Public Works and Government Services Canada

Travaux publics et Services gouvernementaux Canada

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Bid Receiving - PWGSC / Réception des soumissions - TPSGC
Suite 100
167 Lombard Ave
Winnipeg
Winnipeg
Manitoba
R3B 0T6
Bid Fax: (204) 983-0338

INVITATION TO TENDER
APPEL D'OFFRES

Tender 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.

Soumission 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 et sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet
ETP Reaction Tank Replacement

Solicitation No. - N° de l'invitation EW702-151706/A	**Date** 2015-01-08
Client Reference No. - N° de référence du client PWGSC-EW702-151706	**GETS Ref. No. - N° de réf. de SEAG** PW-$GMP-008-6301
File No. - N° de dossier GMP-4-37094 (008)	**CCC No./N° CCC - FMS No./N° VME**
Solicitation Closes - L'invitation prend fin **at - à 02:00 PM** **on - le 2015-01-26**	**Time Zone** **Fuseau horaire** Central Daylight Saving Time CDT

F.O.B. - F.A.B. Specified Herein - Précisé dans les présentes
Plant-Usine: ☐ **Destination:** ☐ **Other-Autre:** ☑

Address Enquiries to: - Adresser toutes questions à: Olson, Teresa	**Buyer Id - Id de l'acheteur** gmp008
Telephone No. - N° de téléphone (204) 230-4558 ( )	**FAX No. - N° de FAX** (204) 983-7796

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:
DEPARTMENT OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA
ATB PLACE NORTH, 5TH FLOOR
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

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**

Issuing Office - Bureau de distribution
Public Works and Government Services Canada/Travaux publics et Services gouvernementaux Canada
Suite 1650
635 - 8th Ave. S.W.
Bureau 1650
635 - 8e avenue, SO
Calgary
Calgary
Alberta

Canada

See attached.

INVITATION TO TENDER

IMPORTANT NOTICE TO BIDDERS

DEPARTMENTAL REPRESENTATIVE'S AUTHORITY
See related changes to GC2.1 of R2820D that have been included in the Standard Acquisition Clauses and Conditions (SACC)

INSURANCE TERMS
The Certificate of Insurance and its instructions has been replaced see Annex B. (Completed certificate is NOT required at bid closing

SUPPORT THE USE OF APPRENTICES
Through Canada's Economic Action Plan 2013, the Government of Canada proposes to support the employment of apprentices in federal construction and maintenance projects. Refer to SI11.

TABLE OF CONTENTS

APPENDIX 1 - COMPLETE LIST OF EACH INDIVIDUAL WHO ARE CURRENTLY DIRECTORS AND OR OWNER OF THE BIDDER

APPENDIX 2 - VOLUNTARY CERTIFICATION TO SUPPORT THE USE OF APPRENTICES

APPENDIX 3 – DEPARTMENTAL REPRESENTATIVE'S AUTHORITY

ANNEX A – SPECIFICATIONS

ANNEX B - DRAWINGS

ANNEX C - CERTIFICATE OF INSURANCE

ANNEX D - VOLUNTARY REPORTS FOR APPRENTICES EMPLOYED DURING THE CONTRACT

SPECIAL INSTRUCTIONS TO BIDDERS (SI)

SI01 INTEGRITY PROVISIONS - ASSOCIATED INFORMATION

By submitting a bid, the Bidder certifies that the Bidder and its Affiliates are in compliance with the provisions as stated in Section GI01 Integrity Provisions - Bid General Instructions – Construction Services – Bid Security Requirements, R2710T. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

SI02 BID DOCUMENTS

1. The following are the bid documents:

   a. Invitation to Tender - Page 1;
   b. Special Instructions to Bidders;
   c. General Instructions - Construction Services - Bid Security Requirements R2710T (2014-09-25)
   d. Clauses & Conditions identified in “Contract Documents”;
   e. Drawings and Specifications;
   f. Bid and Acceptance Form and related Appendix(s); and
   g. Any amendment issued prior to solicitation closing.

   Submission of a bid constitutes acknowledgement that the Bidder has read and agrees to be bound by these documents.

2. General Instructions - Construction Services - Bid Security Requirements R2710T is incorporated by reference and is set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site: https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R

SI03 ENQUIRIES DURING THE SOLICITATION PERIOD

1. Enquiries regarding this bid must be submitted in writing to the Contracting Officer named on the Invitation to Tender - Page 1 as early as possible within the solicitation period. Except for the approval of alternative materials as described in GI15 of R2710T, enquiries should be received no later than five (5) calendar days prior to the date set for solicitation closing to allow sufficient time to provide a response. Enquiries received after that time may not result in an answer being provided.

2. To ensure consistency and quality of the information provided to Bidders, the Contracting Officer shall examine the content of the enquiry and shall decide whether or not to issue an amendment.

3. All enquiries and other communications related to this bid sent throughout the solicitation period are to be directed ONLY to the Contracting Officer named on the Invitation to Tender - Page 1. Failure to comply with this requirement may result in the bid being declared non-responsive.

SI04 OPTIONAL SITE VISIT

There will be a site visit **on January 19, 2015 at 10:00am**. Interested bidders are to meet at C-Dry at Giant Mine. Contractors participating in the site visit are required to contact the Contracting Authority a minimum of 3 days prior to the site visit. Contractors who do not contact the Contracting Authority prior to site visit may not be allowed to participate.

The site visit for this project is OPTIONAL. The representative of the bidder will be required to sign the Site Visit Attendance Sheet at the site visit.

Contractors participating in the site visit will be required to come equipped with their own CSA rated safety boots, glasses, and disposable coveralls.

SI05 REVISION OF BID

A bid may be revised by letter or facsimile in accordance with GI10 of R2710T. The facsimile number for receipt of revisions is (204) 983-0338.

SI06 BID RESULTS

1. A public bid opening will be held in the office designated on the Front Page “Invitation to Tender” for the receipt of bids shortly after the time set for solicitation closing.

2. Following solicitation closing, bid results may be obtained by calling (204) 983-3774.

SI07 INSUFFICIENT FUNDING

In the event that the lowest compliant bid exceeds the amount of funding allocated for the Work, Canada in its sole discretion may

a. cancel the solicitation; or

b. obtain additional funding and award the Contract to the Bidder submitting the lowest compliant bid; and/or

c. negotiate a reduction in the bid price and/or scope of work of not more than 15% with the Bidder submitting the lowest compliant bid. Should an agreement satisfactory to Canada not be reached, Canada shall exercise option (a) or (b).

SI08 BID VALIDITY PERIOD

1. Canada reserves the right to seek an extension to the bid validity period prescribed in BA04 of the Bid and Acceptance Form. Upon notification in writing from Canada, Bidders shall have the option to either accept or reject the proposed extension.

2. If the extension referred to in paragraph 1.of SI08 is accepted, in writing, by all those who submitted bids, then Canada shall continue immediately with the evaluation of the bids and its approvals processes.

3. If the extension referred to in paragraph 1.of SI08 is not accepted in writing by all those who submitted bids then Canada shall, at its sole discretion, either

   a. continue to evaluate the bids of those who have accepted the proposed extension and seek the necessary approvals; or

   b. cancel the invitation to tender.

4. The provisions expressed herein do not in any manner limit Canada’s rights in law or under GI11 of R2710T.

SI09 CONSTRUCTION DOCUMENTS

The successful Contractor will be provided with one electronic copy of the sealed and signed drawings, the specifications and the amendments upon acceptance of the offer. Obtaining more copies shall be the responsibility of the Contractor including costs.

SI10 PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND DEFENCE CONSTRUCTION CANADA APPRENTICE PROCUREMENT INITIATIVE

1. To encourage employers to participate in apprenticeship training, Contractors bidding on construction and maintenance contracts by Public Works and Government Services Canada (PWGSC) are being asked to sign a voluntary certification, signaling their commitment to hire and train apprentices.

2. Canada is facing skills shortages across various sectors and regions, especially in the skilled trades. Equipping Canadians with skills and training is a shared responsibility. In Economic Action Plan (EAP) 2013, the Government of Canada made a commitment to support the use of apprentices in federal construction and maintenance contracts. Contractors have an important role in supporting apprentices through hiring and training and are encouraged to certify that they are providing opportunities to apprentices as part of doing business with the Government of Canada.

3. Through the Economic Action Plan 2013 and support for training programs, the Government of Canada is encouraging apprenticeships and careers in the skilled trades. In addition, the government offers a tax credit to employers to encourage them to hire apprentices. Information on this tax measure administered by the Canada Revenue Agency can be found at: www.cra-arc.gc.ca. Employers are also encouraged to find out what additional information and supports are available from their respective provincial or territorial jurisdiction.

4. Signed certifications (Appendix 4) will be used to better understand contractor use of apprentices on Government of Canada maintenance and construction contracts and may inform future policy and program development.

5. The Contractor hereby certifies the following:

   In order to help meet demand for skilled trades people, the Contractor agrees to use, and require its subcontractors to use, reasonable commercial efforts to hire and train registered apprentices, to strive to fully utilize allowable apprenticeship ratios * and to respect any hiring requirements prescribed by provincial or territorial statutes

   The Contractor hereby consents to this information being collected and held by PWGSC, and Employment and Social Development Canada to support work to gather data on the hiring and training of apprentices in federal construction and maintenance contracts.

   To support this initiative, a voluntary certification signaling the Contractor's commitment to hire and train apprentices is available at Appendix 4.

   If you accept fill out and sign Appendix 4

   * *The journeyperson-apprentice ratio is defined as the number of qualified/certified journeypersons that an employer must employ in a designated trade or occupation in order to be eligible to register an apprentice as determined by provincial/territorial (P/T) legislation, regulation, policy directive or by law issued by the responsible authority or agency.*

SI11 MANDATORY HEALTH AND SAFETY

WCB AND SAFETY PROGRAM - *for Work in the Northwest Territories*

1.) SPECIAL INSTRUCTIONS TO BIDDERS (SI):

1. The recommended Bidder shall provide to the Contracting Authority, prior to Contract award:

   1.1 a Workers' Safety and Compensation Claims Cost Summary - *Northwest Territories & Nunavut*, or equivalent documentation from another jurisdiction;

   1.2 a Workers' Safety and Compensation Commission letter of good standing, also listing covered Directors, Principals, Proprietor(s) or Partners who will be or who are anticipated to be present on the work site(s), or

equivalent documentation from another jurisdiction; and

1.3 a Certificate of Recognition (COR) or Registered Safety Plan (RSP). A health and safety policy and program, as required by other provincial/territorial Occupational Health and Safety Acts, will be acceptable in lieu of a COR or RSP.

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 with the request may result in the bid being declared non-compliant.

Exemption to Generic Safety Programs *(Northwest Territories & Nunavut Territory only)* - Contractors having ten (10) or less employees do not require a written program. However, evidence of a system to manage health and safety remains a requirement.

DECLARATION

DATE: _____

COMPANY NAME: _____

ADDRESS: _____

_____

_____

This company is exempt from the Northwest Territories Safety Act and Regulations requirement to have a formalized Health and Safety Policy and Program, on the basis that this company does not at the present time employ more than ten (10) full time employees, including those required on all current projects for all clients. By signing this Declaration the Contractor certifies they will remain in compliance with the identified AHJ's requirements regarding health and safety at the work site.

Current number of full time employees: _____

_____
TITLE OF COMPANY OFFICER

_____
SIGNATURE

SI12 TLICHO LAND CLAIMS AND SELF-GOVERNMENT AGREEMENT

The area of the contract is within the Môwhì Gogha Dè Nîîtåèè area, as defined in the Tlicho Land Claims and Self-Government Agreement, and proximate to Yellowknife and Akaitcho Dene First Nation Communities of Dettah and N'dilo.

Tlicho Agreement (2003)

The requirements of the **Tlicho Land Claims and Self-Government Agreement** (http://www.ainc-inac.gc.ca/al/ldc/ccl/fagr/nwts/tliagr/tliagr-eng.pdf) will apply to the proposed procurement. Bidders are therefore requested to maximize aboriginal employment, subcontracting and on-the-job training opportunities, and involve local, regional and Aboriginal citizens and businesses, in carrying out the work under this project. The benefits that apply to this procurement are contained in: Chapter 26, of the Tlicho Land Claims and Self-Government Agreement.

In compliance with the requirements of Chapter 26 - Economic Measures, of the Tlicho Land Claims and Self-Government Agreement, the following conditions shall apply in the award of any Contract resulting from this solicitation:

Contractor Selection

Any contract resulting from this solicitation will be awarded to the responsive bidder whose total assessed bid price is the lowest. In order to be considered responsive, a bid must satisfy all mandatory terms, conditions, and specifications of this solicitation document. The total assessed bid price will be used for evaluation purposes only and will be calculated by reducing the total actual bid price by a percentage equal to the total number of points assigned through evaluation of the bid in accordance with the Bid Criteria. ITT (07-2014)

Bid Criteria

For the portion of the work specifically undertaken in the Môwhì Gogha Dè Nîîtåèè (NWT) area as defined in the Tlicho Land Claims and Self-Government Agreement, bids will be evaluated and allocated a range of points in accordance with the degree to which the Bidder's proposed method of carrying out the work meets the objectives of the following criteria.

In this requirement "Aboriginal Representations" will allow for up to a maximum of 10% downward adjustment to a bidders price, for evaluation purposes only, in accordance with the following Bid Criteria. This provides for socioeconomic benefits in the region.

BID CRITERIA	TOTAL AVAILABLE POINTS
(a) The existence of head offices, administrative offices or other facilities in Môwhì Gogha Dè Nîîtåèè (NWT).	2 Points
(b) The employment of Aboriginal labour, engagement of Aboriginal professional services, or use of Aboriginal suppliers from the area of the contract which can act as sub-contractors in assisting with the carrying out of the contract.	6 Points
(c) The undertaking of commitments, under the contract, with respect to on-the-job training or skills development for Aboriginal Citizens from the area of the contract.	2 Points
TOTAL POSSIBLE POINTS	**10 Points**

For purposes of interpretation:

**Aboriginal Sub-Contractor/Business is defined, for audit purposes, as a corporation, partnership, proprietorship and/or joint venture; where controlling interest of the Aboriginal Business is established by a status Aboriginal, a group of status Aboriginals, and/or an Aboriginal Business/Corporation.

“deliveries to” means “goods delivered to, and services performed in”.

Evaluation and Assessment - Submission Requirements

In order for a bid to be assigned points for representations made in respect of any criterion (hereinafter collectively referred to as the "Aboriginal Representations"), appropriately documented evidence of conformance with the stated objective of the criterion must be provided with the tender submission.

The Minister reserves the right to verify any information provided in the "Aboriginal Representations" and that untrue statements may result in the tender being declared non-responsive.

Treatment of Representations and Warranties

The Bidder acknowledges that:

a) the Minister relies upon the "Aboriginal Representations" to evaluate bids; and

b) the "Aboriginal Representations" shall become covenants under any contract(s) resulting from this solicitation.

Contracting Policy Notice 2006-4

26.3 Government Employment and Contracts

26.3.1 Where government carries out public activities wholly or partly in Môwhì Gogha Dè Nîîtåèè (NWT) which give rise to employment or other economic opportunities and government elects to enter into contracts with respect to those activities,

(a) the Government of Canada shall follow its contracting procedures and approaches intended to maximize local, regional and Aboriginal employment and business opportunities, including the provision of opportunities for potential contractors to become familiar with bidding systems; and

(b) the Government of the Northwest Territories shall follow its preferential contracting policies, procedures and approaches intended to maximize local, regional and northern employment and business opportunities.

SI13 WEB SITES

The connection to some of the Web sites in the solicitation documents is established by the use of hyperlinks. The following is a list of the addresses of the Web sites:

Treasury Board Appendix L, Acceptable Bonding Companies
http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494&section=text#appL

Buy and Sell https://www.achatsetventes-buyandsell.gc.ca

Canadian economic sanctions http://www.international.gc.ca/sanctions/index.aspx?lang=eng

Contractor Performance Evaluation Report (Form PWGSC-TPSGC 2913)
http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/2913.pdf

Bid Bond (form PWGSC-TPSGC 504) http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/504.pdf

Performance Bond (form PWGSC-TPSGC 505) http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/505.pdf

Labour and Material Payment Bond (form PWGWSC-TPSGC 506)
http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/506.pdf

Standard Acquisition Clauses and Conditions (SACC) Manual
https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R

PWGSC, Industrial Security Services http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html

PWGSC, Code of Conduct and Certifications
http://www.tpsgc-pwgsc.gc.ca/app-acq/cndt-cndct/index-eng.html

PWGSC Consent to a Criminal Record Verification (PWGSC-TPSGC 229)
http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/229.pdf

Construction and Consultant Services Contract Administration Forms Real Property Contracting
http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html

SUPPLEMENTARY CONDITIONS (SC)

SC01 WORKPLACE SAFETY AND HEALTH

1. EMPLOYER/PRINCIPAL CONTRACTOR

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

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 Principal Contractor, 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 Canada's order * to:

1.1.3.1 assume, as the Principal Contractor, the responsibility for Canada's other Contractor(s); or

1.1.3.2 accept that Canada's other Contractor is Principal Contractor and conform to that Contractor's Site Specific Health and Safety Plan.

** "order" definition: after contract award, Contractor is ordered by a Change Order*

2. SUBMITTALS

2.1 The Contractor shall provide to Canada:

2.1.1 prior to the pre-construction meeting, a transmittal and copy of a completed Notice of Project form PWGSC - TPSGC 458 (form will be provided to the proposed contractor prior to award), as sent to the Authority Having Jurisdiction (AHJ); and

2.1.2 prior to commencement of work and without limiting the terms of the General Conditions:

2.1.2.1 copies of all other necessary permits, notifications and related documents as called for in the scope of work/specifications and/or by the AHJ; and

2.1.2.2 a site specific Health and Safety Plan as requested.

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.

3. LABOUR AUTHORITY CONTACT*:*

The contact below represents the Labour Authority in the jurisdiction (AHJ). They are not representatives of the Workers Compensation.

Do not contact the people 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.

<u>NORTHWEST TERRITORIES</u>

Workers' Safety and Compensation
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

SC02 INSURANCE TERMS

1) Insurance Contracts

(a) The Contractor must, at the Contractor's expense, obtain and maintain insurance contracts in accordance with the requirements of the Certificate of Insurance. Coverage must be placed with an Insurer licensed to carry out business in Canada.

(b) Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract. 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.

2) Period of Insurance

(a) The policies required in the Certificate of Insurance must be in force from the date of contract award and be maintained throughout the duration of the Contract.

(b) The Contractor must be responsible to provide and maintain coverage for Products/Completed Operations hazards on its Commercial General Liability insurance policy, for a period of six (6) years beyond the date of the Certificate of Substantial Performance.

3) Proof of Insurance

(a) Before commencement of the Work, and no later than thirty (30) days after acceptance of its bid, the Contractor must deposit with Canada a Certificate of Insurance on the form attached herein.

(b) Upon request by Canada, the Contractor must provide originals or certified true copies of all contracts of insurance maintained by the Contractor pursuant to the Certificate of Insurance.

4) Insurance Proceeds

In the event of a claim, the Contractor must, without delay, do such things and execute such documents as are necessary to effect payment of the proceeds.

5) Deductible

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

SC03 LIQUIDATED DAMAGES

1. The contractor acknowledges that:

1.1 the bid solicitation and this Contract fall within the ambit of Tlicho Land Claims and Self-Government Agreement (the "Tlicho Agreement"); and

1.2 pursuant to Sections 26.1.1, 26.1.2, 26.3.1 (a), and 26.4.1 of the Tlicho Agreement, the bid criteria included in the bid solicitation and this contract included a request for commitments to carry out the work in a manner that meets the objectives of the following criteria:

1.2.1 the existence of head offices, administrative offices or other facilities in Môwhì Gogha Dè Nîîtåèè (NWT);

1.2.2 the employment of Aboriginal labour, engagement of Aboriginal professional services, or use of Aboriginal suppliers from the area of the contract which can act as sub-contractors in assisting with the carrying out of the contract;

1.2.3 the undertaking of commitments, under the contract, with respect to on-the-job training or skills development for Aboriginal Citizens from the area of the contract.

2. The contractor acknowledges and confirms that it made the following commitments in its bid for this contract (collectively the "Aboriginal Representations") as contemplated in paragraph 1 above (to be completed at time of contract award):

	COMMITMENT	ASSIGNED POINT
2.1		
2.2		
2.3		

3. The contractor acknowledges that the "Aboriginal Representations":

3.1 are covenants under this contract; and

3.2 that each "Aboriginal Representation" represents a percentage of the initial total contract value equal to the number of points assigned to the commitment/representation at the time of evaluation and stated in paragraph 2. above in the "ASSIGNED POINTS" column.

4. Without prejudice to any other legal or equitable rights Her Majesty may have, if at any time during the contract, the Contractor breaches any or all of the "Aboriginal Representations", Her Majesty shall be entitled to set-off, from any contract monies owing to the Contractor, the applicable sum or sums identified per each "Aboriginal Representation" in paragraph 3.2.

5. The Contractor further acknowledges that:

5.1 the sums in paragraph 3.2 are a genuine pre-estimate of damages arrived at through negotiation with Her Majesty. Those negotiations considered the financial, administrative and other costs, including consequential costs, of any such breach; and

5.2 The Contractor acknowledges that it has had legal advice to the full extent deemed necessary by itself. Furthermore the Contractor acknowledges that it did not act under any duress.

CONTRACT DOCUMENTS (CD)

1. The following are the contract documents:

   a. Contract Page when signed by Canada;
   b. Duly completed Bid and Acceptance Form and any Appendices attached thereto;
   c. Drawings and Specifications;
   d. General Conditions and clauses

GC1	General Provisions – Construction Services	R2810D	(2014-09-25);
GC2	Administration of the Contract	R2820D	(2014-09-25);
GC3	Execution and Control of the Work	R2830D	(2014-03-01);
GC4	Protective Measures	R2840D	(2008-05-12);
GC5	Terms of Payment	R2850D	(2014-06-26);
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	R2880D	(2012-07-16);
GC9	Contract Security	R2890D	(2014-06-26);
GC10	Insurance	R2900D	(2008-05-12);
	Allowable Costs for Contract Changes Under GC6.4.1	R2950D	(2014-06-26);
	Supplementary Conditions		

   e. Any amendment issued or any allowable bid revision received before the date and time set for solicitation
   f. Any amendment incorporated by mutual agreement between Canada and the Contractor before acceptance of the bid; and
   g. Any amendment or variation of the contract documents that is made in accordance with the General Conditions.

2. The documents identified by title, number and date above are incorporated by reference and are set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site: https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual

3. The language of the contract documents is the language of the Bid and Acceptance Form submitted.

BID AND ACCEPTANCE FORM (BA)

BA01 IDENTIFICATION
ETP Reaction Tank Replacement, Giant Mine, Yellowknife, NWT

BA02 BUSINESS NAME AND ADDRESS OF BIDDER

Name: _____

Address: _____

Telephone: _____ Fax: _____ PBN: _____

BA03 THE OFFER

The Bidder offers to Canada to perform and complete the Work for the above named project in accordance with the Bid Documents for the Total Bid Amount of

$ _____excluding applicable taxe(s).
(amount in numbers)

BA04 BID VALIDITY PERIOD
The bid shall not be withdrawn for a period of thirty (30) days following the date of solicitation closing.

BA05 ACCEPTANCE AND CONTRACT
Upon acceptance of the Contractor's offer by Canada, a binding Contract shall be formed between Canada and the Contractor. The documents forming the Contract shall be the contract documents identified in Contract Documents (CD).

BA06 CONSTRUCTION TIME

The Contractor shall perform and complete the Work to be fully operational and commissioned twenty-two (22) weeks from the date of notification of acceptance of the offer. The Contractor shall fabricate the tanks and make them available for inspection and acceptance FOB Plant eight (8) weeks from award.

BA07 BID SECURITY
The Bidder is enclosing bid security with its bid in accordance with GI08 - Bid Security Requirements of R2710T - General Instructions - Construction Services - Bid Security Requirements.

