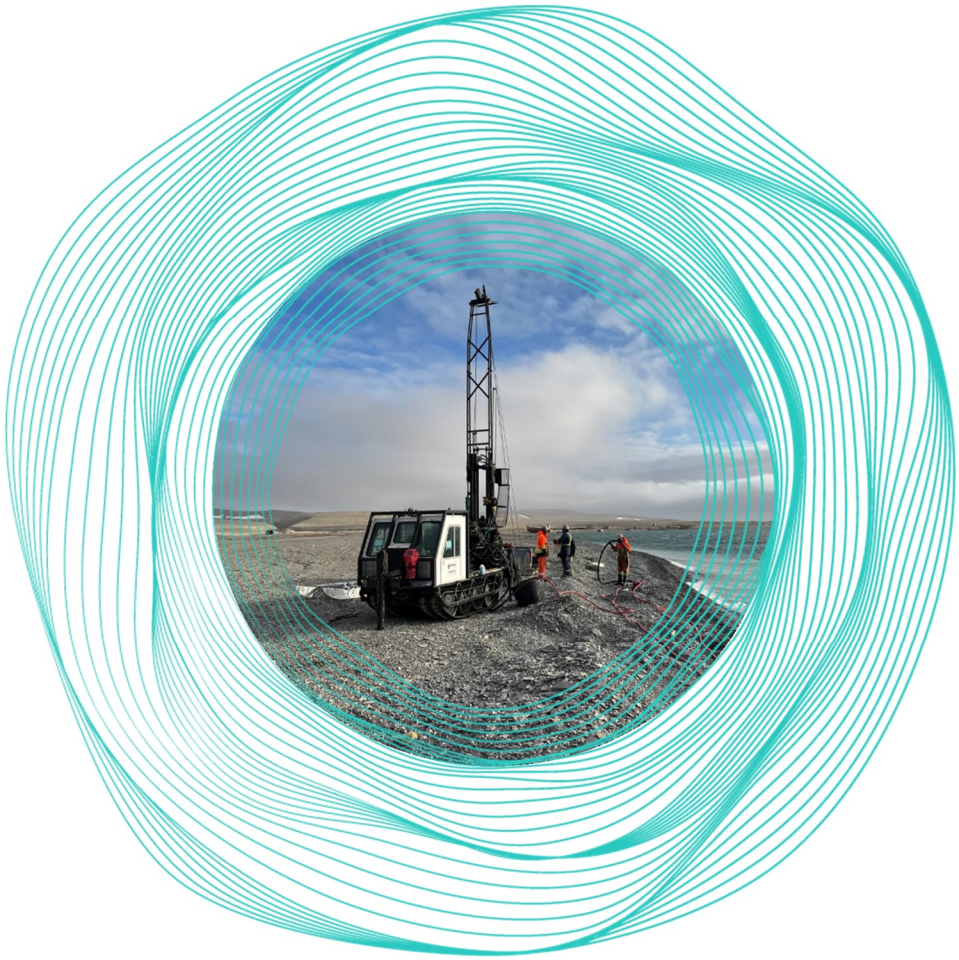
GOVERNMENT OF NUNAVUT

Geotechnical Investigation Factual Report

Resolute Bay Community Harbour

Document no. 0 : 317086-54175-00-SS-REP-00001



26 May 2026

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Executive Summary

The Government of Nunavut (GN), Department of Transportation and Infrastructure (formerly the Department of Community and Government Services) plans to develop a Community Harbour (CH) in the Hamlet of Resolute Bay. Worley Canada Services Ltd., operating as Worley Consulting (Worley), has been retained by the GN to perform detailed design, community consultation and regulatory support services for the Project.

The scope of work planned for the summer of 2024/spring-summer of 2025 geotechnical site investigation included the following:

- Site reconnaissance within the footprint of the proposed CH and quarry to assess access across sea ice for marine drilling locations and access along the existing road.
- Drilling of geotechnical boreholes within the footprint of the CH.
- Excavation of test pits at the near-shore area of the CH.
- Drilling at potential quarry locations.
- Logging of soil in accordance with the Unified Soil Classification System (USCS) and the Canadian Foundation Engineering Manual (CFEM, 2023); Logging of rock in accordance with CFEM (2023).
- Collection of disturbed and relatively undisturbed (Shelby tube) soil samples, where applicable, for geotechnical laboratory testing.
- Collection of rock core samples from the CH for strength testing.
- Collection of rock core samples from the quarry for strength testing, durability, petrographic analysis, X-Ray diffraction and Acid Rock Drainage (ARD)/Metal Leaching (ML) testing.
- Photographs of soil samples and rock core.
- Laboratory testing of collected soil and rock samples.
- Geophysical Survey.
- Preparation of this Geotechnical Investigation Factual Report.

The geological assessment previously completed by Advisian (Advisian 2020) and schematic design at the time of the investigation was used to define the scope of works for the geotechnical site investigation.

At the proposed CH location, the encountered subsurface conditions onshore typically consisted of dense to very dense well-graded gravel and silty, clayey sand, overlying dolostone bedrock. In the marine area the subsurface conditions typically consisted of stiff to very stiff silty clay and/or lean clay, at locations very soft to soft, overlying compact to very dense clayey/silty gravel and sand, overlying dolostone bedrock. The dolostone bedrock was fresh to moderately weathered (generally slightly weathered), very well cemented, weak to strong (generally medium strong to strong). At the location of the near-shore area where the test pits were completed the encountered soil conditions consisted of silty clayey gravel with sand.

At the proposed North and South Quarry location, the encountered subsurface conditions included fresh to moderately weathered, strong (weak to medium strong at surface), closely to widely bedded dolostone bedrock. At the proposed South Quarry location, the encountered subsurface material included 0.5 m of colluvium/frost shattered bedrock, overlying dolostone bedrock.

1. Introduction

Worley Canada Services Ltd., operating as Worley Consulting (Worley) was retained by the Government of Nunavut (GN), Department of Transportation and Infrastructure (formerly the Department of Community and Government Services) to carry out a geotechnical site investigation to support the development of a Community Harbour (CH) at the Hamlet of Resolute Bay (Resolute). This investigation was done with respect to the recommendations for future work outlined in the Resolute Harbour Development Report (Advisian 2020) prepared for the Department of Fisheries and Oceans Canada, Small Craft Harbours.

This CH development falls under the memorandum of understanding (MOU) signed in August 2021 between the Qikiqtani Inuit Association (QIA), Transport Canada (TC), and the GN to deliver community harbours in Grise Fiord and Resolute Bay, Nunavut.

1.1 Project Overview

Resolute Bay, also known as Quaasuittuq in Inuktitut meaning “the place with no dawn” has a population of approximately 200 (Statistics Canada 2021). It is located on the southern coast of Cornwallis Island, and is the second most northern community in Nunavut, after Grise Fiord.

The community’s marine infrastructure currently consists of a floating dock and pushout, which are rarely used by boaters for their intended purpose over functionality problems (Advisian 2020). Annual sealift cargo is unloaded on the beach by front-end loaders at the western side of the bay, adjacent to the tank farm, then delivered to the community or claimed at the laydown.

To address the community’s needs for improved infrastructure, Worley developed three conceptual design options that were brought to the community for feedback in three consultation sessions between 2018 and 2019 (Advisian 2020). Based on community feedback, cost, and proximity from Resolute’s sewage outfall, one option was chosen to be carried forward to the Schematic Design Phase (Option 2).

To source rock for the proposed CH infrastructure, two (2) quarry locations were identified and investigated during the 2019 site reconnaissance (Advisian 2020). Quarry Location 2 (southeast of the community) was further investigated by Worley Consulting in 2024, the details of which are outlined in this report. Site photos including a figure showing photo locations captured during the 2019 site reconnaissance are provided in Appendix A.

Figure 1 (attached) shows the location of Quarry Location 2 (Quarry Location 2 is further divided into two parcels the North Quarry and the South Quarry); and the proposed CH. Figure 2 (attached) shows the CH schematic design.

1.2 Community Harbour

Resolute Bay Option 2 is located on the north shoreline of the bay, adjacent to the hamlet and west of the outfall, as shown in Figure 1-1.

At the time of the investigation the CH layout consisted of one breakwater, approximately 300 m long, protecting a harbour basin of 1.1 ha. The crest of the breakwater is at Elevation +4.1 m above Chart Datum (m CD) for the majority of its length before sloping down to +3.0 m CD to tie-in to the parking and boat storage area. The breakwater is designed to be accessible by vehicles and pedestrians with a road width of 7 m and has a navigation light at the offshore end.

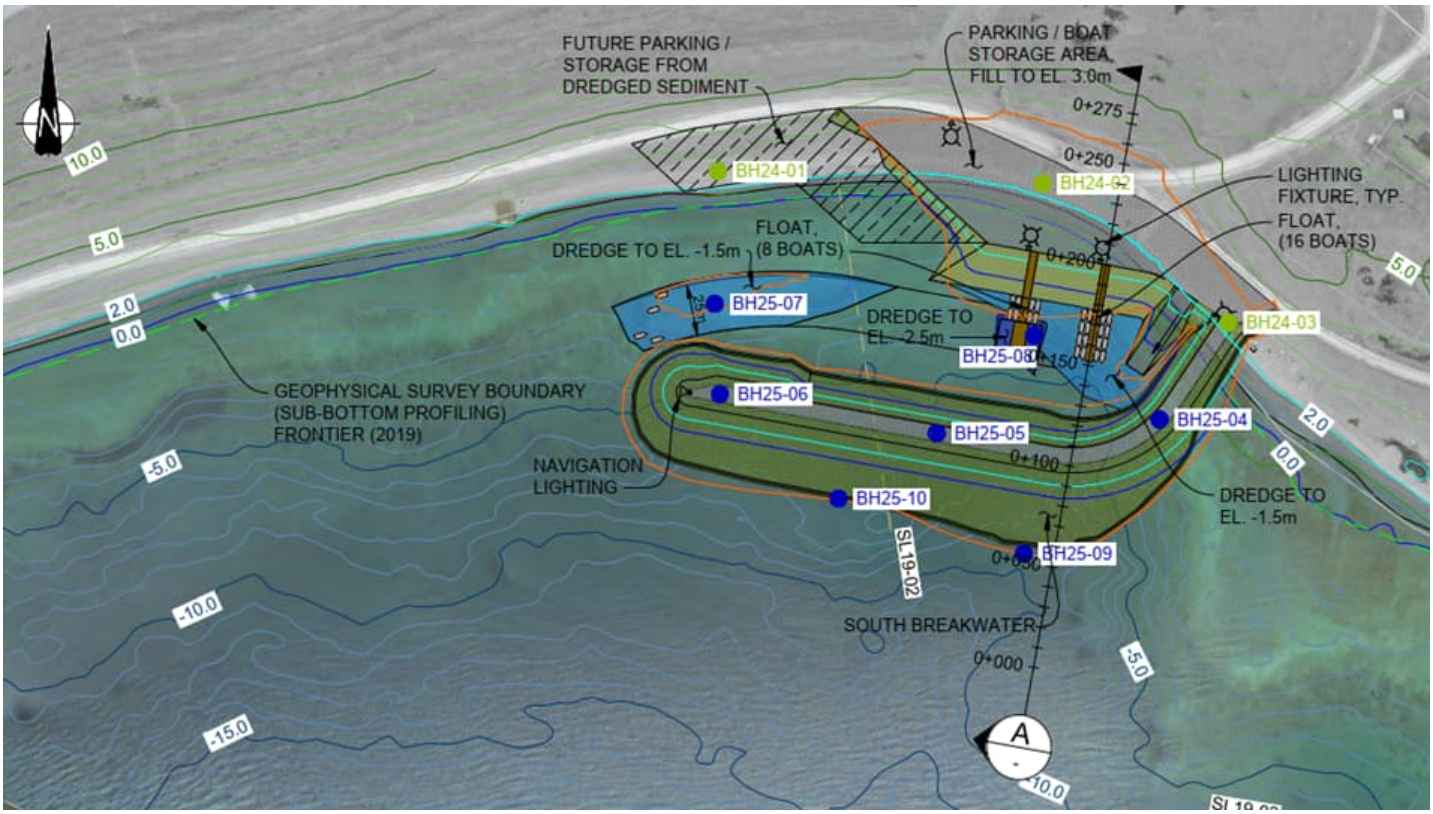


Figure 1-1: Schematic Design Option 2 for Resolute Community Harbour Layout at the time the Investigation Took Place

The parking and boat storage area is 0.7 ha and filled to an elevation of +3.0 m CD. A 10 m wide boat launch ramp located at the east end. Two floating dock strings extend from the shoreline west of the boat ramp, with the west float designed to accommodate eight boats and the east float 16 boats. The west float has an enlarged float at the end with local dredging to -2.5 m CD to accommodate larger draft vessels. These vessels would only be able to access the floats at higher suitable tides.

It should be noted that during the design derivation, after the completion of the geotechnical investigation, the CH layout was updated in order for the breakwater embankment to move away from encountered soft soils. Currently, the breakwater is approximately 320 m long and the two floats are designed to accommodate 16 boats (west) and 10 boats (east), as shown in Figure 2 (attached). Figure 1-1 shows the layout at the time of the geotechnical investigation.

1.3 Quarry

A new quarry is required for the construction of the facility to source bulk fill, filter layers, and armour stone. Based on prior studies and community consultations, Location 2, located near the southeast area of the bay, has been chosen as the preferred quarry target. It is divided into two parcels. Figure 1-2 and Figure 1 (attached) show the northern and southern footprint of Quarry Location 2, which for the purposes of this report will be named North and South Quarry.

The quarry reconnaissance performed in 2019 (Advisian 2020) indicated that dolostone bedrock surficial samples taken from general area of the South Quarry satisfied nearly all testing parameters, only marginally exceeding abrasion resistance, and was deemed suitable for armour stone purposes. The 2024 geotechnical investigation was executed to estimate the maximum attainable block sizes at the North and South Quarry, as well as to collect samples for durability testing, Acid Rock Drainage (ARD) /Metal Leaching (ML) testing, petrographic analysis and X-Ray diffraction testing.

1.4 Previous Studies (Worley)

A geological assessment was undertaken as part of a feasibility study undertaken by Worley in 2019, operating as Advisian (Advisian 2020) to assess the potential construction of a CH in Resolute Bay. The geotechnical scope of work included:

- A geotechnical desktop study of the proposed CH and surrounding area.
- Identification of potentially suitable sites to source rock for construction of breakwaters and hardstand areas for the proposed CH.
- A geological walkover covering areas including the shoreline at the proposed CH site, potential haul routes and potential quarry locations, including preliminary assessment of the rock mass and collection of rock samples for further identification, classification and laboratory testing.
- Laboratory testing of rock samples including rock strength, durability tests and ARD testing.
- Preliminary assessment of rock suitability from potential quarry locations.
- Preliminary assessment of geotechnical conditions at the potential CH location.
- Geophysical surveys (seismic refraction and sub-bottom profiling) at the proposed CH locations to access foundation conditions, conducted by Frontier Geosciences Inc (Frontier).

Findings and results of the rock tests and geophysics are summarized in the Resolute Harbour Development Geological Assessment report (Advisian 2020, Appendix 5). The geological assessment supported the small craft harbour feasibility study (Advisian 2020, Doc Ref. 307071-01306-00-MA-REP-0004) for the Department of Fisheries and Oceans Canada.

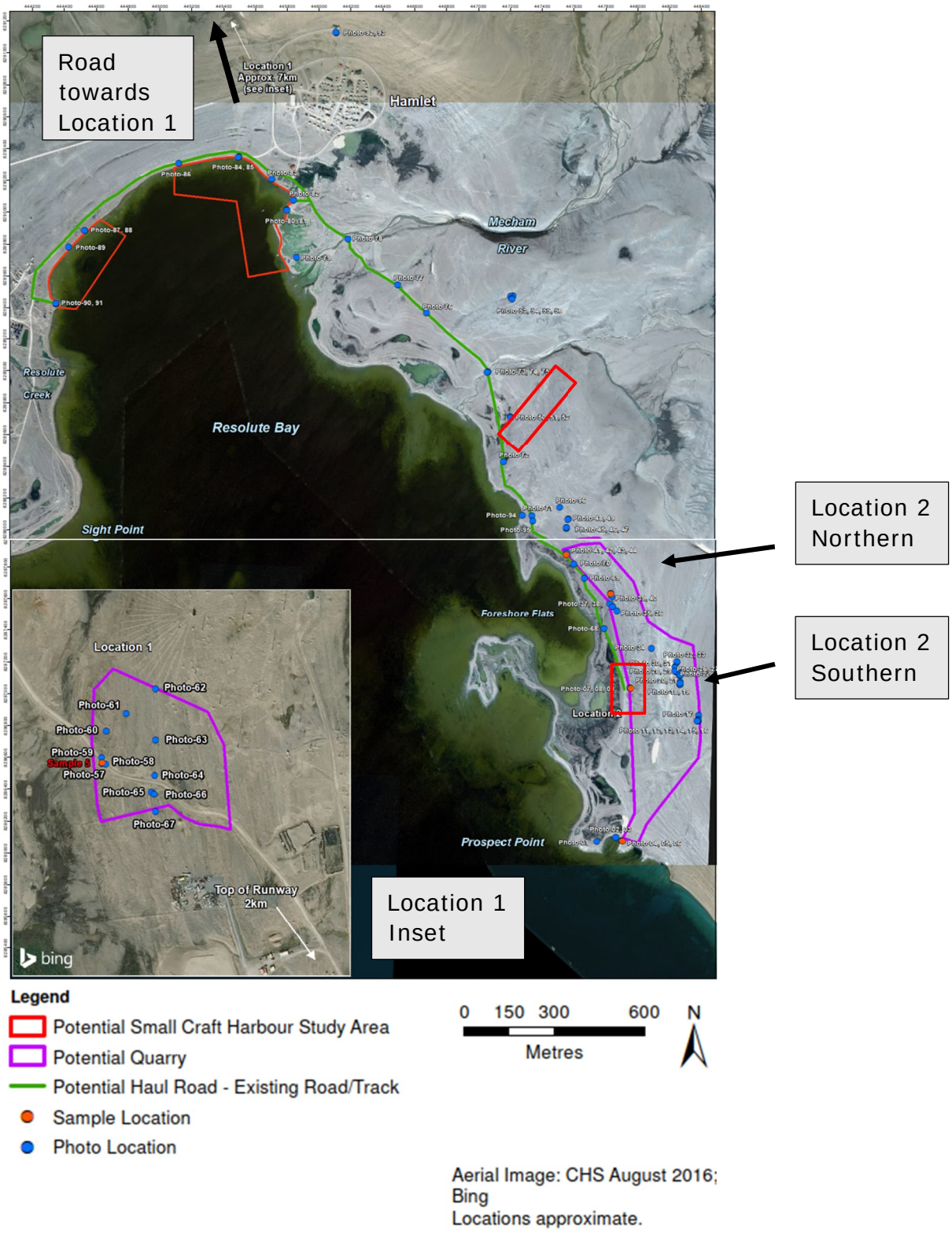


Figure 1-2: Proposed Quarry Locations 1 and 2.

1.5 Scope of 2024/2025 Work

1.5.1 General

Worley has been retained by The Department of Transportation and Infrastructure Nunavut as the Prime Consultant for improvements to the marine infrastructure in Resolute Bay. The overall scope of work includes further development of previous studies for a CH from a concept level through to detailed design and construction. The project includes the following phases:

- Pre-Design Works.
- Schematic Design.
- Permitting Support.
- Design Development.
- Construction Documents.
- Construction and Contract Administration.

Concurrent with the Marine Facilities Schematic Design, Worley has also undertaken the following tasks in support of the project:

- Geological and geotechnical field investigations.
- Baseline environmental studies and impact assessments.
- Permit applications.
- Community consultations.

The CH facility is expected to include:

- Parking/boat storage area with boat launch ramp, lighting and accessories.
- Breakwater.
- Small craft floats.
- CH basin and entrance channel dredging to -1.5 m CD, with a -2.5 m CD dredged pocket at the end of the float string to accommodate larger vessels.
- Navigation lighting.

The following additional scope/future expansion is not part of the current facility; however, has been considered at the conceptual phase of the project:

- Increased parking/boat storage area.
- A fixed dock to support fishery vessels (Arctic Fisheries Alliance).
- Dredged turning circle and entrance channel for larger vessels.
- Additional area lighting for future parking/boat storage area.
- Additional float strings to accommodate small craft vessels.

The final scope of facilities will be driven by community need and available funding, and will be influenced by residents, Hunters and Trapper Associations, small vessel owners, and selected industry (tourism, sealift, refueling) representatives.

1.6 2024/2025 Site Investigation

The geological assessment previously completed by Worley operating as Advisian (Advisian 2020) and schematic design at the time of investigation was used to define the scope of works for the geotechnical site investigation in 2024/2025.

The scope of work planned for the geological and geotechnical site investigation at the proposed CH and quarry targets was divided into summer 2024, spring 2025 and summer 2025 and is summarized in the sections below.

A general layout of the site is shown in Figure 1 (attached). Borehole and test pit locations at the CH area shown in Figure 2 (attached). The proposed quarry locations (North and South Quarry) and associated borehole locations are shown in Figure 3 (attached).

1.6.1 Geotechnical Field Investigation

1.6.1.1 Community Harbour – Summer 2024

The geotechnical investigation comprised the following:

- Collected drill rig and sea container from NEAS sealift.
- Supervision and coordination during the drilling of three (3) geotechnical boreholes along the shoreline of the proposed CH area.

1.6.1.2 Quarry Targets – Summer 2024

The geotechnical investigation comprised the following:

- Site reconnaissance including geological field mapping and drone survey (by Underhill Geomatics Ltd.) within the North and South Quarry locations and potential haul road routes.
- Collection of representative rock samples at each quarry location for rock durability tests, petrographic analysis, and X-Ray diffraction testing and ARD/ ML testing.
- Supervision and coordination during the drilling of one (1) borehole each at the North and South Quarry locations for a total of two (2) quarry boreholes.
- Laboratory testing of select soil and rock samples.
- Drone survey (by Underhill Geomatics Ltd.).

1.6.1.3 Community Harbour – Spring 2025

The geotechnical investigation comprised the following:

- Supervision and coordination during the drilling of eight (8) boreholes on the sea ice within the proposed dredge and breakwater areas of CH Option 2 in Spring 2025:
  - Two (2) boreholes within the proposed dredging areas.
  - Four (4) boreholes along the proposed breakwater.
  - Two (2) boreholes along the southern slope of the proposed breakwater to further assess slope stability.
- Laboratory testing of select soil and rock samples.

1.6.1.4 Community Harbour – Summer 2025

The geotechnical investigation comprised the following:

- Supervision and coordination during the excavation of eight (8) test pits along the intertidal area of CH Option 2 in August 2025:
  - Eight (8) test pits at four locations along the intertidal zone of the CH footprint (two test pits per location).
- Laboratory testing of select soil samples.

1.6.1.5 General

- Logging of soil in accordance with the Unified Soil Classification System (American Society for Testing and Materials [ASTM] D2487-17) and the Canadian Foundation Engineering Manual (CFEM 2023); Logging of rock in accordance with CFEM (2023);
- Collection of disturbed soil and rock samples, where applicable, for geotechnical laboratory testing;
- Photographs of soil and rock samples;
- Laboratory testing of collected soil and rock samples; and
- Preparation of this Geotechnical Investigation Factual Report to outline the work completed, the methodology used and the results.

1.7 Geophysical Testing

A multibeam bathymetric survey within the footprint of the proposed CH and associated infrastructure was undertaken by Frontier in August 2024. The overwater multibeam bathymetry survey was completed using an Imagenex DeltaT multibeam sonar, and the position of the sonar system was correlated with a differential Garmin 19xHVS so that each sonar record could be contoured for final data presentation and interpretation.

In addition, Frontier reviewed the geophysical survey results acquired in 2019 and reinterpreted the data as needed, considering also the 2024/2025 geotechnical investigation data. Then re-issued the geophysical survey report (Appendix G).

1.8 Topographical Survey

A topographic survey was undertaken by Underhill Geomatics Ltd. in 2024. This is presented in a separate cover.

1.9 Roles and Responsibilities

The roles and responsibilities of the participants in the geotechnical investigation are summarized in Table 1-1.

Table 1-1: Roles and Responsibilities

Company	Role/Responsibilities
The Government of Nunavut (GN), Department of Transport and Infrastructure	Customer
Worley	Geotechnical Consultant to GN. • Subcontracted charter flight, ice engineer, drilling contractor, earthworks contractor and laboratory testing companies; • Engaged local support and equipment (wildlife monitors, helpers and truck); • Prime contractor during drilling program and test pit excavation including leading and managing drilling contractor and excavator operator; • Staked drilling locations on the sea ice and identified access routes and drill pad dimensions; • Provided technical direction and fieldwork supervision, including soil and rock logging of drilled samples at the CH and quarry locations; • Interpreted field investigation findings, laboratory testing results, and other background information pertaining to the site characterization work; and • Prepared this geotechnical investigation factual report.
Alietum Ice Inc.	Subcontractor to Worley: • Provided ice engineering and ice profiling services.
ATCO Ltd.	Subcontractor to Worley: • Provided excavator and operator.
NOVA Drilling Inc.	Subcontractor to Worley: • Provided geotechnical drilling services; and • Subcontracted local heavy equipment and operators.
Kool Runnings	Subcontractor to Worley: • Provided wildlife monitoring services.
Solum Consultants Ltd.	Subcontractor to Worley: • Provided basic and specialized geotechnical laboratory testing services.
Vancouver Petrographics Ltd.	Subcontractor to Worley: • Provided petrological assessment of rock samples.
SGS Canada	Subcontractor to Worley: • Provided Acid Rock Drainage laboratory testing services.

Company	Role/Responsibilities
Frontier	Subcontractor to Worley: Provided geophysical services.
Underhill	Provided topographical surveys.

2. Site Conditions

2.1 Site Location and Existing Marine Infrastructure

Resolute Bay is located on the south coast of Cornwallis Island and north of the Arctic Circle. As the second most northern community in Nunavut, after Grise Fiord, it is one of the coldest inhabited locations in the world with an annual average temperature of -15.1 degrees Celsius (°C). The population of approximately 200 (Statistics Canada 2021) is supplied via sealift during the shipping season and is accessible by air only via commercial aircraft.

The community of Resolute Bay does not currently have an established CH and the only existing infrastructure consists of a sealift ramp, fuel shipment facilities (including a fuel manifold and associated piping to the tank farm, and mooring bollards), and a boat launch area (see Figure 2-1). Additionally, the GN supplied the community with a large twin pontoon float in 2010 (Advisian 2020). The float has been described as awkward to handle and, given its weight and the exposed nature of the site, of limited use.



Figure 2-1: Aerial View of Resolute Bay

Boats are usually pulled up on the beach in the northeast corner of the bay, which is closest to the townsite, as seen in Figure 2-2, but some boats exit at the South Camp area on the west side.

There are five sets of range lights to guide deep draft vessels into the bay and to the anchorages.

Cruise ships also call on the community and passengers are transferred to shore via the cruise ship tenders, typically rigid inflatable boats (RIBs). The tenders land along the beach at suitable tides and weather conditions.



Figure 2-2: Boats Stored on Beach at the Northeast Corner of the Bay

2.2 Geological Setting

The surficial geology surrounding the Hamlet of Resolute has been classified as polar desert as well as alluvium (Figure 2-3). Polar desert deposits include active beach and recent marine deposits comprising stones, ice push features, and unsorted materials up to 3 m above mean sea level. Raised marine features within polar desert deposits usually contain rounded or subangular stones, shelly and fine sand materials, patterned and sorted on level areas up to 18 m above mean sea level. Raised marine terraces are present up to 120 m above present sea level due to isostatic uplift following deglaciation. Higher marine terrace features are found between 70 m to 90 m above mean sea level and include stones of variable roundness, sandy fine material, sorted and patterned ground, and solifluction modification on slopes (Cruickshank 1971).

Bedrock in the Resolute Bay area is within the Douro, Cape Storm and Allen Bay groups which are Ordivician to Silurian in age (416 to 488 million years ago) and part of the Franklinian Shelf (Harrison et al 2014). Rock types typically comprise sedimentary rocks including limestone, dolostone, dolomite, shale, siltstone, and pebble to boulder grade conglomerates.

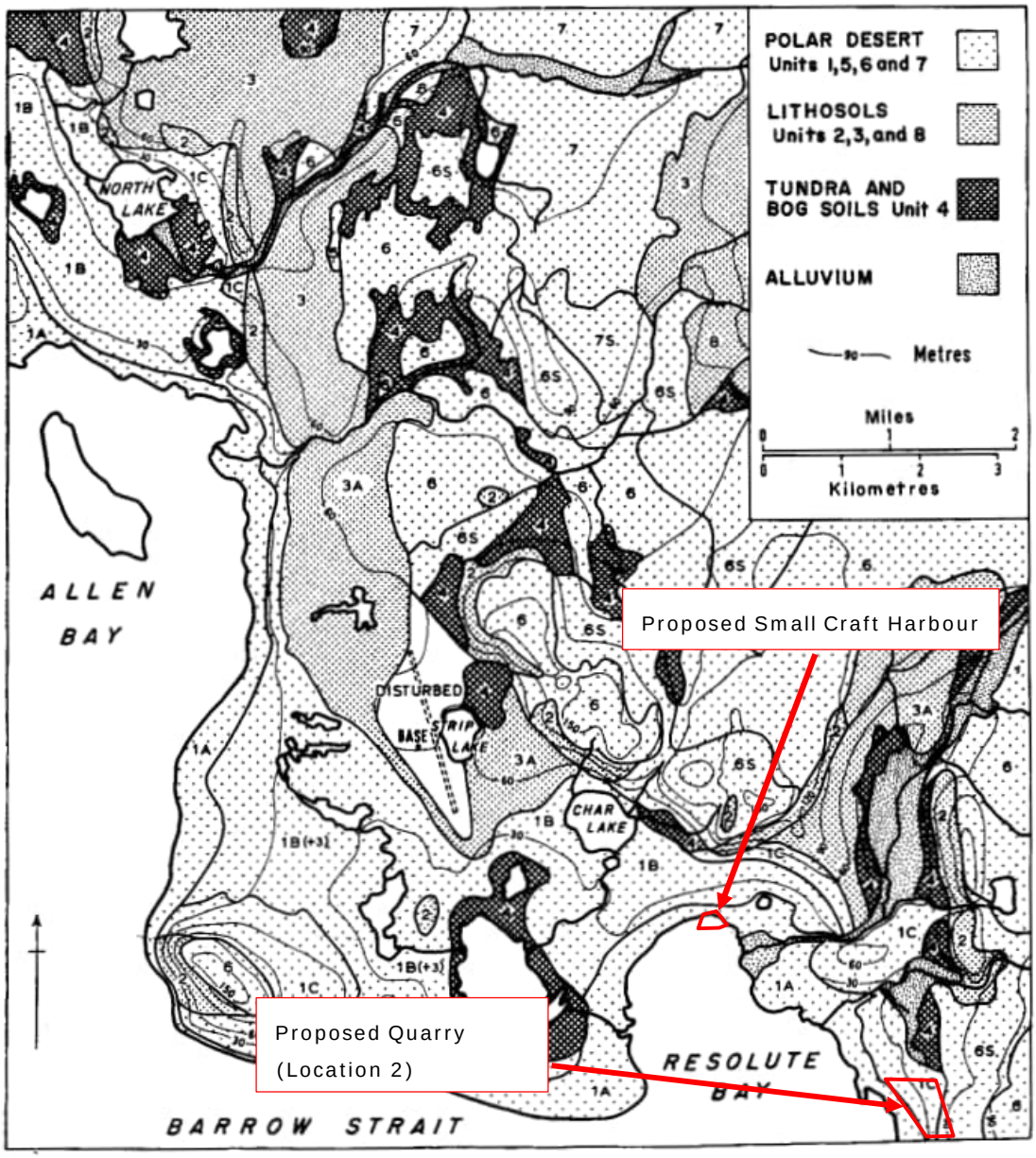


FIG. 2. Soil map of the study area around Resolute, southwest Cornwallis Island. Resolute base and air strip are at 74°44′N., 94°55′W. Numbers refer to the classification of terrain units.

Figure 2-3: Surficial Geology Map of Resolute Bay (Cruickshank 1971).

2.3 Topography and Drainage

The community of Resolute and the surrounding area is relatively flat and is part of a series of raised beach terraces. The surface is strewn with patterned ground which based on field observations, may be evidence for ice wedges and gelifluction lobes on slopes surrounding the community.

Drainage into Resolute Bay comes from two main rivers:

- Resolute Creek to the west of the community (western side of Resolute Bay), which is fed by Resolute Lake and Char Lake as well as other smaller lakes; and
- Mecham River to the south of the community (east side of Resolute Bay), which is fed by numerous small lakes and a small creek approximately 300 m south of the community (east side of Resolute Bay).

2.4 Permafrost

Melting permafrost can result in changes to ecosystems as well as infrastructure. This effect is most pronounced over land where melting permafrost can cause slope instabilities, softening foundations under infrastructure and a shortened season for land transportation over winter roadways. In addition, melting permafrost can release gases into the atmosphere and affect the local ecosystem while exacerbating the progression of permafrost melting.

Resolute is located in the region of continuous permafrost and with a depth of approximately 15 m below grade with an annual mean ground temperature in 2022 of -10.2 °C (Duchesne et al 2024).

Information regarding the extent and depth of permafrost in the Bay itself is not known. While melting permafrost could affect the structures it is unlikely in this case since melting subsea permafrost is a relatively slow process, and it is typically located well below the seabed surface.

2.5 Regional Seismicity

Resolute Bay is located an area of low seismicity.

Based on the site investigation/observations, considering the soils at the top 30 m below ground surface (mbgs), including the soft clayey soil encountered in boreholes BH24-09 and BH25-10, the site can be characterized of Site Designation X_E (Site Class E). If the infrastructure moves away from boreholes BH25-09 and BH25-10 and the soft soil encountered in these boreholes is excluded from the analysis, then the site can be characterized as of Site Designation X_C (Site Class C).

The seismic hazard for Resolute Bay was calculated using the National Resources Canada (NRC) Seismic Calculator (NRC 2020) for interpolated seismic hazard for the 1:475-year and 1:2475-year return period values and 5% damping ratio. The spectral acceleration values for Site Class C and E are shown in Table 2-1.

Table 2-1: NBCC (2020) Interpolated Seismic Hazard Values

Sa and PGA (as a ratio of gravity)[1,2,3]	Probability of Exceedance in 50 years (Return Period)			
	Site Designation X_C (Site Class C)		Site Designation X_E (Site Class E)	
	10% (1:475)	2% (1:2475)	10% (1:475)	2% (1:2475)
Sa (0.2)	0.119	0.314	0.163	0.39
Sa (0.5)	0.08	0.201	0.168	0.39
Sa (1.0)	0.043	0.111	0.0982	0.24
Sa (2.0)	0.020	0.0524	0.0453	0.116
Sa (5.0)	0.0049	0.014	0.0109	0.031
Sa (10.0)	0.0017	0.0048	0.0034	0.0094
PGA	0.057	0.164	0.0969	0.241

Notes:

Sa = Spectral horizontal acceleration for given Site Designation, with period in seconds shown in brackets.

PGA = Peak Ground Acceleration for given Site Designation.

Sa and PGA are given in units of gravity, i.e., 9.81 m/s^2.

2.6 Tidal Water Levels

Tide levels for the Resolute Bay Station were obtained from Canadian Tide and Current Tables, Volume 4 (Fisheries and Oceans Canada, 2025) and are provided in Table 2-2.

Table 2-2: Tide Levels at Resolute Bay

Tide	Elevation (m CD)
Extreme High	2.3
Higher High Water Large Tide (HHWLT)	2.0
Higher High Water Mean Tide (HHWMT)	1.6
Mean Water Level (MWL)	1.0
Lower Low Water Mean Tide (LLWMT)	0.4
Lower Low Water Large Tide (LLWLT)	0.0
Extreme Low	-0.4

Note:

CD – Chart Datum.

2.7 Horizontal and Vertical Datum

2.7.1 Horizontal Datum

The reference horizontal datum is Universal Transverse Mercator (UTM) NAD83 15N.

2.7.2 Vertical Datum

The vertical reference datum used is the local Chart Datum (CD), which is typically defined as the lowest water level found in any place under normal meteorological conditions.

A shift of +1.347 m is used to convert Canadian Geodetic Vertical Datum, CGVD2013 (CGG2013a), to Chart Datum. This shift was established by the Department of Fisheries and Oceans (DFO) in 1984. It is noted that this shift does not account for crustal uplift and may not be accurate to current tide predictions. Additional tidal observations may be required to verify CD.

3. Site Investigations

Worley completed a geological desktop assessment and site reconnaissance program in Resolute Bay in August 2019 (Advisian 2020) and one in August 2024, followed by two (2) geotechnical drilling programs; one in September 2024 and one April 2025, as well as a test pitting program in August 2025, outlined herein. In addition, Frontier performed geophysical surveys in 2019 and 2025.

Figure 1 (attached) provides a location plan showing the location of the proposed quarry and CH. Figure 2 (attached) provides a location plan showing the CH borehole and test pit locations and Figure 3 (attached) shows the location of the boreholes completed at the proposed quarry.

Photographs of the general area and retrieved soil samples from the 2024/2025 geotechnical investigations are included in Appendix A and Appendix B, respectively. Photographs that show the rock at the quarry locations are included in Appendix C. Borehole and test pit logs are provided in Appendix D. Borehole/test pit explanatory notes are provided in Appendix E. Geotechnical laboratory testing results are included within Appendix F. Geophysical survey data collected in 2019 as part of the site reconnaissance program was re-interpreted by Frontier Geosciences Ltd. (Frontier) upon completion of the Worley 2024/2025 site investigations. The geophysical survey report is provided in Appendix G.

3.1 Worley Supervision

Table 3-1 below identifies the Worley Geologists who supervised each of the phases of the investigation.

Table 3-1: Worley Supervision

Investigation	Personnel	Dates
2024 – Quarry Assessment	Jonathan Woods	August 23 to 25, 2024 and September 3 to 4, 2024
2024 – Summer Drilling Program	Jeff Gibson	September 18 to 21, 2024
2025 – Spring Drilling Program	Lauren Tagg, Melanie Jones	April 12 to 15, 2025
2025 – Summer Test Pitting Program	Jeff Gibson	August 13, 2025

3.2 2024 Summer Geotechnical Investigation

Worley completed a total of five (5) geotechnical boreholes in Resolute from September 18, 2024, to September 21, 2024. Three (3) boreholes were drilled along the shoreline of CH design Option 2 (BH24-01 to -03) and one (1) borehole each was drilled at the Northern (BH24-Q01) and Southern (BH24-Q02) regions of Quarry Location 2.

Further discussion on the various components of the site investigation is provided below.

3.2.1 Quarry Fieldwork

A total of two (2) boreholes were advanced at Quarry Location 2 (see Figure 3 attached) by Nova Drilling Inc., under the direct supervision of Worley. Boreholes were advanced 6.30 mbgs to 7.80 mbgs. Boreholes were advanced using HQ diamond coring techniques using water as a drilling fluid. Drilling operations were undertaken 12 hours per day by one crew for the duration of the drilling program.

A summary of the borehole numbers and depths is provided in Table 3-2.

Table 3-2: 2024 Quarry Borehole Locations and Depths

Borehole ID	Area	Location[1] (Easting / Northing UTM)	Elevation (m)	Termination Depth (m)	Bedrock Depth (m)
BH24-Q01	North Quarry	N 8,288,521.00 E 447,174.00	Not Recorded	6.30	6.30
BH24-Q02	South Quarry	N 8,287,415.00 E 447,788.00	Not Recorded	7.80	7.20

Note:

[1] Coordinates from handheld GPS.

Scanlines of the North and south quarry were undertaken during the 2024 summer reconnaissance to collect representative rock dimensions (block size) of rocks at surface to aid future quarry assessments. The location and dimensions of blocks measured are provided in Appendix F.

3.2.2 Community Harbour Fieldwork

A Track Mounted Rotary Drill Rig (CME-55) supplied and operated by Nova Drilling Inc., based out of Halifax, NS was used to drill all boreholes. The drill rig and support equipment were loaded into one 20 feet long sea container and mobilized via truck to Bécancour, QB, and delivered to NEAS for loading onto a sealift vessel that arrived in Resolute on September 15, 2024. Upon arrival the drill rig and sea container were offloaded to the sealift laydown area.

The drill crew (one site supervisor, one driller and one helper) and one Worley geotechnical representative mobilized to Resolute on September 18, 2024.

Upon completing a check of the sea container contents, the drill rig was tracked to the first drill location. Access to the drilling locations for work crews was aided by pick-up trucks.

Borehole drilling was completed in overburden soils by advancing Huisman Well Technology (HWT) casing and utilizing an HQ-sized tube (96 mm outer rod diameter) in rock to drill using water rotary techniques. Seawater was used as the drilling fluid and all boreholes terminated at their desired depths. Typical drill setup at the CH and quarry locations is shown in photographs in Appendix A.

Three (3) boreholes were advanced along the shoreline of CH design Option 2 (BH24-01 to -03) by Nova Drilling Inc. under the direct supervision of Worley. Boreholes were advanced 4.80 m to 6.50 mbgs. Drilling operations were undertaken 12 hours per day by one crew for the duration of the drilling program. Upon termination the boreholes were backfilled with cuttings.

The approximate locations of the boreholes are shown in Figure 2, attached. A summary of the borehole numbers and depths is provided in Table 3-3.

Table 3-3: 2024 CH Borehole Locations and Depths

Borehole ID	Area[1]	Location[2] (Easting / Northing UTM)	Elevation[3] (m CD)	Termination Depth (m)	Bedrock Depth (m)
BH24-01	Future Parking / Storage from Dredged Sediment	N 8,290,350.00 E 445,374.00	2.54	6.50	3.65
BH24-02	Parking / Boat Storage Area	N 8,290,344.00 E 445,533.00	2.01	6.30	4.80
BH24-03	Laydown / Breakwater	N 8,290,276.00 E 445,624.00	2.24	4.80	1.90

Notes:

[1] Proposed infrastructure.

[2] Coordinates from handheld GPS.

[3] Elevations in meters above Chart Datum (m CD) and are based on the Underhill Geomatics Ltd. 2024 Survey.

3.3 2025 Spring Geotechnical Investigation

The 2025 spring Geotechnical investigation included an ice survey and geotechnical site investigation within the footprint of the proposed CH.

Further discussion on the various components of the site investigation is provided below.

3.3.1 Ice Surveys

Alietum Ice, based out of Yellowknife, Northwest Territories (NWT), was contracted to perform ice thickness measurements within the footprint of the proposed CH. An ice survey was undertaken on March 21st, 2025.

Prior to mobilizing the ice survey crew, or drilling equipment to site, Alietum Ice requested drill rig loads for drilling equipment as well as pull back forces in order to assess the minimum ice thickness requirements. The survey was required to assess ice thickness and integrity along access routes and within the footprint of proposed drill sites.

The survey undertaken by Alietum Ice involved ground penetrating radar (GPR) survey using a GPR unit secured in a qamutik (sled) and towed using a skidoo. Confirmatory ice augers were advanced through the sea ice using a 2-inch ice auger bit.

The ice survey indicated that ice thickness within the footprint of the CH ranged from 83 cm to 181 cm, with ice thickness at borehole locations and along access routes ranging from 122 cm to 181 cm. A minimum ice thickness of 120 cm was recommended by Alietum Ice based on drill rig layouts and pull back forces.

3.3.2 Geotechnical Investigation

3.3.2.1 Geotechnical Drilling

Eight (8) boreholes were advanced within the footprint of the CH by Nova Drilling Inc. under the direct supervision of Worley in Resolute from April 12 to 15, 2025 within the footprint of the proposed CH.

The drill rig chosen to advance boreholes at the CH was the same one used during the Summer 2024 investigation. The drill rig and support equipment had been stored over winter at the laydown area located west of the bay.

The drill crew (one site supervisor, one driller and two helpers) and three Worley geotechnical representatives mobilized to Resolute on April 9, 2025. The drill crew with the support of ATCO spent 2.5 days preparing for drilling operations, which included shoveling out the drill rig and construction of a wooden skid mounted drill shack on the sea ice to protect the crew from the elements. Photographs showing the construction and completion of the drill shack are provided in Appendix B.

Upon construction of the drill shack on the sea ice, the drill rig was tracked to the first drill location from the laydown area. Access to the drilling locations for work crews was aided by pick-up trucks and/or skidoos, and the drill shack was towed across the sea ice between borehole locations using a pickup truck.

Once set up, the driller advanced the initial hole through the sea ice using an auger and dipped a measuring tape to the seabed to get an initial depth measurement. An HWT drill casing (114.3 mm outer diameter) was then lowered to within approximately 125 mm to 250 mm (5 inches to 10 inches) above the seabed (as required) and drilling was completed in overburden soils using water and mud rotary techniques. When bedrock was encountered, the coring method was switched to diamond drilling with an HQ3-sized triple tube (96 mm outer rod diameter). Typical drill setup at the CH is shown in photographs in Appendix B.

Boreholes were advanced 3.03 to 12.14 metres below seabed (mbsb). Drilling operations were undertaken 12 hours per day by one crew for the duration of the drilling program.

A summary of the borehole numbers and depths is provided in Table 3-4.

3.3.2.2 Test Pits

Test pits were completed using a Hitachi EX230LC excavator equipped with an approximately 1.5 m wide bucket with teeth, operated by ATCO, under the supervision of a Worley representative. Each test pit measured approximately 4 m in length and 1.5 m in width. At total of eight (8) test pits were excavated (four (4) locations each with two (2) test pits) until the excavator bucket was unable to penetrate deeper, or the test pit condition was unsafe to continue. Test pits were excavated 1 to 2 m below ground surface level. Bulk and grab samples were taken in TP25-01A and TP25-04A. The test pits were backfilled in lifts with native soil excavated from the test pits and compacted using the excavator bucket.

A summary of the completed test pit numbers and depths is provided in Table 3-4.

Table 3-4: 2025 CH Borehole/Test Pit Locations

Test Location ID	Area[1]	Location[2] (Easting / Northing UTM)	Elevation[3] (m) CD	Termination Depth (m)	Bedrock Depth (m)
BH25-04	Breakwater	N 8,290,228.69 E 445,590.35	-2.11	8.00	3.98
BH25-05	Breakwater	N 8,290,221.94 E 445,481.15	-5.86	7.67	5.91
BH25-05A	Breakwater	N 8,290,224.06 E 445,483.27	-5.94	3.03	N/A
BH25-06	Breakwater	N 8,290,241.11 E 445,374.94	-4.80	5.14	3.10
BH25-07	Dredge Pocket	N 8,290,285.18 E 445,372.44	-1.40	4.79	1.20
BH25-08	Dredge Pocket	N 8,290,269.80 E 445,528.87	-3.70	5.25	3.13
BH25-09	Breakwater	N 8,290,163.09 E 445,523.89	-9.07	12.14	7.04
BH25-10	Breakwater	N 8,290,190.00 E 445,433.00	-6.19	3.35	2.25
TP25-01A	Dredging / Laydown	N 8,290,329.00 E 445,304.00	0.00	1.00	N/A
TP25-01B	Dredging / Laydown	N 8,290,329.00 E 445,304.00	0.00	1.50	N/A
TP25-02A	Dredging / Laydown	N 8,290,338.00 E 445,378.00	-1.20	1.0	N/A
TP25-02B	Dredging / Laydown	N 8,290,338.00 E 445,378.00	-1.20	1.50	N/A
TP25-03A	Dredging / Laydown	N 8,290,343.00 E 445,430.00	-1.30	1.00	N/A
TP25-03B	Dredging / Laydown	N 8,290,343.00 E 445,430.00	-1.30	1.80	N/A
TP25-04A	Dredging / Laydown	N 8,290,334.00 E 445,516.00	-1.20	1.00	N/A

Test Location ID	Area[1]	Location[2] (Easting / Northing UTM)	Elevation[3] (m) CD	Termination Depth (m)	Bedrock Depth (m)
TP25-04B	Dredging / Laydown	N 8,290,334.000 E 445,516.000	-1.2	2	N/A

Notes:

[1] Proposed infrastructure at the time of geotechnical investigation (refer to Figure 1-1), which was subsequently revised as shown on Figure 2 to avoid influence of soft sediments.

[2] Coordinates from handheld GPS.

[3] Elevations in meters above Chart Datum (m CD) and are based on the Underhill Geomatics Ltd. 2024 Survey.

3.4 General

3.4.1 Site Clearance and Setup

For all investigations, upon arrival to site, the Worley site supervisor completed a site walkover along the proposed access routes and drill locations to verify that there were no obstructions.

In Spring 2025, the walkover was to verify that there had been no significant change since the ice reconnaissance survey. It was found that ATCO had cleared the entirety of the investigation area using a loader and/or dozer prior to Worley's arrival on site. No further clearing was required during the site investigation. The access routes and drill locations were then delineated using wooden stakes. Representative photographs showing access route delineation and pad clearing are provided in Appendix B.

Access to the proposed quarry involved utilizing the existing road from the Hamlet towards the south along the east side of Resolute Bay.

During borehole location and access delineation in Spring 2025, the Worley Consulting site supervisors and Drilling supervisor visually monitored the ice for any cracking or any other features that may indicate integrity issues. The drill pad and access routes were also monitored frequently for ice cracking.

3.4.2 Survey Control

3.4.2.1 Horizontal Control

Borehole locations were located through a phone mapping app (Avenza) connected to a handheld Bad Elf GPS Pro (accuracy ±2.5 m). Refer to measurements and accompanying notes provided in Table 3-4 for each borehole/test pit location.

At the test pit locations, one test was completed approximately at 5 m into water and one at the water edge. The test pit coordinates are approximate.

3.4.2.2 Vertical Control

The ground surface elevation of each onshore borehole was determined in 2024 using an RTK GPS set on a survey tripod operated by a Underhill site representative. Boreholes BH24-01 to BH24-03 were marked “X” with white spray paint, which was identified by the drill crew.

In 2025, the elevation of the seabed at each borehole location was assessed by measurements taken from the sea ice prior to commencement of drilling. The first stage was to auger the sea ice and measure the freeboard (distance measured from the ice surface to the stationary water in the hole), which was typically 90 to 350 mm. Once the freeboard was measured, the distance from the top of sea ice to seabed was measured by lowering a weighted tape through the augured hole deployed from the sea ice. The water depth was calculated by subtracting the freeboard from the total depth from top of sea ice to seabed.

The seabed elevation (SE) relative to Chart Datum (CD) was then determined by correcting water depth (WD) for tide level (TL) based on updated predicted tidal information from the Canadian Tide and Current Tables, Volume 4 (Fisheries and Oceans Canada 2025), such that:

$$SE = TL - WD$$

The key inputs to assessing seabed elevation included tidal data, GPS location and multibeam bathymetry (Frontier 2024).

At the test pit locations, the elevation was assessed based on the Underhill Geomatics Ltd. 2024 Survey.

3.4.3 Geotechnical Logging

All boreholes and test pits were directed and supervised by a Worley representative. Soil and rock samples were logged at the site, in accordance with recommendations of CFEM (2023) and ASTM D2488-17e1.

All boreholes were drilled using wireline HQ diamond coring in both surficial soils and rock and HWT sized surface casing. Seawater was used as the drilling fluid and all boreholes terminated at their desired depths.

When drilling in surficial soils, SPTs were performed every 0.75 to 1.5 m or as directed by the Worley field supervisor, and disturbed soil samples from the SPTs and cores were collected. One (1) Shelby tube sample was collected, and Field Vane Tests were also undertaken in fine grained cohesive soils.

Soil logging was completed on samples recovered from split spoons, core and the Shelby tube. All recovered soil intervals were described, classified, photographed and packaged. Split spoon samples are shown in photographs in Appendix C. In general, pocket penetrometer and torvane measurements were carried out on fine-grained cohesive samples. Samples were logged in the field in accordance with the Unified Soil Classification System (ASTM D2487-17) as adopted in CFEM (2023), double bagged, labelled and stored in 5-gallon pails. Any unused soil and rock cuttings were disposed of on site.

Rock core logging commenced on the rock cores as soon as they were extracted from the core barrel into a wooden core box. Rock cores are shown in photographs in Appendix C. Rock core logging consisted of identification of rock type, defect type and spacing, field strength, as well as assessing weathering. Fractured zones within the recovered bedrock often resulted in gravel to cobble sized fragments being loosely retrieved in the liners. In such cases, the recovered core pieces were reasonably reconstructed prior to core measurements being taken. Select cored rock samples were also collected for laboratory testing.

It should be noted that soil and rock classifications, including material strengths, have been reviewed based upon the results of the laboratory testing. Wherever the field description did not match the laboratory result, then the test result and the relevant section of core was reviewed (typically in the core photo) and the field description was amended, if deemed appropriate. Rock strength classifications provided on the logs are based on the strength classification system described in the explanatory notes provided in Appendix E, which uses the Unconfined Compressive Strength (UCS) as the primary strength classification. UCS is estimated in the field based on qualitative field tests described Appendix E, and confirmed based upon actual UCS tests where available, and/or Point Load Strength Index results.

Soil and rock samples were shipped as cargo to the designated laboratory for subsequent testing.

3.4.4 Laboratory Testing

Representative soil and rock samples were selected for laboratory testing by a qualified Worley Consulting geotechnical engineer and/or engineering geologist. Samples were sent to one (1) of three (3) laboratories depending on the testing required.

The following laboratories were utilized for testing:

- Solum Consultants Ltd., Calgary, AB (Solum)– Soil and rock samples being tested for engineering parameters (proposed CH and quarry targets);
- Vancouver Petrographics Ltd., Vancouver, BC – Petrological analysis (proposed quarry targets); and
- SGS, Burnaby, BC –ARD) /(ML and X-Ray Diffraction testing (proposed quarry targets).

A summary of the test types, methods and number of tests is included in Table 3-5 and Table 3-6.

Geotechnical laboratory test results are included within Appendix F. The petrological analysis, X-Ray Diffraction and ARD/ML laboratory reports are also provided in Appendix F.

Table 3-5: 2024 Laboratory Testing Summary

Test Suite	Laboratory	Test Type	ASTM (Other Standard or Reference)	Number of Tests
Soil Classification / Strength Testing (CH)				
1	Solum	Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass	D2216-19	1
	Solum	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils	D4318-17	1
	Solum	Standard Tests Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis & Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis	D6913M-17 & D7928-21	3
Rock Strength Testing (CH)				
2	Solum	Standard Test Method for Determination of the Point Load Strength Index of Rock and Application to Rock Strength Classifications	D5731-16	3
Rock Strength Testing (Quarry Location 2-North and South Quarry)				
3	Solum	Standard Test Methods for Compressive Strength and Elastic Moduli of Intact Rock Core Specimens under Varying States of Stress and Temperature	D7012-23	5
	Solum	Standard Test Method for Determination of the Point Load Strength Index of Rock and Application to Rock Strength Classifications	D5731-16	6
Rock Durability Testing (Quarry Location 2-North and South Quarry)				
4	Solum	Riprap Test Suite (including Specific Gravity, Absorption, and Durability Index)	(CT206 and CT229)	2
	Solum	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulphate or Magnesium Sulphate	C88M-24	2
	Solum	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine	C131M-20	2
Petrological Analysis (Quarry Location 2-North and South Quarry)				
5	Vancouver Petrographics	Petrological Analysis	N/A	3
ARD / ML Geochemical Testing (Quarry Location 2-North and South Quarry)				
6	SGS	Acid Base Accounting (ABA)	(Sobek et. al. 1978)	3
	SGS	Sulphur (S) Speciation	D2492-02	3
	SGS	X-Ray Diffraction	(EMXDF[1], 2024)	3

Note:

[1] Electron Microbeam/X-ray Diffraction Facility, the University of British Columbia.

Table 3-6: 2025 Laboratory Testing Summary

Test Suite	Laboratory	Test Type	ASTM (Other Standard or Reference)	Number of Tests
Soil Classification / Strength Testing (CH)				
1	Solum	Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass	D2216-19	20
	Solum	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils	D4318-17	15
	Solum	Standard Tests Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis & Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis	D6913M-17 & D7928-21	19
	Solum	Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental Loading	D2435M-11	1
	Solum	Standard Test Method for Unconsolidated-Undrained Triaxial Compression Test on Cohesive Soils	D2850-25	1
	Solum	Standard Test Method for Direct Shear Test of Soils Under Consolidated Drained Conditions	D3080M-23	1
	Solum	Standard Proctor (Method C)	D698-12	2
	Solum	California Bearing Ratio Test – Unsoaked	D1883-21	2
Rock Strength Testing (CH)				
2	Solum	Standard Test Method for Determination of the Point Load Strength Index of Rock and Application to Rock Strength Classifications	D5731-16	5

3.4.5 Field Standards

All fieldwork was performed in accordance with the Worley Geotechnical Field Manual with guidance from the applicable ASTM standards presented in Table 3-7, and other recognized standards including CFEM (2023).

Table 3-7: Applicable ASTM Standards

Applicable Standards	ASTM Designation
Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)	D2487-17
Standard Practice for Description and Identification of Soils (Visual – Manual Procedure)	D2488-17e1
Standard Practices for Preserving and Transporting Soil Samples	D4220-14

3.4.6 Health, Safety & Sustainability Management Plan

All drilling related studies were carried out with due care to the health and safety of all site personnel and the environment. Work activities were undertaken in accordance with a comprehensive health, safety and environmental management plan (HSEMP), reviewed and approved by Worley management. The plan was regularly assessed, and individual work procedures were updated based upon any lessons learned during execution of the work. No lost time incidents occurred throughout the course of the drilling program.

3.4.7 Local Support

The crew included a wildlife monitor sourced locally by Kool Runnings; and vehicles and heavy equipment as needed from ATCO.

4. Subsurface Conditions

This section provides a summary of the findings of the geotechnical investigations, based on the data collected during fieldwork and laboratory testing. Details of the subsurface conditions are also presented on borehole and test pit logs attached in Appendix D.

The soil descriptions provided in this report are based on accepted standard methods of visual classification and identification as outlined in the USCS (ASTM D2487-17) as adopted in CFEM (2023). The stratigraphic boundaries shown on the borehole logs are inferred from non-continuous sampling, observations of drilling progress and the results of in situ testing. These boundaries represent transitions between soil types rather than exact planes of geological change. Subsurface conditions may vary both with depth and laterally between individual borehole locations.

Occasionally low SPT N values (number of blows for 300 mm penetration) encountered at various depths within the subsurface soil could be low due to sloughing and softening. Similarly, occasional high SPT N values could be artificially high due to the SPT sampler striking coarse gravel, cobbles and/or boulders within the soil matrix.

Descriptions of soils encountered during the investigation are discussed in the following section.

4.1 Engineering Geological Units

The geological subsurface materials encountered during the geotechnical investigations at the CH and quarry locations are outlined briefly below.

At the proposed CH location, the encountered subsurface conditions onshore typically consisted of dense to very dense well-graded gravel and silty, clayey sand, overlying dolostone bedrock. In the marine area the subsurface conditions typically consisted of stiff to very stiff silty clay and/or lean clay, at locations very soft to soft, overlying compact to very dense clayey/silty gravel and sand, overlying dolostone bedrock. The dolostone bedrock was fresh to moderately weathered (generally slightly weathered), very well cemented, weak to strong (generally medium strong to strong). At the location of the near-shore area where the test pits were completed the encountered soil conditions consisted of silty clayey gravel with sand.

At the proposed North and South Quarry location, the encountered subsurface conditions included fresh to moderately weathered, strong (weak to medium strong at surface), closely to widely bedded dolostone bedrock. At the proposed South Quarry location, the encountered subsurface material included 0.5 m of colluvium/frost shattered bedrock, overlying dolostone bedrock.

Photos of all encountered geomaterials are included in Appendix C.

4.2 Well-Graded Gravel (Unit 1)

Granular deposits were encountered from ground surface in all boreholes that were completed onshore (BH24-01 to BH24-03). This unit generally consisted of well-graded gravel with varying amounts of sand, grey to brown; fine to coarse sub-rounded to angular gravel comprised of dolostone, and fine to medium grained sand. This unit ranged from 1.8 m to 3.65 m thick at surface and was also encountered in borehole BH24-02 at depth from 3.0 mbgs to 4.8 mbgs. Frozen core with ice crystals was recovered from 0.1 m depth in borehole BH24-01.

The boreholes confirmed the presence of dolostone cobbles and boulders in this unit. Unit 1 can be characterized as GW in accordance with the USCS.

SPT tests undertaken in this unit resulted in N-values ranging from 10 to refusal, indicating compact to very dense material. Two (2) particle size analysis tests were undertaken in Unit 1. Results indicate that the unit contained no clay, silt content ranged between 0.5% to 1.3%, sand between 18.1% to 31.1% and gravel from 67.6% to 81.5%.

4.3 Silty Clay / Lean Clay (Unit 2)

Cohesive deposits were encountered at surface in most marine test locations at the CH footprint (BH25-05, BH25-05A, BH25-06, BH25-08, BH25-09 and BH25-10), and at a depth of 2.3 mbgs to 3.0 mbgs at one (1) onshore borehole (BH24-02). This unit generally consisted of grey/dark grey/grey-black silty clay to lean clay/sandy lean clay, of low plasticity, with varying amounts of fine-grained sand and fine to coarse subrounded to angular gravel. Cobbles were encountered in this unit at borehole BH25-08. Trace to some shell fragments were also noted within Unit 2. This unit was separated into Unit 2a and Unit 2b based on significant differences in the in-situ strength.

4.3.1 Soft Silty Clay / Lean Clay (Unit 2a)

Unit 2a was encountered in three (3) of the eight (8) marine boreholes drilled at the CH footprint (boreholes BH25-09, BH25-10 and locally only in BH25-05). This unit consisted of grey sandy silty clay with gravel at BH25-05, and dark grey lean clay with sand and few gravel at BH25-09. This unit was encountered with thicknesses of 0.6 m and 4.9 m at boreholes BH25-05 and BH25-09, respectively, and the uncorrected SPT N values ranged from 0 (weight of rods/hammer) to 3 based on three (3) SPT tests. A total of five (5) particle size analysis and six (6) Atterberg limit tests were undertaken in Unit 2a. Results indicate that the clay content ranged from 4.6 to 6.3%, silt ranged between 51.2% to 81.4%, sand between 7.7% to 23.6% and gravel between 4.7% to 20.8%. The LL and PI ranged from 22% to 32% and 6% to 13%, respectively. Utilizing the Plasticity Chart, the LL and PI values reveal the soil unit is, generally, CL with one result CL-ML, in accordance with the USCS, i.e., lean clay or low plasticity silty clay.

In borehole BH25-09, the undrained shear strength measured using pocket penetrometer and handheld torvane ranged from 15 kPa to 50 kPa and the results from two (2) in-situ vane shear test recorded a peak values of 0.5 kPa and 1.0 kPa, and remoulded values of 0 kPa and 0.5 kPa. One unconsolidated undrained (UU) triaxial test undertaken in the lab resulted in an undrained shear strength of 12 kPa. The SPT N values and undrained shear strength values indicate that Unit 2a is typically very soft to soft.

Additionally, non-plastic grey silt with gravel was encountered from surface to 2.3 mbsb at marine borehole BH25-10 with SPT N values ranging from 3 to 5, indicative of soft to firm material. No laboratory testing was conducted on the sample collected.

4.3.2 Stiff to Very Stiff Silty Clay / Lean Clay (Unit 2b)

Unit 2b was encountered in five (5) of the eight (8) marine boreholes drilled at the CH footprint (boreholes BH25-05, BH25-05A, BH26-06, BH25-08, and BH25-09), and one (1) onshore borehole (BH24-02). Unit 2b generally consisted of silty clay and/or lean clay with variable amounts of sand and gravel and is typically grey/dark grey/grey-black. This unit ranged in thickness from approximately 0.5 m to 2.4 m in the marine boreholes and 0.7 m in the onshore borehole, and the uncorrected SPT N values ranged from 9 to refusal, but typically ranged from 9 to 28 (with a median of 16) based on nine (9) SPT tests. A total of six (6) particle size analysis and seven (7) Atterberg limit tests were undertaken in Unit 2b. Results indicate that the clay content ranged from 2.9% to 6.4%, silt ranged between 51.2% to 65.7%, sand between 13.9% to 23.6% and gravel between 7.5% to 26.4%. The LL and PI ranged from 22% to 31% and 6% to 14%, respectively. Utilizing the Plasticity Chart, the LL and PI values reveal the soil unit is CL or CL-ML in accordance with the USCS, i.e., lean clay or low plasticity silty clay.

The undrained shear strength measured using a pocket penetrometer on one sample collected from borehole BH25-06 from 0 mbsb to 0.6 mbsb was 138 kPa. The SPT N values and undrained shear strength values indicate that Unit 2b is typically stiff to very stiff.

4.4 Clayey Gravel / Silty, Clayey Gravel (Unit 3)

Unit 3 was encountered in five (5) marine boreholes at the CH footprint (BH25-04, BH25-05, BH25-06, BH25-08, and BH25-09), underlying the silty clay/lean clay, or at surface in the case of BH25-04. Additionally, Unit 3 was encountered at six (6) of the near-shore test pits excavated to depth (TP25-01A, TP25-01B, TP25-02A, TP25-02B, TP25-03A, and TP25-03B). This unit consisted of grey to black clayey gravel / silty clayey gravel comprised of dolostone, with varying amounts of sand and low plasticity clay. Varying amounts of shell fragments and trace cobbles and boulders were encountered in the test pits. SPT tests undertaken in this unit resulted in N-values ranging from 14 to 54, indicating compact to very dense material.

Seven (7) particle size analysis and three (3) Atterberg limits tests were undertaken in Unit 3. Results indicate that the clay content ranged from 1.7% to 4.2%, silt ranged between 4.7% to 36.6% and gravel from 36.0% to 66.6%. The liquid limit (LL) and plasticity index (PI) ranged from 17% to 30% and 6% to 16%, respectively. Utilizing the Plasticity Chart, the LL and PI values reveal the fine soil matrix is CL to CL-ML, i.e., lean clay or low plasticity silty clay. Considering the gravel as well, Unit 3 can be characterized as GC to GC-GM in accordance with the USCS.

4.5 Silty, Clayey Sand (Unit 4)

Silty, clayey sand was encountered underlying the well-graded gravel (Unit 1) at onshore borehole BH24-02, underlying clayey gravel (Unit 3) at marine borehole BH25-04, and at surface at marine borehole BH25-07. Additionally, Unit 4 was encountered at two (2) of the near-shore test pits excavated to depth (TP25-04A and TP25-04B). This unit generally consisted of silty, clayey sand, fine to coarse-grained, grey to black, with fine to coarse gravel and trace shell fragments. SPT tests undertaken in this unit resulted in N-values ranging from 36 to refusal, indicating dense to very dense material.

Four (4) particle size analysis and two (2) Atterberg limits tests were undertaken in Unit 4. Results indicate that the clay content ranged from 1.8% to 4.3%, silt ranged between 12.0% to 42.7%, sand between 29.4% to 45.6% and gravel from 23.6 to 39.9%. The liquid limit (LL) and plasticity index (PI) ranged from 22% to 24% and 5% to 10%, respectively. Utilizing the Plasticity Chart, the LL and PI values reveal the fine soil matrix is CL to CL-ML, i.e. lean clay or low plasticity silty clay. Considering the sand as well, Unit 4 can be characterized as SC to SC-SM in accordance with the USCS.

4.6 Bedrock

4.6.1 Community Harbour (Unit 5)

Unit 5 was encountered in all onshore and marine boreholes advanced, except for marine borehole BH25-05A, which was a shallow hole drilled to confirm overburden soil conditions. The bedrock type was assessed as dolostone and was generally described as dark grey with light grey banding to light brown, fine grained, thinly sub-horizontally bedded to laminated and occasionally bioturbated. Recovered rock cores were fresh to moderately weathered (generally slightly weathered), very well cemented.

Point Load Strength index values ranged from approximately 4 MPa to 7 MPa based on eight (8) samples, indicative of typically very strong (R5 based on ISRM [1981]) rock; the rock strength varied overall based on field observations from weak to strong (generally medium strong to strong).

4.6.2 Bedrock – Quarry (Unit 6)

Unit 6 was encountered in both boreholes from the proposed quarry locations (boreholes BH24-Q01 at the North Quarry location and BH24-Q02 at the South Quarry location). The bedrock

was generally described as fine-grained dolostone, dark and pale grey to pale brown. The rock was logged as closely to widely bedded.

Petrographic examination of the rock core samples completed in 2025, identified it as a limestone/marble and X-Ray Diffraction (XRD) analysis completed in 2025 indicated that the rock was a dolostone and comprised 81% dolomite, 13% ankerite, and 5% calcite. The petrographic analysis completed in rock samples in 2019 identified the rock as dolostone. The rock type was deferred from the XRD (which provides more information on mineral composition and is considered more applicable) as well as the 2019 petrographic analysis.

Field estimates of rock strength ranged from R2 to R4 (weak to strong) and typically R4 (strong). Unconfined compressive strength (UCS) test results ranged from 18.0 MPa to 61.3 MPa (based on four samples) indicative of weak to strong rock. Recovered rock cores were generally fresh to slightly weathered rock; however, slightly to moderately weathered rock, primarily frost shattered, was intersected in the upper 0.9 m in borehole BH24-Q01 and 2.5 m in borehole BH24-Q02.

4.7 Permafrost

Frozen ground conditions were encountered in all onshore borehole (BH24-01 to BH24-03) on the shoreline adjacent to the CH footprint. Ice crystals were noted within the well-graded gravel unit at borehole BH24-01 at a depth of 0.1 mbgs. Additionally, ice lenses were observed within bedrock defects at borehole BH24-01 at 4.62 mbsb and from 5.82 mbsb to 6.50 mbsb. Visible ice was not encountered to the depths drilled in marine boreholes (BH25-04 to BH25-10), which indicates that it is unlikely that subsea permafrost is present within the depths drilled.

5. Closure

We trust that this report satisfies your current requirements and provides suitable documentation for your records. If you have any questions or require further details, please contact the undersigned at any time.

Report Prepared by:

Melanie Jones, P.Geo.
Geologist

Senior Review by:



2026-05-28

Jeffrey Gibson, P.L.Eng. (BC)
Associate Engineering Geologist

Panagiotis Berdousis, P.Eng., MSc, DIC
Principal Technical Consultant-Geotechnical Engineer

PERMIT TO PRACTICE
WORLEY CANADA SERVICES LTD.
Signature Christopher Meisl
Date 2026-05-29
PERMIT NUMBER: P 029
NT/NU Association of Professional Engineers and Geoscientists

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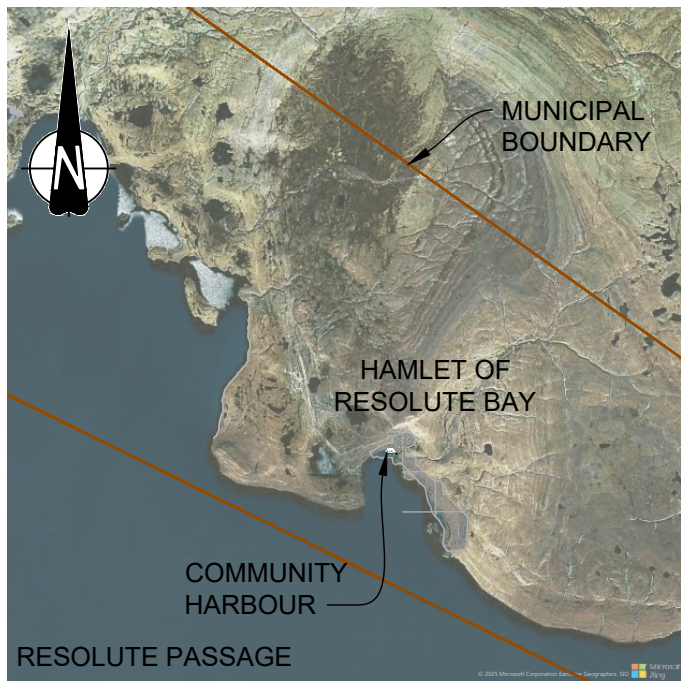
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Figures

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USER NAME: jennifer.coppendale
ISSUING OFFICE: VANCOUVER, B.C.



