


DEPARTMENT OF NATIONAL DEFENCE

**SPECIFICATIONS FOR THE
REMEDIATION OF THE BEACH REFUEL AREA
FOX-M, HALL BEACH
DEW LINE SITE**

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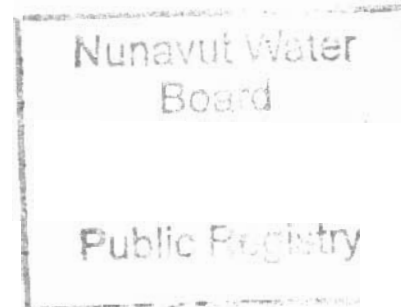
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UMA Engineering Ltd.

In association with:

The SGE Group Inc.

July 2002



Job No.: H-H11/1-9101

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	<u>No. of Pages</u>
Table of Contents	1
List of Drawings	1
List of Acronyms	1
Schedule A Unit Price Items	1
Schedule B Lump Sum Pay Items	1
Schedule C Prime Cost Allowance	1
Schedule D Balance of Project Complete	1
Summary of Cost Schedules	1
Section 01005 General Instructions	11
Section 01020 Prime Cost Allowance	3
Section 01110 Mobilization/Demobilization	2
Section 01545 Safety, Medical and Security Requirements	5
Section 01560 Environmental Protection	4
Section 01600 Material and Equipment	3
Section 01720 Project Record Documents	3
Section 02066 Contaminated Soils	6
Section 02209 Grading	9
Section 02219 Debris Removal	5
Section 02499 Geomembranes	5
Appendix A Site Photographs: Demolition, Debris	
Appendix B Drawings	
Appendix C Environmental Protection Plan	

<u>Drawing No.</u>	<u>Title</u>
Sketch 101	Overall Site Plan
Sketch 102	Beach Refuel Area - Contaminated Soil Remediation
Sketch 103	Hydrocarbon Contaminated Soil Excavation Near Ocean
Sketch 104	Hydrocarbon Secure Storage Area Typical Cross-Section
Sketch 105	Typical Monitoring Well Detail

ASTM	American Society for Testing and Materials
CCME	Canadian Council of Ministers of the Environment
CEPA	Canadian Environmental Protection Act
CGSB	Canadian General Standards Board
CSA	Canadian Standards Association
CWBS	Contract Work Breakdown Structure
DCC	DEW Line Clean Up Criteria
DCL	Defence Construction Canada Ltd.
DEW Line	Distant Early Warning Line
DIAND	Department of Indian Affairs and Northern Development
DND	Department of National Defence ("Owner")
DNWSO	Director North Warning System Office
EPP	Environmental Protection Plan
ESG	Environmental Sciences Group - Royal Military College
GNWT	Government of Northwest Territories
HEPA	High Efficiency Particulate Air
IATA	International Air Transport Association
LEL	Lower Explosive Limit
LIUNA	Labourers International Union of North America
LRR	Long Range Radar
NFC	National Fire Code
NHW	Non-Hazardous Waste
NIOSH	National Institute of Occupational Safety and Health
NT	Nunavut Territory
NTCL	Northern Transportation Company Ltd.
NWS	North Warning System
NWT	Northwest Territories
OSHA	Occupational Safety and Health Act
PACE	Petroleum Association for Conservation of the Canadian Environment
PAP	PCB Amended Painted
POL	Petroleum, Oils and Lubricants
SGT	Satellite Ground Terminal
SRR	Short Range Radar
TBM	Temporary Benchmark
TDG	Transportation of Dangerous Goods
TDGA	Transportation of Dangerous Goods Act
TPH	Total Petroleum Hydrocarbon
USAF	United States Air Force
UV	Ultraviolet
VOC	Volatile Organic Compound
WHMIS	Workplace Hazardous Materials Information System

National Defence
 Job No.: H-H11/1-9101
 DEW Line Cleanup Project
 FOX-M: Hall Beach

