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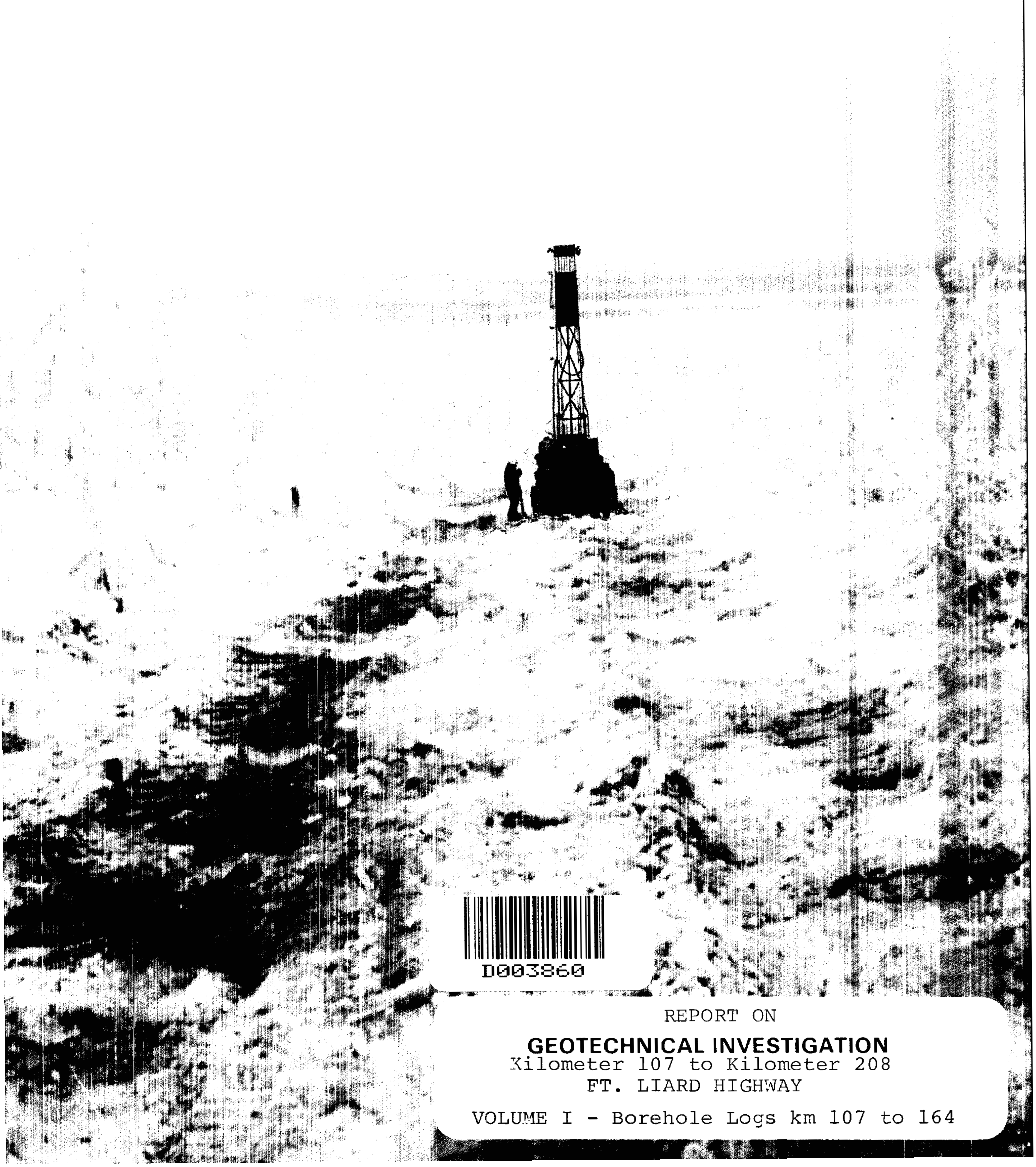

REPORT ON

GEOTECHNICAL INVESTIGATION

Kilometer 107 to Kilometer 208
FT. LIARD HIGHWAY

VOLUME I - Borehole Logs km 107 to 164

DEPARTMENT OF PUBLIC WORKS

WESTERN REGION

REPORT ON

GEOTECHNICAL INVESTIGATION

KILOMETER 107 TO KILOMETER 208

FT. LIARD HIGHWAY

Submitted by:

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I INTRODUCTION

1.1 General

This report presents the results of a centerline soil survey and assessment of potential borrow sources along the Ft. Liard highway route between the Muskeg River (km 207) and the British Columbia border (km 254.5). The objectives of this geotechnical programme were to identify and classify the subgrade soils along the route; to evaluate their suitability for conventional "cut and fill" embankment construction; to locate and evaluate sources of embankment borrow as required; and to evaluate all potential sources of granular surfacing materials within a reasonable haul distance of the right-of-way.

Field work on this section of the highway was carried out during the course of a field investigation over the entire non-completed length of the Ft. Liard Highway in the N.W.T., i.e. from km 35 to km 254.5. This overall programme, as described below, commenced in mid January, 1978 and was completed near the end of March.

1.2 Scope of Field Programme

Field operations were carried out from a mobile camp and commenced near Ft. Simpson and proceeded toward the B.C. Border. Drilling equipment was supplied by P.W.C. and camp and caterpillar support were provided on a contract basis. The field crew averaged 15 throughout the work, consisting of eight (8) to nine (9) P.W.C. staff, and six (6) to seven (7) contractor employees.

During the course of the field programme approximately 1500 holes were drilled, logged and sampled. A total of 129 potential borrow areas were investigated. Approximately 8000 samples were taken and moisture contents and visual classifications were obtained on all samples in the Departmental Laboratory in Edmonton. Selected representative samples, primarily from major highway cut sections and from borrow sources, were subjected to more extensive classification testing.

1.3 Field Procedures

Field work was under the direction of a geotechnical engineer with the assistance of a senior technician, responsible for field location and clearing of borrow sites, and flagging test holes. Technicians assigned to each drill crew were responsible for logging boreholes, field identification of soil, sampling, packaging and labelling of all samples.

Prior to the commencement of field work, and throughout the course of the work, aerial photograph analysis was employed to evaluate the terrain and select potential borrow sites. Centerline drill hole locations were determined primarily from a tentative gradeline along the centerline profile, with some modifications made on the basis of terrain observations during flagging. The extent of borrow search along any portion of the route was modified daily on the basis of suitability of the right-of-way subsoils for cut and borrow. Drill hole locations were marked on centerline profiles, or, in the case of borrow search, on air photos or air photo mosaics.

The following criteria, based on both construction and environmental considerations, generally were observed in hole layout for borrow:

1) Seismic lines and trails were used for access whenever possible;
2) An attempt was made to locate access lines so they could be used for future haul roads;
3) In order to screen future borrow activity from the highway, all access lines were 'dog-legged' at a distance of approximately 75 m (250 feet) off centerline;
4) Holes were not located within 90 m (300 feet) of centerline, nor within 90 m (300 feet) of lakes or streams, as environmental restrictions dictated against obtaining borrow within these limits;
5) Wherever possible a portion of a potential borrow source was selected for investigation in such a

manner that the pit, if developed, would not be visible from the highway and would have good drainage;

6) Access lines were cleared with a minimum cutting of trees and disturbance to the organic cover, and all lines were 'cleaned up' with all 'leaners' knocked down and brush cover piled on one side of the lines.

A track mounted Mobile B-50 auger rig using 15 cm (six inch) solid stem flight augers was used for the majority of the work. This rig was double shifted until the last three (3) weeks of the programme when a truck mounted auger rig was brought in via Ft. Nelson and Ft. Liard as a supplement.

Centerline test holes were generally drilled to a depth of 3 to 3.3 m (10 to 11 feet) or, in major cut sections, below the tentative gradeline elevation. Disturbed 'grab' samples were obtained off the augers at depths of 0.5 m (1.5'), 0.9 m (3'), 1.5 m (5'), 2.4 m (8'), 3.3 m (11'), 4.6 m (15'), 6 m (20'), 7.6 m (25'), etc.

Borrow area test holes were usually advanced to depths of 6 m to 9 m (20 to 30 feet) with identical sampling methods and depths.

All samples were returned to the Departmental laboratory in Edmonton, and were visually identified, assessed as to relative moisture content, and tested for natural moisture content. Additional testing was carried out on selected samples from borrow pits and major cut sections - usually both grain size analysis and Atterberg Limits were performed. Final borehole logs were then prepared with both field and laboratory data included, for evaluation and reporting.

1.4 Numbering and Classification Systems

A. Borehole Numbering

Boreholes on centerline were prefixed with the kilometre in which it was located, identified by the letter C to indicate centerline, and then progressively numbered within each kilometre. Thus hole No. 102-C-4 is the fourth hole drilled on centerline between km 102 and km 103.

Borrow areas were numbered consecutively from km 35 south, and holes for borrow investigations were prefixed by the pit number. Subsequently, the kilometre in which the borrow area is located was added to the number, i.e. #242-128B-3 indicates the 3rd hole drilled in borrow area 128 which is located between kilometre 242 and 243.

B. Soils Classification

Soils were classified according to the Unified Classification System which is outlined at the rear of this text.

Soil samples were also categorized in the laboratory using a series of terms to indicate the relative moisture content of the soil. The terms and their approximate relationship to the Atterberg Limits are summarized below:

Relative Moisture Content		Atterberg Limits
'dry'		
'humid'		
'damp'	____________	plastic limit
'moist'		
'wet'	____________	liquid limit
'saturated'		
'free water'		

The above information is included on the borehole log sheets for all samples.

1.5 Permafrost Ice Description

Very little permafrost is present along the highway location; that which was encountered occurs as random pockets often overlain by muskeg. The ice classification system used was the National Research Council system which follows this text. In addition to the N.R.C. classification, the logging technicians also employed a series of relative terms to indicate the amount of visual ground ice. These terms and their approximate relationship to ground ice are outlined below:

Relative Term	Visual Ground Ice
'nil'	- frozen, but little or no ice in any form - usually confined to dry surface gravels or bedrock.
'low'	- ice coatings, ice crystals and, possibly, occasional very small lenses.
'moderate'	- numerous small ice lenses.
'high'	- continuous small ice lenses with a significant amount of large (1.3 cm +) (½" +) ice lenses.
'very high'	- continuous large ice lenses.
'ice'	- ice with some soil, or clear ice.

II SUMMARY OF RESULTS

Blackstone River (km 107.8) to Muskeg River (km 208)

Test drilling along this section of the Highway consisted of 500 centerline holes plus 210 holes in 60 potential borrow areas. All hole locations are shown on the 1:10,000 airphoto mosaics included with the design packages. This volume includes borehole logs from km 107.8 to 164; volume II contains borehole logs from km 164 to 208.

2.1 General Geology and Route Location

The highway location within this section closely parallels the Liard River, and much of the topography along the route reflects the past influence of the Liard River.

Between the Muskeg River and km 162 (mile 101), the Liard River occupies a fairly narrow valley that has been incised into a glacial till plain with some lateral bedrock control. The river has probably been located in its present channel for many thousands of years. Within this section the highway is located above the Liard Valley and is generally upon glacial till. From km 162 to 185 the topography is bedrock controlled with a thin mantle of glacial till. Beginning near Rabbit Creek (km 185) the glacial till mantle becomes thicker and the surface topography begins to reflect glacial advance, i.e. drumline and fluting, rather than bedrock control. Bedrock through this section is primarily dolomitic limestone.

From km 162 to the Blackstone River, the Liard Valley becomes very broad and the width of old river deposits and abandoned higher channels is as much as 15 km in this section. The river is presently incised in a channel which has near vertical banks up to 30 - 40 m in height. On the south and east is a gently sloping, poorly drained, alluvial plain that extends 7 - 8 km from the incised channel. Relief on this plain is minimal and at all locations where the terrain is flat or gently sloping, and not drained by incised stream gullies, muskeg has developed. There are large areas of such organic terrain, much of which has deep deposits of peat and groundwater at or near the ground surface. The highway is located relatively near the Liard channel and tends to be located on low ridges which avoid the muskegs and provide slightly improved drainage. Near the edges of steep banks, ie river or creek gullies, the subsoil is better drained at least within the upper few meters. Subsoil thoughout this section consist of alluvial clay-silts or silty clays with glacial till at depth. Borrow sources are limited to better drained promontories along the creeks or rivers, or to low ridges. Well-drained high ground is several km to the south of the route. Granular deposits near the route are non-existant with the possible exception of localized stream deposits along the Netla River.

The following describes this portion of the route and the test boring results in detail. Cut depths and fill heights referred to herein were based upon a preliminary gradeline des

2.2 Kilometer by kilometer Comments

Blackstone River (km 107.8) to km 109

This is the crossing of a tributary to the Blackstone River and the ascent out of the Blackstone River valley.

The channels of the Blackstone and its tributary are roughly parallel at the crossing and separated by a narrow

(200 m) ridge of non-eroded till and alluvium some 11-12 m above the general level of the floodplains. A major cut of about 10 m is proposed here. Test borings reveal 5 - 6 m of alluvial sands, silts and some gravel over glacial clay-till that is near optimum. All material in the cut will be suitable for embankment construction.

From km 108.2 to 108.7 the route crosses the flood plain and an old infilled channel of the tributary stream. Muskeg and organic silts can be expected in the old channel and both short and long term settlements can be expected under the proposed 6 - 8 m fill. Three to one side slopes and/or berms are recommended to safeguard against a shear failure here.

From km 108.7 to km 109 the highway is in cut section as it ascends through the valley wall of the tributary stream. The entire cut section (maximum depth of about 5 m) will be in a medium plastic silty clay with moisture contents probably 5 - 7% above optimum. Backslopes in this material will be stable with little or no seepage and the excavated material may be used at the base of the high fill on the floodplain with some rutting under loaded equipment.

Km 109 to km 124

Through this section the highway is located on a gently sloping alluvial plain. Relief is minimal and drainage poor. The route follows as best possible the available treed relief to bypass areas of muskeg, shallow peat and surface wetness. The water table is shallow throughout. Good borrow is practically non-existant - the subsoil profile consists generally of 1 - 2 m of silt over a medium plastic silty clay. Moisture contents range between 20 and 30% (or higher) and are consistently above the plastic limit and well above optimum. Permafrost was not encountered in any test holes, however, isolated pockets probably exist in muskeg areas - fortunately the route largely avoids significant muskegs.

The ground elevation is consistently near elevation 123 - 124 throughout and the entire section will be in fill with the exception of shallow cuts proposed at a large creek at km 115.4. Cuts here to about 1.5 m maximum will be in damp to moist silt and should present no problems.

There are few features within this section that offer hope for good borrow. The highway is located near or upon the best terrain possible across the plain and the greatest relief tends to be near the alignment. Nine (9) features were test drilled for borrow between km 109 and 124 (borrow areas #38 to #46). None will provide good borrow as the subsoil consists of 1 - 2 m of clay silt over silty clay, with moisture contents averaging near 25% and well above optimum (estimated at about 19-20% in the silty clay and about 15-17% in the clay-silt).

Construction will have to make do with what is available and shallow borrow areas (2 - 3 m) and light, small capacity earth movers are suggested. Areas #42 and #43 are the wettest features drilled- all remaining areas contain some usable material.

Km 124 to km 132

Within this section the route continues across the poorly drained alluvial plain but gains slightly in elevation (to about 145 - 147) and enters an area of more defined cross drainage with a resulting increase in micro - relief . The route follows available low treed ridges which offer slightly better drained subsoil than the surrounding terrain. There are several minor cuts proposed where the route crosses small creek gullies or very low ridges. In most cut areas the subsoil is above optimum but it is expected that ditching will drain and fully stabilize cut areas. At km 125 a cut to 1.5 m will be in sandy clay - silt that is above optimum but acceptable. At km 125.7 a cut to about 2 m is proposed at an approach to a creek gully - subsoil is silt that is moist to wet and above optimum; in addition permafrost was noted near the start of cut. Any portion of this cut in permafrost should probably be sub-cut and back-filled - most material from the cut although above optimum can be used at the base of the gully fill - wet material will have to be wasted. Shallow cuts to 1 m are proposed at km 128 and 131 - both in silts that are above optimum; with ditching, cut sections should dry out and firm up. An additional cut section could be considered at km 129.1 where the subsoil is damp to moist sand - silt which should drain and stabilize readily with ditching.

Again the most promising features for borrow are near the low treed ridges on which the highway is located. Nine areas were test drilled for borrow between km 124 and 132 (Borrow areas #47 to #55). None will provide good borrow as the subsoil consists generally of 2 - 4 m of clayey or sandy silt over silty clay with moisture contents above optimum below a depth of about 2 m. Again shallow borrow pits and light, small capacity earth movers are suggested. Areas #47, #48, #49 (holes #1, #2, #3), #52 (holes #2 and #3), #53 (holes #1, #2, #4), #54 and #55 all should provide some usable material in the upper 2 - 3 m.

Km 132 to km 133.5

Through this section the highway crosses two (2) major creek gullies that extend approximately 11 m and 18 m below the surrounding terrain. Major cuts and fills are proposed here. The gullies are V-shaped and probably still actively eroding during flood at the base hence do not contain any significant organic deposits. Fill settlements should not be a problem.

A cut to about 3 m at km 132.1 will extend through about 2 m of moist to wet clay-silt into silty clay that should be stable. Most material from the cut, although above optimum, can be used for fill - some wet zones may have to be wasted. At km 133.1 a cut to 4 - 5 m will encounter similar subsoil - again all materials are above optimum but cuts should be stable and most materials can be placed in the large fills.

One borrow area (#56) was test drilled between the two gullies and proved to be the best construction material encountered west of the Blackstone River (km 107.8). The subsoil is a silty clay over a silt-gravel-sand mix with low moisture contents. Although this area is near a creek it is recommended this borrow source be developed and utilized to the maximum, possibly as a surface lift over silty embankments.

Km 133.5 to km 137

The route is located within about 100 to 300 m of the incised Liard channel here, on flat alluvial sediments with no relief. A series of small slumps on the channel bank are indicative of the weak unstable soils in this area. The highway through this section will be entirely in fill. Subsoil is clayey and sandy silt that is somewhat better drained in the upper few meters than the route to the east.

Three (3) areas (#57, #58 and #59) were test drilled for borrow. Subsoil is primarily clayey and sandy silt and areas #57, and #58 (holes #1 and #2) will provide usable material to a limited depth (2 - 4 m).

Km 137 to km 139

This is the crossing of the Netla River and the Netla River valley. A major cut to 14 - 15 m deep and approximately 300 m long is proposed on the descent through the valley wall on the east. The subsoil here is primarily silty sand that is well drained and near optimum. No problems with the cut are anticipated. Ditch erosion here could be severe - frequent ditch checks will be required.

Holes on either side of the Netla River within the valley encountered permafrost and thawed moisture contents near 30 - 35%. On the east the permafrost area will be under 3 - 4 m of fill which should insulate the permafrost and result in very slow thaw degradation and settlement. This side of the valley floor should be disturbed as little as possible before and during construction. On the west a shallow cut is proposed (to 3 m) at km 138.3 in the permafrost area. Thawed moisture contents are near the liquid limit hence cuts in this material will be unstable. Raising the gradeline here is not feasible as it would increase the bridge length over the river. It is recommended the cut be made to a depth of at least 2.5 m and allowed to thaw, drain and stabilize during one (1) summer period, before being repaired to design grade.

A second cut to about 3 m is proposed near the top of the valley wall on the west at km 138.6. The subsoil here is permafrost free and slightly above optimum and will present no problems to the cut.

Two (2) areas along the Netla River were test drilled for gravel - area #60 approximately 500 m + downstream of the crossing site and area #61 approximately 500 m upstream of the crossing. Both areas are within meander bends of the river and only slightly above river level. Deposits tend to be very sandy, although some holes encountered sandy gravel, i.e. holes #60 - 3, 4 and 5 and #61 - 3, 4, 5 and 9. These areas would not appear to be viable sources of gravel, however, they do indicate there is potential for gravel along the Netla. Fortunately the highway location roughly parallels the river to approximately kilometre 146 and there are two (2) areas where test pitting is recommended, both on the south side of the Netla - at approximately kilometre 142.5 and 146.0. Both areas are higher abandoned terraces of the Netla and may provide a gravel source above the water table and away from the present stream channel.

<u>Km 139 to km 141</u>

Within this section the route traverses to km 140.4 an old floodplain where both the Liard and Netla Rivers appear to have meandered during downcutting, and then climbs back to the alluvial upland through a cut section in the valley wall.

Deposits on the old floodplain are silts and clays and several holes encountered permafrost. A minimum fill height of about 1.5 m is recommended here with no disturbance to the existing surface. Long term settlements can be expected across this area as the permafrost thaws, however, they should occur slowly and can likely be repaired during normal maintenance blading.

The cut section at km 140.6 will be roughly 200 m in length and 6 m in depth. Deposits in the cut consist of approximately 3 m of silt over a silty clay. Moisture contents are as much as 10% above optimum, and difficulty will occur during excavation and fill placement. The cuts (3:1 minimum) should remain stable, however, rutting and shoving in fills will occur until the material dries.

One borrow area (#62) was test drilled on the old floodplain. All holes encountered permafrost and this area is unsuitable.

Km 141 to km 146

The route traverses a narrow (300 to 500 m) ridge of high ground that separates the Netla River valley on the south and on the north, a former temporary channel and floodplain of the Liard River that is now poorly drained with extensive muskeg. The terrain is relatively flat near elevation 154 and the highway will be in fill throughout. Subsoil through this area is alluvial silts and clays. No permafrost was encountered.

Five (5) borrow areas (#63 to #67) were test drilled here. The subsoil in all areas is low plastic silty clay with a thin overlay of silt (1 - 2 m). Moisture contents are slightly above optimum. Areas #63, #64 and #67 (holes #1 and #2) offer the best material. Again shallow pits and light construction equipment are recommended.

Km 146 to km 149

At km 146 the route turns away from the Netla river valley and parallels the edge of a former temporary channel of the Liard River. The location is on the edge of the slight upland adjacent to the old channel: on both sides of the highway are flat, poorly drained, muskeg areas probably with extensive permafrost. The present location offers the best possible route across this very bad area and avoids most of the muskeg. Subsoils are silts, clays and some sands that are wet of optimum with the exception of possibly the upper 1 m on slight ridges where cross drainage occurs. Permafrost was encountered in several holes.

Several shallow cuts are proposed through slight ridges. As some of the ridges are in permafrost, it is recommended the proposed gradeline be raised such that shallow cuts are effected only at km 147.5 and at 149.0.

Three (3) borrow areas (#68 to #70) were checked along the edge of the slight upland. Only area #70 is considered to have any potential as a usable borrow source and it is borderline with moisture contents above optimum.

Km 149 to km 155

From km 149 to 155 the route is within about 100 to 500 m of the steep banks of the present Liard river channel. To the east and south is a flat, poorly drained, muskeg area with high groundwater levels. For the most part, the route is close enough to the Liard channel that the subsoil is sufficiently well drained to be free of ponds and muskegs, however, groundwater levels are high. Several deep V-shaped cross drainage gullies are crossed, all of which are actively eroding and free of extensive peat and soft sediments at the base.

Subsoil through this section is primarily low plastic silty clay that is well above optimum. Cuts are proposed at two major creek gullies. At km 152.8 cuts totalling about 350 m in length and up to 5 m in depth are planned. Subsoil is silty clay with moisture contents averaging near 25% and well above optimum (estimated at 17-18%). Permafrost was encountered at depth in hole #152-6 on the S.W. side of the gully. These cuts can be completed as planned and backslopes should remain stable, however, the large volume of excavated material will not compact well in fill and will rut and shove badly under loaded equipment. The S.W. side of this gully where permafrost was noted is very wet and represents the worst conditions. A slight gradeline raise here would be beneficial.

At km 154.0 shallow cuts of less than 1 m are proposed on each side of a gully, which will be okay.

Five (5) borrow areas (#70 to #75) were test drilled in this section, all on better drained promontories near gullies or on bluffs above the Liard River. Borrow areas #71 (holes #1, #2 and #5) and #75 are slightly above optimum and most suitable. The remaining areas contain material at moisture contents similar to that in the major cut sections.

Km 155 to km 156.5

This is the crossing of a major creek gully roughly 30 m deep, that will entail cuts of possibly 8 - 10 m on either side and a fill of possibly 1.5 m. The subsoil is similar on both sides of the gully - a low plastic silty clay with moisture contents averaging 25 - 27% and well above optimum (estimated at 18%). This gully crossing could represent a major problem both in back-slope stability and embankment stability. The natural slopes in the gully have stabilized at about 8:1 and the subsoil is sufficiently wet that sloughs may occur in cut slopes of 8 - 10 m. In addition the material will not compact in fill at the in-situ moisture content, and will rut and shove under loaded equipment. Thus a high fill constructed with this material could be unstable.

In order to provide some safeguards against failures the following is recommended: 1. It is considered that two (2) short cut slopes with an intervening bench will be more stable than a single slope. Thus it is recommended the cut slopes be benched at mid-height with each cut above and below the bench be limited to 5 m at a 2:1 slope. A bench width of 20' is recommended. Further it is recommended the cut (and resulting fill) be placed in two (2) stages with initial excavation to 5 m (or bench level), followed by a delay of at least two (2) summer months before completion of cut. 2. The fill should be placed at 3:1 slopes with a 6 m berm (from stream bed level) placed on both sides. The'bench' width of the berm should be about 9 - 10 m. Ideally the material should be dried to near optimum and compacted in the fill, however this simply may not be possible or practical. Relatively small earthmovers and a limited rate of fill placement - say 0.5 m per day is suggested to promote some drying, increased compaction and improved equipment mobility.

Km 156.5 to km 164

Within this section the highway turns away from the Liard River channel across a slightly sloping, poorly drained plain. To km 162 the route crosses alluvial silts and silty clays with the groundwater table near the surface. Near km 162 the terrain begins to climb and the subsoil changes to thin (1 - 1.5 m) slopewash deposits over glacial clay till. Between approximately km 159.5 and km 162 there are thin (to 1 m) pockets and overlays of peat and organic silts which should be removed before fill placement. No permafrost was noted in test holes, however, pockets of permafrost can be expected through this area.

A long cut (400 + m) to a depth of about 1.5 m is proposed near km 163. The subsoil here is 1 to 1.5 m of clay-silt over low plastic clay till. Deposits above the till are wet whereas the till is slightly above optimum and a good construction material. It is suggested this cut be deepened into the till to gain more good embankment material.

Five (5) borrow areas were test drilled through this section. Areas #76, #77 and #78 are in the alluvial deposits between km 157 and 160. The subsoil in these areas consists of clayey-silts over silty clays and only the upper 1.5 to 2 m is reasonably close to optimum moisture. Area #78 is the best of these three (3). Area #79 is adjacent to the proposed cut at km 163 and the subsoil is similar - wet clay-silts to 1 - 2 m over clay till with some gravelly sand. Deepening the cut at km 163 could eliminate the need for a borrow pit here. Area #81 is 400 to 500 m east of the highway at km 164 along a seismic line. There is a considerable volume of sand and gravelly sand in this area. The deposit lacks sufficient gravel sizes to be considered as surfacing gravel, however, this material would be suitable for culvert bedding and backfill. Stripping over the gravel-sand averages 2 - 3 m.

Km 164 to km 172

This area is dominated by a prominent bedrock controlled hill which rises to about elevation 335. The route skirts around the flanks of this high ground reaching a maximum elevation of approximately 250, and is for the most part on a gentle cross-slope. The terrain is partially bedrock controlled with a thin (to about 15 m maximum) mantle of glacial till. Drainage through this area is generally good and no permafrost was encountered in the test holes.

A cut is proposed at km 164.3 in a bedrock controlled ridge with a till overlay. Unfortunately a hole was not drilled on the crest of the ridge where bedrock could be within 3 m of the surface. A maximum cut of 3 m is recommended here to avoid bedrock contact.

From km 164.4 to km 167 the highway will be in fill. There are shallow (< 1 m) deposits of peat and soft organic soils on some portions of this section that should be excavated before fill placement.

From km 167 to km 170 the terrain becomes very irregular with numerous bedrock controlled ridges, till ridges, erosion channels and areas of rather severe cross-slope. Numerous cuts are proposed. The subsoil is primarily glacial till that is slightly above optimum but a good construction material, with some clay-silt slopewash overlay that is considerably wet of optimum. Most cuts should extend into the competent glacial till and no major problems are anticipated.

At km 170 the terrain flattens and the drainage becomes poorer, and the highway returns to a fill section to km 172.

Very little borrow will be required through this portion of the route, as there are numerous cut sections. Five (5) areas were test drilled. Area #80 at km 164 encountered 3 - 4 m of usable till over bedrock (dolomite). Areas #82, #83, #87 and #88 all encountered glacial till with some slopewash overlay. The till is slightly above optimum but a competent construction material. Areas #82 and #88 are preferred if borrow is required.

Km 172 to km 182

At km 172 the route enters into an area that is largely bedrock controlled with a thin mantle of glacial till (ranging from possibly 2 to 10 m in thickness). There are some minor ground moraine depositional features, i.e. drumlins, flutings. Relief is irregular and rough, however, drainage is generally good. The route closely parallels the Liard River here. Bedrock is dolomitic limestone as evidenced by exposures near km 181-182.

A balanced gradeline should be possible through this section with the majority of cuts limited to within the glacial till and minimal penetration into bedrock. Bedrock cuts can probably not be avoided between km 176 and 177, near km 179.2 and near km 181.

Only three (3) borrow areas (#84, #85 and #86) were test drilled because of the probability of balanced gradeline. All three (3) encountered competent glacial till and are excellent borrow sources.

Km 182 to km 188

Through this area the relief is less irregular as the depth of the glacial till mantle becomes thicker. The route continues to parallel the Liard River and is located primarily upon ground moraine with a thin (1 m average) slopewash overlay. There are two (2) small cross drainage valleys within this section - at km 183 and at km 186 - and cuts are proposed at both locations. A balanced gradeline should be possible through this area although the subsoil tends to be wetter than north of km 182.

Near km 183 the route crosses two (2) creek channels within the small valley and then climbs over a long till ridge near km 184.4. Cuts are proposed on both sides of both creeks. Subsoil in the proposed cut areas is primarily silt and is considerably wet of optimum. It is suggested the cuts near the creeks be kept to a minimum, i.e. limit to about 2 to 2.25 m @ km 183.26 and that the gradeline be lowered into the glacial till ridge @ km 184.4 to provide needed borrow. The glacial till from km 184 to 184.7 is good construction material that is near optimum.

Near km 184.8 the route crosses the edge of a peat area with underlying permafrost for about 200 - 250 m. A small alignment change toward the Liard River and onto a treed till ridge is suggested here to bypass this peat bog. Alternately sub-excavation, ditching, and thawing before fill placement is recommended. Peat and organics to about 0.5 m can be expected in the creek crossing at km 185.3.

Cuts are proposed on either side of the creek channel at km 186.1 and in ridges to km 187.5. The subsoil here is glacial till with some slopewash overlay (to about 0.5 m average). The slopewash silts and the top 0.3 m of the till are wet of optimum, however, the underlying material is near optimum and a competent material. Construction through this section should be straight forward - the wet surface material can be spread in thin lifts and intermixed with better material during construction.

Two borrow areas (#89 and #90) were test drilled within this area, both in till ridges with some slopewash overlay. Both areas can be used if required - the till is near optimum; the overlying silts are wet of optimum.

<u>Km 188 to km 190</u>

This is the crossing of Rabbit Creek. The valley depth here is about 40 m and the creek is entrenched in bedrock at the base. Valley walls are presently treed and stable at about 4 or 5 to 1, although there is some evidence of previous instability about 400 - 500 m upstream of the proposed crossing, and there is evidence of a fairly recent minor "skin" slide in a tributary creek near the route. Both glacial till and overlying alluvial deposits were encountered in the valley walls - it would appear the valley was down-cut through the glacial till at one time, then in-filled with alluvium and subsequently the present valley was cut into this alluvium.

This crossing is expected to result in major problems. The subsoil in the valley walls is variable and much of it is above optimum moisture - in some zones it is above the liquid limit. On the north side there are alluvial sand-silts over glacial till at variable depths. The alluvial deposits are wet and cut slope instability and seepage could occur - fortunately those deposits are relatively shallow and the majority of the cut will bottom out in competent glacial till. Shallow cut slopes in the alluvial deposits should be not less than 3:1, in the till, slopes of 1½:1 may be used. Test hole #188-10 near the edge of the north valley wall encountered the worst condition - approximately 10 m of wet or saturated clay silts above competent till. A cut of roughly 15 m is proposed here and long cut slopes at 3:1 in the saturated clay-silt will seep and most probably slump (the cut may 'day light' on the east into a tributary creek gully). It is recommended this cut be completed in three (3) stages - the initial cut may be about 7 m as the upper 3 m of subsoil is relatively dry, with two (2) subsequent cuts of about 4 m. The interval between the cuts should be at least three (3) months to allow drainage and some drying - preferably the initial cut could be made in the first year of a two (2) year contract and the final cuts in the second year. Material from the cut will rut and shove and will not compact without drying - it may be possible to partially mix the wet material with drier till from farther back in the cut.

On the south side the subsoil is a similar clay-silt that is well above optimum (wet or saturated), especially test hole #189.2. A three (3) stage cut is recommended on this side as well. Some material will have to be wasted here.

It may be possible to improve the subsoil conditions and/or the cut-fill in the valley by an alignment change. A shift of about 300 m toward the Liard River would probably improve soil conditions on the north side, however, there would likely be only minor improvement on the south side and the valley would be deeper. A shift upstream to the original line run in 1970 would result in a broader valley, hence shallower cuts, and possibly a lower fill. A curved approach near the present alignment could reduce cuts somewhat but would result in sidehill cuts and possibly some sidehill fill. Thus there are many alternatives and in view of the anticipated cost of the major cut-fill crossing, it is recommended all alternatives be reviewed in some detail.

Km 190 to km 199

The route traverses the edge of an area of ground moraine marked by low till ridges (flutings) and some soft sediments and shallow peat in intervening depressions. Drainage is not good and to km 195 the subsoil tends to be very wet of topimum. Cut sections should be avoided to km 195 with the exception of shallow cuts on sharply defined ridges. There is a variable overlay of silts above the glacial till and these upper deposits are wet. There are shallow peat and organic silts above the glacial till in depressions between km 192.5 and 194.8, and possibly some permafrost pockets. The soft organic sediments generally do not exceed a depth of 0.5 to 1.0 m and should be excavated before construction. A balanced gradeline will probably not be possible to km 195. Beginning at km 195 the route climbs onto a well treed, irregular till feature and to km 199 there are many opportunities for cut and a balanced gradeline should result. The subsoil tends to be wet of optimum in the upper 1 m, however, most cuts will extend into glacial till (sandy-silty clay with pebbles and some cobbles or boulders) which is near optimum and a good construction material. The irregular topography results in some depressions in cut areas that trap water, hence pockets of wet material may be encountered during construction, i.e. cut at km 197.4, however, these cannot be avoided and may be wasted or mixed with drier material during construction. Again there are short depressions with shallow peat overlays that should be sub-excavated, i.e. km 198.6.

Five (5) borrow areas (#91 to #95) were test drilled between km 190 and 196,all on till ridges. Areas #91 and #92 encountered soft shale at a depth of about 4 m. All areas are suitable, however, areas #91, #92 and #95 are best. The till is low plastic with a significant sand content and with cobbles and some boulder layers - see borrow area #94.

<u>Km 199 to km 206.0</u>

Near km 199 the highway enters into an area that appears to be dead-ice moraine rather than ground moraine. Drainage is poor, moisture contents are generally higher, and there are some deposits of lacustrine clays intermixed with the glacial till.

The highway will be in a major cut at km 199 and the south side of this cut will be in clay-silt that is wet of optimum to about 3 m. The majority of this cut is in glacial till and the wet pockets will have to be wasted or intermixed.

At km 200.3 there is a sharply defined creek gully some 10 m in depth and shallow cuts (to about 3 m maximum) are proposed. The subsoil to depth of cut is primarily a highly plastic clay which is slightly above optimum, however, no problems should occur with cut or fill here.

At km 200.9 a cut to 3 - 4 m is proposed in till-moisture contents are well above optimum in part, however, there is no alternative to a cut here. The till is low plastic and has some sand content hence should dry fairly rapidly, and the material from the cut should be usable with some drying and/or mixing on the roadway. Note there is about 0.6 m of peat at km 201, just south of the cut, that should be stripped and wasted.

Beginning at km 201 the route begins a gradual descent toward the Muskeg River Valley at km 207. Through this area the subsoil is primarily glacial till at shallow depths but with about 1 m of slopewash clay-silt above. Drainage is not good and moisture contents are well above optimum to about 1.5 m. Cuts would not be practical here without preliminary ditching. There are shallow peat and organic silt overlays (to 1.3 m maximum but mostly to about 0.3 m) at numerous locations which should be stripped before construction.

Four areas were test-drilled for borrow - #96, #97 and #98 which are adjacent to the route between km 200 and 203, and a ridge about 900 m east of the route along a seismic line at km 205.2 (test hole #205-4). Glacial till was encountered in all areas and all are suitable as borrow sources. The upper 1 m is wet in all areas, however, the till at depth is near optimum and a good construction material. Note that several auger holes met refusal on cobbles and/or boulders in the till.

Km 206 to 207.8

This is the descent into the Muskeg River valley to the Muskeg River.

The present Muskeg River valley is probably located in a much larger, old, pre-glacial channel that was eroded through glacial till and bedrock. During the last deglaciation period this valley was infilled with alluvial silts, sands and some gravels, much of which have been scoured and eroded out by the river to the present flood-plain. There remain remnants of these former deposits on both sides of the valley extending well above the present valley floor. At km 206.5 the route crosses a deep (13 m) sharply defined creek gully that appears to approximate the edge of the old glacial valley. To the north of this creek are glacial till deposits - to the south are alluvial sediments. The proposed gradeline will enter into a cut section beginning at the south side of the creek gully and will remain in cut through to the Muskeg River floodplain at km 207.2. Maximum depth of cut will be about 12 - 13 m. Subsoil in the cut will consist primarily of a silty sand that is at a moisture content near 5 - 6%, and should present no problems during construction. Ditch erosion here could be severe and frequent ditch checks will be required.

A fill to about 10 m maximum will occur on the valley floor near the north wall. Floodplain deposits consist of surficial silts and sands with sandy gravel below a depth of about 3 - 4 m. Glacial till was encountered at 7 m in one hole (#207-5A). Only minor fill settlements are expected and there is little risk of a foundation shear failure here.

GLOSSARY OF TERMS

Active Layer	The layer of soil above the permafrost table (in the area of this study, the active layer usually freezes completely during the winter.)
Alluvium	Stream deposits of comparatively recent time, does not include subaqueous deposits of seas and lakes.
Anhydrite	A mineral, anhydrous calcium sulfate, $CaSO_4$. Orthorhombic, commonly massive in evaporite beds.
Annuals	A plant that lives only one year or season.
Autoclave Expansion	Laboratory test procedure as designated by ASTM-C151-63 for determination of expansive qualities for all types of Portland Cement and aggregate reactions.
Berm	A horizontal portion of an earth embankment to ensure greater stability of a long slope.
Biotic	Of or pertaining to life or mode of living.
Boreal	Pertaining to the North.
Boulder	A rock fragment larger than 8" in diameter.
Cartographic	Pertaining to a map. In geology a cartographic unit is a rock or group of rocks that is shown on a geologic map by a single color or pattern.
Clay	Soil particles smaller than 0.002 mm. in diameter
Cobble	A rock fragment between 3" and 8" in diameter.
Colluvium	A general term applied to loose and incoherent deposits, usually at the foot of a slope or cliff and brought there chiefly by gravity.

Conglomerate	Rounded water-worn fragments of rocks or pebbles, cemented together by another mineral substance which may be of a siliceous or argillaceous nature.
Continuous Zone	That zone where permafrost occurs everywhere beneath the ground surface including large lakes and rivers.
Cretaceous	The third and latest of the periods included in the Mesozoic era; also the system of strata deposited in the Cretaceous period.
Crystalline	Of or pertaining to the nature of a crystal; having regular molecular structure.
Delta Deposits	An alluvial deposit, usually triangular, at the mouth of a river.
Devonian	In the ordinarily accepted classification, the fourth in order of age of periods, compris in the Paleozoic era, following the Silurian and succeeded by the Mississippian. Also the system of strata deposited at that time.
Discontinuous Zone	That zone where permafrost occurs everywhere beneath the ground surface except beneath large lakes or wide rivers.
Dolomite	A mineral, CaMg $(CO_3)_2$, commonly with some iron replacing magnesium; a common rock-forming mineral.
Drunken Forest	An area characterized by the appearance of many trees leaning in differing directions without any apparent pattern to the direction of inclination. This phenomenon is caused by differential thawing of ground ice.
Ecology	The study of the mutual relationships between organisms and their environments.
Eolian	Deposits which are due to the transporting action of the wind.
Escarpment	The steep face of a ridge of high land.

Esker	A narrow ridge of gravelly or sandy drift, deposited by a stream in association with glacier ice.
Excess Ice	Ice in excess of the fraction that would be retained as water in the soil voids upon thawing.
Fauna	The animals collectively of any given age or region.
Flood Plain	That portion of a river valley, adjacent to the river channel, which is built of sediments during the present regime of the stream and which is covered with water when the river overflows its banks at flood stages.
Flora	The plants collectively of any given formation, age or region.
Fossiliferous	Containing organic remains.
Geomorphology	The study of landscape and of the geologic forces that produce it. It is the dynamic geology of the face of the earth. It concerns that branch of physical geography dealing with the origin and development of the earth's surface; features (landforms) and the history of geologic changes through the interpretation of topographic forms.
Geothermal Gradient	Change in temperature of the earth with depth, either in degrees per unit depth or in units of depth per degree.
Glacial Till	Non sorted, non stratified sediment carried or deposited by a glacier.
Glaciofluvial	Fluvioglacial. Pertaining to streams flowing from glaciers or to the deposits made by such streams.
Glaciolacustrine	Pertaining to glacial-lake conditions, as in glaciolacustrine deposits.

Ground Ice	Bodies of more or less clear ice in permanentl frozen ground.
Ground Moraine	A moraine with low relief, devoid of transvers linear elements.
Gypsum	Alabaster. Selenite. Satin Spar. A mineral, $CaSO_4$, $2H_2O$. Monoclinic. A common mineral of evaporites.
Heterogeneous	Differing in kind; having unlike qualities; possessed of different characteristics; oppose to homogeneous.
Hummock	A mound or knoll.
Icing	Mass of surface ice formed during winter by successive freezing of sheets of water seeping from the ground, a river or spring.
Kames	A mound composed chiefly of gravel or sand, whose form is the result of original depositio modified by settling during the melting of glacier ice against or upon which the sediment is accumulated.
Karst	A limestone plateau marked by sinkholes and underlain by cavernous carbonate rocks having subterranean drainage channelways that largely follow solution-widened joints, faults, and bedding planes.
Lacustrine	Produced or belonging to lakes.
Lichen	Any of a group of low growing plant formations composed of a certain fungi growing close together with certain algae.
Massif	A French term adopted in geology and physical geography for a mountainous mass or group of connected heights, whether isolated or forming a part of a larger mountain system.

Meandering	Condition of river that follows a winding path owing to natural physical causes not imposed by external restraint. Characterized by alternating shoals and bank erosion.
Moraine	Drift, deposited chiefly by direct glacial action and having constructional topography independent of control by the surface on which the drift lies.
Morphological	The scientific study of form. Used in various connections, e.g. landforms (geomorphology).
Muskeg	The term designating organic terrain, the physical condition of which is governed by the structure of peat it contains and its related mineral sublayer, considered in relation to topographic features and the surface vegetation with which the peat co-exists.
Ordovician	The second of the periods comprised in the Paleozoic era, in the geological classification now generally used. Also the system of strata deposited during that period.
Organic Soil	Soil material which contains a significant proportion of organic material. Where the organic nature of the soil is its dominent characteristics, the soil is referred to as a peat.
Perennial	Lasting through the year.
Permafrost	The thermal condition under which earth materials are at a temperature below 32^{o}F continuously for a number of years.
Permafrost Degradation	The lowering of the permafrost table due to thawing.
Permafrost Table	A more or less irregular surface which represents the upper limit of permafrost.
Petrography	The branch of science treating of the systematic description and classification of rocks.

Sand	Soil particles smaller than 2.0mm. in diamete and larger than 0.06mm. in diameter.
Screes	A heap of rock waste at the base of a cliff o a sheet of coarse debris mantling a mountain slope.
Seasonal Frost	Freezing of the ground during the winter. Th term implies that the frost so formed will th during the following spring or summer.
Silurian	The third in order of age of the geologic periods comprised in the Paleozoic era, in th nomenclature in general use. Also the system of strata deposited during that period.
Sinuous	Winding or curving in and out.
Slope Wash	Soil and rock material that is being or has moved down a slope predominantly by the actio of gravity assisted by running water that is not concentrated into channels.
Sporadic Zone	That zone where permafrost occurs only in isolated patches (usually beneath peat bogs)
Subgrade	The original ground upon which an embankment is placed.
Surface Degradation	The lowering of the ground surface due to thawing of underlying ground ice.
Taiga	A Russian word applied to the old, swampy, forested region of the north...that region between the Tundra in the north and the Boreal in the south.
Talus	Coarse angular fragments of rock and subordinate soil material dislodged by weathering (temperature and moisture changes) and collected at the foot of cliffs and other steep slopes and moved downslope primarily by the pull of gravity.

Terrace	A relatively flat elongate stairstepped surface bounded by a steeper ascending slope on one side and a steep descending slope on the other.
Tertiary	The earlier of the two geologic periods comprised in the Cenozoic era, in the classification generally used. Also the system of strata deposited during that period.
Thaw Settlement	Settlement of a soil mass due to thawing of ground ice.
Thermal Conductivity	The amount of heat passing through a unit cross-section in unit time under the influence of unit heat gradient.
Thermal Erosion	Erosion due to the melting of ground ice rather than the removal of soil
Thermal Regime	The temperature conditions in the ground at a given point in time.
Thermal Regression	The thawing of frozen ground due to surface disturbance, increasing temperature, etc.
Thermokarst	Uneven land subsidence caused by the melting of ground ice. The resulting ground surface resembles the karst topography found in limestone areas.
Thermokarst Lake	(Cave-in Lake), lakes which occupy depressions resulting from subsidence caused by thawing of ground ice.
Tundra	Any of the vast, nearly level, treeless plains of the Arctic Regions.
Turbid	Having the sediment stirred up hence muddy, impure.

EXPLANATION OF SYMBOLS AND TERMS USED IN THIS REPORT

GENERAL CLASSIFICATION SYSTEM FOR SOILS

MAJOR DIVISION			Group SYMBOL	Graph SYMBOL	TYPICAL DESCRIPTION
	BOULDERS		N/A		LARGER THAN 8 INCHES DIAMETER
	COBBLES		N/A		3 TO 8 INCHES DIAMETER
COARSE-GRAINED SOILS (more than half by weight larger than 200 sieve)	GRAVELS more than half coarse grains larger than No. 4 sieve & 100% smaller than 3 inches diameter	CLEAN GRAVELS (little or no fines)	G W		WELL GRADED GRAVELS, LITTLE OR NO FINES
			G P		POORLY GRADED GRAVELS, AND GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		DIRTY GRAVELS (with some fines)	G M		SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
			G C		CLAYEY GRAVELS, GRAVEL-SAND CLAY MIXTURES
	SANDS more than half fine grains smaller than No. 4 sieve.	CLEAN SANDS (little or no fines)	S W		WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			S P		POORLY GRADED SANDS, LITTLE OR NO FINES
		DIRTY SANDS (with some fines)	S M		SILTY SANDS, SAND-SILT MIXTURES
			S C		CLAYEY SANDS, SAND-CLAY MIXTURES
FINE-GRAINED SOILS (more than half by weight passes 200 sieve)	SILTS below "A" line negligible organic content	W_L 50%	M L		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY SANDS OF SLIGHT PLASTICITY
		W_L 50%	M H		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS
	CLAYS above "A" line on plasticity chart negligible organic content	W_L 30%	C L		INORGANIC CLAYS OF LOW PLASTICITY, GRAVELLY, SANDY, OR SILTY CLAYS, LEAN CLAYS
		30% W_L 50%	C I		INORGANIC CLAYS OF MEDIUM PLASTICITY, SILTY CLAYS
		W_L 50%	C H		INORGANIC CLAYS OR HIGH PLASTICITY, FAT CLAYS
	ORGANIC SILTS & CLAYS below "A" line on chart	W_L 50%	O L		ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
		W_L 50%	O H		ORGANIC CLAYS OF HIGH PLASTICITY
	HIGHLY ORGANIC SOILS		P t		PEAT AND OTHER HIGHLY ORGANIC SOILS

NATIONAL RESEARCH COUNCIL PERMAFROST CLASSIFICATION SYSTEM

Permafrost ground ice occurs in three basic conditions including non-visible, visible (less than one inch in thickness) and clear ice.

A. Non-visible - N

N_f - poorly bonded or friable frozen soil

N_{bn} - well bonded soil, no excess ice

N_{be} - well bonded soil, excess ice

B. Visible - V (less than 1" thick)

V_x - individual ice crystals or inclusions

V_c - ice coatings on particles

V_r - random or irregularly oriented ice formations

V_s - stratified or oriented ice formations

C. Visible Ice - (greater than 1" thick)

Ice - ice with soil inclusions

Ice + soil - ice without soil inclusions

A more complete description of this system is included in NRC publication TM 79.

CENTERLINE HOLES

km 107 to km 164

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/01/30	km 108	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
108+050	℄

REMARKS

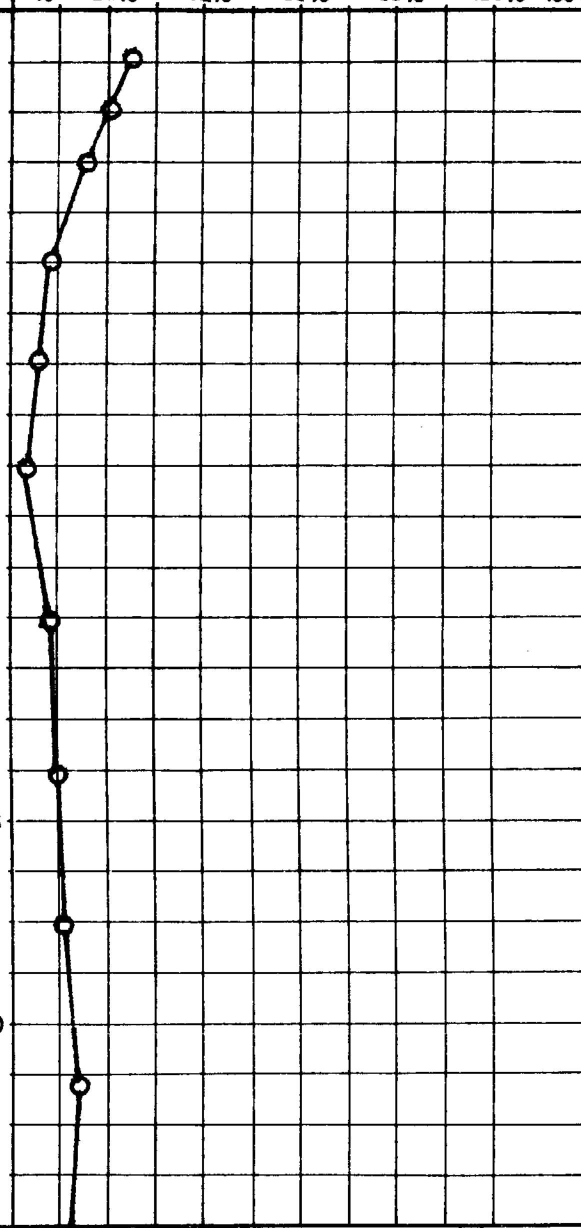
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
2	CL CI	CLAY - SILTY SANDY FROM .9m		
4	ML	1.0m SILTY SANDY		
6–10	SC	SAND - SILTY CLAYEY GRAVELLY		
12–14	GW	3.7m GRAVEL - SANDY		
16–38	CL CI	4.9m CLAY - SILTY SANDY GRAVELLY PEBBLES @ OR - P_L GREY - LOW-MED. PLASTIC		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
~0.4	99		1	0	MOIST
~1					MOIST
~1.5	68		32	0	MOIST
~2.5					MOIST
~3.4					MOIST
~4.5	8		21	71	MOIST
~6	44		31	25	MOIST
~7.5	67		29	4	DAMP
~9					DAMP
~10.5	70		27	3	DAMP
~12					DAMP

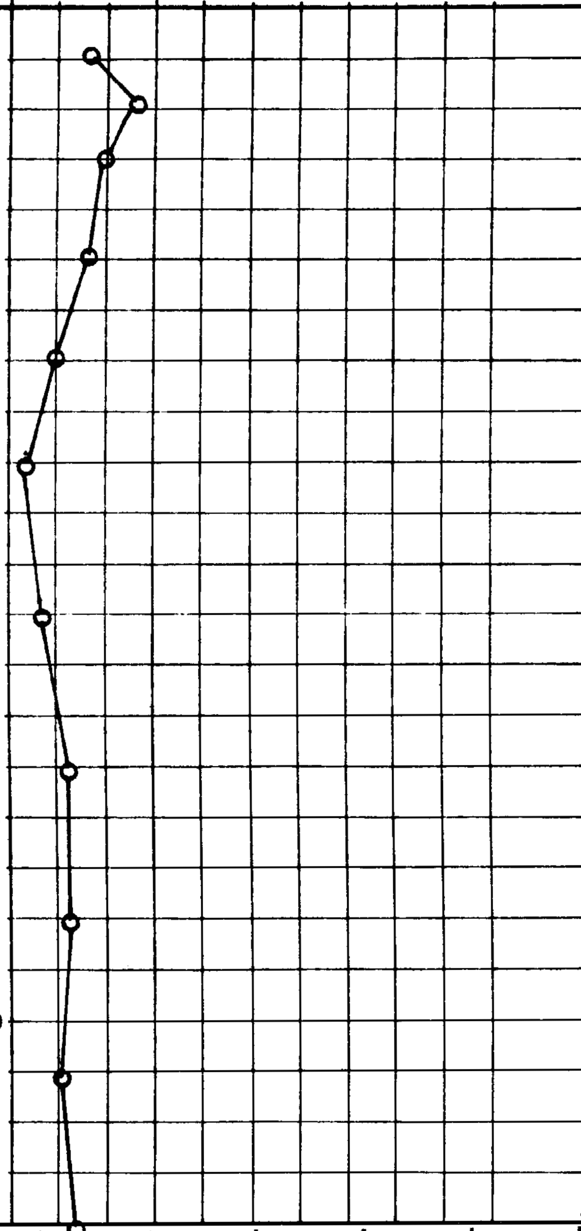
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/01/30	km 108	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
108+110	℄

UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
CI	CLAY-SILTY SANDY SILTY MED. PLASTIC 1.2m		
ML	SILT-SANDY 3.1		
CL	CLAY-SILTY SANDY PEBBLES LOW PLASTIC 4.0m		
GW	GRAVEL-SANDY 6.1m		
CI	CLAY-SILTY SANDY GRAVELLY PEBBLES MED. PLASTIC @ ? - P_L		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				MOIST
72		28	0	MOIST
94		6	0	MOIST
75		25	0	MOIST
				MOIST
9		39	52	MOIST
46		33	21	MOIST
				DAMP
68		28	4	DAMP
				DAMP
67		23	10	DAMP

REMARKS

BOTTOM OF HOLE - 12.2 m

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

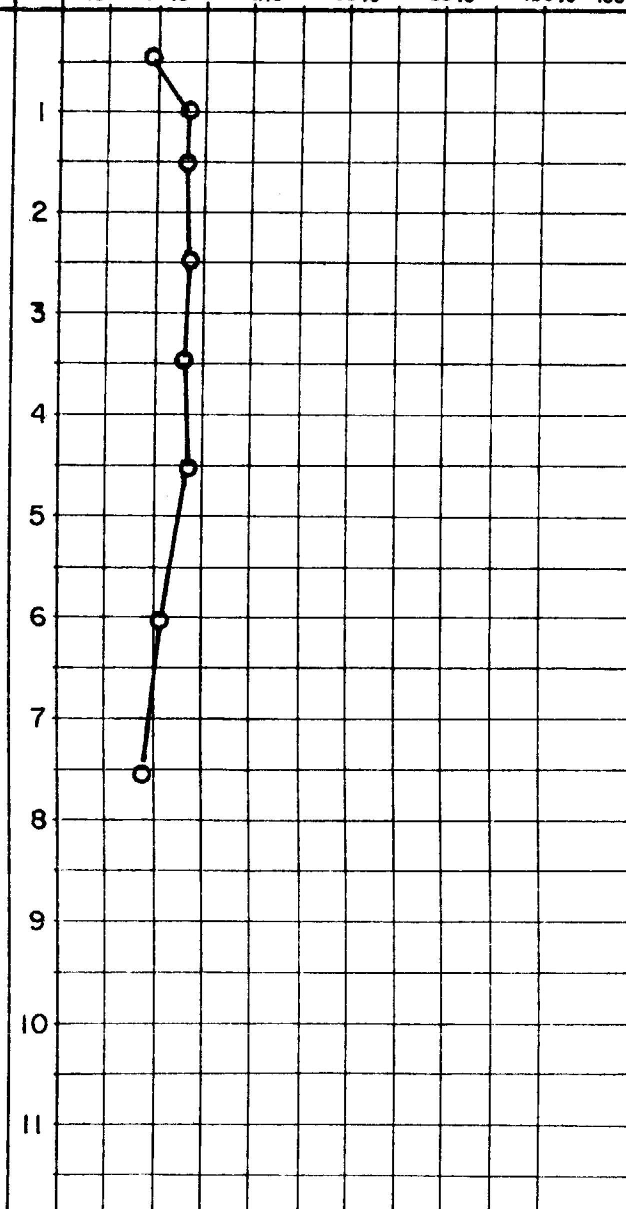
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/01/30	108		4

CHAINAGE	OFFSET
108+780	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–2	ML	SILT - -SANDY		
		.9 m		
	CI	CLAY - SILTY +PL MED. PLASTIC		
		7.6 m		
		BOTTOM OF HOLE - 7.6 m		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY + SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
97	3	0	DAMP
73	27	0	MOIST
			MOIST
96	4	0	MOIST
			MOIST
97	3	0	MOIST
			MOIST
			MOIST

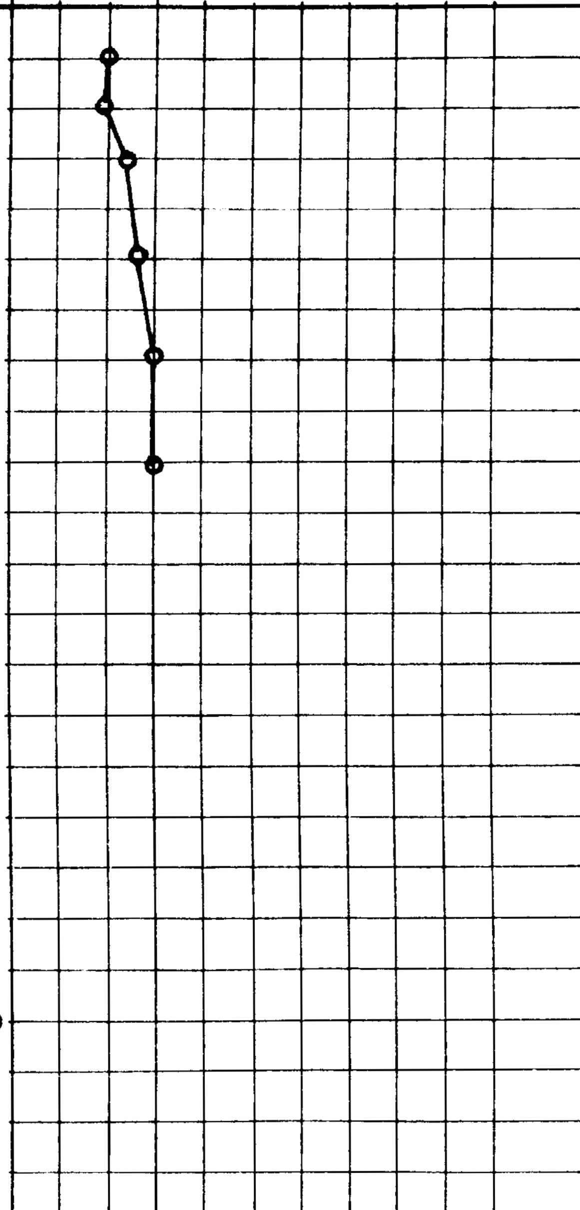
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/01/30	km 108	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
108+880	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |———| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–4	ML	SILT - SANDY			0–1.2	-	99	1	0	DAMP	
						-	90	10	0	DAMP	
		1.2m									
4–15	CI	CLAY - SILTY, MED. PLASTIC			1.2–4.6	-	99	1	0	MOIST	
										MOIST	
						-	99	1	0	MOIST	
										WET	
		4.6m									
		BOTTOM OF HOLE. 4.6m									

DEPTH (FEET) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/01/30	km 109	B.P. No.	HOLE No. 1

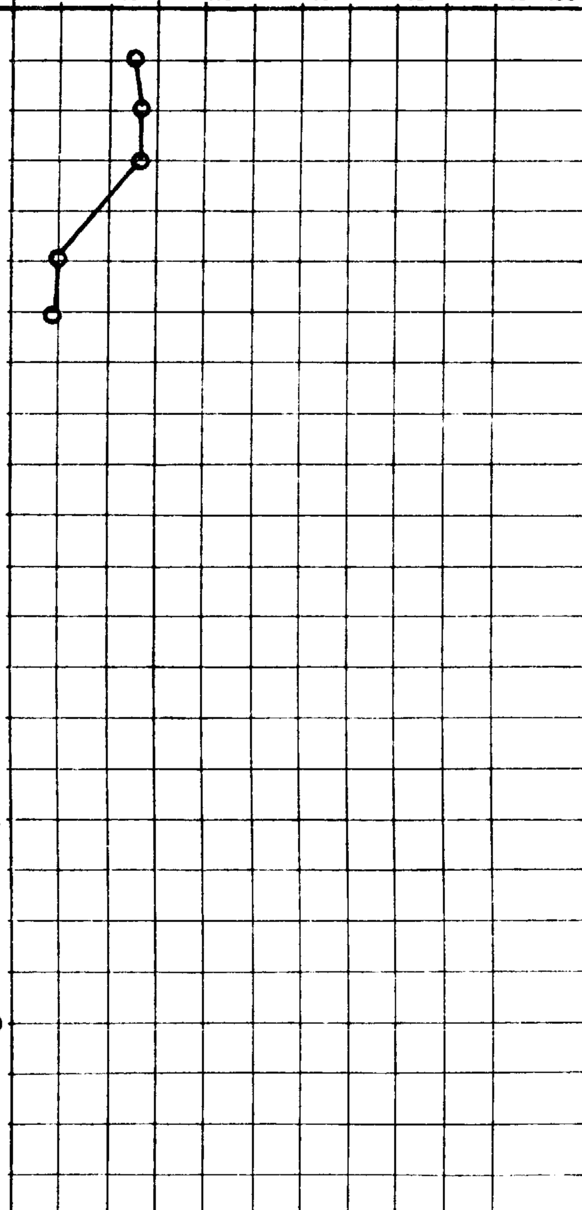
CHAINAGE	OFFSET
109+060	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	CI	CLAY - SILTY MED. PLASTIC +PL								MOIST	
4					1	99		1	0	MOIST	
6										MOIST	
8		2.4m			2						
	ML	SILT - SANDY				60		40	0	MOIST	
10		3.1m			3	58		42	0	MOIST	
12		BOTTOM OF HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



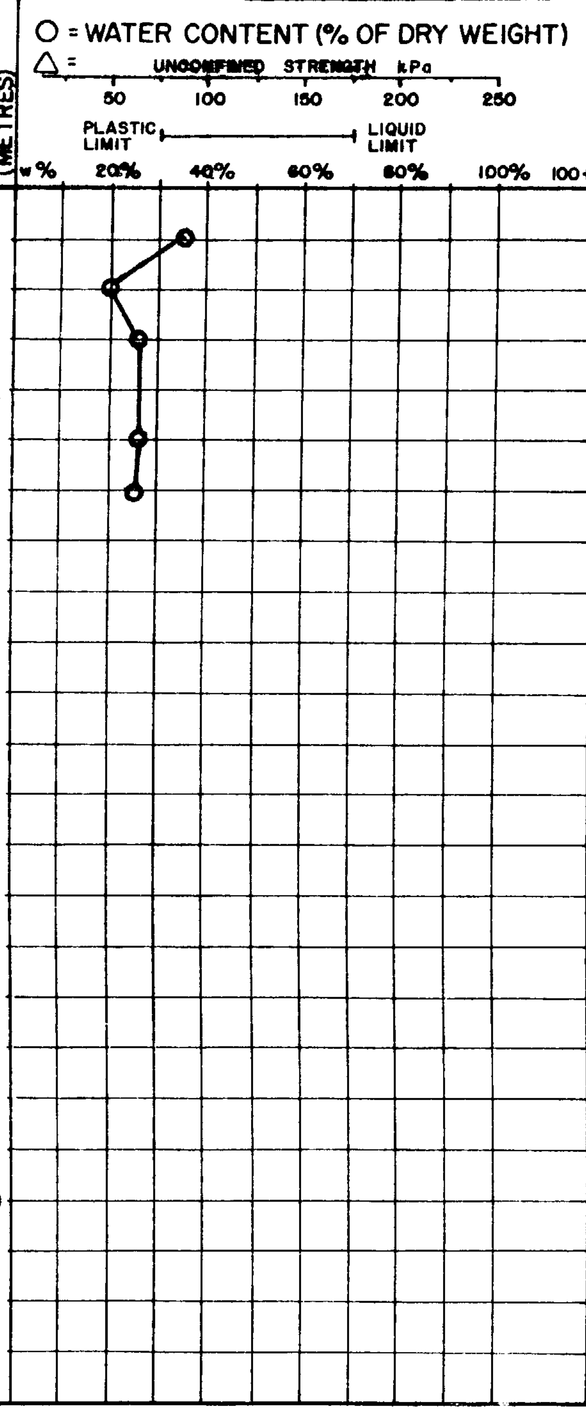
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/9/30	km 109	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
109+150	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAYEY				99		1	0	WET	
4		1.2m			1	98		2	0	MOIST	
6		CLAY - SILTY - MED. PLASTIC								MOIST	
8	CI	+ PL			2	100		0	0	MOIST	
10		3.1m			3					MOIST	
12		BOTTOM OF HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28					9						
30											
32					10						
34											
36					11						
38											



PUBLIC WORKS CANADA — DRILL HOLE REPORT

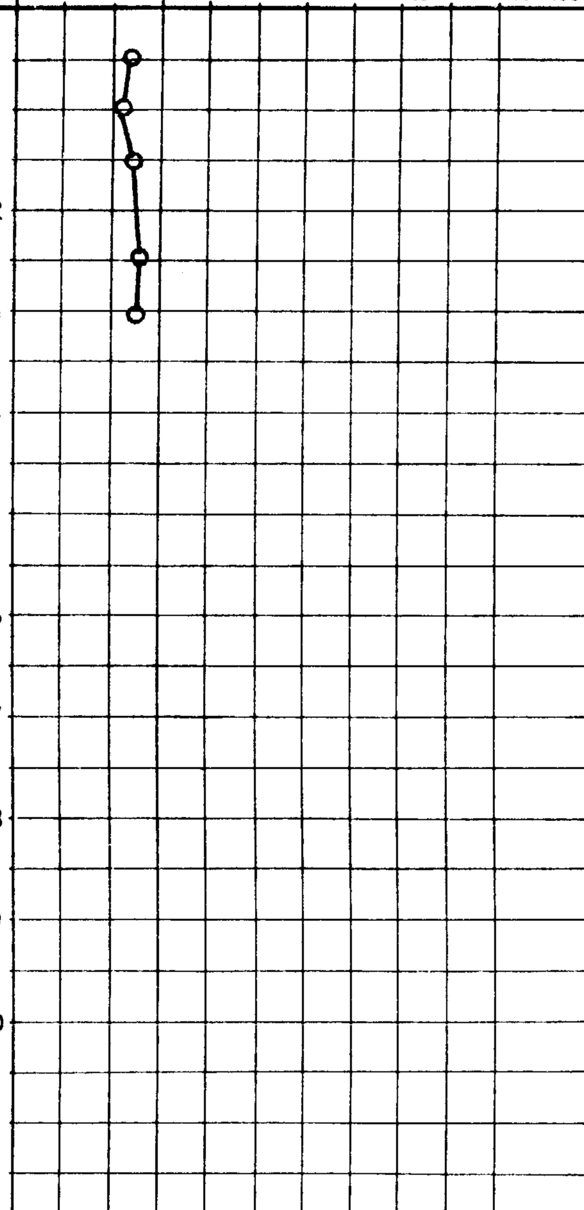
LIARD HWY.

TECH. WEBBER | RIG B-50 | DATE 78/03/30 | km 109 | B.P. No. | HOLE No. 3

CHAINAGE	OFFSET
109+550	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–4	ML	SILT-		
4		——— 1.2 m		
4–10	CI	CLAY - SILTY MED. PLASTIC +PL		
10		——— 3.1 m		
12		BOTTOM OF HOLE - 3.1 m		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├───┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY / SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0.5	98	2	0	MOIST	
1	99	1	0	MOIST	
1.5	99	1	0	MOIST	
2.5				MOIST	
3	99	1	0	MOIST	

PUBLIC WORKS CANADA — DRILL HOLE REPORT

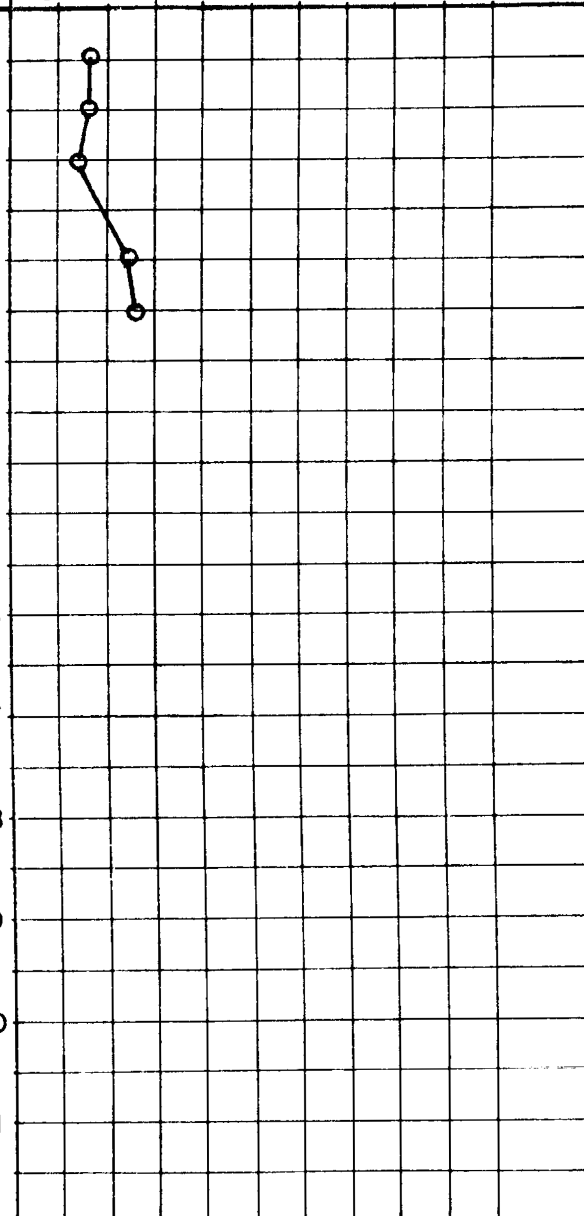
LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/01/30	109		4

CHAINAGE	OFFSET
109+880	℄

REMARKS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT — LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–6	ML	SILT. (to 1.8m)			0.5	-	98	2	0	DAMP
					1.0	-	99	1	0	DAMP
					1.5	-	99	1	0	DAMP
6–10	CI	CLAY. SILTY MED. PLASTIC +PL (1.8m – 3.1m)			2.5					MOIST
					3.0	-	99	1	0	MOIST
		BOTTOM OF HOLE . 3.1m								

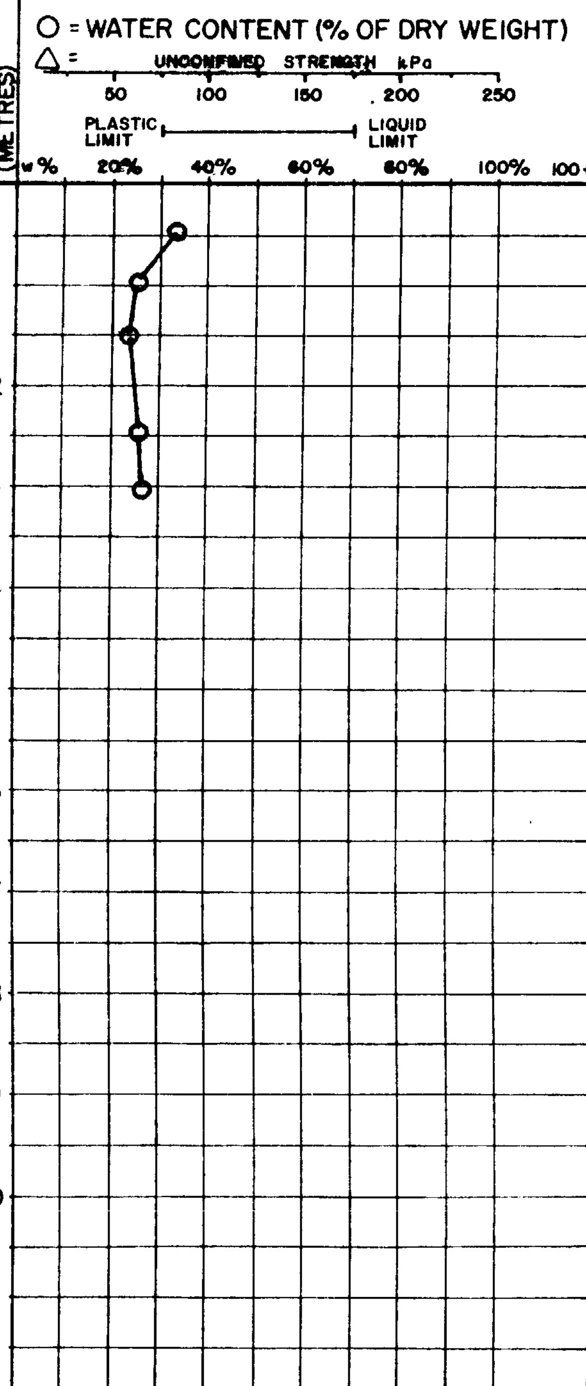
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. Pronyshyn?	RIG B-61	DATE 78/01/30	km 110	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
110+150	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - SAT.				100		0	0	SAT	
4		1.2 m			1	99		1	0	MOIST	
6	CL	CLAY - SILTY +PL								MOIST	
8	- CI	LOW-MED. PLASTIC			2	100		0	0	MOIST	
10		3.1 m			3					MOIST	
12		BOTTOM OF HOLE 3.1 m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/01/30	110		2

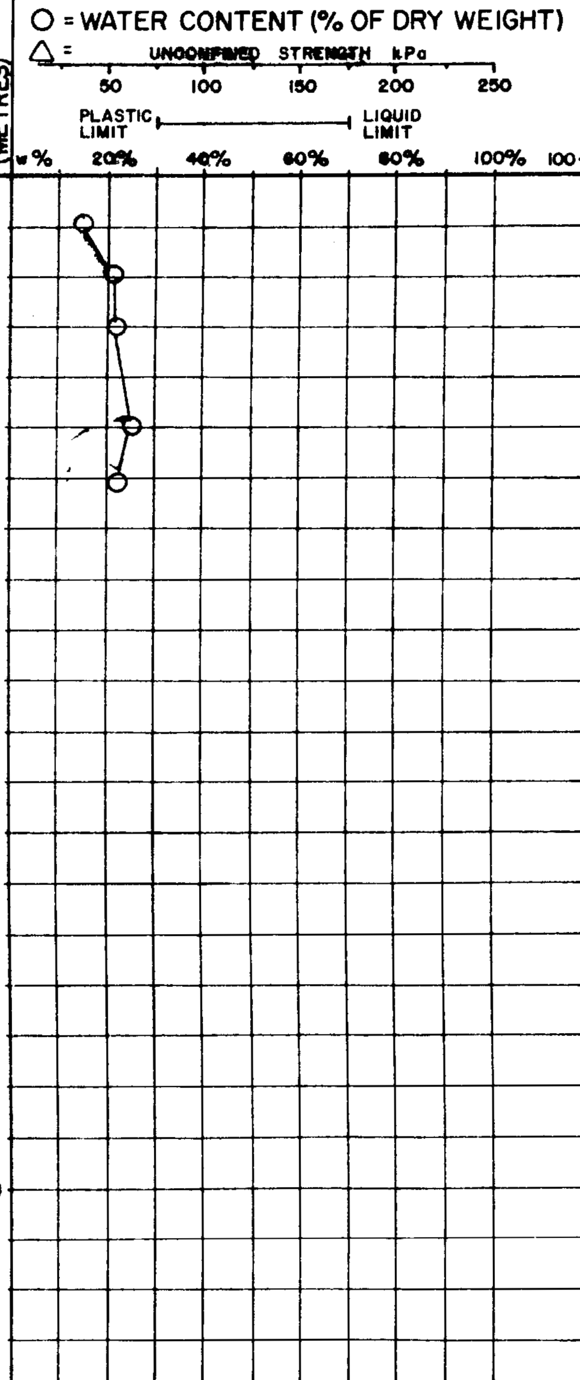
CHAINAGE	OFFSET
110+490	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT - ½ m				99		1	0	DAMP	
2											
4		CLAY - SILTY			1					MOIST	
		MED. PLASTIC				100		0	0	MOIST	
6	CI	+PL			2						
8										MOIST	
10		3.1 m			3	100		0	0	MOIST	
12		BOTTOM OF HOLE 3.1 m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT

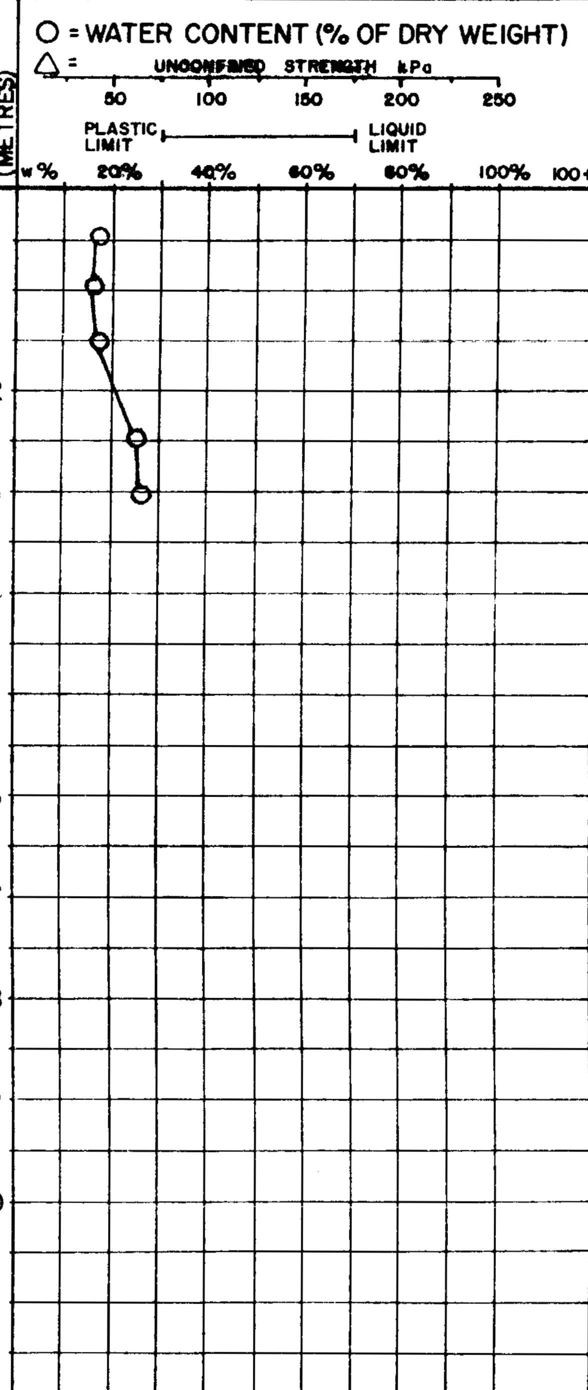
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/01/30	110		3

CHAINAGE	OFFSET
110+990	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–3	ML	SILT - (to 1m)				100.		0	0	MOIST
3–10	CI	CLAY - SILTY MED. PLASTIC +PL (to 3.1m)			1	99.		1	0	MOIST
						99.		1	0	MOIST
					2.5	100.		0	0	MOIST
					3					MOIST
		BOTTOM OF HOLE - 3.1 m								



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B.50	78/01/30	112.		3

CHAINAGE	OFFSET
112+810	℄

REMARKS

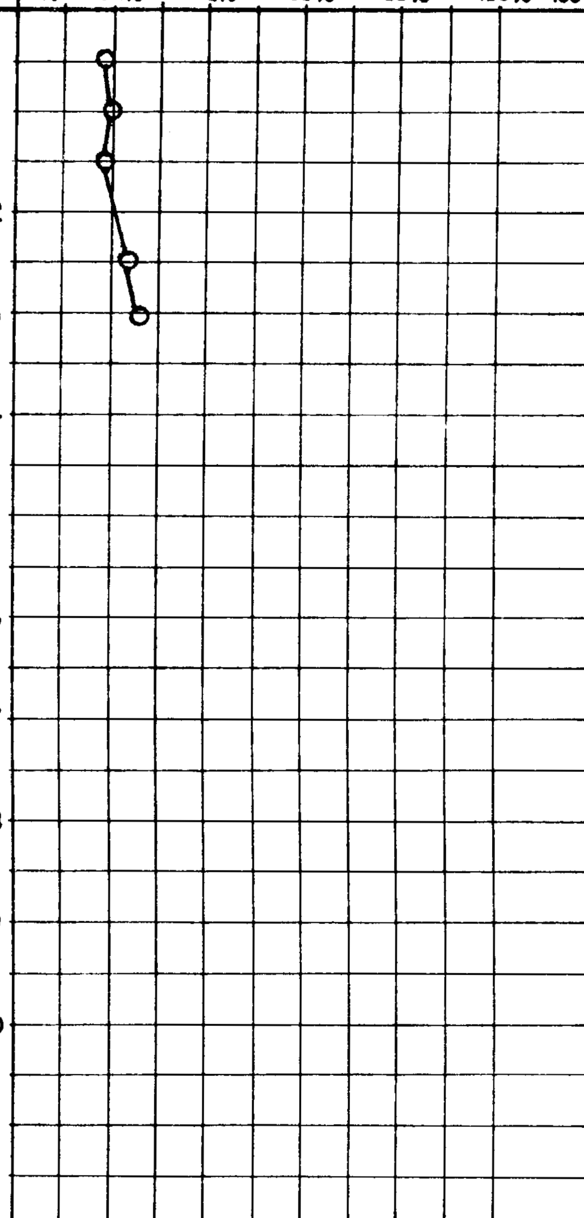
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–6	ML	SILT-		
6–10	CI	2.0m CLAY-SILTY MED. PLASTIC		
10		3.1m		
12		BOTTOM OF HOLE- 3.1m		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0.5	99.		1	0	MOIST
1.0	99.		1	0	MOIST
1.5	99.		1	0	MOIST
2.5					MOIST
3.0	99.		1	0	MOIST

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/01/30	113		1

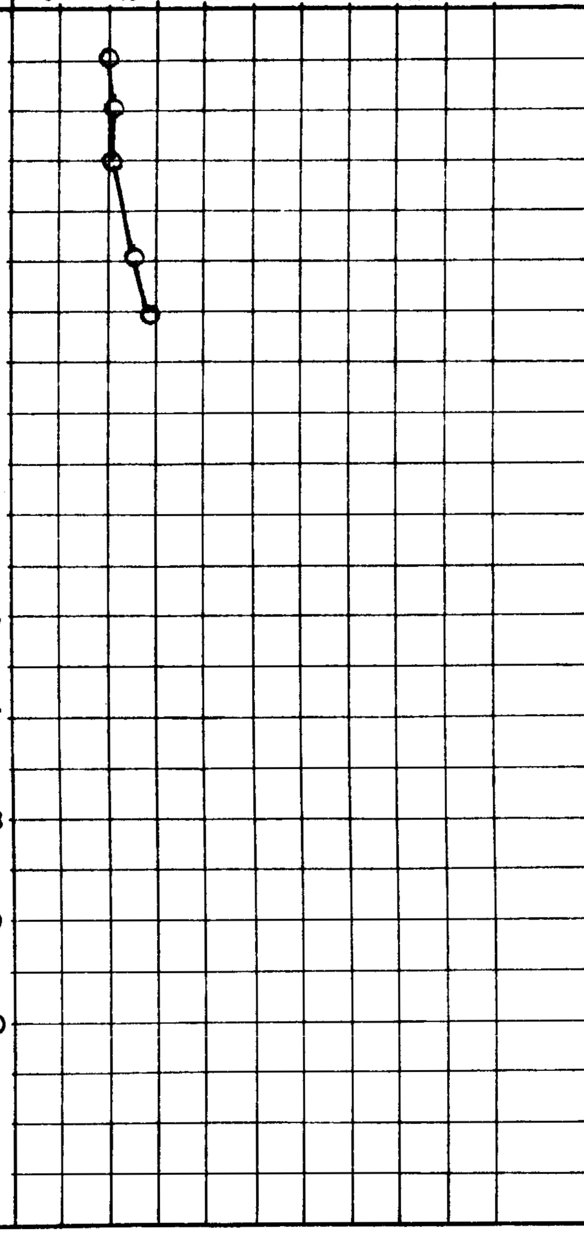
CHAINAGE	OFFSET
113+110	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–6	ML	SILT				99		1	0	MOIST	
					1	99		1	0	MOIST	
		1.8 m				100		0	0	WET	
6–10	CL CI	CLAY - SILTY LOW-MED PLASTIC			2	100		0	0	MOIST	
		3.1 m			3					MOIST	
		BOTTOM OF HOLE - 3.1 m									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/01/30	113		2

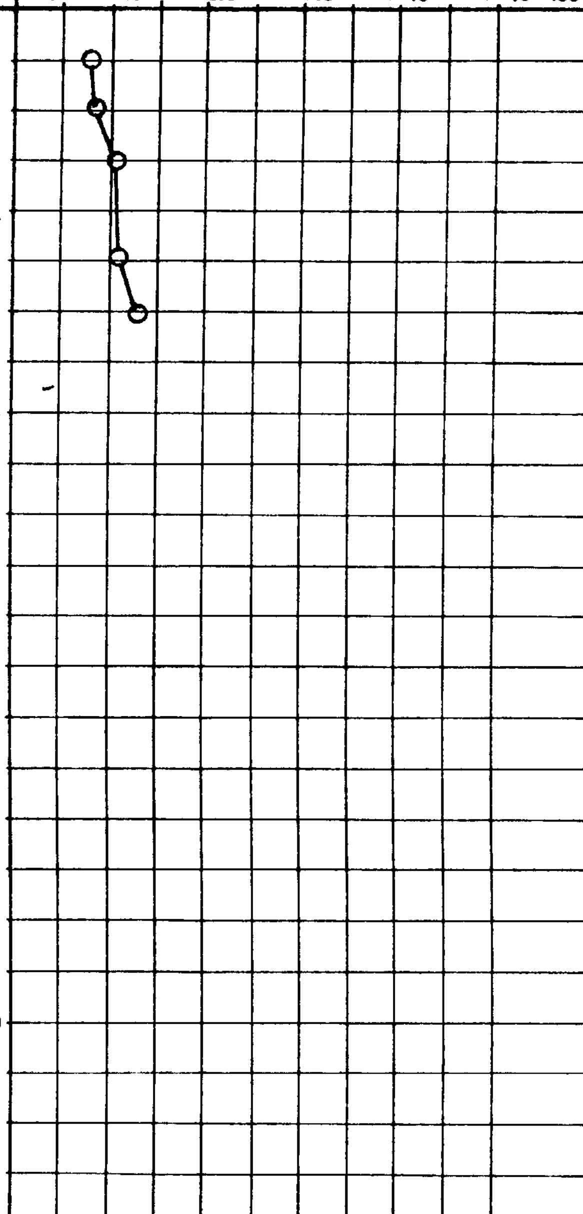
CHAINAGE	OFFSET
113+29?	E

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0 – .6 m	ML	SILT.			-98-		2	0	DAMP	
.6 m – 3.1 m	CL CI	CLAY - SILTY LOW - MED. PLASTIC							DAMP	
					-100-		0	0	DAMP	
									H.1.8	
3.1 m					-100-		0	0		
		BOTTOM OF HOLE 3.1m								

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

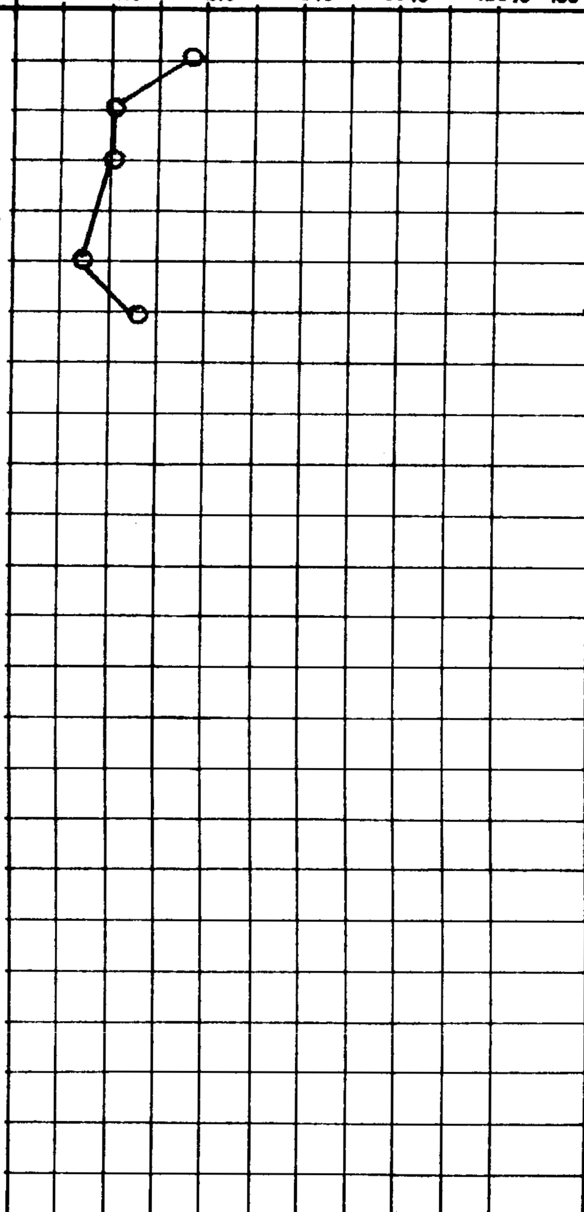
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/01/30	113		3

CHAINAGE	OFFSET
113+950	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–4	ML	SILT - CLAYEY				98		2	0	SAT.	
		1.2 m			1	99		1	0	MOIST	
4–10	ML	SILT - CLAYEY				100		0	0	MOIST	
	CL	CLAY - SILTY			2					H.I.B	
		+P_L									
		3.1 m			3	100		0	0	MOIST	
12		BOTTOM OF HOLE - 3.1 m									

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38
Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/01/30	km 114	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
114+210	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - CLAYEY				-99-		1	0	SAT.	
2	ML	SILT			1	-99-		1	0	MOIST	
4		SILT - CLAYEY				-99-		1	0	MOIST	
6		1.8 m									
		CLAY - SILTY GREY			2						
8	CL CI	LOW - MED. PLASTIC				-100-		0	0	MOIST	
10		3.1 m			3					MOIST	
12		BOTTOM OF HOLE - 3.1 m									

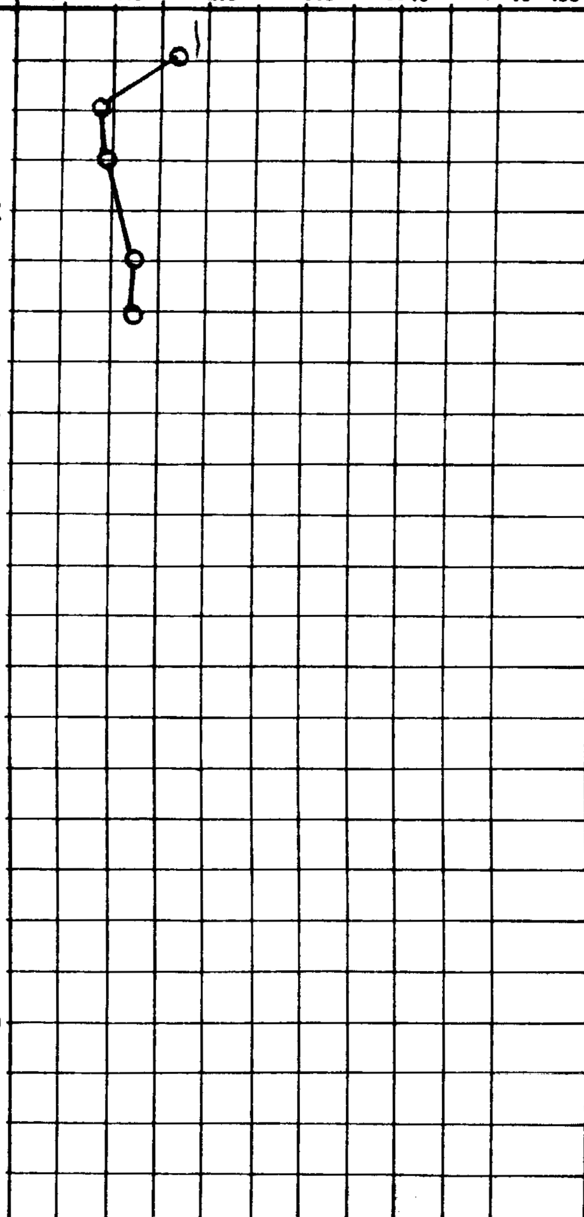
GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT |———| LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (metres) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD Hwy.