KEY PLAN
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PLAN
1:30000

LEGEND

- HAUL ROAD ON EXISTING ROAD/TRACK
- ALTERNATE/ADDITIONAL HAUL ROUTE
- COMMUNITY STUDY AREA
- QUARRIES STUDY AREA
- EXISTING ROAD STUDY AREA
- STOCKPILE/LAYDOWN AREA
- QUARRY

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GOVERNMENT OF NUNAVUT
RESOLUTE BAY COMMUNITY
HARBOUR DEVELOPMENT

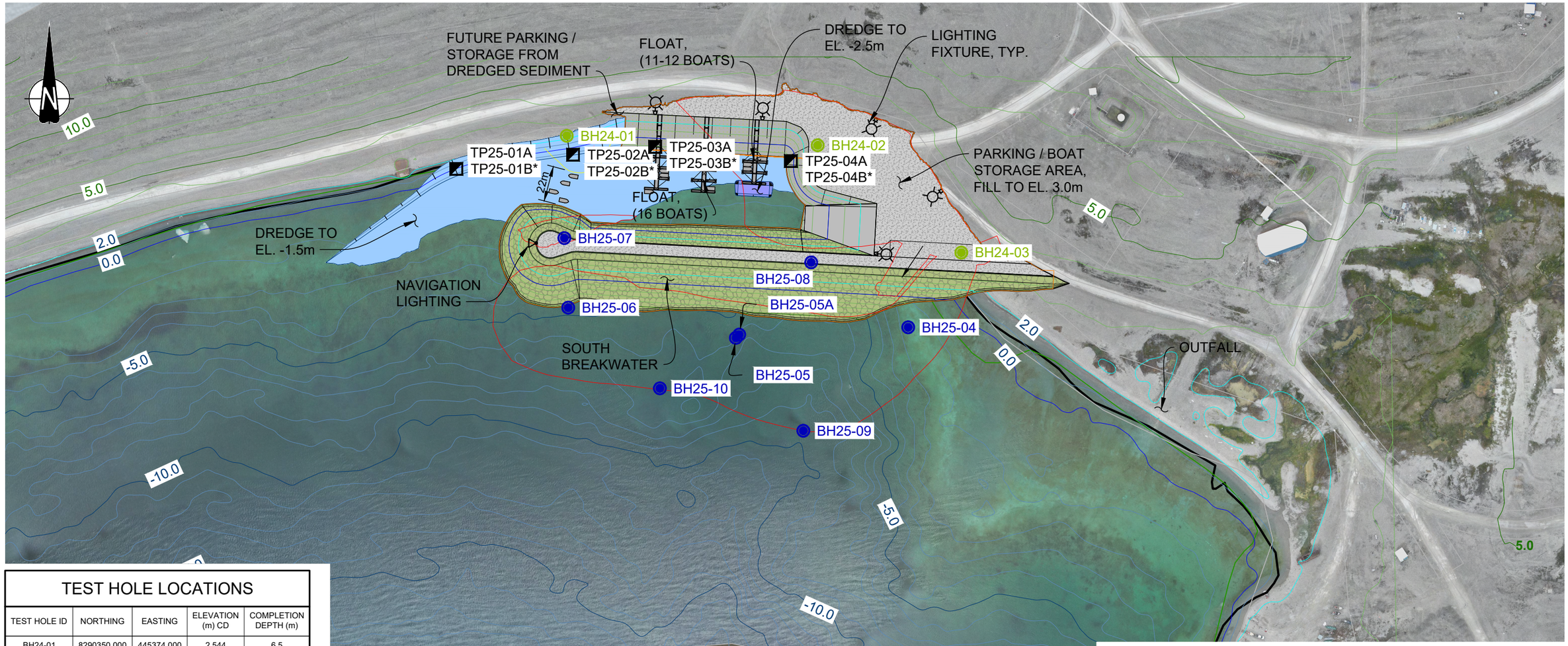
LOCATION PLAN

Date: 12-MAR-26	Drawn by: JLC	Edited by: JLC	App'd by: JRG

Worley Project Number: 317086-54175

FIG No: 1 REV: 0

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TEST HOLE LOCATIONS

TEST HOLE ID	NORTHING	EASTING	ELEVATION (m) CD	COMPLETION DEPTH (m)
BH24-01	8290350.000	445374.000	2.544	6.5
BH24-02	8290344.000	445533.000	2.014	6.3
BH24-03	8290276.000	445624.000	2.236	4.8
BH25-04	8290228.691	445590.352	-2.110	8.0
BH25-05	8290221.940	445481.146	-5.860	7.7
BH25-05A	8290224.061	445483.271	-5.940	3.0
BH25-06	8290241.114	445374.936	-4.800	5.1
BH25-07	8290285.184	445372.439	-1.400	4.8
BH25-08	8290269.799	445528.867	-3.700	5.2
BH25-09	8290163.094	445523.891	-9.070	12.1
BH25-10	8290190.000	445433.000	-6.190	3.4
TP25-01A	8290329.000	445304.000	0.000	1.0
TP25-01B *	8290329.000	445304.000	0.000	1.5
TP25-02A	8290338.000	445378.000	-1.200	1.0
TP25-02B*	8290338.000	445378.000	-1.200	1.5
TP25-03A	8290343.000	445430.000	-1.300	1.0
TP25-03B*	8290343.000	445430.000	-1.300	1.8
TP25-04A	8290334.000	445516.000	-1.200	1.0
TP25-04B*	8290334.000	445516.000	-1.200	2.0

* 2025 TEST PIT 'B' LOCATED APPROXIMATELY 5m OFFSHORE FROM POINT 'A' DUE TO EXCAVATOR REACH

LEGEND

- HYDROGRAPHIC CONTOUR MAJOR - FRONTIER 2024
- HYDROGRAPHIC CONTOUR MINOR - FRONTIER 2024
- TOPOGRAPHIC CONTOUR MAJOR - FRONTIER 2024
- TOPOGRAPHIC CONTOUR MINOR - FRONTIER 2024
- DREDGE
- GRAVEL SLOPE
- GRAVEL - DRIVEABLE
- ARMOUR STONE

PLAN

1:2500

m 0 50 100 150 m

1:2500

PRELIMINARY

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NOTES:

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2. BATHYMETRIC CONTOURS DERIVED FROM FRONTIER GEOSCIENCES LTD. BATHYMETRY SURVEY, DATED AUGUST 2024.

GOVERNMENT OF NUNAVUT
RESOLUTE BAY COMMUNITY
HARBOUR DEVELOPMENT

GEOTECHNICAL SITE INVESTIGATION
TEST LOCATIONS PLAN - LAYOUT AT TIME OF INVESTIGATION

Date:	Drawn by:	Edited by:	App'd by:
13-NOV-25	JLC	JLC	JRG

Worley Project No. 317085-54175

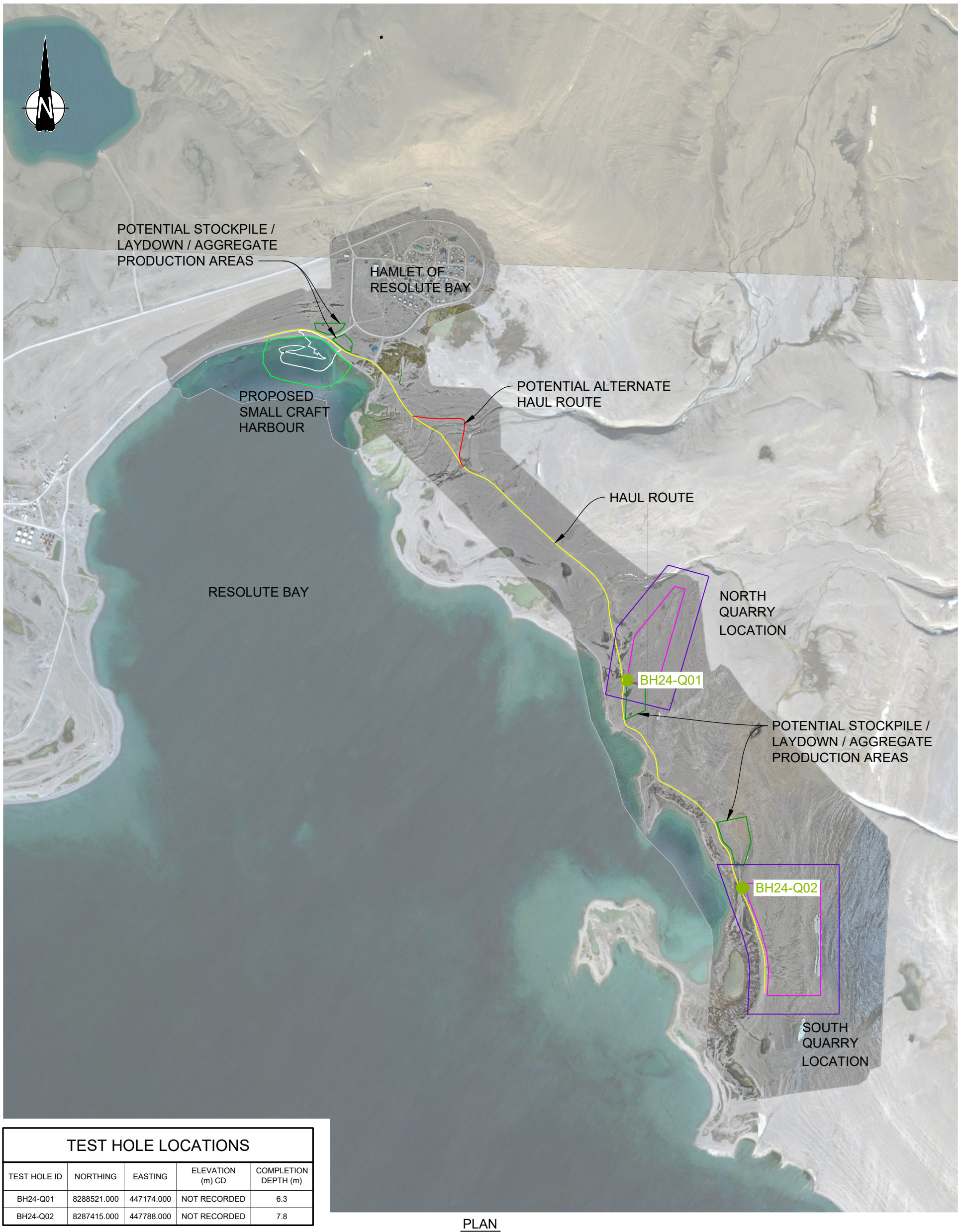
FIG No 2 | REV B

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ISSUING OFFICE: VANCOUVER, B.C.



TEST HOLE LOCATIONS

TEST HOLE ID	NORTHING	EASTING	ELEVATION (m) CD	COMPLETION DEPTH (m)
BH24-Q01	8288521.000	447174.000	NOT RECORDED	6.3
BH24-Q02	8287415.000	447788.000	NOT RECORDED	7.8

PLAN
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PRELIMINARY
DO NOT USE FOR CONSTRUCTION
Last Saved: Jul. 03/25 10:25am

LEGEND

- HAUL ROAD ON EXISTING ROAD/TRACK
- ALTERNATE/ADDITIONAL HAUL ROUTE
- COMMUNITY STUDY AREA
- QUARRIES STUDY AREA
- EXISTING ROAD STUDY AREA
- STOCKPILE/LAYDOWN AREA
- QUARRY

m 0 500 1000 1500 m
1:30000

GOVERNMENT OF NUNAVUT
RESOLUTE BAY COMMUNITY
HARBOUR DEVELOPMENT

QUARRY SITE INVESTIGATION
TEST LOCATIONS - PLAN

Date:	Drawn by:	Edited by:	App'd by:
26-JUN-25	JLC	JLC	JRG

Worley Project Number: 317086-54175
FIG No: 3
REV: A

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MPL_B_FSK

Appendix A. Representative Site Photos from the 2024-2025 Investigation

Resolute Bay Community Harbour Development Project



Photo 01: Sea ice cleared in preparation for drilling; looking out towards bay (April 2025)

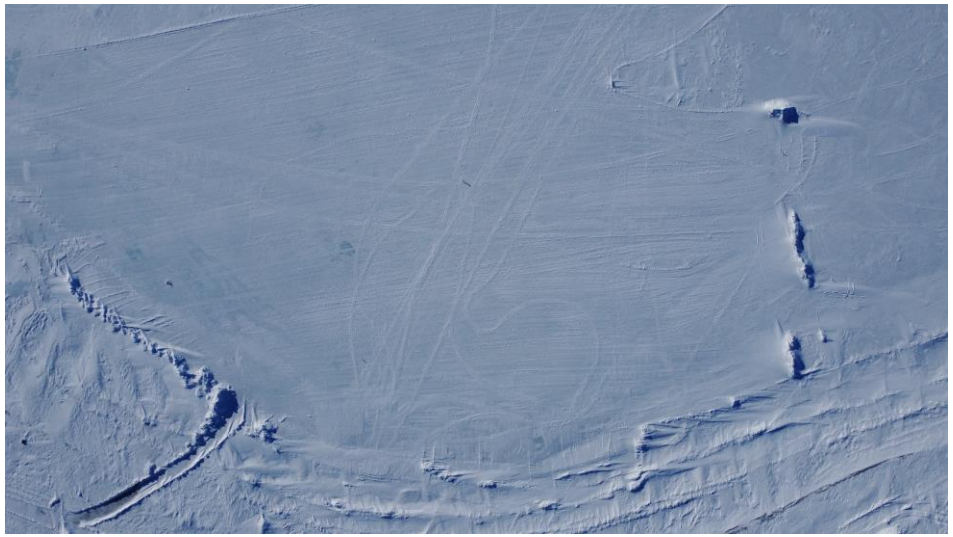


Photo 02: Access road out onto sea ice (April 2025)

Notes:

					Figure Name			Client	
					Representative Photos at the Proposed Community Harbour (SCH) - Photos 1 & 2			Nunavut	worley consulting
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**		
NA	27-Jun-25	MJ	JG	CM	317086-54175	1	A		

Resolute Bay Community Harbour Development Project



Photo 03: Staking out borehole locations on sea ice (April 2025)



Photo 04: Looking at wet tidal cracks parallel to the shoreline

Notes:

					Figure Name		**Client**
					Representative Photos at the Proposed Community Harbour (SCH) - Photos 3 & 4		Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	27-Jun-25	MJ	JG	CM	317086-54175	2	A

Resolute Bay Community Harbour Development Project



Photo 05: Drill rig and sea containers at laydown (September 2024)



Photo 06: Drill rig after being shovelled out at laydown (April 2025)

Notes:

					Figure Name Representative Photos at the Proposed Community Harbour (SCH) - Photos 5 & 6		**Client** Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	27-Jun-25	MJ	JG	CM	317086-54175	3	A

Resolute Bay Community Harbour Development Project



Photo 07: Sea container with drilling supplies at laydown (April 2025)



Photo 08: Wooden shack on skids built for drill rig (April 2025)

Notes:

					Figure Name			Client	
					Representative Photos at the Proposed Community Harbour (SCH) - Photos 7 & 8			Nunavut	worley consulting
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**		
NA	27-Jun-25	MJ	JG	CM	317086-54175	4	A		

Resolute Bay Community Harbour Development Project



Photo 09: Augering through ice at BH25-04 with drill rig



Photo 10: Drill rig on shore in preparation for drilling (September 2024)

Notes:

					Figure Name		**Client**
					Representative Photos at the Proposed Community Harbour (SCH) - Photos 9 & 10		Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	27-Jun-25	MJ	JG	CM	317086-54175	5	A

Resolute Bay Community Harbour Development Project



Photo 11: Typicall onshore drill rig setup (BH24-01, September 2024)



Photo 12: Typicall drill rig setup on sea ice (BH25-10, April 2025)

Notes:

					Figure Name			Client
					Representative Photos at the Proposed Community Harbour (SCH) - Photos 11 & 12			Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**	
NA	27-Jun-25	MJ	JG	CM	317086-54175	6	A	

Resolute Bay Community Harbour Development Project



Photo 13: Typicall drill rig setup on sea ice (BH25-05, April 2025)

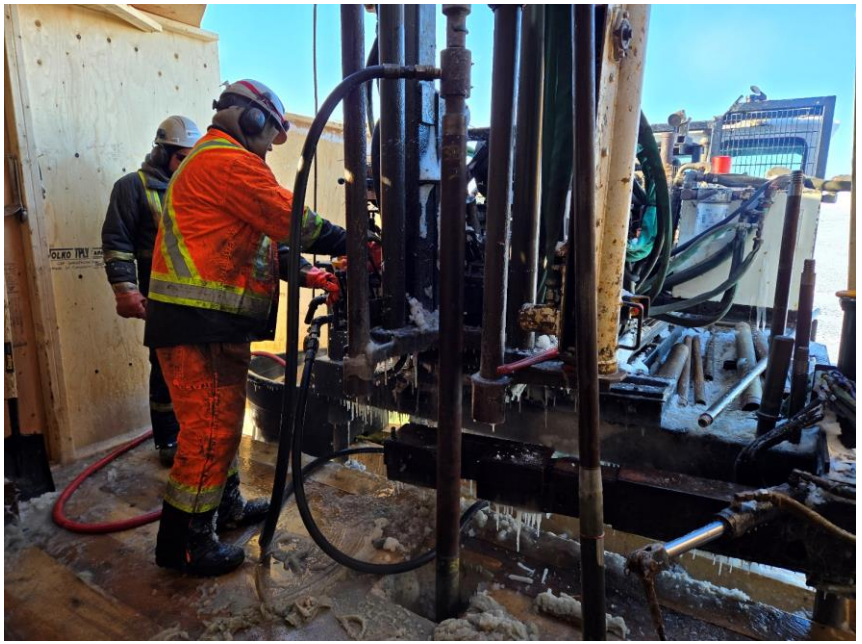


Photo 14: View inside drill setup

Notes:

					Figure Name		**Client**
					Representative Photos at the Proposed Community Harbour (SCH) - Photos 13 & 14		Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	27-Jun-25	MJ	JG	CM	317086-54175	7	A

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Resolute Bay Community Harbour Development Project



Photo 15: Excavation of Shoreline Test Pit (TP25-04A, August 2025)



Photo 16: Backfilling and Compaction of Shoreline Test Pit (TP25-04B, August 2025)

Notes:

					Figure Name		**Client**
					Representative Photos at the Proposed Community Harbour (SCH) - Photos 15 & 16		Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	9-Sep-25	MJ	JG	CM	317086-54175	8	A

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Photo 01: Proposed Quarry location; view from borehole BH24-Q01



Photo 02: Drill rig at borehole BH24-Q01

Notes:

					Figure Name		
					Representative Photos at the Proposed Quarry - Photos 1 & 2		
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	27-Jun-25	MJ	JG	CM	317086-54175	1	A

Client

Nunavut

worley consulting

Resolute Bay Community Harbour Development Project



Photo 03: Proposed Quarry location; view from borehole BH24-Q02



Photo 04: Drill rig at borehole BH24-Q02

Notes:

					Figure Name		
					Representative Photos at the Proposed Quarry - Photos 3 & 4		
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
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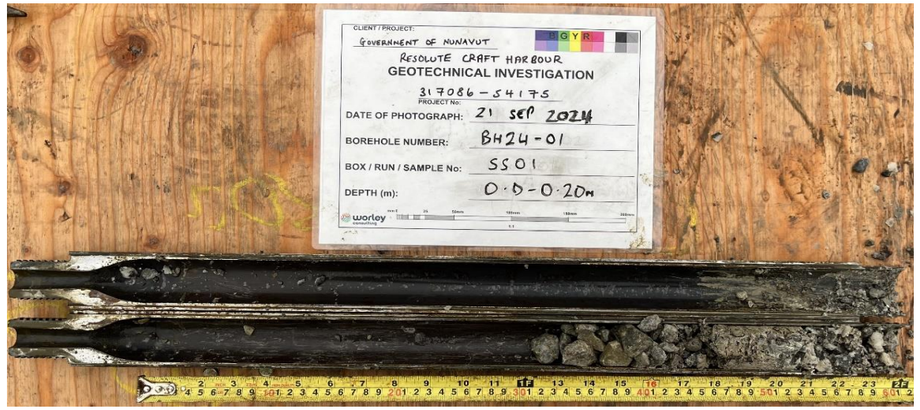
Client

Nunavut

worley consulting

Appendix B. Soil and Rock Photos from the 2024/2025 Investigation

Resolute Bay Community Harbour Development Project



SS01 : 0.00 to 0.20 m



SS02 : 0.75 to 0.90 m



BOX 01 : 1.60 to 5.00 m



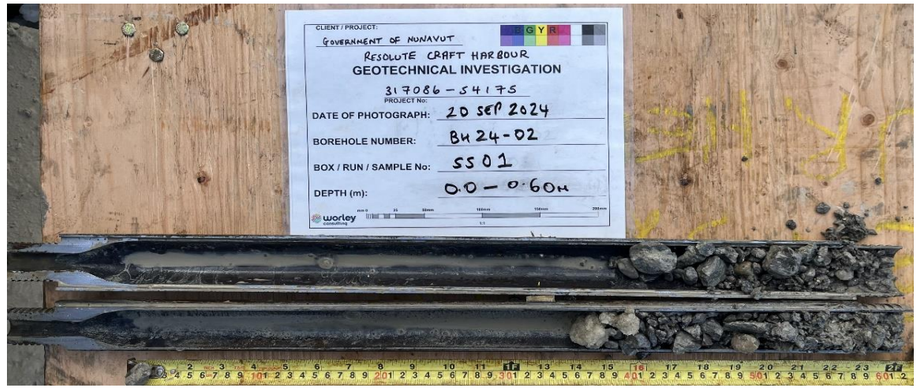
BOX 02 : 5.00 to 6.50 m E.O.H

Notes:

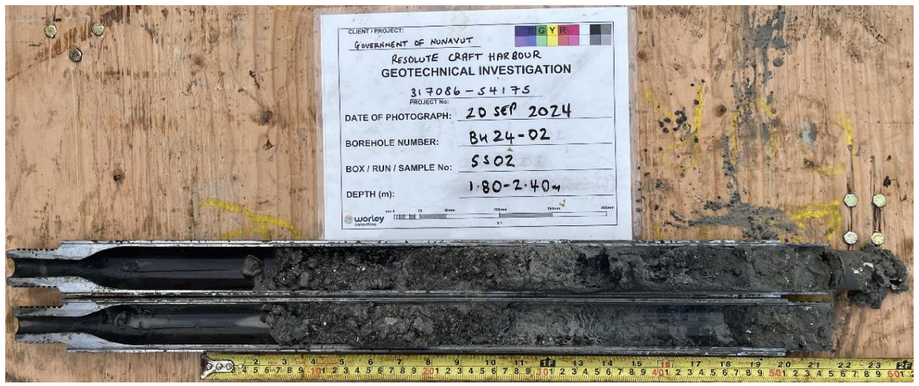
					Figure Name		**Client**
					Borehole BH24-01		Canada Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	3-Mar-26	MJ	JG	CM	317086-54175	1	0

worley consulting

Resolute Bay Community Harbour Development Project



SS01 : 0.00 to 0.60 m



SS02 : 1.80 to 2.40 m



BOX 01 : 1.80 to 3.30 m



BOX 02 : 3.30 to 6.30 m E.O.H

Notes:

					Figure Name		Client
					Borehole BH24-02		Canada Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	3-Mar-26	MJ	JG	CM	317086-54175	2	0

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Resolute Bay Community Harbour Development Project



BOX 01 : 1.80 to 4.80 m E.O.H

Notes:

					Figure Name		**Client**	
					Borehole BH24-03		Canada Nunavut	worley consulting
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**	
NA	3-Mar-26	MJ	JG	CM	317086-54175	3	0	

Resolute Bay Community Harbour Development Project



SS01 : 0.00 to 0.60 m



SS02 : 0.75 to 0.90 m



BOX 01 & 02 : 3.98 to 8.00 m E.O.H

Notes:

					Figure Name		Client
					Borehole BH25-04		Canada Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	3-Mar-26	MJ	JG	CM	317086-54175	4	0

worley consulting

Resolute Bay Community Harbour Development Project



SS01 : 0.00 to 0.60 m



SS03 : 2.70 to 3.30 m



SS04 : 3.76 to 4.36 m



SS05 : 5.08 to 5.68 m



BOX 01 : 5.08 to 7.67 m E.O.H

Notes:

					Figure Name		Client
					Borehole BH25-05		Canada Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	3-Mar-26	MJ	JG	CM	317086-54175	5	0

worley consulting

Resolute Bay Community Harbour Development Project



SS01 : 0.00 to 0.60 m



SS02 : 0.78 to 1.38 m



SS03 : 1.65 to 2.25 m



SS04 : 2.43 to 3.03 m

Notes:

					Figure Name			**Client**	
					Borehole BH25-05A			Canada Nunavut	worley consulting
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**		
NA	3-Mar-26	MJ	JG	CM	317086-54175	6	0		

Resolute Bay Community Harbour Development Project



SS01 : 0.00 to 0.60 m



SS03 : 1.39 to 1.99 m



SS04 : 2.31 to 2.85 m



SS05 : 3.53 to 3.72 m



BOX 01 : 2.31 to 5.14 m E.O.H

Notes:

					Figure Name		Client
					Borehole BH25-06		Canada Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	3-Mar-26	MJ	JG	CM	317086-54175	7	0

worley consulting

Resolute Bay Community Harbour Development Project



SS01 : 0.00 to 0.60 m



SS02 : 0.81 to 1.25 m



SS03 : 1.57 to 2.17 m



BOX 01 & 02 : 0.80 to 4.79 m E.O.H

Notes:

					Figure Name			Client
					Borehole BH25-07			Canada Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**	worley consulting
NA	3-Mar-26	MJ	JG	CM	317086-54175	8	0	

Resolute Bay Community Harbour Development Project



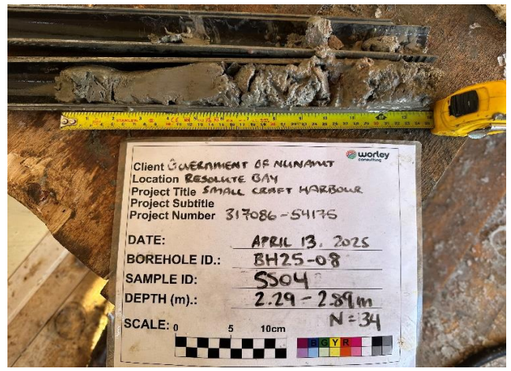
SS01 : 0.03 to 0.63 m



SS02 : 0.63 to 0.83 m



SS03 : 1.56 to 2.06 m



SS04 : 2.29 to 2.89 m



SS05 : 3.13 to 3.32 m



SS06 : 3.98 to 4.26 m



BOX 01 : 3.13 to 5.25 m E.O.H

Notes:

					Figure Name		Client
					Borehole BH25-08		Canada Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	3-Mar-26	MJ	JG	CM	317086-54175	9	0

worley consulting

Resolute Bay Community Harbour Development Project



SS01 : 0.00 to 0.60 m



SS02 : 2.70 to 3.30 m



SS03 : 4.88 to 5.48 m



SS04 : 5.63 to 6.23 m



SS05 : 7.02 to 7.62 m



BOX 01 : 7.02 to 9.20 m



BOX 02 : 10.6 to 12.14 m E.O.H

Notes:

					Figure Name			Client
					Borehole BH25-09			Canada Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**	worley consulting
NA	3-Mar-26	MJ	JG	CM	317086-54175	10	0	

Resolute Bay Community Harbour Development Project



SS02 : 0.93 to 1.53 m



SS03 : 2.51 to 3.11 m



BOX 01 : 0.93 to 3.35 m E.O.H

Notes:

					Figure Name		Client
					Borehole BH25-10		Canada Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	3-Mar-26	MJ	JG	CM	317086-54175	11	0

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Resolute Bay Community Harbour Development Project



Excavated Silty, Clayey Gravel with Sand (GC-GM)



BS01 : 0.00 to 1.00 m

Notes:

					Figure Name			Client
					Test Pit TP25-01A			Canada Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**	worley consulting
NA	3-Mar-26	MJ	JG	CM	317086-54175	12	0	

Resolute Bay Community Harbour Development Project



Excavated Silty, Clayey Gravel with Sand (GC-GM) with Cobble to Boulder-Sized Fragments of Limestone Bedrock



Excavated Silty, Clayey Gravel with Sand (GC-GM) with Cobble to Boulder-Sized Fragments of Limestone Bedrock (Close-Up)

Notes:

					Figure Name Test Pit TP25-01B			**Client** Canada Nunavut	worley consulting
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**		
NA	3-Mar-26	MJ	JG	CM	317086-54175	13	0		

Resolute Bay Community Harbour Development Project



Pockets of Clayey Silty Sand



Excavated Silty, Clayey Gravel with Sand (GC-GM)

Notes:

					Figure Name			Client	
					Test Pit TP25-02A			Canada Nunavut	worley consulting
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**		
NA	3-Mar-26	MJ	JG	CM	317086-54175	14	0		

Resolute Bay Community Harbour Development Project



Excavated Silty, Clayey Gravel with Sand (GC-GM) with Cobble to Boulder-Sized Fragments of Limestone Bedrock (1 of 2)



Excavated Silty, Clayey Gravel with Sand (GC-GM) with Cobble to Boulder-Sized Fragments of Limestone Bedrock (2 of 2)

Notes:

					Figure Name Test Pit TP25-02B			**Client** Canada Nunavut	worley consulting
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**		
NA	3-Mar-26	MJ	JG	CM	317086-54175	15	0		

Resolute Bay Community Harbour Development Project



Excavated Silty, Clayey Gravel with Sand (GC-GM)



Pockets of Clayey Silty Sand

Notes:

					Figure Name		Client
					Test Pit TP25-03A		Canada Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	3-Mar-26	MJ	JG	CM	317086-54175	16	0

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Resolute Bay Community Harbour Development Project



Excavated Test Pit with Water Ingress



Excavated Silty, Clayey Gravel with Sand (GC-GM)

Notes:

					Figure Name Test Pit TP25-03B		**Client** Canada Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	3-Mar-26	MJ	JG	CM	317086-54175	17	0

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Resolute Bay Community Harbour Development Project



Excavated Clayey Sand with Gravel (SC)



Pockets of Clayey Sand

Notes:

					Figure Name			**Client**	
					Test Pit TP25-04A			Canada Nunavut	worley consulting
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**		
NA	3-Mar-26	MJ	JG	CM	317086-54175	18	0		

Resolute Bay Community Harbour Development Project



Excavated Test Pit with Minor Water Ingress



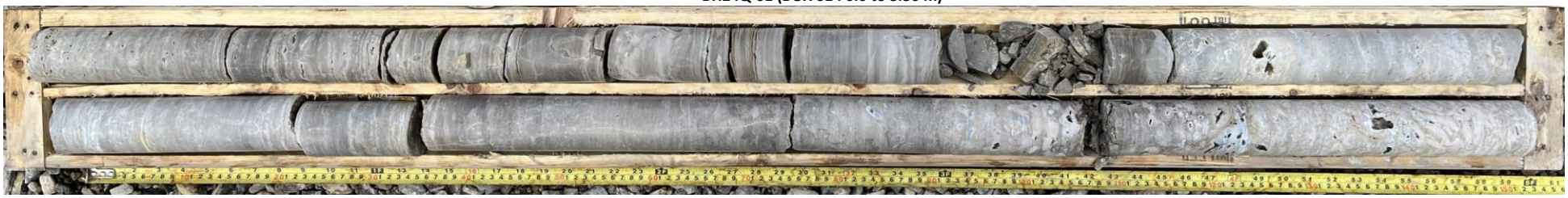
Excavated Clayey Sand with Gravel (SC)

Notes:

					Figure Name Test Pit TP25-04B			**Client** Canada Nunavut	worley consulting
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**		
NA	3-Mar-26	MJ	JG	CM	317086-54175	19	0		



BH24Q-01 (BOX 01 : 0.0 to 3.30 m)



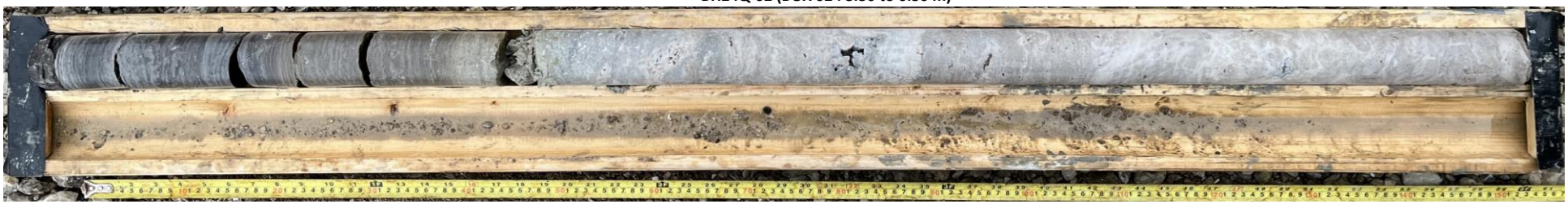
BH24Q-02 (BOX 02 : 3.30 to 6.30 m E.O.H)



BH24Q-02 (BOX 01 : 0.0 to 3.30 m)



BH24Q-02 (BOX 02 : 3.30 to 6.30 m)



BH24Q-02 (BOX 03 : 6.30 to 7.80 m E.O.H)

Notes:

					Figure Name		Client
					Borehole BHQ24-01 and BH24Q24-02 (Rock Core)		Canada Nunavut
Phase	**Date**	**Originator**	**Checker**	**Approver**	**Project Number**	**Figure Number**	**REV**
NA	3-Mar-26	JG	JW	CM	317086-54175	20	0

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Appendix C. Select Photographs from the 2024/2025 Site Reconnaissance

FILE LOCATION: U:\YVR\317086\54175_GoN_ResolutBay\10_Eng\16_Geomatics\MXDs\ResoluteBay_Photos_RB1.mxd

PLOT DATE & TIME: 3/11/2026 8:24:31 AM
SAVE DATE & TIME: 3/11/2026 8:24:15 AM
USER NAME: Kenneth.W.Ritchie

446800 447000 447200 447400 447600 447800 448000 448200 448400 448600

8289400 8289200 8289000 8288800 8288600 8288400 8288200 8288000 8287800 8287600 8287400 8287200 8287000 8286800 8286600

NQ2, NQ7
NQ1, NQ3
NQ5, NQ10
GPS 286
GPS 285
NQ6
NQ4
Quarry Northern Location
NQ8, NQ9
Foreshore Flats
GPS 269
Quarry Southern Location
GPS 274
SQ3, SQ5
GPS 275
GPS 276
GPS 268
GPS 277
GPS 267
GPS 266
SQ4, SQ6
GPS 278
GPS 279
GPS 280
GPS 281
bing

Legend

- GPS Point
- Photo Location
- Haul Route
- Quarry Boundary
- Stockpile/Laydown Area

N

0 75 150 300
Metres
1:7,500
WGS 1984 UTM Zone 15N

Aerial Image: CHS August 2016;
© 2026 Microsoft Corporation © 2026 Maxar ©CNES (2026) Distribution Airbus DS
Locations approximate.

GOVERNMENT OF NUNAVUT
RESOLUTE BAY COMMUNITY
HARBOUR DEVELOPMENT

POTENTIAL QUARRY LOCATIONS NORTH & SOUTH

Date:	Drawn by:	Edited by:	App'd by:
11-MAR-26	KR		JG

Project No. 317086-54175
FIG No 1
REV 0

"This drawing is prepared solely for the use of our customers as specified in the accompanying report.
Worley Canada Services Ltd. assumes no liability to any other party for any representations contained in this drawing."

Resolute Bay Community Harbour Development Project - North Quarry



Photo NQ1: Proposed North Quarry location; view North West towards Cabin and Bay



Photo NQ2: View looking East at exposed bedrock

Notes:

Figure Name: Representative Photos at North Quarry - Photos NQ1 & NQ2

Client: Nunavut

Phase	Date	Originator	Checker	Approver	Project Number	Figure Number	REV
NA	19-May-26	JG	PB	CM	317086-54175	1	0

Resolute Bay Community Harbour Development Project - North Quarry

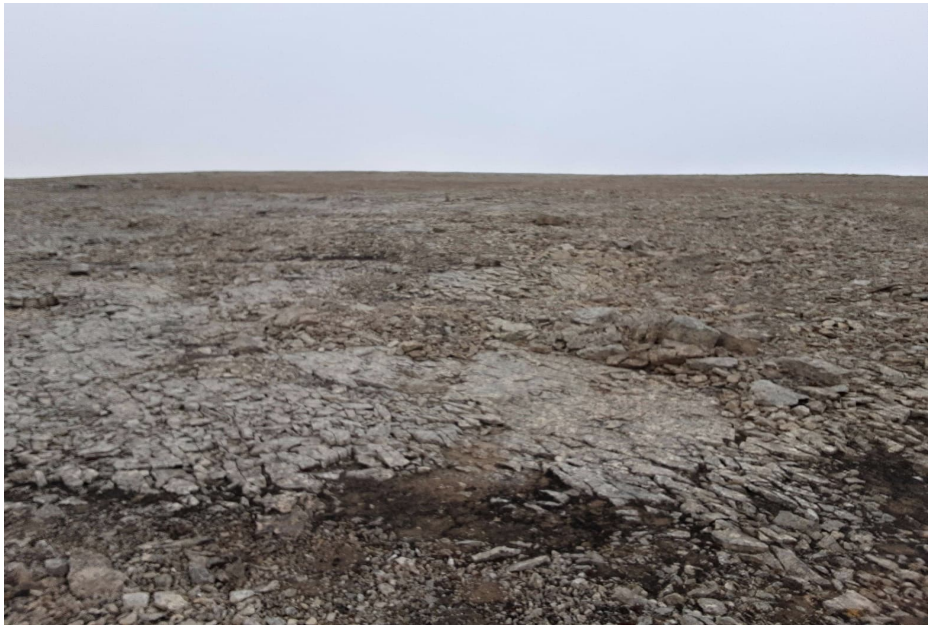


Photo NQ3: View looking East at exposed bedrock



Photo NQ4: View looking South West at bedrock exposure in foreground and Bay in background

Notes:

					Figure Name			Client
					Representative Photos at North Quarry - Photos NQ3 & NQ4			Nunavut
Phase	Date	Originator	Checker	Approver	Project Number	Figure Number	REV	
NA	19-May-26	JG	PB	CM	317086-54175	2	0	

Resolute Bay Community Harbour Development Project - North Quarry



Photo NQ5: View looking East at exposed bedrock and frost shattered / weathered rock



Photo NQ6: View looking North East at exposed bedrock and frost shattered / weathered rock

Notes:

					Figure Name			Client
					Representative Photos at North Quarry - Photos NQ5 & NQ6			Nunavut
Phase	Date	Originator	Checker	Approver	Project Number	Figure Number	REV	
NA	19-May-26	JG	PB	CM	317086-54175	3	0	

Resolute Bay Community Harbour Development Project - North Quarry



Photo NQ7: View looking South at exposed bedrock and frost shattered / weathered rock



Photo NQ8: View looking North to borehole BH25Q-01

Notes:

Figure Name: Representative Photos at North Quarry - Photos NQ7 & NQ8

Client: Nunavut

Phase	Date	Originator	Checker	Approver	Project Number	Figure Number	REV
NA	19-May-26	JG	PB	CM	317086-54175	4	0

Resolute Bay Community Harbour Development Project - North Quarry



Photo NQ9: View looking North towards community



Photo NQ10: Dolostone slab, massive towards surface with thinner bedding towards base

Notes:

					Figure Name			Client	
					Representative Photos at North Quarry - Photos NQ9 & NQ10			Nunavut	worley consulting
Phase	Date	Originator	Checker	Approver	Project Number	Figure Number	REV		
NA	19-May-26	JG	PB	CM	317086-54175	5	0		

Resolute Bay Community Harbour Development Project - South Quarry



Photo SQ3: View looking South. Large slabs of Dolostone at base of slope face



Photo SQ4: Dolostone slab, massive towards surface with thinner bedding towards base

Notes:

					Figure Name			Client
					Representative Photos at South Quarry - Photos SQ3 & SQ4			Nunavut
Phase	Date	Originator	Checker	Approver	Project Number	Figure Number	REV	
NA	19-May-26	JG	PB	CM	317086-54175	6	0	

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Resolute Bay Community Harbour Development Project - South Quarry



Photo SQ5: View of massive Dolostone



Photo SQ6: View of massive Dolostone with variable sized blocks of frost shattered bedrock

Notes:

					Figure Name			Client
					Representative Photos at South Quarry - Photos SQ5 & SQ6			Nunavut
Phase	Date	Originator	Checker	Approver	Project Number	Figure Number	REV	
NA	19-May-26	JG	PB	CM	317086-54175	7	0	

Appendix D. 2024/2025 Investigation Borehole and Test Pit Logs

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH24-01**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175
Coordinates (UTM): N 8,290,350.00 E 445,374.00	Method: Water Rotary / HQ Drilling	Dip: -90° / Azimuth: N/A / Elevation: 2.54 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) Elevation (m)	Casing Type	Geological Unit	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30 40)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
2	HWT			Well-Graded GRAVEL (GW): fine to coarse sub-rounded to angular dolostone gravel, trace to some cobbles of limestone at surface, dark grey, very dense		SS01	150		30	Borehole offset 7.0 m seaward of survey marker (Orange X) and at similar elevation.
1				Well-Graded GRAVEL with Sand (GW): fine to medium sub-rounded to angular dolostone gravel, fine to medium grained sand, trace silt, frozen, ice crystals present, dark grey, very dense ...from 0.75 to 3.65 m, fine to coarse sub-rounded to angular dolostone gravel		SS02	100		6-30 30 30	Run 01: 0.0 to 1.60 m Particle Size Analysis: Gravel 81.5%, Sand 18.1%, Silt 0.5%, Clay 0%
1		Marine		...from 1.60 to 3.65 m, recovered fine to coarse, sub-rounded to angular dolostone gravel		SS03	0		30 30	Run 02: 1.60 to 3.30 m
0	Open Hole									
-1				...Core loss from 3.30 to 3.55 m						Run 03: 3.30 to 5.0 m
-2				Rock encountered at 3.65m, refer to rock core log						
-3										

worley consulting

Logged By: Jeff Gibson		Completion Depth: 6.50 m
Reviewed By: Jon Woods		Drilled on: 9/21/2024
Groundwater Depth: Not Applicable		Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.		Borehole Number: **BH24-01**
Client: Government of Nunavut	Equipment: CME 55		Project Number: 317086-54175
Coordinates (UTM): N 8,290,350.00 E 445,374.00	Method: Water Rotary / HQ Drilling	Dip: -90°	Azimuth: N/A	Elevation: 2.54 mCD

Symbol: Coring; Core Loss

Well Details: Bentonite; Peltonite; Sand; Grout; Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Graphic Log	MATERIAL DESCRIPTION	Weathering/ Cementation	Estimated Strength	Defect Spacing (mm)	Run/Recovery (%)	RQD (%)	Lab Tests: UCS (MPa)	Lab Tests: PLI-A (PLI-D) MPa	Field Records / Comments and Defect Description
				Continued from Soil Log								
4 / -2	Open Hole	Cape Storm Formation		DOLOSTONE: slightly to moderately weathered, fine grained, dark grey and pale grey banding with fine to coarse gravel sized nodules of calcite, weak to medium strong ...Core loss from 3.30 to 3.55 m ...from 3.70 to 3.83 m and 3.98 m to 4.10 m, rubblized ...from 3.98 to 4.10 m, rubblized ...below 4.1 m, fresh to slightly weathered, strong ...from 4.40 m, with calcite stringers throughout ...from 4.80 m, with small gravel sized dissolution cavities ...multiple drilling induced fractures from 5.08 to 5.22 m ...from 5.30 to 5.50 m, pale grey	SW-MW	R2 to R3		Run03/91	50		4.43	Run 03: 3.30 to 5.0 m GB01: 4.26 to 4.40 m ...at 4.26 m: J, 0°, Pl, VR, Si, Vn ...at 4.47 m: J, 0°, Pl, VR, Si, Vn ...at 4.62 m: J, 5°, Pl, VR, Ice, Fi ...at 4.70 m: J, 80°, Pl, VR, Si, Vn ...at 4.78 m: J, 0°, Pl, VR, Si, Vn Run 04: 5.0 to 6.50 m ...from 5.08 to 5.22 m: J, 80°, Pl, R, Si, Vn GB02: 5.30 to 5.63 m ...at 5.63 m: J, 15°, Pl, VR, Cn ...from 5.68 to 5.76 m rubbelized ...from 5.82 to 6.50 m: J, 85°, Pl, R, Ice, Fi
5 / -3					FR-SW	R4		Run04/100	90			
6												

End of Hole at a depth of 6.50 m
Drilling method: driller advanced HWT casing with water to 1.50 mbsb. HQ drilling using water rotary method. Borehole backfilled using cuttings.

worley consulting	Logged By: Jeff Gibson	Completion Depth: 6.50 m
	Reviewed By: Jon Woods	Drilled on: 9/21/2024
	Groundwater Depth: Not Applicable	Page 1 of 1

ROCK LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ ARCTIC BAY.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH24-02**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175
Coordinates (UTM): N 8,290,344.00 E 445,533.00	Method: Water Rotary / HQ Drilling	Dip: -90° / Azimuth: N/A / Elevation: 2.01 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic / MC / Liquid (10 20 30 40)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
0 / 1	HWT			Well-Graded GRAVEL with Sand (GW): fine to coarse sub-rounded to angular dolostone gravel, fine to medium grained sand, trace silt, trace to some cobbles of dolostone at surface, black, moist, compact ...below 0.5 m, dense		SS01	37		10 2-4-6-9	Particle Size Analysis: Gravel 67.6%, Sand 31.3%, Silt 1.3%, Clay 0% Run 01: 0.0 to 1.80 m
1 / 0	Open Hole	Marine		Silty, Clayey SAND with Gravel (SC-SM): fine to medium grained sand, fine to medium sub-rounded to angular gravel, trace shell fragments, black, moist, dense		SS02	92	10 17 22	36 16-18-18-10	Particle Size Analysis: Gravel 36.3%, Sand 45.3%, Silt 16.6%, Clay 1.8% Run 02: 1.80 to 3.30 m
2 / -1				Sandy, Silty CLAY (CL-ML): fine grained sand, trace fine to medium sub-rounded to sub-angular gravel, with shells and shell fragments, pale brown, low plasticity, moist, hard						
3 / -2				Well-Graded GRAVEL with Sand (GW): fine to coarse sub-rounded to angular dolostone gravel, fine to medium grained sand, very dense. Sand likely washed out during drilling process. BOULDER: dolostone		SS03	0		>> 10 10	Run 03: 3.30 to 4.80 m
4 / -3				Well-Graded GRAVEL (GW): fine to coarse sub-rounded to angular dolostone, trace to some fine to medium grained sand, very dense. Sand likely washed out during drilling process. ...from 4.0 to 4.20 m, with some silty SAND, sand and fines likely washed out during drill process Rock encountered at 4.80m, refer to rock core log						No SPT at 4.80 m due to presence of gravel / cobble

worley consulting	Logged By: Jeff Gibson	Completion Depth: 6.30 m
	Reviewed By: Jon Woods	Drilled on: 9/20/2024
	Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH24-02**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175
Coordinates (UTM): N 8,290,344.00 E 445,533.00	Method: Water Rotary / HQ Drilling	Dip: -90° / Azimuth: N/A / Elevation: 2.01 mCD

Symbol: Coring; Core Loss

Well Details: Bentonite; Peltonite; Sand; Grout; Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Graphic Log	MATERIAL DESCRIPTION	Weathering/ Cementation	Estimated Strength	Defect Spacing (mm)	Run/Recovery (%)	RQD (%)	Lab Tests: UCS (MPa)	Lab Tests: PLI-A (PLI-D) MPa	Field Records / Comments and Defect Description
5 -3	Open Hole	Cape Storm Formation		Continued from Soil Log DOLOSTONE: slightly weathered, fine grained, mottled dark and pale grey, strong ...from 5.0 to 6.15 m, highly fractured / rubbelized. Possibly frost shattered. Fracture surfaces stained orange. ...from 5.1 to 6.2 m, slightly to moderately weathered, weak to medium strong	SW SW-MW	R4 R2 to R3	20 60 200 600 2000	Run04/100	25		4.68	GB01: 4.80 to 5.02 m Run 04: 4.80 to 6.30 m ...at 5.02 m: J, 5°, Pl, R, Si, Vn
6 -4				...below 6.2 m, slightly weathered, strong End of Hole at a depth of 6.30 m Drilling method: driller advanced HWT casing with water to 1.50 mbsb. HQ drilling using water rotary method. Borehole backfilled using cuttings.	SW	R4						...from 5.75 to 6.05 m: J, 80°, Pl, R, Cn ...at 6.15 m: J, 45°, Pl, R, Si, Vn ...from 6.24 to 6.30 m healed Joint

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Logged By: Jeff Gibson	Completion Depth: 6.30 m
Reviewed By: Jon Woods	Drilled on: 9/20/2024
Groundwater Depth: Not Applicable	Page 1 of 1

ROCK LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ ARCTIC BAY.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH24-03**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175
Coordinates (UTM): N 8,290,276.00 E 445,624.00	Method: Water Rotary / HQ Drilling	Dip: -90° / Azimuth: N/A / Elevation: 2.24 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) Elevation (m)	Casing Type	Geological Unit	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30 40)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
2				Well-Graded GRAVEL (GW): fine to coarse angular dolostone gravel, trace to some cobbles of dolostone at surface						Borehole offset 5.60 m landward of survey marker. Borehole measured approximately 0.5 m higher in elevation than survey marker.
1	HWT	Marine								Run 01: 0.0 to 1.80 m
1	Open Hole					SS01	0			
				Rock encountered at 1.90m, refer to rock core log						R >> R Run 02: 1.80 to 3.30 m

worley consulting

Logged By: Jeff Gibson	Completion Depth: 4.80 m
Reviewed By: Jon Woods	Drilled on: 9/19/2024
Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.		Borehole Number: **BH24-03**
Client: Government of Nunavut	Equipment: CME 55		Project Number: 317086-54175
Coordinates (UTM): N 8,290,276.00 E 445,624.00	Method: Water Rotary / HQ Drilling	Dip: -90°	Azimuth: N/A	Elevation: 2.24 mCD

Symbol: Coring; Core Loss

Well Details: Bentonite; Peltonite; Sand; Grout; Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Graphic Log	MATERIAL DESCRIPTION	Weathering/ Cementation	Estimated Strength	Defect Spacing (mm)	Run/Recovery (%)	RQD (%)	Lab Tests: UCS (MPa)	Lab Tests: PLI-A (PLI-D) MPa	Field Records / Comments and Defect Description
				Continued from Soil Log			20 60 200 600 2000					
2 / 0	Open Hole	Cape Storm Formation		DOLOSTONE: slightly to moderately weathered, fine grained, thinly bedded to laminated, dark grey with pale grey banding, weak to medium strong ...from 1.90 to 3.53 m, highly fractured / rubbelized	SW-MW	R2 to R3						Run 02: 1.80 to 3.30 m
3 / -1												Run 03: 3.30 to 4.80 m
				...below 3.6 m, slightly weathered, strong				Run03/100	62			...at 3.53 m: J, 5°, Pl, VR, Cn ...at 3.67 m: J, 5°, Pl, VR, Cn ...at 3.82 m: J, 5°, Pl, VR, Cn
4 / -2					SW	R4						...at 3.82 m: J, 0°, Pl, VR, Cn ...at 4.12 m: J, 50°, Pl, VR, Cn ...at 4.20 m: mechanical break
											5.65	...at 4.66 m: J, 0°, Pl, VR, Cn GB01: 4.70 to 4.80 m ...at 4.70 m: J, 0°, Pl, VR, Cn
				End of Hole at a depth of 4.80 m Drilling method: driller advanced HWT casing with water to 1.50 mbsb. HQ drilling using water rotary method. Borehole backfilled using cuttings.								

worley consulting	Logged By: Jeff Gibson	Completion Depth: 4.80 m
	Reviewed By: Jon Woods	Drilled on: 9/19/2024
	Groundwater Depth: Not Applicable	Page 1 of 1

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.		Borehole Number: **BH24-Q01**
Client: Government of Nunavut	Equipment: CME 55		Project Number: 317086-54175
Coordinates (UTM): N 8,288,521.00 E 447,174.00	Method: Water Rotary / HQ Drilling	Dip: -90°	Azimuth: N/A / Elevation:

Symbol: Coring; Core Loss

Well Details: Bentonite; Peltonite; Sand; Grout; Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Graphic Log	MATERIAL DESCRIPTION	Weathering/ Cementation	Estimated Strength	Defect Spacing (mm)	Run/Recovery (%)	RQD (%)	Lab Tests: UCS (MPa)	Lab Tests: PLI-A (PLI-D) MPa	Field Records / Comments and Defect Description
				Continued from Soil Log								
0	Open Hole	Allen Bay Formation		DOLOSTONE: slightly to moderately weathered, fine grained, pale grey, mottled brown, with calcite nodules / stringers, weak to medium strong ...from 0.3 to 0.90 m, highly fractured / rubbelized	SW-MW	R2 to R3		Run01/100	42		1.81	Run 01: 1.0 to 1.50 m GB01 from 0 to 0.2m ...at 0.20 m Mechanical Break ...at 0.25 m: J, 40°, Un, SR, Si, Co ...at 0.30 m Mechanical Break
1				...from 0.90 m, fresh to slightly weathered, with some fine to coarse gravel sized solution cavities, strong ...from 1.20 to 1.22 m, highly fractured / rubbelized ...from 1.25 to 1.30 m, pale yellow ...from 1.50 m, grey mottled white								...at 0.92 m Mechanical Break ...at 1.15 m: J, 0°, Pl, SR, Si, Co ...at 1.1 m: J, 0°, Pl, SR, Si, Co ...at 1.25 m Mechanical Break ...at 1.28 m Mechanical Break ...at 1.30 m Mechanical Break ...at 1.35 m Mechanical Break
2				...from 2.20 to 2.60 m, dark grey	FR-SW	R4		Run02/93	65	61.25		...at 1.4 m Mechanical Break ...at 1.45 m: J, 20°, Un, SR, Si, Co Run 02: 1.50 to 3.30 m ...at 1.55 m Mechanical Break ...at 1.58 m: J, 5°, Pl, SR, Cn ...at 1.72 m: Mechanical Break ...at 1.76 m: Mechanical Break ...at 1.80 m: Mechanical Break ...at 1.85 m: Mechanical Break
3				...from 2.55 to 2.61 m, highly fractured / rubbelized ...from 2.60 m, pale grey mottled white with calcite stringers and small solution cavities ...from 3.18 to 3.3 m, CORE LOSS ...from 3.30 to 3.70 m, with some solution cavities ...from 3.48 to 4.1 m, bedding planes pronounced	NA	NA		Run03/100	87			...at 1.90 m: Mechanical Break ...at 1.95 m: Mechanical Break ...at 2.15 m: Mechanical Break ...at 2.20 m: Mechanical Break ...at 2.30 m: Mechanical Break ...at 2.35 m: Mechanical Break ...at 2.40 m: Mechanical Break GB02 from 2.4 to 2.55m ..from 2.61 to 2.92 m: J, 80°, Pl, SR, Su
4				...from 4.22 to 4.42 m, highly fractured / rubbelized ...at 4.58 m, large solution cavities	FR-SW	R4						Run 03: 3.30 to 4.80 m ...at 3.48 m Mechanical Break ...at 3.65 m Mechanical Break along solution cavity
5				...from 5.55 m, with some solution cavities ...from 5.70 m, mottled grey and off-white ...from 5.86 to 5.90 m, highly fractured / rubbelized				Run04/100	97	17.97	1.72	...at 3.70 m Mechanical Break ...at 3.77 m Mechanical Break ...at 3.88 m Mechanical Break ...at 3.98 m Mechanical Break ...at 4.01 m Mechanical Break ...at 4.03 m Mechanical Break ...at 4.07 m Mechanical Break GB03 from 4.07 to 4.22m ...at 4.46 m Mechanical Break Run 04: 4.80 to 6.30 m ...at 5.05 m Mechanical Break ...at 5.18 m Mechanical Break ...at 5.56 m Mechanical Break GB04 from 5.56 to 5.86m ...at 5.90 m Mechanical Break
6				End of Hole at a depth of 6.30 m								

ROCK LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ ARCTIC BAY.GPJ 11/13/25

worley consulting

Logged By: Jeff Gibson	Completion Depth: 6.30 m
Reviewed By: Jon Woods	Drilled on: 9/19/2024
Groundwater Depth: Not Applicable	Page 1 of 1

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.		Borehole Number: **BH24-Q02**
Client: Government of Nunavut	Equipment: CME 55		Project Number: 317086-54175
Coordinates (UTM): N 8,287,415.00 E 447,788.00	Method: Water Rotary / HQ Drilling	Dip: -90° Azimuth: N/A	Elevation:

Symbol: Coring; Core Loss

Well Details: Bentonite; Peltonite; Sand; Grout; Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Graphic Log	MATERIAL DESCRIPTION	Weathering/ Cementation	Estimated Strength	Defect Spacing (mm)	Run/Recovery (%)	RQD (%)	Lab Tests: UCS (MPa)	Lab Tests: PLI-A (PLI-D) MPa	Field Records / Comments and Defect Description
				Continued from Soil Log								
		Marine		...from 0.0 to 0.15 m, CORE LOSS		NA						Run 01: 0.0 to 1.80 m
				Well-Graded GRAVEL (GW): medium to coarse angular dolostone	NA	NA						
1	Open Hole	Allen Bay Formation		DOLOSTONE: slightly to moderately weathered, fine grained, dark grey with pale brown and pale pale grey nodules, frost shattered, weak to medium strong				Run01/92	6			
				...from 1.30 m, large nodules of calcite	SW-MW	R2 to R3						
2				...from 2.0 to 2.17 m, highly fractured / rubbelized						25.80		Run 02: 1.80 to 3.30 m
				...from 2.17 to 2.45 m, multiple fractures								GB01 from 1.8 to 2m
				...from 2.40 m, pale brown				Run02/100	67			
				...below 2.5 m, fresh to slightly weathered, strong								...at 2.50 m Mechanical Break
3												...at 2.58 m Mechanical Break
												...at 2.62 m: J, 5°, Un, SR, Si, Co
				...from 2.95 to 3.02 m, grey								...at 2.69 m Mechanical Break
												...at 2.82 m: J, 5°, Un, VR, Cn
											4.04	...at 2.86 m Mechanical Break
				...from 3.30 to 3.40 m, multiple mechanical breaks								...at 2.97 m: J, 5°, Un, VR, Cn
												...at 3.04 m Mechanical Break
												...at 3.15 m: J, 5°, Un, VR, Cn
4												GB02 from 3.15 to 3.3m
								Run03/100	73			Run 03: 3.30 to 4.80 m
				...from 4.07 to 4.15 m, multiple fractures								...at 3.32 m: J, 5°, Un, VR, Cn
				...from 4.25 m, solution cavities present								...at 3.33 m: J, 85°, Un, VR, Cn
												...at 3.35 m Mechanical Break
												...at 3.37 m Mechanical Break
												...at 3.48 m Mechanical Break
												...at 3.54 m Mechanical Break
5												...at 3.61 m Mechanical Break
												...at 3.66 m Mechanical Break
					FR-SW	R4						...at 3.95 m: J, 5°, Un, VR, Cn
												GB03 from 4.26 to 4.48m
								Run04/100	100			...at 4.48 m Mechanical Break
												...at 4.52 m Mechanical Break
											4.38	Run 04: 4.80 to 6.30 m
6												...at 4.85 m: J, 5°, Un, VR, Cn
												...from 5.0 to 5.12 m healed joint
												...at 5.53 m Mechanical Break
				...from 6.17 to 6.30 m, multiple mechanical breaks								GB04 from 5.68 to 5.88m
												...at 5.70 m Mechanical Break
												...at 5.91 m Mechanical Break
												...at 6.13 m Mechanical Break
												...at 6.20 m Mechanical Break
7								Run05/100	82			...at 6.22 m Mechanical Break
												...at 6.26 m Mechanical Break
												...at 6.28 m Mechanical Break
												Run 05: 6.30 to 7.80 m
										18.53	3.62	...at 6.35 m: J, 5°, Un, VR, Cn
												...at 6.45 m: J, 5°, Un, VR, Cn
												...at 6.52 m: J, 0°, Un, VR, Cn
												...at 6.59 m: J, 0°, Un, VR, Cn
				End of Hole at a depth of 7.80 m								GB05 from 7.5 to 7.8m

worley consulting

Logged By: Jeff Gibson		Completion Depth: 7.80 m
Reviewed By: Jon Woods		Drilled on: 9/19/2024
Groundwater Depth: Not Applicable		Page 1 of 1

ROCK LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ ARCTIC BAY.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.		Borehole Number: **BH25-04**
Client: Government of Nunavut	Equipment: CME 55		Project Number: 317086-54175
Coordinates (UTM): N 8,290,228.69 E 445,590.35	Method: Water Rotary / HQ Drilling	Dip: -90° Azimuth: N/A	Elevation: -2.11 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) Elevation (m)	Casing Type	Geological Unit	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30 40)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
0 / -2	HWT	Marine		Clayey GRAVEL with Sand (GC): fine to medium subangular gravel, fine to coarse grained sand, some silt, trace shell fragments, green grey, moist, low plasticity, dense		SS01	67	10.4; 14; 30	45; 20-30-15-10	Particle Size Analysis: Gravel 36.0%, Sand 24.6%, Silt 35.7%, Clay 3.7%
1 / -3										
2 / -4				Silty, Clayey SAND with Gravel (SC-SM): medium to coarse grained sand, fine to coarse angular to subrounded gravel, grey, moist, dense		SS02	55	5.9	36; 14-16-20-18	Particle Size Analysis: Gravel 39.7%, Sand 41.4%, Silt 15.8%, Clay 3.1%
3 / -5										
-6				Rock encountered at 3.98m, refer to rock core log		SS03	0		R	R

SOIL LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

worley consulting

Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 8.00 m
Reviewed By: Jeff Gibson	Drilled on: 4/12/2025
Groundwater Depth: Not Applicable	Page 1 of 1

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH25-04**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175
Coordinates (UTM): N 8,290,228.69 E 445,590.35	Method: Water Rotary / HQ Drilling	Dip: -90° / Azimuth: N/A / Elevation: -2.11 mCD

Symbol: Coring; Core Loss

Well Details: Bentonite; Peltonite; Sand; Grout; Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Graphic Log	MATERIAL DESCRIPTION	Weathering/ Cementation	Estimated Strength	Defect Spacing (mm)	Run/Recovery (%)	RQD (%)	Lab Tests: UCS (MPa)	Lab Tests: PLI-A (PLI-D) MPa	Field Records / Comments and Defect Description
				Continued from Soil Log								
5 / -7	Open Hole	Cape Storm Formation		DOLOSTONE: fresh, fine grained, massive with subhorizontal bedding (~10-60° TCA), light and dark grey bedding with some brown interbeds, medium strong to strong	FR	R3 to R4		03/100	75		7.02	...from 4.08 to 4.18m, rubblized zone ...from 4.51 to 4.58m, rubblized zone
6 / -8								04/100	76			...from 5.08 to 5.18m, rubblized zone ...from 5.31 to 5.38m, rubblized zone
7 / -9				...from 6.4 to 6.6 m, evidence of bioturbation				05/100	75			...at 6.54m, J: 50°TCA, Un, SR, Fe, Su ...from 7.02 to 7.52m, rubblized zone
8 / -10				...from 7.8 to 8.0 m, light grey, decreased bedding								

End of Hole at a depth of 8.00 m
Drilling method: HQ drilling using water rotary method to 8.0 mbsb.

Seabed Elevation: -2.11 mCD
Ice Thickness: 1.83 m

worley consulting	Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 8.00 m
	Reviewed By: Jeff Gibson	Drilled on: 4/12/2025
	Groundwater Depth: Not Applicable	Page 1 of 1

ROCK LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ ARCTIC BAY.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH25-05**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175
Coordinates (UTM): N 8,290,221.94 E 445,481.15	Method: Water Rotary / HQ Drilling	Dip: -90° / Azimuth: N/A / Elevation: -5.86 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30 40)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
0 / -6				Sandy, Silty CLAY with Gravel (CL-ML): fine sand, fine subangular gravel, trace shell fragments, grey, moist, low plasticity, stiff		SS01	50	26.4; 19 25	10; 3-3-7-5	Particle Size Analysis: Gravel 20.8%, Sand 23.4%, Silt 51.2%, Clay 4.6%
1 / -7										
2 / -8				...at 2.13 m, soft		SS02	0		3; 8-2-1-1	
3 / -9	HWT	Marine		Silty, Clayey GRAVEL with Sand (GC-GM): fine to coarse subangular to angular gravel, medium to coarse grained sand, grey, wet (likely drilling fluid), compact		SS03	35	20.5	21; HW-10-11-13	Particle Size Analysis: Gravel 54.6%, Sand 18.6%, Silt 24.0%, Clay 2.8%
4 / -10				...at 3.76 m, very dense		SS04	47		54; 16-41-13-13	
5 / -11				...at 5.08 m, increased sand, decreased fines, compact to dense		SS05	50	6	30; 1-10-20-22	Particle Size Analysis: Gravel 57.0%, Sand 36.6%, Silt 4.7%, Clay 1.7%
				Rock encountered at 5.91m, refer to rock core log						

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Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 7.67 m
Reviewed By: Jeff Gibson	Drilled on: 4/13/2025
Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH25-05**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175
Coordinates (UTM): N 8,290,221.94 E 445,481.15	Method: Water Rotary / HQ Drilling	Dip: -90°	Azimuth: N/A	Elevation: -5.86 mCD

Symbol: Coring; Core Loss

Well Details: Bentonite; Peltonite; Sand; Grout; Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Graphic Log	MATERIAL DESCRIPTION	Weathering/ Cementation	Estimated Strength	Defect Spacing (mm)	Run/Recovery (%)	RQD (%)	Lab Tests: UCS (MPa)	Lab Tests: PLI-A (PLI-D) MPa	Field Records / Comments and Defect Description
				Continued from Soil Log								
6 / -12	Open Hole	Cape Storm Formation		DOLOSTONE: slightly weathered, fine grained, massive, light brown, medium strong	SW	R3		04/39	54			
				...from 6.43 to 6.55 m, core loss		NA						...from 6.55 to 6.65m, rubblized zone
7 / -13					SW	R3		05/90	66			...from 7.13 to 7.25m, rubblized zone ...from 7.33 to 7.40m, rubblized zone ...from 7.55 to 7.67m, rubblized zone

End of Hole at a depth of 7.67 m
Drilling method: HQ drilling using water rotary method to 7.67 mbsb.

Seabed Elevation: -5.86 mCD
Ice Thickness: 1.55 m

ROCK LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ ARCTIC BAY.GPJ 11/13/25

worley consulting

Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 7.67 m
Reviewed By: Jeff Gibson	Drilled on: 4/13/2025
Groundwater Depth: Not Applicable	Page 1 of 1

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.		Borehole Number: **BH25-05A**
Client: Government of Nunavut	Equipment: CME 55		Project Number: 317086-54175
Coordinates (UTM): N 8,290,224.06 E 445,483.27	Method: Water Rotary / HQ Drilling	Dip: -90° Azimuth: N/A	Elevation: -5.94 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30 40)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
-6				Gravelly, Silty CLAY (CL-ML): fine subangular gravel, little fine grained sand, trace shell fragments, grey black, moist, low plasticity, very stiff		SS01	38	21.4 (18, 24)	21 HW-5-16-18	Particle Size Analysis: Gravel 17.0%, Sand 13.9%, Silt 65.7%, Clay 3.4%
1 -7	HWT	Marine		Sandy Lean CLAY with Gravel (CL): fine grained sand, fine subangular gravel, trace shell fragments, grey black, moist, low plasticity, very stiff		SS02	25	25.2 (18, 31)	20 12-10-10-10	
				...at 1.65 m, stiff		SS03	83	27.6 (15, 29)	9 3-4-5-8	Particle Size Analysis: Gravel 15.6%, Sand 21.5%, Silt 56.5%, Clay 6.4%
2 -8				Well-Graded GRAVEL with Sand (GW) (possible Weathered Dolostone): fine to coarse angular to subangular gravel, medium to coarse grained sand, grey, moist, compact to dense		SS04	48		30 13-12-18-12	
3				End of Hole at a depth of 3.03 m Drilling method: HQ drilling using water rotary method to 3.03 mbsb. Offset 3m north of BH25-05 Seabed Elevation: -5.94 mCD Ice Thickness: 1.6 m						

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Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 3.03 m
Reviewed By: Jeff Gibson	Drilled on: 4/13/2025
Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH25-06**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175
Coordinates (UTM): N 8,290,241.11 E 445,374.94	Method: Water Rotary / HQ Drilling	Dip: -90° / Azimuth: N/A / Elevation: -4.80 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30 40)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
0 / -5				Gravelly, Silty CLAY with Sand (CL-ML): fine to coarse subangular to angular gravel (<60mm in diameter), fine grained sand, trace shell fragments, grey, moist, low plasticity, stiff		SS01	50	18.4; 16; 22	9; 1-2-7-9	Particle Size Analysis: Gravel 26.4%, Sand 16.3%, Silt 54.4%, Clay 2.9%
				...at 0.69 m, very stiff		SS02	0		28; 12-12-16-15	
1 / -6	HWT	Marine		Clayey GRAVEL with Sand (GC): fine to coarse subangular to angular gravel, medium to coarse grained sand, little silt, grey, wet (drilling fluid), compact		SS03	58	12; 13; 21	16; 5-7-9-12	Particle Size Analysis: Gravel 58.5%, Sand 24.8%, Silt 15.0%, Clay 1.7%
2 / -7				...at 2.3 m, trace cobbles, dense		SS04	28		33; 22-17-16-R	
3				Rock encountered at 3.10m, refer to rock core log						

worley consulting

Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 5.14 m	
Reviewed By: Jeff Gibson	Drilled on: 4/14/2025	
Groundwater Depth: Not Applicable		Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH25-06**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175
Coordinates (UTM): N 8,290,241.11 E 445,374.94	Method: Water Rotary / HQ Drilling	Dip: -90° / Azimuth: N/A / Elevation: -4.80 mCD

Symbol: Coring; Core Loss

Well Details: Bentonite; Peltonite; Sand; Grout; Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Graphic Log	MATERIAL DESCRIPTION	Weathering/ Cementation	Estimated Strength	Defect Spacing (mm)	Run/Recovery (%)	RQD (%)	Lab Tests: UCS (MPa)	Lab Tests: PLI-A (PLI-D) MPa	Field Records / Comments and Defect Description
				Continued from Soil Log			20 60 200 600 2000					
-8	Open Hole	Cape Storm Formation		DOLOSTONE: fresh to slightly weathered, fine grained, massive with subhorizontal bedding/laminations (~70 to 80° TCA), dark grey, evidence of bioturbation, medium strong to strong	FR-SW	R3 to R4		04/100	65			...from 3.26 to 3.37m, rubblized zone
-9				...from 3.53 to 3.7 m, core loss		NA						SS05: 3.53 to 3.72m - 49/50 for 0.04m, Recovery = 0.19m ...from 3.64 to 3.75m, rubblized zone
-4											5.68	
-5					FR-SW	R3 to R4		05/89	70			...from 4.09 to 4.29m, rubblized zone

End of Hole at a depth of 5.14 m
Drilling method: HQ drilling using water rotary method to 5.14 mbsb.

Seabed Elevation: -4.8 mCD
Ice Thickness: 1.6 m

worley consulting	Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 5.14 m
	Reviewed By: Jeff Gibson	Drilled on: 4/14/2025
	Groundwater Depth: Not Applicable	Page 1 of 1

ROCK LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ ARCTIC BAY.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH25-07**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175
Coordinates (UTM): N 8,290,285.18 E 445,372.44	Method: Water Rotary / HQ Drilling	Dip: -90° / Azimuth: N/A / Elevation: -1.40 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) Elevation (m)	Casing Type	Geological Unit	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30 40)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
-2	HWT	Marine		Silty, Clayey SAND with Gravel (SC-SM): medium to coarse grained sand, fine to coarse subangular to angular gravel, grey, wet, dense		SS01	58		36 / 35-21-15-27	Particle Size Analysis: Gravel 39.9%, Sand 45.6%, Silt 12.0%, Clay 2.5%
-1				...at 0.81 m, very dense		SS02	86		R >> 22-31-R	

Rock encountered at 1.20m, refer to rock core log

worley consulting	Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 4.79 m
	Reviewed By: Jeff Gibson	Drilled on: 4/14/2025
	Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.		Borehole Number: **BH25-07**
Client: Government of Nunavut	Equipment: CME 55		Project Number: 317086-54175
Coordinates (UTM): N 8,290,285.18 E 445,372.44	Method: Water Rotary / HQ Drilling	Dip: -90° Azimuth: N/A	Elevation: -1.40 mCD

Symbol: Coring; Core Loss

Well Details: Bentonite; Peltonite; Sand; Grout; Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Graphic Log	MATERIAL DESCRIPTION	Weathering/ Cementation	Estimated Strength	Defect Spacing (mm)	Run/Recovery (%)	RQD (%)	Lab Tests: UCS (MPa)	Lab Tests: PLI-A (PLI-D) MPa	Field Records / Comments and Defect Description
				Continued from Soil Log								
-3 / -2	Open Hole	Cape Storm Formation		DOLOSTONE: slightly weathered, fine grained, massive, evidence of bedding, grey, weak to medium strong	SW	R2 to R3		02/100	100		5.58	
				...from 1.57 to 2.09 m, core loss		NA		03/42	0			SS03: 1.57 to 2.17m - 19/20/36/50
-4 / -3					SW	R2 to R3						...from 2.09 to 2.46m, rubblized zone
				...from 2.46 to 2.71 m, core loss		NA		04/68	42			
-5 / -4					SW	R2 to R3						...from 3.06 to 3.23m, rubblized zone
				...from 3.23 to 3.45 m, core loss		NA						SS04: 3.23 to 3.65m - 17/35/50 for 0.12m, Recovery = 0.2m
-6					SW	R2 to R3		05/86	71			...from 3.45 to 3.68m, rubblized zone
												...from 4.11 to 4.34m, rubblized zone

End of Hole at a depth of 4.79 m
Drilling method: HQ drilling using water rotary method to 4.79 mbsb.