Unit Price Items

Schedule A
 Page 1 of 1
 2002-07-16

Item	Description	Unit	Unit Price	Quantity	Total
A.02066-1	Contaminated Soil Excavation - Beach Refuel Area	cubic metres	\$_____	560	\$_____
A.02066-2	Hydrocarbon Contaminated Soil Excavation - Beach Refuel Area	cubic metres	\$_____	8,000	\$_____
A.02209-1	Unclassified Excavation	cubic metres	\$_____	3,000	\$_____
A.02209-2	Type 3 Granular Fill	cubic metres	\$_____	3,500	\$_____
A.02209-3	Test Pit Excavation	each	\$_____	5	\$_____
A.02209-4	Monitoring Well Supply	each	\$_____	4	\$_____
A.02209-5	Reshaping	square metre	\$_____	25,000	\$_____
A.02219-1	Buried Debris Removal	cubic metre	\$_____	400	\$_____
A.02499-1	Geomembrane Installation	square metre	\$_____	400	\$_____
TOTAL SCHEDULE A					\$_____

National Defence
 Job No.: H-H11/1-9101
 DEW Line Cleanup Project
 FOX-M: Hall Beach

Lump Sum Pay Items

Schedule B
 Page 1 of 1
 2002-07-16

Item	Description	Unit	Unit Price	Total
B.01110-1	Mobilization	Lump Sum	\$_____	\$_____
B.01110-2	Demobilization	Lump Sum	\$_____	\$_____
B.01545-1	Health and Safety Plan	Lump Sum	\$_____	\$_____
B.01560-1	Environmental Protection Supplies	Lump Sum	\$_____	\$_____
B.02066-1	Tank Cleaning	Lump Sum	\$_____	\$_____
B.02066-2	Tank Valves and Fittings	Lump Sum	\$_____	\$_____
B.02219-1	Known Debris Removal - Beach Refuel Area	Lump Sum	\$_____	\$_____
B.02219-2	Demolition Beach Masters Shed	Lump Sum	\$_____	\$_____
B.02499-1	Geomembrane - Supply	Lump Sum	\$_____	\$_____
TOTAL SCHEDULE B				\$_____

National Defence
Job No.: H-H11/1-9101
DEW Line Cleanup Project
FOX-M: Hall Beach

Prime Cost Allowance

Schedule C
Page 1 of 1
2002-07-16

C.02219-1	Unknown Hazardous Waste	\$	10,000
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National Defence
Job No.: H-H11/1-9101
DEW Line Cleanup Project
FOX-M: Hall Beach

Balance of Project Complete

Schedule D
Page 1 of 1
2002-07-16

Balance of Project Complete (Firm Price)

\$_____

National Defence
Job No.: H-H11/1-9101
DEW Line Cleanup Project
FOX-M: Hall Beach

Summary of Cost Schedules

Page 1 of 1
2002-07-16

A	Unit Prices: Total Schedule A	\$_____
B	Lump Sum Items: Total Schedule B	\$_____
C	Prime Cost Allowance	\$_____ 10,000
D	Balance of Project Complete: Total Schedule D	\$_____
	TOTAL	\$_____

1	Description of Work
2	Documents Required
3	Site Conditions
4	Owner's Representatives
5	Work Schedule
6	Cost Breakdown
7	Measurement for Payment
8	Contractor's Use of Site
9	Codes and Standards
10	Permits
11	Project Meetings
12	Site Supervision
13	Qualifications and Personnel Protection
14	Community Relations
15	Setting Out of Work
16	Existing Services
17	Additional Drawings
18	Materials and Equipment
19	Indemnification
20	Relics and Antiquities
21	Examination of Site
22	Statistical Information
23	Site Maintenance

