Cariboo Regional District

Tender 26-016: Gibraltar Landfill Phase 3C (2026-2027)

June 2026

Owner: *Cariboo Regional District*
(NAME OF OWNER)

Contract: *Gibraltar Landfill Phase 3C (2026-2027)*
(TITLE OF CONTRACT)

Reference No. *Tender 26-016*
(OWNER'S CONTRACT REFERENCE NO.)

The Owner invites tenders for: The construction of the berm to allow for the Phase 3C expansion of the Gibraltar Landfill including excavation and construction of the west side of Road 3C, and placement, shaping, and compaction of excavated materials To construct the berm on the east side of Road 3C.
(BRIEF DESCRIPTION OF THE WORK)

Contract Documents **are available at:** Contract documents are available for download from the Cariboo Regional District Website

Tenders are scheduled to close:

Tender Closing Time: 2:00, pm local time

Tender Closing Date: July 2, 2026

Address: Tenders must be submitted electronically via email

NAME OF *OWNER'S* REPRESENTATIVE Mircea L. Cvaci, P.Eng.

604-986-7723
(PHONE)

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(FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

**(TO BE READ WITH "INSTRUCTIONS TO TENDERERS - PART II"
CONTAINED IN THE EDITION OF THE PUBLICATION
"MASTER MUNICIPAL CONSTRUCTION DOCUMENTS" SPECIFIED IN ARTICLE 2.2 BELOW)**

Owner: *Cariboo Regional District*
(NAME OF OWNER)

Contract: *Gibraltar Landfill Phase 3C (2026-2027)*
(TITLE OF CONTRACT)

Reference No. *Tender 26-016*
(OWNER'S CONTRACT REFERENCE NO.)

1.0 Introduction

1.1 These Instructions apply to and govern the preparation of tenders for this *Contract*. The *Contract* is generally for the following work:

Excavation of materials to construct the western portion of Road 3C. Hauling, placement, shaping, and compaction of materials to construct the berm for the eastern portion of Road 3C and allow for the filling of Phase 3C of the landfill.

1.2 Direct all inquiries regarding the *Contract*, to:

Mircea L. Cvaci, P.Eng. – President, Sperling Hansen Associates
(NAME AND POSITION OF INDIVIDUAL WHO WILL ANSWER INQUIRIS)

Address: 8-1225 E. Keith Road
North Vancouver, BC
V7J 1J3

Phone: 604-986-7723 ext. 101

Email: mcvaci@sperlinghansen.com

2.0 Tender Documents

2.1 The tender documents which a tenderer should review to prepare a tender consist of all of the *Contract Documents* listed in Schedule 1 entitled "Schedule of Contract Documents". Schedule 1 is attached to the Agreement which is included as part of the tender package. The *Contract Documents* include the drawings listed in Schedule 2 to the Agreement, entitled "List of *Contract Drawings*".

2.2 A portion of the *Contract Documents* are included by reference. Copies of these documents have not been included with the tender package. These documents are the Instructions to Tenderers - Part II, General Conditions, Specifications and Standard Detail Drawings. They are those contained in the publication entitled "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings". Refer to Schedule 1 to the Agreement or, if not specified in Schedule 1, then the applicable edition shall be the most recent edition as of the date of the *Tender Closing Date.* All sections of this publication are by reference included in the *Contract Documents*.

2.3 Any additional information made available to tenderers prior to the *Tender Closing Time* by the *Owner* or representative of the *Owner,* such as geotechnical reports or as-built plans, which is not expressly included in Schedule 1 or Schedule 2 to the Agreement, is not included in the *Contract Documents*. Such additional information is made available only for the assistance of tenderers who must make their own judgment about its reliability, accuracy, completeness and relevance to the *Contract*, and neither the *Owner* nor any representative of the *Owner* gives any guarantee or representation that the additional information is reliable, accurate, complete or relevant.

3.0 Submission of Tenders

3.1 Tenders must be submitted to:

Mircea L. Cvaci, P.Eng. – President, Sperling Hansen Associates

(TITLE OF POSITION)

on or before:

Tender Closing Time: 2:00pm local time

Tender Closing Date: July 2, 2026

Via email to mcvaci@sperlinghansen.com, with the Tender Reference and Name included in the subject line: "Tender 26-016: Gibraltar Landfill Phase 3C (2026-2027)"

3.2 Late tenders will not be accepted or considered, and will be returned unopened.

4.0 Additional Instructions to Tenderers

4.1 IT 15.5 from the MMCD Supplemental Update 2022-04-07 is considered in full force and effect for this tender as follows:

IT 15.5 Adjustment When All Tenders Over Budget

Subject to any express provision of these Instructions to Tenderers, if the *Tender Prices* for all *Tenders* exceed the amount that the *Owner* has budgeted for the *Work*, then the *Owner* may, at its election and in its sole and absolute discretion:

(1) Seek approval for an increase in the budget; or

(2) Terminate the process under this *Tender,* and enter into negotiations with the *Tenderer* that, but for its over-budget *Tender Price,* would have been recommended as the successful *Tenderer* under these Instructions to Tenderers for the purpose of identifying scope or other amendments to the Contract to achieve the budget

4.2 Notice to Proceed is expected to be issued no later than July 15.

4.3 Substantial Performance is expected on or before September 30, 2026.

4.4 An optional site visit by Tenderers to the Place of Work is scheduled for 11:30am on **Thursday, June 25th, 2026**. Representatives of the Owner and Engineer will be in attendance. It is anticipated that any and all answers to questions will be distributed through an Addendum. The holding of this optional visit in no way limits the responsibility of tenderers under paragraph 8.1 of these Instructions to Tenderers – Part II or otherwise to have inspected the Place of Work.

4.5 As the Gibraltar Landfill is located within the Gibraltar Mine, there are established safety protocols on the site that will be required of the successful Tenderer. The specific safety requirements are provided in the reference document ‘Contractor Information Package’ from Taseko Gibraltar, attached for reference to this tender package.

FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT - TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.

Owner: Cariboo Regional District

Contract: Gibraltar Phase 3C (2026-2027)

Reference No. Tender 26-016

To *Owner*:

WE, THE UNDERSIGNED:

1.1 have received and carefully reviewed all of the *Contract Documents*, including the Instructions to Tenderers, the specified edition of the "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings" and the following Addenda:

_____

_____

_____ ;

(ADDENDA, IF ANY)

1.2 have full knowledge of the *Place of the Work*, and the *Work* required; and

1.3 have complied with the Instructions to Tenderers; and

ACCORDINGLY WE HEREBY OFFER

2.1 to perform and complete all of the *Work* and to provide all the labour, equipment and material all as set out in the *Contract Documents*, in strict compliance with the *Contract Documents*; and

2.2 to achieve Substantial Performance of the Work on or before **September 30, 2026**; and

2.3 to do the *Work* for the price, which is the sum of the products of the actual quantities incorporated into the *Work* and the appropriate unit prices set out in Appendix 1, the "*Schedule of Quantities and Prices*", plus any lump sums or specific prices and adjustment amounts as provided by the *Contract Documents*. For the purposes of tender comparison, our offer is to complete the *Work* for the "*Tender Price*" as set out on Appendix 1 of this Form of Tender. Our *Tender Price* is based on the estimated quantities listed in the *Schedule of Quantities and Prices*, and excludes *GST*.

WE CONFIRM:

3.1 that we understand and agree that the quantities as listed in the *Schedule of Quantities and Prices* are estimated, and that the actual quantities will vary.

WE CONFIRM:

4.1 that the following appendices are attached to and form a part of this tender:

4.1.1 the appendices as required by paragraph 5.3 of the Instructions to Tenderers – Part II; and

4.1.2 the *Bid Security* as required by paragraph 5.2 of the Instructions to Tenderers – Part II.

WE AGREE:

5.1 that this tender will be irrevocable and open for acceptance by the *Owner* for a period of **60 calendar days** from the day following the *Tender Closing Date and Time*, even if the tender of another tenderer is accepted by the *Owner*. If within this period the *Owner* delivers a written notice ("*Notice of Award*") by which the *Owner* accepts our tender we will:

5.1.1 within 15 *Days* of receipt of the written *Notice of Award* deliver to the *Owner*:

.1 a Performance Bond and a Labour and Material Payment Bond, each in the amount of 50% of the Contract Price, covering the performance of the Work including the Contractor's obligations during the Maintenance Period, issued by a surety licensed to carry on the business of suretyship in the province of British Columbia, and in a form acceptable to the Owner;

.2 a Baseline Construction Schedule, as provided by GC 4.6.1;

.3 a "clearance letter" indicating that the tenderer is in Worksafe BC compliance; and

.4 a copy of the insurance policies as specified in GC 24 indicating that all such insurance coverage is in place and;

5.1.2 within 2 *Days* of receipt of written "*Notice to Proceed*", or such longer time as may be otherwise specified in the *Notice to Proceed*, commence the *Work*; and

5.1.3 sign the Contract Documents as required by GC 2.1.2.

WE AGREE:

6.1 that, if we receive written *Notice of Award* of this *Contract* and, contrary to paragraph 5 of this Form of Tender, we:

6.1.1 fail or refuse to deliver the documents as specified by paragraph 5.1.1 of this Form of Tender; or

6.1.2 fail or refuse to commence the *Work* as required by the *Notice to Proceed*,

then such failure or refusal will be deemed to be a refusal by us to enter into the *Contract* and the *Owner* may, on written notice to us, award the *Contract* to another party. We further agree that, as full compensation on account of damages suffered by the *Owner* because of such failure or refusal, the *Bid Security* shall be forfeited to the *Owner*, in an amount equal to the lesser of:

6.1.3 the face value of the *Bid Security*; and

6.1.4 the amount by which our *Tender Price* is less than the amount for which the *Owner* contracts with another party to perform the *Work*.

OUR ADDRESS IS AS FOLLOWS:

_____

_____

_____

Phone: _____

Email: _____

Attention: _____

This Tender is executed this
_____ day of _____, 20 _____.

Contractor:

_____
(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

_____
(AUTHORIZED SIGNATORY)

_____
(AUTHORIZED SIGNATORY)

(FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

BETWEEN *OWNER* AND *CONTRACTOR*

This agreement made in duplicate this

_____ day of _____, 20_____.

Contract: Gibraltar Landfill Phase 3C (2026-2027)

Reference No. Tender 26-016

BETWEEN:

The Cariboo Regional District
Suite D, 180 North 3rd Avenue
Williams Lake, BC
V2G 2A4

(the "*Owner*")

AND:

_____

_____

_____
(NAME AND OFFICE ADDRESS OF CONTRACTOR)

(the "*Contractor*")

The *Owner* and the *Contractor* agree as follows:

Article 1 The Work Start / Completion Dates

1.1 The *Contractor* will perform all *Work* and provide all labour, equipment and material and do all things strictly as required by the *Contract Documents*.

1.2 The *Contractor* will commence the *Work* in accordance with the *Notice to Proceed*. The *Contractor* will proceed with the *Work* diligently, will perform the *Work* generally in accordance with the construction schedules as required by the *Contract Documents* and will achieve *Substantial Performance* of the *Work* on or before **September 30, 2026** subject to the provisions of the *Contract Documents* for adjustments to the *Contract Time*.

1.3 Time shall be of the essence of the *Contract.*

Article 2 Contract Documents

2.1 The "*Contract Documents*" consist of the documents listed or referred to in Schedule 1, entitled "Schedule of Contract Documents", which is attached and forms a part of this Agreement, and includes any and all additional and amending documents issued in accordance with the provisions of the *Contract Documents*. All of the *Contract Documents* shall constitute the entire *Contract* between the *Owner* and the *Contractor*.

2.2 The *Contract* supersedes all prior negotiations, representations or agreements, whether written or oral, and the *Contract* may be amended only in strict accordance with the provisions of the *Contract Documents.*

Article 3 Contract Price

3.1 The price for the *Work* ("*Contract Price*") shall be the sum in Canadian dollars of the following

1.1.1 the product of the actual quantities of the items of *Work* listed in the *Schedule of Quantities and Prices* which are incorporated into or made necessary by the *Work* and the unit prices listed in the *Schedule of Quantities and Prices*; plus

1.1.2 all lump sums, if any, as listed in the *Schedule of Quantities and Prices*, for items relating to or incorporated into the *Work*; plus

1.1.3 any adjustments, including any payments owing on account of *Changes* and agreed to *Extra Work*, approved in accordance with the provisions of the *Contract Documents*.

3.2 The *Contract Price* shall be the entire compensation owing to the *Contractor* for the *Work* and this compensation shall cover and include all profit and all costs of supervision, labour, material, equipment, overhead, financing, and all other costs and expenses whatsoever incurred in performing the *Work*.

Article 4 Payment

4.1 Subject to applicable legislation and the provisions of the *Contract Documents*, the *Owner* shall make payments to the *Contractor*.