BA08 SIGNATURE

_____
Name and title of person authorized to sign on behalf of Bidder (Type or print)

_____ _____
Signature Date

APPENDIX 1 - COMPLETE LIST OF EACH INDIVIDUAL WHO ARE CURRENTLY DIRECTORS AND OR OWNER OF THE BIDDER

NOTE TO BIDDERS
WRITE DIRECTOR'S AND OR OWNERS SURNAMES AND GIVEN NAMES

APPENDIX 2 - VOLUNTARY CERTIFICATION TO SUPPORT THE USE OF APPRENTICES

Note; The contractor will be asked to fill out a report every six months or at project completion as per sample "Voluntary Reports for Apprentices Employed during the Contract" provided at Annex C

Name: _____

Signature: _____

Company Name: _____

Company Legal Name: _____

Solicitation Number: _____

Number of company employees: _____

Number of apprentices planned to be working on this contract: _____

Trades of those apprentices:

_____

_____

_____

_____

_____

_____

_____

APPENDIX 3 – DEPARTMENTAL REPRESENTATIVE'S AUTHORITY

TO BE PROVIDED AT CONTRACT AWARD.

Contracting Authority is :

Name : _____

Title : _____

Department :_____

Division : _____

Telephone : ____- ____- _____

e-mail : _____

Technical Authority is :

Name : _____

Title : _____

Department :_____

Division : _____

Telephone : ____- ____- _____

e-mail : _____

ANNEX A – SPECIFICATIONS

See attached.

ANNEX B – DRAWINGS

See attached.

ANNEX C - CERTIFICATE OF INSURANCE (Not required at solicitation closing)

See attached.

ANNEX D - VOLUNTARY REPORT FOR APPRENTICES EMPLOYED DURING THE CONTRACT (Sample)

This report is not required at bid deposit)

The Contractor should compile and maintain records on the number of apprentices and their trade that were hired to work on the contract.

The Contractor should provide this data in accordance with the format below. If no apprentices were hired during the contract period, the Contractor should still provide a "nil" report.

The data should be submitted six months after the Contract award or at the end of the Contract, whichever comes first to the Contracting Authority.

Number of apprentices hired	Trade

(Add rows as needed)

Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

Canada

Respect ◆ Integrity ◆ Excellence ◆ Leadership

Serving GOVERNMENT, Serving CANADIANS.

SPECIFICATION

ETP Reaction Tank Replacement
Giant Mine, Yellowknife

Solicitation No. EW702-151706/A
Project #: R.014.204.334

www.pwgsc-tpsgc.gc.ca

PART 1 GENERAL

1.1 Background Information

.1 Giant Mine was a large-scale gold mine that operated from 1945 to 2004 under a series of different owners. The most recent owners of the mine were assigned to bankruptcy in 2005 and responsibility for this site has since been assigned to Aboriginal Affairs and Northern Development Canada (AANDC). Also since 2005, the required Care and Maintenance at the Giant Mine Site, including environmental management activities, have been contracted out by AANDC and Public Works and Government Services Canada (PWGSC).

.2 The Giant Mine site is located within the city limits of Yellowknife, Northwest Territories (NWT), Canada, approximately 5 km north of the city centre. The Giant Mine is accessible year-round via Highway 4 (Ingraham Trail), which is owned and maintained by the Government of the Northwest Territories. The Giant Mine site lies within the area traditionally used by the Yellowknives Dene First Nation.

.3 Hazards that the Contractor should be aware of include, but are not limited to, the following:

.1 Tailings ponds, potentially containing arsenic and cyanide compounds and by-products.
.2 Reagents including acids and lime.
.3 Fuels and lubrication fluids.
.4 Process chemicals and mill dust.
.5 Assay chemicals.
.6 Wildlife (bears).
.7 Asbestos.
.8 Arsenic Trioxide Dust.
.9 Contaminated Water.
.10 Mine workings such as waste rock, open pits, open stopes, and underground chambers.
.11 Physical hazards of water bodies such as tailings ponds and Baker Creek.
.12 Traffic along Ingraham Trail and site roads.
.13 Extreme cold.

1.2 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 Hazardous Waste Material containerization under the Contract to which these Specifications apply.

.4 Mine Manager: A separate contract will be in place to fulfil the role of Mine Manager under the NWT Mine Health and Safety Act for the overall Giant Mine Site. The Mine Manager will therefore be responsible for all site Health and Safety. The existing Care and Maintenance (C&M) Contractor is currently acting as Mine Manager.

.5 Contract Boundary: Area directly affected by the Work under these Specifications and within which the Contractor supervises Work and controls Health and Safety. Project Work Area is defined on the Drawings.

.6 Contractor's Site Superintendent: Contractor's resident site representative who is authorized to make decisions on behalf of Contractor and who assumes the role and responsibility of a Level 2 Supervisor under the Mine Health and Safety Act for the Project Work Area.

.7 Authority Having Jurisdiction (AHJ): Governmental agency or sub-agency that regulates the codes and standards that are to be met during the remediation processes.

1.3 Summary of Work

.1 Requirements Included:

.1 Title and description of work:
ETP Train A Replacement

.2 Contract method: Lump Sum.

.2 Work covered by the Contract Documents generally includes, but is not necessarily limited to:

1. Removal and replacement of the existing Train A Reactor Tanks
2. Refurbishment and reinstallation of the existing Catwalk
3. Removal of a Sulphuric Acid Tank
4. Removal and replacement of two existing tank mixers
5. Installation of one new tank mixer
6. Installation of one static mixer on the Train A inlet yard piping.

1.4 Documents Required

.1 Maintain at job site, one copy each of following:

.1 Contract drawings.
.2 Specifications.
.3 Addenda.
.4 Reviewed shop drawings.
.5 Change orders.
.6 Other modifications to Contract.
.7 Field test reports.
.8 Copy of approved work schedule.
.9 Manufacturers' installation and application instructions.

1.5 Work Schedule

.1 Provide within 5 working days after Contract award, revised construction schedule showing anticipated progress stages and final completion of work within time period required by Contract documents in accordance with the following requirements.

.1 Schedules Required
- .1 Construction Progress Schedule.

.2 Format
- .1 Prepare schedule in form of horizontal bar chart.
- .2 Provide separate bar for each roadway section or part and identify all major trades or operations.
- .3 Provide horizontal time scale identifying first work date of each week.
- .4 Format for listings: Chronological order of start of each item of work.
- .5 Identify the first work day of each week.

.3 Submission

- .1 Submit electronic pdf, opaque reproduction, plus 2 printed copies to be retained by Departmental Representative.
- .2 Departmental Representative will review schedule and return reviewed copy within 10 days after receipt.
- .3 Resubmit finalized schedule within 7 days after return of reviewed copy.

.2 Interim reviews of work progress based on work schedule will be conducted as decided by Departmental Representative and schedule updated by Contractor in conjunction with and to approval of Departmental Representative.

1.6 Work Sequence

.1 Construct work in stages to minimize traffic and pedestrian disruptions at all times. Phases to minimize use of temporary water and sanitary sewer services.

.2 Access must remain for operations staff to Treatment Train B. The ability to operate Train B shall not be impaired for the duration of the contract.

.3 Coordinate construction schedule with Mine Operations staff during construction.

.4 The following is a suggested construction sequence:

a) Removal of two existing tank mixers, Tank 1A and Tank 3A, c/w shaft and impeller.

b) Removal of all electrical cables along existing tank walkway.

c) Removal of existing chemical feed lines (lime slurry and polymer) along existing catwalk.

d) Removal of existing catwalk.

e) Removal of sulphuric acid tank.

f) Disconnection of Tank 1A inlet feed, provide temporary blind flange on 400 mm diameter inlet piping, and disconnection of Tank 1A outlet line and disconnection of Tank 1A drain line, provide temporary blind flange on 150 mm pipe connection.

g) Disconnection of Tank 2A inlet feed and disconnection of Tank 2A outlet line.

h) Disconnection of Tank 3A inlet feed, disconnection of Tank 3A outlet line, provide temporary support and blind flange on 400 mm outlet piping, and disconnection of Tank 3A drain line, provide temporary blind flange on 150 mm pipe connection.

i) Removal of existing tank catwalk; remove in three sections.

j) Demolition of existing Tanks 1A, 2A and 3A.

k) Grade and shape gravel base including sand layer foundation for installation of new tanks.

l) Supply, construct, and install new Tanks 1A, 2A and 3A.

m) Connect existing inlet to Tank 1A inlet including inlet drop pipe, connect outlet of Tank 1A to Tank 2A inlet including drop piping, connect outlet of Tank 2A to inlet of Tank 3A including drop pipe, connect outlet of Tank 3A to existing outlet piping. Reinstall drain lines for all three tanks.

n) Reinstall walkway system; provide connections to access end of walkway. Once all walkway sections are set in place and connected together, fillet weld walkway to tank.

o) Reinstall existing chemical feed lines.

p) Reinstall existing tank mixers in Tank 1A and Tank 3A. Install new mixer in Tank 2A.

q) Install new cable tray and cables to tank mixers (two existing mixers and one new mixer).

r) Provide electrical connections to tank mixers and to lime feed valve.

s) Install new inline static mixer and extend ferric sulfate line to new static mixer.

1.7 Contractor's Use of Site

.1 Use of site: Contractor must maintain access to adjacent facilities and minimize disruption of traffic into areas. Contractor will maintain emergency vehicle access and egress at all times.

.2 Do not unreasonably encumber site with materials or equipment.

.3 Move stored products or equipment which interfere with operations of Departmental Representative, other contractors or pedestrian and vehicular traffic.

.4 Schedule and sequence equipment and material transportation in coordination with Departmental Representative and Mine Manager.

1.8 Mobilization and Demobilization

.1 Mobilization shall include transportation to the site of the Contractor's labour, equipment, and materials in readiness to start work.

.2 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.

1.9 Codes and Standards

.1 Perform work in accordance with National Building Code of Canada (NBC) and any other code of territorial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

.2 Meet or exceed requirements of contract documents, specified standards, codes and referenced documents.

1.10 Construction Timeline Constraints and Milestones

.1 The new treatment tank train must be fully operational and commissioned by June 30th, 2015.

.2 Correction of deficiencies and outstanding work by July 30, 2014.

.3 The work is to progress without disrupting the treatment processes in Train B.

1.11 Subsurface Conditions

.1 The Contractor shall be responsible for his own assessment of soil conditions which may include additional on-site investigations.

1.12 Remove and Dispose of Materials

.1 Materials to be removed and disposed shall be removed, hauled and disposed of at the Contractor’s expense in accordance with Section 02 90 00. Disposal areas will be determined by the Departmental Representative, but will be within 3 km of the site.

.2 Obtain all necessary approvals and/or permits, from the Owner of the disposal site, and any governing authority prior to dumping any materials.

1.13 Noise and Dust Control

.1 Control objectionable dust conditions in areas of construction as a result of traffic, construction equipment or wind.

.2 All equipment shall be equipped with hospital grade muffling systems.

.3 Abide by Noise Bylaws which affect any work in the area.

1.14 Project Meetings

.1 The Departmental Representative will arrange for a Pre-Construction meeting and progress meetings. The progress meetings are to be held at intervals of approximately two weeks.

.2 Contractor's superintendent to attend all meetings.

.3 An Occupational Health and Safety representative is to attend pre-construction to ascertain contractor's overall OH&S program and field and office safety representative's names.

1.15 Cutting, Fitting and Patching

.1 Execute cutting (including excavation), fitting and patching required to make work fit properly.

.2 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work.

.3 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.

1.16 Work Site safety

.1 Safety Certification:

.1 Safety certification, as specified in front end documents, is a condition of contract award.

1.17 Additional Drawings

.1 Drawings and Specifications Furnished:

.1 Owner will provide three (3) copies of drawings and specifications to Contractor.
.2 Additional copies of drawings and specifications are available upon request at an additional cost.

.2 The Departmental Representative 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.

1.18 Relics and Antiquities

.1 Relics and antiquities and items of historical or scientific interest such as cornerstones and contents, commemorative plaques, inscribed tablets, and similar objects found on site or in buildings to be demolished, shall remain property of the Owner. Protect such articles and request directives from Departmental Representative.

.2 Give immediate notice to the Departmental Representative if evidence of archaeological finds are encountered during construction, and await his written instructions before proceeding with work in this area.

1.19 Standard of Acceptance

.1 Means that item named and specified by catalogue number forms part of specification and sets standard regarding performance, quality of material and workmanship.

1.20 Water Supply

.1 Supply all water necessary for the work. Water for the work may be obtained from the Polishing Pond. Typical water quality over a year for the Polishing Pond at the discharge point to Baker Creek can be found in Section 01 35 15.

.2 There are no potable water sources on-site. Obtain water for office and sanitary facilities from the City of Yellowknife.

.3 No water is to be taken from on-site surface water bodies.

1.21 Contractor Submission Requirements

.1 A list of the documents and information to be submitted by the Contractor is presented in the table at the end of this Section. Please note that this list does not necessarily include all required submissions.

.2 Submit all information and documents by the dates indicated, unless otherwise directed by the Departmental Representative.

.3 Refer to Section 01 33 00 for additional requirements for submittals.

1.22 Site Security

.1 Despite what facilities and security the Owner may or may not have on the existing site, the Contractor will be totally responsible for the security of its own equipment, tools, materials, temporary facilities and the completed and stored works under its care and custody and will take appropriate steps to ensure that security to the extent it does not affect the work of others on the site.

.2 Maintain site security by:

.1 Restrict access to the site to those requiring access and limiting visitors and tours.
.2 Report any breaches in security and/or suspicious situations to the Departmental Representative and Owner (and police if appropriate).
.3 Lock temporary facilities and gates on off hours.

1.23 Dewatering and Drainage

.1 Keep all portions of the work properly drained during the construction and until completion.

.2 The Contractor shall be responsible for all damage, directly resultant from his operations, which may be caused by or which may result from water backing up or overflowing through, from or along any part of the work.

.3 Bear all costs related to the effective dewatering of excavations and all other pumping and drainage necessary for the proper construction of the works, including keeping the pipes, structures and trenches free of undesirable accumulations of seepage, subsoil water, surface water or rainwater.

.4 Keep all drainage channels and culverts free of silt, sand, debris and gravel and remove such deposits as required by the Departmental Representative or any other Authority having jurisdiction.

.5 Dispose of all other project water in accordance with Section 02 90 00.

1.24 Sanitary Facilities

.1 Sanitary wastewater must be held in temporary facilities and disposed of off-site at appropriate wastewater treatment facilities.

1.25 Night Work

.1 Night work will only be allowed if written permission is given beforehand by the Departmental Representative.

.2 When work is carried out at night, supply a sufficient number of electric or other approved lights to enable the work to be done in a safe and satisfactory manner.

.3 Requirements of Noise Bylaws shall be observed.

1.26 Layout of the Work

.1 The Contractor shall be responsible for any costs related to survey layout of the Work, shall preserve and protect the established reference points, and shall not change or relocate the established reference points without the approval of the Departmental Representative.

.2 The Contractor shall advise the Departmental Representative whenever any Contractor established reference point is lost, destroyed, damaged, or requires relocation as a result of their operations. The cost to re-establish any reference point that is lost, destroyed, damaged or requires relocation as a result of the Contractor's operations, shall be at the Contractor's expense.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.1 Not used.

CONTRACTOR SUBMITTAL SCHEDULE		
Specification Section	**Description**	**Date Required**
01 10 00	Copies of Permits/Licenses	Upon Departmental Representative's request.
01 33 00	Material and Shop Drawing Schedule	15 days from Notice of Acceptance.
01 32 18	Contract Work Schedule	5 days from Notice of Acceptance. Revised schedule with each payment application.
01 35 32	Site Specific Health and Safety Plan	10 days prior to construction
01 77 00	Record Drawings (2 sets)	At project completion/prior to final inspection.

END OF SECTION

PART 1 GENERAL

1.1 Definitions

.1 Pre-Construction Meeting: meeting to be held prior to Contractor Mobilization to Giant Mine and to include Departmental Representative, Contractor, Contractor, major Sub-Contractors, field inspectors and Mine Manager.

.2 Progress Meeting: meeting to be on-site at weekly intervals during construction and to include Contractor, major Sub-Contractors, Mine Manager and the Departmental Representative.

.3 Weekly Construction Meeting: meeting to be held on-site at weekly intervals during the project and to include the Contractor's Site Superintendent, foremen as necessary, the Mine Manager, and Departmental Representative.

.4 Tailgate Meeting: meeting to be held on-site daily during construction season and to include Contractor, all construction staff, Departmental Representative's Authorized Personnel and the Departmental Representative.

1.2 Administrative

.1 Schedule and administer project meetings throughout the progress of the Work at the call of the Departmental Representative.

.2 Prepare agenda for meetings.

.3 Distribute written notice of each meeting five (5) days in advance of meeting date to the Departmental Representative.

.4 Make arrangements for meetings. Physical meeting space shall be provided within the C-Dry Building on the Giant Mine Site with the approval of the Mine Manager.

.5 Preside at meetings.

.6 Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.

.7 Reproduce and distribute copies of minutes within three (3) days after meetings and transmit to meeting participants and the Departmental Representative.

.8 Representatives of the Contractor, Subcontractors and Suppliers attending meetings will be qualified and authorized to act on behalf of the party each represents.

1.3 Pre-construction Meeting

.1 Within seven (7) days after the award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.

.2 Departmental Representative, Contractor, Contractor's Site Superintendent, major Sub-Contractors, field inspectors and Mine Manager will be in attendance.

.3 Establish time and location of meeting and notify parties concerned a minimum of five (5) days before meeting.

.4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.

.5 Agenda to include:

.1 Confirmation 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 all submittals in accordance with Section 01 33 00 - Submittal Procedures.
.4 Requirements and location for temporary facilities, site sign, site offices, storage sheds, utilities and fences in accordance with Section 01 52 00 Construction Facilities.
.5 Site security.
.6 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime and administrative requirements.
.7 Monthly progress claims, administrative procedures, photographs and hold backs.
.8 Appointment of inspection and testing agencies and firms.
.9 Insurances and transcript of policies.

1.4 Progress Meetings

.1 During the course of the Work and to project completion schedule progress meetings weekly.

.2 Contractor, major Sub-Contractors, Mine Manager and Departmental Representative are to be in attendance.

.3 Notify parties minimum five (5) days prior to meetings.

.4 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within three (3) days after meeting.

.5 Agenda to include:

.1 Review and approval of minutes of previous meeting.
.2 Review of work progress since previous meeting.
.3 Field observations, problems and conflicts.
.4 Health, safety and security issues.
.5 Problems which impede construction schedule.
.6 Corrective measures and procedures to regain projected schedule.
.7 Revision to the construction schedule.
.8 Progress schedule, during succeeding work period.
.9 Review of submittal schedule, expedite as required.
.10 Maintenance of quality standards.
.11 Review of proposed changes for effect on construction schedule and on completion date.
.12 Other business

1.5 Tailgate Meeting

.1 Hold daily tailgate meetings with all construction staff and Departmental Representative's Authorized Personnel, and document minutes with daily reporting requirements to Departmental Representative.

1.6 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 Provide submittals to the Departmental Representative for review. Include submittals as noted in Section 01 33 00 - Submittal Procedures.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.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, and expected cost and expected resource requirements. Activities can be subdivided into tasks.

.2 Bar Chart (Gantt chart): graphic display of Schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.

.3 Baseline: original approved plan (for Project, Work package, or activity), plus or minus approved scope changes.

.4 Construction Work Week: Sunday to Saturday, inclusive, seven (7) day Work week. Present scheduled 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 Master Plan: summary level schedule that identifies major activities and key milestones.

.7 Milestone: significant event in project, usually the completion of major deliverable.

.8 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.

.9 Project Planning, Monitoring and Control System: overall system operated by the Departmental Representative to enable monitoring of project work in relation to established milestones.

1.2 Requirements

.1 Master Plan and Project Schedule are to be practical and to remain within specified Contract duration.

.2 Plan to complete Work in accordance with prescribed milestones and time frame.

.3 Limit activity durations to maximum of approximately ten (10) working days, to allow for progress reporting.

.4 The Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence to the Contract.

1.3 Submittals

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

.2 Submit to Departmental Representative within five (5) working days of Award of Contract a Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.

.3 Submit Project Schedule to Departmental Representative within five (5) working days of receipt of acceptance of the Master Plan.

1.4 Project Milestones

.1 Project milestones form the interim targets for the Project Schedule and include the following:

.1 Train A to be fully operational and commissioned by June 30, 2015.
.2 Correction of deficiencies and outstanding work by July 30, 2015 (Final Inspection).

1.5 Master Plan

.1 Structure schedule to allow orderly planning, organizing and execution of the Work as a Bar (GANTT) Chart.

.2 Departmental Representative will review and return revised schedules with three (3) working days.

.3 Revise and resubmit schedules within (3) working days of receipt of comments.

.4 The accepted schedule will be the Master Plan and be utilized as the baseline for all updates.

1.6 Project Schedule

.1 Develop a detailed Project Schedule derived from the Master Plan.

.2 The detailed Project Schedule is to include minimum milestone and activity types as follows:

.1 Award.
.2 Start-up Meeting.
.3 Shop Drawings, Samples.
.4 Submittals.
.5 Mobilization.
.6 Site Activities (Contractor to expand as required to outline the Contractor's task breakdown).
.7 Interim Certificate of Completion.
.8 Demobilization.
.9 Closeout Submittals.
.10 Final Inspection
.11 Final Certificate of Completion.

1.7 Project Schedule Reporting

.1 Update the Project Schedule on a weekly basis reflecting activity changes and completions as well as activities in progress.

.2 Include as part of the Project Schedule, a 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.

1.8 Project Meetings

.1 Discuss Project Schedule at regular meetings, identify activities that are behind Schedule and provide measures to regain slippage. Activities considered behind Schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.

.2 Weather related delays with their remedial measures will be discussed and negotiated.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Definition

.1 Shop Drawings: 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. Submit promptly and in orderly sequence 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 Do not proceed with Work affected by submittal until review is complete.

.3 Present shop drawings, product data, samples and mock-ups in SI Metric units.

.4 Where items or information is not produced in SI Metric units, converted values are acceptable.

.5 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 co-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 shall 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 Verify field measurements and affected adjacent Work are co-ordinated.

.8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.

.9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.

.10 Keep one reviewed copy of each submission on site.

.11 Onsite activities will not be permitted to commence until all submittals have been submitted and clarifications provided.

1.3 Shop Drawings and Product Data

.1 Submit shop drawings to bearing stamp and signature of qualified Professional Engineer registered or licensed in the Province or Territories of Canada.

.2 Indicate materials, methods of construction and attachment of anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which items will be supplied and installed. Indicate cross references to design drawings and specifications.

.3 Allow four (four) working days for the Departmental Representative review of each submission.

.4 Adjustments made on Shop Drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative and obtain written authorization prior to proceeding with Work.

.5 Make changes in Shop Drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of any revisions other than those requested.

.6 Accompany submissions with transmittal letter, in duplicate, containing:

.1 Date.
.2 Project title and number.
.3 Contractor's name and address.
.4 Identification and quantity of each shop drawing, product data and sample.
.5 Other pertinent data.

.7 Submissions shall include:

.1 Date and revision dates.
.2 Project title and number.
.3 Name and address of Subcontractor, supplier and manufacturer.
.4 Contractor’s stamp, signed by Contractor’s representative certifying approval of submissions, verification of field measurements and compliance with the Contract Documents.

.8 Provide details of appropriate portions of Work as applicable:

.1 Fabrication.
.2 Layout, showing dimensions, including identified field dimensions and clearances.
.3 Setting or erection details.
.4 Capacities.
.5 Performance characteristics.
.6 Standards.
.7 Operating weight.
.8 Wiring diagrams.
9. Single line and schematic diagrams.
10. Relationship to adjacent work.

.9 After Departmental Representative's review, distribute copies.

.10 Submit electronic copy of Shop Drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.

.11 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where Shop Drawings will not be prepared due to standardized manufacture of product.

.12 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.

.1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accordance with specified requirements.
.2 Testing must be within two (2) years of date of contract award for project.

.13 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative.

.1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets the specification requirements.
.2 Certificates must be dated after award of project contract complete with project name.

.14 Submit electronic copies of manufacturer's instructions for requirements requested in specification Sections and as requested by Departmental Representative.

.1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.

.15 Submit electronic copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.

.1 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

.16 Submit electronic copies of Operations and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.

.17 Supplement standard information to provide details applicable to project.

.18 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, electronic copies will be returned and Work may proceed. If shop drawings are rejected, noted copy will be returned and re-submission of corrected Shop Drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

.19 The review of Shop Drawings by Public Works and Government Services Canada (PWGSC) is for sole purpose of ascertaining conformance with general concept.