- | | |
|----|---|
| 1 | <u>Description of Work</u> |
| .1 | Work under this contract covers the partial environmental cleanup of contaminated soil and debris at the FOX-M DEW Line site, as indicated on the Drawings and Specifications. |
| .2 | Specific cleanup work at the FOX-M site includes, but is not limited to, the following: |
| .1 | Mobilization and demobilization of all personnel, equipment, support facilities and materials required to complete the work. |
| .2 | Remediation of the Beach Refuel Area, including: |
| .1 | Excavation of approximately 10 000 cubic metres of clean and contaminated soil. |
| .2 | Transport of approximately 8 000 cubic metres of hydrocarbon contaminated soil from the Beach Refuel Area to a secure storage area. |
| .3 | Transport of approximately 560 cubic metres of contaminated soil from the Beach Refuel Area to the existing sewage lagoon. |
| .4 | Excavation and sorting of buried debris within and adjacent to the contaminated soil area. This most likely includes buried barrels. Placement of hazardous debris into containers and the non-hazardous debris into the Retrograde Storage Area. |
| .5 | Demolition of the Beach Masters Shed and stockpiling of waste at the Retrograde Storage Area into non-hazardous and hazardous debris. |
| .6 | Transport of the existing Stored Debris Pile to the Retrograde Storage Area. |
| .7 | Removal of the existing hydro-poles, transport and placement at the Retrograde Storage Area. |
| .8 | Supply, placement and compaction of approximately 8000 cubic metres of granular fill to backfill the excavated areas. |
| .9 | Supply and installation of geomembrane liner at the Beach Refuel area to separate the clean soil from the remaining contaminated soil located beneath the supports for the refuelling pipeline. |
| .3 | Hydrocarbon Secure Storage Area Construction, including: |
| .1 | Reshaping development area. |
| .2 | Excavation of a perimeter drainage system around the secure storage area. |
| .3 | Supply and installation of groundwater monitoring wells. |
| .4 | General site grading of work areas at the FOX-M Site, including: |
| .1 | Contaminated soil excavation areas. |
| .2 | Areas disturbed during the removal of site debris, demolition activities, borrow extraction |

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- operations, and any areas disturbed during the establishment and operation of laydown and equipment storage areas.
- .3 Construction and reclamation of haul roads and borrow areas as required for construction.
- .5 Provision of survey services as required for setting out of work, measurement for Payment and Record Drawings purposes.

- .6 Provision of a dedicated wildlife monitor at all times.
- .7 Specific work related to the project that is not included in this contract includes:
 - .1 Specific testing requirements will be the responsibility of the Owner.
 - .2 The off-site transport of the containerized waste materials from the Hazardous Waste Storage Area and disposal at licensed disposal facilities.

2 Documents Required

- .1 Maintain at job site, one copy of each of the following:
 - .1 Contract Drawings
 - .2 Specifications
 - .3 Addenda
 - .4 Change Orders
 - .5 Other modifications to Contract.
 - .6 Field test reports.
 - .7 Copy of approved work schedule.
 - .8 Standards listed in specific sections of the Specification including NIOSH, OSHA, WHMIS, TDGA, etc.
 - .9 Permits, licenses, and land use regulations.
 - .10 Labour and Materials Payment and Performance Bonds.
 - .11 Up to date Record Drawings.
 - .12 Site specific Safe Work Plan and Contractor's Company Safety Manual and Contractor's Spill Contingency Plan
 - .13 Health and Safety Plan
 - .14 Credentials of First Aid Personnel

3 Site Conditions

- .1 Geotechnical Reports are available for review.
- .2 The geotechnical reports are engineering reports giving properties of the soils and recommendations for design as prepared for use by the Engineer. The recommendations given in the reports are not to be construed as requirements of the Contract unless they are contained in sections of the Specifications or are specifically referenced therein.
- .3 Information is supplied to assist in evaluating and carrying out the Contract requirements. However, the Engineer will use these reports as a guide as to what will be considered good construction practice.
- .4 The geotechnical reports by their nature cannot reveal all conditions that exist or can occur on the site, and the Contractor is assumed to be knowledgeable of the limitations of testing procedures. Should subsurface conditions be found to vary substantially from the Geotechnical Reports, changes in the design will be made with the resulting credits or expenditures accruing to the Owner.

- .5 Geotechnical data is provided for information only is based on conditions at the time of investigation and at the test hole locations shown and may not be indicative of the entire site or the present conditions. The Owner, Engineer, and Owner's Consultants and Consultants' employees disclaim any responsibility for the accuracy, true location and extent of geotechnical investigations that have been prepared by others. They further disclaim responsibility for interpretation of that data by bidders, such as in projecting rock profiles, soil stability and present level and extent of underground water, etc.
- .6 The information presented on the Drawings and in the Specifications is based upon site conditions as reported during field investigation programs of 2000 and 2001.
- .7 Information obtained from USAF records indicates that the following waste materials may exist at the DEW Line Site:
- | | |
|---------------------------------|----------------------------------|
| - waste oil | - transmission fluid |
| - PCB transformers/capacitors | - 1-1-1-trichloroethane |
| - asbestos | - PBX telephone equipment |
| - sewage | - mercury vapour rectifier tubes |
| - lead-based paints | - paint thinners |
| - radioactive tubes | - batteries |
| - scrap metal | - chlorinated hydrocarbons |
| - radar components | - corrosion inhibitors |
| - fuel drums | - lye |
| - lime | - corrosives |
| - antifreeze | - paper |
| - wood | - plastics |
| - AVGAS (aviation fuel) | - solvent |
| - sulfamic acid | - dynamite |
| - cathode-ray tubes and screens | - RF interference filters |
| - filtron tubes | - generators |
| - oscillators | - scopes |
| - meters | - vehicles |
| - copper wire | - rubber fuel bladders |
- .8 Information regarding the delineation and analytical testing of contaminated soil areas, as indicated on the Drawings, has been provided by the Environmental Sciences Group - Royal Military College.

