Englobe
Soils Materials Environment

Public Services and Procurement Canada

CAM-C Site Remediation
Matheson Point, Nunavut
(Ref.: EW699-172531)

Sampling Methodology, Laboratory Location, Personnel and Protocols

Preliminary Version

Date: June 2017
Ref. N°: P-0012811-0-01-001

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Property and Confidentiality

REVISION AND PUBLICATION REGISTER		
Revision N°	Date	Modification And/Or Publication Details
0A	2017-06-21	Preliminary Version

1 INTRODUCTION

The following report details Englobe Corps. (Englobe's) proposed methodology for sampling and testing for the scope of the CAM-C Site Remediation Project. Sampling can be broken into two primary streams: soil and water. Englobe's soil sampling mandate will consist of monitoring Type B PHC levels in the landfarm facility while water samples will include potable water testing, sewage effluent, soil excavation water and wash water from site processes including barrel washing and equipment decontamination. The following information is included in this report:

- The proposed analytical laboratory;
- Proposed sampling personnel;
- Sampling protocols for soil and water; and,
- Packaging and transport methods.

Sampling protocols for the CAM-C Project will be in accordance with the Indian and Northern Affairs Canada (INAC) *Abandoned Military Site Remediation Protocol*, 2009, applicable regulations and industry best standards.

2 PROPOSED ANALYTICAL LABORATORY

For the analytical needs of the CAM-C Project, Englobe will be using Maxxam Analytics International Corporation (Maxxam) in Edmonton, Alberta. The Edmonton laboratory was chosen because of the availability of daily flights from Yellowknife and the presence of an Englobe office in Edmonton. Please refer to Appendix A for the proposed laboratory's current ISO17025 certification.

3 PROPOSED SAMPLING PERSONNEL

Sampling will be performed by or under the supervision of Englobe's Hazardous Waste Specialist, Pascal Gagnon or Englobe's Site Superintendent, Brandon MacKay.

4 SAMPLING PROTOCOLS

4.1 SOIL SAMPLING

Soil sampling will be performed in accordance with the protocol outlined in the Soil Treatment Plan.

4.2 WATER SAMPLING

Englobe is responsible for the testing of potable water, wash water, pooled water from excavations and sewage effluent. Samples must be collected, analyzed and comply with the appropriate parameters set by the specifications, water license and applicable regulations prior to discharging.

4.2.1 Drinking Water

Potable water will be tested at a minimum frequency of every four weeks to verify that it is meeting the criteria of the *Guidelines for Canadian Drinking Water Quality* (CDWQ). Two consecutive sample results that meet the specified criteria will be required before camp drinking water can be considered potable. Sampling protocol will be as follows:

- Wear non-powdered latex gloves for all water sampling operations and wear clothing without long sleeves to prevent contaminating the sample;
- Label bottles with the sample ID using a felt-tipped marker and apply plastic tape over the label to prevent smearing;
- Remove aerator from tap prior to sampling and run the tap on cold water for thirty seconds;
- Fill the sample bottle just below the top to prevent preservative from spilling from the bottle;
- Cap sample immediately after being taken. Take note of location, time and corresponding ID number;
- Take field duplicates for 10% of the samples;
- Update sample tracking datasheet and chain-of-custody; and,
- Prepare samples for shipment.

Drinking water will be analyzed for potability and biological parameters. The results of potable water will be recorded and provided to the Departmental Representative upon request.

4.2.2 Sewage Effluent and Contact Water

The water samples collected from the sewage lagoons, waste water handling facility and excavations will be collected prior to discharging any water from these areas. These samples will be analyzed in the laboratory to ensure they meet the water quality limits set forth by the project-specific Water Licence.

These samples will be taken as grab samples. The sampler will wear appropriate personal protective equipment, such as nitrile gloves, and will either sample the water directly by placing the sample bottle into the water or will use a swing sampler to collect the sample. When using a swing sampler to collect bacteriological samples, another bottle will need to be used to collect the sample from which the sample will be poured into the appropriate bottle. This is done to

prevent the spillage of preservatives contained within the sample bottle. The bottle used to collect the sample will be rinsed three times prior to filling the sample bottle.

As with soil and potable water samples, duplicates will be taken for 10% of the samples.

5 PACKAGING AND TRANSPORTATION METHODS

Sampling events will take place the same day as the weekly shuttle to Yellowknife to keep sample spoilage to a minimum. Samples will be transported in hard coolers equipped with freezer packs, (to maintain a cool temperature) sealed with duct tape and the appropriately labelled instruction “Do not Freeze.” Upon reaching Yellowknife the samples will be transferred for shipment to Edmonton by Maxxam personnel at the airport. Upon arrival, the samples will be picked up at the Edmonton International Airport by Maxxam laboratory staff for analyses.

A Chain-of-Custody form will be filled out and sent with the samples indicating the sample names, sampling date, the desired analysis, and all relevant contact information such as: the name of the Project Manager and the sampler, laboratory contact information, and signatures to ensure the samples were received.

Appendix A Proposed Laboratory's ISO Certification

CERTIFICATE OF ACCREDITATION

Standards Council of Canada
Conseil canadien des normes

CERTIFICAT D'ACCRÉDITATION

Maxxam Analytics International Corporation
Edmonton Laboratory
Petroleum Technology Center, 6744 - 50 Street NW and 9331 48th Street NW, Edmonton, Alberta, T6B 3M9, Canada

having been assessed by the Standards Council of Canada (SCC) and found to conform with the requirements of ISO/IEC 17025:2005 and the conditions for accreditation established by SCC is hereby recognized as an

ACCREDITED TESTING LABORATORY

for the specific tests or types or tests listed in the scope of accreditation approved by SCC and found on the SCC website at www.scc.ca.

ayant fait l'objet d'une évaluation réalisée par le Conseil canadien des normes (CCN), et été jugé conforme aux exigences énoncées dans ISO/CEI 17025:2005 et aux conditions liées à l'accréditation établies par le CCN, est de ce fait reconnu comme étant un

LABORATOIRE D'ESSAIS ACCRÉDITÉ

pour les essais ou types d'essais énumérés dans la portée d'accréditation approuvée par le CCN et figurant dans le site web du CCN au www.ccn.ca.

Accredited laboratory number: / Numéro de laboratoire accrédité : 160

Accreditation date: / Date d'accréditation : 1995-03-06

Issued on: / Délivré le : 2016-03-23

Expiry date: / Date d'expiration : 2019-03-06

This certificate is valid until the date of expiration unless suspended, withdrawn or superseded by SCC. / Le présent certificat est valide jusqu'à la date d'expiration, à moins qu'il ne soit suspendu, retiré ou remplacé par le CCN.

Vice-President – Accreditation Services / Vice-présidente – Services d'accréditation

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. The accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF communiqué dated January 2009).

Ce laboratoire est accrédité conformément a la Norme internationale reconnue ISO/IEC 17025:2005. Cette accréditation démontre la compétence technique d'un organisme pour une portée définie et l'exploitation d'un système de management de la qualité de laboratoire (cf. communiqué conjoint ISO-ILAC-IAF date de janvier 2009)

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