TECH. PRONYCH	RIG B-50	DATE 78/01/30	km 114	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
1144300	℄

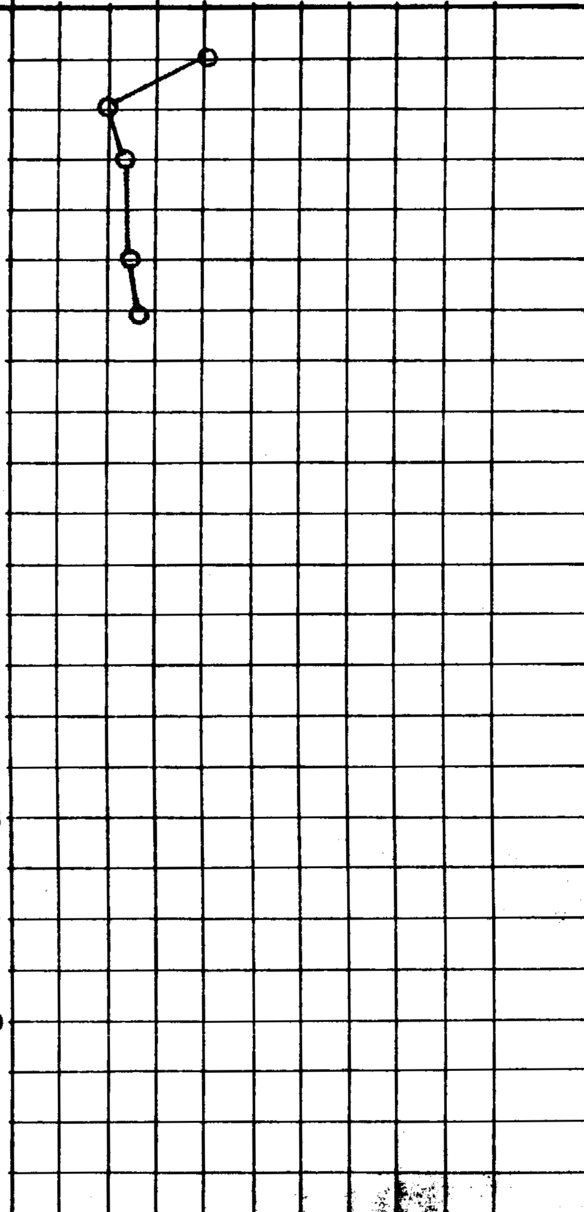
○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - CLAYEY				99		1	0	FREE WATER	
2		SILT -				99		1	0	MOIST	
4	ML				1	100		0	0	MOIST	
6		2.1m			2					MOIST	
8		CLAY - SILTY MED. PLASTIC +P									
10	CI	3.1m			3	100		0	0	MOIST	
12		BOTTOM OF HOLE - 3.1m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYSCH	B-50	78/01/30	114		3

CHAINAGE	OFFSET
114+760	℄

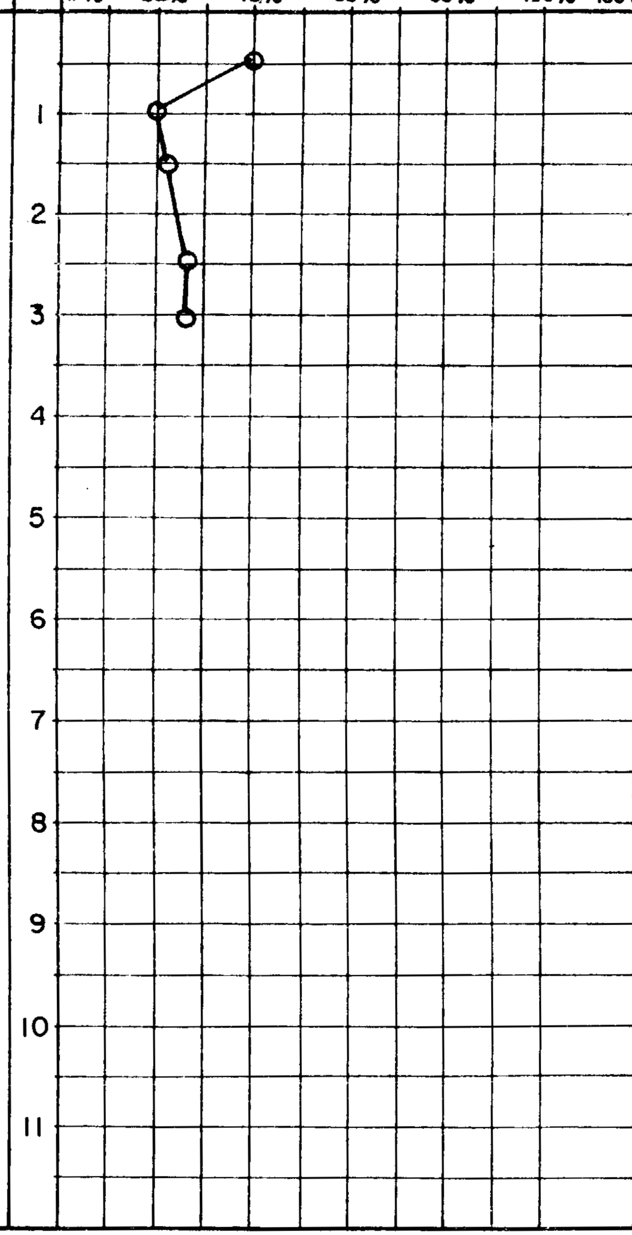
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–6	ML	SILT - CLAYEY SILT		
		2 m		
6–10	CL CI	CLAY - SILTY LOW-MED PLASTIC +PL		
		3.1 m		
12		BOTTOM OF HOLE - 3.1 m		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT |——| LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
98		2	0	FREE WATER	
99		1	0	MOIST	
99		1	0	MOIST	
100		0	0	MOIST	
				MOIST	

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/01/30	km 115	B.P. No.	HOLE No. 1

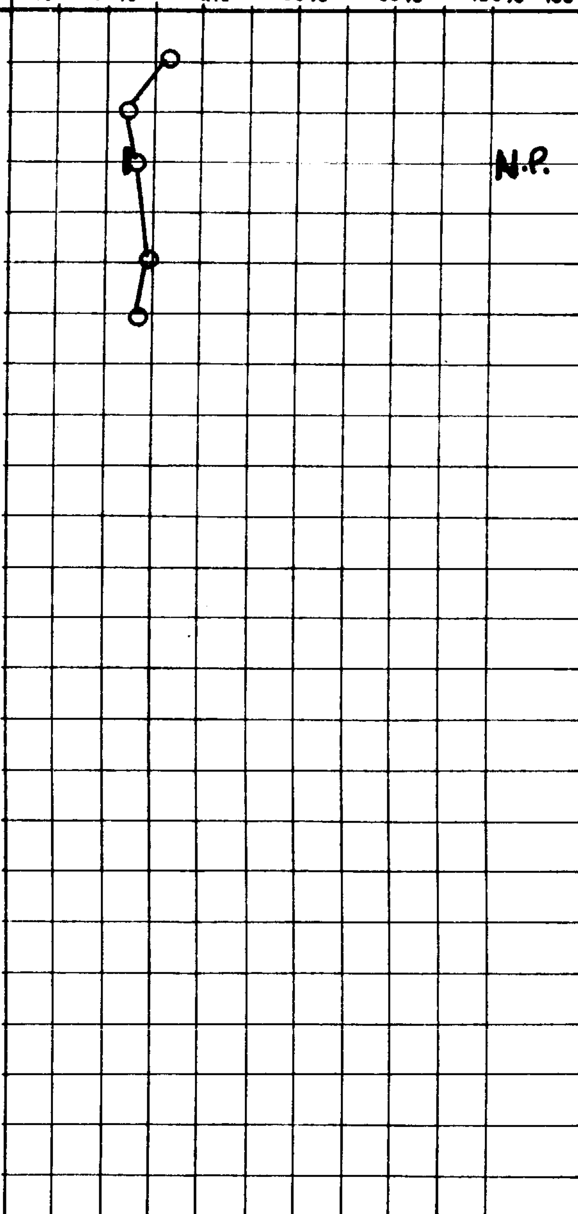
CHAINAGE	OFFSET
115+090	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT |———| LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–6	ML	SILT - CLAYEY SILT			0–1.8	-98-		2	0	WET-SAT.	
										WET-SAT.	
		N.P.				-99-		1	0	WET-SAT.	
6		1.8m			1.8						
6–10	CI	CLAY - SILTY MED. PLASTIC + PL			1.8–3.1					MOIST	
						-100-		0	0	MOIST	
10		3.1m			3.1						
12		BOTTOM OF HOLE 3.1m									

DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

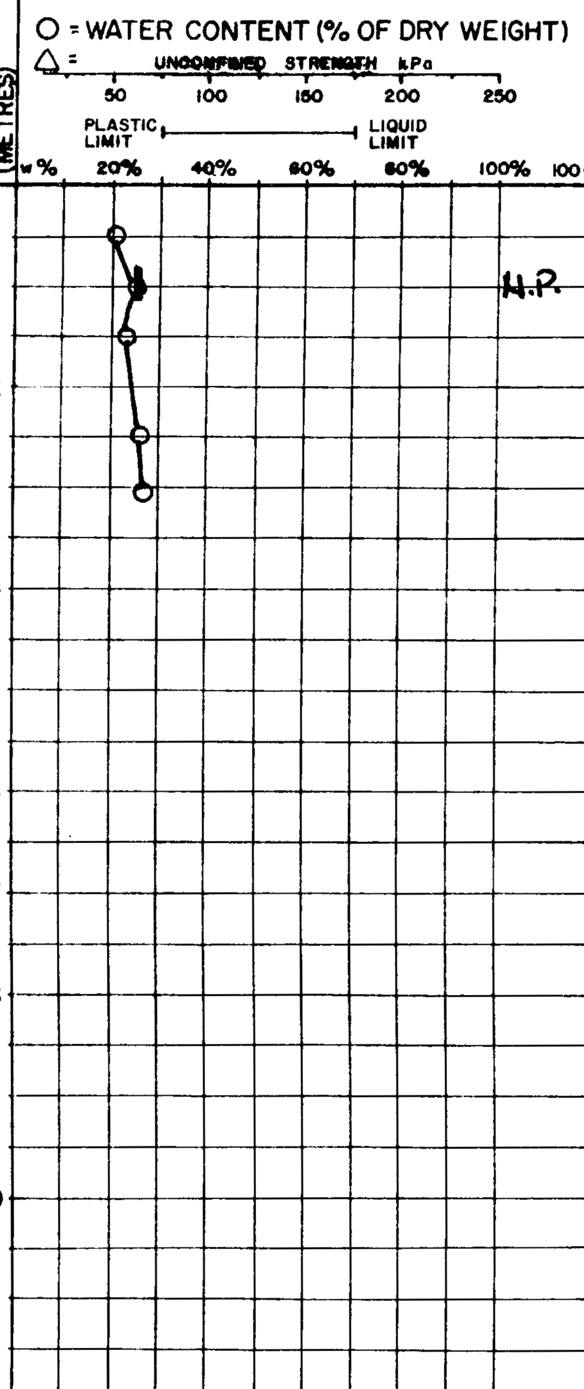
DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. Pronych	RIG B-50	DATE 78/01/30	km 115	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
115+182	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT									
2										DAMP	
4	ML				1	H.P. –	100	0	0	MOIST	
6		2.1m								WET	
8		SILT. CLAYEY			2						
	CL	CLAY-SILTY LOW PLASTIC 3.1m				–	100	0	0	WET	
10					3					WET	
12		Bottom of Hole - 3.1m									



GRAIN-SIZE ANALYSIS

DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/01/31	km 115-3	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
115+520	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
2		SILT			
4	ML				1
6					
8		2.4m			2
		CLAY - SILTY LOW - MED. PLASTIC			
10	CL				3
12	CI				
14					4
		4.6m			
16		BOTTOM OF HOLE - 4.6 m			5
18					
20					6
22					
24					7
26					
28					8
30					9
32					
34					10
36					
38					11

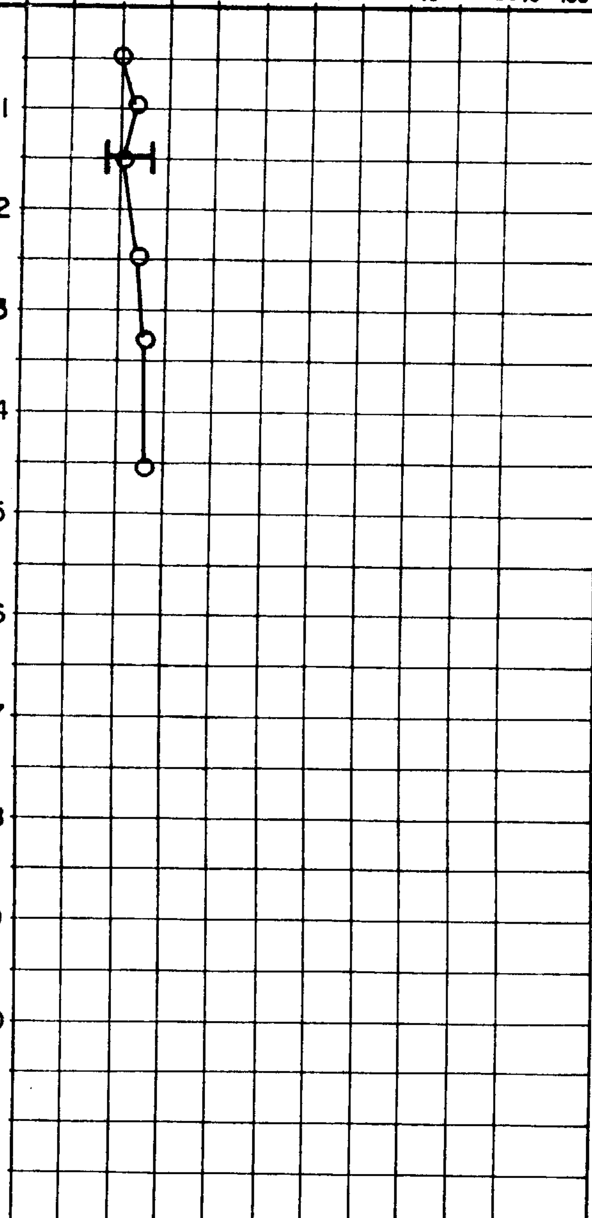
○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
99		1	0	DAMP	
				MOIST	
100		0	0	MOIST	
				MOIST	
100		0	0	MOIST	
				MOIST	

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/01/31	115		4

CHAINAGE	OFFSET
115+610	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT -								MOIST	
2–4		- CLAYEY			1	-100-		0	0	MOIST	
6	ML									MOIST	
8		2.4m			2						
	CL	CLAY - SILTY								MOIST	
10	CI	LOW-MED PLASTIC 3.1m			3	-100-		0	0	MOIST	
12		BOTTOM OF HOLE - 3.1m									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/01/31	km 115	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
115+700	℄

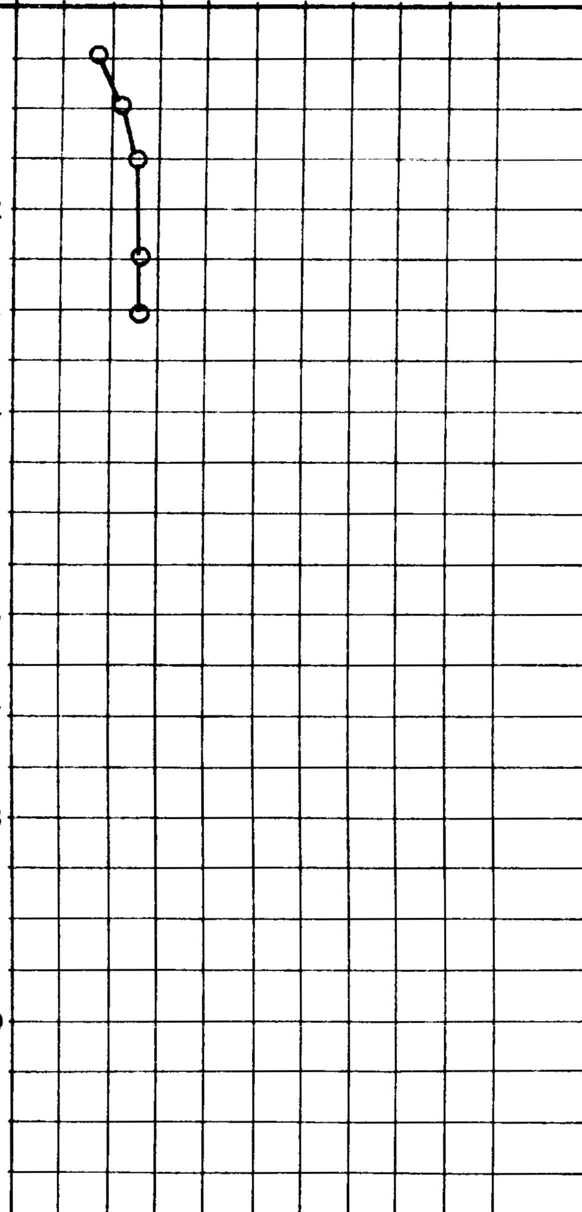
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–5	ML	SILT-			0–1.5	-100-		0	0	DAMP	
						-100-		0	0	MOIST	
		1.5 m								MOIST	
5–10	CL	SILT - CLAYEY CLAY - SILTY LOW PLASTIC			1.5–3.1	-99-		1	0	MOIST	
		3.1 m								MOIST	
		BOTTOM OF HOLE - 3.1 m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

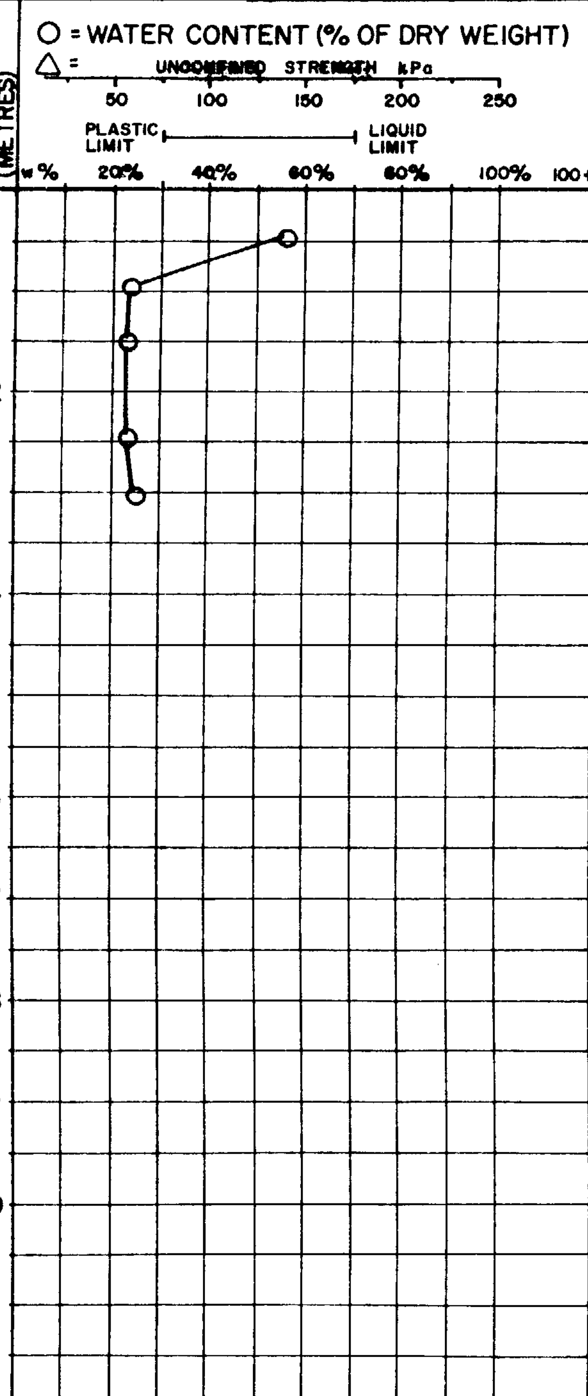
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/01/31	115		6

CHAINAGE	OFFSET
115+947	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - CLAYEY									
2	ML	SILT				-	100	0	0	FREE WATER	
4					1	-	100	0	0	MOIST-WET	
		1.5m								MOIST	
6		CLAY - SILTY			2						
8	CL CI	LOW-MED PLASTIC								MOIST	
10		3.1m			3					MOIST	
12		BOTTOM of HOLE - 3.1 m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/01/31	116		1

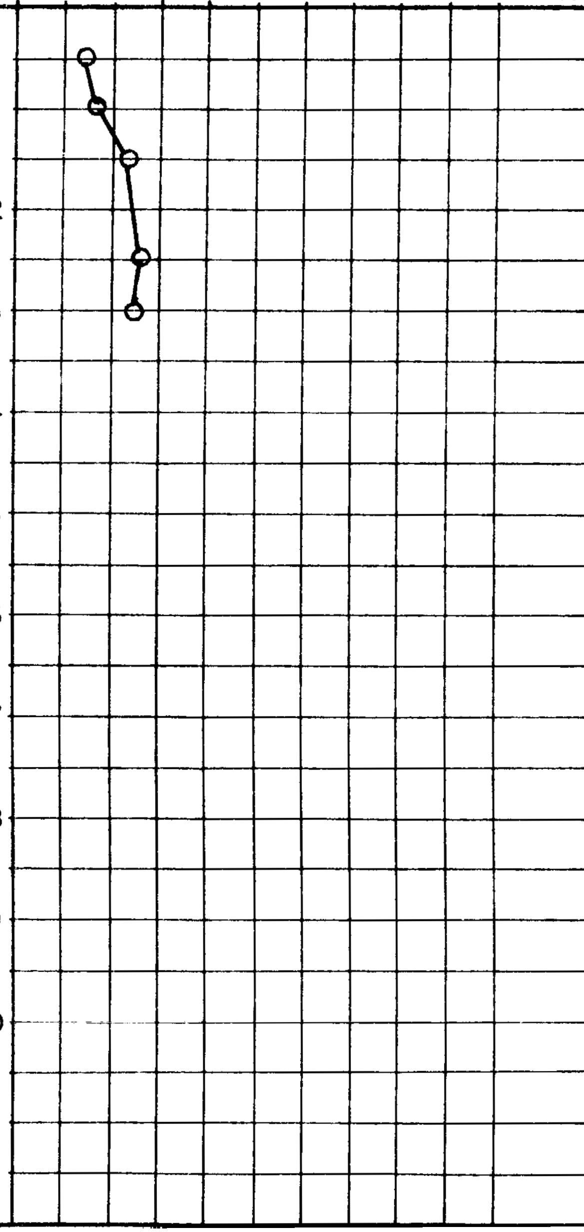
CHAINAGE	OFFSET
116+250	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT -				99-		1	0	DAMP	
4					1	99-		1	0	DAMP	
		1.5m								DAMP	
6	CI	CLAY - SILTY MED. PLASTIC +PL			2						
8										MOIST	
10		3.1m			3	100-		0	0	MOIST	
12		BOTTOM OF HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

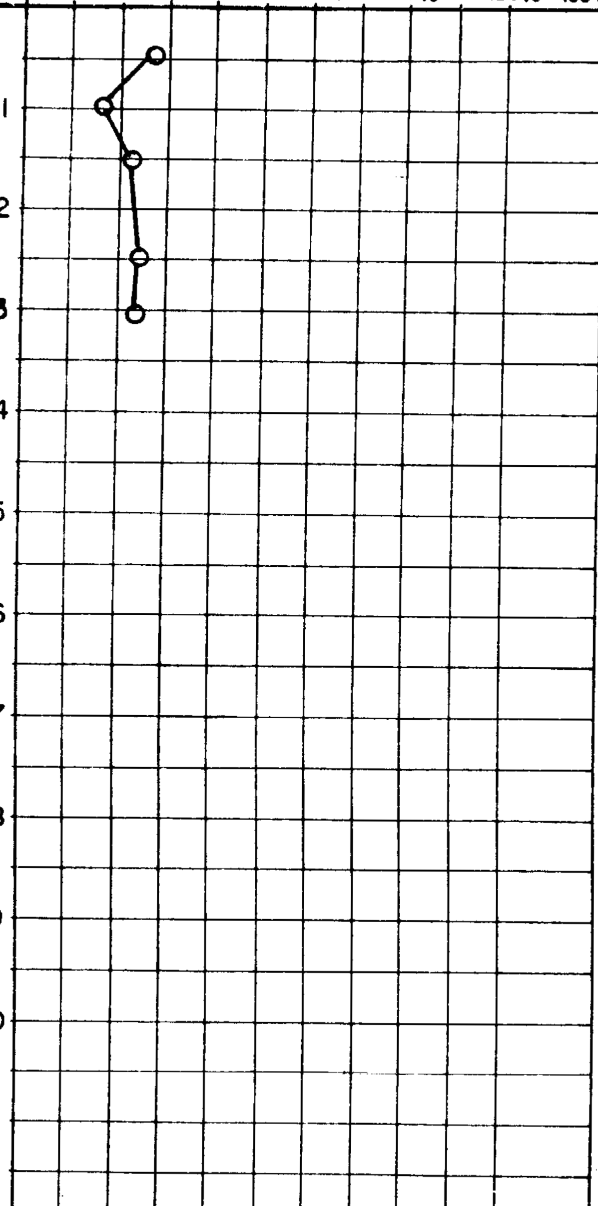
TECH. WEBBER	RIG B-50	DATE 78/01/31	km 116	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
116+740	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–8	ML	SILT - CLAYEY								SAT.
					1		99	1	0	DAMP
										DAMP
8	CL	2.4 m CLAY - SILTY					100	0	0	MOIST
	CI	LOW-MED PLASTIC 3.1 m			3					MOIST
12		BOTTOM OF HOLE - 3.1m								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



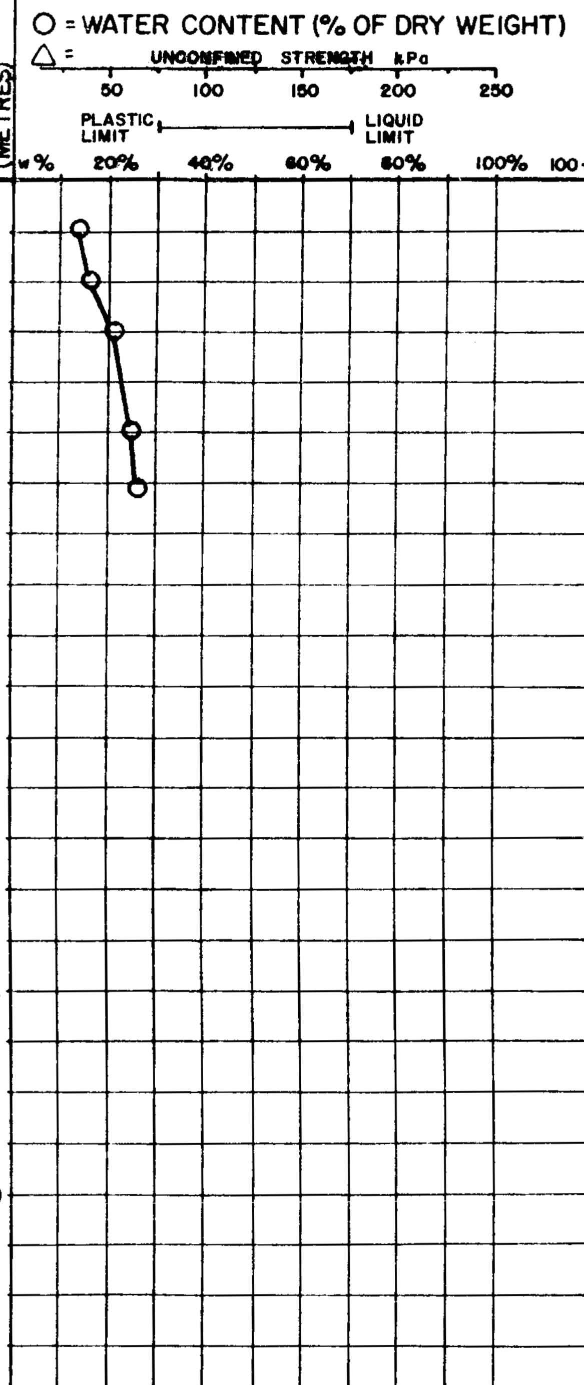
PUBLIC WORKS CANADA — DRILL HOLE REPORT

WIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONUCH	B-50	78/02/01	116		3

CHAINAGE	OFFSET
116+995	℄

DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0 – 1.5m	ML	SILT -								
0.5									DAMP	
1					-99-		1	0	MOIST	
1.5									DAMP	
1.5m – 3.1m	CI	CLAY-SILTY MED. PLASTIC +PL								
2.5									DAMP	
3					-99-		1	0	MOIST	
3.1m		BOTTOM OF HOLE - 3.1m								



PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

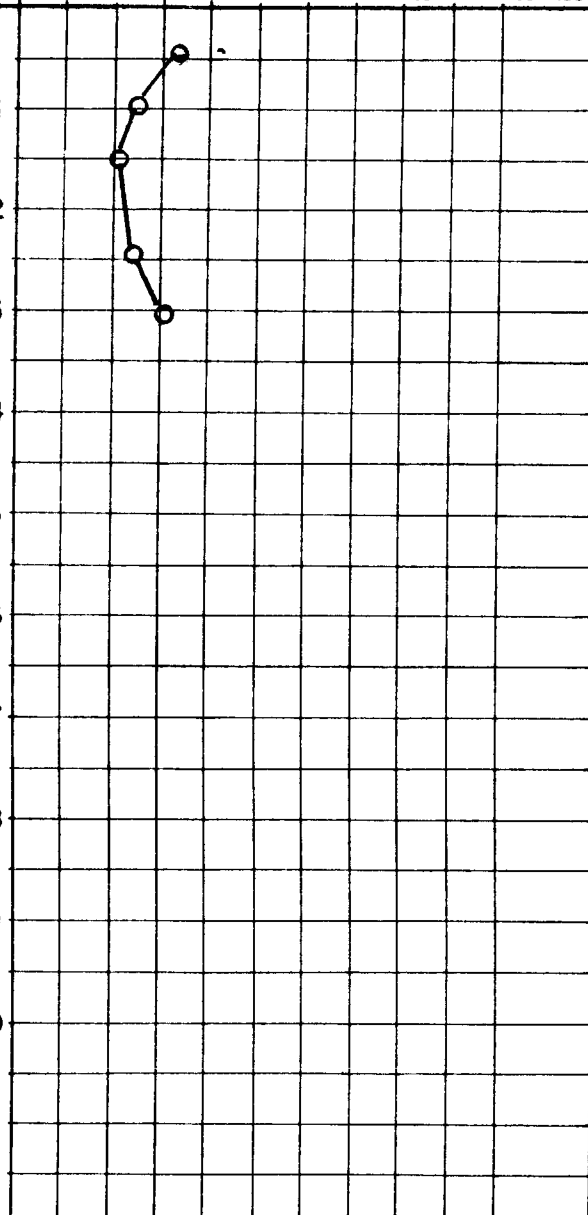
TECH. PRONYCH	RIG B-50	DATE 78/02/01	km 117	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
117+220	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–8	ML	SILT - CLAYEY — 2.4m		
8–10	CI	CLAY-SILTY MED. PLASTIC — 3.1m		
12		BOTTOM OF HOLE - 3.1m		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
~0.5					WET
1	100		0	0	WET
~1.5					MOIST
~2.5	100		0	0	MOIST
3					MOIST

PUBLIC WORKS CANADA — DRILL HOLE REPORT

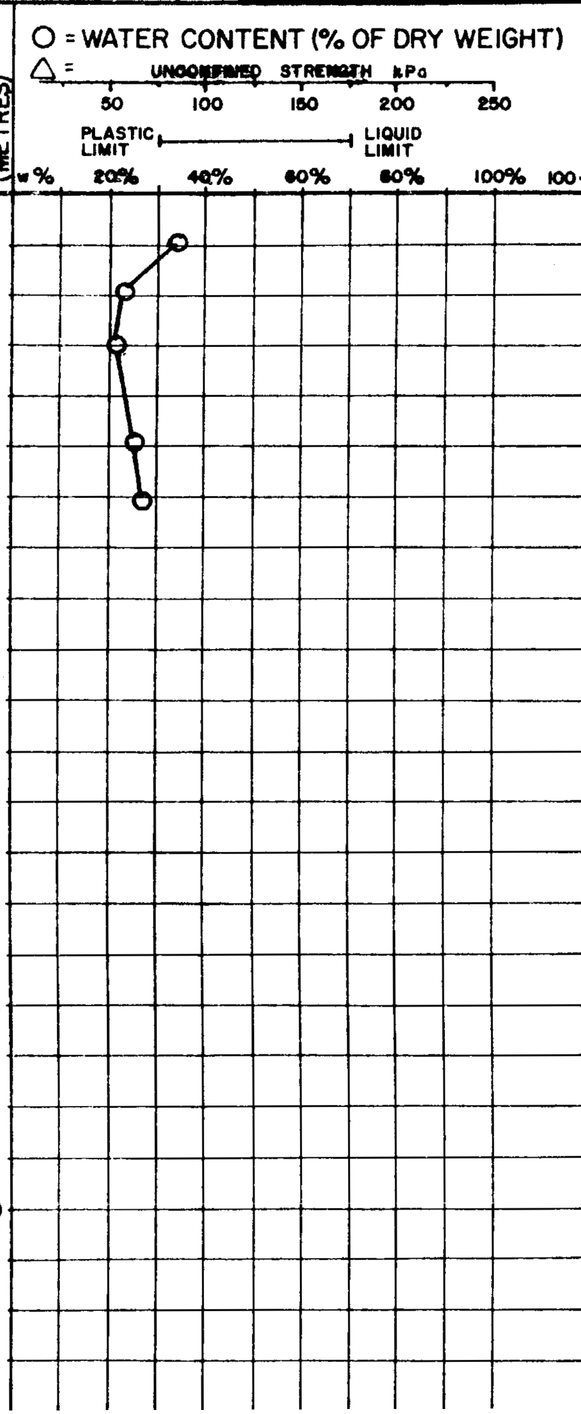
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYSCH	B-50	78/02/01	117		2

CHAINAGE	OFFSET
117+410	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–5	ML	SILT			0–1.5		99	1	0	MOIST
										MOIST
		1.5m					100	0	0	DAMP
5–10	CI	CLAY - SILTY MED. PLASTIC +P[2]			1.5–3.1					MOIST
		3.1m								MOIST
		BOTTOM OF HOLE - 3.1m								



PUBLIC WORKS CANADA — **DRILL HOLE REPORT** — LIARD HWY.

TECH. PRONYCH | RIG B-50 | DATE 78/02/01 | km 117 | B.P. No. | HOLE No. 3

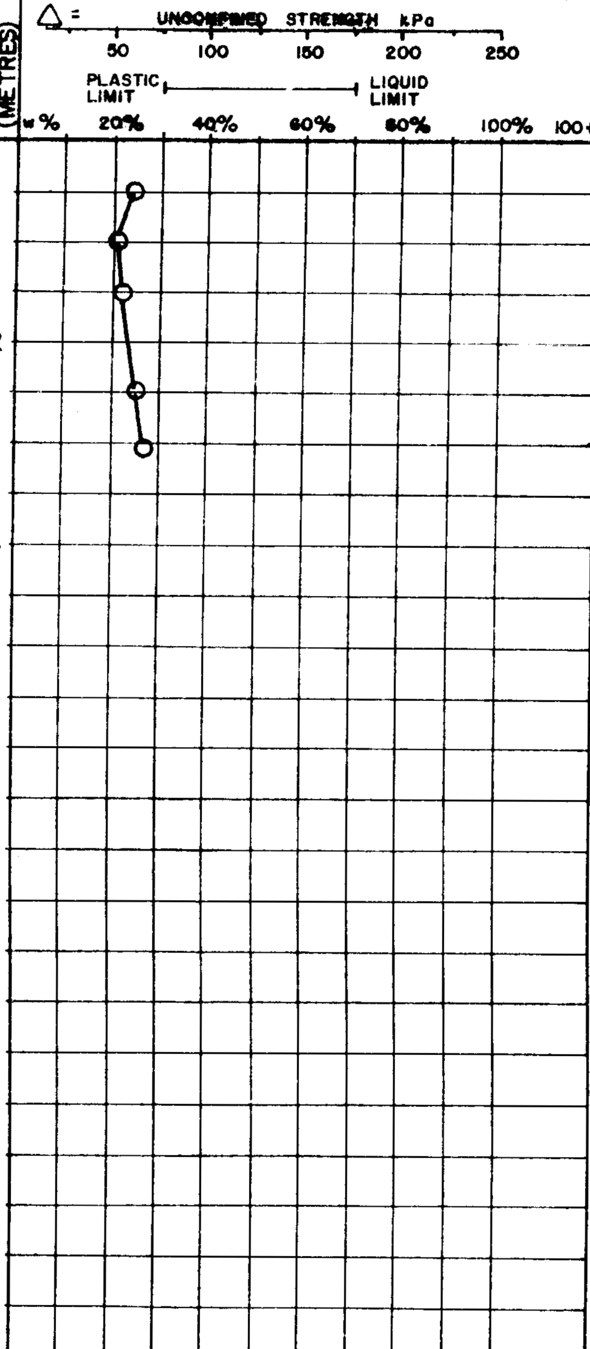
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
2	ML	SILT.				99		1	0	WET
4					1	100		0	0	MOIST
		1.5m								DAMP
6		CLAY - SILTY								
8	CI	MED. PLASTIC +PL			2					MOIST
10		3.1m			3	100		0	0	MOIST
12		BOTTOM OF HOLE - 3.1m								

CHAINAGE: 117+710 | OFFSET: ℄

REMARKS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/01	117		4

CHAINAGE	OFFSET
117+950	℄

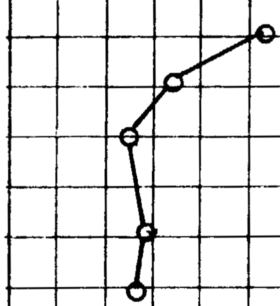
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–8	ML	SILT			0–2.4					FREE WATER	
					1	-	100	0	0	SAT.	
										WET	
										MOIST	
8–10	CL	2.4m CLAY-SILT LOW PLASTIC 3.1m			2.4–3.1	-	100	0	0	WET	
12		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

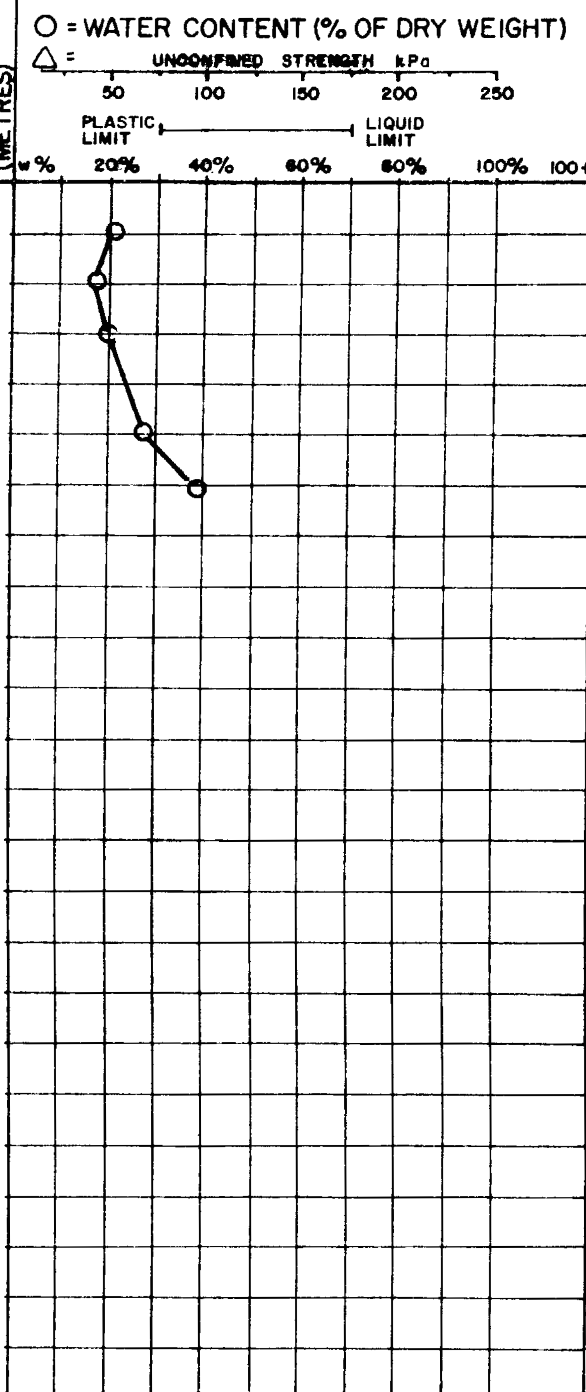


PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy.

TECH. PRONYCH | RIG B-50 | DATE 78/02/01 | km 118 | B.P. No. | HOLE No. 1

CHAINAGE: 118+180 | OFFSET: ℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT.								MOIST	
4		1.2 m			1	-	99	1	0	MOIST	
		CLAY. SILTY								DAMP	
6	CL	LOW-MED PLASTIC			2						
8	CI	+Pc				-	100	0	0	MOIST	
10		3.1m			3					SAT.	
12		BOTTOM OF HOLE 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32					10						
34											
36					11						
38											



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/01	118		2

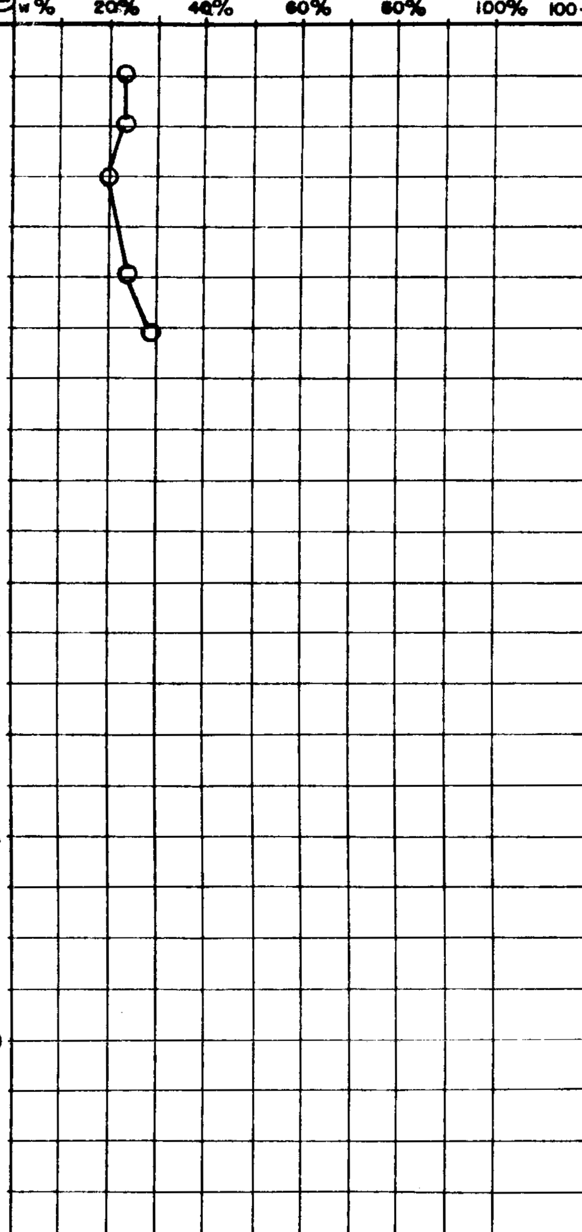
CHAINAGE	OFFSET
118+440	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT.				-99-		1	0	WET	
4		1.2 m			1					WET	
6	CL	CLAY. SILTY LOW. MED. PLASTIC								DAMP	
8	CI				2					MOIST	
10		3.1 m			3	-100-		0	0	MOIST	
		BOTTOM OF HOLE - 3.1 m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYSCH	B-50	78/02/01	118		3

CHAINAGE	OFFSET
118+650	℄

O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

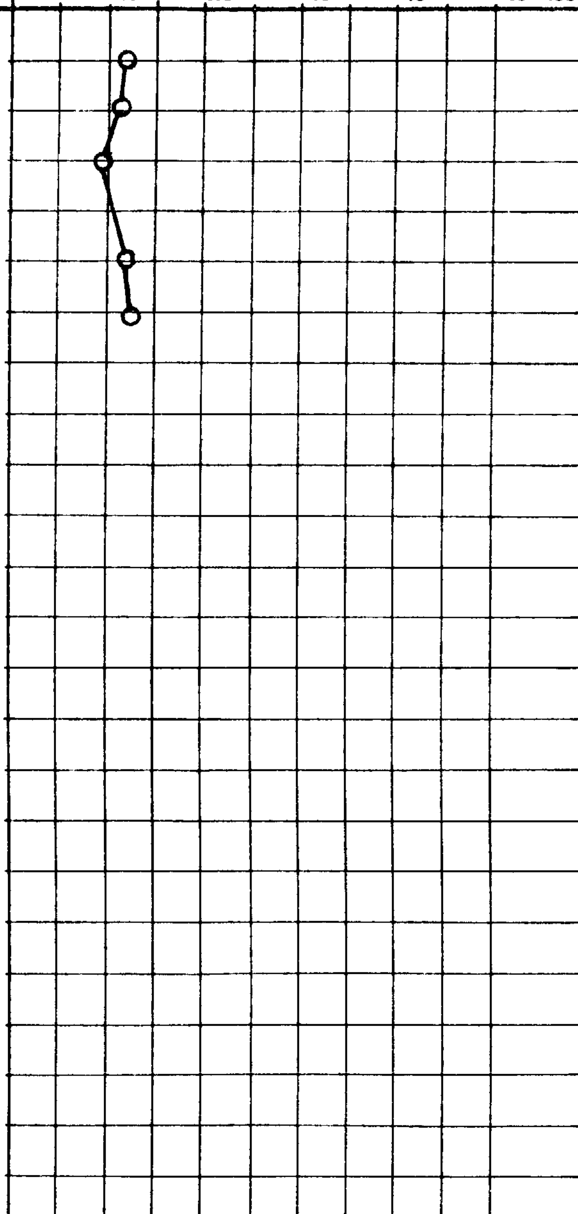
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–1.5 m	ML	SILT - CLAYEY							MOIST	
					100		0	0	MOIST	
									DAMP	
1.5–3.1 m	CI	CLAY - SILTY MED. PLASTIC +PL			100		0	0	MOIST	
									MOIST	
3.1 m		BOTTOM OF HOLE. 3.1m								

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

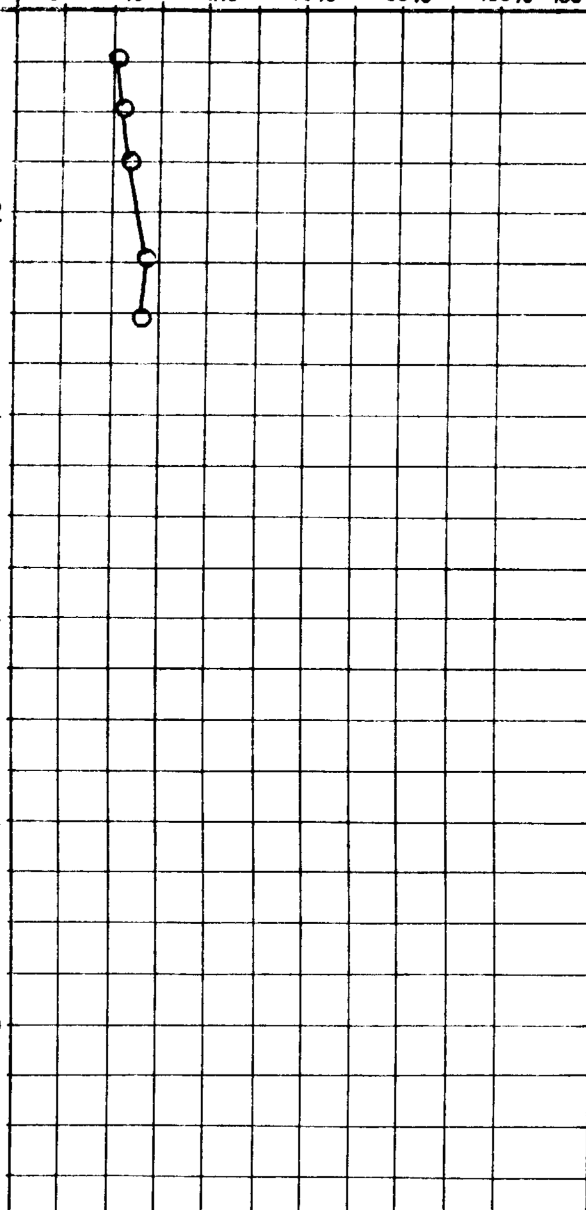
TECH. PRONYCH	RIG B-50	DATE 78/02/01	km 119	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
119+050	E

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–5	ML	SILT			0 – 1.5m
5–10	CI	CLAY - SILTY MED. PLASTIC + PL			1.5m – 3.1m
10		BOTTOM OF HOLE - 3.1m			3.1m

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |———| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
-100-		0	0	MOIST
				MOIST
-100-		0	0	MOIST
				MOIST
				MOIST

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

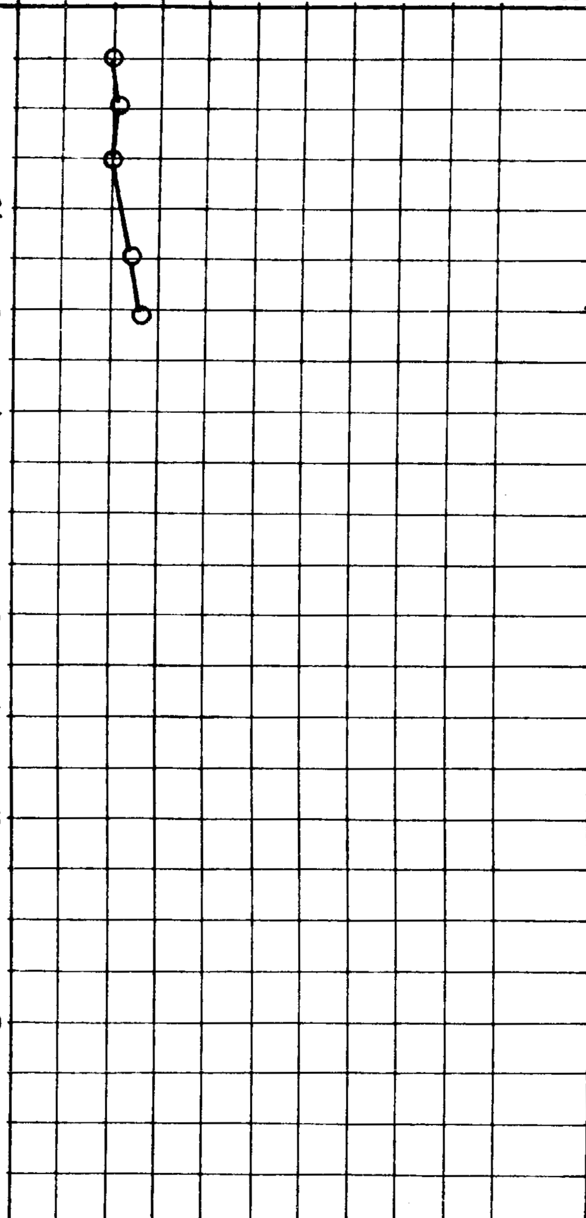
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/01	119		2

CHAINAGE	OFFSET
119+360	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0 – 2.1m	ML	SILT			-100-		0	0	DAMP	
									MOIST	
					-100-		0	0	MOIST	
2.1m – 3.1m	CI	CLAY - SILTY MED. PLASTIC + PL							MOIST	
					-100-		0	0	MOIST	
3.1m		BOTTOM OF HOLE - 3.1m								

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

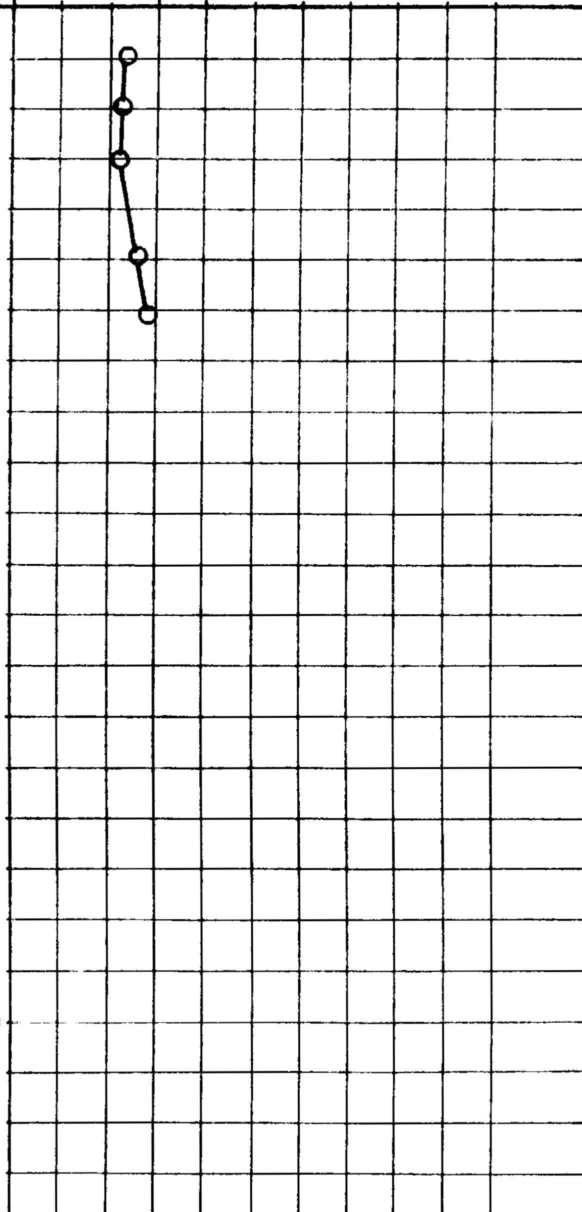
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/01	119		3

CHAINAGE	OFFSET
119+660	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	ML	SILT — .6m				100		0	0	MOIST	
2–10	CL / CI	CLAY - SILTY, LOW - MED. PLASTIC — 3.1m			1					MOIST	
					1.5					MOIST	
					2.5	100		0	0	MOIST	
					3					MOIST	
12		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |———| LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



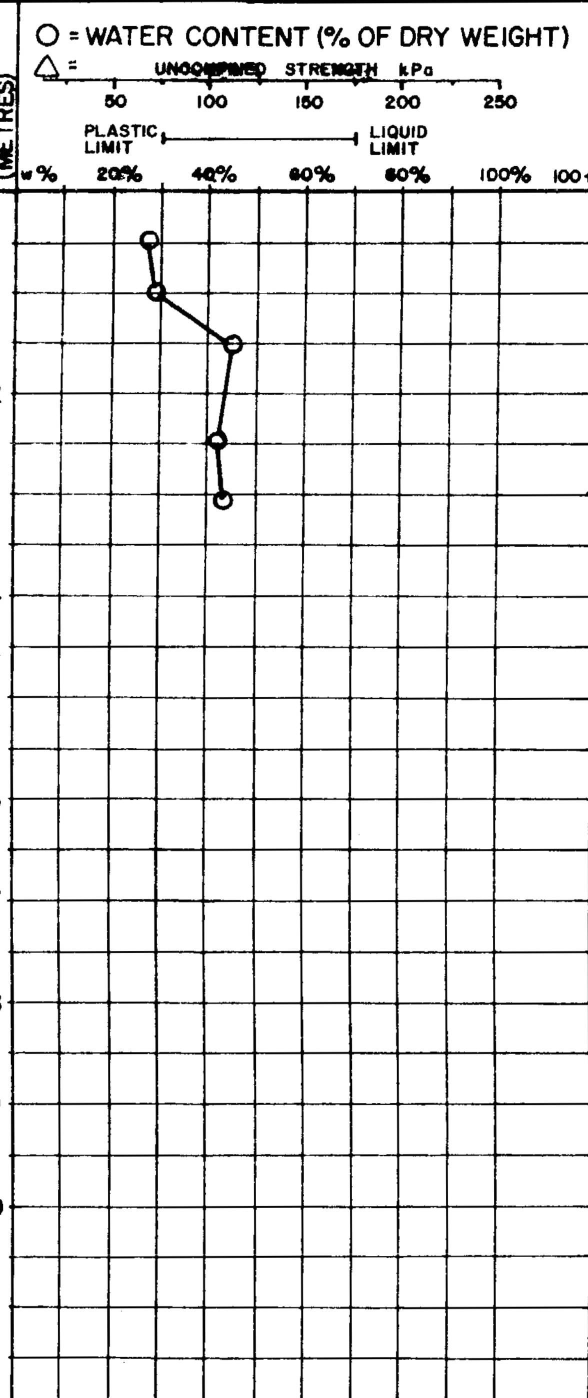
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/01	119		4

CHAINAGE	OFFSET
119+980	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
2	ML	SILT			
4		1.2 m			1
6	CL	CLAY - SILTY LOW PLASTIC +PL			2
8					
10		3.1 m			3
12		Bottom of Hole 3.1 m			



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
				WET	
100		0	0	WET	
				SAT.	
				WET	
99		1	0	WET	

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/01	120		1

CHAINAGE	OFFSET
120+290	℄

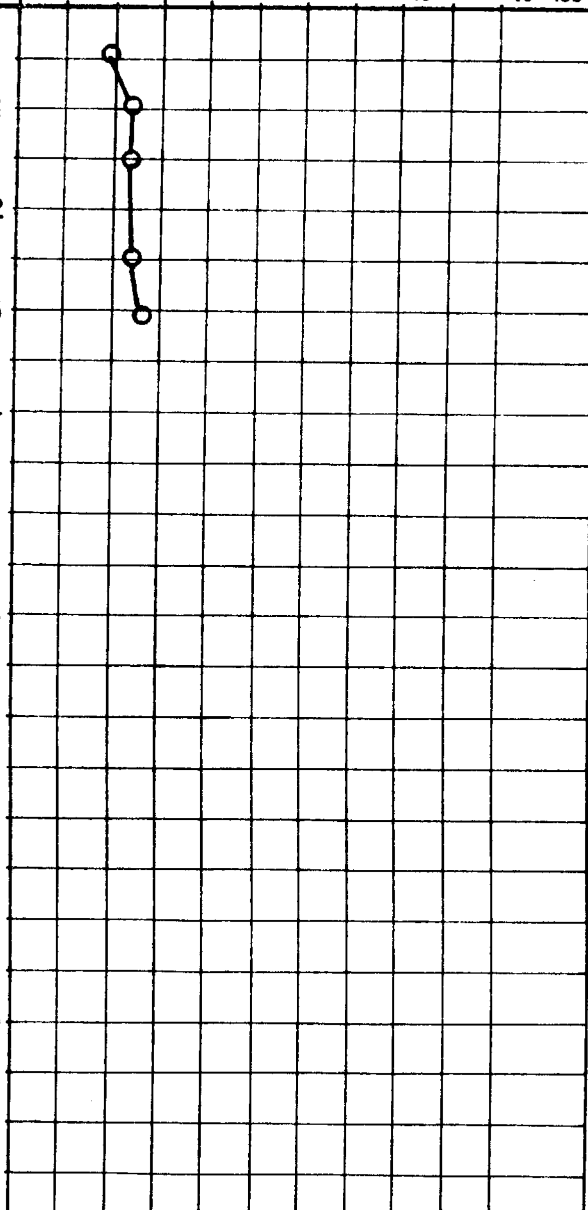
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–8	ML	SILT		
8–10	CL	CLAY - SILTY LOW PLASTIC (2.4 m – 3.1 m)		
		Bottom of Hole - 3.1 m		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
~0.4					MOIST
1	-	100	0	0	WET
~1.5					DAMP
~2.5	-	100	0	0	WET
~3.0					MOIST

REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT

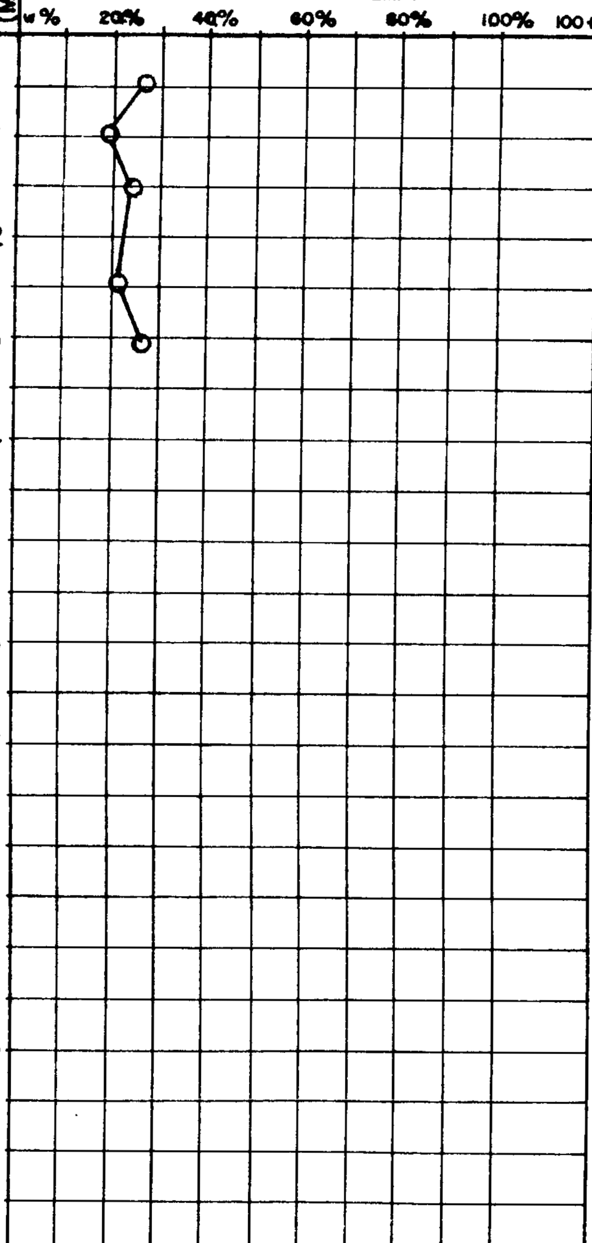
LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/01	km 120	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
120+560	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT — .5 m									
2		CLAY - SILTY				99		1	0	WET	
4		MED. PLASTIC			1					DAMP	
6	CI	$+P_L$								MOIST	
8					2	100		0	0	MOIST	
10		3.1 m			3					MOIST	
12		BOTTOM OF HOLE - 3.1 m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/01	120		3

CHAINAGE	OFFSET
120+670	℄

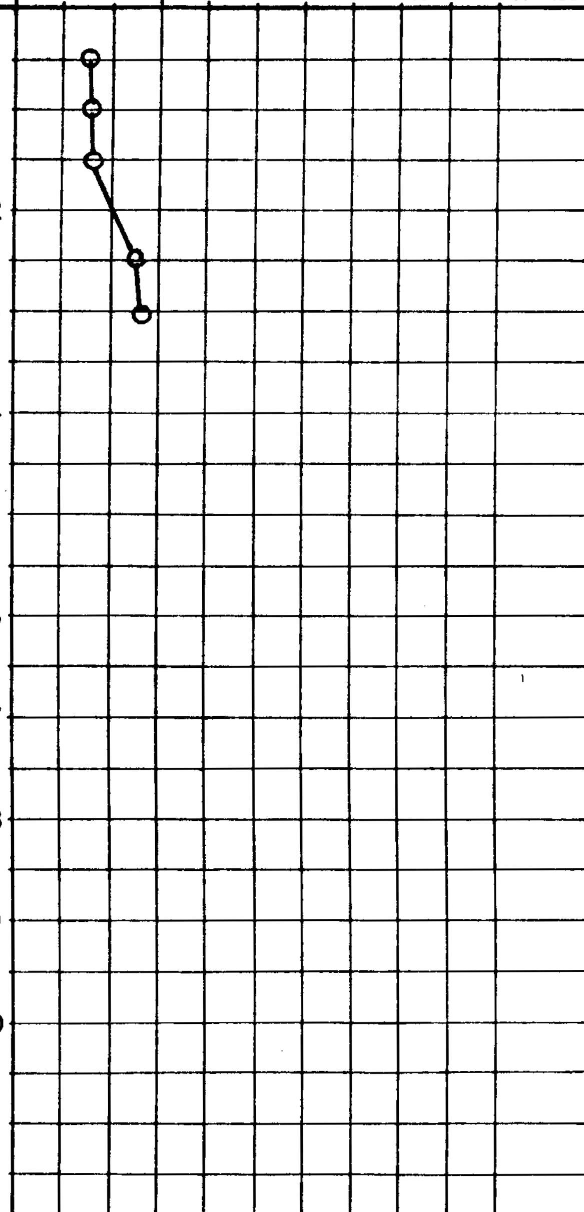
REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–8	ML	SILT -		
		2.4 m		
8–10	CI	CLAY - SILTY MED. PLASTIC		
		3.1 m		
		BOTTOM OF HOLE - 3.1 m		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
99		1	0	MOIST
				MOIST
100		0	0	DAMP
98		2	0	MOIST
				MOIST

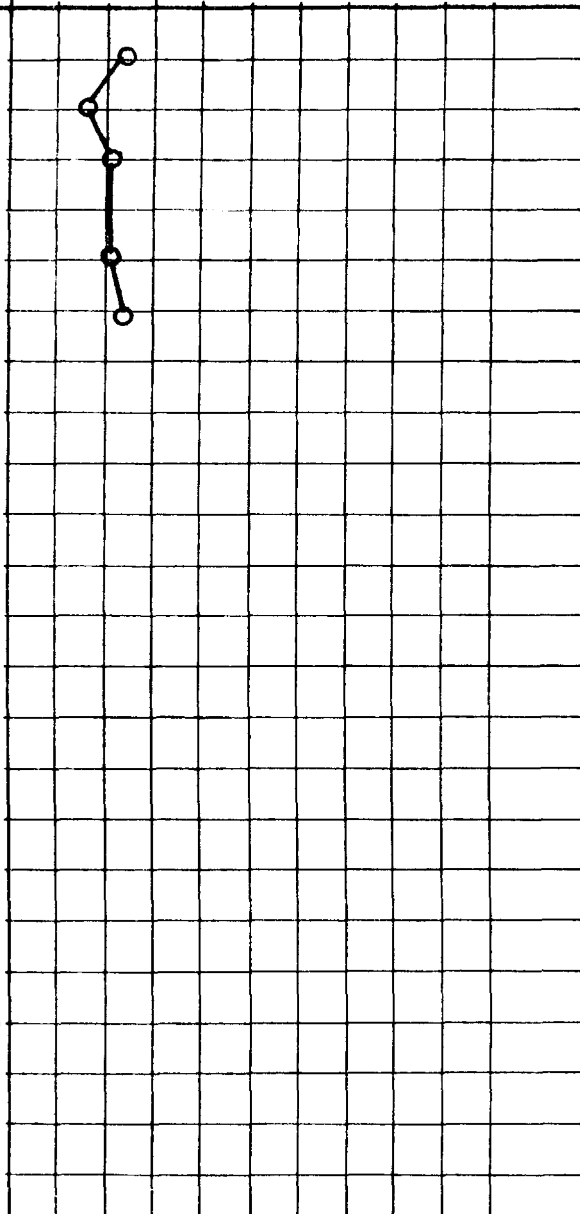
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/01	120		4

CHAINAGE	OFFSET
120+920	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT.								MOIST	
2–4	ML	-CLAYEY			1	-99-		1	0	DAMP	
										MOIST	
8										MOIST	
10		3.1m			3	-99-		1	0	MOIST	
12		BOTTOM OF HOLE - 3.1m									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/01	120		5

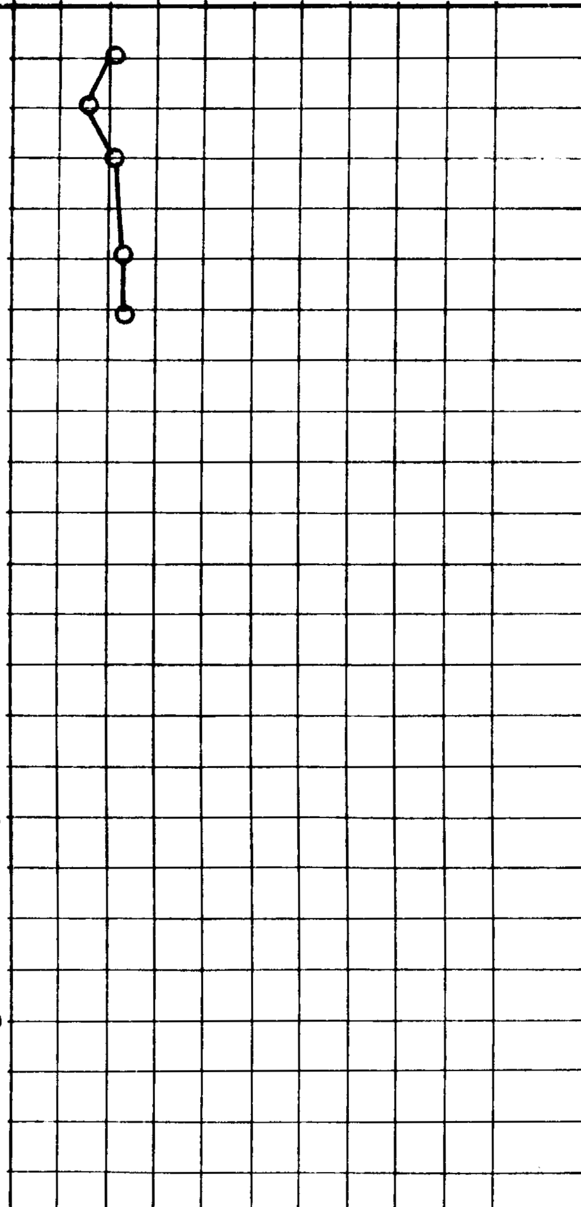
CHAINAGE	OFFSET
120+980	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT —— LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT -				-99-		1	0	MOIST	
4					1					MOIST	
6	ML	- CLAYEY								MOIST	
8					2					MOIST	
10		3.1 m			3	-99-		1	0	MOIST	
12		BOTTOM OF HOLE - 3.1 m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/01	km 121	B.P. No.	HOLE No. 1

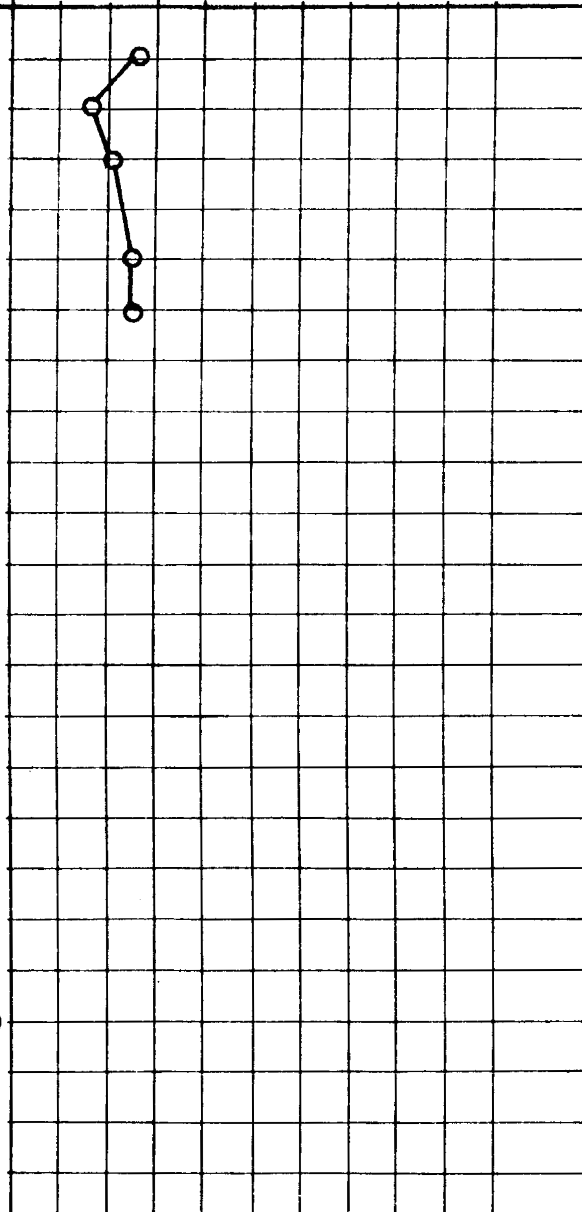
CHAINAGE	OFFSET
121+220	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–5	ML	SILT-								WET	
					1	-	99-	1	0	MOIST	
		1.5m								MOIST	
5–10	CL	CLAY - SILTY LOW-MED. PLASTIC			2						
	CI	+PL				-	99-	1	0	MOIST	
		3.1m			3					MOIST	
		BOTTOM OF HOLE - 3.1m									

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

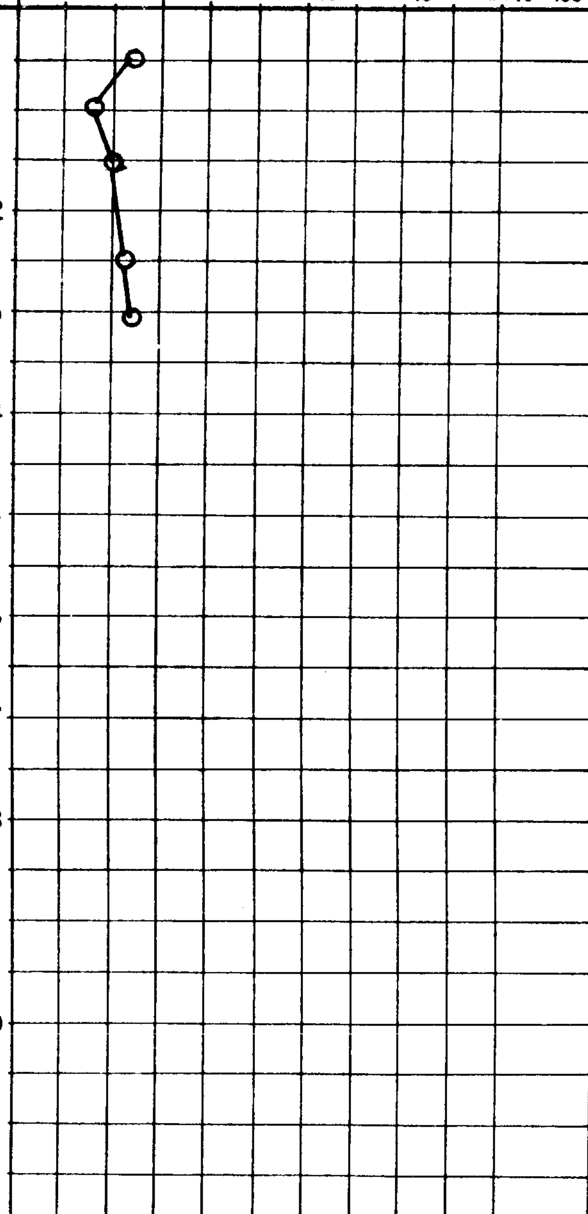
TECH. WEBBER	RIG B-50	DATE 78/02/01	km 121	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
121+590	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
		SILT								MOIST
2										
4					1	-	99	- 1	0	MOIST
6	ML	CLAYEY								MOIST
8					2	-	99	- 1	0	MOIST
10		3.1m			3					WET
12		Bottom of Hole - 3.1m								
14					4					
16					5					
18										
20					6					
22					7					
24										
26					8					
28										
30					9					
32										
34					10					
36					11					
38										

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT —— LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

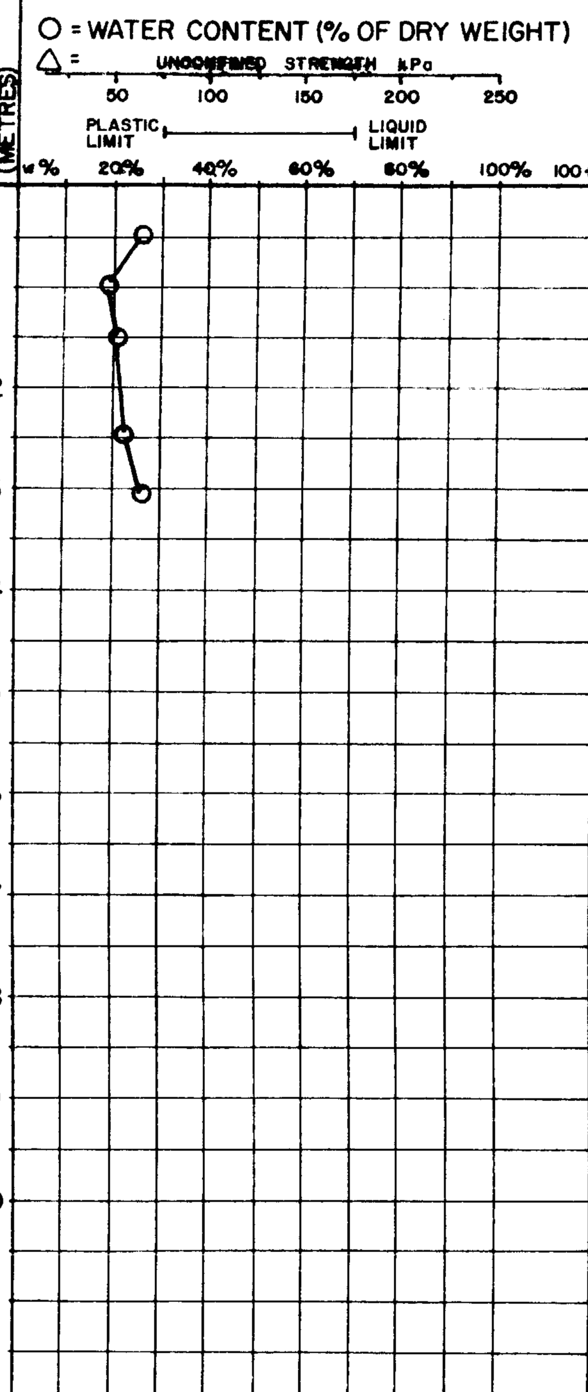


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/01	km 121	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
121+890	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	WATER CONTENT (% OF DRY WEIGHT)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT -					-99-		1	0	MOIST	
					1						DAMP	
		- CLAYEY					-100-		0	0	MOIST	
					2							
											MOIST	
10		3.1m			3		-99-		1	0	WET	
		BOTTOM OF HOLE - 3.1m										



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

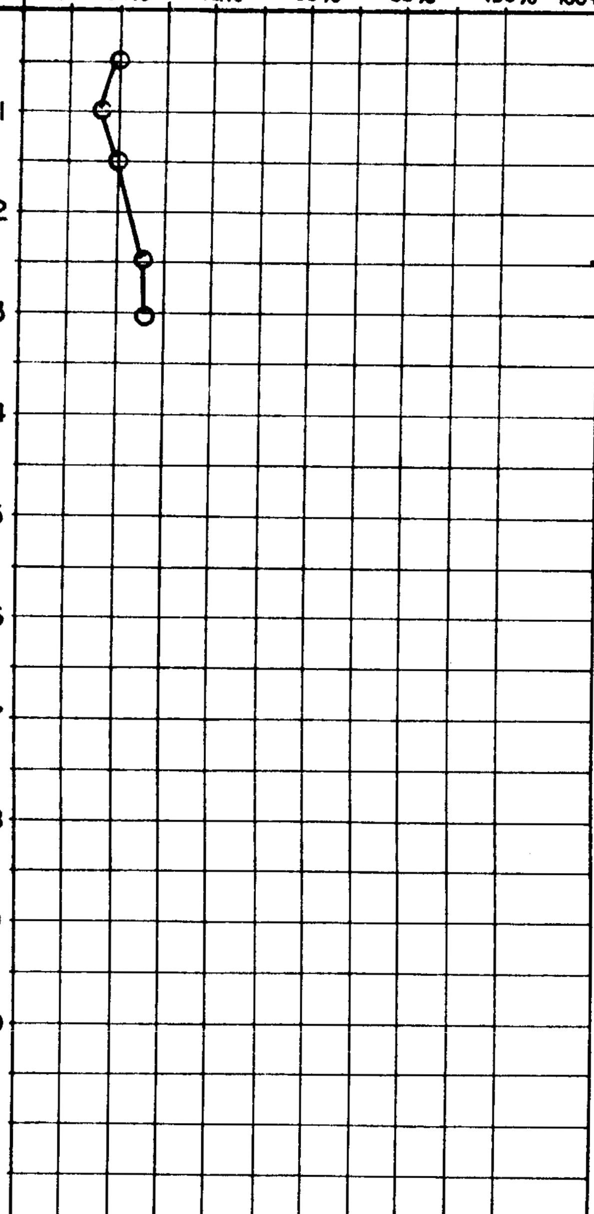
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/01	122		1

CHAINAGE	OFFSET
122+104	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT -			0.5					MOIST	
					1	-99-		1	0	MOIST	
					1.5					MOIST	
					2.5	-99-		1	0	MOIST	
10		3.1 m			3					WET	
		BOTTOM OF HOLE . 3.1 m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/01	km 122	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
122+410	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT -				-99-		1	0	Moist	
4					1					Moist	
6	ML					-99-		1	0	Moist	
8		CLAYEY			2					WET	
10		——— 3.1m			3	-96-		4	0	Moist	
12		Bottom of Hole. 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

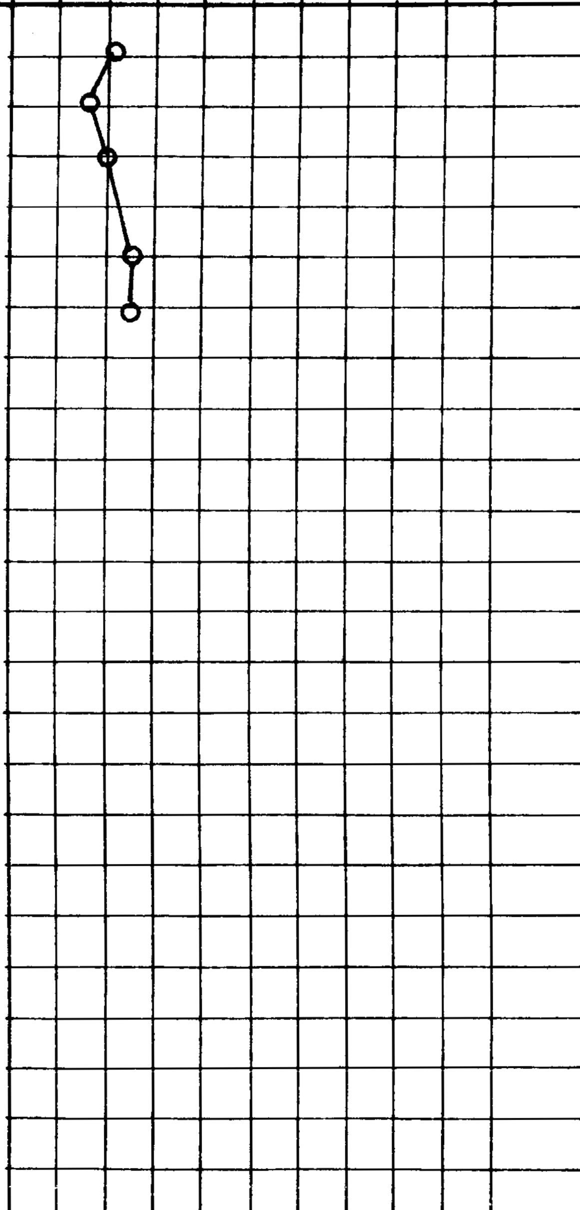
GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

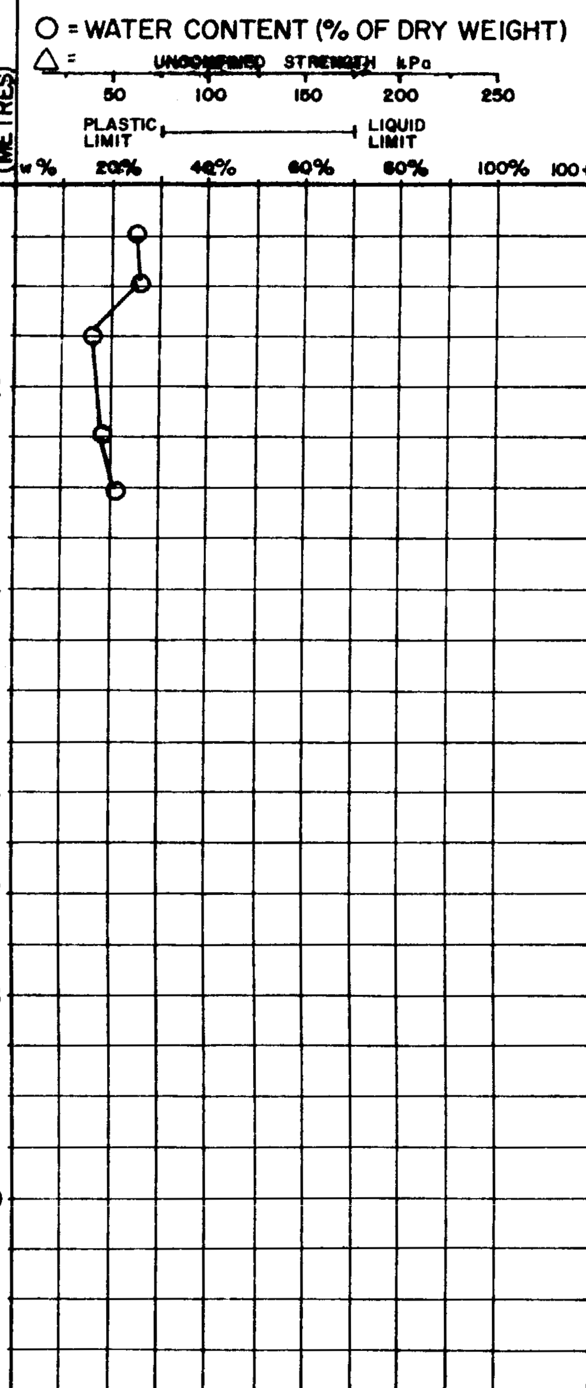
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/01	122		3

CHAINAGE	OFFSET
122+810	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–10	ML	SILT - CLAYEY SANDY		
10		3.1 m		
		BOTTOM OF HOLE - 3.1 m		



CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				MOIST
81	-	19	0	WET
				MOIST
60	-	40	0	WET
				WET

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/01	km 123	B.P. No.	HOLE No. 1

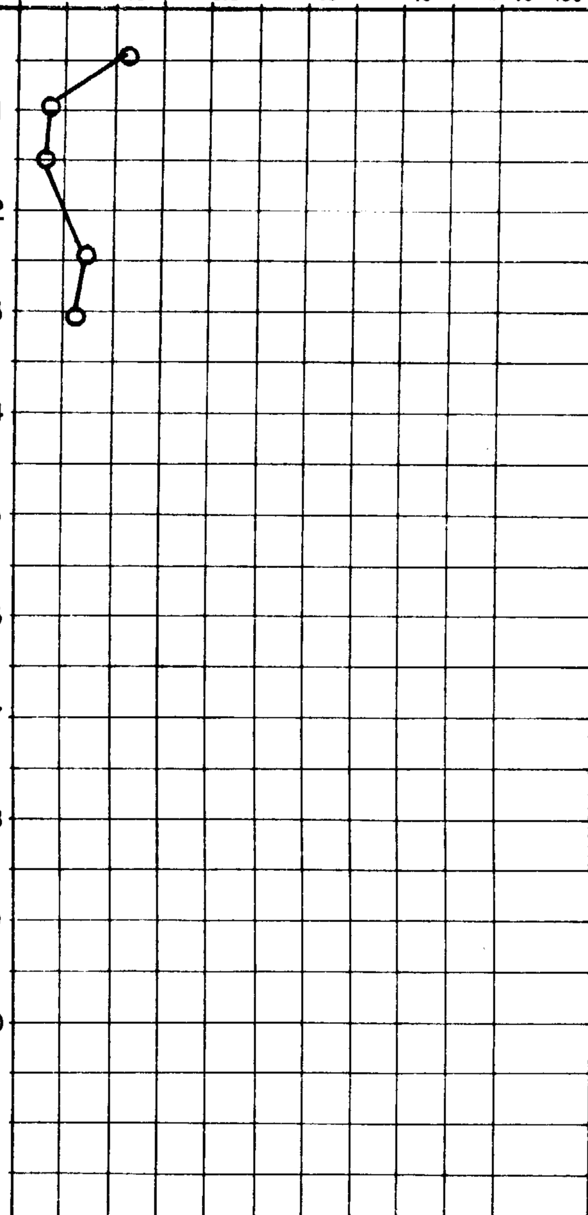
CHAINAGE	OFFSET
123+050	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–2	ML	SILT - CLAYEY .6m		
2–7	SM	SAND - SILTY PEBBLES 2.1m		
7–10	ML	SILT - SANDY 3.1m		
		BOTTOM OF HOLE - 3.1m		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT



DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0.4	-	84	16	0	WET	
0.9					MOIST	
1.5	-	15	83	2	MOIST	
2.4	-	57	43	0	MOIST	
3.0					WET	

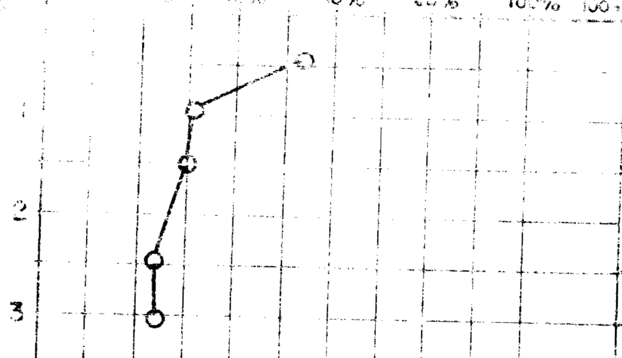
PUBLIC WORKS CANADA | DRILL HOLE REPORT | Liard Hwy.