4

Owner's Representatives

- .1 Engineer: Within the context of these Specifications, the term Engineer refers to the Owner's representative, an employee of Defence Construction Canada Ltd. Direct all primary communication to the Engineer.

- .2 Engineer's Authorized Personnel: Within the context of these Specifications, the term Engineer's Authorized Personnel refers to personnel from the Environmental Sciences Group and/or Owner's Consultants. Engineer's Authorized Personnel provide recommendations/technical guidance to the Engineer, as required, for the enforcement of these specifications. Instructions from Engineer's Authorized Personnel shall be transmitted through the Engineer.

5 Work Schedule

- .1 Schedule to expeditiously complete all work by September 30, 2002.
- .2 Provide and maintain work schedule showing anticipated progress stages and final completion of work within the time period required by the Contract Documents.
- .3 Keep Engineer advised of planned work activities at least 24 hours in advance of operations.

6 Cost Breakdown

- .1 Submit breakdown of firm price items in the Contract. Obtain approval from the Engineer prior to submitting first progress claim.
- .2 Implement and operate throughout the Contract period until the completion of all work, a project control system which includes the following features:
 - .1 Contract Work Breakdown Structure (CWBS).
 - .1 The CWBS is based on the Contractor's costs breakdown and any modifications required by the Engineer.
 - .2 The CWBS shall be an organization of the work to be performed, services to be provided, and data to be submitted by the Contractor, as well as payments to be made to the Contractor under the Terms of the Contract.
 - .3 The CWBS shall clearly define the work elements of each item of the CWBS.
 - .4 The CWBS shall include a breakdown of pay items included under Schedule D, Balance of Project Complete in the Tender Form. All unit price, lump sum, and cost allowance pay items included in Schedules A, B, and C, respectively of the Tender Form shall also be included in the CWBS. In addition, specific labour and equipment rates for the various work elements shall be provided.
 - .5 Prepare the CWBS in computerized spreadsheet format compatible with the most recent release of Microsoft Excel software. Provide CWBS in hard copy and diskette format.
 - .6 Submit a preliminary draft of the CWBS with the tender package. Submit the final CWBS within 30 days following contract award date.

7 Measurement for Payment

- .1 Notify Engineer of planned work 48 hours in advance of operations to permit required measurement for payment.
- .2 Items measured for payment will be paid under Schedule A, Schedule of Unit Prices of the Tender Form. Specific lump sum pay items will be paid under Schedule B – Schedule of Lump Sum Items of the Tender Form. Items specified to paid on a cost recoverable basis will be paid under Schedule C – Prime Cost Allowance of the Tender Form. All other items, whether specifically defined in the Specifications or not, will be paid under Schedule D, Balance of Project Complete in the Tender Form. Include all direct costs in the applicable pay items in Schedules A and B. All indirect costs associated with the work, including profit, accommodation, supervision, overhead, etc. shall be included in Schedule D.
- .3 Include costs of any statement of or requirement for work, goods, or services required in this specification that are not covered by appropriate payment clauses in Schedule D – Balance of Project Complete, Firm Price in the Tender Form.
- .4 Include equipment depreciation and major equipment repair costs in the appropriate unit price, lump sum or prime cost allowance pay item.
- .5 Except as otherwise indicated herein, work under this Section will not be measured. Include all costs in Schedule D – Balance of Project Complete.