Seabed Elevation: -1.4 mCD
Ice Thickness: 1.6 m

worley consulting	Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 4.79 m
	Reviewed By: Jeff Gibson	Drilled on: 4/14/2025
	Groundwater Depth: Not Applicable	Page 1 of 1

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH25-08**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175
Coordinates (UTM): N 8,290,269.80 E 445,528.87	Method: Water Rotary / HQ Drilling	Dip: -90° / Azimuth: N/A / Elevation: -3.70 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) Elevation (m)	Casing Type	Geological Unit	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30 40)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
0 -4				Lean CLAY with Sand (CL): fine grained sand, few fine subangular to subrounded gravel, trace shell fragments, marine odour, grey, moist, non-plastic, very stiff		SS01	67	16.7 (15, 26)	19 (7-9-10-12)	Particle Size Analysis: Gravel 7.5%, Sand 21.5%, Silt 65.2%, Clay 5.8%
						SS02	0		R (13-R)	
1 -5		HWT								
		Marine		...at 1.56 m, some coarse gravel and cobbles in core barrel, stiff		SS03	10		11 (11-5-6-6)	
2 -6				Silty CLAY (CL-ML): grey, moist, low plasticity, firm		SS04	58		34 (6-19-15-16)	Particle Size Analysis: Gravel 66.6%, Sand 11.6%, Silt 18.6%, Clay 3.2%
				Silty, Clayey GRAVEL (GC-GM): fine to coarse subangular to angular gravel, few medium to coarse grained sand, grey, moist, dense						
3				Rock encountered at 3.13m, refer to rock core log		SS05	79		R (25-R)	SS05: 3.13 to 3.32m - 25/50 for 0.04m, Recovery = 0.15m

worley consulting	Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 5.25 m
	Reviewed By: Jeff Gibson	Drilled on: 4/13/2025
	Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH25-08**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175
Coordinates (UTM): N 8,290,269.80 E 445,528.87	Method: Water Rotary / HQ Drilling	Dip: -90° / Azimuth: N/A / Elevation: -3.70 mCD

Symbol: Coring; Core Loss

Well Details: Bentonite; Peltonite; Sand; Grout; Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Graphic Log	MATERIAL DESCRIPTION	Weathering/ Cementation	Estimated Strength	Defect Spacing (mm)	Run/Recovery (%)	RQD (%)	Lab Tests: UCS (MPa)	Lab Tests: PLI-A (PLI-D) MPa	Field Records / Comments and Defect Description
				Continued from Soil Log								
-7	Open Hole	Cape Storm Formation		DOLOSTONE: fresh to slightly weathered, fine grained, massive, light grey brown, strong	FR-SW	R4		04/100	46			...from 3.3 to 3.4m, rubblized zone
				...from 3.5 to 3.6 m, core loss		NA						
					FR-SW	R4		05/79	35		4.01	...from 3.6 to 3.73m, rubblized zone
-4				...from 3.98 to 4.05 m, core loss		NA						SS06: 3.98 to 4.26m - 36/50 for 0.13m, Recovery = 0.28m
-8												...from 4.05 to 4.32m, rubblized zone
					FR-SW	R4		06/94	63			...from 4.55 to 4.59m, rubblized zone
-5												

End of Hole at a depth of 5.25 m
Drilling method: HQ drilling using water rotary method to 5.25 mbsb.

Seabed Elevation: -3.7 mCD
Ice Thickness: 1.6 m

worley consulting	Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 5.25 m
	Reviewed By: Jeff Gibson	Drilled on: 4/13/2025
	Groundwater Depth: Not Applicable	Page 1 of 1

ROCK LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ ARCTIC BAY.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH25-09**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175
Coordinates (UTM): N 8,290,163.09 E 445,523.89	Method: Water Rotary / HQ Drilling	Dip: -90° / Azimuth: N/A / Elevation: -9.07 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Uncorrected / Field SPT Blow Counts per 0.3m; Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Plastic MC Liquid; Undrained Shear Strength (kPa)	Other Data
0 / -10	HWT	Marine		Lean CLAY with Sand (CL): fine grained sand, few fine gravel, some shell fragments, dark grey, moist, non-plastic, very soft	SS	SS01	27	29.7 (18, 31); WR-1-0-0	SS01: Weight of rods for 0.38 m, weight of hammer for 0.22 m; PSA: Gravel (5.7%), Sand (11.4%), Silt (76.6%), Clay (6.3%)
1 / -10					ST	ST01	44	30.1 (16, 26)	PSA: Gravel 5.5%, Sand 11.1%, Silt 78.1%, Clay 5.3%; Compression Index (Cc)=0.06 kPa; Recompress. Index (Cr)=0.01; Preconsol. Pressure (Pp)=25kPa; Void Ratio (em)=0.722; Undrained Shear Strength=12 kPa; Cohesion (C)=4.2 kPa; Friction Angle =33.8°
2 / -11					VST	VST01		0.0 / 0.5	VST01: Peak Strength = 0.5 kPa, Remoulded Strength = 0 kPa
3 / -12					SS	SS02	58	33.8 (19, 32); 1-0-1-0	SS02: 1 blow for 0.1 m, 1 blow for 0.3 m, weight of hammer for 0.2 m; PSA: Gravel (4.7%), Sand (7.7%), Silt (81.4%), Clay (6.2%)
4 / -13					ST	ST02	24	42.3 (21, 32)	ST02: material did not stay in tube. Collected in sample bag
					VST	VST02		0.5 / 1.0	VST02: Peak Strength = 1.0 kPa, Remoulded Strength = 0.5 kPa
5 / -14				Sandy Lean CLAY (CL): fine grained sand, few fine gravel, some shell fragments, dark grey, moist, non-plastic, stiff	SS	SS03	67	21.2 (14, 22); 14; 5-5-9-8	Particle Size Analysis: Gravel 9.6%, Sand 23.6%, Silt 61.2%, Clay 5.6%
6 / -15				Silty, Clayey GRAVEL with Sand (GC-GM): fine to medium angular to subangular gravel, medium to coarse grained sand, grey, moist, compact	SS	SS04	38	14; 3-6-8-12	Particle Size Analysis: Gravel 61.8%, Sand 18.2%, Silt 16.2%, Clay 3.8%
7 / -16		Cape Storm Formation		Weathered DOLOSTONE	SS	SS05	52	39; 32-21-18-16	RC07 7.02-7.62 m, 83% recovery, plugged at 7.5 m
				Rock encountered at 7.50m, refer to rock core log					

worley consulting	Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 12.14 m
	Reviewed By: Jeff Gibson	Drilled on: 4/15/2025
	Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.		Borehole Number: **BH25-09**
Client: Government of Nunavut	Equipment: CME 55		Project Number: 317086-54175
Coordinates (UTM): N 8,290,163.09 E 445,523.89	Method: Water Rotary / HQ Drilling	Dip: -90° Azimuth: N/A	Elevation: -9.07 mCD

Symbol: Coring; Core Loss

Well Details: Bentonite; Peltonite; Sand; Grout; Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Graphic Log	MATERIAL DESCRIPTION	Weathering/ Cementation	Estimated Strength	Defect Spacing (mm)	Run/Recovery (%)	RQD (%)	Lab Tests: UCS (MPa)	Lab Tests: PLI-A (PLI-D) MPa	Field Records / Comments and Defect Description
				Continued from Soil Log			20 60 200 600 2000					
8 -17	Open Hole	Cape Storm Formation		DOLOSTONE: slightly to modetately weathered, fine grained, massive, light brown, weak	SW-MW	R2						
						NA		08/20	0			
9 -18				...from 9.2 to 10.07 m, core loss within rubblized zone, clayey throughout								...9.2 to 10.07 m, rubblized zone
10 -19				...from 9.8 to 10.07 m, extremely weathered, extremely weak to very weak	XW	R0 to R1		09/57	0			
				...from 10.07 to 10.6 m, slightly weathered, weak		R2						
				...below 10.6 m, slightly weathered, medium strong								...from 10.67 to 10.88 m, rubblized zone
11 -20				...at 10.64 m, clay seam, light brown, low plasticity								
				...at 10.7 m, colour change to grey, subhorizontal bedding/laminations, slightly weathered, medium strong	SW	R3		10/99	78			...at 10.96 m, J, 80° TCA, Pl, SR, Si + Sa, Vn ...at 11.02 m, J, 85° TCA, Pl, SR, Si + Sa, Vn ...from 11.03 to 11.08 m, rubblized zone ...at 11.35 m, J, 75° TCA, Un, S, Cl, Co
12 -21												

End of Hole at a depth of 12.14 m
Drilling method: HQ drilling using water rotary method to 12.14 mbsb.

Seabed Elevation: -9.07 mCD
Ice Thickness: 1.5 m

worley consulting	Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 12.14 m
	Reviewed By: Jeff Gibson	Drilled on: 4/15/2025
	Groundwater Depth: Not Applicable	Page 1 of 1

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH25-10**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175
Coordinates (UTM): N 8,290,190.00 E 445,433.00	Method: Water Rotary / HQ Drilling	Dip: -90° / Azimuth: N/A / Elevation: -6.19 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30 40)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
0 / -6.19				SILT (ML) (assumed): grey, moist to wet (drill fluid), non-plastic, soft		SS01	0		3 HW-1-2-4	
-7 / 1	HWT	Marine		...at 0.93 m, SILT with gravel, medium, subangular, firm		SS02	8		5 4-3-2-7	
-8 / 2				Rock encountered at 2.25m, refer to rock core log						

worley consulting

Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 3.35 m
Reviewed By: Jeff Gibson	Drilled on: 4/15/2025
Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute Bay Harbour Development Project	Contractor: Nova Drilling Inc.	Borehole Number: **BH25-10**
Client: Government of Nunavut	Equipment: CME 55	Project Number: 317086-54175

Coordinates (UTM): N 8,290,190.00 E 445,433.00	Method: Water Rotary / HQ Drilling	Dip: -90°	Azimuth: N/A	Elevation: -6.19 mCD

Symbol: Coring; Core Loss

Well Details: Bentonite; Peltonite; Sand; Grout; Slough

Depth (m) / Elevation (m)	Casing Type	Geological Unit	Graphic Log	MATERIAL DESCRIPTION	Weathering/ Cementation	Estimated Strength	Defect Spacing (mm)	Run/Recovery (%)	RQD (%)	Lab Tests: UCS (MPa)	Lab Tests: PLI-A (PLI-D) MPa	Field Records / Comments and Defect Description
				Continued from Soil Log			20 60 200 600 2000					
-9 / 3	Open Hole	Cape Storm Formation		DOLOSTONE: fresh to slightly weathered, fine grained, massive with subhorizontal bedding/laminations, light grey, medium strong to strong	FR-SW	R3 to R4		52/100	100			SS03: 2.51 to 3.11m: 19/9/10/31, Recovery = 0.12m
						NA						
					FR-SW	R3 to R4		03/70	35		4.53	

End of Hole at a depth of 3.35 m
Drilling method: HQ drilling using water rotary method to 3.35 mbsb.

Seabed Elevation: -6.19 mCD
Ice Thickness: 1.6 m

worley consulting	Logged By: Lauren Tagg/Melanie Jones	Completion Depth: 3.35 m
	Reviewed By: Jeff Gibson	Drilled on: 4/15/2025
	Groundwater Depth: Not Applicable	Page 1 of 1

ROCK LOG TEMPLATE RESOLUTE_13-NOV-2025.GPJ ARCTIC BAY.GPJ 11/13/25

Project: Resolute - Shoreline Test Pits	Contractor: ATCO	Borehole Number: **TP25-01A**
Client: Government of Nunavut	Equipment: Hitachi EXLC (Bucket with teeth)	Project Number: 317086-54175
Coordinates (UTM): N 8,290,329.00 E 445,304.00	Method: Test Pitting / Dip: -90° / Azimuth: N/A	Elevation: 0.00 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) Elevation (m)	Casing Type	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
0 / 0			Silty, Clayey GRAVEL with Sand (GC-GM): fine to coarse angular dolostone gravel, fine to medium grained sand, low plasticity clay, trace angular dolostone cobbles, trace shell fragments matrix, dark grey to black, moist	Bulk Sample	GB01		7.5; 11; 17; 8.2		Approximately 5 m into water. Material is difficult to distinguish layering due to excavation in water, however, it appears as though the clayey silty SAND is in pockets rather than an entire matrix. Bulk Sample (approximately 30 kg of sample collected) PSA: Gravel - 48.6%; Sand - 30.9%; Silt - 16.3%; Clay - 4.2%; PI - 6%
-1 / -1			End of Hole at a depth of 1.00 m						

worley consulting

Logged By: Jeffrey Gibson	Completion Depth: 1.00 m
Reviewed By: Panos Berdousis	Drilled on: 8/13/2025
Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE - SHORELINE TEST PITS_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute - Shoreline Test Pits	Contractor: ATCO	Borehole Number: **TP25-01B**
Client: Government of Nunavut	Equipment: Hitachi EXLC (Bucket with teeth)	Project Number: 317086-54175
Coordinates (UTM): N 8,290,329.00 E 445,304.00	Method: Test Pitting / Dip: -90° / Azimuth: N/A	Elevation: 0.00 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) Elevation (m)	Casing Type	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
0 0 -1 -1			Silty, Clayey GRAVEL with Sand (GC-GM): fine to coarse angular limestone gravel, fine to medium grained sand, low plasticity clay, trace boulders, trace angular dolostone cobbles, trace pockets of Clayey Silty SAND with shell fragments matrix, dark grey to black, moist						Water Edge. Difficult digging. Continuous sloughing of gravel due to loose gravel / water ingress. Excavated to approximately 1.5 m below seabed (unable to confirm due to water, based on estimate from bucket in pit). Looks to have tagged bedrock at base of test pit based on large cobble to boulders sized fragments of dolostone with fresh surfaces. No sample was taken at this location.

End of Hole at a depth of 1.50 m

worley consulting	Logged By: Jeffrey Gibson	Completion Depth: 1.50 m
	Reviewed By: Panos Berdousis	Drilled on: 8/13/2025
	Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE - SHORELINE TEST PITS_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute - Shoreline Test Pits	Contractor: ATCO	Borehole Number: **TP25-02A**
Client: Government of Nunavut	Equipment: Hitachi EXLC (Bucket with teeth)	Project Number: 317086-54175
Coordinates (UTM): N 8,290,338.00 E 445,378.00	Method: Test Pitting / Dip: -90° / Azimuth: N/A	Elevation: -1.20 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) Elevation (m)	Casing Type	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
-2			Silty, Clayey GRAVEL with Sand (GC-GM): fine to coarse angular dolostone gravel, fine to medium grained sand, low plasticity clay, trace boulders, trace angular dolostone cobbles, trace pockets of Clayey Silty SAND with shell fragments matrix, dark grey to black, moist						Approximately 5 m into water. Material is difficult to distinguish layering due to excavation in water, however, it appears as though the clayey silty SAND is in pockets rather than an entire matrix (same as TP25-01A). No sample was taken at this location.
-1			End of Hole at a depth of 1.00 m						

worley consulting

Logged By: Jeffrey Gibson	Completion Depth: 1.00 m
Reviewed By: Panos Berdousis	Drilled on: 8/13/2025
Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE - SHORELINE TEST PITS_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute - Shoreline Test Pits	Contractor: ATCO	Borehole Number: **TP25-02B**
Client: Government of Nunavut	Equipment: Hitachi EXLC (Bucket with teeth)	Project Number: 317086-54175
Coordinates (UTM): N 8,290,338.00 E 445,378.00	Method: Test Pitting / Dip: -90° / Azimuth: N/A	Elevation: -1.20 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) Elevation (m)	Casing Type	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
-1 -2			Silty, Clayey GRAVEL with Sand (GC-GM): fine to coarse angular dolostone gravel, fine to medium grained sand, low plasticity clay, trace boulders, trace angular dolostone cobbles, trace pockets of Clayey Silty SAND with shell fragments matrix, dark grey to black, moist						Water edge. Difficult digging. Continuous sloughing of gravel due to loose gravel /water ingress. Looks to have tagged bedrock at base of test pit based on large cobble to boulders sized fragments of dolostone with fresh surfaces (Same as TP25-01B). No sample was taken at this location.

End of Hole at a depth of 1.50 m

worley consulting	Logged By: Jeffrey Gibson	Completion Depth: 1.50 m
	Reviewed By: Panos Berdousis	Drilled on: 8/13/2025
	Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE - SHORELINE TEST PITS_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute - Shoreline Test Pits	Contractor: ATCO	Borehole Number: **TP25-03A**
Client: Government of Nunavut	Equipment: Hitachi EXLC (Bucket with teeth)	Project Number: 317086-54175
Coordinates (UTM): N 8,290,343.00 E 445,430.00	Method: Test Pitting / Dip: -90° / Azimuth: N/A	Elevation: -1.30 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) / Elevation (m)	Casing Type	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic / MC / Liquid (10 20 30)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
-2			Silty, Clayey GRAVEL with Sand (GC-GM): fine to coarse angular dolostone gravel, fine to medium grained sand, low plasticity clay, trace boulders, trace angular dolostone cobbles, trace pockets of Clayey Silty SAND with shell fragments matrix, dark grey to black, moist						Approximately 5 m into water. Excavated to approximately 1 m below seabed (unable to confirm). Difficult digging. Continuous sloughing of gravel due to loose gravel / water ingress. Material is difficult to distinguish layering due to excavation in water, however, it appears as though the clayey silty SAND is in pockets rather than an entire matrix (same as TP25-01A and TP25-02A). No sample was taken at this location.
-1			End of Hole at a depth of 1.00 m						

worley consulting

Logged By: Jeffrey Gibson	Completion Depth: 1.00 m
Reviewed By: Panos Berdousis	Drilled on: 8/13/2025
Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE - SHORELINE TEST PITS_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute - Shoreline Test Pits	Contractor: ATCO	Borehole Number: **TP25-03B**
Client: Government of Nunavut	Equipment: Hitachi EXLC (Bucket with teeth)	Project Number: 317086-54175
Coordinates (UTM): N 8,290,343.00 E 445,430.00	Method: Test Pitting / Dip: -90° / Azimuth: N/A	Elevation: -1.30 mCD

Sample Type: Shelby Tube (ST); Coring; SPT Sample (SS); Grab Sample (GB); Bulk Sample (BS); Vane Shear (VST)

Well Details: Bentonite; Peltonite; Sand; Grout; Slough

Depth (m) Elevation (m)	Casing Type	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
-2 / -1 / -3			Silty, Clayey GRAVEL with Sand (GC-GM): fine to coarse angular dolostone gravel, fine to medium grained sand, low plasticity clay, trace boulders, trace angular dolostone cobbles, trace pockets of Clayey Silty SAND with shell fragments matrix, dark grey to black, moist						Water edge. Excavated to approximately 1.8 m below seabed unable to confirm due to water, based on estimate from bucket in pit. Difficult digging. No sample was taken at this location.

End of Hole at a depth of 1.80 m

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Logged By: Jeffrey Gibson	Completion Depth: 1.80 m
Reviewed By: Panos Berdousis	Drilled on: 8/13/2025
Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE - SHORELINE TEST PITS_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute - Shoreline Test Pits	Contractor: ATCO	Borehole Number: **TP25-04A**
Client: Government of Nunavut	Equipment: Hitachi EXLC (Bucket with teeth)	Project Number: 317086-54175
Coordinates (UTM): N 8,290,334.00 E 445,516.00	Method: Test Pitting / Dip: -90° / Azimuth: N/A	Elevation: -1.20 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) Elevation (m)	Casing Type	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic / MC / Liquid (10 20 30)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
-2			Clayey SAND with Gravel (SC): fine to medium grained sand, fine to coarse angular dolostone gravel, low plasticity clay, trace angular dolostone cobbles, trace shell fragments matrix, dark grey to black, moist	Bulk Sample			16.8 (14 24)		Approximately 5 m into water. Excavated to approximately 1 m below seabed (unable to confirm). Easier digging that TP25-01 to TP25-03. Material is difficult to distinguish layering due to excavation in water, however, it appears as though the clayey silty SAND is in pockets rather than an entire matrix. Seems to be significantly more pockets of clayey sand than the other test pits. Bulk Sample (approximately 30 kg of sample collected) PSA: Gravel - 23.6%, Sand - 29.4%, Silt - 42.7%, Clay - 4.3%; PI - 10%
-1			End of Hole at a depth of 1.00 m	GB	GB01		15		

worley consulting

Logged By: Jeffrey Gibson	Completion Depth: 1.00 m
Reviewed By: Panos Berdousis	Drilled on: 8/13/2025
Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE - SHORELINE TEST PITS_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Project: Resolute - Shoreline Test Pits	Contractor: ATCO	Borehole Number: **TP25-04B**
Client: Government of Nunavut	Equipment: Hitachi EXLC (Bucket with teeth)	Project Number: 317086-54175
Coordinates (UTM): N 8,290,334.00 E 445,516.00	Method: Test Pitting / Dip: -90° / Azimuth: N/A	Elevation: -1.20 mCD

Sample Type: Shelby Tube (ST) | Coring | SPT Sample (SS) | Grab Sample (GB) | Bulk Sample (BS) | Vane Shear (VST)

Well Details: Bentonite | Peltonite | Sand | Grout | Slough

Depth (m) Elevation (m)	Casing Type	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	Recovery (%)	Plastic MC Liquid (10 20 30)	Uncorrected / Field SPT Blow Counts per 0.3m (20 40 60 80); Vane Shear Test (VST); Remoulded VST; Pocket Penetrometer (PP/2); Field Torvane; Undrained Shear Strength (kPa) (40 80 120 160)	Other Data
-2 / -1 / -3 / 2			Clayey SAND with Gravel (SC): fine to medium grained sand, fine to coarse angular dolostone gravel, low plasticity clay, trace angular dolostone cobbles, trace shell fragments matrix, dark grey to black, moist						Water edge Excavated to approximately 2 m below seabed (verified with tape measure). easy digging. Only minor water ingress. No sample was taken at this location.
			End of Hole at a depth of 2.00 m						

worley consulting

Logged By: Jeffrey Gibson	Completion Depth: 2.00 m
Reviewed By: Panos Berdousis	Drilled on: 8/13/2025
Groundwater Depth: Not Applicable	Page 1 of 1

SOIL LOG TEMPLATE RESOLUTE - SHORELINE TEST PITS_13-NOV-2025.GPJ AURORA LNG_DIGBYISLAND_2016-2014_COMBINED.GPJ 11/13/25

Appendix E. Geotechnical Explanatory Notes

EXPLANATORY NOTES FOR SOIL DESCRIPTION AND CLASSIFICATION

The geotechnical soil descriptions and classifications presented in these records have been performed in general accordance with ASTM D2487 and Worley Consulting's Field Manual unless otherwise specified. The terminology used by Worley Consulting to describe the soil condition and classification has been summarized in these explanatory notes for convenience. For more information on the soil description and classification, the reader should refer to ASTM D2487 and the Canadian Foundation Engineering Manual (5th Edition, 2023).

1. Coarse-Grained vs Fine-Grained Description

(a) Particle Size Distribution

Soil Constituent	Size (mm)	Particle Size Description
Boulders	>300	-
Cobbles	75 to 300	-
Gravel	19 – 75	Coarse
	4.75 – 19	Fine
Sand	2.00 – 4.75	Coarse
	0.425 – 2.00	Medium
	0.075 – 0.425	Fine
Silt and Clay	<0.075	-

Cobbles and boulders are added to the soil group name as "with cobbles", "with boulders", or "with cobbles and boulders" if present in the field sample. If possible by the investigation technique (e.g. test pit excavation, ODEX drilling, coring, exposures), the percentage of cobbles or boulders, or both (by volume) is provided and the particle angularity, shape, and maximum particle size or dimension found in the sample is provided. Rock type is provided if known. Cobbles and boulders are not included in estimates of the soil fraction (i.e. soil fraction is <75 mm).

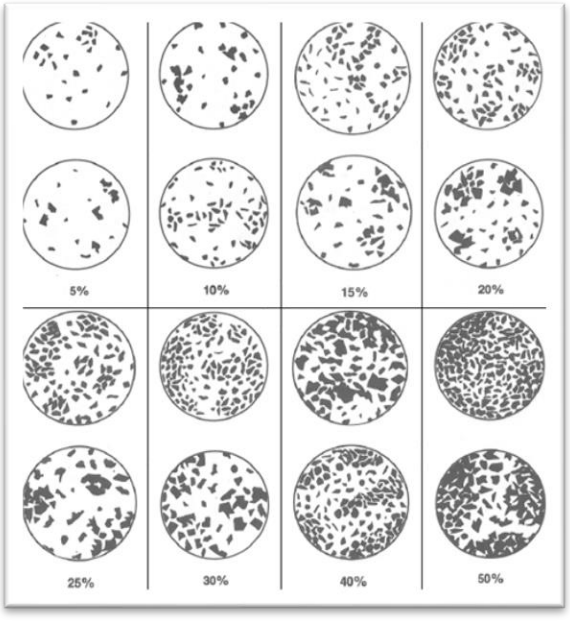
(b) Estimates of Soil Fraction (<75 mm)

Field Visual-Manual Procedure where a gradation analysis (particle size distribution) is not available, the visual-manual procedure may be used to estimate the amount of fines, sand, and gravel to the nearest 5% (by dry weight).

Of the fraction <75 mm, the percentage of gravel, sand, fines, and organic matter or construction debris is estimated to the closest 5% (by weight). The total must equal 100%.

Rather than stating percentages, the following terms may be used:

Description	Percent
Trace	<5
Few	5 to 12
Little	>12 to <30
Some	≥30 to <50
Mostly	≥50



Continued...

2. Coarse-Grained Description

(a) Angularity

- **ROUNDED:** Smooth curved sides with no edges
- **SUBROUNDED:** Planar sides with well-rounded edges
- **SUBANGULAR:** Planar sides with partially rounded edges
- **ANGULAR:** Plane side and sharp edges

(b) Shape *(typically only for gravel)*

- **FLAT:** Width to thickness ratio greater than 3.
- **ELONGATED:** Length to width ratio greater than 3
- **FLAT AND ELONGATED:** Particles meet criteria for both flat & elongated.

(c) Grading

- **WELL-GRADED:** Wide range of particle sizes
- **POORLY GRADED:** Limited range of particle sizes
- **GAP GRADED:** Poorly graded but missing some sizes

(d) Field Moisture Condition

Term	Description
Dry	Moisture absent, dusty
Moist	Damp
Wet	Visible water

(e) Compactness & Relative Density

Density	SPT N-Value	Relative Density (%)
Very Loose	0–4	<15
Loose	4–10	15 to <35
Compact	10–30	35 to <65
Dense	30–50	65 to <85
Very Dense	>50	85 to 100

1. SPT 'N' in accordance with ASTM D1586, uncorrected for overburden pressure effects; approximate only.
2. SPT 'N' values should be considered ONLY an approximate guide to consistency; for sensitive clays, the N-value approximation for consistency terms does NOT apply. Rely on direct measurement of undrained shear strength or other manual observations.

3. Fine-Grained Description

Field Determination of Fine-Grained Constituents by Behaviour *(replaced by laboratory testing of Atterberg Limits where available)*

Dry Strength	Dilatancy	Toughness and Plasticity	Group Symbol	Group Name
None to low	Slow to rapid	Low or thread cannot be formed	ML	Silt
Medium to high	None to slow	Medium	CL	Lean Clay
Low to medium	None to slow	Low to medium	MH	Elastic Silt
High to very high	None	High	CH	Fat Clay

(a) Consistency

Consistency	Undrained Shear Strength (kPa)	SPT N-Value
Very Soft	<12	<2
Soft	12 to <25	2 to <4
Firm	25 to <50	4 to <8
Stiff	50 to <100	8 to <15
Very Stiff	100 to <200	15 to <30
Hard	>200	>30

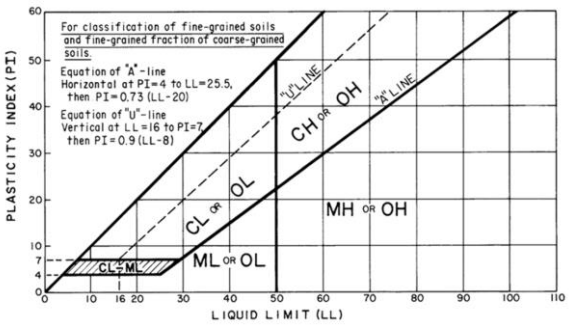
(b) Water Content (*cohesive soils only*)

Term	Field Identification
w < PL	Estimated to be drier than PL
w ~ PL	Estimated to be close to PL
w > PL	Estimated to be wetter than PL

Where PL = Plastic Limit; w<PL (thread cannot be rolled to 4 mm diameter); w ~ PL (thread can be rolled between 2 and 4 mm); w > PL (thread rolled to a diameter of less than 2 mm).

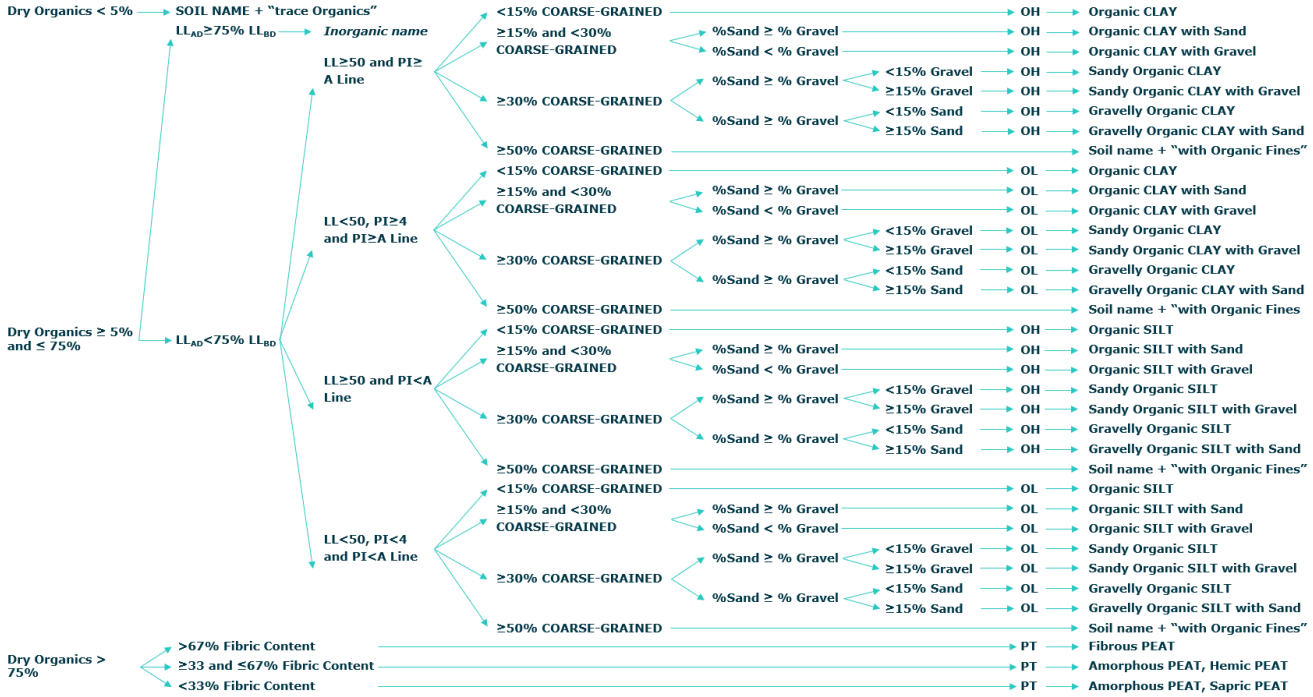
(c) Sensitivity *(cohesive soils only)*

Sensitivity	Ratio of Intact to Remoulded Undrained Shear Strength
Low	<8
Medium	8-30
High	>30

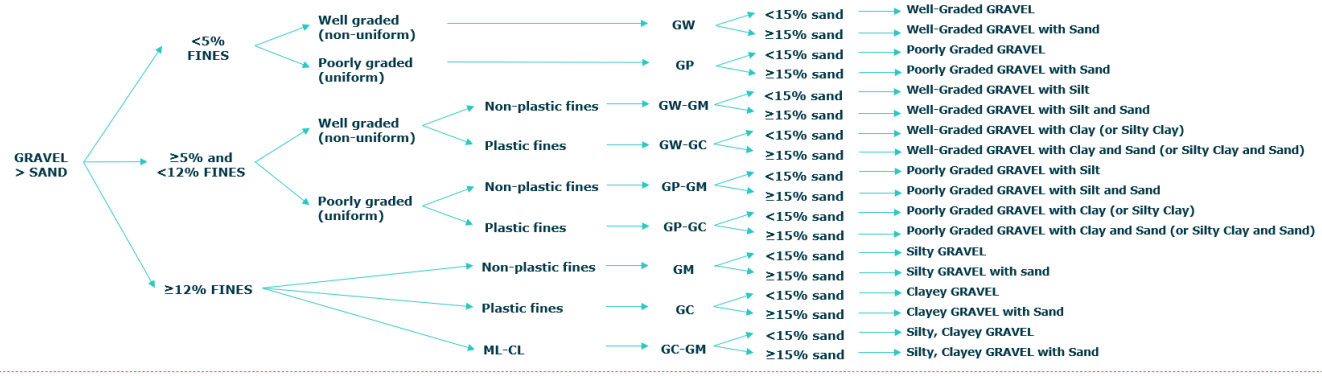


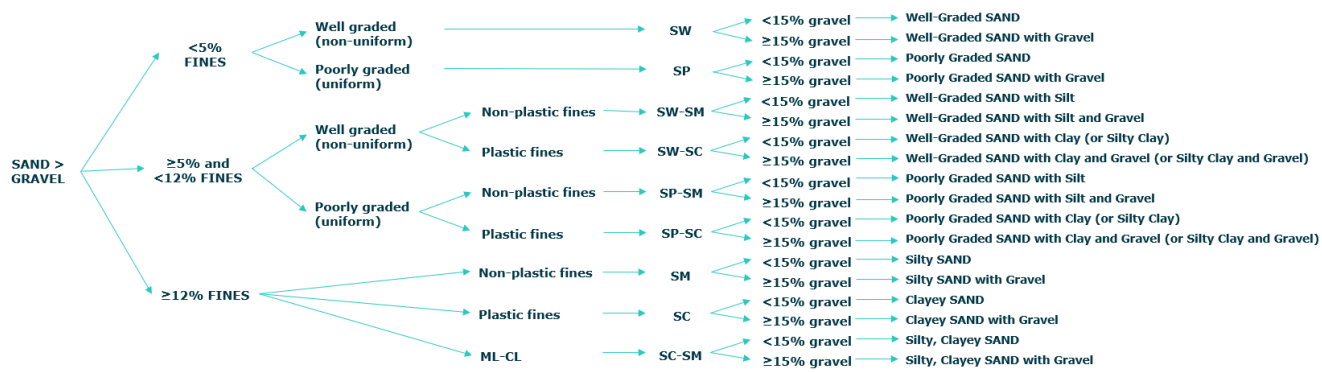
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4. Classification of Organic Soil:



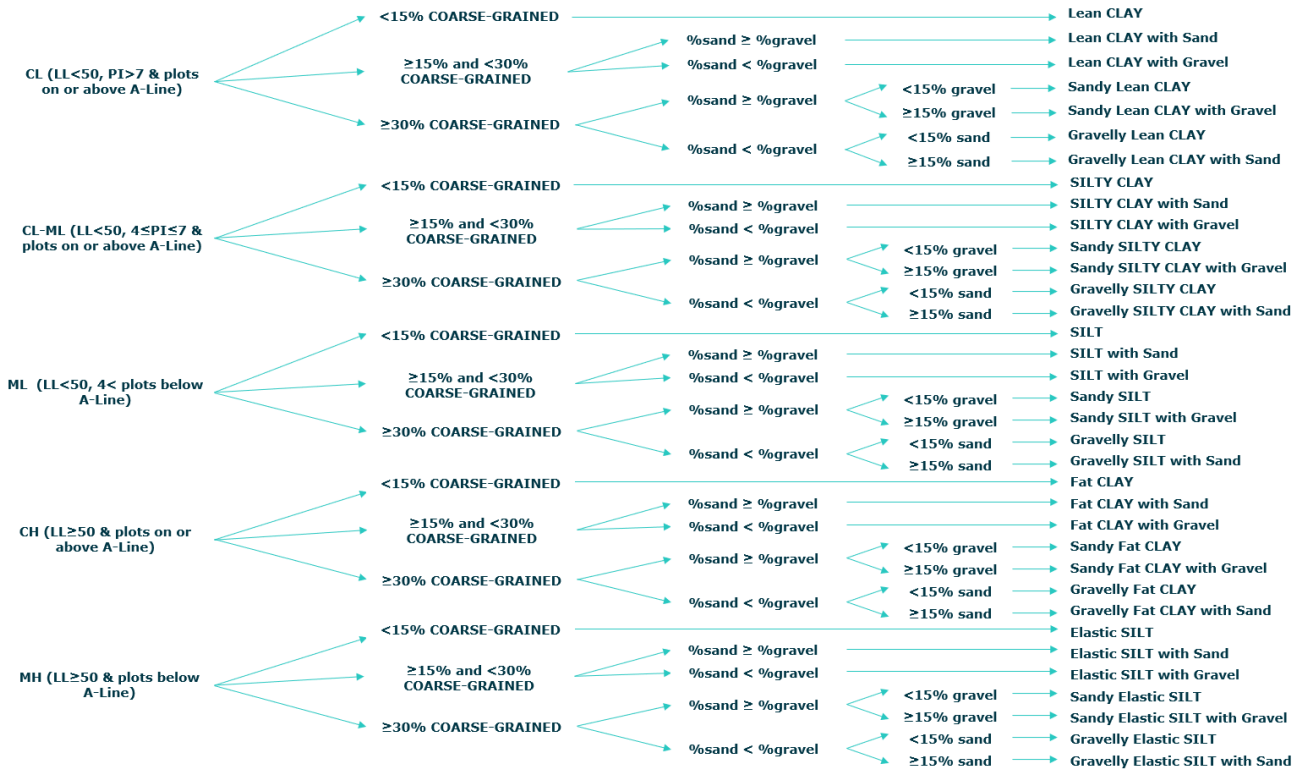
5. Classification of Coarse-Grained Soil:





Continued...

6. Classification of Fine-Grained Soil:



7. Sample/Testing Descriptions

Sample/Test	
Details of field testing (and samples retrieved) including the following:	
BL	Block sample
BS	Bulk Sample
DCP	Dynamic Cone Penetrometer (blows per 150 mm)
DD	Diamond Drilling
DS	Denison-Type Sample (note size)
GB	Grab Sample
PP	Pocket Penetrometer Test
SS	Split-spoon from SPT (blows per 150 mm and N-value) - NOTE HB: Hammer Bouncing; RW: Rod Weight, HW: Hammer Weight
ST	Thin-Walled Tube Sample (note size)
TV	Torvane Test
☒	Disturbed Sample Interval (laboratory test result can be provided or alternatively type of test indicated X)

Continued...

8. Bedding and Layering

Term	Description
Repeating Layers or Laminations	
Laminated (0 to 20 mm)	Closely spaced, alternating layers of differing soils and/or differing colours or shades of soils of similar gradation, usually arranged in a regular sequence. • Thinly laminated – spacing under 6 mm • Thickly laminated – spacing between 6 mm and 20 mm
Stratified or Layered (20 mm to >2m)	Differing soils, rock or visible variations in soil constituents or colour arranged in layers, generally but not necessarily parallel to one another. • Very thinly bedded – 20 mm to 60 mm • Thinly bedded – 60 mm to 200 mm • Medium bedded – 200 mm to 600 mm • Thickly bedded – 600 mm to 2 m • Very thickly bedded – over 2 m
Discrete Layers or Features	
Lens	An inclusion of a different soil type within the soil mass, which thins out laterally (horizontally) and may not be continuous over any significant distance. Typically identified by test pits or correlation between boreholes.
Pocket	A soil of very limited thickness or lateral extent (a small lens) within the overall soil mass; typically identified by a test pit excavation.
Seam	A soil layer of considerable extent but with a thickness of less than about 10 mm. Typically identified by correlation between boreholes or test pits.
Parting	A paper-thin separation of one soil type by another; usually applied to fine grained soils.
Varved	A laminated soil consisting of two distinct soils (usually clay and silt) occurring in regularly repeating patterns; usually resulting from seasonal sediment load variations in lacustrine environments.
Other Features or Terms	
Fissured	Generally applied to dried or overconsolidated fine-grained soils (silts and clays) containing cracks or physical discontinuities which can be vertical, horizontal, or inclined. Described as highly (10 mm spacing), moderately (two or more occurrences per 150 mm length), and slightly fissured (only random or infrequent fissures consistently greater than 75 mm).
Friable, blocky, or platy	Cohesive soil that breaks into small (friable), larger (blocky), or thin, plate-like (platy) fragments with little effort.
Slickensided	Polished or striated surfaces that are often an indication of an existing failure or slip surface. If continuous slickensided shear zones are found an estimate should be made of their angle in relation to the horizontal plane

Continued…

9. Penetration Resistance

Standard Penetration Resistance (SPT); "N": The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) required to drive a 50 mm (2 in.) split-spoon sampler for a distance of 300 mm (12 in.).

Cone Penetration Test (CPT): An electronic cone penetrometer with a 60° conical tip and a project end area of 10 cm2 pushed through ground at a penetration rate of 2 cm/s. Measurements of tip resistance (qt), porewater pressure (u) and sleeve frictions are recorded electronically at 25 mm penetration intervals.

Dynamic Cone Penetration Resistance (DCPT); "Nd": The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) to drive uncased a 50 mm (2 in.) diameter, 60° cone attached to "A" size drill rods for a distance of 300 mm (12 in.).

10. Groundwater

"Groundwater not observed": Whether present or not, groundwater was not observed or could not be observed due to drilling fluids, borehole/test excavation collapse, surface seepage or other.

"Groundwater not encountered": The borehole/test excavation was dry upon or soon after completion (*note, groundwater could be present in low permeability strata if borehole/test excavation was left open for a longer period*).

EXPLANATORY NOTES FOR ROCK DESCRIPTION AND CLASSIFICATION

Geotechnical logging is carried out in general accordance with Canadian Foundation Engineering Manual, 2023 (Identification and Classification of Soil and Rock). The terminology used by Worley Consulting to describe the condition of rocks and associated materials for logging purposes is summarized below.

WEATHERING CLASSIFICATION

Term	Symbol	Definition
Residual Soil	RS/W6	The rock is completely changed to a soil in which the original rock texture has been completely destroyed.
Completely Weathered Rock	XW/W5	All rock material is decomposed and/or disintegrated to soil. The original mass structure is still largely intact.
Highly Weathered Rock	HW/W4	More than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discoloured rock is present either as a discontinuous framework or as corestones.
Moderately Weathered Rock	MW/W3	Less than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discoloured rock is present either as a discontinuous framework or as corestones.
Slightly Weathered Rock	SW/W2	Discolouration indicates weathering of rock material on discontinuity surfaces. All the rock material may be discoloured by weathering and may be somewhat weaker than in its fresh condition.
Fresh Rock	FR/W1	No visible sign of rock material weathering; perhaps slight discolouration on major discontinuity surfaces.

Notes:

1. Rock weathering classification (data from ISRM 2007)

ROCK MATERIAL STRENGTH

Grade[a]	Term	Uniaxial Comp. Strength (MPa)[b]	Point Load Index (MPa)	Field Estimate of Strength	Field Estimate of Strength
R6	Extremely strong	> 250	> 10	Specimen can only be chipped with a geological hammer	Fresh basalt, chert, diabase, gneiss, granite, quartzite
R5	Very strong	>100-250	>4-10	Specimen requires many blows of a geological hammer to fracture it	Amphibolite, sandstone, basalt, gabbro, gneiss, granodiorite, peridotite, rhyolite, tuff
R4	Strong	>50-100	>2-4	Specimen requires more than one blow of a geological hammer to fracture it	Limestone, marble, sandstone, schist
R3	Medium strong	>25-50	1-2	Cannot be scraped or peeled with a pocked knife, specimen can be fractured with a single blow from a geological hammer	Concrete, phyllilte, schist, siltstone
R2	Weak	>5-25	*c*	Can be peeled with a pocket knife with difficulty, shallow indentation made by a firm blow with the point of a geological hammer	Chalk, claystone, potash, marl, siltstone, shale, rocksalt
R1	Very weak	>1-5	*c*	Crumbles under firm blows with point of a geological hammer, can be peeled with a pocket knife	Highly weathered or altered rock, shale
R0	Extremely weak	0.25-1	*c*	Indented by thumbnail	Stiff fault gouge

Notes:

a. Based on Classification of Rock with Respect to Strength (after Marinos and Hoek, 2001). Grade according to ISRM (2007).

b. All rock types exhibit a broad range of uniaxial compressive strength reflecting heterogeneity in composition and anisotropy in structure. Strong rocks are characterized by well-interlocked crystal fabric at few voids.

c. Rocks with uniaxial compressive strength below 25 MPa are likely to yield highly ambiguous results under point load testing.

CEMENTATION CLASSIFICATION

Term	Symbol	Definition
Uncemented	Uc	Clean grains exhibiting soil properties
Very weakly cemented	Vwk	Cement on some grains, collapsing feel under very light finger pressure
Weakly cemented	Wk	Cement on many grains, collapsing feel under finger pressure, breaks down to individual grains
Moderately weakly cemented	Mwk	Cement on most grains, breaks down to lumps under finger pressure, can crush to individual grains under knife blade
Moderately cemented	Mo	Cement on most grains, can break fragments off by hand and crush to small lumps under knife blade
Well cemented	We	Practically all grains cemented together, cannot break fragments off by hand, dull sound under hammer
Very well cemented	Vwe	Most primary pores filled with cement, requires firm blow with hammer to break off fragments, rings when struck

Note:

1. The above field classification system uses terms commonly adopted by geotechnical engineering practice.

DEFECT SPACING

Term	Symbol	Spacing width (m)
Extremely Wide	Ew	>6.0
Very Wide	Vw	2.0 to 6.0
Wide	W	0.6 to <2.0
Moderately close	M	0.20 to <0.6
Close	C	0.06 to <0.20
Very Close	Vc	0.02 to <0.06
Extremely Close	Ec	<0.02

Note:

1. Classification of rock with respect to discontinuity spacing (data from ISRM 2007).

ROCK MASS WEATHERING

Weathering of the rock mass in relation to the distribution of weathered materials and the effect of defects is described below.

Grade	Description
I	No visible sign of weathering except perhaps staining on defect surfaces
II	Almost all rock is discolored by slight weathering
III	Less than half of the material is moderately to extremely weathered, some residual boulders/corestones may be present
IV	More than half of the material is moderately to extremely weathered, occasional corestones may be present
V	The material is extremely weathered with mass structure largely intact
VI	Refer to soil classification system

Note:

1. The above weathering grades apply to relatively large scale exposures. For boreholes, weathering terms discussed previously apply.
2. Defect persistence (areal extent) and aperture (openness) to be recorded where appropriate.

ROCK MASS BLOCK SHAPE

Blocky	Equidimensional
Tabular	Thickness much less than length or width
Columnar	Height much greater than cross section

AN AID TO THE FIELD CLASSIFICATION OF ROCKS FOR ENGINEERING PURPOSES

GRAIN SIZE (mm)	BEDDED ROCKS (MOSTLY SEDIMENTARY)							OBVIOUSLY FOLATED ROCKS (MOSTLY METAMORPHIC)		ROCKS WITH MASSIVE STRUCTURE AND CRYSTALLINE TEXTURE (MOSTLY IGNEOUS)					
More than 20	GRAIN SIZE DESCRIPTION			AT LEAST 50% OF GRAINS ARE OF CARBONATE		AT LEAST 50% OF GRAINS ARE OF FINE GRAINED VOLCANIC ROCK		GRAIN SIZE DESCRIPTION			GRAIN SIZE DESCRIPTION	Pegmatite			Pyroxenite
20	RUDACEOUS		**CONGLOMERATE** Rounded boulders, cobbles and gravel cemented in a finer matrix Breccia Irregular rock fragments in a finer matrix	LIMESTONE AND DOLOMITE (undifferentiated)	Calcirudite	Fragments of volcanic ejecta in a finer matrix Rounded grains **AGGLOMERATE** Angular grains **VOLCANIC BRECCIA**	SALINE ROCKS Halite Anhydrite Gypsum	COARSE	**GNEISS** Well developed but often widely spaced foliation, sometimes with schistose bands Migmatite Irregularly foliated, mixed schists and gneisses	**MARBLE** **QUARTZITE** Granulite **HORNFELS** Amphibolite Serpentinite	COARSE	**GRANITE**[1]	Diorite[1,2]	**GABBRO**[3]	Peridotite
6												These rocks are sometimes porphyritic and are then described, for example, as as porphyritic granite			
2	ARENACEOUS Coarse		**SANDSTONE** Angular or rounded grains, commonly cemented by clay, calcitic or iron minerals		Calcarenite	Cemented volcanic ash **TUFF**		MEDIUM	**SCHIST** Well developed undulose foliation, generally much mica		MEDIUM	Microgranite[1]	Microdiorite[1,2]	Dolerite[3,4]	
0.6	ARENACEOUS Medium		Quartzite Quartz grains and siliceous cement Arkose Many feldspar grains									These rocks are sometimes porphyritic and are then described as porphyries			
0.2	ARENACEOUS Fine		Greywacke Many rock chips												
0.06	ARGILLACEOUS	**MUDSTONE**	**SILTSTONE** Mostly silt	Calcareous mudstone	Calcisiltite	**CHALK** Fine grained **TUFF**		FINE	**PHYLLITE** Slightly undulose foliation, sometimes spotted **SLATE** Well developed plane cleavage (foliation)		FINE	**RHYOLITE**[4,5]	**ANDESITE**[4,5]	**BASALT**[4,5]	
0.002		**SHALE** Fissile	**CLAYSTONE** Mostly clay		Calcilutite	Very fine grained **TUFF**						These rocks are sometimes porphyritic and are then described as porphyries			
Less than 0.002															
Amorphous or crypto-crystalline		Flint: occurs as bands of nodules in chalk Chert: occurs as nodules and beds in limestone and calcareous sandstone					COAL LIGNITE		Mylonite Found in fault zones, mainly in igneous and metamorphic areas			Obsidian[5]	Volcanic glass		
		Granular cemented - except amorphous						CRYSTALLINE				color: Pale ← — — — — — → Dark			
		SILICEOUS		CALCAREOUS		SILICEOUS	CARBON-ACEOUS	SILICEOUS		Mainly SILICEOUS		ACID Much quartz	INTERMEDIATE Some quartz	BASIC Little or no quartz	ULTRA BASIC

SEDIMENTARY ROCKS
Granular cemented rocks vary greatly in strength, some sandstones are stronger than igneous rocks. Bedding may not show in hand specimens and is best seen in outcrop. Only sedimentary rocks, and some metamorphic rocks derived from then, contain fossils.

Calcareous rocks contain calcite (calcium carbonate) which effervesces with dilute hydrochloric acid.

METAMORPHIC ROCKS
Most metamorphic rocks are distinguished by foliation which may impart fissility. Foliation in gneisses is best observed in outcrop. Non-foliated metamorphics are difficult to recognise except by association. Any rock baked by contact metamorphism is described as a 'hornfels' and is generally somewhat stronger than the parent rock. Most fresh metamorphic rocks are strong although perhaps fissile.

IGNEOUS ROCKS
Composed of closely interlocking mineral grains. Strong when fresh and non-porous.

Mode of occurrence: 1 Batholiths; 2 Laccoliths; 3 Sills; 4 Dykes; 5 Lava flows; 6 Veins.

SOURCE: Table 6, AS 1726-1993

KEY TO DEFECT DESCRIPTIVE TERMS USED ON CORED BOREHOLE LOGS

DEFECT DESCRIPTORS

a **Type:**

FR - Fracture
J - Joint
F - Fault
Fo - Foliation
C - Cleavage
B - Bedding
M - Mylonite
Ca - Cavities

} See Rockmass Discontinuity Description (Sheet 5)

b Dip of fracture surface measured relative to a plane parallel to core axis (beta angle to be provided if core oriented)

c **Planarity:**

Un - Undulating, wavy surface
Pl - Planar, no variation in orientation
St - Stepped, well defined steps present
Ir - Irregular, many changes in orientation

d **Roughness:**

Slk - Slickensided, visual evidence of striations
S - Smooth, surface appears and feels smooth
SR - Slightly rough, asperities on the defect surface are distinguishable and can be felt
R - Rough, some ridges and angle steps are evident, asperities are clearly visible and surface feels abrasive
VR - Very rough, near right angle steps and ridges occur on the defect surface

e **Type of Infilling:**

Cl - Clay
Ca - Calcite
Ch - Chlorite
Fe - Iron oxide
Grap - Graphite
Gy - Gypsum
H - Healed
Mn - Manganese oxide
Mic - Mica
Gr - Gravel
Py - Pyrite
Sul - Sulphides
Qz - Quartz
Sd - Sand
CA - Calcrete
Si - Silt
Uk - Unknown

f **Amount of Infilling:**

Cn - Clean, no visible coating or infilling
Su - Surface Stain, no visible coating or infilling but surfaces are discolored
Vn - Veneer, a visible coating or infilling too thin to measure, may be patchy
Co - Coating, visible coating or infilling up to 1mm thick
Fi - Filled, coating or infilling greater than 1mm thick with amount in millimetres. Thick soil infilling to be described as seams if boundaries roughly parallel, or crushed seams if composed of rock fragments e.g. brecciated

Notes:

1. Cores with defect spacings in the range extremely close to close can be collectively denoted as "highly fractured" where considered appropriate

2. NR - not recorded NA - not applicable

Rockmass Discontinuity Descriptions

Discontinuity	Definition	Characteristics
Fracture	A seperation in the rockmass, a break	Signifies joints, faults, slickensides, foliations and cleavage
Joint	A fracture along which there has been no observable relative movement	Most common defect encountered. Present in most formations in some geometric pattern related to rock type and stress field. Open joints allow free movement of water, increasing decomposition rate of mass. Tight joints resist weathering and the mass decomposes uniformly.
Faults	A fracture along which there has been an observable amount of displacement and may contain gouge infill.	Faults usually consist of crushed and sheared rock within a fracture (gouge) through which water may move relatively freely, increasing weathering. Faults generally occur as parallel to sub-parallel sets of fractures (fault zones) along which movement has taken place to a greater or lesser degree.
Slickensides	Pre-existing shear surface: from faulting, landslides or expansion.	Shiny, polished surfaces with striations (slickenlines). Often the weakest elements in a mass when sheared parallel to slickenlines, where strength is near residual.
Foliation planes	Continuous planar surface results from planar orientation of mineral grains during metamorphism or igneous cooling processes.	Can be present as open joints or preferential mineral orientations without openings. Strength and deformation relate to the orientation of applied stress to the foliations.
Cleavage	A type of foliation that develops due to deformation and metamorphism (e.g., diagenesis, folding) that may form open fractures.	Generally found in fine-grained rocks (e.g., shales and slates); usually very closely spaced.
Bedding planes	Contacts between depositional layers of sedimentary or igneous rocks of various nature.	May form zones containing weak materials such as lignite or montmorillonite clays.
Mylonite	Rock that has undergone intense ductile shear.	Fine-grained metamorphic rock with strong laminations: original mineral constituents and fabric crushed and pulverized. May contain large mineral grains such as porphyroclasts.
Veins	Healed fractures that have been infilled with solidified hydrothermal fluids.	Can occur in any host rock and be composed of different minerals. Strength of vein and effect on rock mass strength depends on vein thickness, infill mineralogy, and strength of surrounding intact rock (wall rock).
Cavities	Openings in soluble rocks resulting from groundwater movement, or in igneous rocks from gas pockets	In limestone, range from caverns to tubes (karst). In rhyolite and other igneous rocks, range from vacuoles of various sizes to tubes.

Notes:

1. Based on rock mass discontinuity descriptions (data from Hunt 1986; Passchier and Trouw 2005; Day 2016).

CASING AND DRILL ROD SIZES

Size	Outside Diameter (mm)	Inside Diameter (mm)
HQ3	88.9	77.8
HW	114.3	101.6
PW	139.7	127.0

COMMONLY USED TERMINOLOGY / SYMBOLS

TCA - To Core Axis

RQD - Rock Quality Designation

UCS - Unconfined Compressive Strength

BTS - Brazilian Tensile Strength

PLI - Point Load Index
- -Axial Test (A)
- -Diametral Test (D)
- -Annotated with "v" for failures involving a healed joint, incipient fracture or preferential to foliation

———— - Denotes certain boundaries

– – – – – - Denotes gradational or approximate boundaries

Appendix F. 2024/2025 Investigation Laboratory Testing Results

SOLUM™
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GEOTECHNICAL & MATERIAL
TESTING LABORATORY

Geo-Lab Report (Part 1)

Revision # 0

Report Date:	*February 2, 2025*
Client:	*Worley Canada Services Ltd.*
Address:	*Suite 200, 2930 Virtual Way, Vancouver, BC V5M 0A5*
Attn:	*Jeff Gibson*
Project No:	*317086-54175*
Project Name:	*Resolute*
Solum Job No.:	*00102241218(457)*

Sample Received Date: October 24, 2024

Sample Quantity: 7 pails

Test	Quantity	Destination
WATER CONTENT	1	D2216
ATTERBERG LIMITS	1	D4318
PARTICLE-SIZE ANALYSIS (FULL GRADATION)	5	D6913 & D7928
UCS FOR ROCK	5	D7012
POINT LOAD TEST	9	D5731
LA ABRASION TEST (Aggregates < 1.5")	2	C131
RIPRAP TEST SUITE (INCL. GS, ABSORPTION & DURABILITY INDEX)	2	CT206 & CT229
SOUNDNESS FOR COARSE AGGREGATES	2	C88



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SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Laboratory Analysis Summary Sheet

Project Info: *317086-54175 / Resolute*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102241218(457)*

Reviewed *S. F.*



* Note: Soil classification is for material less than 0.425 mm (material used for Atterberg Limits), this includes the fine sand, silt and clay fraction of the sample.

** Note: Soil classification is for the whole sample. Soil classification uses the Atterberg Limits results and the percent fines, percent sand and percent gravel as described in ASTM D2487.

Borehole ID	Sample ID	Depth (m)	MC as Received (%)	Atterberg Limits				Particle Size Analysis					Soil Classification** Group Symbols
				Liquid Limit(%)	Plastic Limit(%)	Plastic Index(%)	Classification* (USCS)	Cobble Size (%) (75-300mm)	Gravel Size (%) (4.75-75mm)	Sand Size (%) (0.075-4.5mm)	Silt Size (%) (0.002-0.075 mm)	Clay Size (%) (<0.002mm)	
BH24-01	SS02	0.8-0.9	---	---	---	---	---	0.0	81.5	18.1	0.5	0.0	---
BH24-02	SS01	0.0-0.6	---	---	---	---	---	0.0	67.6	31.1	1.3	0.0	---
BH24-02	SS02	1.8-2.4	10.0	22	17	5	CL-ML	0.0	36.3	45.3	16.6	1.8	SC-SM
RB-LS24-01	---	---		---	---	---	---	0.0	100.0	0.0	0.0	0.0	---
RB-LS24-02	---	---		---	---	---	---	0.0	69.4	29.8	0.3	0.5	---

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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Atterberg Limits (ASTM D4318 - Method A)

Project Info: 317086-54175 / Resolute
Client: Worley Canada Services Ltd.
Solum Job No.: 00102241218(457)
Reviewed by: S. F.

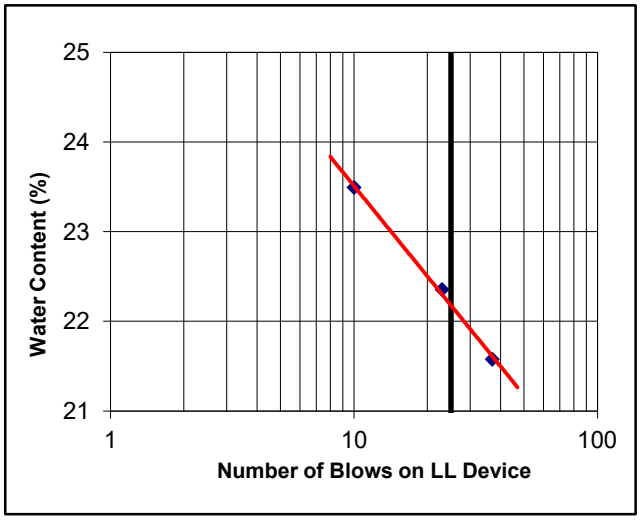
Sample Info: ***BH24-02*** ***SS02*** ***1.8-2.4 m***

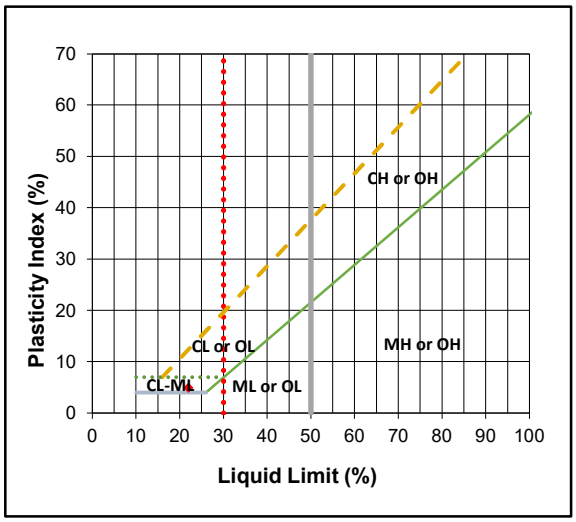
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	10	23	37		
$W_{Wet\ Soil}$ + Tare (g)	39.37	29.62	32.57		
$W_{Dry\ Soil}$ + Tare (g)	32.98	25.27	27.81		
W_{Water} (g)	6.39	4.35	4.76		
Tare (g)	5.78	5.81	5.75		
$W_{Dry\ Soil}$ (g)	27.20	19.46	22.06	**Water Content (%)**	10.0
Water Content (%)	23.5	22.4	21.6		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	14.82	18.33
$W_{Dry\ Soil}$ + Tare (g)	13.50	16.50
W_{Water} (g)	1.32	1.83
Tare (g)	5.64	5.73
$W_{Dry\ Soil}$ (g)	7.86	10.77
Water Content (%)	16.8	17.0
Average Mc (%)	16.9	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
22	**17**	**5**	**CL-ML**





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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102241218(457)*

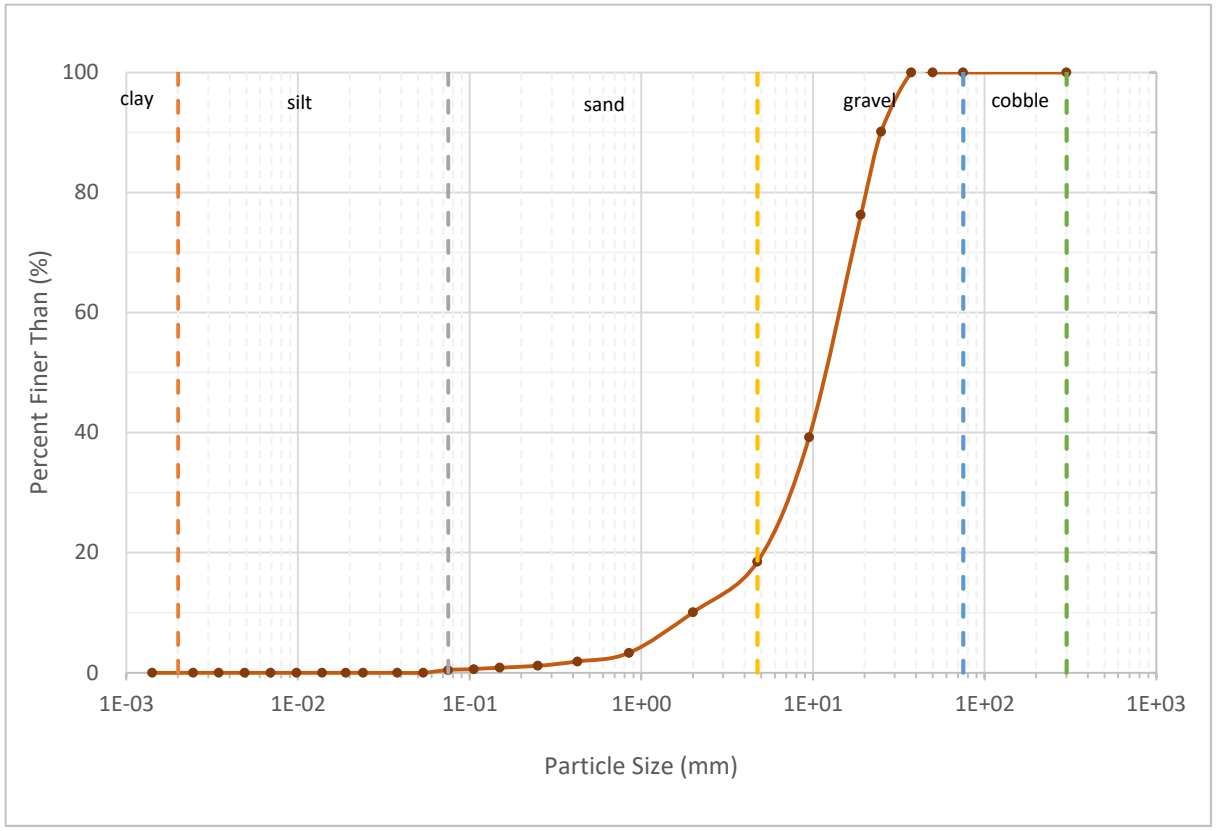
Reviewed by *S. F.*

Sample Info: ***BH24-01*** ***SS02*** ***0.8-0.9 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	90.15
	19.000	76.29
	9.500	39.27
	4.750	18.52
SAND	2.000	10.08
	0.850	3.33
	0.425	1.89
	0.250	1.18
	0.150	0.87
	0.106	0.61
	0.075	0.46
HYDROMETER	0.0537	0.00
	0.0380	0.00
	0.0240	0.00
	0.0190	0.00
	0.0139	0.00
	0.0098	0.00
	0.0069	0.00
	0.0049	0.00
	0.0035	0.00
	0.0025	0.00
	0.0014	0.00

Test Results

Cobbles (%) *(75-300mm)*	Gravel (%) *(4.75-75mm)*	Sand (%) *(0.075-4.75mm)*	Silt (%) *0.002-0.075mm*	Clay (%) *<0.002mm*
0.0	**81.5**	**18.1**	**0.5**	**0.0**



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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102241218(457)*

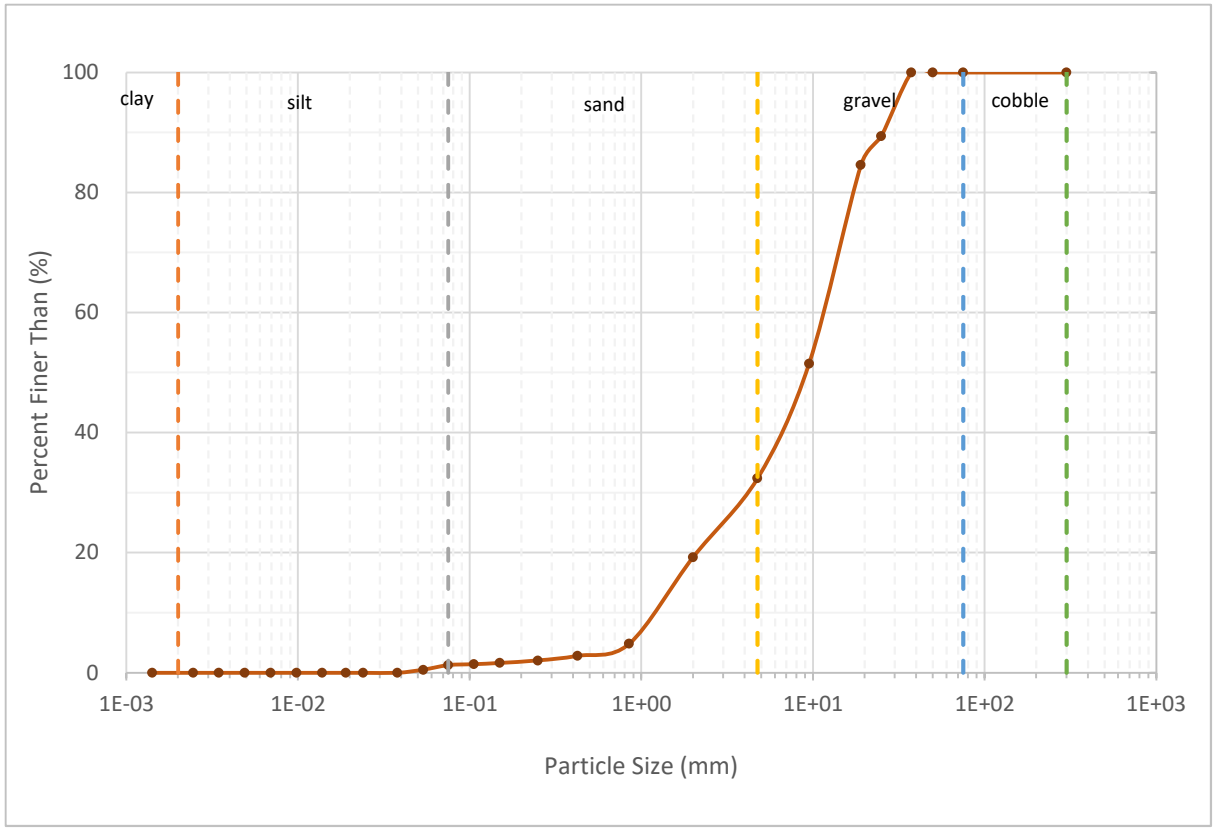
Reviewed by *S. F.*

Sample Info: ***BH24-02*** ***SS01*** ***0.0-0.6 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	89.40
	19.000	84.60
	9.500	51.53
	4.750	32.43
SAND	2.000	19.25
	0.850	4.87
	0.425	2.84
	0.250	2.04
	0.150	1.66
	0.106	1.44
	0.075	1.29
HYDROMETER	0.0537	0.50
	0.0380	0.00
	0.0240	0.00
	0.0190	0.00
	0.0139	0.00
	0.0098	0.00
	0.0069	0.00
	0.0049	0.00
	0.0035	0.00
	0.0025	0.00
	0.0014	0.00

Test Results

Cobbles (%) *(75-300mm)*	Gravel (%) *(4.75-75mm)*	Sand (%) *(0.075-4.75mm)*	Silt (%) *0.002-0.075mm*	Clay (%) *<0.002mm*
0.0	**67.6**	**31.1**	**1.3**	**0.0**



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Particle Size Analysis (ASTM D6913 & D7928)

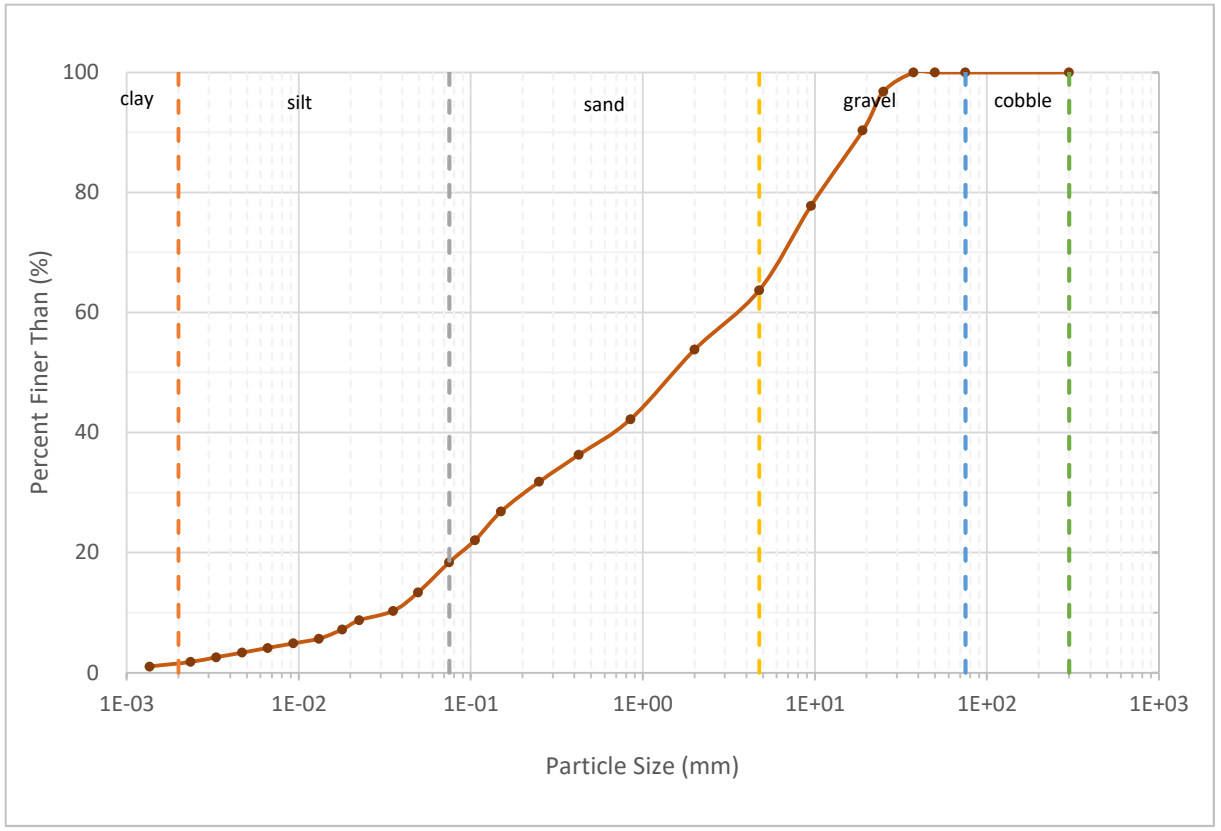
Project Info: *317086-54175 / Resolute*
Client: *Worley Canada Services Ltd.*
Solum Job No.: *00102241218(457)*
Reviewed by *S. F.*

Sample Info: ***BH24-02*** ***SS02*** ***1.8-2.4 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	96.80
	19.000	90.36
	9.500	77.82
	4.750	63.72
SAND	2.000	53.83
	0.850	42.25
	0.425	36.33
	0.250	31.83
	0.150	26.86
	0.106	22.10
	0.075	18.43
HYDROMETER	0.0495	13.42
	0.0354	10.32
	0.0225	8.78
	0.0179	7.23
	0.0131	5.68
	0.0093	4.91
	0.0066	4.14
	0.0047	3.36
	0.0033	2.59
	0.0024	1.82
	0.0014	1.04

Test Results

Cobbles (%) *(75-300mm)*	Gravel (%) *(4.75-75mm)*	Sand (%) *(0.075-4.75mm)*	Silt (%) *0.002-0.075mm*	Clay (%) *<0.002mm*
0.0	**36.3**	**45.3**	**16.6**	**1.8**



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Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102241218(457)*

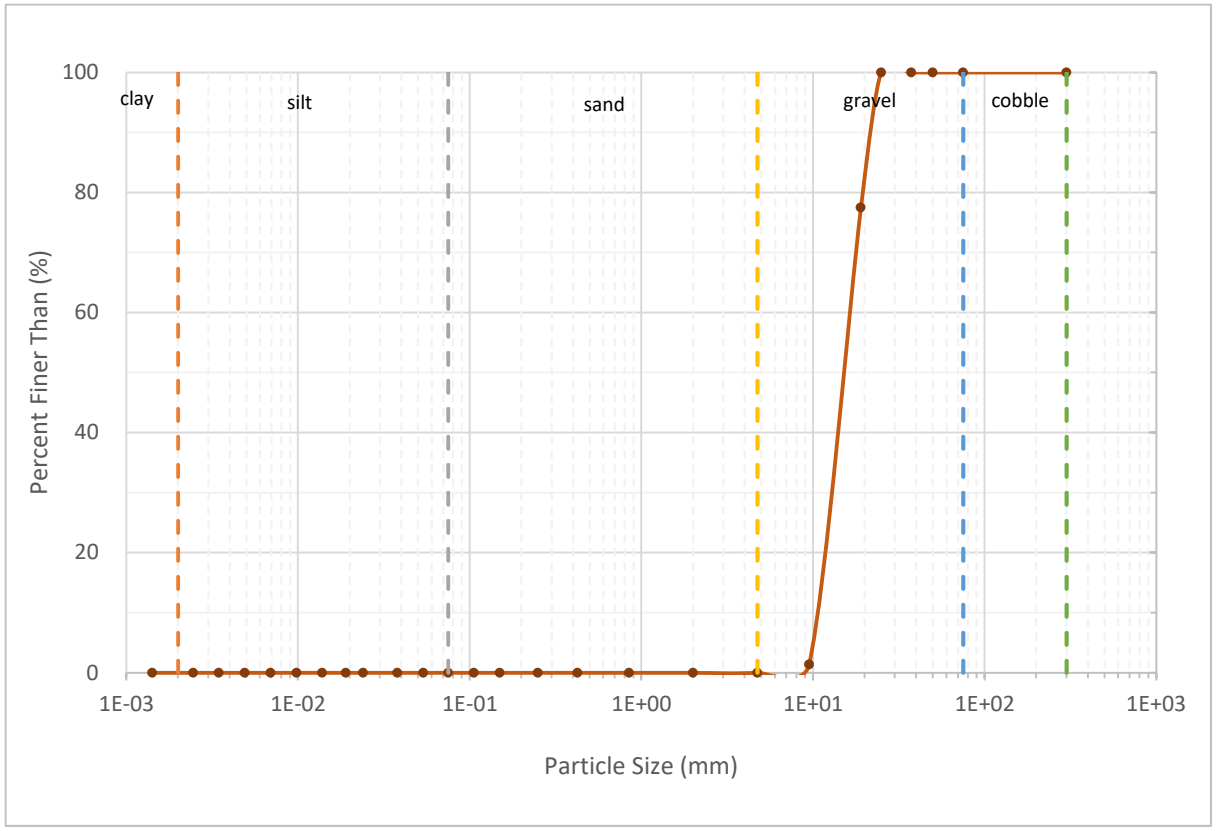
Reviewed by *S. F.*

Sample Info: ***RB-LS24-01***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	100.00
	19.000	77.54
	9.500	1.43
	4.750	0.03
SAND	2.000	0.00
	0.850	0.00
	0.425	0.00
	0.250	0.00
	0.150	0.00
	0.106	0.00
	0.075	0.00
HYDROMETER	0.0537	0.00
	0.0380	0.00
	0.0240	0.00
	0.0190	0.00
	0.0139	0.00
	0.0098	0.00
	0.0069	0.00
	0.0049	0.00
	0.0035	0.00
	0.0025	0.00
	0.0014	0.00

Test Results

Cobbles (%) *(75-300mm)*	Gravel (%) *(4.75-75mm)*	Sand (%) *(0.075-4.75mm)*	Silt (%) *0.002-0.075mm*	Clay (%) *<0.002mm*
0.0	**100.0**	**0.0**	**0.0**	**0.0**



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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102241218(457)*

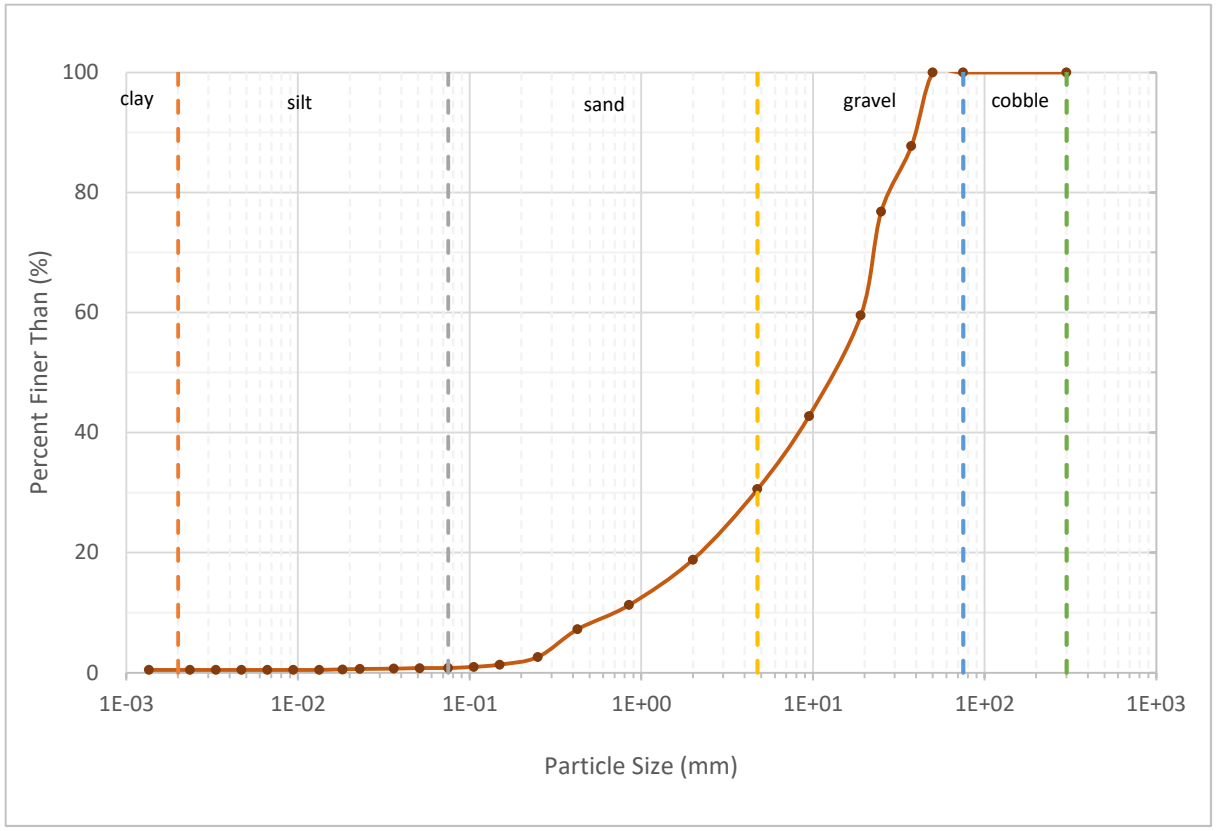
Reviewed by *S. F.*

Sample Info: ***RB-LS24-02***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	87.78
	25.000	76.82
	19.000	59.58
	9.500	42.77
	4.750	30.60
SAND	2.000	18.86
	0.850	11.31
	0.425	7.26
	0.250	2.65
	0.150	1.37
	0.106	0.99
	0.075	0.80
HYDROMETER	0.0512	0.78
	0.0363	0.71
	0.0230	0.63
	0.0182	0.56
	0.0133	0.49
	0.0094	0.49
	0.0066	0.49
	0.0047	0.49
	0.0033	0.49
	0.0023	0.49
	0.0014	0.49

Test Results

Cobbles (%) *(75-300mm)*	Gravel (%) *(4.75-75mm)*	Sand (%) *(0.075-4.75mm)*	Silt (%) *0.002-0.075mm*	Clay (%) *<0.002mm*
0.0	**69.4**	**29.8**	**0.3**	**0.5**



SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Unconfined Compressive Strength for Intact Rock Core (ASTM D7012 Method C)

Project Info: *317086-54175 / Resolute*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102241218(457)*

Reviewed by: *S. F.*

Note: For shear angle, ∠, refer to attached photos.