TECH. Bowyell | RIG 5 | DATE 18/02/04 | km 123 | B.R. No. | HOLE No. 2

CHAINAGE	OFFSET
123+350	℄

DEPTH (FEET)	SOIL SYMBOL	SOIL DESCRIPTION
	OL	Black - Organic Silt
2	ML	Silt - Clayey
4	ML	Sat Appx 2.4m
10	SM	Sand - Silty 3.1 m
12		Bottom of Hole - 3.1 m

WATER CONTENT (% OF DRY WEIGHT) — UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250 — PLASTIC LIMIT, LIQUID LIMIT — 20%, 40%, 60%, 80%, 100%



Depth (m)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
					Wet-Sat.
1		98	2	0	Sat.
					Wet-Sat.
2.5		92	8	0	Wet
3		18	82	0	Wet

REMARKS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/02	km 123	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
123+750	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–2		SILT-				-99-		1	0	WET
4					1					WET
5–6	ML	SAT. AFTER 6'				-99-		1	0	WET
8		-CLAYEY SANDY			2					WET
10		3.1m			3	-88-		12	0	WET
12		BOTTOM OF HOLE. 3.1m								

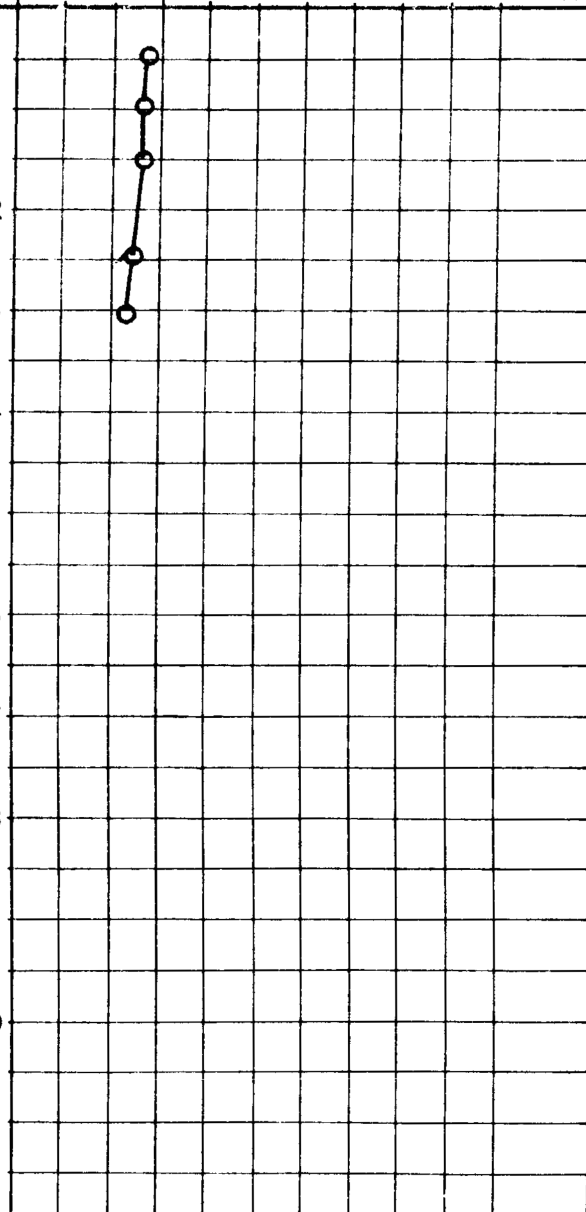
○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

50 100 150 200 250

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA | DRILL HOLE REPORT | Liard Hwy

TECH. [illegible] | RIG [illegible] | DATE 78/02/02 | km 12.4 | B.P. No. | HOLE No. 1

SOIL DESCRIPTION

Peat-

ML

CL Clay - Silty 3.1m

Bottom of Hole 3.1m

○ WATER CONTENT (% OF DRY WEIGHT)

△ UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT — LIQUID LIMIT: 20%, 40%, 60%, 80%, 100%

DEPTH (m)	GRAIN-SIZE ANALYSIS % CLAY	% SILT	% SAND	% GRAVEL	RELATIVE MOISTURE CONTENT
					Moist
					Moist
	-99		1	0	Moist
					Wet
3	99		1	0	Moist-Wet

CHAINAGE	OFFSET
124+020	℄

REMARKS

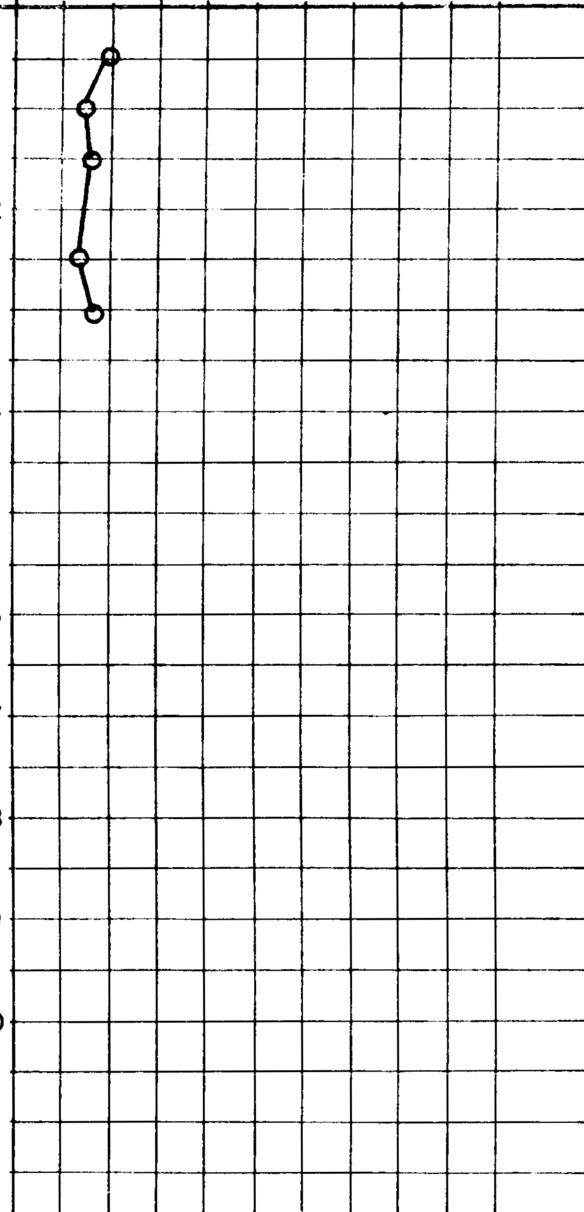
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/02	124		2

CHAINAGE	OFFSET
124+270	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |———| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT -				-	99 -	1	0	DAMP	
					1					DAMP	
										DAMP	
										DAMP	
10		- SANDY 3.1m			3	-	76 -	24	0	DAMP	
		BOTTOM OF HOLE - 3.1 m									

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Liard Hwy.

TECH. [illegible] | RIG [illegible] | DATE 18/0? /02 | km 124 | B.P. No. | HOLE No. 3

CHAINAGE: 124+450 | OFFSET: ℄

SOIL DESCRIPTION

[illegible]

ML

3.1m

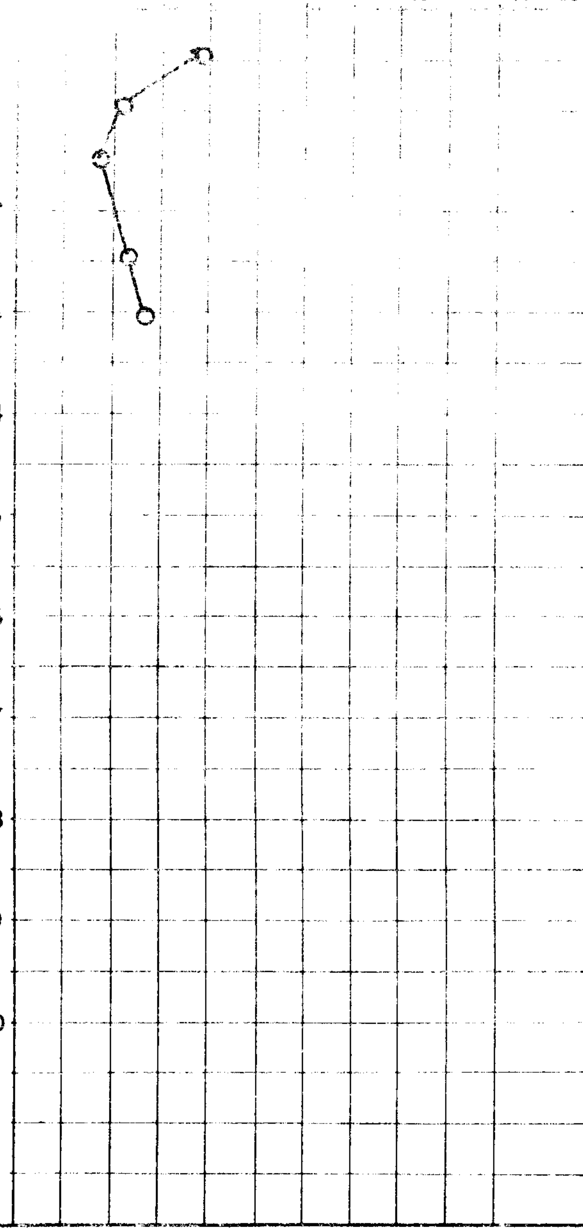
Bottom of Hole - 3.1m

O = WATER CONTENT (% OF DRY WEIGHT)

UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT — LIQUID LIMIT

20%, 40%, 60%, 80%, 100%



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				[illegible]
99		1	0	Moist
				Damp
94		6	0	Wet
				Wet

REMARKS

Depth scale (ft): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

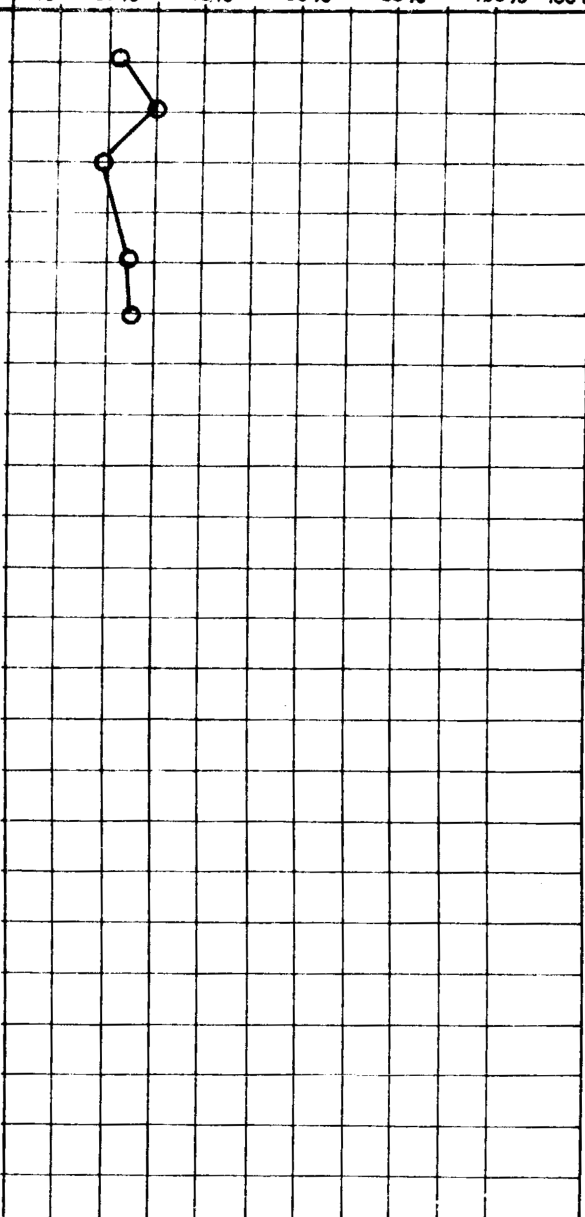
Depth scale (m): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/02	km 124	B.P. No.	HOLE No. 4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
		SILT -								
2	ML									MOIST
4					1	-	99-	1	0	WET
6										WET
8					2					WET
10	CL	CLAY - SILTY 3.1m			3	-	93-	7	0	MOIST
12										
14		BOTTOM OF HOLE - 3.1m			4					
16					5					
18										
20					6					
22										
24					7					
26					8					
28										
30					9					
32										
34					10					
36					11					
38										

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS

CHAINAGE	OFFSET
124+66.0	℄

REMARKS

PUBLIC WORKS CANADA | DRILL HOLE REPORT | Liard Hwy.

TECH. Webber | RIG B-5? | DATE 18/02/?? | Km 124 | B.P. No. | HOLE No. 5

CHAINAGE	OFFSET
124+880	℄

REMARKS

DEPTH (FEET)	SYMBOL	SOIL DESCRIPTION	DEPTH (m)	WATER CONTENT	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–8	ML	Silt.							Wet
			1			99	1	0	Moist
									Moist
8		2.4 m	2						
8–10	CL	Clay - Silty Low Plastic 3.1 m				97	3	0	Moist
10			3						Wet
12		Bottom of Hole - 3.1 m							

○ WATER CONTENT (% OF DRY WEIGHT)
△ UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT — LIQUID LIMIT
%: 20%, 40%, 60%, 80%, 100%

GRAIN SIZE ANALYSIS

ICE DESCRIPTION

Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

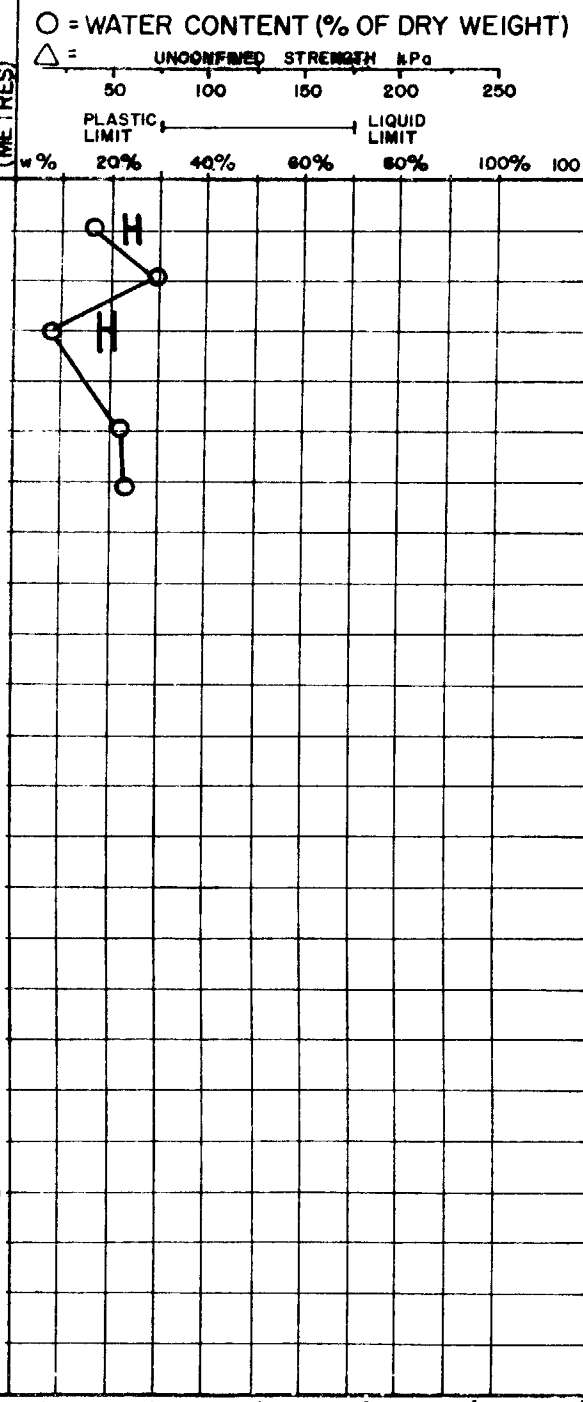
Depth (m) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

TECH. WEBBER | RIG B-50 | DATE 78/02/02 | km 124 | B.P. No. | HOLE No. 6

CHAINAGE: 124+960 | OFFSET: ℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT -				-99-		1	0	DAMP	
4	ML				1					WET-SAT.	
4–6		- SANDY				-69-		31	0	DAMP	
8		2.4m			2					MOIST	
8	CL	SILT - CLAYEY									
10	ML	CLAY - SILTY 3.1m			3	-98-		2	0	MOIST	
12		Bottom of Hole - 3.1m									



Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. WEBBER	RIG 3-50	DATE 78/02/02	km 125	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
125+060	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
		(SILT - SANDY)			
	ML	- CLAYEY			
10		3.1m			3
		BOTTOM OF HOLE 3.1m			

Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (metres) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ WATER CONTENT (% OF DRY WEIGHT)

UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT — LIQUID LIMIT

0%, 20%, 40%, 60%, 80%, 100%, 120%

GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				DAMP
74		26	0	DAMP
				DAMP
97		3	0	MOIST
				MOIST

PUBLIC WORKS CANADA — DRILL HOLE REPORT

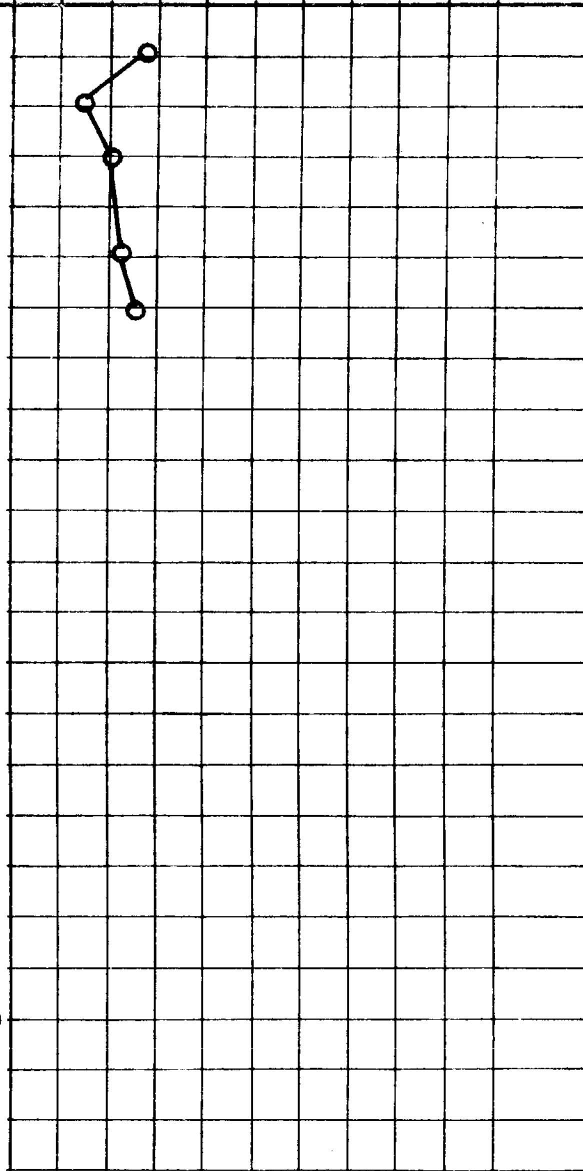
Liard Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/02	125		2

CHAINAGE	OFFSET
125+3.30	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–5	ML	SILT-				-	99	1	0	WET	
					1					DAMP	
5		1.5m			1.5	-	98	2	0	DAMP	
5–10	CI CL	CLAY · SILTY LOW-MED. PLASTIC +P_L			2					MOIST	
10		3.1m			3	-	99	1	0	MOIST	
		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT



PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/02	125		3

CHAINAGE	OFFSET
125+480	℄

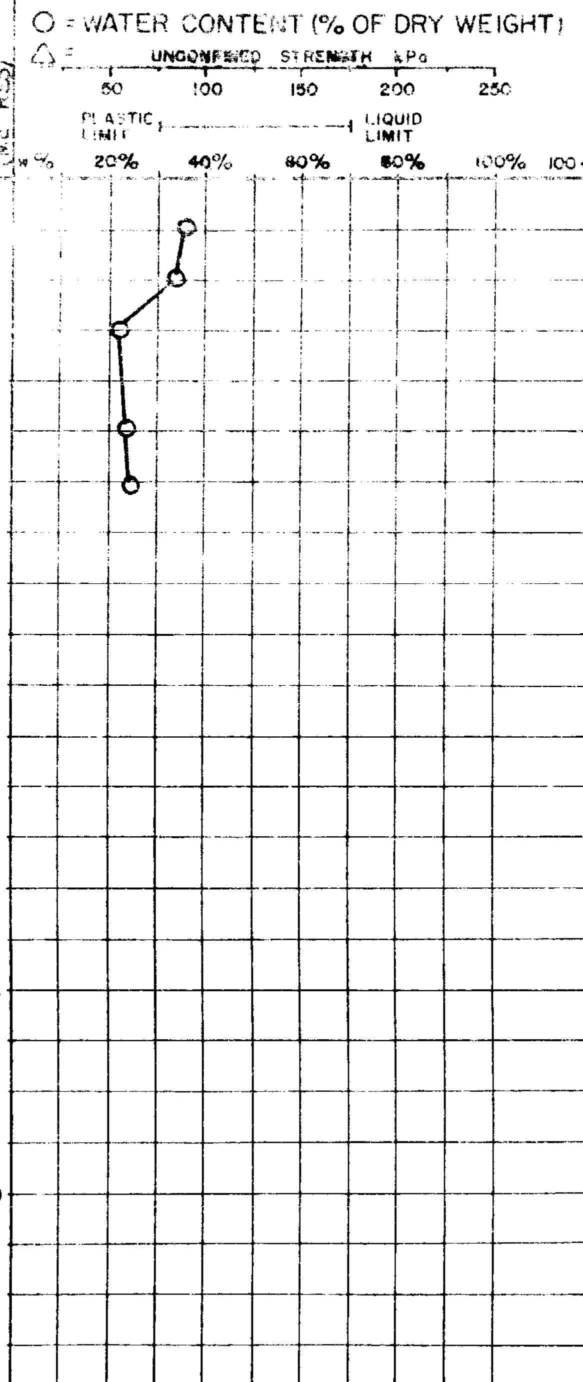
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT-								WET	
4	ML	- CLAYEY			1		99-	1	0	WET-SAT.	
										MOIST	
8		2.4m									
	CL	CLAY - SILTY LOW PLASTIC					99-	1	0	MOIST	
10		3.1m			3					MOIST	
12		BOTTOM of HOLE- 3.1m									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



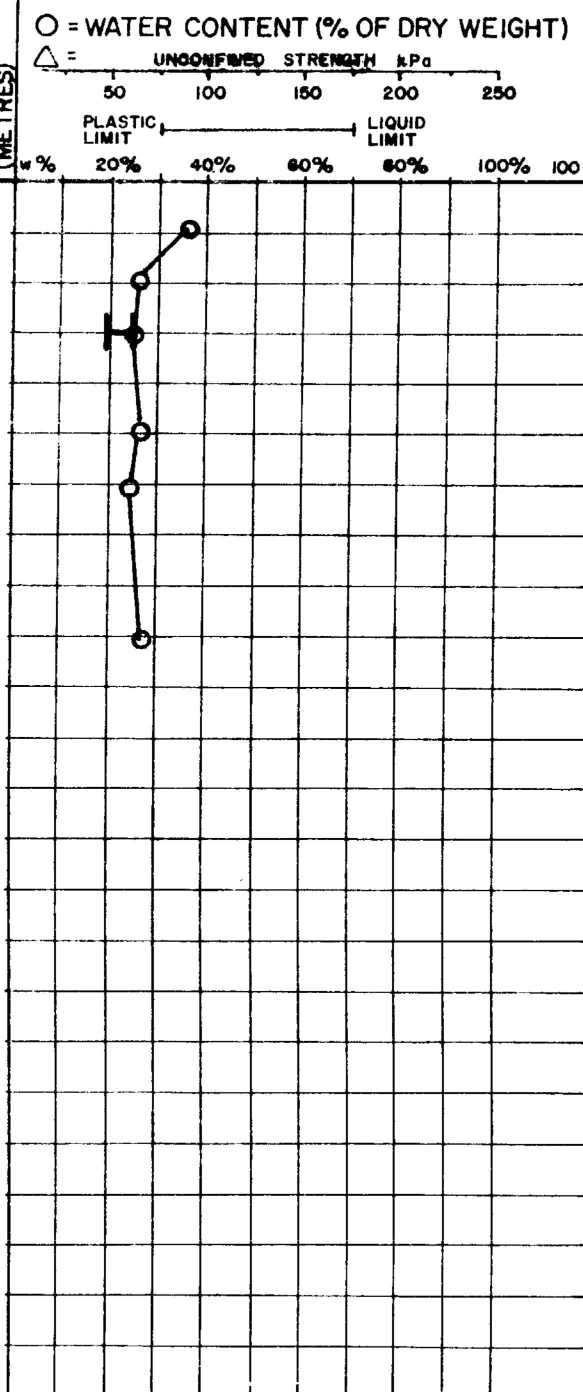
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/02	km 125	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
125+570	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–8	ML	SILT - CLAYEY				-99-		1	0	SAT.	
										MOIST	
						-99-		1	0	MOIST	
8		2.4m									
8–15	CL	CLAY SILTY, LOW PLASTIC, +PL								WET	
										WET	
15		4.6 m				-99-		1	0	WET	
		Bottom of Hole 4.6m									

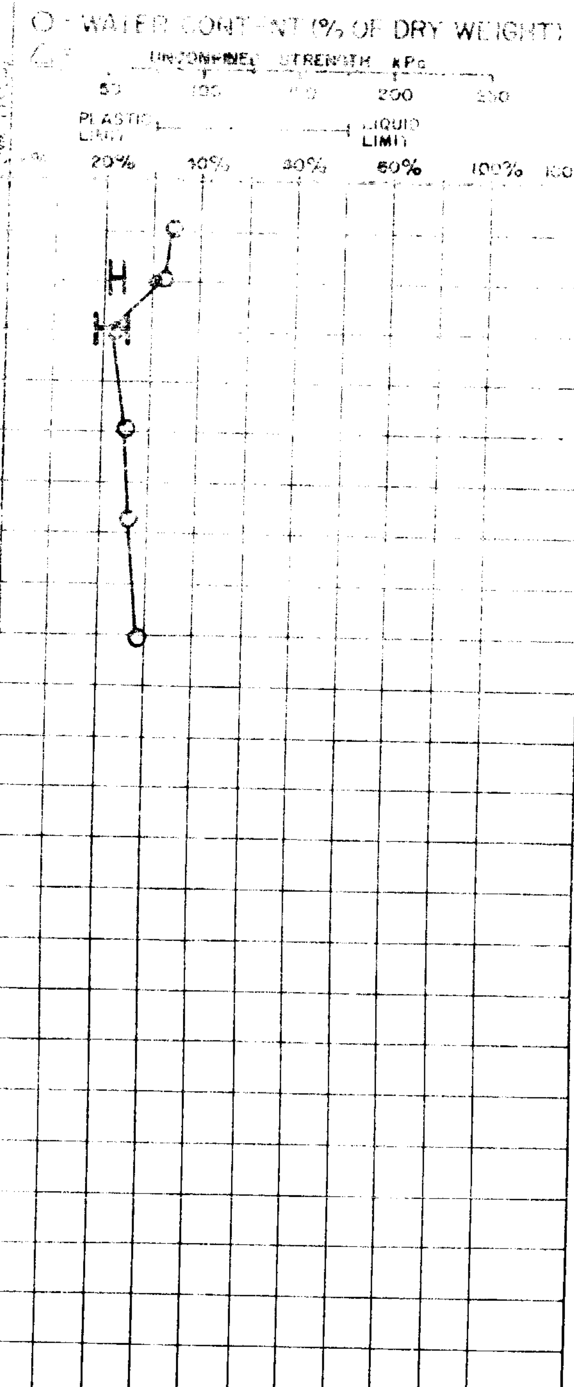


PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Liard Hwy.

TECH. Wubsar	RIG B-50	DATE 18/02/82	km 125	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
125+700	℄

DEPTH (FEET)	UNIFIED SOIL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		Silt -				–	99	1	0	Sat-Free	Water
4	ML				1					Sat.	
6				Frozen		–	99	1	0	Moist	
8		2.4m			2						
10	CL	Clay - Silty, Low-Med. Plastic +PL			3					Moist	
12						–	99	1	0	Wet	
14	CI				4						
16		4.6m								Moist	
18		Bottom of Hole - 4.6m			5						
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



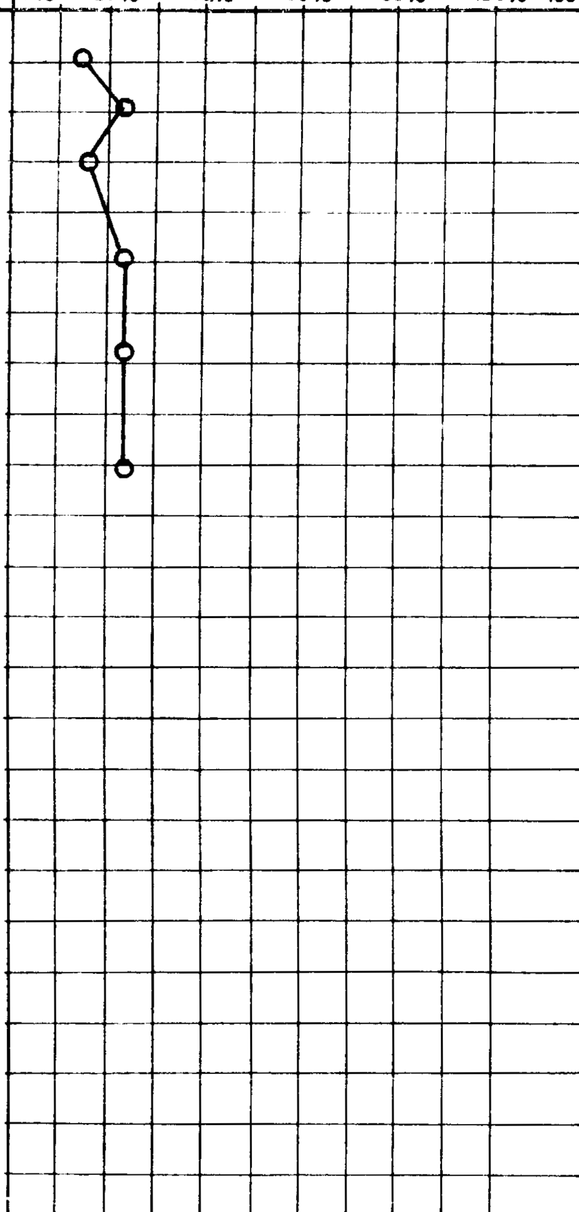
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 125	B.P. No.	HOLE No. 6

CHAINAGE	OFFSET
125+850	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY % / SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT - SANDY CLAYEY							MOIST	
					1	66	34	0	WET	
									MOIST	
8		2.4m								
	CL to ML	CLAY - SILTY SANDY TO SILT CLAYEY SANDY				85	15	0	WET	
									WET	
						82	18	0	WET	
		4.6m								
		BOTTOM OF HOLE 4.6m								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



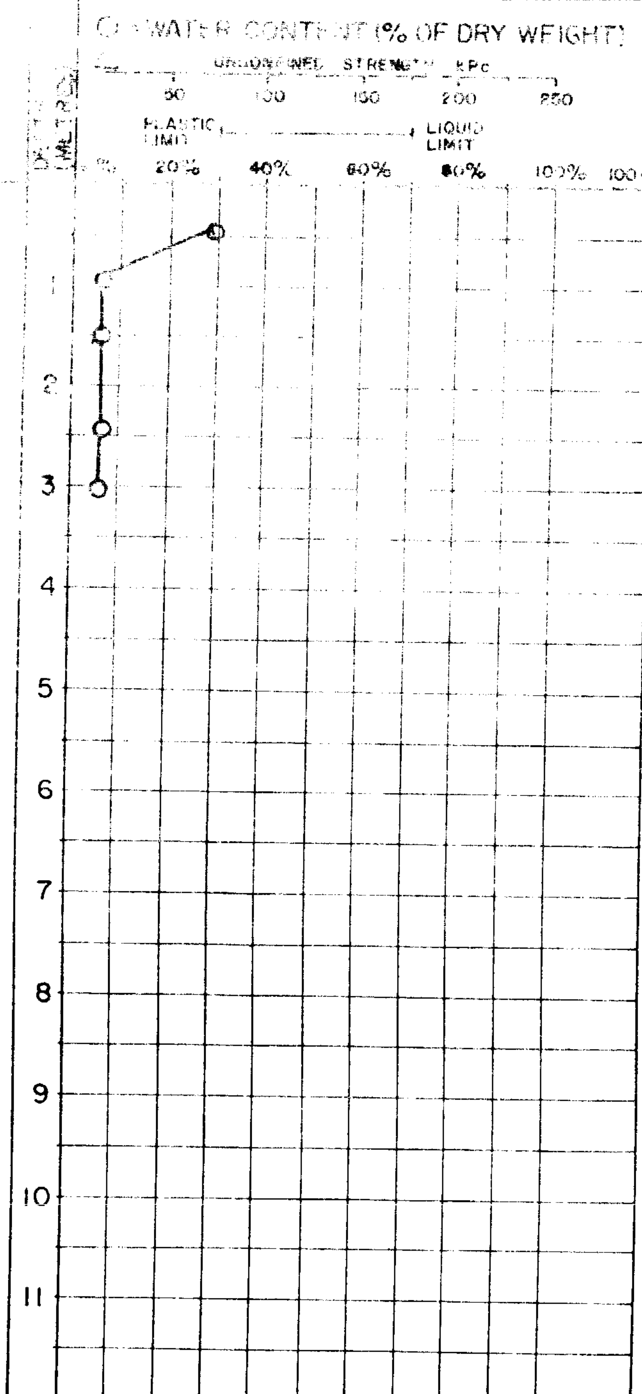
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH	RIG	DATE	km	B.P. No.	HOLE No.
Plowych	B-50	18/02/03	125		7

CHAINAGE	OFFSET
125+970	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION
0	CL	CLAY - SILTY
2		.6m
	SM	SAND - SILTY - PEBBLES
		No PEBBLES
10		3.1m
12		BOTTOM OF HOLE - 3.1m



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
91	-	9	0	WET	
20	-	78	2	DAMP	
22		78	0	DAMP	
20	-	80	0		
16	-	84	0	DAMP DAMP	

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	B-50	78/02/03	126		1

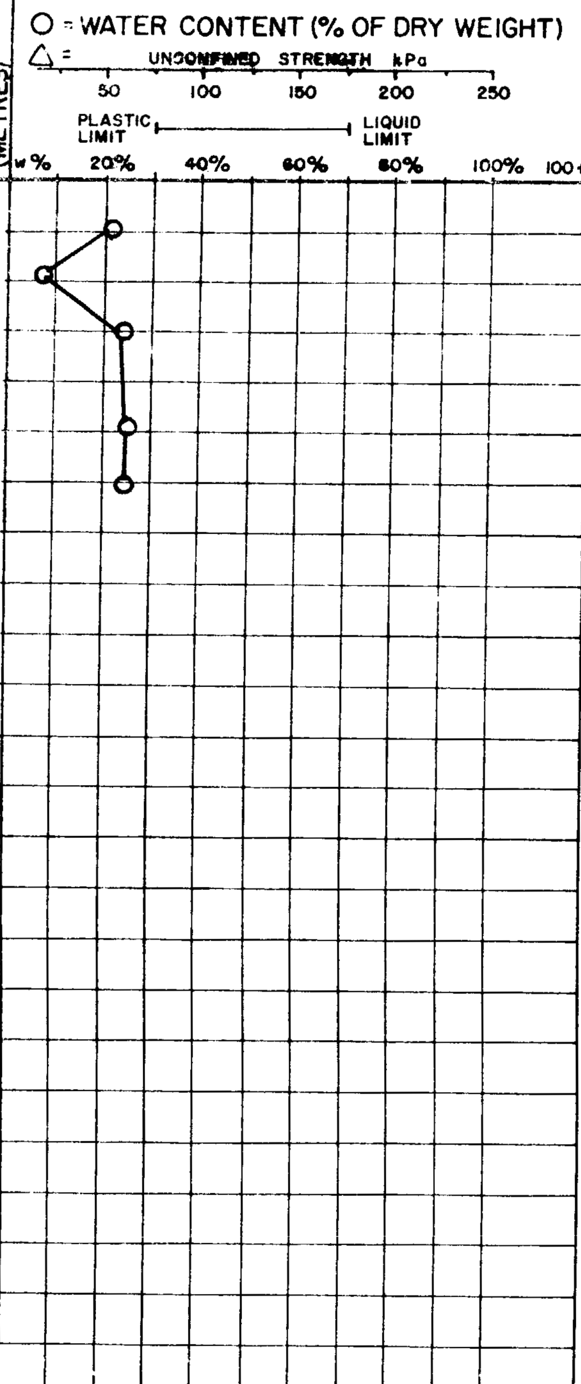
CHAINAGE	OFFSET
126+150	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		Silt -									
2						-97-		3	0	Moist	
4		Wet after 1.8m			1					Damp	
6	ML					-93-		7	0	Wet	
8					2					Wet	
10		-Clayey 3.1m			3	-98-		2	0	Wet	
12		Bottom of Hole - 3.1m									

DEPTH (FEET): 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 4, 5, 6, 7, 8, 9, 10, 11

GRAIN-SIZE ANALYSIS



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYUK	B-50	78/02/03	126		2

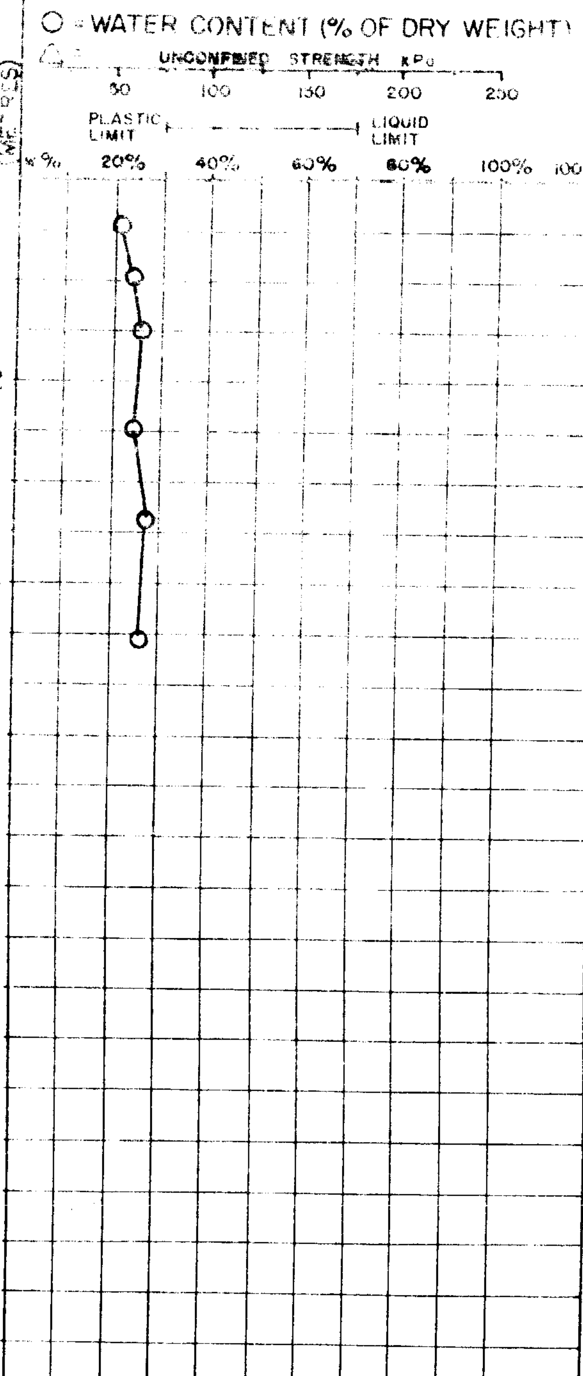
CHAINAGE	OFFSET
126+270	℄

REMARKS

DEPTH (FEET)	SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	% CLAY	% SILT	% SAND	% GRAVEL	RELATIVE MOISTURE CONTENT
		SILT -								DAMP
	ML	CLAYEY			1	-98-		2	0	MOIST
		SATURATED AFTER 1.8m								MOIST
					2					WET
		3.3 m			3					
		CLAY - SILTY				-97-		3	0	WET
	CL	LOW PLASTIC +PL			4					
		4.6m								WET
		BOTTOM OF HOLE - 4.6 m			5					

Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (metres) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. PRONYJCH	RIG B-50	DATE 78/02/03	km 126	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
126+570	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–8	ML	SILT -		
8		2.4m		
8–10	CL	CLAY - SILTY LOW PLASTIC		
10		3.1m		
12		BOTTOM OF HOLE - 3.1m		

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

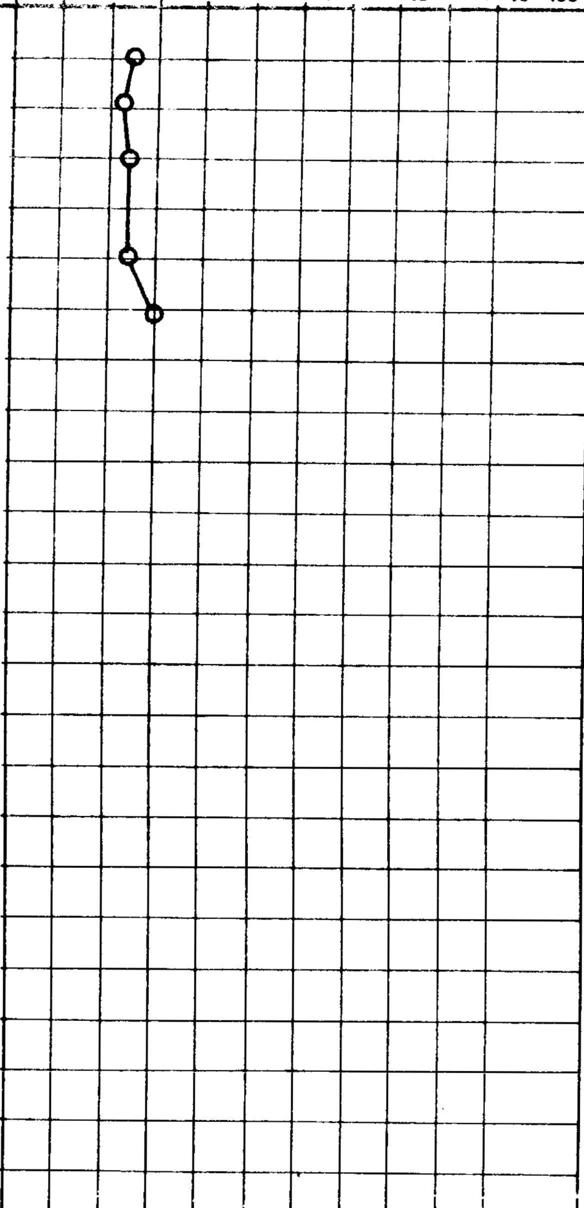
○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa — 50, 100, 150, 200, 250

PLASTIC LIMIT — LIQUID LIMIT

w% — 20%, 40%, 60%, 80%, 100%, 100+

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11



GRAIN-SIZE ANALYSIS				
CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
-99-		1	0	WET
				WET
-98-		2	0	WET
				WET
-98-		2	0	WET

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

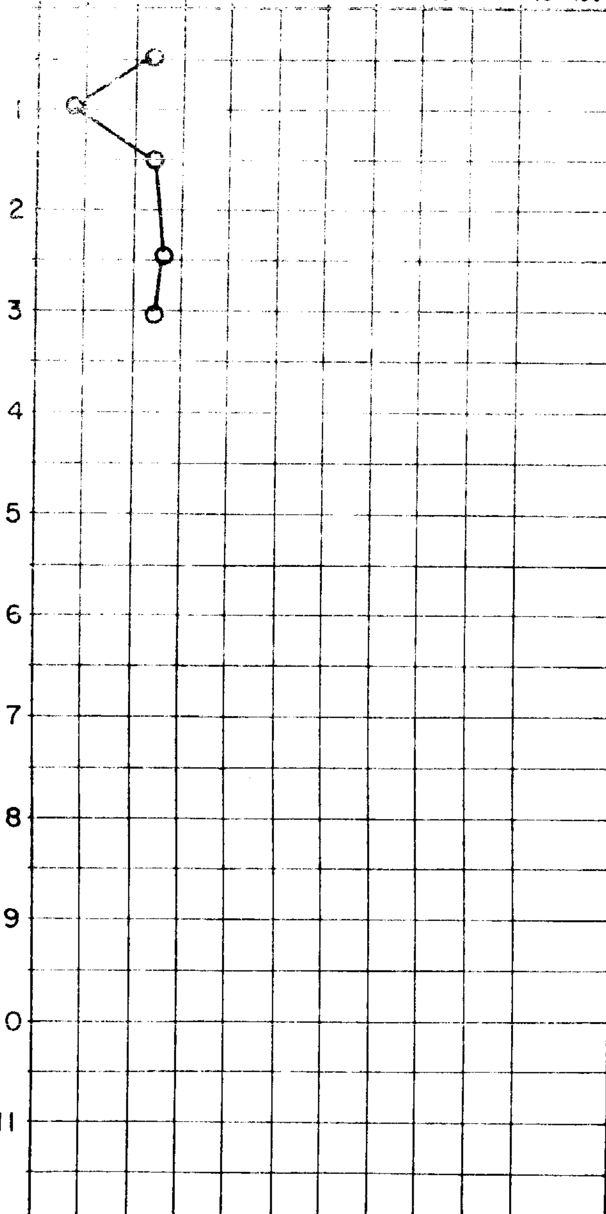
TECH Pronych | RIG B-50 | DATE 78/02/03 | km 126 | B.P. No. | HOLE No. 4

CHAINAGE	OFFSET
126+820	[illegible]

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	CORE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
	ML	SILT - .6 m								WET
2–4	SM	SAND - SILTY 1.5 m			1	-	11	88	1	MOIST
6	CL	CLAY - SILTY 2.4 m								MOIST
8–10	ML	SILT - - CLAYEY 3.3 m			2.5	-	98	2	0	WET
					3					WET
12		BOTTOM OF HOLE 3.3 m								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT —— LIQUID LIMIT



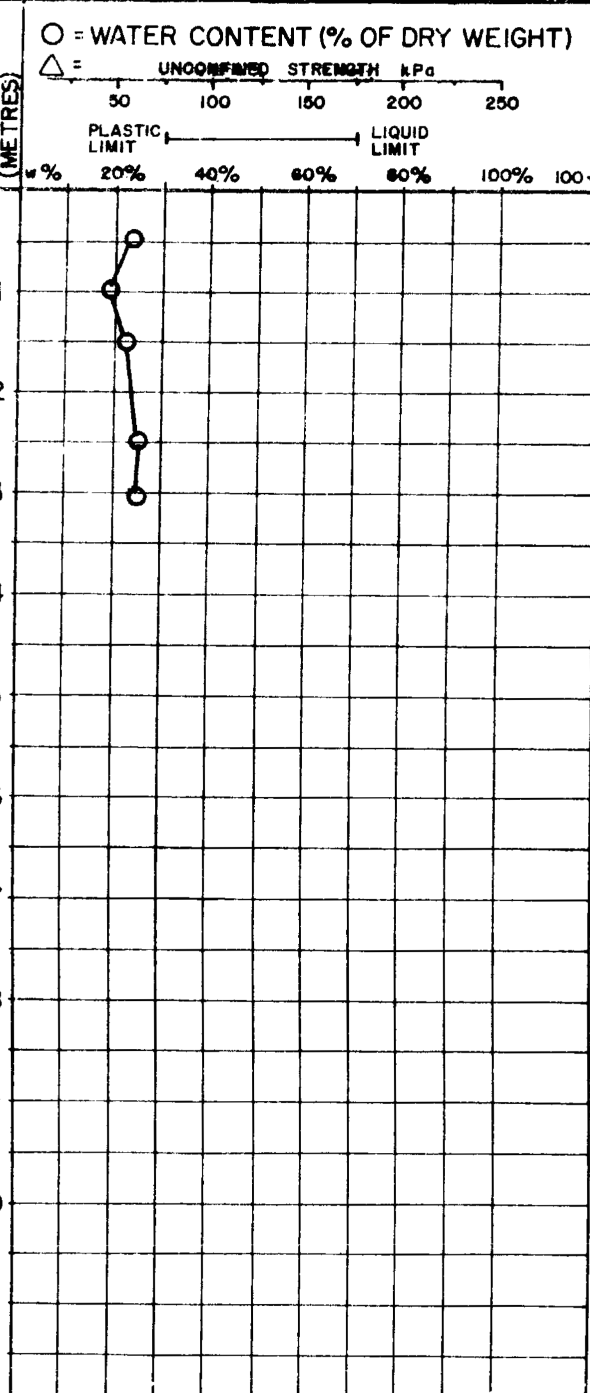
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. PRONUCH	RIG B-50	DATE 18/02/03	km 126	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
126+940	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–8	ML	SILT - CLAYEY			0–2.4					MOIST	
					1		98	2	0	MOIST	
										MOIST	
8–10	CL	CLAY - SILTY, LOW PLASTIC (2.4 m – 3.1 m)			2.4–3.1		97	3	0	WET	
					3					WET	
		Bottom of Hole. 3.1 m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYSCH	B-50	78/02/03	127		1

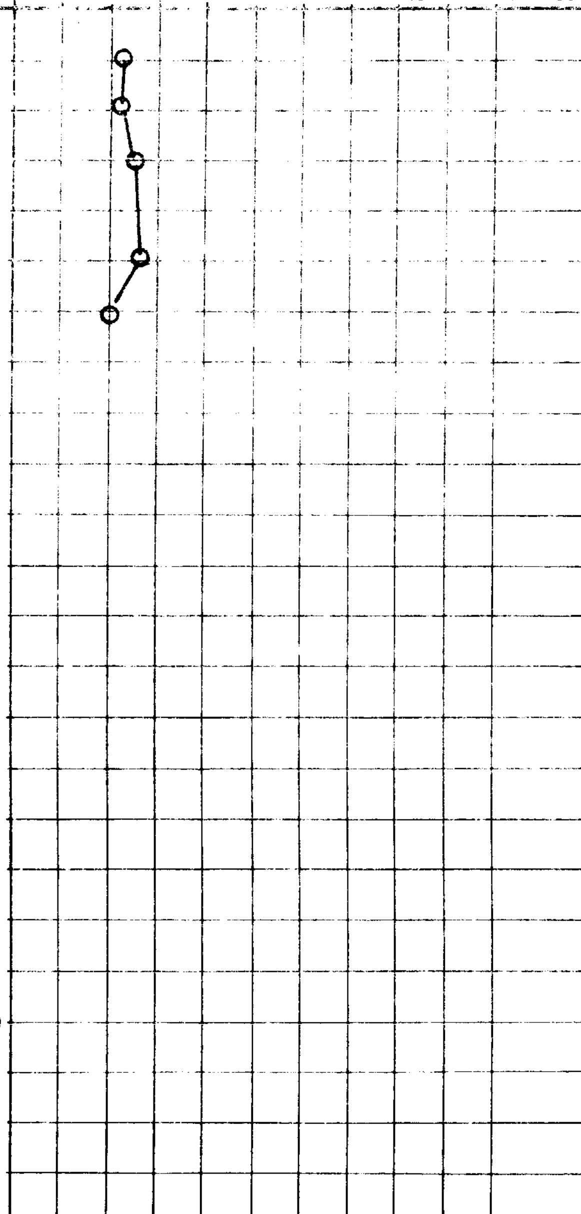
CHAINAGE	OFFSET
127+120	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT -								MOIST	
2					1		99	1	0	MOIST	
4	ML	- CLAYEY								WET	
6		SAT. AFTER 2.4 m			2						
8							93	7	0	WET	
10		SILT - 3.1 m			3					MOIST	
12		BOTTOM OF HOLE - 3.1 m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

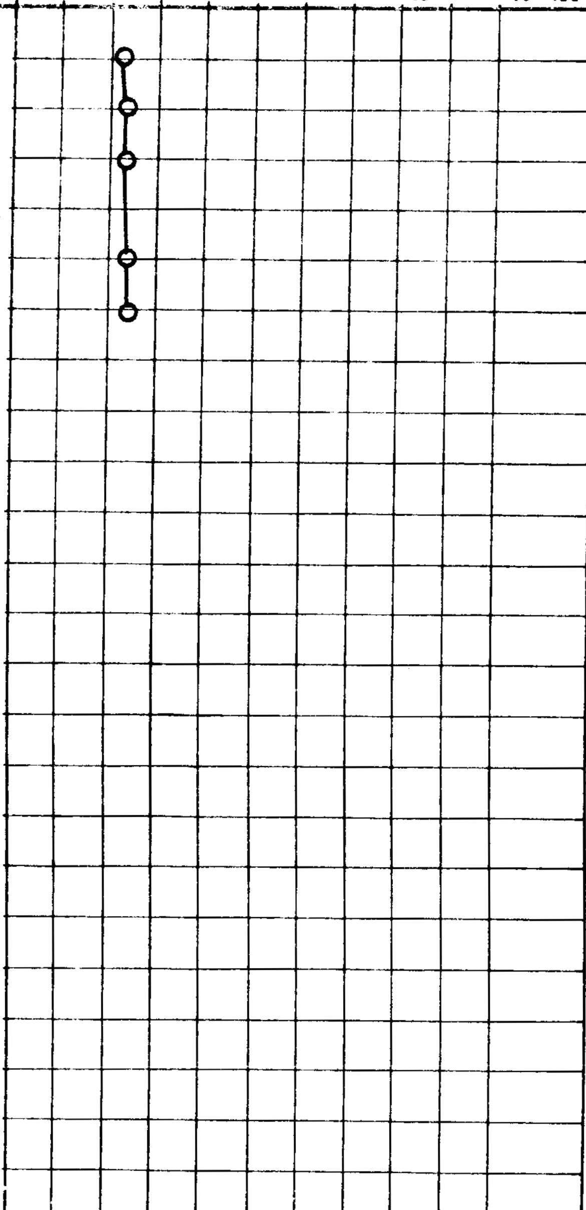
TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 127	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
127+340	℄

REMARKS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–8	ML	SILT. 2.4 m			0–2.4	98-		2	0	MOIST / WET / WET
8–10.5	CL	CLAY - SILTY SATURATED LOW PLASTIC 3.2 m			2.4–3.2	97-		3	0	WET / WET
		BOTTOM OF HOLE - 3.2 m								



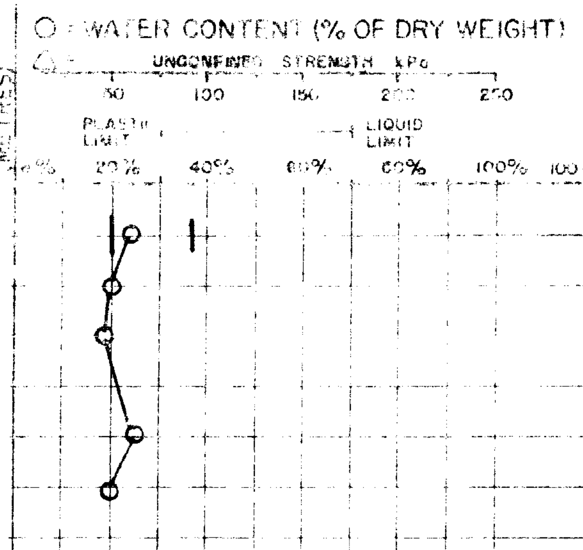
PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 127	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
127+520	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
		SILT -								
2										WET
	ML				1	-93.	7	0		WET
6										MOIST
8		2.4 m			2					
	CL	CLAY - SILTY LOW PLASTIC				-97.	3	0		WET
10		3.1 m			3					MOIST
12		Bottom of Hole - 3.1m								



PUBLIC WORKS CANADA — DRILL HOLE REPORT

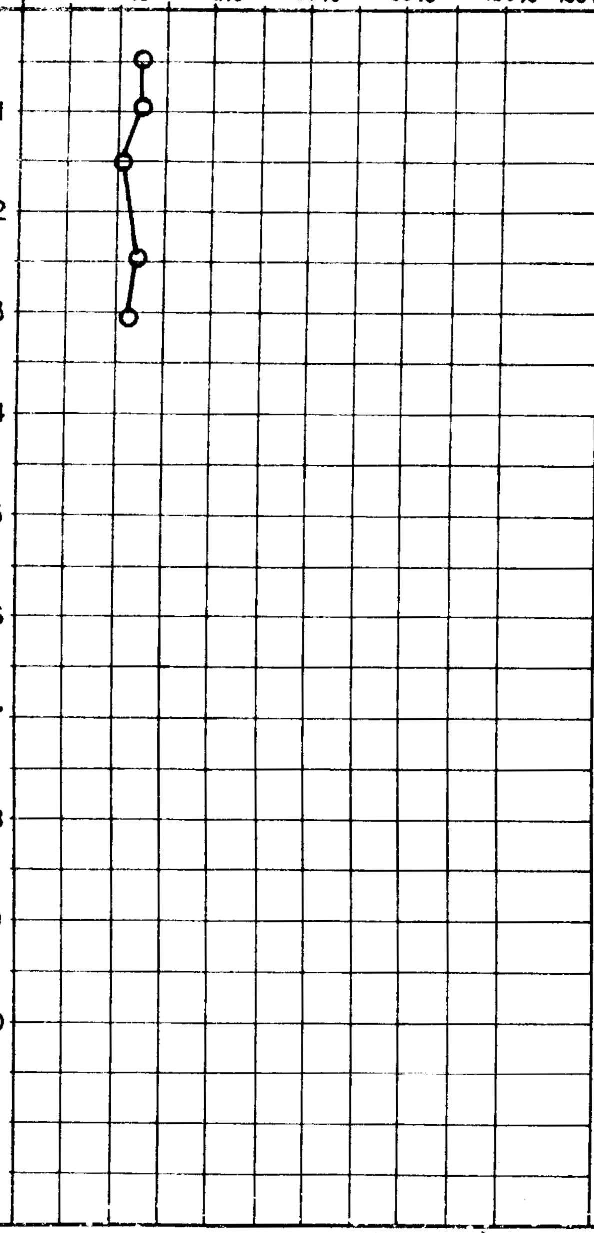
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/03	127		4

CHAINAGE	OFFSET
127+730	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–8	ML	SILT-		
8		2.4m		
8–10	CL	CLAY SILTY SATURATED		
	ML	SILT CLAYEY		
10		3.1m		
		BOTTOM OF HOLE - 3.1m		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
				WET	
-	99 -	1	0	WET	
				WET	
-	93 -	7	0	WET	
				WET	

PUBLIC WORKS CANADA | DRILL HOLE REPORT | Liard Hwy.

TECH. Prowych | RIG B-50 | DATE 78/02/03 | km 127 | B.P. No. | HOLE No. 5

CHAINAGE	OFFSET
127+850	℄

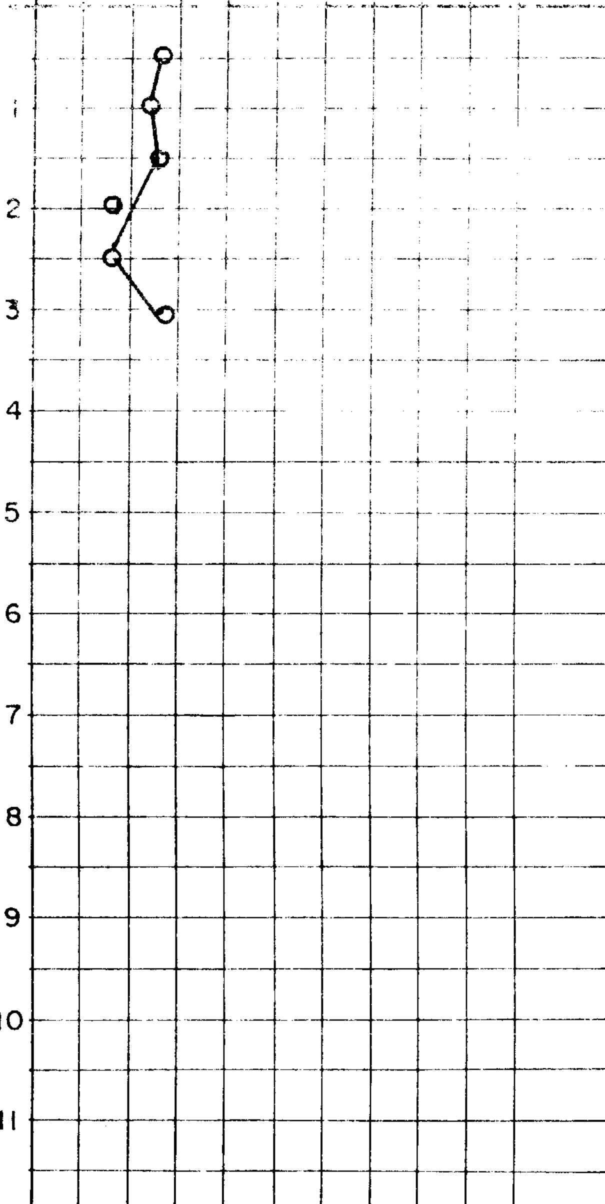
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	ML	Silt -			
10	CL	Clay - Silty 3.1m			3
12		Bottom of Hole - 3.1m			

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

0% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
				WET	
				WET	
99	-	1	0	WET	
				MOIST	
99	-	1	0	WET	

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.	
TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 127
B.P. No.	HOLE No. 6		

CHAINAGE	OFFSET
127+950	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–8	ML	SILT-		
8		2.4 m		
8–15	CL	CLAY - SILTY Low PLASTIC SATURATED AFTER 2.7 m		
15		4.6 m		
		BOTTOM OF HOLE - 4.6 m		

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

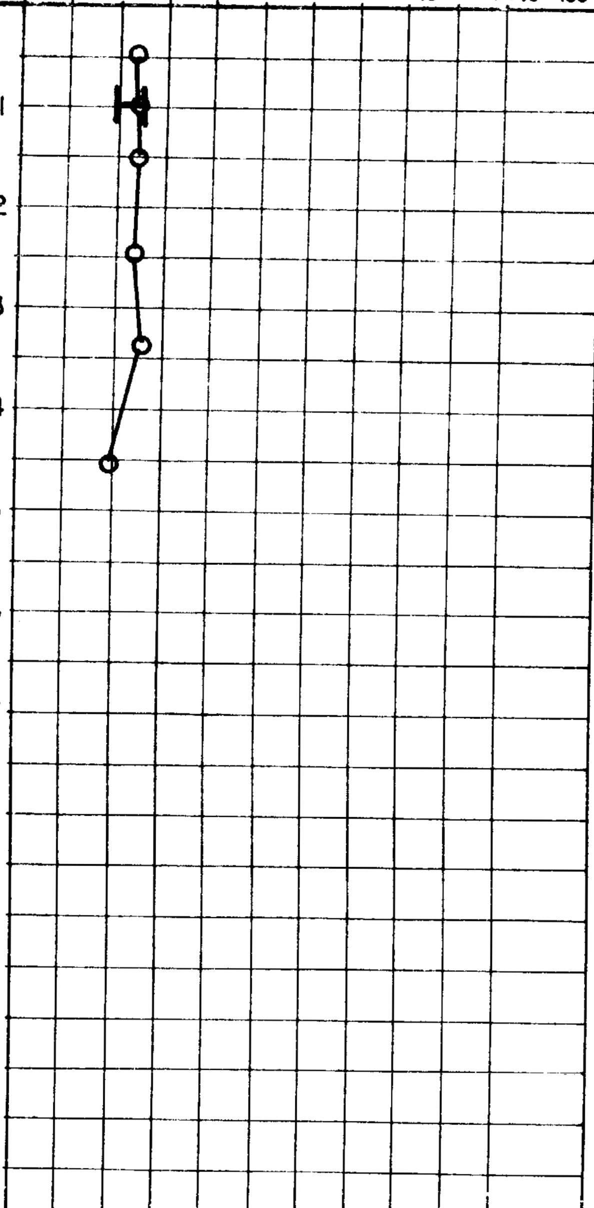
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w %: 20%, 40%, 60%, 80%, 100%, 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
-99-		1	0	MOIST
				MOIST-WET
				WET
-92-		8	0	MOIST
				WET
				WET

REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT

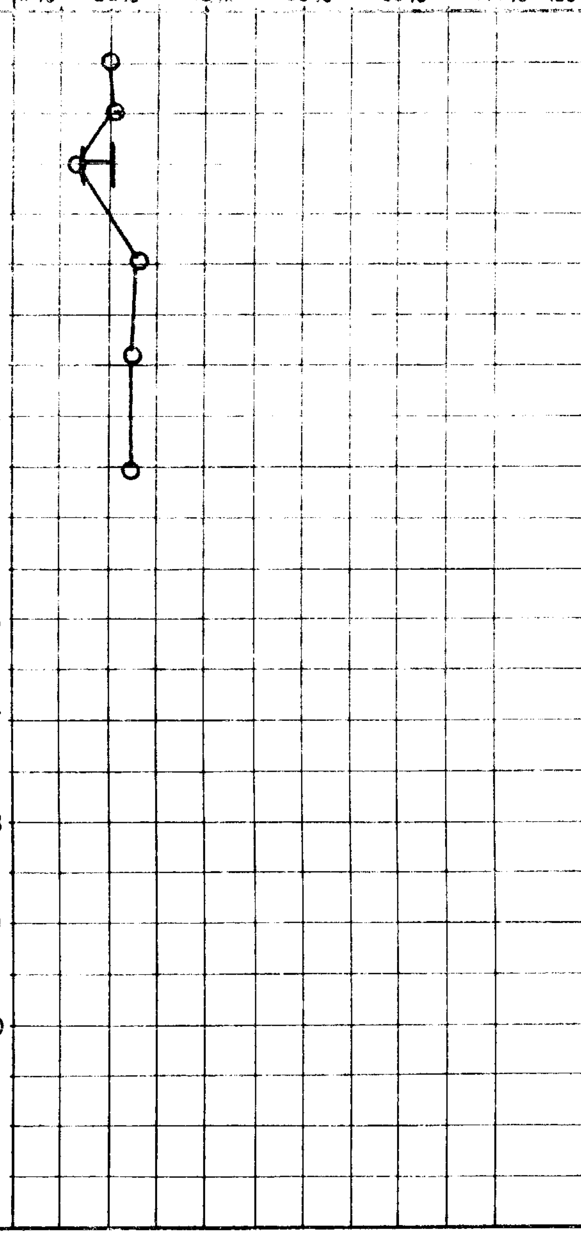
Liard Hwy.

TECH. Prowych	RIG B-50	DATE 78/02/03	km 128	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
128+040	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
0% 20% 40% 60% 80% 100% 100

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–8	ML	Silt - (to 2.4 m)			0–2.4	-	100	0	0	Moist / Moist / Moist	
8–15	CL	Clay - Silty, Low Plastic, + P_L, Sat. after 3.1m (to 4.6m)			2.4–4.6	-	99	1	0	Moist-Wet / Moist / Wet	
15		Bottom of Hole - 4.6m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

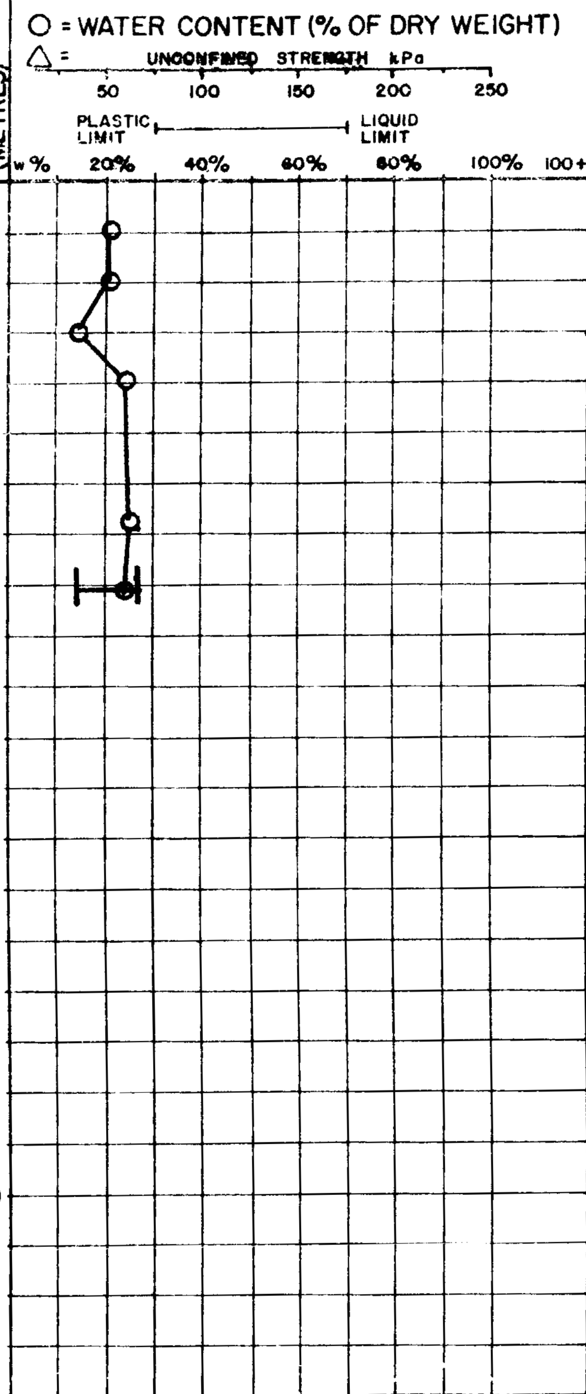
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/03	128		2

CHAINAGE	OFFSET
128+340	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–8	ML	SILT - SANDY		
8		2.4m		
8–15	CL	CLAY - SILTY -LOW PLASTIC		
15		4.6m		
		BOTTOM OF HOLE - 4.6m		



DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
~0.5					MOIST
~1.0					WET
~1.5	-	77	23	0	MOIST
~2.0					MOIST
~3.4					MOIST
~4.0	-	99	1	0	WET

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 128	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
128+650	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	ML	SILT - SATURATED AFTER 1.2m			0–2.4
8		2.4m			
	CL	CLAY - SILT) LOW PLASTIC			2.4–3.1
10		3.1m			
12		BOTTOM OF HOLE 3.1 m			

Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 6, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

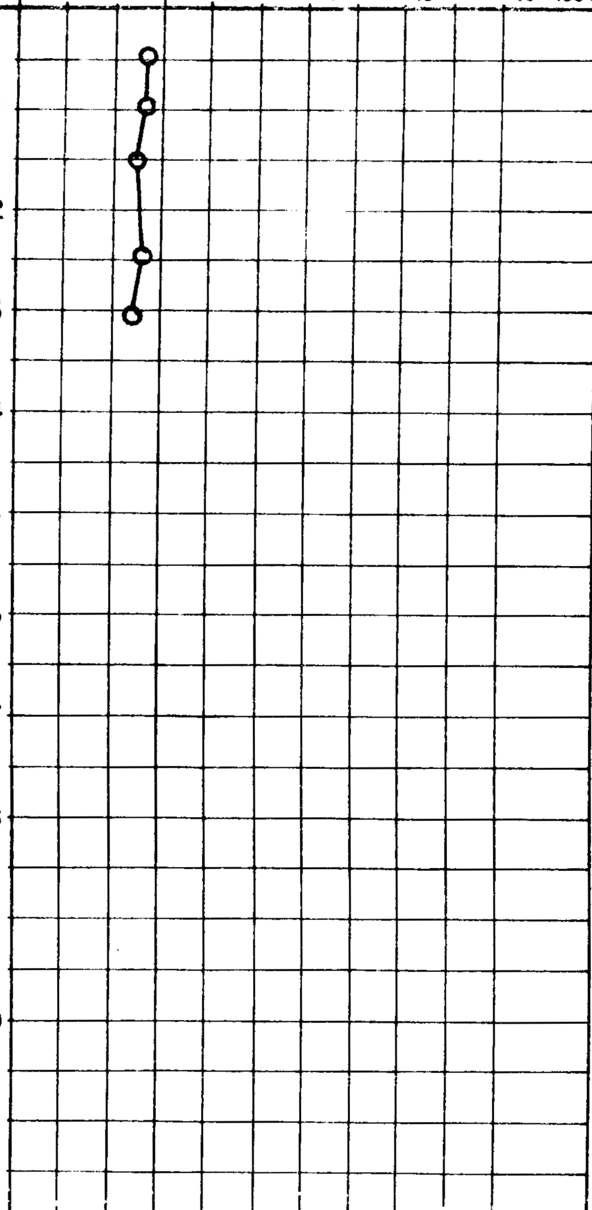
Depth (metres) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



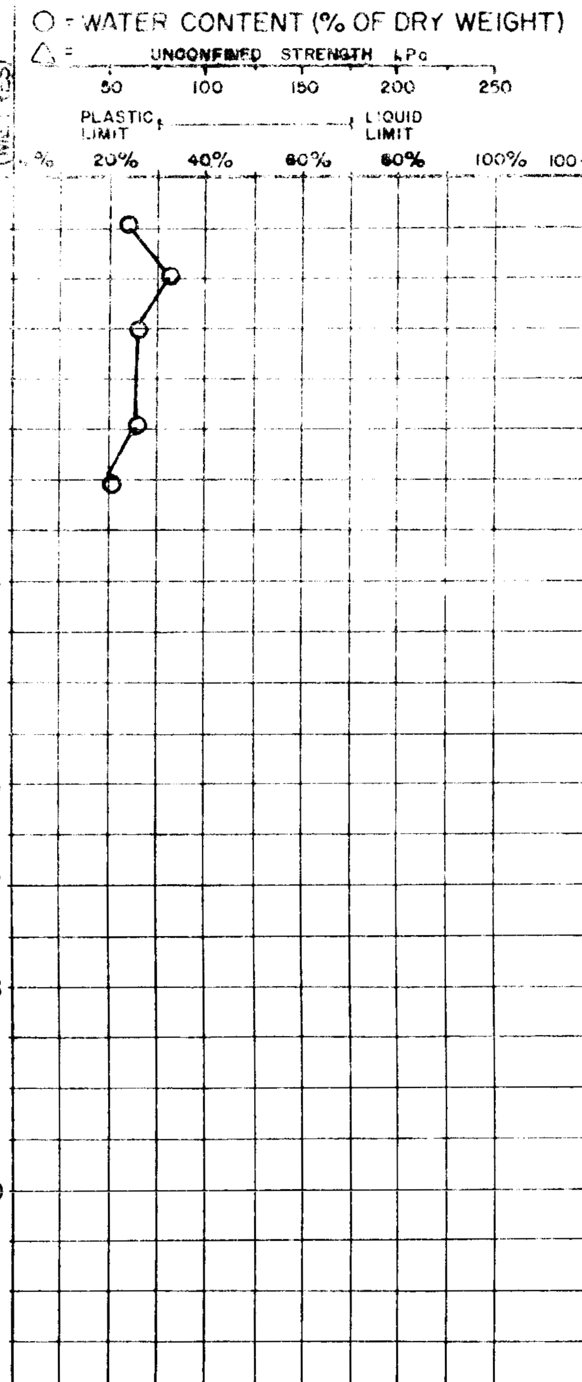
GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
-99-		1	0	MOIST	
				WET	
				WET	
-90-		10	0	MOIST	
				WET	

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 128	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
128+740	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		CLAY - SILTY									
2						-99-		1	0	WET	
4	ML	SILT -			1					WET	
						-99-		1	0	WET	
6		SATURATED AFTER 1.8m			2						
8										WET	
10	CL	CLAY - SILTY 3.1			3	-91-		9	0	WET	
12		BOTTOM OF HOLE 3.1m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



PUBLIC WORKS CANADA — DRILL HOLE REPORT

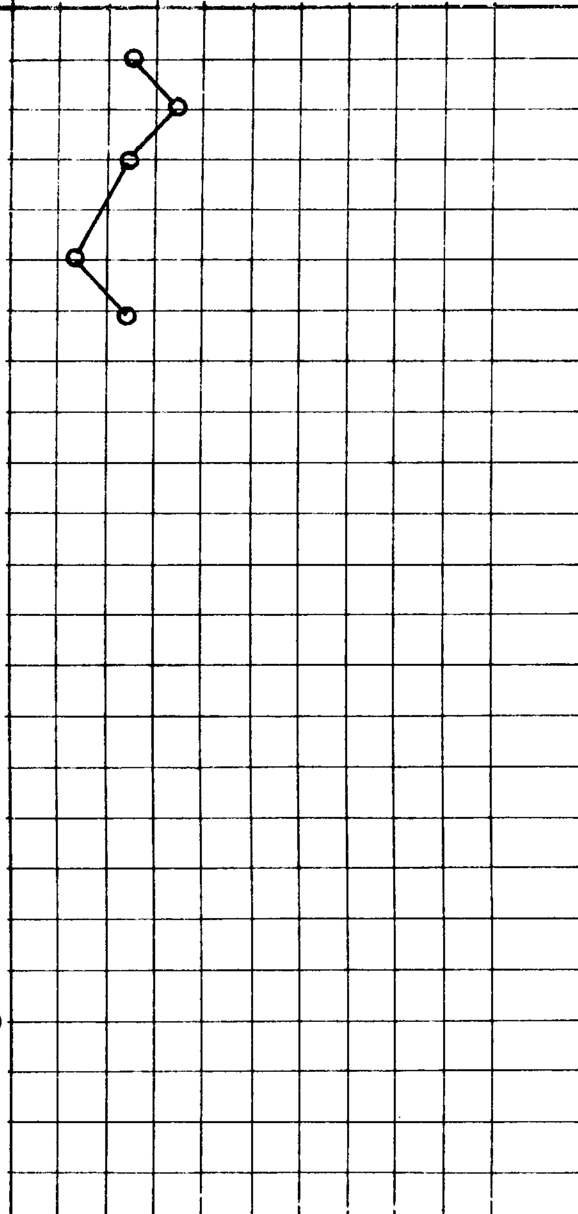
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/03	128		6

CHAINAGE	OFFSET
128+920	℄

REMARKS

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
		SILT-								WET
2–4	ML				1	-	100.	0	0	WET
4		SATURATED AFTER 1.8m								MOIST
8		2.4m								
8	CL	CLAY - SILTY LOW PLASTIC			2.4	-	99.	1	0	MOIST
10		3.1m			3					WET
12		BOTTOM OF HOLE - 3.1m								

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

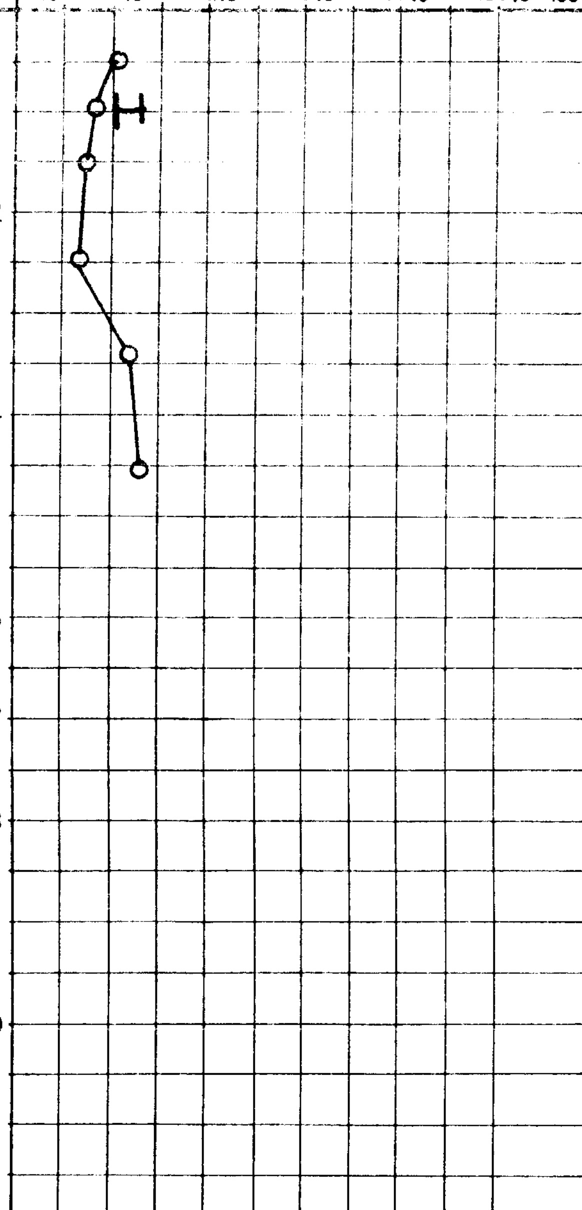
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/03	129		1

CHAINAGE	OFFSET
129+100	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–10.8	ML	SILT - SANDY		
10.8–15.1 (3.3 m – 4.6 m)	CL	CLAY - SILTY, LOW PLASTIC		
		BOTTOM OF HOLE - 4.6 m		

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0.5					MOIST
1.0	99		1	0	MOIST
1.5					MOIST
2.5	79		21	0	MOIST
3.4					MOIST
4.5	99		1	0	WET

PUBLIC WORKS CANADA — DRILL HOLE REPORT

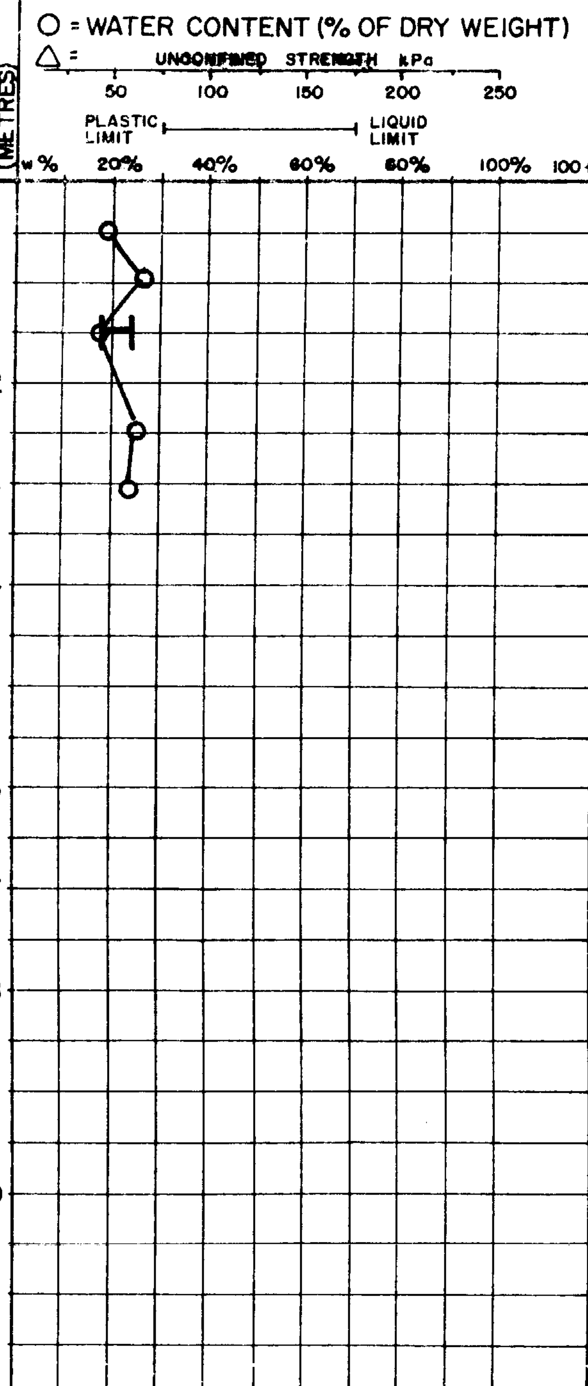
LIARD Hwy.