8 Contractors Use of Site

- .1 Contractor has use of the FOX-M Site with the following restrictions:
 - .1 Do not reasonably encumber sites with materials or equipment.
 - .2 Move stored products that interfere with operations of the Engineer.
 - .3 Use of site shall comply with the Site Use Restrictions.
 - .4 Contractor's operation shall not interfere with the operations of the NWS station.
 - .5 There is no NWS equipment or fuel available on site for use by the Contractor.
- .2 Maintain all access roads used by the Contractor during cleanup/construction activities.

9 Codes and Standards

- .1 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 Nunavut. Advise the Engineer of any discrepancies in the codes, standards and regulations applicable to the Work.
- .2 Codes, standards and regulations applicable to the work and which form part of the Contract have been referenced in various Sections of the Contract Specifications.

- .3 Additional codes, standards and regulations applicable to the work, but which are not part of the Contract Documents, shall be considered by the Contractor. Non-reference of any such codes does not relieve the Contractor from his responsibility to comply with such codes, standards or regulations.
- .4 In any case of conflict between the requirements specified in the codes, standards or regulations applicable to the work, the most stringent requirement shall apply.

10

Permits

- .1 The Owner shall be responsible for obtaining and paying for the Land Use Permits and Water Use License. Any other permits and licenses associated with the work outlined in this contract shall be the responsibility of the Contractor.
- .2 Pay all costs associated with complying with the requirements for the permits and licenses noted in Clauses 10.1 above.
- .3 Register, obtain, and pay for all required licences and permits for individual trades people employed for work as referenced in the Contract Specifications.

11

Project Meetings

- .1 Project meetings will be held at least once per week with the Engineer and Engineer's support personnel during the construction season to review work progress, upcoming scheduled activities, and other project issues.

12

Site Supervision

- .1 Designate a competent and qualified supervisor to be on site at all times during construction, to have full authority to make decisions for the Contractor, to be knowledgeable of the requirements of the contract, and to act upon Engineer's instructions.

13

Qualifications and Personnel Protection

- .1 The Contractor shall be thoroughly familiar with and knowledgeable about existing site conditions, scope of work and requirements of the Specifications.
- .2 Only Contractor's personnel capable of demonstrating a history of satisfactory experience in the area of hazardous waste management and can satisfy Federal and Territorial requirements will be permitted to supervise and direct the work of Sections 02066 – Contaminated Soils and 02219 – Debris Removal. The Contractor's Superintendent responsible for the work of these Sections shall have a minimum of five years of experience in the area of hazardous waste management.

- .3 Follow at all times, guidelines such as those established in Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities: NIOSH Publication No. 85-115, or Hazardous Waste Worker Training Manual: Canadian LIUNA - Contractors Training Council, 1992.
- .4 All activities involving the handling of hazardous materials shall be directly supervised by Contractor's personnel who have successfully completed a 40 hour training course for Hazardous Waste Activities in compliance with OSHA 29 CFR 1910.120 or other approved equivalent training courses such as the Canadian Hazardous Waste Workers Program.
- .5 Contractor's personnel trained as described in Clause 13.4 of this Section shall instruct and direct all workers with respect to the waste management procedures and labour and safety practices to be followed in carrying out the work.
- .6 Provide workers with protection appropriate to the potential type and level of exposure. Establish specific safety protocols prior to commencing cleanup activities.
- .7 Provide suitable safety clothing and equipment as required during the course of the work. Supply sufficient quantities of protection equipment to fit all site personnel including the Engineer, Engineer's staff, and site visitors.
- .8 The Contractor shall carry insurance that includes appropriate coverage for the handling of hazardous material.

14 Community Relations

- .1 Prior to commencement of work, the Owner may arrange a meeting with the local leaders, officials, authorities, and public in Hall Beach. Be prepared to attend this meeting and to discuss local hiring practices and any other items of operation that may impact upon the local community. The Owner will pay for the costs of this meeting.

15 Setting Out of Work

- .1 Existing survey control data required for layout of the work will be provided prior to construction.
- .2 Employ certified and experienced survey personnel to provide all survey control required for the work.
- .3 Set grades and lay out work in detail from control points and grades given by Engineer.
- .4 Notify Engineer immediately of any discrepancies between existing ground elevations and design ground lines.
- .5 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.
- .6 Provide devices, instruments, and labour needed to lay out and construct work.

