of 70.
- .4 High density foam elements.
 - .1 Elements in extruded closed-cell PVC foam, extruded closed-cell polyethylene foam with Shore A hardness of 20 and with tensile strength of 140 to 200 kPa, in extruded polyolefin foam, density of 32 kg/m³, or neoprene, dimensions recommended by manufacturer.
- .5 Anticorrosion tape.
 - .1 Polyethylene tape that does not adhere to sealant materials.

2.04 SEALANT MATERIALS - LOCATION

- .1 Perimeters of interior frames, as detailed and itemized: sealant type 4.
- .2 Control and expansion joints in exterior surfaces of unit masonry walls (blocks/blocks, blocks/concrete: sealant type 2.
- .3 Joints at tops of non-load bearing masonry walls at the underside of poured concrete: sealant type 2.
- .4 Perimeter of bath fixtures (e.g. sinks, water closets, basins) and counters: sealant type 5.
- .5 Expansion and control joints made between ceramic tiles, indoors, and above ceramic baseboards: sealant type 5.
- .6 Acoustical joints, indoors: sealant type 6.
- .7 To seal vapour barrier sheets: sealant type 8.
- .8 Around furniture (aside from counters): sealant type 9
- .9 Glazing joints: sealant type 7.
- .10 Structural joints for double glazing (sealed insulating glass): sealant type 10.

2.05 JOINT CLEANER

- .1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant in accordance with sealant manufacturer's written recommendations.
- .2 Primer: in accordance with sealant manufacturer's written recommendations.

3 EXECUTION

3.01 PROTECTION OF WORK

- .1 Protect installed work performed by third parties against dirt or other forms of contamination.

3.02 SURFACE PREPARATION

- .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.
- .2 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair Work.
- .3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.
- .4 Ensure joint surfaces are dry and frost free.
- .5 Prepare surfaces in accordance with manufacturer's directions.

3.03 PREPARATION OF EXISTING SURFACES

- .1 Remove each application of sealant materials to full depth.
- .2 Grind with diamond-grinding wheel stone, concrete block masonry, brick masonry, prefabricated concrete, concrete and other hard surfaces to remove traces of sealants and contaminants.
- .3 Do not change profile of joints without notifying Departmental Representative and only if width/depth ratios cannot be respected.

3.04 PRIMING

- .1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
- .2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

3.05 BACKUP MATERIAL

- .1 Apply bond breaker tape where required to manufacturer's instructions.
- .2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

3.06 MIXING

- .1 Mix materials in strict accordance with sealant manufacturer's instructions.

3.07 APPLICATION

- .1 Sealant
 - .1 Apply sealant in accordance with manufacturer's written instructions.
 - .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
 - .3 Apply sealant in continuous beads.
 - .4 Apply sealant using gun with proper size nozzle.
 - .5 Use sufficient pressure to fill voids and joints solid.
 - .6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
 - .7 Tool exposed surfaces before skinning begins to give slightly concave shape.
 - .8 Remove excess compound promptly as work progresses and upon completion.
- .2 Curing
 - .1 Cure sealants in accordance with sealant manufacturer's instructions.
 - .2 Do not cover up sealants until proper curing has taken place.
- .3 Cleaning
 - .1 Clean adjacent surfaces immediately and leave work clean and in perfect condition.
 - .2 Remove excess and droppings, using recommended cleaners as work progresses.
 - .3 Remove masking tape after initial set of sealant.
- .4 Ensure that sealant materials installed do not form skins or have poor adhesion and that they do not present any defective work likely to hinder the quality of the work.

END OF SECTION

1 GENERAL

1.01 RELATED SECTIONS

- .1 Section 07 92 10 - Sealants
- .2 Section 08 80 00 – Glazing
- .3 Section 09 90 00 – Painting

1.02 REFERENCE STANDARDS

- .1 Unless otherwise specified, construct wood windows in accordance with Architectural Woodwork Manufacturers Associations of Canada (AWS) standards, 1st Edition 2009, edition published jointly with the Architectural Woodwork Institute (AWI), the Architectural Woodwork Manufacturer Association of Canada (AWMAC) and the Woodwork Institute (WI).
- .2 Unless otherwise specified, fabricate wood windows in accordance with requirements of CAN/CSA-A440-M90.
- .3 Architectural Woodwork Standards
- .4 CAN/CSA O141 05, Softwood Lumber.
- .5 National Lumber Grading Authority (NLGA)
 - .1 NLGA, Standard Grading Rules For Canadian Lumber 2007.