TECH. Pronvch	RIG B-50	DATE 78/02/03	km 129	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
129+230	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–8	ML	SILT -			0–2.4	-98-		2	0	Moist
										Moist
						-98-		2	0	Moist
		2.4 m								
8–10	CL	CLAY - SILTY - LOW PLASTIC			2.4–3.1					Moist
		3.1 m				-98-		2	0	Wet
		Bottom of Hole. 3.1 m								



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/03	km 129	B.P. No.	HOLE No. 3

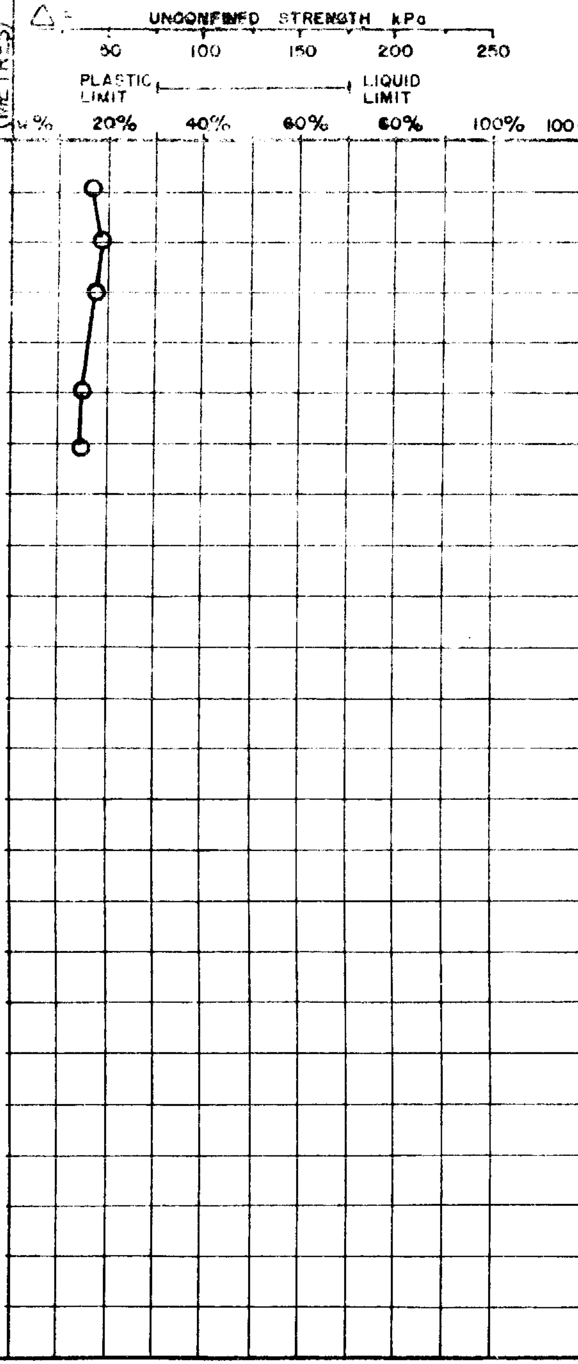
CHAINAGE	OFFSET
129+380	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT.								Moist	
2					1	-99-		1	0	Moist	
4	ML									Moist	
6					2						
8						-97-		3	0	Moist	
10		3.1m			3					Moist	
12		Bottom of Hole - 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/03	129		4

CHAINAGE	OFFSET
129+530	℄

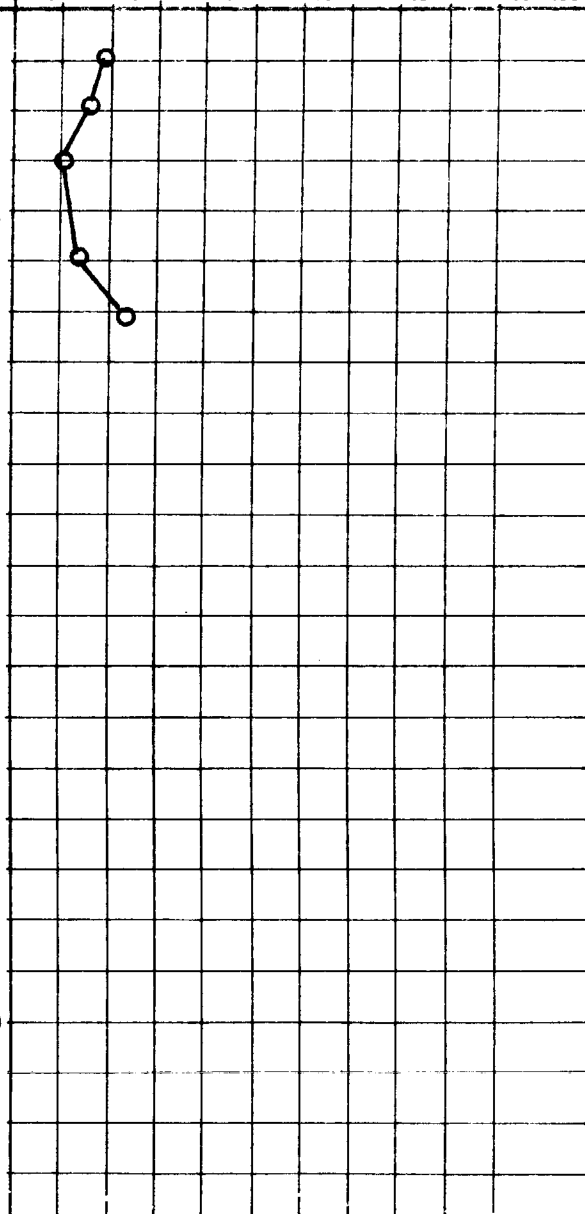
Soil description:

SILT -

ML

- CLAYEY 3.1m

BOTTOM OF HOLE - 3.1m



Depth	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
	98-		2	0	MOIST
					MOIST
	88-		12	0	MOIST
					MOIST
3.1m	96-		4	0	WET

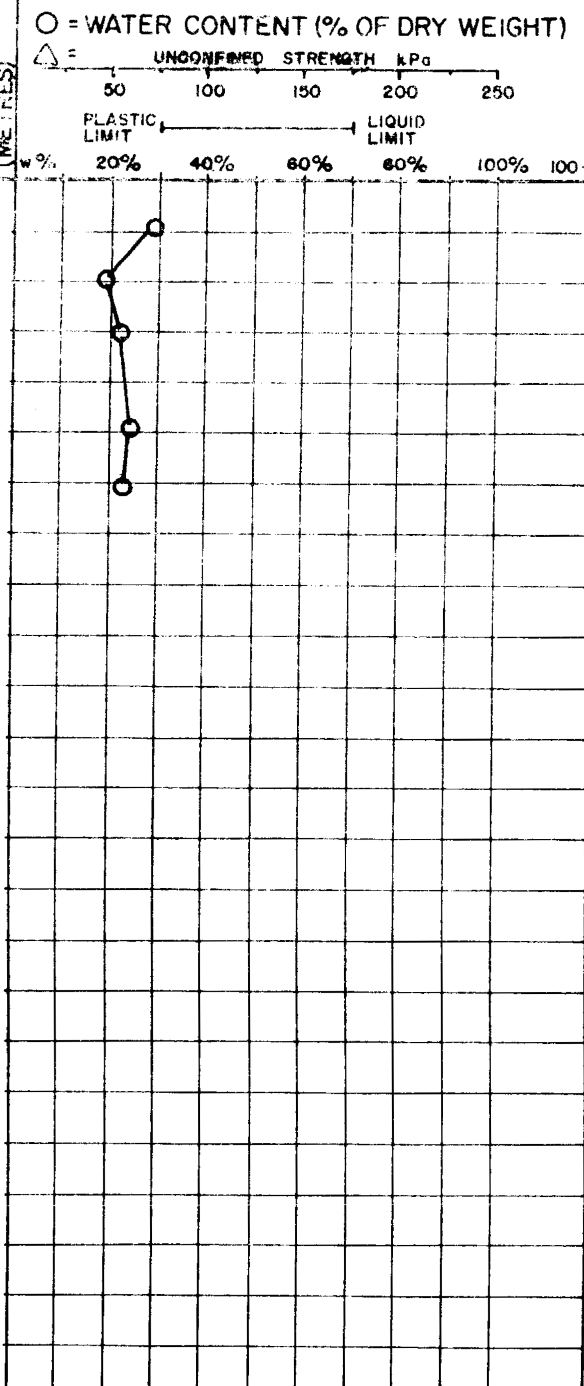
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	REMARKS

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/03	129		5

CHAINAGE	OFFSET
129+850	℄

DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0		SILT -								
~0.5									WET	
1					-	99	1	0	MOIST	
1.5	ML								MOIST + WET	
2.5					-	98	2	0	WET	
3									WET	
3.1		3.1m								
		BOTTOM OF HOLE. 3.1m								

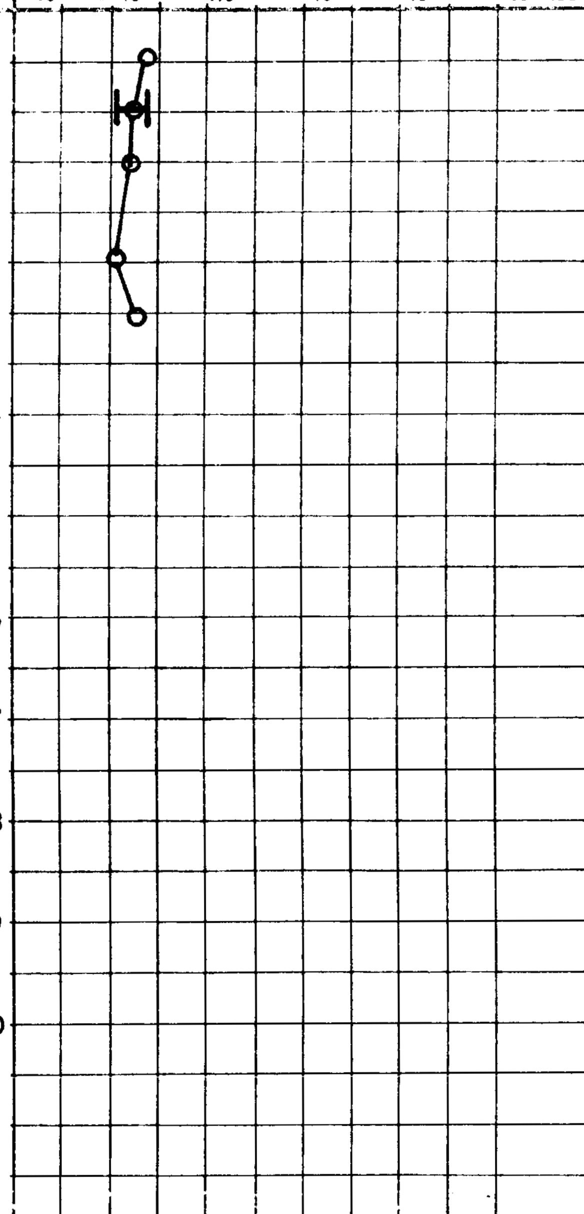


PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	130		1

CHAINAGE	OFFSET
130+110	6

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - CLAYEY								MOIST-WET	
2					1	99-		1	0	MOIST	
4	ML	SILT -								MOIST-WET	
6					2						
8						98-		2	0	MOIST	
10	CL	CLAY - SILTY 3.1m			3					MOIST	
12		BOTTOM OF HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

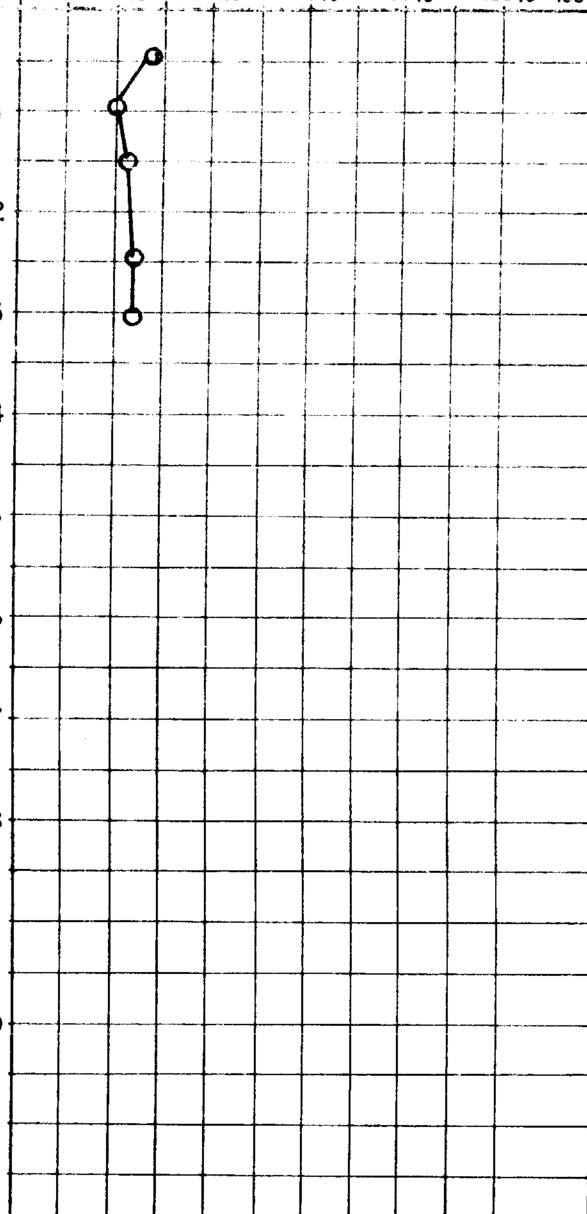
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	130		2

CHAINAGE	OFFSET
130+280	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├───┤ LIQUID LIMIT
0% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT -				-99-		1	0	WET	
					1					MOIST	
6	ML	- CLAYEY								MOIST	
						-97-		3	0	WET	
10		3.1m			3					WET	
		BOTTOM OF HOLE - 3.1m									

PUBLIC WORKS CANADA — DRILL HOLE REPORT

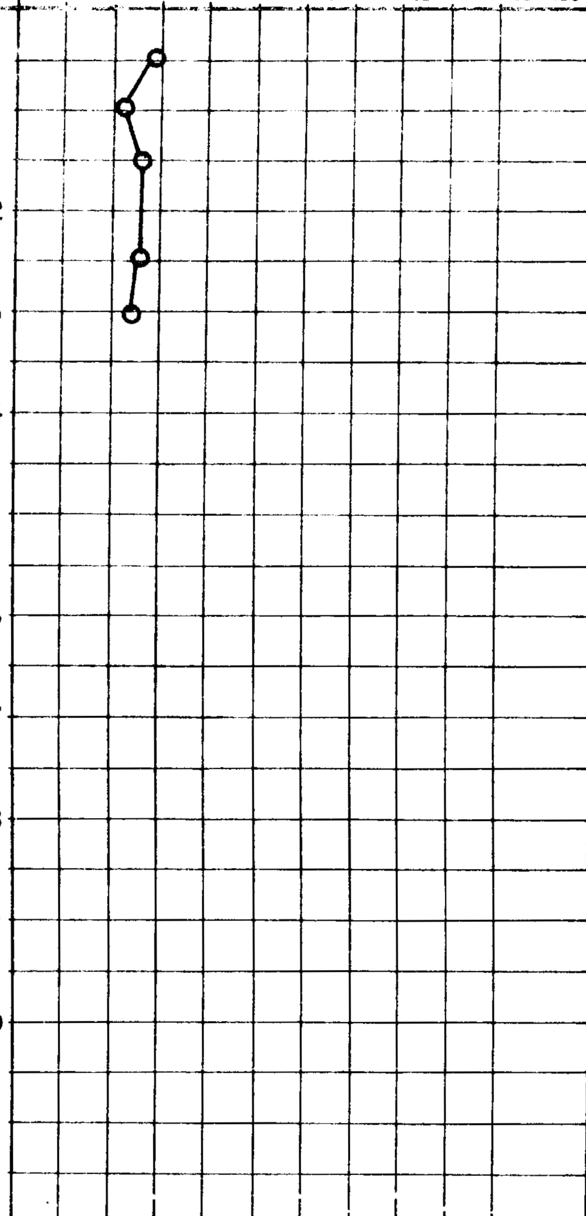
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	130		3

CHAINAGE	OFFSET
130+480	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–10	ML	SILT - CLAYEY			0.5	99		1	0	WET	
					1					MOIST	
					1.5	99		1	0	WET	
					2.5					WET	
10		3.1 m			3	99		1	0	WET	
		Bottom of Hole - 3.1 m									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT

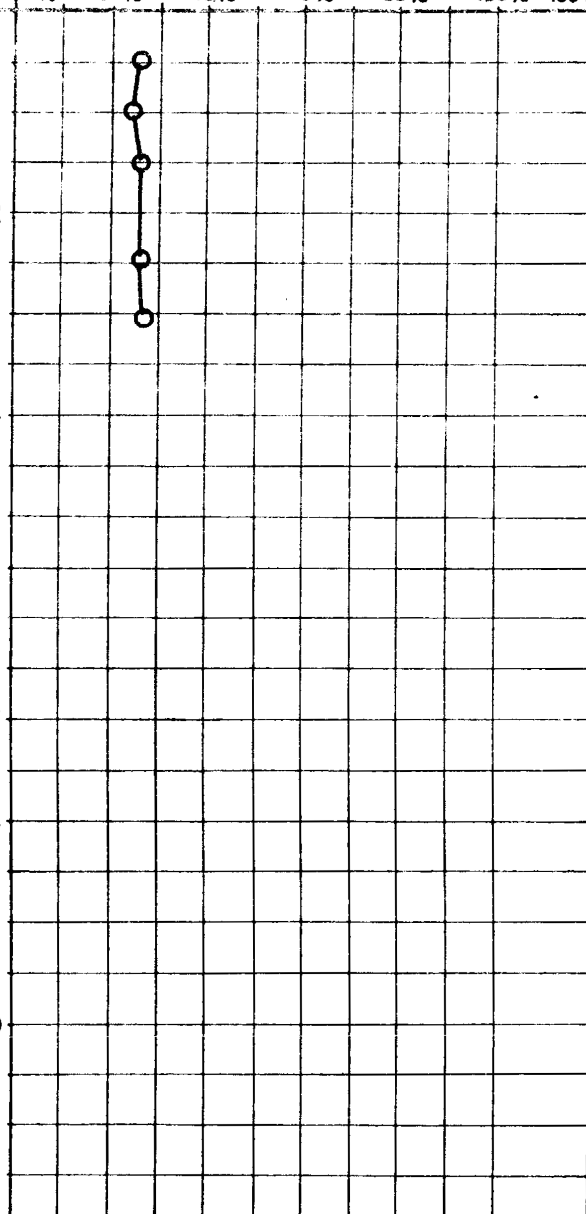
LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/03	km 130	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
130+660	℄

REMARKS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w%: 20%, 40%, 60%, 80%, 100%, 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–8	ML	SILT.		FROZEN	0–2.4					WET
					~1	–	100	0	0	MOIST
										WET
8–10	CL	CLAY SILTY - LOW PLASTIC (2.4 m – 3.1 m)			2.4–3.1	–	100	0	0	WET
										WET
		Bottom of Hole - 3.1m								

DEPTH (FEET) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38
DEPTH (METRES) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

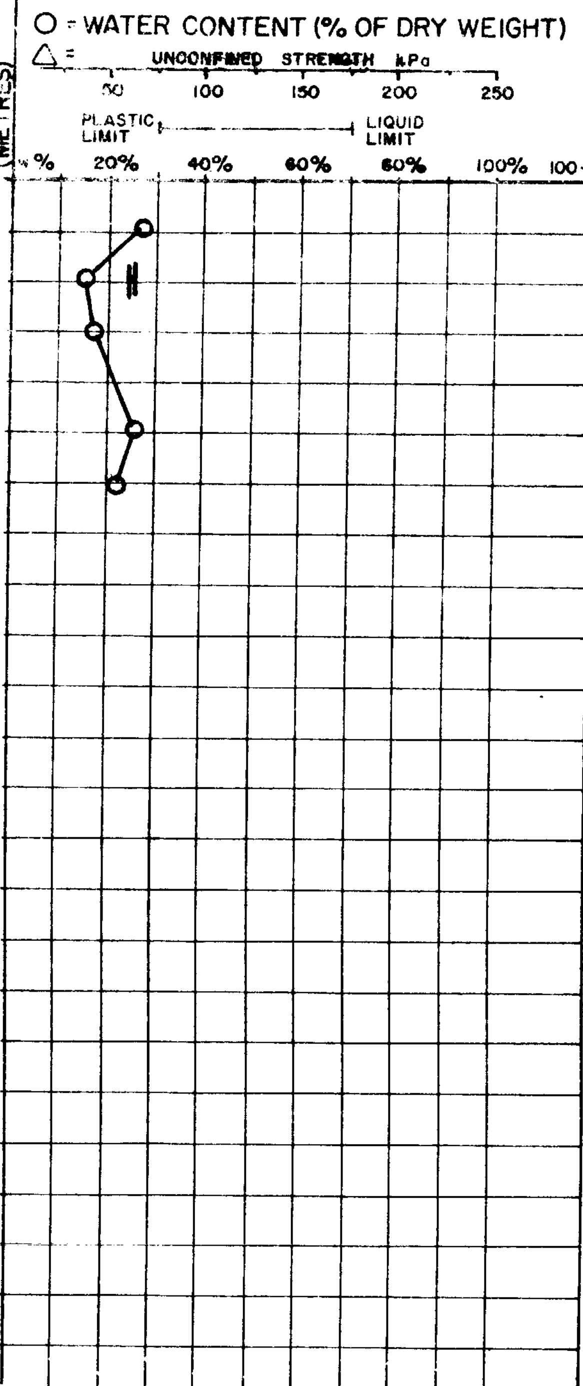
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	130		5

CHAINAGE	OFFSET
130+960	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
		SILT -			
2–4	ML				1
6		-CLAYEY			2
10	CL	CLAY-SILTY 3.1m			3
12		Bottom of Hole - 3.1 m			



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
-99-		1	0	WET	
				MOIST	
-99-		1	0	MOIST	
				MOIST-WET	
-98-		2	0	WET	

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	131		1

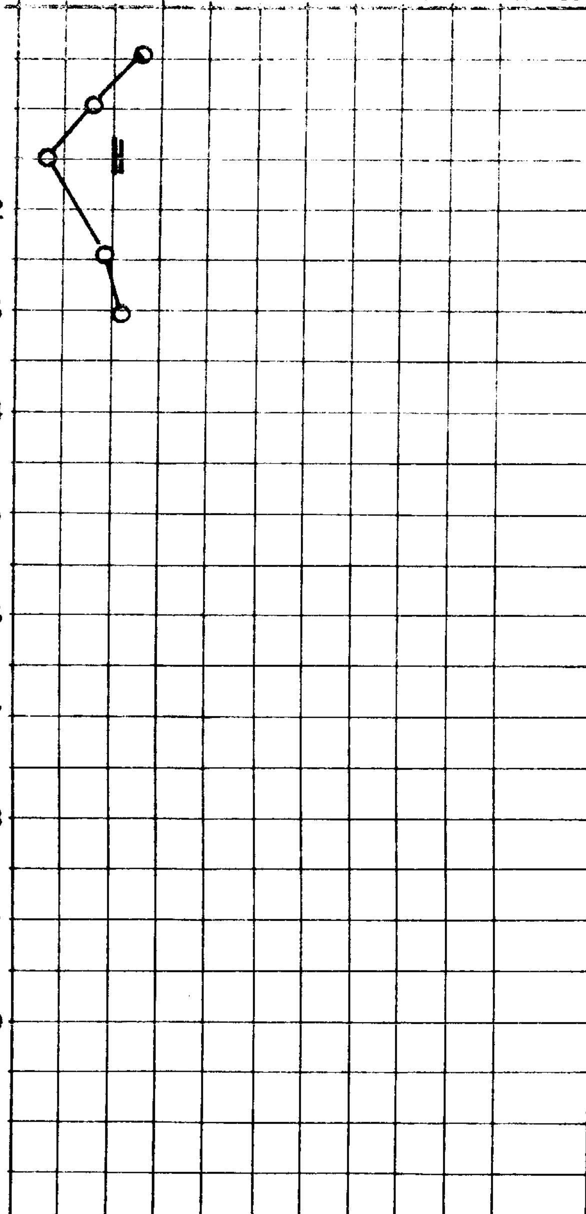
CHAINAGE	OFFSET
131+120	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - CLAYEY				100		0	0	MOIST	
4		SILT -			1					MOIST	
6	ML					83		17	0	MOIST	
8					2					MOIST	
10		- CLAYEY 3.1 m			3	98		2	0	MOIST-WET	
12		BOTTOM OF HOLE - 3.1 m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

PLASTIC LIMIT — LIQUID LIMIT



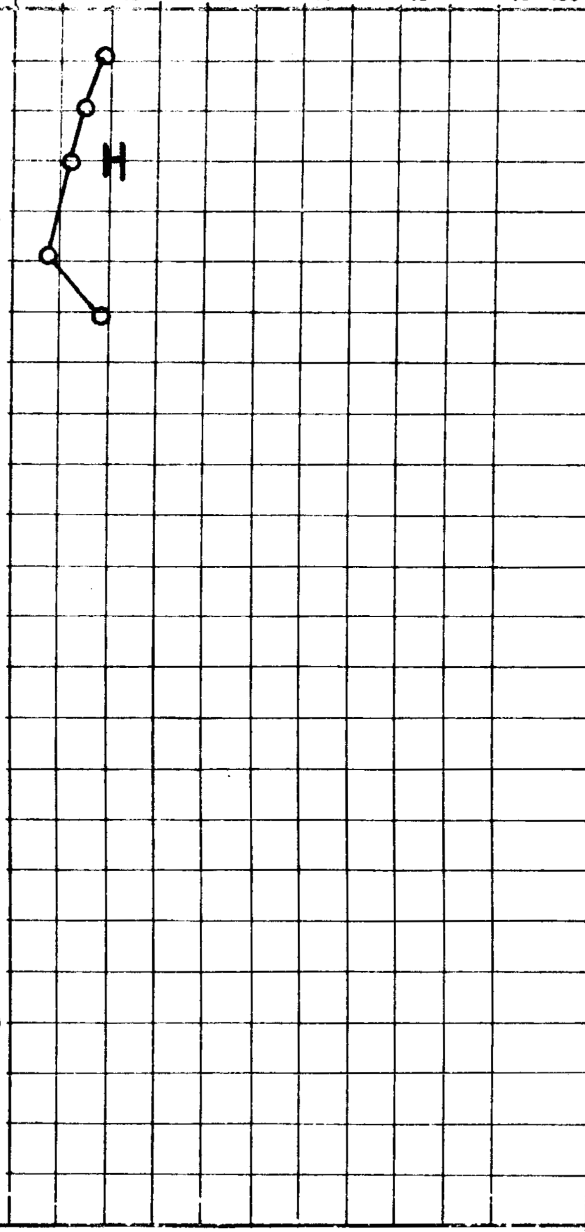
PUBLIC WORKS CANADA — **DRILL HOLE REPORT** — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	131		2

CHAINAGE	OFFSET
131+270	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–10	ML	Silt.			0–3.1
10		3.1m			3.1
12		Bottom of Hole. 3.1m			

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
				Moist	
-	100	0	0	Moist	
				Moist	
-	81	19	0	Moist	
				Moist	

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

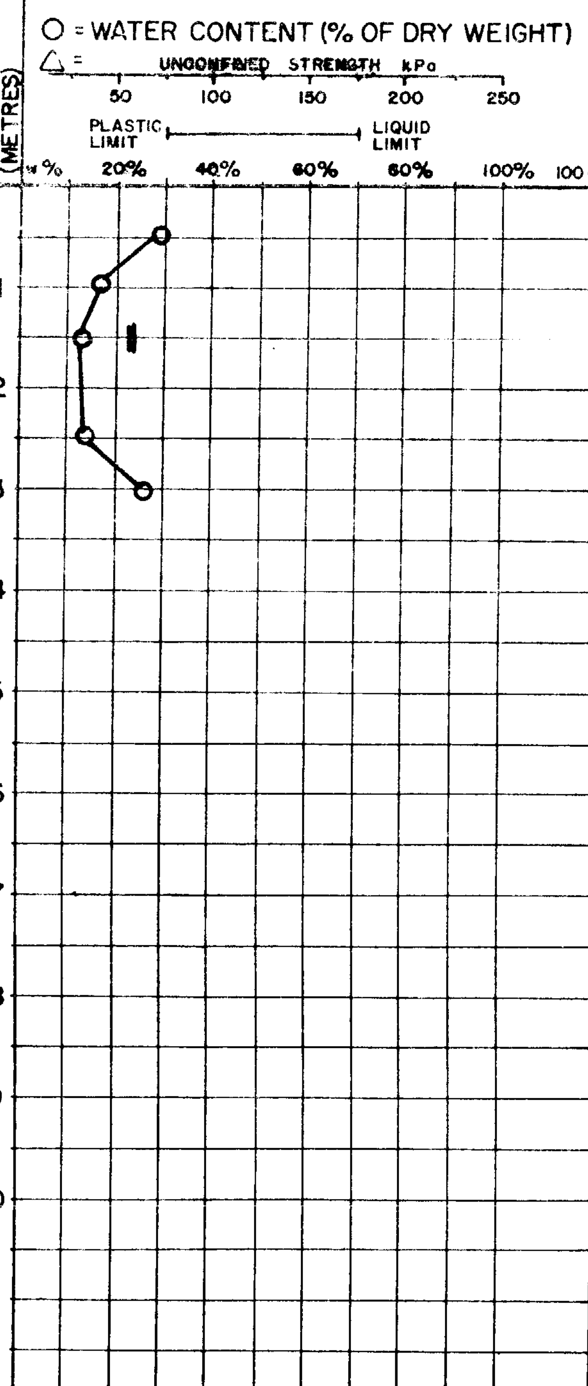
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	131		3

CHAINAGE	OFFSET
131+440	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
		SILT - CLAYEY								
2		SILT -				99		1	0	WET
4					1					MOIST
6						91		9	0	MOIST
8	ML				2					WET-MOIST
10		- CLAYEY 3.1m			3	100		0	0	WET
12		BOTTOM OF HOLE 3.1m								
14					4					
16					5					
18										
20					6					
22										
24					7					
26					8					
28										
30					9					
32										
34					10					
36					11					
38										

GRAIN-SIZE ANALYSIS



PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	131		4

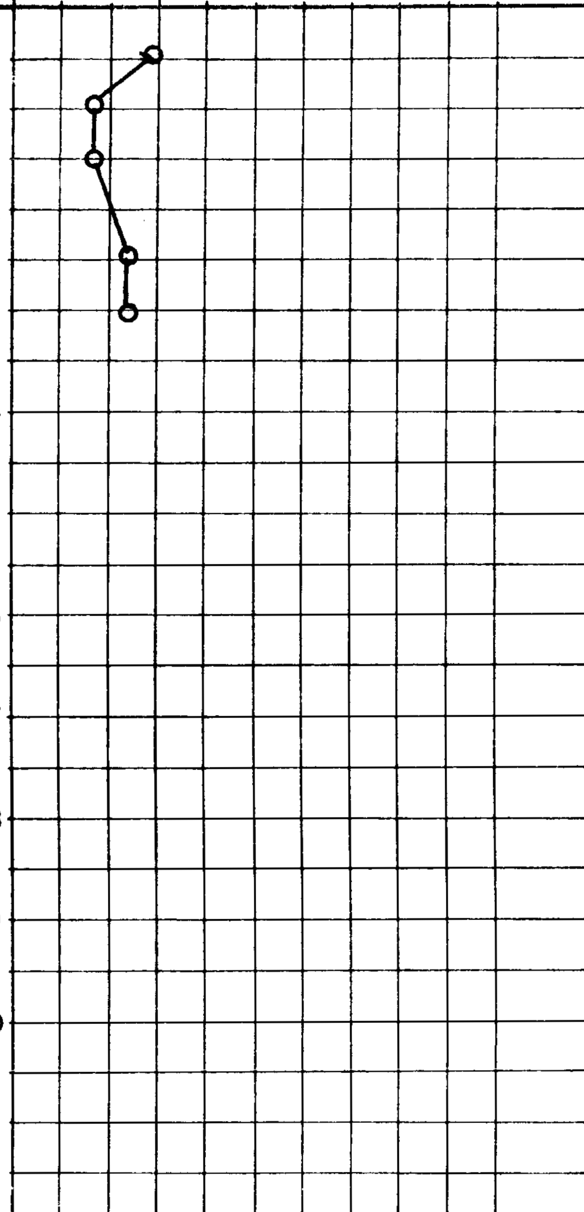
CHAINAGE	OFFSET
131+650	E

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT- CLAYEY								WET	
2		SILT			1	-98-		2	0	MOIST	
4	ML									MOIST	
8		2.4m			2						
	CL	CLAY - SILTY LOW PLASTIC				-100-		0	0	MOIST-WET	
10		3.1m			3					MOIST-WET	
12		BOTTOM OF HOLE - 3.1m									

O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

PLASTIC LIMIT — LIQUID LIMIT



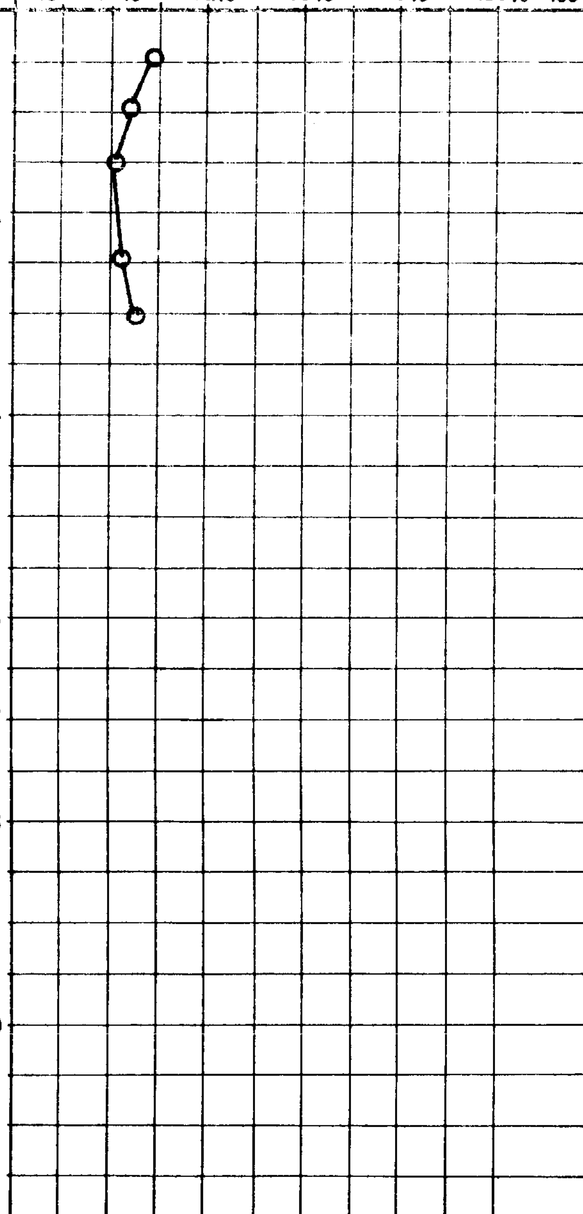
PUBLIC WORKS CANADA — **DRILL HOLE REPORT** — Liard Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Webber	B-50	78/02/03	131		5

CHAINAGE	OFFSET
131+920	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
		Silt- Clayey			
2	ML	Silt -			
8		2.4m			
	CL	Clay - Silty Low Plastic			
10		3.1 m			3
12		Bottom of Hole - 3.1m			

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
99		1	0	Wet	
				Moist-Wet	
97		3	0	Moist-Wet	
				Moist-Wet	
100		0	0	Moist	

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38
Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

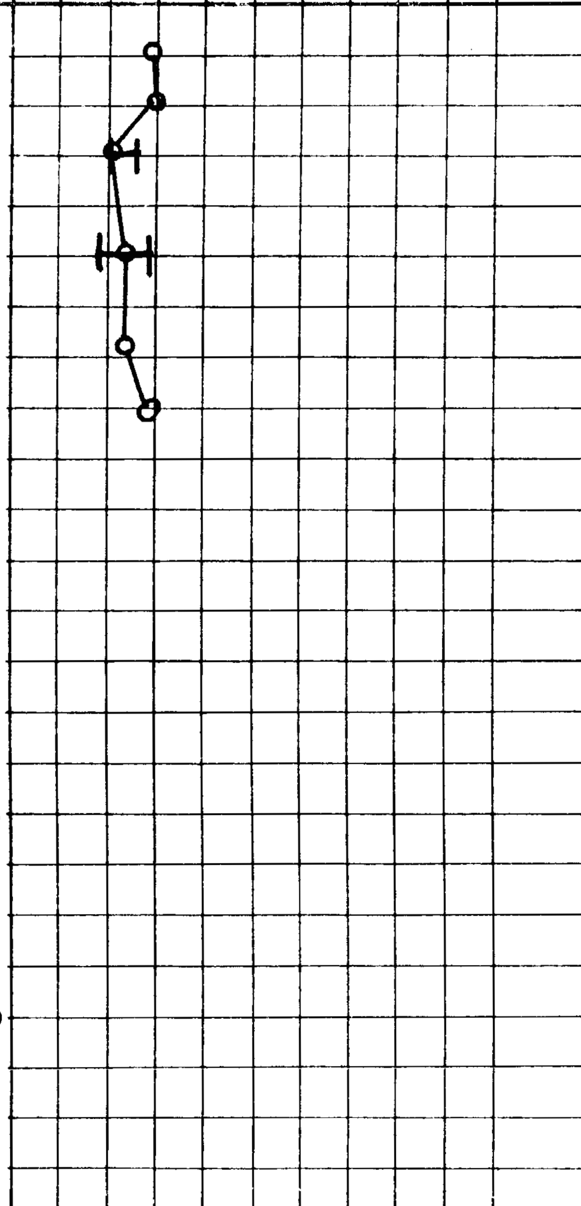
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/03	km 132	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
132+110	℄

REMARKS

Depth (feet)	Unified soil symbol	Soil description
0–8	ML	Silt - Clayey; Silt.
8		2.4 m
8–15	CL	Clay - Silty, Low Plastic + P_L; Wet @ 4.6 m
15		4.6 m
		Bottom of Hole. 4.6 m



Depth (metres)	Clay %	Silt %	Sand %	Gravel %	Relative moisture content
0.5					Wet
1	-100-		0	0	Wet
1.5					Moist
2.5	-100-		0	0	Moist-Wet
3.5					Moist
4	-100-		0	0	Moist-Wet

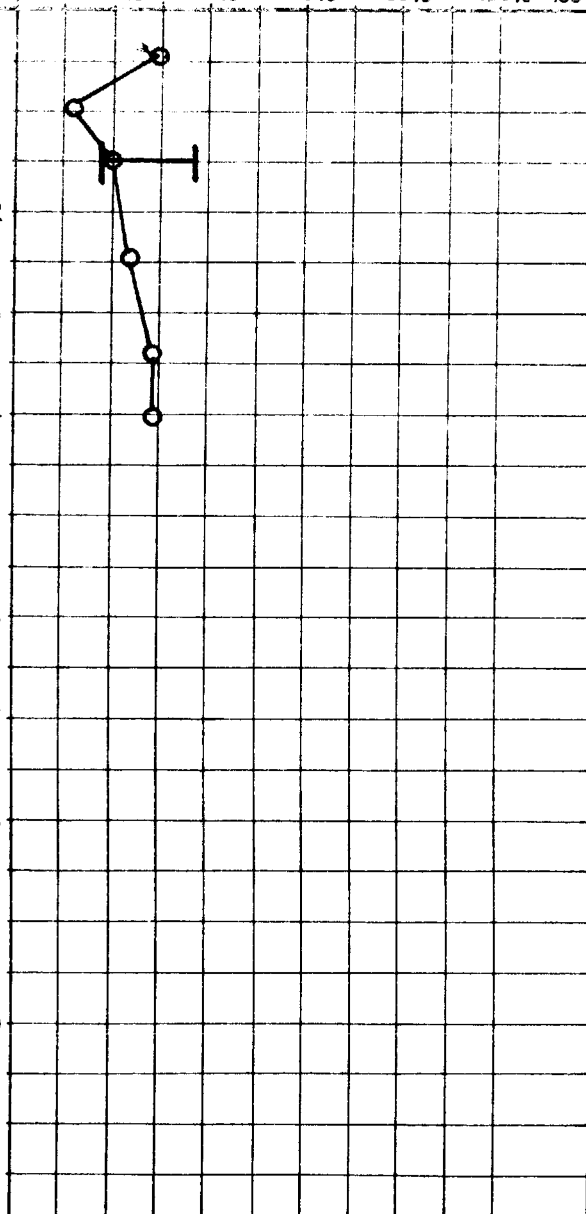
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Liard Hwy.

TECH. Webber	RIG B-50	DATE 78/02/03	km 132	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
132+170	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100%

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		Silt - Clayey				99		1	0	Wet	
4	ML	Silt			1					Moist	
		1.5m				100		0	0	Moist	
6		Clay - Silty			2						
8		Low-Med. Plastic								Moist	
10	CL CI	+PL			3						
12						100		0	0	Moist-Wet	
14					4					Wet	
		4.6m									
16		Bottom of Hole - 4.6m			5						
18											
20					6						
22											
24					7						
26											
28					8						
30					9						
32											
34					10						
36											
38					11						



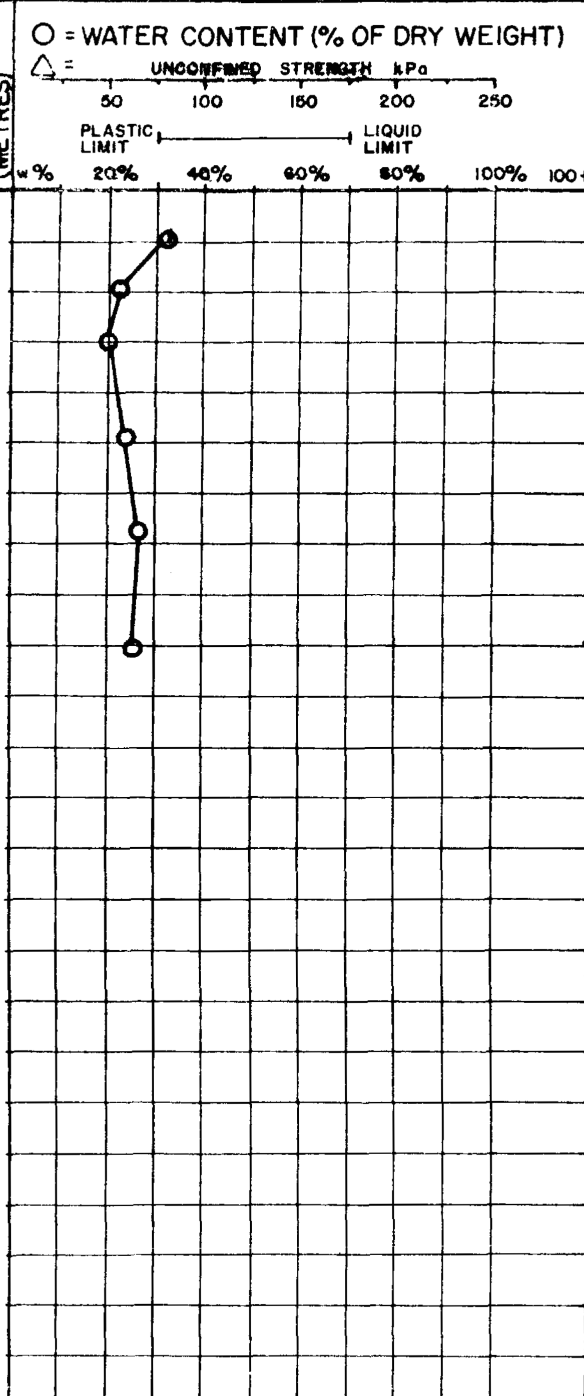
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	132		3

CHAINAGE	OFFSET
132+230	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY - SILTY								
2	ML	SILT -			99		1	0	SAT.	
									MOIST	
	CL	CLAY - SILTY							MOIST	
8	ML	SILT - CLAYEY			97		3	0	MOIST-WET	
	CL	CLAY - SILTY							M-W.	
14		4.6m			100		0	0	M-W.	
		Bottom of Hole - 4.6m								



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/04	132		4

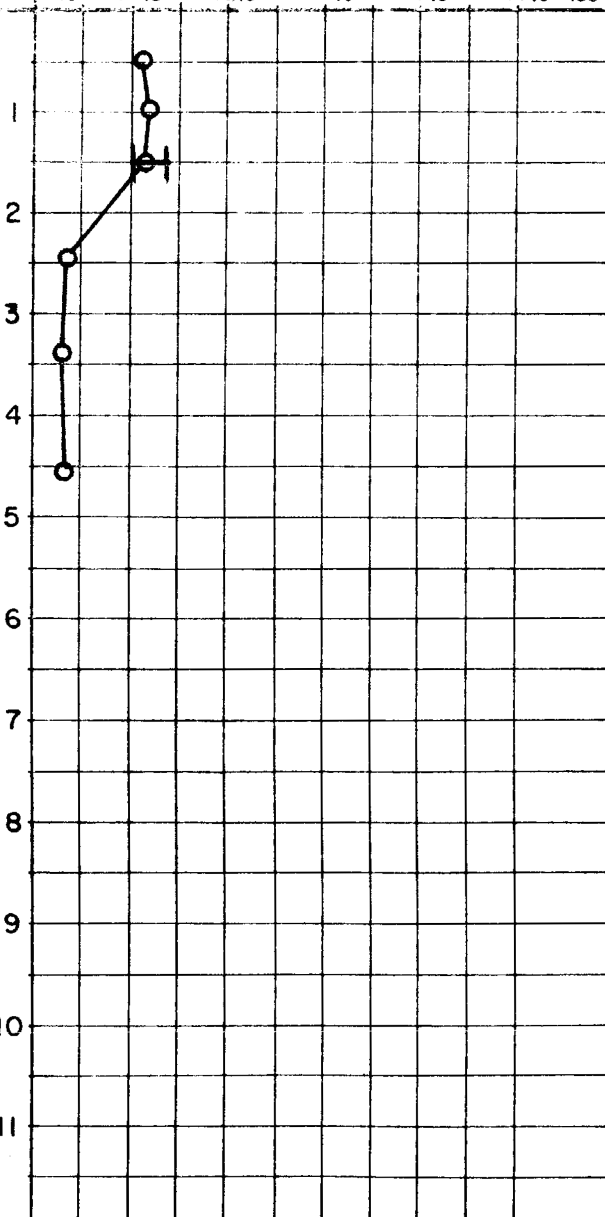
CHAINAGE	OFFSET
132+410	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–6	CL	CLAY - SILTY - LOW PLASTIC		FROZEN to 1.2 m
		2 m		
6–15	SM	SAND - SILTY GRAVELLY		
		4.6 m		
		BOTTOM OF HOLE - 4.6 m		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT



DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
~0.5					MOIST-WET	
1	-99-		1	0	WET	
~1.5					MOIST-WET	
~2.5	-22-		68	10	WET	
~3.4	-21-		57	22	MOIST-WET	
~4.5	-24-		39	37	MOIST-WET	

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 132	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
132+590	℄

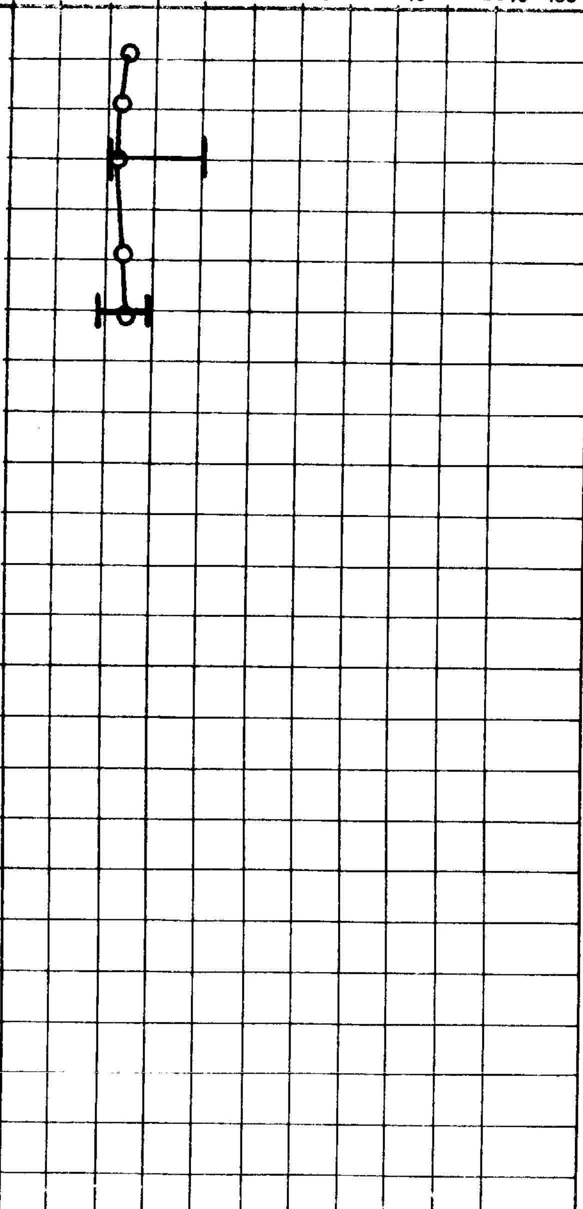
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAYEY — .9 m		FROZEN		99		1	0	WET	
4		CLAY - SILTY			1					MOIST	
6	CL	LOW PLASTIC								DAMP-MOIST	
8					2	100		0	0	MOIST	
10		— 3.1 m			3					WET	
12		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT |———| LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



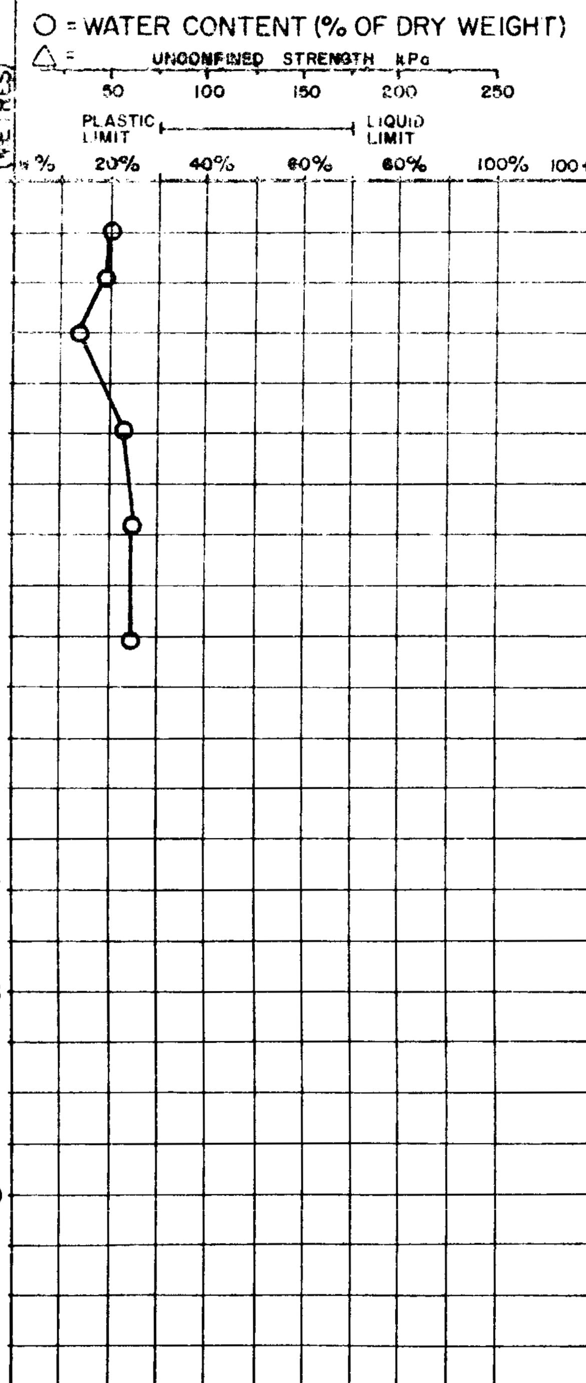
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	B-50	78/02/03	132		6

CHAINAGE	OFFSET
132+670	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–3	ML	SILT. .9m			0–0.9		99	1	0	MOIST-WET	
3–15	CL	CLAY - SILTY - LOWPLASTIC; WET AFTER 2.7m; ~~SAT AFTER 3.7m~~; GREY. 4.6m			0.9–4.6		99	1	0	MOIST	
										MOIST	
										MOIST-WET	
							100	0	0	WET	
										WET	
		BOTTOM OF HOLE. 4.6m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

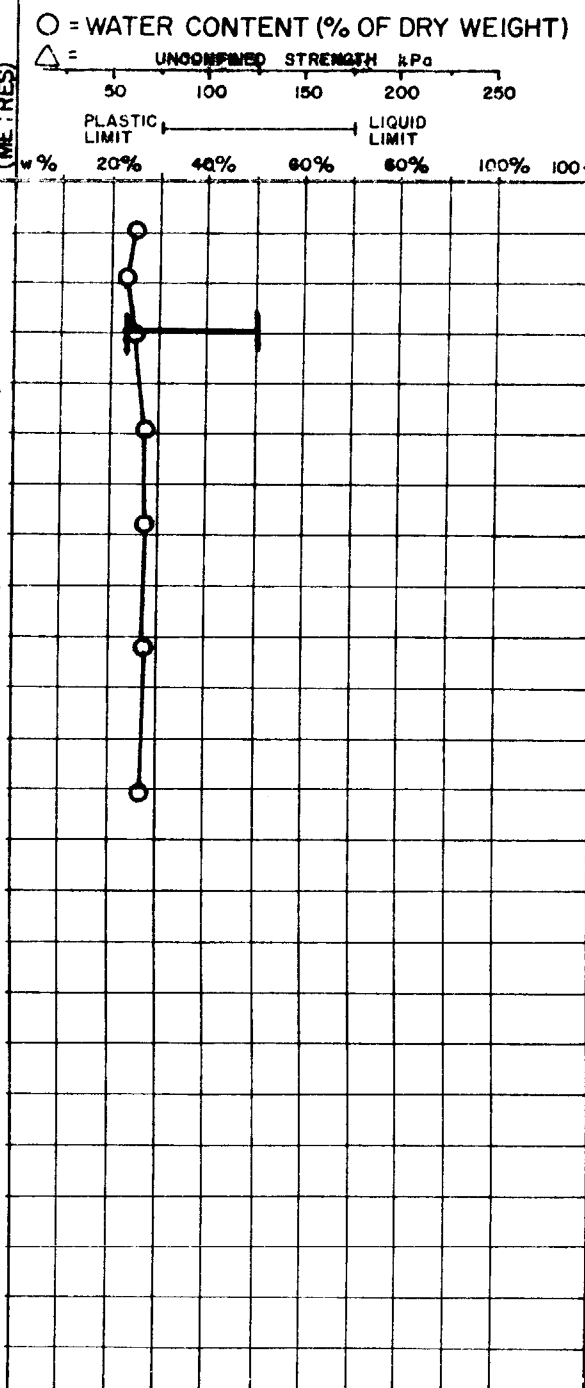
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYSCH	B-50	78/02/04	132		7

CHAINAGE	OFFSET
132+760	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY LOW PLASTIC				-100-		0	0	WET	
4					1					MOIST	
										MOIST	
6	CL				2						
8										MOIST-WET	
10		WET AFTER 2.7 m			3						
12						-100-		0	0	M-W	
14		SAT. AFTER 3.7 m			4						
16					5					WET-SAT	
18											
20		6.1 m			6					WET-SAT.	
22		BOTTOM OF HOLE - 6.1 m			7						
24											
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa

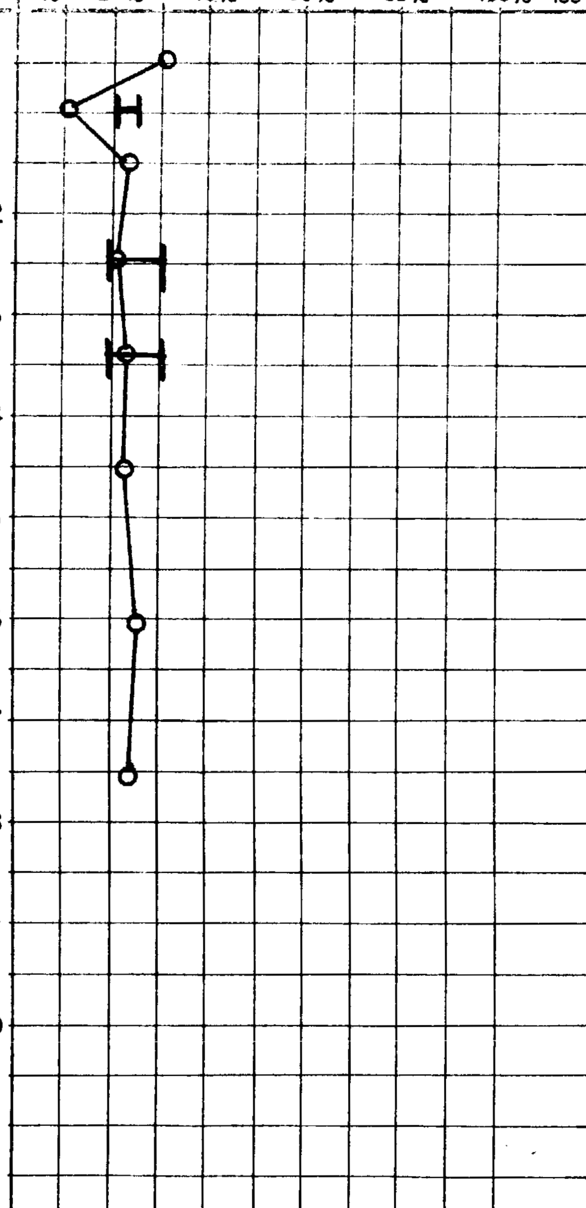


PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/04	133		1

CHAINAGE	OFFSET
133+020	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT



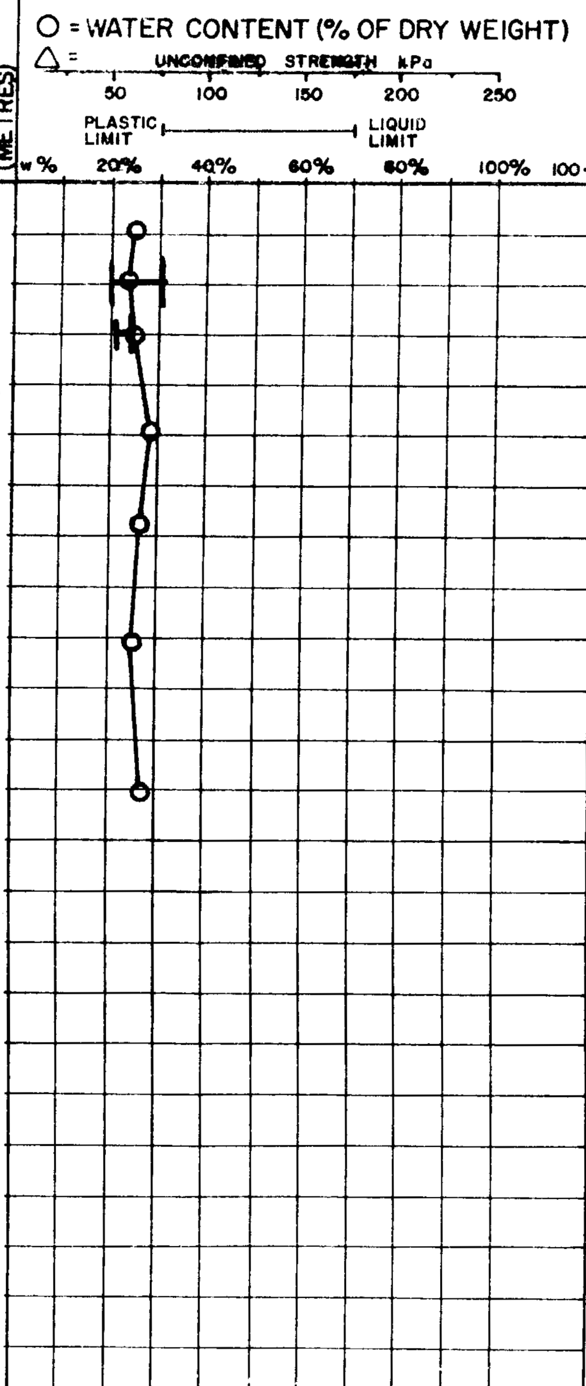
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–5	ML	SILT - CLAYEY							SAT.	
					99.		1	0	DAMP-MOIST	
		1.5m							MOIST	
5–25	CL	CLAY, SILTY - LOW PLASTIC							MOIST	
					100.		0	0	MOIST	
									MOIST-WET	
									WET	
		7.6m			100.		0	0	WET	
26		BOTTOM OF HOLE 7.6m								

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 133	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
133+110	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT - CLAYEY								MOIST	
4		SILT -			1	-96-		4	0	MOIST	
	ML	- CLAYEY								WET	
6		SAT FROM 2m - 3.5m			2						
8		2.4m								WET	
		CLAY - SILTY									
10		- LOW PLASTIC			3						
12										WET	
14	CL	WET			4						
16						-100-		0	0	MOIST-WET	
18					5						
20		GREY - 6.1m			6					WET	
22		BOTTOM OF HOLE 6.1m									
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



PUBLIC WORKS CANADA — DRILL HOLE REPORT

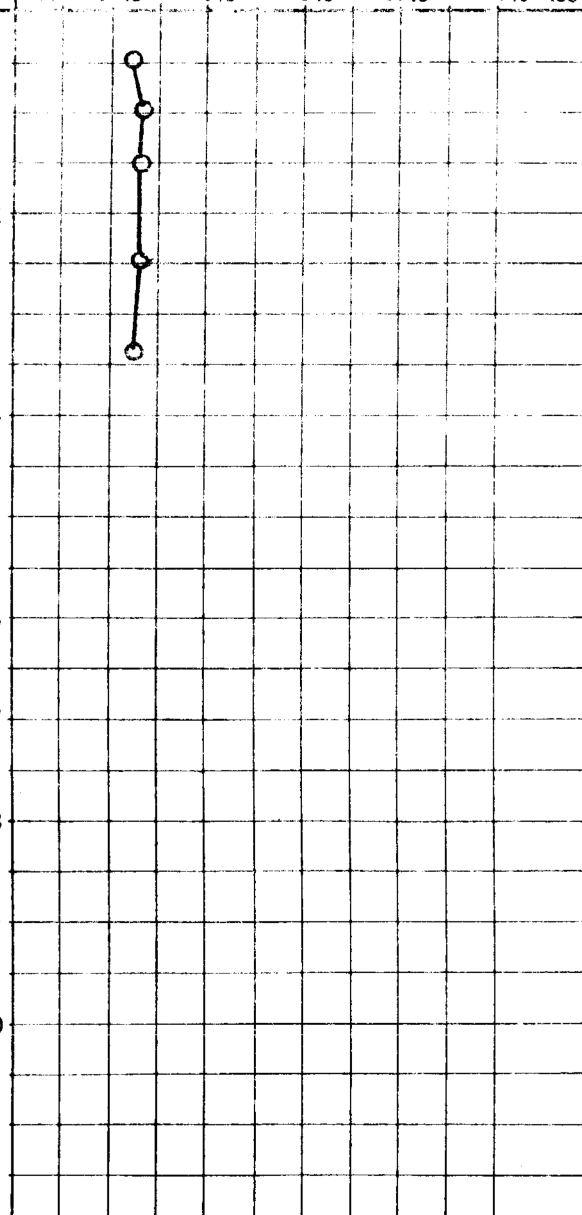
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/03	128		3

CHAINAGE	OFFSET
128+400	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT —— LIQUID LIMIT (0%, 20%, 40%, 60%, 80%, 100%, 100+)

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT-									
2		- CLAYEY								MOIST	
4	ML	SATURATED AFTER .6m			1					WET	
6						-99-		1	0	WET	
8		2.4m			2						
		CLAY, SILTY								WET	
10	CL	- LOW PLASTIC			3						
		3.3m				-99-		1	0	WET	
12		BOTTOM OF HOLE - 3.3m			4						
14											
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

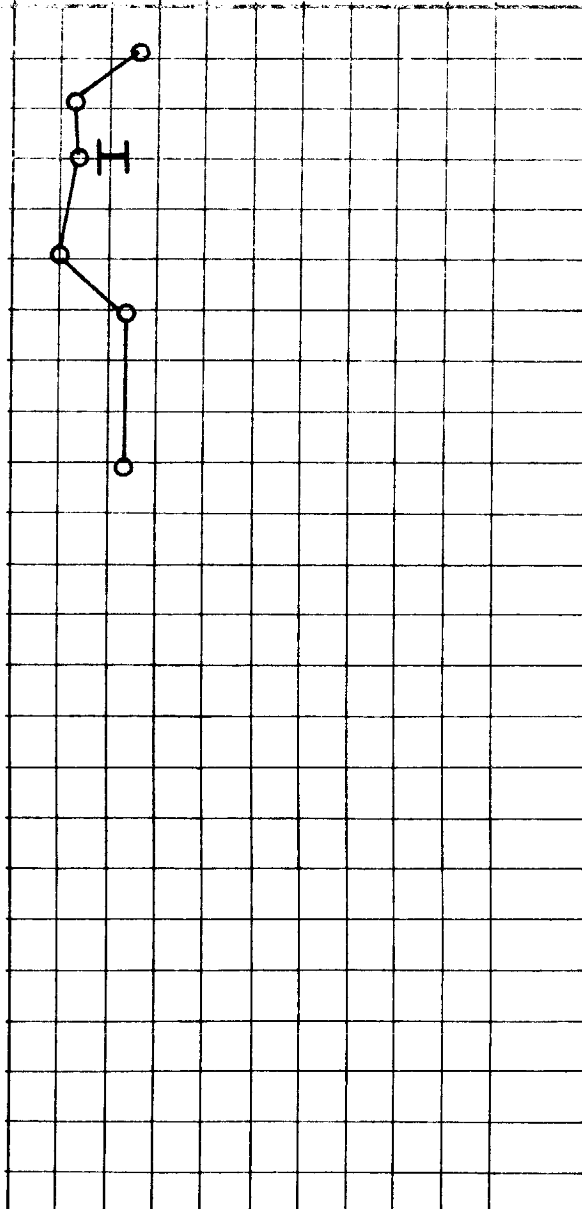
TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 133	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
133+200	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–10	ML	SILT- (to 3.1m)			0–3.1	-96-		4	0	WET, MOIST, MOIST, MOIST, MOIST	
10–15	CL	CLAY - SILTY - LOW PLASTIC (to 4.6m)			3.1–4.6	-100-		0	0	MOIST-WET	

BOTTOM OF HOLE 4.6m

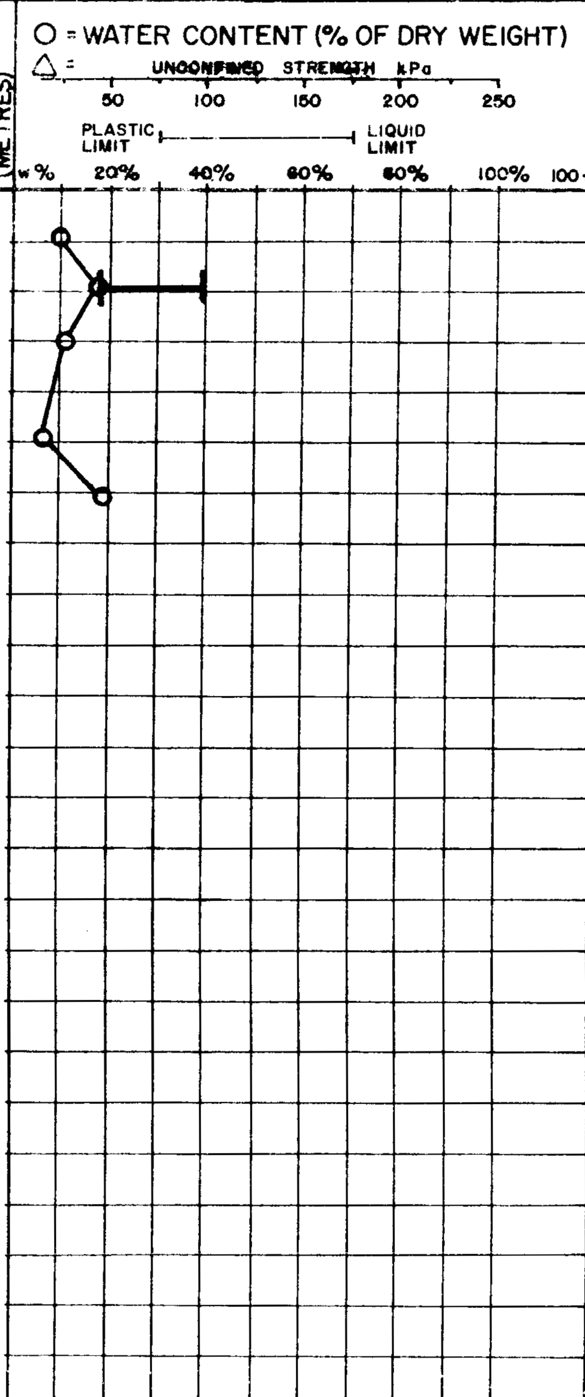
PUBLIC WORKS CANADA	DRILL HOLE REPORT	Liard Hwy.

TECH. Pronych	RIG B-50	DATE 78/02/04	km 133	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
133+360	℄

Unified Soil Symbol	Soil Description	Penetration Resistance	Ice Description	Clay %	Silt %	Sand %	Gravel %	Relative Moisture Content
ML	Silt -							Damp
CL	Clay - Silty			-100-		0	0	Damp
ML	Silt - Clay balls							Damp
ML	Silt			-100-		0	0	Damp
CL	Clay - Silty 3.1m							Damp
	Bottom of Hole - 3.1m							

REMARKS



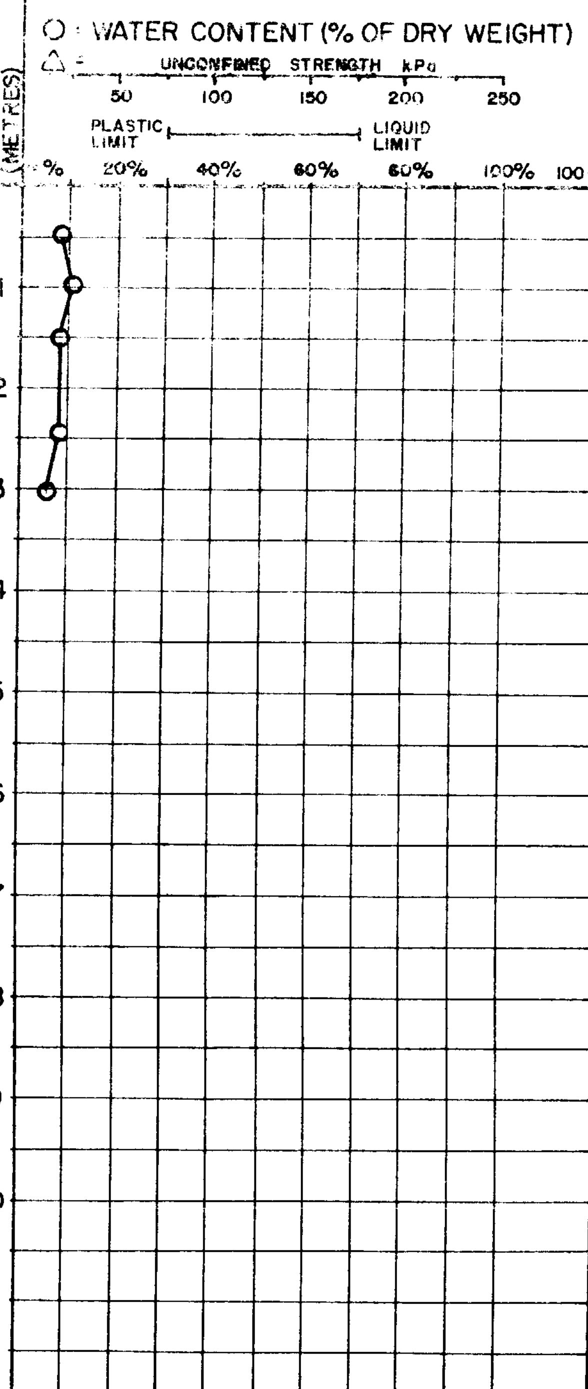
PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 133	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
133+600	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
		SILT -								DAMP
	ML				1	-	99	1	0	DAMP
										DAMP
10		3.1m			3	-	94	6	0	DAMP
										DAMP
		BOTTOM of HOLE - 3.1m								



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/09	133		6

CHAINAGE	OFFSET
133+780	℄

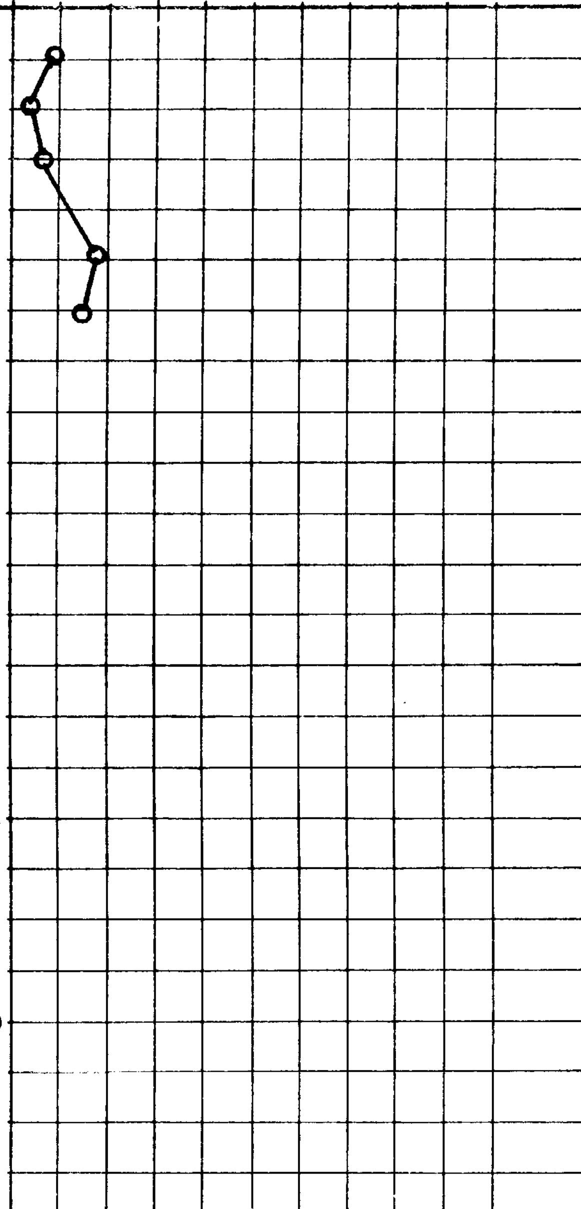
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT-				97		3	0	DAMP	
4	ML				1					DAMP	
6										DAMP	
8		2.4 m			2	100		0	0	DAMP	
8–10	CL	CLAY - SILTY LOW PLASTIC									
10		3.1 m			3					MOIST	
12		BOTTOM OF HOLE - 3.1 m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



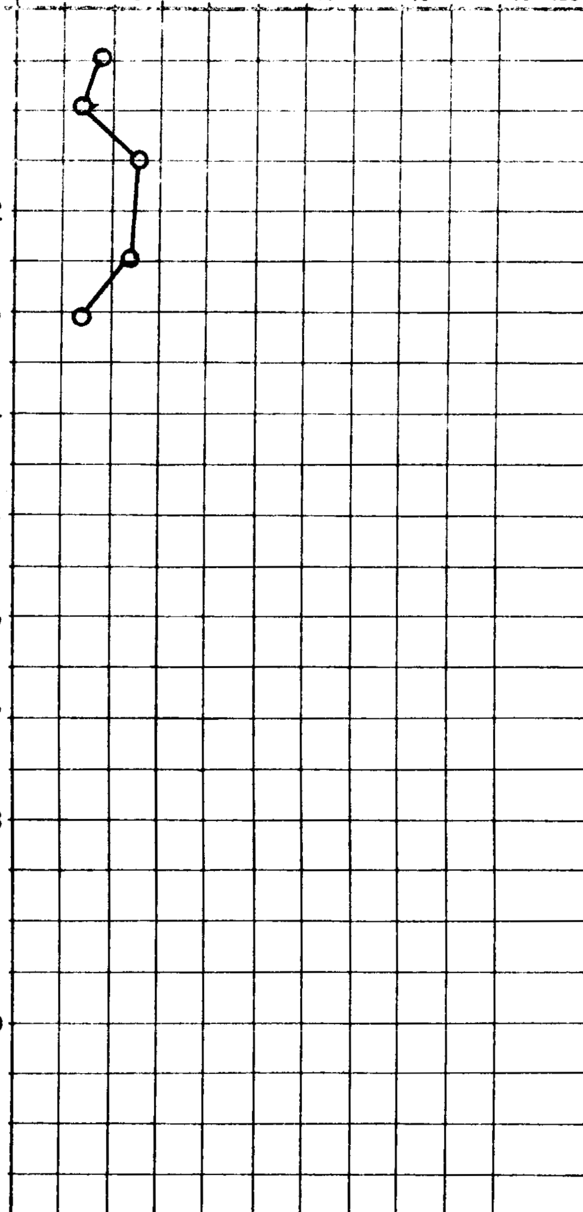
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Liard Hwy.

TECH. Pronych | RIG B-50 | DATE 78|02|04 | km 134 | B.P. No. | HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY - SILTY				-	99	1	0	Moist	
2	ML	SILT -			1					Damp-Moist	
4	CL	CLAY - SILTY								Damp-Moist	
6	ML CL	SILT CLAYEY - CLAY SILTY			2						
8						-	100	0	0	Moist-Wet	
10	ML	SILT 3.1m			3					Moist	
12		Bottom of Hole - 3.1m									

CHAINAGE: 134+100 | OFFSET: ℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
0% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

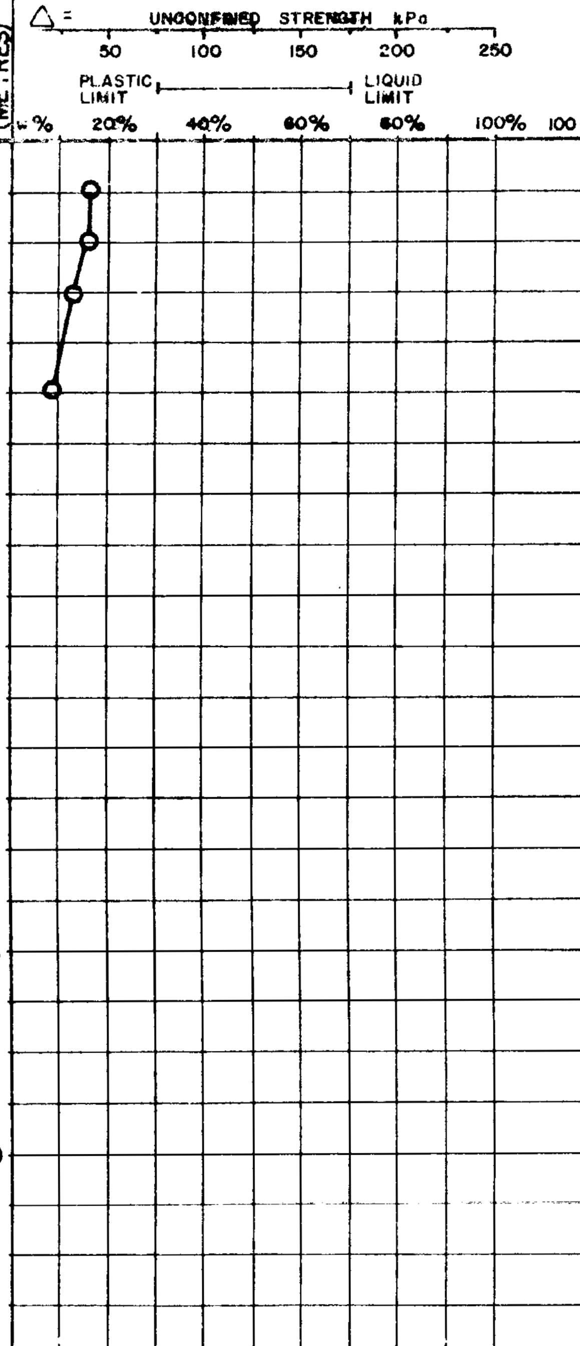
TECH. PRONYSCH	RIG B-50	DATE 78/02/04	km 134	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
134+250	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT-									
2	ML									DAMP	
4					1	-	96-	4	0	DAMP	
6										DAMP-MOIST	
		-CLAYEY			2						
8										MOIST	
10	CL	CLAY- SILTY 3.1m			3	-	96-	4	0	DAMP-MOIST	
12		Bottom of Hole- 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



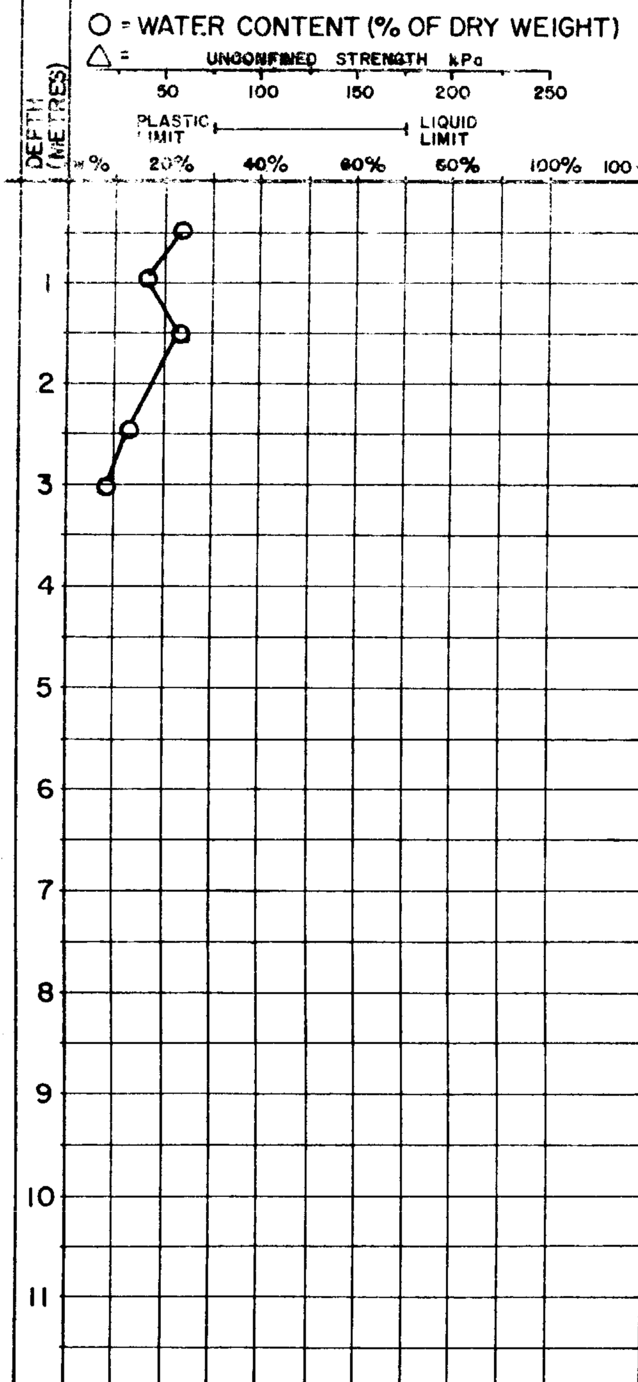
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYCH | RIG B-50 | DATE 78/02/04 | km 134 | B.P. No. | HOLE No. 3

CHAINAGE: 134+530 | OFFSET: ℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	CL	CLAY - SILTY			98		2	0	MOIST	
2–4	ML	SILT - CLAYEY							DAMP	
4–6	CL	CLAY - SILTY							MOIST	
8	ML	SILT - SANDY			73		27	0	MOIST	
10	SM	SAND - SILTY 3.1 m			46		54	0	MOIST	

BOTTOM OF HOLE - 3.1 m

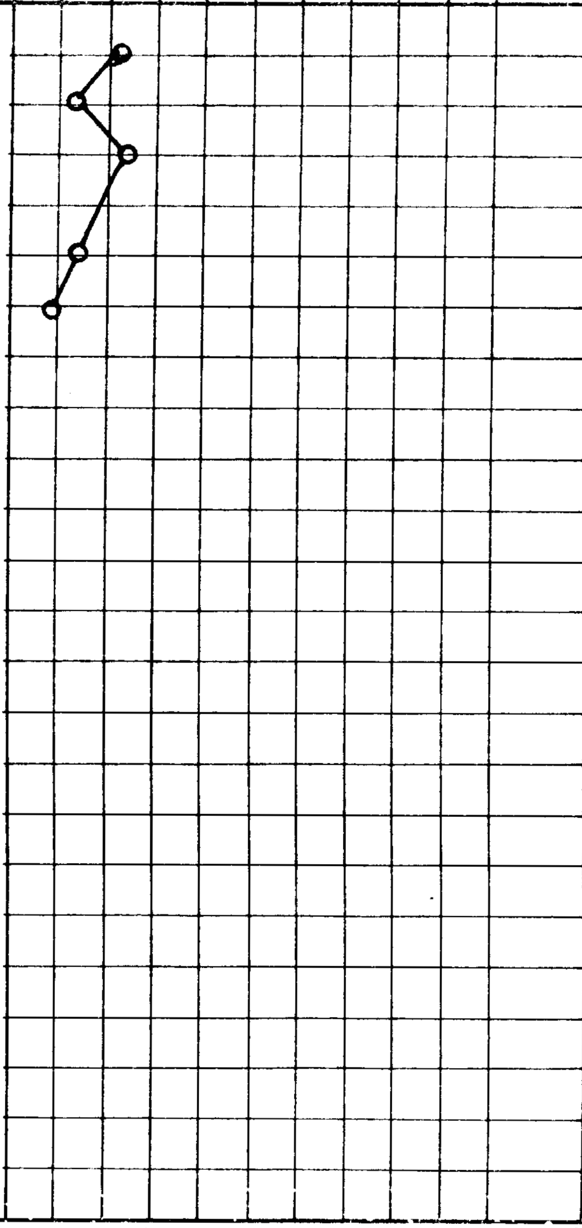


PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD Hwy.

