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**Part 1 General**

**1.1 RELATED REQUIREMENTS**

- .1 Contractor to comply with all applicable federal, territorial and municipal legislation.
- .2 Contractor shall abide by the terms of the Land Use Permit (Appendix 7).
- .3 Section 01 33 00 – Submittal Requirements.

**1.2 DEFINITIONS**

- .1 AANDC: Aboriginal Affairs and Northern Development Canada. AANDC is the Owner.
- .2 Authorities Having Jurisdiction: Governmental agencies or sub-agencies that regulate the codes and standards that are to be met during the abandonment/re-abandonment processes.
- .3 COGOA: Canada Oil and Gas Operations Act.
- .4 Contractor: The Contractor procured to undertake the site management and operation services, decontamination/demolition, remediation and restoration work as defined, within the context of these specifications, as the Contractor.
- .5 Contractor's Site Superintendent: Contractor's resident site representative who is authorized to make decisions on behalf of Contractor.
- .6 DFO: Fisheries and Oceans Canada.
- .7 DR: Departmental Representative. Refers to persons exercising the roles and attributes of Canada under the contract including but not limited to Public Works and Government Services Canada (PWGSC) personnel and the Resident Site Professional.
- .8 DR's Authorized Personnel: Within the context of these Specifications, the term Departmental Representative's Authorized Personnel refers to personnel appointed by DR or authorized on-site by DR. DR's Authorized Personnel provide recommendations/technical guidance to DR, as required, for the enforcement of these Specifications.
- .9 MVLWB: Mackenzie Valley Land and Water Board. The Land Use Permit is issued by MVLWB.
- .10 NEB: National Energy Board.
- .11 Provide: supply and install.
- .12 PWGSC: Public Works and Government Services Canada.

- .13 WDW: Work-Derived Waste: any solid or liquid waste generated during Work of this Contract. This includes, but is not limited to, well casing and abandoned well head materials removed, plug/drill cuttings, recovered drilling fluids, and excavated soils not suitable as backfill.

### **1.3 BACKGROUND INFORMATION**

- .1 Refer to the Site Maps and Photographs (Appendix 1), Previous Reports including the final report from the 2011 well abandonment program (Appendix 6), and the Land Use Permit Application and conditional Land Use Permit (Appendix 7) for additional information including site maps, photographs and requirements.
- .2 The Frobisher Gas Wells consists of seven gas wells that were drilled between 1922 and 1947 on the east shore of the Hay River, approximately 10 km south of the Town of Hay River. The wells are across the river from the Hay River Golf Course and Cross Country Ski Clubhouse and near the ski club trail system. There are also residences to the south of the river.
- .3 The Frobisher gas wells are located within the traditional lands of the K'atlodeeche First Nation, the Hay River Métis Council, Deh Cho First Nation and NWT Métis Nation. Currently there is a land use permit MV2014X0020 held by AANDC for the specified abandonment/remedial work (see Appendix 7). All of the wells are located on AANDC lands but access to the wells will be through Government of Northwest Territories public lands.
- .4 Status of wells:
- .1 The Frobisher gas wells were inspected in October, 2013 and July, 2014 (Appendix 6).
- .2 The Frobisher Well #1 was the first well drilled in the area. It was spudded in 1922. The well was located July 2014 with its casing cemented in and in good condition. All gas migration tests were negative indicating no leaks. Its location was documented, the well was back filled and the helicopter sign was relocated to the wellhead. The well is considered to be properly abandoned awaiting confirmation by the NEB. A pile of unpainted metal debris (approximately 1 m<sup>3</sup>) and a barrel (contents did not exceed the CWS PHCs) were left adjacent to the well sign.
- .3 Frobisher Well #4 is fully abandoned as confirmed by the NEB.
- .4 Frobisher Well #5 is a sour gas well which was abandoned in 2011 (see Appendix 6) and has its conductor welded to the surface casing and an outlet on the conductor with a 50.8 mm riser and ball valve on the annulus. There is no pressure internally on the surface casing but there is a weak flow on the annulus (a methane gas bubble every 3-4 seconds) between the casing and conductor pipe. The annulus was left open to vent as is standard practice in the oil industry. Minimal methane readings were

detected during the gas migration tests in the soils around the wellhead (highest readings were 5% LEL's (lower explosive limit)). No indications of H<sub>2</sub>S were encountered. The culvert around the well was backfilled to level the area and a fence and sign were installed. Valve handles were removed and taped to valves.

- .5 Frobisher Well #5B is a sour gas well which was abandoned in 2011 (see Appendix 6) and has a conductor casing pounded in the ground with a surface casing cemented to surface. The annulus between the two casings is full of cement. There is no leaking gas detected between the conductor casing and surface casing. The 219.1 mm surface casing has a very weak gas flow inside the casing. The casing was left open for an extended period prior to the inspection and at the time of inspection a bubble test showed 2 bubbles of gas every 2-3 seconds in 1 inch of water. The casing was shut in. A gas migration in the soils around the wellhead was completed showing no gas migration. The ground around the well head was back filled and leveled. A fence was installed and valve handles were removed and taped to piping on wellhead.
- .6 Frobisher Well #6 is confirmed as being properly abandoned and needs to be cut and capped.
- .7 Frobisher Well #7 has a valve on top of the well casing. A valve check indicated H<sub>2</sub>S and LEL's were not present. Gas migration tests found no methane (0% LEL's). The well head was excavated and it was determined there was significant corrosion on the casing which needed to be removed prior to installing a tapping sleeve and tool. The well was tapped below the exposed master valve and found to have 130 kPa and 8% H<sub>2</sub>S in the casing. The testing equipment was removed and a ½" bull plug into needle valve was installed. A fence and warning signs were installed around the casing stub and excavation for safety. Further investigations in July 2014 found the well did not have enough volume to flow for flaring and was slow to recover pressure when shut in.
- .8 Frobisher Well #8 is confirmed as being properly abandoned and needs to be cut and capped.

.5 Site access:

- .1 There are two currently known options for accessing the site.
- .2 Option 1: Re-open the existing fireguard (~6 km) from Hwy 5 (Fort Smith Highway) down to the south and open access (~1.5 km) to the lease, and winter road construction.
  - .1 Recognized limitations include, but are not limited to, limited access for heavy equipment, a permit is required to cross the bridge (see Appendix 8), bridge height restriction of 5.1 m, and the route has not yet been used for this purpose.

- .3 Option 2: Access off Hwy 2 along an existing gravel road around the gravel pit following the trail to the south bank of the Hay River, ice crossing of the Hay River.
- .1 Recognized limitations include, but are not limited to, ice bridge construction and operation required to cross the Hay River, steep river banks, and the ice bridge can only be used until March 31 per the Land Use Permit.

#### **1.4 SITE HAZARDS**

- .1 Site hazards that the Contractor must be aware of include, but are not limited to, the following:
  - .1 Residual gas pressure in wellbores;
  - .2 Fire;
  - .3 Forest fire;
  - .4 Explosion;
  - .5 H<sub>2</sub>S gas leaks;
  - .6 Brackish water flow;
  - .7 Uneven terrain;
  - .8 Wildlife hazards including bears and large mammals;
  - .9 Unauthorized site personnel;
  - .10 Overgrowth on site;
  - .11 Aquatic dangers related to Hay River being close to well site and impeding site access (including ice bridge if applicable);
  - .12 Working near water;
  - .13 General debris (tripping hazards, etc.);
  - .14 Waste products and drilling chemicals;
  - .15 Confined spaces;
  - .16 Low oxygen environment;
  - .17 Cold weather;
  - .18 Ice (ice roads and ice bridge, if applicable);
  - .19 Heavy equipment;
  - .20 Noise;
  - .21 Natural disasters;
  - .22 Skin hazards;
  - .23 Hand protection;
  - .24 Rotating equipment/mechanical hazards;
  - .25 Danger of unexpected movement of machinery;
  - .26 Winter lighting;

- .27 Electrocuting;
- .28 Manual lifting;
- .29 Lifting/ hoisting; and
- .30 Vehicle operation in congested areas.

## 1.5 DESCRIPTION OF WORK

- .1 Work covered by Contract documents includes, but is not necessarily limited to, the following:
  - .1 Preparation of planning documents and submittals as per the Contract Specifications.
  - .2 The Contractor shall be responsible for any and all activities related to mobilization, site access, site security, well access, storage, accommodation and demobilization, and subsistence of any and all equipment, materials and/or personnel related to the completion of the specified Work.
  - .3 Debris removal, abandonment/re-abandonment, and cut and cap as per the table below.

**Table 01 11 00-1: Required Well Work**

Well Name	Latitude	Longitude	Spud Date	Well Identification Number	Work Covered by Contract
Frobisher Test Well #1	N 60° 42.623'	W 115° 53.315'	1922	8	Debris removal
Frobisher Test Well #5	N 60° 42.459'	W 115° 53.300'	1946	1705	Re-abandonment; if successful, cut and cap
Frobisher Test Well #5B	N 60° 42.461'	W 115° 53.325'	1947	1709	Re-abandonment; if successful, cut and cap
Frobisher Test Well #6	N 60° 42.541'	W 115° 53.307'	1946	1706	Cut and cap
Frobisher Test Well #7	N 60° 42.495'	W 115° 52.804'	1947	1710	Abandonment; if successful, cut and cap
Frobisher Test	N 60°	W 115°	1946	97	Cut and cap

Summary of Work

Well #8	42.461'	53.811'			
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- .4 Off-site transport and disposal of hazardous and non-hazardous WDW at the Contractor's designated off-site waste disposal facility.
- .5 Documentation and record keeping of non-hazardous waste and hazardous waste final disposal.
- .6 Backfilling and grading of all excavated areas.
- .7 Maintain fire access/control throughout the work.
- .8 To the extent possible, Contractor is to return the Site to its original condition.

## 1.6 REGULATORY SUBMITTALS

- .1 All submittals in accordance with Section 01 33 00 – Submittal Procedures.
- .2 The Contractor shall provide the following submittals for compliance with the Land Use Permit and Operations Authorization:
  - .1 Spill Contingency Plan;
  - .2 List of Equipment and Fuel Supply/Storage;
  - .3 Site Specific Health and Safety Plan in accordance with Section 8 of the *Canada Oil and Gas Drilling and Production Regulations* (COGDPR);
  - .4 Environmental Protection Plan in accordance with Section 9 of the COGDPR;
  - .5 Contingency Plans in accordance with Subsection 6(j) of the COGDPR;
  - .6 Declaration by Owner pursuant to Subsection 5.11(2) of the *Canada Oil and Gas Operations Act* (COGOA);
  - .7 Rig Certificates for those rigs conducting any work for AANDC on the Frobisher Gas Wells Abandonment.
- .3 The Contractor shall provide a "Benefits Plan" in accordance with the Canadian Oil and Gas Operations Act for review and approval by the Crown.
- .4 AANDC will attempt to obtain pre-approvals of the Alter Condition of Well (ACWs) based on the abandonment plans in Appendices 3 and 4 prior to award, but they cannot be approved until the Operations Authorization conditions are met (Clauses 1.6.2.3 to 1.6.2.7 and also listed in Appendix 12).
- .5 The Contractor shall not commence site activities prior to approval of submissions by Authorities Having Jurisdiction.

## 1.7 ON-SITE DOCUMENTS

- .1 Maintain at job site, one copy of all project required submittals and permits, including:
  - .1 Copy of Approved Project Work Plan and Schedule;



- .2 All project required submittals;
- .3 Land Use Permit;
- .4 Operations Authorization;
- .5 Operational Statement notification form submitted to DFO for ice bridge (if applicable);
- .6 Canada Labour Code;
- .7 Contract drawings;
- .8 Specifications;
- .9 Addenda;
- .10 Change orders;
- .11 Other modifications to Contract;
- .12 Field test reports;
- .13 Task authorizations;
- .14 Material Safety Data Sheet specifications;
- .15 All applicable Territorial permits and licenses;
- .16 All applicable Federal permits and licenses; and
- .17 Other documents specified by DR.

## **1.8 WORK SCHEDULE**

- .1 Keep DR advised of planned Work activities in accordance with the instructions of Section 01 33 00 – Submittal Procedures.
- .2 If used, an ice bridge can only be used until March 31 as per the Land Use Permit.
- .3 Required hold points:
  - .1 Contractor shall provide documentation and submittals as per Section 01 33 00 – Submittal Procedures.
  - .2 Mobilization and Demobilization Plan (ice bridge or fireguard option) to be reviewed and confirmed by DR prior to construction. DR to notify Contractor of all deficiencies.
  - .3 Re-abandonment, abandonment and cut and cap activities shall not commence until the DR and Land Use Inspector completes site inspection and confirms that the Contractor has complied with NEB and Land Use Permit requirements.
  - .4 Cut and cap excavations are not to be backfilled without final inspection and confirmation from DR.
  - .5 Confirmation must be obtained from DR prior to the use of any soils or imported “clean” materials as backfill material on the site.

- .6 Contractor shall not demobilize from the site until Work has been completed as per the Contract Specifications and/or Contractor has received written authorization from the DR.

## **1.9 CONTRACTOR'S USE OF SITE**

- .1 Contractor's use of site is restricted to the terms and conditions of the issued permits, and all applicable guidelines and regulations.
- .2 Coordinate use of site as approved by DR.
- .3 Use of site shall comply with the environmental requirements of Section 01 35 26 – Environmental Protection.
- .4 Provide alternative routes for pedestrian and vehicular traffic, as required.
  - .1 Note that part of the permitted area is within the lease for the Hay River ski club. Contractor should make best efforts to minimize impacts to existing trails where possible and safe to do so.
- .5 Construct barriers, as required.
  - .1 Refer to Section 01 56 00 – Temporary Barriers and Enclosures.

## **1.10 EXISTING SERVICES**

- .1 There are no existing services at the site.
  - .1 Refer to Section 01 51 00 – Temporary Utilities.
- .2 Where unknown services are encountered, immediately advise DR and confirm findings in writing.

## **1.11 EXAMINATION OF SITE**

- .1 Prior to mobilization, the Contractor must complete a Pre-Mobilization Site Visit to check field conditions and obtain actual conditions. The Pre-Mobilization Site Visit will include attendance by the DR and AANDC. Following a site visit, the Contractor must notify the DR, in writing, of all matters which could prejudice proper execution of the Work.
- .2 Commencement of mobilization constitutes acceptance of existing conditions, and verification of dimensions.

## **1.12 SITE SUPERVISION**

- .1 Designate Contractor's Site Superintendent to be on-site at all times during construction, to have full authority to make decisions on behalf of the Contractor, to be knowledgeable of the requirements of the contract, and to act upon Departmental Representative's instructions.

- .2 Notify DR one week in advance of changing the Site Superintendent and provide an updated chain-of-command.

### **1.13 ADDITIONAL DRAWINGS**

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

### **1.14 METHOD OF PAYMENT**

- .1 Work under this Contract will be paid for as follows:
  - .1 Lump sum pay items will be paid at the lump sum price tendered for each lump sum item listed in the Basis of Payment Schedule.
  - .2 Unit price items will be paid at the unit price tendered for each unit price item listed in the Basis of Payment Schedule.
  - .3 Indirect project costs will be paid at the lump sum price tendered for "Balance of Project Costs" (BOPC) on the Basis of Payment Schedule.
  - .4 Potential Additional Work will be paid for at firm all-inclusive unit prices tendered for additional Work on the Basis of Payment Schedule.
  - .5 Materials consumed for Potential Additional Work will be paid according to the actual costs expended plus Contractor percent mark-up tendered in the Basis of Payment Schedule, as certified by the Departmental Representative for each provisional cost item. Retain receipts for all Provisional Cost Sum Items.
- .2 Unit price items, lump sum items and provisional cost sum items will be paid under the Basis of Pricing of the proposed contract. All other items, whether specifically defined in the specific sections of the Specifications or not, will be paid under Item BOPC, Balance of Project Costs, in the Basis of Payment Schedule.
- .3 Direct costs include all costs directly attributable to a particular pay item including equipment, operators, materials, etc. All direct costs for lump sum and unit price items are to be included in the appropriate price item in the Basis of Payment Schedule.
- .4 Except as indicated above, work under this section will not be measured.