1.03 SAMPLES

- .1 Contractor must submit a full-scale sample showing exact composition, materials, construction, finish, colour and hardware of the window.
- .2 These samples will be installed in the building in areas designated by Departmental Representative. Once adjusted and corrected, if applicable, to meet requirements of standards and specifications, they will serve as benchmarks for the fabrication of other units.

1.04 SHOP DRAWINGS

- .1 Shop drawings must clearly indicate the nature of materials, dimensions of all materials, dimensions of all members of constituents, all assembly details, all profiles and anchors, hardware, weatherstripping and type de glazing. Shop drawings must also show elevation views of all window models and cross section view of each type.

1.05 QUALIFICATION

- .1 Contractor must demonstrate relevant joinery experience in two (2) major projects involving traditional wood glass windows and prove he has an adequate shop.

1.06 WARRANTY

- .1 Contractor must certify in writing that all materials used and performances comply with these specifications for a period of five (5) years.

1.07 MAINTENANCE

- .1 Contractor must provide the necessary instructions for cleaning and maintenance of surfaces, materials and glazing.

1.08 DELIVERY AND STORAGE

- .1 Windows or louvers, frames and all accessories and equipment are only delivered to and stored on site if conditions allow. Products will be stored in dry and clean location with controlled and locked access.
- .2 Each window or louver will be mounted in its frame, trussed and protected for transportation and storage. Each window or louver must at all times be kept rigid and square.
- .3 Each window or louver must be labelled to identify its exact installation location.

1.09 ACCEPTANCE OF DOCKING AREAS AND OPENINGS

- .1 Before undertaking fabrication of window frames or louvers, Contractor must verify all openings, ensure accuracy of dimensions and docking areas. Commencement of work signifies acceptance of openings and docking areas.

2 PRODUCTS

2.01 MATERIALS

- .1 Wood :
 - .1 Has to meet the AWMAC and National Lumber Grades Authority requirements
 - .2 Humidity content : maximum 6% during fabrication and installation.
 - .3 "Select" sawn timber, free of knots, sap, cracks, stains or other structural weaknesses.
 - .4 Section and dimensions according to drawings.
 - .5 Smooth finish on visible face, #100 grit paper, to paint, for paint finish.
 - .6 No piece made from cut pieces joined together with joint and glue system will be accepted.
 - .7 Construction wood for exterior components that are not covered with metal sheets (storm windows and louvers):
 - .1 Western red cedar (*Thula plicata*);
 - .2 Category : B Clear grade, best.

- .8 Construction wood for interior components or for components covered with metal sheets (frames and window shutters):
 - .1 White pine (*Pinus strobus*);
 - .2 Has to meet CSA 0141 norm requirements.
- .2 Glue for wood assembly: waterproof, phenol resin and resorcinol based for drying at ambient temperature, to ACNOR 0112.7.
- .3 Nails: finishing nails, to ACNORB111 galvanized.
- .4 Paintable, weather-resistant plywood panels: exterior plywood coated with a pressure-applied resin and laminated by hot pressing on wood to resist poor weather conditions. Smooth texture for maximum adherence to paint. Thickness shown on drawings.
 - .1 Such as Crezon plywood panels or other acceptable product.
- .5 Glazing
 - .1 Float or polished glass, clear, 4 mm thick, to CAN/CGSB-12.3.
- .6 Sealant: paste, linseed oil based, to CGSB 19-GP-6M type 2, for spatula application.
- .7 Corners: galvanized steel, cut in triangles, for glazing.
- .8 Weatherstripping:
 - .1 Bubble type weatherstripping: fabricated by Weatherstripping Lapointe, model CFLBL08, or other acceptable model. Inserted into frame or shutter with oblique groove, as per details on plans.
 - .2 Metal water stop: stainless steel blade, 3mm x 30mm sections, inserted in vertical groove on frame.
- .9 Caulking and sealing:
 - .1 See section 07 92 10 – Joint Sealants.
- .10 Hardware:
 - .1 Eyehook: zinc-plated steel, length required to attach storm sash to frame (4 by storm sash or louver shutter)
 - .2 Garnet hinge: as distributed by Atelier du Vieux Pin, model 115 A & B, or other acceptable product. Wrought iron with 6 holes, 64mm high, mortised to leaf surface (2 per sliding shutter).
 - .3 Handle: pounded black iron (finish #036) 95mm high, as fabricated by Metal Style Bouvet, model 1112-96, or other acceptable product (1 per sliding shutter).
 - .4 Top door bolt: pounded black iron (finish #036), 300mm high, as fabricated by Metal Style Bouvet, model 1357-380 or other acceptable product (1 per sliding shutter).
 - .5 Bottom door bolt: pounded black iron (finish #036), 190mm high, as fabricated by Metal Style Bouvet, model 1357-280 or other acceptable product (1 per sliding shutter)
- .11 Factory finishing:
 - .1 Done in shop, see section 09 91 23 – Painting.

