

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Public Works and Government Services Canada
Telus Plaza North, 5th floor
10025 Jasper Avenue
Edmonton
Alberta
T5J 1S6
Bid Fax: (780) 497-3510

REQUEST FOR PROPOSAL DEMANDE DE PROPOSITION

Proposal To: Public Works and Government Services Canada

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

Proposition aux: Travaux Publics et Services Gouvernementaux Canada

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet Inuvik Airport Remediation	
Solicitation No. - N° de l'invitation EW699-140333/A	Date 2013-07-08
Client Reference No. - N° de référence du client TC 20140333	
GETS Reference No. - N° de référence de SEAG PW-\$NCS-107-9864	
File No. - N° de dossier NCS-3-36055 (107)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2013-07-30	Time Zone Fuseau horaire Mountain Daylight Saving Time MDT
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Anthony (NCS), Mary	Buyer Id - Id de l'acheteur ncs107
Telephone No. - N° de téléphone (780) 497-3588 ()	FAX No. - N° de FAX (780) 497-3510
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA TELUS PLAZA N. 10025 JASPER AVE EDMONTON Alberta T5J1S6 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Public Works and Government Services Canada
Northern Contaminated Site Program
Telus Plaza North, 5th floor
10025 Jasper Avenue
Edmonton
Alberta
T5J 1S6

Delivery Required - Livraison exigée See Herein	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

**INUVIK MIKE ZUBKO AIRPORT FIRE TRAINING AREA REMEDIATION
INUVIK, NORTHWEST TERRITORIES
PWGSC PROJECT NUMBER - R.056019.004**

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Section 1: Instructions To Bidders

1.0 Instructions and Conditions

1.1 Trade Agreements

The proposed requirement is subject to the provisions of the Agreement on Internal Trade (AIT).

1.2 Comprehensive Land Claim Agreements

1.2.1 Inuvialuit Final Agreement (IFA) - Evaluation Criteria

The requirements of the Inuvialuit Final Agreement apply to the proposed procurement and the appropriate notification will be provided to the Inuvialuit Regional Corporation in compliance with the agreement. Under article 16.8 "Economic Measures" of this agreement, bidders will be required to maximize Inuvialuit employment, sub-contracting and on the job training opportunities and involve Inuvialuit citizens and businesses in carrying out the work under this project.

1.2.2 Gwich'in Comprehensive Land Claim Agreement (GCLCA) - Evaluation Criteria

The requirements of the Gwich'in Comprehensive Land Claim Agreement will apply to the proposed procurement and the appropriate notification will be provided to the Gwich'in Regional Corporation in compliance with the agreement. Bidders are therefore requested to maximize aboriginal employment, subcontracting and on-the-job training opportunities, and involve local, regional and Inuvialuit and/or Gwich'in citizens and businesses, in carrying out the work under this project. The benefits that apply to this procurement are contained in Chapter 10 of the Gwich'in Comprehensive Land Claim Agreement (GCLCA).

1.3 Standard Instructions, Clauses and Conditions

1.3.1 All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual issued by Public Works and Government Services Canada.

1.3.2 Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

1.3.3 The 2003 (2013-06-01), Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

1.3.3.1 Section 05 - Submission of Bids, subsection 4 of 2003, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: sixty (60) days, Insert: ninety (90) days

1.3.4 Electronic Bids Will Not Be Accepted due to the nature of this solicitation.

1.3.5 Bid amendments will not be accepted after the Request for Bid closing date and time.

1.3.6 Due to the operational requirements of this project, a request for extension to the solicitation closing date and time will NOT be considered.

- 1.3.7** The Contractor will not be paid for any cost incurred before the effective date of the Contract unless it is expressly provided for in the Contract.

2.0 Requirement

2.1 Summary

The Contractor must perform the Work in accordance with the Specifications at Annex C and the Technical and Management and Organizational portions of the Contractor's bid entitled (TBD), dated (TDB).

Public Works and Government Services Canada (PWGSC) on behalf of Transport Canada (TC) have a requirement for the supply of all labour, equipment and material to provide remediation activities at the Fire Training Area (FTA) of the Inuvik Mike Zubko Airport, NT.

Work of this proposed procurement comprises site remediation activities at the Fire Training Area, including, but not limited to, the following; Mobilization and demobilization of all personnel, equipment, support facilities and materials required to complete the Work; Upgrading of site access routes; Development and rehabilitation of quarry borrow source; Processing of native soils for backfill and grading requirements as necessary; Construction of sump area and liner at existing East land treatment area; Excavation of contaminated soil including transportation and placement in adjacent East land treatment area; Screening of former liner material from stockpiled soil at West land treatment area; Regrading and backfill of area; Necessary maintenance of access road after excavation activities.

The provision of the following site support services will be required under this contract: Safety and fire protection and a Specific Health and Safety Plan.

2.2 Specifications

- 2.2.1** You are invited to submit a Technical Bid, Management & Organizational Bid, Aboriginal Opportunities Consideration (**original and four (4) copies**), and a Financial Bid (**original only**) to perform the work described in the Specifications, Annex C, attached, for Public Works and Government Services Canada (PWGSC).

2.3 Optional Bidders' Conference

An optional bidders' conference will be held at Telus Plaza North, 10025 Jasper Avenue on July 15, 2013. The conference will begin at 1:00 pm. Suppliers may attend in person or call in. The call in number is:

Call-in Line: 1-877-413-4782

Conference ID: 7083442

Attendees in person are asked to go to the 5th floor, Public Works and Government Services Canada reception. The scope of the requirement outlined in the bid solicitation will be reviewed during the conference and questions will be answered. It is recommended that bidders who intend to submit a bid attend or send a representative.

Bidders are requested to communicate with the Contracting Authority before the conference to confirm attendance. Bidders should provide, in writing, to the Contracting Authority, the names of

the person(s) who will be attending and a list of issues they wish to table at least three (3) working days before the scheduled conference.

Any clarifications or changes to the bid solicitation resulting from the bidders' conference will be included as an amendment to the bid solicitation. Bidders who do not attend will not be precluded from submitting a bid.

All travel and living costs associated with travel to Edmonton, Alberta for the purpose of attending the Optional Bidders' Conference will be borne by the Bidder or their representative.

2.4 Period of Proposed Contract

- 2.4.1** The period of the contract will be from **(To Be Determined)** to 31 December, 2013. The Work is to be performed during the period of (estimated) August, 2013 to Fall, 2013 and all deliverables must be received on or before December 31, 2013.

2.5 Contract Financial Security

- 2.5.1** A Performance Bond will not be required, however, there will be a requirement for a 10% Holdback on each monthly invoice in accordance with Article TP-3 "Method of Payment as per **Annex G** attached.

2.5.2 10% Holdback - Definition

The ten percent (10%) holdback is an amount of funds withheld by Canada from each monthly invoice in lieu of contract security. The hold back calculation is based on the invoice value prior to the Goods and Services Tax (GST) being applied. The holdback is released as specified in TP-3

2.6 Education / Experience - Certification

- 2.6.1** By signing the first page of this Request for Bid, The Bidder certifies that all the information provided in the résumés and supporting material submitted with its bid, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Bidder to be true and accurate. Furthermore, the Bidder warrants that every individual proposed by the Bidder for the requirement is capable of performing the Work described in the resulting contract.

2.7 Health and Safety - Northwest Territories/Nunavut WCB and Safety Program

- 2.7.1** The recommended Bidder shall provide to the Contracting Authority, prior to Contract award:

2.7.1.1 a Workers Compensation Board Claims Cost Summary (NU);

2.7.1.2 a Workers Compensation Board letter of good standing and written confirmation from a Workers Compensation Board of coverage for all Directors, Principals, Proprietors or Partners who will be or who are anticipated to be present on the work site(s); and

2.7.1.3 a Certificate of Recognition (COR) or Registered Safety Plan (RSP) acceptable to the Authority Having Jurisdiction (AHJ). A health and safety policy and program, as required by the respective provincial/territorial Occupational Health and Safety Act, will be acceptable in lieu of a COR or RSP. If none is required by law, complete and return a provided declaration form instead.

- 2.7.2** The recommended Bidder shall deliver all of the above documents to the Contracting Authority on or before the date stated (usually 3-5 days after notification) by the Contracting Authority. Failure to comply will result in a breach of promise, at which time the Contracting Authority will be free to approach the next highest ranked responsive Bidder.

2.8 Bidder Suggestions During The Period Of The Request For Proposal (RFP)

- 2.8.1** Should the Bidder consider that the specifications or Statement of Work (SOW) contained in this Request For Proposal (RFP) can be improved technically or technologically, the Bidder is invited to make suggestions, in writing, to the Contracting Authority named herein. The Bidder must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions which do not restrict the level of competition nor favour a particular Bidder will be given consideration provided they are received by the Contracting Authority no later than five (5) calendar days prior to the bid closing date specified herein. Canada reserves the right to accept or reject any or all suggestions.

2.9 Financial Capability

- 2.9.1 Financial Capability Requirement:** The Bidder must have the financial capability to fulfill this requirement. To determine the Bidder's financial capability, the Contracting Authority may, by written notice to the Bidder, require the submission of some or all of the financial information detailed below during the evaluation of bids. The Bidder must provide the following information to the Contracting Authority within fifteen (15) working days of the request or as specified by the Contracting Authority in the notice:

- (a)** Audited financial statements, if available, or the unaudited financial statements (prepared by the Bidder's outside accounting firm, if available, or prepared in-house if no external statements have been prepared) for the Bidder's last three fiscal years, or for the years that the Bidder has been in business if this is less than three years (including, as a minimum, the Balance Sheet, the Statement of Retained Earnings, the Income Statement and any notes to the statements).
- (b)** If the date of the financial statements in (a) above is more than five months before the date of the request for information by the Contracting Authority, the Bidder must also provide, unless this is prohibited by legislation for public companies, the last quarterly financial statements (consisting of a Balance Sheet and a year-to-date Income Statement), as of two months before the date on which the Contracting Authority requests this information.
- (c)** If the Bidder has not been in business for at least one full fiscal year, the following must be provided:
 - (i)** the opening Balance Sheet on commencement of business (in the case of a corporation, the date of incorporation); and
 - (ii)** the last quarterly financial statements (consisting of a Balance Sheet and a year-to-date Income Statement) as of two months before the date on which the Contracting Authority requests this information.
- (d)** A certification from the Chief Financial Officer or an authorized signing officer of the Bidder that the financial information provided is complete and accurate.

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- (e) A confirmation letter from all of the financial institution(s) that have provided short-term financing to the Bidder outlining the total of lines of credit granted to the Bidder and the amount of credit that remains available and not drawn upon as of one month prior to the date on which the Contracting Authority requests this information.
- (f) A detailed monthly Cash Flow Statement covering all the Bidder's activities (including the requirement) for the first two years of the requirement that is the subject of the bid solicitation, unless this is prohibited by legislation. This statement must detail the Bidder's major sources and amounts of cash and the major items of cash expenditures on a monthly basis, for all the Bidder's activities. All assumptions made should be explained as well as details of how cash shortfalls will be financed.
- (g) A detailed monthly Project Cash Flow Statement covering the first two years of the requirement that is the subject of the bid solicitation, unless this is prohibited by legislation. This statement must detail the Bidder's major sources and amounts of cash and the major items of cash expenditures, for the requirement, on a monthly basis. All assumptions made should be explained as well as details of how cash shortfalls will be financed.
- 2.9.2** If the Bidder is a joint venture, the financial information required by the Contracting Authority must be provided by each member of the joint venture.
- 2.9.3** If the Bidder is a subsidiary of another company, then any financial information in 1. (a) to (f) above required by the Contracting Authority must be provided by the ultimate parent company. Provision of parent company financial information does not by itself satisfy the requirement for the provision of the financial information of the Bidder, and the financial capability of a parent cannot be substituted for the financial capability of the Bidder itself unless an agreement by the parent company to sign a Parental Guarantee, as drawn up by Public Works and Government Services Canada (PWGSC), is provided with the required information.
- 2.9.4** Financial Information Already Provided to PWGSC: The Bidder is not required to resubmit any financial information requested by the Contracting Authority that is already on file at PWGSC with the Contract Cost Analysis, Audit and Policy Directorate of the Policy, Risk, Integrity and Strategic Management Sector, provided that within the above-noted time frame:
- (a) the Bidder identifies to the Contracting Authority in writing the specific information that is on file and the requirement for which this information was provided; and
- (b) the Bidder authorizes the use of the information for this requirement. It is the Bidder's responsibility to confirm with the Contracting Authority that this information is still on file with PWGSC.
- 2.9.5 Other Information:** Canada reserves the right to request from the Bidder any other information that Canada requires to conduct a complete financial capability assessment of the Bidder.
- 2.9.6 Confidentiality:** If the Bidder provides the information required above to Canada in confidence while indicating that the disclosed information is confidential, then Canada will treat the information in a confidential manner as permitted by the Access to Information Act, R.S., 1985, c.c. A-1, Section 20(1) (b) and (c).
- 2.9.7 Security**
- In determining the Bidder's financial capability to fulfill this requirement, Canada may consider any security the Bidder is capable of providing, at the Bidder's sole expense (for example, an

irrevocable letter of credit from a registered financial institution drawn in favour of Canada, a performance guarantee from a third party or some other form of security, as determined by Canada).

2.9.8 Insurance Requirements

The Bidder must provide a letter from an insurance broker or an insurance company licensed to operate in Canada stating that the Bidder, if awarded a contract as a result of the bid solicitation, can be insured in accordance with the Insurance Requirements specified in Annex E.

If the information is not provided in the bid, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

3.0 Mandatory Requirements

Each bid must meet all of the mandatory requirements and all bid submissions must indicate acceptance with no counter offer, by the bidder, of all terms and conditions of the RFP, Basis of Pricing, and Plans and Specifications at bid closing. Bids which fail to meet these requirements will be considered unresponsive and will receive no further consideration.

There are mandatory requirements specified herein (as per 3.1, 3.2 & 3.3 In order to expedite the evaluation process of the bids submitted, "bidders" should submit the post bid closing mandatory requirements with their bid.

3.1 Mandatory Requirements Precedent to Bid Closing (If Bidder wishes to receive optional evaluation for Aboriginal Opportunity Consideration as outlined in section 2.6 of Annex I.)

- 3.1.1** Bidders who wish to include Aboriginal Opportunities Consideration (AOC), must provide a certification as per section 1. of Annex H.

3.2 Mandatory Requirements Precedent to Contract Award

Bidders must submit the following mandatory requirements precedent to contract award within five (5) business days from date of request:

- 3.2.1** A signed front page of the RFP with your bid. Your signature indicates acceptance with the terms and conditions of the RFP, Basis of Pricing, Plans and Specification at bid closing with no counter offers.
- 3.2.2** Proof of compliance with WCB and Health and Safety Requirements as specified in the RFP.
- 3.2.3** A letter or other documentation, from your Insurer stating that you can comply with the Insurance Requirements as specified in the RFP.
- 3.2.4** Compliance to Code of Conduct and Certifications - Related Documentation per section 2.1 of Annex H, attached.
- 3.2.5** Joint Venture documentation as per section 3.1 of Annex H, attached.
- 3.2.6** Contractor's Representative must be provided as per section 3.2 Annex H, attached.

- 3.2.7** Name and Location of Designated Licensed Waste Facility certification as per section 3.3 of Annex H, attached.

3.3 Mandatory Requirements Required Post Contract Award

Bidders must submit the following mandatory requirement post contract award:

- 3.3.1** Provision of Insurance Certificate as per Annex E within 10 days of contract award.

4.0 Bid Contents

4.1 General

- 4.1.1** Bids should be submitted in the format requested (Technical Bid, Management & Organizational Bid, Aboriginal Opportunities Consideration and Financial Bid). Each section should be brief and concise. Unnecessary information should not be provided. It is the responsibility of the Bidder to obtain clarification of the requirements contained herein, if necessary, prior to submitting a bid.

- 4.1.2** Bids shall address the Specifications in Annex C, attached and will be evaluated against the mandatory and point rated requirements set out in the Evaluation Criteria / Contractor Selection Method, Annex I, attached. Your bid should be divided into four (4) parts, described below. You are advised to follow the same format with a clear, concise and complete response to the requested evaluation criteria.

4.2 Part "1" - Technical Bid

Your Technical Bid should include, but not necessarily be limited to, the following:

4.2.1 Clear, Concise and Complete Proposal

Provide a clear, concise and complete proposal that is well organised. All criteria were addressed in a logical order and in sufficient depth, communicating a clear understanding of the project and its requirements.

4.2.2 Project Understanding

Demonstrate understanding of the scope of work as well as the unique nature of the project relative to, but not limited to, the constraints of working in a remote northern area.

4.2.3 Health and Safety

Identify the risks and hazards specific to site and provide details on how they would be mitigated and/or managed.

4.2.4 Equipment

4.2.4.1 Remediation Equipment and Supplies

Provide a detailed inventory of equipment proposed for site work including, condition and age/hours of heavy equipment. Provide details on how equipment will meet the specific site constraints, equipment redundancy, on-site equipment maintenance, spare parts inventory and

dedicated repair and maintenance staff. Provide a detailed inventory of the remediation supplies necessary to complete the work. Include identification of potential problems and mitigative measures.

4.2.5 Description of Work

4.2.5.1 Mobilization/Demobilization

Provide a detailed description on how all equipment, materials, supplies and personnel proposed for use at the site will be transported to and from the site. Include identification of potential problems and mitigative measures.

4.2.5.2 Borrow Source

Provide details regarding use of the identified borrow sources and the estimated quantities of material to be used. Include identification of potential problems and mitigative measures

4.2.5.3 Collection and Sorting of Debris

Provide details regarding how non-hazardous waste will be collected and sorted. Provide detailed discussion of how specifically debris from the soil stockpiled adjacent to the West LTU will be screened and collected for disposal. Discussion to include identification of hazards specific to this task and how they will be mitigated. Provide details on the Material Processing Area including locations, dimensions, and general layout. Identify potential problems and mitigative measures.

4.2.5.4 Landfarm Treatment Unit

Provide detail on the construction of the landfarm treatment unit including the placements of liners, and the containment and treatment of contact water. Provide details regarding how the petroleum hydrocarbon contaminated soil will be excavated and how it will be transported to the identified treatment unit. Provide details on mitigative measures to complete the construction of the landfarm treatment unit if landfarm treatment construction materials are delayed arriving to site. Identify potential problems and mitigative measures.

4.2.5.5 Packaging, Transport, and Disposal of Non-Hazardous Waste

Provide details regarding how the various non-hazardous waste materials will be transported to an accepting facility including any interim storage as necessary. Include a letter from the proposed waste disposal facility confirming that they are licensed to accept the non-hazardous waste material. Identify potential problems and mitigative measures.

4.2.5.6 Schedule

Provide a schedule which clearly shows if the remediation activities will be complete concurrently or sequentially. Prepare a schedule of activities that illustrated the duration of each of the major tasks. Each task must be broken down into sufficient sub tasks so that project progress can be easily monitored by the Departmental Representative. Identify the critical path of activities within the schedule and what "float" is included within the duration of the specified activities. The schedule must clearly indicate the sequence of work activities. Provide written assurance that

the proposed schedule will be adhered to and that time and associated operating expenses required to perform the known contract work is at contractor's cost.

4.3 Part "2" - Management and Organizational Bid

Your Management and Organizational Bid should include, but not necessarily be limited to, the following:

4.3.1 Company/Joint Venture/ Consortium Qualifications and Experience

Provide details on the qualifications on bidder's company/joint venture/consortium, and historical background information demonstrating experience specifically related to similar scope of work activities at remote northern locations.

4.3.2 Client References

Provide evidence of up to three (3) similar remediation projects successfully undertaken by the bidder which included key members of the proposed project team. A "similar project" for this evaluation is defined as a project completed at a remote northern location which consisted of similar work. The project team, their roles, the project objectives, scope of services, budget, completion date and deliverables were clearly identified.

Provide client letters of reference for each of the projects identified that are signed and dated by the Bidder's client and, at a minimum, specifically address the following items:

1. Extent to which bidder delivered services on time
2. Extent to which bidder delivered services on budget.
3. Extent to which bidder met objective of the project Points are awarded to bidder for degree of overall achievement in each of the 3 sub-categories, and are not awarded on a project-by-project basis.

4.3.3 Qualifications of Key Individuals

Provide resumes (up to 2 pages in length) for the following positions. Resumes include experience on similar projects, experience working in remote northern environments and experience in the proposed project role.

A. Project Manager & back-up: Demonstrate experience managing remediation projects similar in scale and scope to the proposed project. Experience includes financial and schedule control, liaison with client.

B. Site Superintendent and cross-shift: Demonstrate experience managing personnel in a remote setting. Experience includes site superintendent experience on remediation projects similar in scope to the proposed project.

C. Off-site and on-site Health & Safety Coordinators: Demonstrate experience working in remote areas on remediation projects similar in scope to the proposed project. Experience in developing and implementing site specific health and safety programs for remediation sites.

D. Non-Hazardous and Hazardous Waste Specialist: Demonstrate field experience on remediation projects similar in scope to the proposed project. Experience includes the identification, sampling, characterization, containerization and transportation and disposal of hazardous and non-hazardous materials.

NOTE:

1. Back-up personnel are personnel assigned to the project if the identified personnel are not available due to illness, change in employment, etc.
2. Cross-shift personnel are personnel who will regularly replace the identified personnel for shift changes during the site work.

4.3.4 Staffing Contingency Plan

Demonstrate ability to properly staff the project and contingency plans to cover off key team members.

4.3.5 Organization Chart

Submit a detailed Organization Chart of the Project Team showing Transport Canada, PWGSC, Departmental Representative, Contractor's Staff, Sub-Contractors. Include all of the resource elements including Contractor personnel and subcontractors. Identify who will be responsible for overall control and for the provisions for controlling costs and conformance to the Specifications. Clearly identify lines of communication for all parties.

4.4 Part "3" - Aboriginal Opportunities Consideration (AOC) - (If Bidder wishes to receive optional evaluation for Aboriginal Opportunity Consideration as outlined in section 2.6 of Annex I.)

The requirement is subject to the requirements of the Inuvialuit Final Agreement (IFA) and/or the Gwich'in Comprehensive Land Claim Agreement (GCLCA). Bidders are encouraged to maximize involvement of local groups within the CLCAs, and surrounding communities. Article 16.8 of the Inuvialuit Final Agreement (IFA) applies and chapter 10 of the Gwich'in Comprehensive Land Claim Agreement (GCLCA) applies.

Your Aboriginal Opportunities Consideration (AOC) must include at least one of the following:

- 4.4.1** Provide documentation that confirms the bidder has an office located in a Comprehensive Land Claim Area (Inuvialuit Final Agreement (IFA) and/or Gwich'in Comprehensive Land Claim Agreement (GCLCA).
- 4.4.2** Provide documentation supporting a firm guarantee to use Inuvialuit and/or Gwich'in employment content from the area of the contract in carrying out the work. The percentages identified below relate specifically to on-site labour hours regardless whether they are prime contractor staff or subcontractor staff.
- 4.4.3** Provide documentation supporting a firm guarantee to use Inuvialuit and/or Gwich'in Sub-Contractors for services or the procurement of supplies and equipment from the area of the contract associated with the project. Ranges are based on expenditure for equipment associated,

supplies and /or services as a percentage of the total estimated cost for the remediation contract not the number of businesses used.

Note: if the Prime Contractor is a business from the area of the contract, the total dollar value of the Aboriginal contracting shall also include the contractor's share of the clean up.

4.5 Part "4" - Financial Bid

4.5.1 Your Bid

Your price bid as per Annex F should be submitted in a separate envelope and be clearly marked as "Financial Bid". No mention of any financial consideration shall be included in your overview summary or the Technical, Management and AOC sections of your bid. It should include a detailed breakdown of the total quoted price and must be submitted in accordance with the Proposed Basis of Pricing, Annex F, attached.

4.5.2 Prices

All prices must be quoted in Canadian funds, FOB Inuvik Mike Zubko Airport Fire Training Area, Inuvik, Northwest Territories. All items discussed in the bid are assumed to be included in the quoted firm unit or lot prices.

4.5.3 Exchange Rate Fluctuation

The requirement does not provide for exchange rate fluctuation protection. Any request for exchange rate fluctuation protection will not be considered and will render the bid non-responsive.

4.5.4 Customs Duties

It is your responsibility to ascertain which items in the cost bid may be subject to customs duties. These charges must be included and identified in the cost estimates where applicable. State whether customs duty is included, not applicable, etc.

5.0 Evaluation Criteria / Selection Method

5.1 Evaluation

Bids will be assessed based on the information you have been asked to provide, in accordance with the Mandatory & Point Rated Requirements set out in Annex I.

5.2 Contractor Selection

Contractor selection will be based on the method specified in Annex I, attached.

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INUVIK MIKE ZUBKO AIRPORT FIRE TRAINING AREA REMEDIATION INUVIK, NORTHWEST TERRITORIES PWGSC PROJECT NUMBER - R.056019.004

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Section 2: Resulting Contract

1.0 Instructions and Conditions

1.1 Standard Acquisition Clauses and Conditions Manual

1.1.1 All clauses and conditions identified in the Contract by title, number and date are set out in the Standard Acquisition Clauses and Conditions Manual issued by Public Works and Government Services Canada (PWGSC).