.1 This review does not mean that PWGSC approves detail design inherent in shop drawings, responsibility for which remains with Contractor submitting same, and such review does not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting all requirements of construction and Contract Documents.

.2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrications processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.4 Samples

.1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.

.2 Deliver samples prepaid to Departmental Representative's site office.

.3 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.

.4 Where colour, pattern or texture is criterion, submit full range of samples.

.5 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.

.6 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.

.7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.5 Mock-ups

.1 Erect mock-ups in accordance with Section 01 45 00 – Quality Control.

1.6 Progress Photographs

.1 Provide date-marked digital photographs in “Joint Photographic Experts Group” (.jpg) format for Progress Photographs.

.2 Digital photographs to have a minimum of 2,592 x 1,944 pixel (5 Megapixel) resolution.

.3 Progress Photographs are to be used in support of schedule review, progress reporting and request for progress claims.

.4 Progress Photographs are to be dated to actual time of taking.

.5 Progress Photographs are to capture sufficient information to document the performance of the work, erection of temporary measures and reinstatement of the site.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Definitions

.1 Wastewater: wash water, rinse water, water from decontamination activities, water from dewatering work areas, and/or any other liquid effluent stream created or encountered during Work activities. Does not include sewage water from sanitary facilities.

.2 Processed Wastewater: Wastewater processed through the Wastewater System.

.3 Treated Wastewater: Processed wastewater which has been tested and shown to meet the requirements for discharge of this Section.

.4 Wastewater System: System for containment and treatment of Wastewater derived from Work activities.

1.2 Regulatory Requirements

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

1.3 Submittals

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

1.4 Water Sources

.1 Obtain all water for use in equipment cleaning and descaling from the Polishing Pond. The following table indicates typical water quality over a year for the Polishing Pond at the discharge point to Baker Creek:

Polishing Pond Water Quality Data			
Parameter	**Units**	**Average Concentration**	**Maximum Concentration**
Total Alkalinity, as $CaCO_3$	mg/L	69.3	92.1
Aluminum	mg/L	0.0155	0.201
Antimony	mg/L	0.362	1.09
Arsenic	mg/L	0.288	0.433
Barium	mg/L	0.015	0.020
Beryllium	mg/L	ND	
Bismuth	mg/L	ND	
Boron	mg/L	0.33	0.40
Bromide	mg/L	3.09	6.30
Cadmium	mg/L	0.00008	0.0005
Calcium	mg/L	418	464
Cesium	mg/L	0.0001	0.0003
Chloride	mg/L	313	410
Chromium	mg/L	0.0007	0.0011
Cobalt	mg/L	0.0114	0.0802

Polishing Pond Water Quality Data			
Parameter	**Units**	**Average Concentration**	**Maximum Concentration**
Copper	mg/L	0.0111	0.0111
Cyanide, Total	mg/L	0.0063	0.0145
Dissolved Organic Carbon	mg/L	4.56	5.14
Hardness	mg/L	1416	1520
Iron	mg/L	0.032	0.161
Lead	mg/L	0.0004	0.0070
Lithium	mg/L	0.027	0.056
Magnesium	mg/L	89.5	100
Manganese	mg/L	0.0241	0.499
Mercury	mg/L	ND	
Molybdenum	mg/L	0.0231	0.0305
Nickel	mg/L	0.0401	0.0687
Nitrate/Nitrite, as N	mg/L	6.74	9.45
Oil & Grease	mg/L	ND	
pH	unitless	7.76	8.01
Phosphorus	mg/L	ND	
Potassium	mg/L	11.9	13.3
Rubidium	mg/L	0.0074	0.0111
Selenium	mg/L	0.0011	0.0019
Silicon	mg/L	1.5776	1.8500
Silver	mg/L	0.0001	0.0002
Sodium	mg/L	160.6	191
Specific Conductivity	uS/cm	2961	3180
Strontium	mg/L	2.83	3.88
Sulphate	mg/L	1098	1170
Thallium	mg/L	0.0001	0.0001
Titanium	mg/L	0.0051	0.016
Total Ammonia, as N	mg/L	0.0176	0.04
Total Dissolved Solids	mg/L	2426	2760
Total Kjeldahl Nitrogen	mg/L	0.432	0.732
Total Organic Carbon	mg/L	4.54	5.32
Total Phosphate, as P	mg/L	0.0054	0.0076
Total Suspended Solids	mg/L	<1	1.9
Turbidity	NTU	0.41	1
Uranium	mg/L	0.00226	0.0061
Vanadium	mg/L	0.0016	0.0031
Zinc	mg/L	0.0055	0.0713

.2 There are no potable water sources on-site. Obtain water for use in personnel decontamination showers, office facilities, and sanitary facilities from the City of Yellowknife.

.3 No water is to be taken from on-site surface water bodies.

.4 There is no sanitary sewage disposal on-site. Disposal shall be done in accordance with AHJ.

1.5 Wastewater System Requirements

.1 Collect and dispose of wastewater in accordance with Section 02 90 00

1.6 Vehicular Access and Parking

.1 Prevent contamination of access and site roads by Contractor's Work activities. Immediately scrape up debris or material deposited by Contractor on access roads which is suspected to be contaminated as determined by Departmental Representative; containerize or place in Northwest Tailings Pond, as required.

.2 Departmental Representative may collect soil samples for chemical analyses from the travelling surfaces of existing access routes prior to, during, and upon completion of Work. Excavate and dispose of clean soil contaminated by Contractor's activities at no additional cost.

1.7 Dust and Particulate Control

.1 Execute Work by methods that minimize raising dust from operations.

.2 Collect wastewater used for dust and particulate control, and transfer to Wastewater System.

1.8 Equipment Decontamination

.1 Decontaminate equipment used for Selective Site Demolition Work prior to leaving Work area.

.2 Perform final decontamination of all equipment, tools, and materials which may have come in contact with potentially contaminated materials prior to removal from site.

.3 Notify Departmental Representative for inspection after decontamination and prior to removal from site. Departmental Representative will have right to require additional decontamination to be completed, if deemed necessary.

1.9 Progress Cleaning

.1 Maintain cleanliness of Project Work Area to comply with federal, provincial/territorial, and local fire and safety laws, ordinances, codes, and regulations.

.2 Coordinate cleaning operations with storage operations to prevent accumulation of dust, dirt, debris, rubbish, and waste materials.

1.10 Removal

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

.2 Do not discharge wastes into streams or waterways.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Definitions

.1 Contractor: The contractor procured to undertake the arsenic waste containerization under the Contract to which these Specifications apply.

.2 Mine Manager: A separate contract will be in place to fulfill the role of Mine Manager under the NWT Mine Health and Safety Act for the overall Giant Mine Site. The Mine Manager will therefore be responsible for all site Health and Safety. The existing Care and Maintenance (C&M) Contractor is currently acting as Mine Manager.

.3 Project Work Area: Area directly affected by the Work under these Specifications and within which the Contractor supervises Work and controls Health and Safety in the Project Work Area is defined on the Drawings.

.4 Contractor's Site Superintendent: Contractor's resident site representative who is authorized to make decisions on behalf of the Contractor and who assumes the role and responsibility of a Level 2 Supervisor under the Mine Health and Safety Act for the Project Work Area.

.5 Contractor’s Site Specific Health and Safety Plan (SSHASP): the site specific health and safety plan, prepared by the Contractor and reviewed and accepted by the Departmental Representative and the Mine Manager, that applies only to the Work of this Contract and within the Project Work Area. Unless otherwise specified, all references to a SSHASP in this section apply to the Contractor’s SSHASP.

.6 Mine Manager’s Site Specific Health and Safety Plan: the site specific health and safety plan, prepared by the Mine Manager, that the Contractor’s SSHASP must comply with, and that applies to the overall Giant Mine Site.

1.2 Site Specific Health and Safety Plan Requirements

.1 Comply with the Mine Manager’s health and safety requirements.

.2 Develop a SSHASP for the specified Work that satisfies all Authorities Having Jurisdiction (AHJ) and complies with Mine Manager’s SSHASP.

.3 Develop a SSHASP for the Work that complies with the most stringent requirements of regulations from AHJ, Canada Labour Code, and NWT Mine Health and Safety Act.

.4 Maintain and complete all health and safety, fire safety, and environmental compliance activities in accordance with applicable sections and AHJ.

.5 Schedule a compliance meeting on an as required basis, as directed by Departmental Representative. Compliance meetings may be held in conjunction with regular meetings.

.6 The intent of the compliance meeting is to review reporting and inspection requirements with respect to the NWT Mine Health and Safety Act, existing permits, other regulations, and other requirements as necessary.

.7 Compliance meetings to be held at the Work site.

.1 Departmental Representative will record minutes, chair the meeting and distribute minutes to parties of record prior to the next scheduled meeting.

.2 Attendees:

.1 Contractor: Superintendent and/or Supervisor(s), representatives of major Sub-Contractors, and others as necessary.

.2 Mine Manager.

.3 Departmental Representative and representatives of Independent Inspection Agencies.

.4 AANDC representative(s).

.3 Agenda:

.1 Review site safety and security compliance issues.

.2 Review and approval of minutes of previous meeting.

.3 Review of compliance items of significance that could affect Work.

.4 Identify requirements for maintenance of quality standards needed for compliance with applicable Codes and Legislation.

.5 Review environmental and regulatory compliance.

.6 Review of Contractor’s on-going inspection reports.

.7 Other topics as appropriate to current status of the Work.

.4 Compliance meetings to include site inspections on a monthly basis, or at a different frequency, as determined by the Departmental Representative or as dictated by the AHJ.

.1 Identify and record field observations, compliance problems, and conflicts that must be noted in reports required by the AHJ.

.2 Identify corrective measures and procedures to regain approval from AHJ.

.8 Personnel Training

In order to work on the Giant Mine Site, all personnel are required to attend Mine Manger’s orientation program as well as provide proof of training for:

- WHMIS
- Fire Extinguisher training
- Valid drivers licence
- Fall Protection training (if required)
- Heavy equipment operation for all equipment used onsite

1.3 Site Supervision

.1 Designate Contractor's Site Superintendent or back-up to be on site at all times during site operations, 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. The Site Superintendent must fulfill the requirements of the NWT Mine Health and Safety Act and associated Regulations Level 2 Supervisor.

.2 Departmental Representative may engage an independent engineering consultant to provide inspection and testing services for on-going verification of Contractor's compliance with project specifications and required work procedures.

1.4 Submittals

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

.2 Submit Draft SSHASP no later than fifteen (15) days after contract award to the Department Representative, Mine Manager and AHJ to ensure all the elements required by the Mine Manager's SSHASP, NWT Mine Health and Safety Act, OSHA Regulations, other AHJ, and Contract Specifications have been addressed. Any items which are identified as missing will be added and the plan revised, so as to incorporate the additional items. Submit the Final SSHASP forty-five (45) days prior to mobilization. The Final SSHASP will be submitted to Departmental Representative, Mine Manager, and AHJ to ensure all the elements required by the Mine Manager's SSHASP, NWT Mine Health and Safety Act, OSHA Regulations, other AHJ, and Contract Specifications have been addressed.

.3 The SSHASP will include, but not be limited to the following sections:

- .1 A Statement of Contractor's Safety Policy.
- .2 Environmental, Health and Safety Management Plan.
- .3 Name and telephone number of Contractor's corporate Safety Officer and on-site Safety Representative.
- .4 Safety Responsibilities of all on-site personnel.
- .5 Anti-Harassment Policy.
- .6 Safe Work Practices and/or Job Procedures.
- .7 Requirements for safety meetings and documentation.
- .8 Safety Inspection Plan.
- .9 First Aid Locations.
- .10 Results of safety and health risk or hazard analysis for Work area and activities.
- .11 Procedures for, but not limited to:
  - .1 General worker health and safety.
  - .2 Cold weather survival.
  - .3 Heat stress.
  - .4 Working at heights.
  - .5 Working with the hazard and health risk items identified during the health risk and hazard analysis.
  - .6 Identification of previously unidentified suspected hazardous materials.
  - .7 Lockout/Tagout procedures for equipment that could become energized.
  - .8 Working around mine openings.
  - .9 Emergency site communications.
- .12 Workplace Hazardous Materials Information System (WHMIS) and Material Safety Data Sheet (MSDS) records.
- .13 Personnel hygiene.
- .14 Personal Protection Equipment (PPE) Program.
- .15 Access restrictions and control zone, entering and existing procedures for the Contractor Work Area.
- .16 Protective equipment and clothing to be worn by workers and visitors at the Hazardous Materials Abatement Work Area(s).
- .17 Traffic control.
- .18 On-site Contingency and Emergency Response Plan.

.19 Spill Contingency Plan.
.20 Fuel Management Plan.
.21 Fire Safety Plan.
.22 Working around mine openings.

.4 The On-site Contingency and Emergency Response Plan is to address standard operating procedures to be implemented during emergency situations. Plans including procedures are to meet Safety Requirements below.

1. Prepare and coordinate a Contingency and Emergency Response Plan with contributions from the Mine Manager, appropriate authorities including the Northwest Territories Mine Health and Safety Act, Stanton Hospital, RCMP, Ministry of Transportation, and the Yellowknife Fire Department.
2. Plan will identify off-site Emergency Response Coordinator through whom all information and coordination will flow in the event of an incident and coordination with Mine Manager.
3. This plan is to include, but is not limited to, an evacuation plan in the event of accident, power failure, negative air system failure, or any other event that may require modification of Work area isolation procedures.
4. The plan is to address limitations to emergency response capabilities of the City of Yellowknife.
5. Review the On-site Contingency and Emergency Response Plan with AHJ, Mine Manager, and local emergency response authorities during the Emergency Response Orientation Seminar and make modifications or additions as necessary based on review comments during the Seminar.

.5 The PPE Program will include, but is not limited to, the following.

.1 Donning and doffing procedures.
.2 PPE Selection based upon site hazards.
.3 PPE use and limitations of equipment.
.4 Work mission duration, PPE maintenance and storage.
.5 PPE decontamination and disposal.
.6 PPE inspection procedures prior to, during, and after use.
.7 Evaluation of effectiveness of PPE program and limitations during temperature extremes, and other appropriate medical considerations.
.8 Medical surveillance requirements for personnel assigned to work at site.
.9 Frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used, including methods of maintenance and calibration of monitoring and sampling equipment.
.10 Contaminated site working and decontamination procedures for both personnel and equipment.
.11 Written respiratory protection program for project activities.
.12 Proof of respirator fit testing.

.6 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 each season. Include a schedule for upgrading deficiencies to meet requirements of AHJ.

.7 Prepare and maintain a training matrix documenting all applicable training of all Work personnel. In addition to Contractor's workers, include all sub-contractors, visitors and Departmental Representative's Authorized Personnel in matrix. Submit updated training matrix to Departmental Representative on a monthly basis.

1.4 Construction Safety Measures

.1 Designate a resident Health and Safety Officer to oversee Contractor's SSHASP with the authority to enforce policies and procedures set out in the SSHASP. 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, Northwest Territories Workers' Safety and Compensation Commission, the applicable Occupational Health and Safety Regulations, and Territorial and local statutes and AHJ.

.3 In the event of discrepancies between any requirements of the above listed authorities, the more stringent requirements will govern.

.4 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 Departmental Representative within three (3) days of the meeting.

.5 Maintain at the site, five safety hats with liners, five safety hi-visibility vests, five pairs of steel toes rubber boots (size 5 – 11) and five (5) pairs of safety glasses for use by visitors. Maintain a supply of ear plugs.

.6 Maintain a supply of Tyvek or equivalent suits of various sizes as required for Contractor's staff, Departmental Representative and up to five (5) visitors for the duration of the Work.

.7 Comply with all applicable existing site-specific health and safety policies and procedures.

.8 Departmental Representative and Mine Manager have 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 Coordinate and verify with Mine Manager that emergency procedures including appropriate First Aid facilities and First Aid personnel are in place at the Work Site. First Aid facilities and First Aid personnel must be in compliance with the *NWT Mine Health and Safety Act.*

.10 Verify that procedures meet the AHJ requirements.

.11 PPE Program and Contaminated Sites Working and Decontamination procedures to be consistent with requirements OSHA's 29 CFR 1910.120 HAZWOPER and territorial environmental regulations for:

.1 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.

.12 Hazardous Material Discovery:

.1 Immediately stop Work and notify Departmental Representative for further instructions with respect to abatement procedures required when hazardous or suspected hazardous materials not identified on Specifications and Drawings are encountered during course of Work.

1.5 Filing of Notice

.1 File Notice of Project with Territorial AHJ prior to commencement of Work.

.2 Provide copy of Notice of Project to Departmental Representative.

1.6 Regulatory Requirements

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

.2 All equipment brought to the site must meet the *Mine Health and Safety Act*; equipment must have rotating beacons and vehicles should have beacons and buggy whips.

1.7 Responsibility

.1 Be responsible for safety of persons and property on the site and for protection of the environment to extent that they may be affected by the conduct of Work.

.2 The health and safety of personnel and the public takes precedence.

.3 Control access to the Contract Boundary. Persons with business at the Project Work Area and who are not Contractor's employees must be briefed on health and safety issues, and provided with a copy of the SSHASP.

.4 Contractor may refuse access to the Contract Boundary to any person not complying with site specific health and safety standards.

.5 Where required, control traffic around Contract Boundary. Coordinate traffic control with Departmental Representative and Mine Manager, and local AHJ as required.

.6 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, territorial, and local statutes, regulations, and ordinances, Mine Manager's SSHASP, and with Contractor's SSHASP:

.1 Conduct appropriate safety training for all personnel working on 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 outdated or consumable (headache medicines, band-aids) products.

.4 Conduct Job Safety/Hazard Assessment prior to commencing new Work activity not already documented in a Safe Work Plan or a Standard Operating Procedure.

1.8 Hazard Communication Requirements

.1 Comply with Work Site Hazardous Materials Information System Regulations of the AHJ.

.2 Provide Departmental Representative and Mine Manager with up to date 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.

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 when working in confined spaces.

1.10 Safety and Hygiene

.1 Provide appropriate training for all persons entering the site 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 AHJ.

.2 Verify that safety equipment and protective clothing is kept clean, is used and well maintained, and treated as per manufacturer's recommendations.

.3 All clothing and personal protective equipment used for Work must remain on site, to be either decontaminated or disposed of. No Work clothing is to leave the contaminated 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 SSHASP 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 any restrictions to the wearing of contact lenses.

.2 The use of eyeglass inserts for workers wearing full-face respirators.

.3 Provisions for steel toed safety shoes or boots covered by overshoes when entering or working in potentially contaminated Work areas.
.4 Discard disposable PPE worn on site at end of each Workday.
.5 Decontaminate reusable PPE at end of each shift.
.6 Provision for decontamination arising from access to contaminated or hazardous Work areas.

.4 Develop a written Respiratory Protection program as part of the PPE Program to be strictly followed by site personnel, which includes the following procedures at minimum:

.1 Provide site personnel with extensive training in usage and limitations of quantitative and qualitative fit testing for respirators, air purifying respirators, and supplied air respirators in accordance with specified regulations.
.2 Monitor, evaluate, and provide appropriate 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 required respiratory protection increases.
.5 Verify that appropriate respiratory protection during Work activities is available and readily accessible; all personnel entering potentially contaminated or hazardous 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 or hazardous 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 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 SSHASP.

.6 Personnel Hygiene and Personnel Decontamination Procedures to include the following as a minimum:

.1 Provision of containers for storage and disposal of contaminated PPE.
.2 Potable water and suitable sanitation facility.
.3 Access to shower facilities.

1.11 Site Communication

.1 Post emergency numbers near site telephones. Update emergency numbers as required.

.2 Train personnel in the use of "buddy" system.

.3 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 All equipment must have operational two-way radio communication while in operation.

1.12 Safety Meeting

.1 Conduct task specific safety meetings as per Work requirements, requirements of Mine Manager, and as directed by Departmental Representative.

.2 Conduct safety meetings with Workers engaged in construction, maintenance, decontamination and deconstruction activities. Workers must be instructed on the dangers inherent with winter conditions, hazardous materials abatement, and hazard avoidance procedures.

.3 Conduct mandatory daily safety meetings for personnel, and additionally as required by special or Work related conditions including, but not limited to: refresher training for existing equipment and protocols, ongoing safety issues and protocols, and new site conditions as encountered. Hold additional safety meetings on an as needed basis or as specified by the AHJ.

.4 Conduct weekly safety meetings with other contractors and subcontractors providing services related to the Work.

1.13 Storage and Handling of Fuel

.1 There will be no fuel storage area available for this Work.

.2 Provide a Fuel Management Plan that includes but is not limited to:

.1 Information related to on-site transport and handling.
.2 The refueling of all vehicles and equipment by appropriately trained personnel, using the proper PPE and drip pans, in a manner which meets or exceeds regulatory requirements.
.3 The recording of fuel usage by activity.

.3 Inspect fuel dispensing equipment daily. Make available fire fighting and spill response equipment for immediate access at each fuel dispensing equipment.

.4 Store all barrels 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.

.5 All barrels 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, Material Safety Data Sheets for all materials maintained at site or along right-of-ways.

.6 All barrels/fuel containers to be stored in accordance with the Land Use Permit and Water License, and labelled with AANDC’s name and Contractor's name, as required by the permits.

.7 Treat all waste petroleum products, including used oil filters, as hazardous materials.

.8 Conduct regular inspections of all machinery hydraulic, fuel and cooling systems. Repair leaks immediately.

.9 Pre-assemble and maintain emergency spill equipment with all mobile fuelling containers.

.10 Remove all full and empty barrels and associated materials and equipment from site at conclusion of Work.

.11 All fuel drums delivered to site, regardless of ownership, will be returned to supplier by Contractor for reuse or cleaned, crushed, transported and disposed in accordance with AHJ.

1.14 Vehicle and Equipment Usage

.1 Seatbelts must be worn at all times vehicle is in operation.

.2 Speed limits set by the Mine Manager must be obeyed at all times.

.3 If road conditions are unsafe or marginally unsafe, inform Departmental Representative and Mine Manager so that roads may be maintained to acceptable standards. Do not risk property damage or injury.

.4 Vehicles are to not be idled for longer than 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. Refuel equipment as per the Fuel Management Plan.

.6 Place drip pans under stationary equipment with potential leaks.

.7 All mobile light equipment brought to the site must have rotating beacons, audible backup alarms, wheel chocks and buggy whips.

.8 Dispose of used oil, grease and coolants from Contractor’s Equipment maintenance activities at the Contractors cost.

.9 Helmets must be worn at all times when operating ATV’s.

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 45 litres 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 45 litres for Work purposes requires 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 81 01 - Hazardous Waste Material.

1.16 Spill Contingency Plan

.1 Submit to Departmental Representative for approval, detailed Spill Contingency Plan. Identify response capabilities by detailing response times, and types and volumes of spills to which Contractor can respond. The 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 (sorbent and containment), sorbents for cleanup, fire extinguishers for A-B-C fires, overpacks for contaminated or hazardous materials, pumps, hand shovels, picks and containment barriers, such as plastic sheeting.
.9 Emergency protective equipment: Including, at minimum, clothing, protective suits, respirators, etc. in accordance with NIOSH guidelines.
.10 Procedures for reporting incidents.
.11 Spill response and containment plans for all materials that could potentially be spilled.
.12 An inventory of response and clean-up equipment.
.13 A site map with the location of storage facilities and the location of emergency equipment with spill response and clean-up equipment.
.14 A cover page that clearly identifies the NT-NU 24-hour Spill Report Line and the name, job title and 24-hour telephone number for person(s) responsible for activating the Spill Contingency Plan.

1.17 Medical

.1 Ensure availability and maintain first aid facilities for all Workers as required by AHJ, Human Resources and Social Development Canada and the statutes of the *NWT Safety Act*. Provide first aid personnel, as required by the statutes of the NWT Mine Health and Safety Act. Include personnel first aid training in Training Matrix.

.2 Provide the appropriate NWT First Aid kit, based on the number of Workers, in accordance with AHJ and the *NWT Safety Act*.

.3 Establish a medevac plan acceptable to the AHJ 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 at Project Work Area including first aid kit to accommodate number of site personnel; portable emergency eye wash and fire protection equipment as required by NWT Mine Health and Safety Act.
.2 Locate sufficient self contained breathing apparatus units; blankets and towels; stretcher; and one (1) hand held emergency siren in all confined and hazardous access locations.
.3 Locate and maintain cyanide antidote kits in appropriate location on site and provide personnel trained in their use.
.4 Provide a health and safety coordinator 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 around First Aid station.

