APPENDIX B
ASBESTOS AND PAINT SAMPLING –
UNDERDECK SOFFITT REPLACEMENT
NORTHWEST ATLANTIC FISHERIES CENTRE (NAFC)

March 25, 2019

Mr. Dominic Giovannini
Environmental Services
Public Services and Procurement Canada
10 Barter's Hill
St. John's, NL A1C 6M1

Subject: FINAL REPORT
Asbestos and Paint Sampling – Underdeck Soffit Replacement
Northwest Atlantic Fisheries Centre (NAFC)
80 East White Hills Road, St. John's, NL
Our ref.: 1900209

1 INTRODUCTION

At the request of Public Services and Procurement Canada (PSPC), Englobe Corp. (Englobe) conducted an asbestos and paint sampling program at the Northwest Atlantic Fisheries Centre (NAFC) in St. John's, NL.

The fieldwork was completed under the PSPC Hazardous Materials Standing Offer Contract EA007-178551/A with Englobe for Newfoundland and Labrador.

2 BACKGROUND

The asbestos and paint sampling event was requested by PSPC prior to soffit replacement work being conducted near the main entranceway to NAFC Pods J12 and H11. The sampling is required prior to the start of this work to confirm the absence or presence of asbestos as well as lead and mercury in paint on building materials that may be disturbed during the work. Prior to the start of the field work, PSPC notified Englobe that asbestos-containing transite paneling was previously confirmed in this work area and did not require sampling at this time. A bulk sampling and analysis program for asbestos and lead and mercury in paint was conducted by Englobe on February 22, 2019.

3 METHODOLOGY

In total, six (6) asbestos samples were collected for asbestos analysis. The samples were of building materials that may potentially become disturbed during the replacement of the underdeck soffit, as indicated by PSPC. Samples of suspected asbestos-containing materials (ACMs) were collected in accordance with *PWGSC/PSPC Deputy Minister Directive 057 - Asbestos Management*.

The assessment included both friable and non-friable materials suspected of containing asbestos. The term friable refers to a building material that can be reduced to dust by hand or moderate pressure, or any material that is already dust. Friable ACMs pose a greater risk to workers and building users due to the higher likelihood of releasing airborne asbestos fibres when disturbed.

When collecting samples for asbestos analysis, care was taken to avoid disturbing the materials more than necessary to prevent fibre release during sampling and to prevent unnecessary damage to the structures. Samples were collected by penetrating the material in question through the entire thickness with either a clean knife or a

clean hammer and chisel. Samples were placed in individual sample bags with zip-locks and labelled with the sample ID.

All asbestos samples were submitted to EMSL Canada Inc. in Mississauga, ON for analysis by the EPA 600/R-93/116 method using polarized light microscopy (PLM). EMSL is a National Voluntary Laboratory Accreditation Program (NVALP) certified laboratory for the required analyses.

Two (2) paint samples were collected to represent the colours found on the exterior of the soffit. Paint samples collected for analysis consisted of paint on substrate, where practical, and paint chips, only if paint was observed to be peeling or flaking. When collecting samples of paint for analysis, a clean knife or scraper was used to cut/scrape an area of paint and underlying layers. Samples were placed in individual clean zip-lock sealable bags. Sample bags were labeled with the sample ID. A minimum of 5 grams per sample was collected, as per laboratory requirements. PPE was worn, as required. Two (2) paint samples were collected and submitted for total lead and mercury analyses. Samples collected were labeled LOC1-PAINT1 and LOC2-PAINT2.

Total lead and mercury analyses were subcontracted to Maxxam Analytics Inc. (Maxxam) laboratory in Bedford, NS. Total lead and mercury were analyzed by EPA 6020A method using Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). Maxxam is a Standards Council of Canada (SCC) accredited laboratory for the described lead and mercury (in paint) analysis.

The results of the current asbestos and paint assessment are provided below in Section 5.

4 REGULATORY CRITERIA

Asbestos

Asbestos materials are defined in *Newfoundland and Labrador Asbestos Abatement Regulation 111/98*, under the *Occupational Health and Safety Act (o.c. 98-730)* as material containing greater than 1% asbestos by dry weight.