TECH. PRONYCH | RIG B-50 | DATE 78/02/04 | km 134 | B.P. No. | HOLE No. 4

CHAINAGE: 134+800 | OFFSET: ℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY - SILTY									
2	ML	SILT - CLAYEY SANDY								MOIST	
4					1	-	86	14	0	MOIST	
	CL	CLAY - SILTY				-	100	0	0	MOIST-WET	
6					2						
8	ML	SILT - SANDY								MOIST	
10		3.1m			3	-	71	29	0	MOIST	
12		BOTTOM OF HOLE 3.1m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

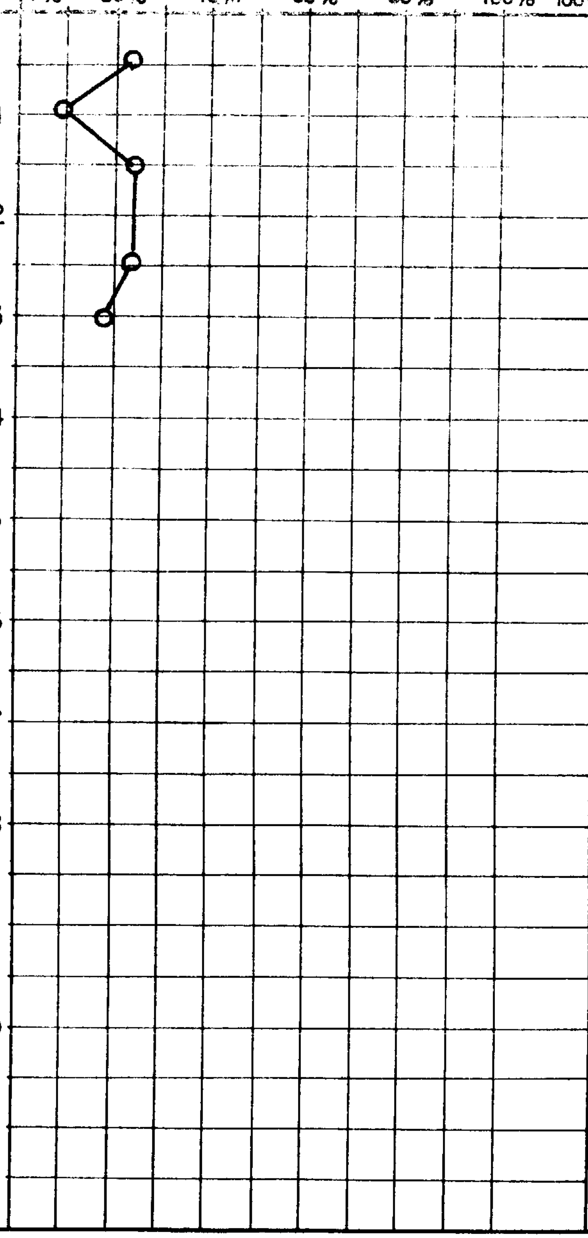
TECH. PRONYCH | RIG B-50 | DATE 78/02/04 | km 134 | B.P. No. | HOLE No. 5

CHAINAGE	OFFSET
134+920	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION		PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY - SILTY +PL										
2	CI	LOW-MED. PLASTIC	.6 m				98		2	0	DAMP-MOIST	
4		SILT - CLAYEY				1					DAMP	
6	ML						99		1	0	MOIST	
8						2						
			2.7 m								WET	
10	SM	SAND - SILTY	3.1 m			3	47		53	0	MOIST-WET	
12		BOTTOM OF HOLE. 3.1 m										
14						4						
16						5						
18												
20						6						
22						7						
24												
26						8						
28												
30						9						
32												
34						10						
36						11						
38												

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

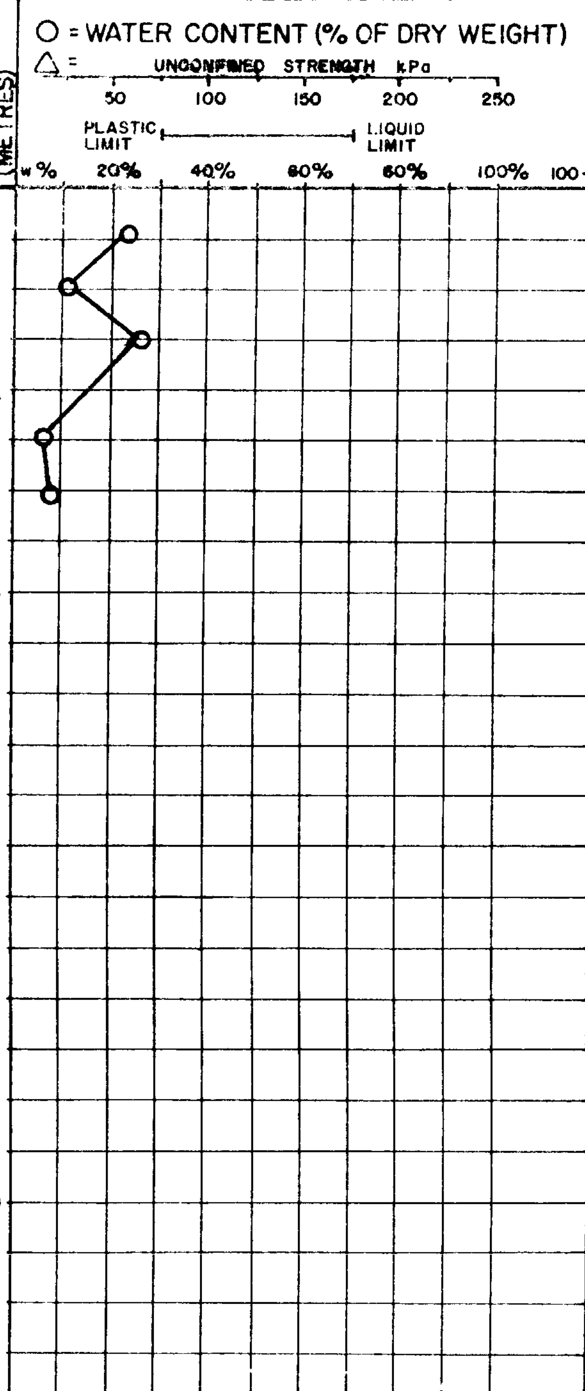
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	B-50	78/02/04	135		1

CHAINAGE	OFFSET
135+070	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CI	CLAY - SILTY, MED. PLASTIC .6m								DAMP-MOIST	
2	ML	SILT - CLAYEY SANDY			1		84	16	0	D-M	
4										MOIST	
6		SANDY			2						
8							58	42	0	MOIST	
10	ML	SILT - 3.1m			3		93	7	0	MOIST	
12		BOTTOM OF HOLE - 3.1m									

DEPTH (FEET): 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 4, 5, 6, 7, 8, 9, 10, 11

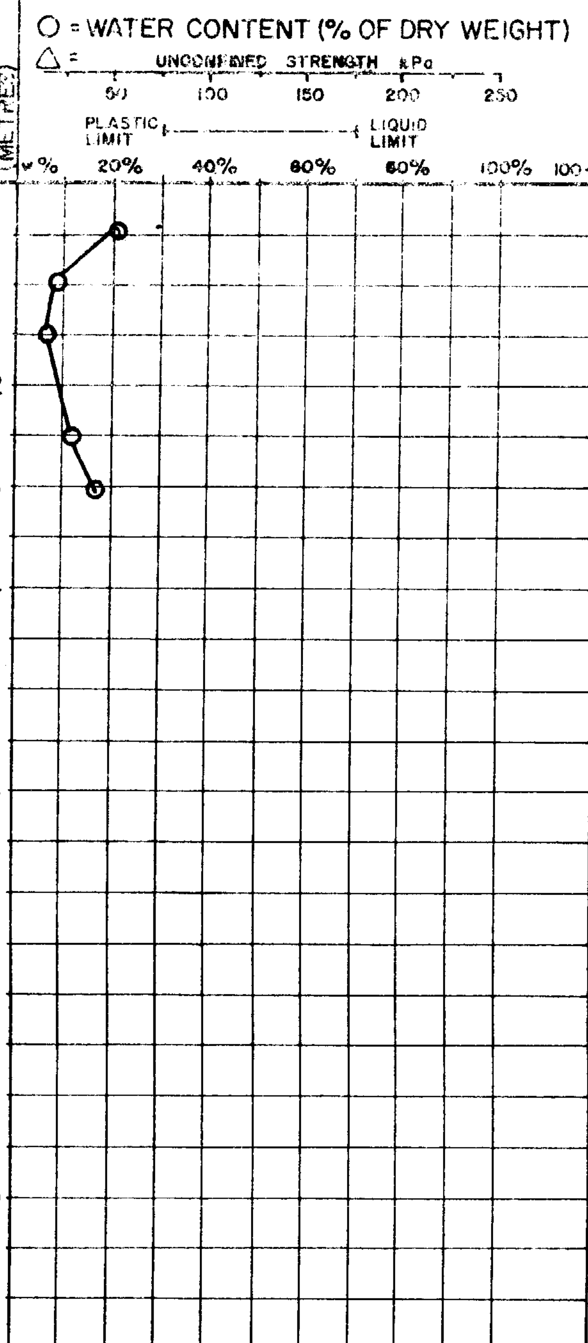


PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/04	135		2

CHAINAGE	OFFSET
135+260	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT -								SAT.	
		- SANDY			1	-	84	16	0	DAMP-MOIST	
	ML	SILT -								D-M	
						-	91	9	0	D-M	
10		3.1m			3					D-M	
		BOTTOM OF HOLE - 3.1m									



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/04	135		3

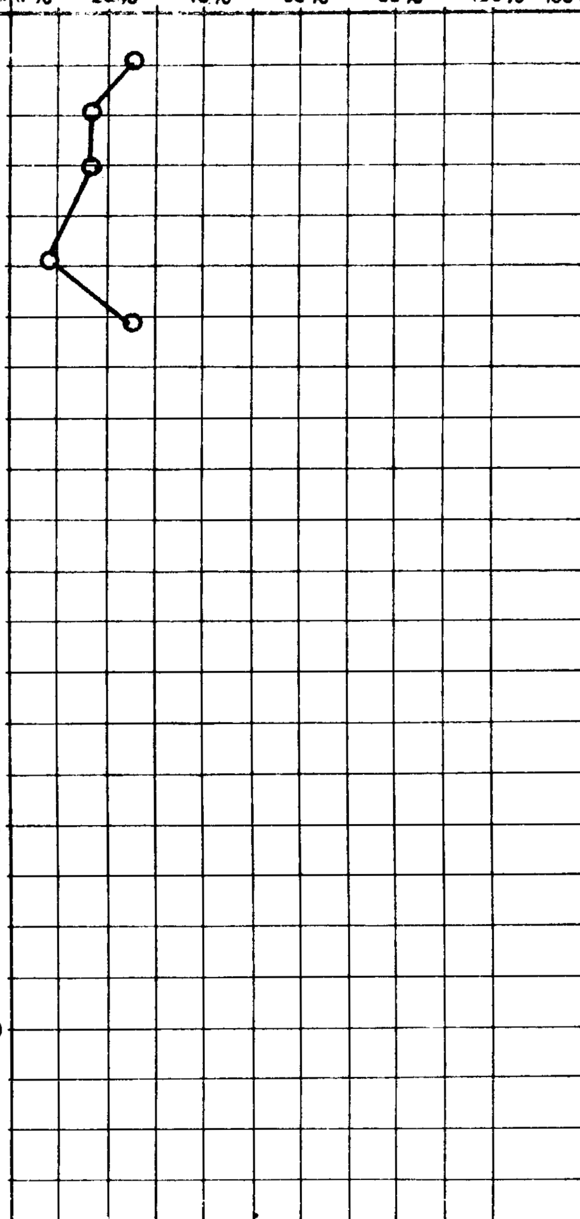
CHAINAGE	OFFSET
135+470	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

0% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–3	CL	CLAY - SILTY, LOW PLASTIC			0.4					MOIST-WET	
					1.0	96		4	0	DAMP	
					1.5					DAMP	
8	ML	SILT - SANDY			2.4	74		26	0	MOIST	
10	CL	CLAY - SILTY — 3.1 m			3.0					MOIST-WET	
12		BOTTOM of HOLE - 3.1 m									

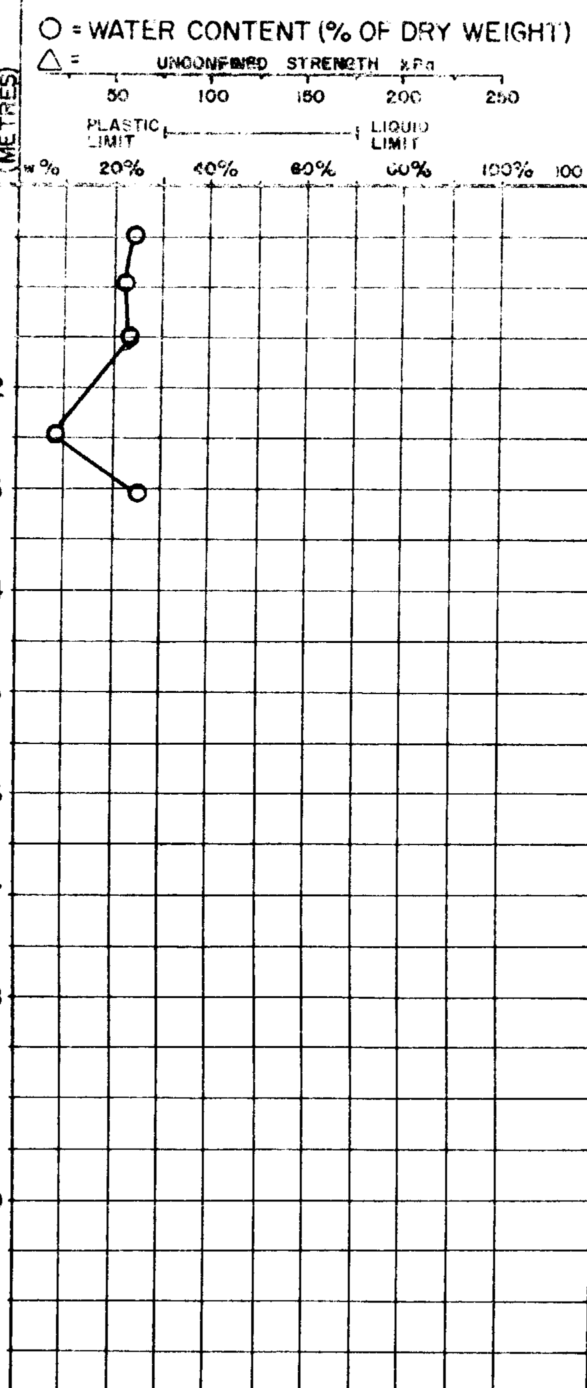
PUBLIC WORKS CANADA — DRILL HOLE REPORT

Liard Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	B-50	78/02/04	135		4

CHAINAGE	OFFSET
135+750	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	Silt - .5m								Wet	
2–4	CL	Clay - Silty Sandy Low Plastic			1	90	10	0		Moist	
										Moist	
6–8	SM ML	2.1m Sand Silty - Silt Sandy			2.5	57	43	0		Moist	
10	CI	Clay - Silty 3.1m			3	99	1	0		Moist	
		Bottom of Hole - 3.1m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. PRONYCH | RIG B-50 | DATE 78/02/04 | km 135 | B.P. No. | HOLE No. 5

CHAINAGE: 135+870 | OFFSET: ℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		CLAY - SILTY				98		2	0	SAT.	
		- SILTY SANDY			1					DAMP-MOIST	
4	CL	LOW PLASTIC				86		14	0	MOIST	
8		2.4m			2						
	ML	SILT - SANDY								DAMP-MOIST	
10	SM	SAND - SILTY 3.1m			3	38		62	0	D-M	
		BOTTOM OF HOLE - 3.1m									

Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

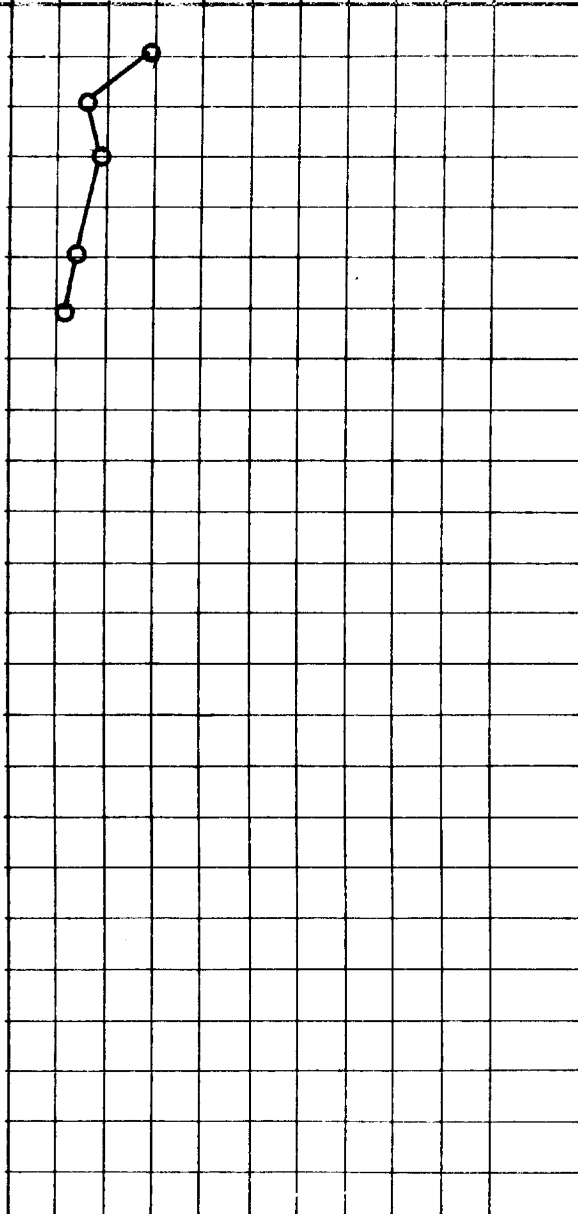
Depth (metres) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa — 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



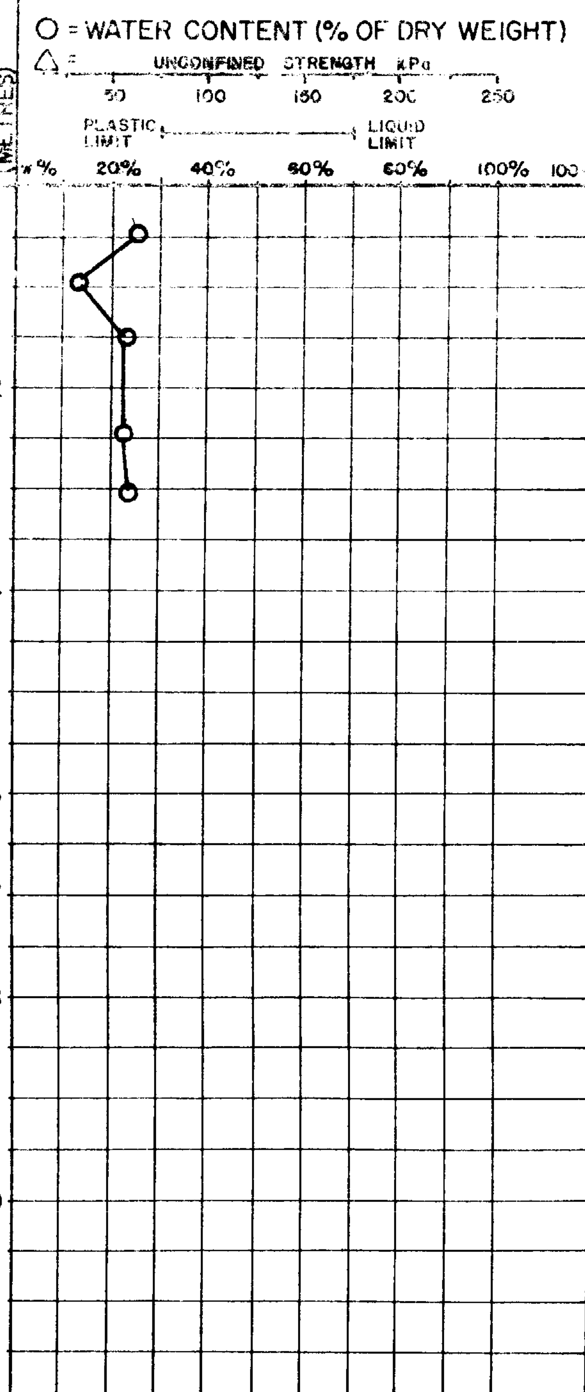
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/04	136		1

CHAINAGE	OFFSET
136+260	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2		SILT - SANDY								WET	
4	ML	SAT. AFTER 1.2m ?			1	-	58	42	0	MOIST	
6										MOIST-WET	
8					2	-	73	27	0	M-W	
10		3.1m			3					WET	
12		BOTTOM OF HOLE - 3.1m									



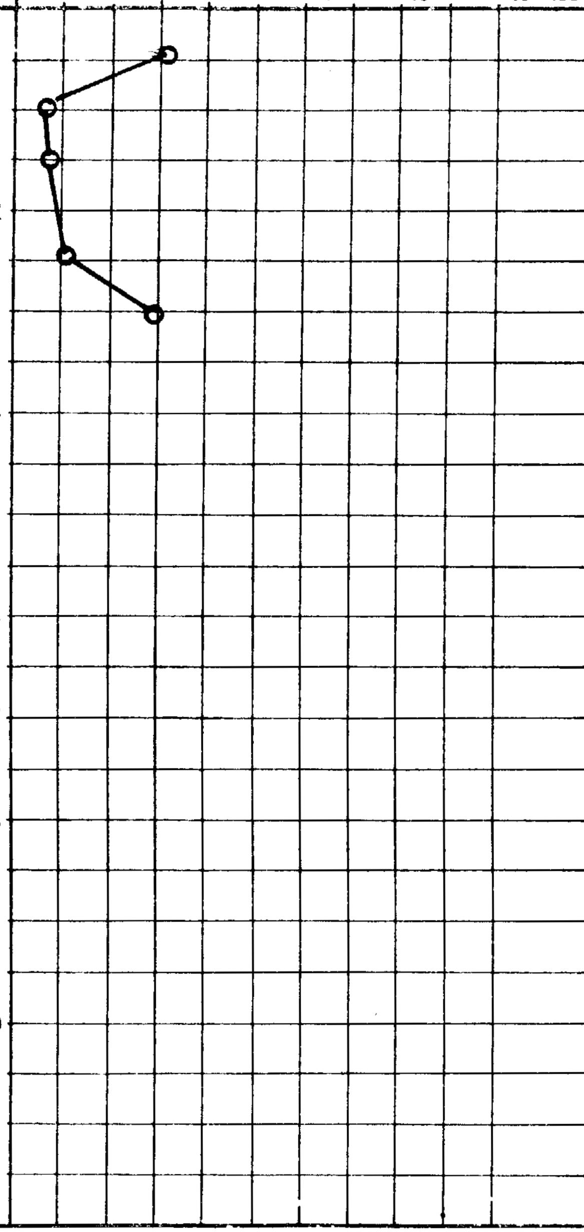
PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	B-50	78/02/04	136-		2

CHAINAGE	OFFSET
136+510	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY- SILTY									
2		.5m				98-		2	0	SAT.	
	SM	SAND-SILT MIXTURE									
4	ML				1	51-		49	0	MOIST	
		1.5m								MOIST	
6	ML	SILT - SANDY			2						
8	SM	SAT. AFTER 2.7 m				70-		30	0	MOIST	
10		3.1m			3					SAT.	
12		Bottom of Hole. 3.1m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYSCH	RIG B-50	DATE 78/02/04	km 136	B.P. No.	HOLE No. 3

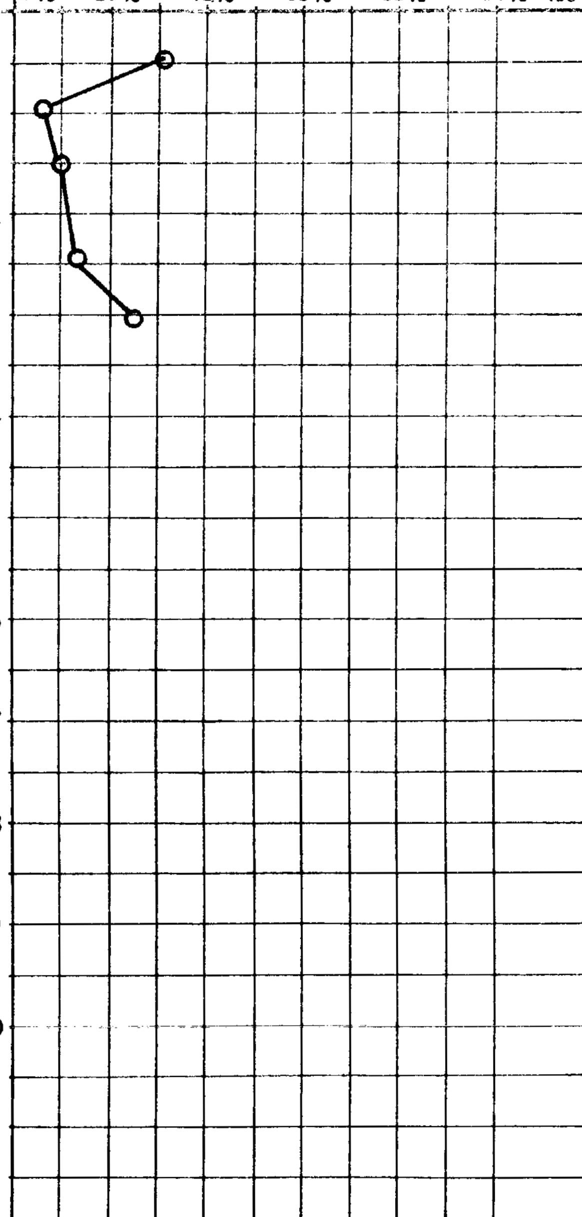
CHAINAGE	OFFSET
136+610	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
		SILT - CLAYEY								
2		- SANDY								MOIST
4					1		53	47	0	MOIST
6	ML									MOIST
8					2		79	21	0	MOIST
10		SILT - 3.1 m			3					WET
12		BOTTOM OF HOLE 3.1 m								
14					4					
16					5					
18										
20					6					
22										
24					7					
26										
28					8					
30					9					
32										
34					10					
36					11					
38										

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT |———| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

GRAIN-SIZE ANALYSIS



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

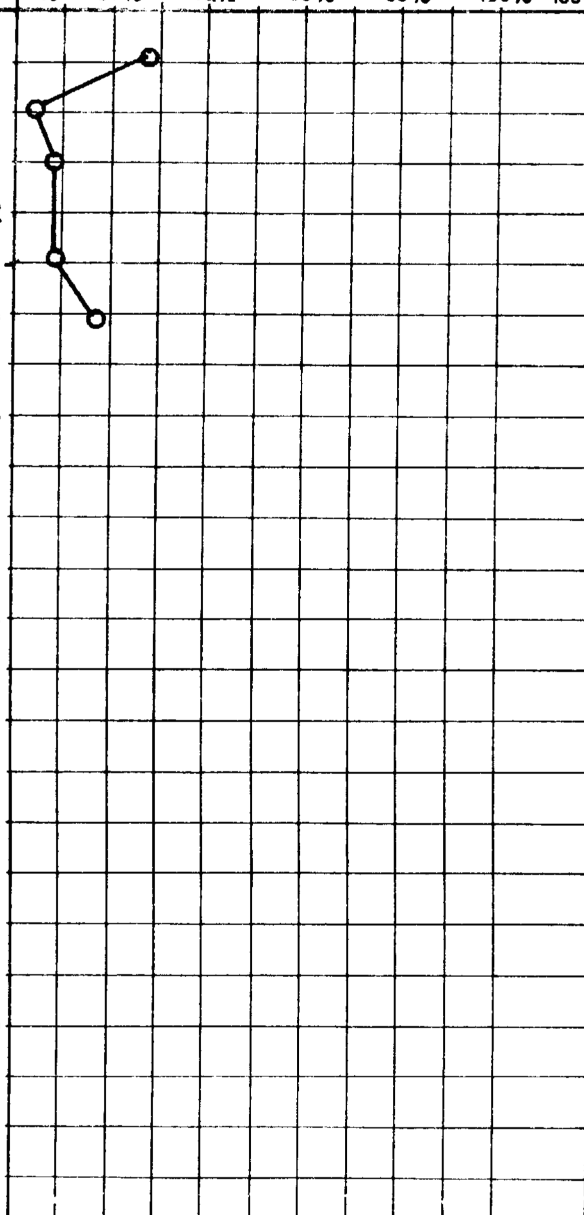
TECH. Pronych	RIG B-50	DATE 78/02/09	km 136	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
136+810	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CI	CLAY - SILTY									
2		.5 m			0.5					MOIST	
		SILT - SANDY									
4					1	-	58	42	0	DAMP	
6	ML				1.5	-	82	18	0	DAMP	
8					2.5	-	75	25	0	DAMP	
10		SILT - 3.1 m			3	-	93	7	0	DAMP	
12		BOTTOM OF HOLE - 3.1 m									

PUBLIC WORKS CANADA — **DRILL HOLE REPORT** — LIARD Hwy.

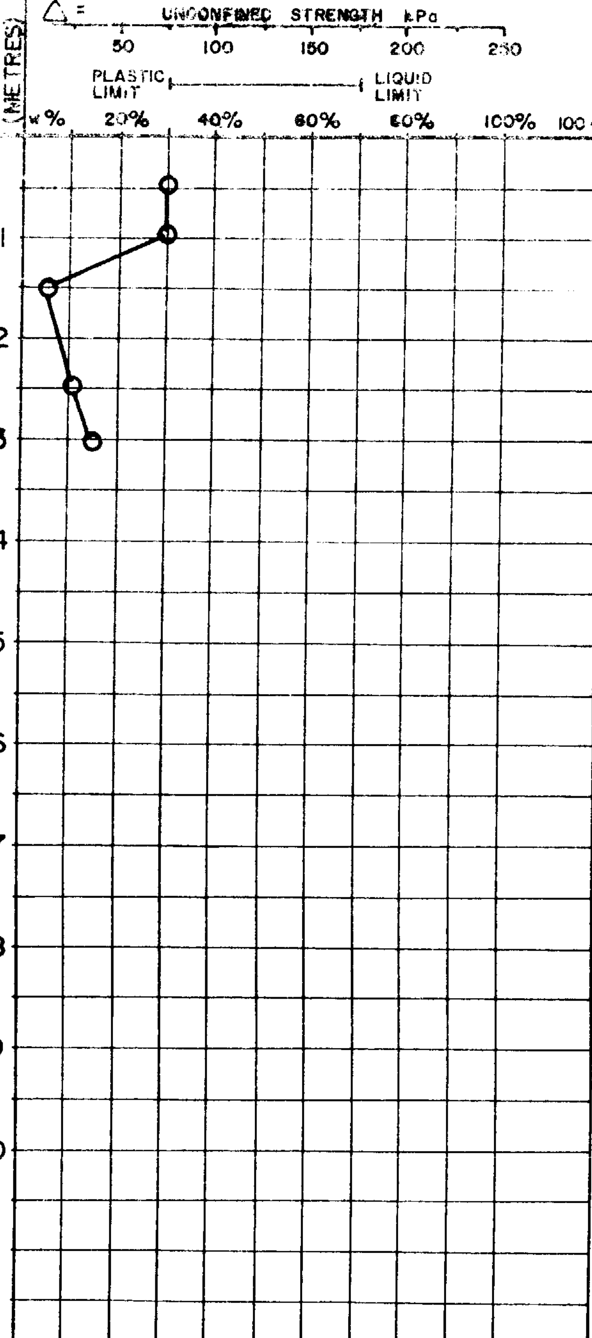
TECH. WEBBER	RIG B-50	DATE 78/02/05	km 136	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
136+920	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–5	CL	CLAY - SILTY, LOW PLASTIC		FROZEN	0.5					WET	
					1	98		2	0	WET	
		1.5m			1.5					DAMP	
5–10	ML	SILT - SANDY			2.5	82		18	0	DAMP	
		3.1m			3					DAMP-MOIST	
12		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/04	137		1

CHAINAGE	OFFSET
137+590	℄

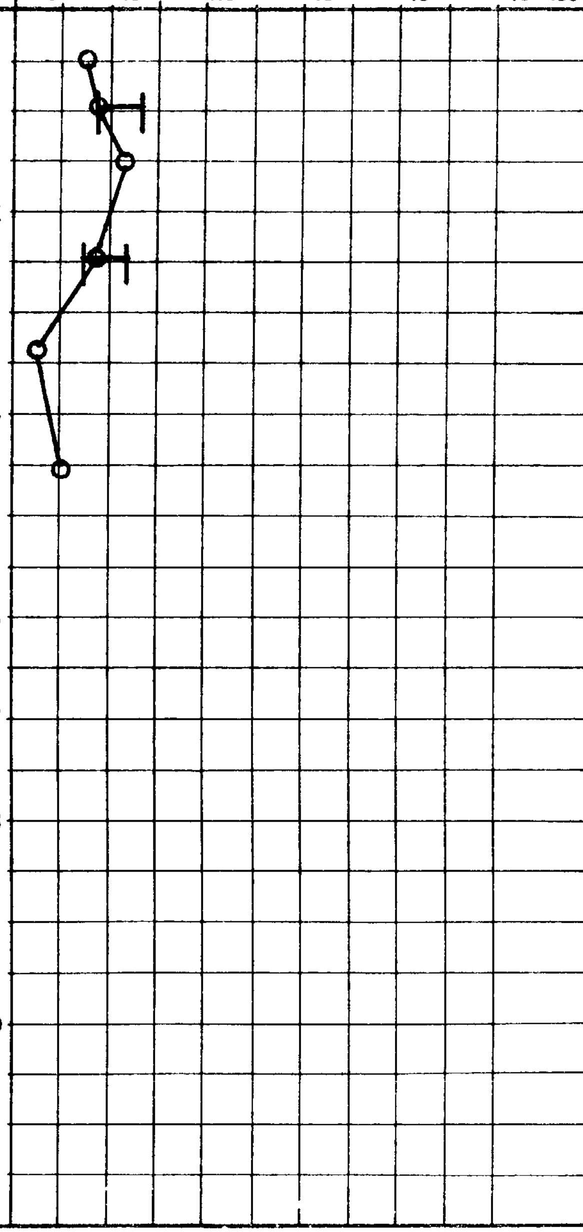
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT. .5m									
2–4	CL CI	CLAY - SILTY LOW - MED. PLASTIC				100		0	0	DAMP	
					1					DAMP	
						95		5	0	MOIST	
										DAMP-MOIST	
10		3.3m									
12	SM	SAND - SILTY FINE				33		67	0	DAMP	
14	ML	SILT - SANDY 4.6m				56		44	0	DAMP-MOIST	
		BOTTOM OF HOLE. 4.6m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

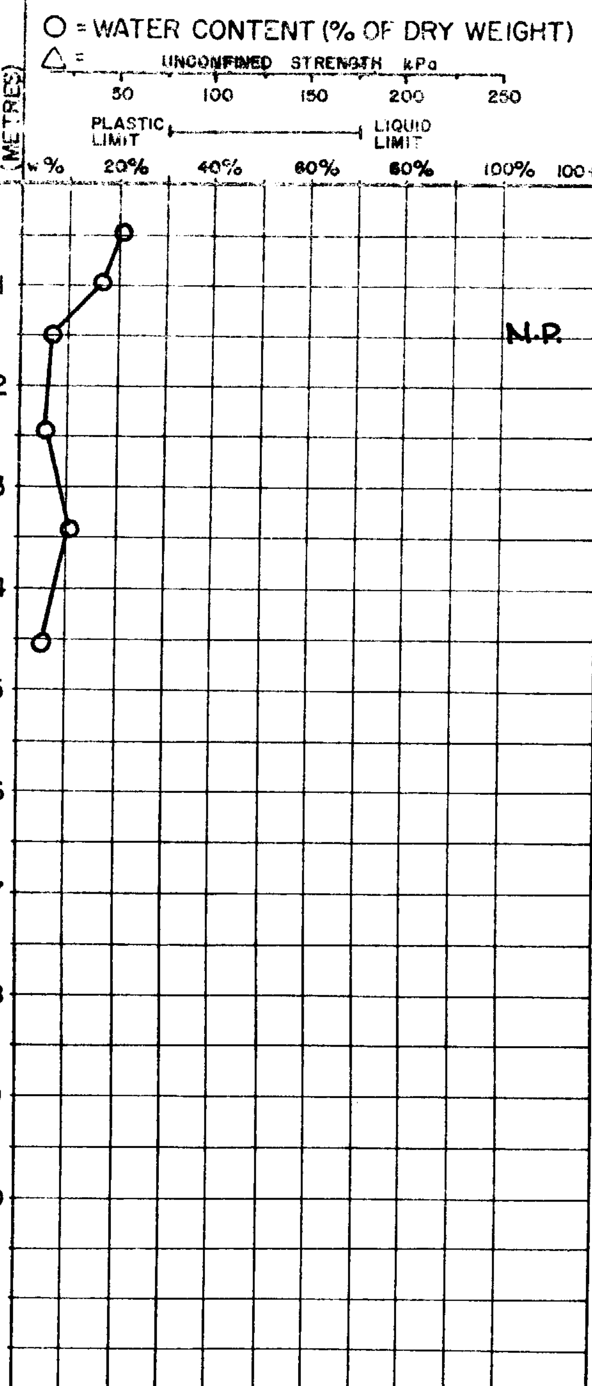
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/04	km 137	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
137+680	E

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	CL	CLAY - SILTY LOW - MED. PLASTIC									DAMP	
4	CI				1			94	6	0	DAMP	
		1.5m				N.P.					DAMP	
6	ML	SILT - SANDY			2							
8		2.4m						29	71	0	DAMP-MOIST	
10		SAND - SILTY			3							
12	SM							45	55	0	MOIST	
14		4.6m			4			20	80	0	DAMP-MOIST	
16		BOTTOM OF HOLE - 4.6m			5							
18												
20					6							
22												
24					7							
26												
28					8							
30					9							
32												
34					10							
36					11							
38												



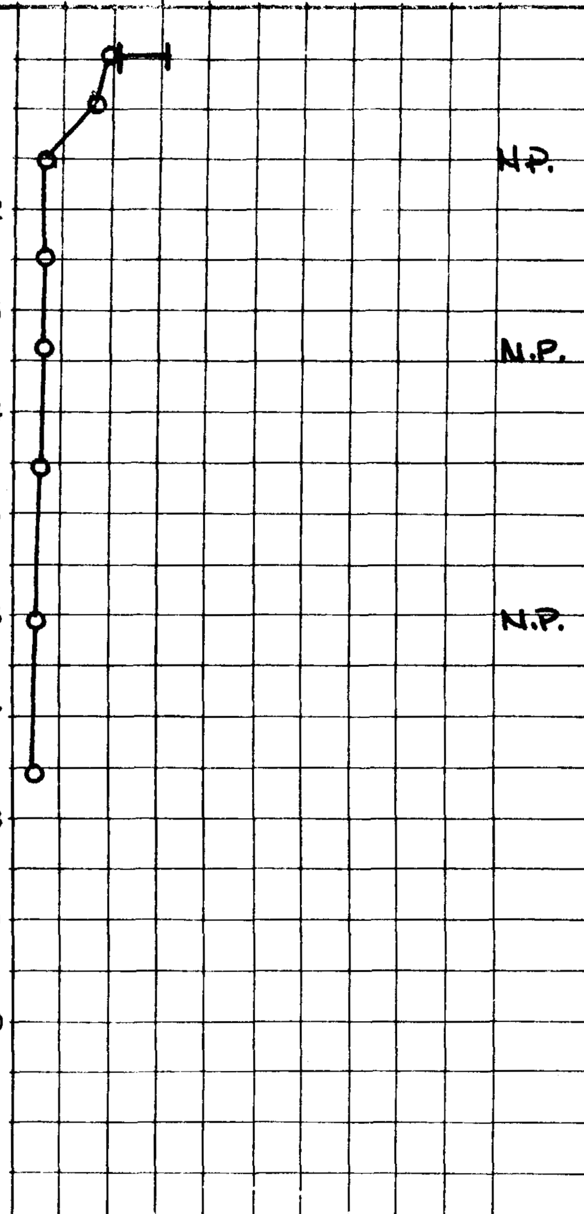
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/05	137		3

CHAINAGE	OFFSET
137+780	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)		CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		CLAY - SILTY									DAMP	
					1		93-		7	0	DAMP	
4		1.2m										
	ML	SILT - SANDY				N.P.					DAMP	
8		2.4m										
		SAND - SILTY					24-		76	0	DAMP	
						N.P.	25-		75	0	DAMP	
	SM						28-		72	0	DAMP	
					6	N.P.	10-		90	0	DAMP	
		7.6m					10-		90	0	DAMP	
		BOTTOM OF HOLE - 7.6m										

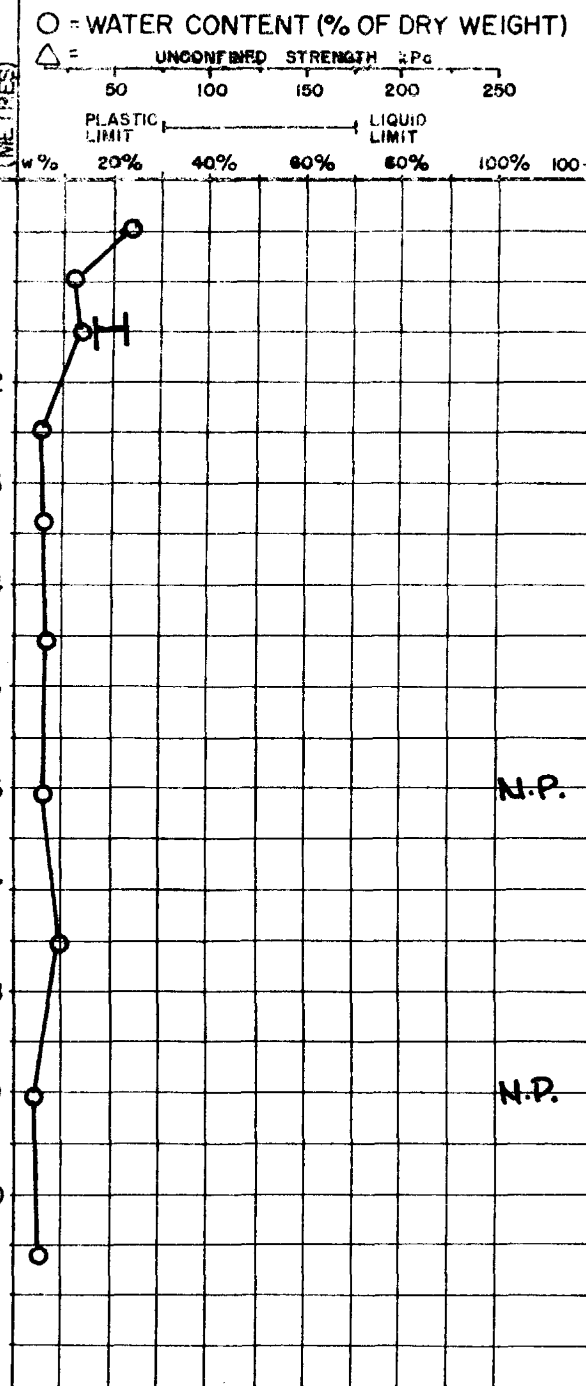
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/05	137		4

CHAINAGE	OFFSET
137+870	℄

REMARKS

Depth (metres)	Unified Soil Symbol	Soil Description	Plasticity	Clay %	Silt %	Sand %	Gravel %	Relative Moisture Content
0–2.4 m	CL - CI	CLAY - SILTY LOW - MED. PLASTIC						
~0.5								DAMP-MOIST
1				-77-		23	0	DAMP
1.5								DAMP
2.4 m								
2.4–10.7 m	SM	SAND - SILTY WET - FREE WATER ? (LOG BOOK)						
2.5								DAMP
3.4				-22-		78	0	DAMP-MOIST
4.5								D-M
6			N.P.	-32-		68	0	D-M
7.5								MOIST
9			N.P.	-13-		87	0	DAMP-MOIST
10.6								D-M
10.7 m		BOTTOM OF HOLE - 10.7m						



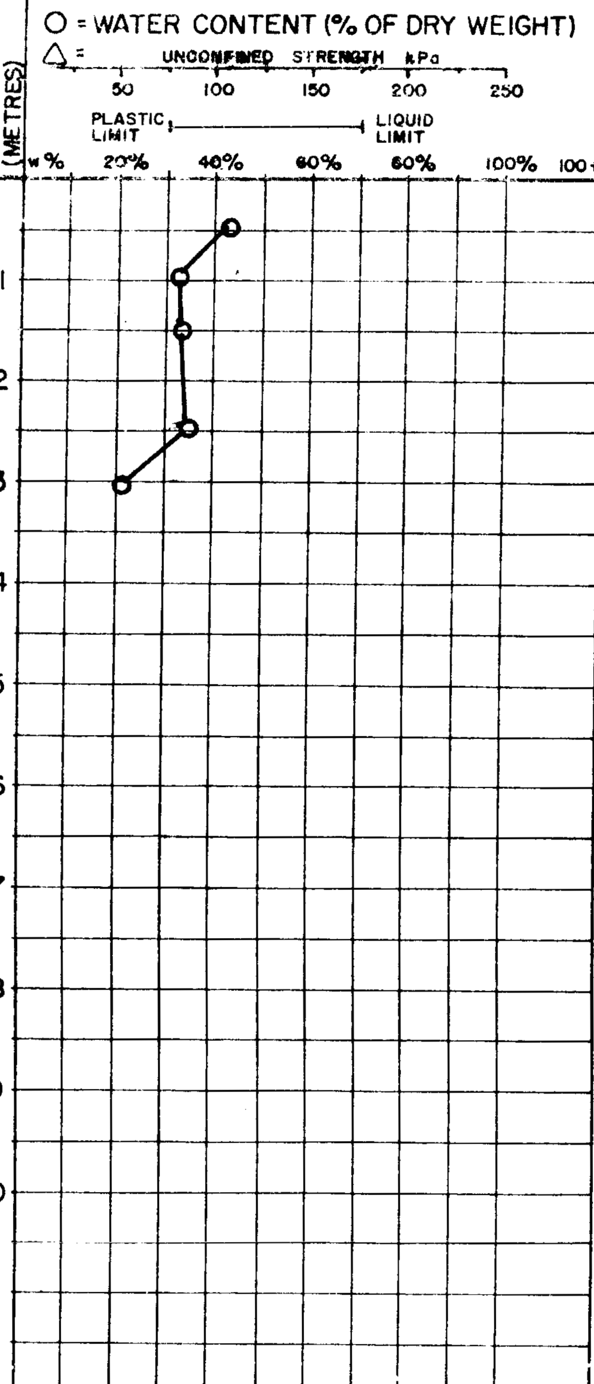
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/05	138		1

CHAINAGE	OFFSET
138+110	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		CLAY - SILTY - ORG.								SAT.	
		- SANDY			1	87	-	13	0	SAT.	
6	CL	Low Plastic		Frozen						SAT.	
						81	-	19	0	Free Water	
10		3.1m			3					SAT.	
		Bottom of Hole - 3.1m									



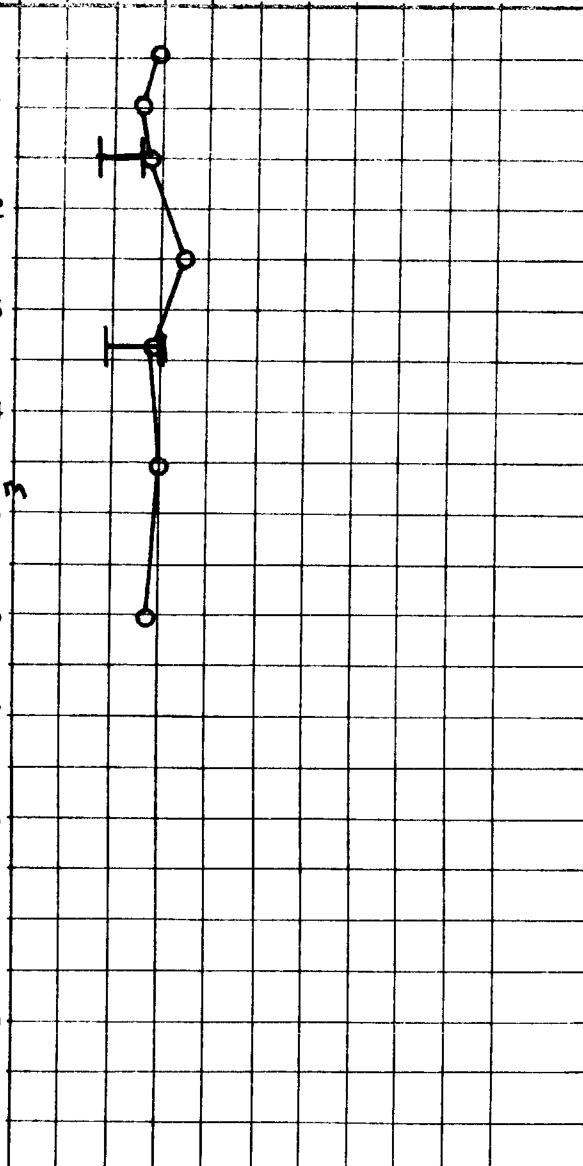
PUBLIC WORKS CANADA — **DRILL HOLE REPORT** — LIARD Hwy

TECH. WEBBER	RIG B-50	DATE 78/02/05	km 138	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
138 + 320 ~~4343~~	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
2	CL	CLAY - SILTY LOW PLASTIC			
4					1
6					2
8				FROZEN	
10					3
12		GREY. MED. PLASTIC			
14	CI				4
16		WET-FREE WATER 5.2m - 6.1m		4.9m	5
18					
20		6.1m			6
22		BOTTOM OF HOLE - 6.1m			
24					7
26					
28					8
30					9
32					
34					10
36					11
38					

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



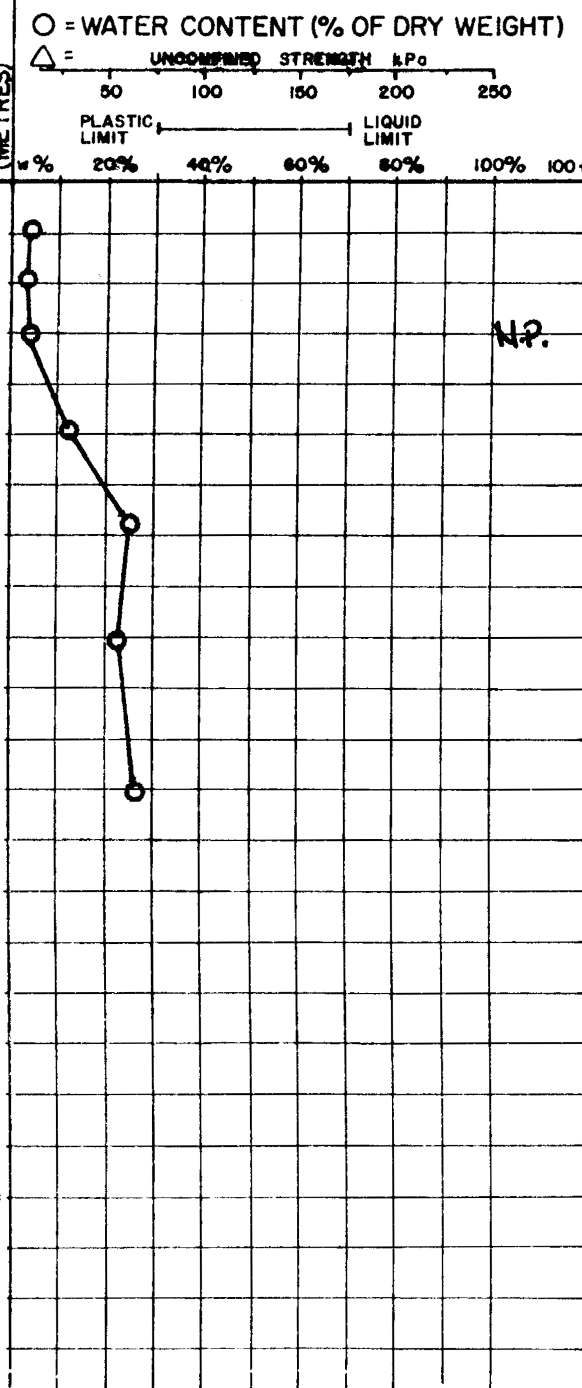
Depth (m, approx.)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0.4					WET-SAT	
1	99		1	0	W-S	
1.5					W-S	
2.5	100		0	0	WET	
3.3					WET	
4.5					WET	
6	99		1	0	WET-SAT.	

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/05	km 138	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
138+450 ~~4547~~	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)		CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	SP	SAND - FINE PEBBLES					- 4 -		88	8	WET	
4		GRAVELLY			1		- 3 -		83	14	WET	
6		PEBBLES - SILTY				N.P.	- 7 -		83	10	WET	
8	SM	2.7m			2		- 41 -		55	4	WET	
10		CLAY - SILTY			3							
12		- LOW PLASTIC									WET	
14		GREY - + PL			4		- 97 -		3	0	MOIST	
16	CL				5							
18											WET-SAT.	
20		6.1m			6							
22		BOTTOM OF HOLE - 6.1m										
24					7							
26					8							
28												
30					9							
32												
34					10							
36					11							
38												



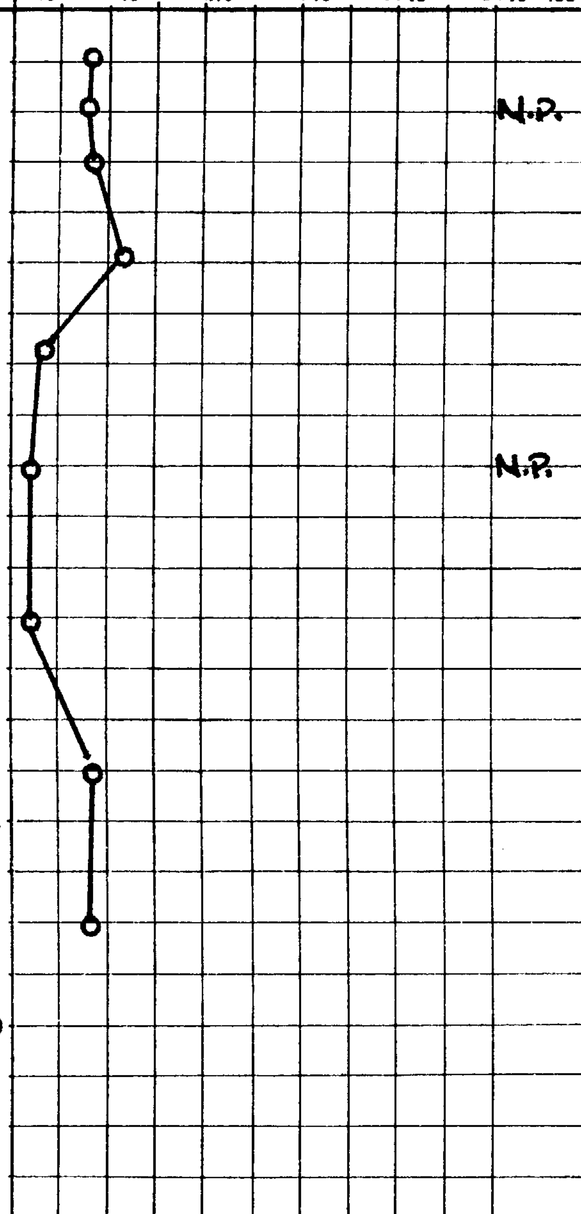
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/05	km 138	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
138+540 ~~4550~~	℄

REMARKS

UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	DEPTH TO BASE
CL	CLAY - SILTY	.5m
ML	SILT - SANDY - CLAYEY	2.4m
SM	SAND - SILTY	7.0m
CL	CLAY - SILTY, LOW PLASTIC + P_L	9.1m
	BOTTOM OF HOLE - 9.1m	



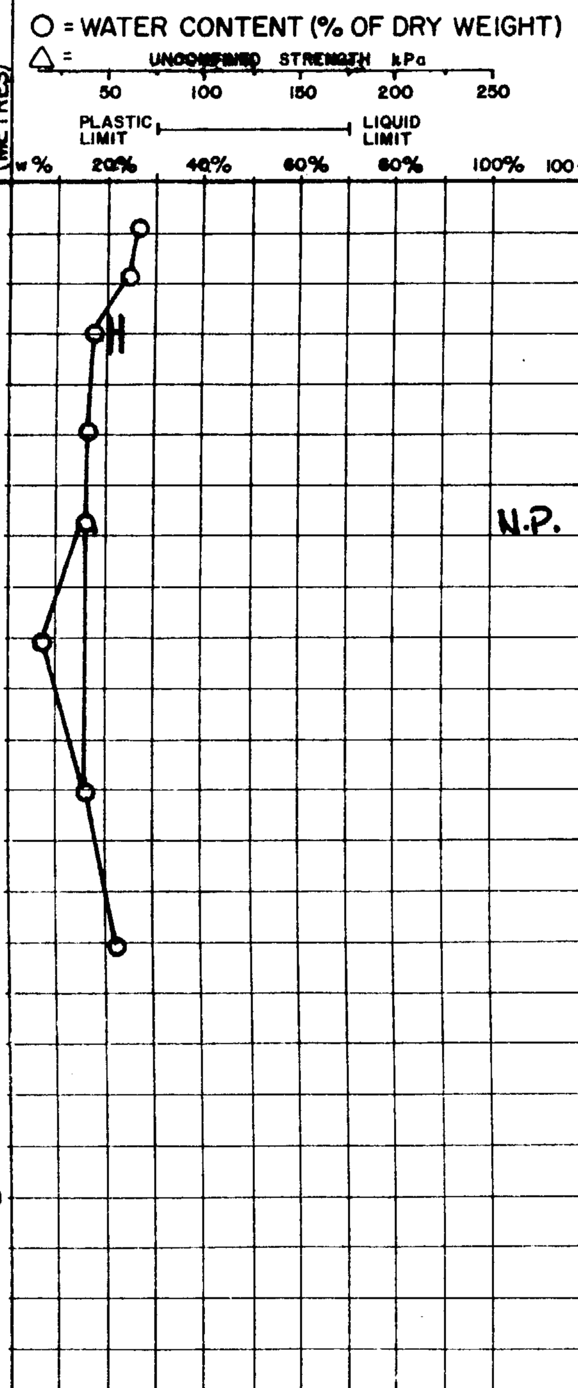
Sample	Grain size: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
					DAMP
N.P.	-	65	35	0	DAMP
					DAMP-MOIST
	-	41	59	0	WET
					MOIST
N.P.	-	9	91	0	MOIST
	-	11	89	0	MOIST
					WET
	-	59	41	0	WET

DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

PENETRATION RESISTANCE | ICE DESCRIPTION

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.			
TECH. WEBBER	RIG B-50	DATE 78/02/05	km 138	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
138+700	℄



DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0 – 1.5 m	CL	CLAY. SILTY - SOME ORG. - LOW PLASTIC +PL			98-		2	0	MOIST; MOIST; MOIST-WET	
1.5 m – 4.0 m	ML	SILT-SANDY			81-		19	0	MOIST; MOIST	
4.0 m – 5.8 m	SM	SAND. SILTY			19-		81	0	MOIST	
5.8 m – 7.6 m	CL	CLAY. SILTY SANDY - LOW PLASTIC +PL			71-		29	0	MOIST-WET; WET	

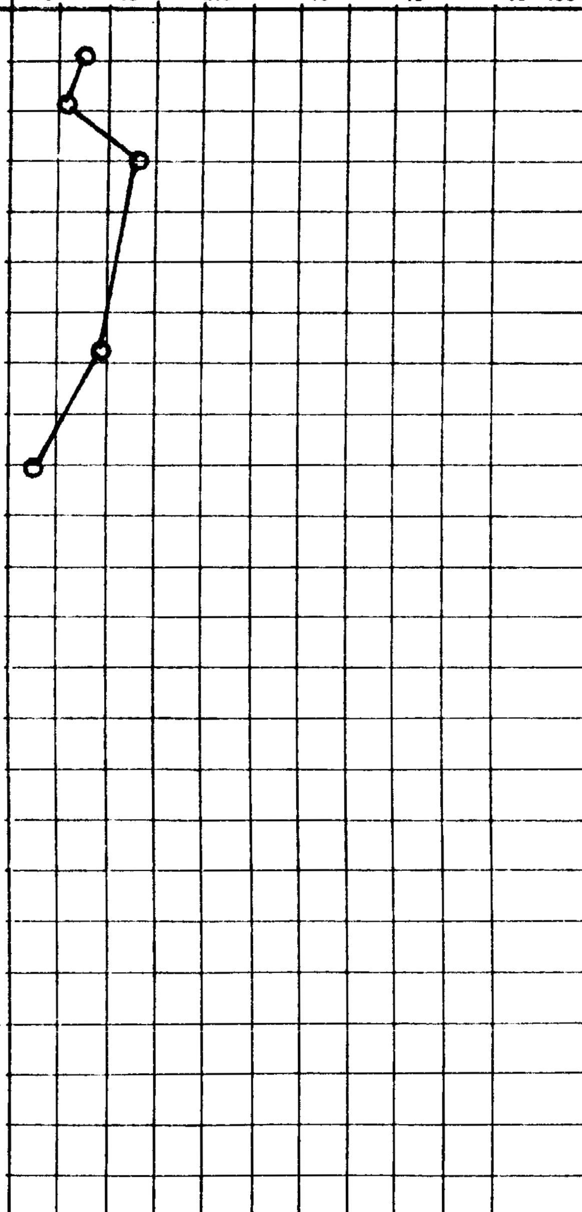
BOTTOM OF HOLE - 7.6 m

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/05	km 138	B.P. No.	HOLE No. 6

CHAINAGE	OFFSET
138+810	℄

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT — LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT -									
2										DAMP-MOIST	
4		- SANDY			1					DAMP	
4–6	ML			FROZEN		49	-	51	0	FREEWATER	
8					2						
10		3.1m			3						
		SAND. SILTY								WET	
12	SM				4						
14		4.6m				12	-	88	0	DAMP	
16		BOTTOM OF HOLE - 4.6m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36											
38					11						

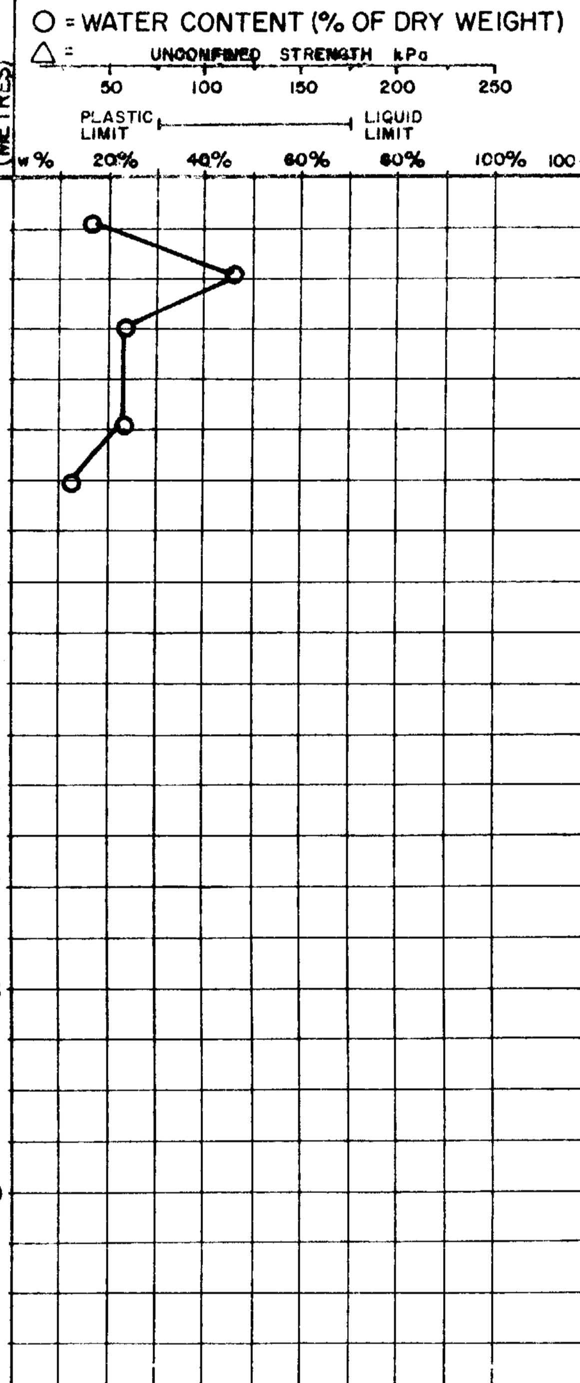
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/05	km 139	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
139+020	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	CL	CLAY - SILTY -LOW PLASTIC +PL		FROZEN			70	30	0	DAMP-MOIST	
					1					SAT.	
4		1.2m									
		SILT - CLAYEY SANDY					74	26	0	WET	
6	ML				2						
8										SAT.	
10	SM	SAND - SILTY 3.1m			3		19	81	0	WET	
12		BOTTOM OF HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

GRAIN-SIZE ANALYSIS



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/05	km 139	B.P. No.	HOLE No. 2

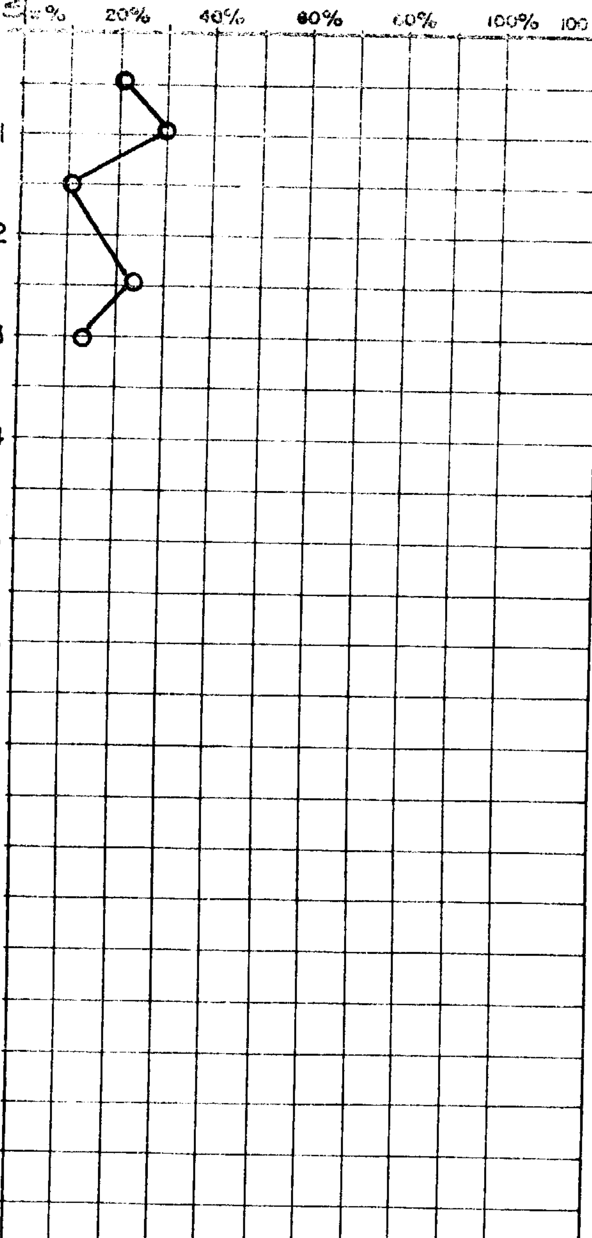
CHAINAGE	OFFSET
139+210	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2–4	CI	CLAY - SILTY MED. PLASTIC +PL		Frozen	0.5	87		13	0	DAMP	
					1					MOIST	
		1.5 m									
6–8	ML	SILT - SANDY			1.5					DAMP-MOIST	
					2.5	52		48	0	MOIST-WET	
10		3.1 m			3					WET	
12		BOTTOM OF HOLE - 3.1 m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT |———| LIQUID LIMIT



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

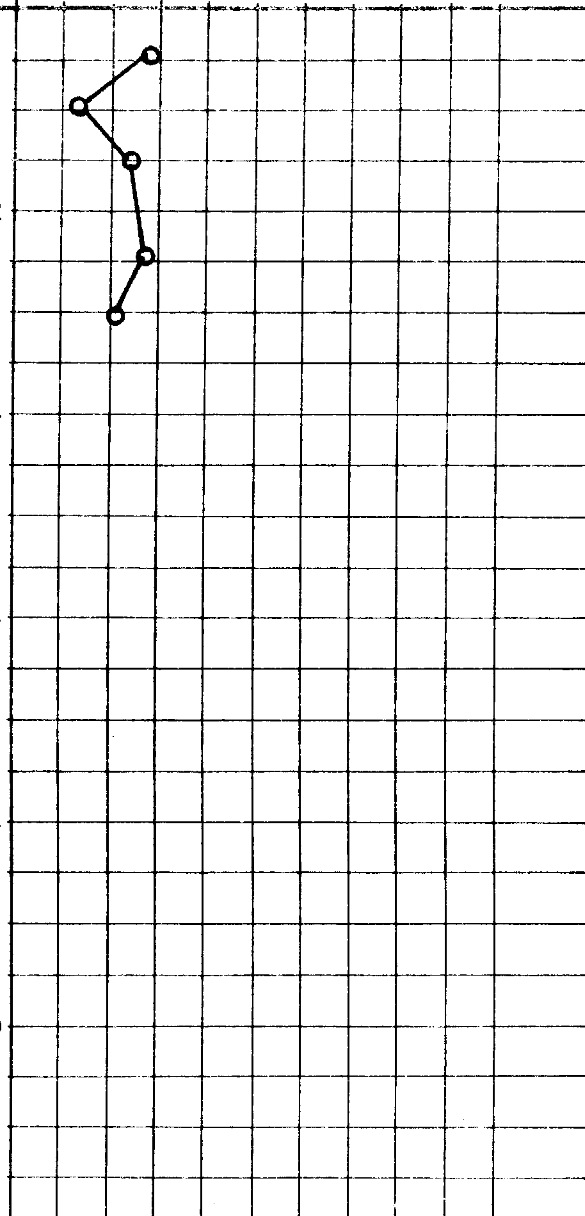
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/05	139		3

CHAINAGE	OFFSET
139+540	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
	CL	CLAY - SILTY				-87-		13	0	MOIST
2	ML	SILT - SANDY CLAYEY			1	-68-		32	0	DAMP
4		CLAY - SILTY								WET
6, 8	CL	- SANDY LOW PLASTIC +P_L		FROZEN	2	-90-		10	0	WET
10		3.1m			3					MOIST
12		BOTTOM OF HOLE - 3.1m								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

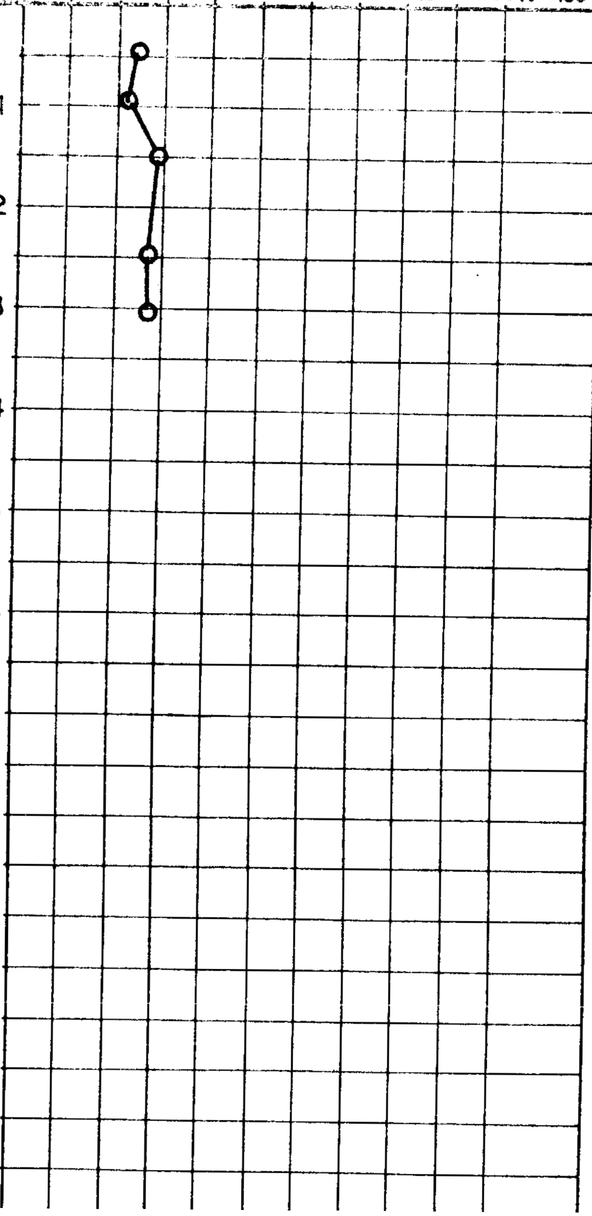
PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/06	km 139	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
139+760	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa — 50, 100, 150, 200, 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
0% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		CLAY - SILTY									
2		- LOW PLASTIC								MOIST-WET	
4		- +P$_L$			1	-93-		7	0	MOIST	
6				FROZEN						MOIST	
8					2	-96-		4	0	WET	
10		3.1 m			3					SAT.	
12		BOTTOM OF HOLE - 3.1 m									
14					4						
16											
18					5						
20											
22					6						
24					7						
26											
28					8						
30					9						
32											
34					10						
36											
38					11						



PUBLIC WORKS CANADA — DRILL HOLE REPORT

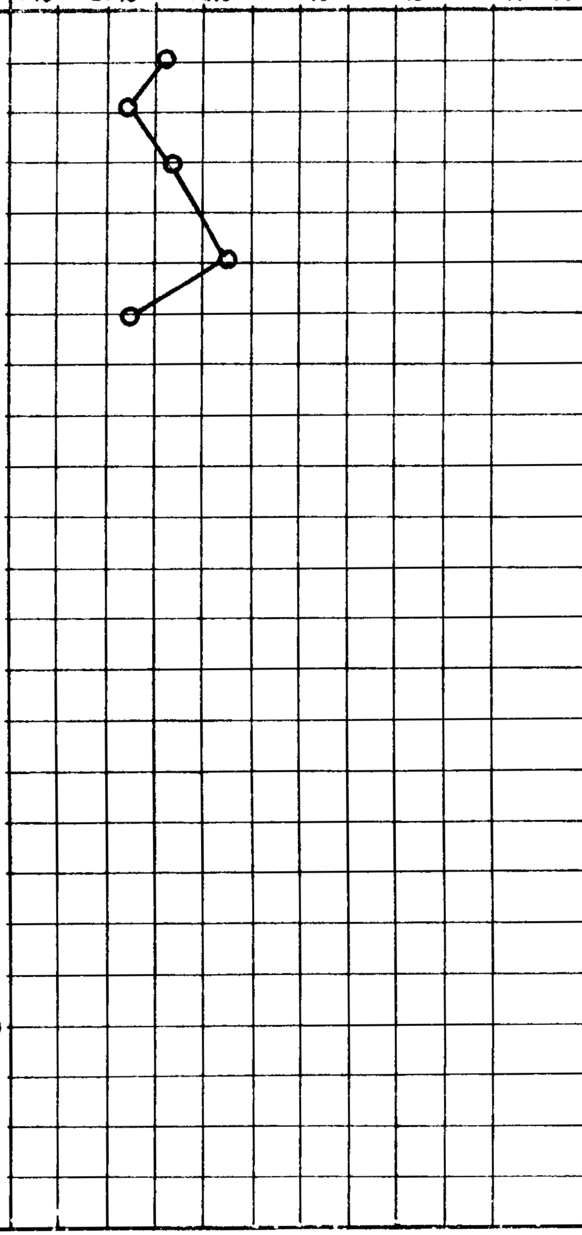
LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/06	km 139	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
139+910	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
%: 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–10	CL	CLAY - SILTY - LOW PLASTIC + P_L		FROZEN	0–3.1	94 -		6	0	DAMP	
										WET	
						99 -		1	0	WET	
										SAT.	
										WET	
10		3.1m			3						
		BOTTOM OF HOLE. 3.1m									



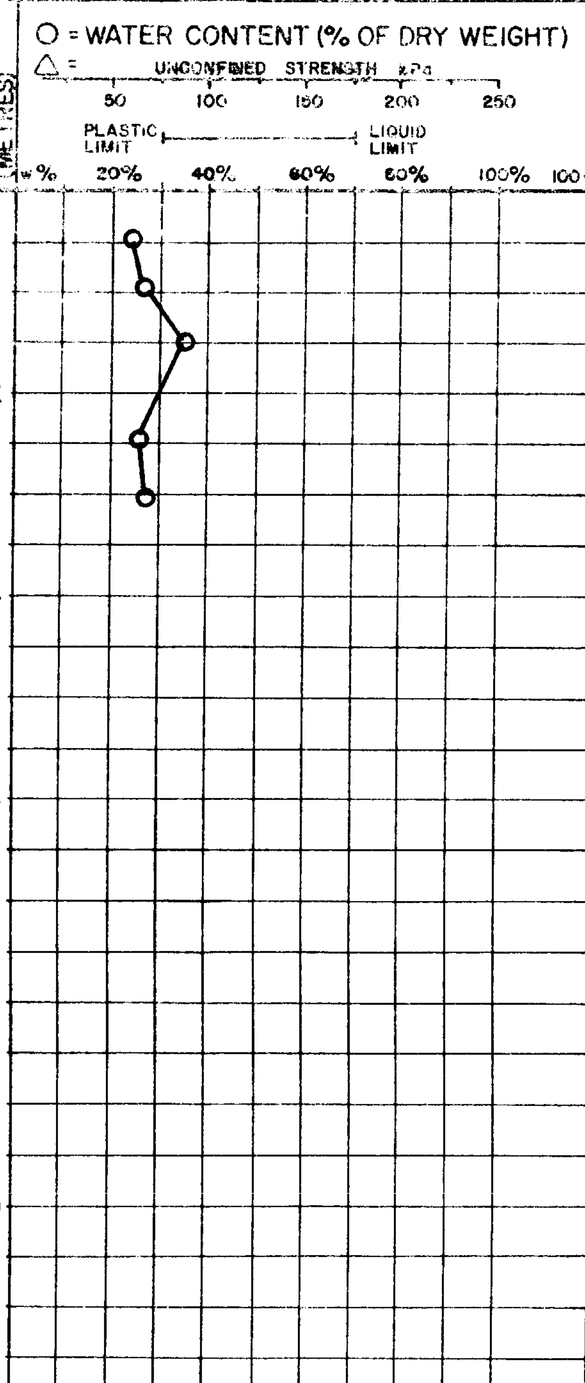
PUBLIC WORKS CANADA — DRILL HOLE REPORT

Liard Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Webber	B-50	78/02/06	140		1

CHAINAGE	OFFSET
140+060	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		CLAY - Silty Sandy								Damp	
4	CL	- Silty			1	-76-		24	0	Damp	
		- Low Plastic								Moist-Wet	
8		$+P_L$			2.5	-98-		2	0	Wet	
10		3.1 m			3					Wet	
12		Bottom of Hole. 3.1 m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

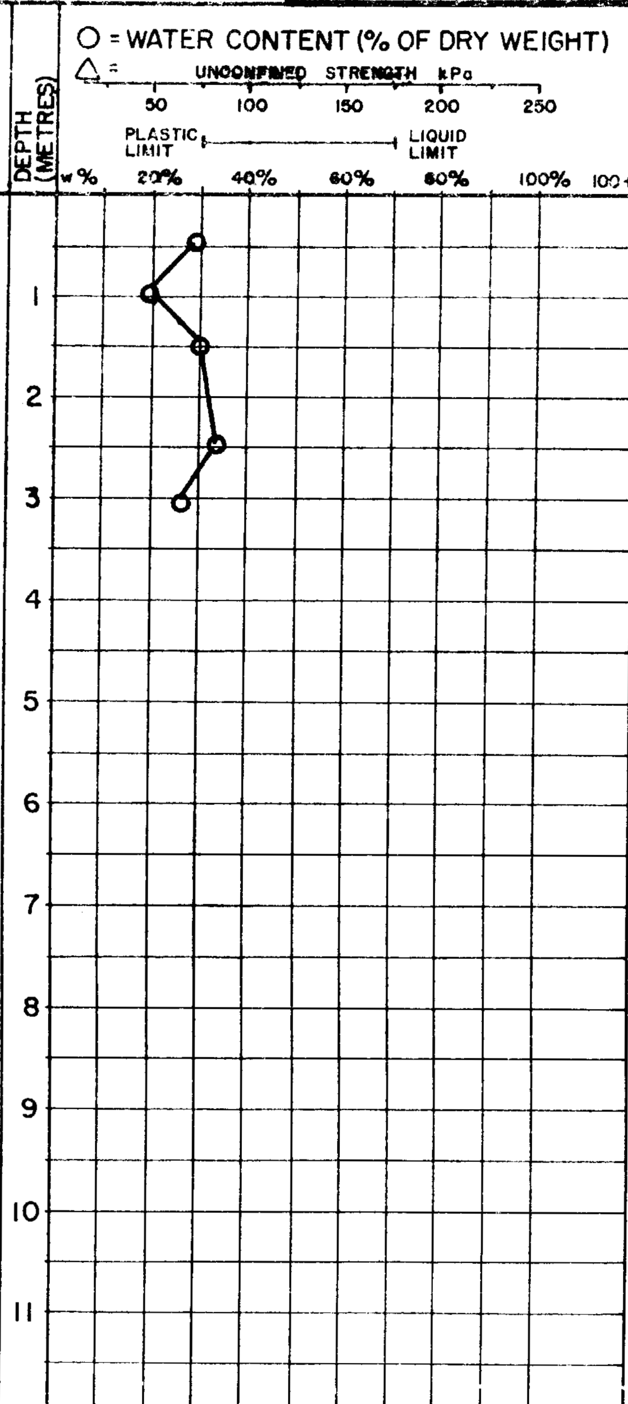
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-30	78/02/06	140		2

CHAINAGE	OFFSET
140+240	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
		CLAY - SILTY		
2		- SANDY		
4	CL			
	-	- SILTY		
6	CI	LOW - MED. PLASTIC		
8				
10		3.1 m		
12		BOTTOM OF HOLE - 3.1 m		
14				
16				
18				
20				
22				
24				
26				
28				
30				
32				
34				
36				
38				

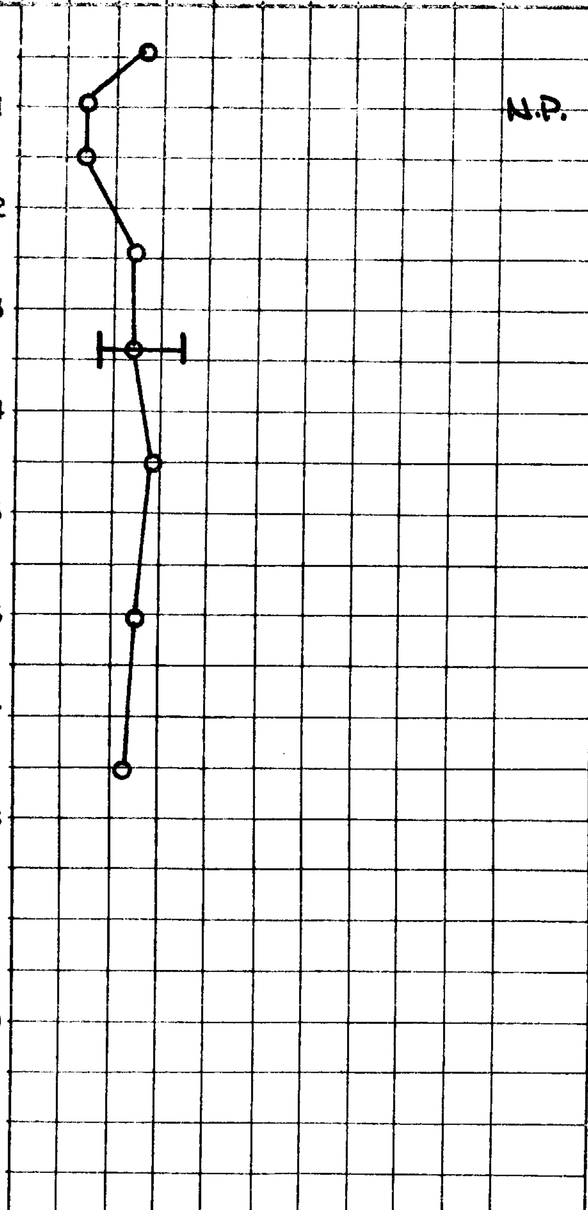


DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
~0.5					DAMP-MOIST
1	-81-		19	0	MOIST
~1.5					MOIST-WET
~2.5					M-W
3	-97-		3	0	MOIST

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.	
TECH. WEBBER	RIG B-50	DATE 78/02/	km 140
B.P. No.	HOLE No. 3	CHAINAGE 140+580	OFFSET ℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY - SILTY .5m					99	1	0	WET	
2		SILT -									
4					1					DAMP	
6	ML						98	2	0	DAMP	
8					2					WET	
10		3.3m			3						
12		CLAY - SILTY Low Plastic +PL					100	0	0	WET	
14					4					WET	
16	CL				5						
20		Gray.			6					MOIST-WET	
24		7.6m			7		96	4	0	M-W	
26		BOTTOM OF HOLE . 7.6			8						
28–38					9–11						

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100%



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/06	km 140	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
140+760	℄

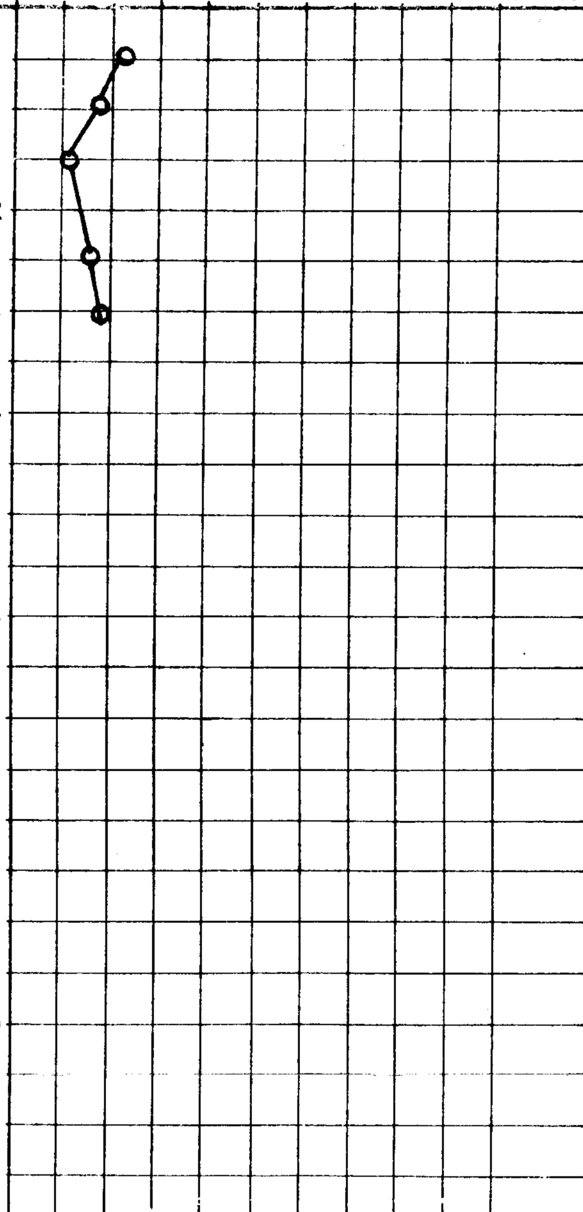
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–5	CL	CLAY - SILTY Low Plastic + P_L			~0.5					MOIST	
					1	-96-		4	0	DAMP	
		1.5			1.5					DAMP	
5–10	ML	SILT - CLAYEY			2.5	-97-		3	0	DAMP	
		3.1m			3					DAMP-MOIST	
		Bottom of Hole. 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



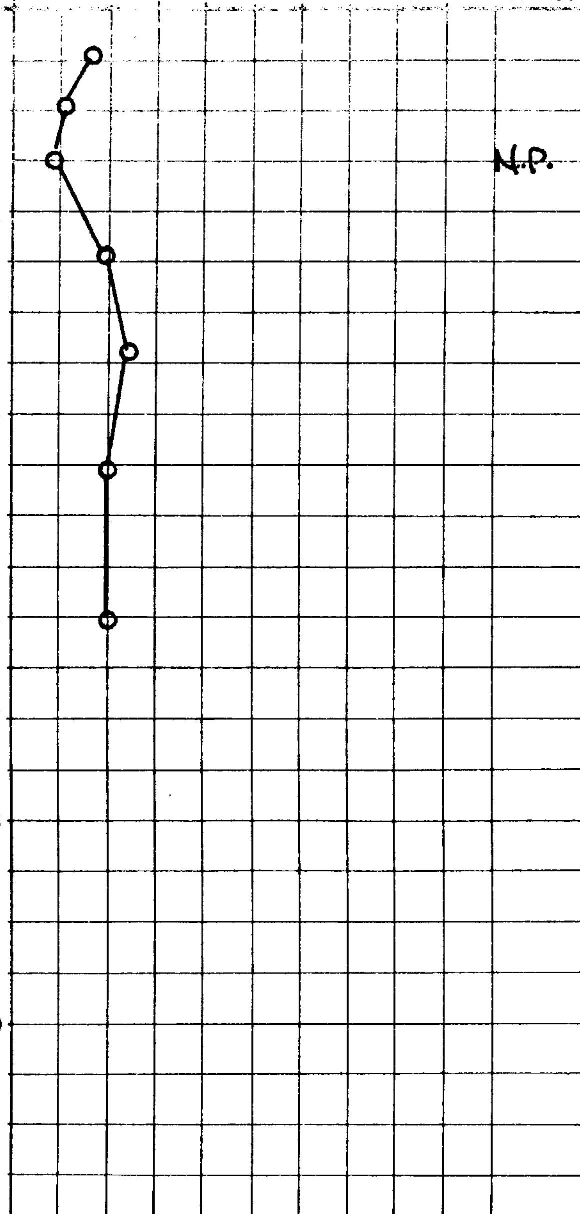
GRAIN-SIZE ANALYSIS

PUBLIC WORKS CANADA | DRILL HOLE REPORT | Liard Hwy.

TECH. Webber	RIG B-50	DATE 78-02-06	km 140	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
140+940	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY - SILTY .5m								DAMP	
2–6	ML	SILT -			1					DAMP	
						N.P.	91	9	0	DAMP	
8		2.4m			2					DAMP-MOIST	
10–14	CL, CI	CLAY - SILTY +PL LOW - MED PLASTIC			3	100		0	0	MOIST	
					4–5					MOIST	
					5–6					MOIST	
20		6.1m			6						
22		BOTTOM OF HOLE - 6.1m									

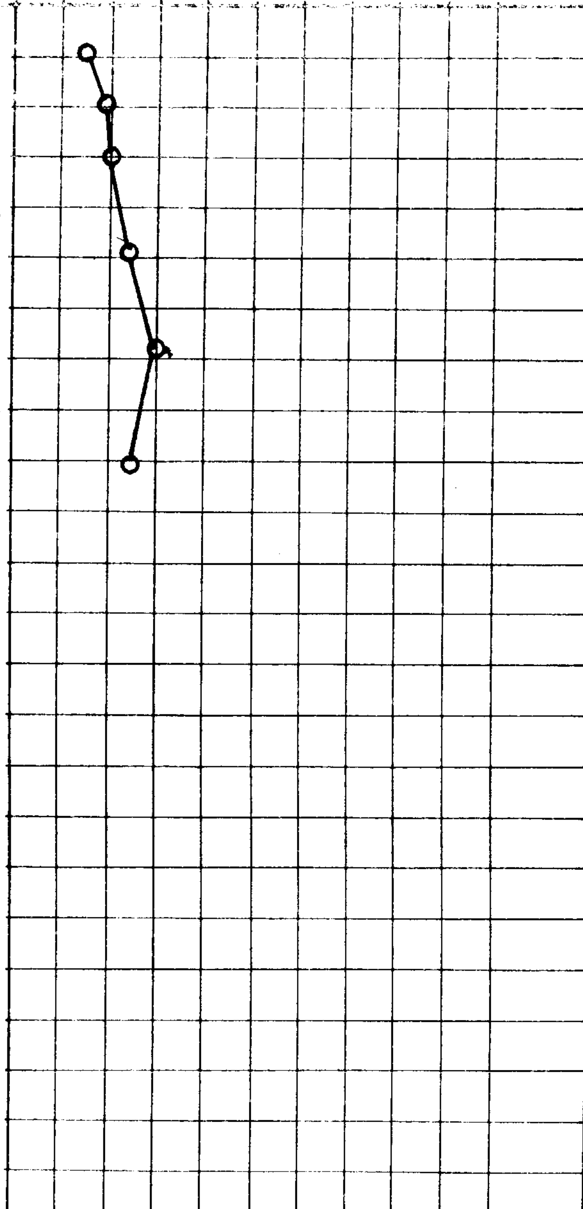


PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/06	km 141	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
141+160	℄

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT —— LIQUID LIMIT
0% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY - SILTY +PL LOW PLASTIC			-	98	2	0	DAMP	
									MOIST	
					-	97	3	0	MOIST	
6	ML	SILT -							WET	
8	CL	CLAY - SILTY								
					-	99	1	0	WET	
		4.6m							MOIST-WET	
		BOTTOM OF HOLE - 4.6m								

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/06	km 141-2	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
141+280	℄

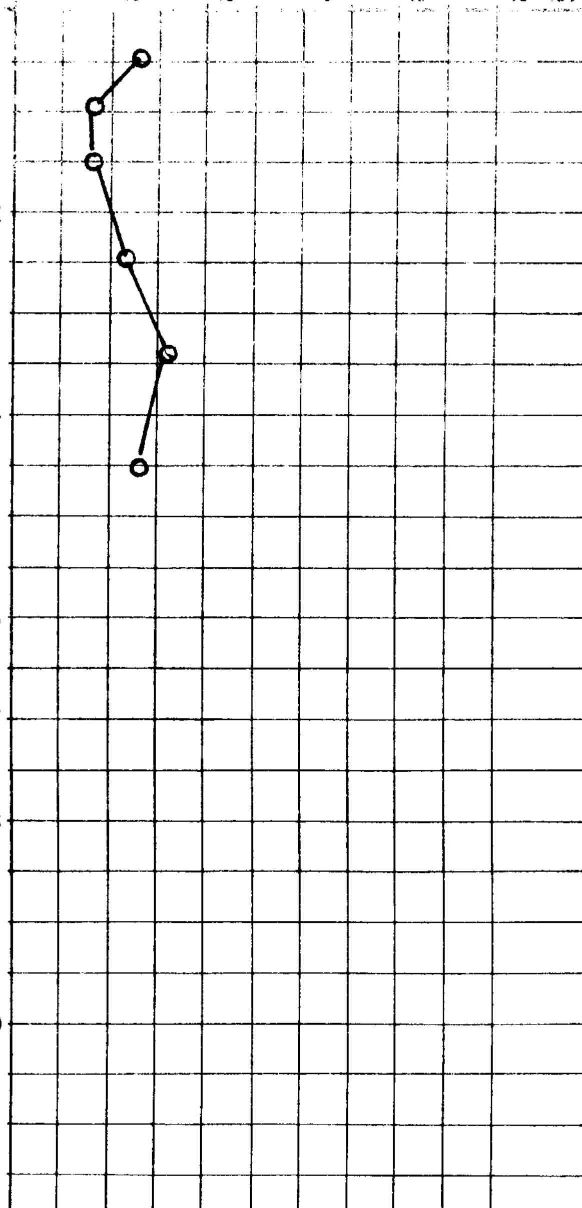
REMARKS

DEPTH (FEET)	UNIFIED SOIL	SOIL DESCRIPTION	
	CL	CLAY - SILTY	.5m
2–6	ML	SILT - CLAYEY	2.4m
8–14	CI	CLAY - SILTY MED. PLASTIC	4.6m
16		BOTTOM OF HOLE - 4.6m	

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)



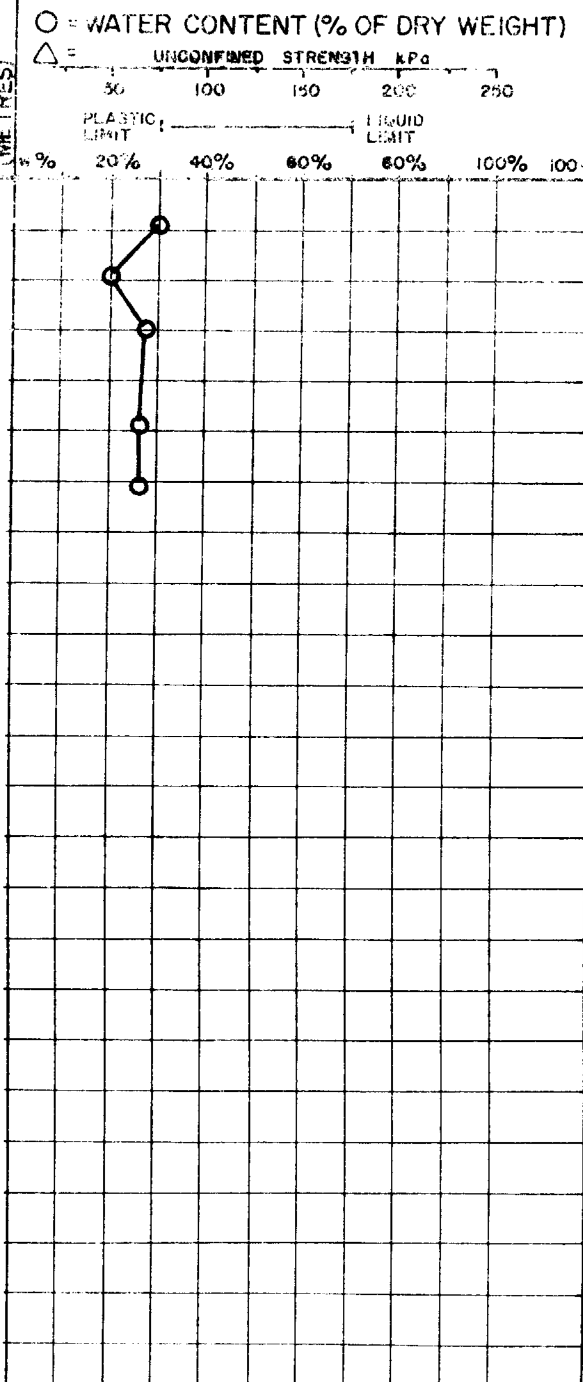
GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				WET
-95-		5	0	DAMP
				DAMP
-99-		1	0	MOIST
				MOIST
-99-		1	0	MOIST

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/06	km 141	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
141+430	E

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–5	ML	SILT. CLAYEY — 1.5m		
5–10	CL	CLAY - SILTY LOW PLASTIC + P_L — 3.1m		
10+		BOTTOM OF HOLE - 3.1m		



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
-94-		6	0	WET
				DAMP-MOIST
-98-		2	0	WET
				MOIST-WET
-99-		1	0	M-W

REMARKS

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/06	km 141	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
141+650	℄

SOIL DESCRIPTION

CLAY - SILTY
- LOW PLASTIC
+ P_L

Soil symbol: CL

3.1m

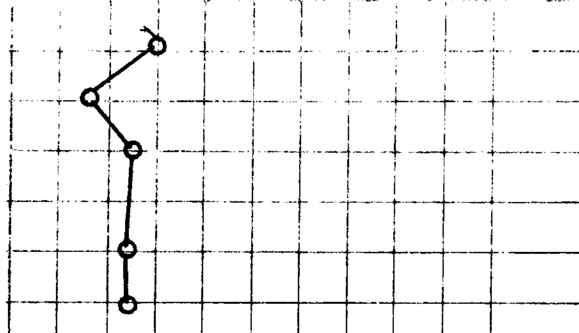
Bottom of Hole - 3.1m

○ = WATER CONTENT (% OF DRY WEIGHT)

UNCONFINED STRENGTH

PLASTIC LIMIT — LIQUID LIMIT

0% 20% 40% 80% 60% 100%



GRAIN SIZE ANALYSIS

CLAY %	SILT %	SAND %	GRAVEL %	MOISTURE	REMARKS
				WET-SAT.	
96	-	4	0	DAMP	
				WET	
99	-	1	0	MOIST	
				MOIST	

Depth (ft): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (m): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/06	141		5

CHAINAGE	OFFSET
141+920	℄

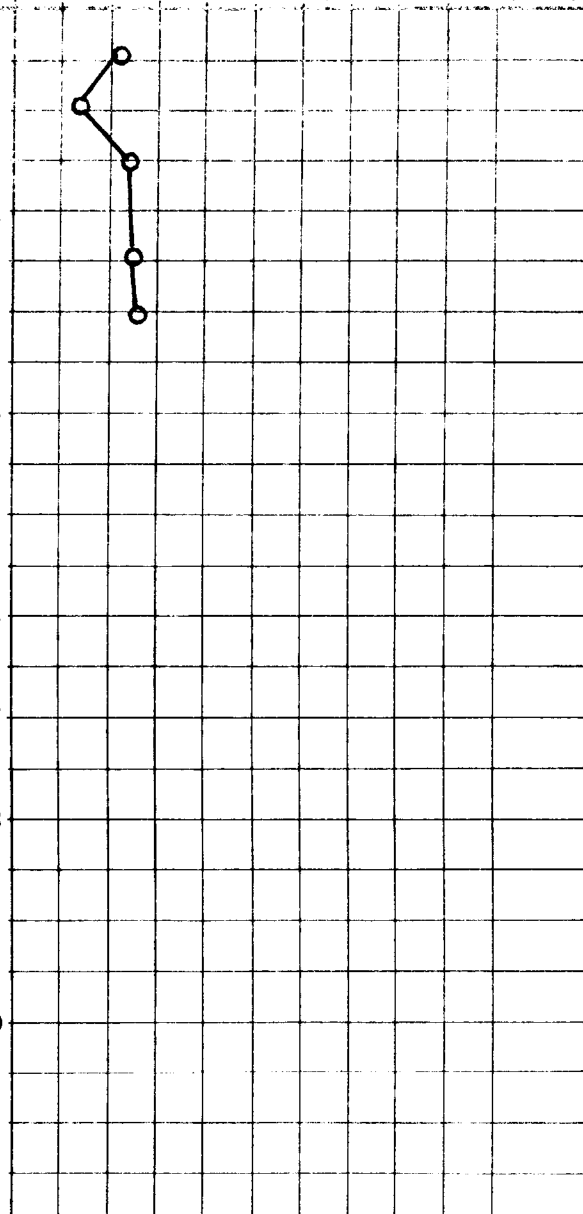
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - CLAYEY								DAMP-MOIST	
2–4	ML	SILT -			1	-	98	2	0	D-M	
		1.5 m								MOIST	
6–8	CL, CI	CLAY - SILTY, LOW - MED PLASTIC			2	-	99	1	0	MOIST	
10		3.1 m			3					MOIST	
12		BOTTOM OF HOLE - 3.1 m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT — LIQUID LIMIT

0% 20% 40% 60% 80% 100%



PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

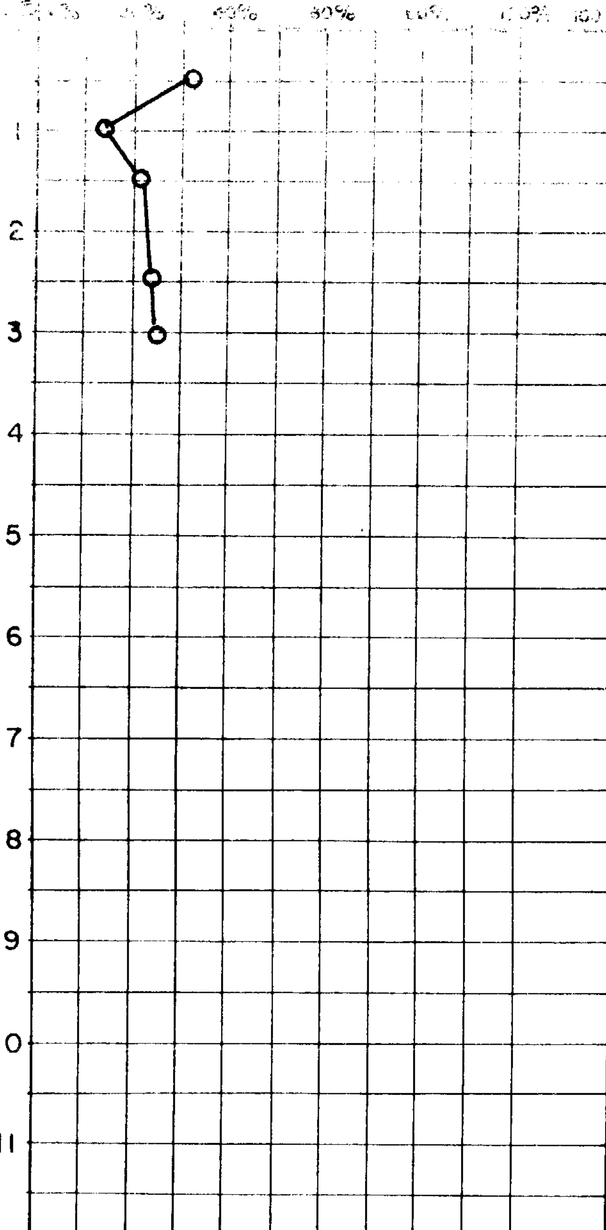
TECH WEBBER | RIG B-50 | DATE 78/02/06 | km 142 | B.P. No. | HOLE No. 1