1.18 Health and Safety Incidents and Accident Reports

.1 Immediately report, verbally, followed by a written incident report within twenty four (24) hours, to AHJ and Departmental Representative and Mine Manager, 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, e-mail 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 incident or accident, promptly report the facts in writing to Departmental Representative, giving full details of the claim.

1.19 Fire Safety

.1 Provide for all fire prevention, fire protection and fire fighting needs for the Project Work Area.

.2 Implement a fire safety program that is co-ordinated with the Mine Manager’s fire safety program, and includes fire prevention, fire protection and fire fighting requirements. Submit details of the fire safety program in writing to Departmental Representative and Mine Manager 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 any Sub-Contractors and other Contractor personnel on Project Work Area 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 Mine Health and 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 Personal Protective Equipment (PPE) as required by AHJ and the Canada Labour Code.

1.20 Reporting Fires

.1 A person discovering a fire and all fire related incidents will report immediately, by fastest available means, to Departmental Representative, Site Superintendent, and Mine Manager.

.2 A person discovering a fire will if possible, remain in the vicinity to direct fire fighting personnel to the location of the fire.

1.21 Fire Extinguishers

.1 Provide and maintain fire extinguishers in sufficient quantity and size to protect, in an emergency, the Work in progress.

1.22 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 asbestos and arsenic areas. Exercise care in the use of smoking materials in non-restricted areas.

.3 Provide and place signs prohibiting smoking in areas where smoking is not permitted.

.4 Signs prohibiting smoking will be in English 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, relevant universal symbols of not less than 150 mm by 150 mm may be used.

.5 Smoking is prohibited within 7.5 metres of fuel dispensing facilities.

.6 Provide and place signs indicating that smoking within 7.5 metres of fuel dispensing facilities is not permitted, and that the vehicle ignition must be turned off while the vehicle is being refuelled. Provide at least one 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.

1.23 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.

1.24 Hazardous Substances

.1 All Work entailing the use of, or exposure to, toxic or hazardous materials or chemicals, or creating a hazard to life, safety or health, is to 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 designated representative 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, are to be provided. The determination of dangerous or hazardous areas along with the level of precaution necessary for Fire Watch is to 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.

1.25 Questions and Clarifications

.1 Direct any questions or clarification to Departmental Representative.

1.26 Unique Hazards

.1 The unique hazard at the site is the presence of arsenic, arsenic compounds, asbestos containing material, cyanide compounds, and other hazardous materials.

.2 Ensure Workers receive training specific to the PPE requirements for working with hazardous materials including safe handling, disposal and emergency procedures.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.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 site remediation activities. 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 including, but not limited to:

.1 Federal Migratory Birds Convention Act
.2 Federal Species at Risk Act
.3 Territorial Species at Risk Act
.4 Territorial Wildlife Act

.2 Acquire and comply with such permits, approvals and authorizations as may be required.

.3 Comply with, and be subject to, those permits and approvals obtained from Departmental Representative to conduct the Work.

1.3 Submittals

.1 Submit all required Contractor submittals to satisfy environmental requirements directly to the responsible agency and AHJ.

.2 Submit an Environmental Protection Plan, as specified in this Section.

.3 Submit, on a weekly basis an Environmental Monitoring Summary, or as directed by Departmental Representative. The Environmental Monitoring Summary to include the following:

.1 .2 Tabulated data identifying the date and volume of water withdrawn from the Polishing Pond, as per Section 01 35 15 Special Project Procedures for Contaminated Sites.
.3 The results of any wastewater sampling as per Section 01 35 15 Special Project Procedures for Contaminated Sites.

.4 Tabulated data identifying the date and volume of treated wastewater discharged to the Northwest Tailings Pond as per Section 01 35 15 Special Project Procedures for Contaminated Sites.

.5 A summary of any wildlife sightings at the Project Work Area, and any mitigative measures taken to limit wildlife disturbances.

.4 Submit one (1) complete copy of all submittals and agency approvals to Departmental Representative.

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

1.4 Fires

.1 Unless otherwise specified and authorized in writing by the Departmental Representative, fires and burning of rubbish on site are not permitted.

1.5 Disposal of Waste

.1 Do not bury or dispose of rubbish or waste materials on site unless approved by Departmental Representative.

.2 Do not dispose of waste materials in ditches or into waterways.

1.6 Environmental Protection Plan

.1 Submit an Environmental Protection Plan to Departmental Representative for review ten (5) working days prior to initiation of Work activities. The Plan shall include, but not be limited to the following:

.1 Completion of wildlife surveys at the Work Area including, but not limited to:

.1 Daytime walk-through surveys to document presence of birds and/or signs of bird use.

.2 Dawn or dusk walk-through surveys, as required, to determine nocturnal species present.

.3 Reporting of results of wildlife surveys to Departmental Representative as part of weekly progress report.

.2 Wildlife protection arising from wildlife surveys including, but not limited to:

.1 Avoidance of active animal dens.

.2 Avoidance of active nests.

.3 Drainage, erosion, and sediment control, including, but not limited to:

.1 Details of grading Work to prevent surface drainage into or out of Work areas.

.2 Details of erosion control works and materials to be used for specific Work activities, including the deployment of silt fencing, floating silt curtains and containment booms during Work activities.

.3 The treatment of site runoff to prevent contamination and siltation of watercourses.

.4 Methods for collection of wastewater derived from decontamination activities.

.5 Maintenance and monitoring of control works.

.4 Protection of Cultural and Heritage features.
.5 Record keeping and reporting.

1.7 Work Adjacent to Water bodies

.1 Do not operate construction equipment in waterways.

.2 Do not use waterway beds for borrow material.

.3 Do not dump excavated fill, waste material or debris in water bodies.

.4 Do not refuel equipment (except for boats) within 30 m of water bodies or on ice.

.5 Do not use shoreline grounds (at least 30 m from edge) as staging area, equipment/vehicle maintenance or overnight parking, or for stockpiling of rock/earth and other deleterious material storage.

1.8 Water Control

.1 Water supply for Work activities to be obtained from the Polishing Pond. No water to be obtained from on-site surface water bodies.

.2 Contain, collect, transfer, treat, and discharge wastewater as per Section 01 35 15 Special Project Procedures for Contaminated Sites.

1.9 Pollution Control

.1 Maintain temporary erosion and pollution control features installed under this Contract.

.2 Prevent vehicles and equipment from tracking waste or debris beyond the immediate work area.

.3 Control emissions from equipment and Work activities so as to comply with the local authorities emission requirements.

.4 Be responsible for controlling and cleaning any materials spilled by the Contractor during the Work in accordance with established spill response procedures.

1.10 Notification

.1 Departmental Representative will notify Contractor verbally and in writing of observed non-compliance with Federal, Territorial or Municipal environmental laws or regulations, permits and other elements of Contractor's Environmental Protection plan.

.2 Contractor will, after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action to the satisfaction of Departmental Representative.

.3 Departmental Representative may issue stop Work order until satisfactory corrective action has been taken.

.4 No time extensions granted or financial adjustments allowed to Contractor for such suspensions.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 References and Codes

.1 Perform Work in accordance with all permits and licenses acquired including those from the Mackenzie Valley Land and Water Board, the City of Yellowknife, AANDC, Canada Coast Guard (CCG), Canada Labour Code, Department of Fisheries and Oceans (DFO) and the National Building Code of Canada (NBC) including all amendments and other National codes. If there is a conflict or discrepancy, more stringent requirements apply.

.2 Meet or exceed requirements of:

.1 Contract documents.
.2 Specified standards, codes and referenced documents.
.3 Authorities Having Jurisdiction (AHJ).

.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, the Government of the NWT, and the City of Yellowknife. Use latest version of all specified standards, codes and referenced documents. Most stringent requirements will apply to any case of conflict between requirements listed in acts, codes, standards or regulations to Work described herein.

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 II - Occupational Health and Safety (R.S. 1985, c.L-2).
.2 Northwest Territories and Nunavut Mining Regulations (C.R.C., c. 1516).
.3 Canada Occupational Health and Safety Regulations (SOR/86-304).
.4 Canadian Environmental Protection Act, S.C. 1999 (S.C. 1999, c.33) including PCB Regulations.
.5 Controlled Products Regulations (SOR/88-66).
.6 Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (EIHWHRMR) (SOR/2005-149).
.7 Inter-provincial Movement of Hazardous Waste Regulations (SOR/2002-301).
.8 National Fire Code of Canada, 2010.
.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 MacKenzie Valley Land Use Regulations (SOR/98-429).
.13 Migratory Birds Convention Act, 1994 (S.C. 1994, c.22).
.14 Northwest Territories Waters Act (S.C. 1992, c.39).
.15 Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations (SOR/2008-197).

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 (R.S.N.W.T. 1988, c.L-1)
.3 Public Health Act (R.S.N.W.T. 1988, c.P-12).
.4 Spill Contingency Planning and Reporting Regulations (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. 1990, c.36).
.7 Used Oil and Waste Fuel Management Regulations (R-064-2003).
.8 Work Site Hazardous Materials Information System Regulations (R.R.N.W.T. 1990, c.S-2).
.9 Mine Health and Safety Act (S.N.W.T. 1994, c.25).
.10 Asbestos Safety Regulations (R-016-92).

1.4 References and Codes – City of Yellowknife

.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 City of Yellowknife including, but not limited to:

.1 Water and Sewer Services By-law No. 4663.
.2 Building By-law No. 4469.
.3 Emergency Response and Fire Protection Services By-law No. 4502.

1.5 Standard and Guidelines

.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, CCME, 2003.
.2 Guidelines for Canadian Drinking Water Quality, Health Canada, August 2012.
.3 Guidelines for Effluent Quality and Wastewater Treatment at Federal Establishments, Environment Canada, April 1976.
.4 Guidelines for the Management of Waste Batteries, GNWT ENR, September 1998.
.5 Guidelines for the Management of Waste Lead and Lead Paint, GNWT ENR, April 2004.
.6 Guideline for the Management of Waste Solvents, GNWT ENR, September 1998.
.7 Guideline for Contaminated Site Remediation, GNWT ENR, November 2003.
.8 Guideline for Ambient Air Quality Standards in the Northwest Territories, GNWT ENR, January 2011.
.9 Guideline for Dust Suppression, GNWT ENR, February 1998.
.10 Guideline for the General Management of Hazardous Waste in the NWT, GNWT ENR, February 1998.

.11 Environmental Guideline for Ozone Depleting Substances (ODS) and Halocarbon Alternatives, GNWT ENR, August 2007.
.12 Environmental Health and Safety Management Systems Manual, AANDC March 2008.
.13 AANDC Standard Operating Procedures.
.14 Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health, CCME, 1999.
.15 Canadian Water Quality Guidelines for the Protection of Aquatic Life, CCME, 1999.
.16 Contaminated Sites Management Policy, AANDC, 2002.
.17 A Federal Approach to Contaminated Sites, CSMWG, 2002.
.18 Risk Management Guidance Document, AANDC, 2006.
.19 Contaminated Sites Cost Estimating Guide, AANDC, 2006.
.20 Treasury Board Policy on Management of Real Property, TB, 2007.
.21 Risk Management Tool & Reporting Tool User Guide, AANDC, 2007.
.22 Environment, Health & Safety Standard Operating Procedures Manual, AANDC, 2008.
.23 Environment, Health & Safety Control Framework, Northern Contaminated Sites Program, AANDC, 2008.
.24 Environment, Health & Safety Audit Program Guide, AANDC, 2008.
.25 Construction Project Safety Management Guide, 5th Edition, PWGSC, 2008.
.26 Abandoned Military Site Remediation Protocol, AANDC, 2008.
.27 General Guidelines Asbestos Removal and Disposal, GNWT 2010.
.28 Northwest Territories and Nunavut Code of Practice Asbestos Abatement, Workers' Safety & Compensation Commission, 2012.

1.6 Operational Statements

.1 Aboriginal Affairs and Northern Development Canada (AANDC), Northern Affairs Program, Contaminated Sites Program, Environment, Health and Safety Standard Operating Procedures Manual applicable to the Work includes, but is not limited to, the following:

.1 SOP-017(A), Wildlife Safety, September 27, 2006.
.2 SOP-017(B), Bear Safety, August 28, 2008.

1.7 Hazardous Material Discovery

.1 Stop Work immediately and notify Departmental Representative upon discovery of the following materials during course of work:

.1 Hazardous materials such as PCB's, asbestos, arsenic, and mercury not described in Contract Specifications and Drawings.

1.8 WHMIS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling and storage of hazardous materials; and regarding labeling and provision of material safety data sheets acceptable to AHJ including Labour Canada and Health and Welfare Canada.

.2 Deliver copies of Material Safety Data Sheets data sheets to Departmental Representative upon delivery of materials.

1.9 Submittals

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

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.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 timely notice requesting inspection, if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.

.3 If Contractor covers, or permits to be covered, Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

.4 Departmental Representative will order 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 shall pay cost of examination and replacement.

1.2 Submittals

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

1.3 Contractor Responsibility for Quality Control

.1 It is the Contractor's responsibility to carry out whatever quality control surveys, inspections, and testing is required to ensure that the Work is in conformance with the Contract Documents and its associated costs.

.2 The Contractor cannot rely on the surveys, inspections or testing that will be carried out by the Independent Survey or Testing Agency for quality assurance by the Engineer; the intention of this testing is for determination by the Engineer of satisfactory completed work for Progress Payment.

.3 All costs required to ensure quality control shall be borne by the Contractor.

1.4 Independent Inspection Agencies

.1 Independent Inspection/Testing Agencies may be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by the Departmental Representative.

.2 Provide equipment required for executing inspection and testing by appointed agencies.

.3 Employment of inspection/testing agencies does not relax Contractor's 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 re-testing and re-inspection.

1.5 Access to Work

.1 Allow inspection/testing agencies access to Work.

.2 Co-operate to provide reasonable facilities for such access.

1.6 Procedures

.1 Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.

.2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in 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.

1.7 Rejected Work

.1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

.2 Make good other Contractor's Work damaged by such removals or replacements promptly.

.3 If, in opinion of Departmental Representative, it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will 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.

1.8 Reports

.1 Submit electronic copies of inspection and test reports to Departmental Representative.

.2 Provide copies to subcontractor of work being inspected or tested.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Installation and Removal

.1 During Work, coordinate use of site and facilities with Departmental Representative and Mine Manager.

.2 Parking is permitted at the Giant Mine Site for vehicles forming a part of the Work and for vehicles required to transport personnel to the place of Work; no other vehicle parking is permitted.

.3 Do not unreasonably encumber premises with products.

1.2 Existing Services

.1 The location of equipment and utility services specified or indicated on the Drawings is to be considered as approximate.

.2 Before commencing Work, establish location and extent of equipment and 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 Repair and replace services or facilities damaged as a result of Contractor's operations at own cost.

1.3 Water Supply

.1 There is no active water supply to buildings included in this Contract. Obtain potable water for construction use from the City of Yellowknife. Obtain supply of washwater for equipment decontamination from Polishing Pond, as per Section 01 35 15 – Special Procedures for Contaminated Sites. Operate and maintain supply system and carry out testing and reporting in accordance with Authorities Having Jurisdiction (AHJ).

.2 Transfer water via pumping and/or treatment system to water transport/storage equipment used for Work.

.3 Provide, maintain and operate equipment required to transport and store water for use at Work Area.

.4 Coordinate water supply and discharge requirements with Departmental Representative.

1.4 Temporary Power and Light

.1 Install temporary facilities as necessary for power distribution or supply using ground cable(s). Erect safety barriers as necessary along routing. Temporary power system to be installed according to the requirements of the Canadian Electrical Code and the NWT Mine Health and Safety Act.

.2 Provide and maintain temporary lighting throughout project.

.3 Power outages are a common occurrence in the City of Yellowknife. Provide emergency backup generator(s) to provide continued operation, in the event of a local power outage, of Work activities and facilities necessary for the protection of human health and the environment.

1.5 Temporary Heating and Ventilation

.1 Provide, operate and maintain equipment necessary to provide temporary heating required during Work period.

.2 Provide temporary heat and ventilation as required to facilitate progress of Work. Ventilation is to meet health regulations for safe working environment.

.3 Maintain temperatures as required by Labour Code and AHJ in areas where Work is in progress.

.4 Ventilate if required to ensure compliance with AHJ regulations while undertaking the Work, including cleaning and descaling of the equipment.

.5 Maintain strict supervision of operation of temporary heating and ventilating equipment to conform with requirements of AHJ.

.6 Be responsible for damage to Work due to failure in providing adequate heat and protection during decontamination and containerization.

1.6 Temporary Communication Facilities

.1 There are currently three (3) communication systems available to the Contractor for Mine site coverage:

.1 FM surface radio and repeaters for two-way communications.
.2 Cellular telephone coverage is available.

1.7 Fire Protection

.1 Provide and maintain temporary fire protection equipment during performance of Work required by governing codes and regulations.

1.8 Signs and Notices

.1 Safety and Instruction Signs and Notices:

.1 Signs and Notices for safety and instruction to be in English and French as required by the Departmental Representative.

.2 Maintenance of Site Signs:

.1 Maintain approved temporary Signs and Notices for duration of the Work and dispose of on completion of the Project.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Definitions:

.1 Construction Facility: temporary structures, services, or equipment erected and used on-site to support Contractor's operations for completion of Work.

.2 Material Staging Area: specified location on-site for the temporary staging of materials, equipment or waste derived from containerization activities. The Material Staging Area is to be located within the Contract Boundary.

1.2 Installation and Removal

.1 Provide Construction Facilities in order to execute Work expeditiously.

.2 Remove from site all such Facilities after use.

.3 Design, supply, construct, maintain, operate, and remove all Construction Facilities required to support the Work. Construction Facilities to meet requirements of permits for the Work, satisfy requirements of Federal, Territorial and local Authorities Having Jurisdiction (AHJ), and comply with the requirements of Section 01 35 43 - Environmental Procedures and Section 01 35 15 – Special Procedures for Contaminated Sites.

.4 Prepare and submit Construction Facilities Site Plan(s) indicating Project Work Area specifics:

.1 Proposed location and dimensions of the Material Staging Area.
.2 Proposed locations, dimensions, and types of Work area enclosures, including avenues of ingress/egress.
.3 Proposed methods of access control and prevention of tracking of waste.
.4 Proposed location and dimensions of Wastewater system.
.5 Proposed location and dimensions of office facility, any storage facilities and equipment laydown area(s).
.6 Proposed location and dimensions of any other required Construction Facilities.

1.3 Location of Equipment and Fixtures

.1 Locations 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.

1.4 Access and Dust Control

.1 Provide and maintain adequate access, including snow removal, at Contract Boundary. Mine Manager is responsible for road maintenance and snow removal throughout overall site. Inform Departmental Representative of any access restrictions due to Mine Manager operations.

.2 Control Work operations to eliminate all excessive dust-creating activities, or as directed by Departmental Representative. The use of oil for dust control is prohibited.

1.5 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 CSA S269.2-M87. 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.

1.6 Hoisting

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

.2 Hoists to be operated by qualified and certified operator.

1.7 Site Storage/Loading

.1 Confine Work and operations of employees to Contract Boundary. 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.

1.8 Construction Parking

.1 Parking will be permitted at the C-Dry parking lot of the Giant Mine site. The Contractor is to provide for the transport of equipment and workers to the work area in vehicles meeting the requirements set by the Mine Manager.

.2 Clean and maintain areas where Contractor's equipment is used.

.3 Additional Parking may be authorized and permitted with the Departmental Representatives written authorization.

1.9 Vehicles

.1 No vehicles are required for the Departmental Representative or the Departmental Representative's Authorized Personnel.

1.10 Office Facilities

.1 Provide office facilities on-site of sufficient size and services to accommodate the performance of the Work.

.2 Place office facilities so as not to interfere with other site activities.

1.11 Equipment, Tools and Materials Storage

.1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds or containers for the storage of tools, equipment and materials as required to perform the Work.

.2 Locate the materials not required to be stored in weatherproof sheds or containers on site in a manner to cause the least interference with Work activities.

1.12 Sanitary Facilities

.1 Provide and operate sanitary facilities for Work force and dispose of waste in accordance with AHJ.

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

1.13 Construction Signage

.1 At the discretion of the Departmental Representative, provide and erect warning signs at Contract Boundary prior to commencing site work. Signs are to clearly indicate the presence of hazardous materials.

.2 No other signs or advertisements are permitted on site.

1.14 Fire Routes

.1 Maintain access to property, including overhead clearance, for use by emergency response vehicles.

1.15 Protection for Off-Site and Public Property

.1 Protect surrounding private and public property from damage during performance of Work.

.2 Be responsible for damage incurred.

1.16 Protection and Maintenance of Traffic

.1 Maintain and protect traffic on affected roads during the construction period except as otherwise specifically directed by the Departmental Representative.

.2 Protect travelling public from damage to person and property.

.3 Contractor's traffic on roads selected for hauling material to and from the site is to interfere as little as possible with other site traffic.

.4 Verify the adequacy of existing roads and allowable load limit. The Contractor is responsible for the repair of damage to roads caused by construction operations.

.5 Construct access and haul roads as necessary. The location, grade, width and alignment of all constructed haul roads is subject to approval by the Departmental Representative.

.6 Haul roads are to be constructed with suitable grades and widths. Sharp curves, blind corners and dangerous traffic crossings should be avoided.

.7 Provide and erect all necessary signs, barricades and distinctive markings for the safe movement of traffic.

.8 Provide, install and maintain all lighting necessary for full and clear visibility for the full width of the haul road during night Work operations.

.9 Remove, upon completion of work, haul roads designated by Departmental Representative.

1.17 Clean-Up

.1 Remove construction debris and waste materials from work site regularly.

.2 Clean dirt or mud tracked onto paved or surfaced roadways.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

3.1 Materials Staging Area

.1 Locate Materials Staging Area within the Contact Boundary as specified on the Drawings.

.2 Prepare the Materials Staging Area to comply with the following:

.1 Provide easy access to the off-site transport equipment.
.2 Allow the containers to be level and distribute the weight of the facilities evenly to the supporting surface.
.3 The area is to be free of standing water.
.4 Surface water run-on to the area must be minimized.

.5 Sufficiently compact the area so as to prevent the facilities from settling into the soil. Supply, place and compact additional granular fill as required.

.3 The Materials Staging Area are to be located as follows:

.1 More than 30 metres away from any water body or drainage course.
.2 On stable ground not subject to flooding or seasonal saturation.
.3 In an area not routinely accessed or essential to Contractor's workforce or site personnel.
.4 More than 30 metres away from flammable materials.

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 to perform all Work necessary for mobilization to, and demobilization from site.

.3 Mobilization to include transportation to site of Contractor's labour, equipment, materials, and assembling, erecting, and preparing site in readiness 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.

.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 in a Mobilization and Demobilization Plan. Submit the Mobilization and Demobilization Plan to the Departmental Representative a maximum of seven (7) days after contract award.

.8 All mobilization and demobilization methods to comply with the requirements of all applicable codes, standards, guidelines and permits.

.9 All personnel supervising or operating equipment via overland or marine routes 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.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 General

.1 This Section specifies the general requirements for the delivery handling, storage and protection for all items required in the construction of the work. Specific requirements, if any, are specified with the related item.

1.2 Transportation and Delivery

.1 Transport and handle items in accordance with manufacturer's printed instructions.

.2 Before shipping to the Site, contact the Departmental Representative, in writing, giving at least fourteen (14) Days prior notice to enable the Departmental Representative or its authorized inspector to inspect the equipment if necessary. Assemble the complete unit in the factory for inspection by the Departmental Representative or its authorized inspector. Do not ship the equipment until the Departmental Representative has completed its inspection.

.3 Schedule delivery to reduce long term on-site storage prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the Departmental Representative.

.4 Ship equipment, material and spare parts complete except where partial disassembly is required by transportation regulations or for protection of components.

.5 Pack spare parts in containers bearing labels clearly designating contents and pieces of equipment for which intended. All spare parts shall be cross-referenced to their applicable the Specification Section.

.6 Carefully pack and crate equipment for shipment. Protect polished and machined metal surfaces from corrosion and damage during shipment and installation. Specially pack electrical equipment to prevent damage by moisture. Cover equipment having exposed bearings and glands to exclude foreign matter. Carefully pack machines for shipment and protect electrical equipment from moisture damage. Protect bearings, seals and glands from grit and dirt.