2.02 FABRICATION OF WINDOWS AND LOUVERS

- .1 Work from this section must be fabricated in accordance with approved shop drawings instructions and, unless otherwise specified, in accordance with requirements of standards in paragraph 1.2.
- .2 Windows will be constructed of leaves and storm sashes with hooks as shown on approved shop drawings.
- .3 Louvers will be constructed with shutter hooks, as shown on approved shop drawings.
- .4 Machine elements to the profiles, shapes and dimensions as shown on drawings and approved shop drawings.
- .5 Work the wood with modern tools and machinery. Exposed surfaces of parts must be free of roughness, ripples or machine marks. Moulding profiles must be straight, flat and free of defects in curves.
- .6 Members must be assembled with glued tongue and groove.
- .7 Jambs, window heads, the mullions and panels must be one solid piece of wood.
- .8 Framed corners must be assembled in interlocking crossbeams and doweled. Leaves must be assembled tongue and groove and doweled.
- .9 Drill, mortise and groove frames and leaves to receive hardware parts and other specified accessories (weatherstripping, setting blocks). Use installation templates provided by hardware manufacturer.
- .10 Moulding on elements of solid wood frame must be cut directly on these elements.
- .11 A minimum set must be planned around each panel.
- .12 Mouldings must be nailed in accordance with indications.
- .13 Once assembled and machined, perfectly sand all work. All surfaces to be painted must be sanded with #80 sandpaper. Seal knots in frames using gum lac and sand rough areas before applying primer. Reject all parts with resin secretions. Fill small cracks and other imperfections with sealant or paste filler and sand before priming.
- .14 Windows must be prepared in view of installing glazing. Glazing beads must be provided and mouldings put in place.
- .15 Cut glazing taking into account adjustment tolerances based on industry standards.
- .16 Install hardware and adjust to work smoothly. Verify the work and wrap for transportation. Identify each item including installation location.

- .17 No trade names must appear on doors and windows.
- .18 Refer to section 09 91 23, with regard to painting. Perform painting work (primer and finishing) in ship. Plan for on-site touch ups.
- .19 Truss window frames and louvers to maintain squareness and rigidity during transportation, storage and installation.

2.03 INSTALLATION OF WEATHERSTRIPPING

- .1 Fit all joints between new frames and leaves with weatherstripping.
- .2 Adjust weatherstripping so that socketing is sufficiently deep and continuous to obtain effective contact and around entire perimeter of leaves when closed.
- .3 Weatherstripping must be installed and adjusted by highly specialized labour and in accordance with printed instructions of weatherstripping manufacturer. The effectiveness of weatherstripping is the sole responsibility of the window manufacturer and the installation of windows must in no way hinder the smooth operation of leaves.

3 EXECUTION

3.01 INSTALLATION OF WINDOWS AND LOUVERS

- .1 Verify openings made for new frames. Ensure that the opening and nailing base are compliant and ready to receive new frames.
- .2 Install windows plumb, square and level in prepared openings, and ensure they are free of warping and twisting and that they will not support excess loads. Comply with written instructions of window manufacturer.
- .3 Fasten securely and with precision to the framing, in the required position.