1.1.2 The Manual is available on the PWGSC Website:
<https://buyandsell.gc.ca/policy-and-guidelines/Supply-Manual>

1.2 Terms and Conditions of the Contract

1.2.1 Pursuant to the Department of Public Works and Government Services Act, S.C. 1996, c.16, the clauses and conditions identified in the contract by title, number and date, and the Conditions set out in Part B of the 2003 (2013-06-01) Standard Instructions - Goods or Services - Competitive Requirements are incorporated by reference into and form part of this Contract as though expressly set out in the contract.

1.3 Contract Cost Principles (1031-2, 2012-07-16)

2.0 Requirement

2.1 Summary

The Contractor must perform the Work in accordance with the Specifications at Annex C and the Technical and Management and Organizational portions of the Contractor's bid entitled (TBD), dated (TDB).

Public Works and Government Services Canada (PWGSC) on behalf of Transport Canada has a requirement for remediation activities at the Inuvik Mike Zubko Airport Fire Training Area, Inuvik, Northwest Territories. The work includes, but is not limited to the mobilization and demobilization of all necessary equipment and materials, demolition of infrastructure, excavation of contaminated soil and packaging, transportation and disposal of hazardous and non-hazardous waste from the site.

The provision of the following site support services is required under this contract: Safety and fire protection and a Specific Health and Safety Plan.

R1 Specifications

1.1 The Contractor shall perform the Work as outlined in the Specifications attached hereto as Annex C, and in accordance with the technical and management portions of the Contractor's bid, forming part of this Contract.

R2 Period of Contract

- 2.1** The period of the contract will be from **(To Be Determined)** to 31 December, 2013. The Work is to be performed during the period of (estimated) August, 2013 to Fall, 2013 and all deliverables must be received on or before December 31, 2013.

- R3 Priority of Documents** - Supplementary Conditions, Annex A, attached, shall apply to the contract.

R4 Departmental Representative

- 4.1** The Departmental Representative for this Contract is:

Name:

Title:

Address:

Telephone:

Facsimile:

E-mail:

The Departmental Representative is responsible for all matters concerning the technical content of the Work under this requirement. Any proposed changes to the scope of the Work are to be discussed with the Departmental Representative, but any resulting change can only be confirmed by a contract amendment issued by the Contracting Authority.

R5 Contracting Authority

- 5.1** The Contracting Authority for this Contract is:

Mary Anthony

Supply Specialist

Acquisitions & Contracting Services, Western Region

Northern Contaminated Sites Program

Department of Public Works and Government Services

Telus Plaza North, 5th Floor, 10025 Jasper Avenue

Edmonton, AB T5J 1S6

TEL NO: (780) 497-3588

FAX NO: (780) 497-3510

E-mail: mary.anthony@pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract, and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

R6 Health and Safety

6.1 The Health and Safety provisions, Annex D, attached, shall apply to the contract.

R7 Supplementary Conditions

7.1 The Supplementary Conditions, Annex A, attached, shall apply to the contract.

R8 General Conditions

8.1 The General Conditions, Annex B, attached in reference only, shall apply to the contract.

R9 Terms of Payment

9.1 The Terms of Payment, Annex G, attached, shall apply to the contract.

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Annex A

Supplementary Conditions

Supplementary Conditions Changes To Contract Documents

SC01 DELETE paragraph 1) of GC 1.2.2 Order of Precedence and replace with the following:

In the event of any discrepancy or conflict in the contents of the following documents, such documents shall take precedence and govern in the following order:

- (a) The front page and these articles of agreement,
- (b) Supplementary Conditions, Annex A,
- (b) General Conditions, Annex B,
- (c) Specifications, Annex C,
- (d) Health and Safety provisions, Annex D,
- (e) Insurance and Insurer's Certificate of Insurance, Annex E,
- (f) Basis of Payment, Annex F,
- (g) Terms of Payment, Annex G,
- (h) Certifications and Required Documentation, Annex H,
- (i) The Technical, Management and Organizational and the Aboriginal Opportunities Consideration portions of the Contractor's bid dated _____.

SC02 GC1.8 (2013-04-25) Laws, Permits and Taxes DELETE - not used in this requirement.

SC03 GC2.6 Superintendent (2012-07-16) DELETE and replace with the following:

GC2.6 Contractor's Manager, Superintendent/ Supervisor

- 1) The contractor shall, forthwith upon the award of the contract, designate a Manager, and a Superintendent/Supervisor.
- 2) The contractor shall forthwith notify the Departmental Representative of the names, addresses and telephone numbers of the persons designated pursuant to GC2.6.
- 3) Either the Manager or in his/her absence the Superintendent/Supervisor designated pursuant to GC2.6 shall be in full charge of the operations of the contractor in the performance of the work at all times and shall be authorized to accept any notice, consent, order, direction, decision or other communication on behalf of the contractor.
- 4) The contractor shall, until the work has been completed, keep a competent Manager or Superintendent/Supervisor at the work site during working hours.
- 5) The contractor shall not substitute a Manager or a Superintendent/Supervisor without the written consent of the Departmental Representative.

SC04 GC5 Terms of Payment R2850D (2010-01-11), will not be used for this requirement with the exception of GC5.8. With the exception of GC5.8, GC5 Terms of Payment is replaced with the Terms of Payment set out in ANNEX G.

SC05 GC6.4 Determination of Price (2013-04-25) - not used for this requirement.

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SC06 GC9 Contract Security R2890D (2012-07-16) - not used this requirement.

SC07 GC10 Insurance R2900D (2008-05-12) - not used this requirement.

Insurance Terms R2910D (2008-12-12) - not used this requirement.

SC08 Refer to Insurance terms and conditions as set out in Annex E.

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Annex B

General Conditions

General Conditions

Note: Changes have been made to the General Conditions. Please refer to Annex A, SUPPLEMENTARY CONDITIONS for the changes to the contract documents.

GC1	General Provisions	R2810D (2013-04-25)
GC2	Administration of the Contract	R2820D (2012-07-16)
GC3	Execution and Control of the Work	R2830D (2010-01-11)
GC4	Protective Measures	R2840D (2008-05-12)
GC5.8	Claims and Obligations	R2850D (2010-01-11)
GC6	Delays and Changes in the Work	R2860D (2013-04-25)
GC7	Default, Suspension or Termination of Contract	R2870D (2008-05-12)
GC8	Dispute Resolution	R2882D (2008-12-12)
	Fair Wages and Hours of Labour - Labour Conditions	R2940D (2012-07-16)

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Annex C

Specifications

(Attached as a Separate Electronic Document)

Annex D

Health and Safety

1. Principal Contractor
2. Permits, Notifications
3. Site Specific Safety Plan
4. Advance Notification of Project
5. Owner Information
6. Hazardous Regulated Activities
7. Distribution
8. Labour Authority Contacts

Health and Safety

1. Principal Contractor

1.1 The Contractor shall, for the purposes of the Northwest Territories/Nunavut Safety Act and Regulations, and for the duration of the Work of the Contract:

1.1.1 act as the Employer, where there is only one employer on the work site, in accordance with the Authority Having Jurisdiction;

1.1.2 assume the role of Contractor/Principal Contractor/Constructor, where there are two or more employers involved in work at the same time and space at the work site, in accordance with the Authority Having Jurisdiction; and

1.1.3 agree, in the event of two or more Contractors working at the same time and space at the work site, without limiting the General Conditions, to the Departmental Representative's order to:

1.1.3.1 assume, as the Contractor/Principal Contractor/Constructor, the responsibility for the Departmental Representative's other Contractor(s); or

1.1.3.2 accept that the Departmental Representative's other Contractor is Contractor/Principal Contractor/Constructor and conform to that Contractor's Site Specific Health and Safety Plan.

2. Permits, Notifications

2.1 The Contractor shall provide to the Departmental Representative:

2.1.1 prior to any pre-construction meeting, a transmittal and copy of the Advance Notification of Project form, contained herein, as sent to the Authority Having Jurisdiction (AHJ); and

2.1.2 prior to commencement of work, copies of all other necessary permits, notifications and related documents as called for in the specifications and/or the AHJ.

3. Site Specific Safety Plan

3.1 The Contractor shall provide to the Departmental Representative, prior to commencement of work and without limiting the terms of General Conditions GC1 a Site Specific Safety Plan detailing the specific safety programs related to the general work required and any regulated hazardous activities. The plan must comply with the NU Safety Act contract specifications where so noted. Where there is any conflict between the two, the NU Safety Act shall prevail.

Refer to Annex C, Specifications, Section 01 35 32.

4. Advance Notification Of Project**To Provincial/Territorial Labour Authority:**

This Advance Notification is to advise you that we, the listed contractor, will be undertaking a Federal Project within your jurisdiction for which we are designated the Prime/Principal/General Contractor or Constructor and that we will be the party responsible for the overall co-ordination of safety on the site.

A Phase 1 Start-up Meeting for this project will be held at (Location)_____ on _____(Date)_____ at (Time)_____. An invitation for a representative of the provincial/territorial authority to attend this meeting is extended. The Site Specific Safety Plan will be reviewed at this meeting. Should you wish to attend please contact the name listed below.

Date:_____ FileNumber:_____

Contract Amount: _____ Project Number:_____

Business/Legal Name of Employer/Prime Contractor (AB)(BC); Employer/Contractor (SK); Employer/Principal Contractor (MB)(QC)(NF&Labrador)(NWT & Nunavut); Employer/Constructor (ON)(NS)(NB)(PE)(YT)

Mailing Address:_____

Telephone: _____ Fax Number:_____

Contractor Name:_____

Project Details

Location of Project:_____

Nature of Work/Process Undertaken:_____

Name of Site Superintendent:_____

Contact Number for Superintendent:_____

Estimated Start Date of Project:_____

Estimated Project Duration:_____

Number of Workers to be Employed:_____

List Of Sub-Contractors To Be Employed (Use additional space if required)

Company Name Business Address/Location

5. Owner InformationProject Owner: Public Works & Government Services Canada

Owner's representative: _____

Owner Representative Contact Number: _____

6. Hazardous Regulated Activities

This is a notification to the Provincial/Territorial Labour Authority of the Hazardous Regulated Activities that are to be undertaken during project by the Prime/Principal Contractor or Constructor or any sub-contractors. This list may not be all inclusive and may be amended from time to time.

Note to Prime/Principal Contractor or Constructor:

Any Hazardous Regulated Activities which are listed must also have elements included in the Site Specific Safety Plan listing safe working procedures for those activities.

Check Box for activities to be undertaken and provide estimated duration of activities in hours/days.

Check	Activity	Estimated Duration
	Working in or with Trenching/Excavation/Tunnels	
	Use of Scaffolding/Swing Stages	
	Working from Heights requiring fall protection systems	
	Crane Operations	
	Work in Confined Spaces	
	Blasting and/or use of explosives	
	Use and or exposure to high voltage electrical	
	Hot Work	
	Demolition	
	Use of Heavy Equipment which may/may not require traffic control	
	Working on or near water	
	Working with hazardous substances/regulated products	
	Working with radiation emitting devices	
	Working with or exposure to Asbestos, PCB's or Lead	

Please list any other hazardous regulated activities, which are not listed, below:

7. Distribution

The Prime/Principal Contractor or Constructor is responsible to ensure proper distribution of the above form and must provide proof that the form was sent to the Labour Authority. Work activities cannot commence until such proof has been provided. Proof can be by registered mail receipt, or by providing a copy of a fax transmittal notice, or any other means providing indication that the Labour Authority has received this document:

Original: to applicable provincial/territorial labour authority
Copies to: PWGSC Project Officer

A copy of this form is to be posted at the project site prior to the commencement of work.

Note: Please do not include any forms that include personal 3rd party information such as the names of the contractor's employees and their related claims information.

8. Labour Authority Contacts

The contact below represents the Labour Authority in the jurisdiction of the NWT/NU. He/She is not a representative of the Workers Compensation. In NWT/NU, the WCB has separate divisions for each.

Do not contact the person referenced below for issues pertaining to WCB or WCB Clearances. Those queries must be directed specifically to the WCB, and where the WCB has both a Labour and Compensation component, WCB issues must be directed to the Compensation/Employer Services sections.

**Workers' Compensation Board
Northwest Territories and Nunavut
Prevention Services
Box 8888
Yellowknife, NT, X1A 2R3
Attention: Chief Industrial Safety Officer
Telephone: (867) 669-4418
Facsimile: (867) 873-0262**

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Annex E

Insurance Conditions and Insurer's Certificate of Insurance

1. Insurance Conditions

1.1 Payment of Deductible

The payment of monies up to the deductible amount made in satisfaction of a claim shall be borne by the Contractor.

1.2 Representation and Warranty

The Contractor has represented that it has in place and effect the appropriate liability insurance coverage as required by these Insurance Conditions and the Contractor has verified and warrants that it shall obtain, in a timely manner and prior to commencement of the Work, the appropriate property insurance coverage as required by these Insurance Conditions and, further, that it shall maintain all required insurance policies in place and effect as required by these Insurance Conditions.

1.3 Period of Insurance

Unless otherwise directed in writing by the Contracting Officer or otherwise stipulated elsewhere in these Insurance Conditions, the policies required hereunder shall be in force and be maintained from the date of contract award until the day of issue of the Departmental Representative's Final Certificate of Completion.

1.4 Insurance Requirements (G1001C 2008-05-12)

1.4.1 The Contractor must comply with the insurance requirements specified in Annex E. The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

1.4.2 The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

1.4.3 The Contractor must forward to the Contracting Authority within ten (10) days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. Coverage must be placed with an Insurer licensed to carry out business in Canada. The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

1.5 Certificate of Insurance

1.5.1 The Certificate of Insurance is enclosed herein as per 1.9.

1.5.2 The Certificate of Insurance shall be forwarded as specified in 1.4.3.

1.6 Aviation Liability Insurance (G2030C 2008-05-12)

1.6.1 The Contractor must obtain Aviation Liability Insurance for Bodily Injury (including passenger Bodily Injury) and Property Damage, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$5,000,000 per accident or occurrence and in the annual aggregate.

1.6.2 The Aviation Liability policy must include the following:

- (a)** Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, represented by Public Works and Government Services Canada.
- (b)** Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
- (c)** Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
- (d)** Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
- (e)** Employees and, where applicable, Volunteers must be included as Additional Insured.
- (f)** Aviation Passenger Liability and inclusive Medical Payments: If sub-limits are applicable to Contractor's policy conforming to international carriage agreements or otherwise, such sub-limits must in any event be, not less than, \$300,000 per person. The per accident limit should be no less than \$300,000 multiplied by the number of passengers.
- (g)** If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
- (h)** Employers Liability (unless we have confirmation that all employees are covered by Worker's compensation (WSIB) or similar program).
- (i)** Products and Completed Operations: To cover liability arising from the sale and service of aviation products, assembly and repair activities, in connection with the Work performed by or on behalf of the Contractor.
- (j)** Airport Tenants' Legal Liability Broad Form: To protect the Contractor for liabilities arising from its occupancy of leased airport premises.
- (k)** Non-owned Aircraft Liability: To protect the Contractor for liabilities arising from its use of aircraft owned by other parties including Canada.

- (I) *Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.*

For the province of Quebec, send to:

Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice,
284 Wellington Street, Room SAT-6042,
Ottawa, Ontario, K1A 0H8

For other provinces and territories, send to:

Senior General Counsel,
Civil Litigation Section,
Department of Justice
234 Wellington Street, East Tower
Ottawa, Ontario K1A 0H8

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada

1.7 Automobile Liability Insurance (G2020C 2008-05-12)

1.7.1 The Contractor must obtain Automobile Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$2,000,000 per accident or occurrence.

1.7.2 The policy must include the following:

- (a) Third Party Liability - \$2,000,000 Minimum Limit per Accident or Occurrence
- (b) Accident Benefits - all jurisdictional statutes
- (c) Uninsured Motorist Protection
- (d) Notice of Cancellation: The Insurer will endeavor to provide the Contracting Authority thirty (30) days written notice of cancellation.
- (e) OPCF/SEF/QEF #3 - Drive Government Automobiles Endorsement.

1.8 Environmental Impairment Liability Insurance (G2040C 2008-05-12)

1.8.1 The Contractor must obtain Contractors Pollution Liability insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$1,000,000 per accident or occurrence and in the annual aggregate.

1.8.2 If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.

1.8.3 The Contractors Pollution Liability insurance policy must include the following:

- (a) Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.
- (b) Notice of Cancellation: The Insurer will endeavor to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
- (c) Separation of Insureds: The policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
- (d) Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
- (e) Incidental Transit Extension: The policy must extend to losses arising from any waste, products or materials transported, shipped, or delivered via any transportation mode to a location beyond the boundaries of a site at which the Contractor or any entity for which the Contractor is legally liable is performing or has performed the operations described in the contract.

- (f) Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:
Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice
284 Wellington Street, Room SAT-6042,
Ottawa, Ontario K1A 0H8

For other provinces and territories, send to:
Senior General Counsel,
Civil Litigation Section,
Department of Justice,
234 Wellington Street, East Tower
Ottawa, Ontario, K1A 0H8

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

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1.9 Insurer's Certificate of Insurance

(To be completed by Insurer (not broker) and delivered to Public Works and Government Services Canada as specified in 1.4.3)

CONTRACT

Description of Work:

Contract No.:

Award Date:

Location:

INSURER

Name _____

Address _____

BROKER

Name _____

Address _____

INSURED

Name of Contractor _____

Address _____

ADDITIONAL INSURED

Canada as represented by the Minister of Public
Works and Government Services

PWGSC Western Region

Telus Plaza North, 5th Floor

10025 Jasper Avenue

Edmonton, Alberta T5J 1S6

This document certifies that the following policies of insurance are at present in force covering all operations of the Insured, in connection with the contract made between the named insured and Public Works and Government Services Canada:

POLICY

Type of	Number	Inception Date	Expiry Date	Limits of Liability	Deductible
---------	--------	-------------------	----------------	------------------------	------------

Aviation Liability Insurance (includes a additional insured requirement):

Automobile Liability Insurance (excludes an additional insured requirement):

Environmental Impairment Liability Insurance (includes a additional insured requirement):

Other (if required):

Each of these policies includes coverages/provisions as specified in the Insurance Coverage Requirements in this document which form part of this contract and each policy has been endorsed to cover Canada as an Additional Insured (excluding Automobile Liability Insurance). The Insurer agrees to notify Canada and the Insured in writing 30 days prior to any material change in, or cancellation of any policy or coverage.

Name of Insurer's Officer
or Authorized Employee

Telephone Number

Signature

Date

ISSUANCE OF THIS CERTIFICATE SHALL NOT LIMIT OR RESTRICT THE RIGHT OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA TO REQUEST AT ANY TIME DUPLICATE CERTIFIED COPIES OF SAID INSURANCE POLICIES.

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Annex F

Proposed Basis of Pricing (Will Form Basis of Payment In Contract)

- 1) Section 1 - Basis of Payment**
- 2) Section 1a - BOPC-1 Cost Breakdown**

Proposed Basis of Pricing - Known Work (Will form the Basis of Payment)

Section 1 - Firm Unit/Lump Sum Prices - Based on Estimated Quantities Inuvik Mike Zubko Airport, Inuvik, Northwest Territories During the Period of the Contract.

The bidder shall enter pricing for each item in the tables below. If an item is to be provided at no cost, enter zero. If any item is left blank, it will be assumed that the item will be provided at no cost, and all pricing extensions will be calculated accordingly, and where applicable the bidder will be held to the resulting total price. In extreme cases of omission, and at the discretion of the Contracting Authority, the bidder may be given the opportunity to withdraw its bid from this competition.

1.0 FIRM UNIT/LUMP SUM PRICES: PERIOD OF CONTRACT

- 1.1** The Contractor will be paid a separate firm unit or lump sum price, including profit, for the items identified herein, FOB, Inuvik Mike Zubko Airport, Inuvik, Northwest Territories Custom duty included where applicable, Goods and Services Tax (GST) extra, as appropriate for the duration of the Contract Period.
- 1.2** If the final quantity of the price per unit item exceeds the estimated tendered quantity by more than 15%, either party to the Contract may make a written request to the other party to negotiate an amended price per unit for that portion of the item which exceeds 115% of the estimated tendered quantity, and to facilitate approval of any amended price per unit, the Contractor shall, on request, provide Canada with
 - 1.2.1** detailed records of the actual cost to the Contractor of performing or supplying the tendered quantity for the price per unit item up to the time the negotiation was requested; and
 - 1.2.2** the estimated unit cost of labour, Plant and Material required for the portion of the item that is in excess of 115% of the tendered quantity.
- 1.3** If it appears that the final quantity of labour, Plant and Material under a price per unit item shall be less than 85% of the estimated tendered quantity, either party to the Contract may make a written request to the other party to negotiate a change to the price per unit for the item if
 - 1.3.1** there is a demonstrable difference between the unit cost to the Contractor of performing or supplying the estimated tendered quantity and the unit cost to the Contractor for performing or supplying the final quantity; and
 - 1.3.2** the difference in unit cost is due solely to the decrease in quantity and not to any other cause.
 - 1.3.3** the onus of establishing, justifying and quantifying a proposed change lies with the party making the request for negotiation; and
 - 1.3.4** in no event shall the total price for an item that has been amended as a result of a reduction in quantity exceed the amount that would have been payable to the Contractor had 85% of the tendered quantity actually been performed or supplied.

Section 1 - Proposed Basis of Pricing
Firm Unit/Lump Sum Prices (Based on Estimated Quantities)
During the Period of the Contract
Inuvik Mike Zubko Airport , Remediation, Inuvik, Northwest Territories

Item #	Description	Unit	Quantity	Unit Price	Total
BOPC-1	Balance of Project Costs - Includes any variable, indirect costs including all costs not directly attributable to the pay items including profit, supervision, overhead, administration, CGL Insurance, WCB, allowances for equipment repairs and all other indirect costs associated with specific unit price, etc.	lump sum			
01 11 00-1	Worker Orientation Seminar	lump sum			
01 31 19-1	Project Start-up Teleconference Meeting	each	1		
01 31 19-3	Construction Meetings	lump sum			
01 33 00-1	Photographs	lump sum			
01 35 32-1	Site Specific Health and Safety Plan	each	1		
01 53 00-1	Mobilization	lump sum			
01 53 00-2	Demobilization	lump sum			
01 71 00-1	Survey	lump sum			\$ _____
01 77 00-1	Post Demobilization Inspection	lump sum			
01 78 00-1	Project Record Documents	lump sum			
02 55 13-1	Contaminated Soil Excavation and Backfill	m ³	5,100	\$ _____	\$ _____
31 22 15-1	Road and Access Upgrades and Replacement	lump sum		\$ _____	\$ _____
31 32 21-1	Geotextile - Supply	m ²	6,200	\$ _____	\$ _____
31 32 21-1	Geotextile - Installation	m ²	6,200	\$ _____	\$ _____
31 32 22-1	Geomembrane- Supply	m ²	6,200	\$ _____	\$ _____
31 32 22-1	Geomembrane- Installation	m ²	6,200	\$ _____	\$ _____
Sub-Total Estimated Price (BOP)					\$ _____
G.S.T. (5%)					\$ _____
Total Estimated Price (BOP)					\$ _____

Section - 1a - Balance of Project Cost BOPC-1

Provision of Item Breakdown(s) This form is intended to provide the Contracting Authority with a breakdown of the costs included in the BOPC-1. It will assist in determining if the cost represents value for money and are considered "fair and reasonable". The cost break down provided herein must equal the total provided in the **BOPC-1 in Section 1** of the proposed Basis of Payment. **Note:** Refer to 1031-2 article Spec Section 07 for Non Applicable Costs. Further breakdown may be requested where applicable.

Item	Description	Amount
00 11 21	Summary of Work i.e Balance of Project Costs for project including but not limited to: -Any variable indirect Costs for Overhead and Admin. - Costs for expeditors -Closeout submittals -CGL Insurance -All Risk Insurance -WCB Costs -Business Expenses -Ancillary Equipment, -Service Vehicles -Supervision, -Equipment repairs and parts supply & transport	 \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____
01 11 00	Summary of Work	\$ _____
01 31 19	Project Meetings	\$ _____
01 32 18	Construction Progress Schedules - Bar (GANTT) Chart	\$ _____
01 33 00	Submittal Procedures	\$ _____
01 35 15	Special Project Procedures for Contaminated Sites	\$ _____
01 35 32	Site Specific Health and Safety Plan	\$ _____
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 53 00	Mobilization and Demobilization	\$ _____
01 61 00	Common Product Requirements	\$ _____
01 71 00	Survey Requirements	\$ _____
01 77 00	Closeout Procedures	\$ _____
01 78 00	Closeout Submittals	\$ _____
02 55 13	Contaminated Soil	\$ _____
31 22 15	Grading	\$ _____
31 32 21	Geotextiles	\$ _____

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31 32 22	Geomembranes	\$
Total for BOPC Breakdown. This dollar amount must be equal to that of which is provided in the Basis of Pricing BOPC-1.		\$

Proposed Basis of Pricing - Summary of Estimated Prices	
Total - Estimated Price - Section 1 - BOP (GST Extra)	\$ _____
GST Extra @ 5%	\$ _____
Total Estimated Price - (GST Included)	\$ _____

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Annex G

Terms of Payment

Terms of Payment

TP1 Basis of Payment

- 1.1** The Contractor will be paid its costs reasonably and properly incurred in accordance with the firm unit/lump sum prices in the performance of the Work, as per Annex F, attached, and forming part of this Contract.