4.2 If the *Owner* fails to make payments to the *Contractor* as they become due in accordance with the terms of the *Contract Documents* then interest calculated at 2% per annum over the prime commercial lending rate of the Royal Bank of Canada on such unpaid amounts shall also become due and payable until payment. Such interest shall be calculated and added to any unpaid amounts monthly.

Article 5 Rights and Remedies

5.1 The duties and obligations imposed by the *Contract Documents* and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

5.2 Except as specifically set out in the *Contract Documents*, no action or failure to act by the *Owner*, *Contract Administrator* or *Contractor* shall constitute a waiver of any of the parties' rights or duties afforded under the *Contract*, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach under the *Contract*.

Article 6 Notices

6.1 Communications among the *Owner*, the *Contract Administrator* and the *Contractor*, including all written notices required by the *Contract Documents*, may be delivered by hand, or by fax, or by pre-paid registered mail to the addresses as set out below:

The *Owner*:

Cariboo Regional District
Suite D, 180 North 3rd Avenue
Williams Lake, BC V2G 2A4
Email: tgrady@cariboord.ca
Attention: Tera Grady, Manager of Solid Waste

The *Contractor*:

Email:
Attention:

The *Contract Administrator*:

TBD upon contract award

Email:
Attention:

6.2 A communication or notice that is addressed as above shall be considered to have been received

1.1.4 immediately upon delivery, if delivered by hand; or

1.1.5 immediately upon transmission if sent by fax and received in hard copy; or

1.1.6 after 5 *Days* from date of posting if sent by registered mail.

6.3 The *Owner* or the *Contractor* may, at any time, change its address for notice by giving written notice to the other at the address then applicable. Similarly if the *Contract Administrator* changes its address for notice then the *Owner* will give or cause to be given written notice to the *Contractor.*

6.4 The sender of a notice by fax assumes all risk that the fax is received in hard copy.

Article 7 General

7.1 This *Contract* shall be construed according to the laws of British Columbia.

7.2 The *Contractor* shall not, without the express written consent of the *Owner*, assign this *Contract*, or any portion of this *Contract*.

7.3 The headings included in the *Contract Documents* are for convenience only and do not form part of this *Contract* and will not be used to interpret, define or limit the scope or intent of this *Contract* or any of the provisions of the *Contract Documents*.

7.4 A word in the *Contract Documents* in the singular includes the plural and, in each case, vice versa.

7.5 This agreement shall ensure to the benefit of and be binding upon the parties and their successors, executors, administrators and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first written above.

Contractor:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

Owner:

Cariboo Regional District

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

(INCLUDE IN LIST ALL DOCUMENTS INCLUDING, IF ANY, SUPPLEMENTARY GENERAL CONDITIONS, SUPPLEMENTARY SPECIFICATIONS,SUPPLEMENTARY STANDARD DETAIL DRAWINGS.)

Schedule 1 Schedule of Contract Documents

The following is an exact and complete list of the *Contract Documents*, as referred to in Article 2.1 of the Agreement.

***NOTE*:** The documents noted with "*" are contained in the "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings", edition dated 20_____. All sections of this publication are included in the *Contract Documents*.

8.1 Agreement, including all Schedules;

8.2 Supplementary General Conditions – Gibraltar Phase 3C (2026-2027);

8.3 General Conditions*;

8.4 Supplementary Technical Specifications – Gibraltar Phase 3C (2026-2027);

8.5 Specifications*;

8.6 Standard Detail Drawings*;

8.7 Executed Form of Tender, including all Appendices;

8.8 *Contract Documents* listed in Schedule 2 to the Agreement – "List of *Contract Drawings*";

8.9 Instructions To Tenderers - Part I;

8.10 Instructions to Tenderers - Part II*;

8.11 The following Addenda:

_____

_____

_____

_____

_____

_____

_____

_____

(ADDENDA, IF ANY)

(COMPLETE LISTING OF ALL DRAWINGS, PLANS AND SKETCHES WHICH ARE TO FORM A PART OF THE CONTRACT, OTHER THAN STANDARD DETAIL DRAWINGS AND SUPPLEMENTARY STANDARD DETAIL DRAWINGS.)

Schedule 2 List of Contract Drawings

TITLE	DRAWING NO.	DATE	REVISION NO.	REVISION DATE
Title Page, Legend & Site Location Plan	26056-00			
Existing Topography (Gibraltar 20251217 CRD)	26056-01			
Phase 3C Berm and Access Road	26056-02			
Phase 3C Berm and Access Road Cut & Fill	26056-03			
Phase 3C Berm Sections	26056-04			
Phase 3C Access Road – Section	26056-05			
Gradation Curves and Details	26056-06			

SUPPLEMENTARY GENERAL CONDITIONS

The General Conditions for this project are contained in the Master Municipal Construction Documents (MMCD) 2019 Edition, except as specified in the following Supplementary General Conditions and MMCD Supplemental Updates (as specified in Schedule 1 of the Form of Agreement). These Supplementary Conditions take precedence over the applicable MMCD General Conditions.

Owner: Cariboo Regional District
Contract: Gibraltar Landfill Phase 3C (2026-2027)
Reference No.: Tender 26-016

SGC 27. VARIANCE THRESHOLD PERCENTAGE

SGC 27.1 Variance Threshold Percentage

1) GC 1.76 “Variance Threshold Percentage” is hereby amended by changing the variance from 15% to 100%. The amended GC 1.76 reads:

   “Variance Threshold Percentage” means a variance of 100% between the quantity of a unit price item actually constructed or provided by the time of Total Performance and the quantity shown on the tendered Schedule of Quantities and Prices for that item.

SGC 28. AS-CONSTRUCTED DRAWINGS

SGC 28.1 As-Constructed Drawings

1) The Contractor shall provide to the Owner, at the lump sum bid, all information in electronic format complete with Red Line mark-up drawings that is necessary for the Contract Administrator to produce as-constructed drawings. This information shall be provided within 30 days after construction is complete. It is the Contractor’s responsibility to contact the Contract Administrator to determine which electronic format shall be used when submitting such information.

2) The information described in SGC 28.1(1) shall include but is not limited to:

a) location of all system components, such as cleanouts, PVC bends, inspection chambers and valves;

b) inverts of pipes at PVC bends, manholes, cleanouts and tie ins;

c) depth of inspection chambers; and

d) rim elevations for manholes, cleanouts, catch basins, curb stops and valves.

SGC 29. MATERIALS TESTING

SGC 29.1 Materials Testing

1) The Contractor shall hire a third-party materials tester at their own cost to perform all materials testing, inspections, and approvals of the Work necessary for Quality Assurance and Quality Control to ensure materials, products, and workmanship are in strict conformance with the Contract Documents. The Contractor shall provide the results of such tests, inspections, and approvals to the Contract Administrator upon request.

SGC 30. DELAYS

SGC 30.1 Liquidated Damages for Late Completion

1) GC 13.9.1(1) is amended to be as follows: “as a genuine pre-estimate of the Owner’s increased costs for the Contract Administrator and the Owner’s own staff caused by such delay an amount of **$1,000.00** per day or pro rata portion for each Day that actual Substantial Performance is achieved after the Substantial Performance Milestone Date; plus”

SGC 31. PAYMENT

SGC 31.1 Holdbacks

1) GC 18.4.2 - add the following paragraph: “The Contractor will repair any defects or deficiencies within 10 working days after the date of written notification by the Contract Administrator. If the defects or deficiencies, or any part thereof, are not repaired within 10 working days of written notification from the Owner, the Owner may draw funds from the deficiency holdback and the Owner may complete the work at the expense of the Contractor. All costs pertaining to the repair, including the Owner’s administration costs, shall be deducted from the deficiency holdback. It is understood and agreed that the Owner may do such work either by itself, or by contractors employed by the Owner.”

SGC 31.2 Payment

1) GC 18.5.1 – Delete the words “15th Day” and replace with the words “30th Day”

SGC 31.3 Substantial Performance

1) GC 18.6.4 is amended to be as follows: “The Contract Administrator shall include the date of Substantial Performance in the Certificate of Substantial Performance. The date for Total Performance shall be 10 calendar days after the date of Substantial Performance unless otherwise agreed by the Contract Administrator.”

2) GC 18.6.5 – add the following paragraph: “The Contract Administrator shall prepare a Payment Certificate for the release of the lien holdback and the amount shall be due and payable in accordance with GC 18.5.1.”

SGC 31.4 Total Performance

1) GC 18.7.4 – If Total Performance is not achieved on the date as outlined in SGC 18.6.4, upon written notification, the Owner may complete or cause to be completed any and all outstanding deficiencies. All resulting costs incurred by the Owner in completing the Work, including administration and inspection costs, will be deducted from the amounts owing by the Owner to the Contractor.

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Section 00 51 00 - Project Overview

PART 1 GENERAL

1.01 SCOPE OF WORK AND SCHEDULE

The Site is located at the Gibraltar Mine Landfill, approximately 18 kilometres north of McLeese Lake. The scope of work includes construction of a new berm using on-site waste rock; placement of salvaged till over the berm and quarry area; construction of a new access road with roadside ditches and a culvert connection; erosion control; and provisional work items. The Site, including the general locations of the main entrance and on-site roads, is shown on Drawing 26056-001. Access to the Site is available through the Landfill Main Entrance.

A. The overall scope of work for the Gibraltar Landfill Expansion includes the following work components:

   a. On-site waste rock and till relocation;

   b. Placement and compaction of salvaged and new till;

   c. Construction of the new access road, roadside ditches, and culvert connection;

   d. Erosion control;

   e. Supply and installation of no-post barriers; and

   f. Provisional work items, where directed by the Contract Administrator.

B. The Contractor shall submit a detailed construction schedule with its Tender, indicating the proposed construction start date and anticipated construction period. All work shall be coordinated with ongoing landfill operations and any other construction activities occurring concurrently at the Site. A general description of the work components follows, with further details provided in the Tender Documents.

1.02 EARTHWORK

A. The berm footprint, quarry area, new access road alignment, and existing berm / new fill interface will first be cleared, grubbed, and stripped as required. The existing till layer will be excavated, relocated, and stockpiled for reuse. Waste rock will then be relocated from the quarry area and approved excavation limits to construct the berm. Following berm construction, salvaged till will be placed and compacted over the berm and quarry area, with new till supplied where required. The new access road subgrade will be graded and compacted to provide suitable vehicle access. Roadside ditches and the culvert connection

will be constructed within the limits shown on the Drawings. No-post barriers will be installed along the outer shoulder where directed.

B. The specific components of the Earthworks are as follows:

a. Clearing, grubbing, and stripping;

b. Excavate, relocate, and stockpile existing till;

c. Relocate waste rock and construct the berm in maximum 300 mm thick lifts;

d. Place and compact salvaged till over the berm and quarry area;

e. Supply and place new till where required;

f. Shape roadside ditches and install the culvert connection;

g. Grade and compact the existing till surface to form the new access road subgrade; and

h. Supply and install no-post barriers on the outer shoulder.

1.03 EROSION CONTROL

A. Following completion of the earthworks, erosion control measures will be implemented over the quarry area and the outer 2.5H:1V slope of the new berm. The work will include hydraulic seeding in accordance with Section 32 92 19.

**** END OF SECTION ****

Section 01 20 00 - Measurement and Payment

PART 1 GENERAL

1.01 SECTION INCLUDES

This section summarizes the work included in each bid item listed on the Schedule of Quantities and Prices and defines the methods of measurement and payment for each payment item.

1.02 MEASUREMENT FOR PAYMENT QUANTITIES

A. Measurement for payment will be performed by the Contractor according to standard measurement procedures and based on actual units of work performed or installed. The method of measurement is described under each bid item.

B. The Contractor shall make all interim measurements, and determine all interim quantities and amounts of complete work done under the Contract. At the time measurements are made for quantity determinations, the Owner or its representative will be present to verify such measurements

C. The Contractor shall provide sufficient advanced notice for the date and time of measurements and allow the Owner or its representative the opportunity to observe measurements and/or conduct independent measurements for establishing quantities for progress payments.

D. Description of Methods for Measurement of Quantities

a. For items specified to be measured by a length unit (e.g. lineal or vertical metre), pay length will be measured along the line and grade of the item involved as actually placed and accepted.

b. When items are specified to be measured by an area unit (e.g., square metre, hectare, etc.), the Owner or its representative will use one of the following methods for measurement:

a. For those items to be measured by the in-place area, measurement shall be employed by the most practical means as determined by the Owner or its representative.

b. For those items measured by the in-place area with a neat line measurement for width, the area will be determined by the in-place horizontal measure for length multiplied by the fixed plan dimension for width as shown on the Contract Documents.

c. For items specified to be measured by a volume unit (e.g. cubic metres), the Owner or its representative will use one of the following methods for measurement:

   a. For those items to be measured by the in-place volume, measurement shall be determined by detailed topographic survey methods. The quantity for payment shall be the calculated as a difference between the original ground surface (prior to construction) and the final ground surface (after construction is completed). The volume shall be calculated by a cut and fill analysis using AutoCAD Civil 3D software. For volumes of excavation or embankment which are small or otherwise impractical to measure quantities by a cut and fill analysis, an average-end-area method shall be used as specified by the Owner or its representative.

   b. For those items measured by the in-place area with a neat line measurement for depth, the volume will be determined by the in-place horizontal measure for area multiplied by the fixed plan dimension for depth as shown on the Contract Documents.

   c. For those items measured by load counts of the hauling vehicle, the volume will be determined by the dimensions of each hauling vehicle. Each hauling vehicle will be measured by the Contractor to Owner's or its representative satisfaction to establish the number of cubic metres carried by that vehicle when full. All haul vehicles shall be numbered or otherwise uniquely marked for identification purposes.