Borehole ID	Sample ID	Depth (m)	Received MC (%)	Wet Bulk Density (kg/m^3)	Diameter (mm)	Area (mm^2)	Length (mm)	Load (kN)	L/D Correction	Corr. Strength (MPa)
BH24-Q01	GB02	2.4-2.55	0.5	2783	62.99	3116.5	132.84	192.07	1.01	**61.25**
BH24-Q01	GB04	5.56-5.86	3.4	2697	63.04	3121.5	137.67	56.65	1.01	**17.97**
BH24-Q02	GB01	1.8-2.0	1.0	2773	62.99	3116.5	142.24	81.52	1.01	**25.80**
BH24-Q02	GB05	7.5-7.8	1.6	2605	62.99	3116.5	150.62	58.92	1.02	**18.53**
South Pail	#1	---	0.1	2781	30.23*	717.5	56.13	31.69	0.99	**44.57**

* Note: UCS specimen was a rectangular prism cut out from a boulder.

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Point Load Strength Index of Rock (ASTM D5731) - Axial

Project Info: *317086-54175 / Resolute*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102241218(457)*

Reviewed by: *S. F.*



Borehole ID	Sample ID	Depth (m)	Received MC (%)	Diameter (mm) ***(W)***	Length (mm) ***(D)***	Equivalent Diameter (mm) ***(D_e)***	Load (bar)	Correction Factor ***(F)***	I_s (mPa)	I_s (50) (mPa)	Est. UCS (mPa)
BH24-01	GB01	4.3-4.4	0.2	62.74	16.51	36.32	71.2	0.87	5.12	**4.43**	125.39
BH24-02	GB01	4.8-5.0	0.3	63.00	14.73	34.38	69.0	0.84	5.54	**4.68**	135.62
BH24-03	GB01	4.7-4.8	0.5	62.99	12.95	32.23	75.4	0.82	6.88	**5.65**	168.56
BH24-Q01	GB01	0.0-0.2	0.1	63.00	17.45	37.41	30.4	0.88	2.06	**1.81**	50.44
BH24-Q01	GB04	5.56-5.86	3.4	63.04	20.65	40.71	33.0	0.91	1.89	**1.72**	46.24
BH24-Q02	GB02	3.15-3.30	0.6	63.15	17.37	37.38	67.8	0.88	4.60	**4.04**	112.73
BH24-Q02	GB04	5.68-5.88	0.2	63.12	16.76	36.71	71.6	0.87	5.04	**4.38**	123.43
BH24-Q02	GB05	7.5-7.8	1.6	63.00	17.27	37.22	60.4	0.88	4.13	**3.62**	101.26

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Point Load Strength Index of Rock (ASTM D5731) - Irregular

Project Info: *317086-54175 / Resolute*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102241218(457)*

Reviewed by: *S. F.*



Borehole ID	Sample No.	Depth	Received MC (%)	Depth (mm) ***(D)***	Avg. Width (mm) ***(W)***	Equivalent Diameter (mm) ***(D_e)***	Load (bar)	Correction Factor ***(F)***	I_s (mPa)	I_s (50) (mPa)	Est. UCS (mPa)
South Pail	#1	---	0.1	38.31	17.46	29.18	35.8	0.78	3.98	**3.13**	97.63

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Specific Gravity / Absorption Test (CT #206) & Durability Index (CT #229)

Project Info:	*317086-54175 / Resolute*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102241218(457)*		
Sample ID:	*South Pail #1*		

Test Results for Gs & Absorption %

Oven-Dried Sample mass (g), A	2243
Saturated, Surface-Dried Sample mass(g), B	2247
Saturated Sample mass immersed in water (g), C	1437
Bulk Specific Gravity (Apparent)	2.78
Percent Absorption	0.2

Test Result Durability Index

Agitator Specs	Reciprocal 285 cpm, stroke length 1.75"
Agitation Duration	10 min
Procedure	A
Total Tested Aggregates dry mass (g)	2552.0
Durability Index	59

Tested Rip Rap Properties

	AT Section 10 Requirement	Test Results	Compliant
Specific Gravity	>2.6	2.78	Yes
Absportion %	<2.0	0.2	Yes
Durability Index (DI)	>52	59	Yes
Durability Absorption Ratio (DAR)	>23	50	Yes

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Specific Gravity / Absorption Test (CT #206) & Durability Index (CT #229)

Project Info:	*317086-54175 / Resolute*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102241218(457)*		
Sample ID:	*North Pail #2*		

Test Results for Gs & Absorption %

Oven-Dried Sample mass (g), A	2309
Saturated, Surface-Dried Sample mass(g), B	2329
Saturated Sample mass immersed in water (g), C	1433
Bulk Specific Gravity (Apparent)	2.63
Percent Absorption	0.9

Test Result Durability Index

Agitator Specs	Reciprocal 285 cpm, stroke length 1.75"
Agitation Duration	10 min
Procedure	A
Total Tested Aggregates dry mass (g)	2561.1
Durability Index	62

Tested Rip Rap Properties

	AT Section 10 Requirement	Test Results	Compliant
Specific Gravity	>2.6	2.63	Yes
Absportion %	<2.0	0.9	Yes
Durability Index (DI)	>52	62	Yes
Durability Absorption Ratio (DAR)	>23	33	Yes

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

LA Abrasion Test (ASTM C131)

Project Info:	*317086-54175 / Resolute*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102241218(457)*		
Sample ID:	*South Pail #1*		

Test Information

Grading Designation	X	*A*
		B
		C
		D
Revolution Number:	500	
Speed (r/min):	30	
Sphere Numbers:	X	12
		11
		8
		6

Test Results

Passing	*Retained*	*Mass Before (g)*	**Mass After (g)*	*Loss (g)*	*LA Abrasion Hardness*
38 / 1.5"	25 / 1"	1262.2	886.4	375.8	**12**
25 / 1"	19 / 3/4"	1254.9	792.0	462.9	
19 / 3/4"	12.5 / 1/2"	1241.3	811.0	430.3	
12.5 / 1/2"	9.5 / 3/8"	1245.2	727.8	517.4	
9.5 / 3/8"	6.3 / 1/4"			0.0	
6.3 / 1/4"	4.75 / #4			0.0	
4.75 / #4	2.36 / #8			0.0	
2.36 / #8	1.68 / #12		1205.3		
Subtotal		5003.6	4422.5	581.1	

*Note: This is the final intact mass retained on #12 sieve after washing and oven dry.

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

LA Abrasion Test (ASTM C131)

Project Info:	*317086-54175 / Resolute*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102241218(457)*		
Sample ID:	*North Pail #2*		

Test Information

Grading Designation	X	*A*
		B
		C
		D
Revolution Number:	500	
Speed (r/min):	30	
Sphere Numbers:	X	12
		11
		8
		6

Test Results

Passing	*Retained*	*Mass Before (g)*	**Mass After (g)*	*Loss (g)*	*LA Abrasion Hardness*
38 / 1.5"	25 / 1"	1266.9	876.5	390.4	
25 / 1"	19 / 3/4"	1237.9	711.5	526.4	
19 / 3/4"	12.5 / 1/2"	1243.7	794.0	449.7	
12.5 / 1/2"	9.5 / 3/8"	1251.9	709.6	542.3	
9.5 / 3/8"	6.3 / 1/4"			0.0	**14**
6.3 / 1/4"	4.75 / #4			0.0	
4.75 / #4	2.36 / #8			0.0	
2.36 / #8	1.68 / #12		1208.5		
Subtotal		5000.4	4300.1	700.3	

*Note: This is the final intact mass retained on #12 sieve after washing and oven dry.

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GEOTECHNICAL & MATERIAL
TESTING LABORATORY

Geo-Lab Report (Part 2)

Revision # 0

Report Date:	*February 2, 2025*
Client:	*Worley Canada Services Ltd.*
Address:	*Suite 200, 2930 Virtual Way, Vancouver, BC V5M 0A5*
Attn:	*Jeff Gibson*
Project No:	*317086-54175*
Project Name:	*Resolute*
Solum Job No.:	*00102241218(457)*

Sample Received Date: October 24, 2024

Sample Quantity: 7 pails

Test	Quantity	Destination
WATER CONTENT	1	D2216
ATTERBERG LIMITS	1	D4318
PARTICLE-SIZE ANALYSIS (FULL GRADATION)	5	D6913 & D7928
UCS FOR ROCK	5	D7012
POINT LOAD TEST	9	D5731
LA ABRASION TEST (Aggregates < 1.5")	2	C131
RIPRAP TEST SUITE (INCL. GS, ABSORPTION & DURABILITY INDEX)	2	CT206 & CT229
SOUNDNESS FOR COARSE AGGREGATES	2	C88



President: Saad Farag

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SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Sulphate Soundness Test of Coarse Aggregates (ASTM C 88)

Project Info:	*317086-54175 / Resolute*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102241218(457)*		
Sample ID:	*South Pail #1*		
Visual Description:	*boulders, crushed specimens were tested.*		

Solution: Magnesium Sulphate, freshly prepared Cycle Numbers : **5**

Test Results

Sieve Size	Target Mass (g)	Grading of Original Sample, % (a)	Weight of Test Fractions Before Test, g (b)	Weight Fractions After Test, g (c)	Percentage Passing Designated Sieve After Test, % (d) d=(b-c)/b	Weighted Percentage Loss, % (e) (e=a x d)
100 mm(4 in) to 90 mm (3½ in)	7000	---	---	---	---	---
90 mm(3½ in) to 75 mm (3 in)	7000	22.5	5711	5702	0.2	0.0
75 mm(3 in) to 63 mm (2½ in)	7000	22.2	6872	6867	0.1	0.0
63 mm(2½ in) to 37.5 mm (1½ in)	5000	19.3	4536	4525	0.2	0.0
37.5 mm(1½ in) to 19.0 mm (¾ in)	1500	28.1	1515	1506	0.6	0.2
19.0 mm(3/4 in) to 9.5 mm (3/8 in)	1000	6.1	984	971	1.3	0.1
9.5 mm(3/8 in) to 4.75 mm(No.4)	300	1.8	228	205	10.1	0.2
< 4.75 mm(No.4)	---	---	---	---	---	---
Totals		100.0				**0.5**

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Sulphate Soundness Test of Coarse Aggregates (ASTM C 88)

Project Info:	*317086-54175 / Resolute*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102241218(457)*		
Sample ID:	*North Pail #2*		
Visual Description:	*boulders, crushed specimens were tested.*		

Solution: Magnesium Sulphate, freshly prepared Cycle Numbers : **5**

Test Results

Sieve Size	Target Mass (g)	Grading of Original Sample, % (a)	Weight of Test Fractions Before Test, g (b)	Weight Fractions After Test, g (c)	Percentage Passing Designated Sieve After Test, % (d) d=(b-c)/b	Weighted Percentage Loss, % (e) (e=a x d)
100 mm(4 in) to 90 mm (3½ in)	7000	---	---	---	---	---
90 mm(3½ in) to 75 mm (3 in)	7000	19.7	5164	5158	0.1	0.0
75 mm(3 in) to 63 mm (2½ in)	7000	23.4	4038	4025	0.3	0.1
63 mm(2½ in) to 37.5 mm (1½ in)	5000	20.6	4165	4137	0.7	0.1
37.5 mm(1½ in) to 19.0 mm (¾ in)	1500	26.5	1472	1454	1.2	0.3
19.0 mm(3/4 in) to 9.5 mm (3/8 in)	1000	7.2	989	976	1.3	0.1
9.5 mm(3/8 in) to 4.75 mm(No.4)	300	2.6	234	228	2.6	0.1
< 4.75 mm(No.4)	---		---	---	---	---
Totals		100.0				**0.7**

SOLUM™
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GEOTECHNICAL & MATERIAL
TESTING LABORATORY

STANDARD LABORATORY TERMS AND CONDITIONS

1.0 Description of Services to be Performed by Solum Consultants Ltd. (Solum)

Solum shall provide geotechnical and material laboratory testing services on samples in accordance with these terms and conditions and executed Laboratory Testing Request Forms. Solum shall perform its work in accordance with accepted laboratory standards, such as ASTM, CSA or client's specific specs, as well as accepted standard operating procedures. Solum reserves the right to modify methods as necessary based upon experience and/or current scientific literature. If the Client requests a manner of analysis that varies from standard operating or recommended procedures, the Client shall not hold Solum responsible for the results. Such variations of analysis will be noted on the reports. Solum reserves the right to subcontract laboratory testing if a particular test cannot be performed by Solum.

2.0 Reports, Confidentiality and Third Parties

Laboratory reports provided by Solum will be composed of a cover page, tables and figures if applicable. Reports will be e-mailed in PDF format to the individual(s) specified on the Laboratory Testing Request Forms. Laboratory reports may also be faxed or mailed to the Client upon request. Except as required by law, Solum shall not disclose testing results or reports to any party other than the Client, unless the Client, in writing, requests information to be provided to a third party. Solum shall abide by any additional confidentiality requirements requested by the Client provided that such requirements are provided to Solum at or before execution of the testing.

Information provided by Solum is intended for Client use only. Any use by a third party, of reports or documents authored by Solum, or any reliance on or decisions made by a third party based on the findings described in said documents, are the sole responsibility of such third parities, and Solum accepts no responsibility of damages suffered by any third party as a result of decisions made or actions conducted.

3.0 Laboratory Testing Request Form (Chain of Custody)

The laboratory testing request form must be completed by the Client and be accompanied with the samples. Other form of COC may be accepted; however, the condition of Solum COC is still applied. Testing will not commence until the laboratory testing request form has been completed. If requested by the Client, Solum shall provide a copy of the laboratory testing request form with the report.

No persons other than the designated representatives for each Laboratory Testing Request Form are authorized to act regarding changes to the testing request form. Any changes or amendments of the laboratory testing request form must be in writing and be completed by the originator.

4.0 Acceptance, Contamination and Disposal of Samples

Loss or damages to samples remains the responsibility of the Client until Solum representatives acceptance of samples by notation on the laboratory testing request form.

As to any samples that are suspected of containing hazardous substances, the Client will specify the suspected or known substance and level of contamination. This information is to be stated on the laboratory testing request form and be accompanied with the samples before testing can commence. Solum may refuse acceptance of samples if it determines they present a risk to health and safety.

Samples accepted by Solum shall remain the property and liability of the Client while in the custody of Solum. Solum will discard all non-contaminated samples after two weeks of submitting lab report or a month from the date of receiving the samples without additional retention period at a fixed disposal charge, or if requested by the Client, samples may be returned to the Client at no cost to Solum. If requested by client, Solum will store samples provided the client agrees to pay for the storage charge. Contaminated material may be returned/shipped to the Client at the Client's expense or Solum will discard samples with disposal rates varying for samples containing higher levels of contamination, refer to price list.

Soil samples requested to be stored will be stored inside the lab up to the expiration of storage period. Soil samples will be discarded upon the expiration date of the storage period unless client requests either extending storage period or return samples back to client at no cost to Solum.

5.0 Indemnification/Hold Harmless

Solum shall protect, indemnify and save harmless Client, and its directors, officers, employees, agents, representatives, invitees and subcontractors, and at Client's request, investigate and defend such entities form and against all claims, demands and causes of action, of every kind and character, without limitation, arising in favour of or made by third parties, on account of bodily injury, death or damage to or loss of their property resulting from any negligent act or wilful misconduct of Solum.

The Client shall protect, indemnify and save harmless Solum, and its directors, officers, employees, agents, representatives, invitees and subcontractors, and at Solum's request, investigate and defend such entities form and against all claims, demands and causes of action, of every kind and character, without limitation, arising in favour of or made by third parties, on account of bodily injury, death or damage to or loss of their property resulting from any negligent act or wilful misconduct of Client.

6.0 Limitation of Liability

The total liability of Solum or its staff whether based in contract or tort, will be limited to the lesser of the fees paid or actual damages incurred by the Client. Solum will not be responsible for any consequential or indirect damages even if caused by negligence of Solum. Solum will only be liable for damages resulting form negligence of Solum. All claims by the Client shall be deemed relinquished if not made within one year after the testing date. No warranty is either expressed or implied, or intended by any agreement or by furnishing oral or written reports or findings.

7.0 Termination of Testing Work Order

The Client may order work suspended or terminated upon seven days advance written notice. If work is suspended, Solum shall receive, upon resumption, an adjustment in the cost of services to compensate for additional costs incurred due to the interruption of services. Upon suspension or termination, Solum shall preserve samples provided that the Client agrees to pay the sample storage charge.

8.0 Pricing, Payments and Invoicing

Invoices will be based on most current Solum laboratory testing rates; rates may change without notice. Solum invoices shall be paid within thirty (30) days of receipt of the invoice. Amounts not paid when due shall bear interest at the rate of 18% per annum from the date due until the date of payment.

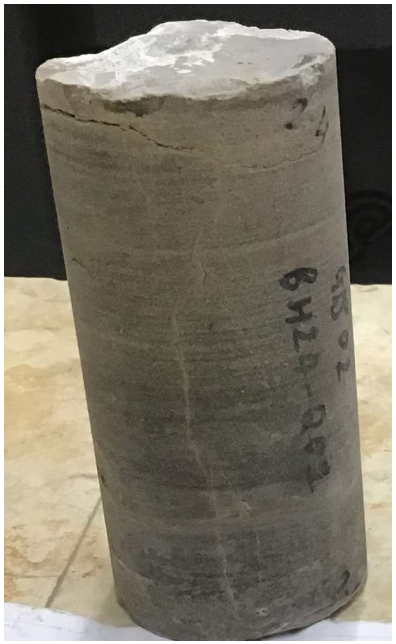
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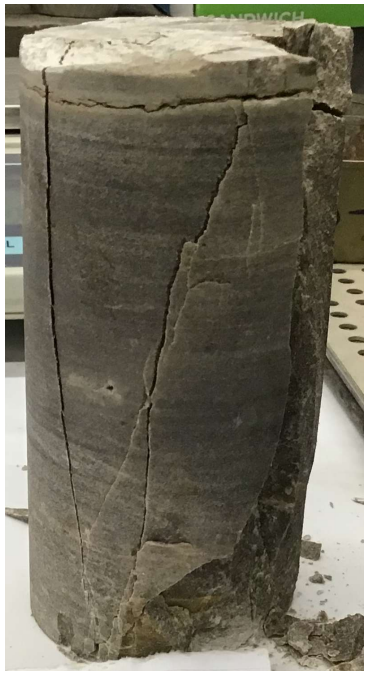
#9, 3620 - 29 Street, N.E.
Calgary, Alberta T1Y 5Z8
Ph: (403)250-3035
Fax: (403)250-3021
Email: solum@mymts.net
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Project Number: 317086-54175

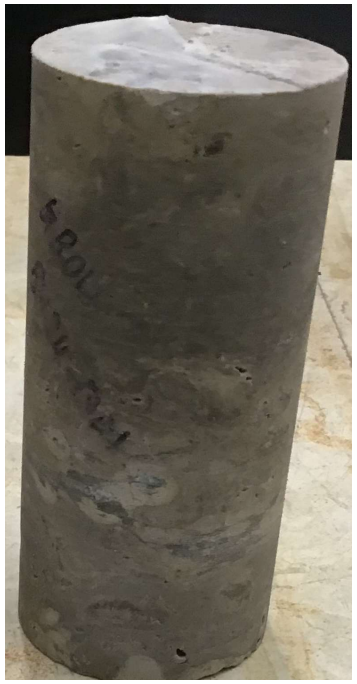
Project Name: Resolute

Sample ID: BH24-Q01 GB02





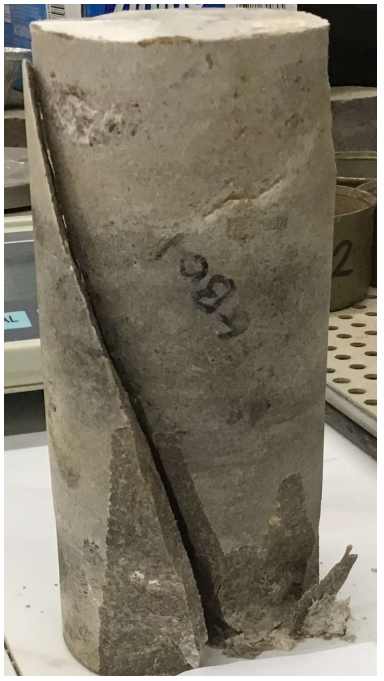
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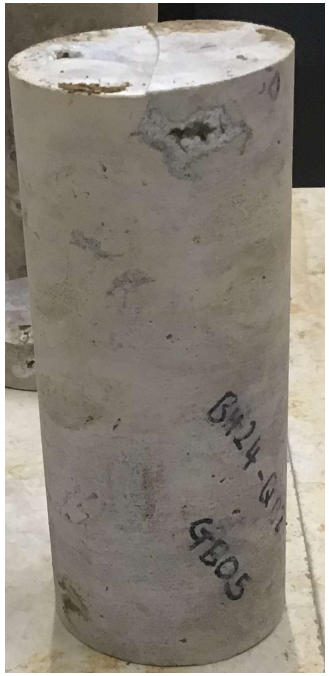


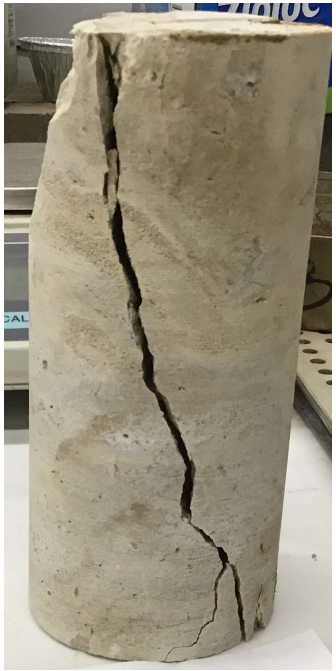
Sample ID: BH24-Q02 GB01





Sample ID: BH24-Q02 GB05





Sample ID: South Pail 1 UCS





Sample ID: BH24-Q01 GB01





Sample ID: BH24-02 GB01





Sample ID: BH24-Q02 GB04





Sample ID: BH24-Q02 GB02



Sample ID:



Sample ID: BH24-03 GB01





Sample ID: BH24-01 GB01





Sample ID: South Pail 1 PL





Sample ID: BH24-Q01 GB04





Sample ID: BH24-Q02 GB05





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GEOTECHNICAL & MATERIAL
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Geo-Lab Report

Revision # 0

Report Date:	*June 14, 2025*
Client:	*Worley Canada Services Ltd.*
Address:	*49 Quarry Park Blvd SE, Calgary, AB T2C 5H9*
Attn:	*Denise Falk*
Project No:	*317086-54175*
Project Name:	*Resolute Bay,Nanuvat*
Solum Job No.:	*00102250516(186)*

Sample Received Date: May 16, 2025

Sample Quantity: 2 pails

Test	Quantity	Destination
WATER CONTENT	16	D2216
ATTERBERG LIMITS	13	D4318
PARTICLE-SIZE ANALYSIS (FULL GRADATION)	17	D6913 & D7928
CD DIRECT SHEAR TEST (FINES)	1	D3080
UU TRIAXIAL TEST W/O SATURATION	1	D2850
1-D CONSOLIDATION (12.5,25,50,100,200,400,800,200,50,200,800,1600,400,100,25kPa)	1	D2435
POINT LOAD TEST	5	D5731

President: Saad Farag

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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Laboratory Analysis Summary Sheet

Project Info: *317086-54175 / Resolute Bay,Nanuvat*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102250516(186)*

Reviewed *S. F.*



* Note: Soil classification is for material less than 0.425 mm (material used for Atterberg Limits), this includes the fine sand, silt and clay fraction of the sample.

** Note: Soil classification is for the whole sample. Soil classification uses the Atterberg Limits results and the percent fines, percent sand and percent gravel as described in ASTM D2487.

Borehole ID	Sample ID	Depth (m)	Atterberg Limits				Particle Size Analysis					Soil Classification** Group Symbols
			Liquid Limit(%)	Plastic Limit(%)	Plastic Index(%)	Classification* (USCS)	Cobble Size (%) (75-300mm)	Gravel Size (%) (4.75-75mm)	Sand Size (%) (0.075-4.5mm)	Silt Size (%) (0.002-0.075 mm)	Clay Size (%) (<0.002mm)	
BH 25-04	SS01	0.00-0.60	30	14	16	CL	0.0	36.0	24.6	35.7	3.7	GC
BH 25-04	SS02	1.63-2.23	---	---	---	---	0.0	39.7	41.4	15.8	3.1	---
BH 25-05	SS01	0.00-0.60	25	19	6	CL-ML	0.0	20.8	23.4	51.2	4.6	CL-ML
BH 25-05	SS03	2.73-3.30	---	---	---	---	0.0	54.6	18.6	24.0	2.8	---
BH 25-05	SS05	5.08-5.68	---	---	---	---	0.0	57.0	36.6	4.7	1.7	---
BH 25-05A	SS01	0.00-0.60	24	18	6	CL-ML	0.0	17.0	13.9	65.7	3.4	CL-ML
BH 25-05A	SS02	0.78-1.38	31	18	13	CL	---	---	---	---	---	---
BH 25-05A	SS03	1.65-2.25	29	15	14	CL	0.0	15.6	21.5	56.5	6.4	CL
BH 25-06	SS01	0.00-0.60	22	16	6	CL-ML	0.0	26.4	16.3	54.4	2.9	CL-ML
BH 25-06	SS03	1.39-1.99	21	13	8	CL	0.0	58.5	24.8	15.0	1.7	GC
BH 25-07	SS01	0.00-0.60	---	---	---	---	0.0	39.9	45.6	12.0	2.5	---
BH 25-08	SS01	0.03-0.63	28	15	13	CL	0.0	7.5	21.5	65.2	5.8	CL
BH 25-08	SS04	2.29-2.89	---	---	---	---	0.0	66.6	11.6	18.6	3.2	---

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Laboratory Analysis Summary Sheet

Project Info: *317086-54175 / Resolute Bay,Nanuvat*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102250516(186)*

Reviewed *S. F.*



* Note: Soil classification is for material less than 0.425 mm (material used for Atterberg Limits), this includes the fine sand, silt and clay fraction of the sample.

** Note: Soil classification is for the whole sample. Soil classification uses the Atterberg Limits results and the percent fines, percent sand and percent gravel as described in ASTM D2487.

Borehole ID	Sample ID	Depth (m)	Atterberg Limits				Particle Size Analysis					Soil Classification** Group Symbols
			Liquid Limit(%)	Plastic Limit(%)	Plastic Index(%)	Classification* (USCS)	Cobble Size (%) (75-300mm)	Gravel Size (%) (4.75-75mm)	Sand Size (%) (0.075-4.5mm)	Silt Size (%) (0.002-0.075 mm)	Clay Size (%) (<0.002mm)	
BH 25-09	SS01	0.00-0.60	31	18	13	CL	0.0	5.7	11.4	76.6	6.3	CL
BH 25-09	ST01	0.72-1.62	26	16	10	CL	0.0	5.5	11.1	78.1	5.3	CL
BH 25-09	SS02	2.70-3.30	32	19	13	CL	0.0	4.7	7.7	81.4	6.2	CL
BH 25-09	ST02	3.43-3.98	32	21	11	CL	---	---	---	---	---	---
BH 25-09	SS03	4.88-5.48	22	14	8	CL	0.0	9.6	23.6	61.2	5.6	CL
BH 25-09	SS04	5.63-6.23	---	---	---	---	0.0	61.8	18.2	16.2	3.8	---

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Water (Moisture) Content (ASTM D2216)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed b* *S. F.*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102250516(186)*

Borehole ID	Sample ID	Test No.	Wet soil wt + Tare (g)	Dry soil wt + Tare (g)	Wt of water (g)	Tare (g)	Dry soil weight (g)	MC
BH25-04	SS01	1	93.64	85.86	7.78	10.94	74.92	**10.4**
BH25-04	SS02	2	104.74	99.54	5.20	11.00	88.54	**5.9**
BH25-05	SS01	3	39.42	33.41	6.01	10.64	22.77	**26.4**
BH25-05	SS03	4	31.19	27.80	3.39	11.23	16.57	**20.5**
BH25-05	SS05	5	46.97	44.93	2.04	10.80	34.13	**6.0**
BH25-05A	SS01	6	67.52	57.50	10.02	10.72	46.78	**21.4**
BH25-05A	SS02	7	40.71	34.71	6.00	10.91	23.80	**25.2**
BH25-05A	SS03	8	56.76	46.85	9.91	10.93	35.92	**27.6**
BH25-06	SS01	9	77.21	66.86	10.35	10.60	56.26	**18.4**
BH25-06	SS03	10	73.87	67.11	6.76	10.92	56.19	**12.0**
BH25-08	SS01	11	94.35	82.45	11.90	10.98	71.47	**16.7**
BH25-09	SS01	12	26.54	22.99	3.55	11.03	11.96	**29.7**
BH25-09	ST01	13	115.85	95.31	20.54	27.10	68.21	**30.1**
BH25-09	SS02	14	72.17	56.73	15.44	11.03	45.70	**33.8**
BH25-09	ST02	15	59.89	45.32	14.57	10.89	34.43	**42.3**
BH25-09	SS03	16	84.72	71.85	12.87	11.15	60.70	**21.2**

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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Atterberg Limits (ASTM D4318 - Method A)

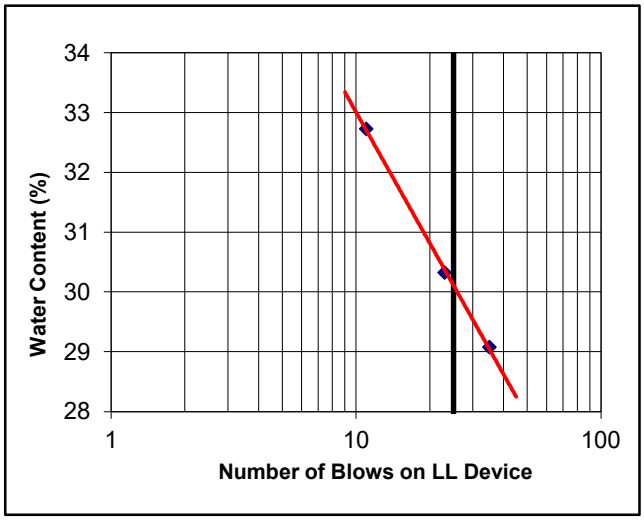
Project Info:	*317086-54175 / Resolute Bay,Nanuvat*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250516(186)*		
Sample Info:	***BH25-04 SS01 0.00-0.60 m***		

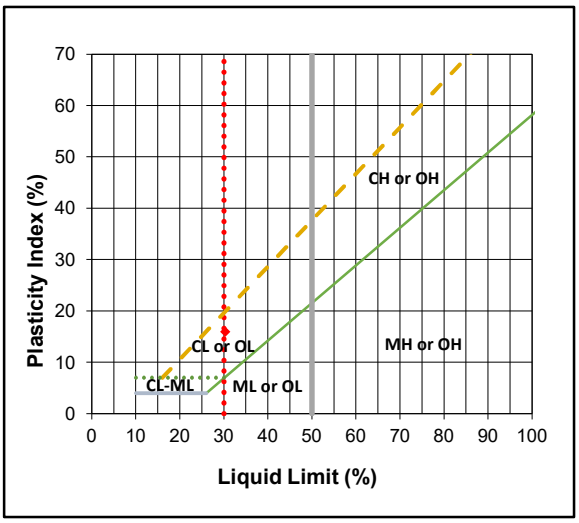
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	11	23	35		
$W_{Wet\ Soil}$ + Tare (g)	35.56	31.20	29.03		
$W_{Dry\ Soil}$ + Tare (g)	28.22	25.25	23.75		
W_{Water} (g)	7.34	5.95	5.28		
Tare (g)	5.79	5.63	5.59		
$W_{Dry\ Soil}$ (g)	22.43	19.62	18.16	Water Content (%)	10.4
Water Content (%)	32.7	30.3	29.1		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	17.71	19.28
$W_{Dry\ Soil}$ + Tare (g)	16.23	17.55
W_{Water} (g)	1.48	1.73
Tare (g)	5.79	5.59
$W_{Dry\ Soil}$ (g)	10.44	11.96
Water Content (%)	14.2	14.5
Average Mc (%)	14.3	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
30	**14**	**16**	**CL**





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Atterberg Limits (ASTM D4318 - Method A)

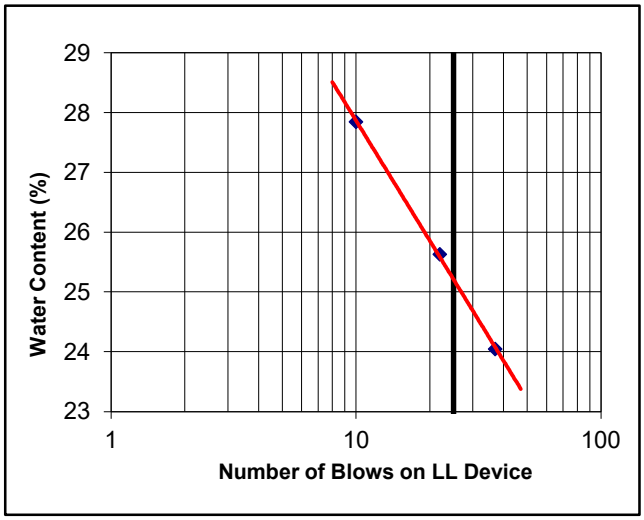
Project Info:	*317086-54175 / Resolute Bay,Nanuvat*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250516(186)*		
Sample Info:	***BH 25-05 SS01 0.00-0.60 m***		

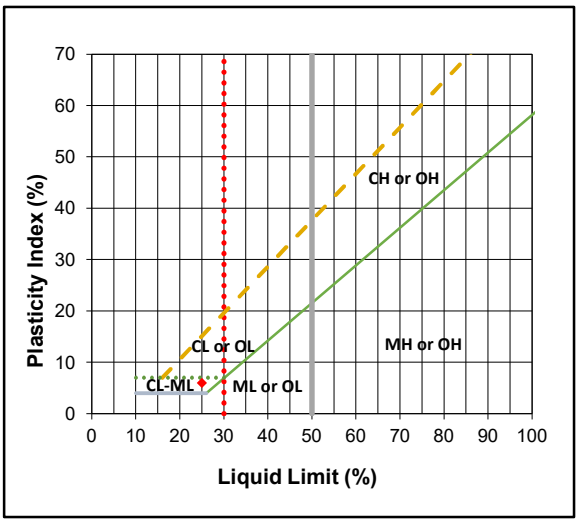
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	10	22	37		
$W_{Wet\ Soil}$ + Tare (g)	41.51	38.66	32.96		
$W_{Dry\ Soil}$ + Tare (g)	33.73	31.96	27.68		
W_{Water} (g)	7.78	6.70	5.28		
Tare (g)	5.79	5.82	5.72		
$W_{Dry\ Soil}$ (g)	27.94	26.14	21.96	Water Content (%)	26.4
Water Content (%)	27.8	25.6	24.0		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	24.95	19.75
$W_{Dry\ Soil}$ + Tare (g)	21.90	17.49
W_{Water} (g)	3.05	2.26
Tare (g)	5.79	5.59
$W_{Dry\ Soil}$ (g)	16.11	11.90
Water Content (%)	18.9	19.0
Average Mc (%)	19.0	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
25	**19**	**6**	**CL-ML**





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Atterberg Limits (ASTM D4318 - Method A)

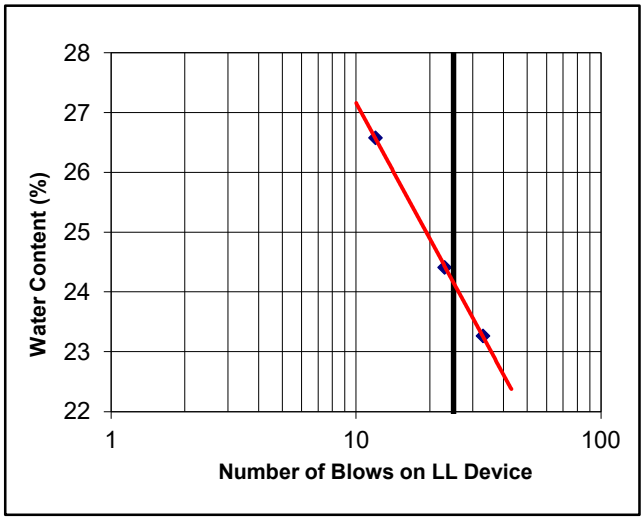
Project Info:	*317086-54175 / Resolute Bay,Nanuvat*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250516(186)*		
Sample Info:	***BH 25-05A SS01 0.00-0.60 m***		

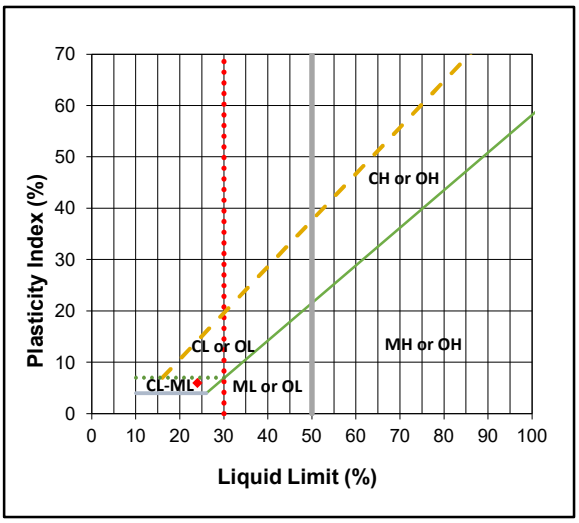
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	12	23	33		
$W_{Wet\ Soil}$ + Tare (g)	27.53	28.97	27.61		
$W_{Dry\ Soil}$ + Tare (g)	22.93	24.44	23.49		
W_{Water} (g)	4.60	4.53	4.12		
Tare (g)	5.62	5.88	5.78		
$W_{Dry\ Soil}$ (g)	17.31	18.56	17.71	Water Content (%)	21.4
Water Content (%)	26.6	24.4	23.3		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	20.78	20.12
$W_{Dry\ Soil}$ + Tare (g)	18.43	17.89
W_{Water} (g)	2.35	2.23
Tare (g)	5.69	5.60
$W_{Dry\ Soil}$ (g)	12.74	12.29
Water Content (%)	18.4	18.1
Average Mc (%)	18.3	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
24	**18**	**6**	**CL-ML**





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Atterberg Limits (ASTM D4318 - Method A)

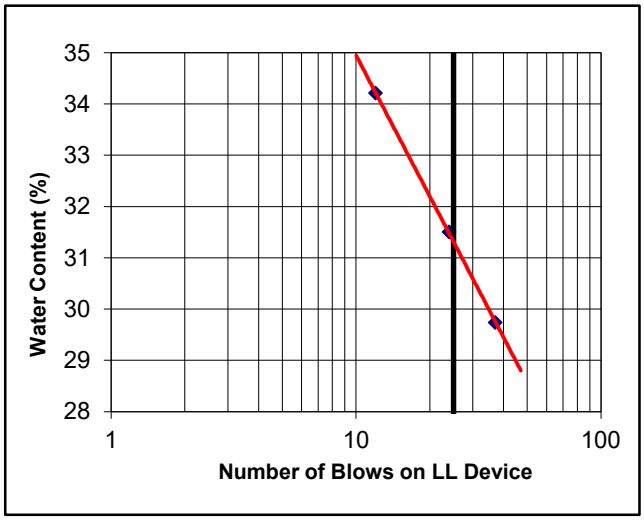
Project Info:	*317086-54175 / Resolute Bay,Nanuvat*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250516(186)*		
Sample Info:	***BH 25-05A SS02 0.78-1.38 m***		

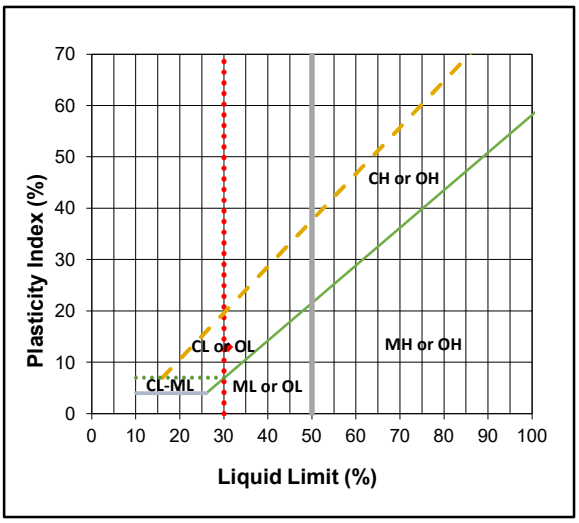
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	12	24	37		
$W_{Wet\ Soil}$ + Tare (g)	32.78	28.75	30.64		
$W_{Dry\ Soil}$ + Tare (g)	25.91	23.23	24.91		
W_{Water} (g)	6.87	5.52	5.73		
Tare (g)	5.83	5.71	5.64		
$W_{Dry\ Soil}$ (g)	20.08	17.52	19.27	Water Content (%)	25.2
Water Content (%)	34.2	31.5	29.7		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	15.26	16.26
$W_{Dry\ Soil}$ + Tare (g)	13.80	14.66
W_{Water} (g)	1.46	1.60
Tare (g)	5.66	5.61
$W_{Dry\ Soil}$ (g)	8.14	9.05
Water Content (%)	17.9	17.7
Average Mc (%)	17.8	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
31	**18**	**13**	**CL**





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Atterberg Limits (ASTM D4318 - Method A)

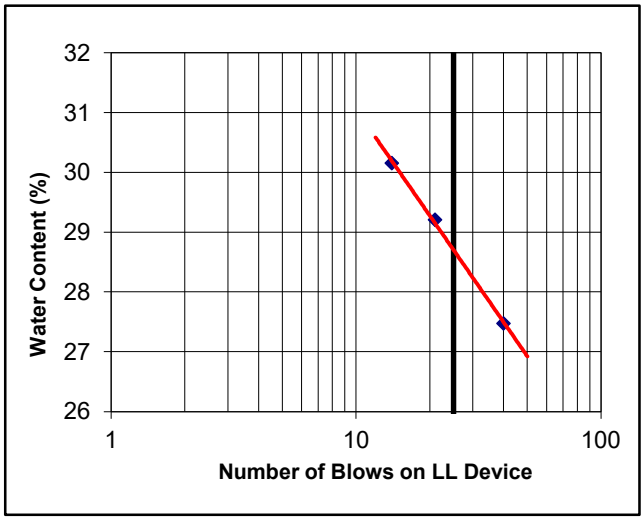
Project Info:	*317086-54175 / Resolute Bay,Nanuvat*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250516(186)*		
Sample Info:	***BH 25-05A SS03 1.65-2.25 m***		

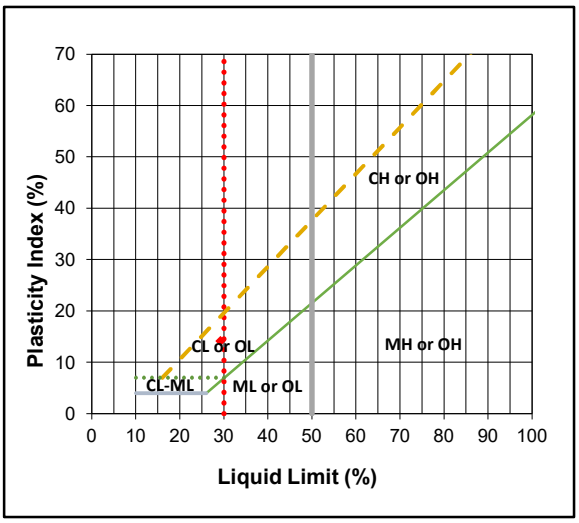
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	14	21	40		
$W_{Wet\ Soil}$ + Tare (g)	29.12	31.38	31.53		
$W_{Dry\ Soil}$ + Tare (g)	23.68	25.55	25.95		
W_{Water} (g)	5.44	5.83	5.58		
Tare (g)	5.64	5.59	5.64		
$W_{Dry\ Soil}$ (g)	18.04	19.96	20.31	Water Content (%)	27.6
Water Content (%)	30.2	29.2	27.5		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	20.31	19.89
$W_{Dry\ Soil}$ + Tare (g)	18.36	18.04
W_{Water} (g)	1.95	1.85
Tare (g)	5.65	5.62
$W_{Dry\ Soil}$ (g)	12.71	12.42
Water Content (%)	15.3	14.9
Average Mc (%)	15.1	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
29	**15**	**14**	**CL**





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Atterberg Limits (ASTM D4318 - Method A)

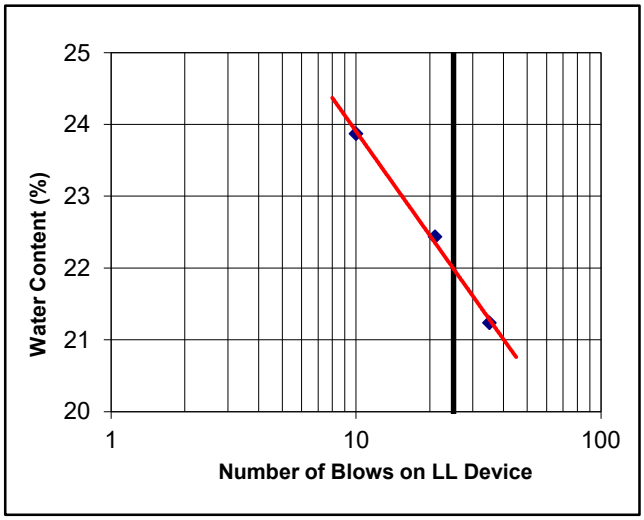
Project Info: 317086-54175 / Resolute Bay,Nanuvat
Reviewed by: S. F.
Client: Worley Canada Services Ltd.
Solum Job No.: 00102250516(186)
Sample Info: ***BH 25-06 SS01 0.00-0.60 m***

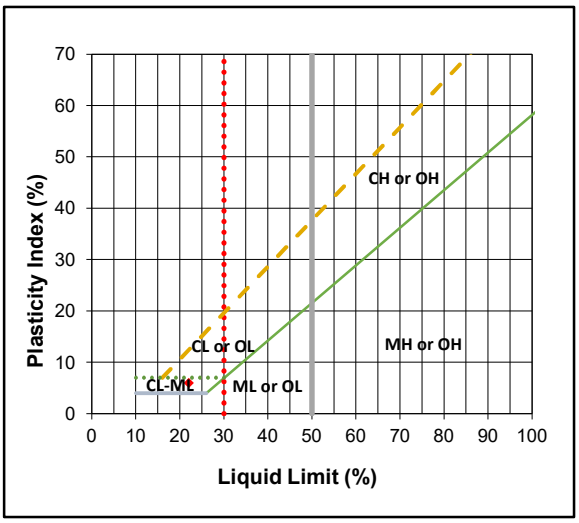
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	10	21	35		
$W_{Wet\ Soil}$ + Tare (g)	28.56	27.43	29.04		
$W_{Dry\ Soil}$ + Tare (g)	24.17	23.47	24.95		
W_{Water} (g)	4.39	3.96	4.09		
Tare (g)	5.78	5.82	5.69		
$W_{Dry\ Soil}$ (g)	18.39	17.65	19.26	**Water Content (%)**	18.4
Water Content (%)	23.9	22.4	21.2		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	22.39	24.88
$W_{Dry\ Soil}$ + Tare (g)	20.08	22.26
W_{Water} (g)	2.31	2.62
Tare (g)	5.64	5.60
$W_{Dry\ Soil}$ (g)	14.44	16.66
Water Content (%)	16.0	15.7
Average Mc (%)	15.9	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
22	**16**	**6**	**CL-ML**





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Atterberg Limits (ASTM D4318 - Method A)

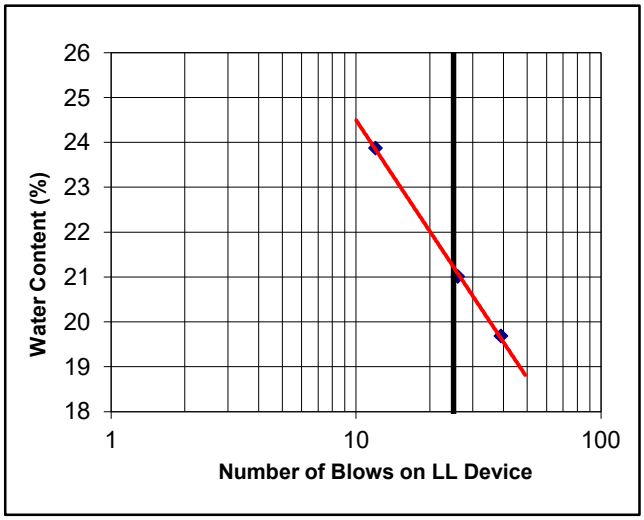
Project Info:	*317086-54175 / Resolute Bay,Nanuvat*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250516(186)*		
Sample Info:	***BH 25-06 SS03 1.39-1.99 m***		

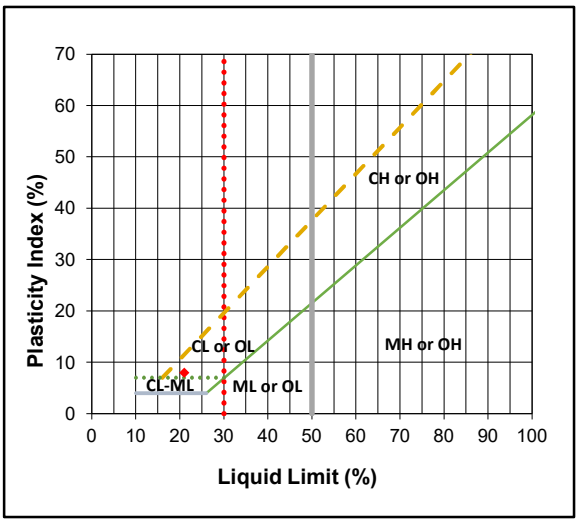
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	12	26	39		
$W_{Wet\ Soil}$ + Tare (g)	28.56	36.87	33.53		
$W_{Dry\ Soil}$ + Tare (g)	24.17	31.46	28.94		
W_{Water} (g)	4.39	5.41	4.59		
Tare (g)	5.78	5.71	5.62		
$W_{Dry\ Soil}$ (g)	18.39	25.75	23.32	**Water Content (%)**	12.0
Water Content (%)	23.9	21.0	19.7		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	20.86	24.19
$W_{Dry\ Soil}$ + Tare (g)	19.09	22.07
W_{Water} (g)	1.77	2.12
Tare (g)	5.66	5.61
$W_{Dry\ Soil}$ (g)	13.43	16.46
Water Content (%)	13.2	12.9
Average Mc (%)	13.0	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
21	**13**	**8**	**CL**





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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Atterberg Limits (ASTM D4318 - Method A)

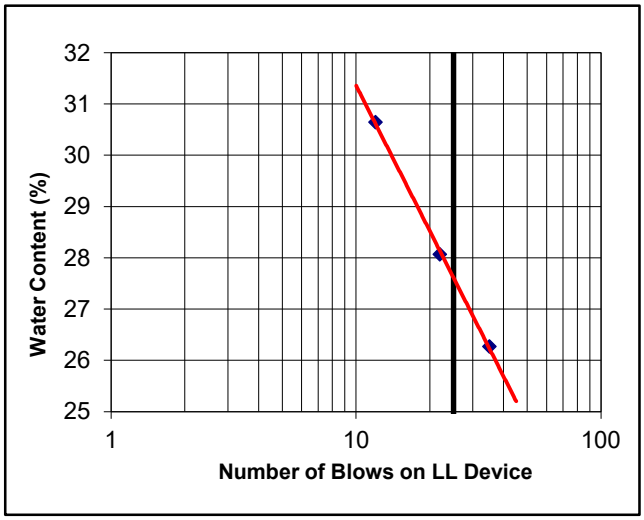
Project Info:	*317086-54175 / Resolute Bay,Nanuvat*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250516(186)*		
Sample Info:	***BH 25-08 SS01 0.03-0.63 m***		

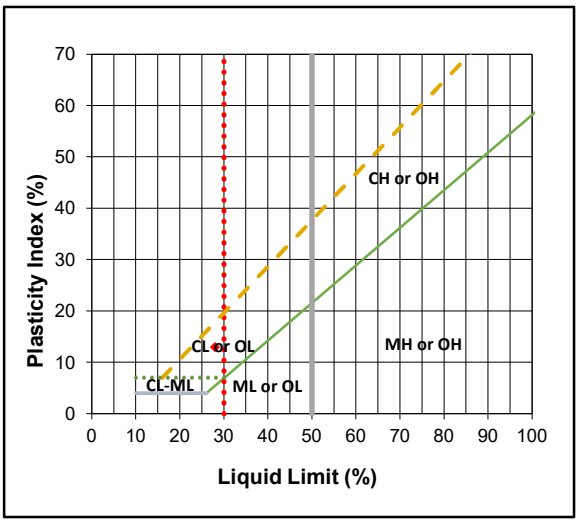
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	12	22	35		
$W_{Wet\ Soil}$ + Tare (g)	31.23	29.71	30.17		
$W_{Dry\ Soil}$ + Tare (g)	25.23	24.45	25.10		
W_{Water} (g)	6.00	5.26	5.07		
Tare (g)	5.65	5.71	5.80		
$W_{Dry\ Soil}$ (g)	19.58	18.74	19.30	**Water Content (%)**	16.7
Water Content (%)	30.6	28.1	26.3		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	21.69	18.12
$W_{Dry\ Soil}$ + Tare (g)	19.61	16.48
W_{Water} (g)	2.08	1.64
Tare (g)	5.62	5.64
$W_{Dry\ Soil}$ (g)	13.99	10.84
Water Content (%)	14.9	15.1
Average Mc (%)	15.0	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
28	**15**	**13**	**CL**





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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Atterberg Limits (ASTM D4318 - Method A)

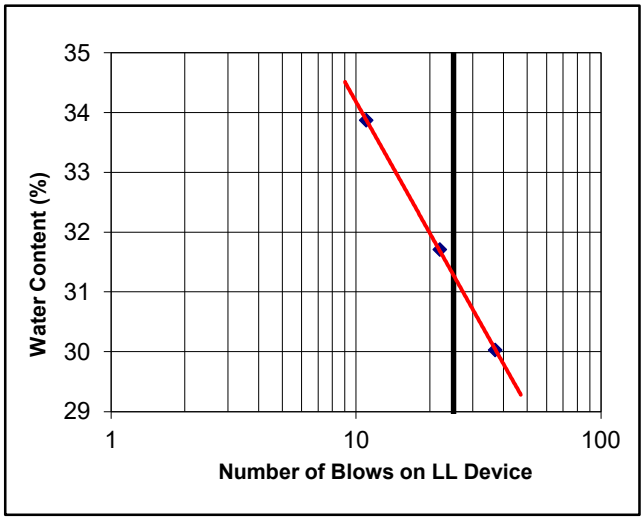
Project Info: 317086-54175 / Resolute Bay,Nanuvat
Reviewed by: S. F.
Client: Worley Canada Services Ltd.
Solum Job No.: 00102250516(186)
Sample Info: ***BH 25-09 SS01 0.00-0.60 m***

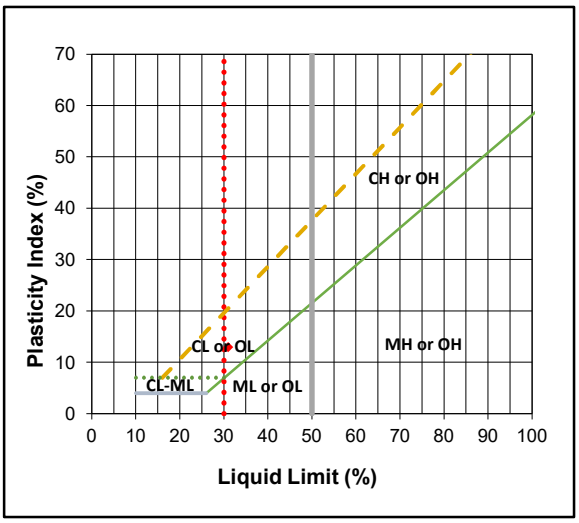
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	11	22	37		
$W_{Wet\ Soil}$ + Tare (g)	29.81	29.67	29.96		
$W_{Dry\ Soil}$ + Tare (g)	23.69	23.88	24.39		
W_{Water} (g)	6.12	5.79	5.57		
Tare (g)	5.62	5.62	5.84		
$W_{Dry\ Soil}$ (g)	18.07	18.26	18.55	Water Content (%)	29.7
Water Content (%)	33.9	31.7	30.0		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	20.83	17.68
$W_{Dry\ Soil}$ + Tare (g)	18.47	15.82
W_{Water} (g)	2.36	1.86
Tare (g)	5.69	5.60
$W_{Dry\ Soil}$ (g)	12.78	10.22
Water Content (%)	18.5	18.2
Average Mc (%)	18.3	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
31	18	13	CL





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Atterberg Limits (ASTM D4318 - Method A)

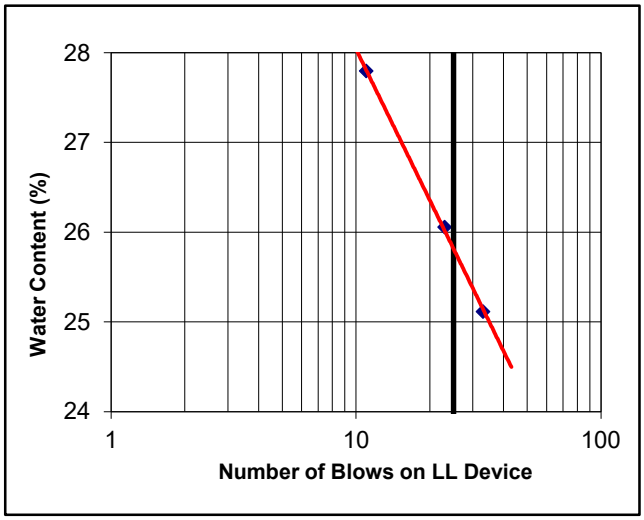
Project Info: 317086-54175 / Resolute Bay,Nanuvat
Reviewed by: S. F.
Client: Worley Canada Services Ltd.
Solum Job No.: 00102250516(186)
Sample Info: ***BH 25-09 ST01 0.72-1.62 m***

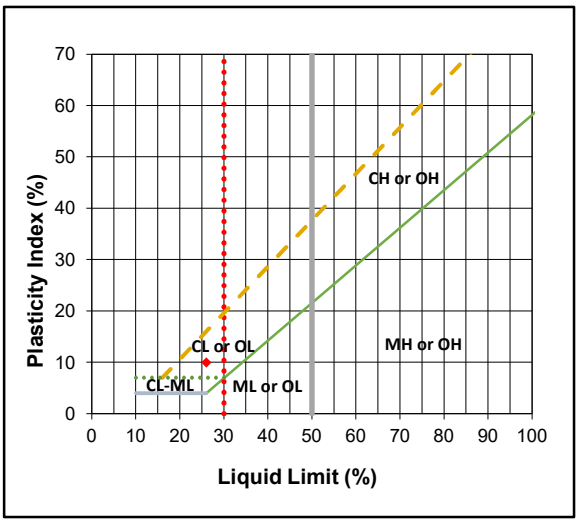
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	11	23	33		
$W_{Wet\ Soil}$ + Tare (g)	30.29	29.68	30.02		
$W_{Dry\ Soil}$ + Tare (g)	24.92	24.74	25.12		
W_{Water} (g)	5.37	4.94	4.90		
Tare (g)	5.60	5.78	5.61		
$W_{Dry\ Soil}$ (g)	19.32	18.96	19.51	Water Content (%)	30.1
Water Content (%)	27.8	26.1	25.1		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	16.78	16.74
$W_{Dry\ Soil}$ + Tare (g)	15.27	15.24
W_{Water} (g)	1.51	1.50
Tare (g)	5.64	5.64
$W_{Dry\ Soil}$ (g)	9.63	9.60
Water Content (%)	15.7	15.6
Average Mc (%)	15.7	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
26	**16**	**10**	**CL**





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Atterberg Limits (ASTM D4318 - Method A)

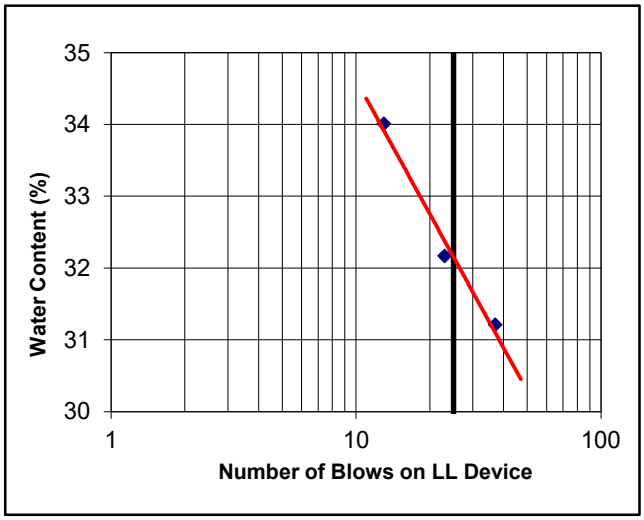
Project Info: 317086-54175 / Resolute Bay,Nanuvat
Reviewed by: S. F.
Client: Worley Canada Services Ltd.
Solum Job No.: 00102250516(186)
Sample Info: ***BH 25-09 SS02 2.70-3.30 m***

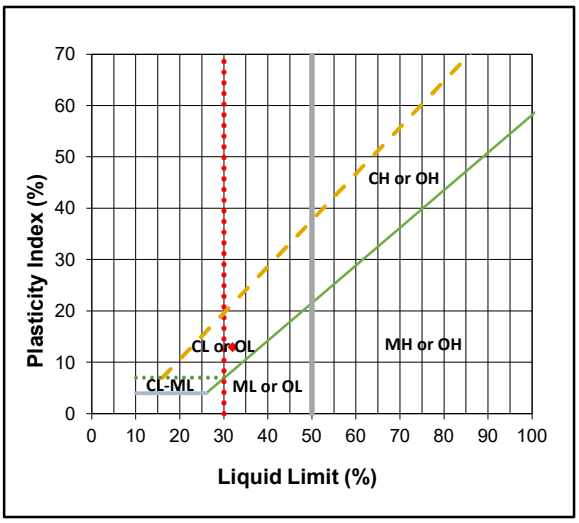
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	13	23	37		
$W_{Wet\ Soil}$ + Tare (g)	32.08	31.45	28.97		
$W_{Dry\ Soil}$ + Tare (g)	25.37	25.19	23.43		
W_{Water} (g)	6.71	6.26	5.54		
Tare (g)	5.64	5.73	5.68		
$W_{Dry\ Soil}$ (g)	19.73	19.46	17.75	Water Content (%)	33.8
Water Content (%)	34.0	32.2	31.2		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	19.82	17.87
$W_{Dry\ Soil}$ + Tare (g)	17.55	15.93
W_{Water} (g)	2.27	1.94
Tare (g)	5.65	5.62
$W_{Dry\ Soil}$ (g)	11.90	10.31
Water Content (%)	19.1	18.8
Average Mc (%)	18.9	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
32	**19**	**13**	**CL**





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Atterberg Limits (ASTM D4318 - Method A)

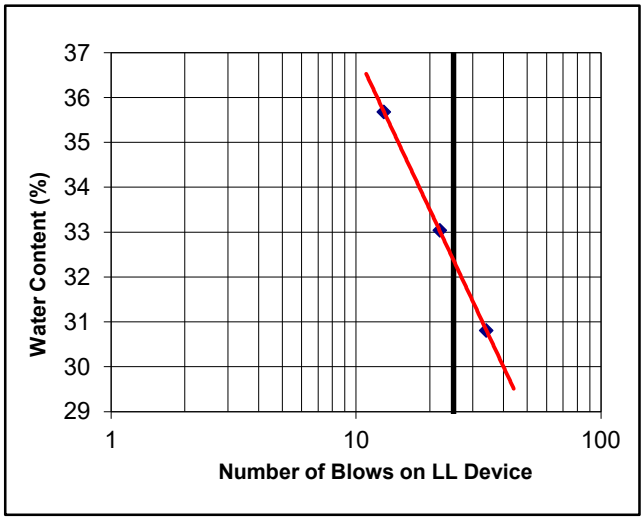
Project Info:	*317086-54175 / Resolute Bay,Nanuvat*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250516(186)*		
Sample Info:	***BH 25-09 ST02 3.43-3.98 m***		