.7 Identify each component with durable identifying labels or tags securely attached to each piece of equipment, crate or container.

.8 Finished surfaces of all exposed flanges shall be protected by fiberboard blank flanges strongly built and securely bolted thereto.

.9 Deliver spare parts at same time as pertaining equipment. Deliver spare parts to owner after completion of work.

.10 Coordinate delivery with installation to ensure minimum holding time for items that are hazardous, flammable, easily damaged or sensitive to deterioration.

.11 Deliver products to the site in manufacturer's original sealed containers or other packing systems, complete with instructions for handling, storing, unpacking, protecting and installing.

.12 Assume responsibility for equipment material and spare parts just before unloading from carrier at site.

.13 All items delivered to the site shall be unloaded and placed in a manner which will not hamper the Contractor's normal construction operation or those of subcontractors and other contractors and will not interfere with the flow of necessary traffic.

.14 Provide equipment and personnel to unload all items delivered to the site..

.15 Promptly inspect shipment to assure that products comply with requirements, quantities are correct, and items are undamaged. For items furnished by others (i.e. Owner, other Contractors), perform inspection in the presence of the Departmental Representative. Notify the Departmental Representative verbally, and in writing, of any problems.

.16 Pay all demurrage charges if failed to promptly unload items.

1.3 Storage and Protection

.1 Store and protect products and equipment in accordance with the manufacturer's instructions, with seals and labels intact and legible. Storage instruction shall be studied by the Contractor and reviewed with the Departmental Representative by him. Instructions shall be carefully followed and a written record of this kept by the Contractor for each product and pieces of equipment.

.2 Arrange storage of products and equipment to permit access for inspection. Periodically inspect to make sure products and equipment are undamaged and are maintained under specified conditions.

.3 Provide protective maintenance during storage consisting of manually exercising equipment, inspecting mechanical surfaces for signs or corrosion or other damage, lubricating, applying any coatings as recommended by the equipment manufacturer necessary for its protection and all other precautions to assure proper protection of all equipment stored and for compliance with manufacturers' requirements related to warranties. Log all protective maintenance for each piece of equipment in the written record noted above.

.4 Store loose granular materials on solid flat surface in a well-drained area. Prevent mixing with foreign matter.

.5 Cement and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All structural, miscellaneous and reinforcing steel shall be stored off the ground or otherwise to prevent accumulation of dirt or grease, and in a position to prevent accumulations of standing water and to minimize rusting. Beams shall be stored with the webs vertical. Precast concrete shall be handled and stored in a manner to prevent accumulations of dirt, standing water, staining, chipping or cracking. Brick, block and similar masonry products shall be handled and stored in manner to reduce breakage, cracking and spalling to a minimum.

.6 All mechanical and electrical equipment and instruments shall be covered with canvas and stored in a weathertight building to prevent injury. The building may be a temporary structure on the site or elsewhere, but it shall be satisfactory to the Departmental Representative. Building shall be provided with adequate ventilation to prevent condensation. Maintain temperature and humidity within range required by manufacturer and to prevent condensation on the equipment being stored.

.1 All equipment shall be stored fully lubricated with oil, grease and other lubricants unless otherwise instructed by the manufacturer.

.2 Moving parts shall be rotated a minimum of once weekly to insure proper lubrication and to avoid metal-to-metal "welding". Log all rotation maintenance for each piece of equipment in the written record noted above.

.3 Upon installation of the equipment, the Contractor shall start the equipment, at least half load, once weekly for an adequate period of time to ensure that the equipment does not deteriorate from lack of use. Log all startup for each piece of equipment in the written record noted above.

.4 Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. New lubricants shall be put into the equipment at the time of acceptance.

.5 Prior to acceptance of the equipment, the Contractor shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guaranty the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at the Contractor's expense.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Closeout Procedures

.1 Notify the Departmental Representative when Work is considered ready for substantial performance completion inspection.

.2 Accompany the Departmental Representative on preliminary inspection to determine items listed for completion or correction.

.3 Comply with the Departmental Representative's instructions for correction of items of Work listed in executed Certificate of Substantial Completion.

.4 Notify the Departmental Representative of instructions for completion of items of Work determined in Departmental Representative's final inspection.

1.2 Cleaning

.1 Remove all waste, surplus materials, rubbish and temporary construction facilities from the site following completion of Work.

1.3 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 the Departmental Representative in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
.2 Request the Departmental Representative's Inspection.

.2 Departmental Representative's Inspection: the 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 the Departmental Representative and Contractor. If Work is deemed incomplete by the Departmental Representative, complete outstanding items and request re-inspection.

.5 Post Demobilization Inspection: once demobilization is completed, the Departmental Representative will request a Post-Demobilization inspection of Work completed by the Departmental Representative and Contractor. If Work is deemed incomplete by the Departmental Representative, complete outstanding items and request re-inspection by the Departmental Representative.

1.4 Record Documents

1 Maintain at the site for the 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 the Departmental Representative.

1.5 Recording Actual Site Conditions (As-Built)

.1 The Departmental Representative will provide two sets of prints for record drawing purposes.

.2 Maintain project record drawings current as work progresses and record neatly and accurately deviations from Contract Documents.

.3 Record the following information:

.1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
.2 Depths of various elements of foundation in relation to bench mark indicated on drawings.
.3 Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvement.
.4 Location of internal utilities and appurtenance concealed in construction, referenced to visible and accessible features of structure.
.5 Field changes of dimension and detail.
.6 Changes made by Change Order or Field Order

4 Identify each set of drawings as “Project Record Drawings” and date and sign each set.

.5 Record changes in red. Mark on one set of prints and at completion of project and prior to interim inspection, neatly transfer notations to second set and submit both sets to the Departmental Representative.

.6 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

1.6 Operation and Maintenance Manual

.1 Submit one copy of completed Operation and Maintenance Manual, in draft form, two (2) weeks prior to Interim Inspection of the Work.

.2 The submitted copy will be returned with Departmental Representatives comments. Revise content of documents as required prior to final submittal.

.3 Contents:

The information to be included in the binder(s) is as follows:

.1 Title sheet, labelled "Operations and Maintenance Instructions", containing project name and date.
.2 Table of contents of individual binder.
.3 List with names, addresses, telephone numbers of Contractor, Subcontractors, Manufacturers, Suppliers and Agents, Service Companies.
.4 A section for all equipment supplied, with exploded views and parts numbered.
.5 Copies of all final shop drawings (review stamped): these will go in the section "Manufacturer's Brochures and Data".
.6 Manufacturer's data sheets (operating and maintenance brochure) on all equipment.
.7 Installation and performance test data on all equipment including start-up and commissioning sheets
.8 Reports and certificates of inspection including Electrical/Mechanical Inspection certificates.
.9 Operations, maintenance and lubrication instructions, for each section, including daily, weekly, monthly, semi-annual and annual checks for equipment and systems, including complete list of equipment and tools.
.10 A master check list with operations, maintenance and lubrication tasks for all equipment materials, surfaces in the facility organized into daily, weekly, monthly, bimonthly, biyearly categories.
.11 Operational information on all mechanical components.
.12 Parts list for all mechanical equipment.
.13 Recommended spare parts list.
.14 Motor Survey Sheets as per specifications, for each motor.
.15 Start-up reports prepared by manufacturer's representatives.
.16 List of maintenance tools supplied.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Format

.1 Organize data in the form of an instructional manual, called Project Record Documents.

.2 Binders: vinyl, hard covered, 3 “D: ring, loose leaf 219 mm 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 systems, 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 Provide a CD with an electronic version of the report in pdf format. Provide CAD files in AutoCAD 2007 format on CD.

1.2 Submittal

.1 Provide to the Departmental Representative the Project Record Documents within thirty (30) days of project completion.

.2 Submit Project Record Documents in accordance with Section 01 33 00 – Submittal Procedures.

1.3 Project Record Documents Contents

.1 Each volume of the Project Record Documents is to include:

1. Title of Project.
2. Date of submission.
3. Names, addresses and telephone numbers of Contractor with name of responsible parties.
4. Table of Contents.
5. Schedule of products and systems, indexed to contents of volume. For each product or system:

    1. List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
    2. Mark each product data sheet to identify specific products and component parts and data applicable to installation. Delete all information that is not applicable.

3. Include text as required to supplement product data. Provide logical sequence of instruction for each procedure, incorporating manufacturer's instructions.

6. Summary of Health and Safety issues, Environmental issues and performance indicators, including results of medical monitoring, air quality monitoring, and wastewater testing.
7. Copies of all permits and documents obtained by the Contractor.
8. Consolidated results of all testing carried out by the Contractor.
9. Inventory of hazardous waste remaining on-site, including container types, container identification codes, and inventory of contents.
10. Waste manifests and disposal certificates from the Contractor's Hazardous Waste Disposal Facility.
11. Information on the state of temporary Construction Facilities and temporary Utilities used in this Contract.
12. As-built drawings and reports.
13. Any other pertinent information.

1.4 Permit Reporting

.1 Thirty (30) days after the completion of Work 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.
.5 Information as required by the Land Use Permit.
.6 Information as required by the Water License.
.7 Information as required by all other applicable regulatory bodies and AHJ.
.8 Copies of all Transportation of Dangerous Goods documentation.

.2 Consolidate the above information in the Project Record Document and submit to the Departmental Representative as described in this section.

1.5 Operations and Maintenance Manual

.1 Two weeks after the completion of Work submit the Final Operations and Maintenance Manuals as described in Section 01 77 00.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Description

.1 This section specifies the requirements for the deconstruction and storage of wastes generated from the deconstruction of the process tanks as well as the salvage of the catwalk as indicated on the Drawings and Specifications.

1.2 Definitions

.1 Deconstruction: Systematic dismantling or controlled demolition of structure in a manner that achieves safe removal and disposal of the non-hazardous and potentially hazardous materials.

.2 Process Tanks: Three steel process tanks located in Train A at the Effluent Treatment Plant.

.3 Catwalk: All structural supports, walkways, piping, mechanical process and electrical components and fixtures that are situated on top of the process tanks, in the area specified on the Drawings.

.4 Hazardous Materials: Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: asbestos PCB's, CFC's, HCFC's poisons, corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health or well-being or environment if handled improperly.

.5 Risate: water containing low concentrations of contaminants as a result of cleaning activities.

.6 Source Separation: Acts of keeping different types of waste materials separate, beginning from first time they became waste.

.7 Project Work Area: The area defined on the drawing which all work activities, including deconstruction are to occur. The contractor has Prime contractor responsibilities within this area.

.8 Waste Storage Area: The area defined on the drawing where cleaned deconstruction wastes will be transported and stockpiled.

1.3 References

.1 Canadian Council of Ministers of the Environment (CCME) Documentation.

.2 Canadian Standards Association (CSA International)

.1 CSA S350-[M1980 (R2003)], Code of Practice for Safety in Demolition of Structures.

.3 Canadian Association of Recycling Industries (CARI-ACIR.ORG)

.4 National Building Code of Canada, Current Edition.

.5 Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities: NIOSH Publication No. 85-115.

.6 Hazardous Waste Worker Training Manual: Canadian LIUNA Contractors Training Council, 1992.

.7 Conduct all Work in accordance with all appropriate Federal and Territorial legislation, and international conventions including, but not limited to the following:

.1 Canadian Federal Legislation
- .1 Canadian Environmental Protection Act.
- .2 Transportation of Dangerous Goods Act.
- .3 Motor Vehicle Safety Act.
- .4 Labour Code of Canada – Part II.

.2 Territorial Legislation
- .1 Safety Act, R.S.N.W.T.
- .2 Northwest Territories Safety Act
- .3 General Safety Regulations, R.R.N.W.T
- .4 Mine Health and Safety Act S.N.W.T.
- .5 Mine Health and Safety Regulations

1.4 Environmental Protection

.1 Complete all Work in accordance with Section 01 35 43 - Environmental Procedures.

1.5 Work Description

.1 Cleaning, removal and storage of overlying catwalk structure.

.2 Cleaning, deconstruction of process tanks and associated piping as indicated on the Drawings.

.3 On-site size reduction as required, transport and placement of sorted waste within the Waste Storage Area.

1.6 Existing Conditions

.1 Assume responsibility for structures and utilities to be demolished based on their condition at the time of award of Contract.

.2 The Effluent Treatment Plant (ETP) is used to treat water to ensure compliance with regulatory effluent criteria. The treatment plant consists of two (2) process trains (A&B). Each train includes 3 process tanks which are connected in series. A catwalk is positioned on top of the tanks. The catwalk provides operator access and supports the chemical delivery piping, electrical cable trays, light standards, and misc. electrical equipment including tank agitators/mixers. The 3 tanks are approximately 3 m high and have a diameter of approximately 10 m.

.3 The chemical processes (addition of ferric sulphate, lime and polymer-Zetag 4100) that has been completed in the tanks generates a precipitate which ultimately passes through the treatment process and is discharged into the adjacent settling pond. Due to the corrosiveness of the chemicals used, the steel tanks are severely scaled and corroded. Toxicity Characteristic Leaching Procedure (TCLP) analysis of the sediment in the settling pond indicates the precipitate is non-hazardous according to the NWT waste disposal guidelines. A copy of this laboratory data is available for information purposes. Currently the process train is not in use; however, the tanks, process piping and portions of the overlying catwalk may contain small quantities of water, sediments, precipitate and/or process chemicals.

.4 Located north of the B Process Train is an abandoned steel sulphuric acid tank. This tank is not in service. The tank has been emptied; however it has not been cleaned.

1.7 Qualifications

.1 Be thoroughly familiar with, and knowledgeable about, existing site conditions, scope of Work and requirements of the Specification.

.2 Provide workers with protection appropriate to the potential type and level of contaminants known or expected in the respective work areas. Establish specific safety protocols prior to commencing decontamination/deconstruction activities.

.3 Provide suitable safety clothing and equipment as required during the course of the Work.

.4 Where decontamination work is being completed in conjunction with deconstruction, workers are to be trained, supervised as required by Territorial and Federal Legislation.

.5 Trained and certified personnel are required to complete all Transportation of Dangerous Goods Acts (TDGA) documentation and recording requirements.

.6 Follow at all times applicable guidelines including, but not limited to, those established in Occupational Safety and Health Guidance Manual for Hazardous Waste Material Site Activities: NIOSH Publication No. 85-115, or Hazardous Waste Worker Training Manual: Canadian LIUNA - Contractors Training Council, 1992.

.7 All personnel handling known or unknown Hazardous Waste Material are to be trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.

1.8 Permits

.1 Comply with requirements of Land Use Permit and Water License.

1.9 Deconstruction Plan

.1 Submit clarifications to the Deconstruction Plan, as requested by the Departmental Representative and AHJ. At minimum, the Deconstruction Plan is to address the following:

.1 The methodology and equipment proposed for Deconstruction, including methodologies to clean process tanks, piping and catwalk and collection and disposal of the risate. The Plan should also include methodologies to size reduce the waste materials.

.2 A summary of proposed methods to protect workers from all onsite hazards. This summary should reference, and be further detailed in, the Contractor's Site Specific Health and Safety Plan as specified in Section 01 35 32 – Site Specific Health and Safety Plan.

.3 The design and construction of all temporary structures.

.4 Mitigative measures to control the generation of dust during all deconstruction activities.

.5 Building demolition sequencing and methods that take into account the close proximity of the Project Work Area to other occupied portions of the mine; including the process equipment in Train B and the associated Effluent Treatment Plant Buildings.

.6 Method to clean and neutralize any residual sulphuric acid remaining in the aboveground storage tank.

.2 The Deconstruction Plan is to comply with Section 01 33 00 - Submittal Procedures.

.3 Deconstruction work must not proceed until the Departmental Representative has reviewed and accepted the Clarifications to the Deconstruction Plan.

.4 Deconstruction work must not proceed until the Departmental Representative is satisfied that all required drawings, approvals, and permits to be acquired by the Contractor for the Work have been obtained.

1.10 Protection

.1 Prevent movement, settlement or damage of adjacent structures, services, roadways, and parking areas to remain. Provide bracing, shoring and underpinning as required. Make good all damage and be liable for injury caused by deconstruction.

.2 Take precautions to support structures and, if safety of structure being deconstructed or adjacent structures or services appear to be endangered, cease operations and notify the Departmental Representative.

.3 Prevent damage and minimize disturbance of natural terrain, features and vegetation. Make good all damage.

.4 Provide safe passage of persons around area of deconstruction.

.5 Do not proceed with deconstruction work when weather conditions constitute a hazard to the workers and site. Prevailing weather conditions and weather forecast are to be considered.

.6 Cover dry materials, scale and rubbish to prevent blowing dust and debris. Provide dust control for existing and temporary roads.

.7 The configuration and nature of the site may require the design and construction of temporary structural safety supports/ barriers.

.8 Confirm that all utilities in Train A have been de-energised and disconnected prior to commencing the work.

.9 Prevent debris from blocking surface drainage system, elevators, mechanical and electrical systems.

1.11 Fires

.1 Burning waste is prohibited.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

3.1 Environmental Protection

.1 Comply with requirements of Section 01 35 43 - Environmental Procedures.

3.2 Safety and Personnel Protection

.1 Unless otherwise specified, carry out Deconstruction Work in accordance with Section 01 10 00 – General Requirements and Section 01 35 32 – Site Specific Health and Safety Plan.

3.3 Preparation

.1 Inspect site and verify with the Departmental Representative all buildings, structures and utilities designated for deconstruction.

.2 Disconnect all utilities entering structures to be deconstructed and check that all electrical lines are de-energized.

.3 Secure and post warning signs on electrical lines and equipment which must remain energized to serve other installations during period of deconstruction.

.4 Prepare area to be used for the temporary storage of Catwalk. Area shall be level and protect Catwalk from damage.

3.4 Deconstruction

.1 Salvage:

1 Items to be removed as for re-installation include:

1. Catwalk including platforms, hand rails, cable trays
2. Agitators/mixers and associated mixing paddles
3. Sections of process pipe

.2 In order to facilitate the removal and re-installation of the catwalk, it can be segmented into sections. Include details of the segmentation in the Deconstruction Plan.

.3 Salvaged materials to be stored on the work site in an area approved by the Departmental Representative, where they will not be damaged from onsite activities.

.2 Removal:

.1 Remove chemical distribution piping and electrical service wiring and lamp standards.

.2 Disconnect piping before tank removal.

.3 Prior to the start of tank deconstruction, all piping, chemical distribution lines and tanks must be cleaned and all contents, including rinsate are to be disposed of.

.4 Cut steel in accordance with applicable standards. Steel products coated with an arsenic based scale have the potential to generate arsine gas if they are cut with methods that involve heating. If heating methods are used, air monitoring will be required to determine the presence of arsine gas. All steel to be suitability cleaned prior to cutting. Air monitoring for mechanical shearing activities are not required.

.5 Cut or crush Non-Hazardous Waste in such shapes and sizes as to minimize voids when material is transported and stockpiled. Cut waste so that the maximum dimension in any direction is three (3) metres.

.6 At end of each day's work, leave Work in safe condition so that no part is in danger of toppling or falling.

.7 Deconstruct in a manner that minimizes dust creation.

.8 Deconstruct in a manner that reduces the resultant deconstruction components to sizes that enable efficient transportation and secure stockpiling.

.9 Remove and lower any heavy or large objects in a safe manner.

.10 The deconstruction sequence must be such that the unintended collapse of the structure is prevented and all workers must be aware of critical supports, both existing and temporary.

.3 Steel Decontamination:

.1 Pipes, chemical distribution lines, and tanks are to be emptied of any remaining liquids, sludges, precipitate and/or process chemicals. The Catwalk and all tanks to be pressure washed to remove process residuals (excluding tank scale). If the washwater does not contain any cleaners/degreasers/detergents (e.g. water only) it can be collected and disposed of in the adjacent Settling pond as identified on the Drawings for disposal. Collection and offsite disposal of risate will be required if decontamination procedures involve the use of cleaners.

.2 Clean and neutralize any residual sulphuric acid in abandoned acid storage tank, prior to cutting or moving tank.

3.5 Stockpiling

.1 Transport and place waste materials in stockpiles in the Waste Storage Area identified on the drawings. Place like material in stockpiles in a manner that reduces voids and maintains the stability of the stockpile.

.2 Label stockpiles, indicating material type and origin.

.3 Place like material in stockpiles that reduces voids and maintains the stability of the stockpile. Position stockpiles in locations and orientations that facilitate inspection, and which does not impede disassembly, processing, or hauling procedures. Stockpiles of waste material to be no higher than 1.5 m high.

3.6 Salvage and Recycling of Deconstruction Material

.1 Only on the approval from the Departmental Representative will the salvage of deconstruction materials be permitted. Contractor will be responsible for any testing or sampling required to confirm acceptability of material for salvage.

3.7 Storage of Deconstruction Materials

.1 Transport and store deconstructed materials as noted herein and in accordance with AHJ, unless otherwise directed by Departmental Representative.

.2 Non-hazardous deconstruction materials are to be stockpiled in the area identified in the specifications and drawings.

.3 At end of each day's work, leave Work in safe and stable condition.

3.8 Storage of Deconstruction Materials

.1 Upon completion of deconstruction Work, remove debris and leave work site clean.

END OF SECTION

PART 1 GENERAL

1.1 Work Included

.1 All structural steel as indicated on the Drawings.

.2 Welds, bolts, washers, nuts, shims and miscellaneous steel items.

.3 Prime structural steel members and appurtenances.

.4 Field touch up of damaged painted surfaces.

1.2 Related Work

.1 Section 05 50 00 - Metal Fabrications.

.2 Section 09 91 00 - Painting.

1.3 Referenced Standards

.1 National Building Code of Canada 2010.

.2 ASTM A108, Standard Specification for Steel Bar, Carbon and Alloy, Cold Finished.

.3 ASTM A325M, Specification for High-Strength Bolts for Structural Steel Joints.

.4 ASTM A572/A572M, Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel.

.5 ASTM A992/A992M, Standard Specification for Structural Steel Shapes.

.6 CISC/CPMA 2-75, Quick-Drying, Primer for use on Structural Steel.

.7 CSA G40.20-04/G40.21-04 (R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.

.8 CSA-S16-14, Limit States Design of Steel Structures.

.9 CSAS136-12, North American Specification for the Design of Cold Formed Steel Structural Members.

.10 CSA-W47.1-03 (R2008), Certification of Companies for Fusion Welding of Steel Structures.

.11 CSA-W48-06, Filler Metals and Allied Materials for Metal Arc Welding.

.12 CSA-W59-03 (R2008), Welded Steel Construction (Metal Arc Welding).

.13 SSPC-SP 1, Solvent Cleaning.

.14 SSPC-SP 7/NACE No. 4, Brush Off Blast Cleaning.

1.4 Design Standards, Code Requirements

.1 Conform to requirements of CSA-S16-14, CSA-S136-12, the Canadian Institute of Steel Construction (CISC) "Code of Standard Practice for Buildings", and the Provincial Construction Safety Act.

.2 Use loads, load combinations and stress levels shown on drawings and in accordance with the National Building Code of Canada 2010.

.3 Shear connections:

.1 Select framed beam shear connections from an industry accepted publication such as "Handbook of the Canadian Institute of Steel Construction" when connection for shear only (standard connection) is required.

.2 Select or design connections to support reaction from maximum uniformly distributed load that can be safely supported by beam in bending, provided no point loads act on beam, when shears are not indicated.

.4 Submit sketches and design calculations stamped and signed by qualified professional engineer registered in the Northwest Territories and Nunavut Association of Professional Engineers for non-standard connections.

.5 All connections and shop drawings are to be reviewed and sealed by a professional engineer registered in the Northwest Territories and Nunavut Association of Professional Engineers.

.6 Perform all welding in accordance with requirements of CSA-W59.

1.5 Quality Control

.1 Comply with the requirements of Division 1.

.2 All work is to be performed by a firm certified by the Canadian Welding Bureau to the requirements of CSA W47.1-09 in Division 1 or Division 2.1.

.3 All welders employed for erection are to possess valid "S" Classification Class "O" certificates issued by the Canadian Welding Bureau.

.4 Provide a system of quality control to ensure that the minimum standards specified herein are attained.

1.6 Inspection and Testing

.1 Shop and field inspection and testing may be performed by an Inspection and Testing Firm appointed and paid by the Owner.