      For each load delivered to the site, the Contractor shall provide to the Owner or its representative at the time of delivery, a ticket indicating the vehicle number or other identification, material type, date, time of delivery, reference to borrow source location, and intended use of material (i.e., subgrade, embankment, backfill, cover soil, drainage aggregate, drain rock, embedment, etc.)

      In addition to vehicle tickets, the Contractor shall provide to the Owner on a daily basis, a summary of vehicle loads delivered that day listing the number of loads; type of material carried by each vehicle and intended use of each type of material.

      Subsequent loads will be checked at the option of the Owner or its representative, and adjustments will be made for partial loads. Where a discrepancy in the initial vehicle capacity determined is encountered, the Owner or its representative may elect to adjust all

previous loads received by the vehicle or if applicable since the last check date.

d. For items specified to be measured by weight, the Owner will use the following methods for measurement:

a. Weight will be determined using truck scales approved by the Owner.

e. Where lump sum is the specified pay unit, complete payment for the work described to be done, completed and accepted, without further measurement will be used.

E. No payment will be made for:

a. Work performed or materials placed outside of limits indicated in the Drawings or established by the Owner.

b. Materials wasted, used, or disposed of in a manner not called for under the Contract.

c. Rejected materials (including material rejected after it has been placed, if the rejection is due to the Contractor's failure to comply with the provisions of the Contract).

d. Hauling and placement of materials from or to interim stockpiles.

e. Hauling and disposing of rejected materials.

f. Material on hand after completion of work.

g. Any other work or material when payment is contrary to any provision of the Contract.

h. Work that has been buried and/or concealed without inspection and approval (immediately prior to, and during burying and/or concealment) from Contract Administrator

i. Work that has not received the required documentation and approval required through the submittal process.

j. Work that has not been surveyed and documented for as-built records.

1.03 INSTRUCTIONS REGARDING FORM OF BIDDER

A. Work completed under this Contract will be paid for at the lump sum prices and unit prices set out in the Schedule of Quantities and Prices.

B. Incorporate all costs associated with finding, procuring, and supplying all materials and performing all work specified herein in the prices set out in the Schedule; allow for Contractor's overhead and profit except for Provisional Items (Extra Work) which shall be priced as per Contract requirements.

C. Any claim by Contractor for extra payment on grounds that work performed or materials supplied in accordance with the Drawings and/or specifications could not be properly charged to items listed in the Schedule will not be considered by the Owner.

D. If the Schedule of Quantities and Prices does not include a pay item that is shown in the Drawings and/or specifications (by either direct mention and/or implication), the Contractor shall include costs and allocate to the pay item which pertains most closely.

E. Prorate costs of a general nature that do not pertain to any one item among all items except for Provisional Items.

F. Payment will only be made for actual quantities supplied and installed during the Contract.

1.04 PROGRESS PAYMENTS

A. The Contractor shall submit an Application for Payment monthly in accordance with the General Conditions of Contract and in a format acceptable to Owner.

B. The Owner will pay the Contractor on or before the last day of the next month following the period covered by the Certificate.

C. The Owner will hold back ten (10) percent of the amount of each Certificate in accordance with the Builder's Lien Act.

D. The Owner will in addition, and where reasonably justified, make special payment hold backs as provided for in the General Conditions of Contract.

E. With every Monthly Application for Payment, the Contractor shall submit all relevant survey records for the current Progress Claim and a survey record summary for all completed work, in a form acceptable to the Owner. Failing to provide such records, could invalidate the Progress Claim and payment may not be considered.

F. The Contractor shall provide a Statutory Declaration and a WCB Clearance Letter in accordance with the General Conditions of Contract for all progress payment certificates except the first one.

1.05 FORCE ACCOUNT WORK

A. Work may be required which is not covered by the Contract.

B. All Force Account work shall be carried out in accordance with the General Conditions of Contract.

C. All Force Account work carried out must have prior written approval from the Owner. All hours of work carried out under this item must be approved on the day the work is carried out. It is the Contractor's responsibility to obtain approval each and every day that work is carried out under this item. If these approvals are not received prior to commencement of the work and at the end of each day as the work is carried out, payment may not be considered.

1.06 DESCRIPTION OF PAYMENT ITEMS

The section summarizes the work included for each of the Items listed in the Schedule of Quantities and Prices.

A. General Contract Considerations

1. Item 1.1 - Mobilization and Demobilization

a. Measurement: Lump Sum.

b. Payment: Payment will be made as a lump sum. Fifty percent (50%) of the value will be paid upon completion of mobilization to the Site, as determined by the Contract Administrator, and fifty percent (50%) will be paid upon Total Completion when all deficiencies have been addressed and all temporary facilities, surplus materials, and equipment have been removed from the Site.

c. Includes: All activities and associated costs for transportation of the Contractor's personnel, equipment, and operating supplies to and from the Site; establishment and removal of offices, buildings, and other temporary facilities; Site access coordination; and all other costs associated with mobilization and demobilization.

2. Item 1.2 - Site Survey (including RFIs, Measurements, Submittals, and Record Drawings)

a. Measurement: Lump Sum.

b. Payment: Payment will be made as a prorated lump sum based on the progress of the Work. Seventy percent (70%) of the lump sum amount may be invoiced progressively during construction, prorated as approved by the Contract Administrator. The remaining thirty percent (30%) will be paid following receipt and acceptance by the Contract Administrator of the final record drawings and supporting survey information.

c. Includes: All surveying, measurements, computations, RFIs, submittals, and record drawings required by the Contract Documents. The Work includes verification of survey control points; construction layout; establishment of lines, grades, and elevations; survey pickup of work before it is covered; interim surveys required for progress payments; and preparation and submission of final record drawings.

B. Site Grading

1. Item 2.1 - Clearing, Grubbing, and Stripping (Berm Footprint, Quarry Area, Access Road Alignment, and Existing Berm / New Fill Interface)

a. Measurement: Calculated area of completed work, based on survey of the limits of clearing, grubbing, and stripping conducted by the Contractor and verified by the Contract Administrator.

b. Payment: Per Square Metre (m^2).

c. Includes: All labour and equipment required to clear, grub, strip, relocate, and stockpile vegetation, roots, organic material, and unsuitable surficial material from the berm footprint, quarry area, access road alignment, and existing berm / new fill interface, within the limits shown on the Drawings.

2. Item 2.2 - Excavate, Relocate, and Stockpile Existing Till Layer (Approx. 1.0 m Thick) from Berm Footprint, Quarry Area, and Existing Berm / New Fill Interface

a. Measurement: Calculated area of completed work, based on survey of the limits of till excavation conducted by the Contractor and verified by the Contract Administrator.

b. Payment: Per Square Metre (m^2).

c. Includes: All labour and equipment required to excavate, load, haul, relocate, and stockpile the existing till layer, estimated to be approximately 1.0 m thick, from the berm footprint, quarry area, and existing berm / new fill interface. The Work includes trimming the exposed surface; stabilizing stockpile slopes to a minimum of 2H:1V; and grading, tracking, and maintaining the stockpiled material for subsequent reuse.

3. Item 2.3 - Relocate Waste Rock and Construct Berm in Maximum 300 mm Thick Lifts, Including Minimum Four Roller Passes per Lift

   a. Measurement: Calculated in-place volume of the completed berm, based on topographic survey before and after construction conducted by the Contractor and verified by the Contract Administrator.

   b. Payment: Per Cubic Metre (m^3).

   c. Includes: All labour and equipment required to excavate, load, haul, unload, spread, place, grade, and compact relocated acid-generating waste rock within the berm limits shown on the Drawings. Waste rock shall be placed in maximum 300 mm thick lifts. Each lift shall receive a minimum of four complete passes of approved compaction equipment, with full coverage and sufficient overlap to avoid untreated areas. Haul-truck and dozer traffic may supplement, but shall not replace, the specified compaction passes unless otherwise approved by the Contract Administrator. The Contractor shall minimize segregation and open voids. Oversized particles that prevent uniform placement shall be broken down, repositioned, or removed as directed by the Contract Administrator. Conventional density testing will not be required for the irregular waste rock. Each lift shall be visually inspected and accepted by the Contract Administrator before placement of the subsequent lift.

4. Item 2.4 - Place and Compact Salvaged Till as a 1.0 m Thick Layer on Berm and Quarry Area

   a. Measurement: Calculated area of completed work, based on survey of the limits of salvaged till placement conducted by the Contractor and verified by the Contract Administrator.

   b. Payment: Per Square Metre (m^2).

   c. Includes: All labour and equipment required to load, haul, unload, spread, moisture condition where required, and compact salvaged till as a 1.0 m thick layer over the berm and quarry area, within the limits shown on the Drawings. Till shall be placed in maximum 300 mm loose lifts and compacted to a density of not less than 95% Modified Proctor. Payment includes density and compaction testing completed by an authorized field services

technician. Compaction testing shall be completed at a frequency of one test for every 50 m^2.

5. Item 2.5 - Supply and Place New Till
   a. Measurement: Volume of new till supplied and placed, based on verified hauling records and delivery tickets, or by another method approved by the Contract Administrator.
   b. Payment: Per Cubic Metre (m3).
   c. Includes: All labour, materials, and equipment required to supply, load, haul, unload, spread, moisture condition where required, place, compact, trim, and grade new till at the locations shown on the Drawings or directed by the Contract Administrator. The proposed till source and available material information shall be submitted to the Contract Administrator for review prior to delivery to the Site.
6. Item 2.6 - Shape 1.0 m Deep V-Ditch Along Both Sides of West Segment of New Access Road
   a. Measurement: Measured length of completed ditch along the ditch centreline. The measured quantity shall include the combined length of the ditches on both sides of the road.
   b. Payment: Per Linear Metre (m).
   c. Includes: All labour and equipment required to excavate, trim, and grade a V-shaped ditch approximately 1.0 m deep along both sides of the west segment of the new access road, within the limits shown on the Drawings. The ditches shall be shaped to provide a uniform flow path and positive drainage. The Work includes removal of loose material, local regrading, and management of excavated material within the Site.
7. Item 2.7 - Grade and Compact Existing Till Surface to Form New Access Road Subgrade Suitable for Vehicle Access
   a. Measurement: Calculated area of completed road subgrade, based on survey of the limits of the completed work conducted by the Contractor and verified by the Contract Administrator.
   b. Payment: Per Square Metre (m^2).

c. Includes: All labour and equipment required to grade, trim, locally rework, moisture condition where required, and compact the existing till surface within the new access road limits shown on the Drawings. The completed surface shall be stable and suitable for vehicle access, with positive drainage and no soft, loose, or visibly yielding areas.

C. Erosion Control

1. Item 3.1 - Supply and Apply Hydroseed Quarry Area and Outer 2.5H:1V Slope of New Berm

a. Measurement: Calculated area of completed hydraulic seeding, based on survey of the limits of completed work conducted by the Contractor and verified by the Contract Administrator.

b. Payment: Per Square Metre (m^2).

c. Includes: All labour, materials, and equipment required to supply and apply hydraulic seeding over the quarry area and the outer 2.5H:1V slope of the new berm, within the limits shown on the Drawings. The Work includes seed, fertilizer, mulch, tackifier, water required for slurry application, and all incidental work required to complete hydraulic seeding in accordance with Section 32 92 19.

D. Optional Work

1. Item 4.1 - Supply and Install 8 oz. Non-Woven Geotextile

a. Measurement: Calculated area of geotextile installed and accepted by the Contract Administrator.

b. Payment: Per Square Metre (m^2).

c. Includes: All labour, materials, and equipment required to supply, place, trim, overlap, anchor, and protect 8 oz. non-woven geotextile at the locations directed by the Contract Administrator, in accordance with the Contract Documents.

2. Item 4.2 - Supply, Place, and Compact 150 mm Thick Layer of Non-PAG 25-75 mm Crush

a. Measurement: Calculated area of completed aggregate placement accepted by the Contract Administrator.

b. Payment: Per Square Metre (m^2).

c. Includes: All labour, materials, and equipment required to supply, load, haul, unload, place, grade, and compact a 150 mm thick layer of 25-75 mm crush at the locations directed by the Contract Administrator. Aggregate supplied under this item shall be sourced from non-PAG material and shall be free of potentially acid-generating waste rock. Payment includes Acid Base Accounting testing for every 1,000 m3 of supplied material and supporting documentation required by the Contract Documents.