All ACMs must be handled in accordance with NL Regulation 111/98 and the Asbestos Management Plan developed for the NAFC. Asbestos waste must be disposed of at an approved municipal landfill disposal site.

Asbestos is classified as a hazardous material under the *Transportation of Dangerous Goods Act* (TDGA), Transport Canada, and has specific requirements for transfer (i.e. manifests, placards, etc.). ACMs must be transported by an operator holding a valid Certificate of Approval under the *Newfoundland and Labrador Waste Material Disposal Act*.

Paint

The *Surface Coating Materials Regulations* under the *Consumer Products Safety Act of Canada* consider surfaces with a total lead concentration greater than 90 mg/kg as lead-containing and a mercury concentration greater than 10 mg/kg as mercury-containing. Any disturbance or removal of lead and/or mercury-containing painted materials that may generate lead/mercury dust or respirable aerosols, will need to conform to the federal and provincial OHSA Regulations. All work should be carried out by individuals qualified to handle metals-containing materials and will require, as a minimum, workers to wear proper PPE (respirators, disposable clothing, etc.).

The Newfoundland and Labrador Department of Municipal Affairs and Environment (MAE) has established guidelines that restrict certain materials from municipal landfills. The MAE Draft guidance document *Management of Disposal of Construction, Abatement and Demolition Waste Containing Lead-Based Paint* (2010) sets the landfill disposal limit for materials with lead-based paint at 5,000 mg/kg of total lead content. Materials with a total lead content greater than 5,000 mg/kg must undergo leachable lead analysis to determine the appropriate disposal method; if the leachable lead content of the material is 5 mg/L or greater, the material is considered a hazardous waste and is not approved for disposal at any site located in Newfoundland and Labrador.

Mercury can also leach from its base material into soil and groundwater, which could potentially create adverse environmental effects. Materials with concentrations of total mercury greater than the applicable disposal limits outlined in the MAE guidance document *Leachable Toxic Waste - Testing and Disposal* (2003) undergo leachate testing to assess whether the leachate exceeds the regulatory limits for such metals. Applicable disposal limits are based on Canadian Council of the Ministers of the Environment (CCME) Soil Quality Guidelines for Industrial Land Use. The MAE disposal limit for total mercury content is 50 mg/kg. The disposal limit for leachable mercury is 0.10 mg/L. If the leachable mercury content of the material is 0.10 mg/L or greater, the material is considered a hazardous waste and is not approved for disposal at any site located in Newfoundland and Labrador.

Transporters of hazardous waste shall have an approval issued by MAE, and shipping documentation for Transport Canada and Environment Canada will be required. Completed waste manifests shall be submitted to MAE prior to the shipment of hazardous wastes.

5 RESULTS

Analytical results for asbestos are tabulated and provided in Table 5-1. Laboratory certificates of analysis are provided in Appendix A.

Table 5-1. Analytical Asbestos Results

Sample ID	Sample Description	Sample Location	Asbestos Present
Loc1-ACM-1	Brown, fireproof insulation	Behind drywall layer, vehicle underpass	None Detected
Loc1-ACM-2	Grey, drywall/drywall compound	Behind rigid insulation layer, vehicle underpass	None Detected
Loc1-ACM-3	Yellow, rigid insulation	Behind soffit, vehicle underpass	None Detected
Loc2-ACM-1	Grey, drywall/drywall compound	Behind rigid insulation layer, access hatch	None Detected
Loc2-ACM-2	Yellow, rigid insulation	Behind soffit, access hatch	None Detected
Loc2-ACM-3	Yellow insulation	Access hatch	None Detected

Analytical results for lead and mercury in paint are tabulated and provided in Table 5-12. Laboratory certificates of analysis are provided in Appendix A.

Table 5-2. Analytical Paint Results

Sample ID	Sample Description	Sample Location	Lead (mg/kg)	Guideline (mg/kg)	Mercury (mg/kg)	Guideline (mg/kg)
LOC1-PAINT1	Flaking paint on soffit	Soffit, vehicle underpass	6.7	5,000	<1.0	50
LOC2-PAINT1	Flaking paint on soffit	Soffit, access hatch	110		<1.0	
LOC2-PAINT1 Lab-Dup	Flaking paint on soffit	Soffit, access hatch	100		<1.0	

Note: Lab-Dup – Laboratory Initiated Duplicate

6 QUALITY ASSURANCE (QA) / QUALITY CONTROL (QC)

Englobe conducted the sampling following standard operating procedures, including job procedures and safe work practices, for the collection and handling of hazardous materials. The sampling was conducted in accordance with all pertinent acts, regulations, codes, guidelines and standard practices.