- .7 Supply fluorescent orange paint, stakes, marker posts, flagging, and other survey markers required for laying out the work.
- .8 Provide to the Engineer, on request, all survey information.
- .9 Protect existing survey stakes, benchmarks and monuments. Re-establish benchmarks and monuments disturbed by the Contractor at no cost to the Owner.

16

Existing Services

- .1 The location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.
- .2 Before commencing Work, establish location and extent of services in area of Work, and notify Engineer of findings. Confirm locations of buried utilities by non-destructive testing methods and/or hand-excavate test pits within 0.9 metres of buried utility.
- .3 Where unknown services are encountered, immediately advise Engineer and confirm findings in writing.
- .4 Record locations of maintained, re-routed and abandoned service lines indicating horizontal distances and vertical elevations.
- .5 Take necessary precautions and prevent damage to existing services and facilities.
- .6 Repair and replace services or facilities damaged as a result of Contractor's operations at no additional cost to the Owner.

17

Additional Drawings

- .1 Engineer may furnish additional drawings to assist proper execution of work. These drawings will be issued for clarification only. Such drawings shall have the same meaning and intent as if they were included with plans referred to in Contract documents.
- .2 Contractor will be responsible for printing and distributing Drawings and Specifications for his own requirements.

18

Materials and Equipment

- .1 Provide material and equipment of specified design and quality, performing to published ratings, and for which replacement parts are readily available.
- .2 No substitutions will be permitted without prior written approval of the Engineer.

19 Indemnification

- .1 Indemnify and save harmless the Owner, the Engineer, the Owner's Consultants and Consultants' employees against liability occasioned in any way through provision of the goods and services of the Contractor. Pay all royalties and fully indemnify the Owner, the Engineer, the Owner's Consultants and Consultants' employees against all suits or actions arising from the claim of any persons who are, or claim to be, patentees of any apparatus or process used on or in connection with the work.

20 Relics and Antiquities

- .1 Relics and antiquities and items of historical or scientific interest such as cairns, tent rings, commemorative plaques, inscribed tablets, and similar objects found on-site or in buildings to be demolished shall remain the property of the appropriate jurisdictional authority. Comply with environmental protection requirements of Section 01560 - Environmental Protection, and the Environmental Protection Plan.
- .2 Prior to commencing work at the site, review the following with the Engineer:
 - .1 The extent of the archaeological sensitive areas.
 - .2 The methods to be used by the Contractor to mark and protect the areas from construction/cleanup activities.
- .3 Give immediate notice to Engineer if evidence of archaeological finds are encountered during construction/cleanup activities, and await the Engineer's written instructions before proceeding with work in this area.
- .4 Protect archaeological finds and similar objects found during course of work.

21 Examination of Site

- .1 Prior to mobilization, check field conditions to obtain actual dimensions required to ensure correct execution of the Work, and notify the Engineer in writing, of all matters which could prejudice proper execution of the work.

22 Statistical Information

- .1 Provide statistical and status reports as outlined in Annex A of the Tender Form.
- .2 This information is required to provide statistics that will aid in assessing and monitoring socioeconomic benefits of this project.

23

Site Maintenance

- .1 Keep this site free from the accumulation of waste materials and debris.
- .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 the Engineer and Land Use Permit.