3. Item 4.3 - Supply, Place, and Compact 100 mm Thick Layer of Non-PAG Minus 19 mm Crush

   a. Measurement: Calculated area of completed aggregate placement accepted by the Contract Administrator.

   b. Payment: Per Square Metre (m^2).

   c. Includes: All labour, materials, and equipment required to supply, load, haul, unload, place, grade, and compact a 100 mm thick layer of minus 19 mm crush at the locations directed by the Contract Administrator. Aggregate supplied under this item shall be sourced from non-PAG material and shall be free of potentially acid-generating waste rock. Payment includes Acid Base Accounting testing for every 1,000 m^3 of supplied material and supporting documentation required by the Contract Documents.

4. Item 4.4 - Supply and Install No-Post Barriers on Outer Shoulder

   a. Measurement: Measured length of no-post barriers installed and accepted by the Contract Administrator.

   b. Payment: Per Linear Metre (m).

   c. Includes: All labour, materials, and equipment required to supply, deliver, place, align, and adjust no-post barriers along the outer shoulder, within the limits shown on the Drawings.

5. Item 4.5 - Supply and Install 450 mm Diameter Double-Wall Corrugated HDPE Culvert Pipe to Connect Roadside Ditches

   a. Measurement: Measured length of culvert pipe installed and as accepted by the Contract Administrator.

   b. Payment: Per Linear Metre (m).

c. Includes: All labour, materials, and equipment required to supply and install 450 mm diameter ADS N-12 double-wall corrugated HDPE culvert pipe, or approved equivalent, to connect the roadside ditches at the location shown on the Drawings. The culvert shall be installed to the required line and grade with a minimum cover of 450 mm, measured vertically from the crown of the pipe to the finished gravel road surface.

The Work includes excavation; preparation of bedding; installation of the culvert; connection to the roadside ditches; placement and compaction of suitable surround and backfill material in accordance with ASTM D2321 and the manufacturer's requirements; reinstatement of the gravel road surface; and grading of the inlet and outlet areas to provide positive drainage. The roadside ditches shall be shaped to an approximate depth of 1.0 m.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

**** END OF SECTION ****

Section 01 71 23 - Field Engineering

PART 1 GENERAL

1.01 SECTION INCLUDES

A. The work described in this section includes field engineering and survey requirements, including Quality Control, Submittals, Project Record Documents and Survey Requirements.

B. The Contractor shall provide as a minimum the following surveying work.

a. Establish and maintain survey control and reference points (survey monuments) throughout the project.

b. Survey existing site features, structures and pipe that impact the work.

c. Survey to provide lines and grades for construction of the works.

d. Survey of as-built work to determine quantities for measurement and payment on a monthly basis.

e. Survey of final as-built work upon completion of the project.

f. Monthly as-built drawings and survey information for quantities with application for progress payments.

g. Final as-built drawings and survey information for use with project record documents.

1.02 QUALITY CONTROL

Employ a Land Surveyor acceptable to the Owner.

1.03 SUBMITTALS

A. Submit name, address, and telephone number of Surveyor before starting survey work.

B. On request, submit documentation verifying accuracy of survey work.

1.04 PROJECT RECORD DOCUMENTS

A. Maintain a complete and accurate log of control and survey work as it progresses.

PART 2 PRODUCTS

2.01 GENERAL

A. Provide drawings in AutoCAD and Adobe Acrobat format acceptable to the Contract Administrator.

B. Provide as-built drawings showing the lines for each structure and pipe system completed for each month. Provide structures, pipe system, and survey points on separate layers in the AutoCAD file.

C. Provide final as-built drawings showing the lines of the structures, lines of the pipe systems, and final surfaces as shown on the "plan" view, "section" view, and "profile" view drawings.

D. Identify pipe type, pipe size, and surface on drawings in an acceptable format approved by the Contract Administrator.

E. Identify elevations of pipes and surfaces (i.e., invert, top of pipe, final surface, etc).

F. Utilize naming conventions and descriptions consistent with drawings and as approved by the Contract Administrator.

G. Provide point lists files including horizontal (x,y) and vertical (z) positions with point descriptions and dates. Points shall be described in a manner acceptable to the Contract Administrator (including list of abbreviations). Provide point lists in MS Excel format.

2.02 AS-BUILT DRAWINGS FOR MONTHLY PROGRESS QUANTITES

A. Provide drawings showing the lines for each structure and pipe system completed for each month. Drawings shall show the entire works completed to date and distinguish between previously completed works separately from current month's work, in a format acceptable to the Contract Administrator.

B. Provide a list of quantities for work completed for the current month in MS Excel format consistent with the format of the Schedule of Quantities and Prices.

C. Each month's work shall correspond to the work identified in the monthly progress payment request.

2.03 AS-BUILT DRAWINGS FOR RECORD DOCUMENTS

A. Provide drawings showing the lines for each structure and pipe system completed for the project.

B. Provide a marked up set of printed Issued for Construction Drawings showing as-built conditions. Mark all coordinates and elevations noted on printed drawings with as-built coordinates and elevations. Provide compatible AutoCAD file to Contract Administrator with as-built surveyed points (x,y,z) including connecting lines delineating the as-built surveyed pipe alignment and profiles at the same scales shown on the Drawings.

C. Provide documentation verifying accuracy of survey work.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify locations of survey control points prior to starting work

B. Before starting any earthwork, Contractor shall review and satisfy itself as to the adequacy and accuracy of the control surveys and data established by Owner. Contractor may make such measurements and surveys as it deems necessary to confirm the Owner's control surveys. Any variances or discrepancies will be resolved by the Owner. When control surveys and data have been established to both parties satisfaction, the Contractor shall indicate his acceptance by signing a copy of the Owner's field survey notes which shall be maintained at the job site throughout the work. Initiation of work without Contractor's signature shall constitute acceptance of control survey work by Contractor.

C. Promptly notify Owner of any discrepancies discovered.

3.02 SURVEY REFERENCE POINTS

A. Contractor to locate and protect survey control and reference points.

B. The Contract Administrator and Owner will work with the Contractor to establish the required survey benchmarks for the project. The Consulting Engineer will be responsible for establishing these prior to commencement of the Work.

C. The Contractor shall maintain thereafter, all benchmarks, baselines, property boundaries and other references and construction points, as originally established by the Owner. The Contractor shall be responsible for keeping their accuracy, and pay to the Owner all costs of re-establishing them if they are disturbed.

D. Control datum for survey is NAD 83 UTM, coordinates of six (6) established hubs at the four corners of the landfill property and approximately mid-section on the north and south landfill sides will be provided.

E. Protect Owner's survey control points at all times; preserve permanent reference points during construction.

F. Promptly report to Owner the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

G. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Owner.

3.03 GENERAL SURVEY REQUIREMENTS

A. Provide field engineering services. Utilize recognized engineering survey practices.

B. The Contractor shall be responsible for all lay-out and survey control for this Contract. The location and coordinates of established survey monuments will be provided by the Owner.

C. The Contract Administrator may, at any time, check Contractor's survey and layout work but this shall not relieve Contractor of any of his responsibilities to carry out Works to the lines and grades as set out in accordance with Drawings and Specifications.

D. The Contractor shall provide reasonable and necessary opportunities and facilities for setting points and making measurements during the Work.

E. The Contractor shall employ a competent surveyor to assist the Contract Administrator, when required, in checking lines and elevation in the Contractor's layout.

F. All elevations and co-ordinates on the Drawings refer to NAD 83. Elevations/dimensions are generally shown in metres/millimetres.

G. The frequency of surveying must be at a minimum every 20 metres. In addition, more survey points must be picked up if there is any change in properties, for example: bend, diameter, thickness, tee, cross, valve, slotted, perforated, etc.

H. When surveying for volumetric quantities of cuts and fills, survey all surfaces before and after work to a 5 m grid spacing on planar surfaces and at 5 m spacing on all significant slope breaks (ditch centerline, slope crest, slope toe, etc.).

I. For all quantity control surveying, conduct survey and present to Contract Administrator for approval before placing any new materials over surface. If any volumetric surfaces are not pre-approved by Contract Administrator before being covered up, then Contract Administrator will have authority to infer surfaces based on information available in the Drawings. In that case, Contract Administrator’s interpretation shall be final.

J. The Contractor shall supply all wooden survey stakes and hubs which shall be of good quality.

3.04 FIELD QUALITY CONTROL

A. Alignment and Grade of Piping

a. The Contractor shall provide grade and alignment control during pipe installation process. The Contractor shall provide stakes or similar devices that display relevant information to control work. Grade control devices shall be spaced no greater than 6 metres (20 feet) apart over the entire length of pipe and at critical grade breaks or changes in alignment.

b. Provide grade control device showing top of bedding layer design elevation, invert elevation and top of pipe elevation and existing grade elevation. The Contractor shall monitor placement of pipe to verify grade and alignment tolerance are met.

c. The Contractor shall immediately set new grade markers that have been disturbed.

d. The Contractor shall demonstrate to the Contract Administrator that installed pipe meets slope (grade), elevations and alignment. At a minimum, the demonstration shall check elevations, slope, and alignment every 3 metres (10 feet) on center.

3.05 SURVEY FOR LINES AND GRADES

A. The Contractor shall be responsible for layout of all works.

B. The Contractor shall establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:

a. Ditches, slope breaks, culverts and pipe center lines.

b. All areas requiring grading cut and / or fill. Control material placement as necessary to achieve desired elevations without overfilling.

c. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.

C. Periodically verify layouts by same means.

D. Dimensions for the determination of quantities for payment will be taken from the Drawings where the location of the lines and points determining quantities for payment is not varied during the construction from the locations shown on the Drawings. Where, however, the location of such lines and points is altered during the construction, field measurements will be made by the Contractor's surveyor and reviewed and approved by the Contract Administrator to determine the changed dimensions shown on the Drawings. The Contractor shall notify the Owner before the work is covered up, so that the true dimensions can be established by the Owner. In all cases where the procedure for determination of quantities is not expressly defined in this Contract, the Contract Administrator shall be the sole judge as to which measurements properly define the quantities.

E. The Contractor shall cooperate with the Contract Administrator and provide a surveyor with differentially corrected GPS or similar assistance in checking layout measuring quantities for payment.

F. No payment will be made for the cost to the Contractor of any work or delays occasioned by establishing or checking lines and grades or making other measurements and no extension of time will be allowed for any delay occasioned thereby.

G. The Drawings indicate the intent of the Work and construction details as accurately as is possible. Because of the nature of the work however, minor adjustments may be required in the field to meet specific conditions. Such adjustments shall be made by the Contractor without additional cost to the Owner.

H. The Contractor shall upon commencement of the work, survey all existing facilities, expose any work required and make any measurements required, to confirm the accuracy of the existing facilities prior to ordering, fabricating, or constructing any piece of work.

I. The Contractor shall verify all elevations and other survey information contained in the Drawings in the field.

J. The Owner will not entertain extras to the Work due to the Contractor's failure to survey or measure the work properly in advance.

K. Additional requirements for Record Drawings are contained in Schedule 14.

3.06 SURVEY FOR MONTHLY QUANTITIES

A. The Contractor shall measure and record the as-built pipeline information for the work associated with the application for progress payment. The survey information MUST be submitted to the Contract Administrator as part of each progress draw per the survey control requirements. The progress draw will not be processed until the necessary survey information is provided and reviewed for completeness and accuracy.

B. As-built survey information shall include horizontal and vertical locations of installed pipelines at locations and elevations shown on the Drawings and a minimum of every 3 metres (10 feet) on center, at grade breaks, junctions, pipe fittings, valves, and changes in alignment.

C. Pick-up of topography for volume purposes shall be surveyed on a regular 10 x 10 m grid with additional points taken at major grade breaks.

D. Surveys for tracking quantities of geomembrane and geotextile installed shall be taken to outer bottom edge of the anchor trench or to the defined geomembrane limit, with a survey spacing of 5 metres and additional points taken at all bends and major grade breaks.

**** END OF SECTION ****

Section 31 23 02 - Earthwork

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Excavation and stockpiling of Backfill

B. Furnishing and installing of Backfill

C. Subgrade preparation

D. Construction of the acid-generating waste rock berm

E. Preparation of the new access road subgrade

F. Shaping of roadside ditches and installation of the culvert connection

1.02 REFERENCES

A. ASTM D422, Standard Test Method for Particle-Size Analysis of Soils.

B. ASTM D698, Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbs/ft3 (600 kN-m/m3)).

C. ASTM D1556, Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.

D. ASTM D1557, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbs/ft3 (2,700 kN-m/m3)).

E. ASTM D1586, Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils

F. ASTM D1587, Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes.

G. ASTM D2166, Test for Unconfined Compressive Strength of Cohesive Soils.

H. ASTM D2167, Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.

I. ASTM D2216, Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass.

J. ASTM D2321, Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.

K. ASTM D2487, Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).

L. ASTM D2573, Standard Test Method for Field Vane Test in Cohesive Soils.

M. ASTM D2937, Standard Test Method for Density of Soil in Place by the Drive Cylinder Method.

N. ASTM D4254, Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.

O. ASTM D4643, Standard Test Method for Determination of Water (Moisture) Content of Soil by the Microwave Oven Heating.

P. ASTM D4944, Standard Test Method for Field Determination of Water (Moisture) Content of Soil by the Calcium Carbide Gas Pressure Tester.