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not used.

**Part 3          Execution**

**3.1              NOT USED**

.1          Not used.

**END OF SECTION**

**Part 1 General**

**1.1 RELATED REQUIREMENTS**

- .1 Contractor shall abide by the terms of the Land Use Permit (Appendix 7).
- .2 Contractor shall abide by the terms and conditions of the Operations Authorization (Section 01 10 00 – Summary of Work Clauses 1.6.2.3 to 1.6.2.7 and Appendix 12).
- .3 Steel bridge at Hwy 5 has weight and size restrictions. NWT Department of Transportation *Permit Pre-Authorization Request Form* provided in Appendix 8.

**1.2 EXISTING SERVICES**

- .1 Identify and locate all utilities lines in area of work. Line locate as required and prior to commencing work.
- .2 Provide for all personnel and vehicle traffic.
- .3 Construct barriers in accordance with Section 01 56 00 – Temporary Barriers and Enclosures.

**1.3 EXISTING ROADS**

- .1 Use existing roads as per the Land Use Permit and Territorial regulations and any weight or load limitations for use of highways and bridges.
- .2 Provide a schedule of activities for the usage of existing roads.
- .3 Identify access route. Refer to Section 01 53 00 – Mobilization and Demobilization.

**1.4 SUBMITTALS**

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

**1.5 METHOD OF PAYMENT**

- .1 Work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3          Execution**

**3.1              NOT USED**

.1          Not Used.

**END OF SECTION**

**Part 1 General**

**1.1 ADMINISTRATIVE**

- .1 Responsibilities of Contractor:
  - .1 Provide physical space and make arrangements for meetings.
  - .2 Representative of Contractor attending meetings will be qualified and authorized to act on behalf of the party represented.
- .2 Responsibilities of DR:
  - .1 Schedule and administer project meetings throughout the progress of Work, unless otherwise stipulated.
  - .2 Prepare agenda for meetings unless otherwise specified.
  - .3 Preside at meetings unless otherwise specified.

**1.2 PROJECT MANAGEMENT KICK-OFF TELECONFERENCE MEETING**

- .1 Project management kick-off teleconference meeting to be held within 10 business days of the Contract Award to include DR, PWGSC, AANDC and Contractor's Project Manager and Site Supervisor.
- .2 DR to establish time and contact information for meeting and notify parties concerned a minimum of five days before meeting.
- .3 DR will chair the meeting and take minutes. Meeting will be informal and agenda to include:
  - .1 Appointment of official representative of participants in the Work;
  - .2 Preliminary Project Work Plan and Schedule and other submissions;
  - .3 Scheduling of Pre-Mobilization Site Visit.

**1.3 PRE-MOBILIZATION SITE VISIT**

- .1 Prior to mobilization, a Pre-Mobilization Site Visit will be completed to check field conditions and obtain actual conditions required for correct execution of Work.
- .2 Provide a minimum of 10 business days notice to DR prior to examining the Site.
- .3 Departmental Representative, Contractor and AANDC will be in attendance.
- .4 Notify DR in writing of all matters which could prejudice proper execution of the Work by submitting a Pre-Mobilization Site Visit Report within seven days of completing the visit.

#### **1.4 WEEKLY PROGRESS MEETINGS**

- .1 On-site meetings shall be held a minimum of weekly with the Contractor and DR or otherwise as agreed by all parties.
- .2 DR will record minutes of meetings and circulate Records of Meetings to attending parties and affected parties not in attendance within 24 hours of each meeting clearly indicating decisions made, changes required, and the responsible party to make the change(s).
- .3 Agenda may include:
  - .1 Past minute reviews;
  - .2 Summary of previous week's site activities;
  - .3 Comparison of progress achieved with the project schedule;
  - .4 Schedules and action Contractor plans to take to get back on schedule, if required;
  - .5 Confirmation of quantities;
  - .6 Reported complaints;
  - .7 Health, safety and security issues;
  - .8 Summary of interactions with Authorities Having Jurisdiction;
  - .9 Work plan for following week;
  - .10 Decisions made; and
  - .11 Other business.
- .4 Contractor to submit a Weekly Progress Report to DR that includes, but is not limited to, the information for the agenda stipulated in Clause 1.4.3.

#### **1.5 FIELD KICK-OFF MEETING**

- .1 Field kick-off meeting to be held prior to the start of well abandonment/re-abandonment and cut and cap work to include DR and Contractor.
- .2 Meeting shall include as a minimum site project safety, site conditions, review of abandonment/re-abandonment and cut and cap work specifications, and tasks schedule.

#### **1.6 CLOSE-OUT MEETING**

- .1 Report on all changes and activities during the Work.
- .2 Obtain acceptance and approvals of the Work.
- .3 Submit closeout documents.
- .4 Submit copies of all manifests related to the Work.
- .5 Submit copies of all permits and licenses related to the Work.



- .6 Repair/correct all deficiencies related to the Work.
- .7 Submit Certificate of Substantial Completion to DR for payment.

## **1.7 WORKER ORIENTATION SEMINAR**

- .1 Contractor shall develop, prior to the start of Work, course material for a Worker Orientation Seminar. The outline of this seminar is to be submitted to DR and is intended to describe the remediation activities at the site, and provide instruction for the applicable health, safety, and environmental policies and regulations as related to the site Work activities. Course material will be prepared and presented in English.
- .2 Submit one electronic copy of the Worker Orientation Seminar course material to DR for review at least 30 days prior to the seminar. Include information describing the facility to be used for conducting the seminars.
- .3 The Worker Orientation Seminar is to address, but is not necessarily limited to, the following topics:
  - .1 Project Communication:
    - .1 Roles of DR and DR's authorized representatives;
    - .2 Roles of Contractor and Contractor's authorized representatives; and
    - .3 Lines of Project communication.
  - .2 Abandonment/Re-abandonment and Cut and Cap Activities (Scope of Work):
    - .1 Management of non-hazardous and hazardous waste material.
  - .3 Regional Overview of the Site:
    - .1 Land use of area (hunting, fishing, skiing activities, etc.);
    - .2 Location of sites relative to communities;
    - .3 Heritage resources;
    - .4 Climate;
    - .5 Geology and hydrology; and
    - .6 Flora and fauna.
  - .4 Project Organization/Schedule/Administration:
    - .1 Personnel policies;
    - .2 Supervisory reporting relationships;
    - .3 Communication;
    - .4 Payroll and banking procedures;
    - .5 Work schedules and hours;
  - .5 Environmental Issues and Protection Procedures:
    - .1 Climate;

- 
- .2 Land use;
  - .3 Water resources/fisheries;
  - .4 Terrestrial resources;
  - .5 Spill Contingency Plan/procedures; and
  - .6 Training activities.
  - .6 Site Specific Health and Safety
    - .1 Responsibility for safety;
    - .2 Team work;
    - .3 Work attitudes/productivity;
    - .4 Anti-Harassment Policy;
    - .5 Site hazards;
      - .1 Residual gas pressure in wellbores;
      - .2 Fire;
      - .3 Forest fire;
      - .4 Explosion;
      - .5 H<sub>2</sub>S gas leaks;
      - .6 Brackish water flow;
      - .7 Uneven terrain;
      - .8 Wildlife hazards including bears and large mammals;
      - .9 Unauthorized site personnel;
      - .10 Overgrowth on site;
      - .11 Aquatic dangers related to Hay River being close to well site and impeding site access (including ice bridge if applicable);
      - .12 Working near water;
      - .13 General debris (tripping hazards, etc.);
      - .14 Waste products and drilling chemicals;
      - .15 Confined spaces;
      - .16 Low oxygen environment;
      - .17 Cold weather;
      - .18 Ice (ice roads and ice bridge, if applicable);
      - .19 Heavy equipment;
      - .20 Noise;
      - .21 Natural disasters;
      - .22 Skin hazards;
      - .23 Hand protection;
      - .24 Rotating equipment/mechanical hazards;

- .25 Danger of unexpected movement of machinery;
- .26 Winter lighting;
- .27 Electrocution;
- .28 Manual lifting;
- .29 Lifting/ hoisting; and
- .30 Vehicle operation in congested areas.
- .6 First aid procedures;
- .7 Protective equipment and clothing;
- .8 Safe operation of equipment and tools;
- .9 WHMIS requirements;
- .10 Wildlife awareness and safety; and
- .11 Weather safety;
- .7 Work Specific Task Requirements:
  - .1 Contaminated soil handling;
  - .2 Environmental mitigation procedures; and
  - .3 Emergency spill response training.
- .4 Prior to the start of Work, conduct Worker Orientation Seminars for all supervisors, foremen, Contractor's general workforce, DR and DR's Authorized Personnel staff based on the course material accepted by DR. Require each attendee to sign a record of attendance upon completion of the seminar. Retain, for DR's review at any time, this record of attendance.
- .5 All workers must attend the Worker Orientation Seminar prior to commencing Work on the Site.

## **1.8 SAFETY MEETINGS**

- .1 Daily Safety Meeting: meeting to be held on-site daily and to include Contractor, all staff, on-site DR and DR's authorized personnel. The Daily Safety Meeting may be split into task or crew specific meetings as required. Record attendance and discussion topic(s) for daily safety meeting(s) and make available to Departmental Representative as required.
- .2 Weekly Safety Meeting: Contractor to preside over weekly meeting for all site personnel. Minutes are to be recorded and attendance taken. Post minutes and attendance list on-site and provide copy to DR within three days of the meeting.
- .3 Joint Occupational Health and Safety Committee Meeting: hold meeting according to attendance and frequency requirements of Authorities Having Jurisdiction.

**1.9 COMMUNITY MEETINGS**

- .1 Prior to the commencement of Work and following the completion of Work, Contractor to arrange meetings with DR, local leaders, officials, authorities and public in Hay River, NT. Be prepared to discuss local hiring practices and any other items of operations which may impact upon the local communities. Minutes will be taken by DR. Provide a sign-in sheet for attendees.
- .2 Conduct presentations via computer and projector using "Power Point" software or using a similar suitable presentation. Provide wording in English. Submit presentations to DR for review a minimum of 14 days prior to each community meeting.
- .3 Provide the following associated with these meetings to accommodate up to 50 attendees:
  - .1 Meeting facility rental.
  - .2 Coffee, tea, pastries, cookies, etc.

**1.10 METHOD OF PAYMENT**

- .1 Work under this section is to be included in the lump sum for Meetings (01 31 19-1).
- .2 Except as indicated above, work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

**Part 2 Products**

**2.1 NOT USED**

- .1 Not used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not used.

**END OF SECTION**

**Part 1        General**

**1.1            DEFINITION**

- .1      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 DR submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract time and no claim for extension by reason of such default will be allowed.
- .2      Notify DR in writing at time of submission identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .3      Contractor's responsibility for errors and omissions in submission is not relieved by DR review of submittals.
- .4      Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by DR review.
- .5      Keep one reviewed copy of each submission on-site.

**1.3            SHOP DRAWINGS SUBMISSION**

- .1      Present shop drawings, product data, samples and mock-ups in SI Metric units.
  - .1      Submit drawings stamped and signed by professional engineer registered and licensed in Northwest Territories.
- .2      Where items or information is not produced in SI Metric units converted values are acceptable.

**1.4            PHOTOGRAPHIC DOCUMENTATION**

- .1      Submit electronic copy of digital photography in jpg format, standard resolution or as directed by DR.
- .2      Project identification: name and number of project and date of exposure indicated.
- .3      Frequency of photographic documentation: daily or as directed by DR.
- .4      Submit progress photographs weekly or as directed by DR.
- .5      Submit final photographs prior to final progress payment request.

## **1.5 PROJECT STATISTICS REPORT**

- .1 Contractor shall submit a Project Statistics Report monthly to DR.
  - .1 AANDC Project Statistics Report Template provided in Appendix 14.
- .2 Project Statistics Report shall include:
  - .1 Environment, health and safety (EHS) performance:
    - .1 Safety;
    - .2 Incidents, inspections and audits; and
    - .3 EHS Training.
  - .2 Socio-economic performance:
    - .1 Employment;
    - .2 Workforce training; and
    - .3 Purchase of goods and services.
  - .3 Stakeholder engagement:
    - .1 Communication activities.

## **1.6 METHOD OF PAYMENT**

- .1 Work under this section is to be included in the lump sum for Submittals (01 33 00-1).
- .2 Except as indicated above, work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not used.

## **Part 3 Execution**

### **3.1 NOT USED**

- .1 Not used.

**TABLE 01 33 00-1**  
**CONTRACTOR SUBMITTAL SCHEDULE**

<b>Specification Section</b>	<b>Description</b>	<b>Due Date</b>
01 10 00	Spill Contingency Plan	With Site Specific Health and Safety Plan
01 10 00	List of Equipment and Fuel Supply/Storage	Within 10 days following Contract Award
01 10 00	Site Specific Health and Safety Plan	Within 10 days following Contract Award
01 10 00	Environmental Protection Plan	Within 10 days following Contract Award
01 10 00	Contingency Plans	Within 10 days following Contract Award
01 10 00	Declaration by Owner	Within 10 days following Contract Award
01 10 00	Rig certificates	Within 10 days following Contract Award
01 10 00	Benefits Plan	Within 10 days following Contract Award
01 14 00	Highway Bridge Permit Pre-Authorization Request Form	Prior to task if Hwy 5 bridge is used.
01 31 19	Pre-Mobilization Site Visit Report	Within seven days of completing the visit.
01 31 19	Weekly Progress Report	Weekly or as directed by DR
01 31 19	Community Meeting Requirements	Submit for review 14 days prior to seminar
01 31 19	Submit Certificate of Substantial Completion	At close-out meeting

**TABLE 01 33 00-1**  
**CONTRACTOR SUBMITTAL SCHEDULE**

<b>Specification Section</b>	<b>Description</b>	<b>Due Date</b>
01 33 00	Progress Photographs	Weekly or as directed by DR
01 33 00	Final Photographs	Prior to final payment request
01 33 00	Project Statistics Report	Monthly
01 35 26	Erosion and Sediment Control Plan	With Environmental Protection Plan
01 35 26	Spill Control Plan	With Environmental Protection Plan
01 35 26	Non-Hazardous Soil Waste Disposal Plan	With Environmental Protection Plan
01 35 26	Contaminant Prevention Plan	With Environmental Protection Plan
01 35 26	Waste Management Plan	With Environmental Protection Plan
01 35 32	Safety Responsibilities	With Site Specific Health and Safety Plan
01 35 32	Site Specific Hazard Assessment	With Site Specific Health and Safety Plan
01 35 32	Safe Work Practices and/or Job Procedures	With Site Specific Health and Safety Plan
01 35 32	PPE Program	With Site Specific Health and Safety Plan
01 35 32	Proof of PPE fit testing for personnel	Prior to task