TP2 Limitation of Expenditure

- 2.1** Canada's total liability under this contract shall not exceed \$ __ (T.B.A.) __, Goods and Services Tax or Harmonized Sales Tax extra, as appropriate.
- 2.2** No increase in the total liability of Canada or in the price of Work resulting from any design changes, modifications or interpretations of specifications, made by the Contractor, will be authorized or paid to the Contractor unless such changes, modifications or interpretations, have been approved, in writing, by the Contracting Authority, prior to their incorporation into the Work. The Contractor shall not be obliged to perform any work or provide any service that would cause the total liability of Canada to be exceeded without the prior written approval of the Contracting Authority.

TP3 Method of Payment

- 3.1** Payments will be made, not more frequently than once per month, for the costs and charges incurred, less the holdback, in accordance with the Basis of Payment, Annex F, attached.
- 3.2** The Contractor shall maintain detailed accurate records broken down into section headers as per Annex "F", attached. At the end of each month, the Contractor shall deliver the original and two (2) copies of the completed PWGSC - Claim for Payment, to the Departmental Representative, for payment processing.
- 3.2.1** Cost verification and audit, for any Potential Additional Work or Service in accordance with the contract requirements, may be performed by a Government Auditor. All backup documentation receipts, vouchers, time cards, etc. to support the claim, will remain with the contractor and must be retained for at least five (5) years upon contract expiry.
- 3.3** Each claim shall include:
- 3.3.1** a written monthly progress claim report that fully describes any part of the work that has been completed, and any material that was delivered to the work site but not incorporated into the work, during that payment period;
- 3.3.2** the Contract Number and Financial Codes as given on Page 1 of the Contract;
- 3.3.3** the amount currently claimed, the total amount of the previous claims, and the cumulative total to date;
- 3.3.4** the holdback of ten (10) percent; except
- 3.3.4.1** The Crown will allow a one time firm lump sum payment for mobilization at start-up (not subject to holdback) and;

-
- 3.3.4.2** The Crown will allow a one time firm lump sum payment for demobilization at shutdown (not subject to holdback);
- 3.3.5** the Goods and Services Tax (GST) / Harmonized Sales Tax (HST) as a separate item; and the GST/HST registration number.
- 3.3.6** a statutory declaration containing a deposition by the Contractor that, up to the date of the Contractor's progress claim, the Contractor has complied with all its lawful obligations with respect to the Labour Conditions and that all lawful obligations of the Contractor to subcontractors and suppliers of material in respect of the work under the contract have been fully discharged.
- 3.4.** The Departmental Representative shall, not later than fifteen (15) days after receipt of a progress claim, inspect the part of the work and the material described in the progress claim
- 3.5** The holdback will be paid annually at the end of the field season and upon completion of the contract subject to:
- 3.5.1** completion and acceptance of the Work;
- 3.5.2** the submission of all deliverable items, including government furnished equipment or purchased equipment, as applicable, to the Departmental Representative.
- 3.5.3** the approval of the claim for holdback by the Crown.
- 3.6** Payment by Canada to the Contractor for the Work shall be made:
- 3.6.1** in the case of a progress payment other than the final payment, within thirty (30) days following the date of receipt of a duly completed Contractor's claim; or
- 3.6.2** in the case of a final payment, within thirty (30) days following the date of receipt of a duly completed Contractor's claim, or within thirty (30) days following the date on which the work is completed, whichever date is the later;
- 3.6.3** if Canada has any objection to the form of the claim, within fifteen (15) days of its receipt, Canada shall notify the Contractor of the nature of the objection. "Form of the claim" means a claim which contains or is accompanied by such substantiating documentation as Canada requires. Failure by Canada to act within fifteen (15) days will only result in the date specified in subparagraphs 3.6.1 and 3.6.2 of this clause applying for the sole purpose of calculating interest on overdue accounts.

TP4 T1204 - Invoicing Instructions

- 4.1** Pursuant to paragraph 221(1)(d) of the Income Tax Act, R.S.C. 1985 c.1 (5th Sup.), payments made by departments and agencies to contractors under applicable services contracts (including contracts involving a mix of goods and services) must be reported on a T1204 Government Service Contract Payments slip.
- 4.2** To enable departments and agencies to comply with this requirement, the Contractor must provide the following information with its first invoice:
- 4.2.1** the legal name of the Contractor, i.e. the legal name associated with its business number or Social Insurance Number (SIN), as well as its address and postal code;

-
- 4.2.2** the status of the Contractor, i.e. an individual, a sole proprietorship, a corporation, or a partnership;
- 4.2.3** the business number of the Contractor if the Contractor is a corporation or a partnership and the SIN if the Contractor is an individual or a sole proprietorship. In the case of a partnership, if the partnership does not have a business number, the partner who has signed the Contract must provide its SIN;
- 4.2.4** in the case of a joint venture, the business number of all parties to the joint venture who have a business number or their SIN if they do not have a business number.
- 4.3** If the information includes a SIN, the information should be provided in a separate envelope marked "PROTECTED" and attached to the invoice.

TP5 Delay in Making Payment

- 5.1** Notwithstanding GC6 any delay by Canada in making any payment when it is due pursuant to these Terms of Payment shall not be a breach of the contract by Canada.

TP6 Interest on Overdue Accounts

- 6.1** For the purposes of this clause:
- 6.1.1** "Bank Rate" means the rate of interest established from time to time by the Bank of Canada as the minimum rate at which the Bank of Canada makes short term advances to members of the Canadian Payments Association.
- 6.1.2** "Average Bank Rate" means the simple arithmetic mean of the Bank Rates in effect at 4:00 EST each day during the calendar month which immediately precedes the calendar month in which payment is made.
- 6.1.3** "date of payment means the date of the negotiable instrument of an amount due and payable by the Receiver General for Canada.
- 6.1.4** an amount is "due and payable" when it is due and payable by Canada to the Contractor in accordance with the terms of the Contract; and
- 6.1.5** an amount is "overdue" when it remains unpaid after the day upon which it is due and payable.
- 6.2** Canada shall be liable to pay, to the Contractor, simple interest at the Average Bank Rate plus 3 percent per annum on any amount that is Overdue. The interest shall apply from the date such amount becomes Overdue until the day prior to the Date of Payment inclusively.
- 6.3** Interest shall be paid to the Contractor without demand on Overdue payments, except, in respect to amounts which are less than fifteen (15) days Overdue, in which case, no interest shall be paid unless the Contractor so demands.
- 6.4** Canada shall not be liable to pay interest on Overdue advance payments or where Canada is not responsible for the delay in paying the Contractor.

TP7 Progress Report and Payment Thereunder not Binding on Canada

- 7.1** Progress payments shall be regarded as interim payments only and the Minister shall have the right to conduct interim cost/time verifications or audits and to make adjustments from time to time during the performance of the Work. Any overpayment resulting from such progress payments or otherwise shall be refunded promptly to Canada.
- 7.2** Neither a progress report referred to in TP3.3.1 nor any payment made by Canada pursuant to these Terms of Payment shall be construed as an admission by Canada that the work, material or any part thereof is complete, is satisfactory or is in accordance with the contract.

TP8 Right of Set-off

- 8.1** Without limiting any right of setoff or deduction given or implied by law or elsewhere in the contract, Canada may set off any amount payable to Canada by the Contractor under this contract or under any current contract against any amount payable to the Contractor under this contract.
- 8.2** For the purposes of TP8.1, "current contract" means a contract between Canada and the Contractor
- 8.2.1** under which the Contractor has an undischarged obligation to perform or supply work, labour or material, or
- 8.2.2** in respect of which Canada has, since the date on which these articles of agreement were made, exercised any right to take the work that is the subject of the contract out of the Contractor's hands.

TP9 Interest on Settled Claims

- 9.1** Canada shall pay to the Contractor simple interest on the amount of a settled claim at the Average Bank Rate plus 3 per cent per annum from the date the settled claim was outstanding until the day prior to the date of payment.
- 9.2** For the purposes of TP9.1,
- 9.2.1** a claim is deemed to have been settled when an agreement in writing is signed by the parties setting out the amount of the claim to be paid by Canada and the items of work for which the said amount is to be paid.
- 9.2.2** a settled claim is deemed to be outstanding from the day immediately following the date the said claim would have been due and payable under the contract had it not been disputed.
- 9.3** For the purposes of TP9 a claim means a disputed amount subject to negotiation between Canada and the Contractor under the contract.

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Annex H

Certifications and Required Documentation

Certifications and Required Documentation

Bidders must provide the required certifications and documentation to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default, if any certification made by the Bidder is found to be untrue whether during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with this request will also render the bid non-responsive or will constitute a default under the Contract.

1 Certifications Required At Solicitation Closing (If Bidder wishes to receive optional evaluation for Aboriginal Opportunity Consideration as outlined in section 2.6 of Annex I.)

1.1. Guarantee of Inuvialuit and/or Gwitch'in Employee Content - On Site Contractors & Sub-Contractors - % of Inuvialuit and/or Gwitch'in Employee Content

Total On-Site Estimated Person Hours For This Project: _____

Total On Site Estimated Inuvialuit and/or Gwitch'in Person Hours For This Project: _____

Total No. Non- Inuvialuit and/or Gwitch'in Person Hours For This Project: _____

Total No. Of Inuvialuit and/or Gwitch'in Person Hours For This Project = _____ %
Total No. Of Person Hours For This Project

Name & Position Title (Provide name(s) where possible)	Inuvialuit and/or Gwitch'in Employee	Non-Inuvialuit and/or Gwitch'in Employee

**1.2 Guarantee Of Inuvialuit and/or Gwitch'in Content For Contracting
Estimated Value of Inuvialuit and/or Gwitch'in Employee Content For Contracting - %
Inuvialuit and/or Gwitch'in Subcontractor/Business Content**

Total Estimated Cost For Supplies/Materials, Equipment And
Services Procured From Inuvialuit and/or Gwitch'in Companies For This Project = _____ %
Total Estimated Cost For This Project

Note: if the Prime Contractor is a business from the area of the contract, the total dollar value of the Inuvialuit and/or Gwitch'in contracting shall also include the contractor's share of the clean up.

Name of Contractor and Location (If Available)	Inuvialuit and/or Gwitch'in Company	Non- Inuvialuit and/or Gwitch'in Company

2. Mandatory Certifications Required Precedent to Contract Award

2.1 Code of Conduct and Certifications - Related Documentation

By submitting a bid, the Bidder certifies that the Bidder and its affiliates are in compliance with the provisions as stated in Section 01 Code of Conduct and Certifications - Bid of Standard Instructions 2003. The related documentation therein required will assist Canada in confirming that the certifications are true.

3. Additional Certifications Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

3.1 Joint Venture

The Bidder represents that the bidding entity is / is not (delete as applicable) a joint venture as defined in *section 17 of the 2003 (2012-11-19) Standard Instructions - Goods or services - Competitive Requirements*. A Bidder that is a joint venture represents the following additional information:

(a) Type of joint venture (mark applicable choice):

- ☐ incorporated joint venture
☐ limited partnership joint venture
☐ partnership joint venture
☐ contractual joint venture
☐ other

(b) Composition: (names and addresses of all members of the joint venture.)

(c) Procurement Business Number of the Joint Venture

3.2 Contractor's Representative

Name:

Company:

Address:

Telephone: () -

Facsimile: () -

E-mail address:

3.3 Name and Location of Designated Licensed Waste Facility Certification

Bidders are to identify and provide the name and location of the licensed waste facility they will be shipping to and disposing of hazardous/non-hazardous waste(s) for this project as follows:

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Name:

Location:

Facility License No.:

Telephone No.:

(Name - Print)

(Signature of Authorized Officer)

(Date)

The Contractor certifies herein that information regarding the name and location of licensed waste facility, submitted with its bid is accurate and complete.

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Annex I

- 1. Evaluation Procedures**
- 2. Basis of Selection**
- 3. Selection Method**
- 4. Evaluation Criteria**

1. Evaluation

- 1.1** Each bid must first meet all of the mandatory requirements set out in the evaluation criteria. Bids which fail to meet these requirements will be considered unresponsive and will receive no further consideration.
- 1.2** Each rated evaluation criterion has a point allotment that reflects its importance in bid submissions. The degree to which the bid satisfies the requirement of each criterion will be assessed and a score will be assigned ranging from 0 to the total point allotment, with 0 meaning the bid completely fails to satisfy the requirements, and the total allotment meaning the bid fully meets the outlined criterion.
- 1.3** Each bid must achieve a minimum of 60% score for the Technical portion and a minimum of 60% score for the Management and Organizational portion. Bids that fail to achieve the minimum score in either portion will be considered technically unacceptable and will be given no further consideration.

2. Selection Method - Combined Merit 60%/Cost 40%

- 2.1** The contractor will be selected on the basis of the Assessed Best Value with the highest combined rating of Merit - 60% (Technical, Management and Organizational and Aboriginal Opportunities Consideration) and Cost - 40% (Price).
- 2.2** The scoring for price will be done by allocating full marks to the lowest price bid, with the other bids being given a prorated score. Based on the results of the evaluations, the bidder with the highest combined total points, given that the price of the bid does not exceed the maximum premium of 15% of the lowest priced compliant bid, will be recommended for award of the contract. If the bidder with the highest combined total points exceeds the maximum premium of 15% of the lowest priced compliant bid, their bid will be considered non compliant and given no further consideration.

2.3 Calculation of Combined Merit/Cost Selection (Example Only)

Total Points Available = 200

Pass Mark = 60 % or 120 Points Minimum for Price to be considered.

Ratio of Importance = Tech/Mgt = 60 % - Price = 40 %

Maximum Premium Paid = 15% of Lowest Compliant Bid.

Summary of the Results of the Evaluation (Example Only)

Firm Name	Tech/MGT Bid (Pass = 120 Min)	Evaluated Price Bid (GST Included)	Weighted Score Merit = 60%	Weighted Score Cost = 40%	Total Score
Bidder "A"	175/200	\$1,000,000.	53	40 Low cost	93.0 Best Overall Bid
Bidder "B"	165/200	\$1,100,000.	50.0	37.0	87.0
Bidder "C"	155/200	\$1,150,000.	47.0	35.0	82.0
Bidder "D"	150/200	\$1,400,000.	45.0	N/A *	N/A *
Bidder "E"	112/200**	\$1,200,400.	N/A	N/A	N/A

* Bidder "D" - Price exceeds the lowest-priced compliant bid by more than 15%.

** Bidder "E" - Failed to reach minimum points given no further consideration.

2.4 Technical Bid Evaluation

ITEM	CATEGORY	AVAILABLE POINTS
2.4	Technical Proposal	
2.4.1	Clear, Concise and Complete Proposal <ul style="list-style-type: none"> Provided a clear, concise and complete proposal that is well organised. All criteria were addressed in a logical order and in sufficient depth, communicating a clear understanding of the project and its requirements. 	5
2.4.2	Project Understanding <ul style="list-style-type: none"> Demonstrated understanding of the scope of work as well as the unique nature of the project relative to, but not limited to, the constraints of working in a remote northern area. 	10
2.4.3	Health and Safety <ul style="list-style-type: none"> Identified the risks and hazards specific to site and provided details on how they would be mitigated and/or managed. 	15
2.4.4	Equipment	
2.4.4.1	Remediation Equipment and Supplies <ul style="list-style-type: none"> Provided a detailed inventory of equipment proposed for site work including, condition and age/hours of heavy equipment. Provided details on how equipment will meet the specific site constraints, equipment redundancy, on-site equipment maintenance, spare parts inventory and dedicated repair and maintenance staff. Provided a detailed inventory of the remediation supplies necessary to complete the work. Included identification of potential problems and mitigative measures. 	30
2.4.5	Description of Work	
2.4.5.1	Mobilization/Demobilization <ul style="list-style-type: none"> Provided a detailed description on how all equipment, materials, supplies and personnel proposed for use at the site will be transported to and from the site. Included identification of potential problems and mitigative measures. 	30

ITEM	CATEGORY	AVAILABLE POINTS
2.4	Technical Proposal	
2.4.5.2	Borrow Source <ul style="list-style-type: none"> • Provided details regarding use of the identified borrow sources and the estimated quantities of material to be used. • Included identification of potential problems and mitigative measures. 	10
2.4.5.3	Collection and Sorting of Debris <ul style="list-style-type: none"> • Provided details regarding how non-hazardous waste will be collected and sorted. • Provided detailed discussion of how specifically debris from the soil stockpiled adjacent to the West LTU will be screened and collected for disposal. Discussion included identification of hazards specific to this task and how they will be mitigated. • Provided details on the Material Processing Area including locations, dimensions, and general layout. • Identified potential problems and mitigative measures. 	10
2.4.5.4	Landfarm Treatment Unit <ul style="list-style-type: none"> • Provided detail on the construction of the landfarm treatment unit including the placements of liners, and the containment and treatment of contact water. • Provided details regarding how the petroleum hydrocarbon contaminated soil will be excavated and how it will be transported to the identified treatment unit. • Provided details on mitigative measures to complete the construction of the landfarm treatment unit if landfarm treatment construction materials are delayed arriving to site. • Identified potential problems and mitigative measures. 	25

ITEM	CATEGORY	AVAILABLE POINTS
2.4	Technical Proposal	
2.4.5.5	Packaging, Transport, and Disposal of Non-Hazardous Waste <ul style="list-style-type: none"> • Provided details regarding how the various non-hazardous waste materials will be transported to an accepting facility including any interim storage as necessary. • Included a letter from the proposed waste disposal facility confirming that they are licensed to accept the non-hazardous waste material. • Identified potential problems and mitigative measures. 	10
2.4.5.6	Schedule <ul style="list-style-type: none"> • Provided a schedule which clearly shows if the remediation activities will be completed concurrently or sequentially. • Prepared a schedule of activities that illustrated the duration of each of the major tasks. • Each task was broken down into sufficient sub tasks so that project progress can be easily monitored by the Departmental Representative. • Identified the critical path of activities within the schedule and what "float" is included within the duration of the specified activities. • The schedule clearly indicated the sequence of work activities. • Provided written assurance that the proposed schedule will be adhered to and that time and associated operating expenses required to perform the known contract Work is at contractor's cost. 	40
Total Points Available This Section		185
Minimum Points Acceptable Overall Under Technical Bid		111 (60%)
Total Points Awarded This Section		

2.5 Management and Organizational Evaluation

ITEM	CATEGORY	AVAILABLE POINTS
2.5	Management and Organization Proposal	
2.5.1	Company/Joint Venture/ Consortium Qualifications and Experience <ul style="list-style-type: none"> • Provided details on the qualifications on bidder's company/joint venture/consortium, and historical background information demonstrating experience specifically related to similar scope of work activities at remote northern locations. 	20
2.5.2	Client References: <ul style="list-style-type: none"> • Provided evidence of up to three (3) similar remediation projects successfully undertaken by the bidder which included key members of the proposed project team. A "similar project" for this evaluation is defined as a project completed at a remote northern location which consisted of similar work. The project team, their roles, the project objectives, scope of services, budget, completion date and deliverables were clearly identified. • Provided client letters of reference for each of the projects identified that are signed and dated by the Bidder's client and, at a minimum, specifically address the following items: <ol style="list-style-type: none"> 1. Extent to which bidder delivered services on time 2. Extent to which bidder delivered services on budget 3. Extent to which bidder met objective of the project • Points are awarded to bidder for degree of overall achievement in each of the 3 sub-categories, and are not awarded on a project-by-project basis. 	30

ITEM	CATEGORY	AVAILABLE POINTS
2.5	Management and Organization Proposal	
2.5.3	<p>Qualifications of Key Individuals:</p> <ul style="list-style-type: none"> • Provided resumes (up to 2 pages in length) for the following positions. Resumes included experience on similar projects, experience working in remote northern environments and experience in the proposed project role. <p>A. Project Manager (15) & back-up (4)</p> <ul style="list-style-type: none"> • Demonstrated experience managing remediation projects similar in scale and scope to the proposed project. • Experience included financial and schedule control, liaison with client. <p>B. Site Superintendent(15) and cross-shift (8)</p> <ul style="list-style-type: none"> • Demonstrated experience managing personnel in a remote setting. • Experience included site superintendent experience on remediation projects similar in scope to the proposed project. <p>C. Off-site (8) and on-site (10) Health & Safety Coordinators</p> <ul style="list-style-type: none"> • Demonstrated experience working in remote areas on remediation projects similar in scope to the proposed project. • Experienced in developing and implementing site specific health and safety programs for remediation sites <p>D. Non-Hazardous and Hazardous Waste Specialist (10)</p> <ul style="list-style-type: none"> • Demonstrated field experience on remediation projects similar in scope to the proposed project. • Experience included the identification, sampling, characterization, containerization and transportation and disposal of hazardous and non-hazardous materials. <p>NOTE:</p> <p>1.Back-up personnel are personnel assigned to the project if the identified personnel are not available due to illness, change in employment, etc.</p> <p>2.Cross-shift personnel are personnel who will regularly replace the identified personnel for shift changes during the site work.</p>	70

ITEM	CATEGORY	AVAILABLE POINTS
2.5	Management and Organization Proposal	
2.5.4	Staffing Contingency Plan <ul style="list-style-type: none"> Demonstrated ability to properly staff the project and contingency plans to cover off key team members. 	10
2.5.5	Organization Chart: <ul style="list-style-type: none"> Submitted a detailed Organization Chart of the Project Team showing Transport Canada, PWGSC, Departmental Representative, Contractor's Staff, Sub-Contractors. Included all of the resource elements including Contractor personnel and subcontractors. Identified who will be responsible for overall control and for the provisions for controlling costs and conformance to the Statement of Work. Clearly identified lines of communication for all parties. 	10
Total Points Available This Section		140
Minimum Points Acceptable - Management & Organizational Bid		84 (60%)
Total Points Awarded This Section		

2.6 Aboriginal Opportunities Consideration (AOC) (If Bidder wishes to receive optional evaluation for Aboriginal Opportunity Consideration as outlined in section 2.6 of Annex I.)

The following optional bonus points for Inuvialuit and/or Gwich'in benefits allow Bidders to provide a plan for considerations of local and/or Regional Inuvialuit and/or Gwich'in citizens and communities in the identified Comprehensive Land Claim Areas. Optional Bonus points will be added to the point rated criteria total points.

NOTE: If the Bidder fails the point rated criteria, the proposal will be considered technically unacceptable and will be given no further consideration and the optional bonus points, if applicable, will not be evaluated or considered.

ABORIGINAL OPPORTUNITIES	Point Value	Score
Offices Bidder has an office located in a Comprehensive Land Claim Area (Inuvialuit Final Agreement (IFA) and/or Gwich'in Comprehensive Land Claim Agreement (GCLCA))	5	
Labor Recruitment (Inuvialuit and/or Gwich'in Employment Content) Bidder included a firm guarantee to use Inuvialuit and/or Gwich'in employment content from the area of the contract in carrying out the work. The percentages identified below relate specifically to on-site labour hours regardless whether they are prime contractor staff or subcontractor staff. <ul style="list-style-type: none"> 0 – 33% of total labour hours 0-1 points 34-66% of total labour hours 2-3 points 67-100% of total labour hours 4-6 points 	6	
Sub-contractors/Suppliers Bidder Included a firm guarantee to use Inuvialuit and/or Gwich'in Sub-Contractors for services or the procurement of supplies and equipment from the area of the contract associated with the project. Ranges are based on expenditure for equipment associated, supplies and /or services as a percentage of the total estimated cost for the remediation contract not the number of businesses used. <ul style="list-style-type: none"> 0 – 33% of total estimated cost 0-1 points 34-66% of total estimated cost 2-3 points 67-100% of total estimated cost 4-6 points Note: if the Prime Contractor is a business from the area of the contract, the total dollar value of the Inuvialuit and/or Gwich'in contracting shall also include the contractor's share of the clean up.	6	
Total Points Available This Section - AOC (no minimum pass/fail)	17	

Solicitation No. - N° de l'invitation

EW699-140333/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

ncs107

Client Ref. No. - N° de réf. du client

File No. - N° du dossier

CCC No./N° CCC - FMS No/ N° VME

TC 20140333

NCS-3-36055

Total Points Awarded This Section

Evaluation Summary		
	Total Points Achieved - Technical Bid (60% of 140 = 111 pts) - PASS/FAIL	
	Total Points Achieved - Management and Organization Bid - (60% of 185 = 84 pts) - PASS/FAIL	
	Total Optional Points Achieved -Aboriginal Opportunities Consideration (AOC) (maximum available = 17 pts -no minimum pass/fail)	
	Total Overall Points Available - All Bid Sections	342
Contractor Selection - Highest Best Value = Merit + Cost		
Merit: (Bidder's Overall Total Point Score/Total Points Available) X 60		
	Merit Score	
	Cost : (Lowest Total Estimated Cost/Bidder's Total Estimated Cost) X 40	40
	Cost Score	
	Total Best Value Points Available	100
	Best Value Score	

Public Works and Government Services Canada

Specifications for Environmental Remediation

Inuvik Fire Training Area

Inuvik, NT

Prepared for

Public Works and Government Services Canada

Prepared by

AECOM Canada Ltd / PWGSC.