3.02 SEALING AND CAULKING

- .1 Caulk the edges with mineral fibre.
- .2 Apply sealant in joints between frame members and other fixed components of windows and louvers, to ensure seal from exterior weather and interior air and vapour seal.
- .3 Apply sealant as follows:
 - .1 Apply primer, backup strip for sealants in accordance with manufacturer instructions.
 - .2 Apply sealant using gun with appropriate size nozzle. Pressure must be strong enough to fill voids and perfectly close the joint. Jointing with single bead is prohibited.
 - .3 Fashion joints to form a continuous sealing bead, free of ridges, folds, sags, air holes and dirt, then give them slightly concave profile.

- .4 Conceal sealant inside window and louver components, except where Departmental Representative accepts to leave it exposed.

3.03 ADJUSTING

- .1 Upon completion of construction work on building, readjust the windows and louvers and their hardware to ensure they work smoothly.

END OF SECTION

1 GENERAL

1.01 RELATED SECTIONS

- .1 Section 06 20 00 – Carpentry;
- .2 Section 07 92 10 – Joint Sealants
- .3 Section 09 91 23 - Painting

1.02 REFERENCES

- .1 Unless otherwise specified, perform work to ACNOR A82.31.
- .2 ASTM International
 - .1 ASTM C 475, Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
 - .2 ASTM C 514, Standard Specification for Nails for the Application of Gypsum Board.
 - .3 ASTM C 557, Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.
 - .4 ASTM C 840, Standard Specification for Application and Finishing of Gypsum Board.
 - .5 ASTM C 954, Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.
 - .6 ASTM C 1002, Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
 - .7 ASTM C 1047, Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
 - .8 ASTM C 1280, Standard Specification for Application of Gypsum Sheathing.
 - .9 ASTM C 1177/C 1177M standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
 - .10 ASTM C 1178/C 1178M, Standard Specification for Glass Mat Water-Resistant Gypsum Backing Board.
 - .11 ASTM C1396/C1396M, Standard Specification for Gypsum Wallboard.
- .3 Association of the Wall and Ceilings Industries International (AWCI)
 - .1 AWCI Levels of Gypsum Board Finish.

1.03 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Client's general conditions.
- .2 Provide all data sheets for proposed products.

1.04 AMBIENT CONDITIONS

- .1 Maintain temperature 10 degrees C minimum, 21 degrees C maximum for 48 hours prior to and during application of gypsum boards and joint treatment, and for 48 hours minimum after completion of joint treatment.
- .2 Apply board and joint treatment to dry, frost free surfaces.

2 PRODUCTS

2.01 MATERIALS

- .1 Standard board: to ASTM C 36, thickness shown on plans, 1200mm wide x maximum practical length, ends square cut, edges rounded or bevelled.
- .2 Screws: to ASTM C646, type W for installing gypsum plaster board on wood substrate. Screws must be sufficiently long to ensure they break at least 10mm into substrate.
- .3 Casing beads, corner beads, control joints and edge trim: to ASTM C 1047: metal, zinc-coated by electrolytic process, 0.5 mm, perforated flanges, one piece length per location, for all rooms.
- .4 Sealants: in accordance with Section 07 92 10 – Joint Sealants.
- .5 Gypsum joint treatment material: joint compound, joint tape and paste filler, as recommended by manufacturer, without asbestos and finish as existing, for paint.

3 EXECUTION

3.01 ERECTION

- .1 Do application and finishing of gypsum board to ASTM C 840 except where specified otherwise.
- .2 Install work level to tolerance of 1:1200.
- .3 Locate edge or end joints over supports. Use full length pieces where practical to minimize number of end-butt joints.
- .4 Screws around perimeter must be at least 9.5 mm apart and no more than 12.5 mm from ends and edges and aligned with screws from adjacent boards.
- .5 Apply 12 mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components. Seal full perimeter of cut-outs around electrical boxes, ducts, in partitions where perimeter sealed with acoustic sealant.

3.02 ACCESSORIES

- .1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm on centre using contact adhesive for full length.
- .2 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.

3.03 JOINT TAPE

- .1 Joint treatment is required in all areas where boards are apparent.
- .2 Work will be performed when building temperature is uniformly maintained between 13 ° and 21 °C for an adequate period of time before, during and after installation of laths and sealers.
- .3 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.
- .4 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.
- .5 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.
- .6 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .7 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

3.04 PAINT

- .1 Unless otherwise specified, all exposed gypsum board surfaces will be painted as specified in section 09 91 16 - Painting.