<b>TABLE 01 33 00-1</b> <b>CONTRACTOR SUBMITTAL SCHEDULE</b>		
<b>Specification Section</b>	<b>Description</b>	<b>Due Date</b>
01 35 32	Air Monitoring Plan	With Site Specific Health and Safety Plan
01 35 32	Emergency Response Plan	With Site Specific Health and Safety Plan
01 35 32	Fire Safety Plan	With Site Specific Health and Safety Plan
01 35 32	Wildlife Management Plan	With Site Specific Health and Safety Plan
01 35 32	Progressive Discipline Policy	With Site Specific Health and Safety Plan
01 35 32	Short Service and New Experienced Workers Management Plan	With Site Specific Health and Safety Plan
01 35 32	Subcontractor Safety Management Plan	With Site Specific Health and Safety Plan
01 35 32	Material Safety Data Sheets	With Site Specific Health and Safety Plan. Changes in materials during Work: upon delivery of materials to site
01 35 32	On-site Contingency and Emergency Plan	With Site Specific Health and Safety Plan
01 35 32	Off-site Contingency and Emergency Plan	With Site Specific Health and Safety Plan
01 35 32	Notice of Project	Prior to commencement of Work
01 35 32	Terms of Use for Firearms	With Site Specific Health and Safety Plan

**TABLE 01 33 00-1**  
**CONTRACTOR SUBMITTAL SCHEDULE**

<b>Specification Section</b>	<b>Description</b>	<b>Due Date</b>
01 35 32	Wildlife Monitor Qualifications and Training Plans	With Site Specific Health and Safety Plan
01 35 32	Incident Reports	Immediate verbal report, written report within 24 hours
01 53 00	Mobilization and Demobilization Plan	Within 10 days following Contract Award
01 53 00	Northwest Territories Operational Statement notification form to DFO area office (ice bridge only)	At least 10 days before starting access road construction
01 71 01	Name and Address of Surveyor	After contract award, prior to Work
01 71 01	Survey Equipment Calibration Certificate Documentation	After contract award, prior to Work
01 71 01	Survey Documentation	Upon request of DR
01 71 01	Final Survey Certificate	Seven days prior to requested final inspection
01 71 01	Drawings	At the request of DR
01 77 00	Completion Certificate	Seven days prior to requested final inspection
01 78 00	Closeout Reporting	Thirty days following project completion

<b>TABLE 01 33 00-1</b>		
<b>CONTRACTOR SUBMITTAL SCHEDULE</b>		
<b>Specification Section</b>	<b>Description</b>	<b>Due Date</b>
02 00 00	Weekly winter road information	Every Monday morning during construction and operation of winter road
02 00 00	Catastrophic Incident Plan (ice bridge only)	Within 10 days following Contract Award
31 23 16.01	Imported Offsite Clean Fill Certificates	As required

**END OF SECTION**

**Part 1 General**

**1.1 RELATED REQUIREMENTS**

- .1 Section 01 33 00 – Submittal Procedures
- .2 Section 01 35 23 – Health and Safety

**1.2 REFERENCES**

- .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 humans; or degrade environment aesthetically, culturally and/or historically.
  - .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.
- .2 Reference Standards.
  - .1 Land Use Permit (Appendix 7).
  - .2 Mackenzie Valley Resource Management Act (S.C. 1998, c. 25, amended April 1, 2014).
  - .3 Mackenzie Valley Land Use Regulations (SOR/98-429, amended September 30, 2013).
  - .4 Northwest Territories Waters Regulations (SOR/93-303, amended September 29, 2014).
  - .5 AANDC Environment, Health and Safety Management System and Standard Operating Procedures Manual (Appendix 10).
  - .6 AANDC Guidelines for Spill Contingency Planning (Appendix 11).
  - .7 Canada Oil and Gas Operations Act (R.S.C., 1985,c.O-7).
  - .8 Canada Oil and Gas Drilling and Product Regulations (SOR/2009-315).
  - .9 NEB Environmental Protection Plan Guidelines (Appendix 13).
  - .10 Northwest Territories Environmental Protection Act [R.S.N.W.T. 1988,c.E-7 amended by R.S.N.W.T. 1988,c.75(Supp.); R.S.N.W.T. 1988,c.117(Supp.); S.N.W.T. 1995,c.11; S.N.W.T. 1998,c.24; S.N.W.T. 1998,c.21; S.N.W.T. 2010,c.16; S.N.W.T. 2011,c.16].
    - .1 Spill Contingency Planning and Reporting Regulations [NWT Reg (Nu) 068-93]
  - .11 Canadian Environmental Protection Act [S.C. 1999,c.33].

- .12 Northwest Territories Safety Act [R.S.N.W.T. 1998,c-S-1 amended by S.N.W.T. 1994,c.15; S.N.W.T. 1994,c.7; S.N.W.T. 1996,c.9; S.N.W.T. 2003,c.25; S.N.W.T. 2004,c.11; S.N.W.T. 2007,c.21; S.N.W.T. 2010,c.16; S.N.W.T. 2014,c.10].
- .13 Canada Occupational Health and Safety Regulations [SOR/86-304].
- .14 Waste Reduction and Recovery Act [S.N.W.T. 2003,c.29 amended by S.N.W.T. 2010,c.16].
- .15 Mackenzie Valley Land and Water Board Guidelines for Developing a Waste Management Plan [March 2011].
- .16 Canadian Council of Ministers of the Environment (CCME) Environmental Quality Guidelines [1999, updated 2014]
- .17 Northwest Territories Transportation of Dangerous Goods Act [R.S.N.W.T. 1988,c.81(Supp) amended by S.N.W.T. 1995,c.11; S.N.W.T. 2008,C.8; S.N.W.T. 2009,c.12]
  - .1 Northwest Territories Transportation of Dangerous Goods Regulations [R-049-2002]

### **1.3 REGULATORY OVERVIEW**

- .1 Comply with all applicable environmental laws, regulations and requirements of Federal, Territorial and other regional authorities, and acquire and comply with such permits, approvals and authorizations as may be required.
- .2 Comply with and be subject to those permits and approvals currently obtained.
- .3 Pay specific attention to the Land Use Permit (Appendix 7) and the National Energy Board legislation and authorizations (with associated conditions).

### **1.4 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for controlled substances that will be used, and include product characteristics, performance criteria, physical size, finish and limitations; and
  - .2 Submit WHMIS MSDS in accordance with Section 01 35 23 – Health and Safety and 01 35 26 – Environmental Protection.
- .3 Submit an Environmental Protection Plan in accordance with Section 9 of the *Canada Oil and Gas Drilling and Production Regulations* to DR within 10 days after Contract Award. Approval required by NEB and MVLWB prior to commencing construction activities or delivery of materials to site.
  - .1 Refer to NEB Environmental Protection Plan Guidelines.

- .4 Environmental Protection Plan must include comprehensive overview of known or potential environmental issues to be addressed during construction.
- .5 Environmental Protection Plan shall include, but is not limited to:
  - .1 Name[s] of person[s] responsible for ensuring adherence to Environmental Protection Plan;
  - .2 Name[s] and qualifications of person[s] responsible for manifesting hazardous waste to be removed from site;
  - .3 Erosion and Sediment Control Plan outlining control structures to be used during operations;
  - .4 Spill Control Plan to include procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance;
  - .5 Non-Hazardous Solid Waste Disposal Plan identifying methods and locations for solid waste disposal;
  - .6 Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Territorial, and Municipal laws and regulations for storage and handling of these materials; and
  - .7 Waste Management Plan identifying methods and procedures for management of drilling cuttings, other solid and liquid wastes, and sanitary waste which are directly derived from Work activities. This should include special provisions for managing hazardous solid and liquid waste. Contractor to identify the method(s) for separating waste materials for reuse and recycling and offsite disposal.

## **1.5 PRECAUTIONARY MEASURES**

- .1 Take every and all precautions to prevent discharge of materials to the environment. This requirement shall be regarded as paramount. All necessary precautions, material, equipment and labour for the prevention of discharges shall be included in the Contract.
- .2 Report all spills of substances introduced to the site by the Contractor, e.g., fuel, lubricants. Adhere to spill reporting requirements as outlined in Territorial and Federal legislation.
- .3 The Contractor shall take all necessary measures to remedy the effects of any spills, whether of hazardous or non-hazardous substances, and shall assume full financial liability for all such remediation measures.

## **1.6 FIRES**

- .1 Fires and burning of rubbish on site is not permitted.

- .2 Minimize volume of flammable materials (e.g. fuels) on site and remove promptly if no longer needed.
- .3 Store all flammable materials in approved containers, labeled and stored away from any sources of ignition.

#### **1.7 PLANT PROTECTION**

- .1 Protect trees and shrubs adjacent to construction work, storage areas and trucking lanes, where possible.
- .2 The Contractor shall leave a buffer strip of undisturbed vegetation between cleared areas and public roads or navigable waterways (see Land Use Permit, Appendix 7).

#### **1.8 WORK ADJACENT TO WATER BODIES**

- .1 Water bodies are to be kept free of wastewater, waste material, sediment and debris.
- .2 Do not pump contaminated water or water containing suspended materials into waterways.

#### **1.9 EROSION AND SEDIMENT CONTROL**

- .1 The Contractor shall construct erosion and sediment control measures as authorized in writing by an Inspector designated by the Minister under the Mackenzie Valley Resource Management Act.
- .2 The Contractor shall install and maintain erosion and sediment control structures as the land use operation progresses.
- .3 The land use operation shall not cause obstruction to any natural drainage.
- .4 The Contractor shall ensure that positive drainage and sheet flow conditions are maintained at the site.
- .5 Prevent cleared soil and excavated earth stockpiled on site from being eroded by rain, snow melt or wind.
- .6 Mud/sediment tracked on to snow roads, ice bridge and ramps (if applicable) to be removed routinely and stockpiled/disposed in a manner to prevent the possibility of sediment in runoff from the area during snow thaw conditions. Disposal location for sediment contaminated snow/ice to be approved by DR.

#### **1.10 POLLUTION CONTROL**

- .1 Maintain temporary pollution control features installed under this Contract.
- .2 Control emissions from equipment and plant in accordance with local authorities' emission requirements.

- .3 No on-site sanitary wastewater servicing is available. The Contractor will arrange for all necessary temporary sanitary wastewater servicing during the duration of the work. Grey water and sanitary wastewater generated by the Contractor shall be treated in an off-site sewage treatment facility. Untreated wastes shall not be permitted to enter water bodies.
- .4 Garbage shall be collected daily. Solid wastes generated within the work area shall be stored on site in a secure area and disposed of in a licensed waste disposal facility.
- .5 Other solid wastes, such as used personal protective clothing, spent sampling materials, will be containerized. This material will be placed in an on-site refuse bin for subsequent off-site disposal by the Contractor.
- .6 Drilling wastes will be containerized. This material will remain contained on-site for subsequent off-site disposal by the Contractor.

#### **1.11 EQUIPMENT AND VEHICLES**

- .1 Vehicle and equipment maintenance shall occur in designated areas at the work site. All maintenance fluids shall be contained, handled and disposed of in accordance with territorial regulations and the Land Use Permit. Spillage of vehicle fluids on the ground is prohibited. Spills must be reported to the 24-Hour Spill Report Line by calling (867) 920-8130 (collect calls are accepted), using the Spill Report Form (on the Northwest Territories Environment and Natural Resources website), fax at (867) 873-6924, or email at [spills@gov.nt.ca](mailto:spills@gov.nt.ca).
- .2 All equipment and vehicles shall be equipped with a suitable dry chemical fire extinguisher.
- .3 Refuelling of on-site vehicles and equipment, shall be undertaken at a location approved by the DR.

#### **1.12 FUEL AND OTHER HAZARDOUS SUBSTANCES**

- .1 Fuel transfers shall be attended by a qualified person for the duration of the operation and performed in a manner that avoids spilling of fuel on the ground or into adjacent waterways.
- .2 Provide adequate emergency equipment, including sorbants, booms, etc. necessary to control accidental loss of hydrocarbon product around vehicles or from areas adjacent to waterways.
- .3 Contractor to ensure that all equipment be free of contaminants before arrival at the site.



**1.13 DISPOSAL OF HAZARDOUS MATERIAL**

- .1 Potentially hazardous materials (such as plug/drill cuttings, drilling fluids, drilling wastes, and excavated soils) should be disposed of appropriately as per the approved Waste Management Plan.
- .2 Approval must be obtained in writing from DR before any materials are removed from the site.
- .3 Manage hazardous materials in accordance with the Section 01 35 23 – Health and Safety.

**1.14 NOTIFICATION**

- .1 DR will notify Contractor in writing of observed noncompliance with Federal, Territorial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection Plan.
- .2 Contractor: after receipt of such notice, inform DR of proposed corrective action and take such action for approval by DR.
  - .1 Take action only after receipt of written approval by DR.
- .3 DR will issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or price adjustments allowed to Contractor for such suspensions.

**1.15 CLOSURE**

- .1 Erosion and Sediment Control measures to remain in place upon closure, as directed by the DR.
- .2 Contractor to ensure that the measures are suitable for snow melt/spring thaw conditions.
- .3 Contractor shall conform to the requirements stipulated in the Land Use Permit.

**1.16 METHOD OF PAYMENT**

- .1 Work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3          Execution**

**3.1              NOT USED**

.1          Not Used.

**END OF SECTION**

**Part 1 General**

**1.5 RELATED SECTIONS**

- .2 Section 01 33 00 – Submittal Procedures.

**1.6 REFERENCES**

- .2 Northwest Territories Safety Act [R.S.N.W.T. 2003].
  - .1 General Safety Regulations [R.R.N.W.T. 1990,c.S-1 amended by R.R.N.W.T. 1990,C.S-1(Supp.); R-028-93; R-096-93; R-072-95; R-135-98; and R-079-2000 (CIF 01/12/2000)]
- .3 Northwest Territories Transportation of Dangerous Goods Act [R.S.N.W.T. 1998,c.81(Supp.) amended by S.N.W.T. 1995,c.11; S.N.W.T. 2008,c.8; and S.N.W.T. 2009,c.12)
- .4 Transportation of Dangerous Goods Regulations [R-049-2002].
- .5 Canada Labour Code, Canada Occupational Safety and Health Regulations [2002].
- .6 Canadian Centre for Occupational Health and Safety guidelines and information.
- .7 OSHA hydrogen sulfide information and standards:  
<https://www.osha.gov/SLTC/hydrogensulfide/standards.html>, accessed September 8, 2014.
- .8 Canada Oil and Gas Drilling and Product Regulations (SOR/2009-315).
- .9 Canada Oil and Gas Operations Act (R.S.C., 1985,c.O-7).
- .10 AANDC Guidelines for Spill Contingency Planning (Appendix 11).

**1.7 SAFETY PLAN**

- .2 Develop written Site Specific Health and Safety Plan based on hazard assessment prior to commencing any site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Site Specific Health and Safety Plan must address project specifications.
  - .1 Refer to Section 8 of the *Canada Oil and Gas Drilling and Production Regulations*.
- .3 DR may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

## **1.8 RESPONSIBILITY**

- .2 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .3 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
- .4 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, advise DR verbally and in writing.
- .5 Follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Authorities Having Jurisdiction.
- .6 Maintain and complete all health and safety, fire safety, and environmental compliance activities in accordance with applicable sections and Authorities Having Jurisdiction.
- .7 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and provision of material safety data sheets acceptable to Labour Canada and Health and Welfare Canada.