17007 - 107 Avenue

Edmonton Alberta T5S 1G3

2977-356-00

May, 2013

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END OF SECTION

LIST OF DRAWINGS

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C1	Location Plan
C2	Contaminated Soils Areas
C3	Sections and Details

LIST OF APPENDICES

No Appendices

END OF SECTION

PART 1 GENERAL

1.1 Precedence

- .1 Division 1 sections take precedence over technical specification sections in other Divisions of this specification.

1.2 Background Information

.1 Introduction

- .1 The Inuvik Fire Training Area is located at the Inuvik Airport, which was originally constructed in 1956–1958 and serves as a regional hub for delivery of services to smaller north-western communities. The airport is 10km southeast of Inuvik on the south side of the Dempster Highway.
- .2 Under an Airport Transfer Agreement (1995) between Transport Canada and the GNWT, Transport Canada is required to address any environmental regulatory deficiencies at the airport.

.2 Site Hazards

- .1 Hazards that may be encountered at the site include, but are not limited to:
 - .1 Debris
 - .2 Contaminated water
 - .3 Contaminated soil
 - .4 Site conditions
 - .5 Wildlife
 - .6 Air traffic
 - .7 Weather

.3 Site Access

- .1 Access points at the site include, but are not limited to:
 - .1 A 1,950 m airstrip at Inuvik (Mike Zubko) Airport,
 - .2 Via quarry access / FTA access road off of the Dempster Highway.

.4 Site Conditions

- .1 Confirm existing site conditions prior to mobilization.
- .2 Existing site infrastructure includes two (2) land treatment units and an access road.

.5 Supporting Documents

- .1 Supporting Documents include but are not limited to:
 - .1 Remedial Action Plan, Former Fire Training Area Inuvik (Mike Zubko) Airport Inuvik, NWT, Pottinger Gaherty Environmental Consultants Ltd. (PGL), March 2010

- .2 Phase III Environmental Site Assessment, Former Fire Training Area (APEC #2) Inuvik (Mike Zubko) Airport Inuvik, NWT, Pottinger Gaherty Environmental Consultants Ltd. (PGL), February 2010

1.3 Description of Work

- .1 Work of this Contract comprises site remediation activities at the Fire Training Area, including, but not limited to, the following:
 - .1 Mobilization and demobilization of all personnel, equipment, support facilities and materials required to complete the Work.
 - .2 Upgrading of site access routes, as required to facilitate construction activities. Gravel access road currently has pot holes.
 - .3 Development and rehabilitation of quarry borrow source.
 - .4 Processing of native soils for backfill and grading requirements as necessary.
 - .5 Construction of sump area and liner at existing East land treatment area. Adequate Liner materials for this purpose are supplied by Department. Additional Liner materials are not supplied by Department.
 - .6 Excavation of contaminated soil including transportation and placement in adjacent East land treatment area.
 - .7 Screening of former liner material from stockpiled soil at West land treatment and removal of former liner material from West LTU area.
 - .8 Placement of screened soil in West LTU.
 - .9 Regrading and backfill of areas as indicated.
 - .10 Necessary maintenance of access road after excavation activities.
 - .11 Provision of the following site support services:
 - .1 Safety and fire protection as specified in Section 01 35 32 - Site Specific Health and Safety Plan.

1.4 Definitions

- .1 Departmental Representative: Within the context of these Specifications, the term Departmental Representative refers to the person exercising the roles and attributes of Canada under the contract.

- .2 Departmental Representative's Authorized Personnel: Within the context of these Specifications, the term Departmental Representative's Authorized Personnel refers to personnel appointed by Departmental Representative or authorized on-site by Departmental Representative. Departmental Representative's Authorized Personnel provide recommendations/technical guidance to Departmental Representative as required, for the enforcement of these specifications.
- .3 Contractor: The Contractor procured to undertake the site management and operation services, safety, decontamination/demolition, remediation and restoration work is defined, within the context of these specifications, as the Contractor. Contractor is considered Prime Contractor within the context of these specifications.
- .4 Contractor's Site Superintendent: Contractor's resident site representative, who is authorized to make decisions on behalf of Contractor.
- .5 Supply: Supply and install, operate, submit or any other procedure necessary to complete the work as intended.
- .6 Authorities Having Jurisdiction (AHJ): Governmental agency or sub-agency that regulates the codes and standards that are to be met during the remediation processes.

1.5 Submittals

- .1 All submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.6 On-Site Documents

- .1 Maintain at job site, one copy each of the following:
 - .1 Contract drawings.
 - .2 Contract and Contract Specifications, including all other contract documents.
 - .3 Requests for Clarification and responses.
 - .4 Addenda.
 - .5 Change Orders.
 - .6 Reviewed shop drawings.
 - .7 Other modifications to Contract.
 - .8 Field test reports.
 - .9 Copy of approved Work Schedule.
 - .10 Manufacturers' installation and application instructions.
 - .11 Material and Safety Data Sheets Specifications.
 - .12 Site Specific Health and Safety Plan, including:
 - .1 Spill Contingency Plan;
 - .2 Fire Safety Plan; and
 - .3 Emergency Response Plan.
 - .13 Labour conditions and wage Schedules.
 - .14 Canada Labour Code – Part II.
 - .15 Up-to-date record drawings.
 - .16 All applicable Territorial permits and licenses.
 - .17 All applicable Federal permits and licenses.
 - .18 Copies of manifests and bills of loading.
 - .19 Worker Training Program and Records.
 - .20 WCB Notification of Project.

- .21 Letter of Good Standing with WCB.
- .22 Other documents as specified.

1.7 Work Schedule

- .1 Provide and maintain Work Schedule in accordance with instructions of Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.
- .2 Keep the Departmental Representative advised of planned Work activities in accordance with the instructions of Section 01 33 00 - Submittal Procedures.

1.8 Contractor Use of Site

- .1 Use of site is unrestricted until substantial performance, with the following exceptions:
 - .1 Coordinate use of premises under direction of Departmental Representative.
 - .2 All work to be conducted in accordance with the Plan of Construction Operations (PCO), to be obtained by airport operations staff

1.9 Examination of Site

- .1 Commencement of mobilization constitutes acceptance of existing conditions, and verification of dimensions.

1.10 Permits and Licenses

- .1 Be responsible for obtaining and paying for all permits, licenses and approvals associated with the work. Quarry permit will be supplied by Department.
- .2 Register, obtain and pay for all required licenses and permits for individual tradesmen employed for Work as referenced in the various Sections of the Contract Specifications for the duration of employment.
- .3 Obtain and pay for any other licenses or permits required to perform the activities required on-site.
- .4 Provide supplemental information to the regulators for any necessary license amendments or reporting requirements.
- .5 Pay all costs associated with complying with the requirements for the permits and licenses noted in the above clauses.

1.11 Site Supervision

- .1 Designate Contractor's Site Superintendent to be on-site at all times during construction, to have full authority to make decisions for Contractor, to be knowledgeable of the requirements of the contract, and to act upon Departmental Representative's instructions.
- .2 Notify Departmental Representative one (1) week in advance of Site Superintendant change and provide updated delegation of authority.

- .3 Departmental Representative will review the Site Superintendent's performance, and may request a replacement if the Site Superintendent is not meeting the requirements of the position. Contractor will not be reimbursed for the costs of the Site Superintendent's replacement.

1.12 Additional Drawings

- .1 Departmental Representative may furnish additional drawings to assist with proper execution of the Work. These drawings will be issued for clarification only. Such drawings have the same meaning and intent as if they were included with plans referred to in Contract Documents.

1.13 Worker Orientation Seminar

- .1 Develop, prior to the start of Work, site and scale appropriate course material for a Worker Orientation Seminar. This seminar is intended to describe the remediation activities at the site, and provide instruction for the applicable health, safety, and environmental policies and regulations as related to the site Work activities. Appropriate course material will be prepared and presented in English and the local language and dialect, as required.
- .2 Submit one (1) electronic copy of the Worker Orientation Seminar course material to the Departmental Representative for review at least five (5) days prior to the seminar. Include information regarding the facility to be used for conducting the seminar.
- .3 The Orientation Course is suggested to address, but is not necessarily limited to, the following topics:
 - .1 Project Communication:
 - .1 Roles of Departmental Representative and Departmental Representative's authorized representatives.
 - .2 Roles of Contractor and Contractor's authorized representatives.
 - .3 Lines of Project communication.
 - .2 Regional Overview of the Inuvik area:
 - .1 Land use of area (hunting, fishing activities, etc.).
 - .2 Location of site relative to communities.
 - .3 Climate.
 - .3 Project Organization/Schedule/Administration:
 - .1 Personnel policies.
 - .2 Supervisory reporting relationships.
 - .3 Communication.
 - .4 Payroll and banking procedures.
 - .5 Work Schedules and hours.
 - .4 Environmental Issues and Protection Procedures:
 - .1 Land use.
 - .2 Water resources/fisheries.
 - .3 Terrestrial resources.
 - .4 Spill contingency plans/procedures.
 - .5 Training activities.

- .5 General Site Specific Health and Safety:
 - .1 Team Work.
 - .2 Work attitudes/productivity.
 - .3 Anti-Harassment Policy.
 - .4 First aid procedures.
 - .5 Protective equipment and clothing.
 - .6 Safe operation of equipment and tools.
 - .7 WHMIS requirements.
 - .8 Wildlife awareness.
 - .9 Emergency Communication Protocols
- .6 Work Specific Task Requirements:
 - .1 Airport Safety Requirements.
 - .2 Transportation of Dangerous Goods (TDG), as necessary.
 - .3 Environmental mitigation procedures.
 - .4 Emergency spill response training.
- .4 Prior to the start of Work, forward Worker Orientation Seminar material for review to all supervisors, foremen, Contractor's general Workforce, Departmental Representative and Departmental Representative's Authorized Personnel based on the course material reviewed by Departmental Representative. Require each attendee to sign a record of attendance upon completion of the seminar. Retain this record of attendance for Departmental Representative's review upon request.

1.14 Measurement of Payment

- .1 Work under this contract will be paid for as follows:
 - .1 Lump sum pay items will be paid at the lump sum price tendered for each lump sum item listed in the Basis of Payment Schedule.
 - .2 Unit price items will be paid at the unit price tendered for each unit price item listed in the Basis of Payment Schedule.
 - .3 Miscellaneous Project costs will be paid at the lump sum price tendered for "Balance of Project Costs" (BOPC) on the Basis of payment Schedule.
 - .4 Additional Work items will be addressed through Change Orders.
- .2 Unit price items, lump sum pay items and provisional cost recoverable items will be paid under the Basis of Pricing which will form the Basis of Payment Schedule of the proposed contract. All other items, whether specifically defined in the specific sections of the Specifications or not, will be paid under Item BOPC-1, Balance of Project Costs, in the Basis of Payment Schedule.
- .3 Direct costs include all costs directly attributable to a particular pay item including equipment, operators, materials, equipment maintenance and depreciation, etc. All direct costs for lump sum and unit price items are to be included in the appropriate price item in the Basis of Payment Schedule.

- .4 Indirect costs include all costs not directly attributable to the pay items including profit, supervision, overhead, administration, CGL Insurance, WCB, allowance for equipment maintenance and depreciation repairs, and any other relevant costs. All indirect costs associated with specific unit price or lump sum items will be included in Item BOPC-1, Balance of Project Costs, in the Basis of Payment Schedule.
- .5 Include costs of any statement of or requirement for Work, goods or services required in this section that are not covered by appropriate payment clauses in other sections in Item BOPC-1, Balance of Project Costs, in the Basis of Payment Schedule.
- .6 Notify Departmental Representative of planned Work activities in accordance with requirements of Section 01 33 00 - Submittal Procedures, and at least two (2) days in advance of operations to permit required measurements for payment.
- .7 All costs for the preparation of the Worker Orientation Seminar Material and for conducting the seminars in Inuvik, NT, including the preparation of meeting room facilities as required, are to be included in the lump sum price for Worker Orientation Seminar, Item 01 11 00-1, as indicated in the Basis of Payment Schedule. The Worker Orientation Seminar will be paid upon review by Departmental Representative of the Worker Orientation Seminar course material, and upon conducting the seminar prior to the start of Work.
- .7 Except as indicated above, work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate the cost of this Work as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 - Construction Progress Schedules – Bar (GANTT) Chart.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used.

PART 3 EXECUTION

3.1 Not Used

- .1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Definitions

- .1 Project Start-Up Teleconference: conference call to be held within five (5) days after Contract Award and to include the Contractor and representatives from Transport Canada and PWGSC.
- .2 Construction Meeting: meeting to be held on-site at approximately every two to three week intervals during the construction season and to include the Contractor and Departmental Representative.
- .3 Tailgate Meeting: meeting to be held on-site daily during the construction season and to include Contractor and all construction staff.

1.2 Administrative

- .1 Responsibilities of Departmental Representative:
 - .1 Schedule and administer Project Meetings throughout the progress of the Work at the call of Departmental Representative.
 - .2 Prepare agenda for meetings unless otherwise specified.
 - .3 Distribute written notice of each meeting five (5) days in advance of meeting date to required attendees.
 - .4 Preside at meetings unless otherwise specified.
 - .5 Record the meeting minutes unless otherwise specified.
 - .6 Reproduce and distribute copies of minutes within three (3) days after meetings and transmit to meeting participants and affected parties not in attendance.
- .2 Responsibilities of Contractor
 - .1 Provide physical space and make arrangements for meetings.
 - .2 Representative of Contractor, Sub-Contractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

1.3 Project Start-Up Teleconference Meeting

- .1 Within two (2) days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities. The meeting will be a teleconference between all parties in attendance.
- .2 Departmental Representative, Departmental Representative's Authorized Personnel, Contractor, Transport Canada, major Sub-Contractors and supervisors will be in attendance.
- .3 Establish time and location of meeting and notify parties concerned minimum two (2) days before meeting.
- .4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.

- .5 Transport Canada will chair the meeting and the Departmental Representative will take minutes. Meeting will be informal and agenda to include the following:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Schedule of Work: in accordance with Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.
 - .3 Schedule of submission of shop drawings, samples, etc. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
 - .4 Schedule of submission in accordance with Section 01 33 00 – Submittal Procedures including but not limited to:
 - .1 Site Specific Health and Safety Plan
 - .1 Emergency Response Plan
 - .2 Spill Contingency Plan
 - .3 Wildlife Management Plan
 - .2 Insurances and transcripts
 - .3 Equipment to be used by Contractor.
 - .4 Location of equipment and proposed methods for mobilization and demobilization.
 - .5 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 Construction Facilities.
 - .6 Requirements for storage of fuel and hazardous materials.
 - .7 Delivery Schedule of specified equipment.
 - .8 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
 - .9 Departmental Representative provided products.
 - .10 Record drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .11 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
 - .12 Monthly progress claims, administrative procedures, photographs, hold backs.
 - .13 Appointment of inspection and testing agencies or firms.
 - .14 Regulatory Issues.
 - .15 Aboriginal involvement and reporting.
 - .16 Project photographs requirements.

1.5 Construction Meetings

- .1 During course of Work and weeks prior to Project completion, Departmental Representative will schedule progress meetings every two to three weeks.
- .2 Contractor, major Sub-Contractors involved in Work, Departmental Representative and Departmental Representative's Authorized Personnel are to be in attendance. Supply the weekly report submittal, as indicated in Section 01 33 00 – Submittal Procedures, to Departmental Representative prior to start of construction meeting.
- .3 Transport Canada or Departmental Representative will chair the meeting and record minutes of meetings. The Departmental Representative will circulate to attending parties and affected parties not in attendance shortly after meeting.

- .1 Agenda may include the following:
 - .1 Review, approval of minutes of previous meeting.
 - .2 Review of Work progress since previous meeting.
 - .3 Field observations, problems, conflicts.
 - .4 Problems which impede construction Schedule.
 - .5 Review of off-site fabrication delivery Schedules.
 - .6 Project Schedule review, identifying activities that are behind Schedule and providing measures to regain slippage.
 - .7 Corrective measures and procedures to regain Projected Schedule.
 - .8 Revision to Project Schedule.
 - .9 Project Schedule, during succeeding Work period.
 - .10 Review submittal Schedules: expedite as required.
 - .11 Maintenance of quality standards.
 - .12 Review proposed changes for affect on construction Schedule and on completion date.
 - .13 Health, Safety and Security issues.
 - .14 Correspondence from Authorities Having Jurisdiction (AHJ) or expected visits from AHJ.
 - .15 Other business.

- .4 In addition to weekly progress meetings, Contractor to preside over daily tailgate meetings with all construction staff and document minutes. Contractor will maintain records of tailgate meetings.
- .5 Provide written explanations on activities which are overrunning estimated time. If any such activities are on the critical path, indicate what corrective action will be taken to bring them back on Schedule.

1.8

Submittals

- .1 Submit Preliminary Construction Schedule as specified in Section 01 32 18 Construction Progress Schedules.
- .2 Submit Shop Drawings, product data and samples in accordance with 01 33 00 - Submittal Procedures.
- .3 Submit requests for payment for review, and for transmittal to Departmental Representative.
- .4 Submit requests for interpretation of Contract Documents, and obtain instructions through Departmental Representative.
- .5 Submit and process substitutions through Departmental Representative.
- .6 Submit and process change orders through Departmental Representative.
- .7 Provide submittals to the Departmental Representative for review. Include submittals as noted in Table 01 33 00-1 in Section 01 33 00 - Submittal Procedures.

1.9 Coordination Drawings

- .1 Provide information required by Departmental Representative for preparation of coordination drawings.
- .2 Review and approve revised drawings for submittal to Departmental Representative.

1.10 Measurement of Payment

- .1 The Project Start-up Teleconference Meeting will be measured for payment by number of meetings under Item 01 31 19-1, as indicated in the Basis of Payment Schedule.
- .2 All direct costs for the facilitation of Construction Meetings are to be included in the lump sum price bid for Item 01 31 19-3, Construction Meetings, in the Basis of Payment Schedule.
- .3 Except as indicated above, work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules – Bar (GANTT) Chart.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used.

PART 3 EXECUTION

3.1 Not Used

- .1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Definitions

- .1 Activity: element of Work performed during course of Project. Activity normally has expected duration, 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: Sunday to Saturday, inclusive, will provide seven (7) days 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.

1.2 Requirements

- .1 Ensure detailed Schedule is practical and remains within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Provide and maintain a work schedule showing anticipated progress stages and final completion of work within time period required by Contract.
- .4 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.
- .5 Prepare the schedule using critical path analysis techniques, showing resource loading. Identify tasks that lie on the critical path. Show total float for all activities.

1.3 Submittals

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit Preliminary Project Schedule to Departmental Representative within seven (7) working days of contract award.

- .3 Submit Project Schedule to Departmental Representative within five (5) working days of receipt of acceptance of Preliminary Project Schedule.

1.4

Project Schedule

- .1 Develop a detailed Project Schedule.
- .2 Ensure detailed Project Schedule includes as minimum, milestone and activity types as follows:
 - .1 Award.
 - .2 Shop Drawings, Samples.
 - .3 Permits required by Contractor.
 - .4 Mobilization.
 - .5 Site Activities (expand as required to suit Contractor's task breakdown).
 - .6 Interim Certificate of Completion.
 - .7 Demobilization.
 - .8 Closeout Submittals.
 - .9 Final Certificate of Completion.
- .3 Submit Preliminary Project Schedule in accordance with Section 01 33 00 - Submittal Procedures to Departmental Representative coordinated with Departmental Representative's Project Schedule.
- .4 After review, revise and resubmit Schedule to comply with revised Project Schedule.
- .5 During progress of Work revise, update and resubmit the Project Schedule as directed by Departmental Representative. Provide the revised Project Schedule a minimum of three (3) days prior to scheduled monthly meetings, or as directed by Departmental Representative.

1.5

Project Schedule Reporting

- .1 Update Project Schedule every week reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

1.6

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 dates shown on baseline Schedule reviewed by Departmental Representative.
- .2 Weather related delays with their remedial measures will be discussed and negotiated.

1.7 Cost and Quantity Control

- .1 Provide a Contract Work Breakdown Structure (CWBS) based on Contractor's Cost Breakdown and any modifications requested by Departmental Representative as follows:
 - .1 CWBS to be an organization of the Work to be performed, services to be provided and data to be submitted by Contractor, as well as payments to be made to Contractor under the terms of the Contract.
 - .2 The CWBS to clearly define the Work elements of each item of the CWBS.
 - .3 The CWBS to include a breakdown of pay items included under Item BOPC -1, Balance of Project Costs in the Basis of Payment Schedule. All unit price, lump sum, and provisional cost sum allowance pay items included in the Basis of Payment Schedule to also be included in the CWBS.
 - .4 Prepare the CWBS in computerized spreadsheet format compatible with the most recent release of Microsoft Excel software. Provide CWBS in hard copy format.
 - .5 Submit the CWBS within ten (10) days following contract award date.
- .2 Equipment and Material Control:
 - .1 Record data on status of construction material and equipment and report upon Departmental Representative's request.

1.8 Measurement of Payment

- .1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in this section.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used.

PART 3 EXECUTION

3.1 Not Used

- .1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Definition

- .1 The term "shop drawings" means drawings, diagrams, illustrations, Schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

1.2 Administrative

- .1 Submit to Departmental Representative submittals listed for review. Submittal list is bound into specification section and is for information only. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Work affected by submittal is not proceed until review is complete.
- .3 Present shop drawings and product data, in SI Metric units.
- .4 Where items or information is not produced in SI Metric units, converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents 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 to specific Project will be returned without being examined and will be considered rejected.
- .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .8 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .9 Keep one reviewed copy of each submission on site.

1.3 Photographs

- .1 Provide digital photos in "Joint Photographic Experts Group" (.jpg) format for Progress Photographs and Final Photographs.
- .2 Digital photographs to have a minimum of 2,592 x 1,944 pixel (5 Megapixel) resolution.
- .3 Final Photographs to be submitted on a compact disc (CD). Provide two (2) copies of the Final Photographs.

- .4 Printed (colour) copies of digital photographs to be provided for Final Photographs only To be included as an Appendix to the final reporting.
- .5 Identification: The name and number of the Project on cover of CD case. Each photograph to be labelled with the digital photo file name positioned so as to not interfere with the view of the main activity or feature presented on the photograph. Also provide a description of each photograph in photographic log format. Photographic log to be included with each CD and included with Appendix. Description to include:
 - .1 Digital photograph file name;
 - .2 Name and description of feature;
 - .3 View direction;
 - .4 GPS location on UTM NAD83 Datum;
 - .5 Date of exposure.
- .6 Quantity: Provide sufficient number of photographs to adequately describe the Work activities carried out during the reporting period. A minimum of two (2) photographs taken from two (2) viewpoints are to be provided for each clean-up/construction activity. Viewpoint locations for final digital photographs to be determined by Departmental Representative.

1.4

Reports

- .1 Submit daily reports as required to Departmental Representative.
- .2 Submit weekly reports before the weekly construction meetings which includes the following:
 - .1 Details of work completed since the last weekly report.
 - .2 Any delay, including but not limited to, the supply of materials, equipment, or labour that will impact the schedule or completion date.
 - .3 Any health or safety incidents or concerns.

- .3 Submit final report within thirty (30) days of the completion of work which will include the following:

- .1 Survey data for items of work;
- .2 Photos;
- .3 Health and safety records;
- .4 Quantities to date;
- .5 Environmental records;

1.5 Measurement of Payment

- .1 All direct costs for the photographs are to be included in the lump sum price for Photographs, Item 01 33 00 - 1, as indicated in Basis of Payment Schedule.
- .2 Except as indicated above, work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules – Bar (GANTT) Chart.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used.

PART 3 EXECUTION

3.1 Not Used

- .1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Regulatory Requirements

- .1 Refer to Section 01 41 00 - Regulatory Requirements.

1.2 Submittals

- .1 All submittals in accordance with Section 01 33 00 - Submittal Procedures

1.3 Stockpiling Facilities

- .1 Provide, maintain, and operate storage/stockpiling facilities as required.
- .2 Departmental Representative will obtain baseline samples of land treatment unit area prior to liner construction, and any proposed stockpile locations prior to placement of material.

1.4 Dust and Particulate Control

- .1 Execute Work by methods to minimize raising dust from construction operations.
- .2 Implement and maintain dust and particulate control measures during construction and in accordance with all applicable regulations.
- .3 Minimize dust-creating activities. The use of oil for dust control is prohibited.

1.5 Equipment Decontamination

- .1 Decontaminate equipment after working in potentially contaminated Work areas and prior to subsequent Work or travel on clean areas.
- .2 Contain any rinsate created during the removal process as wastewater. Contain soil removed from equipment with waste material.
- .3 Perform final decontamination of equipment, and materials which may have come in contact with potentially contaminated materials prior to removal from site.
- .4 Furnish and equip personnel engaged in equipment decontamination with protective equipment including suitable disposable clothing, respiratory protection, and face shields.