Q. ASTM D4959, Standard Test Method for Determination of Water (Moisture) Content of Soil by Direct Heating.

R. ASTM D6938, Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

S. MMCD, Master Municipal Construction Documents Association.

1.03 DEFINITIONS

A. Backfill: Soils placed from the excavated surface to the existing grade.

B. Embedment Material: material placed in contact with the pipe and/or conduit (and immediately adjacent to) for the purpose of providing structural support to the pipe and/or conduit. If applicable, the material placed in contact with the pipe for the purpose of providing the porous region for transfer of gas/fluids into the piping system. Embedment material is classified into 3 zones of placement per ASTM D 2321 as follows:

a. Bedding: That material placed from the bottom of the embedment zone to the bottom of the pipe.

b. Haunching: That material placed from the bottom of the pipe to the springline of the pipe.

c. Initial Backfill: That material placed from the springline of the pipe to the top of the embedment zone.

C. Final Backfill Material: For piping systems, that material placed above the embedment zone to the existing or proposed subgrade. For structures, that material placed above the base of the structure to the existing or proposed subgrade.

D. Embankment Material: material placed on or above existing ground surface (also referred to as fill).

E. Foundation Material:

a. For piping systems, material used to stabilize the trench bottom below the embedment zone when unstable conditions are encountered.

b. For structures, slabs, manholes, catch basins and vaults that material placed from the bottom of the excavated surface to the base of the structure.

c. For cover systems, a layer of fine grain (high clay content) soil placed, compacted, and fine graded to allow direct placement of overlying geosynthetic materials.

F. Geotextile: porous synthetic fabric used to provide filtration, separation, or reinforcement of soils in civil engineering works (also referred to as textile or filter fabric).

G. Rock: Sound and solid masses, or ledges of mineral matter in place and of such hardness and texture that, when it is encountered, cannot be excavated by 3 passes of a ripper tooth mounted on a hydraulic excavator with a bucket curling force of at least 25,700 pounds and a stick crowd force of at least 26,100 pounds, or 2 passes of a single shank ripper mounted on a Caterpillar D-8 crawler tractor (or equivalent).

H. Subgrade: The surface prepared to accept other materials.

I. Unstable trench bottom: The trench bottom shall provide adequate support and stable containment of the embedment material so that the density of the embedment material does not diminish.

a. Unstable conditions include a soft trench bottom that does not provide an adequate working platform or walls that readily slough. Unstable conditions also include materials with high organic content, fine grained soils saturated with water in excess of their liquid limit, low density fine sands or silts, and expansive soils such as "fat" clays and certain shales that exhibit a large change in volume with change in moisture content.

b. In situ soil is considered stable (for cohesive or granular cohesive soils), if the shear strength as measured in accordance with ASTM D2166 or ASTM D2573 is not less than 500 lbs/ft2.

c. In situ soil is considered stable (for sands), if the penetration resistance as determined in accordance with ASTM D1586 is not less than 8 blows per foot.

d. If unstable conditions are encountered, the Contractor shall excavate below grade to such depth and width as directed by the Contract Administrator. The excavated area below grade shall be filled with

foundation material in 150-mm (6-inch) compacted layers and brought up to within 150 mm (6 inches) of the bottom of the pipe.

1.04 SUBMITTALS

A. Submit surveyed topographic map within area proposed pipeline routes as indicated on the drawings as specified hereinafter. Submit topographic map prior to 10 working days before initiating earthwork.

B. Submit samples of proposed materials to be used in construction, whether excavated and processed from materials on site or imported, for testing and review of testing and inspection service. Submit samples of sufficient size, quantity, and frequency, as determined by the Contract Administrator.

C. Submit laboratory test results and field test results of soils/aggregates used in foundation, embedment, and backfill construction, as specified hereinafter.

D. Submit quality control documentation.

E. Submit a plan showing trench construction sequence and schedule.

F. If dewatering is necessary, submit a plan for controlling site water as specified herein.

G. Submit trench subgrade survey as specified hereinafter.

1.05 QUALITY ASSURANCE

A. Codes and Standards: Perform work in compliance with applicable requirements of governing authorities having jurisdiction and referenced codes and standards.

B. Testing and Inspection: Owner will engage a testing and inspection services for quality assurance during earthwork operations.

C. Contractor shall be responsible for daily quality control including: analysis of soil processing operations to insure that the materials produced and installed comply with the gradations and material specifications described hereinafter. Contractor shall employ a qualified testing and inspection agency to provide the necessary quality control testing. The Contractor shall employ a qualified surveying firm to provide specified alignment, grades, and elevations. Contractor shall maintain and submit accurate reports of all quality control testing and surveying. The Owner's testing and inspection service may make periodic random checks of the Contractor's processing and installation operations.

D. All materials intended for use shall be approved by the Contract Administrator prior to placement.

1.06 PROTECTION

A. Protect persons, both on and off the site, from injury. Barricade temporary open excavations occurring as part of the Work with suitable fences and barriers. Equip barriers with warning lights.

B. Protect trees, shrubs, lawns, existing structures, fences, roads, sidewalks, utilities, and other features that are to remain as part of the completed project site.

C. Protect off-site property from damage caused by Contractor's construction operations. Exercise particular care in preventing any disturbed soils, debris, refuse, or other potential pollutants from entering any water course or adjoining property.

D. Do not bring or use explosives on the site unless specified herein.

E. Immediately repair at Contractor's cost all damage caused by construction work.

PART 2 PRODUCTS

2.01 MATERIALS

A. Backfill: Select material obtained from excavations.

a. Backfill material shall be select onsite soils obtained from the Contract Administrator approved borrow source.

B. Salvaged Till: On-site till excavated, stockpiled, and reused for placement over the berm and quarry area.

C. New Till: Till obtained from an Contract Administrator -approved off-site or on-site source. The Contractor shall submit the proposed source and available material information for review before delivery or placement.

D. Berm Fill: Acid-generating waste rock relocated from the designated quarry area and approved excavation limits. The waste rock is irregular in size and shall be placed using the method-based compaction requirements specified herein.

E. Aggregate: 25-75 mm crush and minus 19 mm crush supplied under the provisional items shall be sourced from non-PAG material and shall be free of potentially acid-generating waste rock.

F. Culvert Pipe: 450 mm diameter ADS double-wall corrugated HDPE culvert pipe, or approved equivalent.

2.02 SOURCE QUALITY CONTROL

A. Soils: Material testing of soils used for foundation, embedment, and final backfill shall be performed to ensure the consistency of the properties of the soil obtained from on or off-site borrow sources. These tests shall be performed by the Contractor prior to processing, placement, compaction and any necessary conditioning. The results of these tests shall be submitted to the Contract Administrator within 10 day after award. At a minimum, the following tests shall be conducted:

Table 2
Materials Tests For Borrow Source

Parameter	Test Method
Particle Size of Soils – Washed Sieve	ASTM D422
Moisture/Density Relationship	ASTM D1557 (2)
Notes:	1. Frequency: A minimum of three tests shall be conducted per borrow source. Tests will also be conducted when there is a noticeable change in material type as determined by the Contract Administrator. 2. ASTM D1557 for soils which exhibit a well-defined moisture-density relationship. ASTM D4254 for soils which do not exhibit a well-defined moisture-density relationship.

B. Non-PAG Aggregate: Acid Base Accounting testing shall be completed for every 1,000 m3 of supplied 25-75 mm crush and minus 19 mm crush. Supporting test results shall be submitted to the Contract Administrator before or with delivery of the aggregate to the Site.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that survey benchmark and intended elevations for the work are as indicated.

B. Before starting any earthwork, Contractor shall review and satisfy itself as to the adequacy and accuracy of the control surveys and data established by the Owner for the purpose of computing payment quantities. Contractor may make

such measurements and surveys as it deems necessary to confirm the Owner's control surveys. Any variances or discrepancies will be resolved by the Contract Administrator. When control surveys and data have been established to both parties satisfaction, the Contractor shall indicate his acceptance by signing a copy of the Owner's field survey notes which shall be maintained at the job site throughout the work.

C. Verify that materials excavated and processed on site meet the specified requirements.

3.02 PREPARE EXISTING PLAN AND PROFILE SURVEY MAP

A. Prior to conducting any site work the Contractor shall prepare a topographic map which identifies and locates (horizontally and vertically) existing site features and utilities along the pipe routes. The map shall be prepared by a qualified surveying firm to national map accuracy standards. The Contractor shall provide existing elevations and locations along the alignment of the gas main, header, lateral, branch pipes, and condensate pipes at 5 meters (~15 feet) on center and at every change in alignment, grade, well connection, and existing utility(ies)/structure(s). The elevations and locations shall be based on project datum and be accurate to +/- 0.01 meter (~0.05 foot).

Horizontal and vertical locations shall be referenced to project datum. The ground surface shall be indicated with spot elevations. Other features to be identified include existing roads, paved areas, fences, test pits, pipes, manholes, and other visible site features. All features shall be located horizontally and vertically and identified consistent with the plan and legend. The map shall be prepared in digital format and reproducible hard copy formats at the same scale as the plan drawings. Digital format shall be compatible with AutoCAD Version 2013. Digital format shall provide mapping features on separate layers.

3.03 PREPARATION

A. Allow 10 working days after receipt of maps (receipt by Owner) before proceeding with field layout and staking. Notify Owners 3 days in advance prior to conducting work.

B. Locate and layout the required lines, levels, contours, and datum.

C. Identify, flag, and protect known utilities.

3.04 EXCAVATION

A. General

a. Excavation consists of removal of all types of material encountered when establishing required subgrade elevation, trench dimensions and adequate support for elevations, grades and alignment as shown on the Drawings.

b. Unauthorized excavation consists of removal of materials beyond indicated subgrade/grade or finished elevations or dimensions without specific direction of the Contract Administrator. Unauthorized excavation, as well as remedial work directed by Contract Administrator, shall be at Contractor's expense.

c. Remedial Work for Unauthorized Excavation

1) Under footings, foundation bases, or other structures fill unauthorized excavation by extending bottom elevation of footings, base, or structure to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position, when acceptable to the Contract Administrator.

2) Elsewhere, backfill and compact unauthorized excavations with specified Foundation Material, as determined by Contract Administrator. Compact to a density not less than that specified for the subsequent materials layers.

d. Stability of Excavations: Slope sides of temporary excavations to comply with local codes, ordinances, and authorities having jurisdiction. Provide steel strutted trench boxes, or properly designed sheeting, shoring, and bracing systems where sloping is not possible due to space restrictions or where depth of excavation exceeds 1.2 meters (4 feet), or stability of material being excavated. Maintain sides and slopes of excavation in a safe condition until completion of backfilling.

e. Excavation shall not interfere with normal 45 degree bearing splay of adjacent structure foundations. Underpin adjacent structures which may be damaged by excavation work, including utilities and pipe chases.

f. Material which is part vegetation soil, surfacing, pavement or cover system (such as gravel, pavement, topsoil, and/or barrier soil), shall be separated from other excavated material wherever possible. Such material shall be removed in a manner to separate it clearly from underlying material and shall be stored or disposed of, on the site where directed by the Contract Administrator. Before excavation through any paved surfaces, pavement shall be sawed by means of a power saw, to the width of the trench and so as to minimize damage to pavement outside of the trench limits.

g. Grade top edge of excavation to prevent surface water from draining into excavation.

h. Stockpile excess excavated unprocessed material at locations as directed by Contract Administrator.

i. The Contractor shall take all necessary precautions to protect underground piping during the course of the construction. Some information may be available from the Owner pertaining to the location and existence of underground piping and utilities. The Contractor is responsible for locating and protecting all underground utilities.

j. Schedule all road crossings with Owner and Contract Administrator to minimize disruption to waste disposal operations and traffic. The Contractor shall provide a minimum of 2 week notice of intended road crossing work.

B. Structure Excavation:

a. Excavate subsoil required to accommodate structural foundations, slabs-on-grade and site structures.

b. Extend excavations laterally from structure walls and footings a minimum of 600 mm (2 feet) to allow for clearance for observation and placement and removal of forms.

c. Hand trim excavation. Remove loose matter, water softened subgrade, lumped subsoil, boulders, and rocks.

C. Excavation near Geosynthetics:

a. Request presence of Contract Administrator when excavating near geosynthetics. Do not expose geosynthetics without giving Contract Administrator opportunity for inspection.

b. Provide a “spotter” when using heavy equipment to expose geosynthetics. If using heavy equipment (other than manual labor) to expose geosynthetics, a person must be present during use of heavy equipment to assist the equipment operator in positioning equipment/attachments/tools so as not to damage geosynthetics.

c. Expose existing geosynthetics by carefully removing overlying material without damaging existing geosynthetics.

d. Protect exposed geosynthetics from soil, rock, etc sloughing off the face of the excavation until the geosynthetics connections are complete and accepted by the Contract Administrator. If a temporary shoring system is

used for this purpose, it shall have a flat surface and be heavily padded where in contact with the existing geotextile and geomembrane, so as not to damage or weaken them.