CHAINAGE: 142+160 | OFFSET: ℄

Depth	Soil Sym.	Soil Description	Grain-Size Analysis: % Clay	% Silt	% Sand	% Gravel	Condition
	CL	CLAY - SILTY	99	1	0		WET
2	ML	SILT -					DAMP
4–6	CL	CLAY - SILTY					MOIST
8	CI	LOW - MED PLASTIC	99	1	0		MOIST
10		3.1m					MOIST

BOTTOM OF HOLE - 3.1m

WATER CONTENT (% OF DRY WEIGHT)



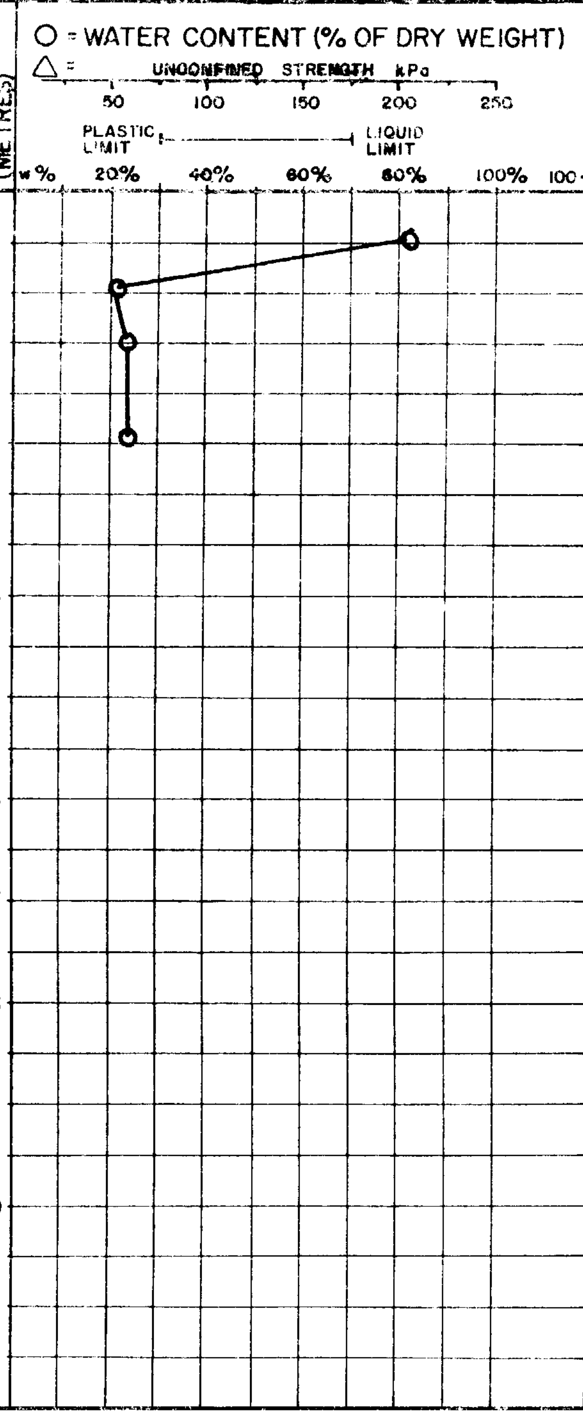
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/06	142		2

CHAINAGE	OFFSET
142 + ~~2?4~~ 350	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY - SILTY								SAT.	
2	ML	SILT -			1	-98-		2	0	MOIST	
4	CL	CLAY - SILTY low PLASTIC +PL								MOIST	
6					2						
8										MOIST	
10		3.1 m			3	-99-		1	0	MOIST-WET	
12		Bottom of Hole - 3.1 m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32					10						
34											
36					11						
38											



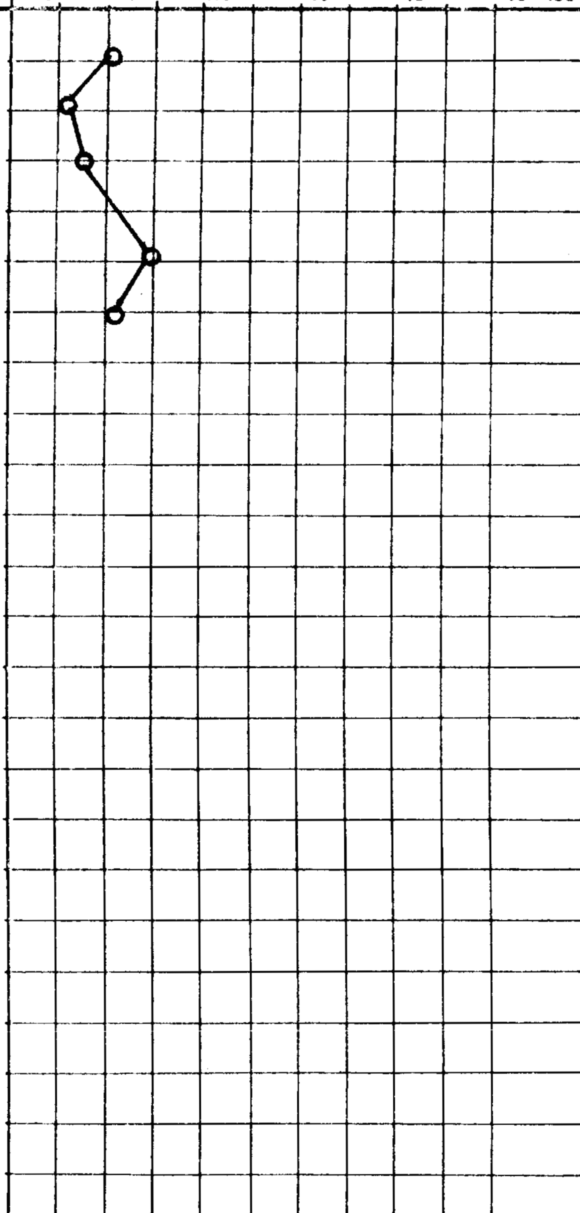
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/06	142		3

CHAINAGE	OFFSET
142 + 530	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |——| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–1.6	CL	CLAY - SILTY .5m				-94-		6	0	DAMP	
1.6–8	ML	SILT - CLAYEY 2.4m			1					DAMP	
					1.5	-99-		1	0	DAMP	
8–10	CL	CLAY - SILTY LOW PLASTIC 3.1m			2.5					MOIST-WET	
					3	-99-		1	0	MOIST	
		BOTTOM OF HOLE - 3.1m									

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/06	km 142	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
142+800	℄

REMARKS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
2	ML	SILT - CLAYEY								SAT.
4		1.2m			1	-	84	16	0	DAMP
6	CL	CLAY - SILTY LOW - MED. PLASTIC								MOIST
8	CI				2	-	99	1	0	MOIST
10		3.1m			3					MOIST
12		Bottom of Hole. 3.1m								

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38
Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

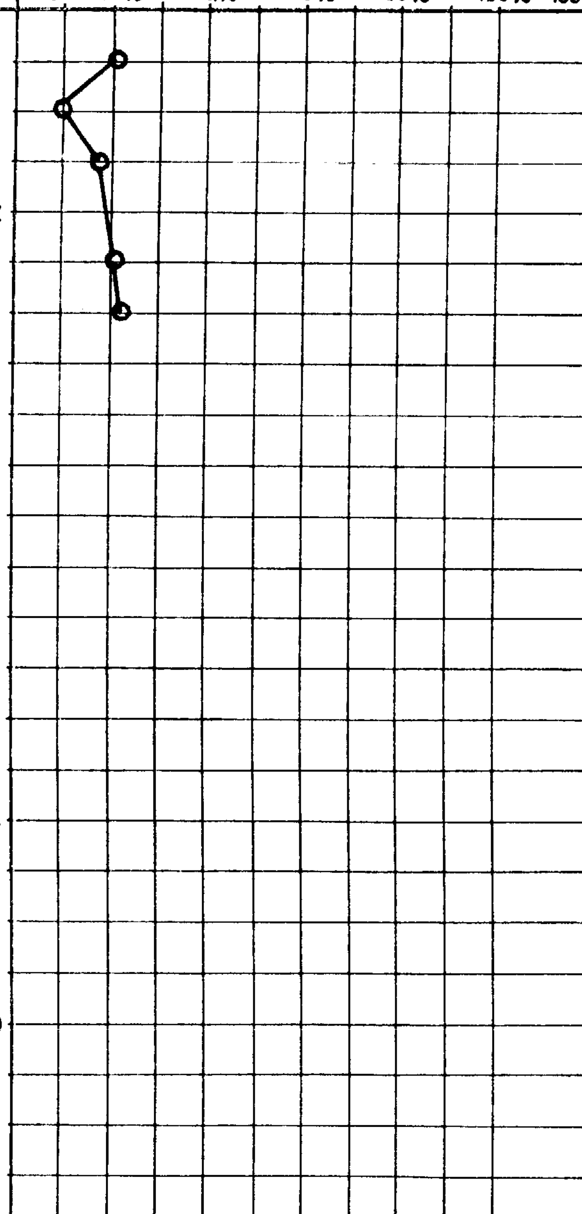
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/06	km 143	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
143+050	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAYEY				99		1	0	DAMP	
4					1					DAMP	
		1.5m				96		4	0	DAMP-MOIST	
6	CL	CLAY - SILTY									
8	CI	LOW-MED. PLASTIC			2					MOIST	
10		3.1m			3	100		0	0	MOIST	
12		BOTTOM of HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/06	743		2

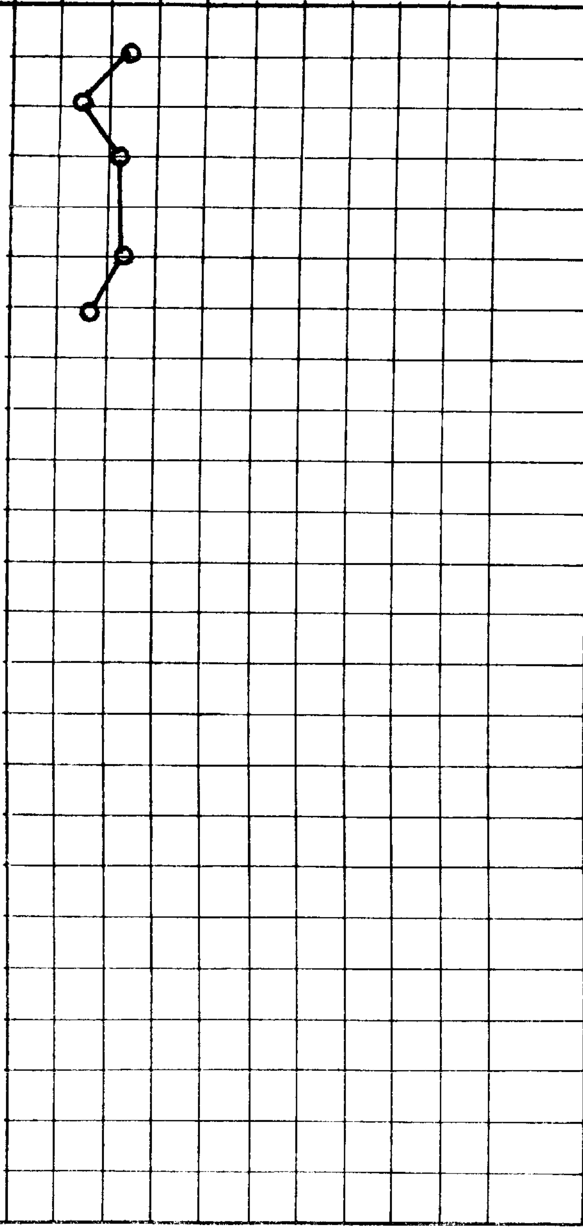
CHAINAGE	OFFSET
143+170	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–4	ML	SILT - CLAYEY (to 1.5m)			0–1.5					Moist	
					1	99	-	1	0	DAMP	
					1.5					Moist	
6–10	CL / CI	CLAY - SILTY, LOW - MED PLASTIC (to 3.1m)			1.5–3.1						
					2.5	100		0	0	Moist	
					3					DAMP-MOIST	
		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

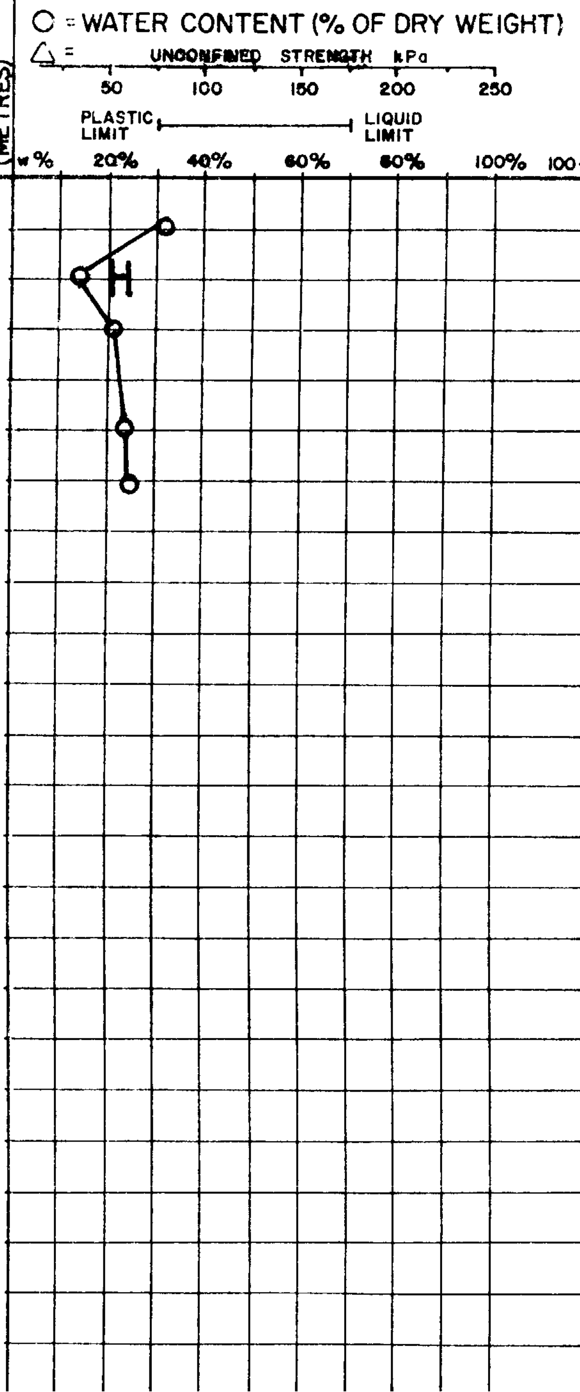


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/06	km 143	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
143+290	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAYEY								SAT.	
4					1	97	-	3	0	DAMP	
		1.5m								DAMP-MOIST	
6		CLAY - SILTY - LOW PLASTIC +PL			2						
8	CL					99	-	1	0	MOIST	
10		3.1m			3					MOIST-WET	
12		BOTTOM OF HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



PUBLIC WORKS CANADA — DRILL HOLE REPORT

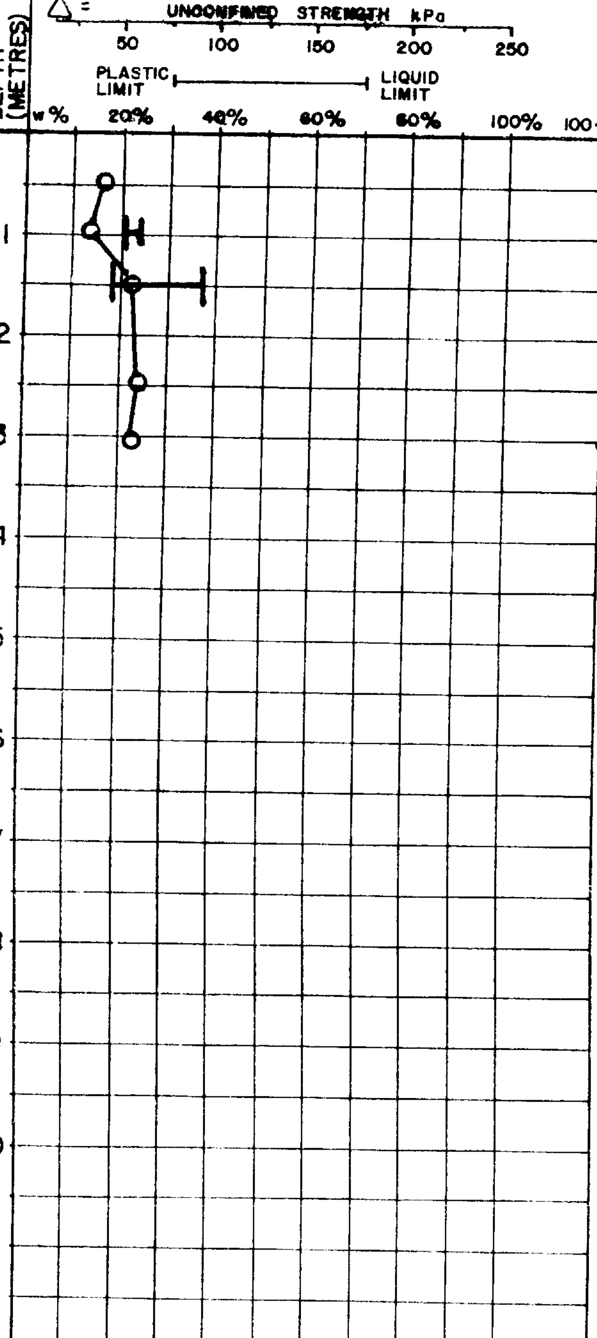
LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/06	143		A

CHAINAGE	OFFSET
143+440	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–5	ML	SILT - CLAYEY			0–1.5 m		96	4	0	DAMP	
										DAMP	
5–10	CL / CI	CLAY - SILTY +DL LOW - MED. PLASTIC			1.5 m–3.1 m		99	1	0	DAMP-MOIST	
										MOIST	
							98	2	0	MOIST	
10		BOTTOM OF HOLE - 3.1m			3.1 m						

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/06	143		5

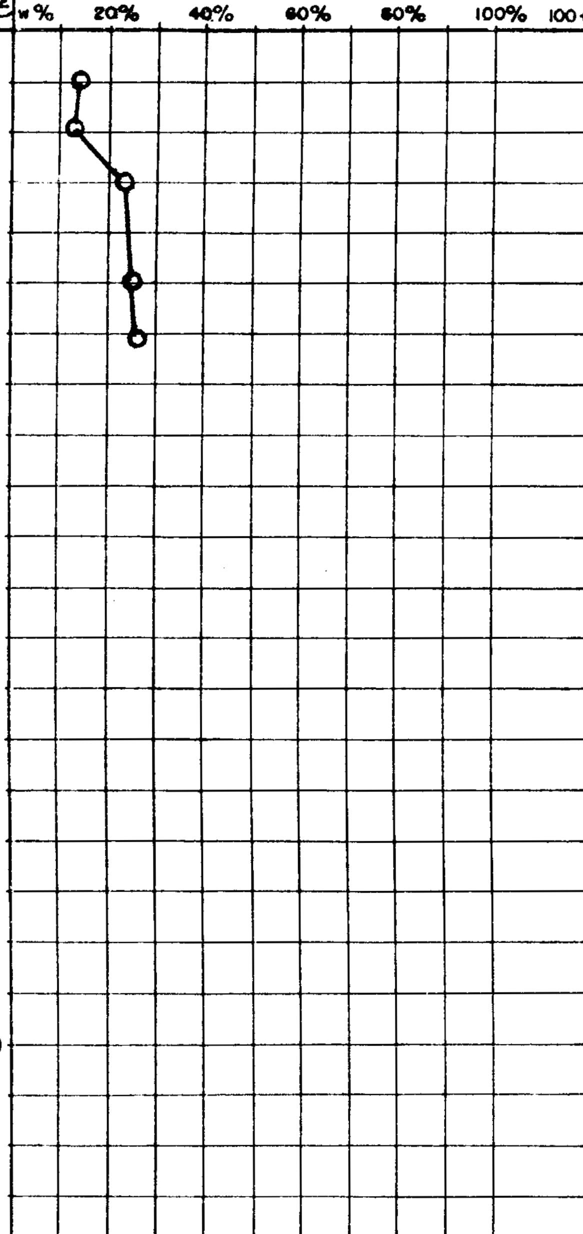
CHAINAGE	OFFSET
143+720	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - CLAYEY								DAMP	
2	ML										
4					1	-96-		4	0	DAMP	
		1.5 m								MOIST	
6		CLAY - SILTY -LOW-MED. PLASTIC +P_L			2						
8	CL CI					-100-		0	0	MOIST	
10		3.1 m			3					MOIST	
12		BOTTOM OF HOLE - 3.1 m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT



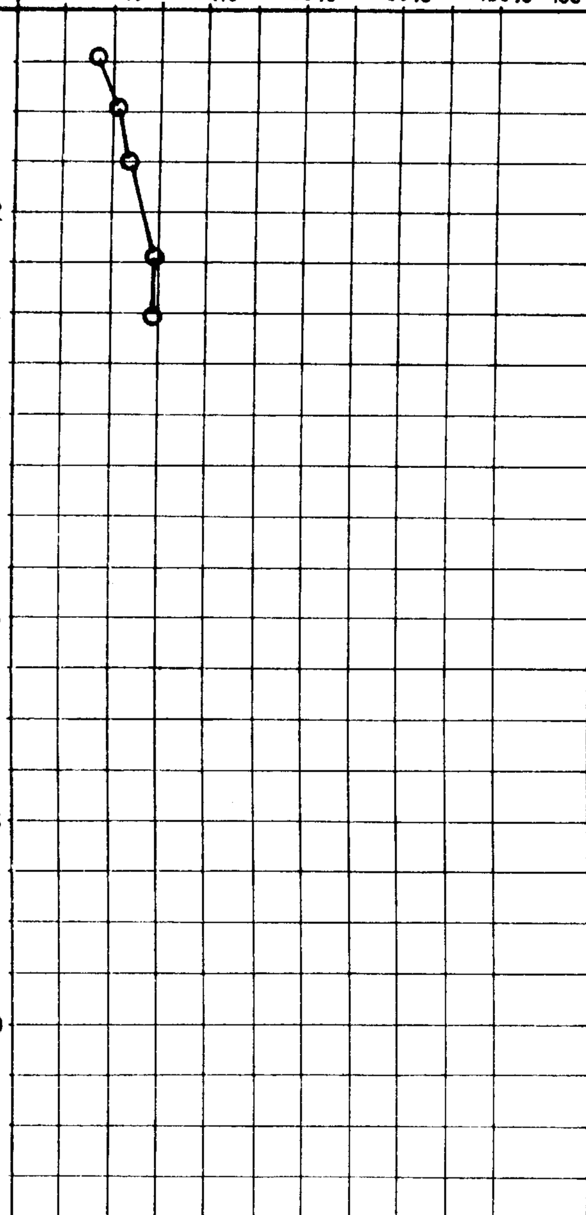
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/06	km 143	B.P. No.	HOLE No. 6

CHAINAGE	OFFSET
143+870	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	CI	CLAY - SILTY MED. PLASTIC + P_L			
10		3.1m			3
		BOTTOM OF HOLE - 3.1m			

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
-96-		4	0	DAMP	
				DAMP-MOIST	
-99-		1	0	MOIST	
				MOIST	
-100-		0	0	MOIST	

PUBLIC WORKS CANADA — DRILL HOLE REPORT

Liard Hwy.

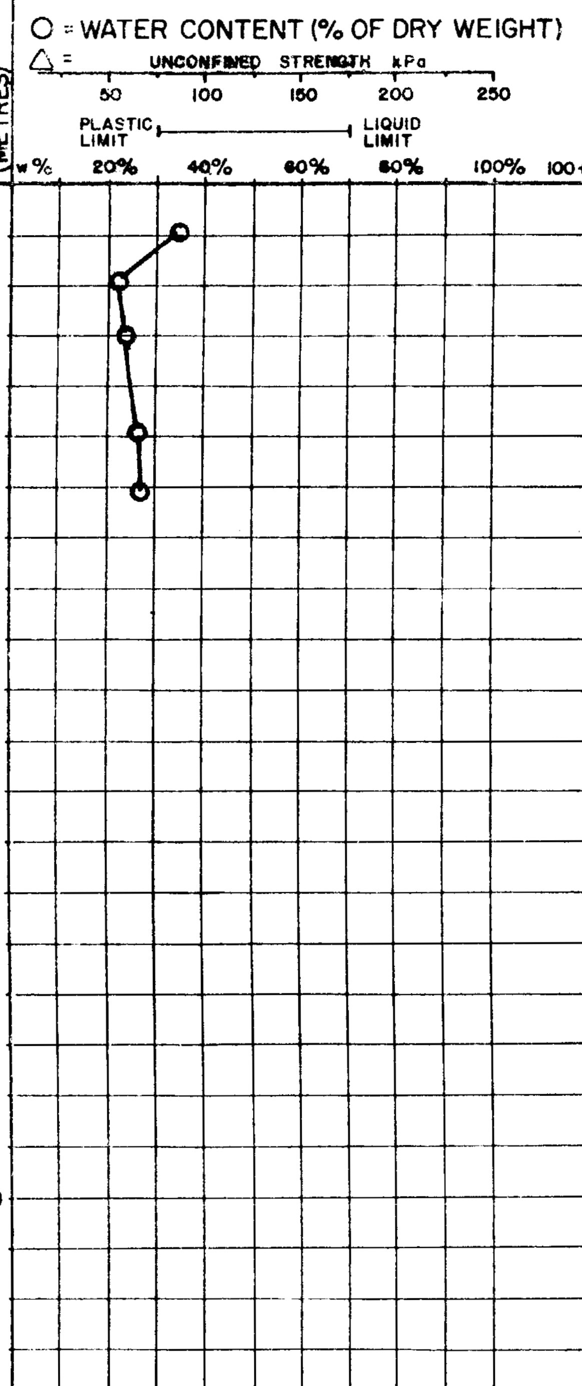
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/06	144		1

CHAINAGE	OFFSET
144+050	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–10	CL	CLAY - SILTY - LOW PLASTIC +PL			0–3.1					SAT.	
					1	98		2	0	DAMP	
										MOIST	
						100		0	0	MOIST-WET	
10		3.1 m			3					M-W	
12		BOTTOM OF HOLE 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



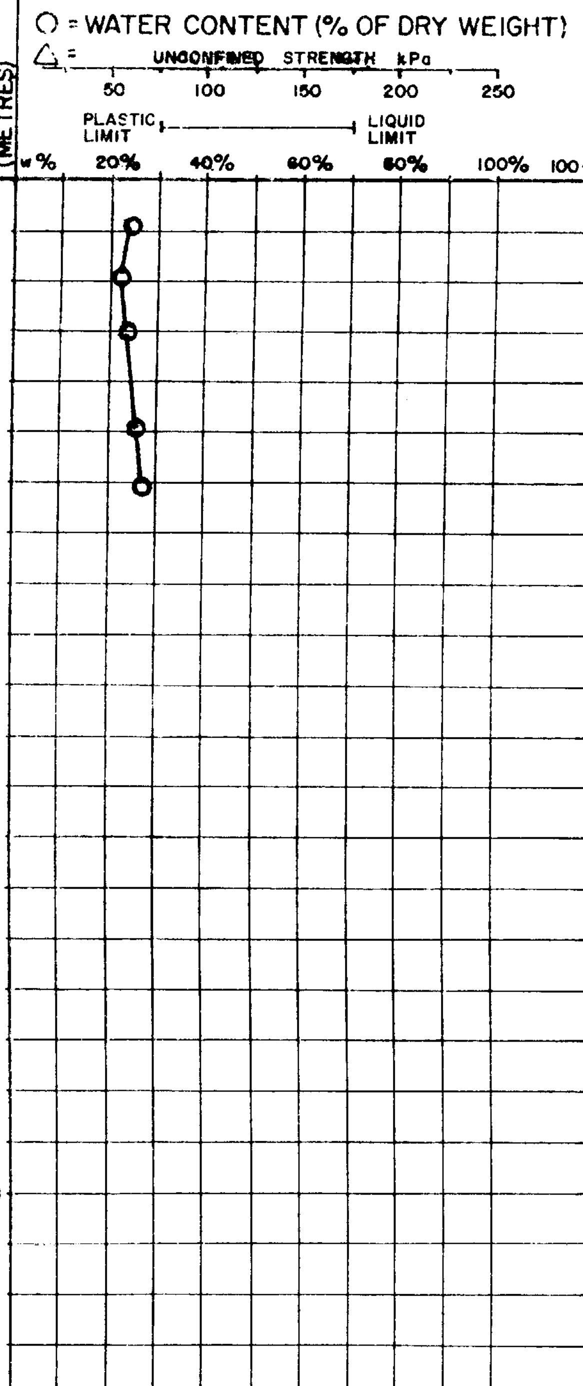
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/07	144		2

CHAINAGE	OFFSET
144+300	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT - CLAYEY								WET	
4	ML				1	-92-		8	0	WET	
										WET	
8		2.4m									
	CL	CLAY - SILTY - LOW PLASTIC				-98-		2	0	MOIST	
10		3.1m			3					SAT.	
12		BOTTOM OF HOLE - 3.1m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

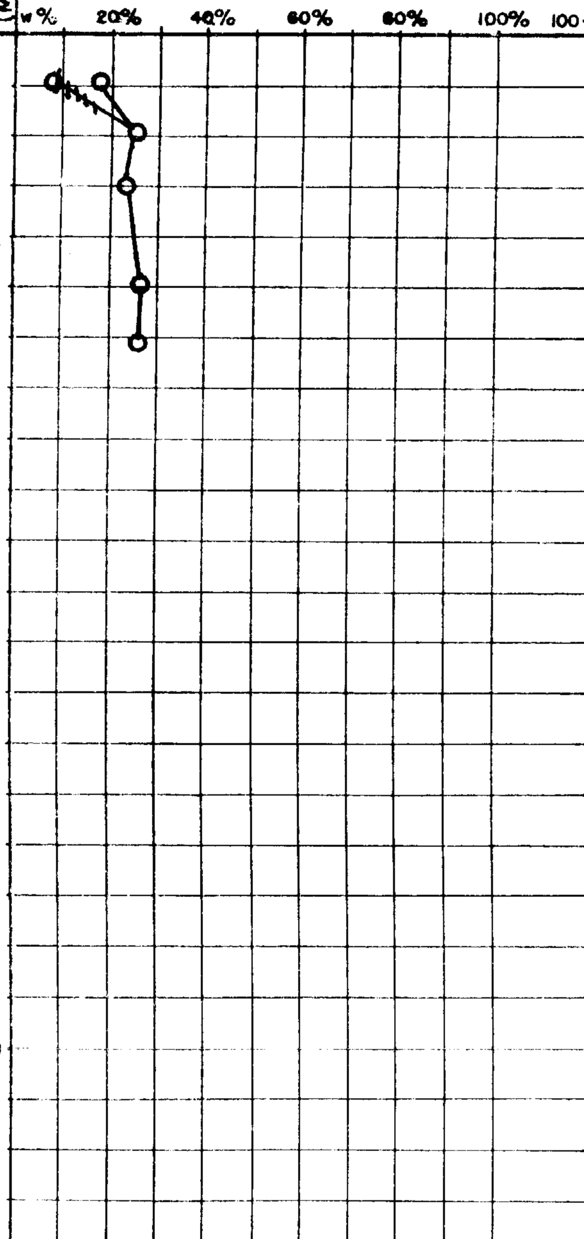
TECH. PRONYCH	RIG B-50	DATE 78/02/07	km 144	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
144+660	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
	Pt	PEAT — .2 m								DAMP
2		SILT -								
4	ML	- CLAYEY — 1.5 m			1	-99-		1	0	WET
6		CLAY - SILTY								MOIST
8	CL	- LOW PLASTIC — 3.1 m			2	-99-		1	0	MOIST-WET
10					3					WET
12		BOTTOM OF HOLE - 3.1 m								
14					4					
16					5					
18										
20					6					
22										
24					7					
26					8					
28										
30					9					
32										
34					10					
36					11					
38										

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├─┤ LIQUID LIMIT



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/07	144		4

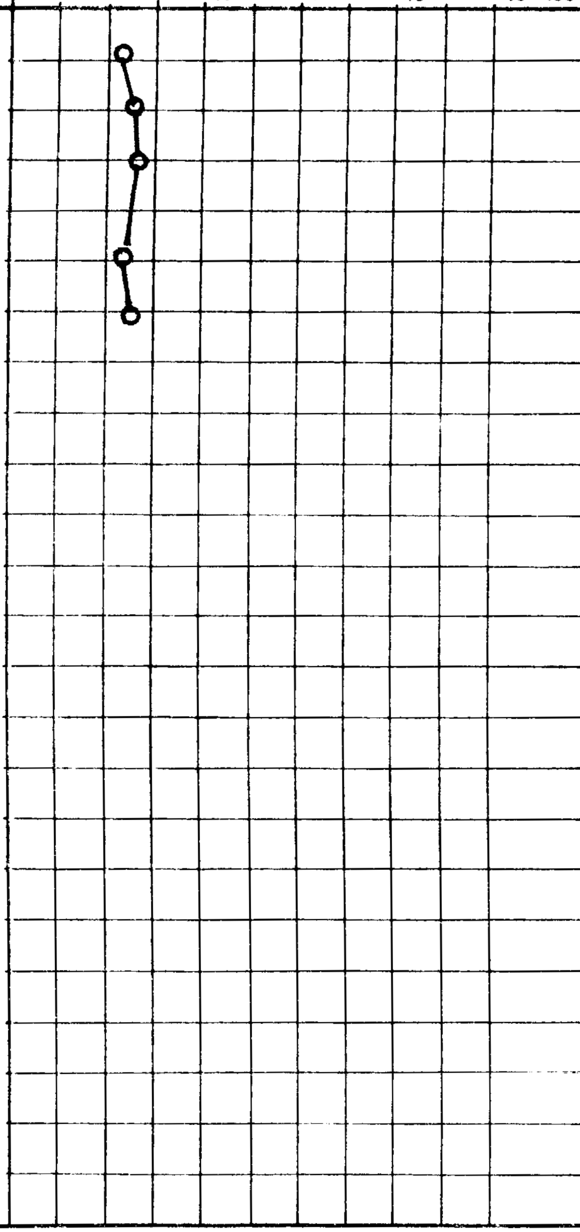
CHAINAGE	OFFSET
144+940	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	PEAT — .2m									
2	ML	SILT — 1.5m				-99-		1	0	WET	
4					1					WET	
6	CL	CLAY - SILTY - LOW PLASTIC +PL — 3.1m				-99-		1	0	MOIST-WET	
8					2					M-W	
10					3	-99-		1	0	WET	
12		BOTTOM OF HOLE - 3.1m									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

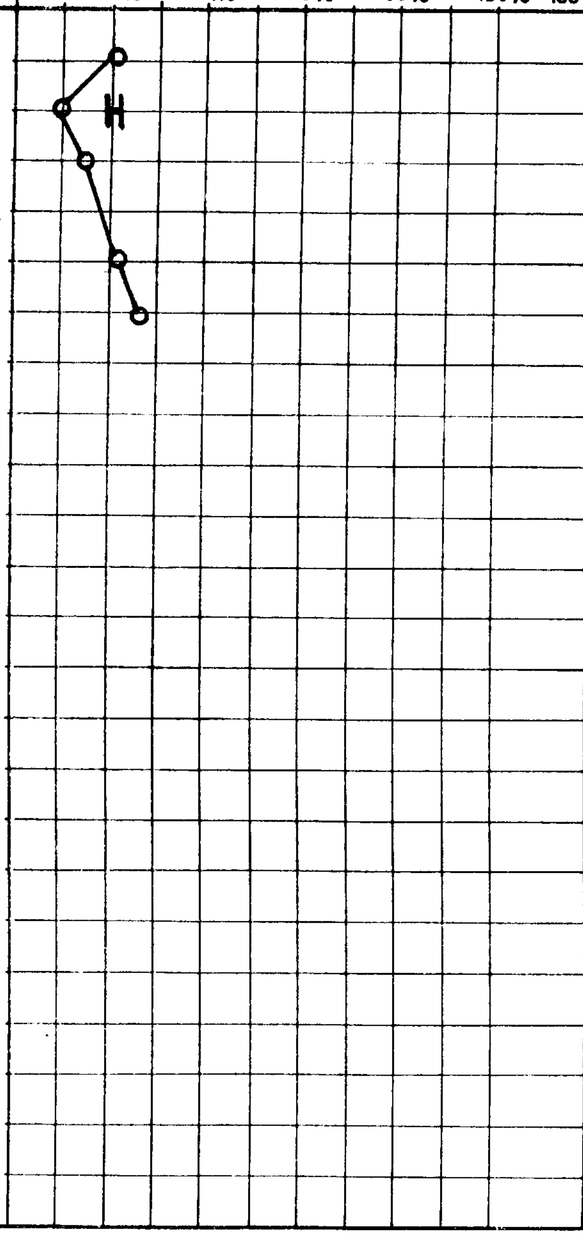
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy.

TECH. PRONYCH	RIG B-50	DATE 78/02/07	km 145	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
145+210	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–10	CL	CLAY - SILTY - LOW PLASTIC @ PL + PL			0–3.1						
					~0.4					DAMP	
					1	-	92	8	0	DAMP	
					~1.5					DAMP	
					~2.5	-	98	2	0	MOIST	
					3					MOIST-WET	
10		3.1 m			3.1						
		BOTTOM OF HOLE. 3.1 m									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/07	145		2

CHAINAGE	OFFSET
145+580	

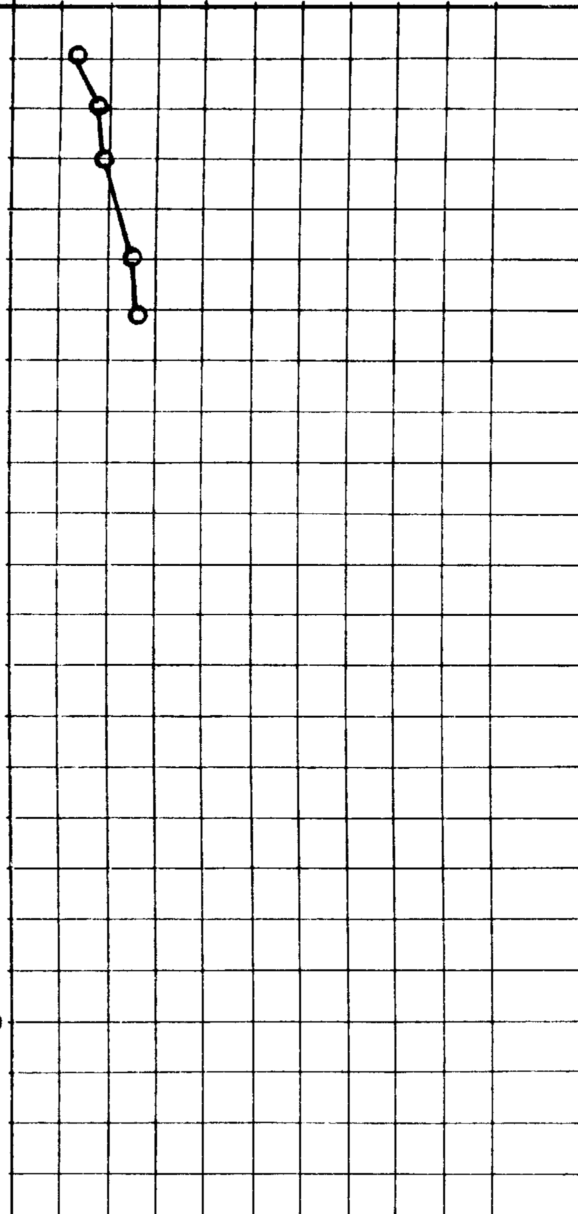
DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0 – 1.4m	ML	SILT - CLAYEY			-96-		4	0	DAMP	
									DAMP	
1.4m – 3.1m	CL	CLAY - SILTY - LOW PLASTIC + P_L			-99-		1	0	DAMP-MOIST	
									MOIST-WET	
3.1m					-99-		1	0	WET	
		BOTTOM OF HOLE - 3.1m								

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



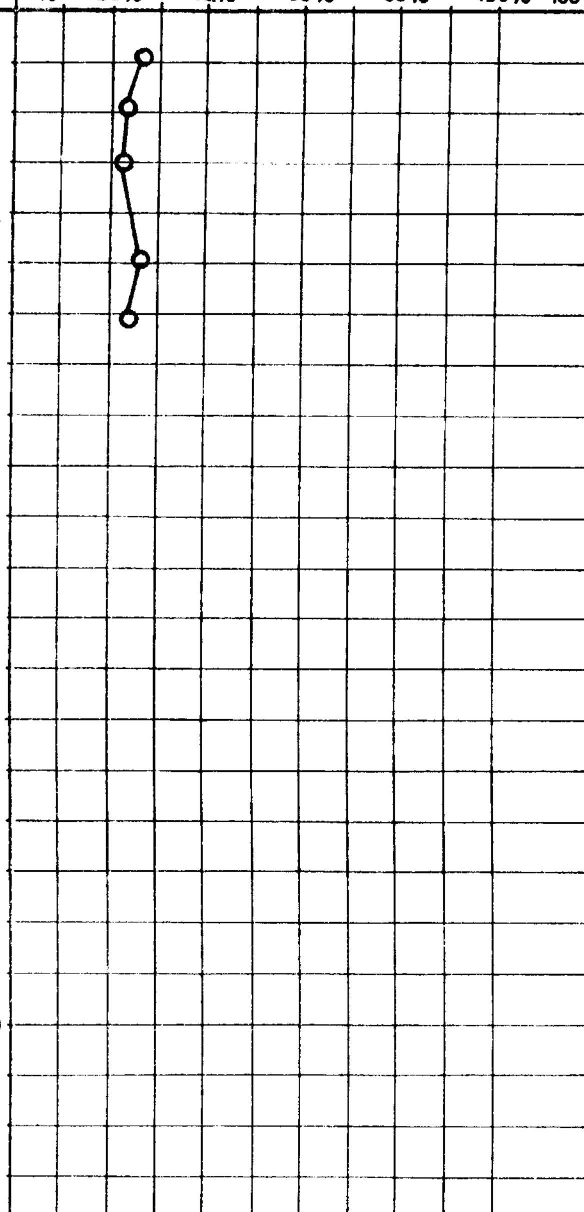
PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/07	145		3

CHAINAGE	OFFSET
145+760	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	CLAY - SILTY - SILT CLAYEY								SAT.	
2	CL										
4		1.2m			1	–	99	1	0	WET	
		CLAY - SILTY									
6		LOW PLASTIC								MOIST	
8	CL	+ PL			2	–	99	1	0	MOIST-WET	
10		3.1m			3					WET	
12		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



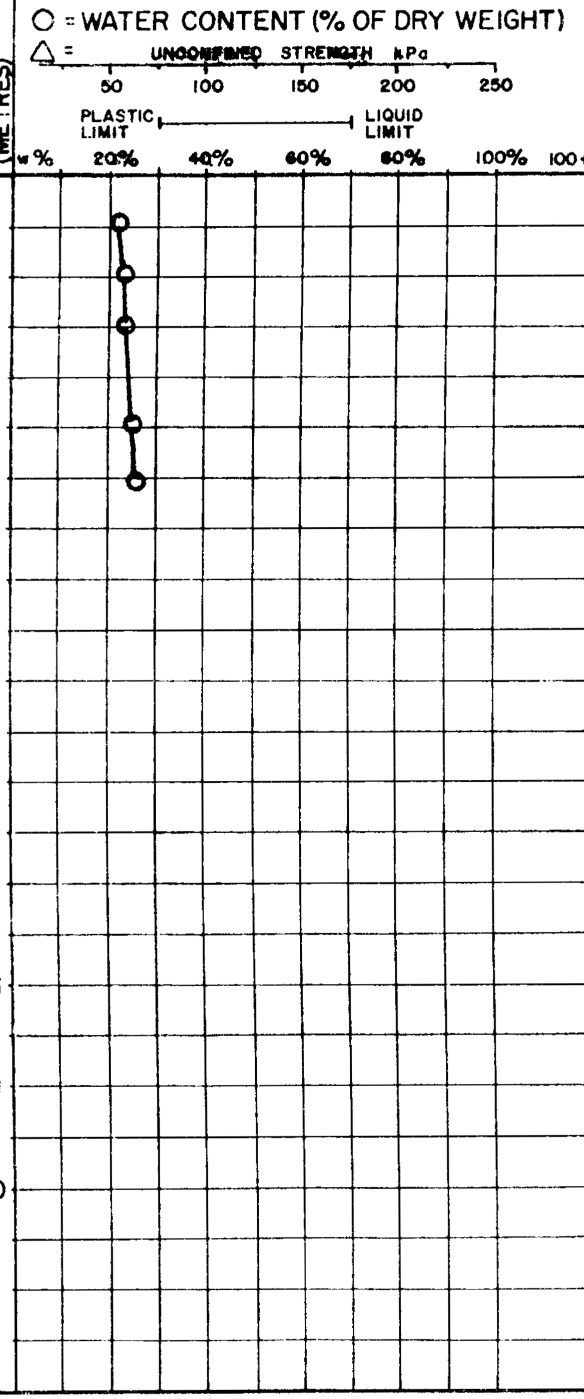
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. Pronych	RIG B-50	DATE 78/02/07	km 145	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
145+910	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - CLAYEY								MOIST	
2	ML	SILT -			1	-	96	4	0	WET	
4		——— 1.5 m								MOIST	
6		CLAY - SILTY			2						
		LOW PLASTIC									
8	CL	+PL				-	99	1	0	MOIST-WET	
10		——— 3.1 m			3					M-W	
12		BOTTOM OF HOLE - 3.1 m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

GRAIN-SIZE ANALYSIS



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/16	km 146	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
146+180	℄

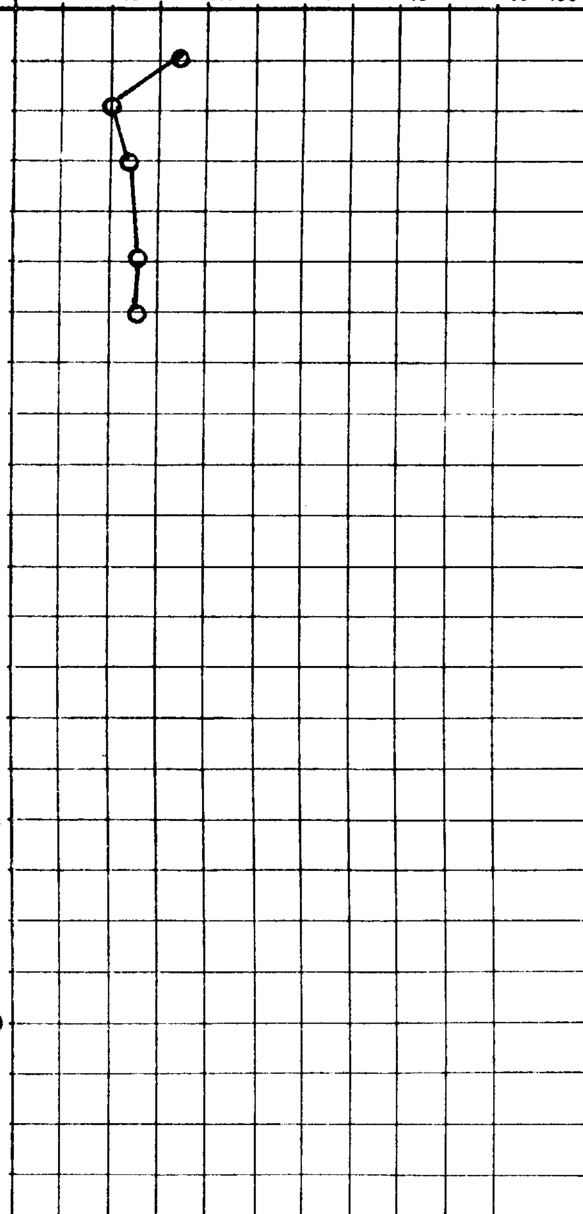
○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	CL	CLAY - SILTY - LOW PLASTIC + P_L				98		2	0	SAT.	
4					1					MOIST	
6						99		1	0	MOIST	
8					2					MOIST-WET	
10		3.1m			3	99		1	0	WET	
12		BOTTOM OF HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32					10						
34											
36					11						
38											



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/16	km 146	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
146+410	℄

REMARKS

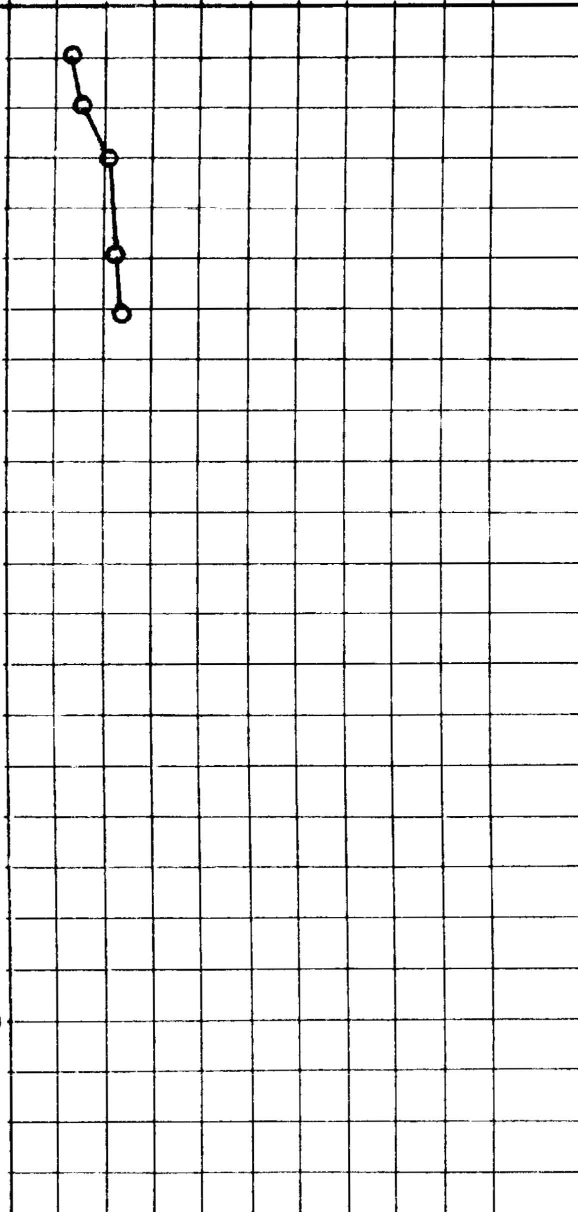
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
		SILT - CLAYEY								DAMP
2	ML				1	99		1	0	DAMP
4		1.2m								
		CLAY - SILTY								DAMP-MOIST
6		-LOW PLASTIC			2					
8	CL	+PL				99		1	0	MOIST
10		3.1m			3					MOIST-WET
12		BOTTOM OF HOLE - 3.1m								
14					4					
16					5					
18										
20					6					
22										
24					7					
26					8					
28										
30					9					
32										
34					10					
36					11					
38										

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

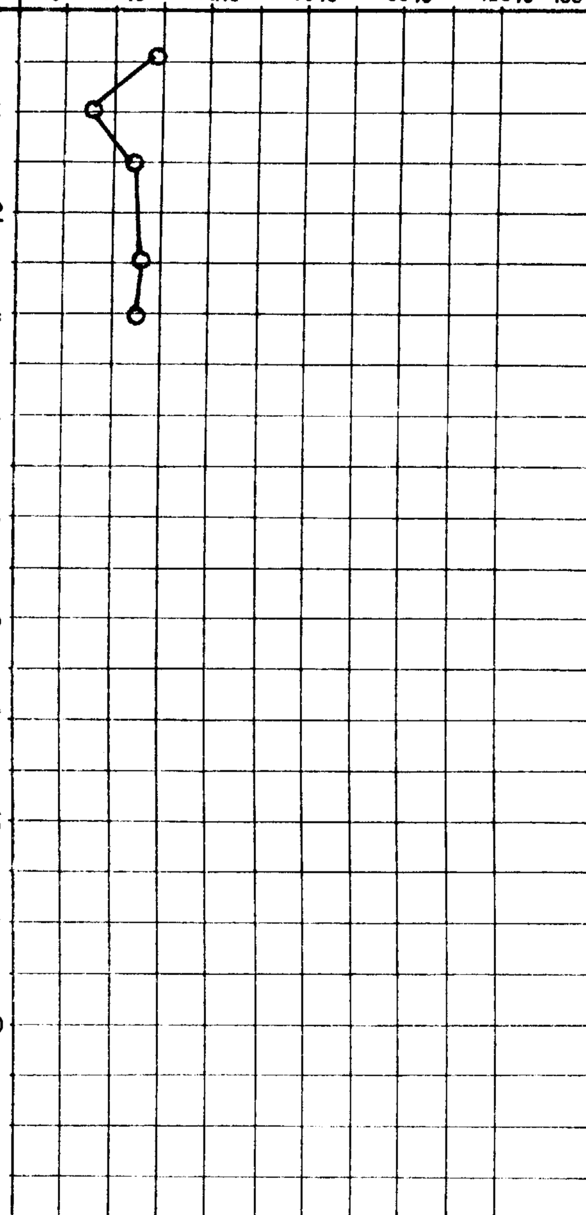
TECH. PRONYCH	RIG B-50	DATE 78/02/16	km 146	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
146+600	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–4	ML	SILT - CLAYEY			0–1.2	85		15	0	SAT.	
		1.2 m			1					MOIST	
4–10	CL	CLAY - SILTY -LOW PLASTIC +P_L			1.5	88		12	0	MOIST	
					2.5					MOIST-WET	
		3.1m			3					WET	
		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/16	146		4

CHAINAGE	OFFSET
146+810	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT.									
4		1.2m			1		98.	2	0	WET	
6		CLAY - SILTY LOW PLASTIC								MOIST-WET	
8	CL	+Pm			2		100.	0	0	M-W	
10		3.1m			3					WET	
12		BOTTOM OF HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

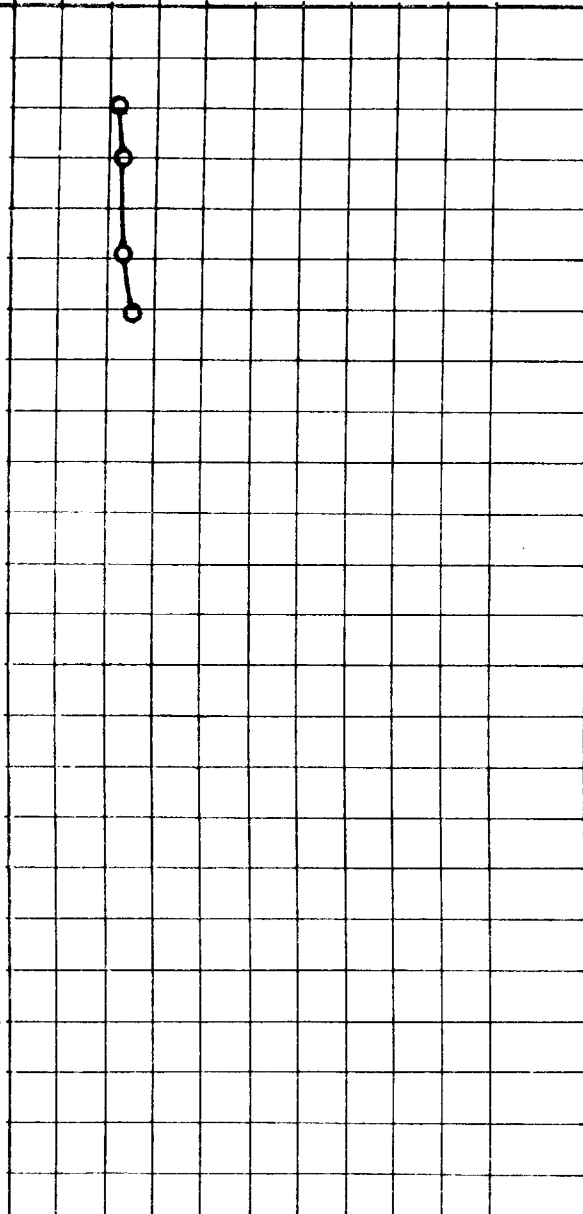
GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



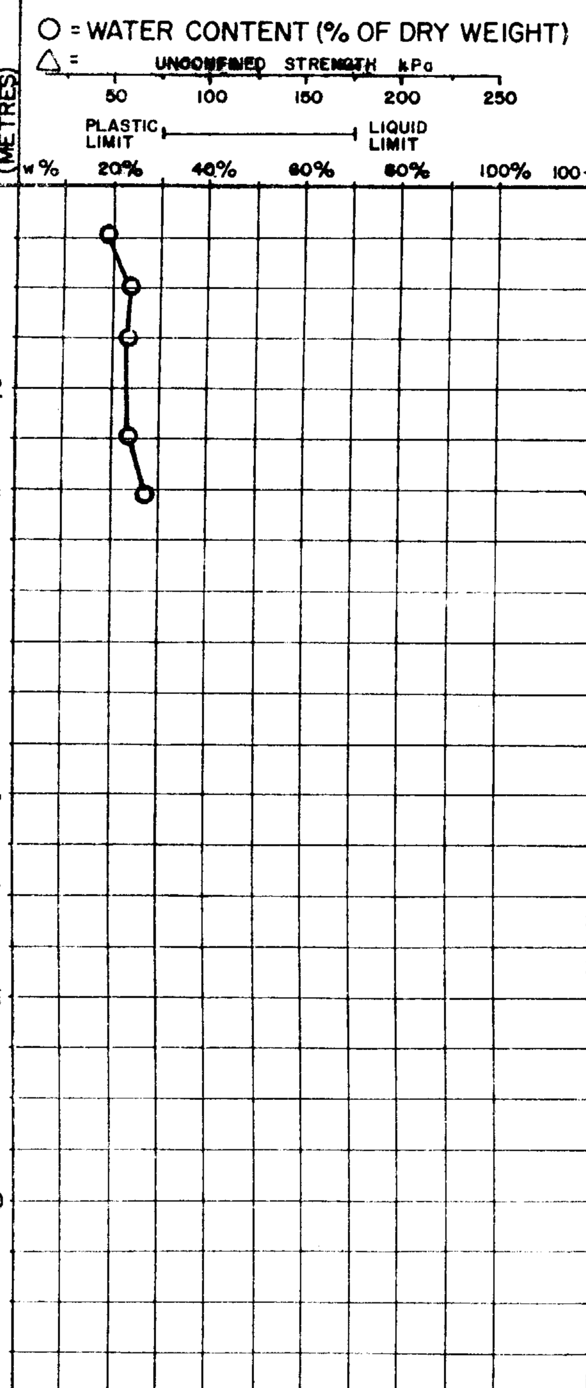
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/16	km 147	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
147+020	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
	ML	SILT.				98		2	0	DAMP
2		.6m								
4		CLAY - SILTY LOW PLASTIC			1					WET
6	CL	+PL				99		1	0	MOIST
8					2					WET
10		3.1m			3	100		0	0	WET
12		BOTTOM OF HOLE - 3.1m								



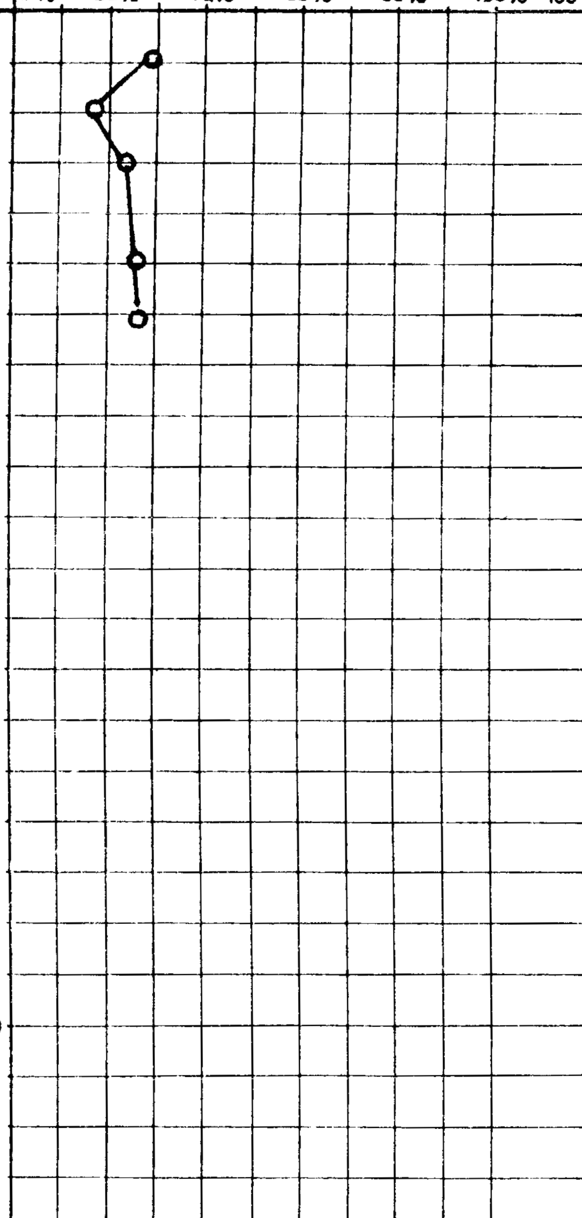
PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/16	147		2

CHAINAGE	OFFSET
147+150	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	CL	CLAY - SILTY		FROZEN	0.5					FREE WATER	
2–4	ML	SILT — 1.2m			1	95-		5	0	MOIST	
4–10	CL	CLAY - SILTY - LOW PLASTIC + PL — 3.1m			1.5					MOIST	
					2.5	99-		1	0	WET	
					3					WET	
12		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/16	km 147 + 300	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
147-300	℄

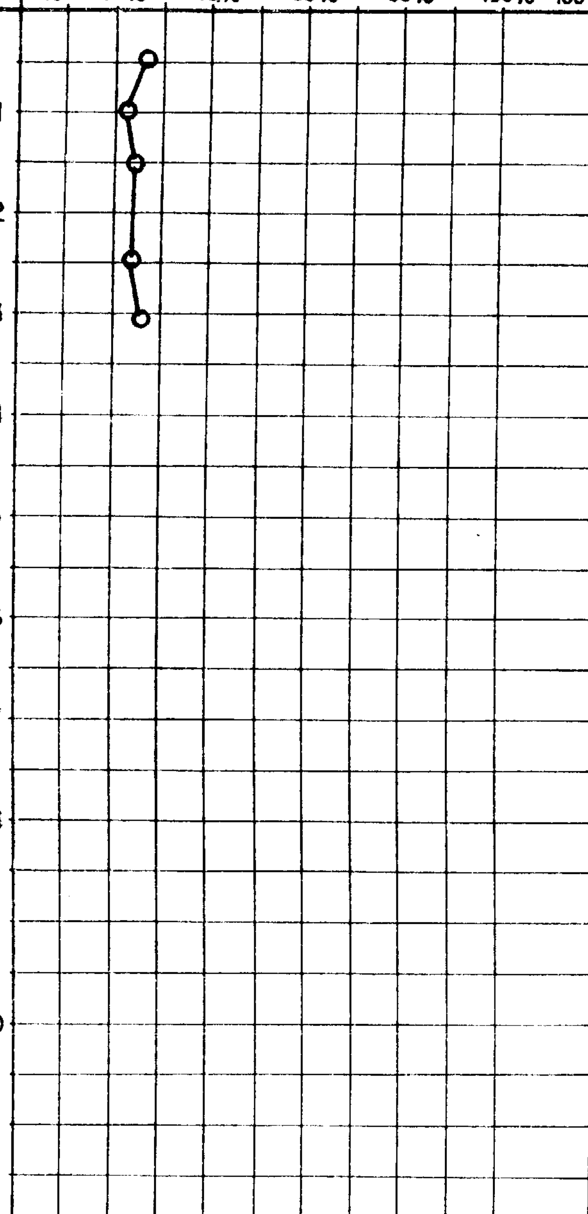
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAYEY SANDY		FROZEN		77		23	0	SAT.	
4		1.2 m			1					MOIST-WET	
		CLAY - SILTY SANDY				79		21	0	M-W	
6					2						
8	CL	- SILTY - LOW PLASTIC								M-W	
10		3.1 m			3	99		1	0	WET	
12		BOTTOM OF HOLE - 3.1 m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT |———| LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



Depth scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38 (feet); 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 (metres)

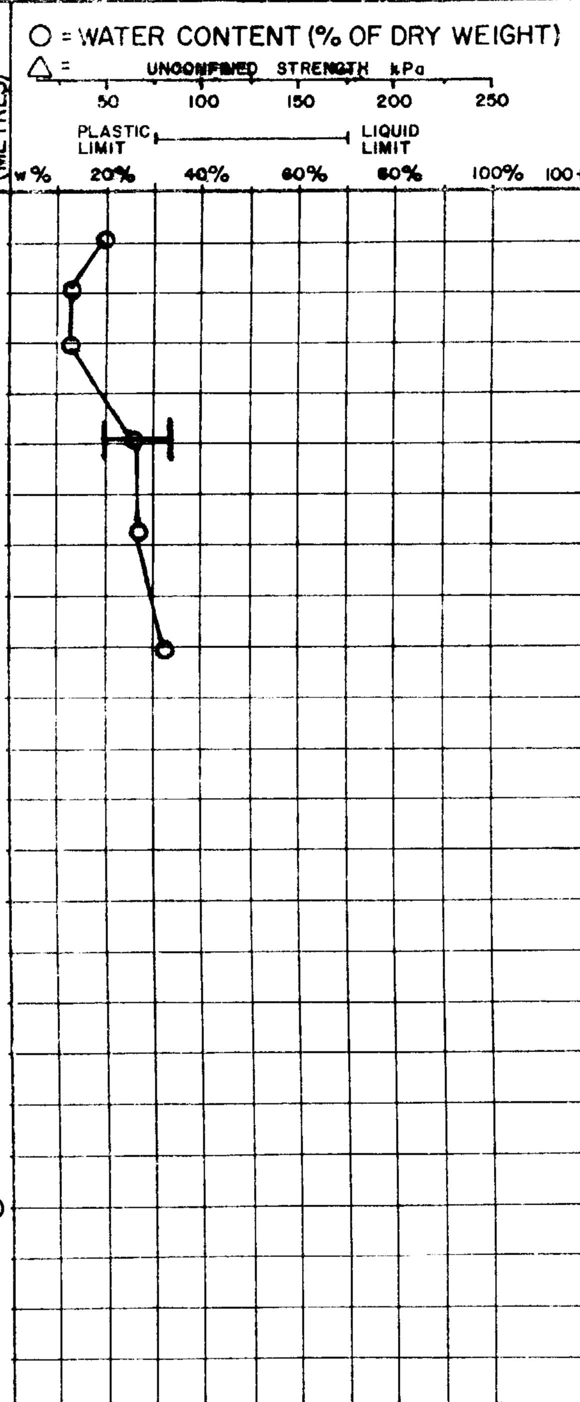
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/16	147+480		4

CHAINAGE	OFFSET
147+480	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–8	ML	SILT - CLAYEY SANDY - SAND 2.4 m			0–2.4	72		28	0	MOIST	
										MOIST	
						57		43	0	MOIST	
										WET	
8–15	CL CI	CLAY - SILTY LOW - MED PLASTIC SAT. LENSE @ 3.7m 4.6 m			2.4–4.6	99		1	0	WET	
										MOIST-WET	
16		BOTTOM OF HOLE - 4.6 m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

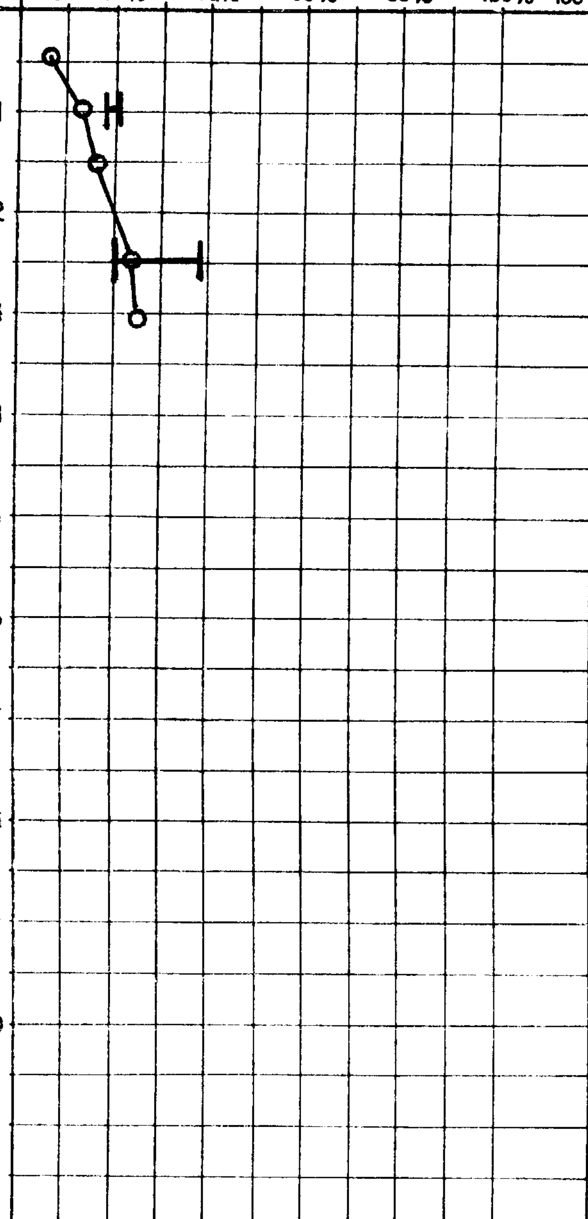
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/16	147 + 570		5

CHAINAGE	OFFSET
147+570	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–7	ML	SILT - SANDY CLAYEY			0–2.1
		2.1 m			
7–10	CL	CLAY - SILTY LOW PLASTIC +PL			2.1–3.1
		3.1 m			
		BOTTOM OF HOLE - 3.1 m			

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |——| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0.5					MOIST	
1.0	-	75	25	0	MOIST	
1.5					MOIST	
2.5	-	98	2	0	MOIST	
3.0					WET	

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

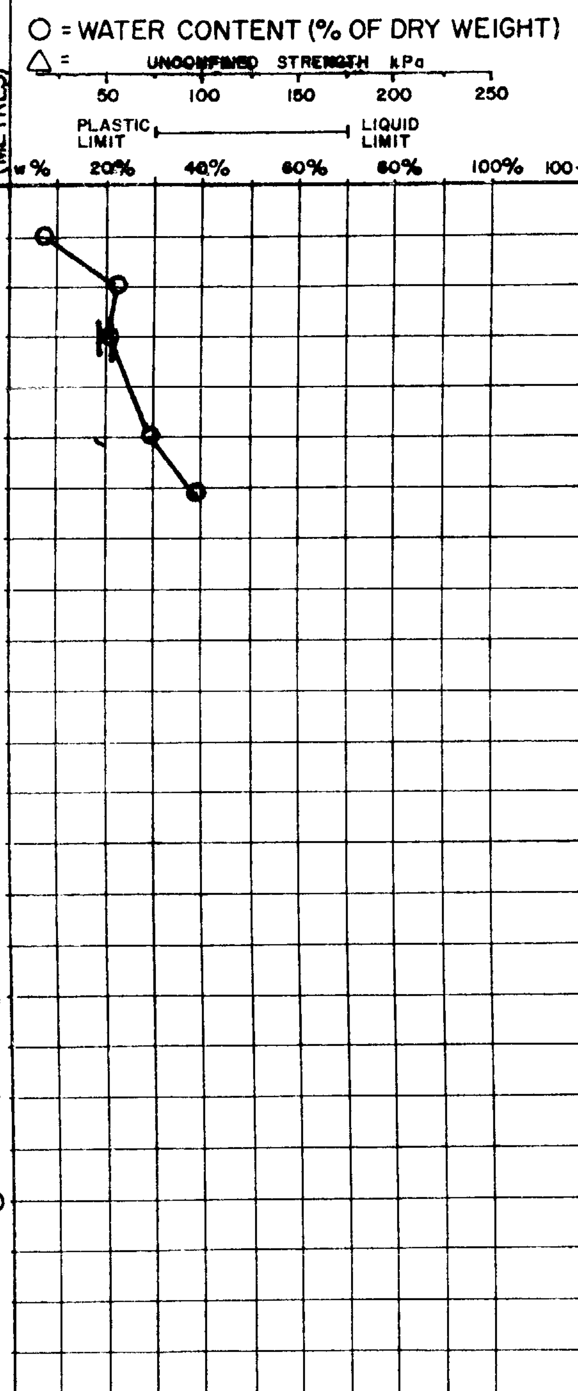
TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 147 +920	B.P. No.	HOLE No. 6

CHAINAGE	OFFSET
147+820 ~~4855~~	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
2	SM	SAND-SILTY .9m				-39-		61	0	MOIST
					1					MOIST
4	ML	SILT-SANDY		FROZEN		-85-		15	0	MOIST
6				ICE	2					
8		2.4m		LENSES						WET
10	CL	CLAY-SILTY LOW PLASTIC 3.1m			3	-99-		1	0	SAT.
12		BOTTOM OF HOLE - 3.1m								

GRAIN-SIZE ANALYSIS



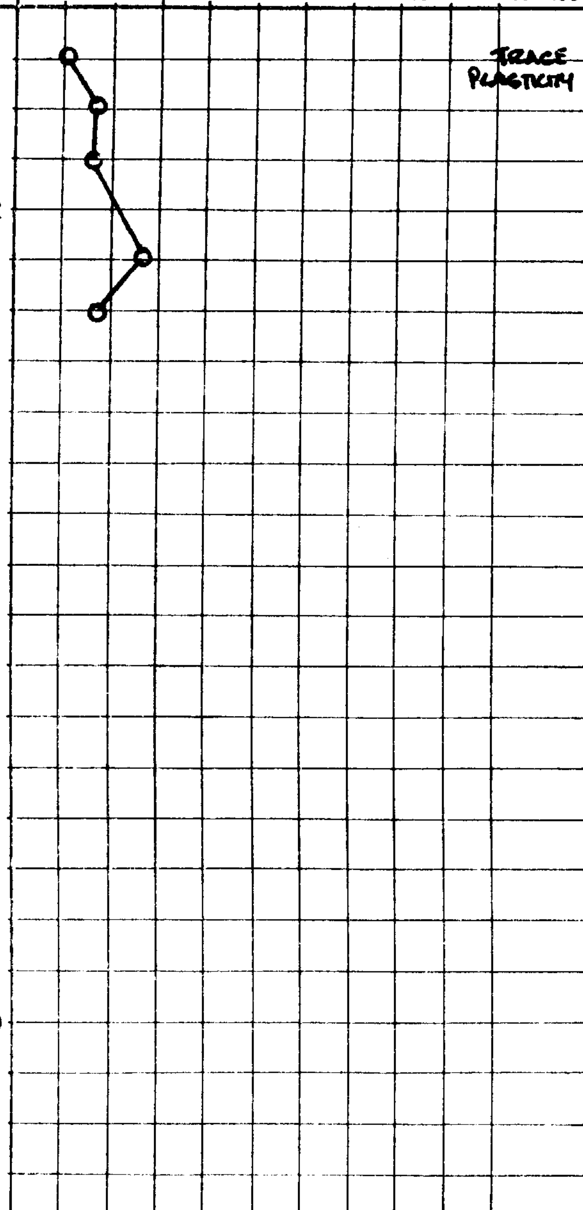
DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

PUBLIC WORKS CANADA — DRILL HOLE REPORT — Liard Hwy.

TECH. Pronych | RIG B-50 | DATE 78/02/17 | km 147+900 | B.P. No. | HOLE No. 7

CHAINAGE	OFFSET
147+910	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa — 50, 100, 150, 200, 250
PLASTIC LIMIT |——| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	WATER CONTENT NOTES	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	SM	SAND - SILTY										
2	ML	SAND - SILT MIX.				TRACE PLASTICITY		44	56	0	MOIST-WET	
4	SM				1						M-W	
		1.5 m						55	45	0	M-W	
6		CLAY SILTY - LOW PLASTIC +PL			2							
8	CL										WET	
10		3.1m			3			97	3	0	WET	
12		BOTTOM OF HOLE - 3.1m										
14					4							
16					5							
18												
20					6							
22												
24					7							
26					8							
28												
30					9							
32												
34					10							
36					11							
38												

PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 148+150	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
148+150	℄

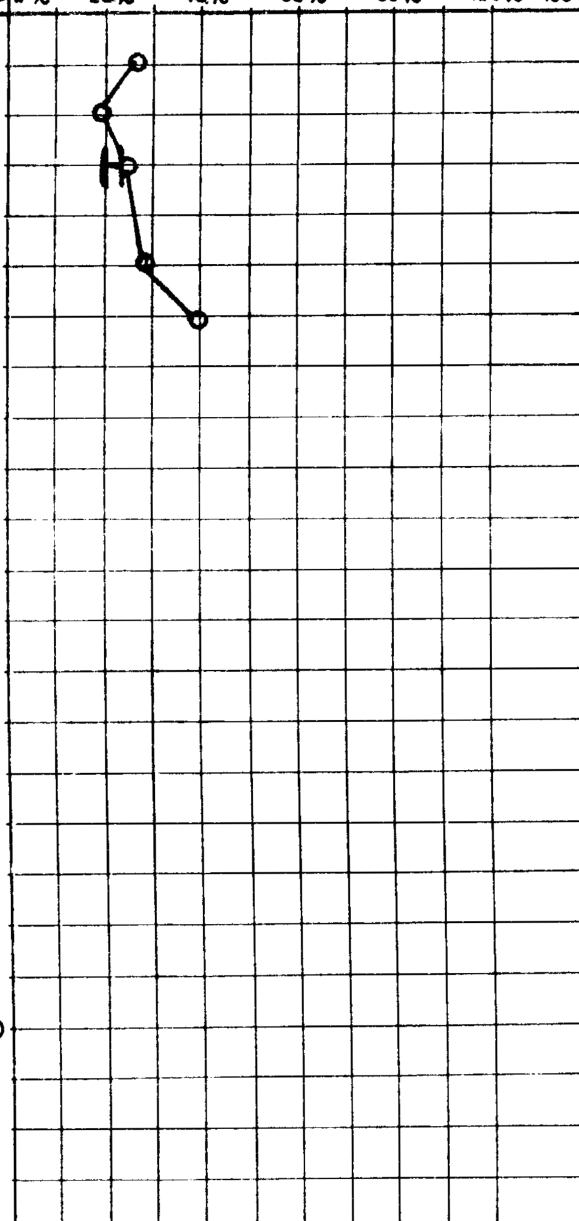
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - CLAYEY		FROZEN						SAT.	
2		- SANDY			1	-	64	36	0	WET	
4	ML	- CLAYEY								SAT.	
6		WET			2						
8		2.4 m				-	98	2	0	WET	
		CLAY - SILTY									
	CL	- LOW PLASTIC 3.1 m		FROZEN						SAT.	
10				ICE LENSES	3						
12		BOTTOM of HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w%: 20%, 40%, 60%, 80%, 100%, 100+



DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD Hwy.