1.6 Water Control

- .1 Protect site from puddling or running water.
- .2 Prevent surface water runoff from leaving Work areas.
- .3 Direct surface waters that have not contacted potentially contaminated materials to existing surface drainage systems.

.4 Have on hand sufficient pumping equipment, machinery, and tankage in good working condition for ordinary emergencies, including power outage, and competent workers for operation of pumping equipment.

.5 Remove all temporary diversions when work complete.

1.7 Progress Cleaning

.1 Maintain cleanliness of Work and surrounding site to comply with federal, territorial, and local fire and safety laws, ordinances, codes, and regulations.

1.8 Removal

.1 Do not bury or burn rubbish and waste materials on-site unless approved by Departmental Representative.

.2 Do not discharge wastes or wastewater into streams or waterways without prior approval from Authorities Having Jurisdiction.

1.9 Measurement of Payment

.1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate the cost of this Work as a separate line item in the cost breakdown specified in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules – Bar (GANTT) Chart.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used

.

PART 3 EXECUTION

3.1 Not Used.

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Definitions

- .1 Separated Work Group: a work crew of any number of personnel working at a location where immediate medical attention from site medical personnel may not be possible due to environmental, mechanical or other factors.

1.2 Site Specific Health and Safety Requirements

- .1 Maintain and complete all health and safety, fire safety, and environmental compliance activities in accordance with applicable sections and Authorities Having Jurisdiction (AHJ).
- .2 Schedule a compliance meeting on an as required basis, as directed by Departmental Representative. Compliance meetings may be held in conjunction with regular meetings.
- .3 The intent of the compliance meeting is to review reporting and inspection requirements to meet the intent of the NWT Safety Act, the Inuvik Airport (Mike Zubko) safety requirements, regulatory, and other requirements as may be required.
- .4 Compliance meetings to be held at the Work site.
- .5 Departmental Representative will record minutes, chair the meeting and distribute minutes to parties of record prior to the next Scheduled meeting.
- .6 Attendees may include the following:
 - .1 Contractor: Manager and/or Supervisor(s), representatives of major Sub-Contractors, and others as necessary.
 - .2 Departmental Representative and/or Departmental Representative's Authorized Personnel.
 - .3 Transport Canada representative(s).
 - .4 Government of the Northwest Territories representative(s).
- .7 Agenda:
 - .1 Review and approval of minutes of previous meeting.
 - .2 Review of items of significance that could affect Work.
 - .3 Inspect the site on a monthly basis, or more or less often, as determined by the Departmental Representative or as dictated by the AHJ.
 - .4 Identify and record field observations, problems, and conflicts that must be noted in reports required by the AHJ.
 - .5 Identify corrective measures and procedures to regain approval from AHJ.
 - .6 Identification of requirements for maintenance of quality standards needed for compliance with applicable Codes and Legislation.
 - .7 Review site safety and security issues.
 - .8 Review environmental and regulatory compliance.
 - .9 Other topics for discussion as appropriate to current status of the Work.

1.3

Submittals

- .1 Submit the Draft Site Specific Health and Safety Plan no later than five (5) days after contract award to the Departmental Representative for review. Any items, which are identified as missing, will be added and the plan revised, so as to incorporate the additional items. Submit three (3) hard copies and one (1) electronic copy of the final Site Specific Health and Safety Plan five (5) days prior to mobilization. The Site Specific Health and Safety Plan will be submitted to the AHJ for review and recommendations to ensure all the elements required by the NWT Safety Act, OSHA Regulations, other AHJ, and Contract Specifications have been addressed prior to start of Work.
- .2 All submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .3 The Site Specific Health and Safety Plan is to include, but is not limited to the following sections:
 - .1 A Statement of Contractor's Safety Policy;
 - .2 Safety Responsibilities of all on-site personnel;
 - .3 Safe Work Practices and/or Job Procedures;
 - .4 Results of safety and health risk or hazard analysis for construction activities;
 - .5 Procedures for, but not limited to, general worker health and safety;
 - .6 Procedures for confined space entry;
 - .7 Procedures for emergency site communications;
 - .8 Name and telephone number of Contractor's corporate Safety Officer and on-site Safety Representative;
 - .9 Emergency Response Plan;
 - .10 Fire Safety Plan;
 - .11 Spill Contingency Plan;
 - .12 Lockout/Tagout procedures for equipment that could become energized;
 - .13 Wildlife Management;
 - .14 Procedures for working within the airport, including any special requirements.
 - .15 First Aid Locations.
- .4 Complete an inventory of Contractor's health, safety, medical and first aid equipment and supplies on-site to assess compliance with AHJ requirements. Submit the inventory to Departmental Representative within ten (10) days of mobilization. Include a schedule for upgrading deficiencies to meet requirements of AHJ.

1.4

Construction Safety Measures

- .1 Designate a resident Health and Safety Officer to oversee Contractor's Site Specific Health and Safety Plan with the authority to enforce policies and procedures set out in the Site Specific Health and Safety Plan. Health and Safety Officer to have a minimum of five (5) years' acceptable experience in administering construction health and safety programs.
- .2 Observe and enforce construction safety measures required by the latest revisions of: Canada Labour Code, National Building Code of Canada, National Fire Code of Canada, Workers' Compensation Board, the applicable Occupational Health and Safety Regulations, and Territorial and local statutes and authorities.

- .3 In the event of discrepancies between any requirements of the above listed authorities, the more stringent requirements will govern.
- .4 Schedule safety meetings, to be held at least once per week. Record the minutes of such meetings and maintain a complete file for review by the appropriate authorities. Submit a copy of these meeting minutes to Departmental Representative within three (3) days of the meeting.
- .5 Maintain at the site; five (5) safety hats with liners, five (5) safety hi-visibility vests, a supply of ear plugs, gloves and safety glasses/goggles for use by Departmental Representative and visitors.
- .6 Maintain a supply of Tyvek or equivalent suits of various sizes as required for Contractor's staff, Departmental Representative and up to three (3) visitors for the duration of the Work.
- .7 Comply with all applicable health and safety policies and procedures.
- .8 Departmental Representative, Departmental Representative's Authorized Personnel or any site personnel has the authority to stop Work on the contract if, in his/her opinion, the Work is being performed in an unsafe manner as required by the applicable safety legislation.
- .9 Prepare and coordinate a Contingency and Emergency Response Plan with contributions from appropriate authorities as required, including, but not limited to, Government of NWT Safety Act, Inuvik Airport, local Hospitals, and RCMP. Plan to identify Emergency Response Coordinator through whom all information and coordination will flow in the event of an incident.
- .10 Verify that emergency procedures including appropriate First Aid facilities and First Aid personnel are in place at the Work Site prior to start of Work. First Aid facilities and First Aid personnel must be in compliance with the NWT Safety Act.
- .11 Verify that procedures meet the WCB and HRSDC requirements.
- .12 Develop, as part of Site Specific Health and Safety Plan, written Contaminated Site Working and Decontamination procedures. Working procedures to outline personal protective equipment (PPE) requirements for various parts of site and for different operations.
- .13 Working Procedures and Decontamination procedures consistent with requirements OSHA's 29 CFR 1910.120 HAZWOPER and territorial environmental regulations for:
 - .1 Working activities, where employees are likely to be exposed to 50% of Threshold Limit Values (TLV) listed by American Conference of Governmental Hygienists (ACGIH), TLVs and BEIs based on documentation of Threshold Limit Values (TLV) for Chemical Substances and Physical Agents and Biological Exposure Indices (BEI) 2004 and amendments thereto.

.14 Hazardous Material Discovery

- .1 Immediately stop Work and notify Departmental Representative for further instructions with respect to abatement procedures required for asbestos or hazardous material conditions encountered when Work occurs in areas having materials resembling asbestos or hazardous materials during course of Work.

1.5 Filing of Notice

- .1 File Notice of Work with Federal and Territorial AHJ prior to commencement of Work.

1.6 Regulatory Requirements

- .1 Comply with specified standards, regulations and orders of AHJ to ensure safe operations at sites containing hazardous or toxic materials and other hazards (such as wildlife encounters, falls, etc.).

1.7 Responsibility

- .1 Be responsible for safety of persons and property on site and for protection of public off site and environment to extent that they may be affected by the site and conduct of Work, as Prime Contractor.
- .2 Control access to the site. Persons with business at the site and who are not Contractor's employees must be briefed on site specific health and safety issues and provided with a copy of the Site Specific Health and Safety Plan.
- .3 Contractor may refuse access to the site to any person not complying with site specific health and safety standards.
- .4 Comply with and enforce compliance by employees, Departmental Representative and Authorized Personnel, and visitors safety requirements of Contract Documents, applicable federal, territorial, and local statutes, regulations, and ordinances, and with Site Specific Health and Safety Plan:
 - .1 Conduct appropriate safety training for all personnel working on or visiting the site.
 - .2 Conduct Work place safety inspections for all Work activities.
 - .3 Maintain a log of First Aid and safety supplies, and notify appropriate personnel for restocking after each incident, and periodical restocking to replace out dated or consumable (headache medicines, bandages) products.

1.8 Hazard Communication Requirements

- .1 Comply with Work Site Hazardous Materials Information System Regulations of the AHJ.
- .2 Provide Departmental Representative with Material Safety Data Sheets (MSDS) and documentation on any "hazardous" chemical that Contractor or Contractor Representatives plan to bring onto site; bound in one place and stored in accordance with the Site Specific Health and Safety Plan.

1.9 Unforeseen Hazards

- .1 Should any unforeseen or peculiar safety related factor, hazard, or condition become evident, stop Work, assess, take steps to mitigate if necessary at that time and immediately advise Departmental Representative verbally and in writing.
- .2 Monitor potential low oxygen and Lower Explosive Limits areas with oxygen/LEL monitor prior to entrance and if workers are working in and around area. These areas include but are not limited to trenches, excavations and areas near machinery exhaust.

1.10 Safety and Hygiene

- .1 Provide training for all persons entering the site, prior to start of Work, in accordance with specified personnel training requirements, maintain log of who was trained, what training was provided and by whom the training was conducted.
- .2 Personal Protective Equipment (PPE):
 - .1 Furnish site personnel with appropriate PPE as required by legislation.
 - .2 Verify that safety equipment and protective clothing is kept clean and well maintained.
 - .3 Ensure all clothing and personal protective equipment used on-site must remain on-site, to be either decontaminated or disposed of. No Work clothing is to leave Work site without having been properly decontaminated. This includes, but is not limited to working coveralls.
 - .4 Outline and designate PPE for each site and Work activity in accordance with AHJ.
- .3 Develop written PPE care and use procedures to be included in the Site Specific Health and Safety Plan and verify that procedures are strictly followed by site personnel including, but not limited to, the following:
 - .1 Provisions for prescription eyeglasses with side shields worn as safety glasses and do not permit contact lenses on site within Work zones.
 - .2 Provisions for footwear are steel toed Canadian Standards Association (CSA) approved safety shoes or boots and are covered by rubber overshoes when entering or working in potentially contaminated Work areas.
 - .3 Dispose of or decontaminate PPE worn on site at end of each workday.
 - .4 Decontaminate reusable PPE before reissuing.
 - .5 Provisions for decontamination arising from entry or exit into contaminated areas.
- .4 Develop a written Respiratory Protection program to be included in the Site Specific Health and Safety Plan and ensure that the program is strictly followed by site personnel; include the following procedures as minimum:
 - .1 Provide site personnel with extensive training in usage and limitations of, and qualitative fit testing for, air purifying and supplied air respirators in accordance with specified regulations.
 - .2 Monitor, evaluate, and provide respiratory protection for site personnel.
 - .3 Verify that levels of protection as listed have been chosen to be consistent with site specific potential airborne hazards associated with major contaminants identified on site.

- .4 Immediately notify Departmental Representative when level of respiratory protection required increases.
 - .5 Verify that appropriate respiratory protection during Work activities is available and readily accessible; all personnel entering potentially contaminated Work areas will be supplied with and use appropriate respiratory protection.
 - .6 Assess ability for site personnel to wear respiratory protection.
 - .7 Verify that site personnel have passed respirator fit test prior to entering potentially contaminated Work areas.
 - .8 Verify that facial hair does not interfere with proper respirator fit.
 - .9 Submit proof of fit testing for site personnel to Departmental Representative. Update submission when new personnel are added to the Work or when new Work activities occur.
- .5 Heat Stress/Cold Stress: Implement heat stress and cold stress monitoring program as applicable and include in the Site Specific Health and Safety Plan.
- .6 Personnel Hygiene and Personnel Decontamination Procedures: provide minimum as follows:
- .1 Suitable containers for storage and disposal of used disposable PPE.
 - .2 Potable water and suitable sanitation facility.
 - .3 Access to shower facilities.
 - .4 Provisions for proper disposal of contaminated PPE.

1.11 Site Communications

- .1 Train personnel in the use of "buddy" system.
- .2 Provide alarm system to notify employees of site emergency situations or to stop Work activities if necessary. Identify emergency stations and Muster Points. Test alarm system regularly and train personnel to use alarm system as required.

1.12 Safety Meeting

- .1 Conduct task specific safety meetings as per Project requirements and as directed by Departmental Representative.
- .2 Conduct safety meetings with workers engaged in constructing, maintaining or travelling on winter roads. Workers must be instructed on the dangers inherent with winter roads and hazard avoidance procedures.
- .3 Conduct safety meetings with workers engaged in outdoor Work under summer or winter conditions. Topics must include hot and cold stress, exhaustion, buddy systems, wildlife awareness, and any other items inherent in working outdoors in summer or winter in isolated environments.
- .4 Conduct mandatory daily safety meetings for personnel, and additionally as required by special or Work related conditions; include refresher training for existing equipment and protocols, review ongoing safety issues and protocols, and examine new site conditions as encountered. Hold additional safety meetings on an as needed basis or as specified by the AHJ.

1.13 Fuel Management

- .1 All vehicle and equipment refuelling must be conducted by appropriately trained personnel using the effective PPE in a manner which meets or exceeds regulatory requirements including using drip pans.
- .2 All fuel transports including mobile refuelling trucks and fuel transport to stationary equipment such as generators or pumps or distributed storage areas, must meet or exceed applicable regulatory requirements.

1.14 Vehicle and Equipment Usage

- .1 Seatbelts must be worn at all times vehicle or equipment is in operation.
- .2 Speed limits must be set and obeyed. Speed limit is not to exceed thirty (30) km/hour.
- .3 If access routes conditions are unsafe or marginally unsafe, maintain access routes to acceptable standards. Do not risk property damage or injury.
- .4 Vehicles are to not be idled for longer than ten (10) minutes (warm up) unless explicitly used as a place of refuge during animal encounters or for personnel working outdoors during winter operations. Exceptions are to be made in consultation with Departmental Representative.
- .5 Perform vehicle maintenance and lubrication of equipment in a manner that avoids spillage of fuels, oils, grease and coolants. When refuelling equipment, use leak free containers and reinforced rip and puncture proof hoses and nozzles. Remain in attendance for duration of refuelling operation, and ensure that all storage container outlets are properly sealed after use.
- .6 Collect and dispose of used oil, grease and coolants from Contractor's vehicle maintenance activities as hazardous waste.
- .7 Place drip pans and/or sorbent pads under stationary equipment with potential leaks.

1.15 Flammable Liquids

- .1 The handling, storage and use of flammable liquids will be governed by the current National Fire Code of Canada.
- .2 Flammable liquids such as gasoline, kerosene and naphtha may be kept for ready use in quantities not exceeding forty-five (45) L provided they are stored in approved safety cans bearing the Underwriter's Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable liquids exceeding forty-five (45) L for Work purposes requires the permission of the permitting authority.
- .3 Do not transfer flammable liquids in the vicinity of open flames or any type of heat-producing devices.
- .4 Do not use flammable liquids having a flash point below 38°C such as naphtha or gasoline as solvents or cleaning agents.

- .5 Store flammable waste liquids, for disposal, in approved containers located in a safe ventilated area. Quantities are to be kept to a minimum and Departmental Representative is to be notified when disposal is required.
- .6 Dispose of all flammable liquids in accordance with all applicable environmental regulations and with the requirements of Section 02 61 33 - Hazardous Waste Material.

1.16 Storage and Handling of Fuel

- .1 Locate fuel storage areas as required by AHJ. Location to be reviewed by Departmental Representative. Provide secondary containment as required by AHJ.
- .2 Inspect fuel storage and dispensing facilities daily. Make available fire fighting and spill response equipment for immediate access at each fuel storage location.
- .3 Store all drums containing fuel and/or hazardous materials in an elevated position, either on their side with bungs facing 9 and 3 o'clock position, or on pallets, upright, and banded.
- .4 All drums to be individually identified. Label will be to industry standards and will provide all information necessary for health and safety and environmental purposes. Make available, to all personnel, MSDSs for all materials maintained at site or along right-of-ways.
- .5 Treat all waste petroleum products, including used oil filters as hazardous materials.
- .6 Conduct regular inspections of all machinery hydraulic, fuel and cooling systems. Repair leaks immediately.
- .7 Remove all full and empty drums, fuel storage facilities and associated materials and equipment from site at conclusion of Work.
- .8 All fuel drums delivered to site, regardless of ownership, will be returned to supplier by Contractor for reuse or cleaned, crushed and disposed in accordance to Section 02 61 33 - Hazardous Waste Material. Fuel drums, if transported, will comply with Section 02 61 33 - Hazardous Waste Material and applicable regulations.

1.17 Spill Contingency Plan

- .1 Submit to Departmental Representative for review a detailed Spill Contingency Plan. Identify response capabilities by detailing response times and types and volumes of spills to which Contractor can respond. Following information is required as a minimum:
 - .1 A description of pre-emergency planning.
 - .2 Personnel roles, lines of authority and communication, emergency phone numbers.
 - .3 Emergency alerting and response procedures.
 - .4 Evacuation routes and procedures, safe distances and places of refuge.
 - .5 Directions/methods of getting to nearest medical facility.
 - .6 Emergency decontamination procedures.

- .7 Emergency medical treatment and First Aid.
- .8 Emergency equipment and materials: Include and provide at minimum booms (sorberent and containment), sorbents for cleanup, fire extinguishers for A-B-C fires, overpacks for contaminated soils, pumps, hand shovels, picks and containment barriers, such as plastic sheeting.
- .9 Emergency protective equipment: Include at minimum clothing, protective suits, respirators, etc. to comply with potential emergency conditions and in accordance with NIOSH guidelines.
- .10 Procedures for reporting incidents.
- .11 Spill response and containment plans for all materials that could potentially be spilled.

1.18 Medical

- .1 Provide and maintain First Aid and medical care and facilities for all workers as required by the Statutes of the NWT Safety Act.
- .2 Provide the appropriate NWT First Aid kit, based on the number of workers, in accordance with the NWT Safety Act.
- .3 Establish an emergency response plan acceptable to Departmental Representative, for the removal of any injured person to medical facilities or a doctor's care in accordance with applicable legislative and regulatory requirements.
- .4 Emergency and First Aid Equipment:
 - .1 Locate and maintain emergency and First Aid equipment in appropriate location on-site including First Aid kit to accommodate number of site personnel; portable emergency eye wash; fire protection equipment as required by legislation.
 - .2 Provide a minimum of one (1) qualified First Aid attendant on site at all times when Work activities are in progress; duties of First Aid attendant may be shared with other light duty Work related activities if these Work activities do not compromise the ability to complete the duties of First Aid Attendant.

1.19 Accidents and Accident Reports

- .1 Contractor's person in charge will immediately report, verbally, followed by a written report within twenty-four (24) hours, to Departmental Representative, all accidents of any sort arising out of or in connection with the performance of the Work, giving full details and statements of witnesses. If death or serious injuries or damages are caused, report the accident promptly to Departmental Representative by telephone or facsimile in addition to any report required under federal and territorial laws and regulations.
- .2 If a claim is made by anyone against Contractor or Sub-Contractor on account of any accident, promptly report the facts in writing to Departmental Representative for information only, giving full details of the claim.

1.20 Security

- .1 Limit site access only to persons employed on the Project. Unauthorized persons will be permitted on site only with the approval of Departmental Representative or Contractor.

1.21 Fire Safety

- .1 Provide all fire prevention, fire protection and fire fighting services at the Project site.
- .2 Implement a fire safety program that includes fire prevention, fire protection and fire fighting requirements. Submit details of the fire safety program in writing to Departmental Representative for review prior to start of construction. Such review does not relieve Contractor from any obligations or responsibilities required by the Contract.
- .3 Ensure that all personnel on-site are briefed on fire safety requirements and are familiar with the fire prevention, fire protection and fire fighting program.
- .4 The fire safety program to meet or exceed the most recent editions of the following codes and standards:
 - .1 NWT Safety Act.
 - .2 National Fire Code of Canada.
 - .3 Canada Labour Code.
- .5 Personnel designated for fire fighting services must be provided with training for any special hazards that may be present. These personnel must also be provided with protective equipment as required by the Canada Labour Code.

1.22 Reporting Fires

- .1 A person discovering a fire and all fire related incidents will report immediately, by fastest available means, to Departmental Representative and site superintendent.
- .2 A person discovering a fire will if possible, remain in the vicinity to direct fire fighting personnel.

1.23 Fire Extinguishers

- .1 Provide and maintain fire extinguishers in sufficient quantity to protect, in an emergency, the Work in progress and the physical plant on-site.

1.24 Smoking Precautions

- .1 Abide by applicable AHJ smoking regulations or the requirements of this Section, whichever are more stringent.
- .2 Do not permit smoking in hazardous areas. Exercise care in the use of smoking materials in non-restricted areas.
- .4 Provide and place signs prohibiting smoking in areas where smoking is not permitted.

- .5 Signs prohibiting smoking will be in English and the local dialect and will have black lettering not less than 50 mm high, with a 12 mm wide stroke on a yellow background. In lieu of lettering, symbols of not less than 150 mm x 150 mm may be used.
- .6 Smoking is prohibited within 7.5 m of fuel storage and dispensing facilities.
- .7 Provide and place signs indicating that smoking within 7.5 m of fuel storage and dispensing facilities is not permitted, and that the vehicle ignition must be turned off while the vehicle is being refuelled. Provide at least one (1) weather-resistant sign at each fuel dispensing location. The signs will have a minimum dimension of 200 mm and letters not less than 25 mm high. In lieu of lettering, signs may have international "No Smoking - Ignition Off" symbols not less than 100 mm in diameter. Install signs in a location visible to all drivers approaching the dispensing location, and at the dispensing unit.

1.25 Rubbish and Waste Materials

- .1 Rubbish and waste materials are to be kept to a minimum.
- .2 Storage:
 - .1 Extreme care is required where it is necessary to store oily waste in Work areas to ensure maximum possible cleanliness and safety.
 - .2 Greasy or oily rags or materials subject to spontaneous combustion will be disposed of as hazardous material.

1.26 Hazardous Substances

- .1 If the Work entails the use of any toxic or hazardous materials or chemicals, or otherwise creates a hazard to life, safety or health, Work will be in accordance with the National Fire Code of Canada, Occupational Health and Safety Legislation, and WHMIS.
- .2 Departmental Representative is to be advised, and a "Hot Work" permit issued by Contractor's Health and Safety Officer or designated alternative in all cases involving welding, burning or the use of blow torches and salamanders, in buildings or facilities. Special precautions are necessary to safeguard life and property from damage by fire or explosives.
- .3 Wherever Work is being carried out in dangerous or hazardous areas involving the use of heat, fire watchers, equipped with sufficient fire extinguishers, will be provided. The determination of dangerous or hazardous areas along with the level of precaution necessary for Fire Watch will be at the discretion of Contractor. Notify Departmental Representative prior to that determination.
- .4 Provide proper ventilation and eliminate all sources of ignition where flammable liquids, such as lacquers or urethanes are used.

1.27 Questions and Clarifications

- .1 Direct any questions or clarification to Departmental Representative.

1.28 Confined Spaces

- .1 Develop Confined Space Entry Procedures.
- .2 Maintain adequate personal protective equipment, air quality monitoring devices and other equipment as appropriate for the work to be completed.
- .3 Provide training for personnel designated to enter Confined Spaces. Topics to include, but are not limited to:
 - .1 Confined Space Entry Procedures;
 - .2 Personal Protective Equipment;
 - .3 Air Quality Monitoring devices;
 - .4 Regulatory requirements;
 - .5 Job specific requirements.

1.29 Measurement of Payment

- .1 Preparation and completion of the Site Specific Health and Safety Plan will be measured for payment by each plan under Item 01 35 32-1, as indicated in the Basis of Payment Schedule. Site Specific Health and Safety Plan will be paid after a satisfactory Site Specific Health and Safety Plan has been submitted to Departmental Representative.
- .2 Except as otherwise indicated herein, Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules – Bar (GANTT) Chart.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used.