## **1.9 TRAINING AND TESTING REQUIREMENTS**

- .2 The Contractor shall ensure that all workers have all required training prior to arriving onsite.
  - .1 Construction Safety Training System (CSTS) or Petroleum Safety Training (PTS).
  - .2 H<sub>2</sub>S Alive. Training certificates must be carried and provided to the DR if requested.
- .3 Well control training.
  - .1 The driller must possess a valid Enform First Line Supervisor's Blowout Prevention certificate.
  - .2 The rig manager must possess a valid Enform Second Line Well Control certificate.
- .4 Respirator fit testing.
  - .1 Submit proof of respirator fit testing for appropriate site personnel prior to task.

## **1.10 SUBMITTALS**

- .2 Make submittals in accordance with Section 01 33 00.

- .3 Submit site-specific Health and Safety Plan: Within 10 days after date of Contract Award and prior to commencement of Work. Health and Safety Plan must include:
  - .1 Safety Responsibilities of all on-site personnel;
  - .2 Results of site specific safety hazard assessment. Hazards may include but are not limited to:
    - .1 Residual gas pressure in wellbores;
    - .2 Fire;
    - .3 Forest fire;
    - .4 Explosion;
    - .5 H<sub>2</sub>S gas leaks;
    - .6 Brackish water flow;
    - .7 Uneven terrain;
    - .8 Wildlife hazards including bears and large mammals;
    - .9 Unauthorized site personnel;
    - .10 Overgrowth on site;
    - .11 Aquatic dangers related to Hay River being close to well site and impeding site access (including ice bridge if applicable);
    - .12 Working near water;
    - .13 General debris (tripping hazards, etc.);
    - .14 Waste products and drilling chemicals;
    - .15 Confined spaces;
    - .16 Low oxygen environment;
    - .17 Cold weather;
    - .18 Ice (ice roads and ice bridge, if applicable);
    - .19 Heavy equipment;
    - .20 Noise;
    - .21 Natural disasters;
    - .22 Skin hazards;
    - .23 Hand protection;
    - .24 Rotating equipment/mechanical hazards;
    - .25 Danger of unexpected movement of machinery;
    - .26 Winter lighting;
    - .27 Electrocution;
    - .28 Manual lifting;
    - .29 Lifting/ hoisting; and
    - .30 Vehicle operation in congested areas.

- 
- .3 Safe Work Practices and/or Job Procedures, including but not limited to:
    - .1 Procedures dealing with temperature extremes (heat and/or cold stress);
    - .2 Confined space entry procedures (if applicable);
    - .3 Drum handling procedures;
    - .4 Fall arrest procedures (if applicable);
    - .5 Spill containment program of waste materials if it is generated; excavated, stored, or managed on site;
    - .6 Decontamination procedures for both personnel and equipment; and
    - .7 Safe driving, including as a minimum:
      - .1 Cell phone usage;
      - .2 Winter driving safety;
      - .3 Using and driving on winter road and/or ice bridge;
      - .4 Hours of operations; and
      - .5 Required safety equipment.
  - .4 Procedures for, but not limited to, cold weather survival, remote Work and general worker health and safety;
  - .5 Name and telephone number of Contractor's corporate Safety Officer and on-site Safety Representative;
  - .6 PPE Program addressing:
    - .1 Donning and doffing procedures;
    - .2 PPE selection based upon site hazards;
    - .3 PPE use and limitations of equipment;
    - .4 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 PPE use; and
    - .9 Written respiratory protection program for project activities.
  - .7 Air Monitoring Plan;
    - .1 Frequency and types of air monitoring, sampling techniques and instrumentation to be used, including methods of maintenance and calibration of monitoring and sampling equipment.
      - .1 Four gas personal monitor.
    - .2 H<sub>2</sub>S air monitoring program.

- .1 Refer to Clause 1.19.
- .8 Emergency Response Plan;
  - .1 Prepare with information obtained from appropriate Authorities Having Jurisdiction, including hospitals, RCMP, Ministry of Transportation, and Ministry of Health. Plan will identify off site Emergency Response Coordinator through whom all information and coordination will flow in the event of an incident.
- .9 Fire Safety Plan;
  - .1 To meet or exceed the most recent editions of the following codes and standards:
    - .1 National Fire Code of Canada; and
    - .2 Canada Labour Code.
- .10 Spill Contingency Plan;
  - .1 Identify response capabilities by detailing response times, and types and volumes of spills to which Contractor can respond.
    - .1 Refer to AANDC Guidelines for Spill Contingency Planning (Appendix 11).
    - .2 Refer to NEB requirements under the Canada Oil and Gas Operations Act (R.S.C., 1985,c.O-7).
- .11 Wildlife Management Plan;
  - .1 Bear and large mammal safety procedures, and the qualifications and training plans for designated Wildlife Monitors.
- .12 Progressive Discipline Policy (Balance of Consequences);
  - .1 Maintain a written progressive discipline process detailing how safety infractions are dealt with.
- .13 Short Service and New Experienced Workers Management Plan; and
  - .1 The Contractor's Health and Safety Plan must address how Short Service Workers and New Experienced Workers will be managed
  - .2 "Short Service Workers" are employees that are new to their trade.
  - .3 "New Experienced Workers" are Workers who are experienced in their trade, craft and job skills but have been employed by the Contractor for a short time.
- .14 Subcontractor Safety Management Plan.
  - .1 The Contractor's Safety Program shall outline how sub-contractors will be managed to ensure compliance with their Safety Program and expectations and how these will be verified in the field.
- .4 Submit copies of reports or directions issued by Federal and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.

- .6 Submit Material Safety Data Sheets (MSDS) to DR.
- .7 DR will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 7 days after receipt of plan. Contractor shall revise plan as appropriate and resubmit plan to DR within 7 days after receipt of comments from DR.
- .8 DR's review of Contractor's final Health and Safety Plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .9 Medical Surveillance: Where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to DR.
- .10 On-site Contingency and Emergency Response Plan: Address standard operating procedures to be implemented during emergency situations. At a minimum, include the following:
  - .1 All individuals accessing the site must sign in and out with the Site Supervisor;
  - .2 In the event of an emergency, where evacuation of the site is necessary, a muster point must be designated a safe distance from the work area. The location of this muster point must be communicated to all site personnel;
  - .3 A method of signalling an emergency and evacuation of the site must be agreed upon and communicated prior to commencing work;
  - .4 Know the location of the nearest telephone, including the emergency phone number;
  - .5 Report immediately all fire incidents to: Hay River Fire Department (867-874-2222). All environmental emergencies to be reported to: NWT Spills Report Line (867-920-8130);
  - .6 When reporting a fire by telephone, give location of fire, name or number of telephone being used, and the name of the caller; and
  - .7 H<sub>2</sub>S contingency plan.
- .11 Off-site Contingency and Emergency Response Plan.
  - .1 Prior to commencing Work involving handling of hazardous materials, develop off-site Contingency and Emergency Response Plan.
  - .2 Plan must provide immediate response to serious site occurrence such as explosion, fire, or migration of significant quantities of toxic or hazardous material from site.
- .12 File Notice of Project with Federal Authorities Having Jurisdiction prior to commencement of Work.



#### **1.11 PERMITS TO WORK**

- .2 The Contractor shall utilize a permit to work system as per their Safety Program and include the details in the submitted Site-specific Health and Safety Plan.
- .3 As a minimum, special permits shall be required for:
  - .1 Confined Space Entry;
  - .2 Hot Work;
  - .3 Lock-out/Tag-out;
  - .4 Critical safety device bypass (e.g. crown saver); and
  - .5 Third party activity.
- .4 Permits shall be available onsite for review by the DR.

#### **1.12 SAFETY ACTIVITIES**

- .2 Perform site specific safety hazard assessment related to project.
- .3 Schedule and administer Health and Safety meeting prior to commencement of Work.
- .4 Conduct safety meetings with workers engaged in outdoor Work under summer or winter conditions. Topics must include hot and cold stress, exhaustion, buddy systems, and any other items inherent in working outdoors in winter in isolated environments.

#### **1.13 HEALTH AND SAFETY COORDINATOR**

- .2 Employ and assign to Work, competent and authorized representative as on-site Health and Safety Coordinator. Health and Safety Coordinator must:
  - .1 Have minimum two years' site-related working experience specific to activities associated with oil and gas well drilling/abandonment;
  - .2 Have working knowledge of occupational safety and health regulations;
  - .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work; and
  - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

#### **1.14 POSTING OF DOCUMENTS**

- .2 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Territory having jurisdiction, and in consultation with DR.
- .3 Comply with Work Site Hazardous Materials Information System Regulations of the Authorities Having Jurisdiction.

- .4 Provide DR with Material Safety Data Sheets (MSDS) and documentation on any "hazardous" chemical that the Contractor plans to bring onto site; bound in one place and stored in accordance with the site-specific Health and Safety Plan.

#### **1.15 SITE CONTROL**

- .2 Control access to the site. Persons with business at the site and who are not Contractor's employees must be briefed on site specific health and safety issues, and provided access to the Site Specific Health and Safety Plan.
- .3 Contractor to provide site security, as required.
- .4 Contractor may refuse access to the site to any person not complying with site specific health and safety standards.
- .5 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
  - .1 Conduct appropriate safety training for all personnel working on the site.
  - .2 Conduct Work place safety inspections for all Work activities.

#### **1.16 CORRECTION OF NON-COMPLIANCE**

- .2 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by DR.
- .3 Provide DR with written report of action taken to correct non-compliance of health and safety issues identified.
- .4 DR may stop Work if non-compliance of health and safety regulations is not corrected.

#### **1.17 PROJECT/SITE CONDITIONS**

- .2 Work at site will involve potential contact with, but not limited to:
  - .1 General site debris (mostly metal debris);
  - .2 Winter road/ice bridge;
  - .3 Natural gas;
  - .4 Hydrogen sulfide gas (H<sub>2</sub>S, sour gas); and
  - .5 Petroleum hydrocarbons.

#### **1.18 WORK SITE COORDINATION**

- .2 The Contractor shall notify the DR of any planned activity that could create additional risk for other contractors, such as upcoming rig moves.

#### **1.19 SITE COMMUNICATIONS**

- .1 Post emergency numbers near site telephones.

- .2 Ensure personnel use of "buddy" system and develop hand signal system appropriate for site activities.
- .3 Provide employee alarm system to notify employees of site emergency situations or to stop Work activities if necessary.
- .4 Furnish selected personnel with 2-way radios.
- .5 Safety Meetings: conduct mandatory daily safety meetings for personnel, including, but not limited to:
  - .1 Pre-job Safety Meeting;
    - .1 A Pre-job Safety meeting will be conducted by the Contractor with all subcontractors and the DRs in Hay River prior to starting work onsite.
    - .2 As a minimum the Pre-job Safety meeting will address the planned scope of work, site specific hazards, hazard awareness, the contractor's permit to work system and incident reporting procedures.
  - .2 Tailgate/Safety Meetings;
    - .1 Tailgate/Safety meetings shall be conducted at each work site immediately prior to each crew starting work.
    - .2 The tailgate meetings shall include planned work and hazard assessment.
      - .1 Tailgate meetings shall be documented including accountability and responsibility assigned to designated personnel.
      - .2 The site specific hazard assessment will be reviewed at each pre-shift tailgate meeting noting any changes in site conditions, road conditions, and other work being conducted in the area.
      - .3 Records of all of these meetings are to be submitted to the DR.
  - .3 Additional meetings as required by special or work-related conditions; and
  - .4 Safety meetings and discussions must be documented with DR.

#### **1.20 HAZARD COMMUNICATION REQUIREMENTS**

- .2 Comply with Work Site Hazardous Materials Information System (WHMIS) Regulations, R.R.N.W.T.
- .3 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations, Part X - Hazardous Substances.

**1.21 WORK STOPPAGE**

- .2 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.
- .3 Assign responsibility and obligation to Health and Safety Officer where required to stop or start Work when, at Health and Safety Officer's discretion, it is necessary or advisable for reasons of health or safety.
- .4 DR has the authority to stop Work on the contract if, in his/her opinion, the Work is being performed in an unsafe manner as required by the applicable safety legislation.

**1.22 UNFORESEEN HAZARDS**

- .1 Should unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, stop work and immediately advise DR verbally and in writing.

**1.23 AIR MONITORING**

- .2 Air Monitoring Program.
  - .1 Contractor to develop air monitoring program meeting specified requirements, including the identification of minimum site monitoring equipment (two permanent air monitoring stations), personal monitoring devices (four gas personal monitors) and regulation H<sub>2</sub>S exposure thresholds and action levels for respiratory protection and/or work stoppage.
  - .2 During progress of work activities, monitor air quality in and around work zones. Conduct monitoring on regular periodic basis (24 hours per day for the entire rig work), and additionally as required by special or work-related conditions. Report departures from general background to DR who will, in conjunction with Health and Safety Officer, determine when operations should be shut down and restarted.
  - .3 Monitoring equipment used within potentially contaminated work areas with combustible gases must be intrinsically safe.
  - .4 Operate air monitoring equipment with personnel trained in equipment provided and under control of Health and Safety Officer.
  - .5 Conduct air monitoring on routine basis around active work locations. Perform hourly monitoring minimum and additionally as dictated by site activities.
  - .6 Furnish wind speed and direction indicator capable of providing permanent record, at unobstructed location on site located above elevation of work area with unobstructed view to affected workers.

**1.24 FIRE PROTECTION**

- .2 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction governing codes, regulations and bylaws.
- .3 Implement a fire safety program that includes fire prevention, fire protection and fire fighting requirements. Submit details of the fire safety program in writing to DR for review prior to start of construction. Such review does not relieve Contractor from any obligations or responsibilities required by the Contract.
- .4 Ensure that any Subcontractors and other Contractor personnel on-site are briefed on fire safety requirements and are familiar with the fire prevention, fire protection and fire fighting program.
- .5 Burning rubbish and construction waste materials is not permitted on site.
- .6 Maintain placed or installed fire resistive construction to protect the portions of the Work during construction.
- .7 Personnel designated for fire fighting services must be provided with training for any special hazards that may be present. These personnel must also be provided with protective equipment as required by the Canada Labour Code.
- .8 A person discovering a fire and all fire related incidents will report immediately, by fastest available means, to DR and site superintendent.
- .9 A person discovering a fire will if possible, remain in the vicinity to direct fire fighting personnel.
- .10 Provide and maintain fire extinguishers in sufficient quantity to protect, in an emergency, the Work in progress and the physical plant on site.
- .11 Maintain access to property including overhead clearances for use by emergency response vehicles.

**1.25 SMOKING PRECAUTIONS**

- .2 Do not permit smoking within Work and restricted 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.

**1.26 FLAMMABLE LIQUIDS**

- .2 The handling, storage and use of flammable liquids will be governed by the current National Fire Code of Canada.
- .3 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 the permission of the permitting authority.

- .4 Do not transfer flammable liquids in the vicinity of open flames or any type of heat-producing devices.
- .5 Do not use flammable liquids having a flash point below 38°C such as naphtha or gasoline as solvents or cleaning agents.
- .6 Store flammable waste liquids, for disposal, in approved containers located in a safe ventilated area. Quantities are to be kept to a minimum and DR is to be notified when disposal is required.
- .7 Dispose of all flammable liquids in accordance with all applicable environmental regulations.