National Defence
Job No.: H-H19/1-9101
DEW Line Cleanup Project
FOX-M Hall Beach

Prime Cost
Allowance

Section 01020
Page 1 of 3
2002-07-16

- 1 General
- 2 Prime Cost Allowance
- 3 Unknown Hazardous Waste Material

-
- 1 General
- .1 Expend each allowance as directed by Engineer.
 - .2 Each cash allowance will be adjusted to actual cost as defined hereunder and contract price will be amended accordingly by written order.
 - .3 Progress payments for work and material authorized under cash allowances will be made in accordance with contract terms of payment.
- 2 Prime Cost Allowances
- .1 The following cash allowances are included in Schedule C of the Tender Form:
 - .1 \$10,000 - Item C.02219-1: Unknown Hazardous Waste Material
 - .2 These allowances will be adjusted to actual costs as certified by the Engineer. Costs for supervision, overhead, profit, and administration costs: these costs shall be included in Balance of Project Complete in the Tender Form. Indicate the cost of this work as a separate line item in the Cost Breakdown specified in Section 01005 - General Instructions.
 - .3 No mark-up on the actual costs shall be paid to the Contractor.
- 3 Unknown Hazardous Waste Material
- .1 Costs for the collection and containerization of unknown hazardous waste material will be paid under the Unknown Hazardous Waste Material Collection Prime Cost Allowance, Schedule C, Item C.02219-1 of the Tender Form.
 - .2 Unknown hazardous waste material is that waste material designated as hazardous in accordance with the definition of hazardous material in Section 02219 – Debris Removal.
 - .3 As part of the Prime Cost Allowance, Unknown Hazardous Waste Material shall include:
 - .1 Hazardous debris scattered and/or excavated from the site area.
 - .2 Hazardous barrel contents encountered during debris removal operations.
 - .3 Unknown hazardous wastes as a result of decontamination operations.
 - .4 The Unknown Hazardous Waste Material Prime Cost Allowance will be adjusted to actual costs as certified by the Engineer. Actual costs will include:
 - .1 Costs for the supply and transport of containers to the site.
 - .2 Equipment and labour costs for the containerization and on-site transportation of unknown hazardous waste materials.

-
- .5 Obtain cost estimates from a minimum of three suppliers or service companies for the cost items identified in this Section. Provide copies of these estimates to the Engineer as verification that the Contractor has obtained the lowest available cost.
- .6 The actual costs to be certified by the Engineer shall not include any Contractor mark-up.

National Defence
Job No.: H-H11/1-9101
DEW Line Cleanup Project
FOX-M: Hall Beach

Mobilization and
Demobilization

Section 01110
Page 1 of 2
2002-07-16

-
- | | |
|---|-------------------------|
| 1 | General |
| 2 | Measurement for Payment |

1 General

- .1 The work specified in this section comprises the provision of all labour, equipment and materials, and the performance of all work necessary for mobilization to and demobilization from the FOX-M site.
- .2 Mobilization shall include transportation to the site of the Contractor's labour, equipment, and materials in readiness to start work, all in accordance with the approved site cleanup program.
- .3 Demobilization shall include the dismantling and removal from the site of all of the Contractor's equipment and materials, cleanup of the site, and transportation of labour from the site.

2 Measurement for Payment

- .1 All direct costs for mobilization are to be included in the lump sum price for Mobilization, Item B.01110-1, as indicated in Schedule B, Schedule of Lump Sum Items in the Tender Form. The lump sum payment for Mobilization will be paid upon transport and delivery to the site of all equipment required to carry out the work, and acquisition of all necessary permits and authorizations designated to be obtained by the Contractor.
- .2 All direct costs for demobilization, of all equipment and materials, are to be included in the lump sum price for Demobilization, Item B.01110-2, as indicated in Schedule B, Schedule of Lump Sum Items in the Tender Form. The lump sum price tendered for Demobilization will be paid after satisfactory cleanup of the site, removal from the site of equipment and materials, and submission to the Engineer of all Contractor submittals.

1	General
2	Health and Safety Plan
3	Construction Safety Measures
4	Medical
5	Accidents and Accident Reports
6	Security
7	WHMIS
8	Handling and Transportation of Dangerous Goods
9	Potentially Hazardous Materials
10	Measurement for Payment

1 General

- .1 Personnel safety, medical facilities and reliable communications are of paramount concern due to the remoteness of the site.
- .2 The Contractor shall be responsible for the safety of all persons and property on or about the project and for ensuring that the work is performed in accordance with all applicable safety regulations and site specific requirements.
- .3 Implement, maintain and supervise a comprehensive safety and health program that meets the standards and requirements of applicable regulatory agencies and to the satisfaction of the Engineer. Make program known to all personnel at the site and include specific instructions on safe performance of duties including working in a harsh environment, monitoring for compliance, safety communications and instruction, and actions to be taken in the event of safety violations, accidents, emergencies, personnel injury and sickness. Include in the program an effective reporting system to the Engineer on safety and health matters.
- .4 Designate a Safety Officer acceptable to the Engineer, who shall be qualified and authorized to supervise and enforce compliance with the safety program. The Safety Officer must have an approved First Aid Course which includes Wilderness First Aid.
- .5 Arrange regular safety meetings, to be held no less frequently than 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 the Engineer within three days of the meeting. All costs for such meetings shall be borne by the Contractor.
- .6 Supply and maintain, at known places on-site, safety equipment necessary to protect the workers, the Engineer and Engineer's support staff against accident or injury as prescribed by the governing authorities, the Engineer, and site specific requirements.
- .7 Personnel shall be medically fit for work in the Arctic at an isolated location with limited medical facilities.
- .8 Provide wildlife monitors, acceptable to the Engineer, equipped with firearms to protect the safety of all workers including the Engineer, and Engineer's support staff during site operations. Assign a wildlife monitor to accompany the Engineer and Engineer's support staff during all inspection and soil/material sampling activities that take place at the construction area or at other locations onsite.