END OF SECTION

1 GENERAL

1.01 RELATED SECTIONS

- .1 Section 06 20 20 – Carpentry;
- .2 Section 08 50 50 – Traditional Wood Windows and Louvers;
- .3 Section 09 21 16 – Gypsum Board Assemblies;

1.02 REFERENCES

- .1 The Master Painters Institute (MPI)
 - .1 Architectural Painting Specification Manual.
 - .2 Maintenance Repainting Manual.
- .2 Systems and Specifications Manual, SSPC Painting Manual, Volume Two, Society for Protective Coatings (SSPC).
- .3 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings) of the Environmental Protection Agency (EPA).
- .4 National Fire Code of Canada.

1.03 QUALITY ASSURANCE

- .1 Quality standard
 - .1 Colour and gloss of finish coat must be uniform on entire surface examined.

1.04 WORK SCHEDULE

- .1 Submit schedule for various painting work steps to Departmental Representative for approval at least 48 hours before commencement of work.
- .2 Obtain written authorization from Departmental Representative for any change to work schedule.

1.05 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit data sheets and manufacturer's instructions regarding application or implementation of paint and coating products used, in accordance with Client's general conditions and specified requirements.
- .2 Submit MSDS required for Workplace Hazardous Materials Information System (WHMIS).

- .3 Submit complete file for all products used. Indicate all products that make up each system, specifying the following information for each:
 - .1 Product name, type and use.
 - .2 Manufacturer's product number.
 - .3 Material Safety Data Sheets (MSDS) from manufacturer of each product.

1.06 ADDITIONAL MATERIALS

- .1 Provide maintenance/spare materials required in accordance with Section 01 78 00 – Closeout Submittals.
- .2 Submit a four-litre container of each type and each colour of finishing product. Identify colour and type of paint in accordance with list of colours and paint system specified.
- .3 Deliver maintenance/spare materials to Owner and store in specified location.

1.07 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Labels must clearly indicate:
 - .1 Name and address of manufacturer;
 - .2 Type of paint or coating;
 - .3 Compliance with relevant standards or requirements;
 - .4 Colour number, based on list of specified colours.
- .3 Remove from site all damaged, open or rejected products and materials.
- .4 Provide and maintain dry, temperature controlled, secure storage.
- .5 Follow manufacturer recommendations regarding storage and handling.
- .6 Store painting materials and supplies away from heat generating devices.
- .7 Store materials and equipment in well ventilated area where temperature is between 7°C and 30°C.
- .8 Storage temperature of heat-sensitive products and materials must never be below minimum temperature recommended by manufacturer.
- .9 Keep storage, cleaning and preparation spaces neat and clean, to satisfaction of Departmental Representative. Once operations completed, return these areas to their initial condition, to satisfaction of Departmental Representative.
- .10 Remove from storage area only quantities of products that will be used same day.
- .11 Meet WHMIS requirements regarding use, storage, handling and disposal of hazardous materials.

- .12 Fire Safety Requirements
 - .1 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
 - .2 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada requirements.

1.08 APPLICATION REQUIREMENTS

- .1 Apply paint finishes when ambient air temperature can be satisfactorily maintained within paint manufacturer's prescribed limits.
- .2 Temperature of substrate and ambient temperature must be within limits set by manufacturer, to satisfaction of Departmental Representative.
- .3 Temperature of substrate and ambient temperature must be at least 10°C and no more than 32°C. Relative humidity should not exceed 85%.
- .4 Use temporary heating when there is no permanent way of maintaining minimum recommended temperature.
- .5 Paint only in areas where ambient air is free of particulate matter generated by construction work and likely to alter painted surfaces.
- .6 Apply paint only to dry, correctly cured and adequately prepared surfaces.
- .7 Provide minimum lighting level of 270 Lux on surfaces to be painted.
- .8 Commencement of work implies that painter accepts finish on which he applies the paint and is as responsible as the one who prepared it.