## **1.27 FUEL MANAGEMENT**

- .2 Vehicle and equipment refuelling.
  - .1 All vehicle and equipment refuelling must be conducted by appropriately trained personnel using the effective PPE in a manner which meets or exceeds regulatory requirements.
  - .2 Records of fuel usage by activity must be maintained.
- .3 Fuel transport.
  - .1 All fuel transports including mobile refuelling trucks and fuel transport to stationary equipment such as generators or pumps or distributed areas, must occur in approved (CSA) containers with the notification and consent of site safety personnel.

## **1.28 WILDLIFE MANAGEMENT**

- .2 Develop a Wildlife Management Plan that includes bear and large mammal safety and as a minimum meets the following requirements:
  - .1 Firearms must be stored and used in accordance with all Authorities Having Jurisdiction.
  - .2 All wildlife encounters and sightings must be reported to DR.
  - .3 All persons on site must be made aware of wildlife attractants and proper procedures to be followed in the event of wildlife encounter.
  - .4 A minimum of one person must be designated as a Wildlife Monitor for each Separated Work Group and trained in firearms and wildlife deterrent use. Qualifications and training plans for Wildlife Monitors must be submitted to DR as part of the Site Specific Health and Safety Plan.

**1.29 SAFETY PPE**

- .2 Provide 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.
- .3 Personal Protective Equipment (PPE), including but not limited to:
  - .1 Furnish site personnel with appropriate PPE as required by legislation;
  - .2 Furnish DR and other site visitors (5 people) with a respirator(s) and four gas personal monitor;
  - .3 Verify that safety equipment and protective clothing is kept clean and well maintained;
  - .4 Verify that procedures are strictly followed by site personnel including, but not limited to, the following:
    - .1 Provisions for prescription eyeglasses with side shields worn as safety glasses and do not permit contact lenses on site within Work zones; and
    - .2 Provisions, for footwear, are steel toed safety shoes or boots.
  - .5 Outline and designate minimum PPE for each site and Work activity in accordance with Authorities Having Jurisdiction;
  - .6 Establish levels of protection for each Work Area based on planned activity and location of activity;
  - .7 Ensure workers receive training specific to the PPE requirements for working with H<sub>2</sub>S including safe handling, disposal and emergency procedures (H<sub>2</sub>S Alive as per National Energy Board legislation);
  - .8 Respiratory Protection:
    - .1 Provide site personnel with extensive training in usage and limitations of, and qualitative fit testing for, air purifying and supplied-air respirators in accordance with specified regulations;
    - .2 Develop, implement, and maintain respirator program;
    - .3 Monitor, evaluate, and provide respiratory protection for site personnel;
    - .4 Ensure levels of protection as listed have been chosen consistent with site-specific potential airborne hazards associated with major contaminants identified on site;
    - .5 Immediately notify DR when level of respiratory protection required increases;
    - .6 Ensure appropriate respiratory protection during work activities. As minimum requirement, ensure that persons entering potentially contaminated work areas are supplied with and use appropriate respiratory protection;

- .7 Assess ability for site personnel to wear respiratory protection; and
  - .8 Ensure site personnel are able to pass respirator fit test prior to entering potentially contaminated work areas.
- .4 Temperature Extremes (heat and/or cold stress).
  - .1 Implement monitoring program as applicable and include in site-specific Health and Safety Plan.
- .5 Personnel Hygiene and Personnel Decontamination Procedures. Provide minimum as follows:
  - .1 Suitable containers for storage and disposal of used disposable PPE.
  - .2 Potable water and suitable sanitation facility.
- .6 Emergency and First-Aid Equipment.
  - .1 Locate and maintain emergency and first-aid equipment in appropriate location on site including first-aid kit to accommodate number of site personnel; portable emergency eye wash; minimum four 9 kg ABC type dry chemical fire extinguishers.
  - .2 As minimum, provide 1 certified first-aid technician on site at all times when work activities are in progress.

### **1.30 INCIDENTS AND INCIDENT REPORTING**

- .2 All near incidents and near misses must be verbally reported immediately to the DR.
- .3 If a serious incident occurs (such as a 'lost time' incident), the site will be shutdown and all site work will stop until the incident scene can be surveyed and photographs or other pertinent information collected that will allow a further investigation.
- .4 Conduct drug and alcohol testing after all serious incidents and significant near misses, unless clear evidence an individual's performance/non-performance could not have been a contributing factor. (e.g.: obvious structural failure).
- .5 The Contractor shall provide an initial notification of the incident (within 4 hours) to the DR that shall include a description of incident, location, date, time, type of work being completed at the time of incident.
- .6 Immediately report, verbally, followed by a written report within 24 hours, to DR, all incidents 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 DR by telephone or facsimile in addition to any report required under federal and territorial laws and regulations.



- .7 If a claim is made by anyone against Contractor or Sub-Contractor on account of any incident/accident, promptly report the facts in writing to DR, giving full details of the claim.

**1.31 METHOD OF PAYMENT**

- .1 Work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

**Part 2 Products**

**2.5 NOT USED**

- .2 Not Used.

**Part 3 Execution**

**3.5 NOT USED**

- .2 Not Used.

**END OF SECTION**

**Part 1 General**

**1.1 REFERENCES AND CODES**

- .1 Perform Work in accordance with National Building Code of Canada (NBC) including all amendments and other codes of territorial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Meet or exceed requirements of:
  - .1 Contract documents.
  - .2 Specified standards, codes and referenced documents.
- .3 Use latest version of all specified standards, codes and referenced documents.
- .4 Perform Work in accordance with the Specifications and meet or exceed all codes, standards and regulations applicable to the Government of Canada and the Government of Northwest Territories. Advise the DR of any discrepancies in the codes, standards and regulations applicable to the Work.

**1.2 REFERENCES AND CODES – FEDERAL**

- .1 Meet or exceed the governing codes, standards and guidelines, and regulations applicable to Work and issued under the authority of the Government of Canada/AANDC including, but not limited to, the following:
  - .1 AANDC, 2007. Guidelines for Spill Contingency Planning.
  - .2 Canada Oil and Gas Operations Act (R.S.C., 1985,c.O-7).
  - .3 Canada Oil and Gas Drilling and Product Regulations (SOR/2009-315).
  - .4 NEB, 2001. Environmental Protection Plan Guidelines.
  - .5 Canadian Environmental Protection Act [S.C. 1999,C.33].
  - .6 Canada Occupational Health and Safety Regulations [SOR/86-304].
  - .7 Canada Water Act [R.S.C., 1985,c.C-11].
  - .8 Canadian Council of Ministers of the Environment (CCME) Environmental Quality Guidelines [1999, updated 2014]
  - .9 Canada Labour Code, Canada Occupational Safety and Health Regulations [2002].
  - .10 CSA Canadian Electrical Code (2012).
  - .11 AANDC, 2007. Northern Land Use Guidelines, Access: Roads and Trails.
  - .12 Mackenzie Valley Resource Management Act (S.C. 1998, c. 25, amended April 1, 2014).
  - .13 Mackenzie Valley Land Use Regulations (SOR/98-429, amended September 30, 2013).

- .14 Mackenzie Valley Land and Water Board, 2011. Guidelines for Developing a Waste Management Plan.

### **1.3 REFERENCES AND CODES – NORTHWEST TERRITORIES**

- .1 Meet or exceed the governing codes, standards and guidelines, and regulations applicable to Work and issued under the authority of the Government of Northwest Territories including, but not limited to, the following:
  - .1 Northwest Territories Environmental Protection Act [R.S.N.W.T. 1988,c.E-7 amended by R.S.N.W.T. 1988,c.75(Supp.); R.S.N.W.T. 1988,c.117(Supp.); S.N.W.T. 1995,c.11; S.N.W.T. 1998,c.24; S.N.W.T. 1998,c.21; S.N.W.T. 2010,c.16; S.N.W.T. 2011,c.16].
  - .2 Spill Contingency Planning and Reporting Regulations [NWT Reg (Nu) 068-93]
  - .3 Northwest Territories Safety Act [R.S.N.W.T. 1998,c-S-1 amended by S.N.W.T. 1994,c.15; S.N.W.T. 1994,c.7; S.N.W.T. 1996,c.9; S.N.W.T. 2003,c.25; S.N.W.T. 2004,c.11; S.N.W.T. 2007,c.21; S.N.W.T. 2010,c.16; S.N.W.T. 2014,c.10].
  - .4 Waste Reduction and Recovery Act [S.N.W.T. 2003,c.29 amended by S.N.W.T. 2010,c.16].
  - .5 Northwest Territories Transportation of Dangerous Goods Act [R.S.N.W.T. 1988,c.81(Supp) amended by S.N.W.T. 1995,c.11; S.N.W.T. 2008,C.8; S.N.W.T. 2009,c.12]
    - .1 Northwest Territories Transportation of Dangerous Goods Regulations [R-049-2002]
  - .6 Northwest Territories Safety Act [R.S.N.W.T. 2003].
    - .1 General Safety Regulations [R.R.N.W.T. 1990,c.S-1 amended by R.R.N.W.T. 1990,C.S-1(Supp.); R-028-93; R-096-93; R-072-95; R-135-98; and R-079-2000 (CIF 01/12/2000)]
  - .7 Department of Transportation, NWT, 2007. A Field Guide to Ice Construction Safety.
  - .8 Northwest Territories Waters Regulations (SOR/93-303, amended September 29, 2014).

### **1.4 PERMITS AND LICENSES**

- .1 The following permit is provided to the Contractor:
  - .1 Land Use Permit and Associated Application (Appendix 7).
  - .2 NEB approvals.
    - .1 Refer to Clause 1.6.3 in Section 01 10 00 – Summary of Work for Alter Condition of Well pre-approval pending the submittals

related to the terms and conditions of the Operations  
Authorization.

- .2 Any deviations from the current plan may require Land Use Permit amendments or field authorizations. Notify DR of any proposed deviations so AANDC can contact the MVLWB to obtain approval for the deviation.
- .3 Obtain all required permits for the abandonment/re-abandonment of the gas wells and the general construction requirements for the Work.
- .4 A timber cutting permit may be required depending on the amount of clearing.

## **1.5 METHOD OF PAYMENT**

- .1 Work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not Used.

## **Part 3 Execution**

### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1 General**

**1.1 REFERENCES**

- .1 CSA Canadian Electrical Code (2012).

**1.2 ACTION AND INFORMATIONAL SUBMITTALS**

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

**1.3 GENERAL**

- .1 Provide all temporary utilities consisting of the design, supply, construction, maintenance, operation and removal of the utilities and services required to undertake the Work.
- .2 Temporary utilities shall meet requirements of Land Use Permit issued for Work (Appendix 7), satisfy requirements of Authorities Having Jurisdiction and comply with the requirements of Section 01 35 26 – Environmental Protection.

**1.4 WATER SUPPLY**

- .1 Provide supply of non-potable and potable water necessary to complete the Work.
- .2 Provide DR with access to water supply.

**1.5 TEMPORARY POWER AND LIGHT**

- .1 The site is not currently serviced with electricity.
  - .1 Contractor shall provide and pay for all temporary power required to execute the Work.
  - .2 Provide and maintain temporary lighting throughout project.

**1.6 TEMPORARY COMMUNICATION FACILITIES**

- .1 Provide and pay for temporary telephone, fax, and data hook up lines and equipment necessary for Contractor use and use of DR.

**1.7 FIRE PROTECTION**

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by governing codes, regulations and bylaws.
- .2 Burning rubbish and construction waste materials is not permitted on site.
- .3 Maintain access to property including overhead clearances for use by emergency response vehicles.

**1.8 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.

**1.9 SANITARY FACILITIES**

- .1 Provide sanitary facilities for work force and DR in accordance with governing regulations and ordinances and in accordance with the Land Use Permit.
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

**1.10 CONSTRUCTION SIGNAGE**

- .1 Maintain approved signs and notices in good condition for duration of project, and dispose of offsite on completion of project or earlier if directed by DR.

**1.11 OFFICES**

- .1 Provide site office, heated, lighted and ventilated, of sufficient size to accommodate site meetings and furnish with a drawing laydown table. Office to have a 900 mm x 1500 mm layout surface minimum c/w chairs.
- .2 Provide a clearly marked and fully stocked first-aid case in a readily available location.
- .3 Subcontractors may provide their own offices as necessary. Direct location of these offices.
- .4 Maintain in clean condition.
- .5 Provide DR with a minimum floor space of 10 m<sup>2</sup> unless less spaces is accepted by writing by DR. Furnish with the following:
  - .1 One double-pedestal desk with a top surface not less than 150 cm by 75 cm.
  - .2 One desk chair.

**1.12 METHOD OF PAYMENT**

- .1 Work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3          Execution**

**3.1              INSTALLATION AND REMOVAL**

- .1      Provide temporary utilities to facilitate all construction activities.
- .2      Remove temporary utilities from site after work is complete.

**END OF SECTION**

**Part 1 General**

**1.1 GENERAL**

- .1 If an ice bridge and/or winter road is used, it cannot be used after March 31 per the Land Use Permit.
- .2 Provide all labour, equipment and materials, and performance of all Work necessary for mobilization to, and demobilization from the site. This will include all DR provided supplies, equipment and material.
- .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, facilities and materials, cleanup of site and transportation of labour from site.
- .5 Do not mobilize to the site without written authorization from the DR.
- .6 Mobilization shall indicate that the Contractor accepts existing conditions at the site.
- .7 All mobilization and demobilization methods to comply with the requirements of all applicable codes, standards, guidelines and AANDC permits, approvals and/or authorizations.
- .8 A Pre-Mobilization site visit will be required as per Section 01 31 19 – Project Meetings.
- .9 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 MOBILIZATION AND DEMOBILIZATION PLAN AND EQUIPMENT LIST**

- .1 Provide a Mobilization and Demobilization Plan which shall include, but not be limited to, the following items:
  - .1 Proposed mode(s), route, and timing;
  - .2 Construction design and plan;
  - .3 In-transit storage and staging areas;
  - .4 Equipment, labour and other requirements;
  - .5 Equipment and materials to be brought to site to complete the Work, as indicated in these specifications.



- .2 Compile a complete List of Equipment comprised of manufacturer name, model number, year, and hours for equipment that is being mobilized to site and submit to DR.

### **1.3 SITE ACCESS**

- .1 Design ice road (if proposed site access method by Contractor).
- .2 Construct ice road (if proposed site access method by Contractor).
- .3 Clear fireguard route (if proposed site access method by Contractor).
- .4 Construct other necessary winter roads proposed by Contractor.

### **1.4 SUBMITTALS**

- .1 Submit Mobilization and Demobilization Plan and List of Equipment in accordance with Section 01 33 00 – Submittal Procedures for review by DR.
- .2 If ice bridge is the site access method:
  - .1 Contractor to contact DFO about planned operations.
  - .2 Contractor shall notify DFO at least 10 working days before starting access road construction by filling out and sending the Northwest Territories Operational Statement notification form to the DFO area office.

### **1.5 METHOD OF PAYMENT**

- .1 Mobilization and demobilization of all labour, equipment and materials necessary to complete the Work, including but not limited to mobilization and demobilization between well locations is to be included in the lump sum for Mobilization/Demobilization (01 53 00-1).
- .2 Supply, construction, operation, maintenance and decommissioning of all site access to the well locations, including but not limited to design, clearing and grubbing, winter road construction and maintenance, ice bridge construction and maintenance (if applicable), waste and spoil handling and disposal is to be included in the lump sum for Site Access (01 53 00-2).
- .3 Except as indicated above, work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not Used.

**Part 3          Execution**

**3.1               NOT USED**

.1          Not Used.