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 148+270	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
148+270	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	CL	CLAY-SILTY — .6m		FROZEN						FREE WATER	
2–7	SM	SAND-SILTY — 2.1m			1	-	57	43	0	WET	
					1.5					WET	
7–10	CL	CLAY-SILTY LOW PLASTIC +P. — 3.1m			2.5	-	96	4	0	WET	
					3					WET	
		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

Depth scale (feet): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

Depth scale (metres): 1 2 3 4 5 6 7 8 9 10 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

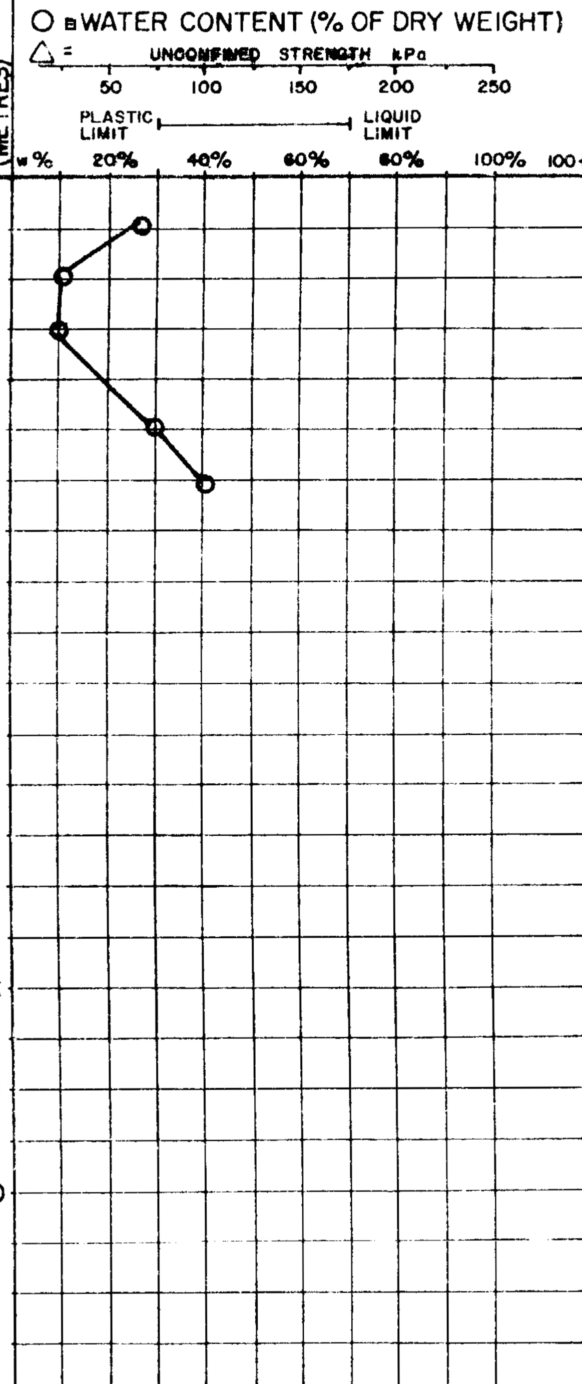
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/17	148 +490		3

CHAINAGE	OFFSET
148+460	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY - SILTY .6m		FROZEN						WET	
2		SAND - SILT		ICE LENSES	1		48-	59	0	MOIST	
4	ML									MOIST	
6–8		2.4m			2		98-	2	0	WET	
8–10	CL	CLAY - SILTY - LOW PLASTIC 3.1m			3					SAT.	
12		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

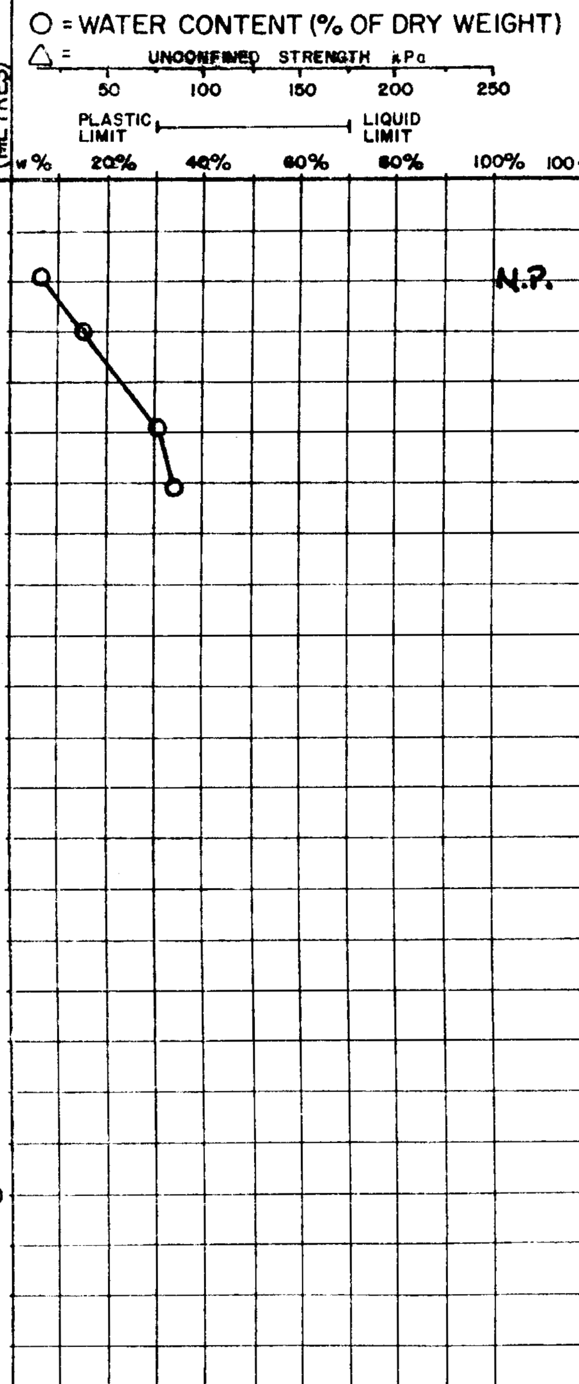


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 148+730	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
148+730	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	SM	SAND-SILT MIXTURE		FROZEN		-45-		55	0	MOIST	
4	ML				1					MOIST-WET	
		1.8m		ICE LENSES		-57-		43	0	MOIST	
6		CLAY-SILTY			2						
8	CL	LOW PLASTIC								WET	
10		+PL			3	-99-		1	0	SAT.	
		3.3m									
12		BOTTOM OF HOLE - 3.3m			4						



DEPTH (FEET): 14 16 18 20 22 24 26 28 30 32 34 36 38

DEPTH (METRES): 5 6 7 8 9 10 11

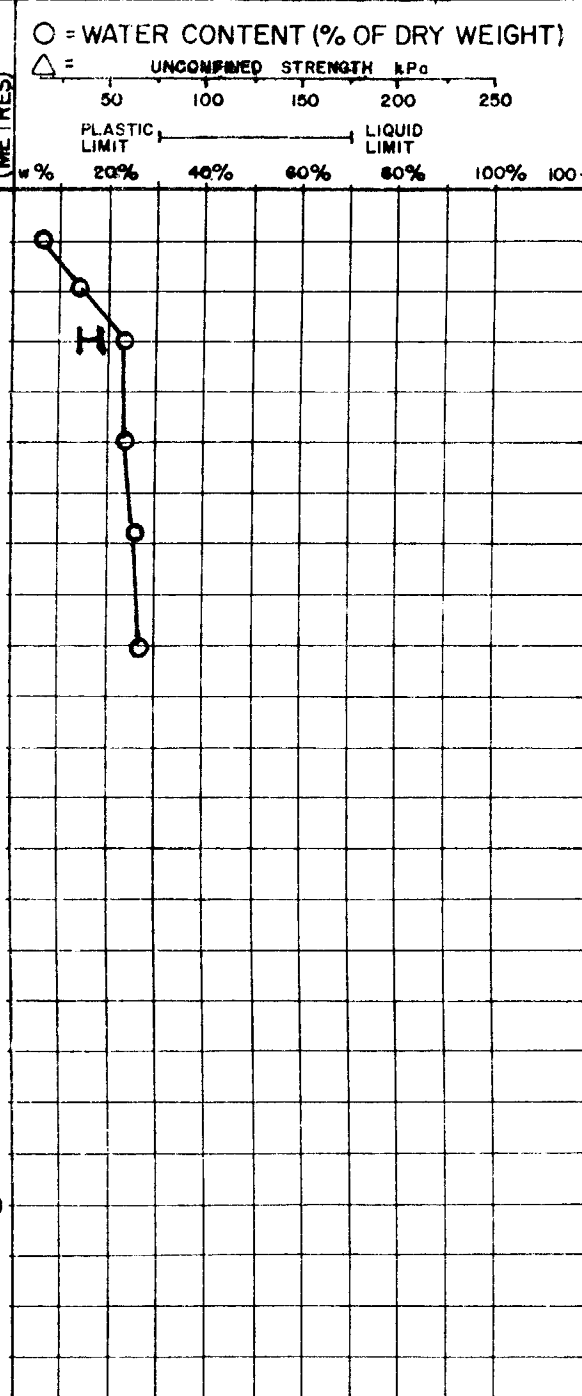
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/17	148-~~8~~990		5

CHAINAGE	OFFSET
148 + 990 ~~4894~~	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–1.5 m	SM	SAND - SILTY					28	72	0	DAMP	
										MOIST	
		1.5m					62	38	0	MOIST-WET	
	ML	SILT - SANDY CLAYEY									
		2.4m								WET	
	CL	CLAY - SILTY Low Plastic +PL								WET	
							98	2	0		
		4.6m								WET-SAT.	
		Bottom of Hole - 4.6m									

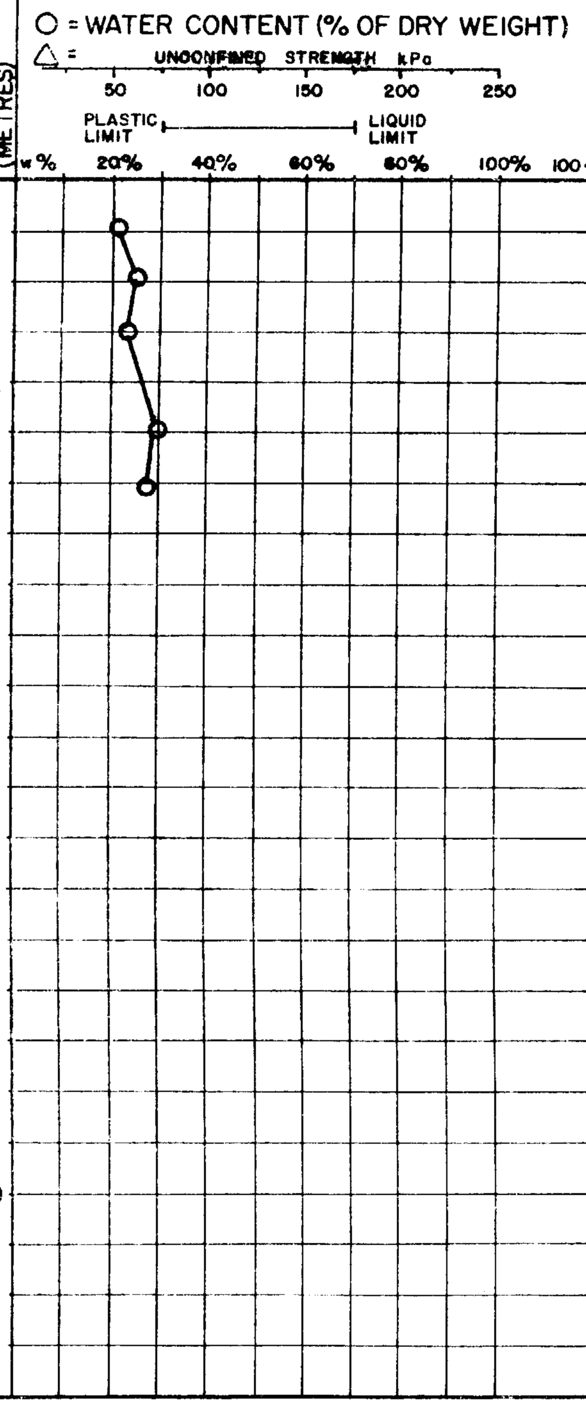


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 149	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
149+155	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	CL	CLAY - SILTY - LOW PLASTIC +P_L								MOIST-WET	
4					1	98		2	0	WET	
6										WET	
8					2	100		0	0	WET	
10		3.1m			3					WET	
12		BOTTOM OF HOLE. 3.1m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/17	149		2

CHAINAGE	OFFSET
149+670	℄

DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–.6m	CL	CLAY-SILTY			90		10	0	SAT.	
.6m–2.1m	ML	SILT							MOIST	
					99		1	0	WET	
2.1m–3.1m	CL	CLAY-SILTY LOW PLASTIC +Pl							WET	
					100		0	0	WET	

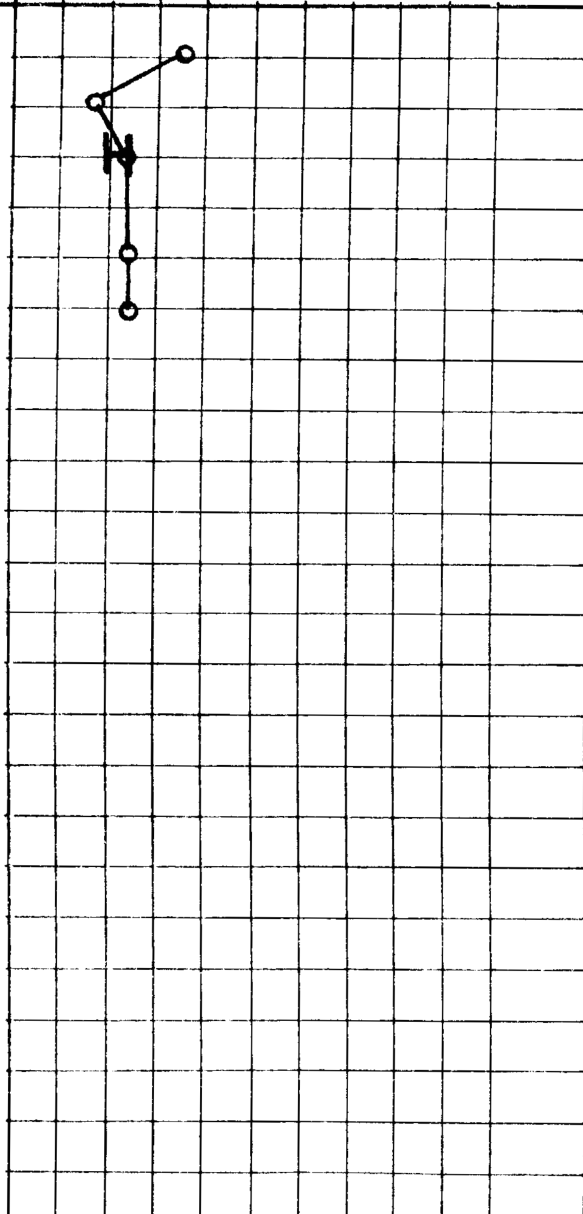
BOTTOM OF HOLE - 3.1 m

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w%: 20%, 40%, 60%, 80%, 100%, 100+



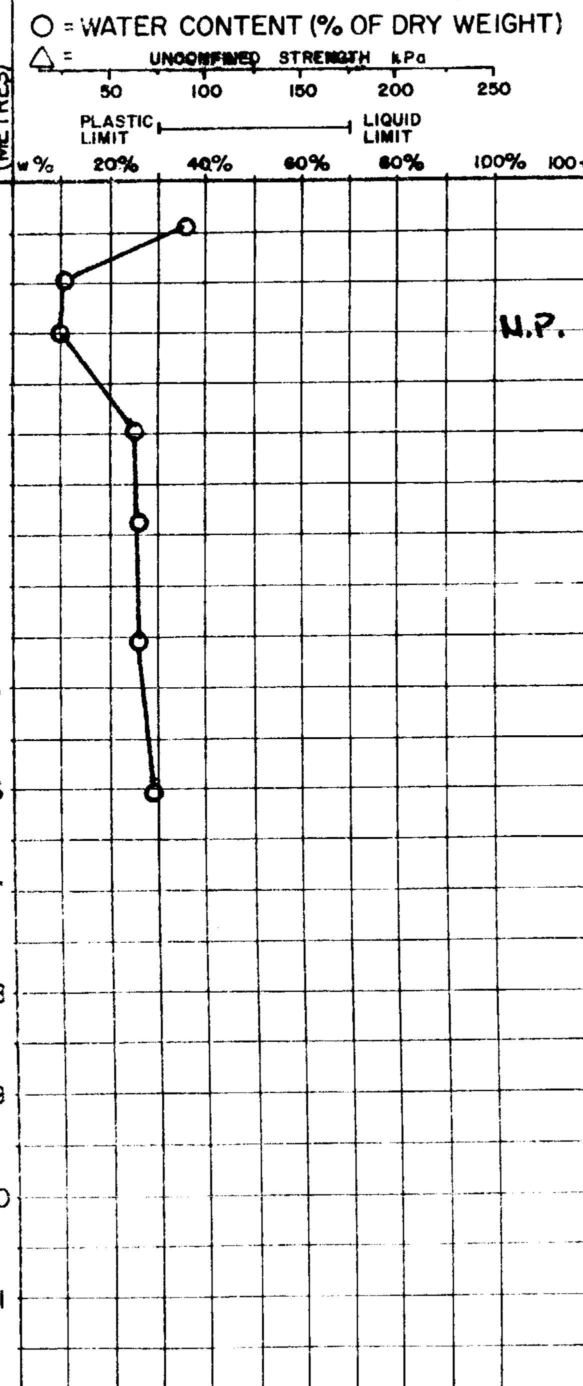
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 149	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
149+920	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY - SILTY								FREE WATER	
2		.6m									
		SILT - SANDY			1	-71-		29	0	MOIST	
4	ML					N.P.				MOIST-WET	
6		SAT. AFTER 1.8m 2.1m			2						
8		CLAY - SILTY - LOW PLASTIC +PL				-97-		3	0	WET	
10					3					WET	
12	CL				4						
14		GRAY.				-97-		3	0	WET	
16					5						
18										SAT.	
20		6.1m			6						
22		BOTTOM OF HOLE - 6.1m									
24					7						
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



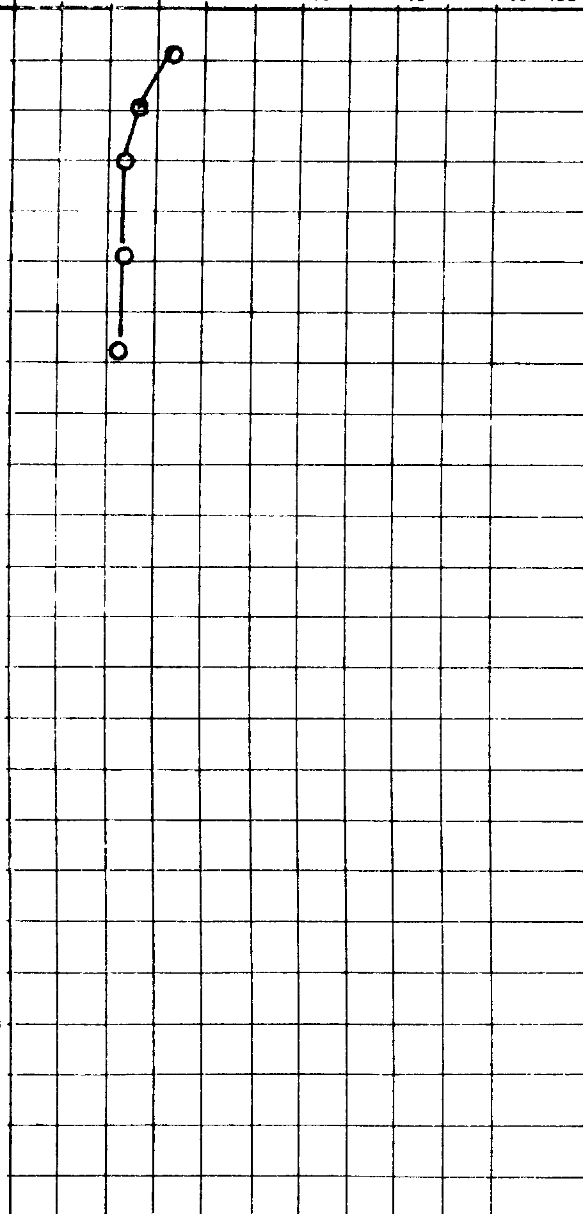
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/17	150		1

CHAINAGE	OFFSET
150+240	~~50 Lt~~ ~~152 Lt~~ & ℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–2	CL	CLAY - SILTY .6m			
2–10	ML	SILT - CLAYEY SAT. AFTER 1.8m 3.1m			1, 2, 3
10–12		BOTTOM OF HOLE. 3.1m			

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



Depth (m)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
~0.4					SAT.	
~1.0	93		7	0	WET-SAT.	
~1.5					W-S.	
~2.5	83		17	0	W-S.	
~3.4					W-S	

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/17	150		2

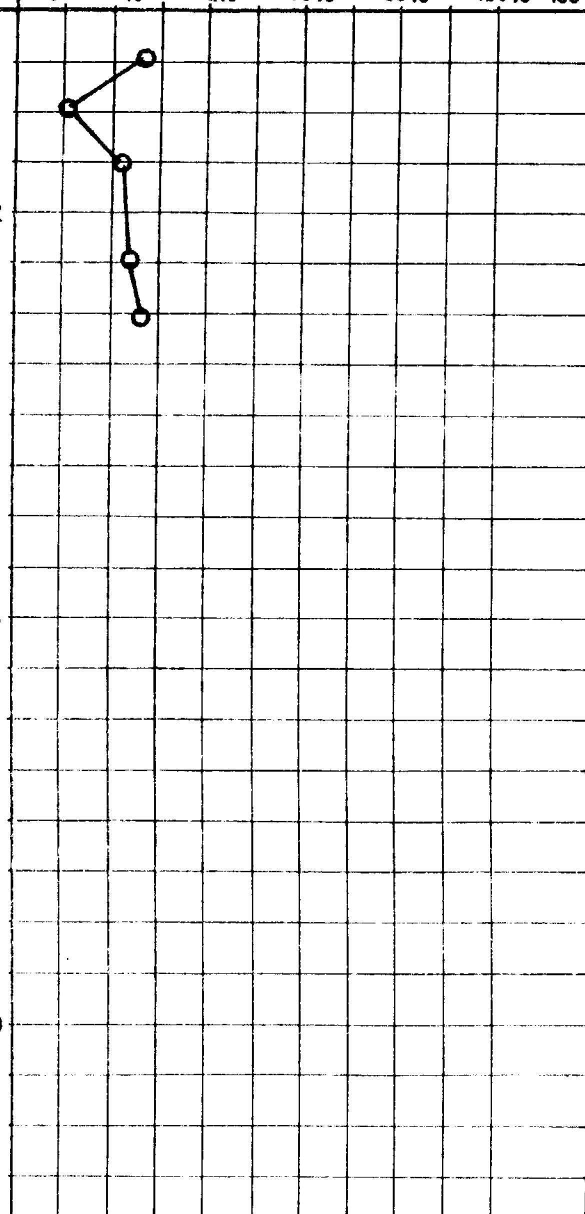
CHAINAGE	OFFSET
150+740	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa — 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT-									
2		- SANDY				97		3	0	SAT.	
4	ML				1					MOIST-WET	
6						77		23	0	WET	
					2						
8		- CLAYEY								SAT.	
10	CL	CLAY-SILTY 3.1m			3	98		2	0	WET	
12		Bottom of Hole - 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

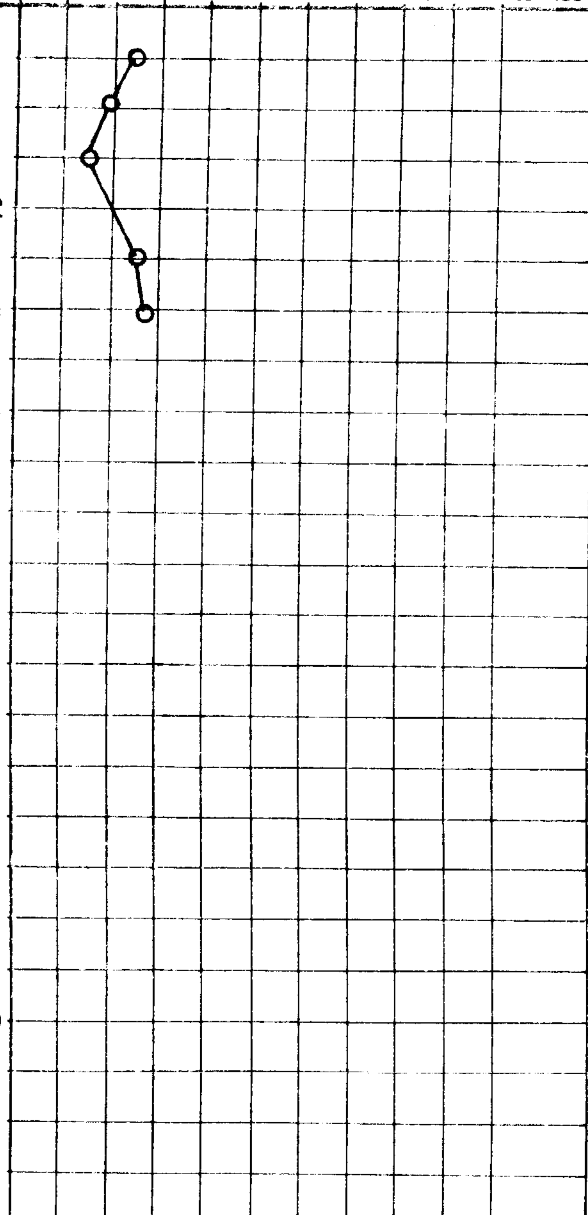
TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 151	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
151+080	~~[illegible]~~ ℄

Unified Soil Symbol	Soil Description	Depth	Clay %	Silt %	Sand %	Gravel %	Relative Moisture Content
ML	SILT - CLAYEY SANDY	.6m	89		11	0	WET
SM	SAND - SILT SAT. AFTER 2.1m	2.4m	40		60	0	MOIST WET
ML	SILT.	3.1m	82		18	0	SAT. FREE WATER
	BOTTOM of HOLE - 3.1m						

O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

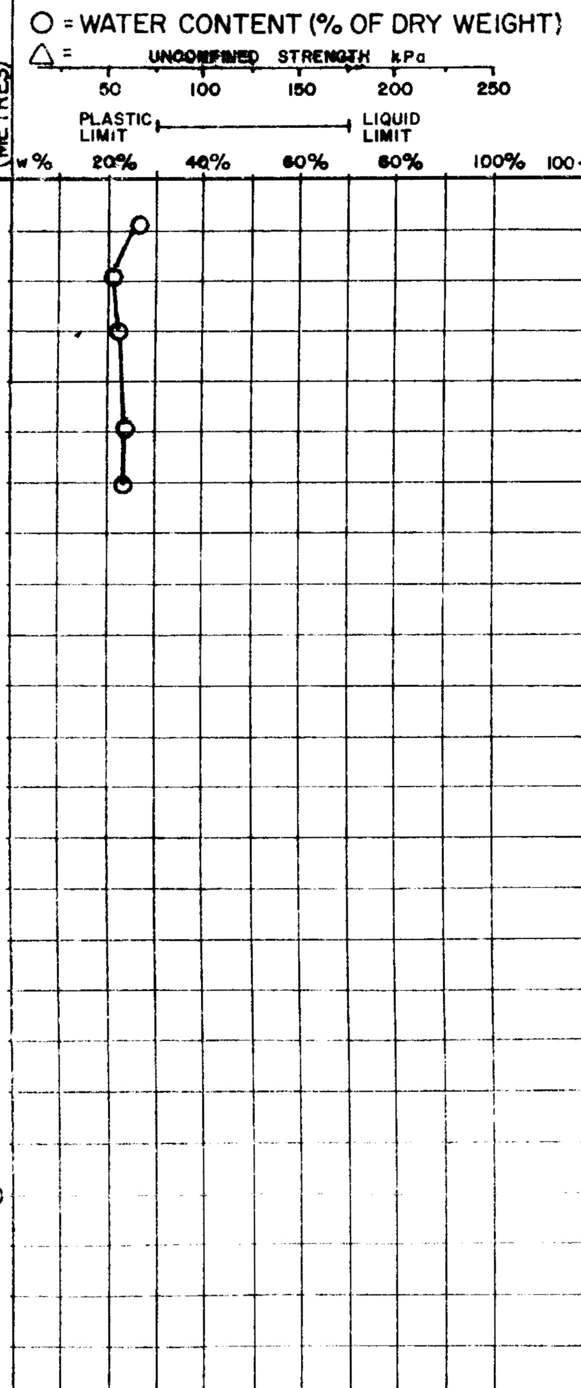
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYSCH	B-50	78/02/17	151		2

CHAINAGE	OFFSET
151+620	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		Clay - Silty								Sat.	
4	CL	- Low Plastic			1	-96-		4	0	Wet	
6		+ P_L								Wet	
8					2	-100-		0	0	Wet	
10		3.1m			3					Moist	
12		Bottom of Hole - 3.1m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

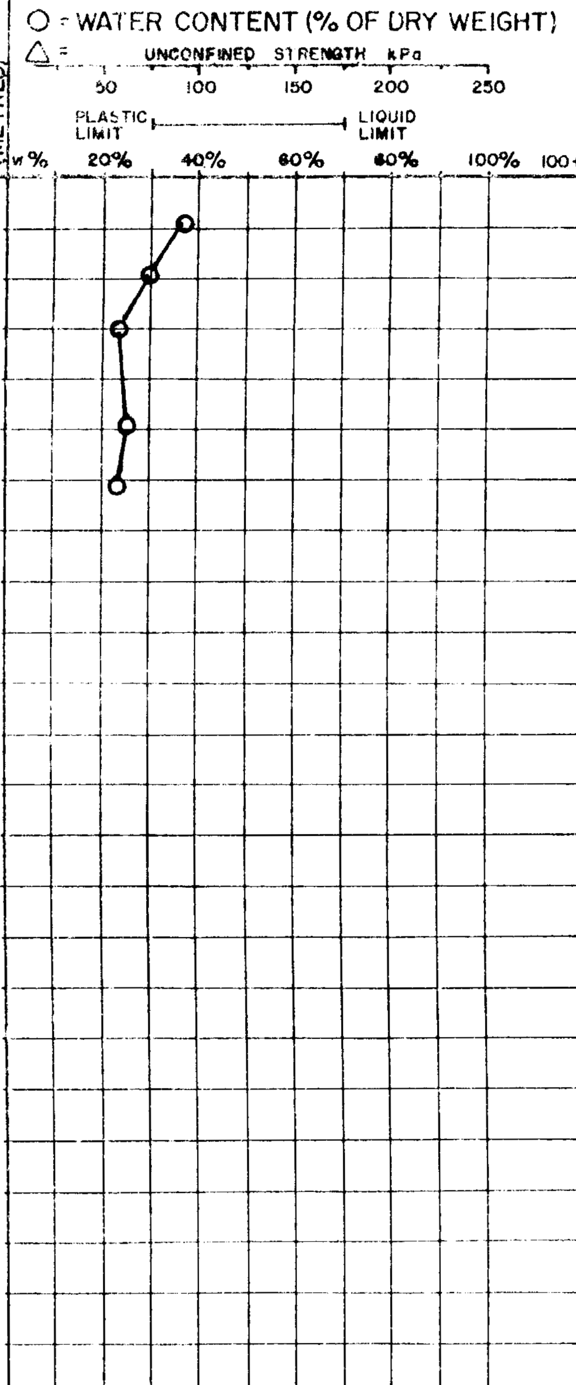


PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Liard Hwy.

TECH. Pronych	RIG B-50	DATE 78/02/17	km 151	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
151+950	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	Pt / ML	Silt - Clayey - Org To .3m; .6m					99	1	0	Rainwater	
2		Clay - Silty			1					Sat.	
4		Low Plastic					100	0	0	Moist-Wet	
6	CL	+P$_L$			2						
8										Wet	
10		3.1m			3		100	0	0	Wet	
12		Bottom of Hole .3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36											
38					11						



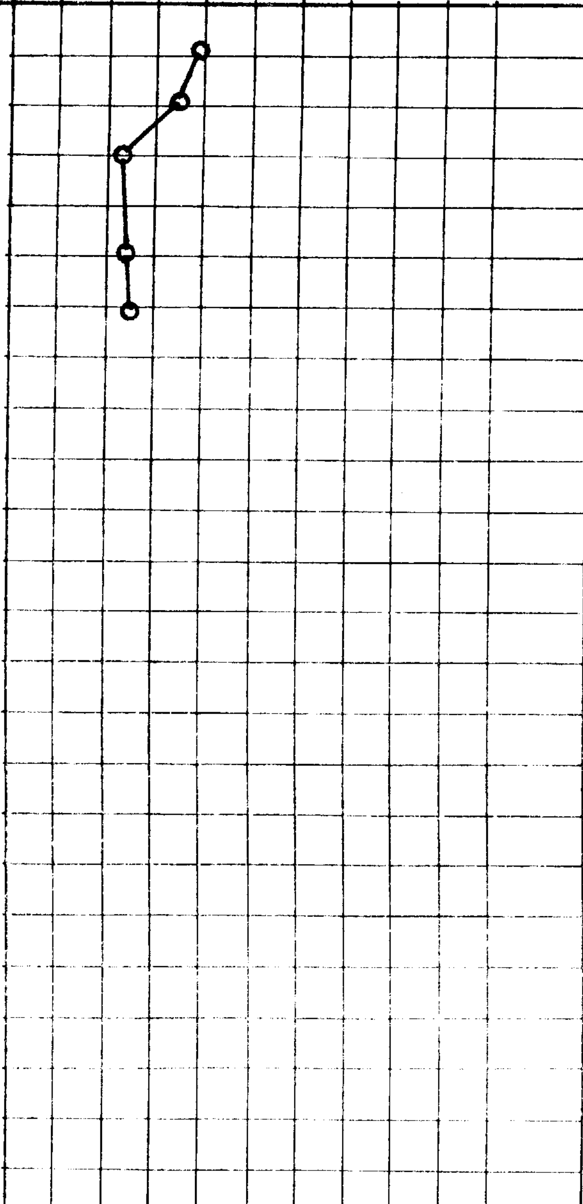
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYUCH	RIG B-50	DATE 78/02/17	km 152	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
152+260	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY-SILTY SOME ORG TO .9 m								SAT	
4		LOW PLASTIC			1	99		1	0	SAT.	
6	CL	+PL								MOIST-WET	
8					2	100		0	0	M-W	
10		3.1 m			3					M-W	
12		BOTTOM OF HOLE - 3.1 m									
14					4						
16											
18					5						
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/17	152		2

CHAINAGE	OFFSET
152+410	℄

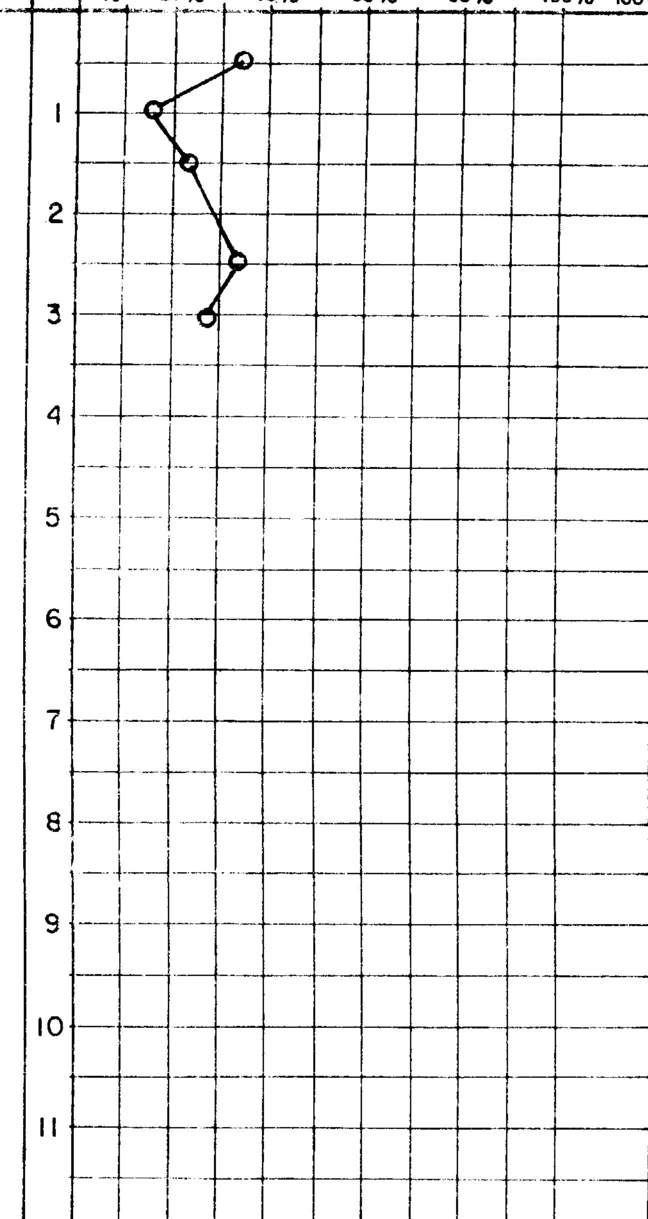
DEPTH (METRES)	SOIL DESCRIPTION	UNIFIED SOIL SYMBOL	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–3.1	CLAY - SILTY LOW PLASTIC +PL WET 2.1m - 3.1m	CL					
~0.5			99		1	0	SAT.
~1.0							DAMP-MOIST
~1.5			100		0	0	MOIST
~2.5							WET
3.0			99		1	0	WET
3.1	3.1m						
	Bottom of Hole - 3.1m						

PENETRATION RESISTANCE | ICE DESCRIPTION | REMARKS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 152	B.P. No.	HOLE No. 3

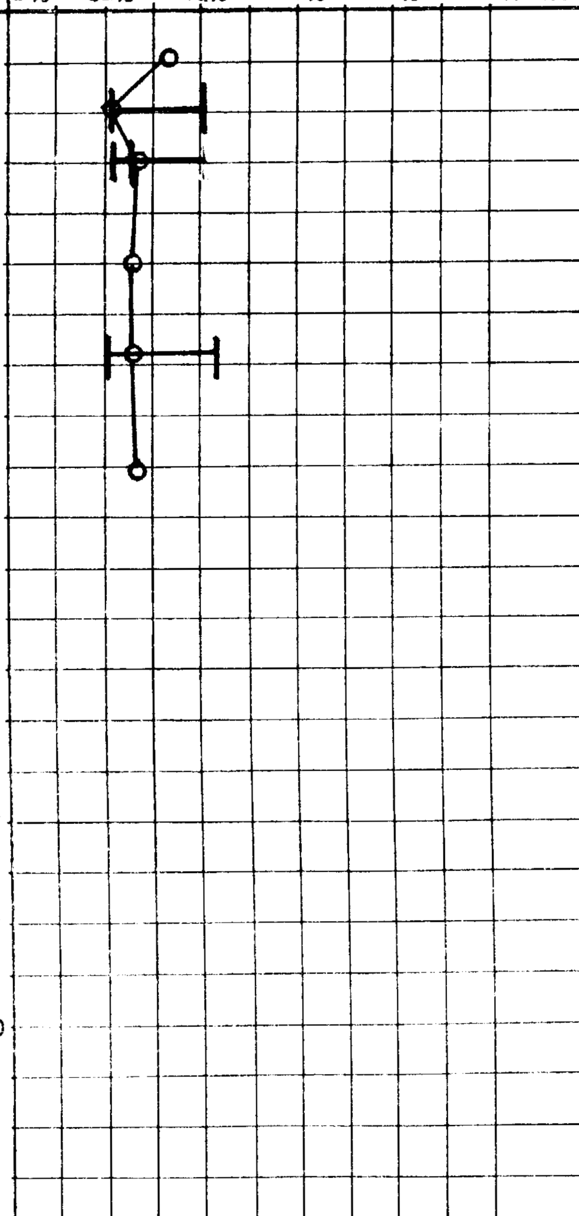
CHAINAGE	OFFSET
152+530	

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		CLAY - SILTY							SAT.	
1		- LOW PLASTIC			-100-		0	0	MOIST	
	CL	+PL							WET	
2					-100-		0	0	WET	
3		WET 3.1m - 4.6m							WET	
4		4.6m			-100		0	0	WET	
5		BOTTOM OF HOLE 4.6m								

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

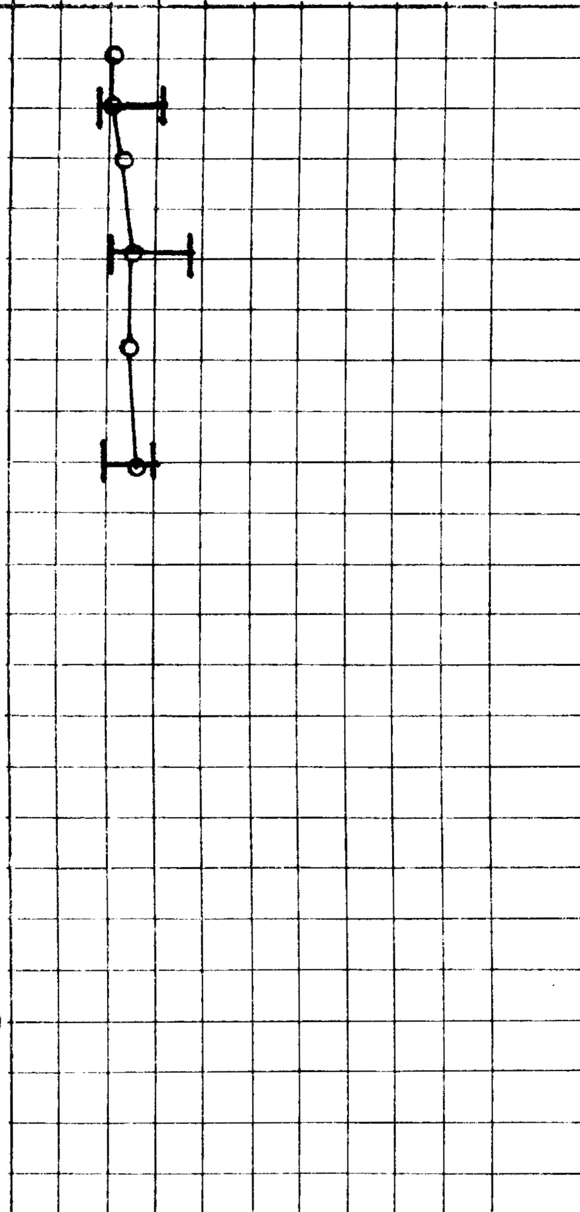
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/17	152		4

CHAINAGE	OFFSET
152+623	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY				-98-		2	0	DAMP	
4		LOW PLASTIC			1					MOIST	
6		+PL				-99-		1	0	MOIST	
8	CL				2					MOIST-WET	
10		WET 3.7m - 4.6m			3	-99-		1	0	M-W	
12											
14		4.6m			4					WET	
16		BOTTOM OF HOLE - 4.6m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

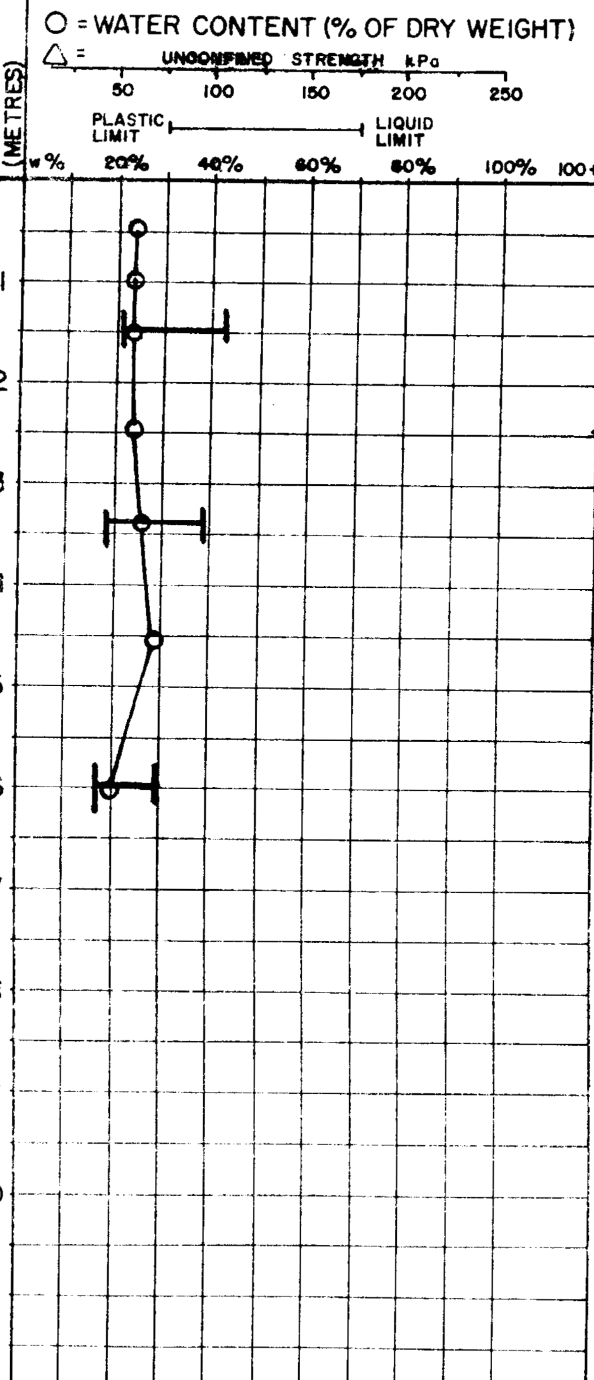
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 152	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
152+680	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY								MOIST	
4		- LOW PLASTIC			1	-98	-	2	0	MOIST	
6		+ PL								MOIST	
8	CL				2	-100	-	0	0	MOIST-WET	
10		WET FROM 3.1m - 6.1m			3						
12										WET	
14					4						
16						-97	-	3	0	SAT.	
18					5						
20		6.1m			6					SAT.	
22		BOTTOM OF HOLE - 6.1m									
24					7						
26											
28					8						
30					9						
32											
34					10						
36					11						
38											

GRAIN-SIZE ANALYSIS



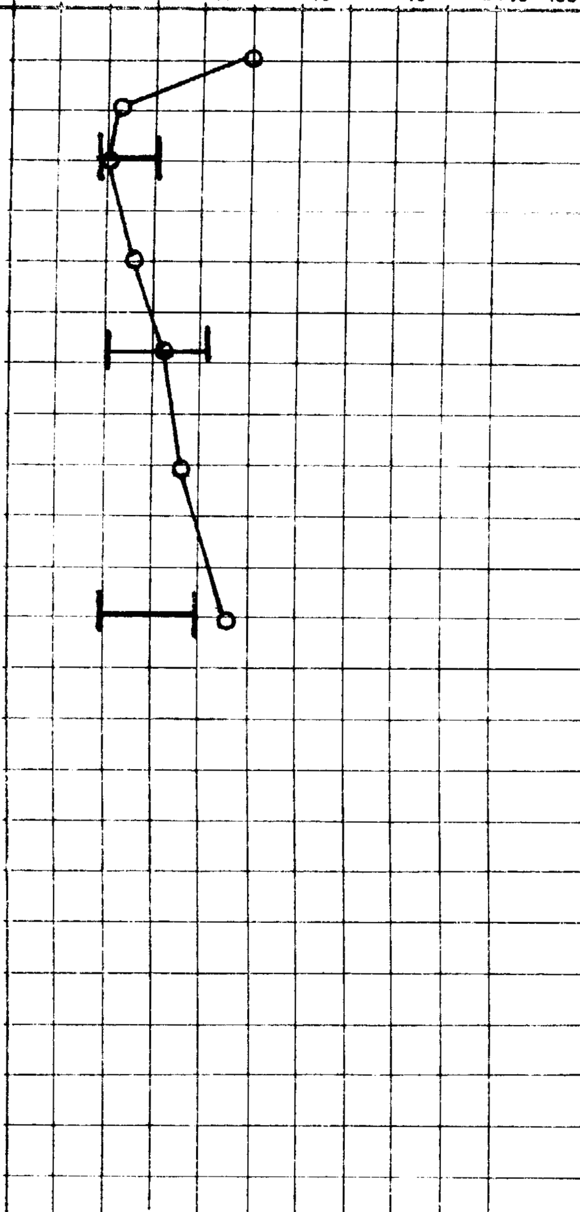
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Liard Hwy.

TECH. Webber	RIG B-50	DATE 78/02/17	km 152	B.P. No.	HOLE No. 6

CHAINAGE	OFFSET
152+870	℄

REMARKS

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100%



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–20	CL	CLAY - SILTY - LOW PLASTIC + P_L		FROZEN Ice Lenses (below approx. 4 m)	0–6.1					
					~0.5					Free Water
					1		100	0	0	WET
					~1.5					WET
					~2.5		100	0	0	WET
					~3.4					SAT
					~4.5		99	1	0	SAT
					6					SAT.
20		6.1 m			6.1					
22		Bottom of Hole 6.1 m								

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/17	152		7

CHAINAGE	OFFSET
152+930	℄

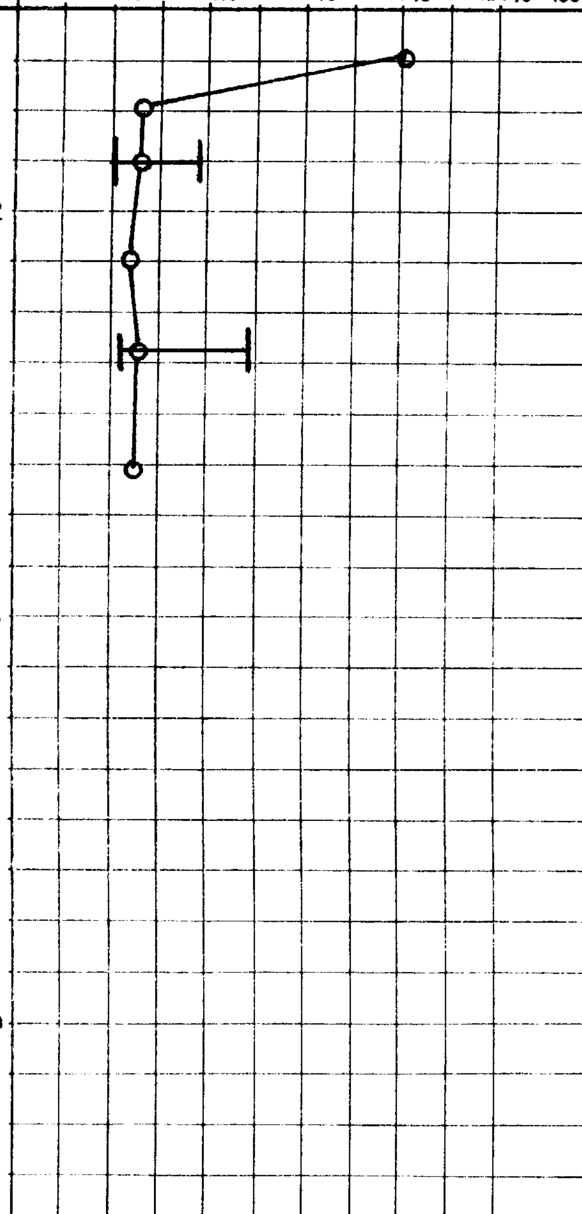
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–5	ML	SILT - CLAYEY - ORGANICS - CLAYEY 1.5 m			0–1.5
5–15	CL	CLAY - SILTY - LOW PLASTIC WET FROM 3.1m - 4.6m 4.6m			1.5–4.6
		BOTTOM OF HOLE - 4.6m			

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



Approx. depth (m)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0.5					SAT.	
1.0	-	99 -	1	0	SAT.	
1.5					WET	
2.5	-	100 -	0	0	MOIST	
3.4					MOIST-WET	
4.5	-	100 -	0	0	WET	

PUBLIC WORKS CANADA — DRILL HOLE REPORT

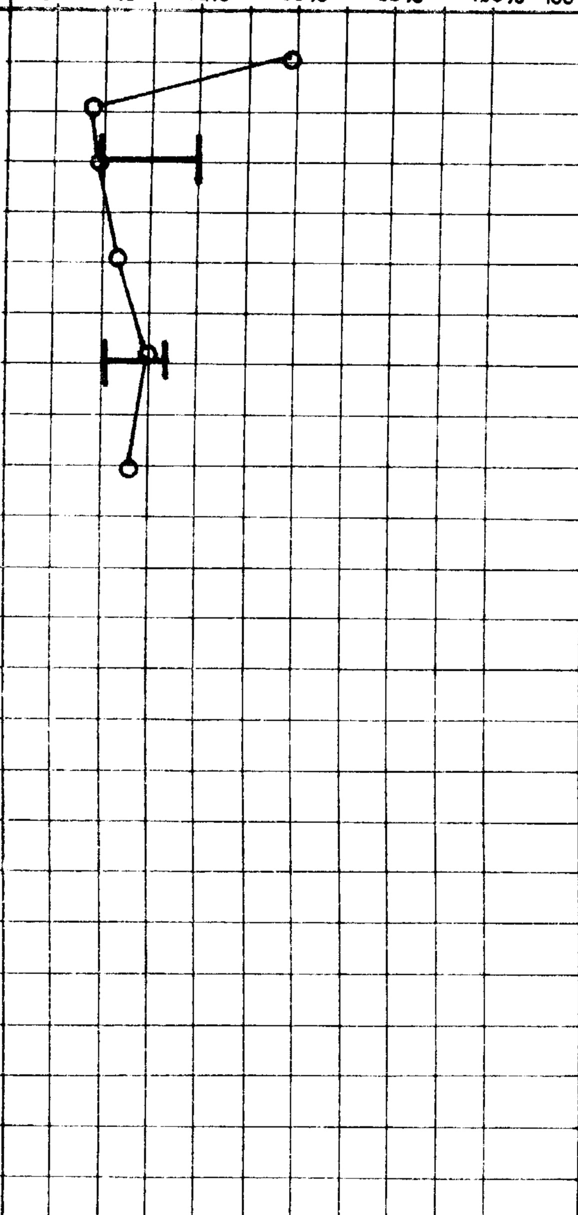
LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 153	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
153+020	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT —— LIQUID LIMIT
w %: 20%, 40%, 60%, 80%, 100%, 100+

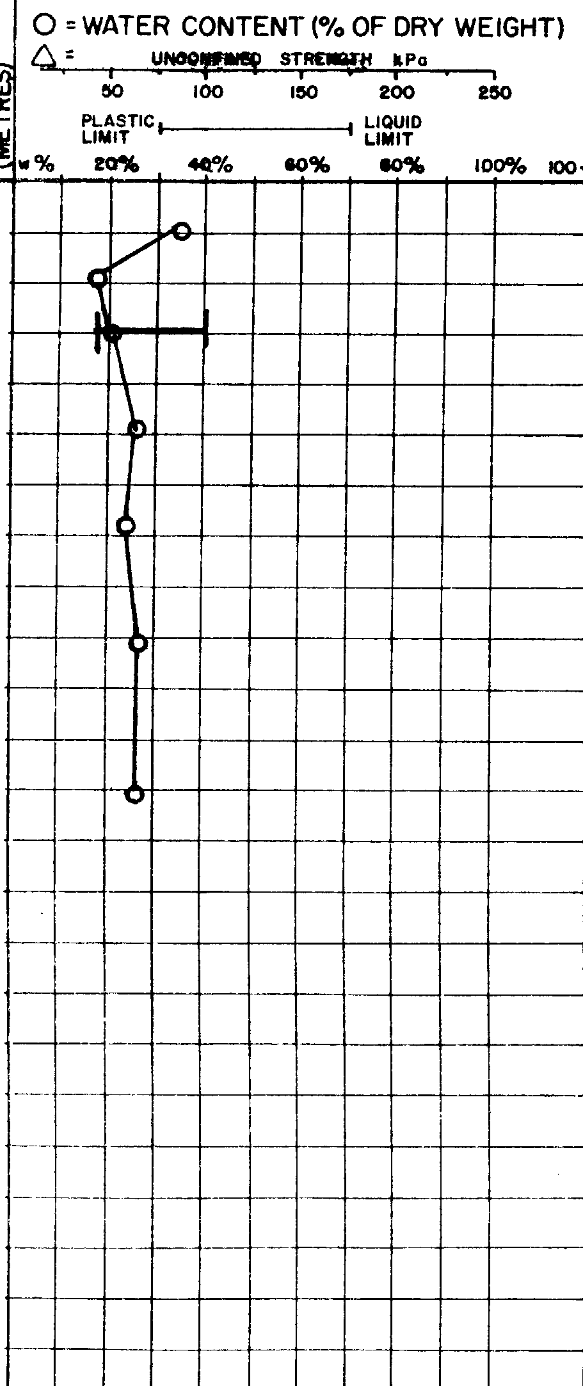
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY				97		3	0	FREE WATER	
4		- LOW PLASTIC			1					MOIST	
6	CL	+PL				99		1	0	MOIST	
8					2					MOIST-WET	
10					3						
12						99		1	0	WET	
14		GREY 4.6 m			4						
16		BOTTOM OF HOLE - 4.6 m								WET	
18					5						
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.			
TECH. WEBBER	RIG B-50	DATE 78/02/17	km 153	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
153+110	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–20	CL	CLAY - SILTY - LOW PLASTIC +P			0–6.1					FREE WATER	
					1	-99-		1	0	MOIST	
					1.5					MOIST	
					2.5	-99-		1	0	MOIST	
					3.4					MOIST	
		WET 4.9m - 6.1m			4.5	-97-		3	0	WET	
20		6.1m			6.1					SAT.	
		BOTTOM OF HOLE - 6.1m									



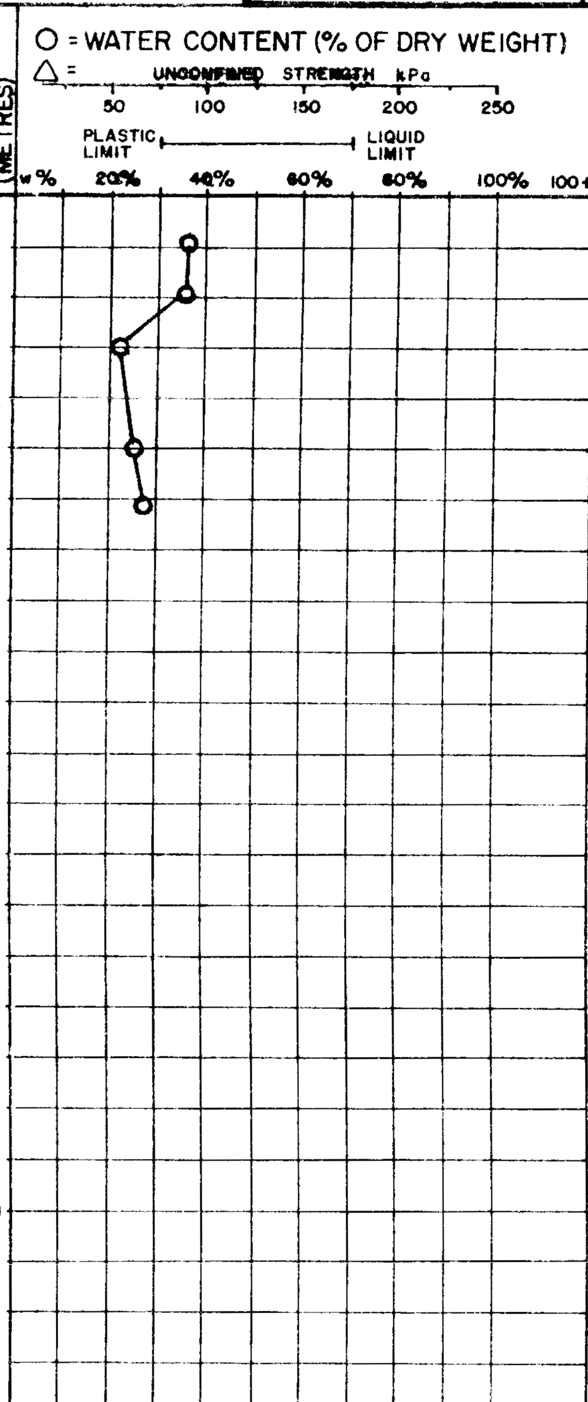
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/17	153		3

CHAINAGE	OFFSET
153+450	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–10	CL	CLAY - SILTY - LOW PLASTIC + P_L			0–3.1					FREEWATER	
						-99-		1	0	FREEWATER	
										WET	
						-100-		0	0	WET	
		3.1m								WET	
12		BOTTOM OF HOLE 3.1m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

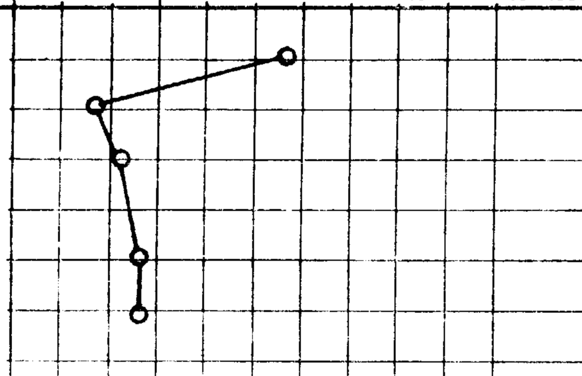
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/17	153		4

CHAINAGE	OFFSET
153+690	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY - ORGANICS				-99-		1	0	FREEWATER	
4		- SILTY			1					DAMP	
6	CL	- LOW PLASTIC				-99-		1	0	MOIST	
8		+PL			2					WET	
10		3.1m			3	-100-		0	0	WET	
12		BOTTOM OF HOLE. 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

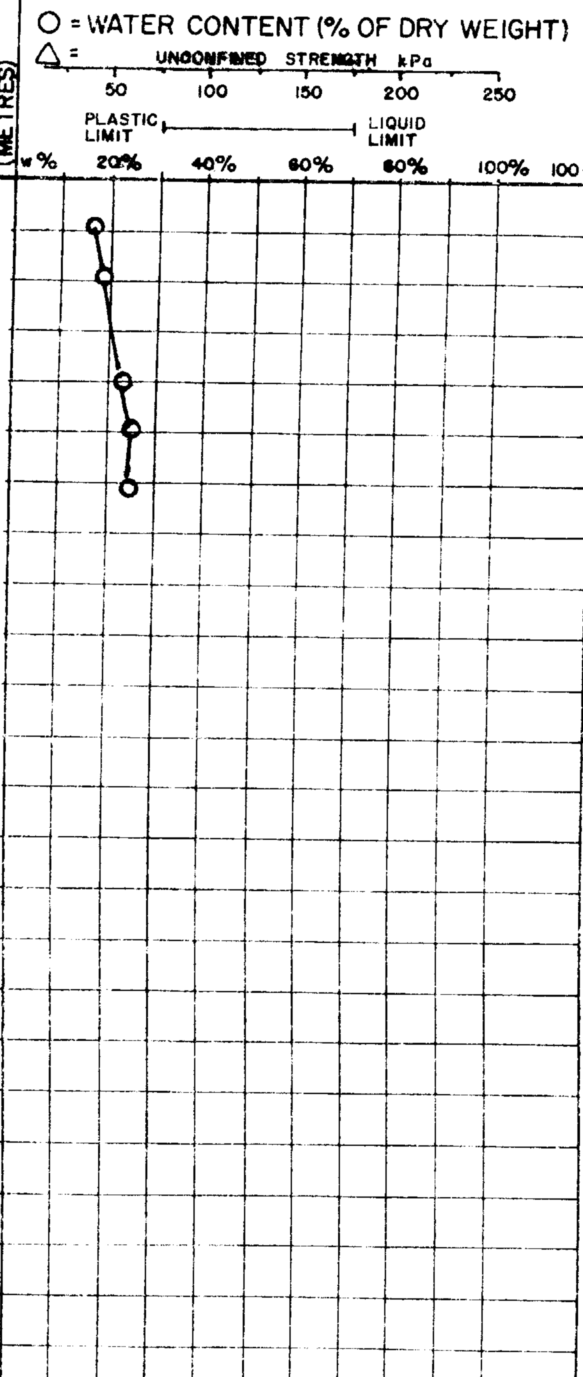


PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 153	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
153+810	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY								DAMP	
4		- LOW PLASTIC			1	100		0	0	MOIST	
6	CL	- +P									
8					2					MOIST-WET	
						100		0	0	M-W	
10		3.1m			3					WET	
12		Bottom of Hole. 3.1m									



14 16 18 20 22 24 26 28 30 32 34 36 38

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/17	153		6

CHAINAGE	OFFSET
153+900	℄

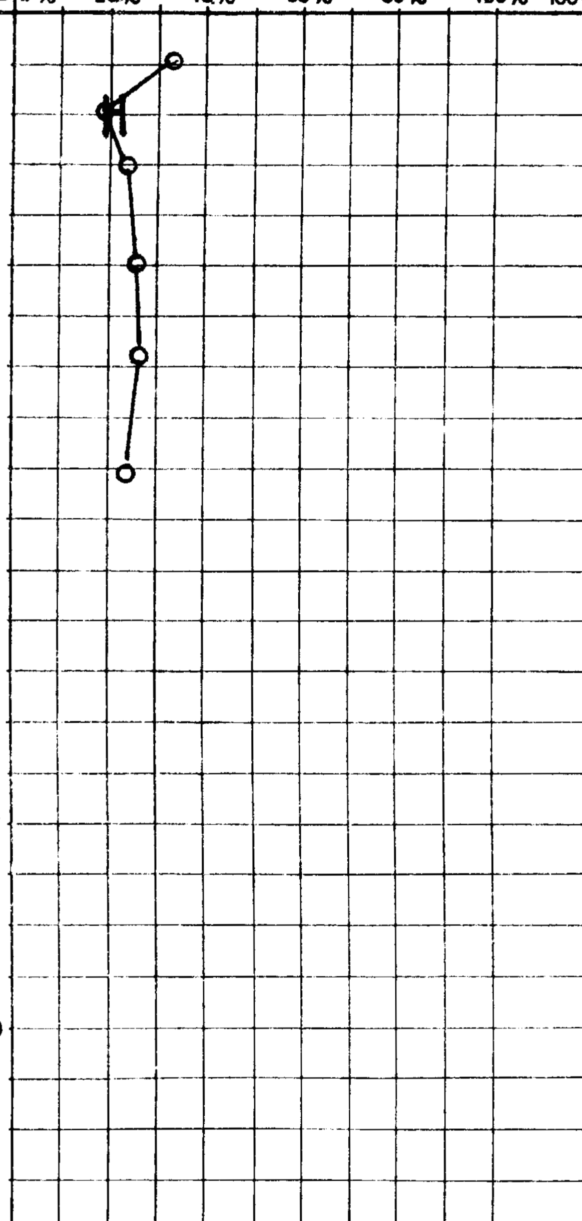
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY				93		7	0	WET	
4		- LOW PLASTIC			1					DAMP	
6		+PL				98		2	0	MOIST	
8	CL				2					MOIST-WET	
12					3	100		0	0	M-W	
14		4.6m			4					SAT.	
16		BOTTOM OF HOLE - 4.6m			5						

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



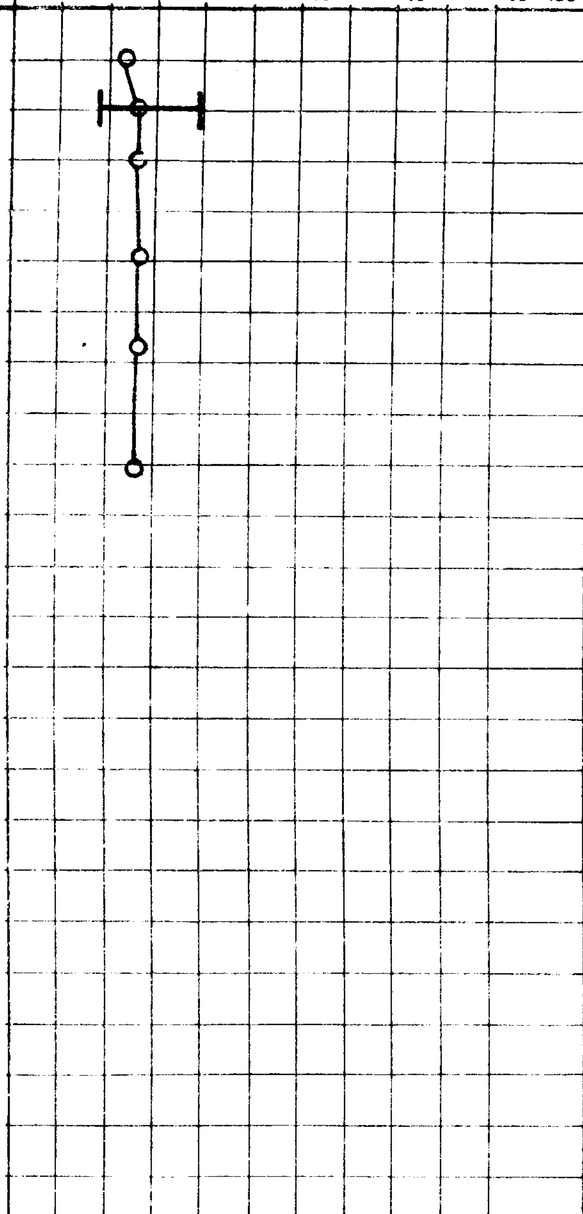
PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/17	154		1

CHAINAGE	OFFSET
154+060	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–15	CL	CLAY - SILTY - LOW PLASTIC + P_L			0–4.6
		4.6m			
		BOTTOM OF HOLE - 4.6m			

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
~0.5					SAT.	
~1.0	100		0	0	MOIST-WET	
~1.5					M-W	
~2.5	95		5	0	SAT.	
~3.4					SAT.	
~4.6	96		4	0	SAT.	

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/17	154		2

CHAINAGE	OFFSET
154+120	℄

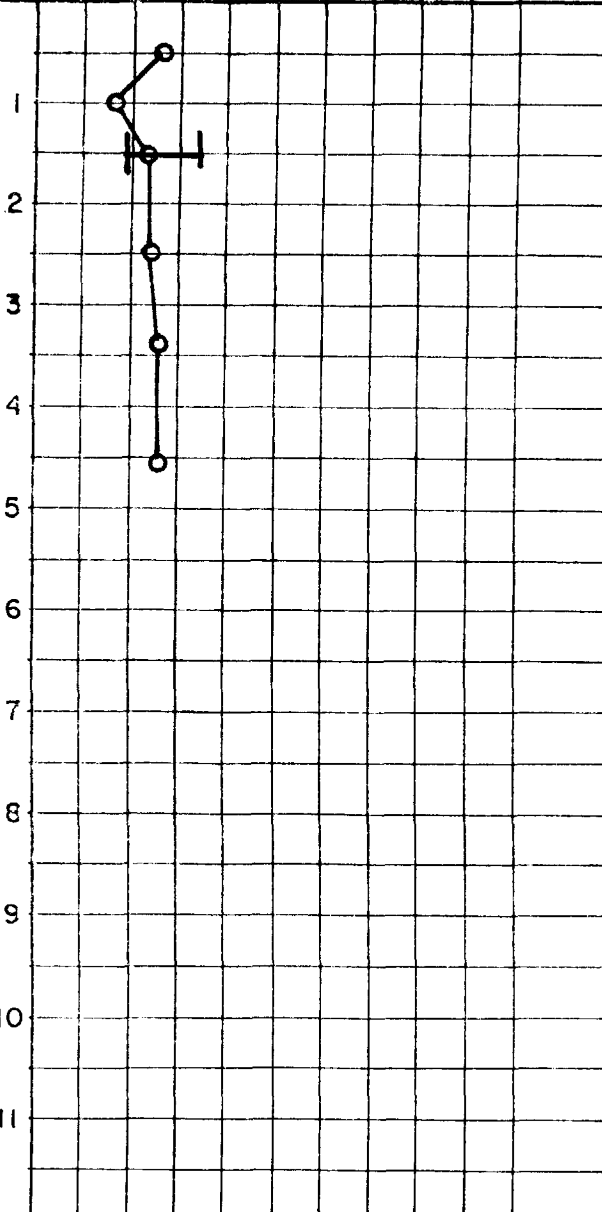
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
		CLAY - SILTY			
2		- LOW PLASTIC			
4					1
6		$+P_L$			
8	CL				2
10					3
12					
14					4
16		4.6m			
18		BOTTOM OF HOLE - 4.6m			5
20					6
22–38					7–11

O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w %: 20%, 40%, 60%, 80%, 100%, 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
98		2	0	SAT.	
				DAMP	
100		0	0	MOIST-DAMP	
				WET	
100		0	0	WET	
				SAT.	

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 154	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
154+3.30	℄

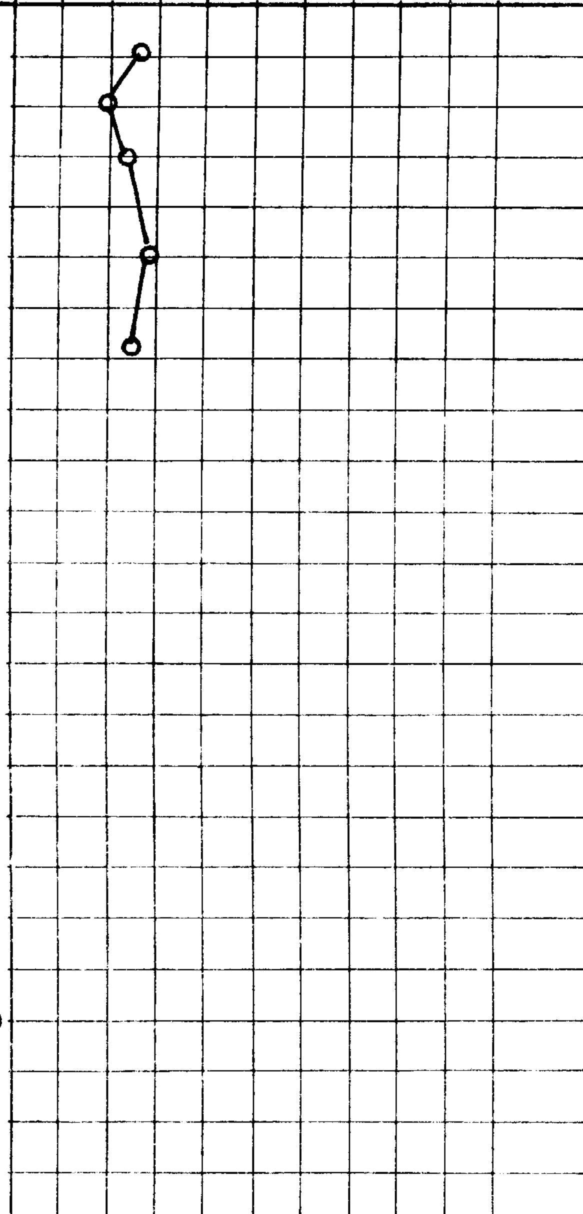
O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w%: 20%, 40%, 60%, 80%, 100%, 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY								SAT.	
4		- LOW PLASTIC			1	100		0	0	MOIST	
6		+PL								MOIST	
8	CL				2	100		0	0	WET	
10					3						
12										WET	
14		4.6m			4						
16		BOTTOM OF HOLE - 4.6m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



PUBLIC WORKS CANADA — DRILL HOLE REPORT

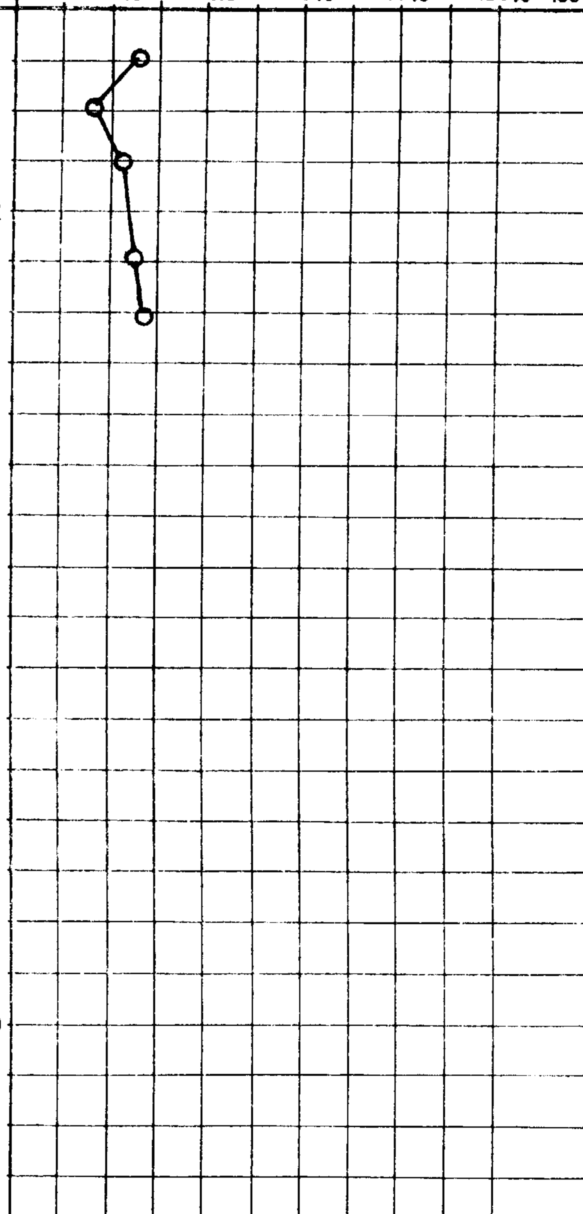
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/17	154		4

CHAINAGE	OFFSET
154+480	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY								SAT.	
4		- LOW PLASTIC			1	99		1	0	DAMP	
6	CL	+P_L				100		0	0	DAMP-MOIST	
8					2					MOIST	
10		3.1m			3	100		0	0	WET	
12		BOTTOM OF HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT —— LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 154	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
154+670	E

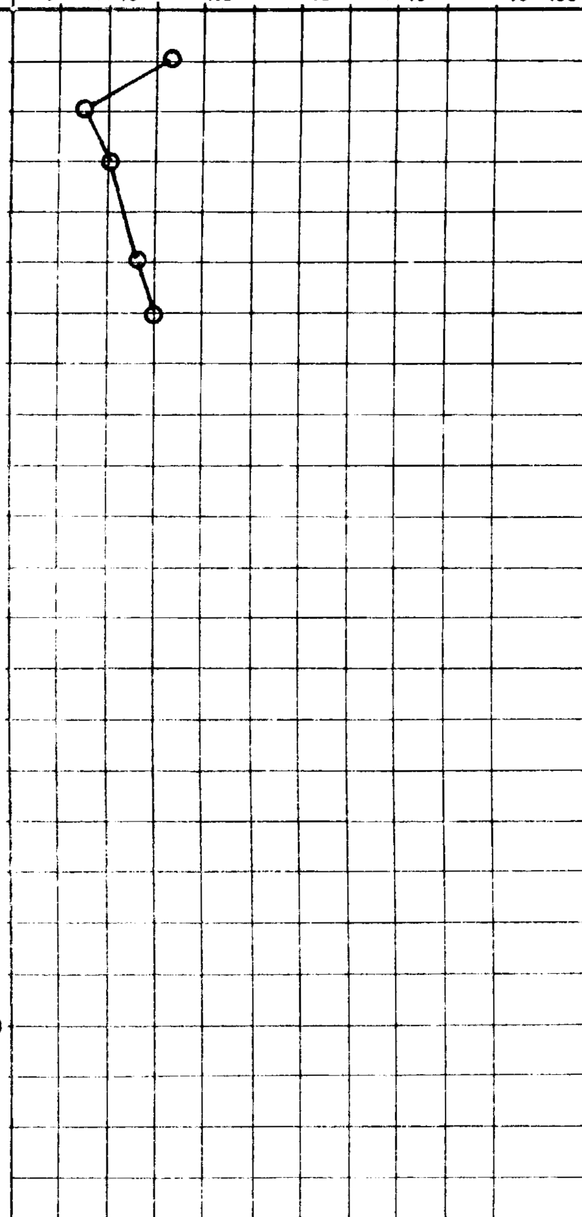
REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	CL	CLAY - SILTY - LOW PLASTIC +P_L			0–3.1
		3.1m			3.1
		BOTTOM OF HOLE - 3.1m			

Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (metres) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT |——| LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				SAT.
-	99 -	1	0	DAMP
				DAMP-MOIST
-	100 -	0	0	MOIST-WET
				WET

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

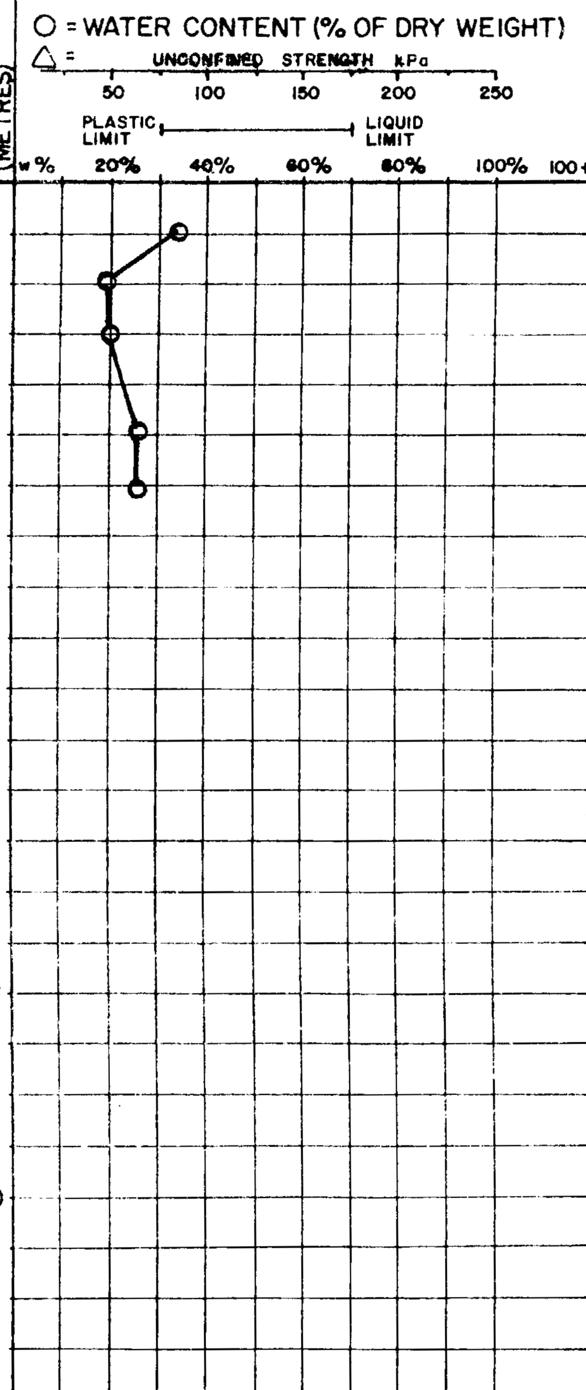
TECH. WEBBER	RIG B-50	DATE 78/02/17	km 154	B.P. No.	HOLE No. 6

CHAINAGE	OFFSET
154+970	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY. SILTY								SAT.	
4		- LOW PLASTIC			1	-	98	-	2 0	DAMP	
6	CL	+PL			2					DAMP. MOIST	
8		FREE WATER 2.7m - 3.1m				-	99	-	1 0	MOIST-WET	
10		3.1m			3					SAT.	
12		BOTTOM OF HOLE. 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



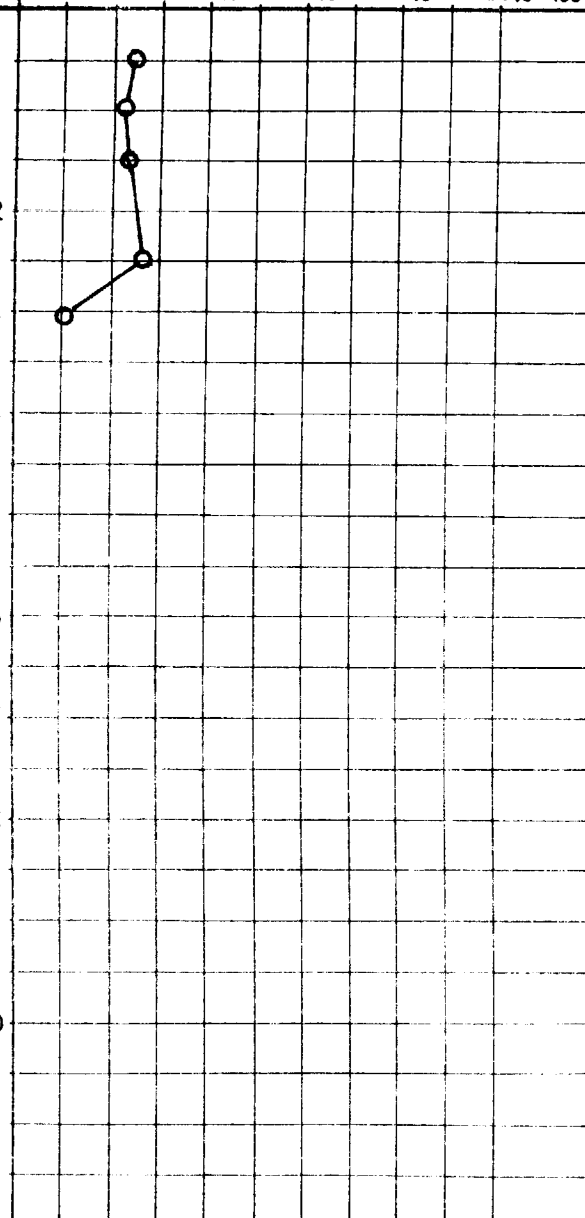
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/18	155		1

CHAINAGE	OFFSET
155+180	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT — LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–10	CL	CLAY - SILTY - LOW PLASTIC +PL				96		4	0	MOIST-WET	
					1					M-W	
						99		1	0	M-W	
		~~BEG WATER 2.7m - 3.1m~~									
					2.5					WET	
10	ML SM	SILT-SAND MIX 3.1m			3	53		47	0	DAMP-MOIST	
		BOTTOM OF HOLE - 3.1 m									

PUBLIC WORKS CANADA	**DRILL HOLE REPORT**	LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 155	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
155+280	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
		CLAY - SILTY		
2		- LOW PLASTIC		
4		+P_L		
6	CL			
8				
10		3.1m		
12		BOTTOM OF HOLE. 3.1m		
14				
16				
18				
20				
22				
24				
26				
28				
30				
32				
34				
36				
38				

○ = WATER CONTENT (% OF DRY WEIGHT)

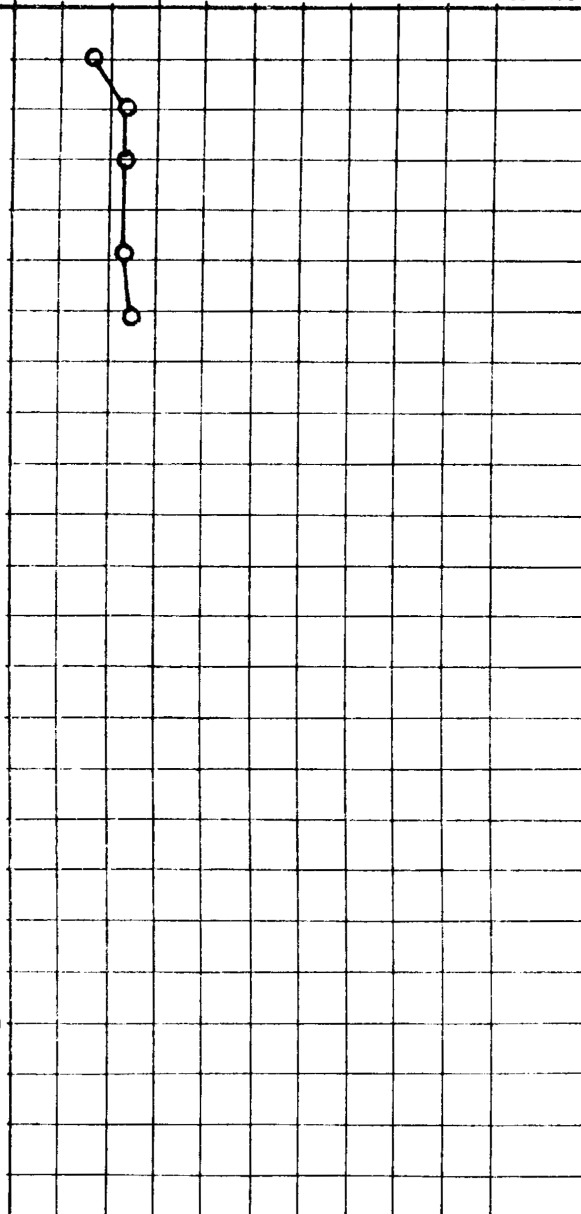
△ = UNCONFINED STRENGTH kPa

50 100 150 200 250

PLASTIC LIMIT ——— LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
				DAMP	
-99-		1	0	WET	
				MOIST-WET	
-92-		8	0	WET	
-95-		5	0	WET	

PUBLIC WORKS CANADA — DRILL HOLE REPORT

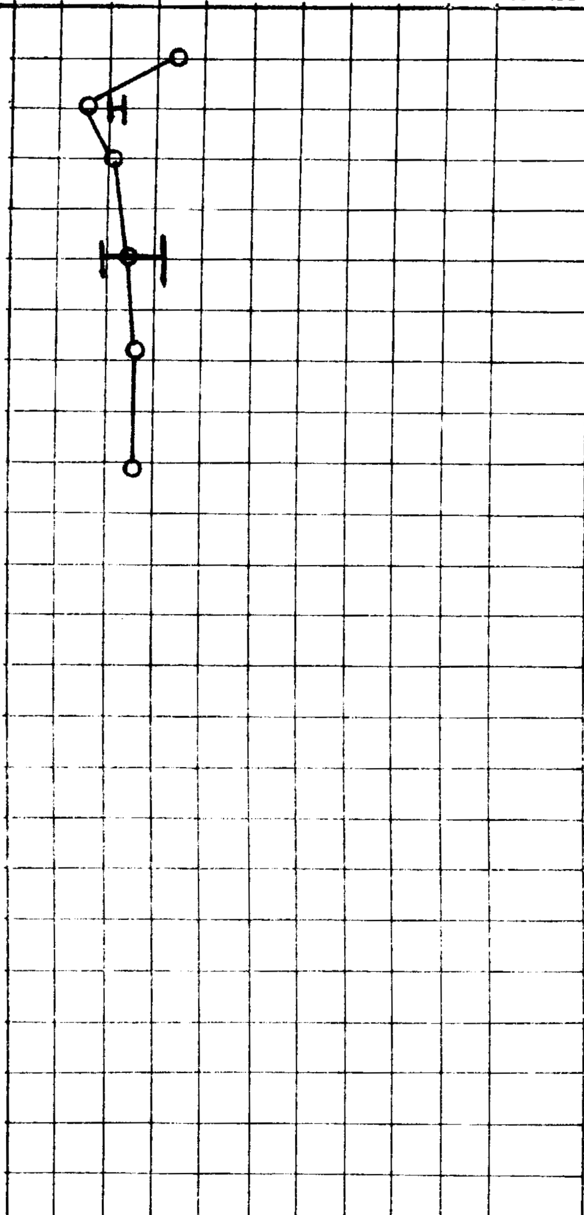
Liard Hwy

TECH. Pronych	RIG B-50	DATE 78/02/18	km 155	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
155+46.0	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		Clay - Silty				99		1	0	Sat.	
4		- Low Plastic			1					Damp	
6		+ P_L				99		1	0	Moist-Wet	
8	CL	Wet after 2.7m			2					Wet	
10					3						
12						99		1	0	Moist-Wet	
14		4.6m			4						
16		Bottom of Hole - 4.6m			5					M-W	
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w%: 20%, 40%, 60%, 80%, 100%, 100+



♦ PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

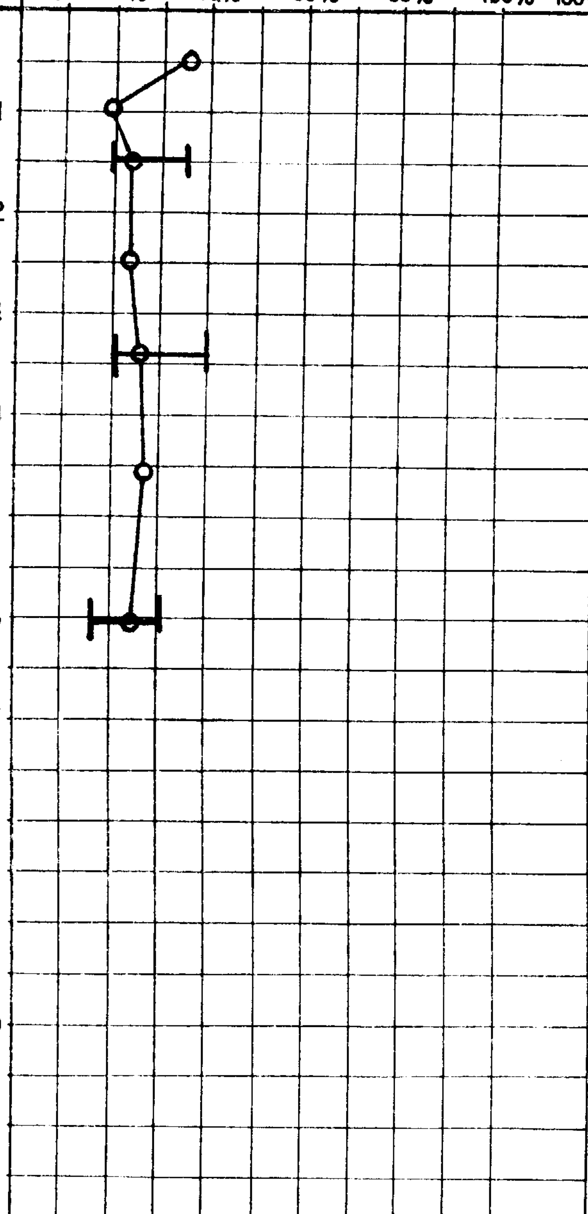
TECH. PRONYSH	RIG B-50	DATE 78/02/18	km 155	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
155+520	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY								FREE WATER	
4		- LOW PLASTIC			1		99	1	0	DAMP	
6										MOIST	
6		+P_L			2						
8	CL	WET - 2.1 - 3.1 m					100	0	0	WET	
10		SAT - 3.7m - 4.0m			3						
12		WET - 4.0m - 6.1m								MOIST-WET	
14					4						
16		GREY -					99	1	0	WET	
18					5						
20		6.1m			6					WET	SAND CONTAMINATION
22		BOTTOM OF HOLE - 6.1m									
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+

GRAIN-SIZE ANALYSIS



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

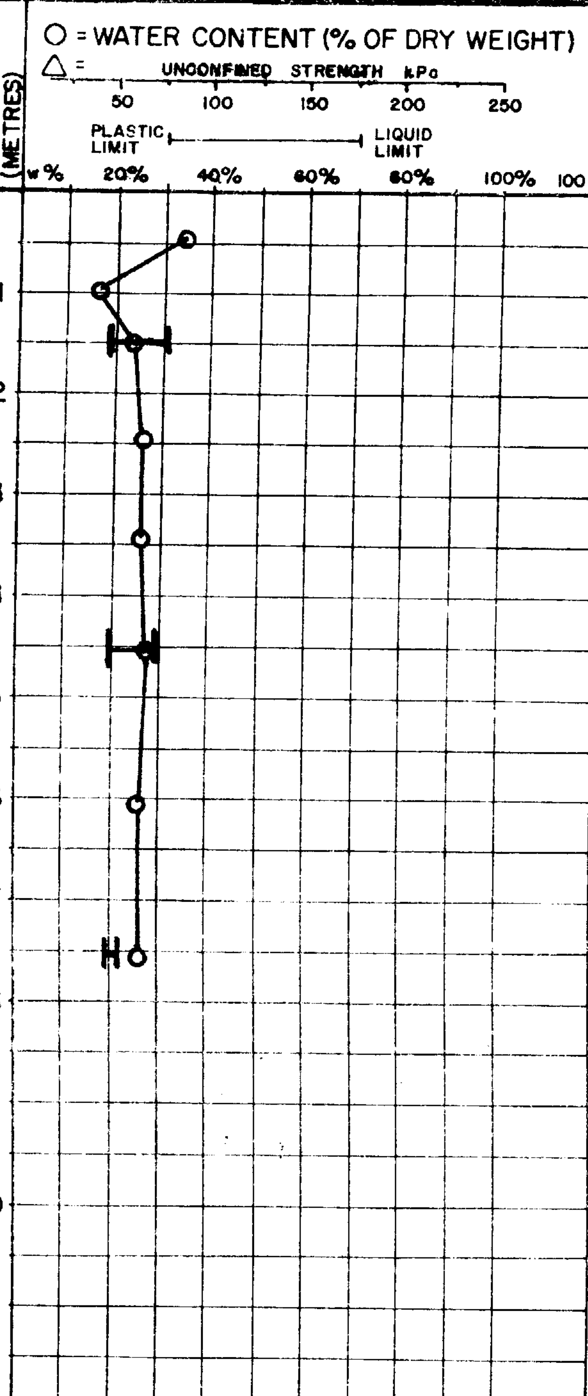
TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 155	B. P. No.	HOLE No. 5

CHAINAGE	OFFSET
155+580	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY				99-		1	0	SAT.	
4		- LOW PLASTIC			1					DAMP	
6		+P_L				99-		1	0	MOIST	
8					2	99-		1	0	MOIST-WET	
10	CL				3						
12										M-W	
14					4					M-W	
16					5						
18											
20					6	100-		0	0	WET	
22											
24		7.6m			7					SAT	
26		BOTTOM OF HOLE - 7.6m			8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

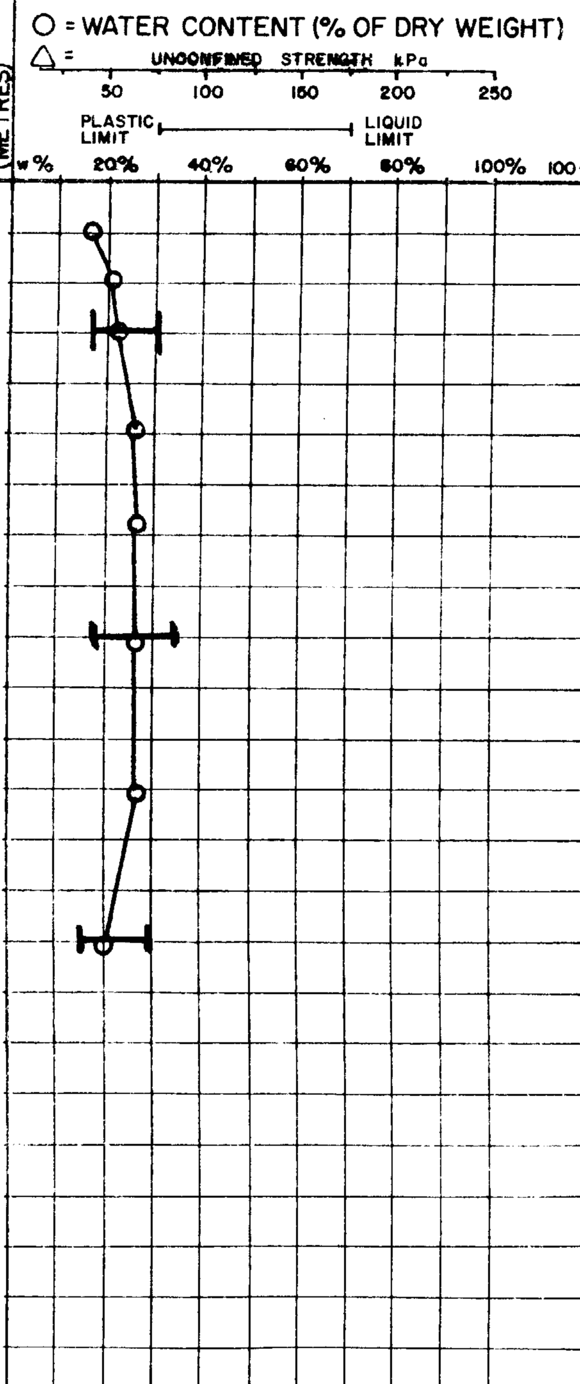


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYJCH	RIG B-50	DATE 78/02/18	km 156	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
156+070	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY								DAMP	
4		- LOW PLASTIC			1	100		0	0	MOIST	
6		+PL								MOIST	
8					2	100		0	0	WET	
10	CL				3						
12		WET 2.1m - 3.1m								MOIST-WET	
14		WET 4.0m - 7.6m			4						
16						93		7	0	WET	
18					5						
20					6					WET	
22											
24		7.6m			7	88		12	0	WET	
26		BOTTOM OF HOLE 7.6m			8						
28											
30					9						
32											
34					10						
36											
38					11						



PUBLIC WORKS CANADA — DRILL HOLE REPORT

Liard Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	B-50	78/02/18	156		2

CHAINAGE	OFFSET
156+160	℄

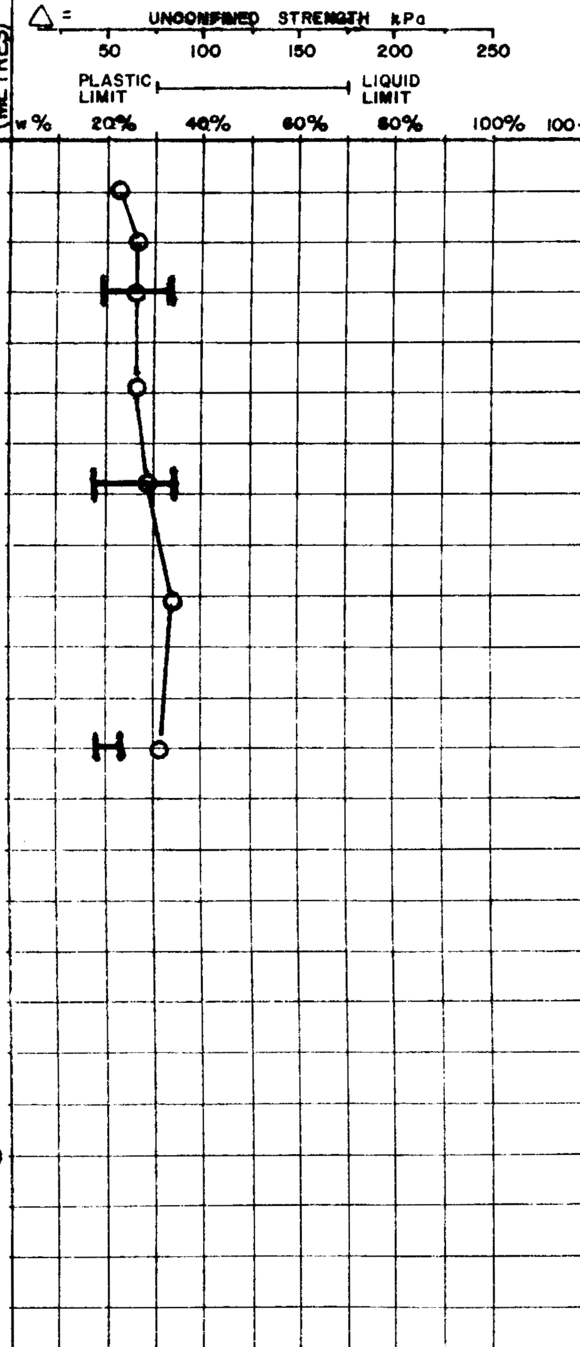
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	CL	CLAY - SILTY			
4		Low Plastic			1
6		+P_L			2
14		Saturated after 4pm			4
18		Sandy			5
20		6.1m			6
22		Bottom of Hole - 6.1m			

Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (metres) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	96	4	0	Moist	
				Wet	
	98	2	0	Moist-Wet	
				Wet	
	99	1	0	Wet	
				Sat.	
	75	25	0	SAT.	