All bulk asbestos samples were submitted under chain of custody to EMSL Canada Inc. laboratory in Mississauga, ON, Canada. EMSL conducts analysis on asbestos bulk samples following the EPA 600/R-93/116 method for PLM analysis.

Maxxam conducted their own internal QA/QC program consistent with relevant standards requirements for laboratories certification. The measured values and recoveries are compared to acceptable lower and upper limits. Englobe reviewed the results and the Maxxam QA/QC report to verify that the sample results were within acceptable ranges.

7 CONCLUSIONS AND RECOMMENDATIONS

All building materials analysed as part of this scope of work were found to not contain asbestos. Asbestos-containing transite sheeting was previously identified as being present in the work area and abatement procedures outlined in *Newfoundland and Labrador Asbestos Abatement Regulations 111/98* and the NAFC Asbestos Management Plan should be followed.

All paint samples analysed as part of this scope of work were found to be below the applicable landfill disposal limits for lead in paint with no detectable concentrations of mercury present above laboratory reportable detection limits. Therefore, there are no special disposal requirements for paint.

8 REPORT USE AND CONDITIONS

This report was prepared for the exclusive use of Public Services and Procurement Canada and is based on data and information obtained during a site visit by Englobe at the subject site and the condition of the site on the date of such inspection, supplemented by information obtained and described herein.

The asbestos and paint sampling program addresses only the specified materials identified in this report. An attempt was made to identify all painted surfaces and all materials in the work area with the potential to contain asbestos. However, it is possible that materials other than those mentioned in this report may be present. The scope of the assessment encompassed only the designated areas described herein and identified by PSPC as being scheduled for replacement.

The statements and conclusions presented in this report are professional opinions based upon data and information obtained during a site survey by Englobe, visual observations made during the site survey, information provided to us by PSPC, and on interpretation of laboratory analyses.

The opinions in this report are given using generally accepted scientific judgement, principles, and practices; however, because of the inherent uncertainty in this process no guarantee of conclusion is intended or can be given.

9 CLOSING

We trust the enclosed is to your satisfaction. If any questions arise, please do not hesitate to contact the undersigned at your convenience.

Regards,
Englobe Corp.

Keith Rowe, M.A.Sc., P.Eng.
Team Leader - NL, Geotechnical, Materials and
Environmental Engineering

Appendix A Laboratory Certificates

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 551902265
Customer ID: 55LVMM42
Customer PO: 24171
Project ID:

Attn: Keith Rowe
Englobe Corp.
39 Sagona Avenue
Mount Pearl, NL A1N 4P9

Phone: (709) 576-8148
Fax:
Collected: 2/22/2019
Received: 2/27/2019
Analyzed: 3/01/2019

Proj: NAFC

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

Client Sample ID: Loc1-ACM-1 ***Lab Sample ID:*** **551902265-0001**
Sample Description: Vehicle Under Pass/Fireproof Insulation

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	3/01/2019	Brown	90.0%	10.0%	None Detected	

Client Sample ID: Loc1-ACM-2 ***Lab Sample ID:*** **551902265-0002**
Sample Description: Vehicle Under Pass/Drywall/Drywall Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	3/01/2019	Gray	10.0%	90.0%	None Detected	

Client Sample ID: Loc1-ACM-3 ***Lab Sample ID:*** **551902265-0003**
Sample Description: Vehicle Under Pass/Rigid Insulation

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	3/01/2019	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: Loc2-ACM-1 ***Lab Sample ID:*** **551902265-0004**
Sample Description: Access Hatch/Drywall/Drywall Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	3/01/2019	Gray	10.0%	90.0%	None Detected	

Client Sample ID: Loc2-ACM-2 ***Lab Sample ID:*** **551902265-0005**
Sample Description: Access Hatch/Rigid Insulation

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	3/01/2019	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: Loc2-ACM-3 ***Lab Sample ID:*** **551902265-0006**
Sample Description: Access Hatch/Insulation

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	3/01/2019	Yellow	90.0%	10.0%	None Detected	

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 551902265
Customer ID: 55LVMM42
Customer PO: 24171
Project ID:

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

Analyst(s):

Michelle Lung PLM (6)

Reviewed and approved by:

Matthew Davis or other approved signatory
or Other Approved Signatory

Samples analyzed by EPA 600/R-93/116 consistent with NLR 111/98. The estimated limit of detection for non-detect samples is <0.1%. Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL`s liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP or any agency of the US Government.

Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0

Initial report from: 03/01/201915:43:54

Maxxam
A Bureau Veritas Group Company

Your P.O. #: 24173
Your Project #: 1900209-0-00
Site Location: NAFC
Your C.O.C. #: N/A

Attention: Keith Rowe

Englobe Corp.
NL
39 Sagona Avenue
Mount Pearl, NL
CANADA A1N 4P9

Report Date: 2019/03/05
Report #: R5616931
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B954563
Received: 2019/03/01, 09:32

Sample Matrix: Paint
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Metals Paint Acid Extr. ICPMS	2	2019/03/04	2019/03/04	ATL SOP 00058	EPA 6020A R1 m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

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

Your P.O. #: 24173
Your Project #: 1900209-0-00
Site Location: NAFC
Your C.O.C. #: N/A

Attention: Keith Rowe

Englobe Corp.
NL
39 Sagona Avenue
Mount Pearl, NL
CANADA A1N 4P9

Report Date: 2019/03/05
Report #: R5616931
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B954563
Received: 2019/03/01, 09:32

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Keri Mackay, Senior Project Manager
Email: kmackay@maxxam.ca
Phone# (902)420-0203 Ext:294

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This report has been generated and distributed using a secure automated process.
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Maxxam Job #: B954563
Report Date: 2019/03/05

Englobe Corp.
Client Project #: 1900209-0-00
Site Location: NAFC
Your P.O. #: 24173
Sampler Initials: RB

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		JCG480	JCG481	JCG481		
Sampling Date		2019/02/22	2019/02/22	2019/02/22		
COC Number		N/A	N/A	N/A		
	UNITS	LOC1- PAINT1	LOC2- PAINT1	LOC2-PAINT1 Lab-Dup	RDL	QC Batch
Metals						
Acid Extractable Lead (Pb)	mg/kg	6.7	110	100	5.0	6000062
Acid Extractable Mercury (Hg)	mg/kg	<1.0	<1.0	<1.0	1.0	6000062

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B954563
Report Date: 2019/03/05

Englobe Corp.
Client Project #: 1900209-0-00
Site Location: NAFC
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GENERAL COMMENTS

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

Package 1	14.1°C

Results relate only to the items tested.

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Maxxam Job #: B954563
Report Date: 2019/03/05

Englobe Corp.
Client Project #: 1900209-0-00
Site Location: NAFC
Your P.O. #: 24173
Sampler Initials: RB

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6000062	BAN	Matrix Spike [JCG481-01]	Acid Extractable Lead (Pb)	2019/03/04		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2019/03/04		100	%	75 - 125
6000062	BAN	Spiked Blank	Acid Extractable Lead (Pb)	2019/03/04		98	%	75 - 125
			Acid Extractable Mercury (Hg)	2019/03/04		100	%	75 - 125
6000062	BAN	Method Blank	Acid Extractable Lead (Pb)	2019/03/04	<5.0		mg/kg	
			Acid Extractable Mercury (Hg)	2019/03/04	<1.0		mg/kg	
6000062	BAN	RPD [JCG481-01]	Acid Extractable Lead (Pb)	2019/03/04	2.9		%	35
			Acid Extractable Mercury (Hg)	2019/03/04	NC		%	35

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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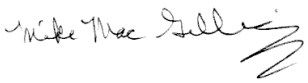
Maxxam Job #: B954563
Report Date: 2019/03/05

Englobe Corp.
Client Project #: 1900209-0-00
Site Location: NAFC
Your P.O. #: 24173
Sampler Initials: RB

VALIDATION SIGNATURE PAGE

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



Mike MacGillivray, Scientific Specialist (Inorganics)

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