PART 3 EXECUTION

3.1 Not Used

- .1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 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 humankind; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2 Regulatory Overview

- .1 Comply with all applicable environmental laws, regulations and requirements of Federal, Territorial and other regional authorities, and acquire and comply with such permits, approvals and authorizations as may be required.
- .2 Comply with and be subject to those permits and approvals obtained from Departmental Representative to conduct the Work.
- .3 Pay specific attention to the Migratory Birds Convention Act, as amended in 1994.

1.3 Submittals

- .1 Submit all required Contractor submittals to satisfy environmental requirements directly to the responsible agency and Authorities Having Jurisdiction (AHJ).
- .2 Submit one (1) complete copy of all submittals, permits, licences and agency approvals prior to start of work to Departmental Representative.
- .3 All submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.4 Site Maintenance

- .1 Keep the site free from the accumulation of waste materials and debris as specified in this section.
- .2 Upon completion of the Work, clean away and dispose of all surplus material, supplies, rubbish and temporary works leaving the site neat and tidy to the requirements of Departmental Representative.

1.5 Fires

- .1 Fires and burning of rubbish/garbage is not permitted.

1.6 Disposal of Wastes

- .1 Do not bury rubbish and waste materials on site unless approved by Departmental Representative.

- .2 Do not burn waste
- .3 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways.

1.7 Liquid Discharge

- .1 Water from the East land treatment unit or from contaminated excavations may not be released onto the ground. Water collected from excavation or from the East land treatment unit sump will be re-applied to the soil within the East land treatment unit.
- .2 Water will be re-applied in a manner that controls “misting” of the water.
- .3 No direct discharge is allowed to wetland or surface waters.
- .4 Do not create erosion channels from water discharge.

1.8 Drainage

- .1 Provide temporary drainage and pumping as necessary to keep the site free from water.
- .2 Have on hand sufficient pumping equipment, machinery, and tankage in good working condition for ordinary emergencies, including power outage, and competent workers for operation of pumping equipment.

1.9 Pollution Control

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment to AHJ emission requirements.
- .3 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for access routes.

1.10 Environment Protection Supplies

- .1 Comply with federal and territorial fisheries and environmental protection legislation, including preventing the loss or destruction of fish habitat, and minimizing the impact of sedimentation, siltation or otherwise causing a degradation in water quality.
- .2 Submit Environmental Protection Supplies Inventory five (5) days prior to mobilization.

1.11 Notification

- .1 Departmental Representative will notify Contractor in writing of observed non-

compliance with Federal and Provincial/Territorial environmental laws, regulations and/or permits.

- .2 Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action for approval by Departmental Representative.
- .3 Departmental Representative will issue stop order of Work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

1.12 Measurement of Payment

- .1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 PRODUCTS

2.1 Not Used.

- .1 Not Used.

PART 3 EXECUTION

3.1 Not Used

- .1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 References and Codes

- .1 Perform Work in accordance with National Building Code of Canada (NBC) including all amendments 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.
- .3 Perform Work in accordance with the Specifications and meet or exceed all codes, standards and regulations applicable to the Work and issued under the authority of the Government of Canada and the Government of the Northwest Territories. Advise Departmental Representative of any discrepancies in the codes, standards and regulations applicable to the Work.

1.2 References and Codes - Federal

- .1 Meet or exceed the most recent amendments or revisions to the governing codes, standards and guidelines, and regulations applicable to Work and issued under the authority of the Government of Canada including, but not limited to:
 - .1 Canada Labour Code Part 11-Occupational Health and Safety (R.S. 1985, c.L-2).
 - .2 Canada Occupational Health and Safety Regulations (SOR/86-304).
 - .3 Canadian Environmental Protection Act, (S.C. 1999, c.33)
 - .4 Controlled Products Regulations (SOR/88-66)
 - .5 Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301).
 - .6 National Construction, Renovation and Demolition Non-hazardous Solid Waste Management Protocol, PWGSC 2002
 - .7 National Fire Code of Canada, 2005
 - .8 National Building Code of Canada, 2005
 - .9 Ozone Depleting Substances Regulations, 1998 (SOR/99-7).
 - .10 Transportation of Dangerous Goods Act, 1992 (S.C. 1992, c.34)
 - .11 Transportation of Dangerous Goods Regulations (SOR/2001-286)
 - .12 Territorial Land Use Regulations (C.R.C., c.1524)
 - .13 Migratory Birds Convention Act, 1994 (1994, c. 22)
 - .14 Fisheries Act (R.S., 1985, c. F-14)
 - .15 Health Canada Guidelines for Canadian Drinking Water Quality, May 2008

1.3 References and Codes - Northwest Territories

- .1 Meet or exceed the most recent amendments or revisions to the governing codes, standards and guidelines, and regulations applicable to Work and issued under the authority of the Government of the Northwest Territories including, but not limited to:
 - .1 Environmental Protection Act (R.S.N.W.T. 1988, c. E-7)
 - .2 Labour Standards Act S.N.W.T. 2003,c.15
 - .3 Public Health Act, R.S.N.W.T. 1988, c.P-12.
 - .4 Spill Contingency Planning and Reporting Regulations N.W.T. R-068-93.

- .5 Fire Prevention Act, R.S.N.W.T. 1988, c.F-6.
- .6 Transportation of Dangerous Goods Act, S.N.W.T. 2008,c.8
- .7 Transportation of Dangerous Goods Regulations, N.W.T. Reg. 049-2002
- .8 Used Oil and Waste Fuel Management Regulations, N.W.T. R-064-2003
- .9 Work Site Hazardous Materials Information System Regulations, R.R.N.W.T. 1990, c.S-2.

1.4 Standards, Guidelines and Policies

- .1 Meet or exceed the most recent amendments or revisions to the governing standards, guidelines, and policies applicable to the Work, including, but not limited to:
 - .1 Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products, (PN 1326), 2003 CCME.
 - .2 Storage Tank Systems for Petroleum and Allied Petroleum Products Regulations, SOR/2008-197, CEPA.
 - .3 Guidelines for Effluent Quality and Wastewater Treatment at Federal Establishments, N.W.T. April 1976.
 - .4 Guideline for the Management of Waste Batteries, N.W.T. September 1998.
 - .5 Guideline for the Management of Waste Lead and Lead Paint, N.W.T. April 2004.
 - .6 Guideline for the Management of Waste Solvents, N.W.T. September 1998.
 - .7 Guideline for Contaminated Site Remediation, N.W.T. November 2003.
 - .8 Guideline for Ambient Air Quality, N.W.T. December 2002.
 - .9 Guideline for Dust Suppression, N.W.T. February 1998.
 - .10 Guideline for the General Management of Hazardous Waste, N.W.T. February 1998.
 - .11 Guideline for Ozone Depleting Substances and Halocarbon Alternatives, N.W.T. June 2007.
 - .12 Environmental Health and Safety Management System Manual, INAC 2006.
 - .13 INAC Standard Operating Procedures

1.5 Hazardous Material Discovery

- .1 Stop Work immediately and notify Departmental Representative upon discovery of following materials during course of Work:
 - .1 Designated substances including, but not limited to PCBs, asbestos, and mercury.

1.6 WHMIS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets acceptable to Labour Canada and Health and Welfare Canada and Human Resources and Social Development Canada.
- .2 Deliver copies of WHMIS data sheets to Departmental Representative on delivery of materials.

1.7 Submittals

- .1 All submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.8 Measurement of Payment

- .1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules – Bar (GANTT) Chart.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used.

PART 3 EXECUTION

3.1 Not Used

- .1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 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 minimum seventy-two (72) hours 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 may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such Work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative will pay cost of examination and replacement.

1.2 Submittals

- .1 All submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.3 Inspection Agencies

- .1 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 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 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 Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and re-inspection.

1.4 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.

1.5 Procedures

- .1 Notify 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 an orderly sequence so as not to cause delay in Work.

.3 Provide labour and facilities to obtain and handle samples and materials on-site.

1.6 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 Contractors' Work damaged by such removals or replacements promptly.

.3 If, in opinion of Departmental Representative, it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Departmental Representative may deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which to be determined by Departmental Representative.

1.7 Reports

.1 Departmental Representative will distribute copies of test results on request by Contractor.

.2 Provide copies to Sub-Contractor of Work being inspected or tested and manufacturer or fabricator of material being inspected or tested.

1.8 Measurement of Payment

.1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules – Bar (GANTT) Chart.

PART 2 PRODUCTS

2.1 Not Used

.1 Not used.

PART 3 EXECUTION

3.1 Not Used

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Installation and Removal

- .1 Provide temporary utilities to facilitate all construction activities.
- .2 Remove from site all such Work after use.
- .3 Provide all temporary utilities consisting of the design, supply, construction, maintenance, operation and removal of the utilities and services required to support the remediation of the site. Temporary utilities to satisfy requirements of Federal, Territorial and local Authorities Having Jurisdiction (AHJ), and comply with the requirements of Section 01 35 43 - Environmental Procedures.

1.2 Submittals

- .1 All submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.3 Existing Services

- .1 The location of equipment and utility services specified or indicated is to be considered as approximate.
- .2 Before commencing Work, establish location and extent of services in area of Work, and notify Departmental Representative of findings.
- .3 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .4 Record locations of maintained, joined, re-routed and abandoned service lines indicating horizontal distances and vertical elevations.
- .5 Take necessary precautions and prevent damage to existing services and facilities designated to remain, including, but not limited to, existing monitoring wells.
- .6 Repair and replace services or facilities designated to remain that are damaged as a result of Contractor's operations at no additional cost to Departmental Representative.

1.4 Fire Protection

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.

1.5 Drainage

- .1 Refer to Section 01 35 43 - Environmental Procedures.

1.6 Signs and Notices

- .1 Safety and Instruction Signs and Notices:
 - .1 Signs and notices for safety and instruction to be in English and the local dialect.

.2 Maintenance and Disposal of Site Signs:

- .1 Maintain approved signs and notices in good condition for duration of Project, and dispose of on completion of Project, or earlier if directed by Departmental Representative.

1.7 Measurement of Payment

- .1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules – Bar (GANTT) Chart.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used.

PART 3 EXECUTION

3.1 Not Used

- .1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Installation and Removal

- .1 Provide construction facilities in order to execute Work expeditiously.
- .2 Remove from site all such Work after use.
- .3 Provide all temporary facilities consisting of the design, supply, construction, maintenance, operation and removal of the facilities and services required to support the remediation of the site. Provide temporary facilities as specified at the Work site, and any other location where temporary facilities are essential to the Work. Temporary facilities to satisfy requirements of Federal, Territorial and local Authorities Having Jurisdiction (AHJ), and comply with the requirements of Section 01 35 43 - Environmental Procedures.
- .4 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, avenues of ingress/egress to fenced area and details of fence installation.

1.2 Location of Equipment and Fixtures

- .1 Location of equipment indicated or specified are to be considered as approximate.
- .2 Inform Departmental Representative of impending installation and obtain approval for actual location if deviation from specified location is contemplated.
- .3 Submit field drawings to indicate relative position of various services and equipment when required by Departmental Representative.

1.3 Access Control

- .1 Provide and maintain adequate access, including snow removal, to all working areas of the site, utilities and offices during all periods of Work by Contractor, Sub-Contractors and other Contractors performing Work for Departmental Representative.
- .2 Access includes removal of snow, as may be required, to gain access to site, as required, to meet the Project Schedule.
- .3 Minimize dust-creating activities, as specified in Section 01 35 15 - Special Project Procedures for Contaminated Sites.

1.4 Scaffolding

- .1 Provide and maintain scaffolding, ramps, ladders, swing staging, platforms, and temporary stairs as necessary for the completion of Work.
- .2 Construct and maintain scaffolding in a rigid, secure and safe manner.
- .3 Erect scaffolding independent of walls. Remove promptly when no longer required.

.4 Design and construct scaffolding in accordance with most recent applicable standards, as required to complete Work. Provide details and procedures for ensuring all scaffolding equipment, materials, and construction practices meet all applicable regulations and site specific requirements.

.5 Conform to safety requirements of Section 01 35 32 - Site Specific Health and Safety Plan.

1.5 Hoisting

.1 Provide, operate and maintain hoists required for moving of workers, materials and equipment.

.2 Hoists to be operated by qualified operator.

1.6 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 a weight or force that will endanger the Work.

1.7 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.

1.8 Sanitary Facilities

.1 Provide sanitary facilities for Work force in accordance with governing regulations and ordinances.

.2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.9 Construction Signage

.1 Maintain approved signs and notices in good condition for duration of Project, and dispose of off site on completion of Project or earlier if directed by Departmental Representative.

1.10 Guard Rails and Barricades

.1 Provide secure, rigid guard rails and barricades around work areas.

.2 Provide as required by governing authorities.

1.11 Protection of Property

- .1 Protect surrounding public property, including historical gravesites and restricted access areas, from damage during performance of Work.
- .2 Be responsible for damage incurred.

1.12 Fire Routes

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

1.13 Measurement of Payment

- .1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules – Bar (GANTT) Chart.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used.

PART 3 EXECUTION

3.1 Not Used

- .1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Mobilization and Demobilization

- .1 Commencement of mobilization constitutes acceptance of existing conditions and verification of dimensions
- .2 Provide all labour, equipment and materials, and performance of all Work necessary for mobilization to, and demobilization from site. This includes all Departmental Representative provided supplies, equipment and material. Department supplied geomembrane and geotextile are on site.
- .3 Mobilization to include transportation to site of Contractor's labour, equipment, materials, and assembling, erecting, and preparing site in readiness as required to start Work, all in accordance with Contractor's Schedule.
- .4 Demobilization to include dismantling and removal from site, of all Contractor's equipment, materials, waste resulting from cleanup of site and transportation of labour from site. This includes removal of all identified historical relics and similar objects found during course of Work, as specified in Section 01 35 43 – Environmental Procedures. Three rolls of "Arctic Liner" geomembrane currently on site will remain on site but relocation will be required.
- .5 Decontaminate and clean all equipment used on the Project prior to demobilization according to Section 01 35 15 – Special Procedures for Contaminated Sites.
- .6 Give five (5) days advance notice in writing to Departmental Representative prior to mobilizing to site.
- .7 Summarize the proposed mode, route, equipment, labour and all other requirements for the mobilization and demobilization of all required permits, equipment, materials, waste and personnel to complete the Work, as indicated in these specifications, in a Mobilization and Demobilization Plan. Submit the Mobilization and Demobilization Plan to the Departmental Representative a maximum of five (5) days after contract award.
- .8 All mobilization and demobilization methods to comply with the requirements of all applicable codes, standards, and guidelines.
- .9 All personnel supervising or operating equipment to be properly certified.
- .10 A Post-Demobilization site visit will be required as part of the Post-Demobilization Inspection as per Section 01 77 00 – Closeout Procedures.

1.2 Submittals

- .1 Submit Mobilization and Demobilization Plan in accordance with Section 01 33 00 - Submittal Procedure for review by Departmental Representative.
- .2 Submit to Departmental Representative, three (3) hard copies and one (1) electronic copy of the Mobilization and Demobilization Plan.

1.3 Measurement of Payment

- .1 All costs for initial mobilization of all equipment and materials, including the submission of the Mobilization and Demobilization Plan, are to be included in the lump sum price for Mobilization, Item 01 53 00-1, as indicated in the Basis of Payment Schedule. The lump sum price for mobilization is to include labour, equipment, materials, supplies, meals, accommodation, flights and any other costs necessary to undertake Work required. Mobilization of equipment, supplies and materials after initial mobilization will not be considered for payment under this section, but will be included for payment under Section 01 52 00 – Construction Facilities.
- .2 All costs for demobilization of all equipment and materials are to be included in the lump sum price for Demobilization, Item 01 53 00-2 as indicated in the Basis of Payment Schedule. The lump sum price for Demobilization is to include all labour equipment, materials, meals, accommodation, flights and any other costs necessary to undertake the work required. Payment for Demobilization will be made after satisfactory cleanup of the site, removal from the site of all equipment, materials, site demolition/debris materials and contaminated soils, all specified archaeological finds and similar objects, as indicated and submission to Departmental Representative of all Contractor submittals as per Section 01 78 00 – Closeout Submittals.
- .3 Except as otherwise indicated herein, Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules – Bar (GANTT) Chart.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used.

PART 3 EXECUTION

3.1 Not Used

- .1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 General

- .1 Use material and equipment acceptable to Departmental Representative unless otherwise specified.
- .2 No later than ten (10) days after contract award, submit the following information for materials and equipment proposed for supply:
 - .1 name and address of manufacturer,
 - .2 trade name, model and catalogue number,
 - .3 performance, descriptive and test data,
 - .4 manufacturer's installation or application instructions,
 - .5 evidence of arrangements to procure.
- .3 Provide material and equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.
- .4 Use products of one manufacturer for material and equipment of same type or classification unless otherwise specified.
- .5 Provide material and equipment of specified design and quality, performing to published ratings, and for which replacement parts are readily available.

1.2 Submittals

- .1 All submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.3 Reference Standards

- .1 If there is question as to whether any product or system is in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.
- .2 Cost for such testing will be born by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.
- .3 Conform to latest date of issue of referenced standards in effect except where specific date or issue is specifically noted.

1.4 Quality

- .1 Products, materials, and articles (referred to as products throughout specifications) incorporated in Work to be new, not damaged or defective, and of best quality (compatible with specifications) 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 any dispute arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.

1.5 Availability

- .1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for any 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, Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.6 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, lumber on flat, solid supports and keep clear of ground. Slope to shed moisture. Secure from wind.
- .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 Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

1.7 Transportation

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

1.8 Manufacturer's Instructions

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions.
- .2 Notify Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative may 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.

1.9 Coordination

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

1.10 Measurement of Payment

- .1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules – Bar (GANTT) Chart.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used.

PART 3 EXECUTION

3.1 Not Used

- .1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Qualifications of Surveyor

- .1 Qualified registered surveyor with a minimum of five (5) years of surveying experience, or as acceptable to the Departmental Representative.
- .2 Surveyor cannot be an employee of Contractor.

1.2 References

- .1 Departmental Representative's identification of existing survey control points and property limits.

1.3 Survey Reference Points

- .1 Locate, confirm and protect control points prior to starting site Work. Preserve permanent reference points during construction. Condition and accuracy of control points is unknown, Contractor to re-establish local control points where required.
- .2 Make no changes or relocations without prior written notice to Departmental Representative.
- .3 Report to Departmental Representative when reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
- .4 Replace control points in accordance with original survey control.

1.4 Survey Requirements

- .1 Establish stable temporary survey control points for use in laying out work. Re-establish local control points at the start of each construction season.
- .2 Establish lines and levels, locate, and lay out, by instrumentation.
- .3 Prepare a topographic map of work sites prior to excavation work to provide a baseline survey for quantity measurements.
- .4 Prior to backfilling excavations, survey the base of the excavation, in a minimum of 1 m grid.
- .5 Stake location of facilities in the field, and prepare a record drawing showing final location and contours of the facilities.
- .6 Maintain surveys for quantity calculations.
- .7 Survey and record existing monitoring well location, ground elevation and top of pipe elevation.
- .8 Survey and record permanent survey control monument location and elevation. Survey of permanent control to meet the following minimum tolerances:
 - .1 Horizontal misclosure: 1:25,000
 - .2 Vertical misclosure: 0.01 m

1.5 Survey Equipment

- .1 Maintain at site, for duration of the construction period, a complete set of survey equipment for occasional use by Departmental Representative. Shared use of Contractor's survey equipment is acceptable.
- .2 Equipment to include:
 - .1 Surveying Total Station or real-time GPS with data recording capability, tripod, spare battery, battery charger, downloading hardware and software and all associated ancillary items.
 - .2 Automatic level with tripod.
 - .3 Single prism with 5 metre collapsible range pole, for Total Station, if supplied.
 - .4 Triple prism with tripod, for Total Station, if supplied.
 - .5 50 metre cloth tape (steel reinforced)
 - .6 5 metre collapsible level rod.
 - .7 Magnetic pin finder (high frequency).
 - .8 One (1) 1.2 m carpenter's level.
- .3 Calibrate all equipment prior to each construction season.

1.6 Survey Markers

- .1 Provide all survey markers and other items required to complete Work as specified, including, but not limited to:
 - .1 Pointed stakes (minimum 1.2 m in length, 12 mm thick, 38 mm wide)
 - .2 Pointed hubs (minimum 0.5 m in length, 20 mm thick, 38 mm wide)
 - .3 Nails (100 mm long), spikes (250 mm long), pins (1 m long), etc.
 - .4 Fluorescent paint, flagging, etc.
 - .5 Felt markers, chalk, wax pens, etc.
- .2 Maintain supply of survey markers for Departmental Representative's use.

1.7 Records

- .1 Maintain a complete, accurate log of control and survey Work as it progresses.

1.8 Submittals

- .1 Submit name, address and resume of Surveyor to Departmental Representative ten (10) days prior to construction commencement each season.
- .2 On request of Departmental Representative, submit documentation (e.g. raw survey observations) to verify accuracy of field work. Maintain accuracy to 0.01 m vertically and 0.1 m horizontally. Submit data in UTM NAD83 Datum.
- .3 Submit survey data backup for quantities claimed on Progress Claims.

- .4 Submit raw survey data in electronic form containing (at minimum):
 - .1 Date of survey
 - .2 Name of survey (e.g. Landfill Berms - Finished Grade or Beach Area - Original Ground, etc.)
 - .3 Point numbers, northing, easting, elevation, descriptions
- .5 Submit the record survey data file as the latest as-constructed information. Submission of more than one data file as record information for each facility is not acceptable.
- .6 Submit all drawings electronically in accordance within PWGSC protocols for AutoCAD drawings and by hard copy.
- .7 Submit to the Departmental Representative documentation certifying the calibration of the equipment ten (10) days prior to construction commencement each season.

1.9 Measurement of Payment

- .1 Include all direct costs for provision of survey information, including surveyor, equipment and other items specified herein in the lump sum price bid for Survey, Item 01 71 00-1 in the Basis of Payment Schedule.
- .2 Except as otherwise indicated herein, Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules - Bar (GANTT).

PART 2 PRODUCTS

2.1 Not Used

- .1 Not Used

PART 3 EXECUTION

3.1 Not Used

- .1 Not Used

END OF SECTION

PART 1 GENERAL

1.1 Closeout Procedures

- .1 Notify Departmental Representative when Work is considered ready for substantial performance.
- .2 Accompany Departmental Representative on preliminary inspection to determine items listed for completion or correction.
- .3 Comply with Departmental Representative's instructions for correction of items of Work listed in executed Certificate of Substantial Completion.
- .4 Notify Departmental Representative of instructions for completion of items of Work determined in Departmental Representative's final inspection.

1.2 Inspection and Declaration

- .1 Contractor's Inspection: Contractor and all Subcontractors to conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
 - .2 Request Departmental Representative's Inspection.
- .2 Departmental Representative's Inspection: Departmental Representative and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor to correct Work accordingly.
- .3 Completion: submit written Request for Final Inspection, including certification that the following have been performed:
 - .1 Work has been completed and inspected for compliance with Contract Documents.
 - .2 Defects have been corrected and deficiencies have been completed.
 - .3 Work is complete and ready for Final Inspection.
- .4 Final Inspection: when items noted above are completed, request final inspection of Work by Departmental Representative and Contractor. If Work is deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection.
- .5 Post-Demobilization Inspection: once demobilization is completed, Departmental Representative will request a Post-Demobilization inspection of Work completed by Departmental Representative and Contractor. If Work is deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection by Departmental Representative.

1.3 Measurement of Payment

- .1 All direct costs for the Post Demobilization Inspection are to be included in the lump sum price for Post Demobilization Inspection, Item 01 77 00 - 1, as indicated in Basis of Payment Schedule.
- .2 Except as indicated above, Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules – Bar (GANTT) Chart.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used.

PART 3 EXECUTION

3.1 Not Used

- .1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Format

- .1 Organize all closeout data in the form of an instructional manual, called Project Record Documents.
- .2 Binders: vinyl, hard covered, three (3) 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- .3 When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.
- .4 Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of Project and identify subject matter of contents.
- .5 Arrange content by site feature under Section numbers and sequence of Table of Contents.
- .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .7 Text: Manufacturer's printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- .9 Provide CAD files in AutoCAD format on CD.

1.2 Contents – Each Volume

- .1 Table of Contents: provide title of Project;
 - .1 Date of submission; names;
 - .2 Addresses, and telephone numbers of Contractor with name of responsible parties;
 - .3 Schedule of products and systems, indexed to content of volume;
 - .4 Summary of Health and Safety issues, Environmental issues and performance indicators.
- .2 For each product or system:
 - .1 List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Product Data: mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Include As-Built drawings as specified in this section.
- .5 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified.

1.3 Final Survey

- .1 Submit Project Record Documents, as specified in this section, to the Departmental Representative at the completion of the Work and at the end of each construction season.

1.4 Record Documents

- 1 In addition to requirements in General Conditions, maintain at the site for Departmental Representative one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to the Contract.
 - .5 Reviewed shop drawings and product data.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 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 the Project Record Documents. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Departmental Representative.
- .6 Include Record Documents within the Project Record Documents to be submitted as specified in this section.