2 Health and Safety Plan

- .1 Prepare a Health and Safety Plan that incorporates the requirements of this section.
- .2 The plan shall include, at a minimum, the following sections:
 - .1 A Statement of the Contractor's Safety Policy.
 - .2 Safety Responsibilities of all on-site personnel.
 - .3 Safe Work Practices and/or Job Procedures.
 - .4 Rules and their enforcement.
 - .5 Harassment Policy.
 - .6 PPE and its maintenance.
 - .7 Incident Reporting and Investigation.
 - .8 Emergency Response Procedures.
 - .9 Record keeping.
- .3 Communicate the Health and Safety Plan to all personnel onsite, and make copies available in each Contractor maintained facility.
- .4 Provide two copies of the Health and Safety Plan to the Engineer prior to the commencement of work.

3 Construction Safety Measures

- .1 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.
- .2 In the event of discrepancies between any requirements of the above listed authorities, the more stringent requirements shall govern.

4 Medical

- .1 Provide and maintain first aid and medical care and facilities for all personnel as required by the Statutes of the Nunavut Safety Act.
- .2 Provide the appropriate Nunavut first aid kit, based on the number of personnel, in accordance with the Nunavut Safety Act.
- .3 Establish an emergency response plan acceptable to the Engineer, for the removal of any injured person to medical facilities or a doctor's care in accordance with applicable legislative and regulatory requirements.
- .4 Provide proof of First Aid credentials to the Engineer prior to the start the construction season. Provide the appropriate number of first aid attendants on site in accordance with the Nunavut Safety Act.

5 Accidents and Accident Reports

- .1 Immediately report, verbally, followed by a written report within 24 hours, to the Owner and the Engineer, 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 the Owner and the Engineer 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 the Contractor or the subcontractor on account of any accident, promptly report the facts in writing to the Owner and the Engineer, giving full details of the claim.

6 Security

- .1 Limit site access only to persons employed on the project. Unauthorized persons will be permitted on site only with the approval of the Engineer.

7 WHMIS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding employee training, use, handling, storage, and disposal of hazardous materials, and regarding labelling and provision of Material Safety Data Sheets as required by WHMIS legislation.
- .2 Submit copies of WHMIS data sheets to Engineer on delivery of materials.

8 Handling and Transportation of Dangerous Goods

- .1 Observe and enforce all construction measures required by the regulatory agencies including but not limited to Environment Canada, Department of Environment, and Transport Canada.
- .2 Most current regulatory Guidelines and Acts will apply to the work.
- .3 In the case of any discrepancies, the more stringent requirements will apply.

9 Potentially Hazardous Materials

- .1 The work of this contract involves the handling of potentially hazardous materials including materials coated with paint containing lead and polychlorinated biphenyls (PCBs).

- .2 PCBs at concentrations in excess of 50 parts per million (ppm) are considered to be hazardous substances. Storage and handling of PCBs are regulated under the Canadian Environmental Protection Act, and federal, territorial and provincial Transportation of Dangerous Goods Act. Comply with all applicable regulations.

10 Measurement for Payment

- .1 Work under this section, except as noted in Clause 10.2, will not be measured. Include all costs for the work of this section in Schedule D - Balance of Project Complete in the Tender Form.
- .2 All direct costs for the preparation and completion of the site specific Health and Safety Plan, are to be included in the lump sum price for Health and Safety Plan, Item B.01545-1, as indicated in Schedule B, Schedule of Lump Sum Items in the Tender Form. The lump sum price tendered for the Health and Safety Plan will be paid after a satisfactory Health and Safety Plan has been submitted to the Engineer.