.2 Provide free access to all portions of work in the shop and in the field and cooperate with appointed firm.

.3 Pay all additional costs for inspection and re-inspection due to defective workmanship or materials.

.4 If requested by the Departmental Representative, submit four (4) copies of mill test reports, properly correlated to materials actually used.

.5 Radiographic and magnetic particle inspection of welds is to be performed by the Inspection and Testing Firm, in accordance with CSA W59 and ASTM E109, for all full penetration welds, all column splices, and all splices to truss compression and tension chords.

.6 All welds are to be visually inspected.

.7 Welds are to be considered defective if they fail to meet quality requirements of CSA W59.

.8 High strength bolted connections are to be inspected and tested in accordance with Clause 23.9 of CSA-S16.

1.7 Shop Drawings

.1 Provide a fabrication and erection schedule to the Departmental Representative prior to commencement of shop fabrication and field erection, in ample time to allow proper scheduling of inspection and testing.

.2 Submit details of typical connections and special connections for review prior to preparation of shop drawings.

.3 Shop drawings and design briefs for connections are to bear the seal of a Professional Structural Engineer, registered with the Northwest Territories and Nunavut Association of Professional Engineers. Stamped cover letters will not be acceptable

.4 Submit shop drawings for review in accordance with Division 01.

.5 Clearly indicate profiles, sizes, spacing and locations of structural members, connections, attachments, reinforcing, anchorage, framed openings, size and type of fasteners, cambers and loads, accessories, column anchor bolt locations, setting details.

.6 Include erection drawings, elevations and details.

.7 Indicate welded connections using welding symbols in compliance with CISC Welding Standards. Clearly indicate net weld lengths.

.8 Shop drawing review by the Departmental Representative is solely to ascertain conformance to the general design concept.

.9 Responsibility for approval of detail design inherent in shop drawings rests with the Contractor and review by the Departmental Representative shall not imply such approval.

.10 Review shall not relieve the Contractor of his responsibility for errors or omissions in shop drawings or for proper completion of the Work in accordance with the Contract Documents.

.11 Responsibility for verification and correlation of field dimensions, fabrication processes, techniques of construction, installation and coordination of all parts of the Work rests with the Contractor.

PART 2 PRODUCTS

2.1 Materials

.1 Beam End Plates, Ledger Angles, and Miscellaneous Steel: to CSA-G40.21, Grade 300W with minimum yield strength of 300 MPa.

.2 Base and Cap Plates: to CSA-G40.21, Type 300W with minimum yield strength of 300 MPa.

.3 Structural steel wide flange sections (W shapes): conforming to CSA-G40.21, Grade 350W with minimum yield strength of 350 MPa, or conforming to ASTM A992 or A572, Grade 50 with minimum yield strength of 345 MPa.

.4 Structural Channels (C shapes): conforming to CSA-G40.21, Grade 300W with minimum yield strength of 300 MPa.

.5 Hollow Structural Sections: conforming to CAN/CSA G40.21, Grade 350W Class 'C' with minimum yield strength of 350 MPa. Hollow structural sections conforming to ASTM A500 Grade C will not be acceptable unless approved by the Departmental Representative.

.6 Bolts, Nuts and Washers: conforming to ASTM A325M; finished to match members to which they attach.

.7 Anchor Rods: fabricated from material conforming to CSA-G40.21, Grade 300W with minimum yield strength of 300 MPa; nuts and washers to be of equal or greater strength than rods.

.8 Stud Shear Connectors: conforming to ASTM A108; with minimum yield strength of 400 MPa.

.9 Welding Materials: conforming to CSA-W59.

.10 Primer: grey primer to CISC/CPMA 2-75.

2.2 Fabrication

.1 Fabricate structural steel members in accordance with CSAS16 and CSA-S136.

.2 Verify all drawing dimensions prior to commencing fabrication.

.3 Provide openings and punched holes 10 – 30 mm in diameter in structural members for other building components. Reinforce openings with steel plates sized and welded in place, to restore members to original design strength. Locate holes so as to cause no appreciable reduction in strength of members.

.4 Provide connections for loads indicated on the Drawings as a minimum.

.5 Provide for field connections to be bolted expect where field welded connections are shown on the Drawings. Bolted connections shall be bearing type connections with the thread excluded from the planes of shear.

.6 Provide CISC double angle header connections wherever possible.

.7 Provide top and bottom flange angle clips for all spandrel beams.

.8 Accurately cut and mill column ends and bearing plates to assure full contact of bearing surfaces prior to welding.

.9 Close and weatherproof all gaps, butt joints and connections exposed to exterior of building. Grind all exposed welds flush with surface of welded members.

.10 Weld shear studs in place with stem perpendicular to member, in full fusion weld.

.11 Where required, extend bottom chord of joists to support suspended ceilings.

.12 Design and detail connections for structural steel so that corrosion potential is minimized. Cap and seal weld all exposed ends of HSS sections.

.13 Weld reinforcing bars to structural steel where approved by the Departmental Representative or as shown on Drawings in accordance with CSA-W186.

2.3 Shop Painting

.1 Clean all members and remove loose mill scale, rust, oil, dirt and other foreign matter. Prepare surfaces according to SSPC-SP1 “Solvent Cleaning” and SSPC-SP 7 “Brush Off Blast Cleaning”, unless noted otherwise.

.2 Prepare surfaces according to SSPC-SP10 “Near-White Blast Cleaning” and SSPC-SP8 “Pickling” for all steel that will be galvanized. Refer to Drawings for extent of galvanized steel.

.3 Apply one coat of grey prime paint in the shop to all steel surfaces, except:

.1 Surfaces to be encased in concrete.

.2 Surfaces to receive field installed stud shear connectors.

.3 Surfaces and edges to be field welded.

.4 Faying surfaces of friction-type connections.

.5 Surfaces to receive sprayed fireproofing.

.6 Surfaces to be galvanized.

.4 Apply paint under cover, on dry surfaces only and when surface and air temperatures are above 5°C.

.5 Maintain dry condition and 5°C minimum temperature until paint is thoroughly dry.

.6 Patch paint bolts, nuts, sharp edges and corners one coat before full prime coat is applied.

.7 Apply paint by brush, spray or dipping to a dry film thickness of 0.05 mm minimum.

.8 All steel that is located outside of the building vapour barrier shall be galvanized, unless noted otherwise on drawings.

PART 3 EXECUTION

3.1 Examination

.1 Before starting erection, take field measurements and examine other work may affect this Work.

.2 Notify the Departmental Representative of any conditions which would prejudice proper installation of this Work.

.3 Commencement of this Work implies acceptance of existing conditions.

3.2 Damaged Members

.1 Repair or replace members damaged during transit or erection, before securing in position.

3.3 Erection

.1 Erect structural steel in accordance with CAN/CSA S16.1-09 and Drawings.

.2 All field connections are to be bolted, as shown on drawings.

.3 Field weld connection can only be performed when approved by the Departmental Representative. Do not field weld wet surfaces or during rain unless under cover

.4 Do not weld at temperature below 5°C except with express permission of the Departmental Representative.

.5 Conform to requirements of CSA W59-03 for minimum preheat and interpass temperatures.

.6 Make adequate provision for all erection loads, and for sufficient temporary bracing to maintain structure safe, plumb and in true alignment until completion of erection and installation of necessary permanent bracing.

.7 Set column bases and other vertical members to design elevations on levelling nuts or steel wedges. Do not use wood wedges.

.8 Use only light drifting to draw parts together. Enlarge holes for bolted connections with reamers or twist drill only. Do not burn to form holes, enlarge holes or match unfair holes.

.9 Obtain the Departmental Representative's written permission prior to field cutting or altering structural members.

.10 After erection field prime and paint welds, nuts, bolts, washers and touch up abrasions and damage to painted surfaces.

.11 Touch up all damaged shop finish paint, prime and finish paint all welds, nuts, bolts and washers.

END OF SECTION

PART 1 GENERAL

1.1 Related Work

.1 Section 05 12 23 - Structural Steel For Buildings.

.2 Section 09 91 00 - Painting.

1.2 References

.1 ASTM A307-00, Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile.

.2 ASTM A325, Specifications for High Strength Steel Bolts Classes 10.9 and 10.9.3 for Structural Steel Joints.

.3 CAN/CGSB-1.40-M89, Primer, Structural Steel, Oil Alkyd Type.

.4 CAN/CGSB-1.108-M89, Bituminous Solvent Type Paint.

.5 CAN/CGSB-1.181-92, Ready-Mixed, Organic Zinc-Rich Coating.

.6 CAN/CSA-G40.21-04, Structural Quality Steels.

.7 CAN/CSA-S16-14, Limit States Design of Steel Structures.

.8 CSA W47.2, Certification of Components for Fusion Welding of Aluminum.

.9 CSA W59-03 (R2008), Welded Steel Construction (Metal Arc Welding).

.10 CSA W59.2, Welded Aluminum Construction.

.11 CSA HA Series M, Standards for Aluminum and Aluminum Alloys.

.12 CSA S157-M, Strength Design in Aluminum.

.13 PIP STF 05501, Fixed Ladders and Cages.

1.3 Shop Drawings

.1 Submit shop drawings in accordance with Section 01 33 00.

.2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

.3 Drawings to bear the seal of a Professional Engineer registered in the Northwest Territories and Nunavut Association of Professional Engineers for all fabricator designed assemblies, components and connections.

1.4 Quality Control

.1 Comply with Division 1.

.2 Employ tradesman skilled in this trade and proficient in the use of various materials specified.

.3 Perform work in accordance with material manufacturer's instructions.

PART 2 PRODUCTS

2.1 Materials

.1 Steel sections (W and HSS shapes): to CAN/CSA-G40.21, Grade 350W.

.2 Steel pipe to ASTM A53.

.3 Hollow Structural Sections to CAN3-640.21, Grade 350W.

.4 Galvanizing to CSA G164. Minimum coating 720 gm/m².

.5 Stainless Steel - ASTM A167 and A276 Type 304 or 316 as indicated.

.6 Aluminum sections and plates to CSA HA.5 Type T6 unless shown.

.7 Steel plates, and sections (channel and angle shapes): to CAN/CSA-G40.21, Grade 300W.

.8 Welding materials: to CSA W59.

.9 Welding electrodes: to CSA W48 Series.

.10 Bolts and anchor bolts: to ASTM A307/A325.

.11 Grout: non-shrink, non-metallic, flowable, 24h, MPa 15, pull-out strength 7.9 MPa.

2.2 Fastenings and Anchor Bolts

.1 Nuts, bolts, washers, rivets and screws for steel to steel - ASTM A325, for steel to concrete ASTM A307. All materials to be galvanized.

.2 Fastenings - Stainless steel and aluminum - stainless steel Type 316 ELC ASTM A167.

.3 For structural steel use high strength bolts to ASTM A-325. Bolts to be galvanized.

.4 All fasteners submerged in water - Stainless steel Type 316 ELC ASTM A167.

.5 Concrete inserts - Hilti, HSL or HVA as manufactured by Hilti Inc. Type 316 stainless steel, or approved alternates.

2.3 Checkered Plates

.1 Frames shall be aluminum and of the dimensions shown on the drawings. Double bituminous coating to be applied to portion of frame which will be in contact with concrete.

.2 Checkered plate shall be aluminum of the thickness and dimensions shown on the drawings.

.3 Plate stiffeners to be aluminum of the dimensions shown on the drawings. Welding to be done in accordance with CSA W59.2 Welded Aluminum Construction.

2.4 Fabrication

.1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.

.2 Use self-tapping shake-proof round headed screws on items requiring assembly by screws or as indicated.

.3 Where possible, fit and shop assemble work, ready for erection.

.4 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.

.5 Fabricate ladders in accordance to CSA S157 and PIP STF 05501.

2.5 Finishes

.1 Galvanizing: hot dipped galvanizing with zinc coating 600 g/m² to CAN/CSA-G164.

.2 Chromium plating: chrome on steel with plating sequence of 0.009 mm thickness of copper 0.010 mm thickness of nickel and 0.0025 mm thickness of chromium.

.3 Shop coat primer: to CAN/CGSB-1.40.

.4 Zinc primer: zinc rich, ready mix to CAN/CGSB-1.181.

.5 Bituminous paint: to CAN/CGSB-1.108.

2.6 Shop Painting

.1 Apply one shop coat of primer to metal items, with exception of galvanized or concrete encased items.

.2 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7°C.

.3 Clean surfaces to be field welded; do not paint.

PART 3 EXECUTION

3.1 Erection

.1 Do welding work in accordance with CSA W59 unless specified otherwise.

.2 Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.

.3 Provide suitable means of anchorage acceptable to the Departmental Representative such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles. Do not use self-drilling anchors where cast-in anchor bolts are specified.

.4 Exposed fastening devices to match finish and be compatible with material through which they pass.

.5 Provide components for building by other sections in accordance with shop drawings and schedule.

.6 Make field connections with high tensile bolts to CAN/CSA-S16-14, stainless steel bolt Type 316 or weld.

.7 Touch-up rivets, field welds, bolts and burnt or scratched surfaces after completion of erection with primer.

.8 Touch-up galvanized surfaces with two coats of zinc rich primer where damaged or burned by field welding.

3.2 Access Ladders

.1 Install access ladders in locations as indicated.

.2 Erect ladders 180 mm clear of wall on bracket supports.

3.3 Channel Frames

.1 Install channel frames to openings as indicated.

END OF SECTION

PART 1 GENERAL

1.1 Description

.1 The work of this Section shall include all labour, materials, tools, scaffolds and other equipment, services and supervision required for preparation and painting of all surfaces scheduled herein.

.2 Paint all new and refurbished surfaces, as identified in the drawings and specifications as per Schedule of Finishes. Include all field painting necessary to complete work shown, scheduled or specified, including back priming and surface preparation.

.3 The work shall also include the painting of shop primed items and equipment installed under any other sections of the Specifications.

.4 Ensure that surface preparation and shop primers comply with finishing paint system specified.

.5 Prepare and touch up any damaged finish with same type, quality and colour of paint as originally used.

.6 Do not paint aluminum, stainless steel or rubber surfaces and nameplates unless noted otherwise.

1.2 Reference Standards

.1 Master Painters Institute (MPI), Architectural Painting Specification Manual, latest edition.

.2 Society for Protective Coatings (SSPC), Steel Structures Painting Manual, Volume I & II.

.3 Manufacturer's product and safety data sheets, and application instructions.

1.3 Qualifications

.1 The work of this Section shall be performed by experienced applicators specializing in the surface preparation and application of the products specified herein.

1.4 Submittals

.1 Comply with Section 01 33 00.

.2 Provide the Departmental Representative with the credentials of the applicators, who will be performing the work on Work Site, which clearly demonstrates compliance with the required qualifications, including:

.1 Key Work Site personnel;

.2 Equipment which will be used;

.3 Information on projects of similar scope with similar products, including references.

.3 Submit three (3) copies of the manufacturer's product data sheets, application instructions and safety data sheets.

1.5 Pre-Installation Conference

.1 Contractor shall convene, at least one (1) week prior to commencing work of this Section, a meeting via teleconference to discuss these Specifications and the scope of work, attended by the Contractor's Superintendent, Applicator's representative, product manufacturer's representative, and the Departmental Representative.

1.6 Delivery/Storage

.1 Deliver materials in sealed, original, labeled containers, bearing manufacturer’s name, type, brand name, colour designation and instructions for mixing and/or reducing. No unsealed materials will be allowed onto the Work Site.

.2 Provide adequate storage facilities. Store materials at a minimum ambient temperature of 7° C and in a well ventilated area.

.3 Take all precautionary measures to prevent fire hazards and spontaneous combustion.

1.7 Colour Schedule/Samples

.1 Paint colours to match existing colours found on Train B.

1.8 Environmental Conditions

.1 Measure moisture content of surfaces using an electronic "Moisture Meter". Do not apply finishes unless the moisture content of surfaces are below the maximums established on product data sheets.

.2 Ensure surface temperatures and the surrounding air temperature are within the range established on product data sheets.

.3 Provide adequate continuous ventilation and sufficient heating facilities to maintain temperatures established on product data sheets for 24 hours before, during, and 48 hours after interior application of finishes.

.4 Provide minimum 325 lux (30 f.c.) of lighting on surfaces during application of finishes.

.5 Do not apply finishes in areas where dust is being generated.

PART 2 PRODUCTS

2.1 Materials

.1 Paints: technically appropriate first line products as listed in Schedule of Finishes.

.2 Paint accessory materials: linseed oil, shellac, turpentine and other materials not specifically indicated herein but required to achieve the finishes specified shall be of highest quality product and approved manufacture.

.3 Solvents: to be the odor free type where possible.

.4 All markings and labeling of piping and equipment shall be black, stencil, spray coated, one quarter diameter of pipe or 25 mm for equipment. Stick- on markers not allowed.

2.2 Mixing

.1 Paints shall be ready-mixed except for field catalyzed coating types.

PART 3 EXECUTION

3.1 Condition of Surfaces

.1 Thoroughly examine all surfaces scheduled to be finished prior to commencement of work. Report in writing to the Departmental Representative any condition that may potentially affect proper application. Do not commence until all such defects have been corrected.

.2 Be responsible for the condition of surfaces or for correcting defects and deficiencies in the surfaces which may adversely affect work of this section.

.3 Commencement of work shall imply acceptance of surfaces.

3.2 Preparation of Work Site Areas

.1 Thoroughly vacuum and wipe clean all surfaces within the area to be finished, prior to and during painting application.

3.3 Protection

.1 Adequately protect other surfaces from paint and damage. Make good any damage as a result of inadequate or unsuitable protection.

.2 Furnish sufficient drop cloths, shields and protective equipment to prevent spray or droppings from fouling surfaces not being finished and, in particular, surfaces within storage and preparation area.

.3 Place cotton waste, cloths, empty containers and material which may constitute a fire hazard in closed metal containers and remove daily from Work Site.

.4 Remove all electrical plates, surface hardware, fittings and fastenings, prior to finishing operations. These items are to be carefully stored, cleaned and replaced on completion of work in each area. Do not use solvent to clean hardware that may remove the permanent lacquer finish.

3.4 Preparation of Surfaces

.1 Prepare surfaces to be painted or finished in accordance with MPI Architectural Painting Specification Manual, or the coating manufacturer's printed instructions, whichever is the more stringent.

.2 Remove factory-applied bituminous coating from ductile iron piping, scheduled for painting, by shot-blast cleaning to SSPC method and degree specified in the applicable painting formula. Shop apply primer as specified, prior to installation of piping.

.3 Touch up pre-primed steel and iron surfaces with a primer compatible with the shop applied primer. Remove dust, dirt and grease.

.4 Previously painted surfaces scheduled for painting shall be cleaned using appropriate previously specified method. Check existing paint coatings for compatibility with paint with which they are to be over coated. If coatings are not compatible, submit recommendations for review by Departmental Representative.

3.5 Application

.1 Ensure that all testing of equipment and process and building systems has been successfully completed, before commencing painting of related surfaces.

.2 Apply paint and other finishes in accordance with good trade practice, and manufacturers' printed instructions.

.3 Cover surfaces satisfactorily with an even colour tone. Apply primer immediately after surface preparation, where recommended.

.4 Apply each coat at the proper consistency.

.5 Sand and dust between coats to remove defects visible from distance up to 1.5 m. Refer to paint manufacturer's technical sheets for coating and re-coating recommendations.

.6 Do not apply finishes on surfaces that are not sufficiently dry.

.7 Allow each coat of finish to dry before a following coat is applied, unless directed otherwise by manufacturer.

.8 Back-prime interior woodwork which is to receive a paint finish with enamel undercoat paint, immediately upon arrival at the Work Site.

.9 Use the following reference for contact surfaces.

.1 Steel surfaces in contact with aluminum shall receive one prime coat and one aluminum finish coat.

.2 Aluminum surfaces in contact with steel surfaces: prime coat with fast-dry modified alkyd primer.

.3 Aluminum surfaces in contact with concrete or masonry shall be prime coated with fast-dry modified alkyd primer, and painted with two coats of interior/exterior acrylic enamel.

.4 Any surfaces not in direct bonded contact but inaccessible after assembly shall receive either the full specified paint system or three coats of the specified primer before assembly.

.10 Painting of previously painted surfaces touch-ups:

.1 Clean areas to be painted using appropriate previously specified method.

.2 Minimum coating requirements for spot-painting shall be as follows:

.1 No rusting, but prime coat exposed - Sand lightly and feather edges. Apply 1 to 2 finish coats to regain specified minimum dry film thickness.

.2 No rusting, but prime coat damaged - Clean area to base material, sand lightly and feather edges. Apply prime coat and two finish coats. Sand and feather edges between coats.

.3 Rust areas - Clean to original standard of surface preparation. Apply coats as per .2 above. Only apply additional spot finished coat, if required, to maintain appearance.

.3 Check existing paint coatings for compatibility with paint with which they are to be over-coated. If not compatible, submit recommendations for review by the Departmental Representative.

3.6 Mechanical and Electrical Equipment

.1 Installed or Reinstalled Piping shall be identified by colour coding and descriptions. Identification colours and description shall be approved by the Departmental Representative. Prior to commencement of the work of this Section, the Contractor will furnish a schedule including identification/description legend, colours, and abbreviations referenced on the drawings. Identification shall be carried out on the following items:

.1 All new, or reinstalled, uninsulated and insulated piping, ducting and valves, flanges, couplings, etc.

.2 All new process equipment.

.3 All new exposed electrical conduit as identified in Division 26.

.2 Remove grilles, covers and access panels for mechanical and electrical systems from location and paint separately.

.3 Finish paint primed equipment.

.4 Paint exposed conduits, pipes, ducts, hangers and other mechanical and electrical equipment occurring in all areas. Colour and texture to match adjacent surfaces, except as noted for colour coded piping.

.5 Leave electrical equipment in original finish except for touch-up as required, and paint mounting accessories and other unfinished items.

.6 Paint exterior steel electrical light standards and other equipment except outdoor transformers and substation equipment.

.7 Clean all damaged areas of factory finished equipment to SP-1. If factory finish is compatible, prime and finish as detailed. If factory finish is not compatible, submit recommendations for review by the Departmental Representative.

.8 Do not paint instruments, ground bus and connections, cable connectors, PVC jackets and aluminum trays.

3.7 Cleaning

.1 As the work proceeds and upon completion, remove all paint where spilled, splashed or spattered.

.2 During the progress of the work, keep the premises free from any unnecessary accumulation of tools, equipment, surplus materials and debris.

.3 At the conclusion of the work leave the site neat and clean.

3.8 Inspection

.1 Contractor shall use wet thickness indicators for application guide.

.2 Provide necessary facilities and co-operate with inspector.

.3 Painted surfaces will be checked for actual dry film thickness in accordance with Society of Protective Coatings, Paint Application Specification No. 2 (SSPC-PA2) five-spot method.

.4 Repaint wherever dry film thickness found inadequate.

.5 When defects are revealed, the Departmental Representative may request additional inspection to ascertain full degrees of defect, at no cost to the Owner.

.6 Correct defects and irregularities as advised by the Departmental Representative and subject to further inspection under similar conditions as earlier inspections, at no cost to the Owner.

3.9 Schedule of Finishes

.1 Outdoor Finishes

Surface	Protective Coating System	Minimum D.F. Thickness
Ferrous Metal	Surface Preparation: Blast Clean New Steel to SSPC-SP10 Near White Blast Blast Clean Previously Coated Steel to SSPC-SP6 Commercial Blast, or manufacturer's recommended surface preparation, whichever is more stringent	
	1st Coat: Zinc-rich epoxy primer, CAN/CGSB-1.181 Acceptable Products: - Ameron Amercoat 68HS - Devoe Catha-Coat 303H - International Interzinc 52 - Carboline Carbozinc 859	2.5 mils
	2nd Coat: High-build epoxy, CAN/CGSB-1.153-M Acceptable Products: - Ameron Amercoat 385 - Devoe Bar Rust 236 - International Interseal 670HS - Carboline Carboguard 890	6-8 mils
	3rd Coat: Low V.O.C. polyurethane, CAN/CGSB-1.177-M Acceptable Products: - Ameron Amercoat 450 H.S. - Devoe Devthane 369 - International Interthane 990 H.S. - Carboline Carbothane 134 HG	2-3 mils
Galvanized Metal	Surface Preparation: Clean to SSPC-SP1 Solvent Wash, as per Manufacturer's instructions. Welds must be neutralized.	