1.5 Recording Actual Site Conditions

- .1 Record information on set of black line opaque drawings, and in copy of Project Record Documents, provided to Departmental Representative as specified in this section.
- .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.

- .4 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
 - .1 Field changes of dimension and detail.
 - .2 Changes made by change orders.
 - .3 Details not on original Contract Drawings.
- .5 References to related shop drawings and modifications.
 - .1 Field changes of dimension and detail.
 - .2 Changes made by Change Order.
- .6 Specifications: legibly mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.
- .7 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

1.6 Record Drawings

- .1 Departmental Representative will provide to Contractor, two (2) sets of white prints for record drawing purposes.
- .2 Maintain project record drawings and record accurately deviations from Contract documents on one set of prints.
- .3 Record changes in red.
- .4 At completion of Project and prior to final inspection, neatly transfer record notations to second set of drawings and submit both sets to Departmental Representative. Include record drawings in the Project Record Documents, submitted to Departmental Representative as described in this section.

1.7 Other Records

- .1 Prior to completion of Project, and at the completion of each construction season, submit the following to the Departmental Representative:
 - .1 Copies of all documents and permits obtained by the Contractor.
 - .2 Results of all testing carried out by the Contractor.
 - .3 Any other pertinent information.
 - .4 Copies of all shipping documents identifying the shipper, the receiver and all carriers involved in the transport of materials.
- .2 Consolidate the above information in the Project Record Document and submit to the Departmental Representative as described in this section.

1.8 Measurement of Payment

- .1 Include all direct costs for provision of Project Record Documents in the lump sum price bid for Project Record Documents, Item 01 78 00-1 in the Basis of Payment Schedule.
- .2 Except as indicated above, work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules – Bar (GANTT) Chart.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used.

PART 3 EXECUTION

3.1 Not Used

- .1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Description

- .1 This Section specifies the requirements for the excavation, treatment, and/or disposal of contaminated soils.

1.2 Definitions

- .1 Petroleum Hydrocarbons (PHC): Hydrocarbon products described by laboratory analyses as lubricating oil and grease, fuel oil, diesel and/or gasoline.
- .2 Contaminated Soil: Soil or native rock containing PHC at concentrations exceeding at least one applicable remediation criterion.
- .3 Free Product: The presence of a measurable layer of petroleum hydrocarbon product in the liquid phase.
- .4 Light Hydrocarbons: F1 and F2 fraction petroleum hydrocarbons.
- .5 Heavy Hydrocarbons: F3 and F4 fraction petroleum hydrocarbons.
- .6 Event Cubic Metre (event m³): Method of payment for processing of the Contaminated Soil at the Land Treatment Unit, using the appropriate equipment, measured by processing event multiplied by the cubic metre of surveyed Contaminated Soil processed, survey completed as specified in Section 31 22 15 - Grading.
- .7 Land Treatment Unit: Area and associated facilities for the treatment of Contaminated Soils.
- .8 General Fill: Granular fill used for re-grading low areas and to replace excavated contaminated soil.
- .9 Debris: Scattered, stockpiled, visible, surficial and/or buried debris. Debris consists of hazardous and non-hazardous material.

1.3 Qualifications

- .1 Be thoroughly familiar with and knowledgeable about existing site conditions, scope of work and requirements of the Specification.
- .2 Only Contractor's personnel capable of demonstrating a history of satisfactory experience in the area of contaminated soil and who can satisfy Federal and Territorial requirements will be permitted to carry out the work of this Section.
- .3 Contractor's Foreman responsible for the work of this Section is to have appropriate level of experience in the area of contaminated soil management.
- .4 Trained and certified personnel are required to complete all Transportation of Dangerous Goods Act (TDGA) documentation and recording requirements.

1.4 Site Conditions

- .1 Suspend operations whenever climatic conditions are unsatisfactory for excavating, backfilling or otherwise performing the Work to conform with this Specification.
- .2 After occurrence of heavy rains, do not operate equipment in designated areas until the material has dried sufficiently to prevent excessive rutting.
- .3 Contractor is advised that the ground in low-lying areas may often be saturated. Dewater saturated ground and ponded areas as required, complying with Section 01 35 15 – Special Project Procedures for Contaminated Sites.
- .4 Prior to the commencement of the work, remove debris, snow, ice and standing water from areas to be excavated and backfilled.
- .5 During excavation of contaminated soil, maintain a stable excavation and dewater as required or as directed by Departmental Representative.

1.5 Protection

- .1 Environmental protection measures are to be in accordance with the requirements specified in Section 01 35 43 - Environmental Procedures.
- .2 Treatment and application to East land treatment unit of all PHC-contaminated wastewater resulting from the dewatering of ponded contaminated soil areas and the decontamination of equipment as specified in Section 01 35 43 - Environmental Procedures and Section 01 35 15 - Special Project Procedures for Contaminated Sites.

1.6 Personnel Protection

- .1 Follow, at all times, all applicable guidelines and regulations including, but not limited to, the following:
 - .1 Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities: NIOSH Publication No. 85-115.
 - .2 Hazardous Waste Worker Training Manual: Canadian LIUNA - Contractors Training Council, 1992.
- .2 Provide workers, Departmental Representative and Departmental Representative's staff when required with protection appropriate to the potential type and level of exposure as specified in the Site Specific Health and Safety Plan and Section 01 35 32 - Site Specific Health and Safety Plan.
- .3 Some areas designated for cleanup under this contract involve soils and hazardous materials which contain inorganic elements, hydrocarbons, and other contaminants which are considered hazardous to human health.
- .4 When working with potentially hazardous materials workers are to wear protective clothing and equipment as specified in the Site Specific Health and Safety Plan and required by Section 01 35 32 – Site Specific Health and Safety Plan.
- .5 Supply sufficient quantities of designated protection equipment to fit all site personnel including Departmental Representative and authorized visitors. Inform workers as to risks, and train in safe work practices.

1.7 Measurement for Payment

- .1 The excavation of Contaminated Soil and backfill of general fill from all site areas will be measured for payment by the cubic metre of excavated soil based on survey methods, as outlined in Section 31 22 15 - Grading. Contaminated Soil Excavation and Backfill will be paid under Item 02 55 13-1 in the Basis of Payment Schedule.
- .2 The scope of work for Payment Item 02 55 13-1 - Contaminated Soil Excavation is to include:
 - .1 Excavation of Contaminated Soil from indicated site areas.
 - .2 Screen excavated material as specified in this section.
 - .3 Transport and placement of the screened Contaminated Soil to the on-site Land Treatment Units
 - .4 The supply, transport, placement and compaction of General Fill from quarry and/or applicable on-site borrow source to replace the excavated Contaminated Soil to original grade, as indicated.
- .3 Payment for the construction of the Soil Treatment Area(s), as indicated on the drawings, will not be paid for in this section, but will be included for payment in Section 31 22 15 - Grading, Section 31 32 21 - Geotextiles and Section 31 32 22 - Geomembranes, as applicable.
- .4 No extra payment will be made for soil removed from beyond the specified limits of excavation, unless such removal has been specifically directed by Departmental Representative. The volume of contaminated soil excavation beyond the specified limits that have been approved by Departmental Representative will be determined by survey.
- .5 All costs associated with the cleanup or treatment of contamination of areas within or surrounding the Land Treatment Unit(s) due to the migration of PHC contaminants from the soil being placed as a result of Contractor's actions or inactions are to become the responsibility of Contractor. These costs are to include all costs of investigation to determine the extent of PHC contamination migration, as well as soil excavation and treatment costs.
- .6 The following activities are considered incidental to the work identified in this section and will not be measured separately:
 - .1 Provision of signage at the Land Treatment Unit(s).
 - .2 Any necessary excavation to facilitate testing of contaminated soils.
 - .3 Provision of all necessary safety equipment and clothing, as specified in Section 01 35 32 - Site Specific Health and Safety Plan.
 - .4 Any requirements of permits.
 - .5 Grading of backfilled excavations to prevent ponding and blend in with the surrounding terrain, as directed by Departmental Representative.
- .7 Costs for additional work required for excavation within permafrost will be submitted to the Departmental Representative using a Change Order request. The scope of work will be negotiated with Departmental Representative on a site specific basis.
- .8 Dewatering will not be measured under this Section. Dewatering is included under Section 01 35 15 - Special Project Procedures for Contaminated Sites.
- .9 Except as indicated above, work under this section will not be measured. Include all

costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate the cost of this Work as a separate line item in the cost breakdown specified in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules - Bar (GANTT).

PART 2 PRODUCTS

2.1 Materials

- .1 Environmental Protection Supplies: as per Section 01 35 43 - Environmental Procedures.
- .2 Backfill Material: material from identified quarry or appropriate on-site borrow sources.

PART 3 EXECUTION

3.1 Excavation of Contaminated Soil and Backfilling

- .1 Layout and excavate areas of contaminated soil to the limits as indicated. All layouts are to be field verified by Departmental Representative prior to excavation.
- .2 Remove all surface debris prior to excavation. Remove all debris from excavated soil, sort and dispose of appropriately.
- .3 Suppress dust generated during excavation operations with a water spray. Prevent surface water from entering the excavated area.
- .4 Dewater ponded contaminated soil areas, as required. Maintain soil excavations free of standing water during soil removal, confirmatory sampling and backfilling activities. Comply with discharge requirements specified in Section 01 35 43 - Environmental Procedures.
- .5 Notify Departmental Representative so that confirmatory soil samples can be collected immediately after reaching the depth and extents of the contaminated soil, as indicated. No further excavation of the soil will proceed until the results of confirmatory samples are assessed by Departmental Representative.
- .6 Do not operate equipment in contaminated soil areas that have been excavated until Departmental Representative has confirmed, based on the results of confirmatory testing, that no further excavation of contaminated soil in the area is required.

3.2 Erosion, Sediment and Drainage Controls

- .1 When excavating in the vicinity of a drainage course or a body of water prevent the release of sediment and deleterious materials into the water.
- .2 At the completion of contaminated soil excavation, remove any erosion, sediment and drainage controls, as directed by Departmental Representative. Dispose of all non-granular erosion, sediment and drainage control materials off-site.

3.3

Equipment Decontamination

- .1 Decontaminate all excavating equipment including the bucket, tracks, etc., of soil lumps and particles prior to mobilizing to the next contaminated soil area, as specified in Section 01 35 15 - Special Project Procedures for Contaminated Sites. Collect and dispose of the removed material in accordance with the contaminated soil designation. Take special precautions to mitigate the tracking of contaminated soil over and between the site areas.

END OF SECTION

PART 1 GENERAL

1.1 Description

- .1 This Section specifies requirements for:
 - .1 The grading of designated areas including contaminated soil excavations, access roads and general site areas requiring regrading and reshaping;
 - .2 The supply and placement of fill materials as indicated.
- .2 Requirements for replacement and upgrades to site roads.

1.2 Definitions

- .1 Reshaping: The levelling and grading, to a maximum depth of 600 mm, including the movement of boulders, of designated areas to blend in with the natural terrain and provide positive drainage. Reshaping does not require the supply and placement of additional granular fill material. Excavation of the terrain to a depth greater than 600 mm during reshaping operations will be considered as common excavation.
- .2 Scarifying: The disturbance or loosening of a soil to a minimum depth of 300 mm to allow for compaction or aeration.
- .3 Re-grading: The supply and placement of granular fill in designated areas to blend in with the natural terrain and provide positive drainage.
- .4 Common Excavation: Excavation of materials of whatever nature encountered in the work to the lines and grades indicated.
- .5 Coarse-Grained Materials: Native material with less than 20% of material passing the 80 micron sieve by weight.
- .6 Fine-Grained Materials: Native material with more than 20% of material passing the 80 micron sieve by weight.
- .7 General Fill: Granular fill used for re-grading low areas and to replace excavated contaminated soil.
- .8 Erosion Protection: Riprap Rock used for erosion protection.
- .9 Unsuitable Material: Excavated material unsuitable for use in work or surplus to requirements.
- .10 Borrow Material: Material obtained from approved areas and required for re-grading requirements.
- .11 Maximum Dry Density is determined by the Standard Proctor Method in accordance with ASTM D698. It is applicable if less than 30% of the material is retained on the ASTM 19 mm sieve.
- .12 Corrected maximum dry density is applicable if more than 30% of the material is retained on the ASTM 19 mm sieve. It is defined as:

- .1
$$D = \frac{D1 \times D2}{(F1)(D2) + (F2)(D1)}$$

.2 Where:

- D = corrected maximum dry density kg/m^3
F1 = fraction (decimal) of total field sample passing ASTM 19.0 mm sieve
F2 = fraction (decimal) of total field sample retained on ASTM 19.0 mm sieve (equal to $1.00 - F1$)
D1 = maximum dry density, kg/m^3 of material passing ASTM 19.0 mm sieve determined in accordance with Method C of ASTM D698 or latest edition thereof.
D2 = bulk density, kg/m^3 of material retained on ASTM 19.0 mm sieve, equal to $1000 G$ where G is bulk specific gravity (dry basis) of material when tested to ASTM C127-84, or latest edition thereof.

- .13 Haul Roads: Roads constructed or upgraded from existing access routes for the purpose of hauling material or equipment to complete the Work.

1.3 Site Conditions

- .1 Suspend operations whenever climatic conditions are unsatisfactory for grading to conform with this Specification in consultation with the Departmental Representative.
- .2 Do not operate equipment in work areas until the material has dried sufficiently to prevent excessive rutting.
- .3 Areas to be graded are to be free from debris and excessive snow, ice or standing water.
- .4 Contractor is advised that soft ground conditions may be prevalent at the site during periods of maximum thaw of the permafrost. Schedule and carry out work to minimize disturbance to permafrost soils.

1.4 Protection

- .1 Prevent damage to benchmarks, existing buildings, surface or underground service or utility lines which are to be used to support ongoing construction activities until such time as they are to be demolished. Immediately repair any damage to the above or replace the above in the event of damage, at no cost to Departmental Representative.
- .2 Protect archaeological sites from construction and construction traffic.
- .3 Protect unanticipated archaeological resources encountered during construction, suspend all activities in that area and notify Departmental Representative immediately.
- .4 Protect and do not disturb spawning beds and breeding grounds as identified or required by the Authorities Having Jurisdiction (AHJ) during construction.

1.5 Measurement for Payment

- .1 For items to be measured for payment by survey, survey the area to receive fill either by cross section or by grid, following removal/stripping (if required) of surface material. Survey significant breaks in the original ground surface grade, incorporating at minimum the cross section locations indicated on the Drawings. The maximum distance between cross sections or grid points is to not exceed 5 m unless otherwise indicated by Departmental Representative. Survey measurements are to be to the nearest 0.01 m. Following placement of granular fill material to specified thickness,

Contractor is to resurvey the cross-sections or grid points. The volume measurement of granular material for payment will be determined by digital terrain model or average end area method, as Departmental Representative deems appropriate for the survey information provided. Preference is to be for quantity determination by digital terrain model.

- .2 The unit of measurement for reshaping within designated areas indicated and to limits authorized by Departmental Representative will be by the square metre as measured by survey. Reshaping associated with earthworks, including, but not limited to, placement of fill materials, regrading or levelling of areas prior to construction, is not to be measured as part of reshaping, but is to be considered incidental to the unit price bid for such earthworks. Areas on the drawings requiring levelling prior to construction will not be considered for payment under reshaping, unless explicitly noted on the Drawings, or authorized by the Departmental Representative.
- .3 Upgrading and replacing site access roads to support Contractor's work, but excluding roads constructed solely to develop borrow sources, will be paid as a lump sum under Item 31 22 15-1, Road and Access Upgrades and Replacement in the Basis of Payment Schedule.
- .4 Backfill for contaminated soil excavations is not included for payment under this section but is included for payment as described in Section 02 55 13 - Contaminated Soil.
- .5 The following work items will be incidental to the work described in this Section, and will not be measured separately:
 - .1 Excavation, screening and stockpiling of existing treated material adjacent to the West Land Treatment Unit, as required.
 - .2 Removal of surficial boulders over 300 mm in diameter from construction areas.
 - .3 Mining, separating, processing, screening, and stockpiling of borrow materials.
 - .4 Grading of on-site borrow areas to approximate the before-construction condition upon completion.
 - .5 Loading, hauling and haul road construction, maintenance and rehabilitation.
 - .6 Water for moisture conditioning, compaction and dust control.
 - .7 All construction surveying, including layout of facilities, slope staking, and supply and installation of witness grade stakes to monitor the depth of granular material placement.
 - .8 Surveying and calculation of granular material quantities for progress payment purposes.
 - .9 Reshaping and regrading of Contractor's laydown areas including the supply, placement and compaction of granular material.
 - .10 Draining of wet areas prior to regrading operations.

- .6 No measurement for payment will be made for:
 - .1 Rejected material.
 - .2 Surplus material.
 - .3 Excavation, and stripping and replacement of organic material beyond specified limits.
 - .4 Excavation to prove borrow sources.
 - .5 Placement of granular fill beyond the limits and depths specified, unless specifically authorized by Departmental Representative.
- .7 Except as indicated above, work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules – Bar (GANTT).

PART 2 PRODUCTS

2.1 Materials

- .1 Fill materials are located at the nearby quarry site and identified on-site borrow sources.
- .2 Fill materials require the approval of Departmental Representative.

PART 3 EXECUTION

3.1 Site Preparation

- .1 Unless specifically indicated, do not remove existing topsoil or organic materials from fill placement areas.
- .2 Borrow Excavation:
 - .1 Obtain from potential borrow areas as indicated, all required fill material.
 - .2 The existing operational pads and roadways at the site are not to be used as granular material borrow sources unless specifically authorized by Departmental Representative.
 - .3 Advise Departmental Representative of selected borrow areas seven days in advance of excavation operations for appropriate testing to be performed.
 - .4 Notify Departmental Representative whenever unsuitable materials are encountered in borrow areas.
 - .5 Stripping, stockpiling and replacement or placement to a new location of organic material and stripping and disposal of unsuitable material found when excavating existing granular fills to be as directed by Departmental Representative.
 - .6 Final grading of borrow area as required under the quarry permit upon completion to be tidy, in a well drained condition, free of standing water to the satisfaction of Departmental Representative.
 - .7 Upon completion of final grading, leave all slopes in a stable condition and spread all stripped organics as may be required.
 - .8 Transport aggregate from borrow areas to the work areas via existing access routes where available. Maintain and provide for dust control on the access route between the borrow area and the work areas.

3.2 Placement, Moisture Conditioning, and Compaction of Granular Fill Material

- .1 Set grades and lay out work in detail from control points in areas of granular fill placement. Verify the original ground topography by survey.
- .2 Haul granular fill material from borrow sites to designated areas.
- .3 Place granular fill material to the lines, grades, elevations and dimensions indicated, or agreed to with Departmental Representative.
- .4 Do not place granular fill on snow or surface ice.
- .5 Maintain natural drainage patterns, unless otherwise directed, and fill depressions to avoid any ponding of water adjacent to embankments.
- .6 All fill material are to be placed in an unfrozen state. Fill material to be free from debris, snow and ice. Do not place granular fill if the outside air temperature is below 0°C, unless otherwise directed by Departmental Representative.
- .7 Maintain a crowned surface during construction to ensure ready runoff of surface water. Do not place material in free standing water. Drain low areas, before placing material.
- .8 Do not dump fill material over the side slopes of berms.
- .9 Place and compact fill material in horizontal lifts.
- .10 Cease construction at any sign of movement or bulging in the embankments to allow assessment by Departmental Representative.
- .11 For fill depths greater than 500 mm, place granular material in lifts not exceeding 250 mm in loose thickness. For fill depths greater than 200 mm and less than 500 mm, place material in two lifts of equal depth. For fill depths less than 200 mm, place material in one lift. Conduct landfilling operations as specified in this section.
- .12 Moisture condition granular fill as required to meet compaction requirements. Provide a water truck capable of efficiently placing water on granular fill. If material is excessively moist, aerate by scarifying with suitable equipment until moisture content is corrected.
- .13 Compact Granular Fill material to a minimum of 95 percent or as shown of Maximum Dry Density determined in accordance with ASTM D698.
- .14 If granular fill has dried out prematurely due to weather conditions, scarify surface, adjust moisture condition and recompact at Departmental Representative's discretion. No extra payment will be made for extra costs incurred as a result of any extra work.
- .15 Compaction equipment must be capable of obtaining required densities uniformly in materials on project. Hand equipment must be available for compaction in areas where large equipment can not access and around instrumentation. Tracked or tired equipment may be substituted for dedicated compaction equipment, provided it can demonstrate satisfactory compactive effort as specified in this section.
- .16 Shape finished surface to required cross-section and grade, or as directed by Departmental Representative.

3.3 Regrading

- .1 Supply, compact, place, blade and trim Granular Fill material to elevation, grades, and cross-section dimensions indicated or directed by Departmental Representative.
- .2 Regrade to allow for positive drainage.
- .3 Supply and install witness grade stakes in areas to be regraded to monitor the depth of granular material. The grade stakes are to be placed on a grid spacing acceptable to Departmental Representative for each specific regrade area. Immediately replace all grade stakes that are damaged or displaced by Contractor operations.

3.4 Reshaping

- .1 Obtain authorization from Departmental Representative prior to beginning reshaping operations.
- .2 Blade and trim material to elevation, grades, and cross-section dimensions indicated or directed by Departmental Representative. Obtain Departmental Representative's approval before reshaping any area.
- .3 Make use of material within the area designated for reshaping to provide a surface that is smooth and compact with stable slopes.
- .4 Blend the final reshaped surface with the natural terrain and provide positive drainage.

3.5 Site Access and Haul Roads

- .1 Upgrade existing access roads and haul roads as required to complete the Work to applicable regulations including, but not limited to, the NWT mine Health and Safety Act,

3.6 Excavating

- .1 Lay out work in detail from control points in areas of excavation. Verify the original ground topography by survey.
- .2 Excavate to lines, grades, elevations and dimensions as indicated on the Drawings or designated by Departmental Representative.

- .3 Keep excavations free of water while work is in progress. Protect open excavations against flooding and damage due to surface run-off. Dispose of water in a manner not detrimental to work completed or under construction. Provide treatment and discharge all water resulting from the dewatering of open excavations as described in Section 01 35 15 - Special Project Procedures for Contaminated Sites.
- .4 Dispose of excavated material at approved locations. Do not obstruct flow of surface drainage or natural watercourses.
- .5 Where required due to unauthorized over-excavation, fill areas with general fill, as directed by Departmental Representative, compacted to a minimum 95 percent of Maximum Dry Density in accordance with ASTM D698.

3.7 Backfilling

- .1 For backfilling operations, use compaction equipment capable of obtaining required densities in materials on project.
- .2 Do not proceed with backfilling operations until Departmental Representative has inspected and approved excavation.
- .3 Areas to be backfilled are to be free from debris, snow, ice and water.
- .4 Commence backfilling of excavated soil areas within 1 day of receipt of confirmatory sampling results indicating no further excavation in the area is required. Costs for any extra work caused as a result of leaving excavations open longer will be the responsibility of Contractor.
- .5 Place specified backfill material in uniform horizontal layers in depths to grades indicated. Compact each layer before placing succeeding layer.
- .6 No trenches or excavations are to be left open during the winter.

3.8 Trenching

- .1 Excavations in excess of the maximum allowable unprotected height of slopes identified in applicable regulations, Section 01 41 00 - Regulatory Requirements, are to be shored, cut back or protected by temporary protective structure.
- .2 Trenching activities to be in compliance with applicable safety regulations and requirements specified in Section 01 35 32 – Site Specific Health and Safety Plan.
- .3 Trenching activities to be completed in compliance with all other excavation requirements, specified in this section.

3.9 Landfilling

- .1 Lay out work in detail from survey control points. Verify the original ground topography by survey.
- .2 Construct perimeter berms of granular fill to the dimensions as indicated.

3.10 Testing

- .1 Testing of fill material and compaction testing will be carried out and paid for by Departmental Representative.
- .2 Frequency and method of testing will be determined by Departmental Representative.

3.11 Finishing and Tolerances

- .1 All areas to be covered with granular material are to be uniform without projections or depressions exceeding 100 mm in 3 m.
- .2 Granular fill surfaces to be within 100 mm of design elevations but not uniformly high or low.
- .3 Finished surfaces are to be graded to promote positive drainage and minimize standing water.

3.12 Maintenance

- .1 Maintain finished surfaces in a condition in accordance with this Section until succeeding material is applied or until demobilization.

END OF SECTION

PART 1 GENERAL

1.1 Description

- .1 This section specifies the requirements for the supply and installation of non-woven geotextiles for the site as may be required beyond that which is supplied by the Department. The Department will supply adequate material on site for the East land treatment unit.

1.2 Manufacturer's Certification and Warranty

- .1 Provide to Departmental Representative, prior to shipment of the material to site, a copy of the Mill Run QA/QC data showing that the material to be shipped to the site has test values for each property specified in this section that meet or exceed the property values specified for that material.
- .2 These certificates are to be signed by the Manufacturer's Product Manager or Quality Control Manager.
- .3 Provide a written warranty from the geotextile manufacturer against defects or deficiencies in the quality of the geotextile material supplied.