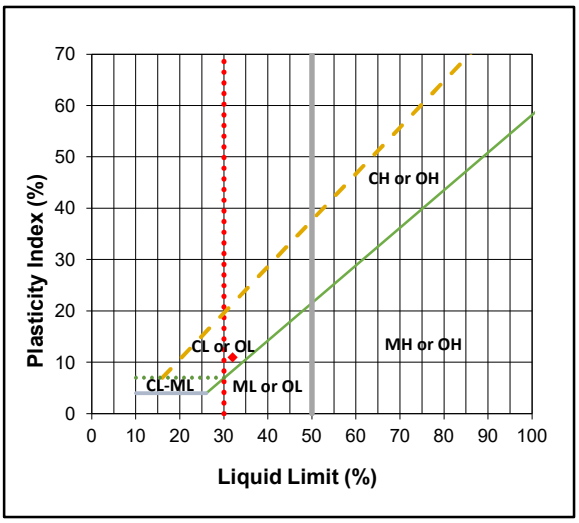
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	13	22	34		
$W_{Wet\ Soil}$ + Tare (g)	32.02	37.32	38.27		
$W_{Dry\ Soil}$ + Tare (g)	25.12	29.49	30.62		
W_{Water} (g)	6.90	7.83	7.65		
Tare (g)	5.78	5.79	5.79		
$W_{Dry\ Soil}$ (g)	19.34	23.70	24.83	Water Content (%)	42.3
Water Content (%)	35.7	33.0	30.8		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	22.41	21.13
$W_{Dry\ Soil}$ + Tare (g)	19.55	18.46
W_{Water} (g)	2.86	2.67
Tare (g)	5.64	5.60
$W_{Dry\ Soil}$ (g)	13.91	12.86
Water Content (%)	20.6	20.8
Average Mc (%)	20.7	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
32	**21**	**11**	**CL**





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Atterberg Limits (ASTM D4318 - Method A)

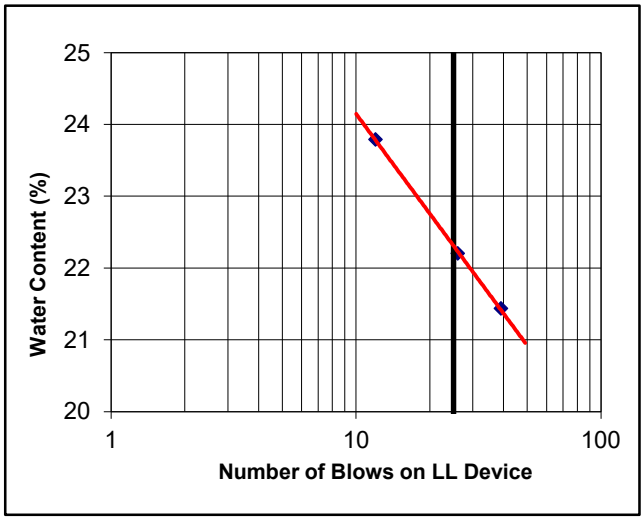
Project Info:	*317086-54175 / Resolute Bay,Nanuvat*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250516(186)*		
Sample Info:	***BH 25-09 SS03 4.88-5.48 m***		

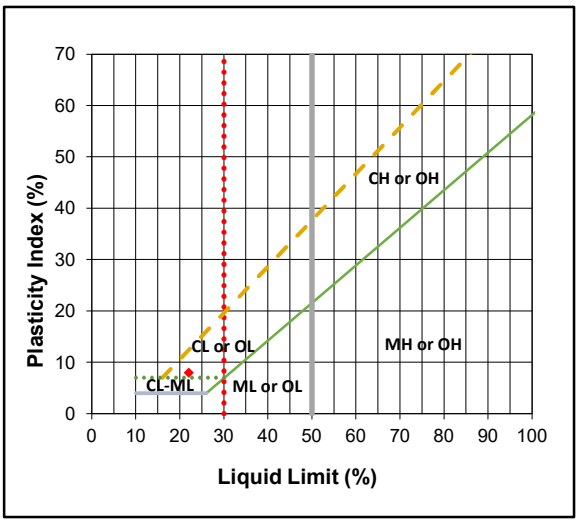
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	12	26	39		
$W_{Wet\ Soil}$ + Tare (g)	41.94	36.86	33.89		
$W_{Dry\ Soil}$ + Tare (g)	35.00	31.20	28.90		
W_{Water} (g)	6.94	5.66	4.99		
Tare (g)	5.83	5.71	5.62		
$W_{Dry\ Soil}$ (g)	29.17	25.49	23.28	Water Content (%)	21.2
Water Content (%)	23.8	22.2	21.4		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	20.81	24.32
$W_{Dry\ Soil}$ + Tare (g)	18.92	22.07
W_{Water} (g)	1.89	2.25
Tare (g)	5.66	5.61
$W_{Dry\ Soil}$ (g)	13.26	16.46
Water Content (%)	14.3	13.7
Average Mc (%)	14.0	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
22	**14**	**8**	**CL**





SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by* *S. F.*

Client: *Worley Canada Services Ltd.*

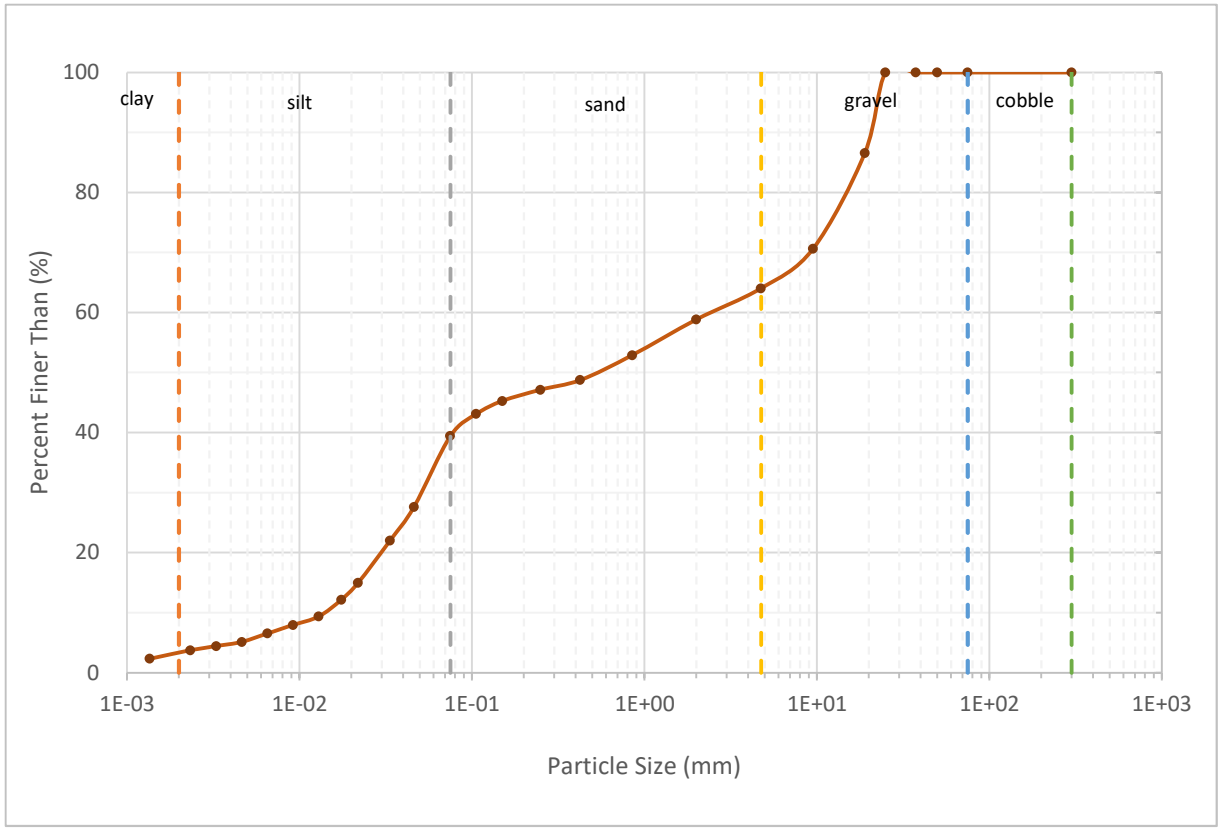
Solum Job No.: *00102250516(186)*

Sample Info: ***BH 25-04*** ***SS01*** ***0.00-0.60 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	100.00
	19.000	86.60
	9.500	70.63
	4.750	64.05
SAND	2.000	58.86
	0.850	52.90
	0.425	48.77
	0.250	47.17
	0.150	45.29
	0.106	43.12
	0.075	39.46
HYDROMETER	0.0462	27.64
	0.0335	22.02
	0.0219	14.99
	0.0175	12.19
	0.0129	9.38
	0.0092	7.97
	0.0065	6.57
	0.0046	5.16
	0.0033	4.46
	0.0023	3.76
	0.0014	2.35

Test Results

Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
(75-300mm)	*(4.75-75mm)*	*(0.075-4.75mm)*	*0.002-0.075mm*	*<0.002mm*
0.0	**36.0**	**24.6**	**35.7**	**3.7**



SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by* *S. F.*

Client: *Worley Canada Services Ltd.*

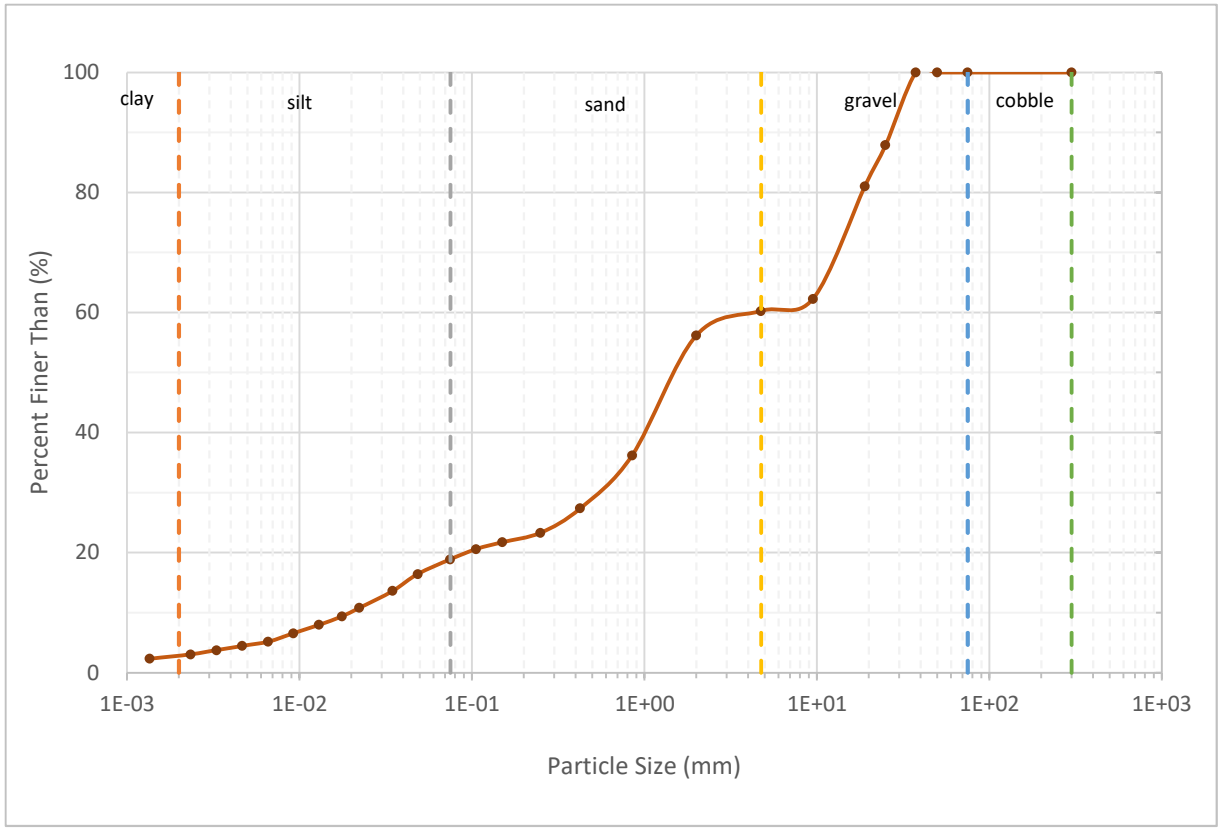
Solum Job No.: *00102250516(186)*

Sample Info: ***BH 25-04*** ***SS02*** ***1.63-2.23 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	87.91
	19.000	81.07
	9.500	62.28
	4.750	60.28
SAND	2.000	56.20
	0.850	36.24
	0.425	27.41
	0.250	23.32
	0.150	21.76
	0.106	20.61
	0.075	18.89
HYDROMETER	0.0486	16.46
	0.0348	13.64
	0.0223	10.82
	0.0177	9.41
	0.0130	8.00
	0.0092	6.59
	0.0066	5.18
	0.0047	4.48
	0.0033	3.77
	0.0023	3.07
	0.0014	2.36

Test Results

Cobbles (%) *(75-300mm)*	Gravel (%) *(4.75-75mm)*	Sand (%) *(0.075-4.75mm)*	Silt (%) *0.002-0.075mm*	Clay (%) *<0.002mm*
0.0	**39.7**	**41.4**	**15.8**	**3.1**



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Particle Size Analysis (ASTM D6913 & D7928)

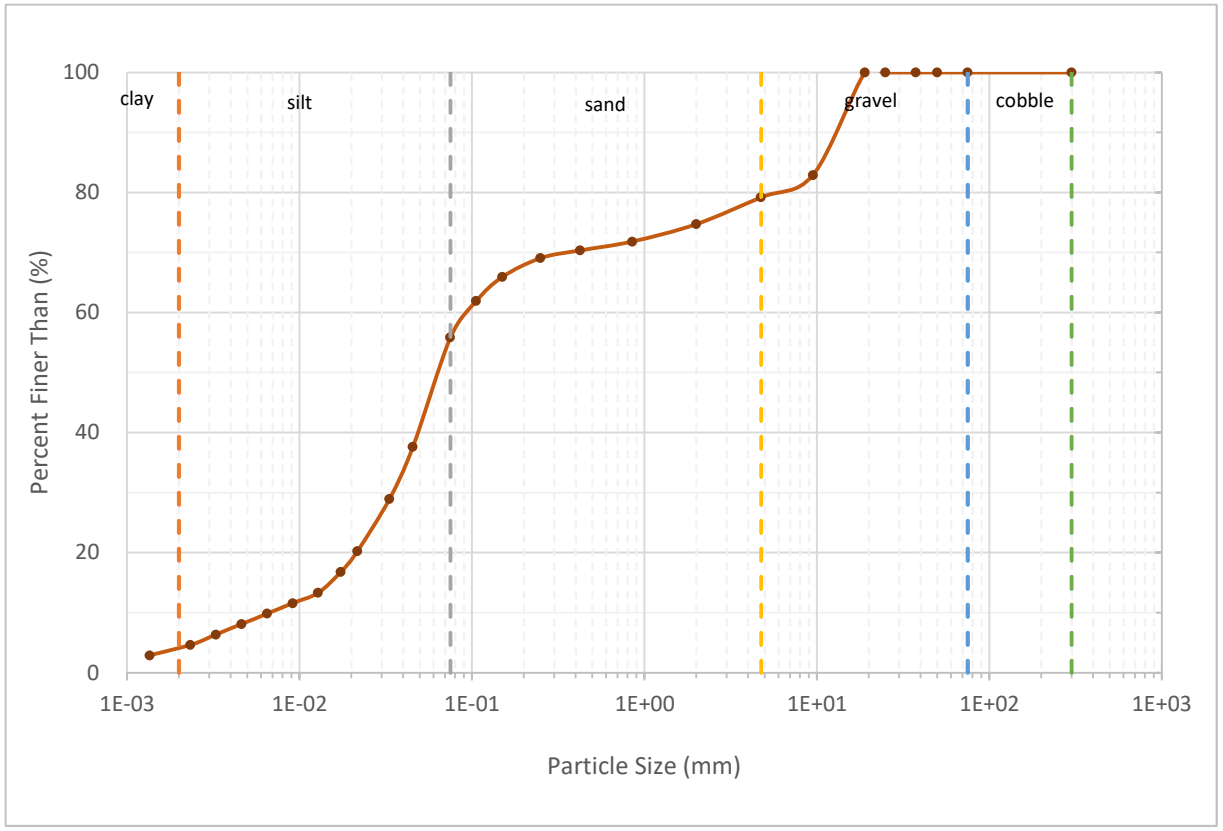
Project Info: *317086-54175 / Resolute Bay,Nanuvat*
Client: *Worley Canada Services Ltd.*
Solum Job No.: *00102250516(186)*
Reviewed by *S. F.*

Sample Info: ***BH 25-05*** ***SS01*** ***0.00-0.60 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	100.00
	19.000	100.00
	9.500	82.92
	4.750	79.22
SAND	2.000	74.74
	0.850	71.84
	0.425	70.38
	0.250	69.09
	0.150	65.94
	0.106	61.95
	0.075	55.86
HYDROMETER	0.0455	37.67
	0.0333	28.98
	0.0217	20.29
	0.0174	16.82
	0.0129	13.34
	0.0091	11.60
	0.0065	9.86
	0.0046	8.13
	0.0033	6.39
	0.0023	4.65
	0.0014	2.91

Test Results

Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
(75-300mm)	*(4.75-75mm)*	*(0.075-4.75mm)*	*0.002-0.075mm*	*<0.002mm*
0.0	**20.8**	**23.4**	**51.2**	**4.6**



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Particle Size Analysis (ASTM D6913 & D7928)

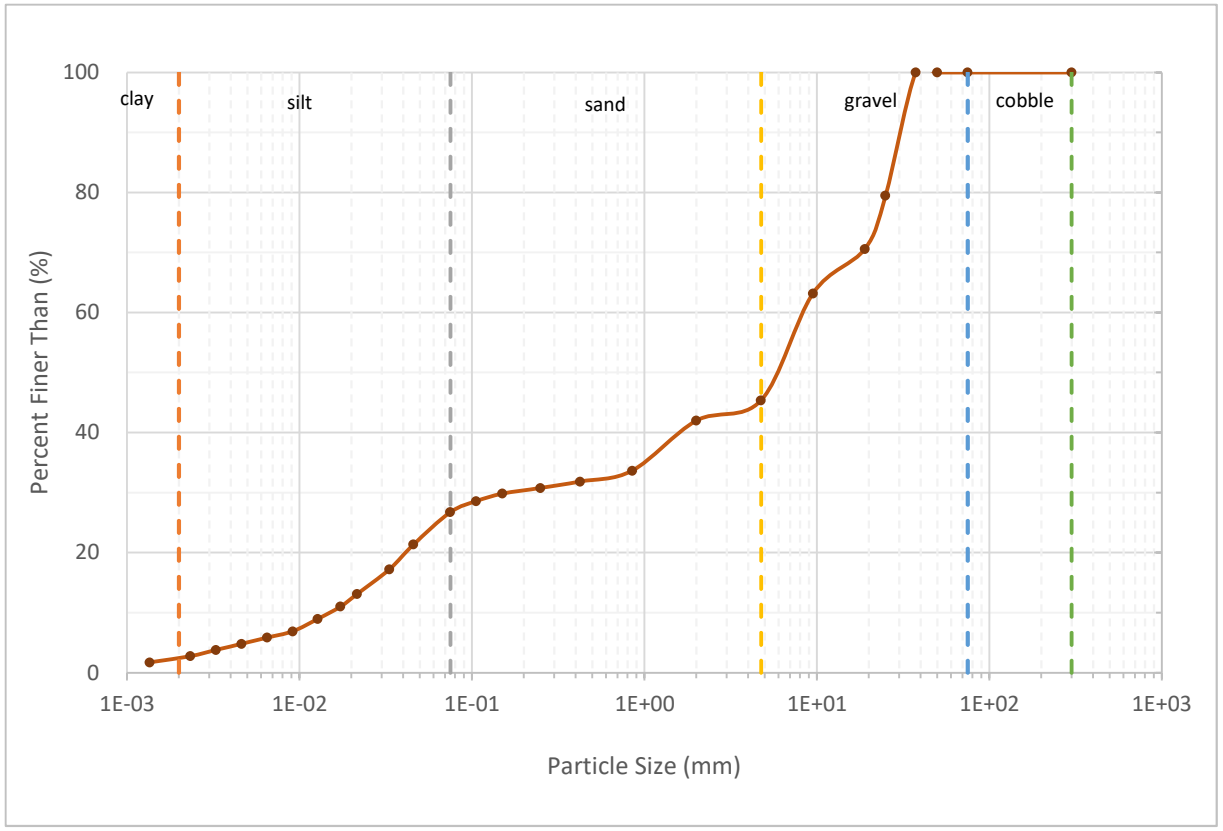
Project Info: 317086-54175 / Resolute Bay,Nanuvat
Client: Worley Canada Services Ltd.
Solum Job No.: 00102250516(186)
Reviewed by S. F.

Sample Info: ***BH 25-05*** ***SS03*** ***2.73-3.30 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	79.52
	19.000	70.60
	9.500	63.20
	4.750	45.40
SAND	2.000	42.00
	0.850	33.67
	0.425	31.87
	0.250	30.78
	0.150	29.85
	0.106	28.60
	0.075	26.76
HYDROMETER	0.0458	21.39
	0.0333	17.25
	0.0216	13.12
	0.0173	11.05
	0.0128	8.98
	0.0091	6.91
	0.0065	5.87
	0.0046	4.84
	0.0033	3.80
	0.0023	2.77
	0.0014	1.73

Test Results

Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
(75-300mm)	*(4.75-75mm)*	*(0.075-4.75mm)*	*0.002-0.075mm*	*<0.002mm*
0.0	**54.6**	**18.6**	**24.0**	**2.8**



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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by* *S. F.*

Client: *Worley Canada Services Ltd.*

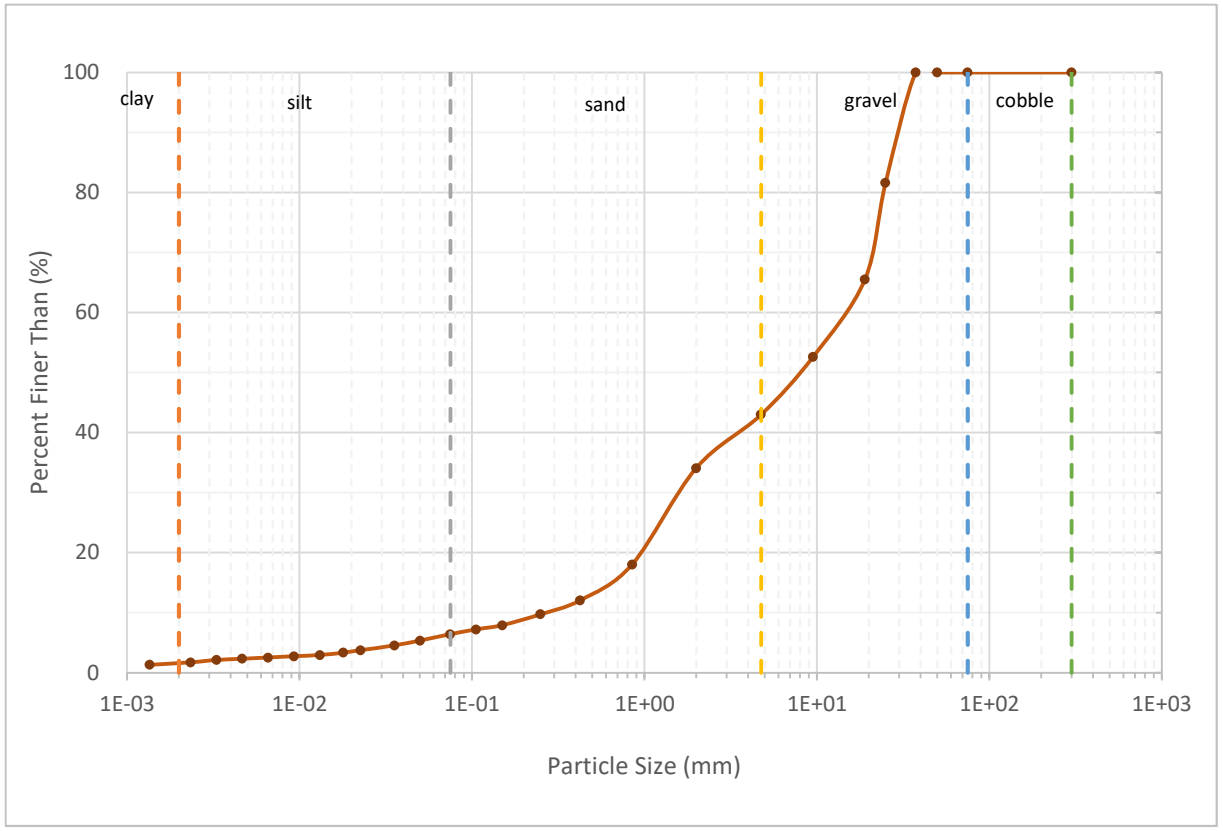
Solum Job No.: *00102250516(186)*

Sample Info: ***BH 25-05*** ***SS05*** ***5.08-5.68 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	81.64
	19.000	65.53
	9.500	52.62
	4.750	43.02
SAND	2.000	34.11
	0.850	18.06
	0.425	12.09
	0.250	9.76
	0.150	7.92
	0.106	7.24
	0.075	6.43
HYDROMETER	0.0501	5.36
	0.0356	4.56
	0.0226	3.75
	0.0180	3.35
	0.0131	2.95
	0.0093	2.75
	0.0066	2.55
	0.0047	2.35
	0.0033	2.15
	0.0023	1.75
	0.0014	1.35

Test Results

Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
(75-300mm)	*(4.75-75mm)*	*(0.075-4.75mm)*	*0.002-0.075mm*	*<0.002mm*
0.0	**57.0**	**36.6**	**4.7**	**1.7**



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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by* *S. F.*

Client: *Worley Canada Services Ltd.*

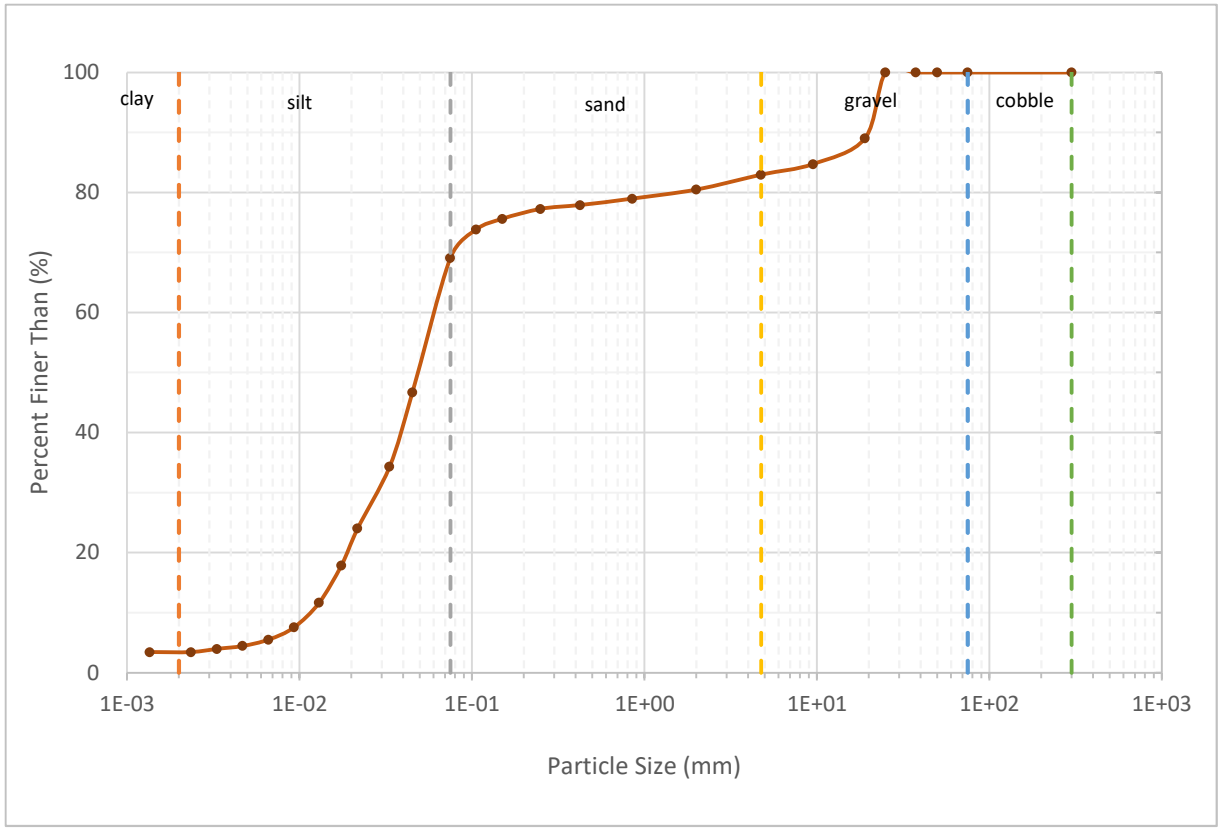
Solum Job No.: *00102250516(186)*

Sample Info: ***BH 25-05A*** ***SS01*** ***0.00-0.60 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	100.00
	19.000	89.03
	9.500	84.74
	4.750	82.97
SAND	2.000	80.50
	0.850	78.97
	0.425	77.92
	0.250	77.26
	0.150	75.63
	0.106	73.86
	0.075	69.10
HYDROMETER	0.0452	46.70
	0.0333	34.35
	0.0217	24.05
	0.0175	17.87
	0.0130	11.69
	0.0093	7.57
	0.0066	5.51
	0.0047	4.48
	0.0033	3.97
	0.0023	3.45
	0.0014	3.45

Test Results

Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
(75-300mm)	*(4.75-75mm)*	*(0.075-4.75mm)*	*0.002-0.075mm*	*<0.002mm*
0.0	**17.0**	**13.9**	**65.7**	**3.4**



SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by* *S. F.*

Client: *Worley Canada Services Ltd.*

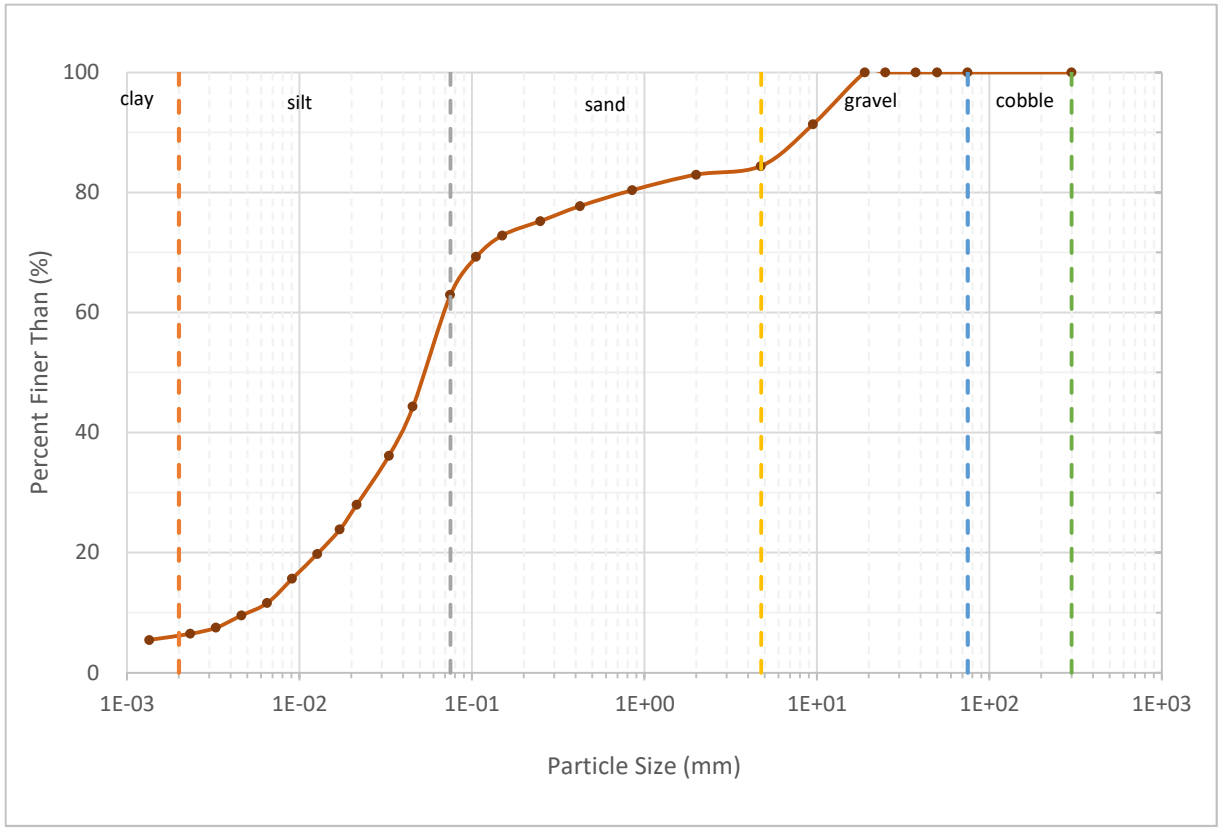
Solum Job No.: *00102250516(186)*

Sample Info: ***BH 25-05A*** ***SS03*** ***1.65-2.25 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	100.00
	19.000	100.00
	9.500	91.37
	4.750	84.42
SAND	2.000	82.97
	0.850	80.39
	0.425	77.75
	0.250	75.26
	0.150	72.86
	0.106	69.30
	0.075	62.96
HYDROMETER	0.0455	44.36
	0.0331	36.18
	0.0215	27.99
	0.0172	23.90
	0.0127	19.80
	0.0091	15.71
	0.0065	11.62
	0.0046	9.57
	0.0033	7.52
	0.0023	6.50
	0.0013	5.47

Test Results

Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
(75-300mm)	*(4.75-75mm)*	*(0.075-4.75mm)*	*0.002-0.075mm*	*<0.002mm*
0.0	**15.6**	**21.5**	**56.5**	**6.4**



SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by* *S. F.*

Client: *Worley Canada Services Ltd.*

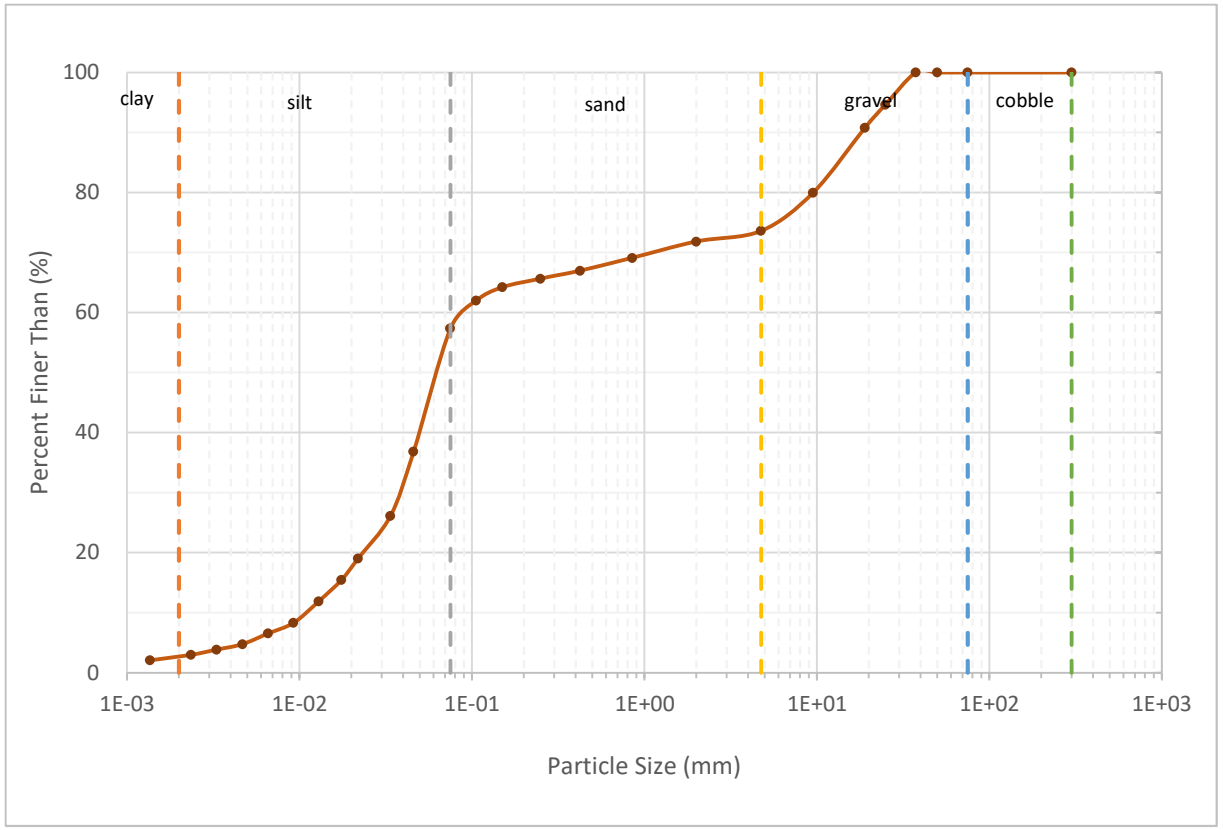
Solum Job No.: *00102250516(186)*

Sample Info: ***BH 25-06*** ***SS01*** ***0.00-0.60 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	94.66
	19.000	90.80
	9.500	79.98
	4.750	73.63
SAND	2.000	71.85
	0.850	69.12
	0.425	66.98
	0.250	65.66
	0.150	64.24
	0.106	62.03
	0.075	57.36
HYDROMETER	0.0458	36.85
	0.0337	26.16
	0.0219	19.03
	0.0175	15.46
	0.0129	11.90
	0.0092	8.33
	0.0066	6.55
	0.0047	4.77
	0.0033	3.88
	0.0023	2.99
	0.0014	2.09

Test Results

Cobbles (%) *(75-300mm)*	Gravel (%) *(4.75-75mm)*	Sand (%) *(0.075-4.75mm)*	Silt (%) *0.002-0.075mm*	Clay (%) *<0.002mm*
0.0	**26.4**	**16.3**	**54.4**	**2.9**



SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by* *S. F.*

Client: *Worley Canada Services Ltd.*

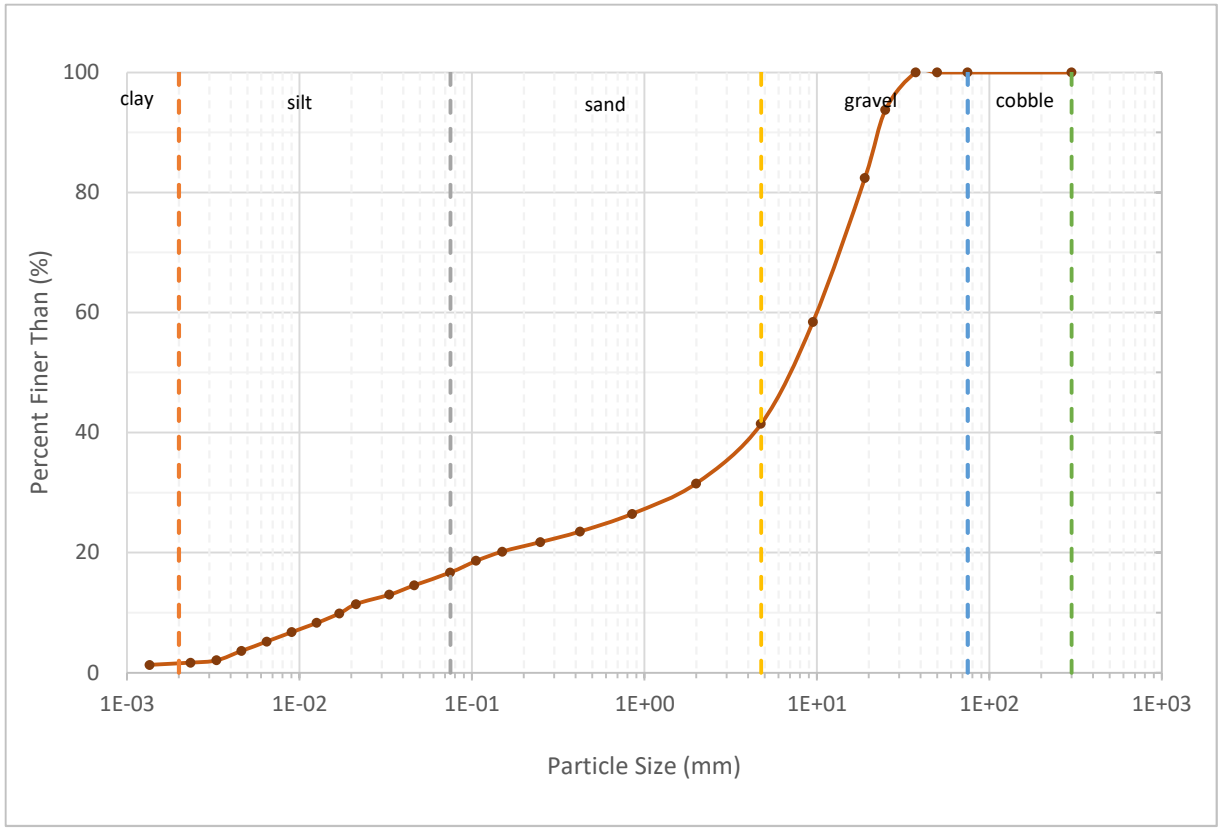
Solum Job No.: *00102250516(186)*

Sample Info: ***BH 25-06*** ***SS03*** ***1.39-1.99 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	93.81
	19.000	82.42
	9.500	58.46
	4.750	41.49
SAND	2.000	31.53
	0.850	26.48
	0.425	23.54
	0.250	21.77
	0.150	20.19
	0.106	18.67
	0.075	16.71
HYDROMETER	0.0465	14.57
	0.0333	13.01
	0.0213	11.45
	0.0171	9.89
	0.0126	8.33
	0.0090	6.77
	0.0065	5.21
	0.0046	3.65
	0.0033	2.09
	0.0023	1.70
	0.0014	1.31

Test Results

Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
(75-300mm)	*(4.75-75mm)*	*(0.075-4.75mm)*	*0.002-0.075mm*	*<0.002mm*
0.0	**58.5**	**24.8**	**15.0**	**1.7**



SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by* *S. F.*

Client: *Worley Canada Services Ltd.*

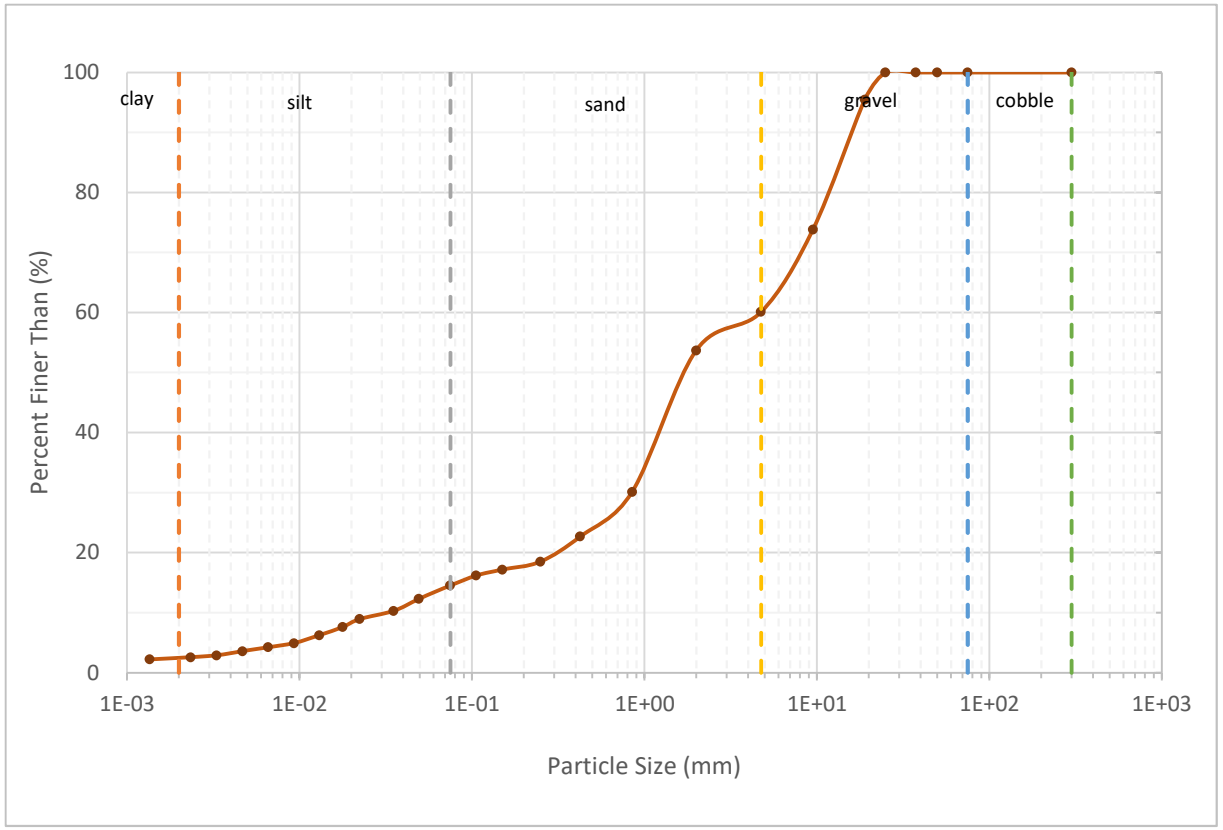
Solum Job No.: *00102250516(186)*

Sample Info: ***BH 25-07*** ***SS01*** ***0.00-0.60 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	100.00
	19.000	95.52
	9.500	73.87
	4.750	60.15
SAND	2.000	53.70
	0.850	30.14
	0.425	22.73
	0.250	18.52
	0.150	17.19
	0.106	16.22
	0.075	14.55
HYDROMETER	0.0493	12.33
	0.0352	10.31
	0.0224	8.97
	0.0178	7.63
	0.0131	6.28
	0.0093	4.94
	0.0066	4.27
	0.0047	3.59
	0.0033	2.92
	0.0023	2.59
	0.0014	2.25

Test Results

Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
(75-300mm)	*(4.75-75mm)*	*(0.075-4.75mm)*	*0.002-0.075mm*	*<0.002mm*
0.0	**39.9**	**45.6**	**12.0**	**2.5**



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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by* *S. F.*

Client: *Worley Canada Services Ltd.*

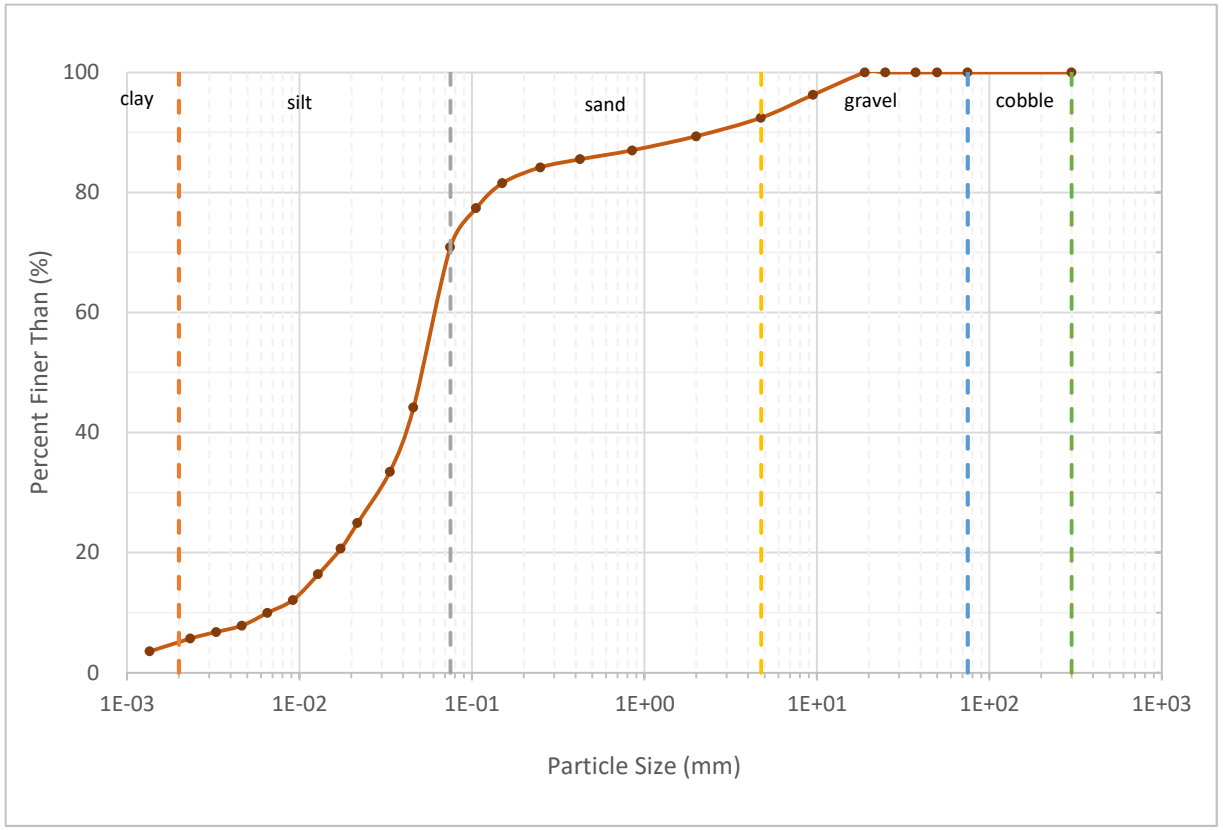
Solum Job No.: *00102250516(186)*

Sample Info: ***BH 25-08*** ***SS01*** ***0.03-0.63 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	100.00
	19.000	100.00
	9.500	96.28
	4.750	92.47
SAND	2.000	89.38
	0.850	87.03
	0.425	85.56
	0.250	84.21
	0.150	81.58
	0.106	77.41
	0.075	70.93
HYDROMETER	0.0458	44.21
	0.0335	33.52
	0.0217	24.97
	0.0174	20.69
	0.0129	16.41
	0.0092	12.14
	0.0065	10.00
	0.0046	7.86
	0.0033	6.79
	0.0023	5.72
	0.0014	3.58

Test Results

Cobbles (%) *(75-300mm)*	Gravel (%) *(4.75-75mm)*	Sand (%) *(0.075-4.75mm)*	Silt (%) *0.002-0.075mm*	Clay (%) *<0.002mm*
0.0	**7.5**	**21.5**	**65.2**	**5.8**



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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by* *S. F.*

Client: *Worley Canada Services Ltd.*

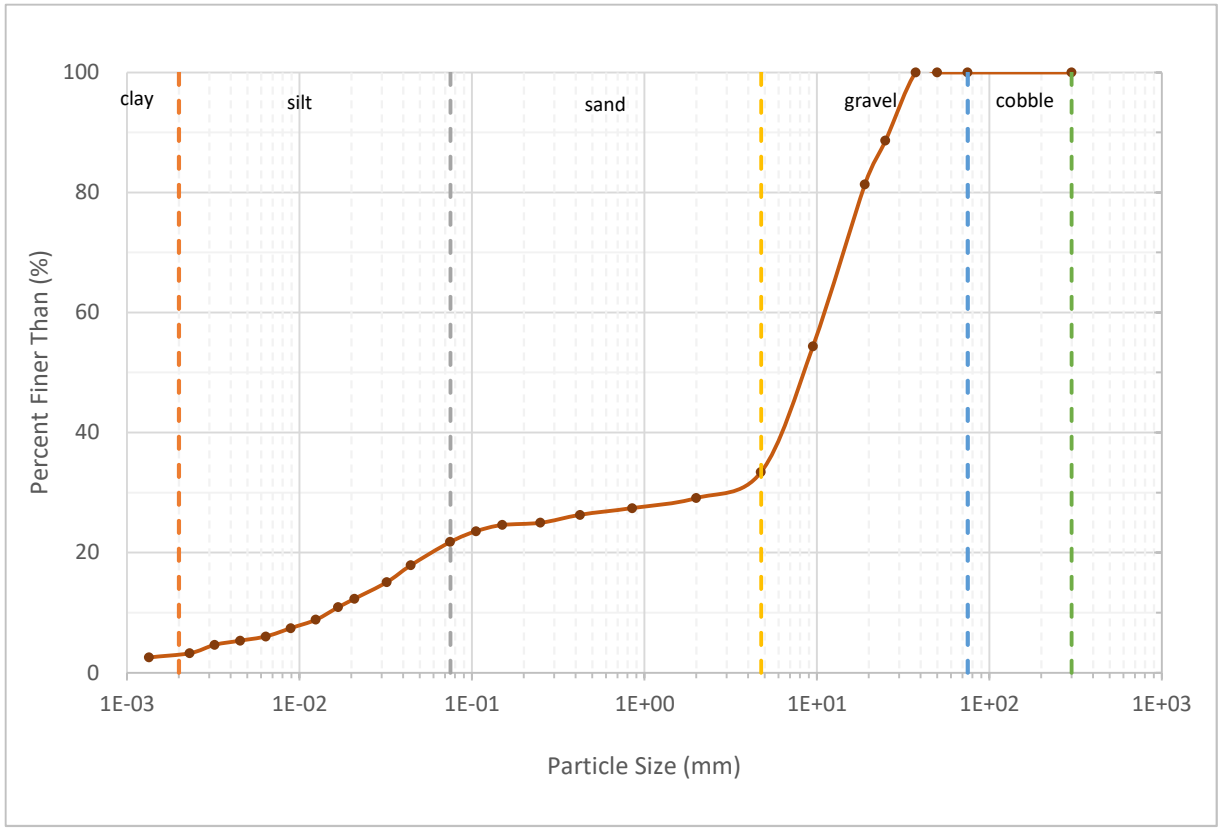
Solum Job No.: *00102250516(186)*

Sample Info: ***BH 25-08*** ***SS04*** ***2.29-2.89 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	88.67
	19.000	81.36
	9.500	54.40
	4.750	33.44
SAND	2.000	29.11
	0.850	27.43
	0.425	26.33
	0.250	25.00
	0.150	24.62
	0.106	23.59
	0.075	21.82
HYDROMETER	0.0442	17.91
	0.0322	15.12
	0.0209	12.33
	0.0168	10.94
	0.0125	8.84
	0.0089	7.45
	0.0064	6.05
	0.0045	5.36
	0.0032	4.66
	0.0023	3.26
	0.0013	2.56

Test Results

Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
(75-300mm)	*(4.75-75mm)*	*(0.075-4.75mm)*	*0.002-0.075mm*	*<0.002mm*
0.0	**66.6**	**11.6**	**18.6**	**3.2**



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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by* *S. F.*

Client: *Worley Canada Services Ltd.*

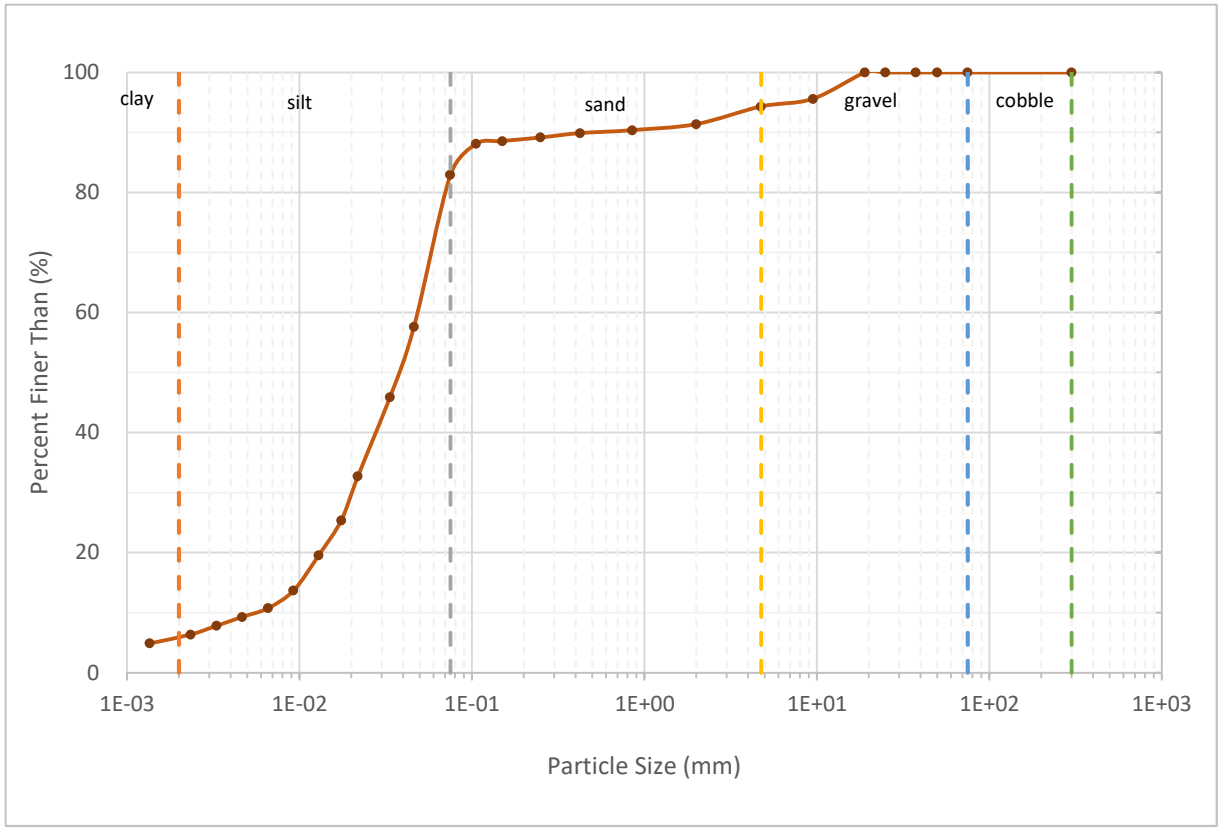
Solum Job No.: *00102250516(186)*

Sample Info: ***BH 25-09*** ***SS01*** ***0.00-0.60 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	100.00
	19.000	100.00
	9.500	95.61
	4.750	94.33
SAND	2.000	91.39
	0.850	90.39
	0.425	89.90
	0.250	89.19
	0.150	88.58
	0.106	88.14
	0.075	82.95
HYDROMETER	0.0462	57.65
	0.0335	45.93
	0.0218	32.74
	0.0175	25.42
	0.0129	19.56
	0.0092	13.70
	0.0066	10.77
	0.0047	9.30
	0.0033	7.84
	0.0023	6.37
	0.0014	4.91

Test Results

Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
(75-300mm)	*(4.75-75mm)*	*(0.075-4.75mm)*	*0.002-0.075mm*	*<0.002mm*
0.0	**5.7**	**11.4**	**76.6**	**6.3**



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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

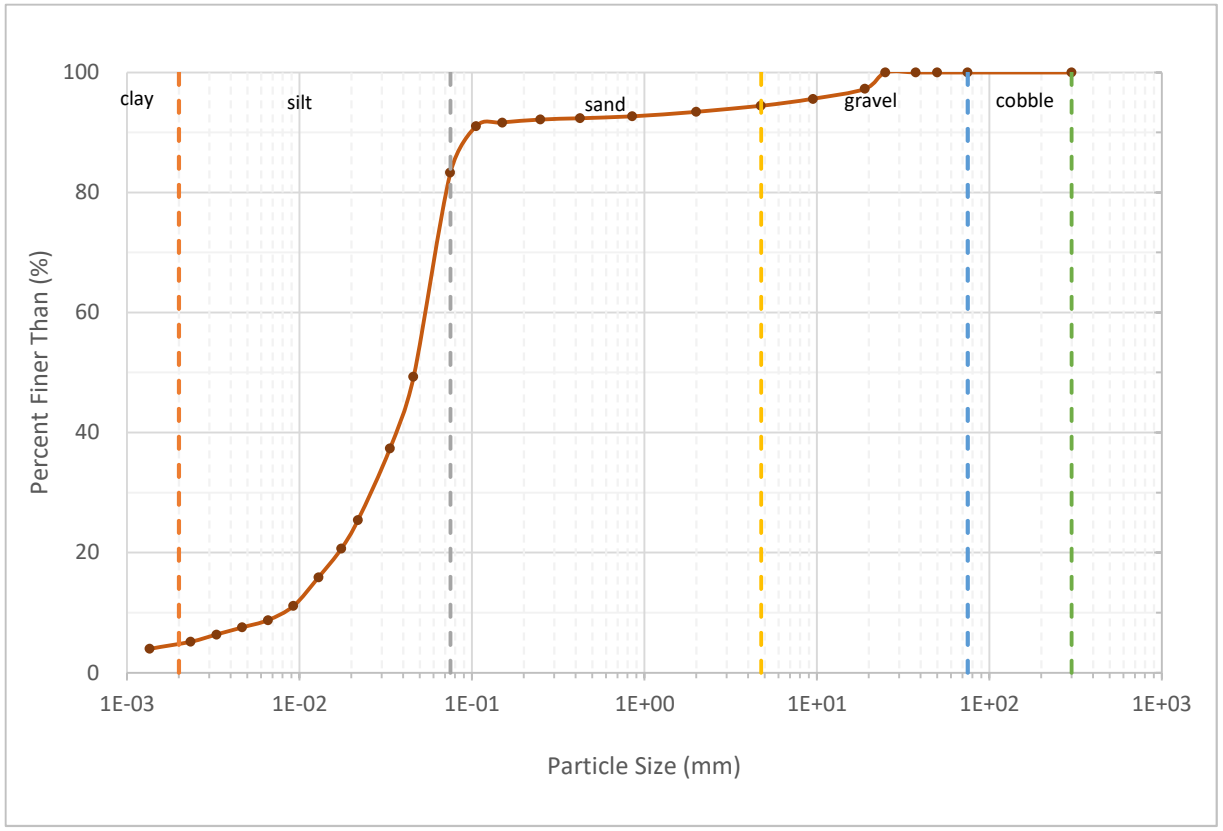
Project Info: 317086-54175 / Resolute Bay,Nanuvat
Client: Worley Canada Services Ltd.
Solum Job No.: 00102250516(186)
Reviewed by S. F.

Sample Info: ***BH 25-09*** ***ST01*** ***0.72-1.62 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	100.00
	19.000	97.28
	9.500	95.61
	4.750	94.47
SAND	2.000	93.46
	0.850	92.70
	0.425	92.39
	0.250	92.17
	0.150	91.67
	0.106	91.08
	0.075	83.33
HYDROMETER	0.0458	49.31
	0.0335	37.38
	0.0219	25.46
	0.0175	20.69
	0.0129	15.92
	0.0092	11.15
	0.0066	8.76
	0.0047	7.57
	0.0033	6.38
	0.0023	5.19
	0.0014	3.99

Test Results

Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
(75-300mm)	*(4.75-75mm)*	*(0.075-4.75mm)*	*0.002-0.075mm*	*<0.002mm*
0.0	**5.5**	**11.1**	**78.1**	**5.3**



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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by* *S. F.*

Client: *Worley Canada Services Ltd.*

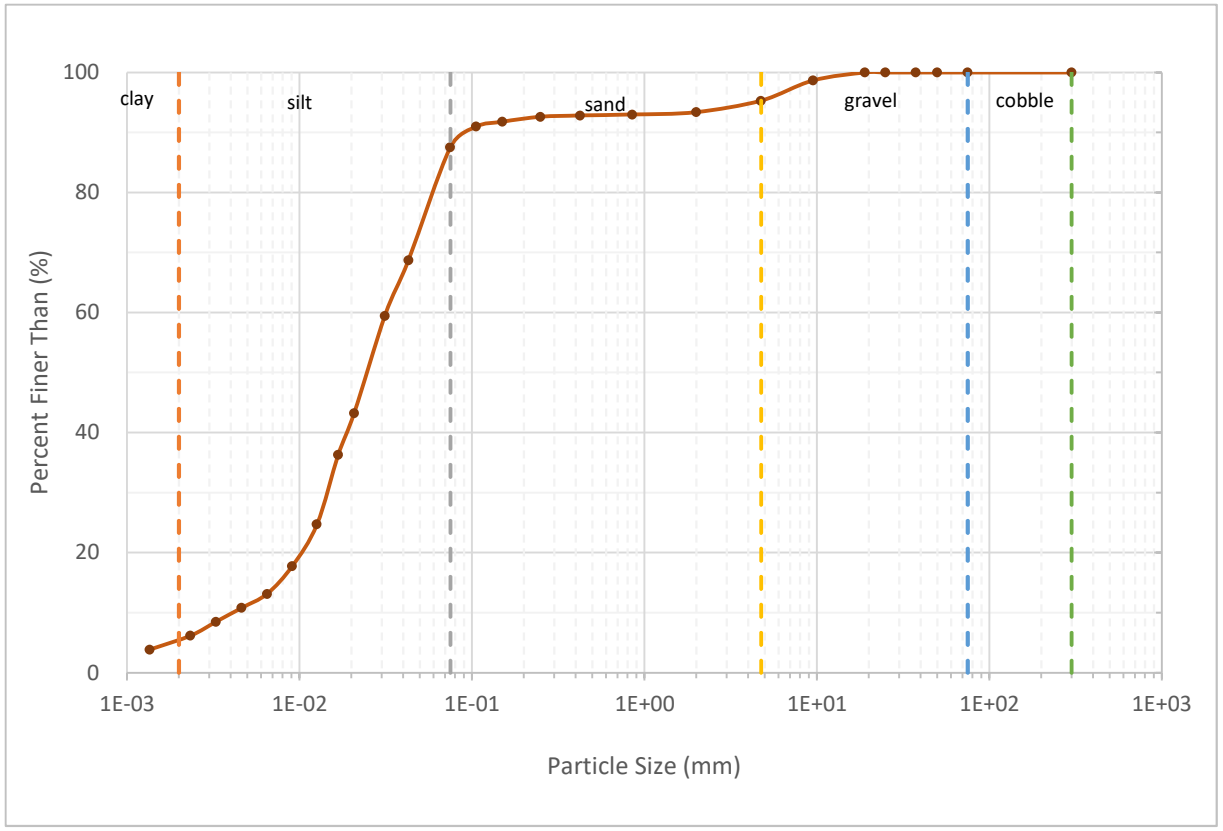
Solum Job No.: *00102250516(186)*

Sample Info: ***BH 25-09*** ***SS02*** ***2.7-3.3 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	100.00
	19.000	100.00
	9.500	98.69
	4.750	95.31
SAND	2.000	93.41
	0.850	92.99
	0.425	92.83
	0.250	92.62
	0.150	91.81
	0.106	91.00
	0.075	87.57
HYDROMETER	0.0429	68.75
	0.0313	59.48
	0.0208	43.27
	0.0168	36.31
	0.0126	24.73
	0.0091	17.78
	0.0065	13.15
	0.0046	10.83
	0.0033	8.51
	0.0023	6.20
	0.0014	3.88

Test Results

Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
(75-300mm)	*(4.75-75mm)*	*(0.075-4.75mm)*	*0.002-0.075mm*	*<0.002mm*
0.0	**4.7**	**7.7**	**81.4**	**6.2**



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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by* *S. F.*

Client: *Worley Canada Services Ltd.*

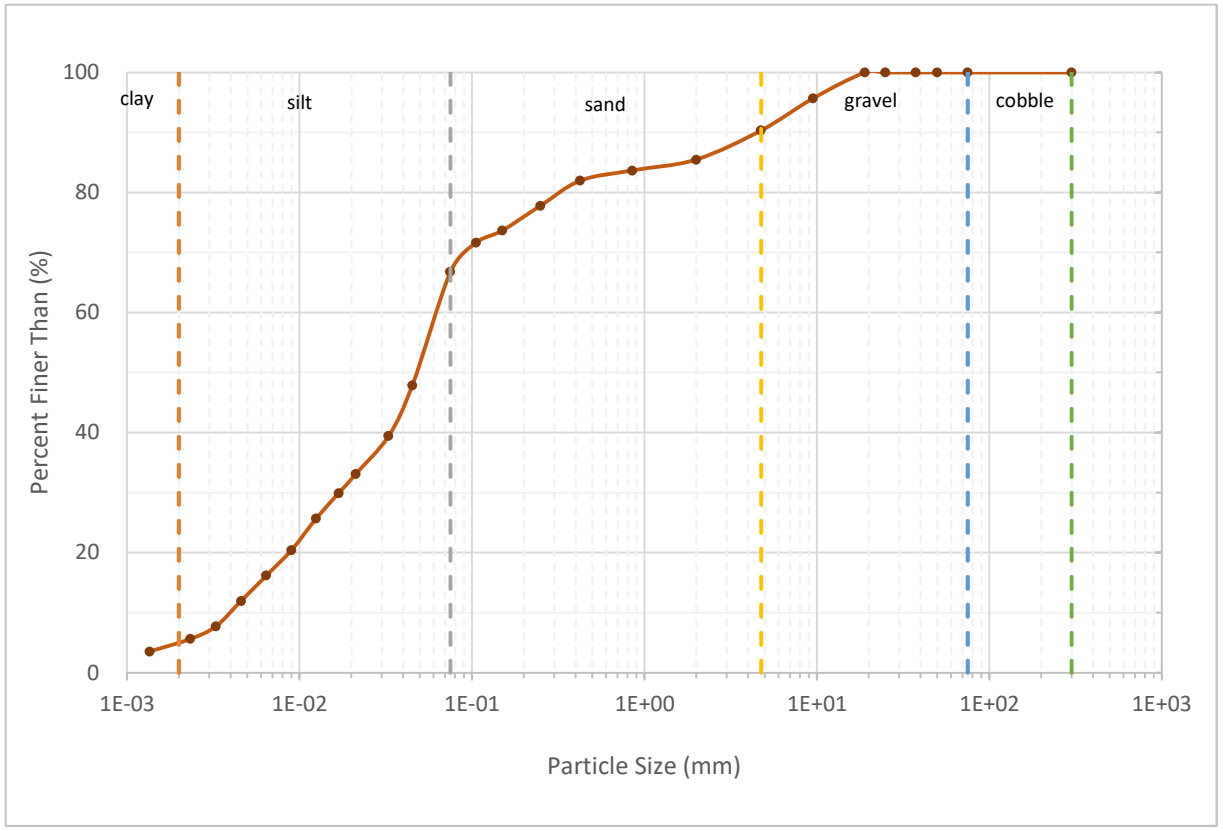
Solum Job No.: *00102250516(186)*

Sample Info: ***BH 25-09*** ***SS03*** ***4.88-5.48 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	100.00
	19.000	100.00
	9.500	95.70
	4.750	90.36
SAND	2.000	85.49
	0.850	83.68
	0.425	81.99
	0.250	77.81
	0.150	73.69
	0.106	71.68
	0.075	66.80
HYDROMETER	0.0452	47.89
	0.0329	39.44
	0.0212	33.11
	0.0169	29.94
	0.0125	25.71
	0.0090	20.43
	0.0064	16.21
	0.0046	11.99
	0.0033	7.76
	0.0023	5.65
	0.0014	3.54

Test Results

Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
(75-300mm)	*(4.75-75mm)*	*(0.075-4.75mm)*	*0.002-0.075mm*	*<0.002mm*
0.0	**9.6**	**23.6**	**61.2**	**5.6**



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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by* *S. F.*

Client: *Worley Canada Services Ltd.*

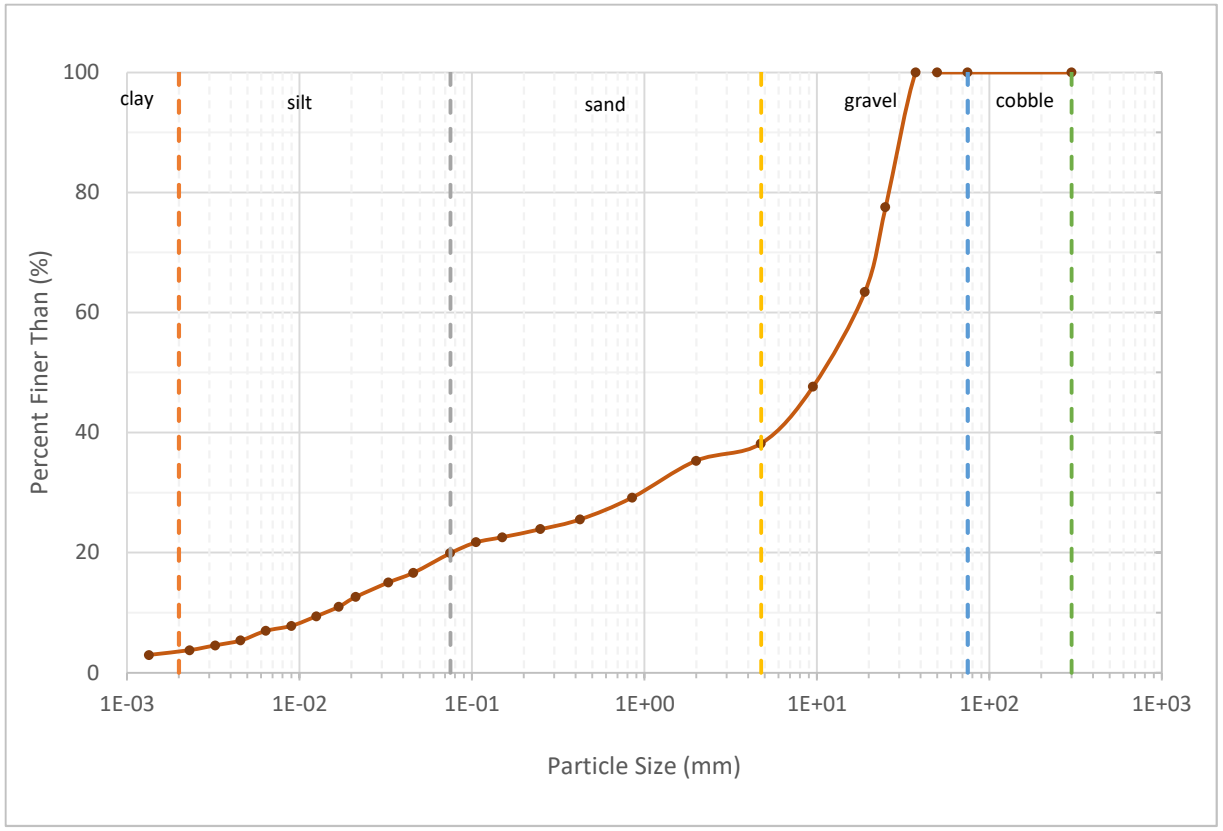
Solum Job No.: *00102250516(186)*

Sample Info: ***BH 25-09*** ***SS04*** ***5.63-6.23 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	100.00
	37.500	100.00
	25.000	77.56
	19.000	63.45
	9.500	47.67
	4.750	38.19
SAND	2.000	35.32
	0.850	29.20
	0.425	25.56
	0.250	23.93
	0.150	22.57
	0.106	21.75
	0.075	19.95
HYDROMETER	0.0458	16.67
	0.0329	15.06
	0.0212	12.64
	0.0170	11.03
	0.0125	9.41
	0.0090	7.80
	0.0064	6.99
	0.0046	5.38
	0.0032	4.58
	0.0023	3.77
	0.0013	2.96

Test Results

Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
(75-300mm)	*(4.75-75mm)*	*(0.075-4.75mm)*	*0.002-0.075mm*	*<0.002mm*
0.0	**61.8**	**18.2**	**16.2**	**3.8**



SOLUM™
CONSULTANTS LTD.