1.09 WASTE MANAGEMENT AND DISPOSAL

- .1 Paints, stains, wood preservation products and other products used during application of these coatings (thinners, solvents, etc.) must be treated as hazardous materials, whose disposal is subject to various regulations. Information regarding relevant legislative provisions can be obtained from provincial departments responsible for the environment and regional government agencies.
- .2 Products that cannot be reused must be treated as hazardous waste and disposed of in appropriate manner.
- .3 Place materials designated hazardous or toxic, including used adhesive and sealant tubes and containers, in areas or containers designated for hazardous waste.
- .4 To reduce the amount of contaminants susceptible to penetrate into the ground or be spilled into waterways and storm water and sanitary sewer networks, the following instructions must be rigorously respected:
 - .1 Keep water used to wash paints and other water-based products so as to collect deposited materials through filtration.

- .2 Keep cleaning products, thinners, solvents and excess paint in designated containers and dispose of them in appropriate manner.
- .3 Keep rags soaked in oil and solvent during painting work in view of recovering contaminants and adequate disposal or cleaning, depending on the case.
- .4 Take required measures to dispose of contaminants in accordance with hazardous waste regulations.
- .5 Let empty paint containers dry before disposing of or recycling them (in regions with appropriate facilities).
- .5 Where paint recycling services exist, recover paint surplus, arrange by type of product and have them delivered to a collection or recycling facility.
- .6 Adequately close and seal containers with partially used adhesives and sealants, and store at moderate temperature in a well ventilated and fire-resistant location.

1.10 PROTECTION OF ADJACENT WORK

- .1 Protect adjacent work from stains and marks using non-staining gummed paper, drop sheets and other appropriate types of protection.

2 PRODUCTS

2.01 MATERIALS

- .1 Standardized products: only paint products on list of CGSB standardized products must be used as part of this work, unless otherwise specified.
- .2 Supply paint materials for paint systems from single manufacturer.
- .3 Low-odour products: Whenever possible, select low-odour paint products.

2.02 COLOURS

- .1 Departmental Representative will provide list of colours after Contract award.
- .2 List of colours:
 - .1 Provide three (3) colours for plaster or gypsum board surfaces;
 - .2 Provide two (2) colours for interior wood baseboards, shelves and mouldings;
 - .3 Provide two (2) colours for exterior wood soffits, fascia boards and mouldings;
 - .4 Provide two (2) colours for interior surfaces of traditional windows and louvers;
 - .5 Provide two (2) colours for exterior surfaces of traditional windows and louvers;
- .3 Colours will be selected from the full range of colours offered by manufacturers.
- .4 Plan for scraping or thorough

2.03 INTERIOR PAINTING

- .1 Primer for gypsum board wall and ceiling surfaces:
 - .1 Primer sealer: one (1) coat of latex primer sealer, opaque, no gloss, to CAN/CGSB-1.119-2000 and with following characteristics:
 - .1 Composition: water and binder based on vinyl-acrylic emulsion polymer;
 - .2 VOC: ASTM D3960-05 :<100 g/l;
 - .3 Viscosity: Ready to use, 102 ± 5 Krebs units;
 - .4 Density: 1.3 g/l;
 - .5 Volume solids: 32%;
 - .6 Weight solids: 49%.
- .2 System for gypsum board ceilings:
 - .1 Interior latex paint 100% acrylic, two (2) coats of paint, mat finish, to CAN/CGSB 1.100-99 and with following characteristics:
 - .1 Composition: modified vinyl acrylic emulsion: latex, titanium dioxide, inert extenders, water, surfactants and others;
 - .2 VOC: ASTM D 3960-05 : < 100 g/l;
 - .3 Viscosity: Ready to use, 92 to 102 Krebs units;
 - .4 Density: 1.48 g/l;
 - .5 Volume solids: 37%;
 - .6 Weight solids: 57%.
- .3 Paint for gypsum board walls:
 - .1 Interior latex paint 100% acrylic, two (2) coats of paint, mat finish, to CAN/CGSB 1.100-99 and with following characteristics:
 - .1 Composition: modified vinyl acrylic emulsion: latex, titanium dioxide, inert extenders, water, surfactants and others;
 - .2 VOC: ASTM D 3960-05 : < 100 g/l;
 - .3 Viscosity: Ready to use, 99 ± 5 Krebs units;
 - .4 Density: 1.3 g/l;
 - .5 Volume solids: 37%;
 - .6 Weight solids: 51%.
- .4 System for interior wood (wood baseboards, shelves and mouldings)
 - .1 Seal knots and sap veins in shop with one coat of gum lac, type 2, to CGSB 1-GP-16;
 - .2 Primer: one (1) coat of primer sealer, opaque, stain killer, alkyd based, no gloss, and with following characteristics:
 - .1 Composition:
 - .1 Thinner: hydrocarbons
 - .2 Binder: alkyds
 - .2 VOC: ASTM D3960-05 : < 350 g/l;
 - .3 Density: 1.3 kg/l ±0,1 kg/l;
 - .4 Volume solids: 56%.