**END OF SECTION**

**Part 1 General**

**1.1 GENERAL REQUIREMENTS**

- .1 Limit site access to authorized personnel.
- .2 Lock-down all on-site equipment at the end of each day.
- .3 Work within noise restriction hours and other times specified by the authorities having jurisdiction.

**1.2 GUARD RAILS AND BARRICADES**

- .1 Provide secure, rigid guard rails and barricades around deep excavations, and any other potentially dangerous areas.
- .2 Provide as required by governing authorities.
- .3 When working at heights, temporary guard rails and barricades are potential forms of fall protection.

**1.3 ACCESS TO SITE**

- .1 Provide and maintain access roads, and throughways as may be required for access to Work.

**1.4 PUBLIC TRAFFIC FLOW**

- .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public.

**1.5 FIRE ROUTES**

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

**1.6 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.

**1.7 METHOD OF PAYMENT**

- .1 Work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 INSTALLATION AND REMOVAL**

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove temporary controls from site when Work is complete.

**END OF SECTION**

**Part 1        General**

**1.1            QUALIFICATIONS OF SURVEYOR**

- .1      Qualified registered land surveyor, licenced to practice in the Northwest Territories, acceptable to DR.

**1.2            SUBMITTALS**

- .1      All submittals in accordance with Section 01 33 00 – Submittal Procedures.
- .2      Submit name and address of Surveyor to DR.
- .3      On request of DR, submit documentation to verify accuracy of field engineering work.
- .4      Certificate of Completed Survey Work signed by surveyor certifying and noting those elevations and locations of completed Work that conform and do not conform with Contract.
- .5      Submit all drawings electronically using the latest version of AutoCAD and by hard copy. Hard copy record drawings to be signed by a qualified registered land surveyor licenced to practice in the Northwest Territories.

**1.3            SURVEY REFERENCE POINTS**

- .1      Locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.
- .2      Make no changes or relocations without prior written notice to DR.
- .3      Report to DR when reference point is lost or destroyed, or requires relocation because of necessary changes in grade or locations.
- .4      Require surveyor to replace control points in accordance with original survey control.

**1.4            SURVEY REQUIREMENTS**

- .1      Establish two permanent bench marks on site, referenced to established bench marks by survey control points. Record locations with horizontal and vertical data.
- .2      Establish lines and level, locate and lay out, by instrumentation.
- .3      Prepare map of access road and work site.

**1.5            SURVEY EQUIPMENT**

- .1      The use of either a Total Station unit or a GPS Real Time Kinetic unit is acceptable.

- .2 Calibrate all equipment prior to Work at the site. Submit to the DR documentation certifying the calibration of the equipment.

## **1.6 SURVEY MARKERS**

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

## **1.7 RECORDS**

- .1 Maintain a complete, accurate log of control and survey work as it progresses.
- .2 Provide elevations and location of gas wells once abandonment has been completed in relation to each other and in relation to survey reference points and major site features.

## **1.8 METHOD OF PAYMENT**

- .1 Work under this section is to be included in the lump sum for Survey (01 71 01-1).
- .2 Except as indicated above, work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not used.

## **Part 3 Execution**

### **3.1 NOT USED**

- .1 Not used.

**END OF SECTION**

**Part 1 General**

**1.1 RELATED REQUIREMENTS**

- .1 Section 01 35 26 – Environmental Protection.

**1.2 REGULATORY REQUIREMENTS**

- .1 Land Use Permit (Appendix 7).
- .2 Satisfy requirements of Authorities Having Jurisdiction.

**1.3 DEBRIS REMOVAL**

- .1 Contractor shall collect and dispose of offsite all debris (1 m<sup>3</sup>) near Frobisher Well #1.

**1.4 PROJECT CLEANLINESS**

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Subcontractors.
- .2 Remove waste materials from site at regularly scheduled times or dispose of as directed by DR. Do not burn waste materials on site unless otherwise approved.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Provide on-site containers for collection of waste materials and debris.
- .5 Dispose of waste materials and debris.
- .6 Store volatile waste in covered metal containers.
- .7 Contractor to routinely remove mud and sediment that has been tracked on to public roads from Work related equipment as directed by DR.

**1.5 FINAL CLEANING**

- .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste products and debris including that caused by Sub-Contractors.

**1.6 METHOD OF PAYMENT**

- .1 Supply of all labour, equipment and materials for removal, handling, transportation and disposal of waste debris in proximity to Gas Well #1 is to be included in the lump sum for Debris Removal and Disposal (01 74 11-1).
- .2 Except as indicated above, work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**



**Part 1        General**

**1.1            CLOSEOUT PROCEDURES**

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

**1.2            INSPECTION AND DECLARATION**

- .1    Contractor's Inspection: Contractor and all Subcontractors to conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
  - .1    Notify DR in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
  - .2    Request DR's Inspection.
- .2    DR's Inspection: DR and Contractor will complete inspection of Work to identify obvious defects or deficiencies. Contractor to correct Work accordingly.
- .3    Completion: submit written certificate that following have been completed:
  - .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    Submit written completion certificate to DR seven days prior to the requested Final Inspection.
- .5    Final Inspection: when items noted above are completed, request final inspection of Work by DR and Contractor. If Work is deemed incomplete by DR, complete outstanding items and request re-inspection.
- .6    Post-Demobilization Inspection: once demobilization is completed, DR will request a Post-Demobilization inspection of Work during snow free conditions by DR and Contractor. If Work is deemed incomplete by DR, complete outstanding items and request re-inspection.

**1.3 METHOD OF PAYMENT**

- .1 Work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1 General**

**1.1 FORMAT**

- .1 Provide in electronic format.
- .2 Organize all closeout data in the form of a report called Abandonment Summary Report.
- .3 On title page provide the title of the project, submission date, addresses and telephone numbers of Contractor
- .4 Organize by task using Section numbers and sequence of Table of Contents.
- .5 Provide 1:1 scaled CAD files in .dxf or .dwg format.

**1.2 CONTENT**

- .1 The Abandonment Summary Report should contain a detailed description of methods, materials and results of all Work performed on Site. This shall include, but is not limited to, the following:
  - .1 Certificate of Substantial Completion.
  - .2 Project Team, Pre-Mobilization Site Visit Report and Field Kick-Off Meeting, and Training.
  - .3 Regulatory compliance.
  - .4 Documentation of mobilization, regulatory work and initial work done in Site.
  - .5 Summary of the abandonment/re-abandonment and cut and cap plans.
  - .6 Summary of all on-site activities (daily/weekly reports and photographs), equipment used, materials used, well history reports, cut and cap reports, final status of each component of the Work, and demobilization.
  - .7 Copies of all excavation spoil chain of custody forms, laboratory certificate of analysis, offsite backfills used, and all other manifests related to the Work.
  - .8 Other Work-related documents, information, and updates.
  - .9 Summary of Benefits Plan – labour, training, subcontractors, etc.**
  - .10 List of safety reports and associated corrective actions.

**1.3 FINAL SURVEY**

- .1 Submit final survey certificate in accordance with Section 01 71 00 – Survey Requirements, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

**1.4 METHOD OF PAYMENT**

- .1 Work under this section is to be included in the lump sum for Submittals (01 33 00-1).
- .2 Except as indicated above, work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).
- .2 Work under this section will not be measured.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1        General**

**1.1        WINTER ROAD SUBMITTALS**

- .1        Submit to the DR, via fax or e-mail attachment, the following information at the commencement of work and every Monday morning thereafter during the construction and operation of the winter road as per the Mobilization and Demobilization Plan:
  - .1        Start date for construction of the winter road.
  - .2        Progress in winter road construction, indicating location and distance under construction, and distance and location completed.
  - .3        Completion date of initial construction.
  - .4        Estimated winter road carrying capacity during construction, and date when required winter road capacity requirements have been met.
  - .5        If the ice bridge route is selected, profile the ice thickness and quality as often as necessary during construction to confirm that minimum weight limits are reached and during maintenance to confirm that those weight limits are maintained (at least two profiling missions are expected over the winter road construction and maintenance season). Fax/e-mail profiling results to the DR as soon as they are available.
  - .6        During the operating/maintenance phase, report dates when inspections were carried out.
  - .7        Summarize maintenance activities undertaken and nature of maintenance carried out, on a weekly basis.
  - .8        Report date of closures due to reduced winter road weight capacity, adverse weather condition (including storms or thaw).
  - .9        Report date of final closure, and date when decommissioning is complete.
  - .10       Schedule assessment: In the event that progress of project work is likely behind schedule, indicate measures to be taken to bring project back on schedule, and inform the DR in writing.
- .2        When the DR is on site, submit required information directly to DR.
- .3        The centerline and width of the winter road will be established based on available data through a qualified 3rd party professional survey and ice profiling firm retained by the Contractor.
- .4        Provide information as stipulated in the appended AANDC, 2007. *Northern Land Use Guidelines, Access: Roads and Trails*. (Appendix 9).
- .5        A description of the work related to the construction and operation of the winter road is to be included in the following plans: Site Specific Health and Safety Plan;

Mobilization and Demobilization Plan; Environmental Protection Plan, as well as any other relevant submittals as outlined in Section 01 33 00 – Submittals.

- .6 Copies of all required documentation is to be kept at the camp established for the winter road construction. The DR is to have access to these documents upon request.

## **1.2 REFERENCES**

- .1 The Land Use Permit states requirements for minimal packed snow or ice thickness on the road; equipment requirements; control or prevention of flooding, erosion and subsidence of land; stream crossings; debris and brush removal; petroleum storage, and any other items deemed necessary for protection of the environment during the construction and maintenance of the winter road.
- .2 The Land Use Permit specifies the "spring break-up" date (March 31), beyond which date the Permittee will not conduct any activity associated with the land-use operation unless otherwise authorized by a Land Use Inspector.
- .3 Guidelines for the methods and procedures for winter road construction are contained in the following publications:
  - .1 *A Field Guide to Ice Construction Safety*, Department of Transportation, NWT, November 2007 Edition. (Appendix 9)
  - .2 *Northern Land Use Guidelines, Access: Roads and Trails*, DIAND (2010). (Appendix 9)
  - .3 *Environmental Guidelines for the Construction, Maintenance and Closure of Winter Roads in the Northwest Territories*, Stanley Associates for the Department of Transportation (Oct 1993).
  - .4 *Best Practice for Building and Working Safely on Ice Covers in Alberta*, Government of Alberta (October 2009).

## **1.3 CATASTROPHIC INCIDENT PLAN**

- .1 Applicable only for ice bridge access option.
- .2 Prepare a plan to address catastrophic incidences of this nature. The plan should include as a minimum the following:
  - .1 Work area inspection and safety verification prior and during progress of active work.
  - .2 Action to be taken by the first person at the scene of a catastrophic incident.
  - .3 Rescue, if equipment is only partially submerged and operator did not jump free.
  - .4 Rescue, if equipment is submerged and operator did not jump free.
  - .5 Communications. List persons to be contacted and method of contact.

- .6 Medivac procedures.
- .7 Methods to contain any fuel/oil spills resulting from the incident.
- .8 Planned method to extract equipment.
- .9 Reporting.
- .3 Submit to Departmental Representative the Catastrophic Incident Plan in accordance with requirements of Section 01 33 00 - Submittal Procedures.

#### **1.4 SCHEDULE**

- .1 Provide the winter road schedule to the Authorities Having Jurisdiction and DR for review.
- .2 Winter road will not be used unless directed or authorized by the Land Use Inspector or DR.

#### **1.5 METHOD OF PAYMENT**

- .1 Work under this section is to be included in the lump sum for Site Access (01 53 00-2).
- .2 Except as indicated above, work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

### **Part 2 Products**

#### **2.1 NOT USED**

- .1 Not used.

### **Part 3 Execution**

#### **3.1 CONSTRUCTION**

- .1 The road will be a minimum 10 m wide on land/portages and a minimum 30 m wide on water crossings/ice bridge.
- .2 The road will be designed to withstand vehicle traffic at a speed of 40 km/hr.
- .3 Notwithstanding requirements specified in guidelines and Land Use Permit, the following conditions must be met:
  - .1 No new ground disturbances (cut/fill) are anticipated while constructing the winter road for this project.
  - .2 The winter road will be constructed and maintained with a minimum of 10 cm packed snow at all times of its use. If this cannot be met with existing site conditions, additional water will be placed to create an ice surface to protect underlying ground surface, vegetation, etc.

- .3 Only water and/or snow will be used in the construction of ice bridges.
- .4 Any ice bridges created will not hinder the flow of water.
- .5 No stream banks will be cut.
- .6 Approach grades on all lake and stream crossings will be minimized.
- .7 All ice bridges and snow fills will be removed prior to break-up.
- .8 A Spill Contingency Plan will be in place and spill kits available during construction and maintenance periods.

### **3.2 MAINTENANCE**

- .1 Maintenance of the road will be on an as needed basis for the period of operation to ensure emergency access if needed.
- .2 Maintenance will include winter road repair work to maintain minimum weight limits, dragging, clearing and compacting snow after storms.
- .3 Maintenance will include leveling areas (wash boarding) where a vehicle traffic speed of 40 km/hr cannot be maintained.
- .4 The road will be re-opened for traffic within 24 hours of a road closure due to weather.
- .5 Maintenance will include rebuilding sections of portages where the required compacted snow or ice thickness is less than the thickness specified in the Land Use Permit or where road bases have been damaged through the over-use of chains, spin outs or ditching.

### **3.3 SIGNAGE**

- .1 Speed signs will be posted at either end of the road. Alternatively, the Contractor may incorporate speed limits in the signboards at the beginning and end of the road. Speed signs to be posted at all the portages.
- .2 Post speed and warning signs at any locations where visibility is reduced and/or where curvature warrants a reduction in speed at each turn and hills.
- .3 Maintain existing direction, speed and warning signs along route.
- .4 Kilometre Signs: With kilometer "0" being at the junction of the start of the winter road (location to be defined according to Mobilization and Demobilization Plan). Place a kilometre sign every 2 kilometres along route. Lettering should be a minimum 150 mm. The material selection and posts will be capable of withstanding arctic winter storms. Signs will be driven into the snow along the route, with lettering clearly visible to vehicles travelling in either direction.



### **3.4 TESTING**

- .1 Thickness of winter road to be tested/evaluated as often as necessary until the minimum design load is obtained along the entire winter road covered by the Contract.
- .2 Once minimum weight limit is achieved, then testing can be reduced to monitoring of weak locations and occasional testing during maintenance of road.
- .3 Test results are to be submitted to the DR as they become available.

### **3.5 FINAL INSPECTION**

- .1 This winter road portion of this contract will be deemed to have been completed when a final inspection has been undertaken by the DR, Contractor, Land Use Inspector, and all deficiencies have been corrected.

### **3.6 DECOMMISSIONING**

- .1 Prior to closure of the winter road, remove signs on rivers and covers.
- .2 Prior to closure of the winter road, cover signs at either end of the road with 1200 mm x 2400 mm "Road Closed" signs and remove all equipment and other materials that may have been left along the road.
- .3 Clean-out all stream crossings in accordance with Land Use Permit.
- .4 If ice bridge access method is used:
  - .1 Final cleanup and removal of snow fills as per the Land Use Permit.
  - .2 V-notching of ice bridge as per the Land Use Permit.
- .5 Correct any deficiencies that the Land Use Inspector may have noted in their final inspections.