GEOTECHNICAL & MATERIAL
TESTING LABORATORY

Client:	Worley Canada Services Ltd.
Project Number:	317086-54175
Project Name:	Resolute Bay,Nanuvat
Solum Job No.:	00102250516(186)
Borehole ID:	BH25-09
Sample ID:	ST01
Depth:	0.72-1.62 m
Reporting Date:	14-Jun-25

Test Requested: [X] 1-D Consolidation

CONSOLIDATION TEST DATA

2025-06-14

Client: Worley
Project: Resolute Bay
Project Number: 31708654175
Location: BH25-09
Depth: 0.72-1.62 m **Sample Number:** ST01

Test Specimen Data

NATURAL MOISTURE

Wet w+t = 137.41 g.
Dry w+t = 114.20 g.
Tare Wt. = 25.13 g.
Moisture = 26.1 %

VOID RATIO

Spec. Gr. = 2.7
Est. Ht. Solids = 0.449 in.
Init. V.R. = 0.753
Init. Sat. = 93.4 %

AFTER TEST

Wet w+t = 158.94 g.
Dry w+t = 136.06 g.
Tare Wt. = 43.00 g.
Moisture = 24.6 %

UNIT WEIGHT

Height = 0.787 in.
Diameter = 2.433 in.
Weight = 116.39 g.
Dry Dens. = 1540 kg/m^3

TEST START

Height = 0.787 in.
Diameter = 2.433 in.

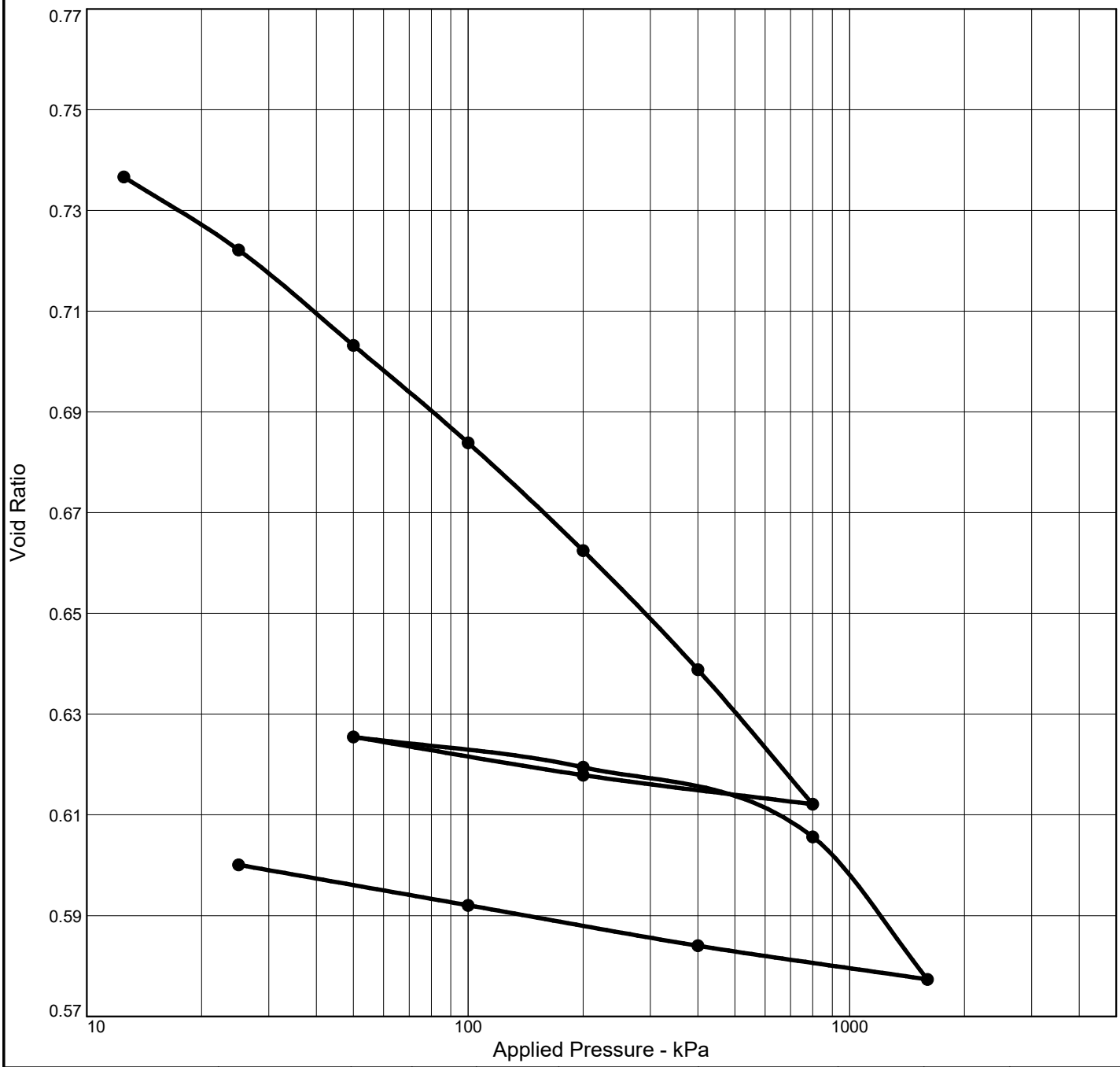
Dry Wt. = 93.06 g.

End-Of-Load Summary

Pressure (kPa)	Final Dial (in.)	Deformation (in.)	C_v (cm.^{2}/sec.)	C_α	Void Ratio	% Strain
start	0.00000	0.00000			0.753	
12.5	-0.00750	0.00750	0.0093		0.737	1.0 Comprs.
25.0	-0.01400	0.01400	0.0027		0.722	1.8 Comprs.
50.0	-0.02250	0.02250	0.0015		0.703	2.9 Comprs.
100.0	-0.03120	0.03120	0.0031		0.684	4.0 Comprs.
200.0	-0.04080	0.04080	0.0022		0.662	5.2 Comprs.
400.0	-0.05140	0.05140	0.0031		0.639	6.5 Comprs.
800.0	-0.06340	0.06340	0.0012		0.612	8.1 Comprs.
200.0	-0.06080	0.06080	0.0277		0.618	7.7 Comprs.
50.0	-0.05740	0.05740	0.0027		0.625	7.3 Comprs.
200.0	-0.06010	0.06010	0.0036		0.619	7.6 Comprs.
800.0	-0.06630	0.06630	0.0019		0.606	8.4 Comprs.
1600.0	-0.07900	0.07900	0.0013		0.577	10.0 Comprs.
400.0	-0.07600	0.07600	0.0480		0.584	9.7 Comprs.
100.0	-0.07240	0.07240	0.0053		0.592	9.2 Comprs.
25.0	-0.06880	0.06880	0.0065		0.600	8.7 Comprs.

Compression index (C_C), kPa = 0.06 **Preconsolidation pressure (P_p), kPa =** 25 **Void ratio at P_p (e_m) =** 0.722
Recompression index (C_r) = 0.01

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (kg/m^3)	LL	PI	Sp. Gr.	Overburden (kPa)	P_c (kPa)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
93.4 %	26.1 %	1540			2.7		25	0.06	0.01	0.753

MATERIAL DESCRIPTION	USCS	AASHTO

Project No. 31708654175 **Client:** Worley

Project: Resolute Bay

Source of Sample: BH25-09 **Depth:** 0.72-1.62 m **Sample Number:** ST01

Remarks:

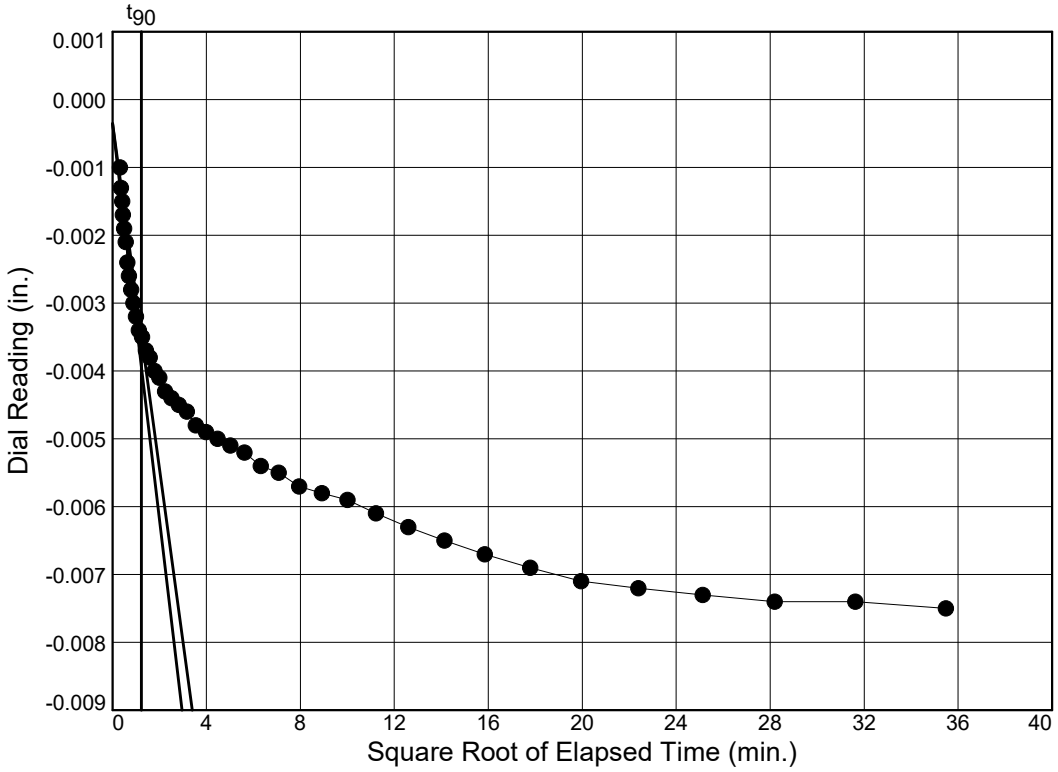
SOLUM CONSULTANTS LTD
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Figure

Dial Reading vs. Time

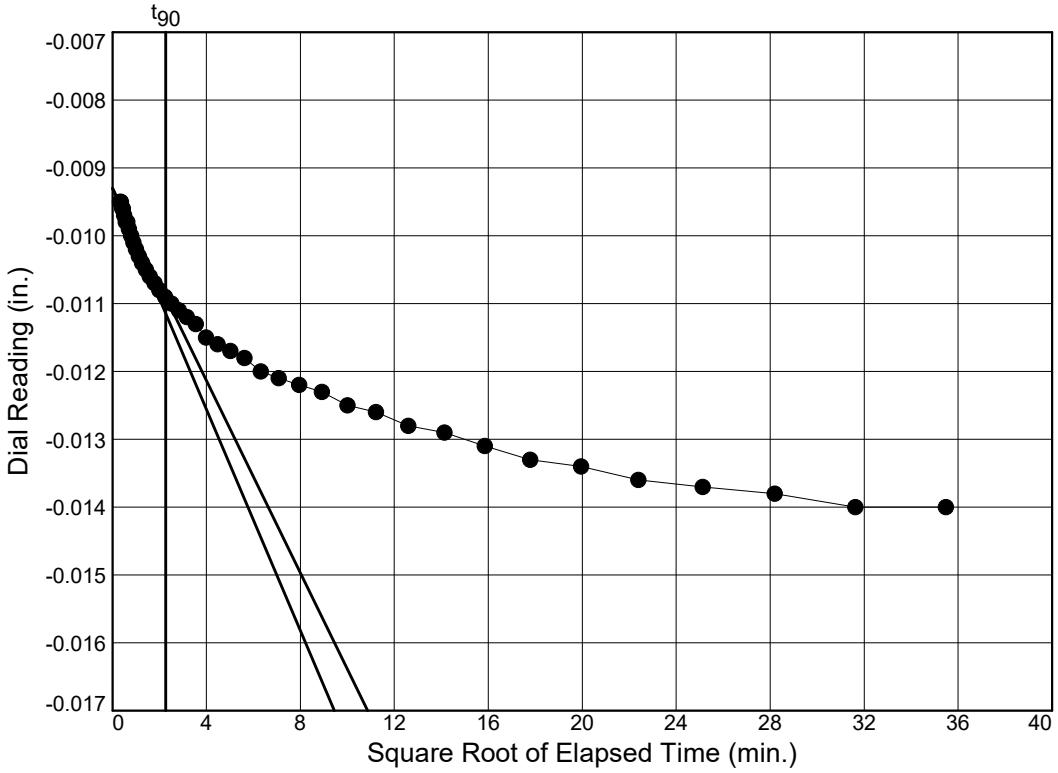
Project No.: 31708654175
Project: Resolute Bay

Source of Sample: BH25-09 Depth: 0.72-1.62 m Sample Number: ST01



Load No.= 1
Load= 12.5 kPa
D_0 = -0.0004
D_{90} = -0.0035
D_{100} = -0.0038
T_{90} = 1.51 min.

C_v @ T_{90}
0.0093 $cm.^2/sec.$



Load No.= 2
Load= 25.0 kPa
D_0 = -0.0093
D_{90} = -0.0109
D_{100} = -0.0111
T_{90} = 5.16 min.

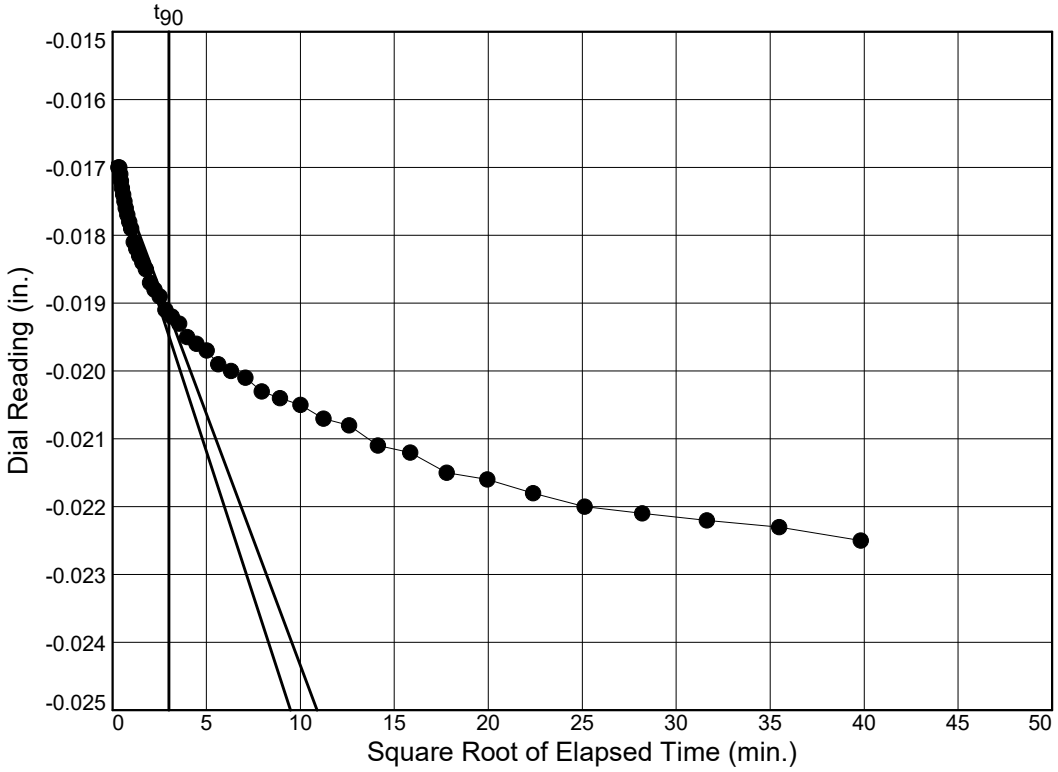
C_v @ T_{90}
0.0027 $cm.^2/sec.$

Figure

Dial Reading vs. Time

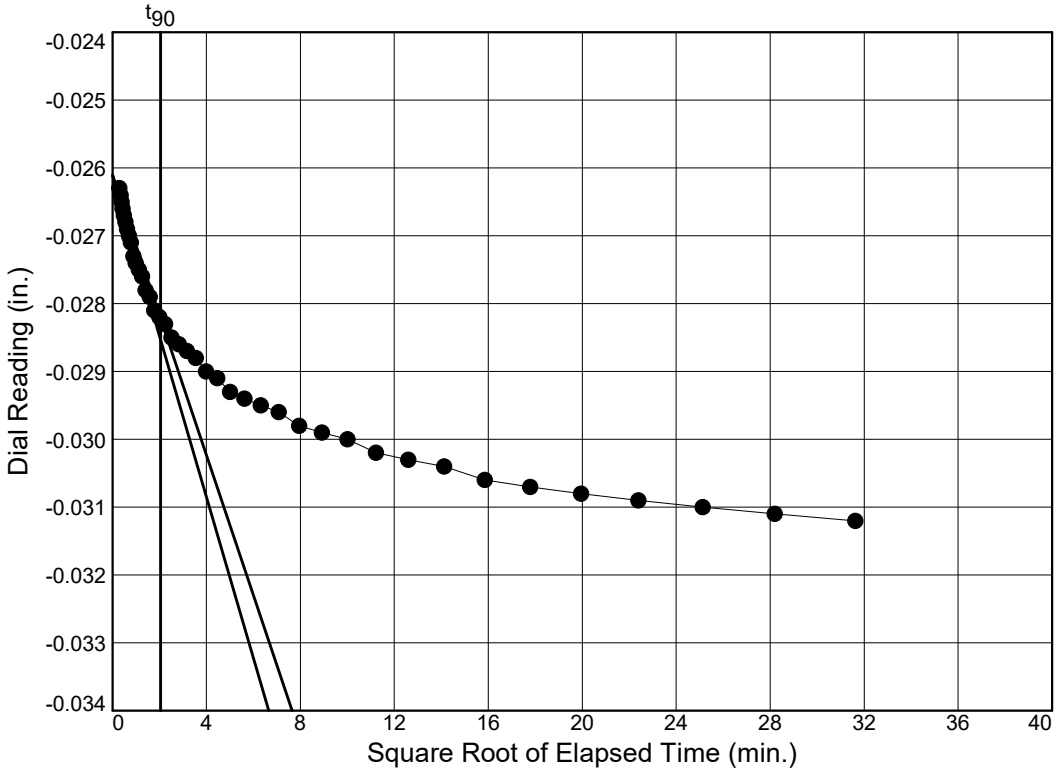
Project No.: 31708654175
Project: Resolute Bay

Source of Sample: BH25-09 Depth: 0.72-1.62 m Sample Number: ST01



Load No.= 3
Load= 50.0 kPa
D_0 = -0.0169
D_{90} = -0.0192
D_{100} = -0.0194
T_{90} = 9.00 min.

C_v @ T_{90}
0.0015 $cm.^2/sec.$



Load No.= 4
Load= 100.0 kPa
D_0 = -0.0261
D_{90} = -0.0282
D_{100} = -0.0285
T_{90} = 4.19 min.

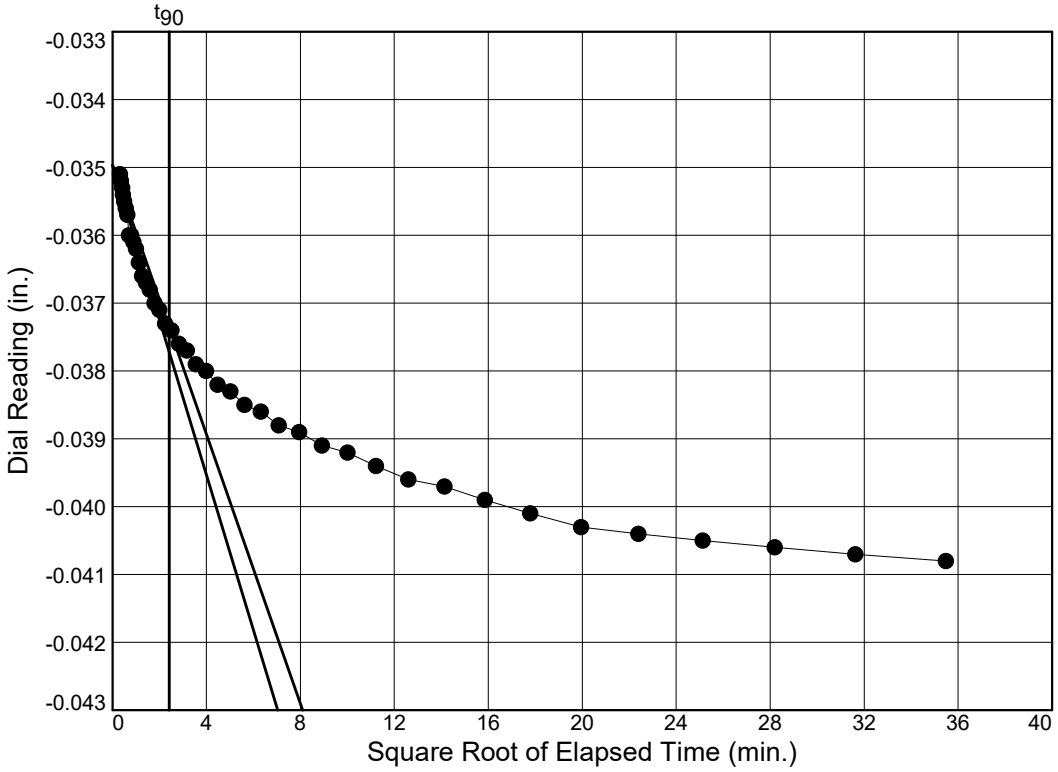
C_v @ T_{90}
0.0031 $cm.^2/sec.$

Figure

Dial Reading vs. Time

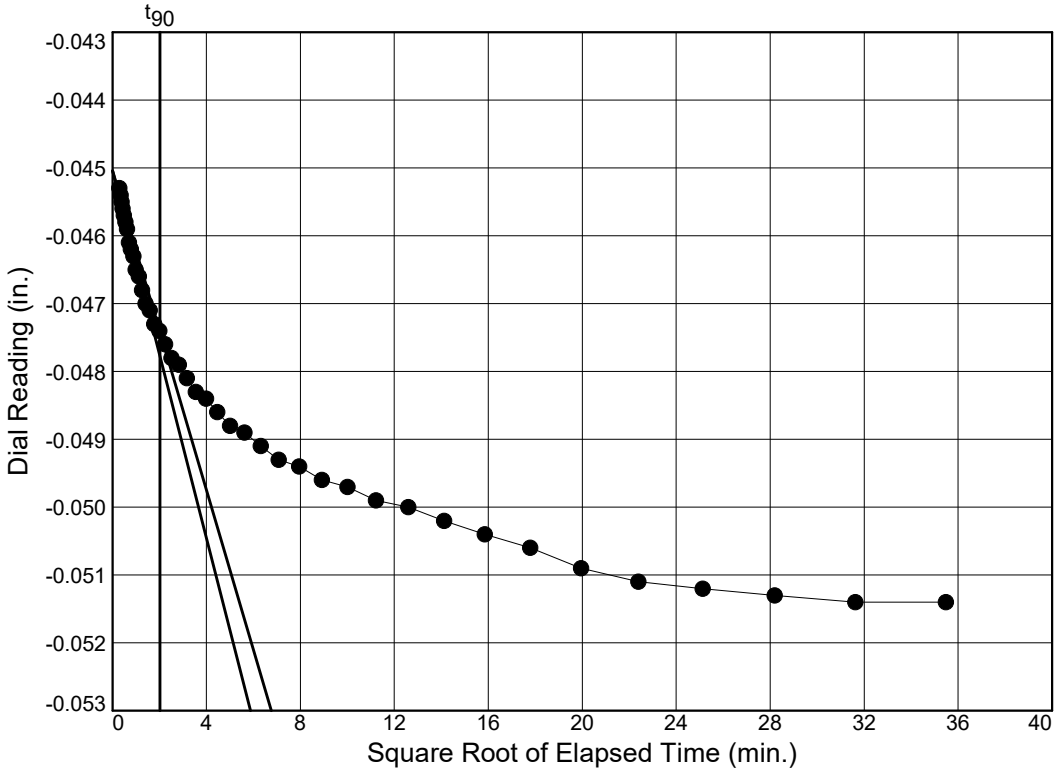
Project No.: 31708654175
Project: Resolute Bay

Source of Sample: BH25-09 Depth: 0.72-1.62 m Sample Number: ST01



Load No.= 5
Load= 200.0 kPa
D_0 = -0.0350
D_{90} = -0.0374
D_{100} = -0.0376
T_{90} = 5.83 min.

C_v @ T_{90}
0.0022 $cm.^2/sec.$



Load No.= 6
Load= 400.0 kPa
D_0 = -0.0450
D_{90} = -0.0474
D_{100} = -0.0477
T_{90} = 4.06 min.

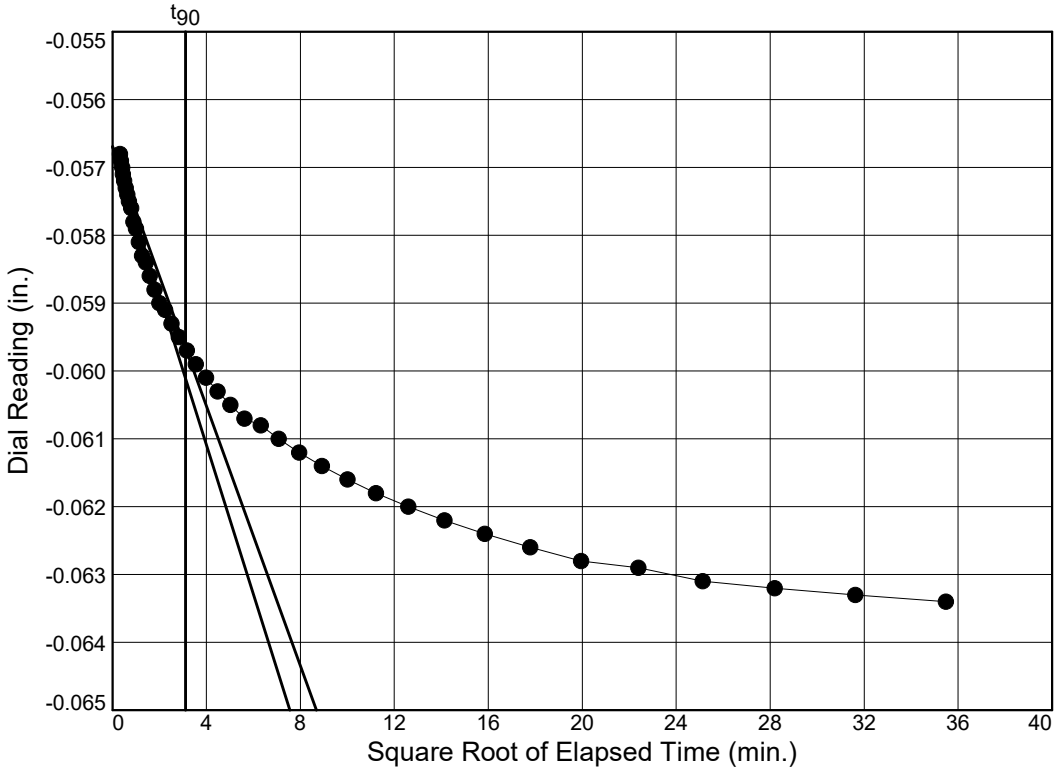
C_v @ T_{90}
0.0031 $cm.^2/sec.$

Figure

Dial Reading vs. Time

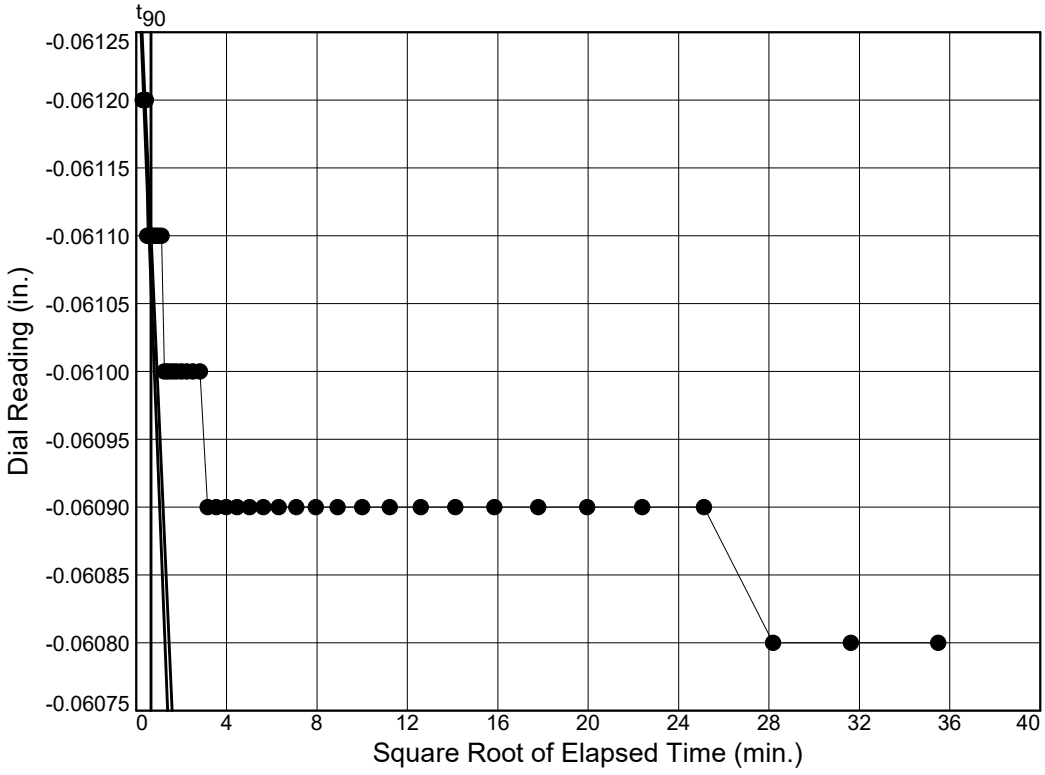
Project No.: 31708654175
Project: Resolute Bay

Source of Sample: BH25-09 Depth: 0.72-1.62 m Sample Number: ST01



Load No.= 7
Load= 800.0 kPa
D_0 = -0.0567
D_{90} = -0.0597
D_{100} = -0.0600
T_{90} = 9.67 min.

C_v @ T_{90}
0.0012 $cm.^2/sec.$



Load No.= 8
Load= 200.0 kPa
D_0 = -0.0613
D_{90} = -0.0611
D_{100} = -0.0611
T_{90} = 0.43 min.

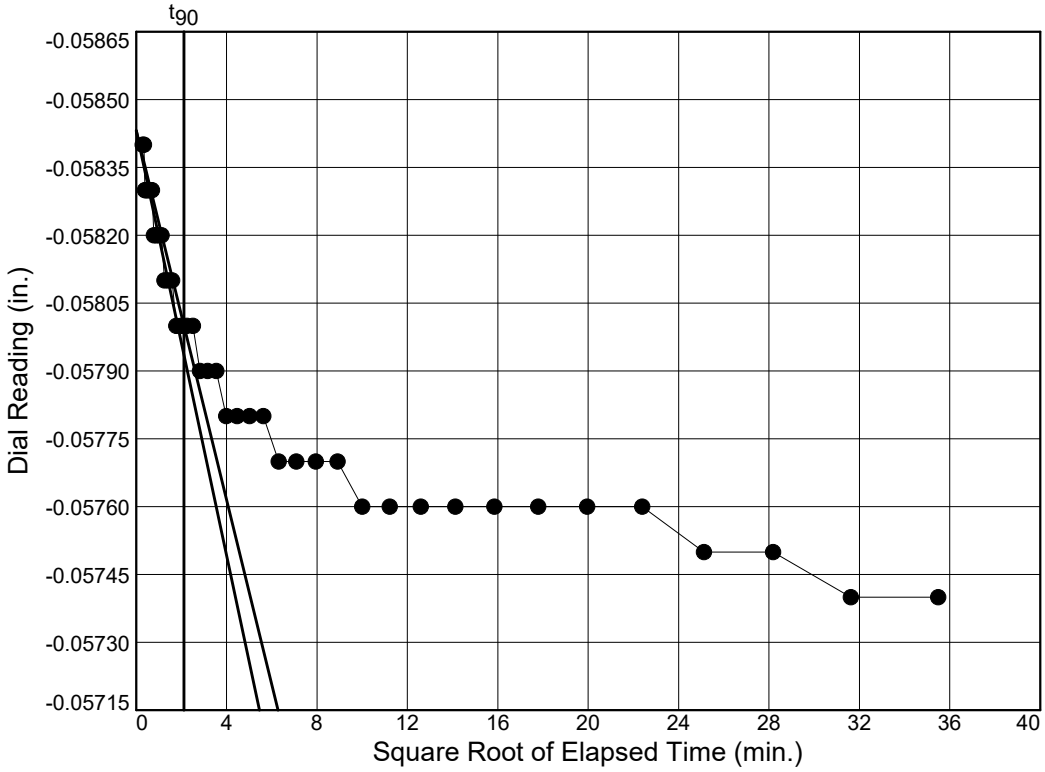
C_v @ T_{90}
0.0277 $cm.^2/sec.$

Figure

Dial Reading vs. Time

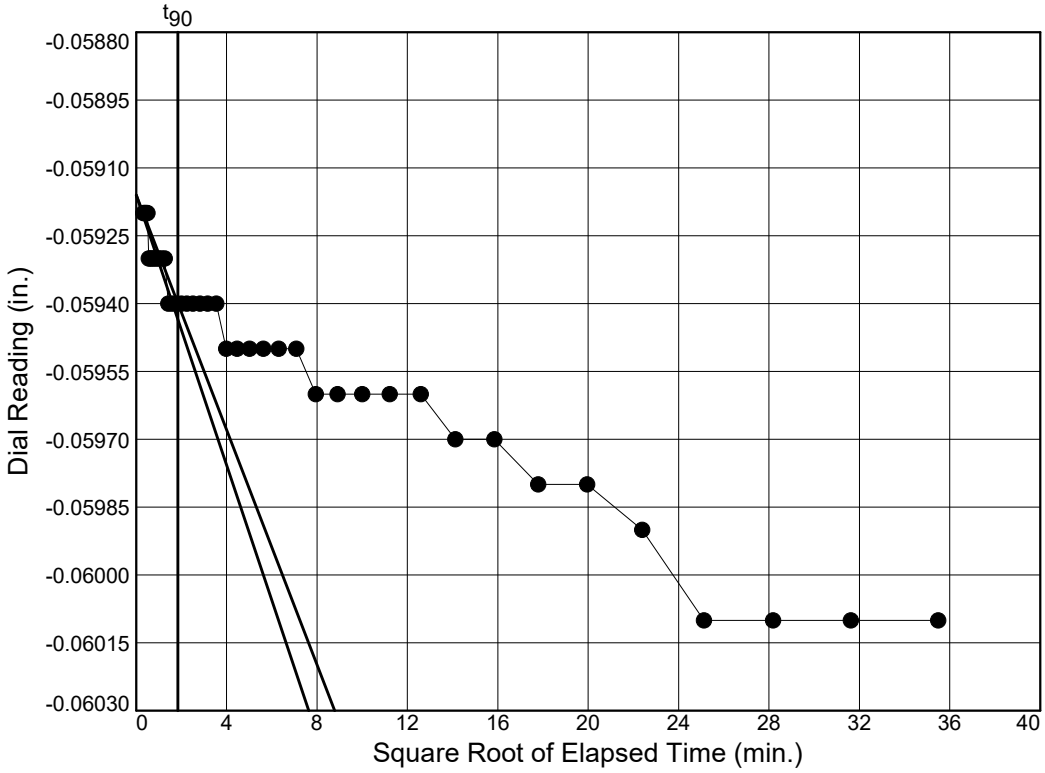
Project No.: 31708654175
Project: Resolute Bay

Source of Sample: BH25-09 Depth: 0.72-1.62 m Sample Number: ST01



Load No.= 9
Load= 50.0 kPa
D_0 = -0.0584
D_{90} = -0.0580
D_{100} = -0.0580
T_{90} = 4.45 min.

C_v @ T_{90}
0.0027 $cm.^2/sec.$



Load No.= 10
Load= 200.0 kPa
D_0 = -0.0592
D_{90} = -0.0594
D_{100} = -0.0594
T_{90} = 3.39 min.

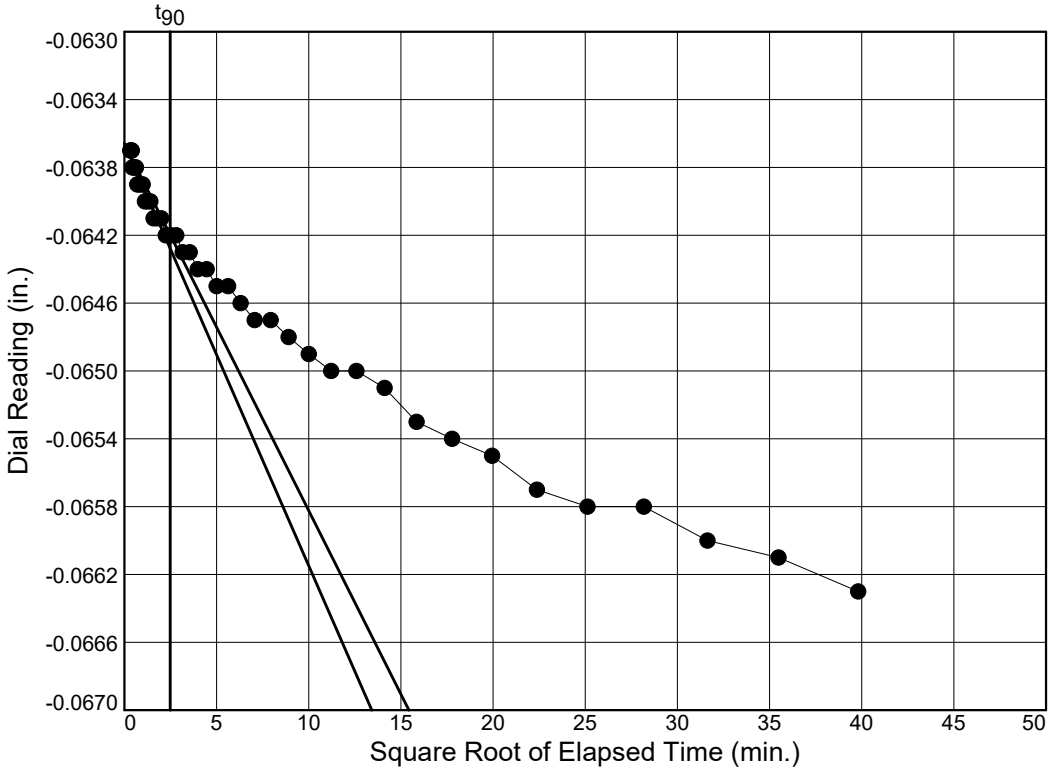
C_v @ T_{90}
0.0036 $cm.^2/sec.$

Figure

Dial Reading vs. Time

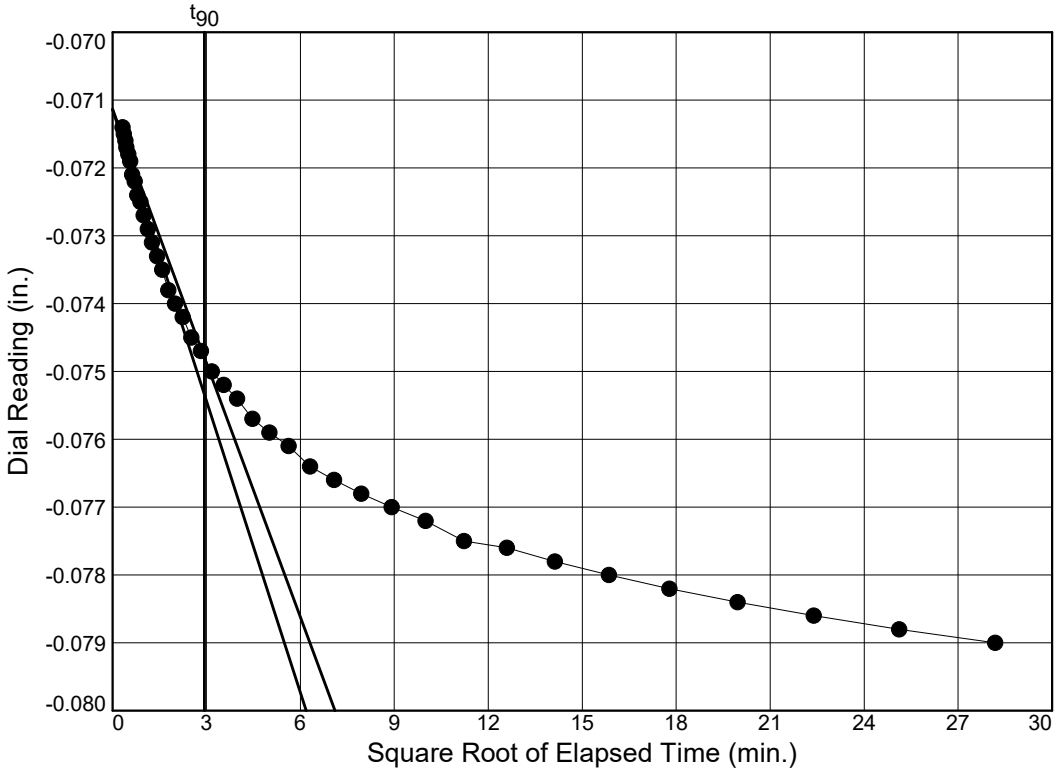
Project No.: 31708654175
Project: Resolute Bay

Source of Sample: BH25-09 Depth: 0.72-1.62 m Sample Number: ST01



Load No.= 11
Load= 800.0 kPa
D_0 = -0.0637
D_{90} = -0.0642
D_{100} = -0.0643
T_{90} = 6.17 min.

C_v @ T_{90}
0.0019 $cm.^2/sec.$



Load No.= 12
Load= 1600.0 kPa
D_0 = -0.0711
D_{90} = -0.0748
D_{100} = -0.0752
T_{90} = 8.64 min.

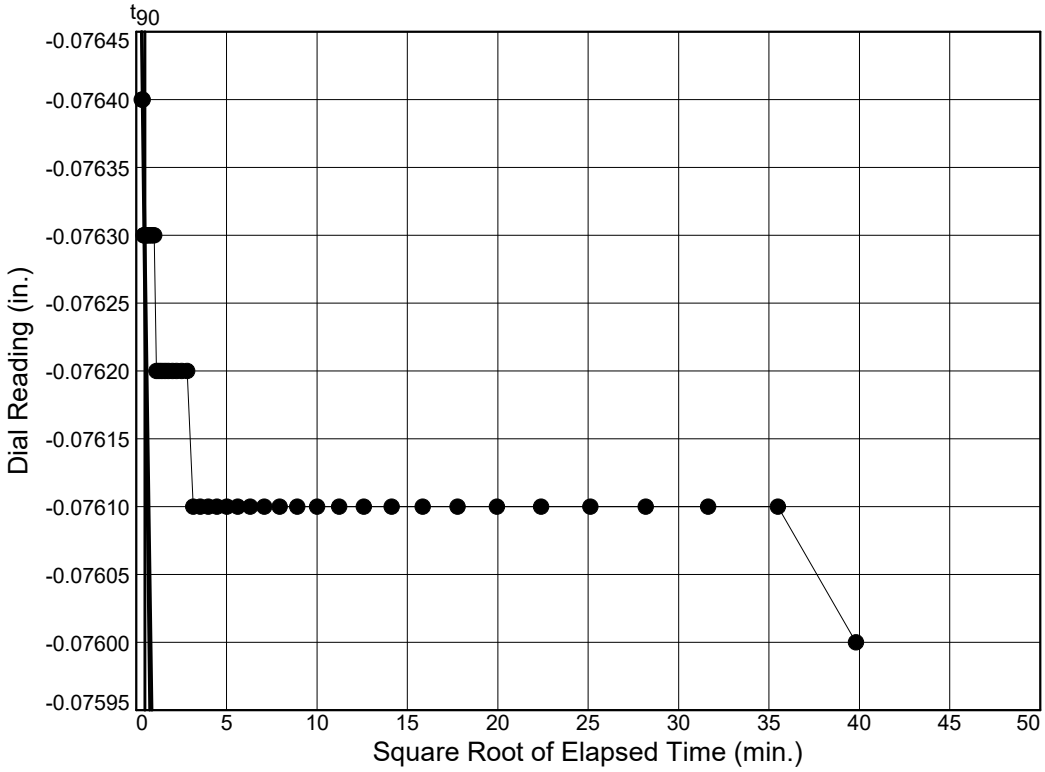
C_v @ T_{90}
0.0013 $cm.^2/sec.$

Figure

Dial Reading vs. Time

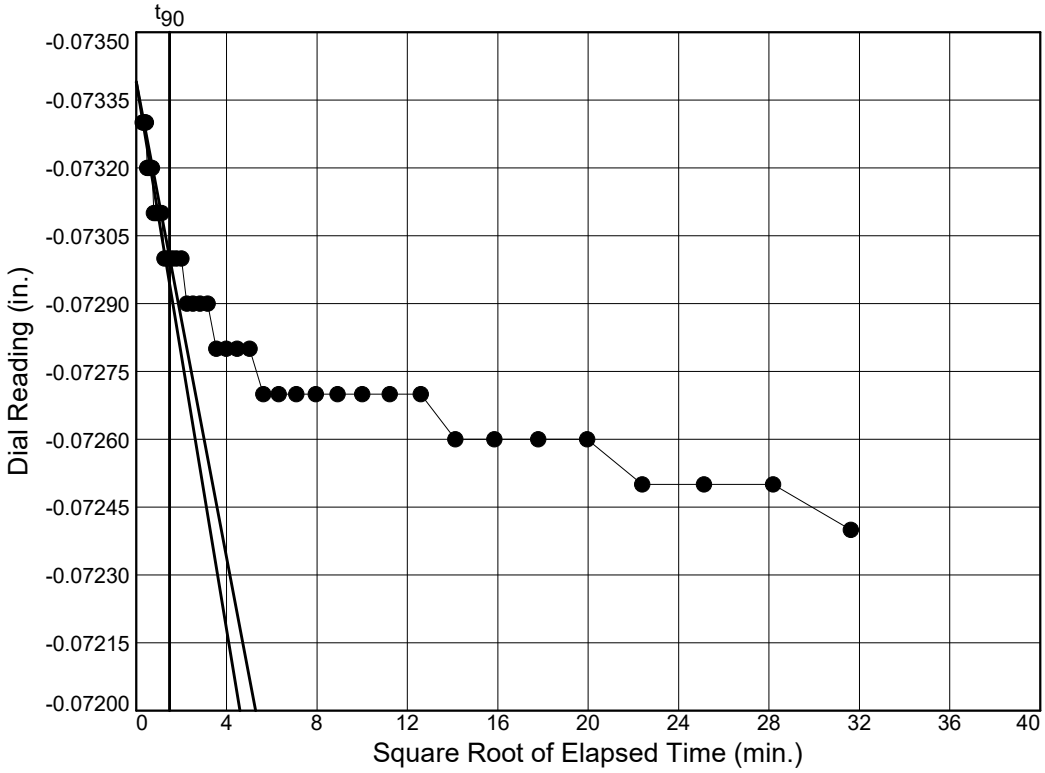
Project No.: 31708654175
Project: Resolute Bay

Source of Sample: BH25-09 Depth: 0.72-1.62 m Sample Number: ST01



Load No.= 13
Load= 400.0 kPa
D_0 = -0.0768
D_{90} = -0.0763
D_{100} = -0.0762
T_{90} = 0.24 min.

C_v @ T_{90}
0.0480 $cm.^2/sec.$



Load No.= 14
Load= 100.0 kPa
D_0 = -0.0734
D_{90} = -0.0730
D_{100} = -0.0730
T_{90} = 2.20 min.

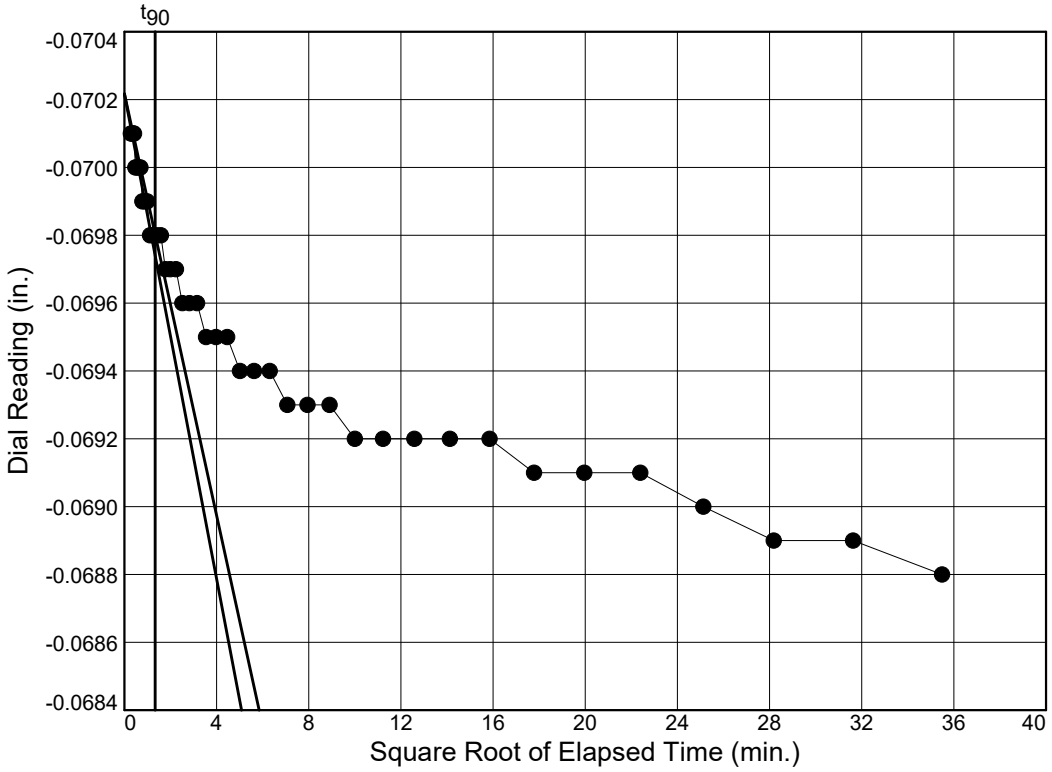
C_v @ T_{90}
0.0053 $cm.^2/sec.$

Figure

Dial Reading vs. Time

Project No.: 31708654175
Project: Resolute Bay

Source of Sample: BH25-09 Depth: 0.72-1.62 m Sample Number: ST01



Load No.= 15
Load= 25.0 kPa
D_0 = -0.0702
D_{90} = -0.0698
D_{100} = -0.0698
T_{90} = 1.81 min.

C_v @ T_{90}
0.0065 $cm.^2/sec.$

Figure

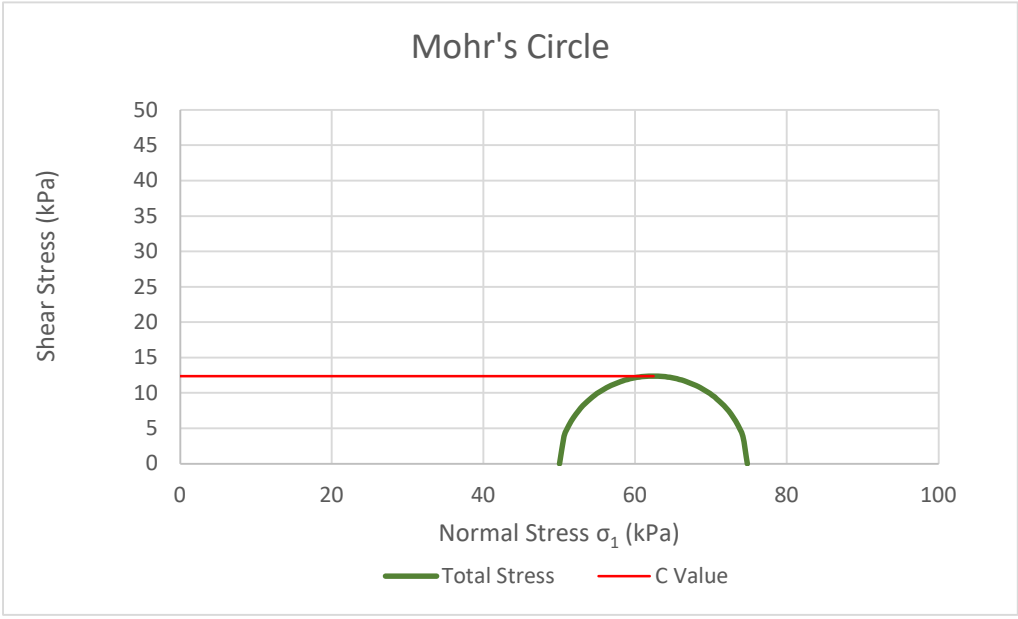
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UU Triaxial Test (ASTM D2850)

Project Info:	*317086-54175 / Resolute Bay,Nanuvat*	*Reviewed by*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250516(186)*		
Sample Info:	***BH25-09 ST01 0.72-1.62 m***		

Diameter (cm)	*6.99*	*Height (cm)*	*13.97*	*H/D Ratio*	*2.00*	*Mass (g)*	*1015.0*	*Shear Rate (mm/min)*	*1.5*
MC as Received (%)	*26.9*	*Wet BD (kg/m^3)*	*1896*	*Assumed Gs*	*2.70*	*Initial Void Ratio*	*0.81*	*Initial Sat. Degree (%)*	*90.0*
Failure Criteria:	**Max. Deviator Stress**								
(σ1-σ3)f (kPa)	24.80	(σ3)f (kPa)	50	(σ1)f (kPa)	74.80	(ε)f (%)	15.05		

Vert. Displ. (cm)	*Load Cell (kN)*	*ε1*	*σ1-σ3*
0.00	0.00	0.00	0.00
0.07	0.01	0.50	1.77
0.14	0.01	0.99	3.46
0.29	0.02	2.05	5.68
0.43	0.03	3.07	7.28
0.56	0.03	3.98	8.69
0.70	0.04	4.99	10.37
0.85	0.05	6.10	12.67
0.99	0.06	7.10	14.69
1.13	0.07	8.10	16.49
1.27	0.08	9.12	18.67
1.55	0.09	11.12	21.68
1.83	0.11	13.14	24.19
2.10	0.11	15.05	24.80



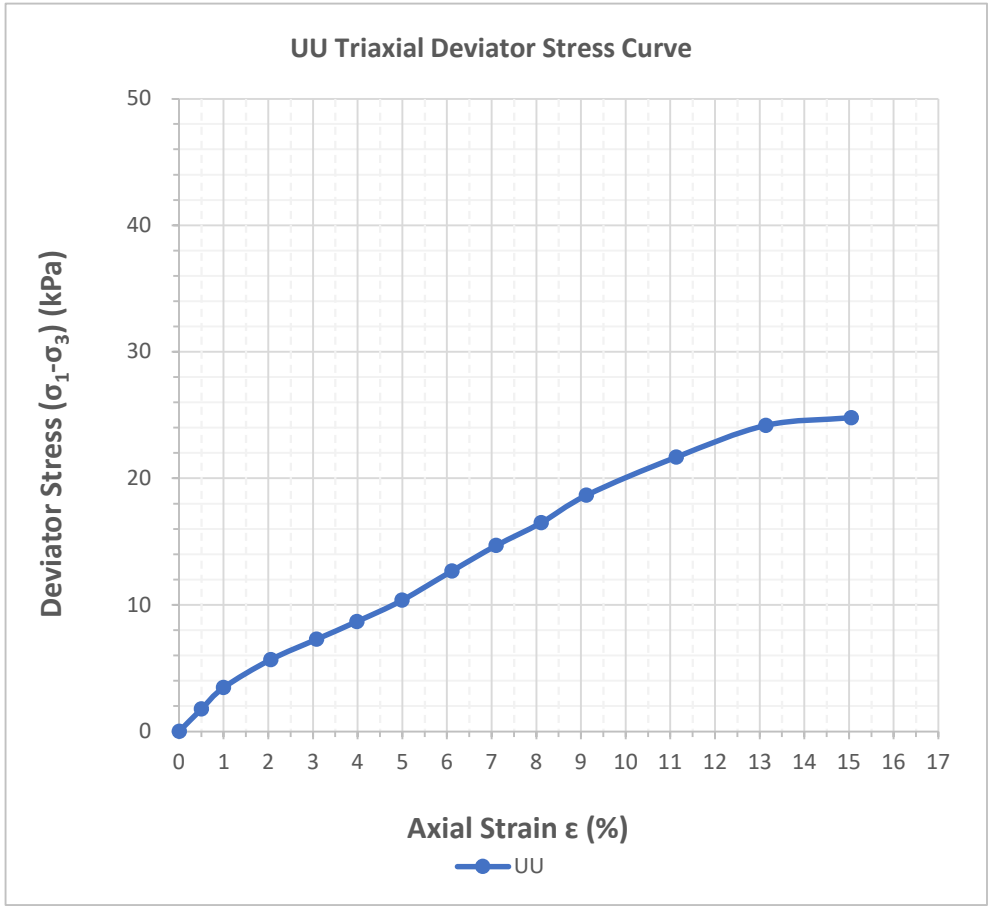
C (kPa) = 12

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UU Triaxial Test (ASTM D2850)

Project Info:	*317086-54175 / Resolute Bay,Nanuvat*	*Reviewed by* *S. F.*
Client:	*Worley Canada Services Ltd.*	
Solum Job No.:	*00102250516(186)*	
Sample Info:	***BH25-09 ST01 0.72-1.62 m***	

Effective Confining Pressure (kPa) = 50



Failure Mode **Bulging**

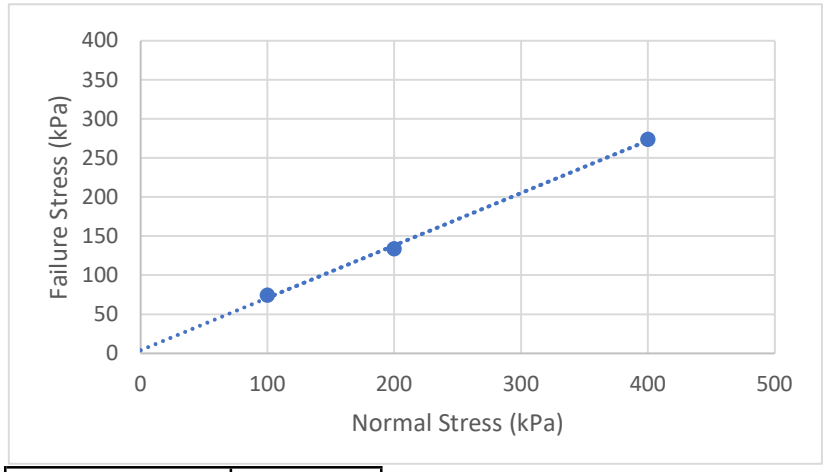
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Consolidated Drained Direct Shear Test (ASTM D3080)

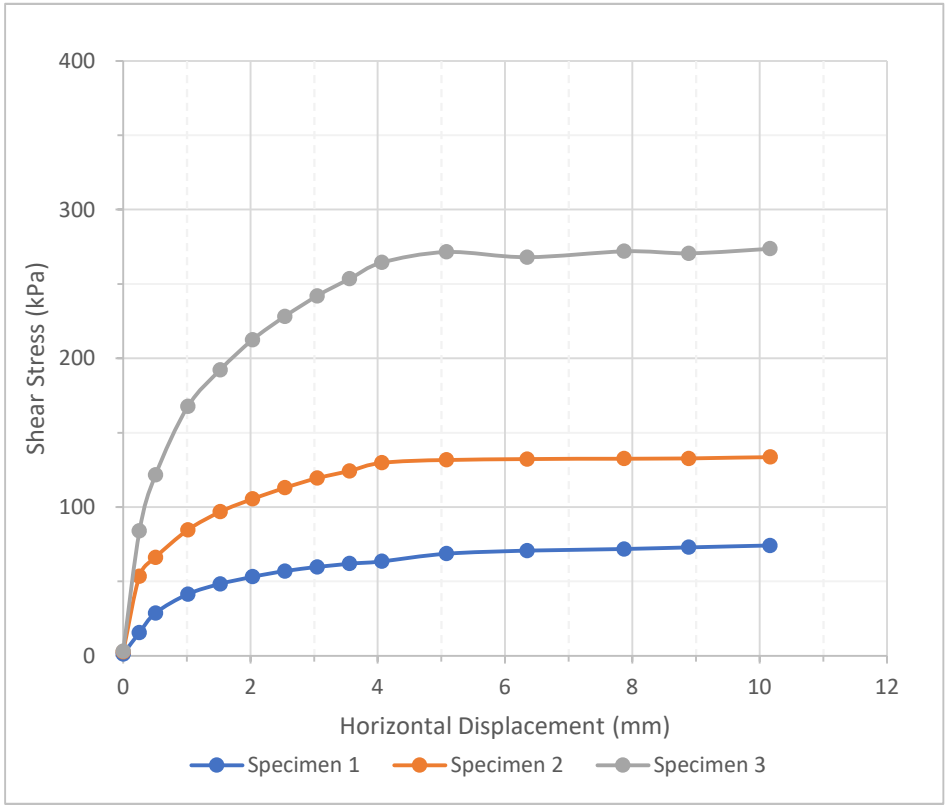
Project Info:	*317086-54175 / Resolute Bay,Nanuvat*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250516(186)*		
Sample Info:	***BH25-09 ST01 0.72-1.62 m***		

Sample Type	*Undisturbed*	*Initial Wet BD (kg/m^3)*	*1940*	*MC as Recv'd(%)*	*26.1*	*Shearing Rate(mm/min)*	*0.010*
		Rem. Wet BD (kg/m^3)	*---*	*Remoulded MC(%)*	*---*		

Specimen No.	*Normal Stress (kPa)*	*Peak Stress (kPa)*	*Disp.@ Failure (mm)*	*MC after Shearing*
1	100	74.20	10.2	27.4
2	200	133.75	10.2	26.6
3	400	273.82	10.2	25.7



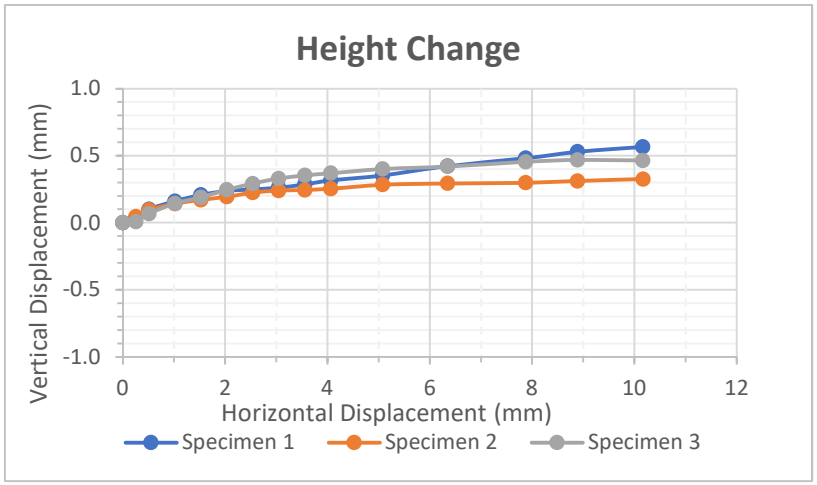
C, kPa	**4.2**
Ø, deg	**33.8**

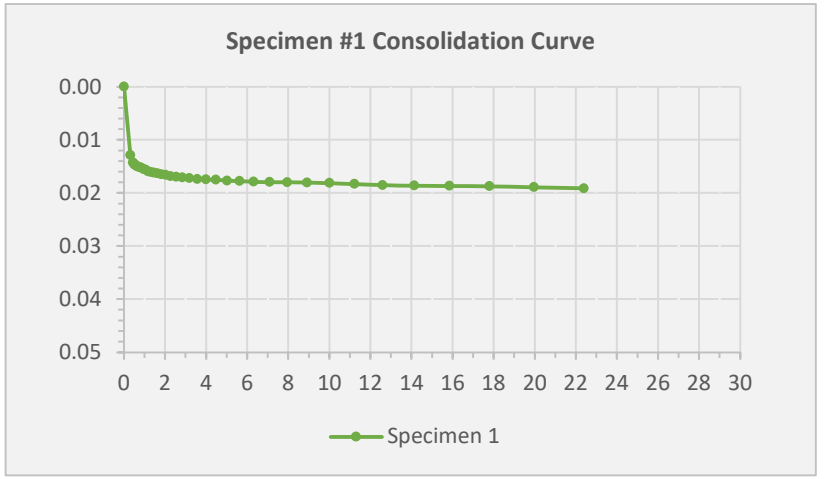


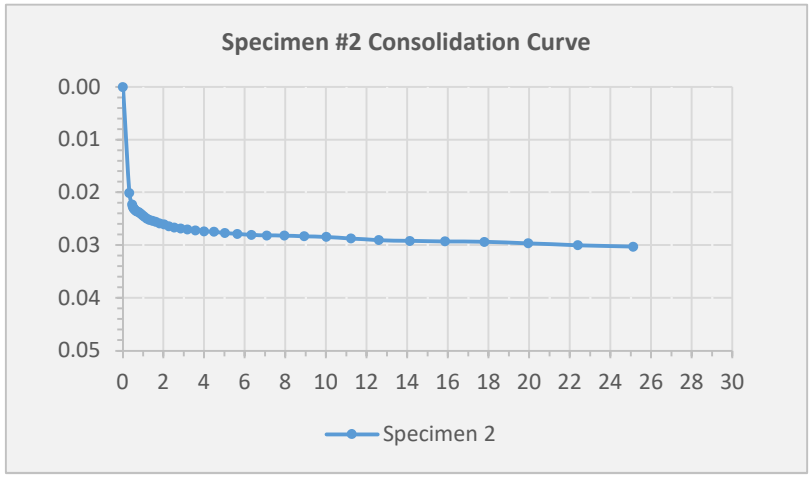
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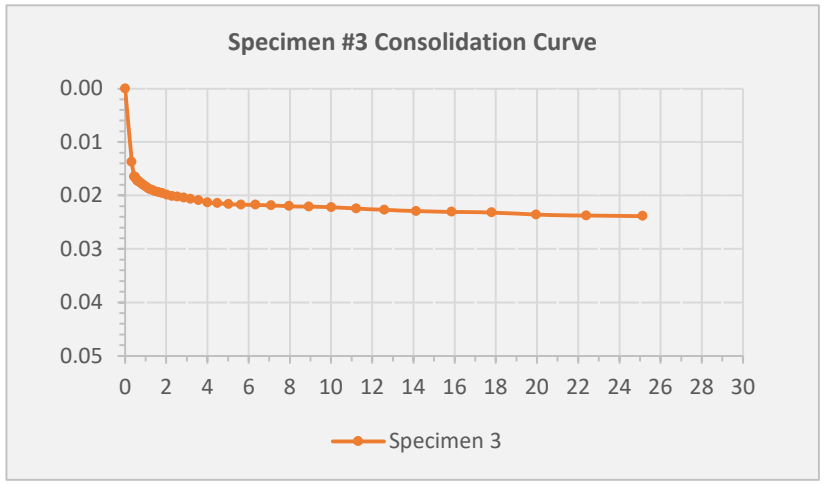
Consolidated Drained Direct Shear Test (ASTM D3080)

Project Info:	*317086-54175 / Resolute Bay,Nanuvat*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250516(186)*		
Sample Info:	***BH25-09 ST01 0.72-1.62 m***		









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GEOTECHNICAL & MATERIAL TESTING LABORATORY

Consolidated Drained Direct Shear Test (ASTM D3080)

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by:* *S. F.*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102250516(186)*

Sample Info: ***BH25-09*** ***ST01*** ***0.72-1.62 m***

Appendix --------- Test Data

Specimen #1		
Hori. Disp (mm)	Stress (kPa)	Vert. Disp (mm)
0.00	1.24	*0.00*
0.25	15.75	*0.04*
0.51	28.87	*0.10*
1.02	41.52	*0.16*
1.52	48.40	*0.21*
2.03	53.23	*0.24*
2.54	57.02	*0.25*
3.05	59.78	*0.26*
3.55	62.10	*0.29*
4.06	63.64	*0.32*
5.08	68.80	*0.35*
6.35	70.78	*0.42*
7.87	71.91	*0.48*
8.89	73.03	*0.53*
10.16	74.20	*0.57*

Specimen #2		
Hori. Disp (mm)	Stress (kPa)	Vert. Disp (mm)
0.00	*2.86*	*0.00*
0.25	*53.63*	*0.05*
0.51	*66.23*	*0.10*
1.02	*84.74*	*0.14*
1.52	*96.97*	*0.17*
2.03	*105.59*	*0.19*
2.54	*113.04*	*0.23*
3.05	*119.57*	*0.24*
3.55	*124.39*	*0.24*
4.06	*129.88*	*0.25*
5.08	*131.84*	*0.28*
6.35	*132.37*	*0.29*
7.87	*132.68*	*0.30*
8.89	*132.78*	*0.31*
10.16	*133.75*	*0.33*

Specimen #3		
Hori. Disp (mm)	Stress (kPa)	Vert. Disp (mm)
0.00	3.25	0.00
0.25	84.03	0.01
0.51	121.68	0.07
1.02	167.75	0.15
1.52	192.41	0.19
2.03	212.60	0.25
2.54	228.30	0.29
3.05	242.11	0.33
3.55	253.54	0.35
4.06	264.53	0.37
5.08	271.60	0.40
6.35	268.05	0.42
7.87	272.12	0.46
8.89	270.69	0.47
10.16	273.82	0.46

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Point Load Strength Index of Rock (ASTM D5731) - Axial

Project Info: *317086-54175 / Resolute Bay,Nanuvat* *Reviewed by:* *S. F.*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102250516(186)*

Borehole ID	Sample ID	Depth (m)	Received MC (%)	Diameter (mm) ***(W)***	Length (mm) ***(D)***	Equivalent Diameter (mm) ***(D_e)***	Load (bar)	Correction Factor ***(F)***	I_s (mPa)	I_s (50) (mPa)	Est. UCS (mPa)
BH25-04	PLT01	3.98-4.08	0.9	63.01	17.97	37.97	120.8	0.88	7.94	**7.02**	194.61
BH25-06	PLT01	3.75-3.87	0.2	63.08	19.67	39.75	105.0	0.90	6.30	**5.68**	154.37
BH25-07	PLT01	1.35-1.50	2.7	62.94	21.01	41.03	108.4	0.91	6.10	**5.58**	149.53
BH25-08	PLT01	3.73-3.98	2.4	63.11	22.98	42.97	83.6	0.93	4.29	**4.01**	105.15
BH25-10	PLT01	3.15-3.25	0.1	62.89	27.66	47.06	108.8	0.97	4.66	**4.53**	114.09

SOLUM™
CONSULTANTS LTD.