Surface	Protective Coating System	Minimum D.F. Thickness
	1st Coat: Vinyl etch primer, CAN/CGSB-1.121 Acceptable Products: - General Paint 39103/104 Metaprime - Glidden 27301/302 Vinyl Wash Primer - International Interprime VTA528/529 2nd Coat: High-build epoxy, CAN/CGSB-1.153-M Acceptable Products: - Ameron Amercoat 385 - Devoe Bar Rust 236 - International Interseal 670HS	0.3 - 0.5 mils 5-6 mils
	3rd Coat: Low V.O.C. polyurethane, CAN/CGSB-1.177-M Acceptable Products: - Ameron Amercoat 450 H.S. - Devoe Devthane 369 - International Interthane 990 H.S.	2-3 mils
Factory Finished Equipment	Surface Preparation: Clean to SSPC-SP1 Solvent Wash 1st Coat: High-build epoxy, CAN/CGSB-1.153-M Acceptable products: - Ameron Amercoat 370 - Devoe Bar Rust 236 - International Interseal 670HS - Carboline Carboguard 890	 6 mils
Metal Conduit	Surface Preparation: Solvent wash to remove oils or grease. Aci etch with phosphoric acid and water (mixed 1:3). Keep surface wet for 2-3 minutes.	
	1st Coat: Anti-corrosive primer, CAN/CGSB-1.81-M Acceptable products: - General paint 06-160 Q.D. - Glidden 5205 Series - Porter Pittsburgh 296	1.5 mils
	2nd Coat: Alkyd enamel, CAN/CGSB-1.61 Acceptable products: - General Paint 10-Line Marine Enamel - Glidden 4550 Glid-Guard Gloss Enamel - International Interlac 820	2 mils

Surface	Protective Coating System	Minimum D.F. Thickness
	3rd Coat: Alkyd enamel, CAN/CGSB-1.61 Acceptable products: - General Paint 10-Line Marine Enamel - Glidden 4550 Glid-Guard Gloss Enamel - International Interlac 820	2 mils
Tanks	Refer to Tank specifications for tank painting requirements	

END OF SECTION

PART 1 GENERAL

1.1 General

.1 Prior to bidding, the Contractor and all subcontractors and suppliers shall read and be governed by all Parts, Specification Sections, Drawings and Addenda of the Bid and Contract Documents which affect the respective work of each.

.2 The complete work under this Contract shall be governed by the dictates of good practice and shall be complete in all details of materials and methods even if not minutely specified. The work shall be properly coordinated with the requirements of all work specified in other sections. The work includes testing as specified, start up and placing of the work into operation (commissioning), ready for use by the Owner.

1.2 Intent

.1 The Contractor shall furnish all labour, materials and necessary equipment to provide complete and operating electrical systems as set forth on the plans and in these Specifications, and as called for elsewhere in the Contract documents. Any work, even if not shown or specified, which is obviously necessary or reasonably implied to complete the work, shall be carried out as if it was both shown and specified.

.2 The responsibility as to which Division provides required articles or materials rests solely with the Contractor. Extras will not be considered based on grounds of difference in interpretation of specifications as to which trade was involved to provide certain specialties or materials.

1.3 Codes and Standards

.1 Where references are made to standard Specifications such as Electrical and Electronic Manufacturers Association of Canada (EEMAC), National Electrical Manufacturers Association (NEMA), Canadian Standards Association (CSA), Institute of Electrical and Electronic Engineers (IEEE), Insulated Power Cable Engineers Association (IPCEA), Instrument Society of America (ISA), etc., the latest edition and revisions of such standard Specifications shall apply.

.2 The electrical installation shall comply with the latest edition of the Canadian Electrical Code, and all applicable municipal and local codes and the regulations of local inspection authorities.

.3 Territorial Electrical Standard in force at time of Bid submission, while not identified and specified by number in these Specifications, are to be considered as forming part of related CSA Part I Standard and must be complied with.

1.4 Drawings and Specifications

.1 Drawings and Specifications are complementary to each other and what is called for by one shall be binding as if called for by both. Should any discrepancy appear between Drawings and Specifications which leaves doubt as to the true intent and meaning, the Specification shall supersede.

.2 Electrical Drawings indicate general location and route to be followed by conduits and/or wire and do not show all structural and mechanical details. In some cases, conduit or wiring is not shown on the plans or shown diagrammatically in schematic or riser diagrams. Conduit and wiring to be installed physically to conserve headroom, furring spaces, etc.

.3 Follow architectural, structural and mechanical Drawings for details of this work and install electrical conduits, boxes and fittings to coordinate with architectural, structural and mechanical work and details. Refer to architectural and structural Drawings for accurate building dimensions.

.4 In order to provide sufficient detail and maximum degree of clarity on Drawings, symbols used for various electrical devices, particularly wall mounted devices, take up more space on the Drawings than the device does on the wall. In these instances, locate device on wall with primary regard for convenience of operation and usage of wall space, rather than stringing devices out along wall so as to comply with scale locations of electrical symbols.

1.5 Examination of Other Drawings

.1 The Contractor shall examine carefully the structural, architectural and mechanical Drawings and work of other trades, to satisfy himself that the work under this Contract can be satisfactorily carried out without changes to the buildings and layouts as shown on the plans.

.2 Should any item arise indicating conflict with equipment of other trades or requiring additional work beyond the intent as described in the Specifications and shown on the Drawings, the Contractor shall immediately bring the matter to the attention of the Departmental Representative before submitting his Bid. Failure to do so constitutes acceptance of responsibility for any necessary work.

1.6 Permit, Inspection, Fees

.1 The Contractor shall obtain all permits required, (paying all fees levied) and after completion of the work, shall furnish to the Departmental Representative a Certificate of Final Inspection and Approval from the Electrical Inspection Authorities. Permits shall be taken out at the beginning of the work.

1.7 Shop Drawings, Product Data and Samples

.1 Refer to Section 01 33 00 - Submittal Procedures for general requirements.

.2 Submit shop drawings, product data and samples for all electrical components as indicated in the respective sections of these Specifications and as required by the Departmental Representative.

.3 Shop drawings shall indicate specific details of construction, dimensions, capacities, weights and electrical performance characteristics of equipment or material being supplied for this project.

.4 Where applicable, include wiring, single line and schematic diagrams.

.5 Include wiring drawings or diagrams showing interconnection with work of other trades.

.6 Wiring, interconnection and schematic diagrams shall indicate terminal and wire numbers for all connections.

1.8 Record Drawings

.1 Refer to General Requirements for Record Drawing requirements.

.2 Continuously update drawings to accurately record all items such as change orders, alterations or additions, runs of conduit, locations of all pull boxes, numbers and locations of outlets, motors, panels, and luminaries that may occur during progress of the work.

.3 All conduit runs must be shown on the Record Drawings complete with size, routing, wire count and wire termination numbers.

1.9 Operations and Maintenance Data

.1 Operations and Maintenance Data shall be submitted in accordance with Section 01 78 00 Closeout Submittals.

.2 Items to be described in these binders shall include those outlined in their respective sections of these Specifications.

.3 Include in Operations and Maintenance Data:

.1 Details of design elements, construction features, component function and maintenance requirements, to permit effective start-up, operation, maintenance, repair, modification, extension and expansion of any portion or feature of installation.
.2 Technical data, product data, supplemented by bulletins, component illustrations, exploded views, technical descriptions of items and parts lists. Advertising or sales literature not acceptable.
.3 Wiring and schematic diagrams and performance curves.
.4 Names and addresses of local suppliers for items must be included in the Maintenance Manuals.
.5 Copies of all test data.
.6 Recommended spare parts list.

PART 2 PRODUCTS

2.1 Material

.1 All materials to be new unless otherwise noted and meet the quality specified and conform to the standards of the Canadian Standards Association. Where equipment or materials are specified by technical description only, they are to be of the best commercial quality obtainable for the purpose.

.2 Electrical equipment that is shown on the plans or called for in the specifications that is not CSA approved to be treated by Division 26 in one of the following ways:

.1 make known to the Departmental Representative in writing not less than five (5) days prior to closing date of Bid, or
.2 make allowance in Bid for having said equipment CSA approved.

.3 Uniformity of Equipment

Unless otherwise specifically called for in the Specifications, uniformity of manufacturer to be maintained throughout the project for any particular item or type of equipment.

.4 Availability of Equipment

Make known, in writing, to the Departmental Representative five (5) days prior to Bid closing date, any material specified or required to complete the work which is not currently available or will not be available for use as called for herein.

.5 Compliance of Equipment With Specifications

Contractor to be completely responsible for ascertaining that every item included in the Bid complies in all respects with the Specifications and Drawings. After award of Bid, any item of equipment found by the Departmental Representative not to comply with the specifications and the drawings to be replaced at no additional cost with an item or unit of Departmental Representative's choice.

PART 3 EXECUTION

3.1 Workmanship

.1 All work shall be performed by competent tradesmen, be executed in a workmanlike manner and present a neat, mechanical appearance when completed.

.2 For work involving specialties such as instrumentation, etc., the Contractor shall employ only tradesmen or Subcontractors fully qualified and experienced in such work.

3.2 Executing the Work

.1 The Contractor shall thoroughly examine the Drawings and Specifications and especially figured dimensions immediately after the Contract is awarded and report any discrepancy, error, or omission to the Departmental Representative. The Contractor shall give the work his personal supervision, lay out his own work, do all necessary levelling and measuring or employ a competent engineer to do so. Figures, full size and dimensioned Drawings shall take precedence over scale measurements of Drawings. No plea as to the actions and directions of other than the Departmental Representative will be admitted as justification for any departure made from the Drawings, Specifications, or Contract. It shall remain the duty of the Contractor to take his own measurements of the work.

.2 The Contractor shall be responsible for correcting all work completed contrary to the intent of the Drawings and Specifications and shall bear all costs for same. Where the intent of the Drawings and Specifications is not clear, he should obtain a clarification from the Departmental Representative before proceeding with the work, otherwise no compensation will be forthcoming for any necessary adjustments.

.3 The Contractor shall be responsible for prompt installation of his work in advance of concrete pouring or similar work. He shall provide sleeves and any of his materials to be embedded in concrete and locate them where required.

.4 Where any equipment supplied by this Contractor must be built in with the work of other Contractors, this Contractor shall be responsible for the supply of the equipment to be built in or measurements to allow necessary openings to be left so as not to delay the work.

.5 The Contractor shall protect all work executed both from the elements and the progress of construction, and shall make good any work supplied that has been damaged from any cause whatsoever.

.6 The Contractor, in setting out of his work, shall make reference to architectural, structural and mechanical Drawings. He shall consult with the respective trades in setting out locations for conduit runs, luminaries, panel assemblies, etc., so that conflicts are avoided and symmetrical even spacing is maintained. Multiple runs of cables and conduits shall be laid out so that they leave the main run in order with a minimum of crossovers.

3.3 Equipment Identification

.1 Equipment Identification

.1 Provide engraved nameplate identification on all distribution switchboards and components, panelboards, motor control and protection equipment, miscellaneous system cabinets, terminal boxes, local and remote mechanical and process equipment switches.
.2 Nameplates: lamicoid 3 mm thick plastic engraving sheet, black face, white core, mechanically secured to the equipment with self tapping screws.
.3 Nameplate sizes:

Size 1	10 x 50 mm	1 line	3 mm high letters
Size 2	12 x 70 mm	1 line	5 mm high letters
Size 3	12 x 70 mm	2 lines	3 mm high letters
Size 4	20 x 90 mm	1 line	8 mm high letters
Size 5	20 x 90 mm	2 lines	5 mm high letters
Size 6	25 x 100 mm	1 line	12 mm high letters
Size 7	25 x 100 mm	2 lines	6 mm high letters

.4 Nameplate sizes and wording on nameplates to be approved prior to manufacture.
.5 Allow for average of twenty-five (25) letters per nameplate.
.6 Nameplates for terminal cabinets and junction boxes to indicate system and/or voltage characteristics.

.2 Wiring Identification

.1 Identify wiring with permanent indelible identifying markings, either numbered or coloured plastic tapes, on both ends of phase conductors of feeders and branch circuit wiring, and on both ends of all control wires. Use hot stamped heat shrinkable sleeves for numbered tags.
.2 Maintain phase sequence and colour coding throughout.
.3 Colour code: to CSA C22.1.
.4 Use colour coded wires in communication cables, matched throughout the system.

3.4 Wiring Terminations

.1 Lugs, terminals and screws used for termination of wiring to be suitable for either copper or aluminum conductors.

3.5 Cutting and Patching

.1 Contractor to be responsible for all cutting required for electrical installation. Structural members not to be cut without the written consent of the Departmental Representative.

.2 Contractor to be responsible for patching and repairing of surfaces damaged by cutting for electrical work.

.3 Where work by Division 26 damages work of other trades, Division 26 to repair and make good such damage to the satisfaction of the trade concerned and the Departmental Representative.

.4 Locate and provide holes and sleeves required for electrical work. Relocate improperly located holes and sleeves at no cost.

3.6 Alterations

.1 Alterations entailing additional work or deletions shall be carried out only upon written request by the Departmental Representative.

3.7 Location of Outlets and Conduit Runs

.1 The Departmental Representative reserves the right to change location of outlets to within 3 m of points indicated on plans without extra charge providing the Contractor is advised prior to installation.

.2 Where switches and receptacles are in the same general location, outlets to be lined up vertically unless otherwise called for by the Departmental Representative.

.3 Locate light switches on latch side of doors.

3.8 Mounting Heights

.1 Mounting height of equipment is from finished floor to centreline of equipment unless specified or indicated otherwise.

.2 If mounting height of equipment is not indicated, verify before proceeding with installation.

.3 Install electrical equipment at the following heights unless indicated otherwise:

.1 Local Switches: 1,300 mm.
.2 Panelboards: 2,100 mm to top or as required by code.
.3 Receptacles: 1,000 mm.

3.9 Protection

.1 Protect the work of others from damage resulting from the work of this Division.

.2 Protect the work of this Division from that of others, make good any damage, remove all debris and rubbish and leave the project site in a clean and tidy condition to the approval of the Departmental Representative.

.3 Guard exposed live electrical equipment during construction for personnel safety, and provide applicable warning signs.

3.10 Mechanical Equipment Wiring

.1 Provide all labour and materials required to complete electrical power and control wiring for process, plumbing, heating and ventilating equipment as called for in these Specifications and/or shown on the Drawings.

.2 Provide all single and three phase motor protection switches, magnetic motor starters and disconnects as required for mechanical equipment unless otherwise specifically noted in these Specifications or on the Drawings.

3.11 Finishes

.1 Shop finish metal enclosure surfaces by removal of rust and scale, cleaning, application of rust resistant primer inside and outside and at least two coats of finish enamel.

.1 Paint indoor switchgear and distribution enclosures light grey to EEMAC 2Y-1-1958.

.2 Clean and touch up surfaces of shop-painted equipment scratched or marred during shipment or installation, to match original paint.

.3 Clean, prime and paint exposed hangers, racks and fastenings to prevent rusting.

.4 Paint all exposed conduits in accordance with Section 09 91 00.

3.12 Manufacturer's and CSA Labels

.1 Manufacturer's nameplates and CSA labels to be visible and legible after equipment is installed.

3.13 Cleaning

.1 Refer to Section 01 77 00 for Closeout Procedures.

3.14 Use of Products During Construction

.1 Any equipment used for temporary or construction purposes shall be acceptable to the Departmental Representative. Clean and restore to "as new" condition all equipment prior to the time of substantial completion.

.2 All lamps used for a period longer than 3 months shall be replaced prior to final acceptance.

.3 The warranty period shall be in accordance with Section 01 77 00 - Closeout Procedures.

3.15 Tests

.1 Before the electrical installation is placed in operation, the Contractor shall make suitable tests to establish that all equipment, devices, and wiring have been correctly installed, are in satisfactory working condition, and will operate as intended.

2 Before energizing any portion of the electrical systems, perform megger tests on all feeders. Results to conform to IPCEA Standards, to the satisfaction of the authorized inspection authority and to the Departmental Representative.

.3 Upon completion of the building and immediately prior to final inspection and takeover, check the load balance on all feeders at distribution centres and panelboards. Tests to be carried out by turning on all possible loads in the building and checking load current balance. If load unbalance exceeds 10 percent, reconnect circuits to balance load.

.4 All tests to be performed in the presence of the Departmental Representative, suitably logged, tabulated, signed and included in the Operating and Maintenance Manuals.

.5 Where specific tests are required for specific systems or equipment, they shall be so indicated in appropriate sections of the Specifications. Furnish Manufacturer's certificate or letter confirming that entire installation as it pertains to each system has been installed to Manufacturer's instructions.

.6 Provide instruments, meters, equipment and personnel required to conduct tests during and at conclusion of project.

.7 Insulation resistance of each circuit shall be measured before energizing (with neutral ground disconnected) as follows:

.1 Line(s) to neutral.
.2 Line(s) to ground.
.3 Neutral to ground.

Circuit testing shall be as follows:

.1 Motor feeders are tested with motors disconnected and controller open.
.2 Motor control circuits are tested with control stations and overcurrent devices connected, from phase to ground only.
.3 Lighting feeders are tested with feeder breaker open and panelboard connected.
.4 Lighting branch circuits are tested after all lamp holders, receptacles, fixtures, and similar items are connected, with switches turned on but before lamping. If circuits feed auto-transformer type ballasts, the only reading possible will be from line or neutral, to ground. If fixtures with power factor correcting capacitors connected line-to-line are involved, it may be necessary to disconnect them to avoid capacitor over-voltage.

.8 Insulation resistance testing:

.1 Megger circuits, feeders and equipment up to 350 V with a 500 V instrument. Megger circuits, feeders and equipment above 350 V with a 1000 V instrument.

.2 Check resistance to ground before energizing.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Working and compacting subgrade soil, including preparation of granular ringwalls for tanks.

1.2 Related Sections

.1 Section 46 33 95.01 Steel Chemical Storage Tanks and Appurtenances.

1.3 Related Codes and Standards

.1 API 650 – refer to Figure B-2 for ringwall requirements.

1.4 Definition

.1 Prepared Subgrade: Existing granular material tank base, reshaped and compacted to a depth of 150 mm with clean sand added where specified.

.2 Clean Sand: clean beach sand free of deleterious materials

1.5 Quality Assurance

.1 Maximum Density: the dry unit mass of a soil sample at optimum moisture content as determined in the laboratory according to ASTM D698 Method A.

.2 Required Density: a minimum of one hundred point zero (100.0%) percent of the maximum density for each 150 mm lift of subgrade under tanks structures.

.3 Testing Frequency: the quality assurance laboratory will take a minimum of one (1) field density test for each 1 000 m^2 of compacted subgrade lift according to ASTM D1556, ASTM D2167, or ASTM D2922 for comparison with a maximum density determined according to ASTM D698 Method A or as directed by the Departmental Representative.

.4 Proof Rolling: a proof roll of the finished subgrade will be required to confirm adequate bearing capacity of the subgrade soils. The proof roll shall be supervised by the Departmental Representative or his designated geotechnical engineer, and must be performed in accordance with the Departmental Representative's recommendations.

PART 2 PRODUCTS

2.1 Materials

.1 Use only existing granular material and imported clean sand with no deleterious material.

.2 The material shall meet the following gradation:

Sieve Size (mm)	Percent Passing (by weight)
12.5	100
5	95 - 100
0.08	2 - 10

.3 The liquid limit shall not exceed 25 and the plasticity index shall not exceed 6. The Contractor shall provide a sieve analysis of the sand for the Departmental Representative's approval.

2.2 Equipment

.1 Equipment: various pieces of equipment designed for and capable of disking, scarifying, spreading, spraying water, compacting and trimming soil to specified depth.

3.0 EXECUTION

3.1 Subgrade Preparation

.1 Loosen soil to required depth. Work soil with cultivating and mixing equipment.

.2 The required compaction can generally best be achieved if the soil is dried and moistened to within ±3% of the optimum moisture content before compacting.

.3 Leave the surface of the compacted subgrade slightly higher than required elevation; then trim to design crown and grade. Leave finished surface even and free of depressions, humps and loose material.

.4 Undertank materials

.1 Tank granular ringwall (tank O.D. plus 2 m to tank O.D. less 1.2 m) – 150 mm compacted gravel from existing base

.2 Inner area (tank O.D. less 1.2 m), remove 75 mm of existing gravel and replace with 75 mm of clean compacted sand, plus 75 mm compacted gravel from existing base.

3.2 Field Quality Control

.1 Check finished surface of subgrade to ensure it meets the following tolerances

Grade: 6 mm maximum variation above designated elevation.
25 mm maximum variation below designated elevation.

.2 When tolerances are exceeded:

.1 Trim high spots and refinish surface to within tolerance.

.2 Add approved material to low areas, scarify and blend to full subgrade depth, recompact to required density and refinish surface. Alternatively, fill low areas with extra thickness of granular material or sand as required.

3.3 Protection of Finished Work

.1 Do not permit vehicular traffic over the prepared subgrade.

.2 If the subgrade floods, drain immediately by natural flow or by pumping to catch basins, manholes, or ditches.

.3 Maintain protection of prepared subgrade until subsequent granular sub-base or base course is placed. Repair and retest as required by the Departmental Representative if damage occurs.

END OF SECTION

PART 1 GENERAL

1.1 Intent

.1 The work under this Division shall include the supply, delivery, installation, testing start-up and adjusting of all equipment and devices to provide a fully operational system as shown on the drawings and as specified herein in complete accord with applicable codes and ordinances.

.2 Also included in the work, even though not minutely specified or detailed on the Drawings, shall be: the supply and installation of connections to process piping for instruments (e.g. a tapping or a welded coupling complete with nipple and shut-off valve).

1.2 Definition to Trades/Jurisdiction

.1 For convenience of reference only, the Specification is separated into titled sections which are identified by a title and a six digit numbering system.

.2 Responsibility as to which Subcontractor supplies and/or provides required materials or articles and work, rests solely with the Contractor.

.3 In the case of a dispute, the General Contractor shall decide which Subcontractor supplies and installs required materials or equipment.

.4 Extras will not be considered on the grounds of differences in interpretation of the specifications as to which Subcontractor does what work.

1.3 Location of Equipment

.1 The process drawings do not show all structural details and any information involving accurate measurement of the site shall not be taken from the process drawings.

.2 The location of small pipe runs or copper tubing may be altered without charge to the Owner, provided that the change is requested by the Departmental Representative before installation and does not require additional material.

.3 Where pipe and tubing runs are not shown on the drawings or are shown only schematically, they shall be installed in such a way as to conserve head room and interfere as little as possible with free use of the space through which they pass.

1.4 Painting

.1 All equipment shall be suitably finished and painted at the factory before shipment.

.2 Without restricting the generality of the above, the items to be painted shall include, but are not necessarily limited to the following:

.1 Equipment that is prime coated only.
.2 Equipment factory finished shall be provided with a field applied top coat to suite colour coding.
.3 All piping external surfaces, hangers, supports whether copper, galvanized, black iron or plastic.
.4 Steel tanks

.3 The following items shall not be painted unless otherwise specified or directed by the Departmental Representative: stainless steel, bronze or brass surfaces, polished shafts and trim on equipment, stems of control valves, stem of valves, instrument dials, thermometers and instrument bodies and cases.

.4 Items requiring painting, as described above, shall be finished in accordance with Division 9.

1.5 Equipment Installation

.1 Install all equipment in strict accordance with the manufacturer's instructions and recommendations.

.2 No equipment shall be securely fastened in place until items that tie to it have been located to determine any slight discrepancies that can be corrected by modifications in locations. The decision as to what modifications shall be permitted shall rest solely with the Departmental Representative.

.3 The equipment and machinery shall be assembled, properly located, positioned and fastened securely in such a manner as to give proper performance.

.4 After proper installation, subject each item of equipment to an operating test to be witnessed by the Departmental Representative.

.5 Assist the Departmental Representative in conducting such tests as may be required. All defects in the operation of equipment units due to faulty installation or damage shall be made good by the Contractor at his own expense.

.6 Obtain all necessary instructions and assistance services, which are required for the installation of the various items of equipment which the Contractor is supplying and/or installing. The costs of the services provided by the manufacturers or suppliers shall be borne by the Contractor.

1.6 Equipment and Piping Identification

.1 Identification to be in accordance with Division 9.