**END OF SECTION**

**Part 1 General**

**1.1 RELATED SECTIONS**

- .1 Section 01 33 00 – Submittal Procedures
- .2 Section 01 35 26 – Environmental Protection
- .3 Section 31 23 16.01 – Excavating and Backfilling

**1.2 REGULATORY REQUIREMENTS**

- .1 Land Use Permit.
- .2 Satisfy requirements of Authorities Having Jurisdiction.

**1.3 DEFINITIONS**

- .1 Clearing consists of cutting of trees and brush vegetative growth to not more than a specified height above ground and disposing of felled trees, previously uprooted trees and stumps, and surface debris.
- .2 Grubbing consists of excavation and disposal of stumps and roots.

**1.4 METHOD OF PAYMENT**

- .1 Supply, construction, operation, maintenance and decommissioning of all site access to the well locations, including but not limited to design, clearing and grubbing, winter road construction and maintenance, ice bridge construction and maintenance (if applicable), waste and spoil handling and disposal is to be included in the lump sum for Site Access (01 53 00-2).
- .2 Except as indicated above, work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

**Part 2 Products**

**2.1 NOT USED**

- .1 Not used.

**Part 3 Execution**

**3.1 PREPARATION**

- .1 Existing conditions to be confirmed at Pre-Mobilization Site Visit.
- .2 Identify a waste area for placing removed materials on Site Layout Plan.

### **3.2 PROTECTION**

- .1 The land use operation shall not cause obstruction to any natural drainage.
- .2 Contractor shall prepare the site in such a manner as to prevent rutting of the ground surface.
- .3 Provide temporary erosion and sediment control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to the Erosion and Sediment Plan.
  - .1 Refer to Section 01 35 26 – Environmental Protection.

### **3.3 CLEARING AND GRUBBING**

- .1 Clear and grub only areas necessary to facilitate equipment and materials access to the wells, set up at the well heads, and accommodate support facilities.
- .2 Contractor to adhere to the requirements of the Land Use Permit, including:
  - .1 The Contractor shall not clear areas larger than identified in the accepted Land Use Permit application.
  - .2 The Contractor shall leave a buffer strip of undisturbed vegetation (tree screen) at least 30 m in width between cleared areas and public roads.
  - .3 Contractor shall salvage all portions of trees cleared that are larger than 13 cm in diameter and pile all salvaged wood at locations authorized in writing by Land Use Inspector.
- .3 Clear as required, by cutting at a height of not more than 300 mm above ground. In areas to be subsequently grubbed, height of stumps left from clearing operations to be not more than 1000 mm above ground surface, unless otherwise stipulated in the Land Use Permit.
- .4 Grub if needed.

### **3.4 REMOVAL**

- .1 Cleared and grubbed materials can be left on site as directed by DR.

### **3.5 CLOSURE**

- .1 Refer to conditions of the Land Use Permit (Appendix 7).
- .2 At the time of final demobilisation, cleared and grubbed material to be spread and pushed down by track hoe to harbor new growth.
- .3 Maintain positive drainage in the cleared/grubbed areas.
- .4 Return site to original conditions as much as possible.

**END OF SECTION**

**Part 1 General**

**1.1 RELATED SECTIONS**

- .1 Section 01 35 23 – Health and Safety.
- .2 Section 01 35 26 – Environmental Protection.
- .3 Section 31 12 13 – Site Clearing.
- .4 Section 33 99 99.02 – Gas Well Cut and Cap.

**1.2 REGULATORY REQUIREMENTS**

- .1 Land Use Permit (Appendix 7).

**1.3 DEFINITIONS**

- .1 Clean excavated soil: excavation spoil from cut and cap locations that shows no signs of hydrocarbon contamination, and approved by DR for re-use on site, including backfilling.
- .2 Contaminated excavated soil: excavation spoil from cut and cap locations that has been sampled by DR, analyzed for petroleum hydrocarbons, and not approved by DR for re-use on site, including backfilling.
- .3 Imported clean common fill: locally available offsite certified clean common fill that is free of organics, well-graded, less than 25% fines, and does not have individual stones larger than 150 mm.
- .4 Imported clean sand: locally available offsite certified clean sand that is free of organics and well-graded to allow easy digging by hand.
- .5 Clean backfill: clean excavated soil and/or imported clean common fill.

**1.4 ACTION AND INFORMATIONAL SUBMITTALS**

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

**1.5 QUALITY ASSURANCE**

- .1 Proposed excavation slopes may be modified to meet site conditions for slope stability if required.
- .2 Keep design and supporting data on site.
- .3 Do not use spoil material as backfill until written report of soil test results are reviewed and approved by DR.

## **1.6 METHOD OF PAYMENT**

- .1 Excavation and backfilling costs associated with abandonment of gas wells #5, #5B and #7 is to be included in the lump sum for Abandonment/Re-abandonment of Gas Wells wells #5, #5B and #7 (33 99 99-1).
- .2 Excavation and backfilling costs associated with cut and cap of gas wells #6 and #8 is to be included in the lump sum for Cut and Cap of Gas Wells #6 and #8 (33 99 99-2).
- .3 Excavation, handling, stockpiling and off-site disposal of petroleum hydrocarbon contaminated soil is to be including the provisional unit rate item no. PAW-3.
- .4 Supply, backfilling and compaction of clean common fill is to be including the provisional unit rate item no. PAW-4.
- .5 Except as indicated above, work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 If excavation spoil indicates hydrocarbon contamination then DR to submit samples of excavation spoil from cut and cap activities to an accredited laboratory for the analysis of petroleum hydrocarbons. Contractor will only reuse spoil as backfill if approved by DR.
- .2 Contractor to identify type and source of offsite imported clean common fill material (along with appropriate documentation) in the Project Work Plan.

## **Part 3 Execution**

### **3.1 EXISTING CONDITIONS**

- .1 Existing conditions to be confirmed at Pre-Mobilization Site Visit.

### **3.2 TEMPORARY EROSION AND SEDIMENT CONTROL**

- .1 Provide temporary erosion and sediment control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and waterways, according to the Erosion and Sediment Plan.
  - .1 Refer to Section 01 35 26 – Environmental Protection.

### **3.3 PREPARATION**

- .1 Existing conditions to be confirmed at on-site meeting with DR prior to bid submissions.

- .2 Identify a waste area for placing removed materials on Site Layout Plan.

### **3.4 PROTECTION**

- .1 The land use operation shall not cause obstruction to any natural drainage.
- .2 Contractor shall prepare the site in such a manner as to prevent rutting of the ground surface.
- .3 Protect existing features in accordance with Section 01 56 00 - Temporary Barriers and Enclosures and applicable local regulations.
- .4 Keep excavations free of standing water.

### **3.5 STOCKPILING**

- .1 Protect fill materials from contamination.
- .2 Implement sufficient erosion and sediment control measures to prevent sediment release off construction boundaries and into water bodies.

### **3.6 DEWATERING AND HEAVE PREVENTION**

- .1 Keep excavations free of water while Work is in progress.
- .2 Avoid excavation below groundwater table if quick condition or heave is likely to occur.
  - .1 Prevent piping or bottom heave of excavations by groundwater lowering, sheet pile cut-offs, or other means.
- .3 Protect open excavations against flooding and damage due to surface run-off.
- .4 Dispose of water in accordance with Section 01 35 26 – Environmental Protection.
  - .1 Provide and maintain temporary drainage ditches and other diversions outside of excavations.

### **3.7 CUT AND CAP EXCAVATIONS**

- .1 Refer to Section 33 99 99.02 – Gas Well Cut and Cap.
- .2 Excavate to lines, grades, elevations and dimensions as indicated in Drawing 1, Appendix 4.
- .3 Dispose of surplus and unsuitable excavated material in approved location off site.
- .4 Do not obstruct flow of surface drainage or natural watercourses.
- .5 Notify DR when bottom of excavation is reached.
- .6 Obtain DR's approval of completed excavation.

**3.8 HANDLING OF CONTAMINATED SOIL**

- .1 Refer to Section 01 35 26 – Environmental Protection.

**3.9 BACKFILLING**

- .1 Do not proceed with backfilling operations until completion of following:
  - .1 DR has inspected and approved the cut and cap work.
  - .2 DR has identified excavation spoil as suitable for backfill, as determined by the soil testing results.
- .2 Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.
- .3 Do not use backfill material which is frozen or contains ice, snow or debris.
- .4 Place backfill material in uniform layers not exceeding 300 mm compacted thickness. Thoroughly compact each lift by bucket tamping before placing succeeding layer.
- .5 Overfill by 10% of the excavation depth.

**3.10 CLOSURE**

- .1 Refer to Land Use Permit (Appendix 7).
- .2 Erosion and Sediment Control measures to remain in place upon closure.

**END OF SECTION**

**Part 1 General**

**1.1 SCOPE**

- .1 Supply and installation of four-panel chain link fence enclosure if instructed by DR.
- .2 See Appendix 5 for an example onsite chain link enclosure.
  - .1 Reuse existing materials where possible.
- .3 Panels should be 1.83 m x 1.83 m (6 feet x 6 feet) with a top, mid and bottom rail.

**1.1 METHOD OF PAYMENT**

- .1 Fencing around gas wells #5, #5B and/or #7 is to be included in the provisional unit rate item no. PAW-1.
- .2 Except as indicated above, work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

**Part 2 Products**

**2.1 CHAIN LINK FABRIC**

- .1 Manufactured from the highest quality zinc coated wire in accordance with CAN/CGSB-138.1-96, Type 1, Class B, medium style, Grade 1.
- .2 Nominal wire diameter: 3.5 mm (9-gauge) or 2.75 mm (11-gauge) +/-0.1 mm.  
Mesh size: 50 mm (2 inch).  
Fabric height: 1.83 m (6 feet).  
Coating: zinc coated 366 g/m<sup>2</sup> (1.2 oz/ft<sup>2</sup>).
- .3 Selvage: twisted or knuckled top and knuckled bottom.

**2.2 FENCE FRAMEWORK**

- .1 Posts and Rails: hot-dip galvanized welded steel pipe with the following minimum dimensions: 2.0 mm (.083") and 3.2 mm (.125") ERW steel pipe, BS 1387 C.Q. Schedule 40 ASTM A53, Grade A.
  - .1 Corner post: 73.0 mm (2 7/8") OD, 3.2 mm (0.125") wall thickness, 1220 mm (4') longer than fabric height.
  - .2 Rails: 33.4 mm (1 3/8") 2.0 mm (0.083") wall thickness.

**2.3 FITTINGS**

- .1 Conforming to ASTM F626 as follows:



	Minimum Dimensions (mm)	Minimum Zinc Coating	Material
Post cap and rail end	N/A	366 g/m <sup>2</sup> (1.2 oz/ft <sup>2</sup> )	Pressed steel, cast iron or die cast aluminum
Tie wire	3.5 dia. (9-guage)	N/A	Aluminum
Tension and brace ends	2.0 thick x 19.0 wide	366 g/m <sup>2</sup> (1.2 oz/ft <sup>2</sup> )	Pressed steel
Tension bar	4.75 x 19.0	366 g/m <sup>2</sup> (1.2 oz/ft <sup>2</sup> )	Steel strip

### **Part 3 Execution**

#### **3.1 SITE PREPARATION**

- .1 Necessary site clearing and grading will be done following well abandonment/re-abandonment work.

#### **3.2 POST LOCATION**

- .1 Corner posts: align in a 1.83 m x 1.83 m (6 feet x 6 feet) square configuration around the wellhead with the wellhead at the centre.

#### **3.3 POST SETTING**

- .1 Corner posts to be driven 1200 mm (4 feet) into the ground.

#### **3.4 RAIL**

- .1 Top, mid and bottom rails should be one piece between corner posts (no rail sleeve is required).
- .2 Top, mid and bottom rails to be securely fastened to corner posts using rail ends and brace bands.

#### **3.5 CORNER POST BRACING**

- .1 Bracing is not required for fences 1.83 m (6 feet) or under.

#### **3.6 CHAIN LINK FABRIC**

- .1 Fabric is placed outside of area to be enclosed.
- .2 Fabric is stretched to recommended tension and fastened to corner posts using a tension bar and tension bands at 400 mm (16") spacing.

- .3 Fabric is secured with tie wire to top, mid and bottom rails at 600 mm (24") spacing.
- .4 Installed fabric shall have a smooth, uniform appearance free of sag, dent and bulge.

**3.7 WORKMANSHIP**

- .1 The installed chain link fence shall be free of any defect or imperfection that can affect its serviceability and appearance. The fence shall follow the ground contours without sharp changes in grade.

**END OF SECTION**

**Part 1 General**

**1.1 RELATED REQUIREMENTS**

- .1 Section 01 35 23 – Health and Safety.
- .2 Section 01 35 26 – Environmental Protection.
- .3 Section 21 12 13 – Site Clearing.
- .4 Section 31 23 16.01 – Excavating and Backfilling.
- .5 Section 33 99 99.02 – Gas Well Cut and Cap.

**1.2 ACTION AND INFORMATIONAL SUBMITTALS**

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

**1.3 CLOSEOUT SUBMITTALS**

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.

**1.4 METHOD OF PAYMENT**

- .1 Abandonment of gas wells #5, #5B and #7 is to be included in the lump sum for Abandonment of Gas Wells wells #5, #5B and #7 (33 99 99-1).
- .2 Except as indicated above, work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

**Part 2 Equipment and Products**

**2.1 DRILLING RIG**

- .1 The Contractor shall provide a drilling rig meeting or exceeding the following specifications:
  - .1 Drawworks Capacity: 40,000 daN;
  - .2 Static Hook Load: 40,000 daN;
  - .3 Derrick: capable of handling Range 3 pipe;
  - .4 Mud Pump: 500 hp;
  - .5 Mud Tanks Capacity: 25 m<sup>3</sup>;
  - .6 BOP's: 228.6mm – 21,000 kPa;
  - .7 Choke Manifold: 21,000 kPa; and
  - .8 KB to Ground: 3.5 m.
- .2 The drilling rig shall be equipped with:

- .1 Top drive;
- .2 Hydraulic Skate Catwalk or Pipe Arm;
- .3 Boiler;
- .4 101.6mm Drill Pipe;
- .5 Pipe racks; and
- .6 Pipe tubs.

## **2.2 DRILL BITS**

- .1 The Contractor shall supply drill bits required to execute this work as follows:
  - .1 Frobisher Well #5:
    - .1 Supply two 200.0 mm medium steel tooth bits (IADC Code 215); and
    - .2 Supply one 200.0 mm medium Tungsten Carbide Insert bit (IADC Code 535) for contingency.
  - .2 Frobisher Well #5B:
    - .1 Supply two 200.0 mm medium steel tooth bits (IADC Code 215); and
    - .2 Supply one 200.0 mm medium Tungsten Carbide Insert bit (IADC Code 535) for contingency.
  - .3 Frobisher Well #7:
    - .1 Supply two 311.2 mm re-tip steel tooth bit; and
    - .2 Supply two 200.0 mm medium steel tooth bits (IADC Code 215).

## **2.3 CASING**

- .1 Frobisher Well #5:
  - .1 No casing required.
- .2 Frobisher Well #5B:
  - .1 No casing required.
- .3 Frobisher Well #7:
  - .1  $\pm 30\text{m} - 406.0\text{mm}$  conductor pipe suitable for driving.
  - .2  $\pm 120\text{m} - 219.1\text{mm} \times 35.72 \text{ kg/m}$  J-55 ST&C surface casing, suitable for sour service (as per AER Directive 10 or similar).