GEOTECHNICAL & MATERIAL
TESTING LABORATORY

STANDARD LABORATORY TERMS AND CONDITIONS

1.0 Description of Services to be Performed by Solum Consultants Ltd. (Solum)

Solum shall provide geotechnical and material laboratory testing services on samples in accordance with these terms and conditions and executed Laboratory Testing Request Forms. Solum shall perform its work in accordance with accepted laboratory standards, such as ASTM, CSA or client's specific specs, as well as accepted standard operating procedures. Solum reserves the right to modify methods as necessary based upon experience and/or current scientific literature. If the Client requests a manner of analysis that varies from standard operating or recommended procedures, the Client shall not hold Solum responsible for the results. Such variations of analysis will be noted on the reports. Solum reserves the right to subcontract laboratory testing if a particular test cannot be performed by Solum.

2.0 Reports, Confidentiality and Third Parties

Laboratory reports provided by Solum will be composed of a cover page, tables and figures if applicable. Reports will be e-mailed in PDF format to the individual(s) specified on the Laboratory Testing Request Forms. Laboratory reports may also be faxed or mailed to the Client upon request. Except as required by law, Solum shall not disclose testing results or reports to any party other than the Client, unless the Client, in writing, requests information to be provided to a third party. Solum shall abide by any additional confidentiality requirements requested by the Client provided that such requirements are provided to Solum at or before execution of the testing.

Information provided by Solum is intended for Client use only. Any use by a third party, of reports or documents authored by Solum, or any reliance on or decisions made by a third party based on the findings described in said documents, are the sole responsibility of such third parities, and Solum accepts no responsibility of damages suffered by any third party as a result of decisions made or actions conducted.

3.0 Laboratory Testing Request Form (Chain of Custody)

The laboratory testing request form must be completed by the Client and be accompanied with the samples. Other form of COC may be accepted; however, the condition of Solum COC is still applied. Testing will not commence until the laboratory testing request form has been completed. If requested by the Client, Solum shall provide a copy of the laboratory testing request form with the report.

No persons other than the designated representatives for each Laboratory Testing Request Form are authorized to act regarding changes to the testing request form. Any changes or amendments of the laboratory testing request form must be in writing and be completed by the originator.

4.0 Acceptance, Contamination and Disposal of Samples

Loss or damages to samples remains the responsibility of the Client until Solum representatives acceptance of samples by notation on the laboratory testing request form.

As to any samples that are suspected of containing hazardous substances, the Client will specify the suspected or known substance and level of contamination. This information is to be stated on the laboratory testing request form and be accompanied with the samples before testing can commence. Solum may refuse acceptance of samples if it determines they present a risk to health and safety.

Samples accepted by Solum shall remain the property and liability of the Client while in the custody of Solum. Solum will discard all non-contaminated samples after two weeks of submitting lab report or a month from the date of receiving the samples without additional retention period at a fixed disposal charge, or if requested by the Client, samples may be returned to the Client at no cost to Solum. If requested by client, Solum will store samples provided the client agrees to pay for the storage charge. Contaminated material may be returned/shipped to the Client at the Client's expense or Solum will discard samples with disposal rates varying for samples containing higher levels of contamination, refer to price list.

Soil samples requested to be stored will be stored inside the lab up to the expiration of storage period. Soil samples will be discarded upon the expiration date of the storage period unless client requests either extending storage period or return samples back to client at no cost to Solum.

5.0 Indemnification/Hold Harmless

Solum shall protect, indemnify and save harmless Client, and its directors, officers, employees, agents, representatives, invitees and subcontractors, and at Client's request, investigate and defend such entities form and against all claims, demands and causes of action, of every kind and character, without limitation, arising in favour of or made by third parties, on account of bodily injury, death or damage to or loss of their property resulting from any negligent act or wilful misconduct of Solum.

The Client shall protect, indemnify and save harmless Solum, and its directors, officers, employees, agents, representatives, invitees and subcontractors, and at Solum's request, investigate and defend such entities form and against all claims, demands and causes of action, of every kind and character, without limitation, arising in favour of or made by third parties, on account of bodily injury, death or damage to or loss of their property resulting from any negligent act or wilful misconduct of Client.

6.0 Limitation of Liability

The total liability of Solum or its staff whether based in contract or tort, will be limited to the lesser of the fees paid or actual damages incurred by the Client. Solum will not be responsible for any consequential or indirect damages even if caused by negligence of Solum. Solum will only be liable for damages resulting form negligence of Solum. All claims by the Client shall be deemed relinquished if not made within one year after the testing date. No warranty is either expressed or implied, or intended by any agreement or by furnishing oral or written reports or findings.

7.0 Termination of Testing Work Order

The Client may order work suspended or terminated upon seven days advance written notice. If work is suspended, Solum shall receive, upon resumption, an adjustment in the cost of services to compensate for additional costs incurred due to the interruption of services. Upon suspension or termination, Solum shall preserve samples provided that the Client agrees to pay the sample storage charge.

8.0 Pricing, Payments and Invoicing

Invoices will be based on most current Solum laboratory testing rates; rates may change without notice. Solum invoices shall be paid within thirty (30) days of receipt of the invoice. Amounts not paid when due shall bear interest at the rate of 18% per annum from the date due until the date of payment.

SOLUM™
CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL
TESTING LABORATORY

#9, 3620 - 29 Street, N.E.
Calgary, Alberta T1Y 5Z8
Ph: (403)250-3035
Fax: (403)250-3021
Email: solum@mymts.net
www.solumconsultantsltd.com

Project Number: 317086-54175

Project Name: Resolute Bay

Sample ID: BH25-04 PLT01





Sample ID: BH25-06 PLT01



Sample ID: BH25-07 PLT01





Sample ID: BH25-08 PLT01





Sample ID: BH25-10 PLT01





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GEOTECHNICAL & MATERIAL
TESTING LABORATORY

Geo-Lab Report

Revision # 0

Report Date:	*October 11, 2025*
Client:	*Worley Canada Services Ltd.*
Address:	*49 Quarry Park Blvd SE, Calgary, AB T2C 5H9*
Attn:	*Jeff Gibson*
Project No:	*317086-54175*
Project Name:	*Resolute*
Solum Job No.:	*00102250917(375)*

Sample Received Date: September 17, 2025

Sample Quantity: 2 big pails

Test	Quantity	Destination
WATER CONTENT	4	D2216
ATTERBERG LIMITS	2	D4318
PARTICLE-SIZE ANALYSIS (FULL GRADATION)	2	D6913 & D7928
STANDARD PROCTOR (Method C)	2	D698
CBR - UNSOAKED (SP COMP EFFORT)(3 PTS)	2	D1883

President: Saad Farag

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phone: (403)250-3035
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SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Laboratory Analysis Summary Sheet

Project Info: *317086-54175 / Resolute* *Reviewed* *S. F.*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102250917(375)*

* Note: Soil classification is for material less than 0.425 mm (material used for Atterberg Limits), this includes the fine sand, silt and clay fraction of the sample.

** Note: Soil classification is for the whole sample. Soil classification uses the Atterberg Limits results and the percent fines, percent sand and percent gravel as described in ASTM D2487.

Borehole ID	Sample ID	Depth (m)	Moisture Content (%)	Atterberg Limits				Particle Size Analysis					Soil Classification** Group Symbols
				Liquid Limit(%)	Plastic Limit(%)	Plastic Index(%)	Classification* (USCS)	Cobble Size (%) (75-300mm)	Gravel Size (%) (4.75-75mm)	Sand Size (%) (0.075-4.5mm)	Silt Size (%) (0.002-0.075 mm)	Clay Size (%) (<0.002mm)	
TP-25-01A	BS01	0.0-1.0	7.5	17	11	6	CL-ML	0.0	48.6	30.9	16.3	4.2	GC-GM
TP-25-01A	GB01	0.0-1.0	8.2	---	---	---	---	---	---	---	---	---	---
TP-25-04A	BS01	0.0-1.0	16.8	24	14	10	CL	0.0	23.6	29.4	42.7	4.3	CL
TP-25-04A	GB01	0.0-1.0	15.0	---	---	---	---	---	---	---	---	---	---

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Atterberg Limits (ASTM D4318 - Method A)

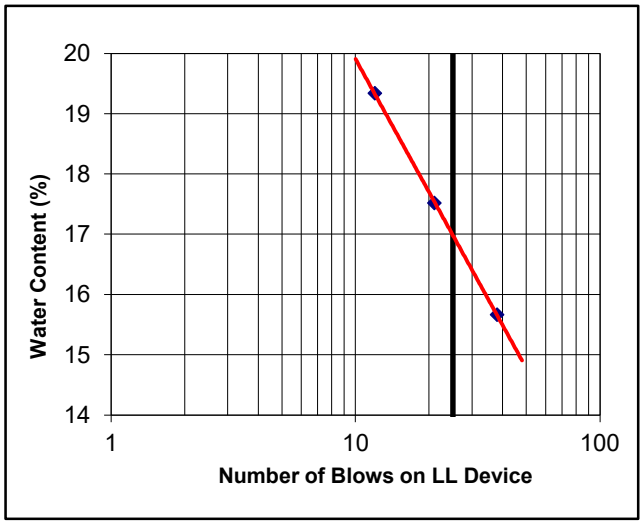
Project Info:	*317086-54175 / Resolute*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250917(375)*		
Sample Info:	***TP25-01A BS01 0.0-1.0 m***		

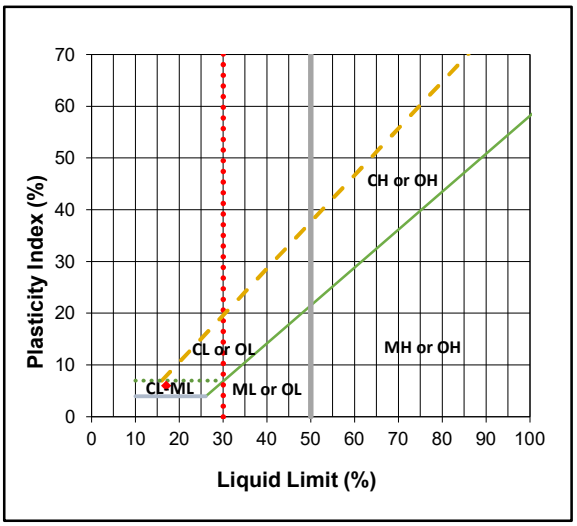
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	12	21	38		
$W_{Wet\ Soil}$ + Tare (g)	32.87	38.26	30.01		
$W_{Dry\ Soil}$ + Tare (g)	28.48	33.42	26.73		
W_{Water} (g)	4.39	4.84	3.28		
Tare (g)	5.78	5.79	5.79		
$W_{Dry\ Soil}$ (g)	22.70	27.63	20.94	**Water Content (%)**	7.5
Water Content (%)	19.3	17.5	15.7		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	26.48	23.84
$W_{Dry\ Soil}$ + Tare (g)	24.43	21.99
W_{Water} (g)	2.05	1.85
Tare (g)	5.64	5.60
$W_{Dry\ Soil}$ (g)	18.79	16.39
Water Content (%)	10.9	11.3
Average Mc (%)	11.1	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
17	**11**	**6**	**CL-ML**





SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Atterberg Limits (ASTM D4318 - Method A)

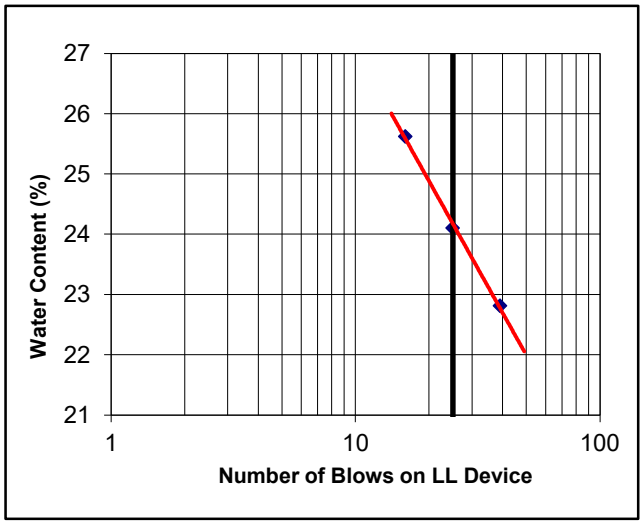
Project Info:	*317086-54175 / Resolute*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250917(375)*		
Sample Info:	***TP-25-04A BS01 0.0-1.0 m***		

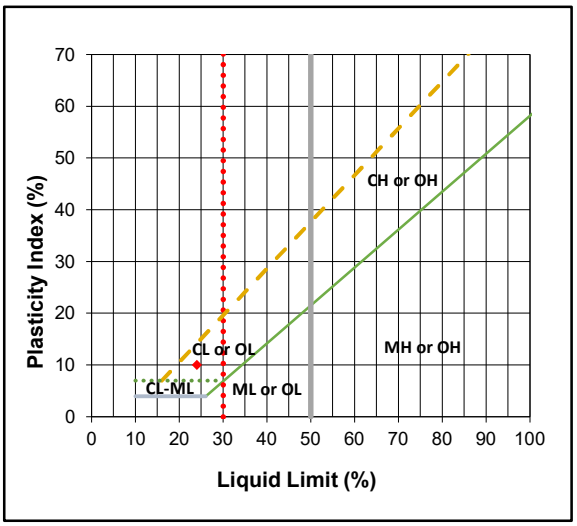
Atterberg Limits - ASTM D4318 (Method A)

	Liquid Limit (Air-Dried) - Multipoint Method			Water Content Received	
Container ID	1	2	3		
Number of Blows	16	25	39		
$W_{Wet\ Soil}$ + Tare (g)	27.55	37.79	24.57		
$W_{Dry\ Soil}$ + Tare (g)	23.12	31.56	21.05		
W_{Water} (g)	4.43	6.23	3.52		
Tare (g)	5.83	5.71	5.62		
$W_{Dry\ Soil}$ (g)	17.29	25.85	15.43	**Water Content (%)**	16.8
Water Content (%)	25.6	24.1	22.8		

	Plastic Limit	
Container ID	4	5
$W_{Wet\ Soil}$ + Tare (g)	25.38	22.53
$W_{Dry\ Soil}$ + Tare (g)	22.93	20.44
W_{Water} (g)	2.45	2.09
Tare (g)	5.66	5.61
$W_{Dry\ Soil}$ (g)	17.27	14.83
Water Content (%)	14.2	14.1
Average Mc (%)	14.1	

Results			
Liquid Limit (Air Dried)(%)	Plastic Limit (%)	Plastic Index (%)	USCS
24	**14**	**10**	**CL**





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Particle Size Analysis (ASTM D6913 & D7928)

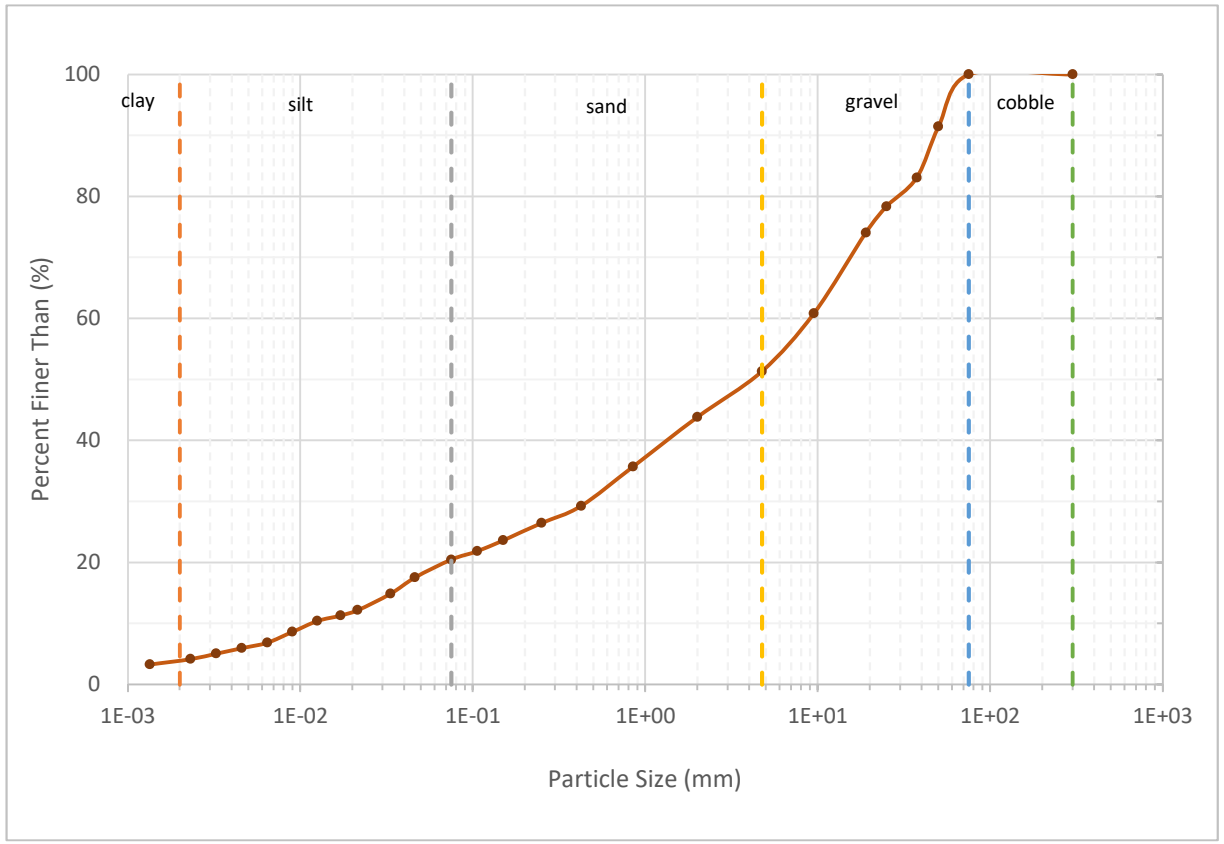
Project Info: *317086-54175 / Resolute*
Client: *Worley Canada Services Ltd.*
Solum Job No.: *00102250917(375)*
Reviewed by *S. F.*

Sample Info: ***TP-25-01A*** ***BS01*** ***0.0-1.0 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	91.46
	37.500	83.08
	25.000	78.35
	19.000	74.05
	9.500	60.86
	4.750	51.36
SAND	2.000	43.83
	0.850	35.74
	0.425	29.26
	0.250	26.48
	0.150	23.64
	0.106	21.85
	0.075	20.47
HYDROMETER	0.0462	17.55
	0.0333	14.87
	0.0215	12.20
	0.0171	11.31
	0.0125	10.41
	0.0090	8.63
	0.0064	6.85
	0.0046	5.95
	0.0032	5.06
	0.0023	4.17
	0.0013	3.28

Test Results

Cobbles (%) *(75-300mm)*	Gravel (%) *(4.75-75mm)*	Sand (%) *(0.075-4.75mm)*	Silt (%) *0.002-0.075mm*	Clay (%) *<0.002mm*
0.0	**48.6**	**30.9**	**16.3**	**4.2**



SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Particle Size Analysis (ASTM D6913 & D7928)

Project Info: *317086-54175 / Resolute*

Client: *Worley Canada Services Ltd.*

Solum Job No.: *00102250917(375)*

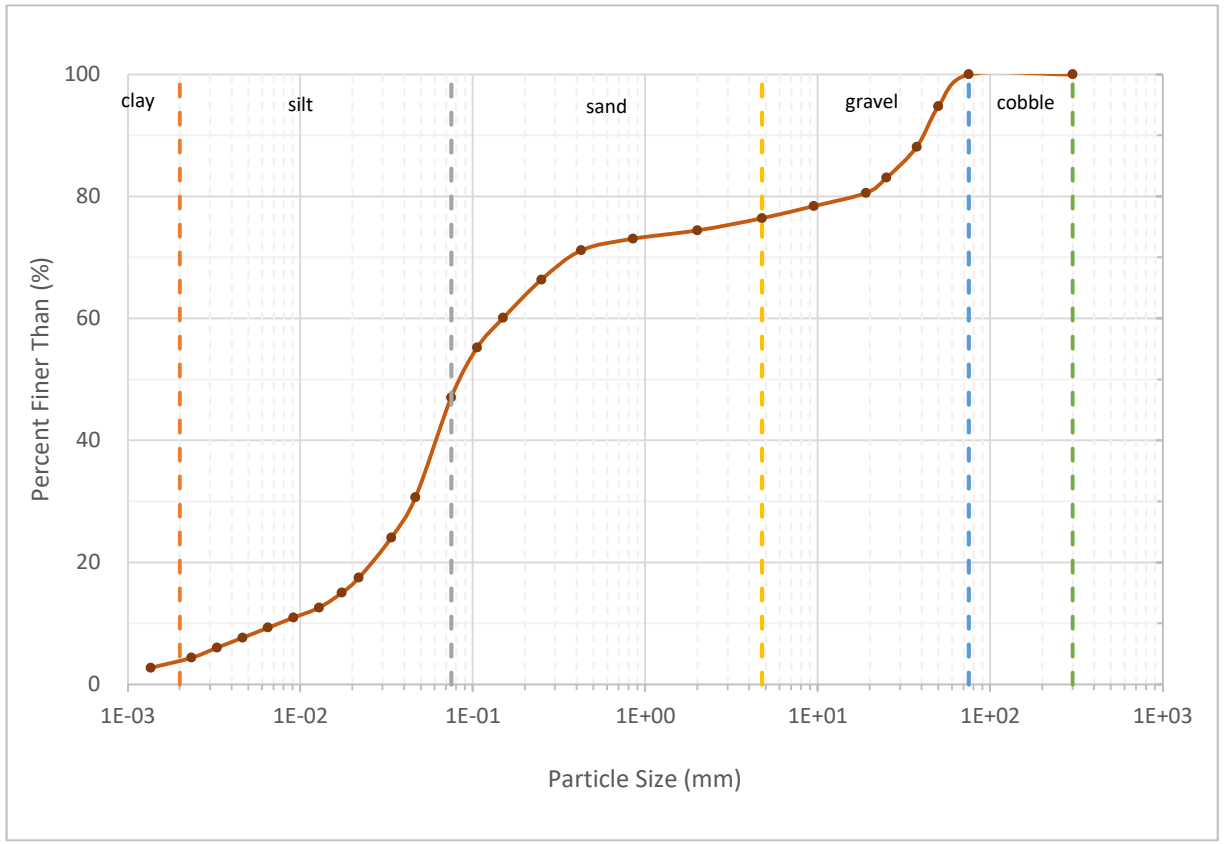
Reviewed by *S. F.*

Sample Info: ***TP-25-04A*** ***BS01*** ***0.0-1.0 m***

	PARTICLE-SIZE (mm)	PERCENT FINER (%)
GRAVEL	300.000	100.00
	75.000	100.00
	50.000	94.78
	37.500	88.13
	25.000	83.05
	19.000	80.58
	9.500	78.41
	4.750	76.43
SAND	2.000	74.43
	0.850	73.06
	0.425	71.16
	0.250	66.35
	0.150	60.09
	0.106	55.22
	0.075	47.06
HYDROMETER	0.0465	30.66
	0.0337	24.09
	0.0219	17.53
	0.0174	15.06
	0.0129	12.60
	0.0091	10.96
	0.0065	9.32
	0.0046	7.68
	0.0033	6.03
	0.0023	4.39
	0.0014	2.75

Test Results

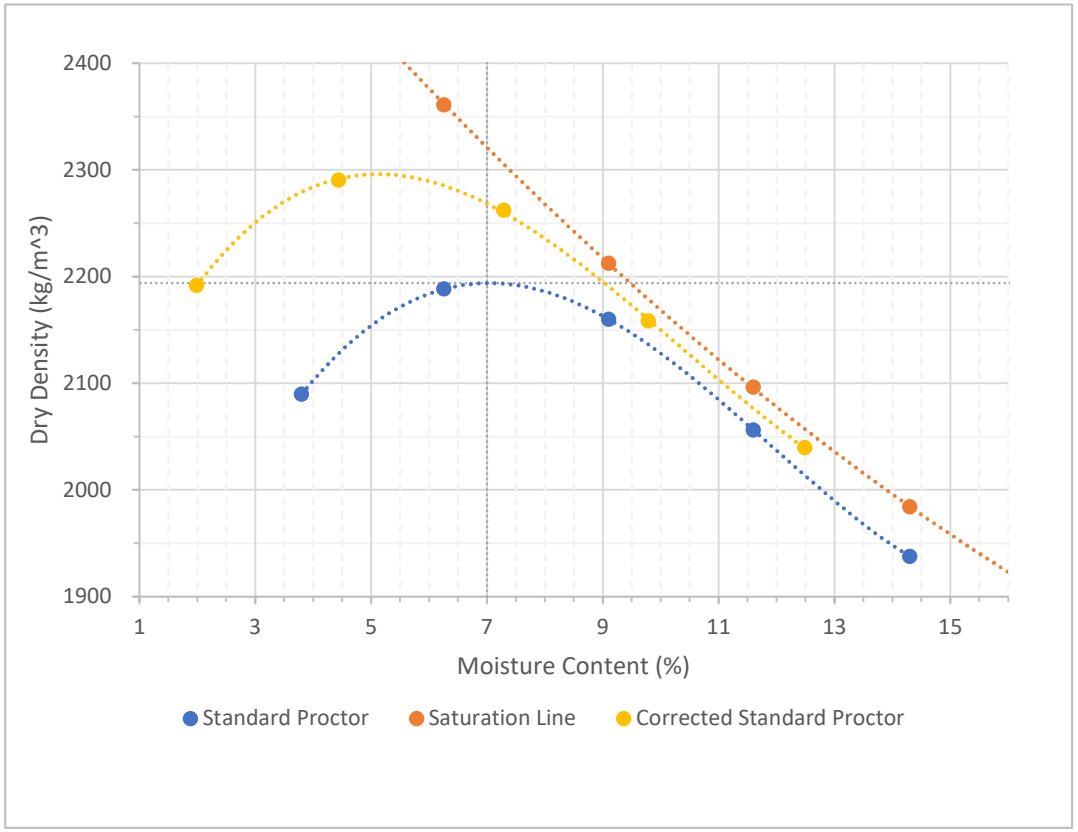
Cobbles (%) *(75-300mm)*	Gravel (%) *(4.75-75mm)*	Sand (%) *(0.075-4.75mm)*	Silt (%) *0.002-0.075mm*	Clay (%) *<0.002mm*
0.0	**23.6**	**29.4**	**42.7**	**4.3**



SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Standard Proctor Test Report (ASTM D698)

Project Info:	*317086-54175 / Resolute*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250917(375)*		
Sample Info:	***TP25-01A BS01 0.0-1.0 m***		



MC as Received (%)	**7.5**
Test Method	**C**
Opt MC(%)	**7.0**
Max. Dry Density (kg/m^3)	**2194**
% Particles Ret.	25.9
Sieve Size	19.0mm
Oversize Correction	YES
Corrected Opt MC(%):	5.2
Corrected MDD (kg/m^3)	2296

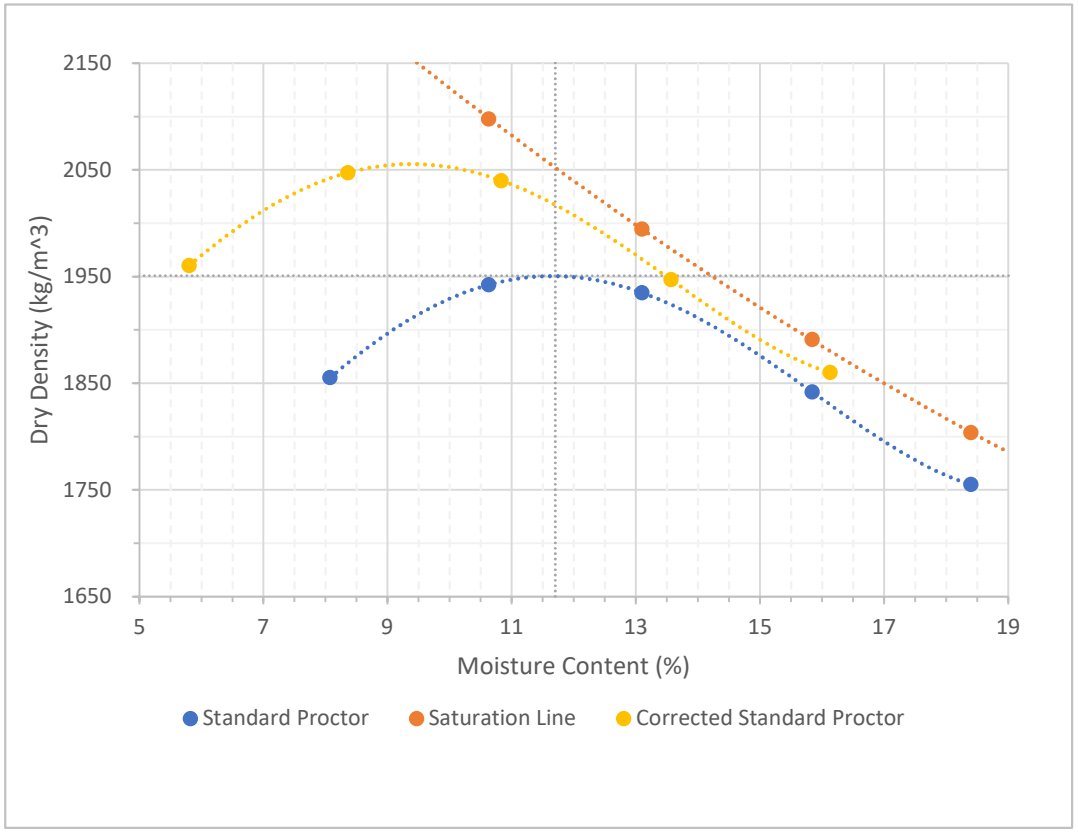
Note: Use ASTM D4718 for oversize correction.

Remarks:

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

Standard Proctor Test Report (ASTM D698)

Project Info:	*317086-54175 / Resolute*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250917(375)*		
Sample Info:	***TH25-04A***	***BS01***	***0.0-1.0 m***



MC as Received (%)	**16.8**
Test Method	**C**
Opt MC(%)	**11.7**
Max. Dry Density (kg/m^3)	**1951**
% Particles Ret.	19.4
Sieve Size	19.0mm
Oversize Correction	YES
Corrected Opt MC(%):	9.4
Corrected MDD (kg/m^3)	2056

Note: Use ASTM D4718 for oversize correction.

Remarks:

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

California Bearing Ratio (ASTM D1883)

Project Info:	*317086-54175 / Resolute*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250917(375)*		
Sample Info:	***TP25-01A BS01 0.0-1.0 m***		

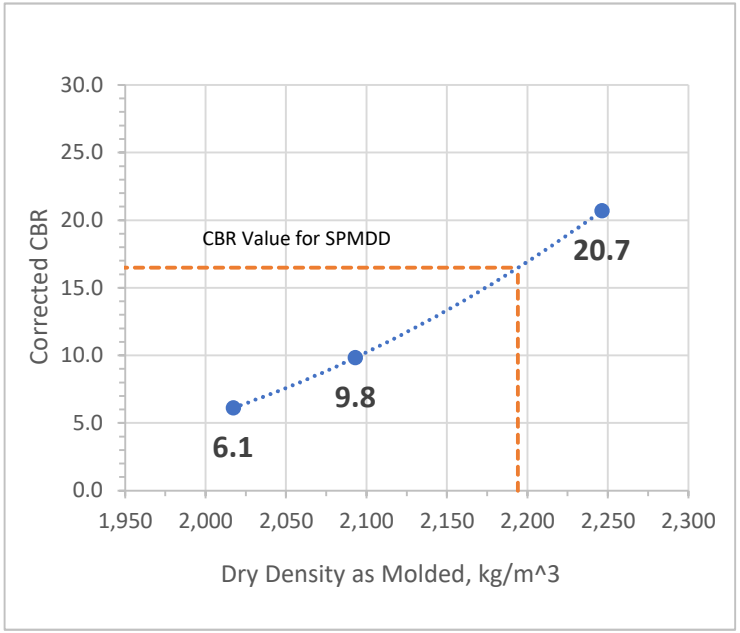
Test Information

Moisture Content: ~ Optimum MC | Test Type: *Unsoaked* | *Test Points:* *3 points*

Shear Rate = 0.05 in/min; Surcharge Amount = 4.54 kg

Test Results

	10 Blows	25 Blows	75 Blows
Dry density before soak, kg/m^3	2017	2093	2246
Dry density after soak, kg/m^3	---	---	---
MC before soak, %	7.3	7.3	7.3
MC after soak, avg., %	---	---	---
MC after soak, top 1", %	---	---	---
% Swell(+)/Consolidation(-) after 96 hr soak	---	---	---
CBR @ depth = 0.200"	**6.1**	**9.8**	**20.7**



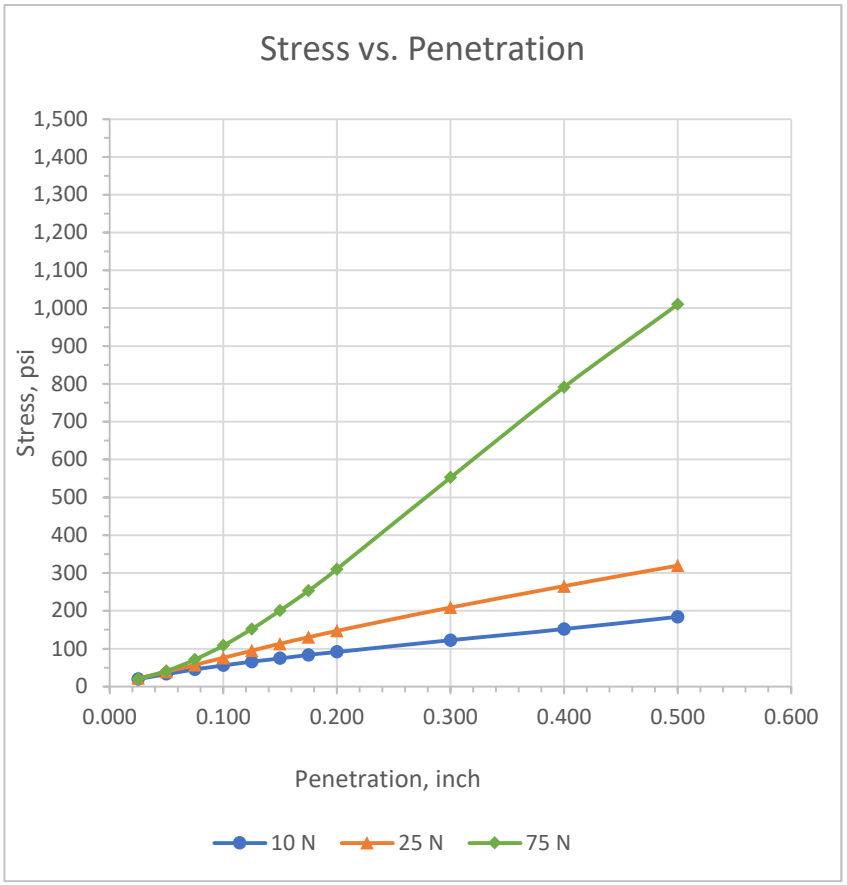
CBR Value ~ 16.5 @ SPMDD = 2194 kg/m^3

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

California Bearing Ratio (ASTM D1883)

Project Info:	*317086-54175 / Resolute*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250917(375)*		
Sample Info:	***TP25-01A BS01 0.0-1.0 m***		

	Stress (psi)		
Penetration (in)	10 N	25 N	75 N
0.025	19.69	22.32	19.68
0.050	33.49	39.33	41.49
0.075	45.64	57.53	71.72
0.100	56.12	76.30	108.74
0.125	65.75	95.31	152.34
0.150	74.92	113.47	201.28
0.175	83.75	130.73	253.46
0.200	91.94	147.57	310.54
0.300	122.70	209.24	552.78
0.400	152.12	265.70	791.46
0.500	184.34	320.17	1010.30



SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

California Bearing Ratio (ASTM D1883)

Project Info:	*317086-54175 / Resolute*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250917(375)*		
Sample Info:	***TH25-04A BS01 0.0-1.0 m***		

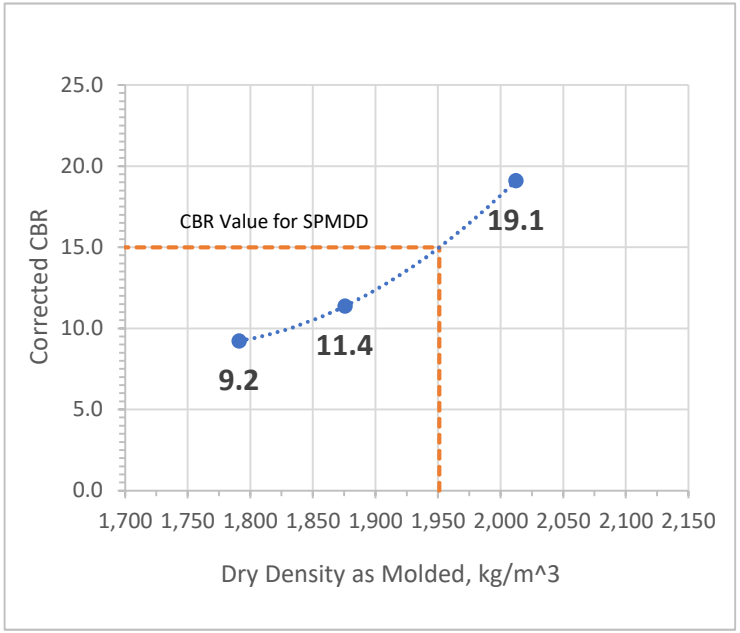
Test Information

Moisture Content: ~ Optimum MC | Test Type: *Unsoaked* | *Test Points:* *3 points*

Shear Rate = 0.05 in/min; Surcharge Amount = 4.54 kg

Test Results

	10 Blows	25 Blows	75 Blows
Dry density before soak, kg/m^3	1791	1875	2012
Dry density after soak, kg/m^3	---	---	---
MC before soak, %	11.2	11.2	11.2
MC after soak, avg., %	---	---	---
MC after soak, top 1", %	---	---	---
% Swell(+)/Consolidation(-) after 96 hr soak	---	---	---
CBR @ depth = 0.200"	**9.2**	**11.4**	**19.1**



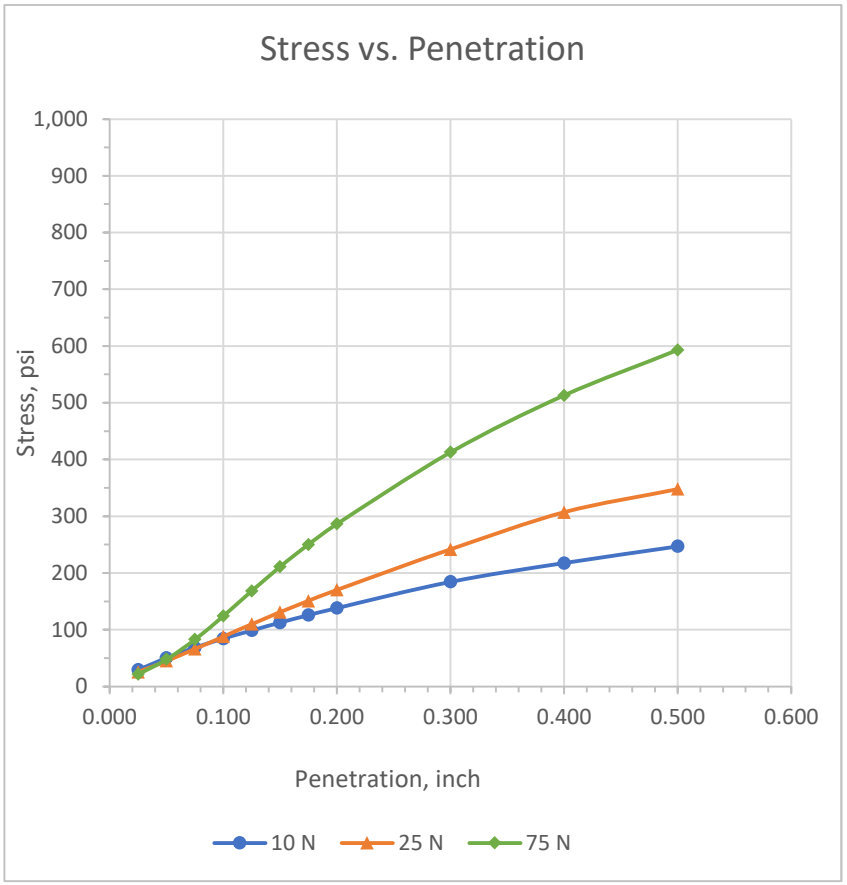
CBR Value ~ 15.0 @ SPMDD = 1951 kg/m^3

SOLUM CONSULTANTS LTD.
GEOTECHNICAL & MATERIAL TESTING LABORATORY

California Bearing Ratio (ASTM D1883)

Project Info:	*317086-54175 / Resolute*	*Reviewed by:*	*S. F.*
Client:	*Worley Canada Services Ltd.*		
Solum Job No.:	*00102250917(375)*		
Sample Info:	***TH25-04A BS01 0.0-1.0 m***		

	Stress (psi)		
Penetration (in)	10 N	25 N	75 N
0.025	29.66	25.81	21.70
0.050	50.43	45.48	48.19
0.075	68.73	66.53	83.20
0.100	84.51	88.25	124.39
0.125	99.00	110.23	168.60
0.150	112.82	131.23	211.32
0.175	126.11	151.19	250.43
0.200	138.44	170.67	286.61
0.300	184.75	241.99	413.15
0.400	217.78	307.29	513.24
0.500	247.21	348.26	593.11



SOLUM™
CONSULTANTS LTD.

GEOTECHNICAL & MATERIAL
TESTING LABORATORY

STANDARD LABORATORY TERMS AND CONDITIONS

1.0 Description of Services to be Performed by Solum Consultants Ltd. (Solum)

Solum shall provide geotechnical and material laboratory testing services on samples in accordance with these terms and conditions and executed Laboratory Testing Request Forms. Solum shall perform its work in accordance with accepted laboratory standards, such as ASTM, CSA or client's specific specs, as well as accepted standard operating procedures. Solum reserves the right to modify methods as necessary based upon experience and/or current scientific literature. If the Client requests a manner of analysis that varies from standard operating or recommended procedures, the Client shall not hold Solum responsible for the results. Such variations of analysis will be noted on the reports. Solum reserves the right to subcontract laboratory testing if a particular test cannot be performed by Solum.

2.0 Reports, Confidentiality and Third Parties

Laboratory reports provided by Solum will be composed of a cover page, tables and figures if applicable. Reports will be e-mailed in PDF format to the individual(s) specified on the Laboratory Testing Request Forms. Laboratory reports may also be faxed or mailed to the Client upon request. Except as required by law, Solum shall not disclose testing results or reports to any party other than the Client, unless the Client, in writing, requests information to be provided to a third party. Solum shall abide by any additional confidentiality requirements requested by the Client provided that such requirements are provided to Solum at or before execution of the testing.

Information provided by Solum is intended for Client use only. Any use by a third party, of reports or documents authored by Solum, or any reliance on or decisions made by a third party based on the findings described in said documents, are the sole responsibility of such third parities, and Solum accepts no responsibility of damages suffered by any third party as a result of decisions made or actions conducted.

3.0 Laboratory Testing Request Form (Chain of Custody)

The laboratory testing request form must be completed by the Client and be accompanied with the samples. Other form of COC may be accepted; however, the condition of Solum COC is still applied. Testing will not commence until the laboratory testing request form has been completed. If requested by the Client, Solum shall provide a copy of the laboratory testing request form with the report.

No persons other than the designated representatives for each Laboratory Testing Request Form are authorized to act regarding changes to the testing request form. Any changes or amendments of the laboratory testing request form must be in writing and be completed by the originator.

4.0 Acceptance, Contamination and Disposal of Samples

Loss or damages to samples remains the responsibility of the Client until Solum representatives acceptance of samples by notation on the laboratory testing request form.

As to any samples that are suspected of containing hazardous substances, the Client will specify the suspected or known substance and level of contamination. This information is to be stated on the laboratory testing request form and be accompanied with the samples before testing can commence. Solum may refuse acceptance of samples if it determines they present a risk to health and safety.

Samples accepted by Solum shall remain the property and liability of the Client while in the custody of Solum. Solum will discard all non-contaminated samples after two weeks of submitting lab report or a month from the date of receiving the samples without additional retention period at a fixed disposal charge, or if requested by the Client, samples may be returned to the Client at no cost to Solum. If requested by client, Solum will store samples provided the client agrees to pay for the storage charge. Contaminated material may be returned/shipped to the Client at the Client's expense or Solum will discard samples with disposal rates varying for samples containing higher levels of contamination, refer to price list.

Soil samples requested to be stored will be stored inside the lab up to the expiration of storage period. Soil samples will be discarded upon the expiration date of the storage period unless client requests either extending storage period or return samples back to client at no cost to Solum.

5.0 Indemnification/Hold Harmless

Solum shall protect, indemnify and save harmless Client, and its directors, officers, employees, agents, representatives, invitees and subcontractors, and at Client's request, investigate and defend such entities form and against all claims, demands and causes of action, of every kind and character, without limitation, arising in favour of or made by third parties, on account of bodily injury, death or damage to or loss of their property resulting from any negligent act or wilful misconduct of Solum.

The Client shall protect, indemnify and save harmless Solum, and its directors, officers, employees, agents, representatives, invitees and subcontractors, and at Solum's request, investigate and defend such entities form and against all claims, demands and causes of action, of every kind and character, without limitation, arising in favour of or made by third parties, on account of bodily injury, death or damage to or loss of their property resulting from any negligent act or wilful misconduct of Client.

6.0 Limitation of Liability

The total liability of Solum or its staff whether based in contract or tort, will be limited to the lesser of the fees paid or actual damages incurred by the Client. Solum will not be responsible for any consequential or indirect damages even if caused by negligence of Solum. Solum will only be liable for damages resulting form negligence of Solum. All claims by the Client shall be deemed relinquished if not made within one year after the testing date. No warranty is either expressed or implied, or intended by any agreement or by furnishing oral or written reports or findings.

7.0 Termination of Testing Work Order

The Client may order work suspended or terminated upon seven days advance written notice. If work is suspended, Solum shall receive, upon resumption, an adjustment in the cost of services to compensate for additional costs incurred due to the interruption of services. Upon suspension or termination, Solum shall preserve samples provided that the Client agrees to pay the sample storage charge.

8.0 Pricing, Payments and Invoicing

Invoices will be based on most current Solum laboratory testing rates; rates may change without notice. Solum invoices shall be paid within thirty (30) days of receipt of the invoice. Amounts not paid when due shall bear interest at the rate of 18% per annum from the date due until the date of payment.

SGS proposal: 20846-PR1
SGS project #: 2510

Work order date: 11-Feb-25
Report date: 24-Feb-25
Sample receipt date: 15-Jan-25
Version: Final

Customer details

Name:	Lauren Tagg
Address:	Worley Consulting

Project reference: Worley Consulting

P.O. number:

COC:

ANALYSIS REPORT

SGS WO: 1

Report Distribution

Name	Email
Lauren Tagg	lauren.tagg@worley.com

Special notes:

3260 Production Way
Burnaby - British Columbia - V5A 4W4
Phone: 604-638-2349 FAX: 604-444-5486

SGS proposal: 20846-PR1
SGS project #: 2510

Work order date: 11-Feb-25
Report date: 24-Feb-25

Version: Final

ANALYSIS REPORT

Method Summaries *Test method information available upon request.*

S(T) and C(T): Total sulfur and total carbon by LECO, Method CSA06V
S(SO4): Sulfate by HCl digestion with ICP finish, Method CSA07V
S(S2-): Sulfide by calculation of S(T) - S(SO4) or by nitric acid digestion with ICP finish (Method CSA08C1)

TIC: Total inorganic carbon by coulometry, Method CSB02V
AP: Acid generating potential based on sulfide sulfur
NP: Modified neutralisation potential by excess acid addition and back titration to pH 8.3
Net NP: Net neutralisation potential = NP - AP

Metals by aqua regia digest with ICP-OES/MS finish, Method ICP21B20/ICM21B20
Metals by multi-acid digest with ICP-OES/MS finish, Method ICP40Q12/IMS40Q12

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Preliminary Data

Anahita Etemadifar - Laboratory Supervisor

Final Data Approval

Noelene Ahern - Manager: ARD

3260 Production Way
Burnaby - British Columbia - V5A 4W4
Phone: 604-638-2349 FAX: 604-444-5486

ABA Report

Test	S(T)	S(SO4)	S(S-2)	Insoluble S	AP
Units	%	%	%	%	kg CaCO3/t
Method Code	CSA06V	CSA07C1	Calc.	Calc.	Calc.
LOD	0.005	0.01	0.01	#N/A	#N/A
Sample ID					
BH24-Q01 4.07-4.17m	0.007	<0.01	0.007	NA	0.2
BH24-Q02 4.38-4.48m	0.005	<0.01	0.005	NA	0.2
Duplicates					
BH24-Q01 4.07-4.17m		<0.01			

QA/QC					
Blank	0.008	<0.01			
Certified standards					
RTS-3a		0.96			
GS915-8	0.135				

SGS proposal: 20846-PR1
SGS project #: 2510

Work order date: 11-Feb-25
Report date: 24-Feb-25

Version: Final

ABA Report

Test Units	C(T) %	TIC %	CaCO3 NP kg CaCO3/t	Modified NP kg CaCO3/t	Net Modified NP kg CaCO3/t	Fizz Test	Paste pH
Method Code	CSA06V	CSB02V	Calc.	Modified	Calc.	Sobek	Sobek
LOD	0.005	0.01		0.5			0.2
Sample ID							
BH24-Q01 4.07-4.17m	12.260	12.53	1043.9	1054.9	1054.7	Moderate	9.41
BH24-Q02 4.38-4.48m	12.260	12.86	1071.8	1040.1	1040.0	Moderate	9.48
Duplicates							
BH24-Q01 4.07-4.17m	12.325			1053.4		Moderate	9.40
QA/QC							
Blank	0.008						
Certified standards							
NBM-1				42.5		Slight	
GS915-8	0.070						

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SGS

ANALYSIS REPORT

ABA Report - CRM Expected Values and Tolerances

CRM	Test	S(T)	S(SO4)	S(SO4)	S(S-2)	C(T)	TIC	CO2	Modified NP	Modified with Siderite Correction NP
	Units	%	%	%	%	%	%	%	kg CaCO3/t	kg CaCO3/t
	Method Code	CSA06V	CSA07V	CSA07D	Calc.	CSA06V	CSB02V	CSB02V	Modified	
	LOD	0.005	0.01	1.01	0.01	0.005	0.01	0.005	0.5	
GGC-07	Expected value	0.51				0.56				
	Tolerance (+/-)	0.09				0.09				
HCC-1	Expected value	33.92								
	Tolerance (+/-)	5.04								
RTS-3a	Expected value		0.98	1.34						
	Tolerance (+/-)		0.12	0.35						
OREAS 278	Expected value				0.699					
	Tolerance (+/-)				0.06					
NBM-1	Expected value								42.44	50.27
	Tolerance (+/-)								3.04	2.31
TIC-L1	Expected value						0.13	0.477		
	Tolerance (+/-)						0.02	0.78		
GS314-2	Expected value	2.56				5.15				
	Tolerance (+/-)	0.14				0.27				
GS915-8	Expected value	0.13				0.07				
	Tolerance (+/-)	0.02				0.02				
OREAS 550	Expected value	0.220				4.110				
	Tolerance (+/-)	0.004				0.22				
SX35-13	Expected value						11.954			
	Tolerance (+/-)						0.626			
SY4	Expected value						0.95			
	Tolerance (+/-)						0.06			

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Sobek With Siderite NP kg CaCO3/t	Fizz Test	Paste pH
	Sobek	Sobek 0.2
57.6	Slight	
1.3		

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Quantitative X-Ray Diffraction by Rietveld Refinement

Report Prepared for:	*ARD-XRD (2510 Worly)* *3260 Production Way, Burnaby, Canada*
Project Number/ LIMS No.	*Custom XRD/MI7005-FEB25*
Sample Receipt:	*February 12, 2025*
Sample Analysis:	*February 21, 2025*
Reporting Date:	*March 13, 2025*

Instrument:	Panalytical X'pert Pro Diffractometer
Test Conditions:	Co radiation, 40 kV, 45 mA; Detector: X'Celerator Regular Scanning: Step: 0.033°, Step time:0.15s, 2θ range: 5-80°
Interpretations :	PDF2/PDF4 powder diffraction databases issued by the International Center for Diffraction Data (ICDD). DiffracPlus Eva and Topas software.
Detection Limit :	0.5-2%. Strongly dependent on crystallinity.

Contents:

1) Method Summary
2) Quantitative XRD Results
3) XRD Pattern(s)

Melody Hao, M.Sc.
Mineralogist

Huyun Zhou, Ph.D., P.Geo.
Senior Mineralogist

Method Summary

Mineral Identification and Interpretation:

Mineral identification and interpretation involves matching the diffraction pattern of an unknown material to patterns of single-phase reference materials. The reference patterns are compiled by the Joint Committee on Powder Diffraction Standards - International Center for Diffraction Data (JCPDS-ICDD) database and released on software as Powder Diffraction Files (PDF).

Interpretations do not reflect the presence of non-crystalline and/or amorphous compounds, except when internal standards have been added by request. Mineral proportions may be strongly influenced by crystallinity, crystal structure and preferred orientations. Mineral or compound identification and quantitative analysis results should be accompanied by supporting chemical assay data or other additional tests.

Quantitative Rietveld Analysis:

Quantitative Rietveld Analysis is performed by using Diffrac Topas 7 (Bruker), a graphics based profile analysis program built around a non-linear least squares fitting system, to determine the amount of different phases present in a multicomponent sample. Whole pattern analyses are predicated by the fact that the X-ray diffraction pattern is a total sum of both instrumental and specimen factors. Unlike other peak intensity-based methods, the Rietveld method uses a least squares approach to refine a theoretical line profile until it matches the obtained experimental patterns.

Rietveld refinement is completed with a set of minerals specifically identified for the sample. Zero values indicate that the mineral was included in the refinement calculations, but the calculated concentration was less than 0.05wt%. Minerals not identified by the analyst are not included in refinement calculations for specific samples and are indicated with a dash.

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WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted.

Summary of Rietveld Quantitative Analysis X-Ray Diffraction Results

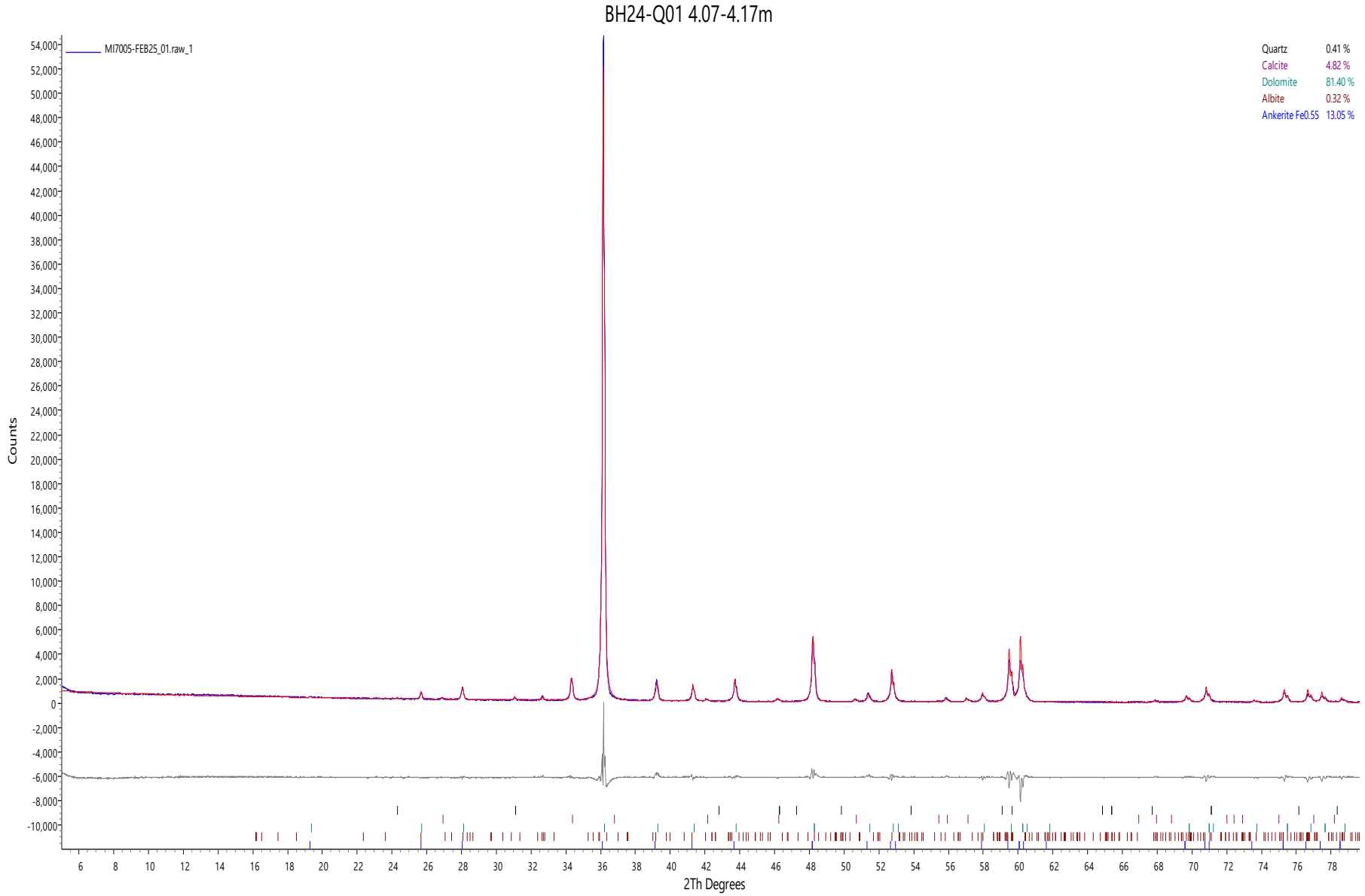
Mineral/Compound	BH24-Q01 4.07-4.17m FEB7005-01 (wt %)	BH24-Q02 4.38-4.48m FEB7005-02 (wt %)	
Quartz	0.4	0.4	
Calcite	4.8	0.2	
Dolomite	81.4	68.6	
Albite	0.3	0.4	
Ankerite	13.0	30.5	
Chlorite	-	-	
Muscovite	-	-	
Biotite	-	-	
Actinolite	-	-	
Grossular	-	-	
Orthoclase	-	-	
Microcline	-	-	
Diopside	-	-	
TOTAL	100	100	

Zero values indicate that the mineral was included in the refinement, but the calculated concentration is below a measurable value.

Dashes indicate that the mineral was not identified by the analyst and not included in the refinement calculation for the sample.

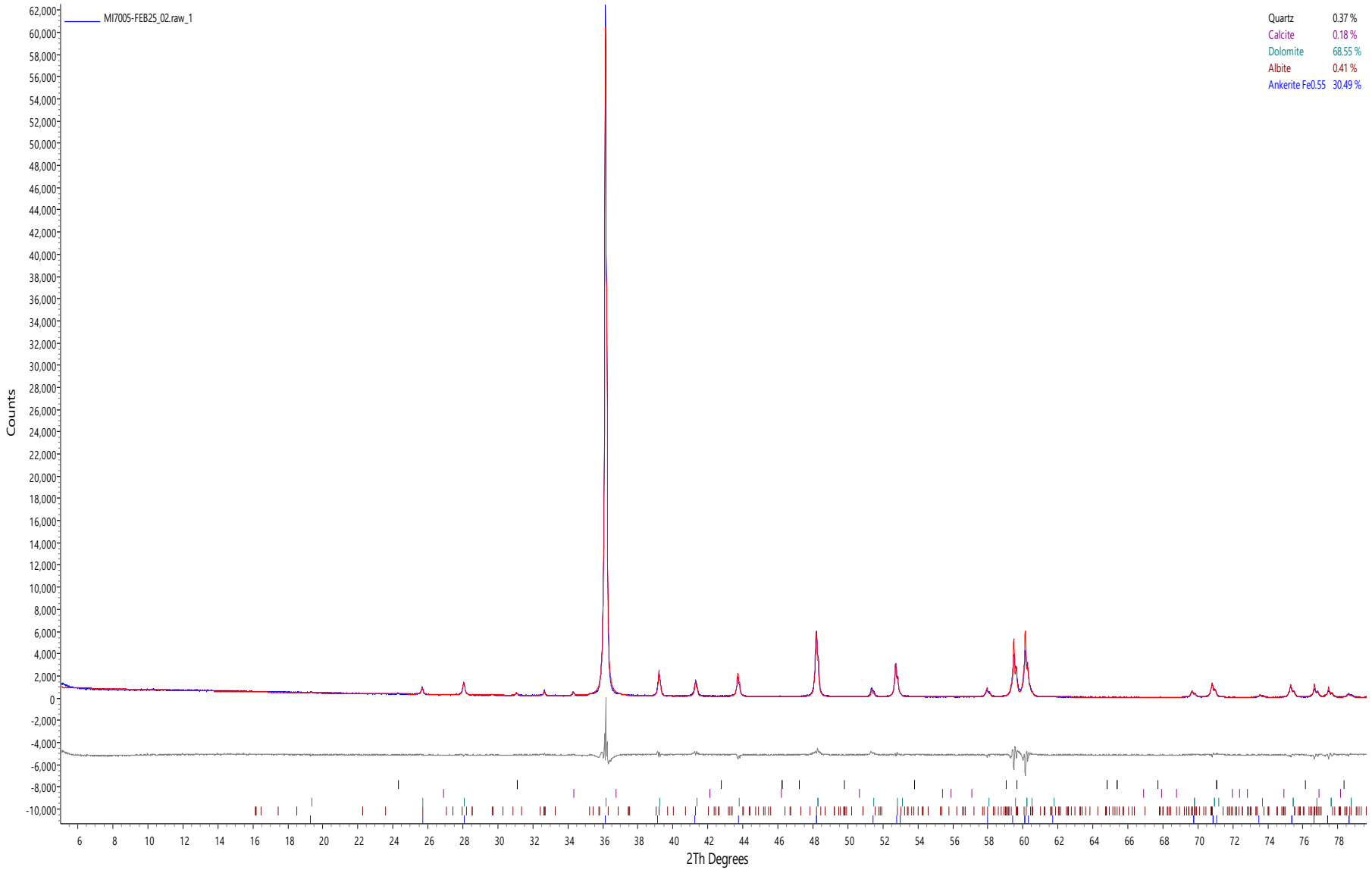
The weight percent quantities indicated have been normalized to a sum of 100%. The quantity of amorphous material has not been determined.

Mineral/Compound	Formula
Quartz	SiO_2
Calcite	$CaCO_3$
Dolomite	$CaMg(CO_3)_2$
Albite	$NaAlSi_3O_8$
Ankerite	$CaFe(CO_3)_2$
Chlorite	$(Fe,(Mg,Mn)_5,Al)(Si_3Al)O_{10}(OH)_8$
Muscovite	$KAl_2(AlSi_3O_{10})(OH)_2$
Biotite	$K(Mg,Fe)_3(AlSi_3O_{10})(OH)_2$
Actinolite	$Ca_2(Mg,Fe)_5Si_8O_{22}(OH)_2$
Grossular	$Ca_3Al_2Si_3O_{12}$
Orthoclase	$KAlSi_3O_8$
Microcline	$KAlSi_3O_8$
Diopside	$CaMgSi_2O_6$


BH24-Q01 4.07-4.17m
MI7005-FEB25_01.raw_1
Quartz 0.41 %
Calcite 4.82 %
Dolomite 81.40 %
Albite 0.32 %
Ankerite Fe0.55 13.05 %
Counts
2Th Degrees

SGS

BH24-Q02 4.38-4.48m



Report 250010 for
Lauren Tagg,
Worley Consulting,
2930 Virtual Way, Unit 200,
Vancouver, BC, V5M 0A5 **January, 2025**
604-440-7178 (mob)
VancouverOffice@worley.com

Samples: BH24-Q01, BH24-Q02, Quarry #2

Summary:

Sample BH24-Q01 is of massive marble composed of uniform extremely fine grained slightly turbid calcite with trace disseminated non-reflective opaque (probably hematite). A patch 4 x 1 to 1.5 mm across is of slightly coarser grained, clear calcite with trace non-reflective opaque.

Sample BH24-Q02 is of massive marble that is similar to Sample BH24-Q01; it is slightly coarser grained, contains slightly more abundant dusty disseminated non-reflective opaque (probably hematite), and contains more abundant but smaller patches of recrystallized, clear calcite.

Photographic Notes:

The scanned sections show the gross textural features; these features are seen much better on the digital image than on the printed image. For the photographs, sample numbers are shown in the upper left corner, photo numbers are shown in the lower left corner, and the letter in the lower right corner indicates the lighting conditions: plane polarized transmitted light (P); transmitted light in crossed nicols (= X); reflected light in slightly crossed nicols and transmitted light in crossed nicols (= ~RX). Locations of photographs are shown on the scanned section. Descriptions of the photographs are at the end of the report.

John G. Payne, Ph.D., P.Geol.
Tel: (604)-597-1080
email: jppayne@telus.net

Sample BH24-Q01 Limestone/Marble

The sample is of massive uniform extremely fine grained slightly turbid calcite with trace disseminated no-reflective opaque (possibly hematite). A patch 4 x 1 to 1.5 mm across is of slightly coarser grained, clear calcite with trace non-reflective opaque.

mineral	**percentage**	**main grain size range (mm)**
calcite	99.5%	0.03-0.06
non-reflective opaque	minor	0.02-0.04
pyrite (?)	trace	0.01
recrystallized		
calcite	0.4	0.07-0.15

Calcite forms anhedral equant, slightly turbid grains. The rock effervesces slowly to moderately with cold dilute HCl.

Non-reflective opaque (hematite?) forms trace disseminated patches up to 0.05 mm across. One patch contains a grain of pyrite 0.01 mm across.

A fairly sharply defined patch 4 x 1 to 1.5 mm in size is of slightly coarser grained, clearer recrystallized calcite.

Sample BH24-Q02 Limestone/Marble

The sample is similar to Sample BH24-Q01; it is slightly coarser grained, contains slightly more abundant dusty disseminated non-reflective opaque (probably hematite), and contains more abundant but smaller patches of recrystallized, clear calcite.

mineral	**percentage**	**main grain size range (mm)**	
calcite	99.9%	0.05-0.08	(a few up to 0.12 mm)
non-reflective opaque	0.3	dusty-0.05	
recrystallized			
calcite	0.4	0.07-0.1	

Calcite forms anhedral slightly to moderately turbid equant grains mainly of fairy uniform size.

Much of the section contains minor non-reflective opaque (hematite?) that ranges from dusty to patches up to 0.05 mm across.

A few recrystallized patches up to 1 mm across are of slightly coarser grained, commonly clearer calcite; some of these have cavities up to 0.3 mm across.

List of Photos

Photo	Sample	Description
01	BH24-Q01	extremely fine grained, turbid calcite with minor disseminated hematite; with a fairly sharply defined elongate patch of slightly coarser grained, clear, recrystallized calcite with minor disseminated hematite.
02	BH24-Q01	same view as Photo 01 (crossed nicols).
03	BH24-Q02	extremely fine grained calcite with minor to accessory disseminated hematite as dusty disseminations and a few patches up to 0.05 mm across; top right: small patch of recrystallized calcite-(hematite).
04	BH24-Q02	in the centre: patch of slightly coarser grained, recrystallized clear calcite with cavities (possibly formed during recrystallization) surrounded by slightly turbid, slightly finer grained calcite with disseminated hematite (mainly dusty with local concentrations up to 0.03 mm across.