3.05 SUBGRADE AND FINISHED SURFACES

A. All areas covered by the work, including excavated and filled sections, shall be uniformly backbladed to the subgrade, or finished ground elevations. The finish surface shall be reasonably smooth and free of irregularities.

B. Area where excavation disrupted a surface system such as vegetation soil, surfacing, pavement or cover system (such as topsoil, gravel, asphalt, and/or barrier soil), shall be restored to the original surfacing.

3.06 WASTE ROCK BERM CONSTRUCTION

A. Construct the berm using acid-generating waste rock relocated from the designated quarry area and approved excavation limits. Place waste rock in maximum 300 mm thick lifts.

B. Each lift shall receive a minimum of four complete passes of approved compaction equipment. Each pass shall provide full coverage of the placed material with sufficient overlap to avoid untreated areas. Haul-truck and dozer traffic may supplement, but shall not replace, the specified compaction passes unless otherwise approved by the Contract Administrator.

C. Place waste rock to minimize segregation and open voids. Oversized particles that prevent uniform placement shall be broken down, repositioned, or removed as directed by the Contract Administrator.

D. Conventional density testing will not be required for the irregular waste rock. Each lift shall be visually inspected and accepted by the Contract Administrator before placement of the subsequent lift.

3.07 NEW ACCESS ROAD SUBGRADE

A. Grade, trim, locally rework, moisture condition where required, and compact the existing till surface within the new access road limits shown on the Drawings. The completed surface shall be stable and suitable for vehicle access, with positive drainage and no soft, loose, or visibly yielding areas.

3.08 ROADSIDE DITCHES AND CULVERT CONNECTION

A. Shape the V-ditches along both sides of the west segment of the new access road to a depth of approximately 0.70 m and to the lines and grades shown on the Drawings. Provide a continuous flow path and positive drainage.

B. Install the 450 mm diameter ADS double-wall corrugated HDPE culvert pipe, or approved equivalent, to connect the roadside ditches. Provide excavation,

bedding, line and grade control, suitable surround and backfill material, compaction, road-surface reinstatement, and grading at the inlet and outlet areas.

3.09 TOLERANCES

A. Top Surface of Subgrade: Plus or minus 30 mm (one tenth (1/10) foot).

3.10 FIELD QUALITY CONTROL

A. The following field inspection and testing shall.

a. Alignment and Grade Control

b. The Contractor shall provide grade and alignment control during excavation of trenches and during preparation of pipe bedding. The Contractor shall provide stakes or similar devices that display relevant information to control work. Grade control devices shall be spaced no greater than 5 meters (~15 feet) apart over the entire surface and at grade breaks or changes in alignment. Laser level techniques are acceptable in lieu of grade staking.

c. Provide grade control device showing trench top and bottom of bedding layer design elevation, depth and existing elevation. The Contractor shall monitor fine grading to verify grade and alignment tolerance are met.

d. The Contractor shall immediately set new grade markers to replace any which have been disturbed.

B. Compaction Control

a. Monitoring compaction effort shall be conducted using the tests and frequencies specified in Table 3. Sample locations shall be in a grid pattern. The grid pattern shall be staggered between successive lifts.

b. If tests indicate work does not meet specified requirements, additional tests shall be performed in the immediate vicinity of the failed test. This area shall be tested, the failed area localized and reconstructed in accordance with these specifications and retested at no cost to Owner.

3.11 WATERING

A. The Contractor shall water for dust control as directed by the Contract Administrator. The Contractor shall not waste water. Separate payment will not be made for watering for dust control. All costs are incidental to the contract and are responsibility of the Contractor. All costs shall be included in the contract with prices for other bid items.

Table 3
Required Tests and Observations on Compacted Soil

Parameter	Test Method	Minimum Testing Frequency
Water Content (Rapid) (Note 1)	ASTM D6938 ASTM D4643 ASTM D4944 ASTM D4959	5/1000 m/lift (1.5/1000 ft/lift) (Note 2)
Water Content (Note 3)	ASTM D2216	One in every 10 rapid water content tests (Note 3)
Total Density (Rapid) (Note 4)	ASTM D6938 ASTM D2937	5/1000 m/lift (1.5/1000 ft/lift) (Notes 2, 4)
Total Density (Note 5)	ASTM D1556 ASTM D1587 ASTM D2167	One in every 20 rapid density tests (Notes 5, 6)
Number of Passes	Observation	1/1000 m/lift (0.3/1000 ft/lift) (Note 2)
Construction Oversight	Observation	Continuous

Table 3 Required Tests and Observations on Compacted Soil		
Parameter	**Test Method**	**Minimum Testing Frequency**
Notes: ASTM D4643 is microwave oven drying, ASTM D4944 is a calcium carbide gas pressure tester method, and ASTM D4959 is a direct heating method, ASTM D6938 is a nuclear method. Direct water content determination (ASTM D2216 is the standard against which nuclear, microwave, or other methods of measurements are calibrated for on-site soils. In addition, at least one test should be performed each day soil is compacted and additional tests shall be performed in areas for which CQA personnel have reason to suspect inadequate compaction. Every tenth sample tested with ASTM D4643, D4944, D4959, or D6938, shall be also tested by direct oven drying (ASTM D2216) to aid in identifying any significant, systematic calibration errors. ASTM D2937 is the drive cylinder method and ASTM D6938 is a nuclear method. These methods, if used, shall be calibrated against the sand cone (ASTM D1556) or rubber balloon (ASTM D2167) for on-site soils. Alternatively, the sand cone or rubber balloon method can be used directly. Every twentieth sample tested with D6938 shall also be tested (as close as possible to the same test location) with the sand cone (ASTM D1556) or rubber balloon (ASTM D2167) to aid in identifying any systematic calibration errors with D6938. ASTM D1587 is the method for obtaining an undisturbed sample. The section of undisturbed sample can be cut or trimmed from the sampling tube to determine bulk density. This method shall not be used for soils containing any particles greater than one sixth (> 1/6) the diameter of the sample.		

3.12 ACCEPTANCE

A. The work shall be accepted by the Contract Administrator when:

a. Conformance test results meet the requirements of the Contract Documents.

b. Required documentation from the field and laboratory testing laboratories has been received and accepted.

c. All repairs have been completed to the Contract Administrator's satisfaction.

d. Written certification documents, including as built drawings, have been received by the Contract Administrator.

**** END OF SECTION ****

Section 31 32 19 - Geotextiles

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Supply the following geotextiles for use as shown on the Drawings, including but not limited to the following:

a. Light Weight (8oz) Non-woven Geotextile for use:

a. As a separation layer above the berm crest and below the provisional road

1.02 STANDARDS

A.	ASTM D3786	Hydraulic Bursting Strength of Fabrics (Mullen Burst)
B.	ASTM D4533	Trapezoid Tearing Strength of Geotextiles
C.	ASTM D4632	Test Method for Breaking Load and Elongation of Geotextiles (Grab Method)
D.	ASTM D4751	Apparent Opening Size of Geotextiles
E.	ASTM D4833	Test Method for Index Puncture-Resistance of Geotextiles, Geomembranes, and Related Products.
F.	ASTM D4873	Guide for Identification, Storage and Handling of Geotextiles
G.	ASTM D4491	Permittivity and Water Flow Rate

1.03 SUBMITTALS

A. Any request to substitute an alternate geotextile shall be submitted to the Contract Administrator in writing as part of the Tender documents and shall include complete product specifications addressing all specifications outlined within this section.

B. Following award of the Contract, the Contractor shall submit a 1.0 x 1.0 m panel of each candidate geotextile for inspection and testing. The sample geotextile panel shall be submitted to the Contract Administrator within 5 days of commencing the Work. The geotextile shall be submitted uniformly rolled and shall be wrapped in plastic to protect the material from moisture and damage during shipment. Samples shall be externally tagged for easy identification. External tagging shall include:

a. name of manufacturer

b. product type

c. product grade

d. lot number

e. physical roll dimensions (length and width)

C. The Contractor shall supply the following information for any alternate geotextiles following the award of the Contract. The information shall be supplied to the Contract Administrator within 5 days of commencing the Work. Factory test results must be acceptable to Contract Administrator prior to shipment of geotextiles.

a. The claimed minimum roll values of the geotextile for each of the properties listed herein (except Apparent Opening Size (AOS))

b. The maximum roll values for the candidate geotextile for AOS based on the standard.

c. These claims shall be supported by laboratory test results from the manufacturer, including certified laboratory test data for unit weight, tensile strength, puncture strength, Mullen burst strength, and trapezoidal tear strength measured in accordance with the procedures listed herein at a minimum frequency of 1 test per 1 ha of geotextile produced.

D. As part of the Tender, the Contractor shall provide the certified records for successful installation of 100 HA of geotextile and 5 years of experience in similar applications, along with three current references regarding the proposed installer of the geotextile.

1.04 SEQUENCING AND SCHEDULING

A. Roll delivery and installation shall be coordinated with the work in other sections to prevent damage to the geotextile.

B. The geotextile shall be placed before placement of any subsequent soil or geosynthetic layer. In no instance, shall the geotextile be left exposed for a period longer than five days before it is completely covered by overlying layers. As soon as an area large enough has been completed and approved by the Contract Administrator, the Contractor may begin installing the overlying layers.

PART 2 PRODUCTS

2.01 NON-WOVEN GEOTEXTILE – 8 OZ LIGHT WEIGHT

A. Due to the coarse nature of the drain rock on which the geotextile may be placed and the significant traffic loads during construction, the fabric must provide a “high” degree of geotextile survivability. To achieve this performance requirement, the geotextile shall be a nonwoven needle punched geotextile with physical properties that meet or exceed the following specifications.

Light Weight Nonwoven Geotextile (8 oz./yd^2)

Property	Required Value	Test Method
Unit weight	270 g/m^2	ASTM D5261
Grab Tensile Strength	975 N	ASTM D4632
Grab Tensile Elongation	50%	ASTM D4632
Puncture	2,600 N	ASTM D6241
Trapezoid Tear Strength	400 N	ASTM D4533
Apparent Opening Size	180µm	ASTM D4751

2.02 GEOTEXTILES GENERAL REQUIREMENTS

A. The geotextile shall be free of holes, tears, defects, and patch repairs of defects. The geotextile shall be composed of needle punched, discontinuous (staple) fibres or continuous fibres. Fibres used in the manufacturing of the geotextile shall consist of a material that is at least 85 percent by weight polyolefins, polyesters, or polyamides.

B. The geotextile and threads used in sewing the geotextile shall be chemically resistant to commonly encountered municipal landfill leachate, rot and mildew. The geotextile and threads used in sewing the geotextile shall also contain stabilizers or inhibitors to limit degradation due to ultraviolet (UV) light exposure. Polymeric thread used for sewing shall exhibit chemical and UV resistance equal to or exceeding that of the geotextile.

C. The geotextile materials supplied under these specifications shall be first quality products specifically manufactured for cushion applications and shall have been demonstrated by prior use their suitability for such applications.

D. The geotextile must achieve sufficient interface shear strength between the overlying or underlying geomembrane and the underlying and overlying drainage layers to ensure a factor of safety of 1.5 or better under worst case static loadings and steepest slope geometries.

PART 3 EXECUTION

3.01 DELIVERY, IDENTIFICATION AND STORAGE

A. The geotextile shall be labeled, stored, and handled in accordance with ASTM D4873. The geotextile shall be kept dry and wrapped in waterproof wrapping such that it is protected from UV light and the elements during shipping and storage. Geotextile rolls shall be stored in a manner that protects them from the

elements. If stored outdoors, they shall be elevated and protected with a waterproof, opaque cover in an area free of mud and / or ponded water.

B. Each roll shall be clearly tagged with the following information:

a. Name of manufacturer

b. Product type

c. Product grade

d. Lot number

e. Physical dimensions (length and width)

C. The delivery of any rolls not labeled or packaged in the specified manner shall be reason for rejection of those rolls.

D. The geotextile shall be delivered to the site in undamaged condition.

3.02 GEOTEXTILE INSTALLATION

A. The surface base shall be approved by the Contract Administrator prior to geotextile placement. Soil surfaces on which the geotextile is to be placed shall be graded and compacted to a smooth surface free of debris or obstructions that may damage the geotextile. All rocks, sticks and other solid particles larger than 50 mm in diameter that protrude from the smooth surface shall be removed unless approved otherwise by the Contract Administrator.

B. Care shall be taken not to entrap stone, excessive dust, or moisture in the geotextile. The Contractor shall not operate equipment directly on the geotextile. Trimming of the geotextile shall be performed in a manner that will not damage the geomembrane or other underlying materials.