## **2.4 CASING BOWL**

- .1 Frobisher Well #5:
  - .1 No casing bowl required.
- .2 Frobisher Well #5B:

- .1 No casing bowl required.
- .3 Frobisher Well #7:
  - .1 228.6 mm – 21 MPa x 219.1mm –weld-on casing bowl, complete with two 50mm line pipe side outlets;
  - .2 Mild Steel Ring Gasket;
  - .3 Two 50 mm pipe nipples; and
  - .4 Two 50 mm – 21 MPa LP Ball Valves.

## **2.5 CEMENTING**

- .1 Surface Cement:
  - .1 Slurry Density: 1900 kg/m<sup>3</sup>;
  - .2 Minimum Thickening Time: 2 hours;
  - .3 Pre-flush: 5 m<sup>3</sup> water;
  - .4 Scavenger: 3m<sup>3</sup> cement at  $\pm 1600\text{kg/m}^3$ ; and
  - .5 Fluids Loss Additive to help prevent gas migration.
- .2 Abandonment Plugs:
  - .1 Slurry Density: 1900 kg/m<sup>3</sup>;
  - .2 Minimum Thickening Time: 2 hours;
  - .3 Pre-flush: 5 m<sup>3</sup> water;
  - .4 Scavenger: 3 m<sup>3</sup> cement at  $\pm 1600\text{ kg/m}^3$ ; and
  - .5 Fluids Loss Additive to help prevent gas migration.
- .3 Cement Programs:
  - .1 The Contractor shall provide cement programs for each well detailing:
    - .1 Cement Blends & Additives;
    - .2 Thickening Time;
    - .3 Compressive Strength;
    - .4 Volume Calculations; and
    - .5 Recommended Procedures.
  - .2 Cement Volumes in open hole shall be based on 100% excess; and
  - .3 The Contractor may provide an additional alternative cement program designed to mitigate gas migration.

## **2.6 CEMENT BINS**

- .1 The Contractor shall provide bins to capture cement returns.
  - .1 The Contractor shall be responsible for determining the number of bins required.

- .2 Bins shall not be filled in excess of 85% capacity.

## **2.7 CENTRALIZATION**

- .1 Frobisher Well #5:
  - .1 None required.
- .2 Frobisher Well #5B:
  - .1 None required.
- .3 Frobisher Well #7:
  - .1 Five – 219.1 mm bow-spring centralizers as per detailed abandonment program.

## **2.8 CENTRIFUGE**

- .1 Minimum 1,500 litres per minute water.
- .2 Complete with light plant for power.
- .3 Hydraulic centrifuge stand.

## **2.9 CUTTINGS DISPOSAL**

- .1 All cuttings shall be mixed off with peat moss until they can pass a paint filter test.
- .2 Cuttings shall be hauled to an approved site for disposal.
- .3 Cuttings shall be hauled in a sealed end dump.
- .4 The Contractor shall complete manifests for all cuttings removed from location.

## **2.10 DIVERTER**

- .1 A diverter system shall be installed on the Conductor Pipe of prior to washing over the existing casing on the Frobisher #7 well.
- .2 The Diverter system shall consist of:
  - .1 A flange welded to the conductor;
  - .2 A drilling spool with a minimum 152.4mm outlet;
  - .3 An annular preventer; and
  - .4 An HCR valve.
- .3 The Diverter system shall not be used to hold back pressure.
- .4 The Diverter line must terminate in a Flare Tank.

## **2.11 BLOWOUT PREVENTERS**

- .1 A Class III BOP system shall be nipped-up on each well prior to drilling out the surface casing shoe.
- .2 The BOP system shall consist of (from bottom to top):
  - .1 Pipe Rams;
  - .2 Drilling Spool;
  - .3 Blind Rams; and
  - .4 Annular Preventer.
- .3 Refer to AER Directive 36, Appendix 3.

## **2.12 DRILLING FLUID**

- .1 As per detailed abandonment/re-abandonment programs.
- .2 Contractor may vary from the specified parameters if necessary to maintain wellbore stability.

## **2.13 DRILLING RECORDER**

- .1 The Contractor shall supply an electronic drilling recorder, including the following components:
  - .1 Base EDR;
  - .2 Pit Volume Totalizer (PVT);
  - .3 AutoDriller;
  - .4 Remote Choke;
  - .5 Hazardous Gas Alarm System;
  - .6 Doghouse Display;
  - .7 Rig Floor Display; and
  - .8 Work Station for Drilling Supervisor.
- .2 A satellite dish shall be provided for EDR Communications.
- .3 The Electronic Drilling Recorder data shall be remotely accessible via the internet.

## **2.14 FISHING TOOLS**

- .1 The Contractor shall supply  $\pm 30\text{m}$  of 244.5mm washover pipe and two washover shoes for the Frobisher #7 well.
- .2 The Contractor shall provide standard fishing tools onsite during the Frobisher #7 abandonment, including, but not limited to:
  - .1 Spear;

- .2 Overshot;
- .3 Junk magnet; and
- .4 Junk mill.

**2.15 FLOAT EQUIPMENT**

- .1 Frobisher Well #5:
  - .1 None required.
- .2 Frobisher Well #5B:
  - .1 None required.
- .3 Frobisher Well #7:
  - .1 219.1 mm J-55 PDC drillable float shoe; and
  - .2 219.1 mm J-55 PDC drillable float collar.

**2.16 LOGGING**

- .1 The Contractor shall provide a wireline truck and tools to run cased hole noise and temperature logs of the surface casing on the Frobisher #5 Well.

**2.17 POWER TONGS**

- .1 The Contractor shall supply integral power tongs for running 219.1 mm surface casing on the Frobisher #7 well.
- .2 Power tongs shall be rated for a minimum make-up torque of 6,000 N-m.

**2.18 SURFACE RENTALS**

- .1 It is anticipated that the Contractor will require the following surface rental equipment, including but not limited to:
  - .1 Floc tank(s) with capacity to store 400 bbl;
  - .2 12 m<sup>3</sup> flare tank;
  - .3 10' x 40' 3-wall shale bin;
  - .4 10' x 40' high wall mix-off bin;
  - .5 Insulated 400 bbl tank;
  - .6 15 – 8' x 40' rig mats;
  - .7 2 – 12' x 60' 50/50 wellsite trailers;
  - .8 12' x 40' first-aid trailer;
  - .9 100' grated steel walkways;
  - .10 1500 gallon insulated waste water holding tank;
  - .11 Segregated waste bin;
  - .12 4" Flygt pump;



- .13 2" Trash pump;
- .14 150kW Generator c/w Light Tower; and
- .15 4 – 20 kW light towers.

### **Part 3 Execution**

#### **3.1 SITE PREPARATION**

- .1 Clearing and grubbing to be conducted by Contractor based on their requirements for access and site set up.
  - .1 Refer to Section 21 12 13 – Site Clearing.
  - .2 Refer to Section 31 23 16.01 – Excavating and Backfilling.
- .2 Detach signs from fence enclosures and give to DR.
- .3 Remove chain link fence enclosures and set materials aside for reuse, if suitable.

#### **3.2 WELL ABANDONMENT/RE-ABANDONMENT**

- .1 Frobisher Well #5:
  - .1 The Contractor shall provide all labour, equipment and materials to re-abandon Frobisher #5 as per the detailed re-abandonment program, including:
    - .1 Drilling cement plugs from inside existing surface casing;
    - .2 Running wireline logs to determine the source of gas;
    - .3 Perforating the surface casing;
    - .4 Squeezing cement;
    - .5 Drilling out open hole cement plugs; and
    - .6 Pumping cement plugs.
- .2 Frobisher Well #5B:
  - .1 The Contractor shall provide all labour, equipment and materials to re-abandon Frobisher #5B as per the detailed re-abandonment program, including:
    - .1 Drilling cement plugs from inside existing surface casing;
    - .2 Drilling out open hole cement plugs; and
    - .3 Pumping cement plugs.
- .3 Frobisher Well #7:
  - .1 The Contractor shall provide all labour, equipment and materials to abandon Frobisher #7 as per the detailed abandonment program, including:

- .1 Driving 16" Conductor Pipe;
- .2 Washing over existing casing;
- .3 Drilling surface hole;
- .4 Running & cementing surface casing;
- .5 Drilling main hole; and
- .6 Pumping cement plugs.

### **3.3 ENVIRONMENTAL**

- .1 Refer to Section 01 35 26 – Environmental Protection.
- .2 Garbage and waste disposal
  - .1 Segregated bins shall be provided at each drill site for the collection of garbage, waste and recyclable materials.
  - .2 The Drilling Supervisor shall ensure that a waste manifest is completed before any hazardous waste is removed from location.
  - .3 All waste must be transported directly from the point of origin to the final destination (waste receiver).
- .3 Fluid disposal
  - .1 Drilling fluids shall be stripped back prior to disposal.
  - .2 Drilling fluids shall be hauled to an approved site for disposal.
  - .3 The Contractor shall complete manifests for all drilling fluids removed from location.
- .4 Spill Prevention
  - .1 The Contractor shall take all reasonable measures to prevent spills.
  - .2 Mobile equipment shall be inspected by the Contractor for oil or hydraulic leaks prior to be allowed on-site.
  - .3 Drip trays will be placed under all light towers and parked equipment.
  - .4 Tailgate meetings & JSA's must address and mitigate the risks associated with refuelling/maintaining equipment.
  - .5 Spill kits will be provided by the Contractor.

### **3.4 HEALTH AND SAFETY**

- .1 Refer to Section 01 35 23 – Health and Safety.

### **3.5 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 – Cleaning.
  - .1 Leave Work area clean at end of each day.

- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools, equipment and fencing in accordance with Section 01 74 11 – Cleaning.
- .3 Waste management to be conducted according to the submitted and approved Waste Management Plan.

### **3.6 CLOSE OUT**

- .1 Backfill with imported clean sand as per Section 31 23 16.01 to allow for easy digging by hand for future cut and cap activities in frost-free conditions.
- .2 Erect fence enclosures around Frobisher Wells #5, #5B and #7 per Section 32 31 00 – Chain Link Fences and Gates if directed by DR.
- .3 Reuse and reattach signs to fence enclosures if directed by DR.
- .4 Return in frost-free conditions to:
  - .1 Conduct gas migration test and vent inspection.
  - .2 Excavate by hand and cut and cap as per Section 33 99 99.02 – Gas Well Cut and Cap wells that have passed gas migration test and vent inspection.

**END OF SECTION**

**Part 1 General**

**1.1 RELATED REQUIREMENTS**

- .1 Section 01 35 23 – Health and Safety.
- .2 Section 01 35 26 – Environmental Protection.
- .3 Section 21 12 13 – Site Clearing.
- .4 Section 31 23 16.01 – Excavating and Backfilling.
- .5 Section 33 99 99.01 – Gas Well Abandonment.

**1.2 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 – Submittal Procedures.

**1.3 CLOSEOUT SUBMITTALS**

- .1 Submit in accordance with Section 01 78 00 – Closeout Submittals.

**1.4 METHOD OF PAYMENT**

- .1 Cut and cap of gas wells #6 and #8 is to be included in the lump sum for Cut and Cap of Gas Wells #6 and #8 (33 99 99-2).
- .2 Cut and cap of gas wells #5, #5B and/or #7 is to be included in the provisional unit rate item no. PAW-2.
- .3 Except as indicated above, work under this section will not be measured and is to be included in the lump sum for Balance of Project Costs (BOPC).

**Part 2 Products**

**2.1 NOT USED**

- .1 Not used.

**Part 3 Execution**

**3.1 SITE PREPARATION**

- .1 Clearing and grubbing to be conducted by Contractor based on their requirements for access and site set up.
  - .1 Refer to Section 21 12 13 – Site Clearing.
  - .2 Refer to Section 31 23 16.01 – Excavating and Backfilling.

- .2 Detach signs from fence enclosures, if present, and give to DR.
- .3 Remove chain link fence enclosures, if present, and set materials aside for reuse, if suitable.

### **3.2 CUT AND CAP**

- .1 Frobisher Well #6 and #8:
  - .1 Refer to Drawing 1, Appendix 4.
  - .2 Excavate soil around wellhead to 2 m below grade.
  - .3 Notify DR when bottom of excavation is reached.
  - .4 Cut and remove existing 406 mm conductor and 219.1 mm surface casings 1 m below ground level.
  - .5 Weld steel plates on both casings. Thickness of steel plate to match or exceed that of the casing it is being welded on to.
- .2 Frobisher Wells #5, #5B and #7:
  - .1 Excavate sand around wellhead by hand in frost-free conditions.
  - .2 Cut and remove existing 406 mm conductor and 219.1 mm surface casings 1 m below ground level.
  - .3 Weld steel plates on both casings. Thickness of steel plate to match or exceed that of the casing it is being welded on to.

### **3.3 BACKFILLING**

- .1 Do not proceed with backfilling operations until completion of the following:
  - .1 DR has inspected and approved the cut and cap work.
  - .2 DR has identified excavation spoil as suitable for backfill, as determined by the soil testing results.
- .2 Backfill with clean excavated soil or imported clean general fill.
- .3 Overfill by 10% of the excavation depth and grade to maintain positive drainage with surrounding area.

### **3.4 HEALTH AND SAFETY**

- .1 Refer to Section 01 35 23 – Health and Safety.

### **3.5 ENVIRONMENTAL**

- .1 Dispose of contaminated excavated soil and removed casing per the Waste Management Plan.
- .2 Refer to Section 01 35 26 – Environmental Protection.

**3.6 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 – Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools, equipment and fencing in accordance with Section 01 74 11 – Cleaning.
- .3 Waste management to be conducted according to the submitted and approved Waste Management Plan.

**3.7 CLOSURE**

- .1 Provide and erect signage as per the specifications in Appendix 4.

**END OF SECTION**

## **Appendix 1 – Site Maps and Photographs**

Public Works and Government Services Canada

Job No.: R.064013

Frobisher Gas Wells Abandonment

Hay River, NT

Well Schematics and Photographs

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Appendix 2

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## **Appendix 2 – Well Schematics and Photographs**



Public Works and Government Services Canada

Job No.: R.064013

Frobisher Gas Wells Abandonment

Hay River, NT

Detailed Abandonment/Re-abandonment Programs

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Appendix 3

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### **Appendix 3 – Detailed Abandonment/Re-abandonment Programs**

#### **Appendix 4 – Cut and Cap Specifications**

## **Appendix 5 – Fencing and Signage**

## **Appendix 6 – Previous Reports**

Public Works and Government Services Canada

Job No.: R.064013

Frobisher Gas Wells Abandonment

Hay River, NT

Land Use Permit and Associated Application

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## **Appendix 7 – Land Use Permit and Associated Application**

Public Works and Government Services Canada

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Highway Transportation Information

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## **Appendix 8 – Highway Transportation Information**

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Winter Road and Ice Bridge Guidelines

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## **Appendix 9 – Winter Road and Ice Bridge Guidelines**

Public Works and Government Services Canada

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Frobisher Gas Wells Abandonment

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AANDC EHS MS and SOP Manuals

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## **Appendix 10 – AANDC EHS MS and SOP Manuals**



Public Works and Government Services Canada

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Frobisher Gas Wells Abandonment

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AANDC Guidelines for Spill Contingency Planning

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## **Appendix 11 – AANDC Guidelines for Spill Contingency Planning**

## **Appendix 12 – Operations Authorization**

Public Works and Government Services Canada

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Frobisher Gas Wells Abandonment

Hay River, NT

NEB Environmental Protection Plan Guidelines

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## **Appendix 13 – NEB Environmental Protection Plan Guidelines**

## **Appendix 14 – Project Statistics Report Template**