- .3 Finish: two (2) coats of latex paint, 100% urethane reinforced acrylic, satin finish, and with following characteristics:
 - .1 Composition: water-based thinner, binder 100% acrylic and polyurethane emulsion;
 - .2 VOC: ASTM D3960-05 : < 100 g/l;
 - .3 Volume solids: 38%.

2.04 EXTERIOR PAINTING

- .1 System for exterior wood (exterior wood soffits, fascia boards, mouldings, all exterior wood windows and louvers):
 - .1 Primer : two (2) factory applied coats on all faces (on coat diluted at 5% in mineral essence, one coat not diluted) of primer sealer, opaque, stain killer, alkyd based with the following characteristics:
 - .1 VOC : ASTM D3960-05 : < 340 g/l;
 - .2 Volume solids : 55% ;
 - .3 Weight solids : 78% ;
 - .4 Minimal film thickness per coat :
 - .1 Humid : 3.6 to 4.6 mils;
 - .2 Dry : 1,96 to 2.51 mils.
 - .2 Finish : two (2) factory applied coats and one more coat on site for wood cladding elements (soffits, fascias and mouldings) of water repellent dye, opaque, alkyd and flaxseed oil based, satin finish, with the following characteristics :
 - .1 VOC : ASTM D3960-05 : < 250 g/l ;
 - .2 Volume solids : 42% ;
 - .3 Weight solids : 57% ;
 - .4 Minimal film thickness per coat :
 - .1 Humid : 3.2 to 5.3 mils;
 - .2 Dry : 1,3 to 2.2 mils.

2.05 CHOICE AND NUMBER OF PAINT COATS

- .1 Notwithstanding what is described in the paint systems to be used, use a sufficient number of additional paint coats to obtain full and uniform masking (to prevent transparency), to satisfaction of Departmental Representative.

3 EXECUTION

3.01 GENERAL

- .1 Unless otherwise specified, perform all paint work in accordance with requirements of CAN/CGSB-85.100 and of paint manufacturer's specifications.
- .2 Apply paint products in accordance with manufacturer's written instructions on new exposed elements and all new unfinished surfaces, unless otherwise clearly specified in plans and specifications.

3.02 PREPARATION

- .1 Remove electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Identify and store items in secure location and re-installed after painting is completed.
- .2 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.
- .3 Place "WET PAINT" signs in occupied areas as painting operations progress. Signs to approval of Departmental Representative.
- .4 All painting work must be completed before the installation of floor finishes, cabinetwork and furniture in general.

3.03 PROTECTION

- .1 Protect against flecks, marks and other damage building surfaces that are not to be painted. If such surfaces become damaged, clean and refurbish them according to Departmental Representative instructions.
- .2 Cover or mask windows and decorative hardware near surfaces to be painted to protect them from paint drops and flecks. Use non-staining covering methods.
- .3 Protect permanently fastened items, for example fire resistance rating labels for doors and windows.
- .4 Protect factory finished materials and products.
- .5 Ensure protection of building occupants and general public in and near building.

3.04 EXISTING CONDITIONS

- .1 Examine existing substrates to verify whether their condition may compromise the preparation of surfaces to be painted. Before commencing work, report to Departmental Representative damage, defects or unsatisfactory or unfavourable conditions noted, where applicable.
- .2 Control humidity level surfaces to be painted. Do not commence work until condition of substrates is acceptable, in accordance with manufacturer recommendations.
- .3 Maximum admissible humidity level:
 - .1 Coatings and gypsum boards: 12%.
 - .2 Wood: 6% (windows) 12% (wood cladding).