VP250010 worley blocks

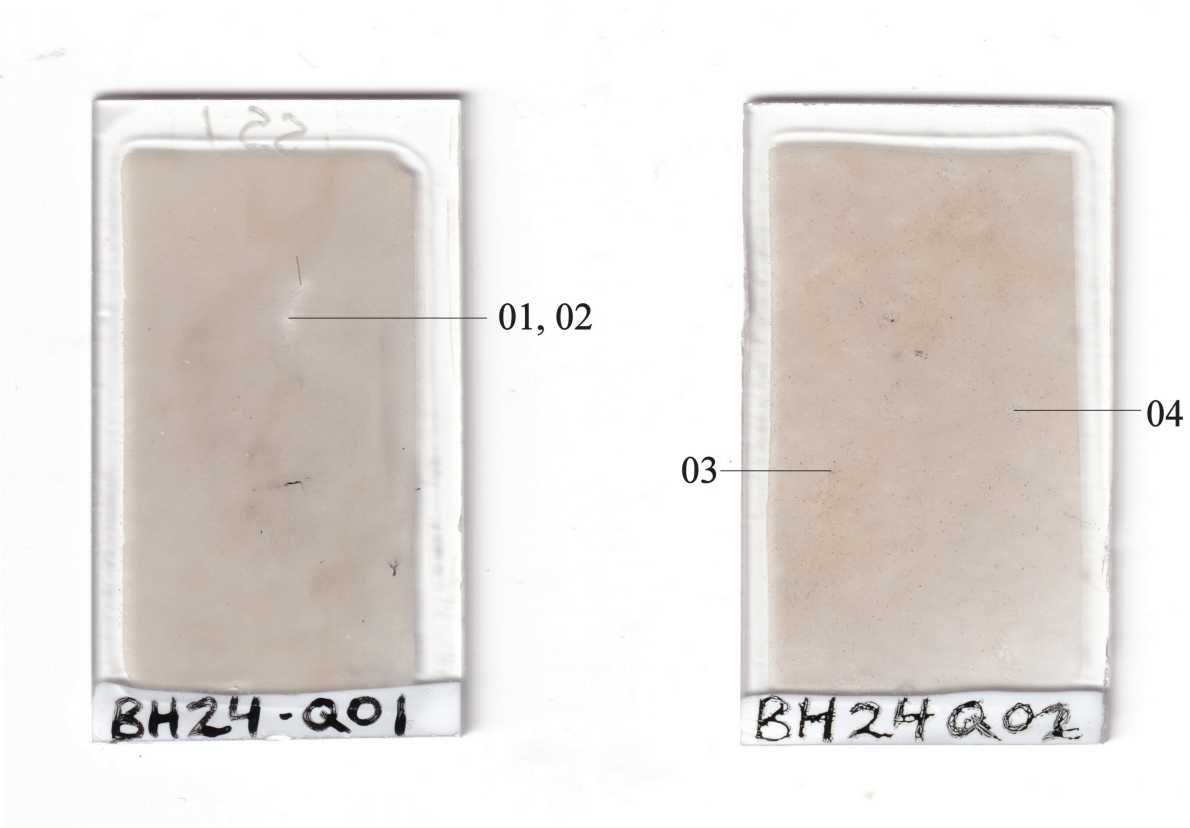


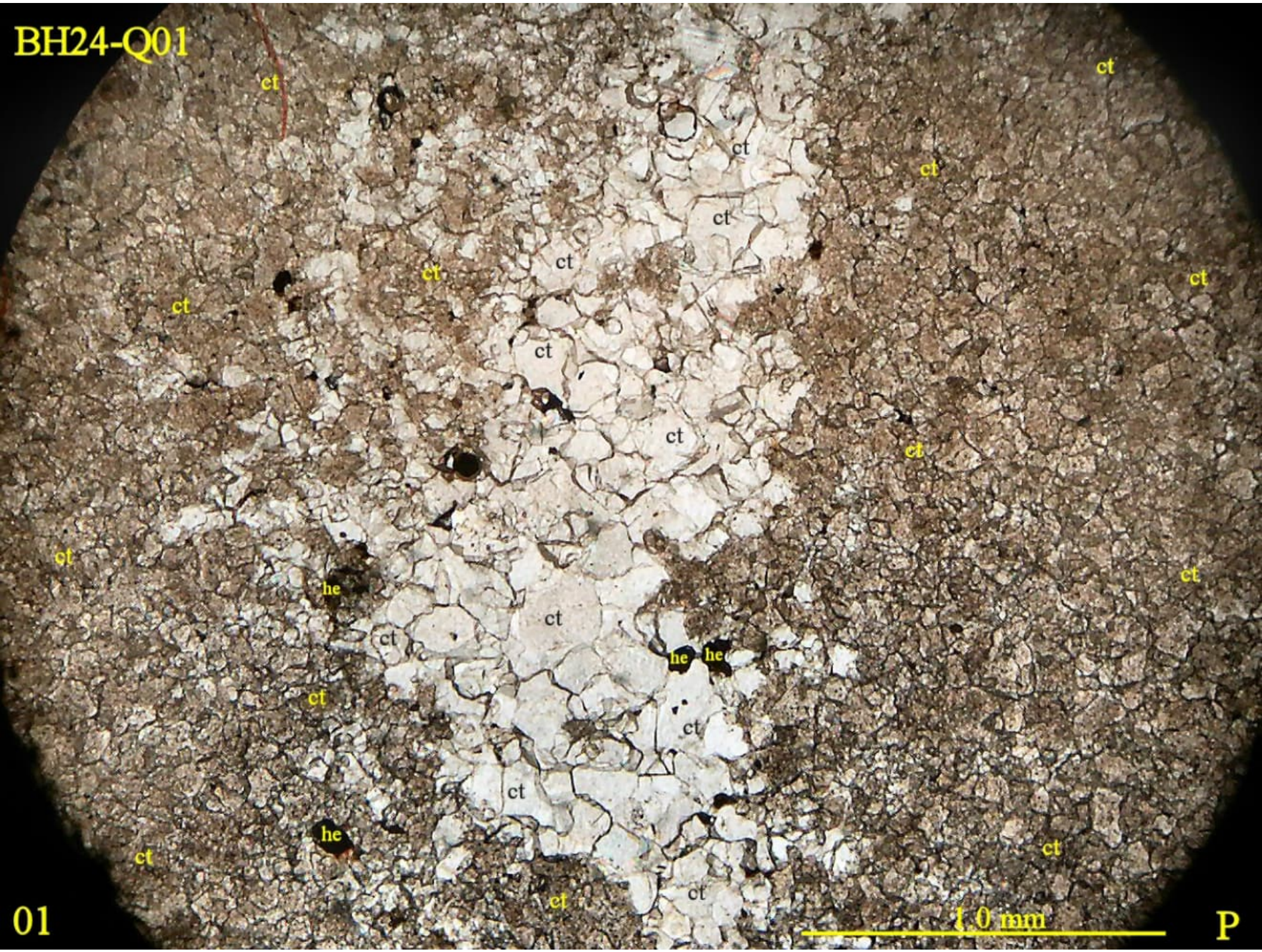
BH24-Q01

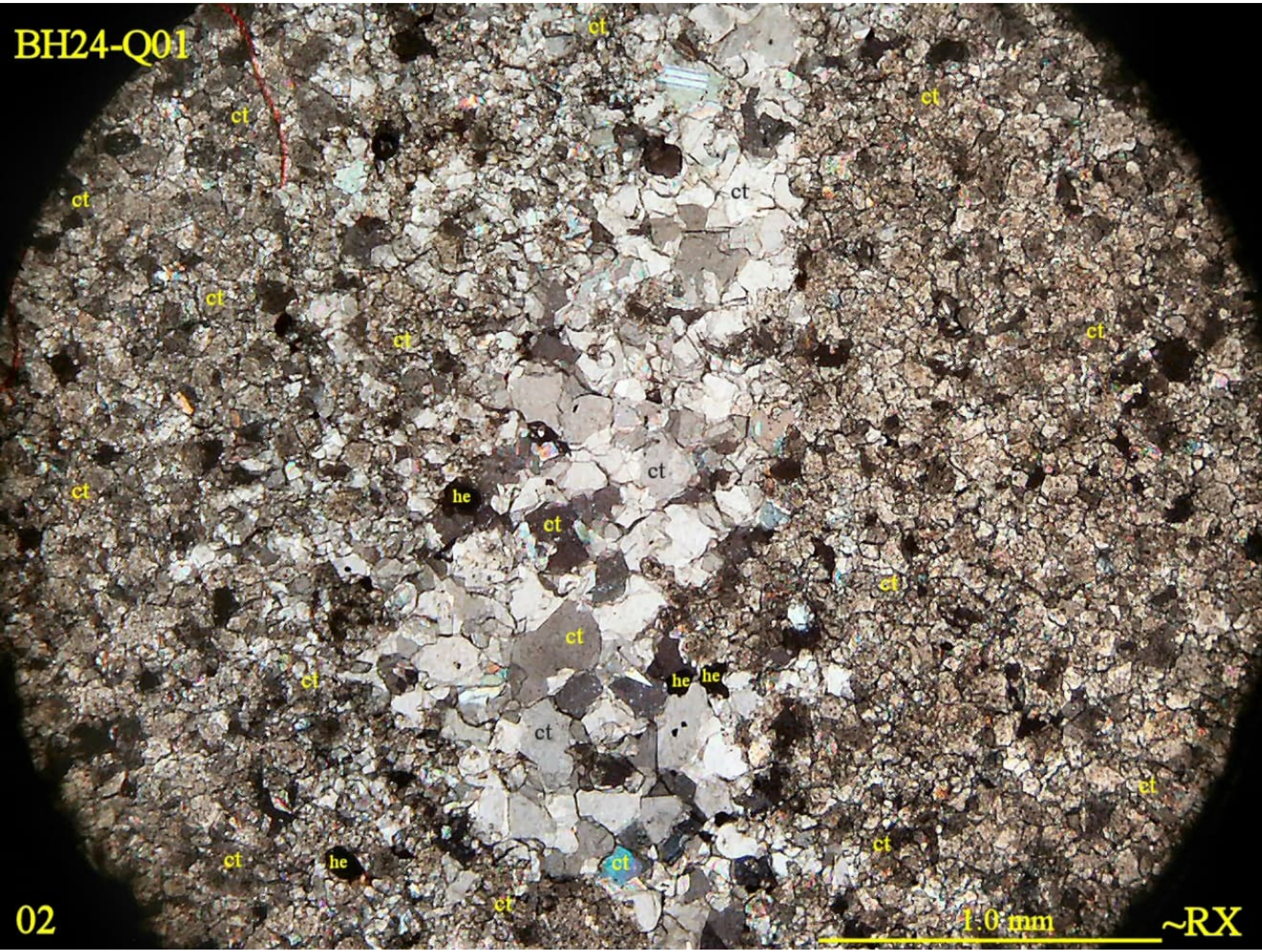


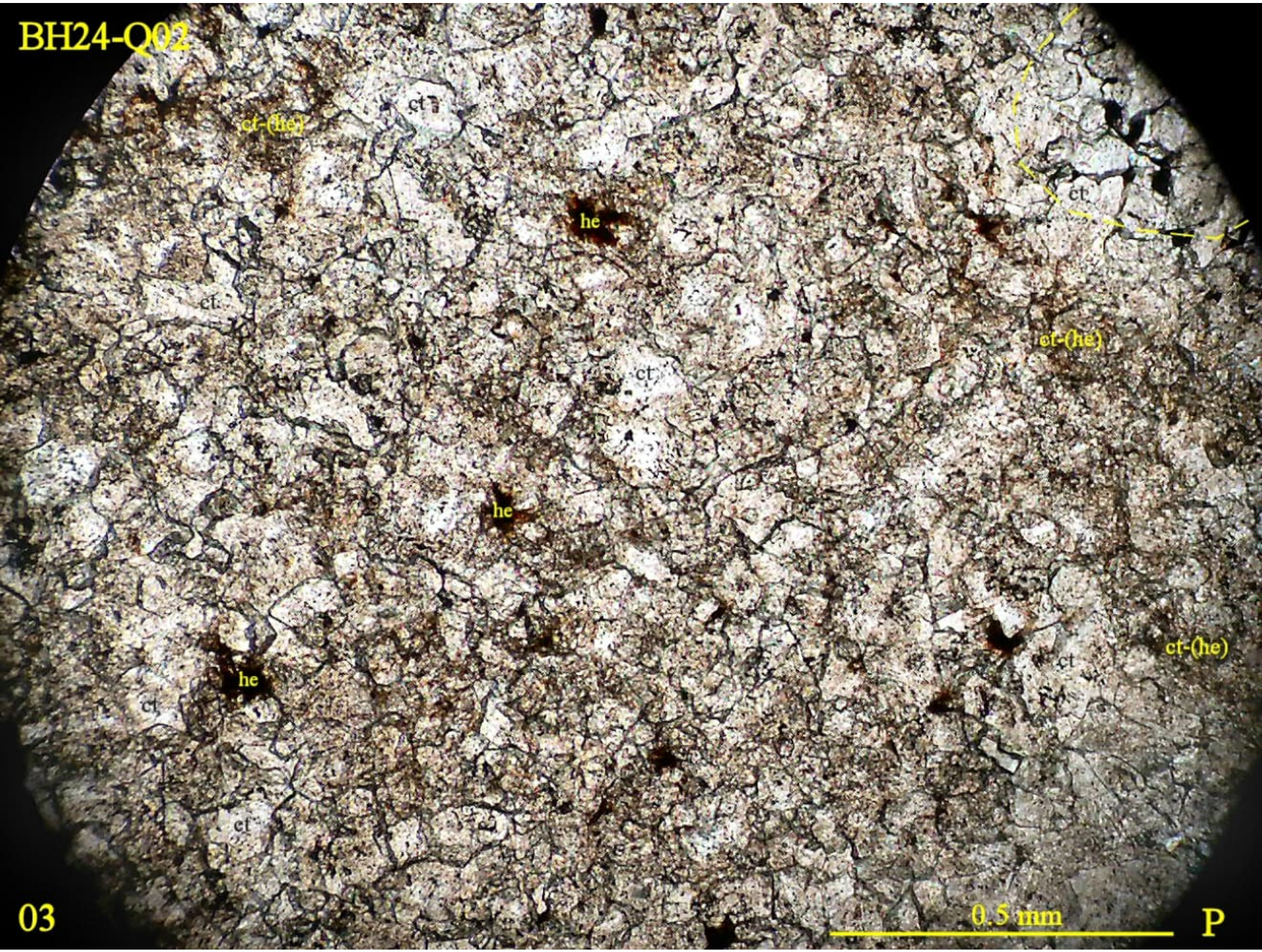
BH24-Q02

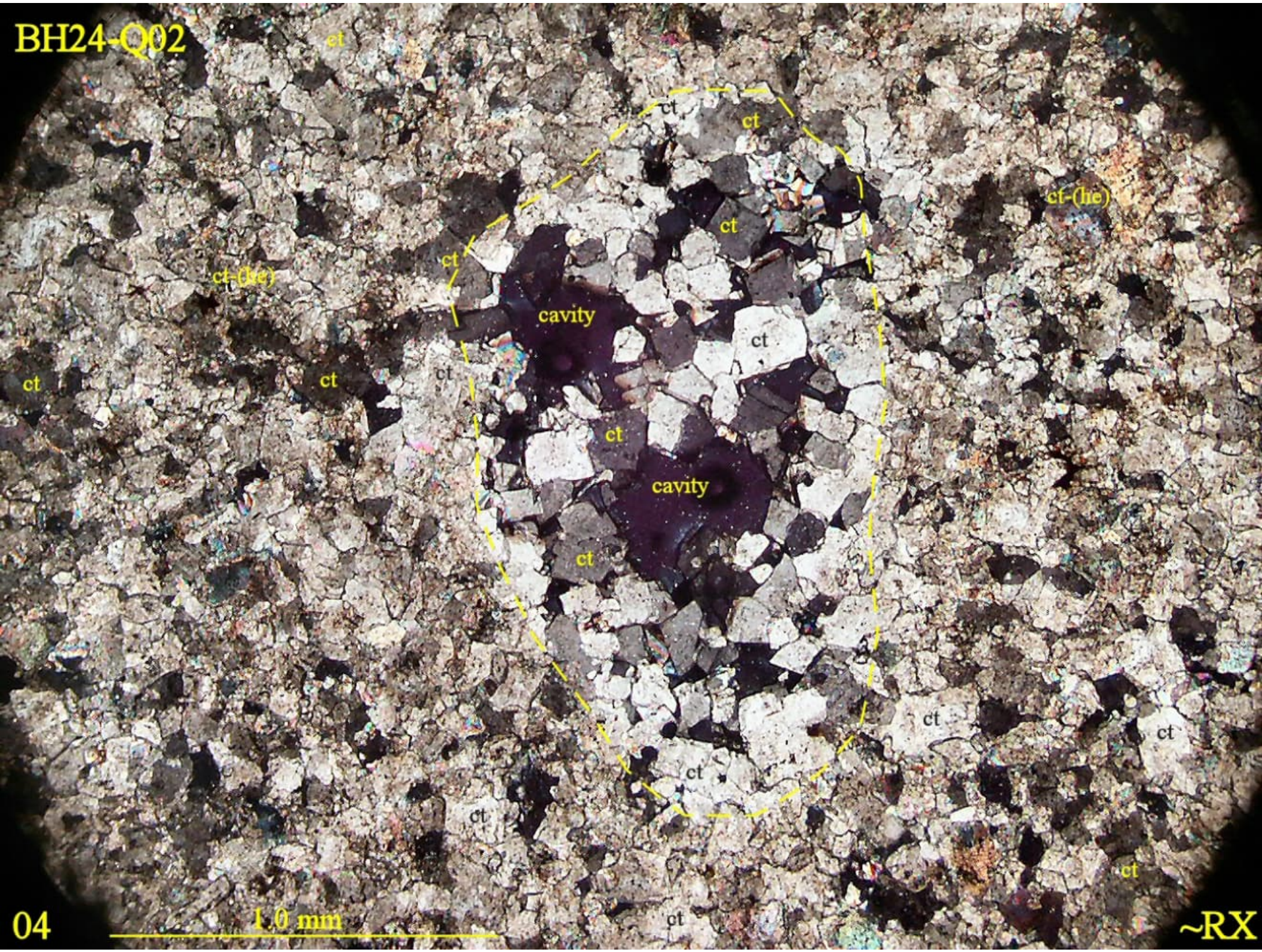
VP250010 worley sections




BH24-Q01
ct
he
1.0 mm
01
P


BH24-Q01
ct
he
02
1.0 mm
~RX


BH24-Q02
ct-(he)
ct
he
ct
ct
ct-(he)
ct
he
ct
ct-(he)
ct
ct
ct
03
0.5 mm
P


BH24-Q02
ct
ct
ct
ct
ct-(he)
ct
ct
ct-(he)
cavity
ct
ct
ct
ct
cavity
ct
ct
ct
ct
ct
ct
ct
ct
ct
04
1.0 mm
~RX

Appendix G. Geophysical Survey Results by Frontier Geosciences Ltd.

Frontier Geosciences Inc.

MULTIBEAM BATHYMETRY, SEISMIC REFRACTION AND MULTICHANNEL ANALYSIS OF SURFACE WAVES SURVEY REPORT

RESOLUTE BAY HARBOUR PROJECT

RESOLUTE BAY, NU

Submitted to:

Worley

February 27, 2026

Authors:

Sean Henry, B.Sc.

Cliff Candy, P.Geo.

Project: FGI-1890

237 St. Georges Ave.
North Vancouver, B.C.
V7L 4T4

604 987 3037

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1. Introduction

During the period of August 27 and 28, 2024, Frontier Geosciences Inc. carried out a multibeam bathymetry investigation for Worley, in support of the Resolute Bay Harbour project, located in Resolute Bay, Nunavut. A Survey Location Plan of the area is shown at a scale of 1:50,000 in Figure 1 of the Appendix.

The purpose of the geophysical survey was to provide bathymetric information in the Resolute Bay harbour. The bathymetry profiling was carried out over an area of approximately 0.134 square kilometres. In addition, the 2019 sub-bottom acoustic profiling and seismic refraction data (Ref. 1) were reinterpreted with reference to the 2024 drilling program data.



Resolute Bay

2. The Multibeam Bathymetric Survey

2.1 Survey Equipment

The overwater bathymetry survey was completed using an Imagenex DeltaT multibeam sonar. This sonar sounder operates at 675 kHz, and provides a resolution of 0.2% of range. The sonar employs an ethernet connection to transmit the data at high speed to the acquisition system for real-time display and logging. The motion and orientation of the sonar system were monitored with a Honeywell HMR gyro-compass. The resolution of the Honeywell heading, roll and pitch measurement is 0.1 degrees. The vessel used for this survey was a small aluminum boat, with power for the system provided by a gas powered generator.

The position of the sonar system was monitored with a Hemisphere S320 GNSS/GLONASS RTK Global Positioning System (GPS) receiver. The Hemisphere S320 is a 24-channel, dual frequency receiver with L1 and L2 carrier phase measurements. The system includes a GPS antenna, receiver, internal radio and a battery in a unit that is utilized as a RTK rover. The RTK position corrections can be received either by the internal radio, or by the built-in GSM module for mobile phone communication. Communication between the receiver and handheld controller is provided through Bluetooth wireless technology.

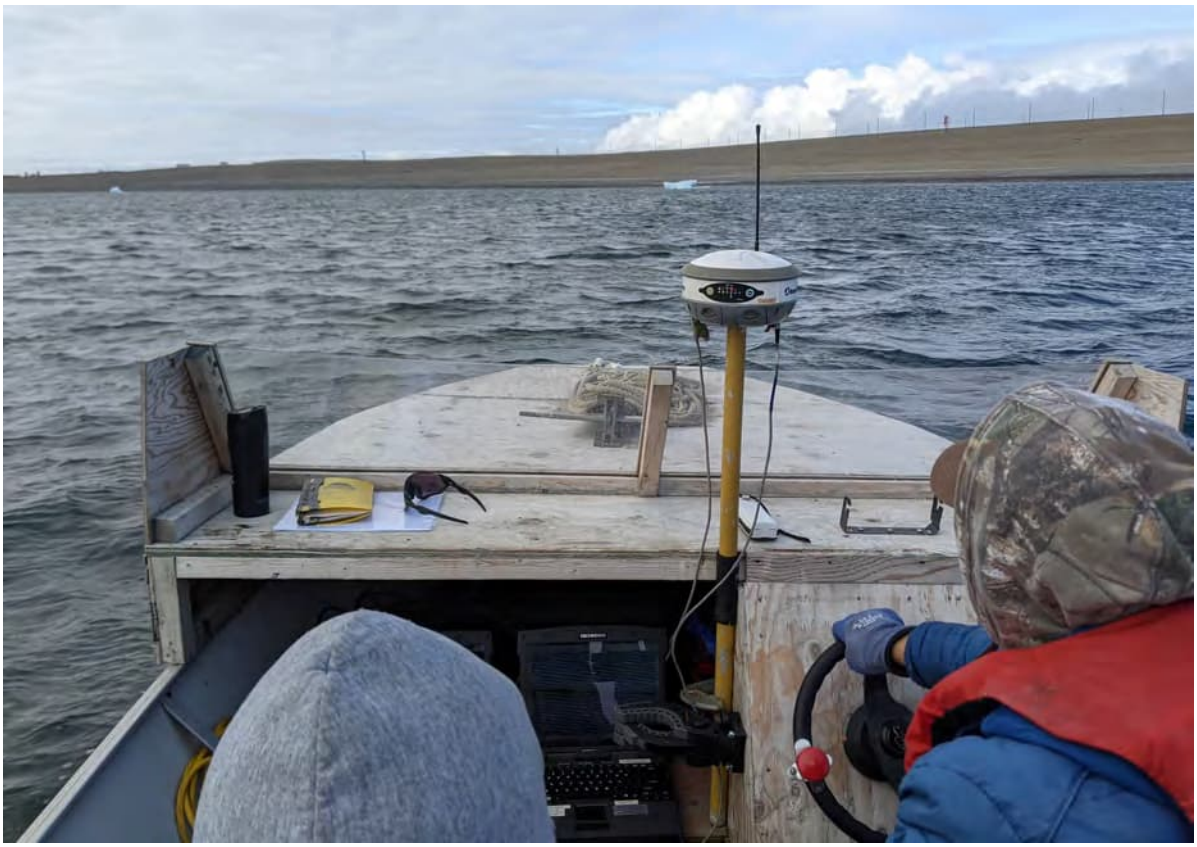
2.2 Survey Procedure

The multibeam sonar was placed in the water at a depth of 34 centimetres on the starboard side of the survey vessel. Data collected from the Imagenex DeltaT were logged in real-time, together with position information, and the HMR gyro-compass data. All data were stored in time synced notebook computers. The horizontal datum used was UTM NAD83 Zone 15 and vertical datum Tide & Chart. The survey was carried out in good conditions, and the continuity and quality of the data were excellent.

2.3 Data Processing and Interpretation Procedure

The sonar position and orientation measurements and sonar depth measurements were combined and analyzed using the MB-System multibeam data processing software, developed by the Monterey Bay Aquarium Research Institute and the Lamont-Doherty Earth Observatory. The resulting sonar files were processed to produce a map that merges each individual swath to produce a final detailed map. Gridding and contouring of the data were conducted with the Golden Software program Surfer. A value of 1470 m/s was used to convert the sonar range information into depth.

Control, benchmarks and the uplands survey were provided by Underhill (Ref. 2). All data are presented referenced to Tide and Chart Datum using a conversion of 1.347 metres with respect to Geodetic datum (CGVD2013).



Bathymetric Survey Operations

3. The Seismic Refraction and Multichannel Analysis of Surface Waves Survey

3.1 Survey Equipment

The seismic refraction investigation was carried out using a Geometrics Geode 24 channel, signal enhancement seismograph and Oyo Geospace 10 Hz hydrophones. Hydrophone intervals along the multicored seismic cable were maintained at 7.5 metre intervals in order to ensure high resolution data on subsurface layering. Seismic energy was provided from a percussive firing ro discharging blank, black powder, 8 gauge, industrial shells. Shot initiation or zero time was established by metal to metal contact of a striking hammer contacting the firing pin of the firing rod.

3.2 Survey Procedure

For each marine seismic spread, the hydrophone cable array was laid onto the ocean bottom in a straight line The line was traversed with the seismic energy source, moving progressively down the array of geophones. The seismic source was operated at each individual shotpoint and up to 24 channels of data were recorded digitally with the seismograph. Additional shotpoints were located off the ends of the seismic array where site conditions permitted, to ensure adequate coverage of the subsurface. Each shot was triggered individually and arrival times for each hydrophone were measured in the seismograph and recorded in the field laptop. Each record length was 2.048 seconds to be sufficiently long to capture the full surface wave train. For quality assurance, field inspection of raw data after each shot was carried out, with additional shots recorded if first arrivals were unclear.

3.3 Seismic Refraction Interpretive Method

The final interpretation of the seismic refraction profiles was arrived at using the Rayfract tomography program. Tomographic inversion of compressional, P-wave travel times was achieved by visually picking the onset arrivals of refracted signals at each receiver. The tomographic analysis then automatically calculates velocities at points across the grid using the simultaneous iterative reconstruction technique. This modification of the initial velocity values consists of repeated cycles of three steps: forward computation of model travel times, calculation of residuals, and application of velocity corrections. An iterative approach using the Neighbourhood Algorithm generates the most accurate subsurface model that is the closest match to the picked compressional wave arrival times for each seismic spread. The best resulting model reduces or eliminates any residual differences between the picked arrival times and the calculated arrival times generated by the inversion analysis.

3.4 MASW Interpretive Method

Interpretation of the MASW data involved a wavefield transformation of the seismogram record. This converted the seismogram from a multichannel shot gather to a dispersion curve that showed the phase velocity of the signal as a function of frequency. The data were processed through the Geometrics Seisimager software and a dispersion curve was created. The fundamental mode event was picked on the dispersion curve and this data inverted in the Seisimager modelling program. The resulting model reveals the shear wave layer velocity structure, and plotted at the centre of the picked seismic array. The individual models produced were then gridded together to produce a shear wave velocity depth section along the survey line.

The MASW processing was applied at select locations where significant sediment thicknesses were present. The relevant seismograms were used to generate a single stacked dispersion curve image with the highest signal-to-noise (S/N) ratio. The derived velocities were then posted on the seismic section, centred on the range of selected seismograms.

4. Geophysical Results

4.1 General

The interpreted bathymetric elevation contour plan is shown at a scale of 1:2,500 in Figure 2 of the Appendix. The bathymetry data were merged with Lidar uplands topographic information, provided by Underhill Geomatics (Ref. 2). Figure 3 shows the bathymetry and topography in the 2019 marine survey area (Ref. 1). Figure 4 shows the interpreted bedrock contour plan acquired in the 2019 marine survey. This map also shows the drill hole locations for the September 2024 drilling program. The reinterpretation of the sub bottom acoustic profiling data delineated a reflector associated with the top of weathered rock. The elevation of this horizon is mapped in plan in Figure 5. The reinterpretation also identified a shallow clay layer at intermediate water depths. The map of the distribution and thickness of this interpreted clay layer is shown in Figure 6.

4.2 Discussion

The bathymetric data, presented in Figure 2, indicates that the seabed depth increases at a relatively constant rate with distance from shore. For the most part, the shallow near-shore shelf often seen in arctic shorelines is absent, except in the central, northeast area of the bay. The seabed elevation decreases to approximately -20 metres at just over 300 metres from shore in the north section of the survey area. In the southern coverage, the seabed slope is greater, with elevations of -18 metres seen approximately 200 metres off shore. Less dense coverage was obtained in the lower priority southern shoreline.

A distinct reflector associated with a shallow clay layer that was identified in Boreholes BH25-09 and BH25-10 at elevations below approximately -4 to -6 metres. These softer materials appear to have accumulated in seafloor depressions, with the acoustic profiling data showing the thickest part of the clay layer present in the area of borehole BH25-09. A second deposit of shallow clay is also seen in a depression to the southeast of the area of the drilling investigation.

Figure 5 shows the top of the interpreted weathered rock, in general agreement with bedrock elevations encountered in the drilling program. Seismic refraction lines SL-19-RB-02 and SL-19-RB-03 are shown in Figures 7 and 8. The tomographic processing of the refraction data shows the presence of a lower velocity surficial layer that appears to also include the gravel layer, as well as the shallow clay. The MASW results, displayed in Figures 9 and 10, are in general alignment with the refraction results.



RTK Base Station Setup

5. Limitations

The depths to ocean bottom derived from overwater bathymetric profiling surveys are generally accepted as accurate to within 0.2 percent of the depth range. Errors may arise from variations in salinity and water temperature within the water column. An underestimate of the velocity function would produce depths that are too shallow, and the reverse occurring with an overestimate of velocity. Additional, small errors may also occur in data gridding.

The depths to subsurface boundaries derived from seismic refraction surveys are generally accepted as accurate to within ten percent of the true depths to the boundaries, below 10 metres. Above 10 metres, the accuracy of seismic refraction data is approximately +/- 1.5 metres due mainly to the greater statistical error in determining the upper velocity layers from fewer data points. In some cases, unusual geological conditions may produce false or misleading data points with the result that computed depths to subsurface boundaries may be less accurate.

The multichannel analysis of surface waves (MASW) method is carried out in the Active or Passive mode with the Active mode generally the most accurate for evaluation of shallow, shear wave velocities. Limitations include reflection and scattering of surface and body waves due to extreme surface topography and in-homogeneous conditions in the subsurface such as boulder concentrations or isolated soil lenses with contrasting properties. Additionally, there are limitations in gridding the data, which can cause sharp velocity changes to present as more gradual contours. The method is generally accepted as an effective means of determining shear wave velocities of geological units.

Shear wave velocity measurements are most effective in the middle range of exploration depths. In the very shallow layers the method may not track very thin low velocity layering accurately. The velocities in the deepest parts of the MASW profile are derived from the lowest frequency parts of the dispersion curve, and tend to have more variability. As the interpreted compressional wave data is directly determined from basal refractor velocity, this value has a high accuracy in distinguishing changes in bedrock conditions, and should be used as the primary method for evaluating bedrock competency.

In seismic refraction surveying difficulties with a 'hidden layer' or a velocity inversion may produce erroneous depths. The first condition is caused by the inability to detect the existence of a layer because of insufficient velocity contrasts or layer thicknesses. A velocity inversion exists when an underlying layer has a lower velocity than the layer directly above it. The interpreted depths shown on drawings are to the closest interface location, which may not be vertically below the measurement point if the refractor dip direction departs significantly from the survey line location. Structural discontinuities occurring on a scale less than the hydrophone spacing or isolated boulders would go undetected in the interpretation of the data. The seismic refraction method may not detect a narrow canyon-like feature incised into bedrock, if the canyon width is narrow relative to the depth of burial of the feature.

The information in this report is based upon geophysical measurements and field procedures and our interpretation of the data. The results are interpretive in nature and are considered to be a reasonably accurate representation of existing subsurface conditions within the limitations of the survey methods discussed.

For: Frontier Geosciences Inc.

Sean Henry, B.Sc.

Cliff Candy, P.Geo. Feb 27, 2024

REGISTERED PROFESSIONAL ENGINEER C.E. CANDY LICENSEE

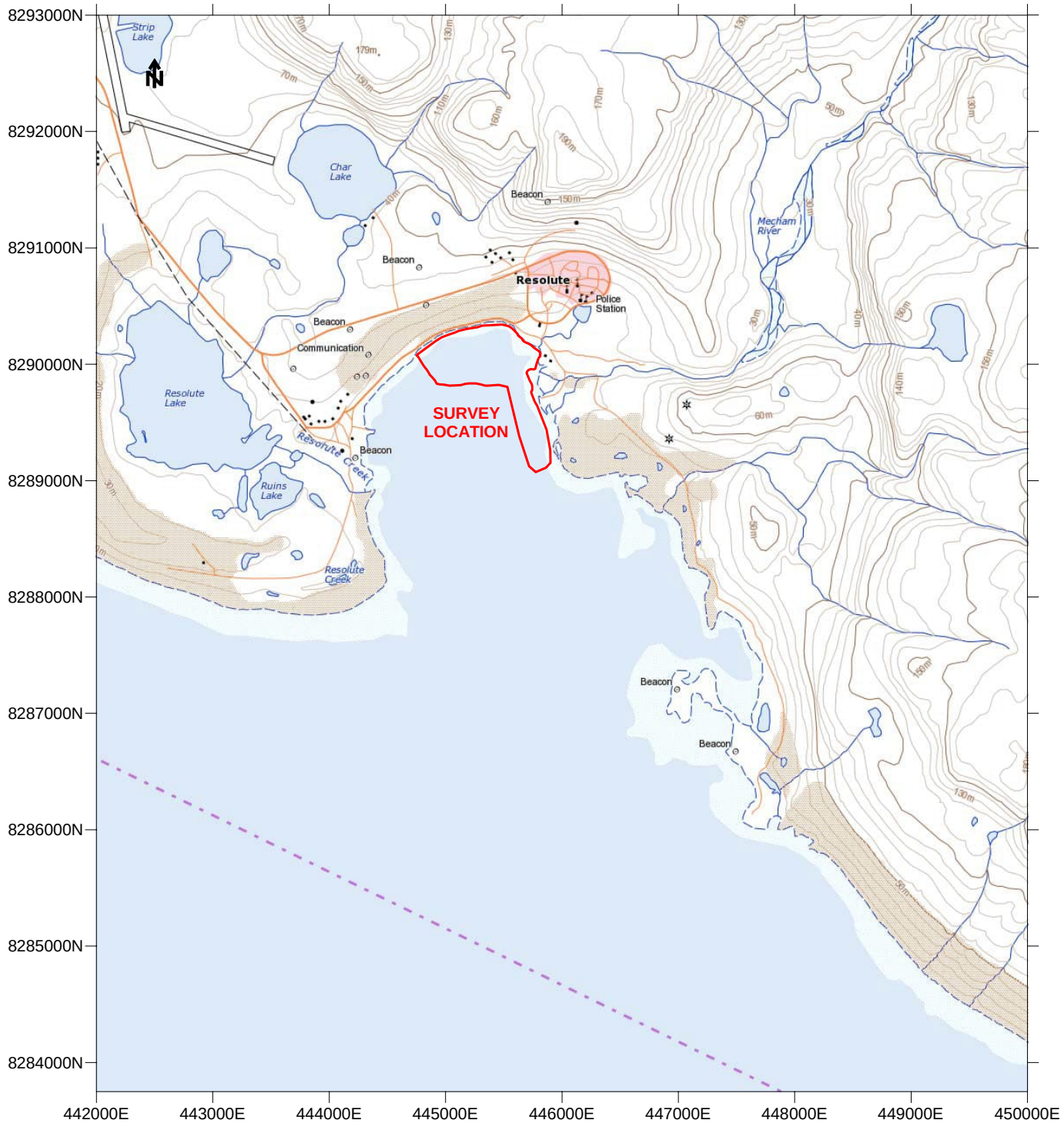
Engineers and Geoscientists of Northwest Territories/Nunavut Permit to Practice # P1551

6. References

Ref 1: Frontier Geosciences Inc., Seismic Refraction and Sub-Bottom Acoustic Profiling Survey Report, FGI-1630, Small Craft Harbours Study, Lancaster Sound Area, Nunavut, Advisian, Dec. 9, 2019

Ref 2: Underhill Geomatics Ltd. Small Craft Harbour Feasibility Studies, Control Network Survey Report, Resolute Bay, Nunavut, Worley, Dec. 10, 2024

APPENDIX



0 0.5 1 1.5 2

KILOMETRES

NATURAL RESOURCES CANADA
TOPORAMA MAPSHEET 58F11
UTM NAD83 ZONE 15

WORLEY

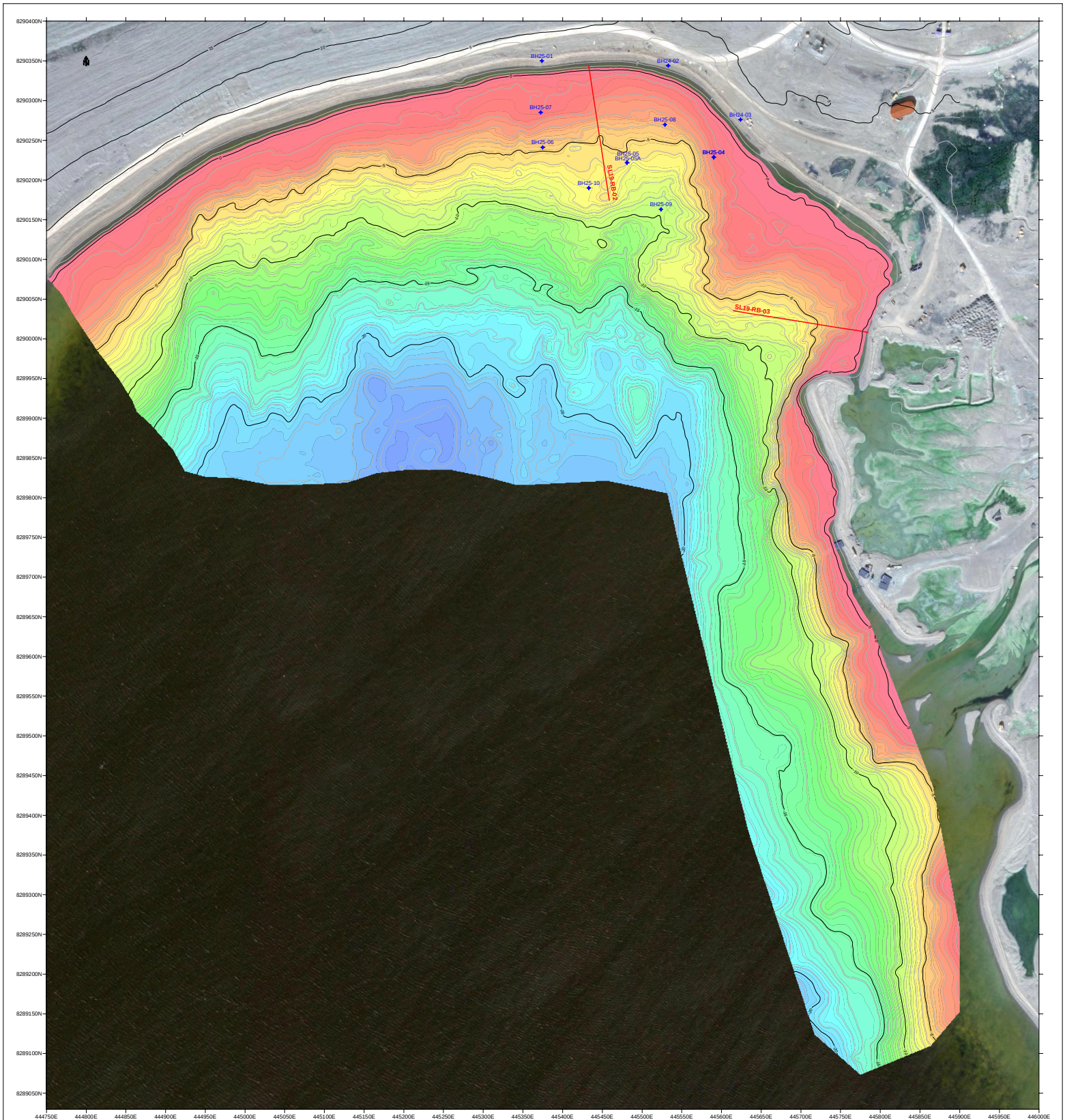
RESOLUTE BAY, NUNAVUT

MARINE GEOPHYSICAL SURVEY

SURVEY LOCATION PLAN

FRONTIER GEOSCIENCES INC.

DATE: AUG. 2024	SCALE 1:50,000	FIG. 1



UTM NAD83 ZONE 15 HORIZONTAL DATUM
TIDE AND CHART VERTICAL DATUM

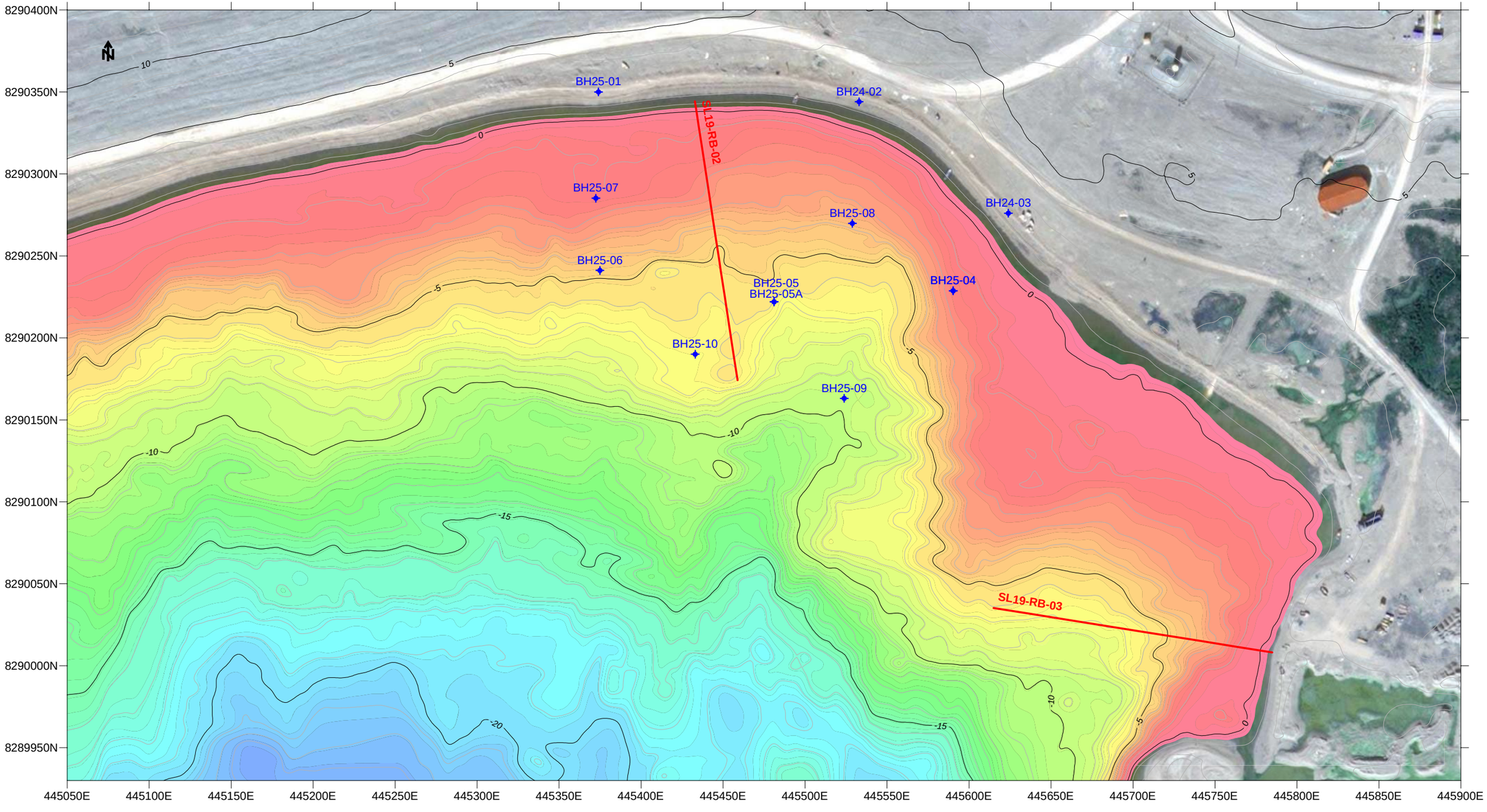
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RESOLUTE BAY, NUNAVUT

MARINE GEOPHYSICAL SURVEY

BATHYMETRIC ELEVATION
CONTOUR PLAN
WITH UPLANDS LIDAR

FRONTIER GEOSCIENCES INC.

DATE: AUG. 2024	SCALE 1:2,500	FIG. 2



-30 -20 -16 -13 -10 -6 -3 0.5

ELEVATION (m)

0 25 50 75 100

METRES

UTM NAD83 ZONE 15 HORIZONTAL DATUM
TIDE AND CHART VERTICAL DATUM

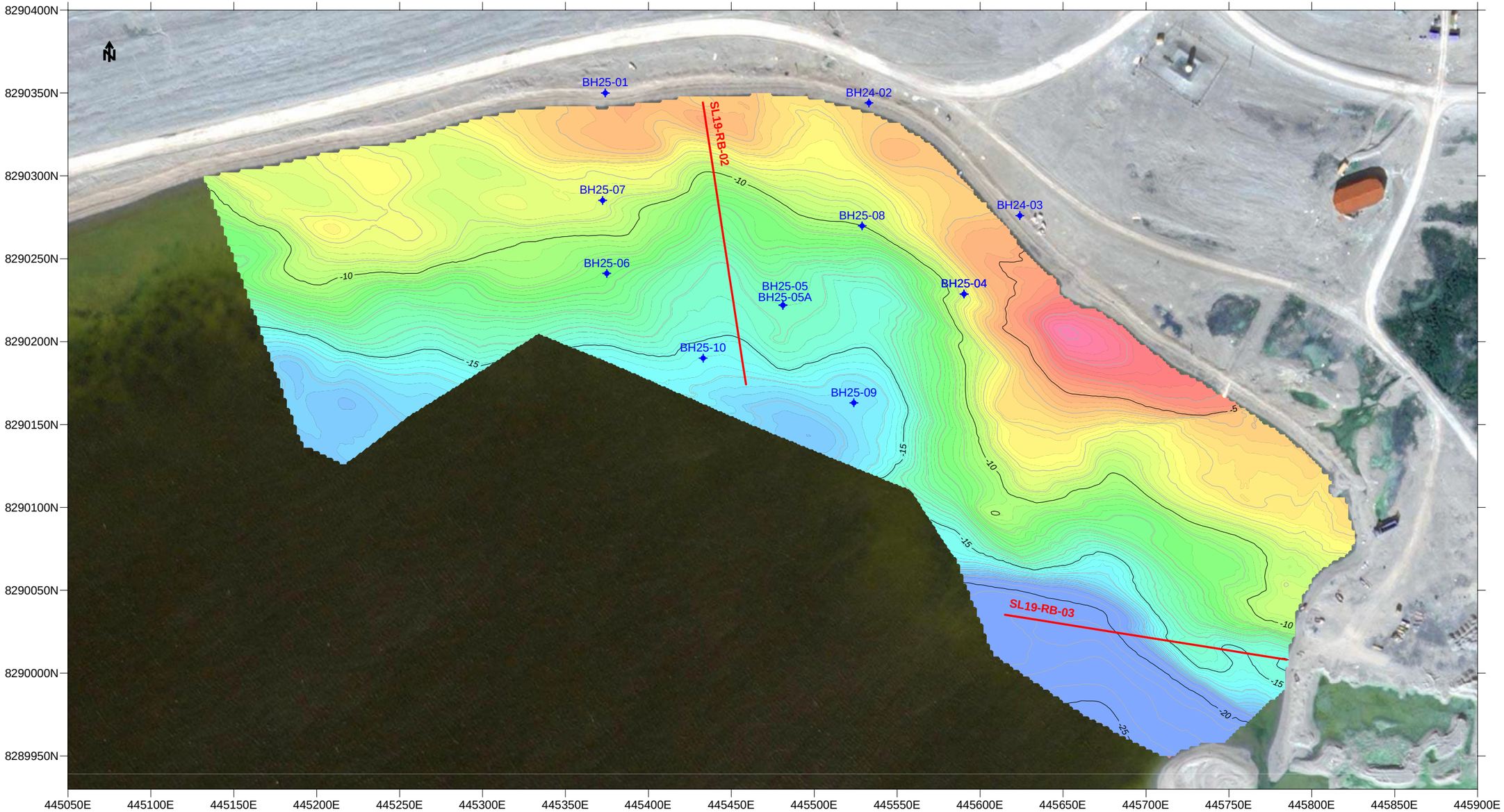
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MARINE GEOPHYSICAL SURVEY

HARBOUR AREA BATHYMETRIC ELEVATION CONTOUR PLAN WITH UPLANDS LIDAR

FRONTIER GEOSCIENCES INC.

DATE: AUG. 2024	SCALE 1:2,500	FIG. 3



-18 -15 -13 -10 -8 -5 -3

ELEVATION (m)

0 25 50 75 100

METRES

2019 SUB-BOTTOM ACOUSTIC PROFILING DATA
UTM NAD83 ZONE 15 HORIZONTAL DATUM
TIDE AND CHART VERTICAL DATUM

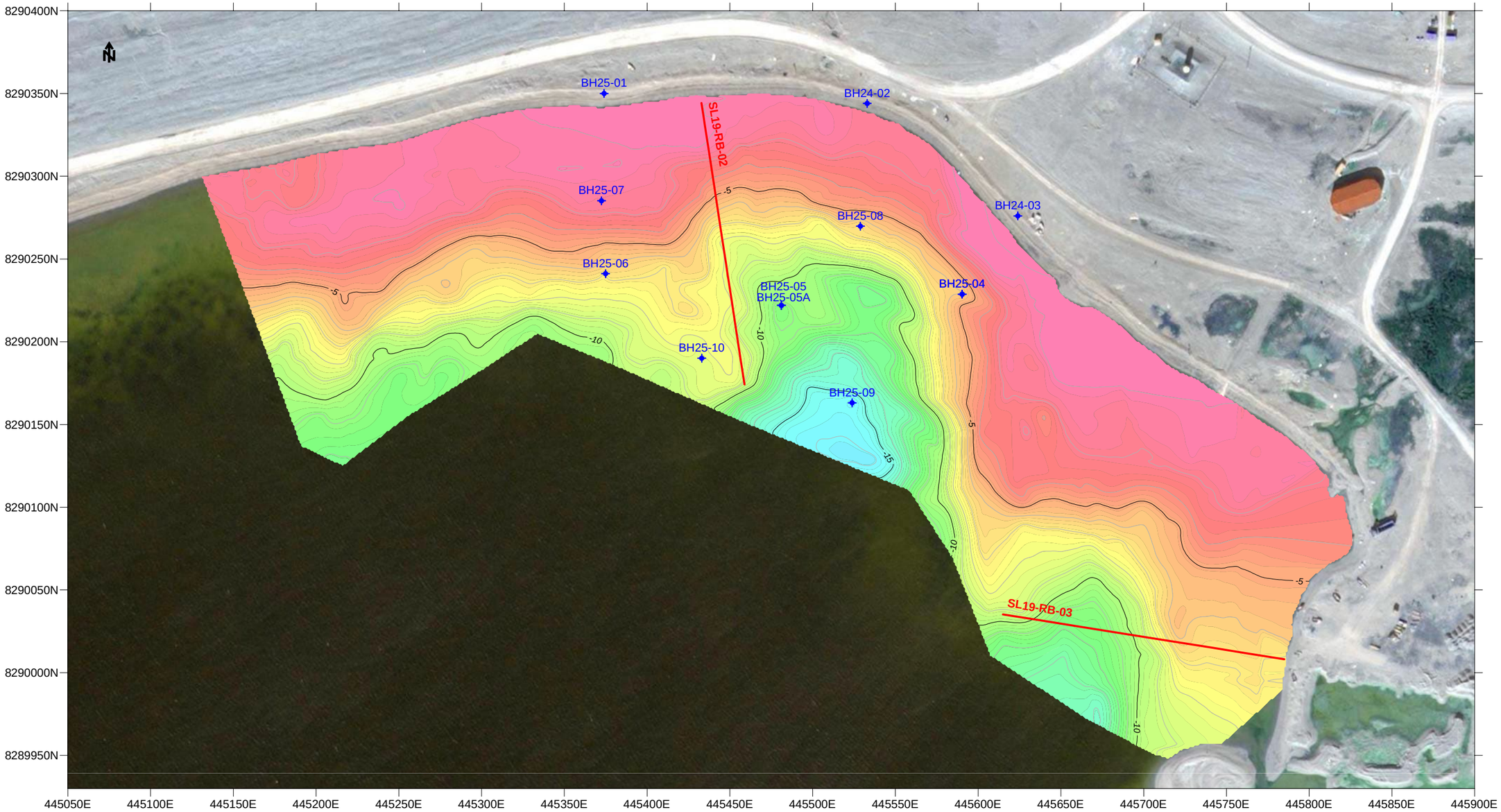
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MARINE GEOPHYSICAL SURVEY

HARBOUR AREA
INTERPRETED BEDROCK
ELEVATION CONTOUR PLAN

FRONTIER GEOSCIENCES INC.

DATE: AUG. 2024	SCALE 1:2,500	FIG. 4



-18 -15 -13 -10 -8 -5 -3

ELEVATION (m)

0 25 50 75 100

METRES

2019 SUB-BOTTOM ACOUSTIC PROFILING DATA
UTM NAD83 ZONE 15 HORIZONTAL DATUM
TIDE AND CHART VERTICAL DATUM

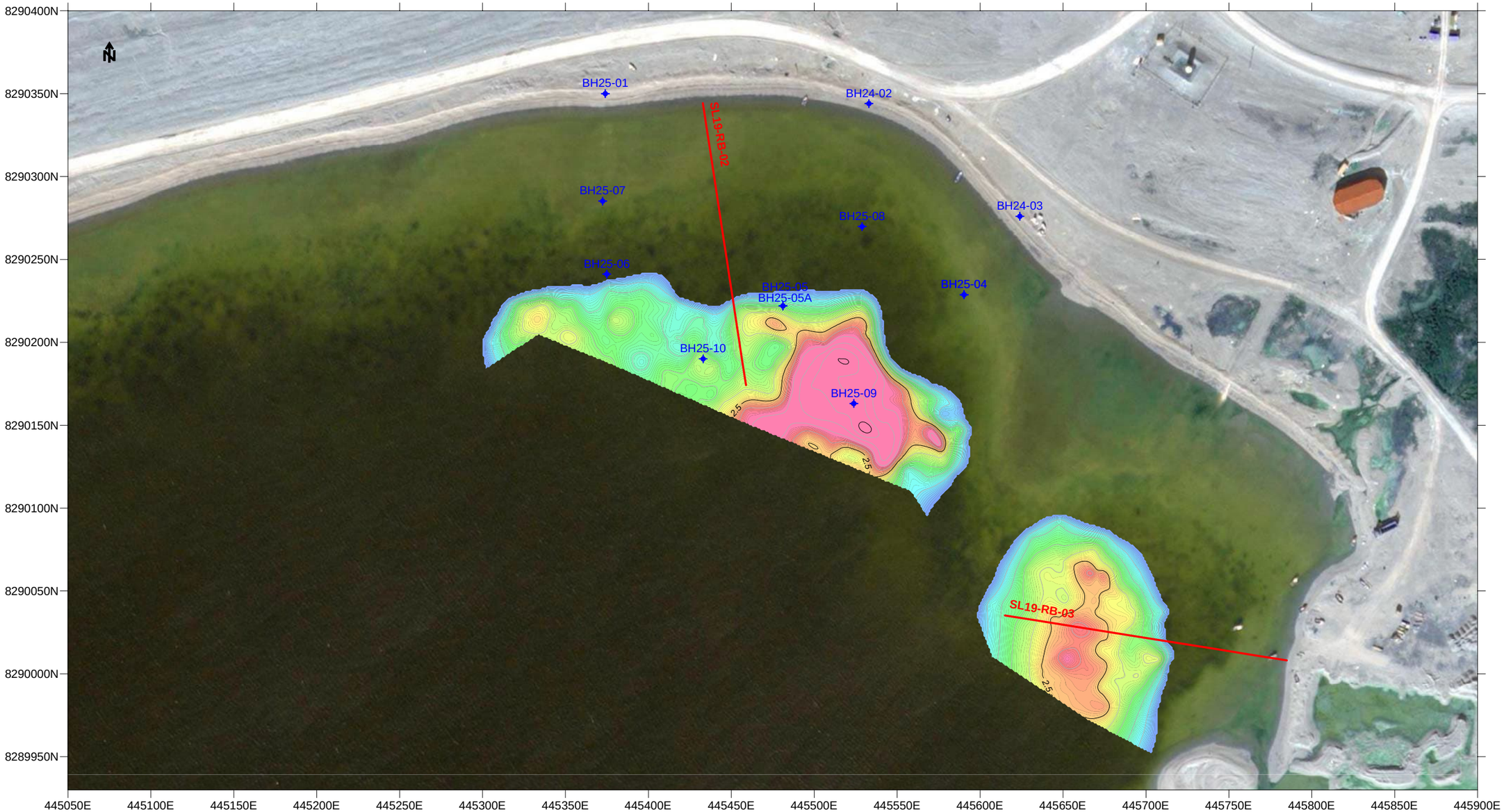
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RESOLUTE BAY, NUNAVUT

MARINE GEOPHYSICAL SURVEY

HARBOUR AREA
INTERPRETED TOP OF
WEATHERED ROCK CONTOUR PLAN

FRONTIER GEOSCIENCES INC.

DATE: AUG. 2024	SCALE 1:2,500	FIG. 5



2019 SUB-BOTTOM ACOUSTIC PROFILING DATA
UTM NAD83 ZONE 15 HORIZONTAL DATUM
TIDE AND CHART VERTICAL DATUM

WORLEY
RESOLUTE BAY, NUNAVUT

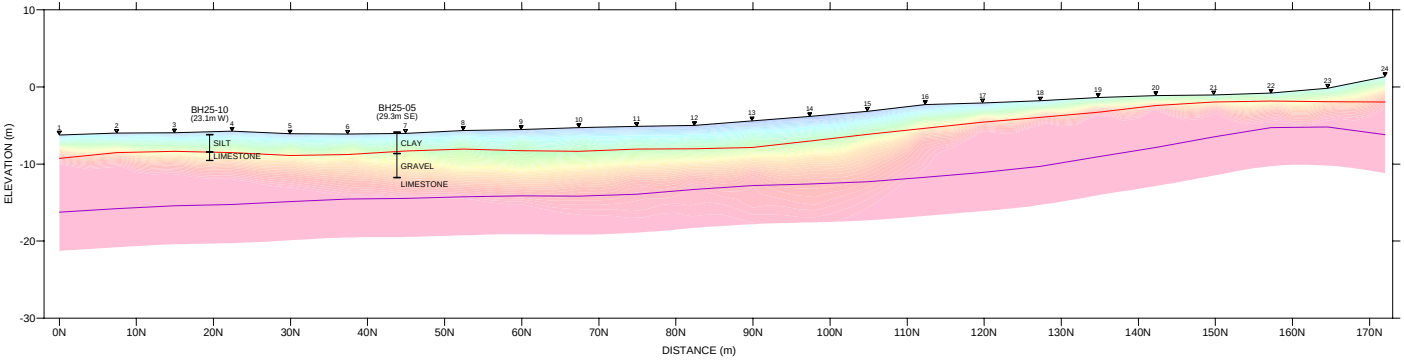
MARINE GEOPHYSICAL SURVEY

HARBOUR AREA
INTERPRETED CLAY LAYER
THICKNESS CONTOUR PLOT

FRONTIER GEOSCIENCES INC.

DATE: AUG. 2024	SCALE 1:2,500	FIG. 6

SEISMIC REFRACTION PROFILE SL19-RB-02



TOP OF SUB-BOTTOM INTERPRETED WEATHERED ROCK REFLECTOR

TOP OF SUB-BOTTOM INTERPRETED BEDROCK REFLECTOR

1000 2000 2630 3250 4250

COMPRESSIONAL WAVE VELOCITY (m/s)

0 5 10 15 20

METRES

TIDE AND CHART VERTICAL DATUM

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RESOLUTE BAY, NUNAVUT

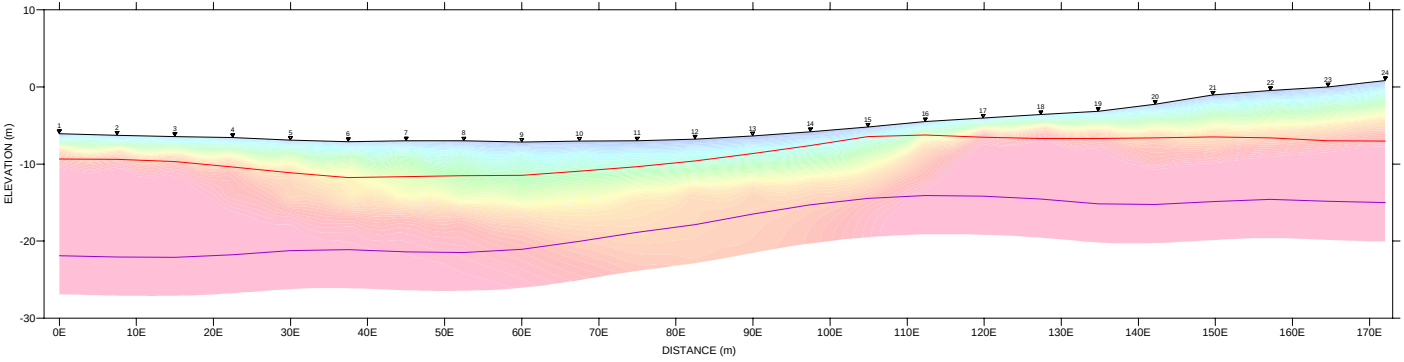
MARINE GEOPHYSICAL SURVEY

INTERPRETED SEISMIC REFRACTION PROFILE SL19-RB-02

FRONTIER GEOSCIENCES INC.

DATE: AUG. 2024	SCALE 1:500	FIG. 7

SEISMIC REFRACTION PROFILE SL19-RB-03



TOP OF SUB-BOTTOM INTERPRETED WEATHERED ROCK REFLECTOR

TOP OF SUB-BOTTOM INTERPRETED BEDROCK REFLECTOR

1000 2000 2630 3250 4250

COMPRESSIONAL WAVE VELOCITY (m/s)

0 5 10 15 20

METRES

TIDE AND CHART VERTICAL DATUM

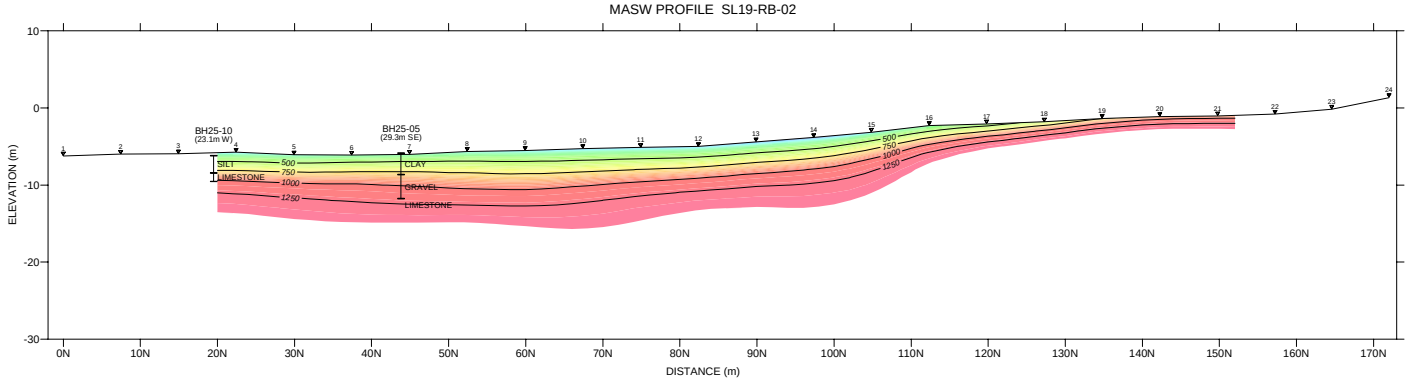
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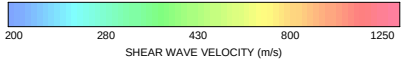
MARINE GEOPHYSICAL SURVEY

INTERPRETED SEISMIC REFRACTION PROFILE SL19-RB-03

FRONTIER GEOSCIENCES INC.

DATE: AUG. 2024 | SCALE 1:500 | FIG. 8





TIDE AND CHART VERTICAL DATUM

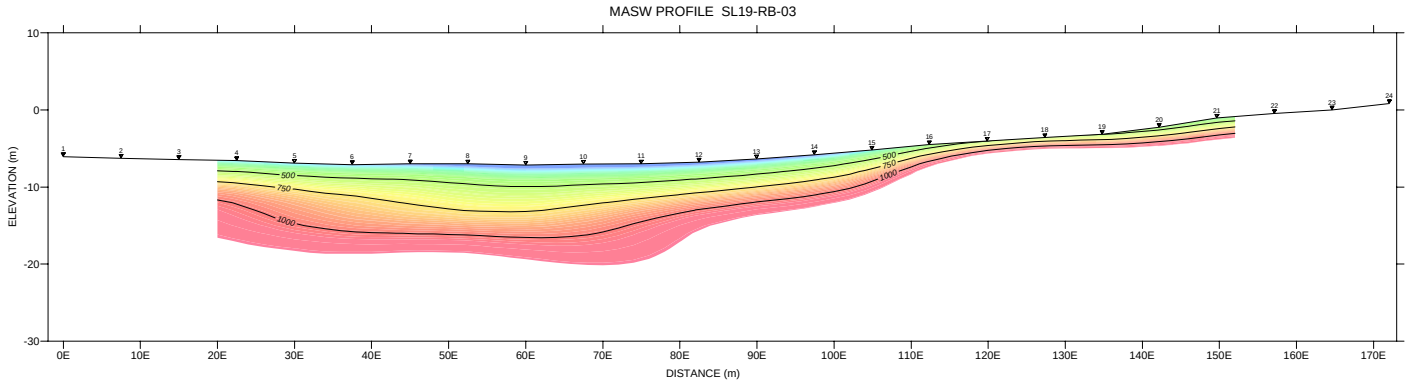
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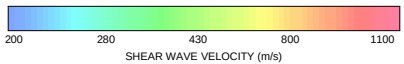
MARINE GEOPHYSICAL SURVEY

INTERPRETED MASW PROFILE
SL19-RB-02

FRONTIER GEOSCIENCES INC.

DATE: AUG. 2024	SCALE 1:500	FIG. 9





TIDE AND CHART VERTICAL DATUM

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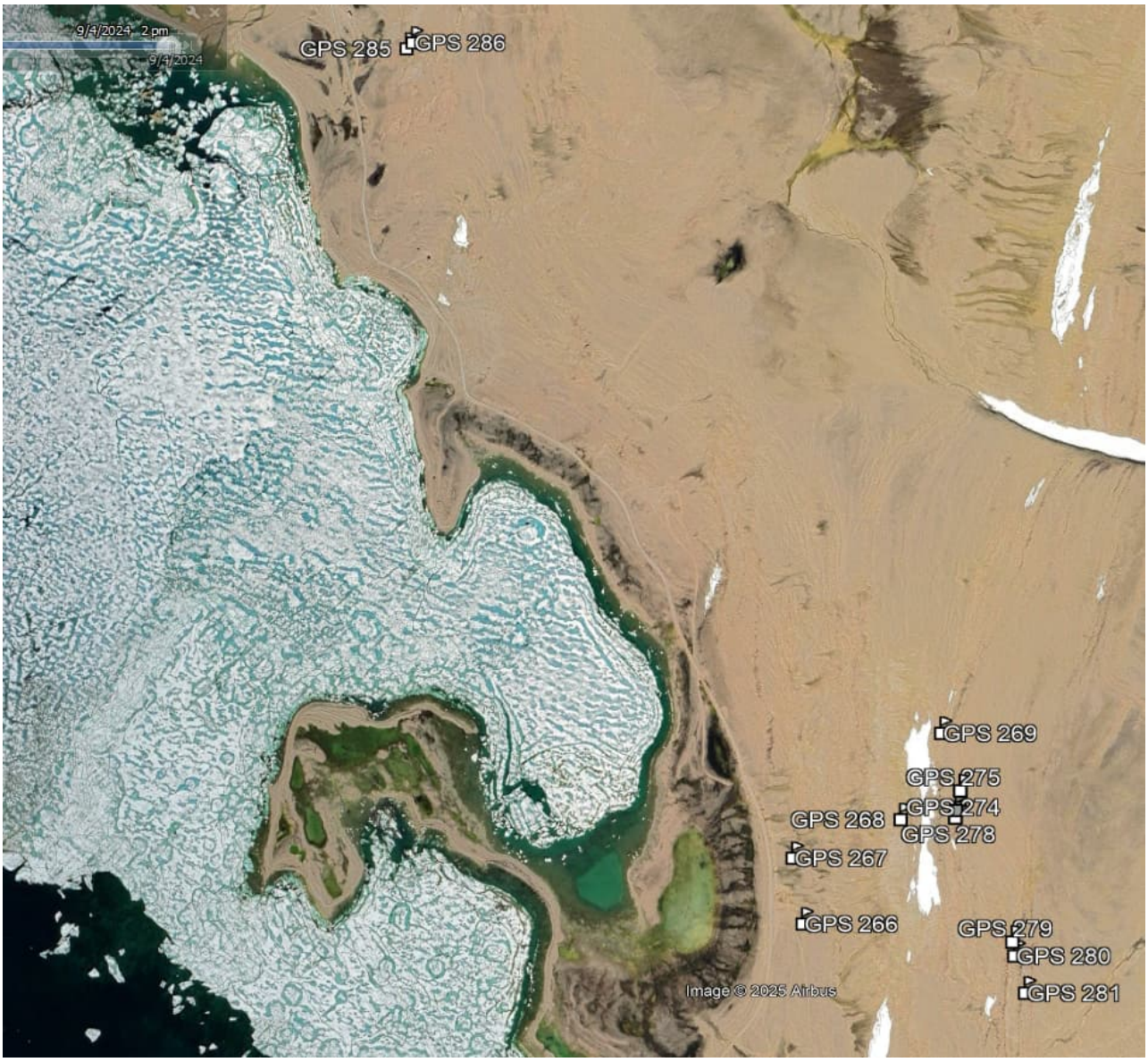
MARINE GEOPHYSICAL SURVEY

INTERPRETED MASW PROFILE
SL19-RB-03

FRONTIER GEOSCIENCES INC.

DATE: AUG. 2024	SCALE 1:500	FIG.10

Appendix H. Block Size Assessment of Measured Scanlines


9/4/2024 2 pm
9/4/2024
GPS 285
GPS 286
GPS 269
GPS 275
GPS 274
GPS 268
GPS 278
GPS 267
GPS 266
GPS 279
GPS 280
GPS 281
Image © 2025 Airbus

Block Volume Assessment of measured Scanlines

Location	Length	Width	Depth (m)	Volume (m^3)	LT
Resolute South Quarry					
GPS 266	1.60	1.10	0.45	0.79	3.56
	1.60	1.20	0.60	1.15	0.75
	0.70	1.50	1.30	1.37	2.14
	1.30	0.90	0.65	0.76	2.00
	1.20	1.70	0.50	1.02	3.40
GPS 267	1.20	2.30	1.60	4.42	1.92
	1.60	2.00	1.60	5.12	1.25
	1.20	1.40	1.30	2.18	1.17
	0.60	1.40	2.80	2.35	4.67
	1.80	0.80	1.30	1.87	2.25
	1.90	1.00	1.60	3.04	1.90
	1.80	1.60	0.70	2.02	2.57
	1.40	1.60	1.10	2.46	1.45
	1.10	1.20	1.40	1.85	1.27
GPS 268	1.10	1.60	2.00	3.52	1.82
	1.00	2.40	1.30	3.12	2.40
	1.30	1.90	0.80	1.98	2.38
GPS 269	1.10	0.80	1.20	1.06	1.50
	1.40	0.80	0.90	1.01	1.75
	1.10	1.00	1.30	1.43	1.30
	1.10	0.80	0.90	0.79	1.38
	1.30	0.80	0.50	0.52	2.60
GPS 274	0.55	0.60	0.90	0.30	1.64
	1.80	1.30	0.60	1.40	3.00
	0.90	1.30	0.50	0.59	2.60
	1.00	0.50	0.70	0.35	2.00
	1.10	0.70	0.70	0.54	1.57
	0.90	0.80	0.80	0.58	1.13
	1.30	0.80	0.30	0.31	4.33

Location	Length	Width	Depth (m)	Volume (m^3)	LT
Resolute South Quarry					
GPS 275	0.70	0.90	1.20	0.76	1.71
	1.00	1.40	0.70	0.98	2.00
	1.30	0.80	0.40	0.42	3.25
	0.80	0.70	0.80	0.45	1.14
	0.70	3.10	0.80	1.74	4.43
	1.50	0.50	1.20	0.90	3.00
	1.20	1.40	0.80	1.34	1.75
	1.30	0.70	1.80	1.64	2.57
	1.00	2.00	1.20	2.40	2.00
GPS 276	0.70	1.40	0.70	0.69	2.00
	0.70	1.30	0.80	0.73	1.86
	2.00	1.00	0.80	1.60	2.00
	0.60	0.70	1.40	0.59	2.33
	1.40	1.00	0.80	1.12	1.75
	1.20	0.80	0.80	0.77	1.50
	1.10	1.50	1.30	2.15	1.36
	0.90	1.50	0.80	1.08	1.88
	0.80	1.10	1.30	1.14	1.63
GPS 277	1.10	1.70	0.70	1.31	2.43
	1.10	0.60	1.10	0.73	1.83
	1.40	0.80	0.90	1.01	1.75
	1.30	0.80	1.20	1.25	1.63
	0.80	0.60	1.30	0.62	2.17
	0.70	1.80	0.50	0.63	3.60
	0.90	0.70	0.50	0.32	1.80
	0.60	0.50	1.80	0.54	3.60
	1.00	1.50	0.90	1.35	1.67
	0.80	1.20	0.70	0.67	1.71
	0.90	0.70	0.70	0.44	1.29
	0.60	1.00	1.30	0.78	2.17
	0.80	1.00	1.70	1.36	2.13
	0.60	0.50	1.00	0.30	2.00
	0.60	1.60	1.00	0.96	2.67
	0.90	1.80	0.90	1.46	2.00
GPS 278	1.20	1.00	0.60	0.72	2.00
	0.50	1.60	1.00	0.80	3.20
	1.30	1.10	1.00	1.43	1.30
	1.30	0.80	0.60	0.62	2.17
	1.70	1.00	0.90	1.53	1.89
	1.10	1.30	0.60	0.86	2.17
	0.50	2.20	0.50	0.55	4.40
	0.90	0.70	1.30	0.82	1.86
	1.20	1.50	1.00	1.80	1.50
	1.30	0.70	1.90	1.73	2.71
GPS 279	0.90	1.00	0.50	0.45	2.00
	0.90	2.30	0.80	1.66	2.88
	0.90	0.80	1.10	0.79	1.38
	0.70	1.10	1.00	0.77	1.57
	1.00	1.00	0.70	0.70	1.43
GPS 280	1.10	1.90	1.70	3.55	1.73
	1.50	0.80	1.00	1.20	1.88
	1.00	1.10	0.50	0.55	2.20
	0.80	1.40	0.70	0.78	2.00
	1.80	3.00	1.00	5.40	3.00
	1.60	1.70	0.10	0.27	17.00
	0.60	0.70	0.90	0.38	1.50
	1.00	0.60	0.70	0.42	1.67
	0.80	1.70	1.00	1.36	2.13
	1.10	1.50	0.90	1.49	1.67
	0.60	1.50	1.00	0.90	2.50
	0.50	1.50	0.90	0.68	3.00
	0.70	1.60	0.90	1.01	2.29
	0.90	1.00	0.80	0.72	1.25
GPS 281	0.70	0.80	1.20	0.67	1.71
	1.90	1.30	0.70	1.73	2.71
	0.50	1.10	0.70	0.39	2.20
	0.70	1.10	1.00	0.77	1.57
	2.20	0.90	0.80	1.58	2.75
	0.90	1.10	0.80	0.79	1.38

Location	Length	Width	Depth (m)	Volume (m^3)	LT
Resolute North Quarry					
GPS 285	1.10	0.50	0.50	0.28	2.20
	0.90	1.30	0.80	0.94	1.63
	1.40	1.20	0.70	1.18	2.00
	0.50	1.60	0.50	0.40	3.20
	0.50	0.80	1.50	0.60	3.00
	1.30	0.80	0.60	0.62	2.17
GPS 286	0.70	1.10	0.90	0.69	1.57
	2.00	0.50	0.60	0.60	4.00
	1.10	0.60	1.70	1.12	2.83
	0.90	1.20	3.60	3.89	4.00
	0.50	0.50	0.50	0.13	1.00
	0.60	0.50	0.60	0.18	1.20
	1.20	0.70	0.60	0.50	2.00
	0.50	1.40	0.80	0.56	2.80
	2.40	0.60	0.90	1.30	4.00
	1.80	0.80	0.50	0.72	3.60
	0.90	0.50	1.00	0.45	2.00
	1.40	0.80	0.40	0.45	3.50
	0.70	0.70	1.80	0.88	2.57
	0.70	0.40	1.20	0.34	3.00