1.7 Material Handling

.1 All pipe and fittings shall be loaded and unloaded by lifting with hoists or skidding so as to avoid shock or damage. Under no circumstances shall such materials be dropped. Pipe handling on skidway shall not be skidded or rolled against pipe already on the ground.

.2 The interior of all pipe shall be kept free from debris and foreign matter at all times.

.3 Pipe shall be piled in strict accordance with the manufacturer's recommendations.

.4 Handle pipe so that exterior and interior surfaces and prefabricated joints are not damaged. If, however, any part of any surface, coating or lining is damaged, the repair shall be made by the Contractor at his own expense, in a manner satisfactory to the Departmental Representative.

1.8 Start-Up, Testing and Operation of Equipment

.1 When a sufficient portion, or portions, of the work have been completed and warrant testing, notify the Departmental Representative of intention to start testing and outline plans for testing procedure and timing.

.2 Testing and flush-out must be closely coordinated with the Departmental Representative.

.3 The Owner's operating personnel will normally be present during testing procedures for training purposes but they will not in any way participate in operating the equipment.

1.9 Lubricants

.1 For designated equipment, furnish all lubricants used during testing and prior to acceptance. In addition, furnish an estimated six months supply of grease and oil necessary for proper lubrication of the equipment.

.2 Furnish lubricants in the original sealed containers, correctly identified as to brand, grade and with reference to the particular piece of equipment for which it is intended.

.3 Provide all lubricants of Canadian manufacture or readily available in Canada from a Canadian supplier.

.4 Provide a complete listing of recommended lubricants with designated application as an integral part of the instruction and maintenance manuals.

PART 2 PRODUCTS

.1 Not used.

PART 3 EXECUTION

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Intent

.1 Supply, deliver, install and test piping fittings and appurtenances for a complete and water tight piping system.

.2 The supply and installation of connections to process piping for instruments shall be included in the work, even though not minutely specified or detailed on the Drawings.

1.2 Protection

.1 Protect existing, finished and unfinished work from damage occurring from any source.

.2 Repair all damage resulting from inadequate protection or improper execution of work.

1.3 Reference Standards

.1 Workmanship and materials shall comply with the Standards of the following organizations as referred to herein.

.1 Canadian Standards Association - CSA
.2 American Waterworks Association - AWWA
.3 American National Standards Institute - ANSI
.4 American Society for Testing & Materials - ASTM
.5 American Society of Mechanical Engineers - ASME

1.4 Record Drawings

.1 Record Drawings shall be maintained and submitted in accordance with Section 01 77 00.

1.5 Electrical Connections

.1 Mechanical equipment requiring electrical connections shall be approved by CSA.

.2 Electrical and Instrumentation connections shall be in accordance with Division 26.

1.6 Pipe Size Conversion Table

.1 Use the following conversion table in determining the equivalent metric sizes of all mechanical/process piping:

Metric Size (Nominal) mm	Imperial Size (Nominal) inches
6	$^1/_4$
12	$^1/_2$
20	$^3/_4$
25	1
30	$1^1/_4$
40	$1^1/_2$
50	2
65	$2^1/_2$
75	3
100	4
150	6
200	8
250	10
300	12
350	14
400	16
450	18

1.7 Inspection

.1 Remove and replace defective pipe at the Contractor's expense.

PART 2 PRODUCTS

2.1 Process Piping Spec Sheets

.1 Where called for on Drawings or in the Specifications, furnish piping materials and fittings according to the requirements of the Piping Spec Sheets which are included within this section.

.2 Reference to the Piping Spec Sheets which define the material to be used for a given line is made by means of a line identification number.

.3 Line identification numbers are made up of the line size, a code for the service designation, and the number of the Piping Spec Sheet which are contained in this Section.

2.2 Fasteners

.1 U.S. standard size nuts and bolts.

.2 ASTM A307 Grade B carbon steel bolts with hexagonal heads

.3 ASTM A563 Grade A heavy hexagonal nuts

.4 Hot dip galvanize bolts and nuts in accordance with ASTM A153 unless noted otherwise.

.5 Submerged or buried nuts and bolts shall be stainless steel ASTM-F593/F594 Group 1.

2.3 Epoxy Pipe Coatings

.1 As per Division 9.

2.4 Gaskets

.1 Provide gaskets per AWWA C207 made from ½ inch (3 mm) thick compressed non-asbestos material.

.2 Materials: Buna N, Neoprene

2.5 Couplings

.1 Sized to suit the outside diameters of the pipes being joined, which will remain sealed and tight indefinitely when subjected to shock, vibration, pulsation, temperature or other adjustments in the pipeline.

.2 Gaskets shall be rubber based compound.

.3 All metal pieces shall be coated with corrosion proof coating.

.4 All nuts and bolts shall be stainless steel.

.5 Acceptable manufacturer's: Dresser, Robar, Viking, or approved alternates.

PART 3 EXECUTION

3.1 Nuts and Bolts

.1 Bolt ends shall project beyond nut faces at least 3 mm, but not more than one bolt diameter.

.2 A mixture of graphite and oil, or a proprietary anti-seize compound shall be used on bolt threads.

.3 Apply water proofing paste to all bolt threads at buried field-made joints.

3.2 Pipe Installation

.1 Carefully align, support and join pipe and fittings to equipment.

.2 Install piping parallel or perpendicular to building walls / tank alignment and level at the elevations shown on the Drawings.

.3 Determine the exact location of each pipe in the field with respect to adjacent and interconnecting piping and installed equipment.

.4 Provide flanges on welded pipe, unions on screwed pipe on both sides of sleeved or cast-in-place pipe spools through walls and floors.

.5 Provide unions on both sides of in-line equipment which are incorporated into the piping system with screwed joints.

.6 Provide flanged joints in all welded piping systems for removal of any pipe section without cutting.

.7 Provide unions in all screwed piping systems for removal of any pipe section without cutting.

.8 Apply sealing compound to male threads at all screwed joints.

.9 Prevent dirt, sand and other foreign matter from getting into the pipes.

.10 Clean all pipes thoroughly of foreign matter, rust, scale and loose shavings before installation commences.

.11 Provide adequate allowance for the expansion and contraction movements of all piping, either by providing special expansion pieces or by ensuring that sufficient allowance is inherent in the specified joints.

3.3 Couplings

.1 Install couplings in locations shown on the Drawings.

3.4 Pipe Supports

.1 Install pipe supports in accordance with Section 40 05 20.

.2 Provide additional pipe supports as found necessary or required by the Departmental Representative in the field to prevent undue vibration, sag, lateral movement or stresses.

.3 Provide temporary supports for piping where required during erection to prevent overstressing any part of the piping.

3.5 Joints

.1 Flanged Joints

All flanged joints shall be brought into close parallel and lateral alignment so that the gasket contact faces bear uniformly on the gasket and then made up with relatively uniform bolt stress.

Steel to cast iron flanged joints must be assembled carefully to avoid damage to the cast iron flange.

Flanges which connect piping to mechanical equipment shall be fitted up to close parallel and lateral alignment prior to tightening the bolting, so that no undue strain is placed on the equipment.

Pipe may not be spot heated to make minor corrections in fit.

Provide joints in addition to those shown on the drawings where required to obtain internal surface preparation and coating.

Pipe flanges mating to cast iron or ducted iron flanges shall be flat faced.

.2 Grooved Pipe Coupling Joints

.1 Grooving for joints shall be done in strict accordance with the recommendations of the coupling manufacturer.

.2 Victaulic coupling shall only be used where explicitly shown on the drawings.

.3 If the Contractor requires additional piping breaks to suit the installation of shop fabricated piping spools; breaks shall be made with weld neck flanges.

.3 Welded Joints

Meet requirements of CSA W59-1977.

Full-depth but with weld metal protruding a maximum of 1.6 mm past the interior pipe wall.

Consumable inserts shall not be used.

Electrodes to CSA Standard W48.1-M1980.

Do not weld pipe or fittings with liquid, or gas on either side of the pipe wall.

.4 Threaded Piping

Threaded joints on carbon steel pipe shall be made up with a joint compound suitable to the service fluid, which the pipe will carry.

3.6 Cleaning of Lines

.1 After completion of installation, all scale, dirt, welding electrodes, slag, rags and other foreign materials shall be removed from the lines.

.2 Flush with water or blow down with clean compressed air.

.3 Where foreign material cannot be removed by these or other convenient means satisfactory to the Departmental Representative, dismantle and re-assemble the piping to remove foreign material.

.4 Prevent the introduction of foreign material into pumps, instruments and other equipment.

3.7 Coatings

.1 Complete all fabrication, welding and cutting of piping before any specified coatings are applied.

3.8 Pressure Testing - General

.1 Prior to initial operation, all piping under the Contract shall be pressure tested with water to assure tightness.

.2 Provide all necessary labour, materials and equipment for the test including pump, pressure hoses, connections, plugs, caps, gauges and all other apparatus necessary for filling the main, pumping to the required test pressure and recording pressure losses.

.3 Test pressure shall be the maximum hydraulic pressure when the tanks are filled to their operating level, no visible leaks shall be detectable..

.4 Pressure shall be maintained for a sufficient time to determine if there are any leaks and to visually locate them, but in any case for a time not less than four hours.

.5 Where leaks are found, the line shall be retested after making repairs except that where the initial leak is minor, the Departmental Representative may at his sole discretion waive the retest.

.6 Where water testing is not considered practicable by the Departmental Representative, he may waive the requirement for a hydrostatic test and permit an air test in accordance with an approved procedure.

.7 If air testing is used, all joints and connections in the line shall be swabbed with a soap solution or other approved leak detecting fluid to aid in the detection of leaks.

.8 Accept full responsibility for introduction of water into a line for testing or other purposes and to provide adequate temporary support, protection from frost and such other measures as are necessary to prevent damage to the line. In a case where damage results, it shall be made good by the Contractor at no cost to the Owner.

.9 All pressure tests shall be witnessed by the Departmental Representative.

.10 Flush and clean out piping after pressure tests.

.11 Dispose of flushing water in an acceptable manner.

.12 Permanently plug all taps at the completion of the testing.

.13 Chemical solution lines shall be tested at 350 kPa, this includes the lime feed line, the extended ferric sulphate line and the existing polymer line.

3.9 Painting Pipelines

.1 Paint piping exterior in accordance with Division 9.

END OF SECTION

PART 1 GENERAL

1.1 General

.1 Provide all equipment, labour and material to install supports, anchors, seals and sleeves for the piping systems.

.2 The location of major pipe supports only are shown on the drawings. The Contractor shall determine the number and location of additional supports, anchors, seals and sleeves to meet the requirements of these specifications.

1.2 Reference Standards

.1 American National Standards Institute - ANSI B31.1.

PART 2 PRODUCTS

2.1 General

.1 Hangers shall not become disengaged by movements of supported pipe.

.2 Provide hangers and supports conforming to MSS SP-69.

.3 All material to be hot dipped galvanized after fabrication unless otherwise noted.

.4 Hanger and support systems to have minimum safety factor of 5.

.5 Size to suit diameter of pipe supported.

2.2 Nuts and Bolts

.1 U.S. standard size ASTM A307 Grade B carbon steel bolts with hexagon heads.

.2 U.S. standard size ASTM A563 Grade A heavy hexagonal nuts.

.3 Project bolt end at least 3 mm beyond nut face, but not more than one bolt diameter.

.4 Bolts, U-bolts, nuts, washers and miscellaneous iron and steel parts used in pipe hangers and supports shall be cadmium plated or galvanized in accordance with ASTM A153.

.5 All bolts, nuts and washers submerged in water or buried shall be stainless steel, ASTM-F593/F594.

2.3 Steel Pipe Hangers

.1 Capable of adjustments after erection of the pipe.

.2 Double bolt pipe clamp: ITT Grinnell Fig. 295, galvanized carbon steel with load ratings to meet ANSI code requirements, or approved alternate.

.3 Adjustable Clevis: ITT Grinnell, Fig. 260, or approved alternate.

.4 Turnbuckle: ITT Grinnell Fig. 230, galvanized forged steel or approved alternate.

2.4 Multiple or Trapeze Hangers

.1 Steel channels with welded spacers, hangers and locknuts.

.2 Acceptable Material: ITT Grinnell, Fig. 46 or approved alternate.

2.5 Copper Pipe and Tubing Hangers

.1 Adjustable ring with copper finish.

.2 Capable of adjustments after erection of the pipe.

.3 Acceptable Material: ITT Grinnell CT-269 or approved alternate.

2.6 Vertical Support at Floor Penetration

.1 Steel riser clamp.

.2 Acceptable Material: ITT Grinnell Fig. 261 or approved alternate.

2.7 Floor Supports

.1 Fabricate as shown on drawings.

.2 Bolt base flanges to floors or foundations where required.

2.8 Hanger Rods

.1 Steel ASTM A-107 continuous thread.

.2 Size to suit hanger and anticipated loading.

.3 Acceptable Material: ITT Grinnell or approved alternate.

2.9 Anchors

.1 Design pipe anchors to accommodate the movement of pipes in all directions.

.2 Install where required, whether shown on the Drawings or not.

.3 Avoid undue reaction forces to the structure of the building, pump flanges, equipment and piping.

.4 Fabricate anchors of structural steel channels, angles or plates secured to building structure.

2.10 Flashings

.1 Steel flashings: 0.55 mm galvanized steel.

2.11 Escutcheons

.1 Nickel-plated cast iron or steel.

.2 Split-type with set screws for holding to the pipe.

2.12 Sleeves

.1 Standard weight steel pipe with water stop ring.

.2 Size sleeves for 25 mm minimum clearance all around pipe or to provide for continuous insulation.

2.13 Inserts

.1 Malleable iron or steel for threaded connection.

.2 Lateral adjustment.

.3 Top slot for reinforcing rods.

.4 Lugs for attaching to forms.

.5 Size inserts to suit threaded hanger rods and anticipated loading.

PART 3 EXECUTION

3.1 Workmanship

.1 Install hangers and supports to prevent vibration.

.2 Maintain uniform pipe slope.

.3 Provide for pipe expansion and contraction.

.4 Install supports of strength and rigidity to suit loading without unduly stressing structure.

.5 Locate supports adjacent to equipment to prevent undue stresses in piping and equipment.

.6 Fasten hangers and supports to structural steel or anchors embedded in concrete.

.7 Review all Drawings prior to drilling for anchors for piping systems.

.8 Obtain Departmental Representative's approval prior to using percussion type fastenings.

.9 Do not use piping or equipment for hanger supports.

.10 Do not use perforated band iron, wire or chain as hangers.

3.2 Installation/Pipe Hangers and Supports

.1 Spacings of hangers and supports for piping on straight runs are not to exceed the following spans.

Nominal Pipe Size	Maximum Span in Metres		
	P-201	P-202	P-203
25 mm & under	2.1	1.5	1.5
40 mm	2.7	1.5	1.5
50 mm	3.0	1.5	1.5
65 mm	3.4	1.5	1.5
75 mm	3.7	1.5	1.5
90 mm	4.0	1.5	1.5
100 mm 4.3	1.5	1.5	
150 mm and larger	6.1	1.5	1.5

.2 Install hangers for minimum 12 mm clear space between finished covering and adjacent work.

.3 Support vertical runs of piping from wall and floor.

.4 Support vertical piping at its base by placing hanger or support as near as possible to the horizontal piping into which it connects.

.5 Support parallel lines at the same elevation, by multiple or trapeze hangers.

.6 Place hanger within 300 mm of each horizontal elbow.

.7 Install hangers to be vertically adjustable 40 mm minimum after piping is erected.

.8 Support riser piping independently of connected horizontal piping.

.9 Provide protective galvanized steel sleeve for PVC pipes at all supports to eliminate point loading. The sleeve shall be half a circumference, a minimum of 200 mm long and 2 mm thick.

.10 Plumbing lines shall be supported in accordance with the National Plumbing Code of Canada. ABS and PVC plastic pipe shall be supported at a maximum horizontal spacing of 1.2 metres as well as at the end of branches or fixture drains and at changes in direction and elevation.

3.3 Painting

.1 Shall be in accordance with Division 9.

.2 Supports, anchors and seals inaccessible after installation shall be painted prior to installation.

END OF SECTION

PART 1 GENERAL

1.1 Description:

.1 Provide and test three (3) Reactor Tanks and appurtenances as indicated on the Drawings and in compliance with Contract Documents.

1.2 References

.1 American Petroleum Institute (API):

.1 650: Welded Tanks for Oil Storage

.2 American Society for Testing and Materials International (ASTM):

.1 A36/A36M: Specification for Carbon Steel Plate.

.3 International Organization for Standardization (ISO):

.1 9001: Quality Management Systems - Requirements

.4 Society for Protective Coatings (SSPC):

.1 SP 6: For Commercial Blast Cleaning.

1.3 Submittals

.1 Submit the following in accordance with Section 01 33 00:

.1 Operating and maintenance instructions and parts lists.
.2 Shop drawings data for accessory items.
.3 Number and identify components to correspond with terminology on drawings. Use these numbers on all submittal sheets and shop drawings.
.4 Tank manufacturers must be capable of providing a list of customers using at least five (5) similar tanks for the same chemical applications for at least ten (10) years.
.5 Material Certification:
.1 Provide certification from the manufacturer that the materials of construction specified are recommended and suitable for the service conditions specified and indicated. If materials other than those specified are proposed based on incompatibility with the service conditions, provide technical data and certification that the proposed materials are recommended and suitable for the service conditions specified and indicated including an installation list of a minimum of five (5) installations in operation for a minimum of three (3) years. Provide proposed materials at no additional cost to the Owner.
.2 Where materials are not specified, provide technical data and certification that the proposed materials are recommended and suitable for the service conditions specified and indicated.
.6 Shop Drawings are to bear the seal of a professional engineer registered in the Northwest Territories and Nunavut Association of Professional Engineers.

.2 Special Requirements:

.1 Mill certificates and signed statements from fabricators certifying alloys from which work is fabricated with delivery of material and equipment.

.2 Coating manufacturer's application recommendations and product data, for Epoxy Coating, as indicated on the drawings.

.3 Coating System Certificates: For each coating system submit invoices of purchase and notarized statement sworn to be authorized official or organization that applies coatings, on its letterhead, testifying to following:

.1 That immediately before coating, surfaces were blast-cleaned as specified and were clean, dry, free of dust, rust and mill scale when coated.

.2 Names of products used and manufacturer.

.3 Shelf-life dates of each container of each product.

.4 That surface preparation and coating use, mixing, application, and curing were done in accordance with current printed recommendations of coating manufacturer and in accordance with coating requirements in this specification.

.5 That copies of coating manufacturer's invoices submitted with this statement cover sale of products.

.3 A copy of this specification section with addenda and all referenced specification sections with addenda, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations and clarifications from the specified requirements.

.1 If deviations and clarifications from the specifications are indicated, therefore requested by the Contractor, provide a detailed written justification for each deviation and clarification.

.2 Failure to include a copy of the marked-up specification sections and or the detailed justifications for any requested deviation or clarification will result in rejection of the entire submittal with no further review and consideration.

1.4 Quality Assurance

.1 The drawings and specifications direct attention to certain required features of the tanks, but do not purport to cover details entering into its design, construction and installation; nevertheless, provide tanks so that systems will be complete and ready for operation.

1.5 Delivery, Storage and Handling

.1 Comply with the requirements specified in Section 01 66 10.

PART 2 PRODUCTS

2.1 System Description

.1 General:

.1 Tank plans, elevation and data per the drawings.

.2 Provide tank nozzles as shown. Project nozzles as indicated from the tank surface.

.3 Provide tank configurations as indicated on drawings.
.4 Equip tank with a substantial internal support bracket for supporting inlet drop pipes as required.
.5 Provide sidewall of tank capable of supporting equipment as required (support existing walkway system including electrical cables, and chemical feed lines and mixers).
.6 Provide tanks with anti-swirl baffles as shown.

2.2 Tanks

.1 Steel:

.1 Fabricate tank of steel plates.
.1 Fabricate in accordance with API 650 Welded Tanks for Oil Storage.
.2 Hydrostatically test tank to maximum level as controlled by the outlet weir.
.3 Paint exterior of the tanks as specified on Drawings.

PART 3 EXECUTION

3.1 Installation

.1 Install tanks in accordance with printed instructions of fabricators, as indicated and specified.

.1 Do not use fittings for handling.
.2 Install on compacted sand bed.
.3 Assure there is no stress on tank nozzles.

3.2 Acceptance Testing

.1 Tanks:

.1 Owner will provide water for testing.
.2 Supply all pipe, hose, pumps, water, power and other equipment required to convey the test liquids and carry out the tests.
.3 After installation, clean tanks of loose debris and dry prior to tests.
.4 Test tanks for leaks or damage prior to use.
.5 Repair leaks or damage by tradesman skilled in that type of work at no cost to the Owner.

3.3 Contract Closeout

.1 Provide in accordance with Section 01 77 00.

END OF SECTION

Travaux publics et Services gouvernementaux Canada | Public Works and Government Services Canada

CERTIFICATE OF INSURANCE

Description and Location of Work	Contract No. EW702-151706
ETP Reaction Tank Replacement, Giant Mine, NWT	Project No. R.014204.334

Name of Insurer, Broker or Agent	Address (No., Street)	City	Province	Postal Code
Name of Insured (Contractor)	**Address (No., Street)**	**City**	**Province**	**Postal Code**

Additional Insured
Her Majesty the Queen in Right of Canada as represented by the Minister of Public Works and Government Services

Type of Insurance	Insurer Name and Policy Number	Inception Date D / M / Y	Expiry Date D / M / Y	Limits of Liability		
				Per Occurrence	Annual General Aggregate	Completed Operations Aggregate
Commercial General Liability **Umbrella/Excess Liability**				**$5,000,000.00** **$**	**$10,000,000.00** **$**	**$5,000,000.00** **$**
Builder's Risk / Installation Floater				**$**		
Pollution Liability				**$1,000.000.00**		

I certify that the above policies were issued by insurers in the course of their Insurance business in Canada, are currently in force and include the applicable insurance coverage's stated on page 2 of this Certificate of Insurance, including advance notice of cancellation / reduction in coverage.

Name of person authorized to sign on behalf of Insurer(s) (Officer, Agent, Broker)

Telephone number

Signature

Date D / M / Y

General

The insurance policies required on page 1 of the Certificate of Insurance must be in force and must include the insurance coverage listed under the corresponding type of insurance on this page.

The policies must insure the Contractor and must include Her Majesty the Queen in Right of Canada as represented by the Minister of Public Works and Government Services as an additional Insured.

The insurance policies must be endorsed to provide Canada with not less than thirty (30) days notice in writing in advance of a cancellation of insurance or any reduction in coverage.

Without increasing the limit of liability, the policies must protect all insured parties to the full extent of coverage provided. Further, the policies must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

Commercial General Liability

The insurance coverage provided must not be substantially less than that provided by the latest edition of IBC Form 2100.
The policy must either include or be endorsed to include coverage for the following exposures or hazards if the Work is subject thereto:

(a) Blasting.
(b) Pile driving and caisson work.
(c) Underpinning.
(d) Removal or weakening of support of any structure or land whether such support be natural or otherwise if the work is performed by the insured contractor.

The policy must have the following minimum limits:

(a) **$5,000,000** Each Occurrence Limit;
(b) **$10,000,000** General Aggregate Limit per policy year if the policy contains a General Aggregate; and
(c) **$5,000,000** Products/Completed Operations Aggregate Limit.

Umbrella or excess liability insurance may be used to achieve the required limits.

Builder's Risk / Installation Floater

The insurance coverage provided must not be less than that provided by the latest edition of IBC Forms 4042 and 4047.
The policy must permit use and occupancy of any of the projects, or any part thereof, where such use and occupancy is for the purposes for which a project is intended upon completion.
The policy may exclude or be endorsed to exclude coverage for loss or damage caused by asbestos, fungi or spores, cyber and terrorism.
The policy must have a limit that is **not less than the sum of the contract value** plus the declared value (if any) set forth in the contract documents of all material and equipment supplied by Canada at the site of the project to be incorporated into and form part of the finished Work. If the value of the Work is changed, the policy must be changed to reflect the revised contract value.
The policy must provide that the proceeds thereof are payable to Canada or as Canada may direct in accordance with GC10.2, "Insurance Proceeds" (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R/R2900D/2).

Contractors Pollution Liability

The policy must have a limit usual for a contract of this nature, but not less than **$1,000,000** per incident or occurrence and in the aggregate.

.