C. The geotextile shall be laid smooth and free of tension with a minimum of wrinkles and creases so that the geotextile contact with the underlying soil or geosynthetic is maximized. Geotextile installation shall be performed to the satisfaction of the Contract Administrator.

D. On slopes, the geotextiles shall be anchored at the top and unrolled down the slope. In the presence of wind, all geotextiles shall be weighted with sandbags or other material which will not damage the geotextile. Geotextile uplifted by wind may be reused upon approval by the Contract Administrator.

E. The geotextile shall be handled in a way that prevents any damage to the fabric. Any geotextile damaged on-site shall be repaired or replaced, at the discretion of the Contract Administrator.

F. On slopes less than or equal to 10H: 1V adjacent geotextile panels may be sewn, heat bonded or overlapped as required by the Contract Administrator.

For overlapped seams, overlap distances shall be a minimum of 450 mm. If separation of overlapping panels occurs, the Contract Administrator may request that the geotextile be seamed in the field, where he sees fit. All field seams shall be fabricated so that stitches remain on top of the seam, visible for inspection.

G. On slopes steeper than 10H:1V the geotextile is to be installed with the long axis of each panel oriented in the up-slope direction, except in ditches where the direction of installation shall be as specified by the Contract Administrator onsite. As well, adjacent geotextile panels shall be sewn on slopes greater than 10H:1V or bonded with other methods (e.g. heat welding) that ensure seam strengths of more than 50 psi. All seams shall be oriented parallel to (in the direction of) the slope. Seams constructed perpendicular or transverse to the direction of the slope will not be accepted, except on benches and berms.

H. The geotextile shall not be placed on any slopes steeper than 2.0 H:1V, unless directed to do so by the Contract Administrator.

I. In trenches, the geotextile shall be placed with sufficient slack to ensure that good contact with the trench bottom and sides will be maintained when the trench is fully backfilled.

J. During installation, the geotextile may be held in place with sand bags or tires. Staples, rods, nails or other penetrating devices shall not be permitted.

K. The geotextile panels shall not be placed on wet or muddy surfaces, except where approved to do so by the Contract Administrator.

L. Any torn, punctured, flawed, deteriorated or otherwise damaged geotextile shall be repaired. Any interfering material shall first be removed as necessary to expose the geotextile. The damage shall be repaired by placing a patch of undamaged geotextile over the damaged area with a minimum overlap of 500 mm in all directions. The patch shall be secured in place with a thermal wedge welder or sewn seam.

M. Construction equipment must not operate directly on top of the geotextile. A minimum of 300 mm of aggregate finer than 25 mm shall be spread on top of the geotextile before construction equipment can operate on the surface.

N. The geotextile shall not be covered with other materials prior to inspection and approval by the Contract Administrator. The geotextile shall be examined over the entire surface after installation to ensure that no potentially harmful objects are present.

**** END OF SECTION ****

Section 32 92 19 - Hydraulic Seeding

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Provide all labour, equipment, and materials required to supply, apply, and maintain hydraulic seeding to successful establishment over the quarry area and the outer 2.5H:1V slope of the new berm, within the limits shown on the Drawings.

1.02 SUBMITTALS

A. As part of the Tender, the Contractor shall provide at least 100 HA of Hydraulic Seeding experience within the past 5 years.

1.03 SEQUENCE AND SCHEDULE

A. Schedule operations to ensure optimal environmental protection, grading, growing medium placement, seeding, mulching, and establishment of vegetation. Schedule hydraulic seeding to minimize on-site storage of materials and disturbance or compaction of the growing medium.

B. The Work is expected to be implemented near the end of the construction season, during September or October. Supplemental watering of the hydroseeded areas will not be required where hydraulic seeding is completed during this period. If the Contractor proposes an alternate schedule, the Tender shall include clarification of the proposed hydroseeding maintenance plan, including any watering, irrigation, monitoring, reseeding, or other measures required to achieve successful establishment of vegetation.

PART 2 PRODUCTS

2.01 SEEDING AND SEED REQUIREMENTS

A. Provide the general grass seed mix for revegetation of British Columbia highway roadsides for Region 4 - Central North East, consisting of the following proportions by mass:

a. 40% Smooth Bromegrass.

b. 20% Creeping Red Fescue.

c. 15% Timothy.

d. 15% Alfalfa.

e. 10% Alsike Clover.

B. Deliver grass seed mixture in original containers showing:

a. Name of supplier.

b. Analysis of seed mixture.

c. Percentage of pure seed.

d. Year of production.

e. Net weight (mass).

f. Date and location of bagging.

C. Store materials in accordance with manufacturer's instructions and in a manner to prevent damage and deterioration. Store seed, fertilizer and related materials in accordance with manufacturer's instructions and in a manner that is protective of human health and the environment. Seed that is incorrectly stored, exposed to excessive heat or moisture must not be used. Remove seed from site that has become wet, moldy, or otherwise damaged in transit or storage.

2.02 HYDRAULIC MULCH

A. Hydraulic mulch specifications are currently being prepared by the Owner and will be supplied to the Contractor following award of the Contract.

2.03 FERTILIZER

A. Provide fertilizer with an analysis of 26-16-8.

B. Fertilizers to be packed in standard waterproof containers, clearly marked with name of manufacturer, weight and analysis.

C. Fertilizer to be stored in weatherproof storage place and in a manner that is protective of human health and the environment and ensure specified effectiveness.

2.04 WATER

A. Water used in hydraulic seeding or in irrigation must be free of impurities that could inhibit germination and growth.

B. The Contractor shall supply the water required for preparation and application of the hydraulic seeding slurry. Supplemental watering of the hydroseeded areas will not be required where hydraulic seeding is completed during the anticipated September-October construction period. Where hydraulic seeding is proposed outside of this period, the Contractor shall implement the accepted hydroseeding maintenance plan, including supplemental watering or irrigation where required to achieve successful establishment.

PART 3 EXECUTION

3.01 GRASS SEED, FERTILIZER AND MULCH

3.02 PREPARATION

A. Do not perform work under adverse field conditions such as frozen soil, excessively wet or dry soil or soil covered with snow, ice or standing water or when winds exceeds 10 km/h.

B. Seeding of the Topsoil layer shall commence over the work area after installation of the Topsoil layer is completed to the satisfaction of the Contract Administrator. Prior to commencing seed application, final grades shall be established and approved by the Contract Administrator.

C. Remove and dispose of weeds, debris, soil contaminated by oil, gasoline and other deleterious materials to approved disposal area.

D. Loosen surface areas that are excessively compacted by means of thorough scarification, disking or harrowing, to minimum 150 mm depth.

E. Ruts resulting from off-road travel by equipment shall be re-graded to the approval of the Contract Administrator.

3.03 PROTECTION

A. Carry out hydraulic seeding with care to ensure that any fertilizer in solution does not come in contact with foliage of any trees, shrubs or other susceptible vegetation. Do not spray seed or mulch on objects not expected to grow grass.

B. Protect existing site equipment, roadways, landscaping, reference points, monuments, markers and structures from damage.

C. Promptly rectify any overspray or damage that occurs during hydraulic seeding.

3.04 EQUIPMENT

A. All hydraulic seeding / mulching equipment to have tank volume certified by identification plate or sticker that is to be affixed in plain view on equipment and not to be removed or altered.

B. The hydraulic seeder / mulcher must be capable of sufficient agitation to mix materials into a homogeneous slurry and to maintain slurry in homogeneous state until application. Discharge pumps and gun nozzles to be capable of applying materials uniformly over designated areas.

3.05 SEEDING

A. All completed topsoil surfaces shall either be broadcast seeded and the seeds raked or rolled, or applied by hydraulic seeding using tackifiers, thickeners or

other adjustments as required. The seed, fertilizer and mulch are to be uniformly applied over the application area.

B. Thoroughly mix seed, fertilizer and hydraulic mulch in water slurry and distribute normally over surface area with approved hydraulic mulcher.

C. Measure quantities of each material to be charged into hydraulic seeder / mulcher tank accurately either by mass or by commonly accepted system of mass-calibrated volume measurements. Add material to tank while it is being filled with water and following sequence: seed, fertilizer, and where applicable, mulch. Thoroughly mix materials into homogeneous water slurry and distribute uniformly over surface area with hydraulic seeder / mulcher.

D. After charging, do not add water or other material to mixture in hydraulic mulcher.

E. Do not leave seed, fertilizer, mulch and water slurry in tank for more than 4 hours. Slurry left in tank over the maximum time is not to be used for seeding and must be disposed of off-site.

3.06 FERTILIZERS

A. Fertilization may occur prior to hydraulic seeding or in combination with seed and mulch application.

B. If fertilizer is to be applied separate from hydraulic seeding it must be applied prior to the hydraulic seeding and spread evenly over growing medium with suitable mechanical spreader.

C. Ensure dry-applied fertilizers are fully incorporated to minimum depth of 100 mm.

3.07 MAINTENANCE

A. Protect all seeded areas with warning signs, temporary wire or temporary fencing.

B. Maintain seeded areas immediately after placement until grass is well established and exhibits a vigorous growing condition and is acceptable to the Contract Administrator. Cover must be established to >80% vegetation coverage, and with no bare spots larger than 1.5 m in diameter. Timing of hydroseeding should be approved by the Contract Administrator.

C. Immediately reseed areas that show deterioration or bare spots. Top-dress all areas showing shrinkage due to lack of watering and seed with seed mix that matches original seed mix.

D. Supplemental watering will not be required where hydraulic seeding is completed during the anticipated September-October construction period. If

hydraulic seeding is completed outside of this period, implement the accepted hydroseeding maintenance plan, including watering or irrigation where required to achieve successful establishment.

E. The Contractor shall remain responsible for successful vegetation establishment and for all required maintenance and repairs for a period of one year from the date of Substantial Performance. Where an alternate hydraulic seeding schedule is proposed, the Contractor shall provide and implement the accepted maintenance plan at no additional cost to the Owner.

3.08 CLEAN UP

A. Following use, any remaining seed, fertilizer, and packaging related to transport and use must be removed from the site within 30 days. Recycling or disposal must be in accordance with applicable regulations.

B. Temporary fencing, silt fences, signage and any/all irrigation equipment is to be removed from the site upon the successful establishment of vegetation.

**** END OF SECTION ****

Gibraltar Mines Limited
P.O. Box 130
McLeese Lake, BC V0L 1P0
tasekomines.com

Contractor Information Package

Gibraltar Mines Ltd. has established a protocol for all new contractors to follow prior to commissioning your company to commence work. Gibraltar Mines Ltd. has always been a company that strives for safety as our number one priority. Therefore, we require all contractors working at our mine site or the McAllister Site to follow the systems that have been established to ensure safety:

- **Contractors: Worker Safety Compliance** – Appendix A
- **AVETTA Registration** – Appendix B
- **Contractor Mobile Equipment Requirements** (where applicable) **–** Appendix C

All contractors entering any Gibraltar Mines Ltd. location must adhere to these protocols. The only exceptions will be granted to visitors, such as company sales representatives and those responsible for training in a classroom setting. Anyone fitting the visitor description will be orientated at the gatehouse before entering the mine site.

Thank you for taking the time to ensure your company is in full compliance before commencing work, and please keep in mind that each process takes time to complete.

Sincerely,

Gibraltar Mines Ltd.

Appendix A

Contractors: Worker Safety Compliance

Meeting the Requirements

All companies performing work at Taseko Gibraltar are required to register with Avetta, and beginning April 14, 2025, individual worker safety compliance will be managed within Avetta's Worker Management platform. This Worker Management platform is where workers complete their site-specific training and upload evidence of testing completion and results.

To ensure they can log in to complete the requirements, company administrators must register all employees performing work at Gibraltar Mine. To do this, the company administrator will log in to Avetta Connect and then access Worker Management to create an account for each employee. Avetta's support team is available to help throughout this process and can be reached at wmsupport@avetta.com.

The following items are required for every contractor working at the Gibraltar Mine site:

1. **Pre-access drug screening** with a negative result verified by an approved laboratory,
2. **Quantitative respiratory fit test** and associated respirator,
3. **Gibraltar Contractor Safety Orientation**,
4. **Gibraltar Mill Orientation**,
5. **Gibraltar Mine Operations Orientation**,
6. **Gibraltar WHMIS**,
7. **Orientation Quiz** completed at the Gibraltar Mine gatehouse when signing in for the first time.

Taseko Gibraltar offers a thorough introduction to ensure all contractors can perform their duties safely and in compliance with the standards, policies, and procedures upheld on the mine site. This introduction is delivered through the orientation courses listed above, and **all workers, regardless of their work area, must complete all four courses**. These must be completed before the worker's first day on site and renewed on an annual basis.

The worker (or company administrator) will also upload pre-access drug screen results and respiratory fit test reports to their Avetta account. Completion of the orientation quiz will be confirmed in Avetta by Taseko Gibraltar's Health & Safety department.