3.05 SURFACE PREPARATION

- .1 Clean all surfaces to be painted as follows:
 - .1 Remove dust, dirt and other foreign matter; wipe with clean and dry rags.
 - .2 Wash surfaces with a trisodium phosphate and clean warm water solution, using stiff brush, to remove dirt, oil and other surface contaminants.
 - .3 After having brushed surfaces, rinse with clean water until no foreign matter remains.
 - .4 Let surfaces dry completely.
- .2 Before applying primer or sealing coat and between other successive coats, prevent cleaned surfaces from being contaminated by grease, oil, solvents, salts, alkali, acids and other corrosive agents. Apply primer or sealing coat, base coat or any other preparation coat as quickly as possible after cleaning, before surfaces deteriorate.
- .3 Sand existing surfaces with intact, smooth, or very glossy finish coating to promote adherence of new paints.
- .4 Prepare new wood surfaces in accordance with requirements of CGSB 85 GP 1M.
 - .1 Fill all nail holes and cracks with wood filler.
 - .2 Clean and prepare exterior surfaces where paint has to be renovated in according to MPI Maintenance Repainting Manual requirements. Refer to this document for specific requirements that will be added to the following instructions.
 - .1 Sand surfaces in order to obtain an SP3 finish surface (#80 grit sand paper for horizontal surfaces and #120 grit for vertical surfaces), according to manufacturer's recommendations.
 - .2 Remove dust, dirt and foreign materials by wiping and brushing, if needed, surfaces with dry and clean cloths or by sweeping with pressurized air.
 - .3 Clean surfaces with a trisodium phosphate solution and clean hot water, with a stiff bristle brush to remove dirt, oil and other contaminants.
 - .4 Rinse the brushed surfaces with clean water, without pressure, until there remains no more foreign materials.
 - .5 Let surfaces drain and dry completely.
 - .6 Use water-based cleaning products rather than organic solvents for surfaces renovated with water-based paint.
- .5 Prepare coating and gypsum board surfaces in accordance with requirements of CGSB 85-GP-33M.

3.06 MIXING PAINT

- .1 Mix ingredients in paint container before and during use, to break up clumps, ensure complete dispersion of pigments and to obtain uniform composition.

- .2 Paints applied with a spray gun must be diluted according to manufacturer instructions. If there are no instructions on container, obtain written instructions from manufacturer and give copy to Departmental Representative.

3.07 APPLICATION

- .1 Unless otherwise specified, apply paint according to manufacturer instructions.
- .2 Use brush pads, sheepskins or use dipping only when there are no other means to reach hard to reach areas, and only with authorization of Departmental Representative.
- .3 Apply each paint coat so as to obtain a continuous film, uniform in thickness. Repaint missed spots (bare surfaces or film that is too thin) before applying next coat.
- .4 Let surfaces dry and set adequately before cleaning and between each successive coat, for minimum duration recommended by manufacturer.
- .5 Sand and remove dust between each coat to remove apparent defects.
- .6 Paint top, bottom, edges and door frames in accordance with provision applicable to door faces, only after doors have been adjusted.
- .7 Apply semi-transparent stains using a brush.

3.08 SITE RESTORATION

- .1 Clean and reinstall all hardware removed for painting work.
- .2 Remove protections and warning signs as soon as possible after completing paint work.
- .3 Remove splatters from exposed surfaces that were not painted. Remove stains and flecks using compatible solvents.
- .4 Protect freshly painted surfaces from drops and dust, to satisfaction of Departmental Representative. Avoid scratching freshly painted surfaces.
- .5 Return areas used for storing, mixing and handling paint to their initial condition and clean, to satisfaction of Departmental Representative.

3.09 TOUCH-UPS

- .1 Touch up finishing paint as needed.

END OF SECTION

1. GENERAL

1.1. Section Summary

- .1 Contents of this section

This section addresses the materials, equipment and installation methods associated with the supply of a new vent for the plumbing system of the building.

This new vent in roof replaces the one located in the window of the roof.

2. PRODUCTS

2.1. Vent

- .1 The vent will be in plastic Acrylonitrile-Butadiene-Styrene (ABS) in compliance with the ASTM D2235-04 standard 100 mm in diameter.

3. EXECUTION

- .1 The new vent will be installed in the building roof (behind of this one) as shown in typical detail type 2 on drawing A-110.
- .2 The Contractor shall provide all special parts for connecting to the existing pipe.
- .3 The work will be mainly carried out in the attic. The Contractor shall provide all the safety equipment required due to the presence of asbestos in the attic.

END OF SECTION