1.3 Measurement for Payment

- .1 The supply and transportation of Geotextile to site, beyond that supplied by the Department, including all labour and materials will be measured for payment by the square metre of geotextile installed. No extra payment is to be made for material overlap requirements or for patches over damaged material. The supply of Geotextile will be paid under Item 31 32 21-1 of the Basis of Payment Schedule.
- .2 Placement and installation of Geotextile to the lines and dimensions indicated, including all labour, materials, tools, supervision, and on-site transport will be measured for payment by the square metre of geotextile installed. No extra payment is to be made for material overlap requirements or for patches over damaged material. The installation of Geotextile will be paid under Item 31 32 21-2 of the Basis of Payment Schedule.
- .3 Excavating and backfilling necessary to install and anchor the geotextile beneath the original ground surface will be included in Section 31 22 15 - Grading.
- .4 Bear all costs for the transport and disposal of unused geotextile off-site upon completion of the project.
- .5 Except as indicated above, work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules - Bar (GANTT).

PART 2 PRODUCTS

2.1 Materials

- .1 Non-Woven Geotextile: The geotextile is to be a non-woven fabric consisting only of continuous chain polymeric filaments or yarns of polyester, formed into a stable network by needle punching. The fabric is to be inert to commonly encountered chemicals, hydrocarbons, mildew and rot resistant, resistant to ultraviolet light exposure, insect and rodent resistant, and conform to the properties listed below. The minimum average roll value (weakest principal direction) for strength properties of any individual roll tested from the manufacturing lot or lots of a particular shipment is to be in excess of the minimum average roll value, weakest principal direction, stipulated below.

.1	Thickness – Typical (ASTM D5199)	4.0 mm
.2	Grab Tensile Strength (ASTM D4632):	1650 N.
.3	Elongation at Failure (ASTM D4632):	50%.
.4	Tear Strength (ASTM D4533):	600 N.
.5	Apparent Opening Size (ASTM D4751)	150 microns
.6	Puncture (ASTM D4833):	1000 N.
.7	Weight – Typical (ASTM D5261):	500 g/m ²

2.2 Shipping, Handling and Storage

- .1 Provide the geotextile in rolls wrapped with protective covering to protect the fabric from mud, dirt, dust, and debris. The fabric is to be free of defects or flaws which significantly affect its physical properties. Label each roll of fabric in the shipment with a number or symbol to identify that production run.
- .2 During delivery and storage, protect geotextiles from direct sunlight, ultraviolet rays, excessive heat, mud, dirt, dust, debris, rodents and water.

PART 3 EXECUTION

3.1 Quality Assurance

- .1 All materials, procedures, operations, and methods are to be in strict conformance with the Drawings and Specifications and are to be subjected to strict quality assurance monitoring as detailed herein. The installed systems are to conform to the Drawings and Specifications, except as otherwise authorized in writing by Departmental Representative.

3.2 Underlying Surface Preparation

- .1 Ensure that the surface underlying the geotextile is graded smooth and is free from angular rocks, debris and protrusions. Remove all particles greater than 75 mm in diameter or sufficiently compact and cover with bedding so they pose no issue to liner integrity.

3.3 Deployment

- .1 Do not begin installation of geotextile until the base has been approved by Departmental Representative.

- .2 Deploy the geotextile by unrolling onto the prepared surface in orientation, manner and locations indicated.
- .3 Place geotextile material smooth and free of tension stress, folds, wrinkles and creases.
- .4 Place geotextile material on sloping surfaces in one continuous length from toe of slope to upper extent of geotextile, perpendicular to the slope direction.
- .5 Overlap adjacent geotextile panels in accordance with manufacturer's recommendations.
- .6 Employ sufficient temporary anchorage to hold geotextile in place during backfilling.
- .7 Protect installed geotextile material from displacement and damage until, during and after placement of additional material layers.
- .8 Repair rips or tears with a patch to cover a minimum of 1 m on each side of the rip or tear.

3.4 Anchorage

- .1 Anchor and backfill the geotextile as required. Temporary anchorage can be provided by sandbags. Compact backfill in such a manner as to not damage the geotextile.

3.5 Protection

- .1 Do not permit passage of any vehicle directly on geotextile at any time.

END OF SECTION

PART 1 GENERAL

1.1 Scope

- .1 This section covers the supply, as required beyond Department supplied material, all installation and quality assurance of a High Density Polyethylene (HDPE) geosynthetic liner or similar performance material liner for the East land treatment unit. The Department will supply on site adequate 0.75 mm Enviroliner geomembrane for the East land treatment unit.

1.2 Measurement For Payment

- .1 The supply and transport of liner to the lines and dimensions indicated, including all labour and materials will be measured for payment by the square metre of liner installed. No extra payment is to be made for material overlap requirements or for patches over damaged material. The supply of liner will be paid under Item 31 32 22-1 of the Basis of Payment Schedule.
- .2 The placement and installation of liner to the lines and dimensions indicated, including all labour, materials, tools, supervision, and on-site transport will be measured for payment by the square metre of HDPE installed. No extra payment is to be made for material overlap requirements or for patches over damaged material. The installation of HDPE will be paid under Item 31 32 22-2 of the Basis of Payment Schedule.
- .3 Excavating and backfilling necessary to install and anchor the geomembranes appropriately.
- .4 Bear all costs for the transport and disposal of unused geomembrane off-site upon completion of the project.
- .5 Except as indicated above, work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 Construction Progress Schedules – Bar (GANTT).

1.3 Submittals

- .1 The following items are to be submitted prior to liner installation:
 - .1 Certification by the manufacturer that all resin used in the manufacture of any additionally required geomembrane for this project meets the specifications.
 - .2 Copy of quality control certificates for all additionally supplied geomembrane rolls to be used on this project.
 - .3 Proposed installation panel layout identifying seams and details. The working drawings are to be in the form of an overlay to the construction drawings and indicate roll number, sizes, and positioning of rolls.

- .4 Resume of the qualifications of the Installation Supervisor and Master Seamer to be assigned to the proposed project.
- .5 Warranty: Obtain a written Manufacturer Warranty (for material) and the Installation Contractor Warranty (for workmanship). Warranties are to include both the quality of the material for a minimum of five (5) years and workmanship for a minimum of one (1) year.

PART 2 PRODUCTS

2.1 Geomembrane

- .1 Adequate geomembrane for the lining of the East land treatment unit is to be supplied by the Department and will be a high-density polyethylene (HDPE), or product of similar performance, with a nominal gauge of 0.75 mm. Use textured surface sheets for horizontal surfaces and on side slopes.
Additionally supplied geomembrane is to be manufactured of new, first quality resin and compounded and manufactured specifically for the intended purpose. Add carbon black to the resin if the resin is not compounded for ultra-violet resistance. The Manufacturer is to acquire enough resin of the same quality to produce the required amount of geomembrane to ensure uniform composition.
- .2 The surface of the geomembrane will not have striations, pinholes or bubbles and be free of holes, blisters, undispersed raw materials or any contamination by foreign matter; except that if, in the opinion of the Inspector, the blemish will not adversely affect properties and use of the geomembrane, Departmental Representative may accept the geomembrane after sufficient laboratory test data are provided to support such acceptance and provided that all such testing is done at the expense of Contractor.
- .3 Any additional geomembrane is to be supplied in rolls. Label each roll to identify the thickness of the material, the length and width of the roll, batch and roll numbers and name of manufacturer.
- .4 Raw Materials
 - .1 Resin:
 - .1 All resins for use in geomembrane must pass a candidate pre-approval process before being eligible for use. Each batch of resin will be sampled with the following testing performed and compared to the manufacturer's specifications:
 - a) Density: ASTM D1505
 - b) Melt Index: ASTM D1238
 - .2 Additives:
 - .1 All additives and concentrates must pass a candidate pre-approval process. All additives are to be statistically sampled with the following testing performed and compared to the manufacturer's specifications:
 - a) Carbon Black Content: ASTM D1603
 - b) Dispersion: ASTM D3015

.5 Finished Product On-Line During Production

- .1 A minimum of one person from the manufacturer's Quality Department independent of the Production Department is to be present for inspection of every roll.
- .2 A full width sample is to be cut from the end of each roll and thicknesses checked across the entire sample.
- .3 Appearance:
 - .1 Constant monitoring of:
 - a) Sheet surface appearance
 - b) Knife-cut edge
 - c) Folds, holes, creases, abrasions or other damage
- .4 Roll Identification
 - .1 The Quality Control Inspector is to control all paper work including roll tags. Four tags per roll will be used.
 - a) On the roll sleeve
 - b) Inside the core
 - c) On the production roll sample
 - d) On the roll surface
- .5 Out-of-Spec Material:
 - .1 Any roll not meeting the specification for any of the above inspections will be placed on hold for further evaluation.

.6 Finished Product Laboratory Testing During Production

- .1 The manufacturer's laboratory is to take samples every 4,000 square metres of produced material, as well as any other samples needed to perform the following testing.
- .2 Each sample is to meet the following specifications:
 - .1 Thickness: ASTM D1593
 - .2 Tensile Properties: ASTM D882
 - .1 Stress at Yield- 10 N/mm
 - .2 Elongation at Break- 500%
 - .3 Tear Resistance: ASTM D1004,
 - .4 Dimensional Stability: D1204 Max Change, $\pm 4\%$ change
- .3 All results are to be logged into the batch file. Any testing that yields out-of-spec results will be brought to the immediate attention of the Quality Control Manager. All material produced after the last sample meeting all specifications will be retrieved and placed on hold for further evaluation.

2.2 Protective Layers

- .1 Material used for bedding and protection of the geomembrane is to be free of debris or contaminants.

- .2 Geotextile used for protection of the geomembrane is to be as per Section 31 32 21 – Geotextiles.

PART 3 EXECUTION

3.1 General

- .1 The Installation (Sub)contractor is to be the Manufacturer or a Manufacturer approved Contractor trained and licensed to install the Manufacturer's geomembrane. Installation will be performed under the constant direction of a single field Installation Supervisor supplied by the Installation (Sub)contractor who will remain on site and be in charge throughout the liner installation for liner activities by the installer. This Installation Supervisor will have installed or supervised the installation and seaming of a minimum of 100,000 square metres of HDPE geomembrane or similar liner material.
- .2 Actual seaming is to be performed under the direction of a Master Seamer who has seamed a minimum of 50,000 square metres of geomembrane, using the same type of seaming apparatus specified in Section 3.5.3. The Master Seamer, who may also be the Installation Supervisor, will be present whenever seaming is performed.

3.2 On-Site Storage

- .1 The geomembrane is to be stored so as to be protected from puncture, dirt, grease, mud, mechanical abrasions, excessive heat or other damage.
- .2 The geomembrane is to be handled with equipment which does not contact the geomembrane itself or with clean fabric.
- .3 Any additional geomembrane rolls are to be stored on a prepared surface (not wooden pallets) and should not be stacked more than two rolls high.

3.3 Earthwork

- .1 Excavate the subgrade as necessary prior to liner system placement.
- .2 In conjunction with the Departmental Representative, on a daily basis, inspect the subgrade preparation and inspect the adequacy of the subgrade for purposes of the warranty. Removed and replaced with properly compacted fill weak or compressible areas which cannot be satisfactorily. All surfaces to be lined will be smooth, free of all foreign and organic material, sharp objects, or debris of any kind. These surfaces will provide a firm, unyielding foundation with no sharp changes or abrupt breaks in grade. Standing water or excessive moisture will not be allowed.
- .3 The Installer, on a daily basis, will inspect and certify that the surface on which the geomembrane will be installed is acceptable. After the supporting soil surface has been accepted, it will be the Installer's responsibility to indicate to the Departmental Representative any change to its condition due to natural causes or occurrences that may require repair work. Proceeding with the installation of the liner will be deemed to be acceptance of the subgrade and soil surface for purposes of the warranty.

3.4 Method Of Placement

.1 Responsibilities of Contractor:

- .1 No equipment or tools will damage the geomembrane by handling, trafficking or other means.
- .2 No personnel working on the geomembrane will wear damaging shoes or engage in other activities that could damage the geomembrane.
- .3 The method used to unroll the panels will not cause scratches or crimps in the geomembrane and will not damage the supporting soil or underlying geotextile.
- .4 The method used to place the panels will minimize wrinkles (especially differential wrinkles between adjacent panels). Locations of any wrinkles will be identified on Contractor's and Inspector's drawings. All defects will be marked and documented for repairs. The total number of defects will not exceed ten per 500 m². If greater than 10 defects the panel will be rejected.

Defects are defined as any abnormalities that affect the physical properties of the geomembrane material.

- .5 Adequate loading (e.g. sandbags or similar items that will not damage the geomembrane) will be placed to prevent uplift by wind (in case of high winds, continuous loading is recommended along edges of panels to minimize risk of wind flow under the panels).
- .6 Direct contact with the geomembrane will be minimized, i.e. the geomembrane in traffic areas will be protected by geotextiles, extra geomembrane or other suitable materials.

.2 Material Deployment

- .1 Deployment must incorporate an allowance for thermal contraction according to the following equation:

$$\text{Allowance} = @ \cdot (T - T_1) \cdot D$$

Where:

@	=	coefficient of liner thermal expansion (cm/cm deg. C)
T	=	temperature at which allowance is measured deg. C
T ₁	=	lowest temperature to be experienced by membrane deg. C
D	=	distance between fixed points

- .2 For exposed membrane the allowance will be approximately 1 m per 100 m. The allowance will be uniformly distributed throughout the lining between the two fixed points.
- .3 The geomembrane will be deployed completely down the side of the anchor trench ensuring that there are no sharp projections along the edge of the trench.
- .4 When side slope material is deployed from welding on horizontal surfaces, care must be taken when it is moved to the side slope that the underside is

not excessively scratched or gouged and that loose flaps adjacent to seams are not penetrated by dirt, sand or gravel.

.3 Weather Conditions

- .1 Geomembrane deployment will proceed between ambient temperatures of 0°C to 40°C. Placement can proceed below 0 degrees only after it has been verified by the Installer and the Inspector that the material can be seamed according to the specification. Geomembrane seaming will not be done during any precipitation, in the presence of excessive moisture (e.g. fog, rain, dew) or in the presence of excessive winds as determined by the Installation Supervisor.

.4 Factory Seam Quality Verifications

- .1 The Installer will be required to test up to as much as 20% of factory fusion welds, if applicable to the type of geomembrane being installed, using non-destructive air pressure test and/or vacuum test in the field to verify factory test results. Additional testing at the Installer's expense will be required if failed tests are obtained in the field.

3.5 Field Seaming

.1 General

- .1 Seams will be oriented parallel to the line of maximum slope, i.e. oriented down, not across the slope. In corners and odd-shaped geometric locations, the number of field seams will be minimized and located outside the corners if possible. Certain conditions may require the seams to be oriented across the slope.
- .2 No base T-seam will be closer than 2 m from the toe of the slope. Seams will be aligned with the least possible number of wrinkles and fishmouths. If a fishmouth or wrinkle is found, it will be relieved and resealed.

.2 Seam Overlap

- .1 Panels of geomembrane will have a finished overlap of a minimum of 150 mm for hot shoe fusion welding and 75 mm for extrusion welding, but in any event sufficient overlap will be provided to allow peel tests to be performed on the seam.
- .2 The procedure used to temporarily bond adjacent panels together will not damage the geomembrane; in particular, the temperature of hot air at the nozzle of any spot welding apparatus will be controlled such that the geomembrane is not damaged.

.3 Seaming Equipment and Accessories

Approved equipment for field seaming are fusion welders and hand held extrusion welders.

- .1 Fusion welder, 110 volt, CSA approved.
- .2 Extrusion welder, 220 volt, CSA approved.
- .3 High-speed, 10,000 rpm, 114 mm side grinders with 60-grit discs.
- .4 6.5 kW generator, or other, to produce single-phase power with 110/220 volt outputs.
- .5 Power cord #10 CSA approved electrical cord with CSA approved twist-type plugs and connections.
- .6 Seam vacuum tester for non-destructive seam and patch testing.
- .7 Field tensiometer, capable of performing seam and peel adhesion tests for quantitative testing on site.

.4 Test Seams

- .1 Field test seams will be conducted on the geomembrane liner to verify that seaming conditions are satisfactory. Test seams will be conducted at the beginning of each seaming period, if welding has ceased for a period of 2 hours or more, or after dramatic change in weather conditions, for each seaming apparatus used that day.
- .2 All test seams will be made at a location selected by the Inspector in the area of the seaming and in contact with the subgrade. The test seam samples will be 2 metres long for fusion welding and 1 metres long for extrusion welding with the seam centred lengthwise. Specimens 25 mm wide will be cut from each opposite end of the test seam by the Inspector. The Inspector will use a tensiometer to test these specimens for shear and peel. If a test seam fails to meet field seam specifications, the seaming apparatus and/or seam will not be accepted and will not be used for seaming until the deficiencies are corrected and two consecutive successful full test seams are achieved. A seam pass is achieved when the seam exhibits the following properties:

- a) Shear Strength - ASTM D3083 - sheet fails before weld and necking occurs - >90% of yield strength (as modified in App. A of NSF 54*) Film tear bond**.
- b) Peel Strength - ASTM D413 - less than 25% weld separation and necking occurs - > 70% of yield strength (as modified in App. A of NSF 54*) Film tear bond**.

* National Sanitation Foundation, Standard 54; "Flexible Membrane Liners"

** Film Tear Bond (FTB) is defined as failure of one of the sheets by tearing, instead of separating from the other sheet at the weld interface area (sheet fails before weld).

- .3 Welding rods or beads used for extrusion welding will be HDPE and the physical properties will be the same as those of the resin used in the manufacture of the HDPE geomembrane. When seaming is performed using welding rod, only solid core rod free of voids will be used.

3.6 Non-Destructive Seam Testing

- .1 The Installer will non-destructively test all field seams over the full length. All test equipment will be furnished by the Installer. The following tests will be performed:
 - a) Vacuum Box Testing
 - b) Air Pressure Testing (For Double Fusion Seam Only)

3.7 Destructive Seam Testing

- .1 The Installer will provide the Inspector with destructive test samples as specified in the table in Section 3.8.4 – Quality Control Testing. Departmental Representative will approve the test location. The Installer will not be informed in advance of the sample location. If, during the project, samples are consistently good then the samples can be decreased to an amount agreeable to the Installer and the Inspector.

3.8 Extrusion Welds

- .1 Extrusion welds will not be used for production welding. The use will be limited to: patches; butt seam "T" intersections; wedge welding flaws or leaks; sheet damage; penetration boots; welds to polyethylene pipes, structures or cast-in-concrete inserts; splash pads, rub sheets or capstrips.
- .2 Edge of seam will be tack welded with a hot air gun prior to grinding and extrusion welding.
- .3 The joining surfaces will be ground to remove oxidized surface material, and preheated by a hot air gun. When joining two flat polyethylene sheets, a minimum 75 mm overlap is required; bevel the edge of the top sheet with a grinder in the area under the extrusion only.
- .4 The extrusion weld bead will be a minimum of 30 mm wide.
- .5 Quality Control Testing for the HDPE liner will be undertaken as follows:

Test	ASTM Test Methods	Minimums
Inspection for uniformity, damage, imperfections, holes, cracks, thin spots or foreign material	Observation	continuous during manufacture
Chemical Resistance: resistance to chemical waste mixtures resistance to pure chemical reagents	9090 (US EPA) D543	manufacturer certificate
Thickness	D5994	manufacturer certificate
Density	D792	manufacturer certificate
Tensile Properties tensile strength at yield tensile strength at break elongation at yield elongation at break	D638 Type IV	manufacturer certificate

Test	ASTM Test Methods	Minimums
Tear Resistance	D1004	manufacturer certificate
Low Temperature Impact	D746	manufacturer certificate
Dimensional Stability	D1204	manufacturer certificate
Notched Constant Load ESCR	D5397	manufacturer certificate
Puncture Resistance	FTMS 101 Method 2065	manufacturer certificate
Carbon Black Percent	D1603	manufacturer certificate
Carbon Black Dispersion	D3015	manufacturer certificate
Material sampling during construction for future testing and analysis		one sample for each geomembrane lot number – stored in room temperature in a light-free environment
Uniformity, Damage, Imperfections	visual inspections	all sheets or panels prior to installation and documentation of repairs
Tears, Punctures, folding, blisters	visual inspections	all sheets or panels prior to installation and documentation or repairs
Test Seams	visual observations and inspections (see Section 3.5.4)	at start of work by each seaming crew; after every 4 hours of seaming; with every change in seaming equipment; and with significant changes in sheet temperature
Non-Destructive testing of field seams	visual observations of tests (see Section 3.6)	all field seams record test location, date, time, test results and documentation of repairs and re-testing
Inspection of patching and overlay seams that cannot be non-destructive tested	visual observations of seam quality	all patches and overlays record inspection and document repairs
Destructive testing of field seams		
Bonded Seam Strength	D4437 NSF 54	sampling at fixed increments of not more than 150 m
Peel Adhesion	D4437 NSF 54	random locations with equivalent number of samples to a 150 m fixed increment

- .6 Before commencing extrusion welding, a qualification test weld will be produced for each day's production. Vice-grip peel, tensiometer peel and tensiometer tensile tests will be performed with the same acceptance criteria as wedge welding.
- .7 Extrusion Production Testing will utilize visual testing, "Pik" test and vacuum box soap test.

3.9 Defects And Repairs

- .1 All seams and non-seam areas of the geomembrane will be inspected by the Inspector for defects, holes, blisters, undispersed raw materials and any sign of contamination by foreign matter. Because light reflected by the geomembrane helps to detect defects, the surface of the geomembrane will be clean at the time of inspection. The geomembrane surface will be brushed, blown or washed by the Installer if the amount of dust or mud inhibits inspection. The Inspector will decide if cleaning of the geomembrane is needed to facilitate inspection. This inspection should be done immediately after placement of the liner panel.
- .2 Each suspect location in seam and non-seam areas will be non-destructively tested as appropriate in the presence of the Inspector. Each location that fails the non-destructive testing will be marked by the Inspector and repaired accordingly.
- .3 Repair Procedures
 - .1 The following procedures will be followed in completion of geomembrane repairs:
 - a) Defective seams will be restarted/reseamed as described in these specifications.
 - b) Small holes will be repaired by extrusion cap welding. If the hole is larger than 6 mm, it will be patched.
 - c) Tears will be repaired by patching. Where the tear is on a slope or an area of stress and has a sharp end it must be rounded prior to patching.
 - d) Blisters, large holes, undispersed raw materials, and contamination by foreign matter will be repaired by patches.
 - e) Surfaces of HDPE which are to be patched will be abraded and cleaned no more than 15 minutes prior to the repair. No more than 10% of the thickness will be removed.
 - .2 Patches will be round or oval in shape, made of the same geomembrane, and extend a minimum of 150 mm beyond the edge of the defects. All patches will be of the same compound and thickness as the geomembrane specified. All patches will have their top edge bevelled with an angle grinder prior to placement on the geomembrane. Patches will be applied using approved methods only.
- .4 Restart/Reseaming Procedures:
 - .1 The extrusion welding process will restart by grinding the existing seam and rewelding a new seam. Welding will commence where the grinding started and must overlap the previous seam by at least 50 mm. Reseaming over an existing seam without regrinding will not be permitted.
- .5 Verification of Repairs:
 - .1 Each repair will be non-destructively tested, except when the Inspector pass the non-destructive test will be taken as an indication of an adequate repair. Failed tests indicate that the repair will be repeated and retested until passing test results are achieved.

.6 Recording of Results:

- .1 Daily documentation of all non-destructive and destructive testing will be provided to the Inspector by the Installer. This documentation will identify all seams that initially failed the test and include evidence that these seams were repaired and successively retested.

3.10 Backfilling Of Anchor Trench

- .1 The anchor trench will be backfilled and compacted by the Installer. Trench backfill material will be placed in 150 mm thick lifts and compacted by light compaction equipment.
- .2 Care will be taken backfilling the trenches to prevent any damage to the geomembrane or geotextiles. At no time will construction equipment come into direct contact with the geomembrane or geotextiles. If damage occurs, it will be repaired by the Installer prior to the completion of backfilling.

END OF SECTION

Specification Drawings

May, 2013



Sheet No.	Sheet Title	Scale	Revision
R.043079.001	C1	of 03	1

LOCATION PLAN

Project: Inuvik Airport
Client: Government of Canada
Contract No.: 9807-00-0001-80X
Contract Description: Inuvik Airport Fire Training Area Remediation
Contract Value: \$1,000,000
Contract Start Date: 1998
Contract End Date: 2000
Contract Status: Completed

PUBLIC WORKS
GOVERNMENT SERVICES
CANADA

Sheet No.	Sheet Title	Scale	Revision
1	DO NOT SCALE DRAWINGS		
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PROJECT INFORMATION
PROJECT NO.: 9807-00-0001-80X
PROJECT NAME: Inuvik Airport Fire Training Area Remediation
PROJECT LOCATION: Inuvik, Northwest Territories
PROJECT START DATE: 1998
PROJECT END DATE: 2000
PROJECT STATUS: Completed

REAL PROPERTY SERVICES
REALTY
CONSTRUCTION

REAL PROPERTY SERVICES
REALTY
CONSTRUCTION