Pre-access Drug Testing

Safety is a core value at Taseko Gibraltar. Individuals who use drugs recreationally or have an ongoing dependency on them pose a safety risk to the workplace.

All contractors reporting to the Gibraltar Mine site must have completed a 7-panel Pre-access Drug Screening with a negative result confirmed by an approved laboratory. **Only urine analysis with lab-based verification will be accepted; oral (fluid), hair follicle, and express drug screens are not acceptable.**

The contractor must provide proof of a negative drug screen for its employees and subcontractors, dated within one month of starting work at Gibraltar Mine. Proof of screening is required on an annual basis, and no contract employee or subcontractor with a positive test result will be permitted to work on any Taseko Gibraltar premises.

Respiratory Fit Testing

Gibraltar Mine implemented mandatory sitewide respiratory protection in 2020. All individuals performing work must complete a quantitative fit test in advance and be fit for duty upon arrival (free of any objects or materials, such as facial hair, that may interfere with the seal or function of their respirator). Workers must bring their respirator to the site and be ready to wear it if required.

While the 3M 6000 series respirators are primarily used at Gibraltar Mine, they are not a specific requirement. Any respirator that meets the following conditions may be used:

- NIOSH-approved
- Is specified on the individual's valid fit test report
- Suits the work the individual will be performing

Gibraltar requires annual fit testing, accompanied by supporting documentation that specifies the test date, the device(s) tested, and that the testing method was quantitative.

Many companies offer lab-verified drug testing and quantitative respiratory fit testing. For reference, the following companies have provided these services for both past and current contractors at Gibraltar Mine:

Company	Location	Contact Information
Unlimited Medical Services	Williams Lake	250-392-9300, *Cell:* 250-392-0053
Quesnel Safety Solutions Ltd.	Quesnel	250-255-8976
CannAmm Occupational Testing Services	Various	*Toll-free* 1-800-440-0023
Classic LifeCare	Prince George	250-563-3501, *Toll-free:* 1-888-263-5168
I.W.C.T. *(Interior Workplace Compliance Testing)*	Various	250-561-7277, *Toll-free:* 1-877-764-6829
Irwin's Industrial Safety	Kelowna	778-753-6540, *Toll-free:* 1-855-747-9467

If you have questions about the requirements specified within this letter, please contact the Loss Prevention Department at LPO@gibraltarmine.com. If necessary, questions may be redirected to a member of the Human Resources Department.

Dale Lawson
Superintendent, Health & Safety

Appendix B

All contractors that perform work at Gibraltar Mines Ltd will need to register with ***Avetta*.** There are two tiers to which contractors can belong, depending on the work performed on site. Gibraltar Mines Ltd requires that all contractors have their information up to date and have a ***compliant status before commencing work on site.***

How to Register with AVETTA

To register with Avetta, please contact Supply Chain at supplychain@gibraltarmine.com and provide the following information:

- Name and address of the company
- Designated contact first and last name, email, and phone number
- Gibraltar Mines contact person
- Type of services provided:

- Architectural / Engineering Services
- Batch Plant – Concrete or Asphalt
- Building – Pre-engineered
- Building – Prefabricated
- Carpentry – General
- Cleaning – Industrial / Chemical / Steam
- Communications Systems
- Concrete – Casting Place
- Concrete- Precast
- Concrete – Ready mix
- Cranes – Conventional / Mobil / RT w/Operator
- Cranes – Hoists / Monorails
- Crushing & Screening Plants
- Dams – Concrete
- Dams – Earth & Fill
- Decking – Roof and Floor Steel
- Drilling Services
- Ductwork / Sheet Metal
- Electrical Construction – General
- Electrical Construction – Transmission / Pole Line
- Environmental Testing & Pollution Control
- Excavation / Backfilling / Clearing / Grubbing
- Facilities Demolition
- Fencing
- Fire Protection
- Geological Exploration / Survey
- Heat Tracing – Electrical
- Heat Tracing – Steam
- Heating
- Instrumentation & Controls
- Insulation
- Mechanical & Piping Work
- Others
- Painting / Coating & Surface Preparation
- Pipelines – HDPE
- Plumbing – General
- Railroad Construction
- Siding / Cladding
- Steel – Structural
- Storage Tanks – Permanent
- Surveying – Aerial
- Surveying – Civil
- Testing – Chemical Analysis
- Testing – Nondestructive; Radiographic
- Training
- Ventilation and Air Conditioning (HVAC)
- Waste Treatment Facilities
- Water Treatment
- Welding – On Site Rig Welding

Information Required by Gibraltar Mines:

- Insurance Requirements:

			Required Endorsements	
Policy Type	Limit Type	Required Limits	Additional Insured	Waiver of Subrogation
General Liability	Each Occurrence	$5,000,000	Yes*	No
Automobile Liability	Combined Single	$2,000,000	No	No
Excess/Umbrella Liability**	See below	Unspecified	No	No

*** Additional Insured**
The insurance certificates for General Liability policies shall state "Taseko Gibraltar Mines Limited is named as Additional Insured."
**** Excess/Umbrella Liability Insurance**
Excess/Umbrella Liability may be used to supplement other liability policies. The limit types on the Excess/Umbrella liability policy must match the policy it is supplementing (i.e. General Liability Each Occurrence can only be supplemented by an Each Occurrence limit type on the Excess/ Umbrella Liability Policy)
Certificate Holder Requirement
It is required that Taseko Gibraltar Mines Limited be named as the certificate holder on your liability policies, please ensure that your agent/broker includes the following certificate holder language:

Taseko Gibraltar Mines Limited c/o AVETTA
LLC 17600 Yonge Street PO Box 21539
Newmarket, Ontario L3Y 8J1

- Copy of WorkSafe BC Clearance Letter.
- Copy of Provincial Workers Comp Experience Rating Statement, e.g. WorkSafe BC Rate Information Letter.
- Copy of Contractor Site Orientation certificate.
- WHMIS certificate for ALL contractor employees working on Gibraltar site.
- Copy of a valid Insurance Certificate (Refer to Insurance Requirements)
- Safety Historical Statistics for the last 3 years, including number of fatalities, Lost Time Incidents, Medical Aids and Citations, if any.
- PLUS Additional general company information as contained in your online interview.
- Pre-Access Drugs Screening must be submitted directly to Gibraltar Mines to the Loss Prevention department, LPO@gibraltarmine.com.
- Copy of EITHER a valid Certificate of Recognition (COR) OR your company's Safety Program and Policy for contractors participating in the Standard Program (For contractors in the Tier 1 program)

The following table shows a breakdown of what is required for each Tier.

<table>
<tr><th>High Risk Program</th><th>Low Risk Program</th></tr>
<tr><td colspan="2">Company Information
Must complete this section, including identifying Work Types – failure results in Non-Compliant Red Icon.</td></tr>
<tr><td colspan="2">Insurance
Failure to meet requirements above will yield a Non-Compliant – Red Icon</td></tr>
<tr><td colspan="2">Safety Historical Statistics
Must provide the following data for the last 3 calendar years. Data is to be updated annually by April 1st.
Fatalities
Must not have any fatalities – Failure yields a Yellow Conditional icon
Lost Time Injuries
Data point not tied to Compliance icons
Medical Aids
Data point not tied to Compliance icons
Citations
Must not have any citations – Failure yields a Yellow Conditional icon
Experience Rating Adjustment for the last year
Performance equal to or better than average yields a Green Compliant Icon.
Performance worse than average by up to 20% yields a Conditional Yellow Icon.
Performance worse than average by 20% or more yields a Non-Compliant Red Icon.</td></tr>
<tr><td colspan="2">Qualifications
Section must be completed - failure results in Non-Compliant Red Icon.
Must provide a copy of Contractor Orientation (annually)
Must provide a copy of Pre-access drug screening (annually)
Must provide a copy of WHMIS
o</td></tr>
<tr><td>EHS Systems
Section must be completed - failure results in Non-Compliant Red Icon.
Must provide EITHER valid COR certificate OR copy of Safety Program and Policy – failure results in Non-Compliant Red Icon.</td><td>n/a to Low-Risk contractors</td></tr>
<tr><td>Quality
Section must be completed - failure results in Non-Compliant Red Icon.</td><td>n/a to Low-Risk contractors</td></tr>
</table>

Appendix C

Contractor Mobile Equipment Requirements (G-FRM-1-1044)

Note: This does not apply to all contractors.
Please discuss with your Gibraltar contact to determine if the following form is required.

Contractor Mobile Equipment Requirements

1.0 **Purpose**

1.1 To ensure we meet compliance with HSRC and company policies when contractor or rental equipment is delivered to site, the following checklist must be completed prior to utilizing the equipment on site.

1.1.1 Rental equipment will be inspected prior to being declared in service by the Gibraltar Mine Maintenance department.

1.1.2 HSRC refers to the Health, Safety and Reclamation Code for Mines in British Columbia. Gibraltar-specific policies are noted by G-SOP.

Inspection Date: _____

Inspected By: _____ *Print Name* _____ *Signature*

EQUIPMENT DETAILS					
Equipment type:		Destination Department:			
Year:		Make:		Model:	
Serial Number:		Unit Number:		Hours/KM:	

INSPECTION REPORT			
Status: ✓ *- Acceptable* ✘ *- Repairs Required* **N/A** *- Not Applicable*			
Inspection Item	Status	Inspector Initial	Comments
Back-Up Alarm (HSRC 4.9.1) Every unit of rubber tired mobile equipment in regular use at a mine in excess of 7000 kg GVW is equipped with a back-up alarm.			
Brakes (HSRC 4.9.16) Mobile equipment must have braking systems meeting the requirements stated in the HSRC 4.9.16 (1) (a-e) and (2).			
Parking Brake (HSRC 4.9.17) Every motor vehicle shall be equipped with an effective, mechanically activated parking brake, the holding power of which is not affected by loss of fluid or air pressure from the braking system.			
Automatic Engine Shutdown/Master Switch (HSRC 4.9.21) Where automatic engine shutdown devices are employed on vehicles, audible and visual alarms shall be installed in the operator's cab to pre-warn the operator that an automatic engine shutdown is imminent.			

Steering Systems (HSRC 4.9.01) Steering systems on tracked or rubber-tired mobile equipment will be maintained in safe operating condition through a regularly scheduled preventative maintenance program, records of which shall be readily available for review by an inspector upon request.			
Transmission Interlock (HSRC 4.9.2) Every unit of mobile equipment having a fluid drive transmission shall be equipped with an interlocking system, maintained in working condition, to prevent the unit from being started and put into motion unless the transmission selector is returned through the neutral position.			
Lock Out Device (G-POL-1-1006) As per Gibraltar Lockout Policy section 6.4, where equipment is not lockable, special hazardous energy control programs must be used.			
Fire Extinguisher (HSRC 4.9.3) Every vehicle shall carry at least one fire extinguisher of adequate size and of the proper type.			
Logbook (HSRC 6.19.2, G-SOP-2-4017) An effective logbook system shall be maintained for each unit of mobile equipment over 7000 kg GVW.			
Whip Light & Antenna (HSRC 6.19.1, G-SOP-2-1003) A vehicle not directly used for production in an open pit (includes haul truck maintenance shop) shall be equipped with a whip antenna (buggy whip) with flag and lamp.			
Beacon (HSRC 4.9.5, G-SOP-2-1003) A vehicle not directly used for production in an open pit shall be equipped with a flashing light (beacon).			
Wheel Chocks (HSRC 4.9.4) All rubber tired mobile equipment over 7000 kg GVW shall have a minimum of two, wheel chocks.			
Secured Seat (HSRC 4.9.4, 6.19.1) All mobile equipment shall have a firmly secured seat for the operator and any authorized passenger, maintained in a comfortable, working, and shock absorbing condition			
Operating Seat Belt (HSRC 4.9.4) All mobile equipment shall have, maintained in working condition, approved safety seat belts.			
Windshield, Side and Rear Windows (HSRC 4.9.4) All mobile equipment shall have, maintained in working condition, windshields, side, and rear windows, and rear vision mirrors maintained to provide clear visibility (if the operator cab was provided as part of the original equipment package, or subsequently fitted).			
Clearance Lights & Reflectors (HSRC 4.9.4) All mobile equipment shall have, maintained in working condition, suitable clearance lights and reflectors.			

Headlights (HSRC 6.19.1) The operator of any unit shall be directly responsible for its safe operation, and operators shall drive with seatbelts secured and headlights on.			
Auxiliary Steering (HSRC 4.9.20) If wheeled mobile equipment having rated speed capability exceeding 20 km/h depends on engine power for steering and power failure will prevent the vehicle from being steered manually, a supplementary system shall be provided to enable the operator to steer to a controlled stop.			

2.0 Associated Documents/Reference Material

2.1 Health, Safety, and Reclamation Code for Mines in British Columbia

2.2 G-POL-1-1006 Lockout Policy

2.3 G-SOP-2-1003 Buggy Whip or Flashing Light

2.4 G-SOP-2-4017 Equipment Logbooks

3.0 Revision History

Revision No.	Date of Revision	Name	Revision Summary