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. Pronych	RIG B-50	DATE 78/02/18	km 156	B.P. No.	HOLE No. 3

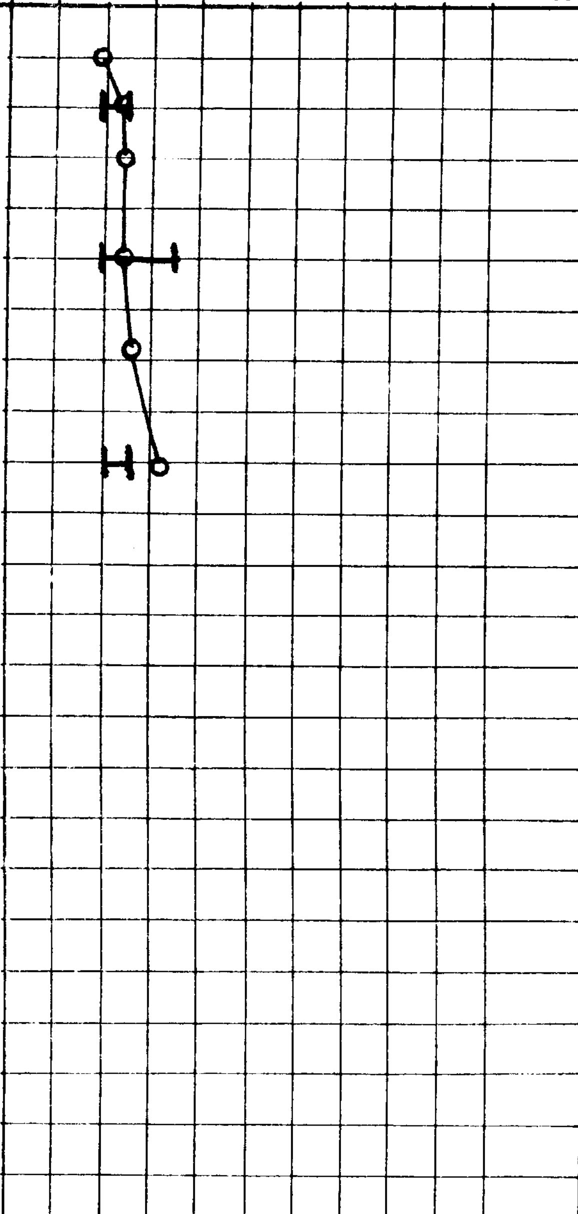
CHAINAGE	OFFSET
156+250	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w %: 20%, 40%, 60%, 80%, 100%, 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY - SILTY								DAMP	
2											
	ML	SILT -			1	100		0	0	MOIST	
4		CLAY - SILTY								WET	
6		- LOW PLASTIC			2						
8		+PL				100		0	0	WET	
10	CL				3						
12		SAT AFTER 4.0m								WET	
14	ML	SILT			4						
		4.6m				99		1	0	SAT.	
16					5						
18		BOTTOM OF HOLE - 4.6m									
20					6						
22											
24					7						
26											
28					8						
30					9						
32											
34					10						
36					11						
38											

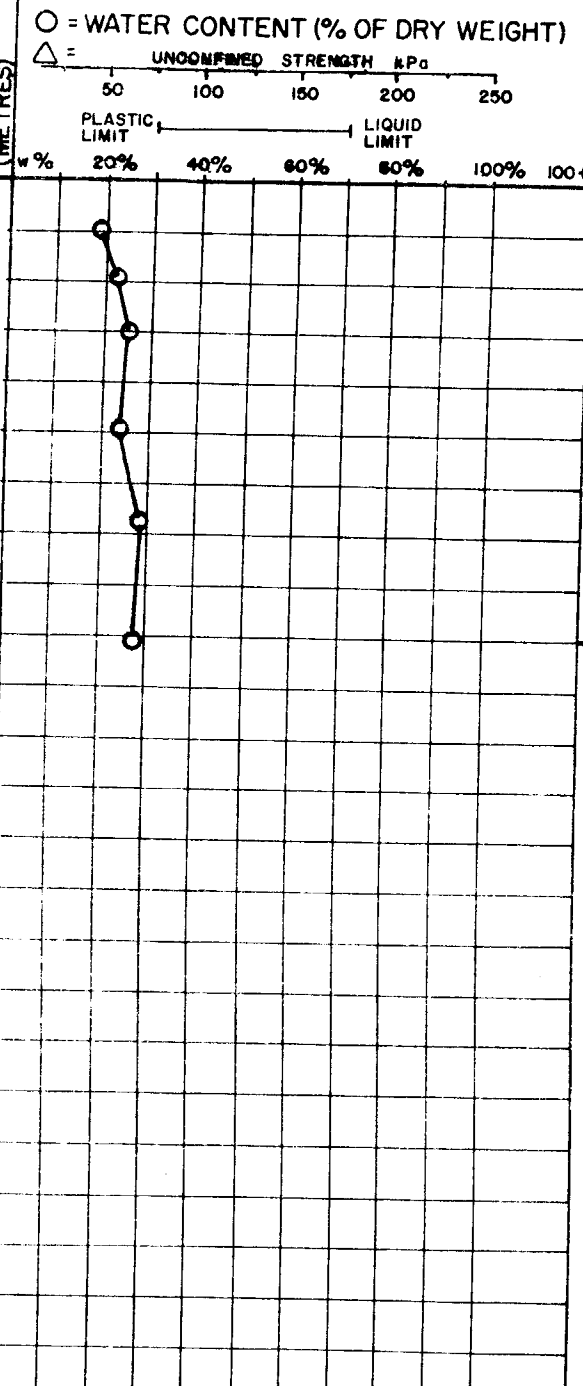
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. PRONYCH | RIG B-50 | DATE 78/02/18 | km 156 | B.P. No. | HOLE No. 4

CHAINAGE: 156+430 | OFFSET: ℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY-SILTY									
2	ML	SILT				98		2	0	DAMP	
4					1	99		1	0	MOIST	
6		CLAY-SILTY - LOW PLASTIC								WET	
8					2	99		1	0	WET.	
10	CL	+P_L			3						
12		SAT. AFTER 3.7m								WET	
14		4.6m			4	89		11	0	SAT.	
16		BOTTOM OF HOLE - 4.6m			5						



DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

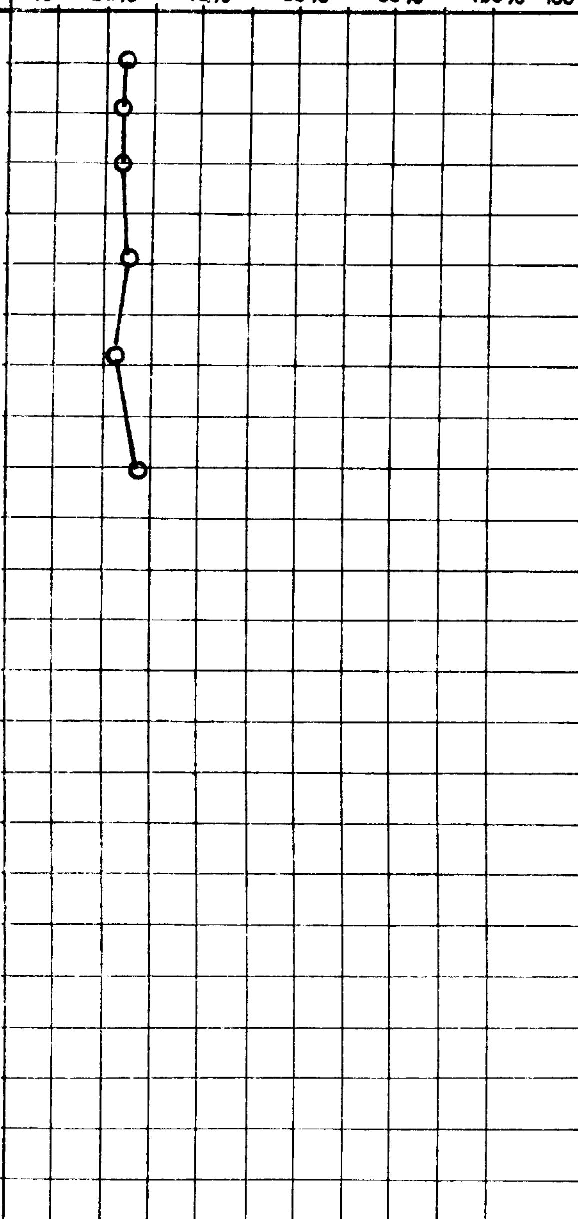
PUBLIC WORKS CANADA	DRILL HOLE REPORT	Liard Hwy.

TECH. Pronych	RIG B-50	DATE 78/02/18	km 156	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
156+550	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	CL	Clay - Silty -Low Plastic +P_L								Moist	
4					1	-99-		1	0	Moist	
6										Moist	
8					2	-100-		0	0	Moist-Wet	
10	CL SC	Clay Silty & Sand Mixture Sat. after 4.0m			3					M-W	
12											
14	ML	Silt 4.6m			4	-91-		9	0	Sat.	
16		Bottom of Hole. 4.6m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 156	B.P. No.	HOLE No. 6

CHAINAGE	OFFSET
156+700	℄

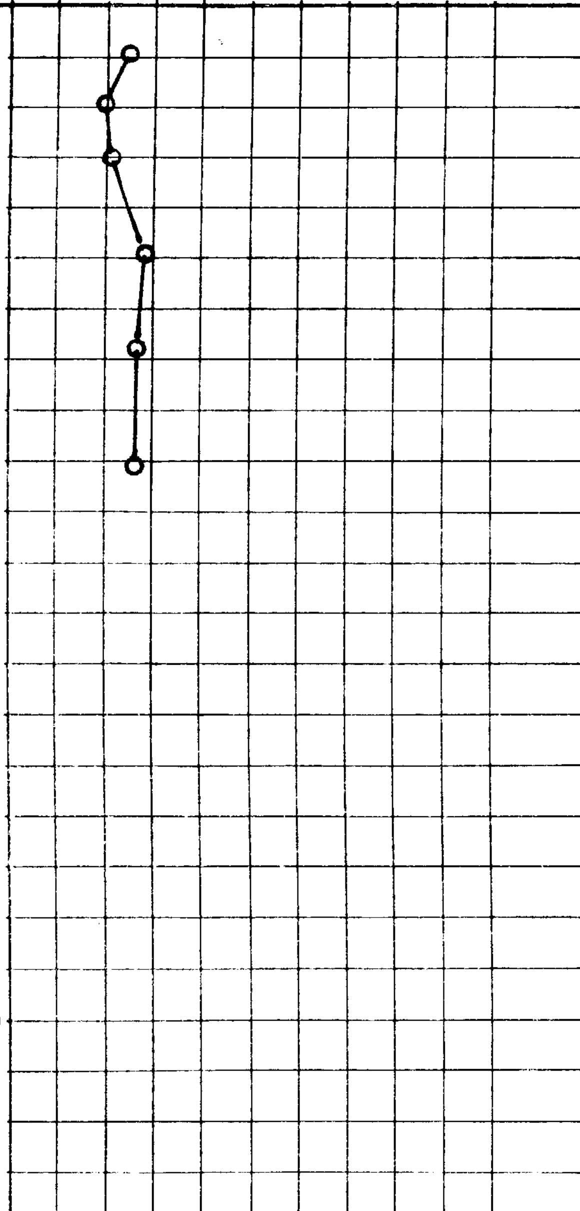
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–7	ML	SILT			0–2.1		99	1	0	WET	
										MOIST	
							99	1	0	WET	
		2.1 m									
7–15	CL	CLAY - SILTY LOW PLASTIC +PL SAT. AFTER 4.0m			2.1–4.6					MOIST-WET	
							99	1	0	M-W	
										SAT	
		4.6 m									
		BOTTOM OF HOLE - 4.6 m									

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

PLASTIC LIMIT — LIQUID LIMIT



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 156	B.P. No.	HOLE No. 7

CHAINAGE	OFFSET
156+950	℄

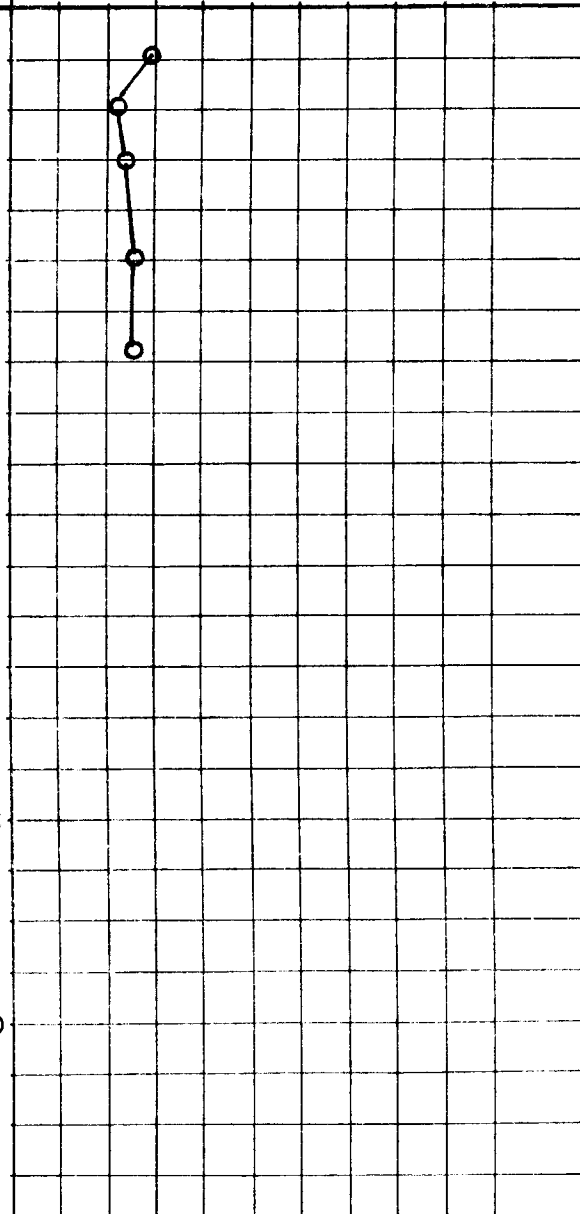
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT-								SAT.	
4					1	–	99	1	0	MOIST-WET	
		1.5m								WET	
6		CLAY - SILTY									
		- LOW PLASTIC			2						
8	CL	±PL				–	100	0	0	WET	
10		SAT. AFTER 2.7m			3						
		3.3m								WET	
12											
14		BOTTOM OF HOLE -3.3m			4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w%: 20%, 40%, 60%, 80%, 100%, 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Procyshyn	B-50	78/02/18	157		1

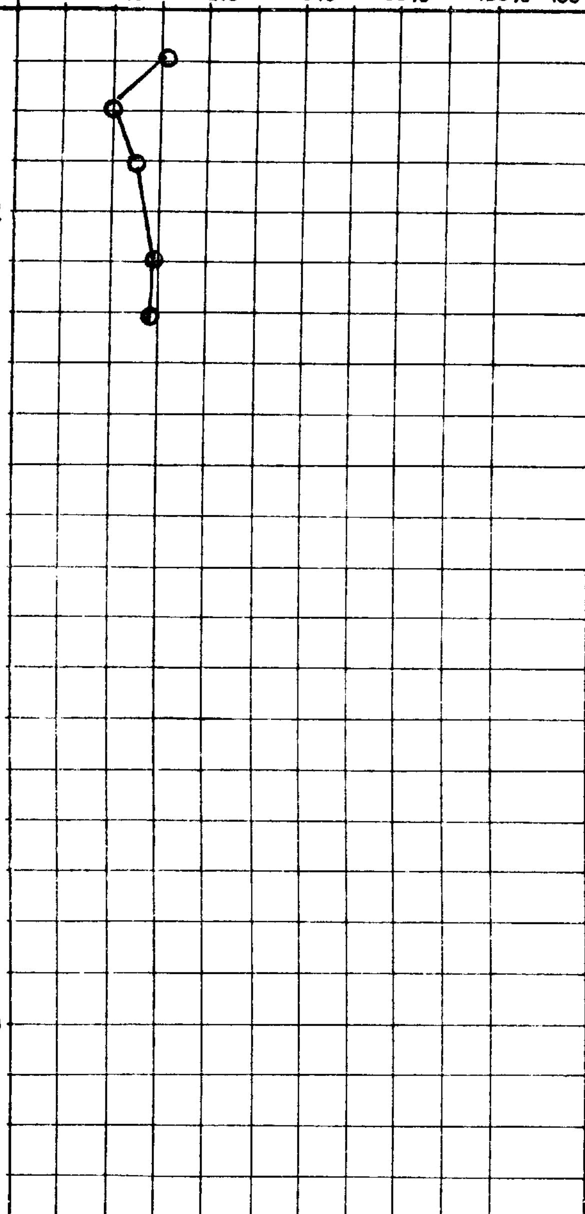
CHAINAGE	OFFSET
157+13C	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAYEY								SAT.	
4		1.2m			1	-99-		1	0	DAMP-MOIST	
6		CLAY - SILTY - Low Plastic + P.								MOIST-WET	
8	CL				2	-100-		0	0	WET	
10		3.1m			3					WET	
12		Bottom of Hole - 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

PUBLIC WORKS CANADA — DRILL HOLE REPORT

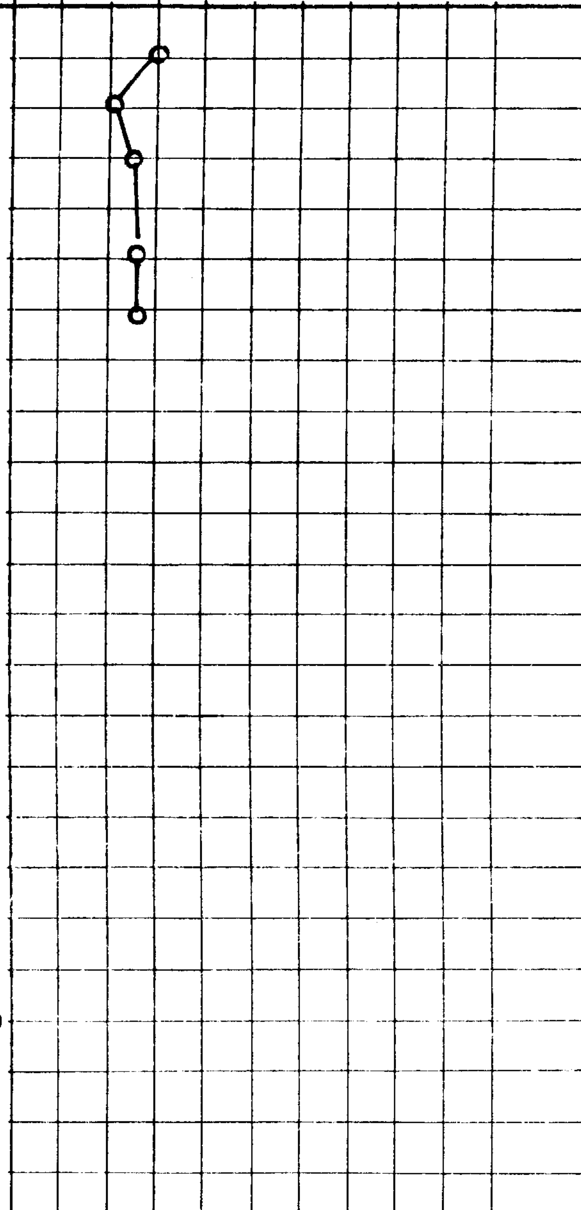
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	157		2

CHAINAGE	OFFSET
157+280	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAYEY				98		2	0	SAT.	
4		1.2m			1					DAMP-MOIST	
		CLAY - SILTY				99		1	0	MOIST-WET	
6	CL	LOW PLASTIC +PL			2						
8		SAT. AFTER 2.1m								WET	
10		3.1m			3	99		1	0	WET	
12		BOTTOM OF HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



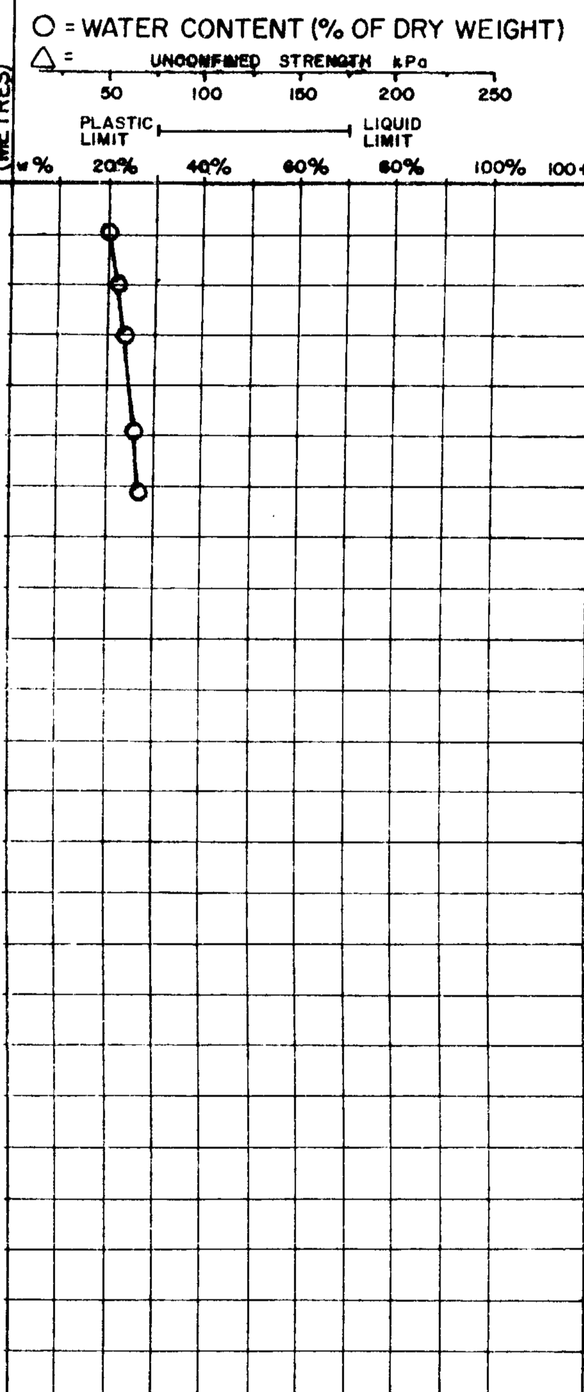
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 157	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
157+530	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
2	ML	SILT - CLAYEY			
4					1
6		1.8m			
8	CL	CLAY - SILTY - LOW PLASTIC			2
10		SAT. AFTER 1.8 m +PL 3.1m			3
12		BOTTOM of HOLE - 3.1m			



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				MOIST
98	-	2	0	WET
				WET
99	-	1	0	WET
				WET

DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

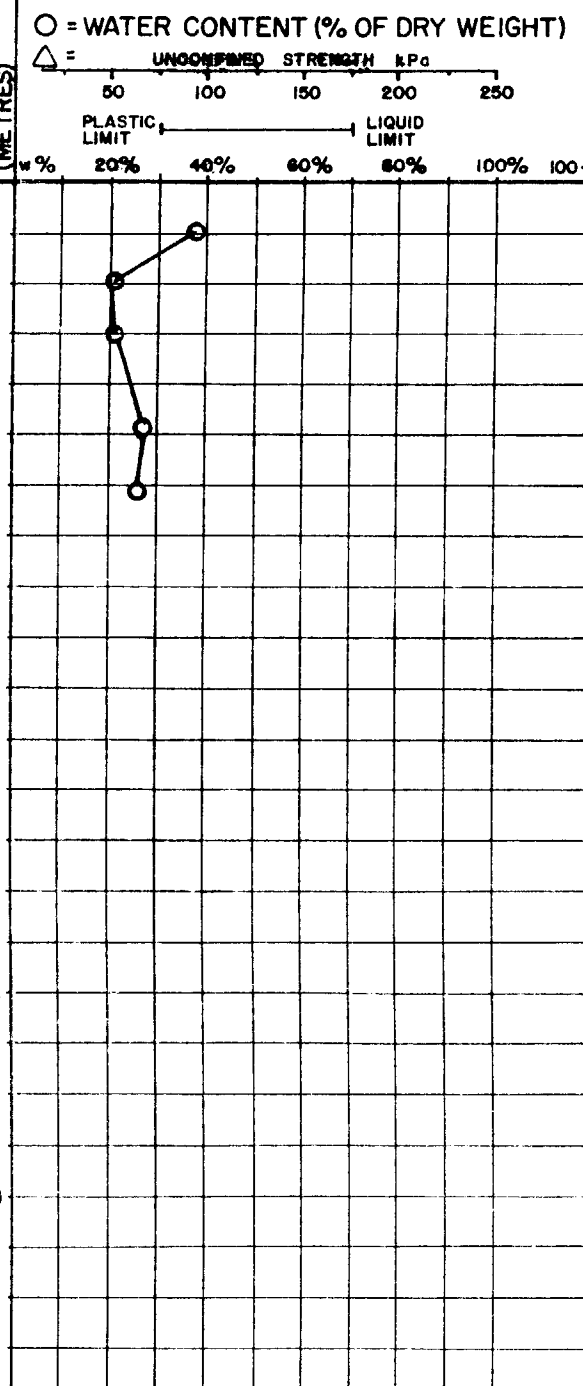
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY

TECH. PRONUCH	RIG B-50	DATE 78/02/18	km 157	B.P. No.	HOLE No. 4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY -LOW PLASTIC +PL				97	-	3	0	SAT.	
4					1					DAMP-MOIST	
6	CL	SAT. AFTER 2.6m								MOIST-WET	
8					2	99	-	1	0	WET	
10		3.1m			3					WET-SAT.	
12		BOTTOM OF HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

GRAIN-SIZE ANALYSIS

CHAINAGE	OFFSET
157+650	



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	157		5

CHAINAGE	OFFSET
157+860	℄

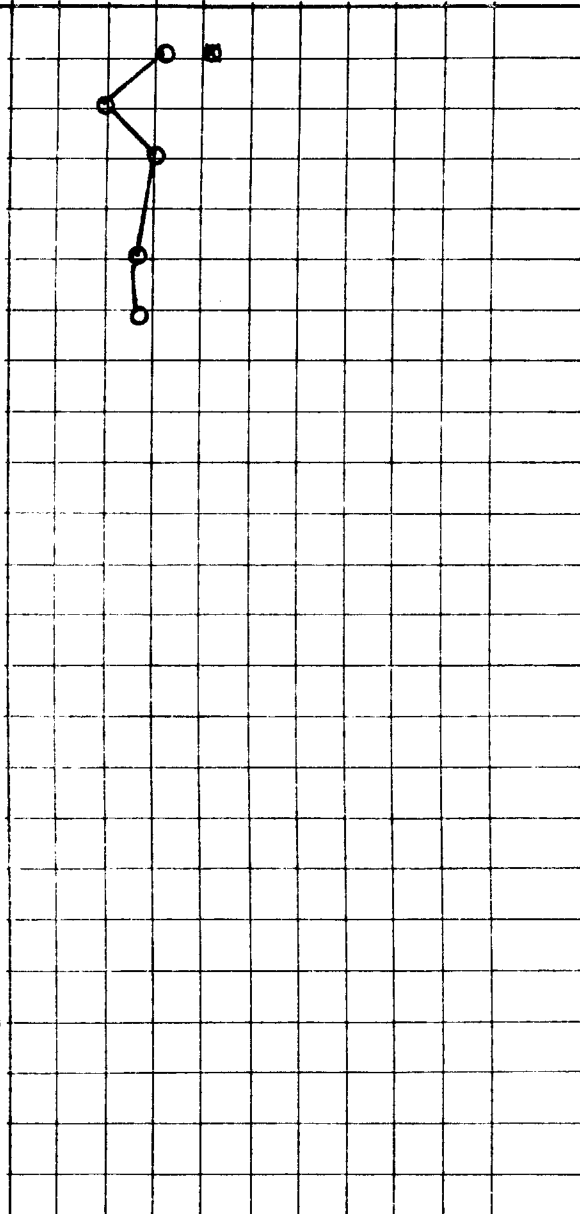
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
	CL	CLAY - SILTY - LOW PLASTIC +PL SAT. AFTER 2.1m		
10	ML	SILT - ~~SANDY~~ 3.1m		
		BOTTOM OF HOLE - 3.1m		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
~0.5					SAT.	
1	-98-		2	0	DAMP-MOIST	
1.5					WET	
2.5	-99-		1	0	WET	
3	-97-		3	0	SAT.	

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

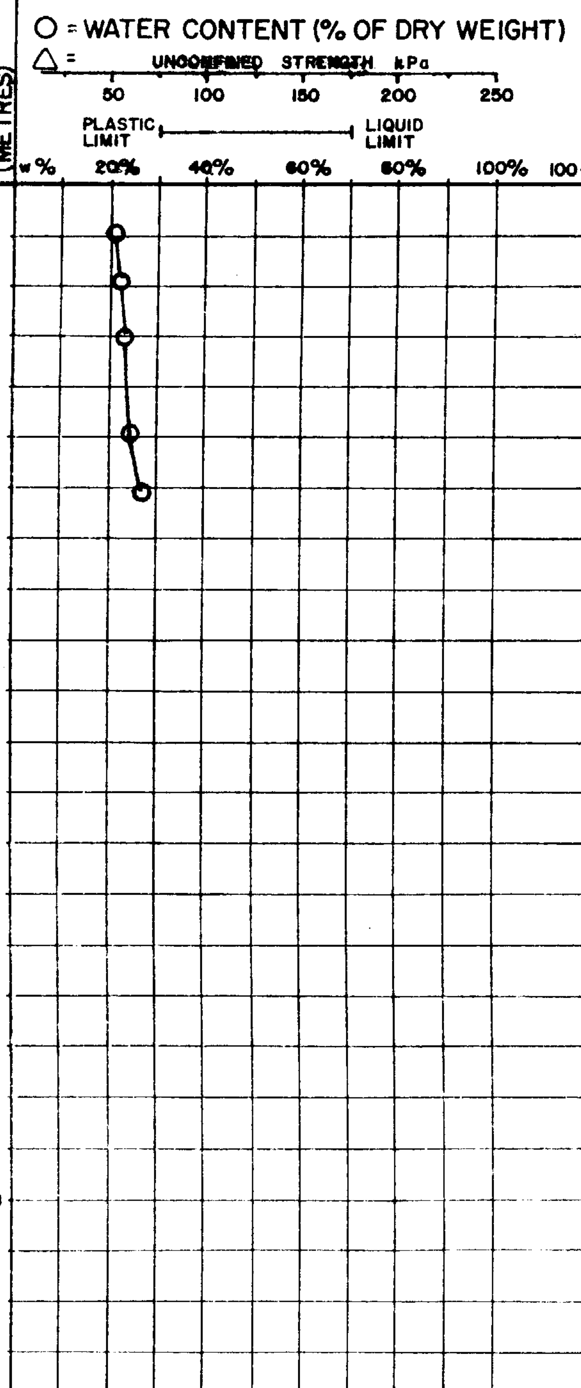
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	158		1

CHAINAGE	OFFSET
158+200	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT-CLAYEY / SILT -				98		2	0	MOIST	
4		1.2m			1					WET	
6	CL	CLAY - SILTY, LOW PLASTIC + P_L				98		2	0	WET	
8					2					WET	
10		SAT AFTER 2.7m — 3.1m			3	95		5	0	SAT.	
12		BOTTOM OF HOLE - 3.1m									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

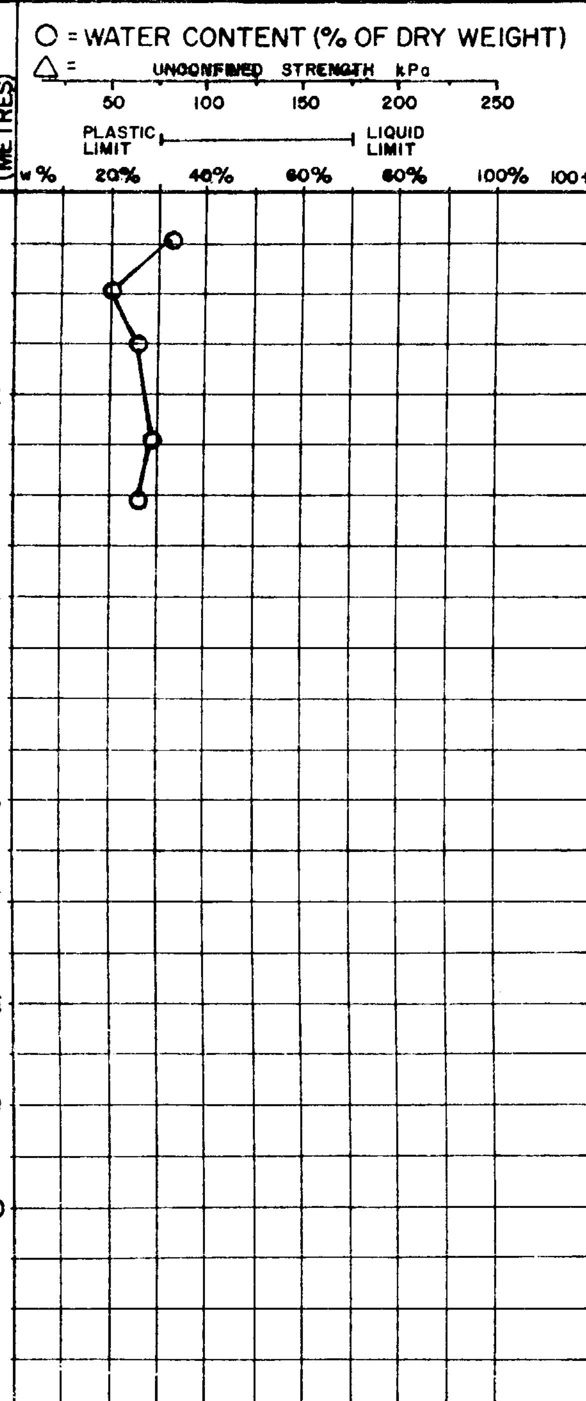


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 158	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
158+560	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	CL	CLAY - SILTY LOW PLASTIC +PL								SAT.	
4					1	-98-		2	0	DAMP-MOIST	
6										WET	
8		2.4m			2	-99-		1	0	SAT	
10	ML	SILT SILT AFTER 2.1m 3.1m			3					SAT.	
12		BOTTOM OF HOLE - 3.1m									



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

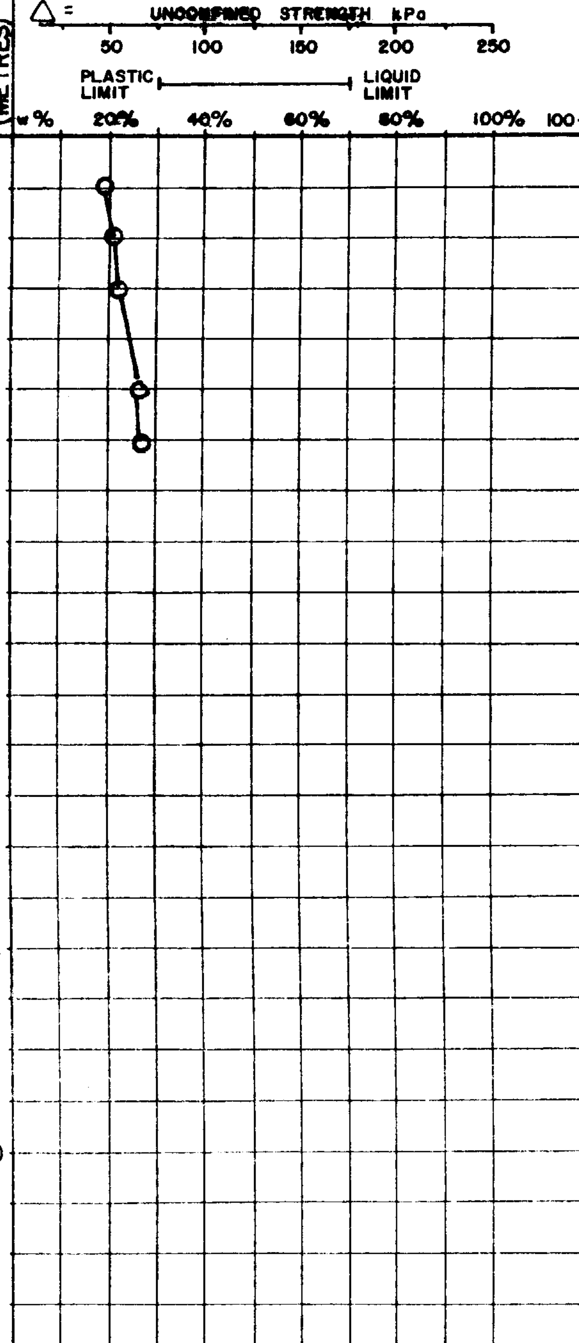
TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 158	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
158+900	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAYEY SILT -								DAMP	
4		1.2 m			1	99	-	1	0	MOIST	
		CLAY - SILTY								MOIST	
6		LOW PLASTIC			2						
8	CL	+PL				99	-	1	0	WET	
10		3.1 m			3					WET	WATER BEARING SAND LENSE @ 2.9
12		BOTTOM OF HOLE - 3.1 m									

O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

PUBLIC WORKS CANADA — DRILL HOLE REPORT

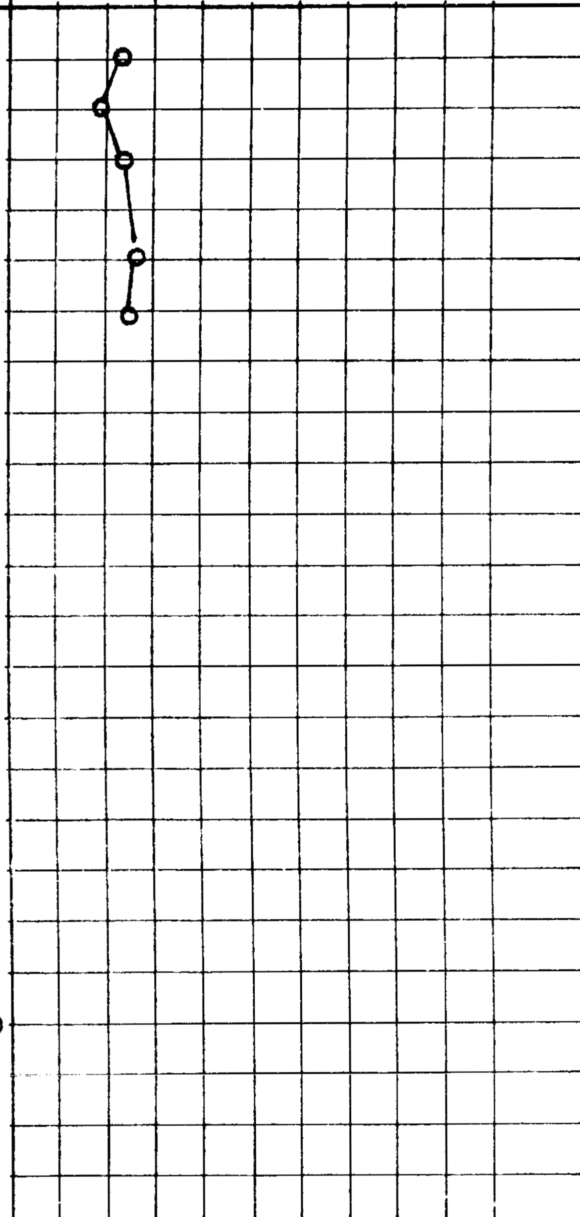
LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	159		1

CHAINAGE	OFFSET
159+230	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–4	ML	SILT - CLAYEY — 1.2m			0–1.2
4–10	CL	CLAY - SILTY - LOW PLASTIC +PL — 3.1m			1.2–3.1
		BOTTOM OF HOLE - 3.1m			

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
				MOIST	
—	99	1	0	DAMP	
				MOIST-WET	
—	94	6	0	M-W	
				WET	

DEPTH (FEET) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 159	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
159+420	℄

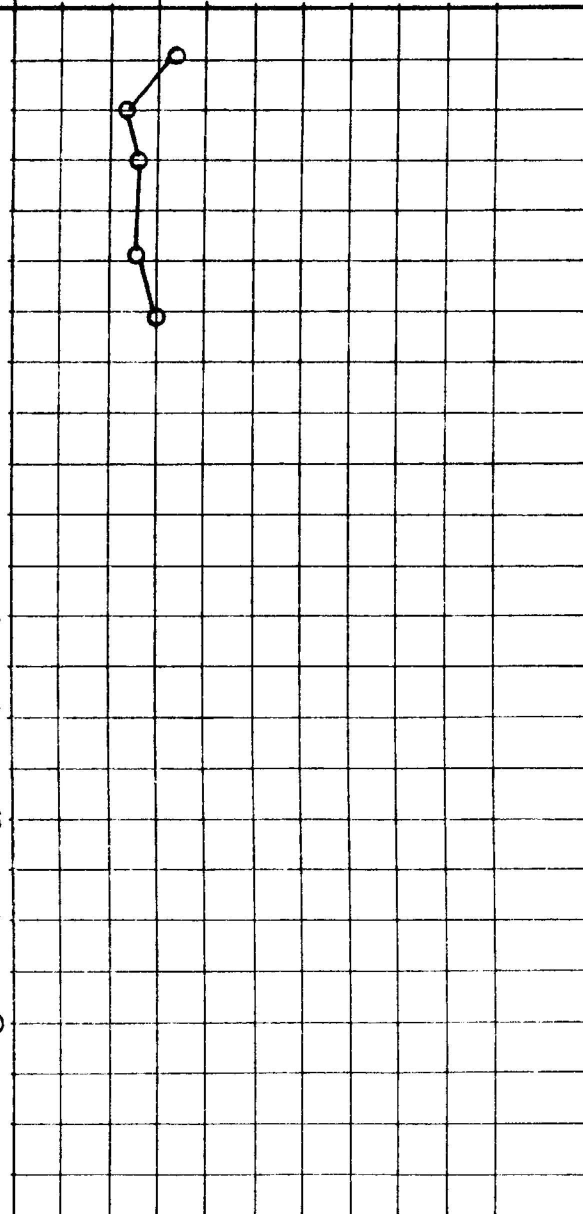
○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–10	CL	CLAY - SILTY - LOW PLASTIC +PL WATER BEARING SAND @ 3.1m - SANDY 3.1m			0–3.1	-96-		4	0	SAT	
										DAMP-MOIST	
						-99-		1	0	MOIST - WET	
										MOIST - WET	
						-58-		42	0	WET	
12		BOTTOM OF HOLE · 3.1 m									



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 159	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
159+840	℄

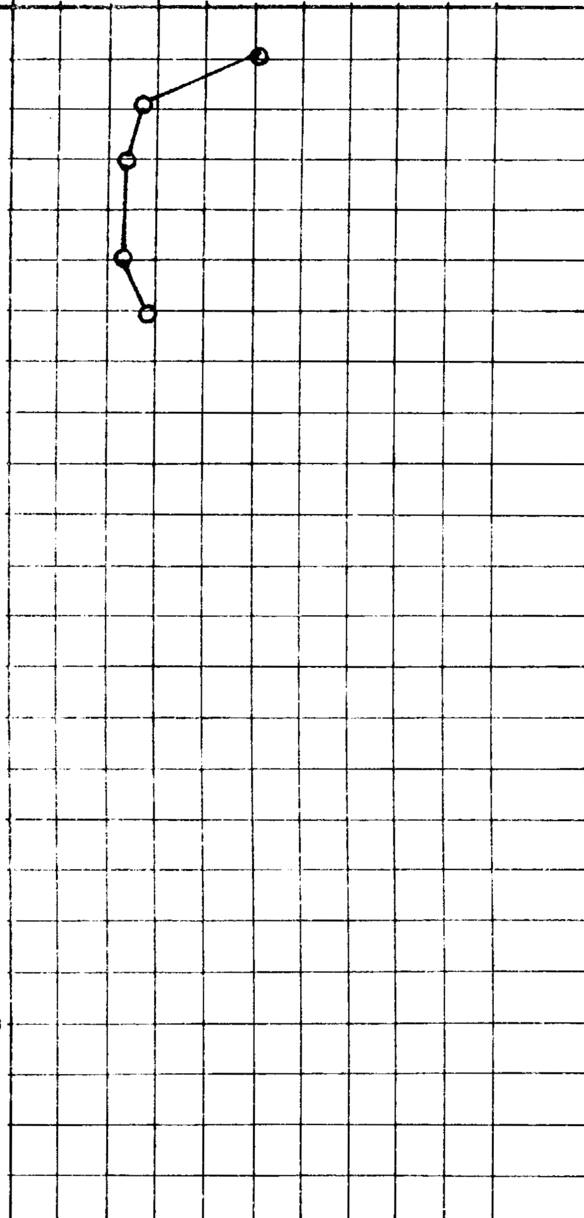
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		ICE .3m		ICE							
2		SILT - CLAYEY WITH ORGANICS								SAT.	
4	ML	SILT			1	99	-	1	0	SAT.	
6										WET	
8		2.4m			2						
	CL	CLAY - SILTY - LOW PLASTIC 3.1m				99	-	1	0	MOIST	
10					3					MOIST-WET	
12		BOTTOM OF HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	160		1

CHAINAGE	OFFSET
160+120	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–2	Pt	PEAT .6m		
2–8	ML / CL	SILT-CLAYEY TO CLAY SILTY 2.4m		
8–10	CL	CLAY-SILTY LOW PLASTIC 3.4m		
10–12		BOTTOM OF HOLE - 3.4m		

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

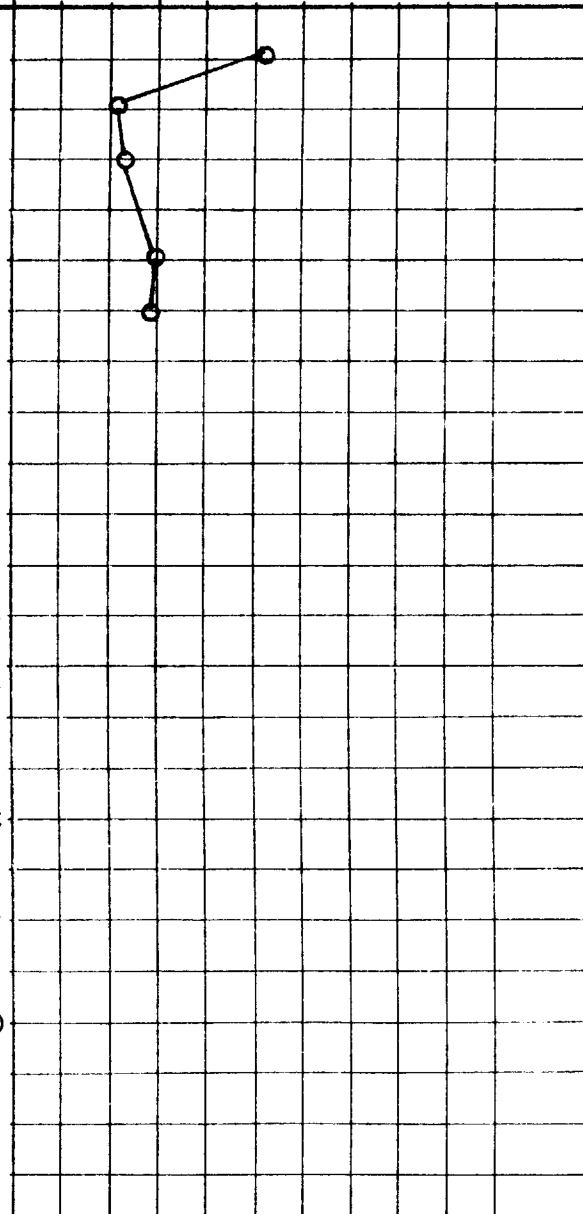
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├────┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
~0.5					WET
~1	98	-	2	0	MOIST-WET
~1.5					WET
~2.5	99	-	1	0	MOIST-WET
~3					WET

REMARKS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 160 -	B.P. No.	HOLE No. 2

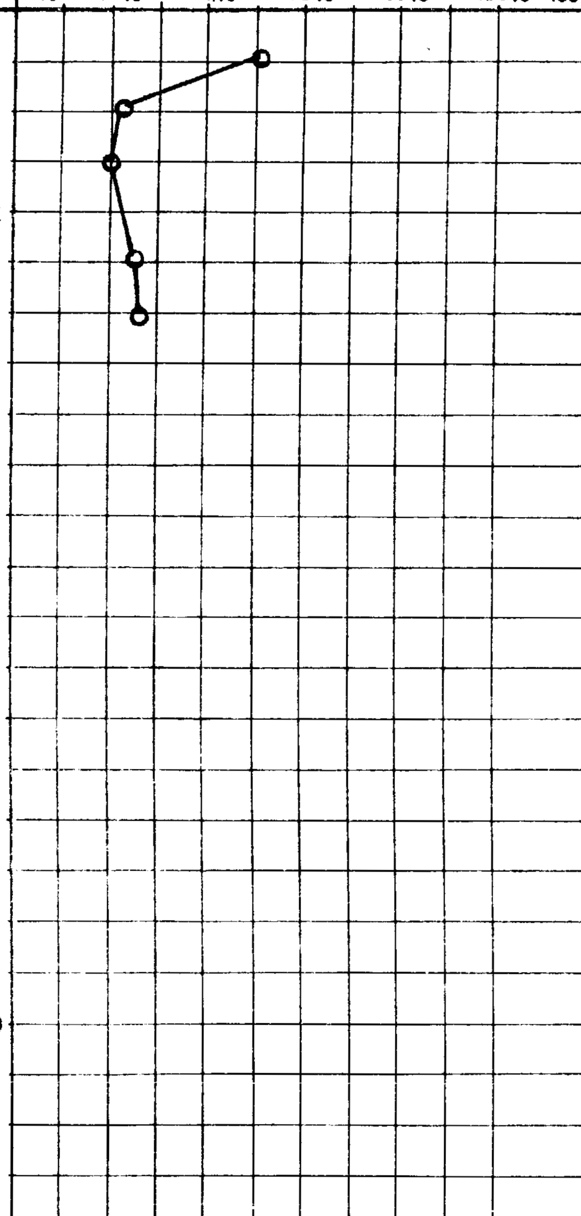
CHAINAGE	OFFSET
160+450	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w%: 20%, 40%, 60%, 80%, 100%, 100+



DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	OL	SILT - ORGANIC							WET	
1	ML	SILT -			-	99 -	1	0	MOIST-WET	
									M-W	
2.4m	CL	CLAY-SILT)			-	97 -	3	0	M-W	FREE WATER
3.1m	SM	SAND - SILTY			-	46 -	54	0	SAT.	2.7m - 3.1m
		BOTTOM OF HOLE 3.1m								

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 160	B.P. No.	HOLE No. 3

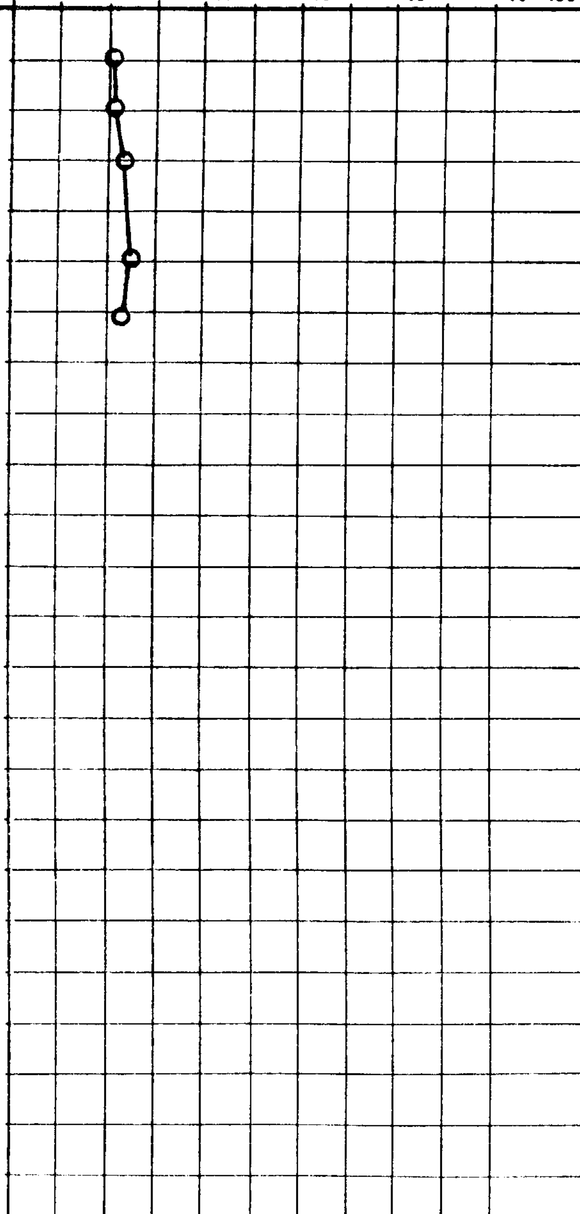
CHAINAGE	OFFSET
160+910	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w%: 20%, 40%, 60%, 80%, 100%, 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT - CLAYEY									
2		.6m				-99-		1	0	WET	
	CL	CLAY - SILTY · LOW PLASTIC +PL - SANDY			1					WET	
										WET	
8						-88-		12	0	MOIST - WET	
10		3.1m			3					M-W	
12		BOTTOM OF HOLE - 3.1m									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11



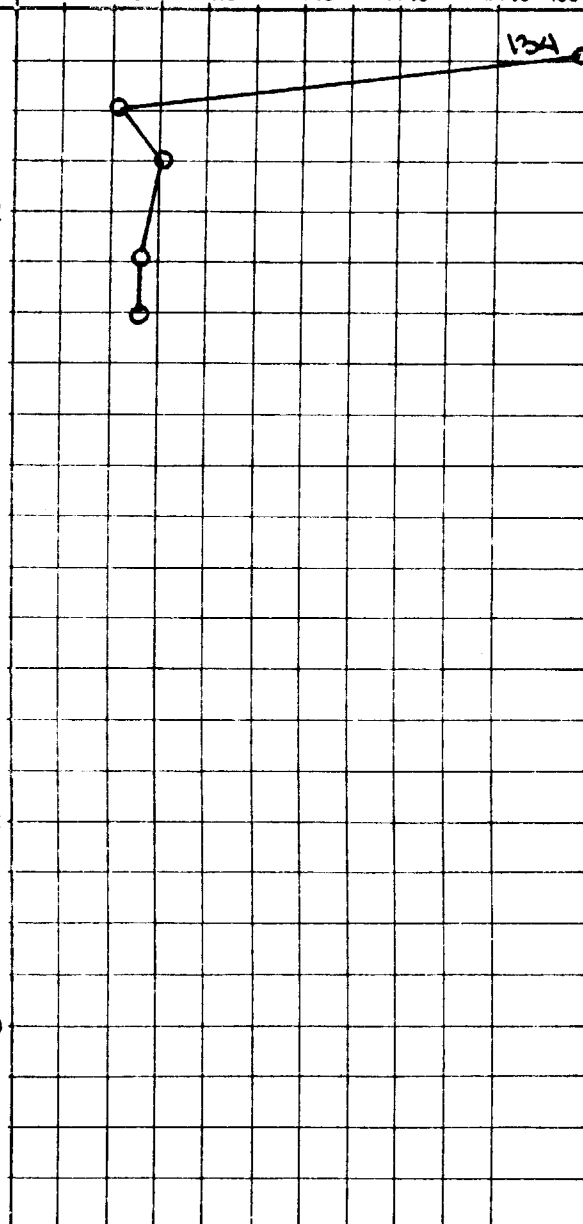
PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 161	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
161+370	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	PEAT								SAT.	
2		.6m									
		CLAY - SILTY			1					MOIST	
4	CL	- LOW - MED PLASTIC				-	98-	2	0	MOIST	
6	Ci	+ Pt			2						
8		2.4m									
	ML	GREY - SILT								WET	FREE WATER
10		3.1m			3	-	98-	2	0	WET	2.7m - 3.1m
12		BOTTOM OF HOLE - 3.1m									



Depth (feet): 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38
Depth (metres): 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

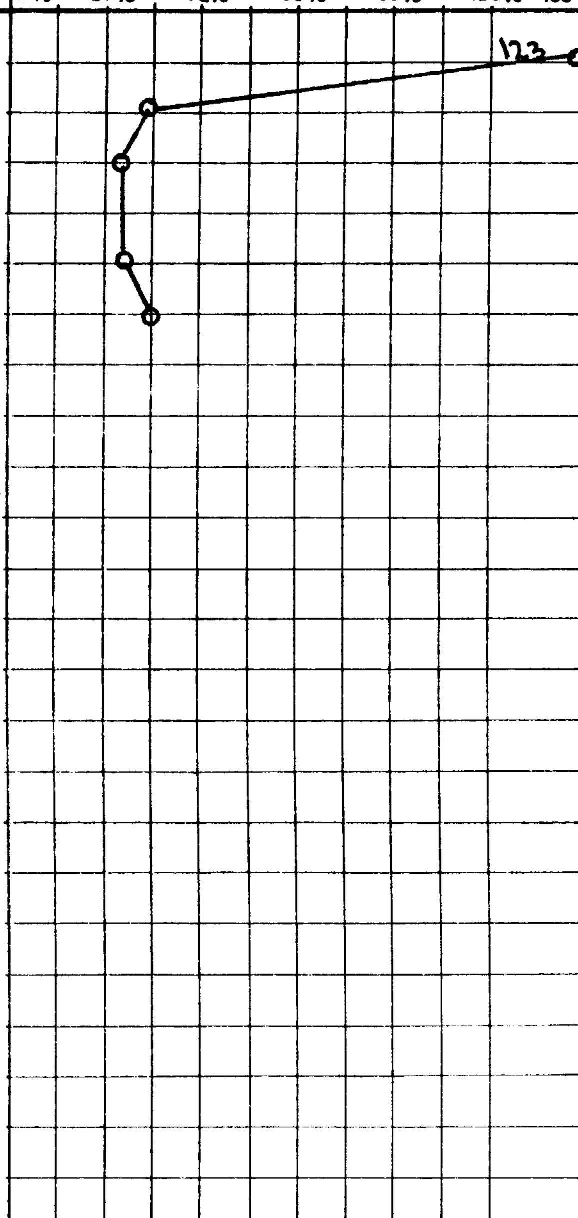
LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/18	161		2

CHAINAGE	OFFSET
161+880	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	Pt	Peat — 1m								SAT.	
4		Silt -			1					SAT.	
6	ML	- Sandy Clayey				98		2	0	WET	
8					2					SAT.	WET 2.1m - 3.1m
10	CL	Clay - Silty — 3.1m			3	91		9	0	MOIST-WET	
12		Bottom of Hole - 3.1m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

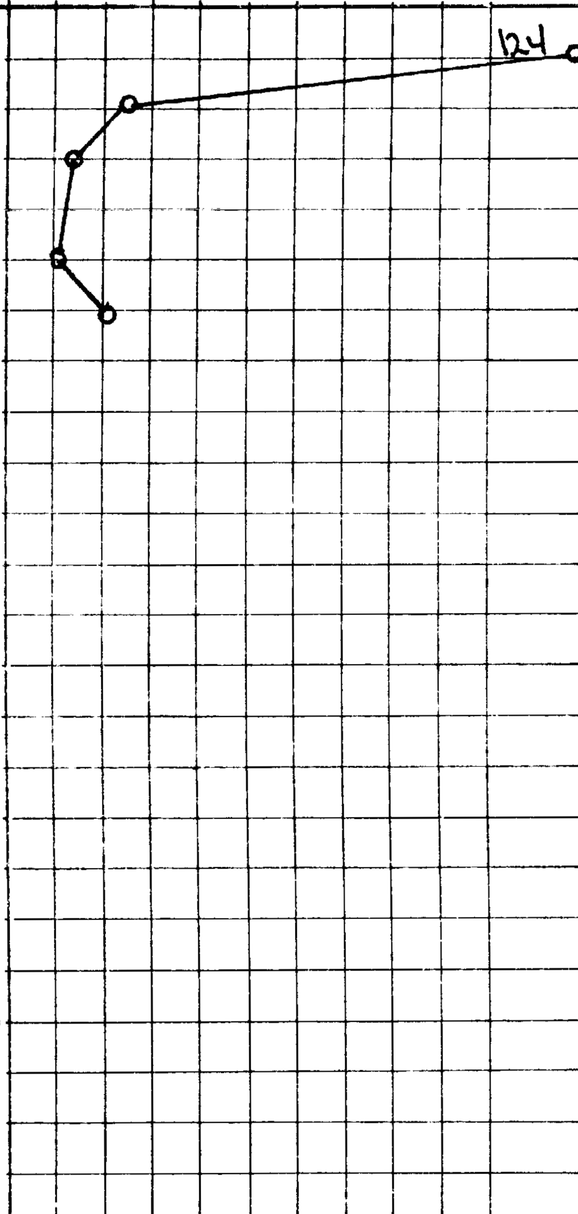
Liard Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/18	162		1

CHAINAGE	OFFSET
162+280	℄

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |——| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	Pt ML	Silt & Peat — .9 m								Free Water	
2–4	ML	Silt - Sandy			1	81-		19	0	Sat.	
4–8	SM	Sand - Silty - Pebbles — 2.4				27-		64	9	Sat.	Free Water
8–10	CL	Clay - Silty Sandy Gravelly — 3.1 m				42-		37	21	Sat.	
10					3					Wet	
12		Bottom of Hole - 3.1 m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 162	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
162+460	℄

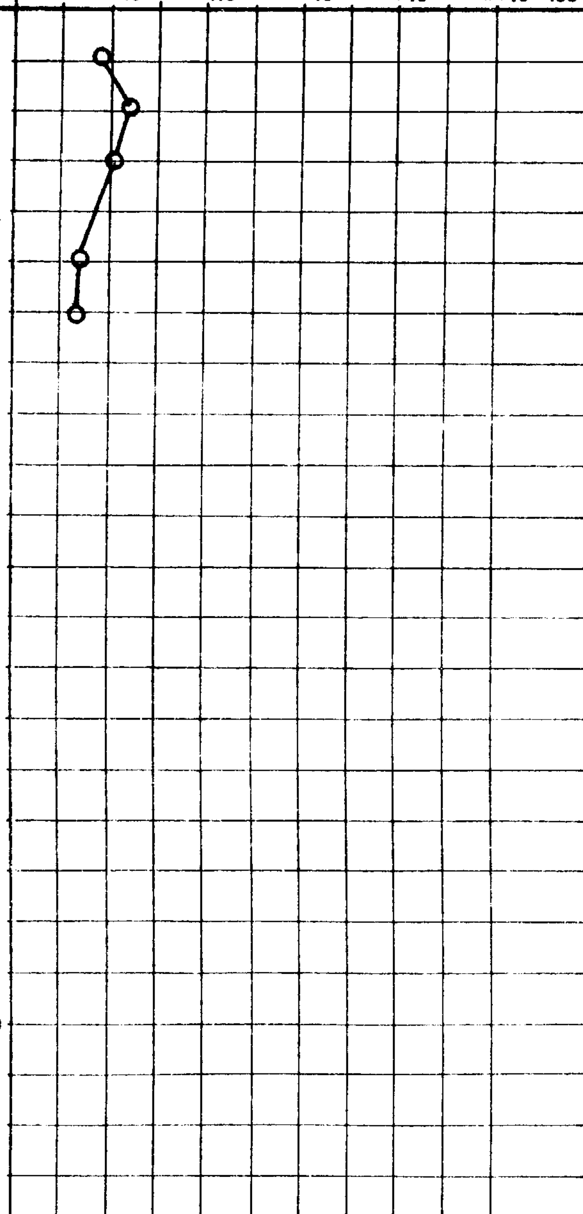
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
2	ML	SILT-			
4		1.5m			1
6		CLAY - SILTY SANDY			
		- PEBBLES			2
8	CL	- LOW PLASTIC			
10		- TILL 3.1 m			3
12		BOTTOM OF HOLE - 3.1 m			
14					4
16					
18					5
20					
22					6
24					7
26					
28					8
30					9
32					
34					10
36					
38					11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
98-		2	0	DAMP
				WET
78-		20	2	MOIST
				MOIST
67-		30	3	MOIST

REMARKS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY		
TECH. WEBBER	RIG B-50	DATE 78/02/18	km 162	B.P. No.
HOLE No. 3	CHAINAGE 162+800	OFFSET ℄		

DEPTH (FEET) | UNIFIED SOIL SYMBOL | SOIL DESCRIPTION | PENETRATION RESISTANCE | ICE DESCRIPTION | DEPTH (METRES)

ML — SILT.

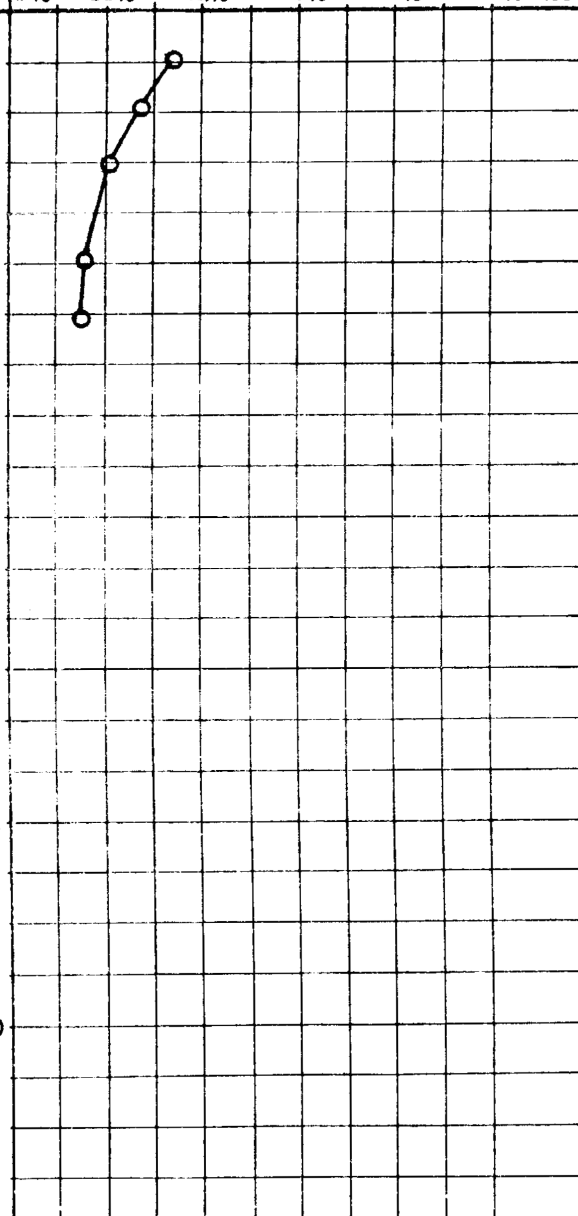
1.5m

CL — CLAY. SILTY SANDY PEBBLES TILL LOW PLASTIC

3.1m

BOTTOM OF HOLE. 3.1m

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



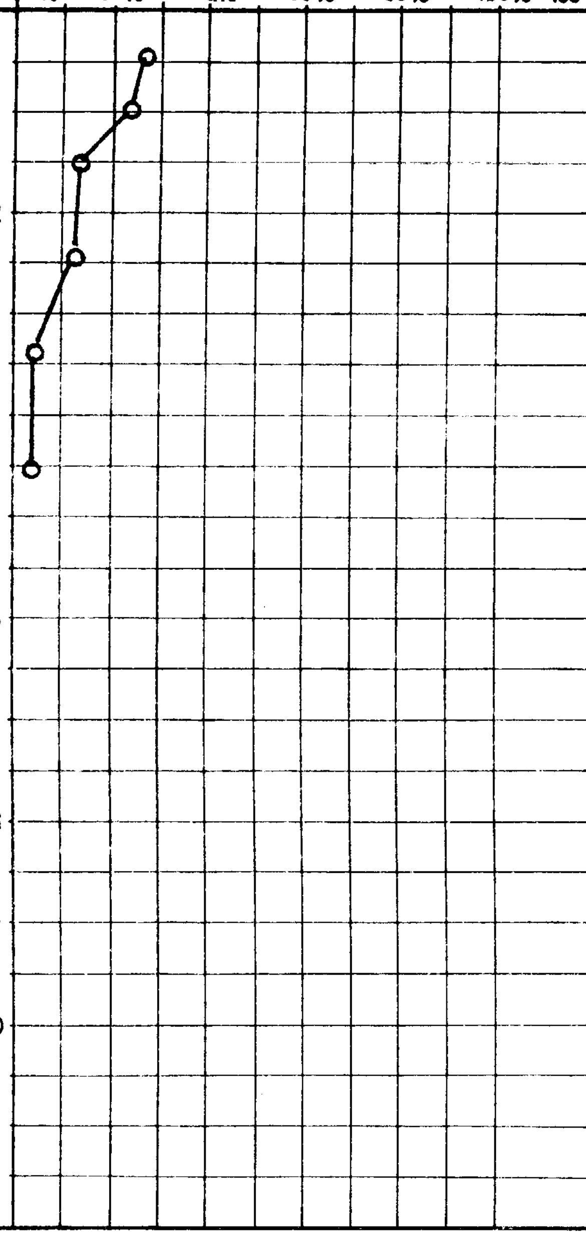
Depth	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	97		3	0	SAT.	
					SAT.	
	65		23	12	WET.	FREE WATER 1m - 1.8m
					MOIST-WET	
	69		28	3	MOIST	

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 162	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
162+980	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |——| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–5	ML	Silt - Clayey Silt -			0–1.5	-98-		2	0	Wet Wet	
		1.5 m									
5–10	CL	Clay - Silty Sandy Pebbles Low Plastic			1.5–3.1	-72-		26	2	Damp-Moist Wet	
		3.1 m									
10–15	SP	Sand - Fine Pebbles			3.1–4.6	-12-		81	7	Humid-Damp	
		4.6 m				-8-		90	2	Humid-Damp	
		Bottom of Hole - 4.6m									

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 163	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
163+130	E

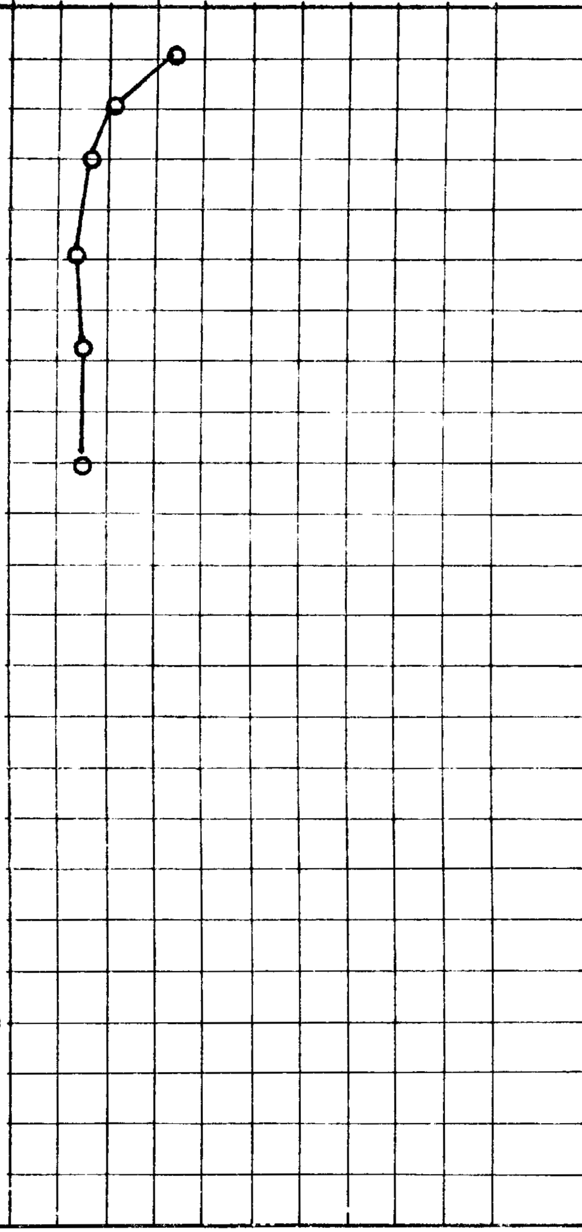
○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT. — .6m								SAT.	
2		CLAY - SILTY			1	-98-		2	0	MOIST-WET	
4	CL	LOW PLASTIC								WET	
6					2						
8										MOIST-WET	
10		GREY - SANDY - PEBBLES			3	-74-		21	5	DAMP-MOIST	
12	CL										
14		— 4.6m			4					D-M	
16		BOTTOM OF HOLE - 4.6m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/18	163		2

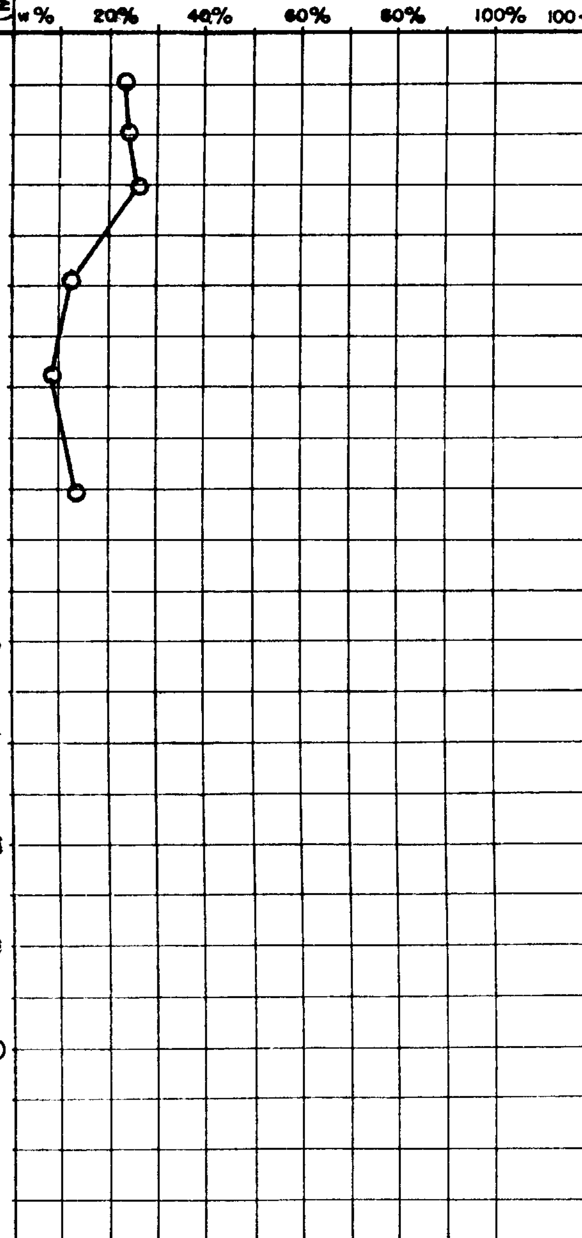
CHAINAGE	OFFSET
163+230	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–5	ML	SILT. 1.5 m			0–1.5	-99-		1	0	DAMP-MOIST / WET / WET	
5–15	CL	CLAY - SILTY - SANDY PEBBLES - LOW PLASTIC GRAVELLY 4.6 m			1.5–4.6	-62-		31	7	MOIST	
										MOIST	
						-52-		29	19	MOIST	
		BOTTOM OF HOLE - 4.6 m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT



PUBLIC WORKS CANADA — DRILL HOLE REPORT

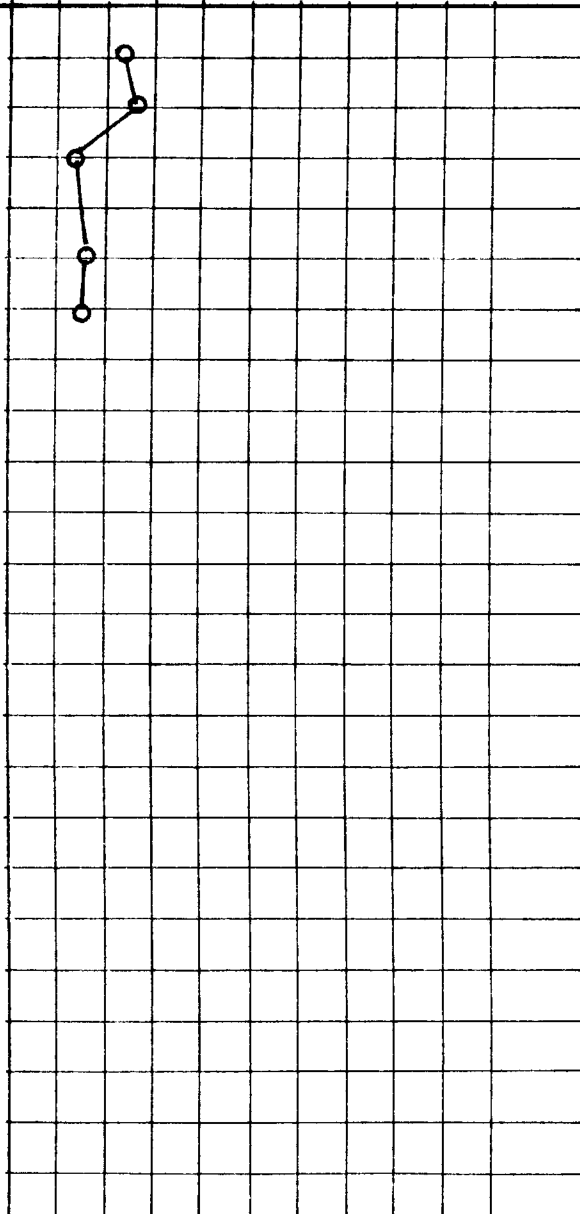
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/18	163		3

CHAINAGE	OFFSET
163+320	℄

REMARKS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
	ML	SILT. .6m				99		1	0	WET
2		CLAY - SILTY			1					WET
4										MOIST
6	CL	- SANDY - PEBBLES			2					
8		- LOW PLASTIC				68		27	5	MOIST
10		3.1m			3					MOIST
12		BOTTOM OF HOLE - 3.1m								
14					4					
16					5					
18										
20					6					
22										
24					7					
26					8					
28										
30					9					
32					10					
34										
36					11					
38										

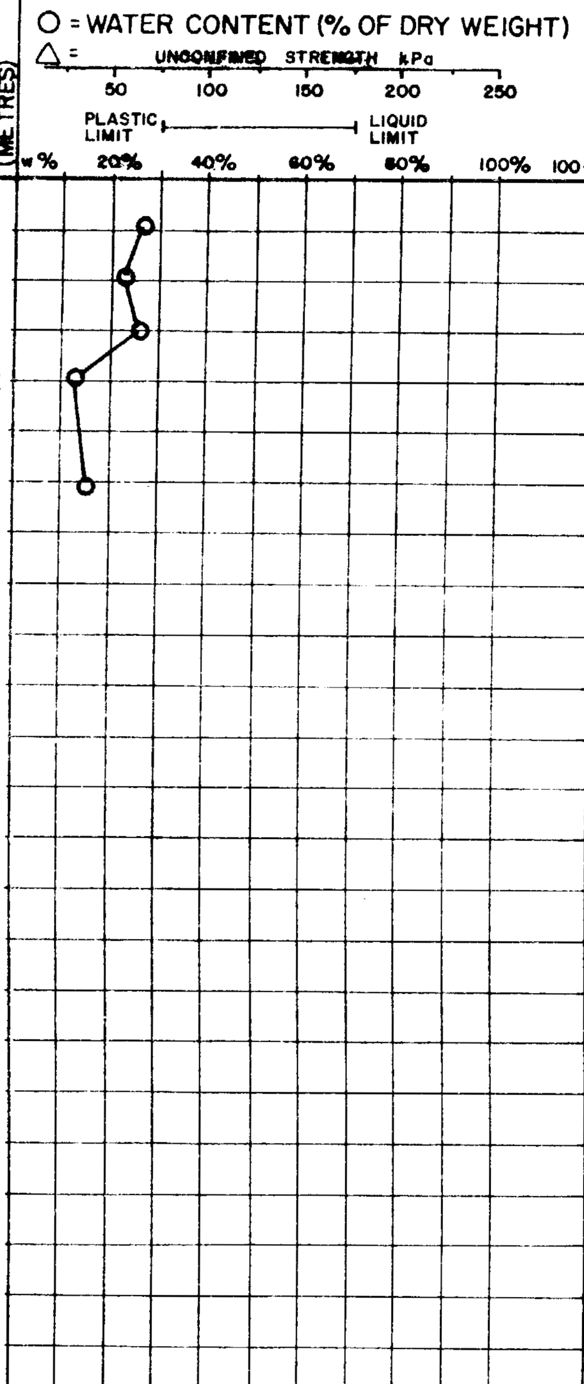
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 163	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
163+840	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT- CLAYEY								SAT.	
2	ML	SILT.			1		99	1	0	MOIST	
4–6										MOIST	
8		2.4m			2					DAMP	
	CL	CLAY. SILTY SANDY									
10	CI	. PEBBLES @PL 3.1m			3		62	31	7	DAMP	
12		BOTTOM OF HOLE- 3.1m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

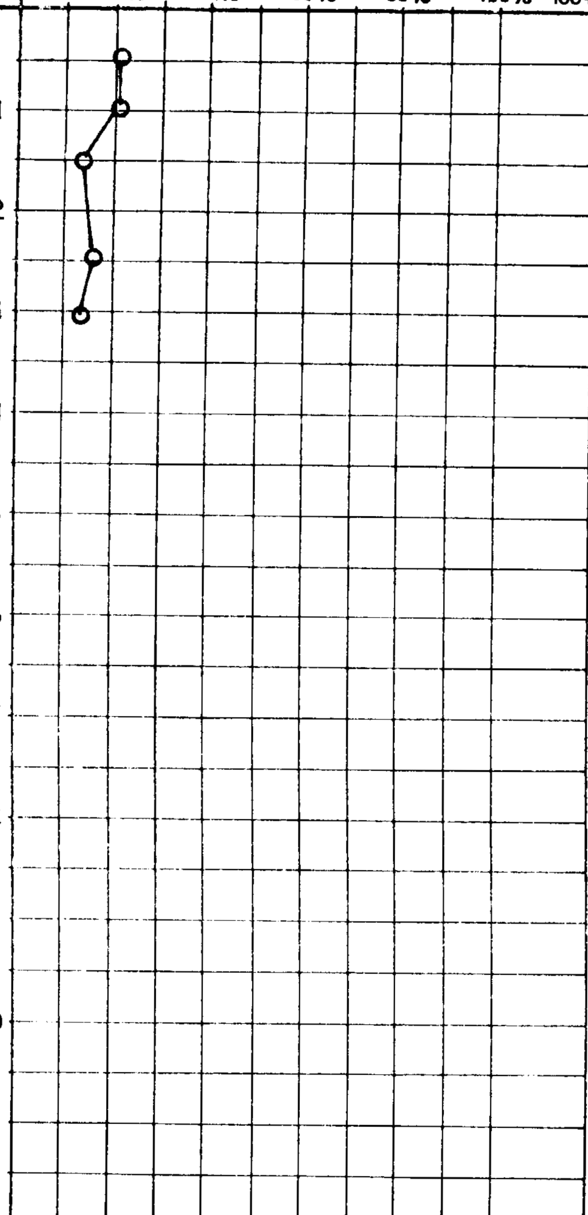
TECH. WEBBER	RIG B-50	DATE 78/02/18	km 163	B.P. No.	HOLE No. 6

CHAINAGE	OFFSET
163+990	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–4	ML	SILT - CLAYEY							WET-SAT	
		1.2 m			-73-		9	18	DAMP	
4–10	CL / CI	CLAY - SILTY SANDY PEBBLES @PL LOW-MED. PLASTIC							DAMP	
					-66-		29	5	DAMP	
		3.1 m							DAMP	
		BOTTOM OF HOLE. 3.1 m								

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+

DEPTH (METRES)



BORROW PIT HOLES

Borrow Pits #38 to #81

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

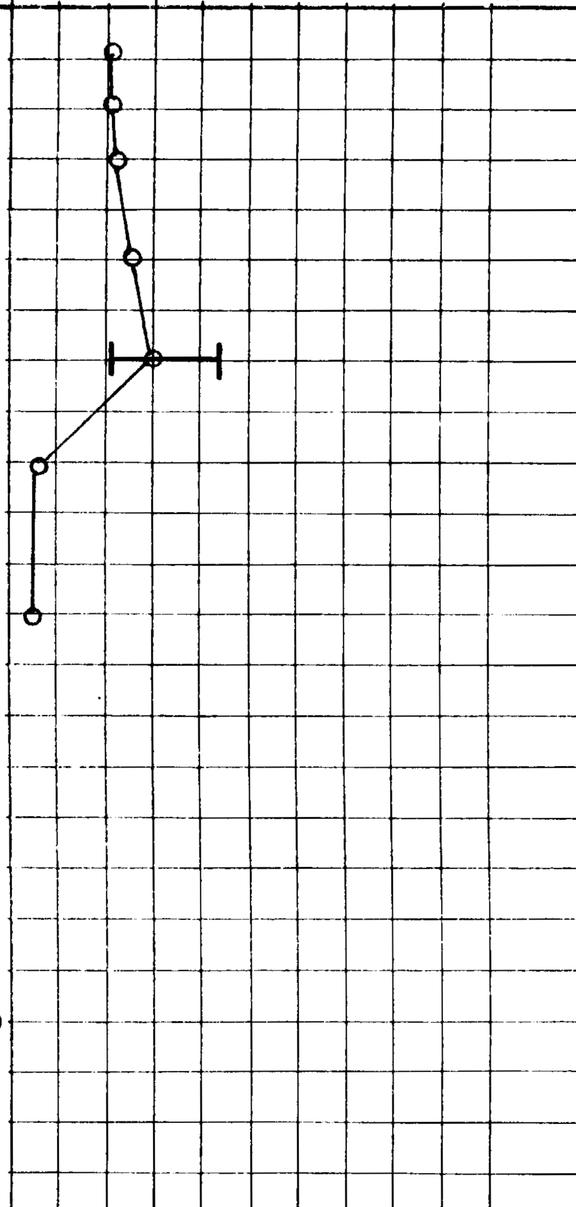
TECH. Pronych	RIG B-50	DATE 78/01/30	km 109	B.P. No. 38	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–13	CL	CLAY - SILTY @ & Above P_L Low Plastic		
		4.m		
13–20	SM	SAND - SILTY		
		6.1m		
		Bottom of Hole 6.1m		

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w %: 20%, 40%, 60%, 80%, 100%, 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
	99	1	0	DAMP
				DAMP
	100	0	0	MOIST
				MOIST
	99	1	0	WET
				HUMID
	34	66	0	HUMID

CHAINAGE	OFFSET

REMARKS

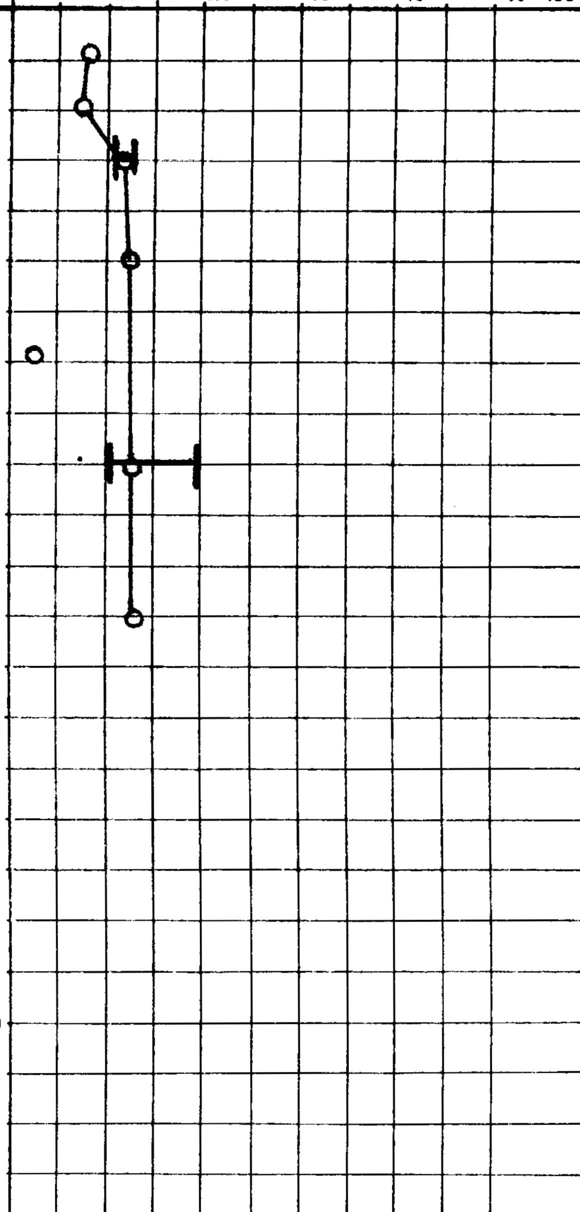
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/01/31	km 113	B.P. No. 39	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–7	ML	SILT.			0–2.1	99		1	0	DAMP	
										DAMP	
										MOIST	
		2.1m									
7–20	CL	CLAY. SILTY - LOW PLASTIC + PL			2.1–6.1	100		0	0	MOIST	
										H.I.B.	
						100		0	0	MOIST	
										MOIST	
		6.1m									
20		BOTTOM OF HOLE. 6.1m									

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/01/31	km 113	B.P. No. 39	HOLE No. 3

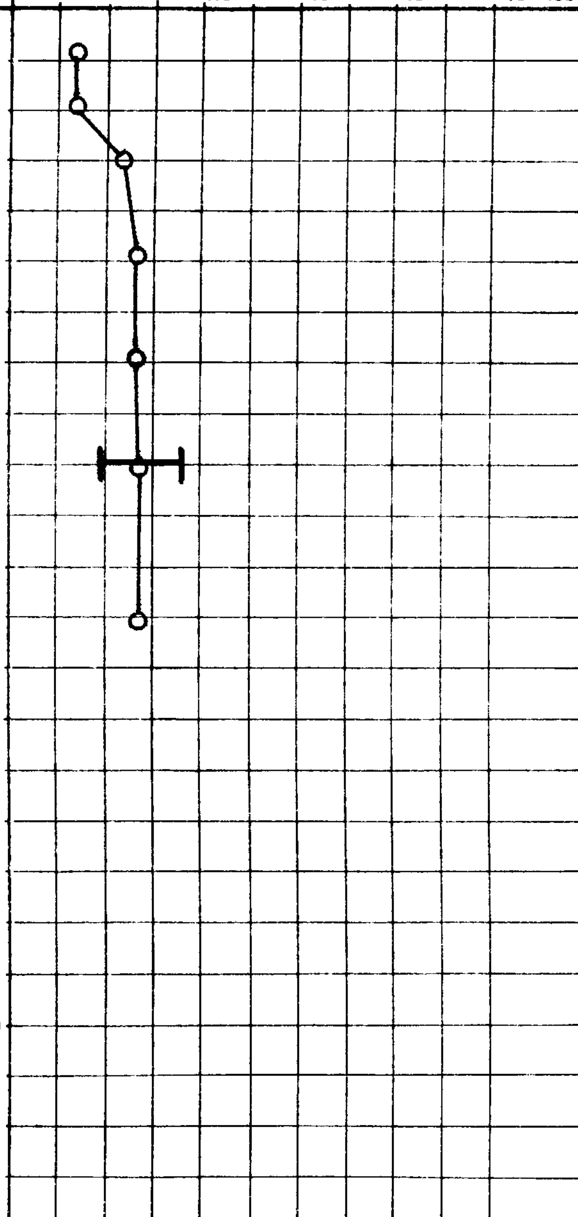
CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT-								DAMP	
4	ML				1	-98-		2	0	DAMP	
6		2.1m								MOIST	
8		CLAY - SILTY + PL · LOW PLASTIC			2	-99-		1	0	MOIST-WET	
10–12					3					M-W	
14	CL				4	-99-		1	0	M-W	
16–20		6.1m			5, 6					M-W	
22		BOTTOM OF HOLE - 6.1m			7						
24–38					8–11						

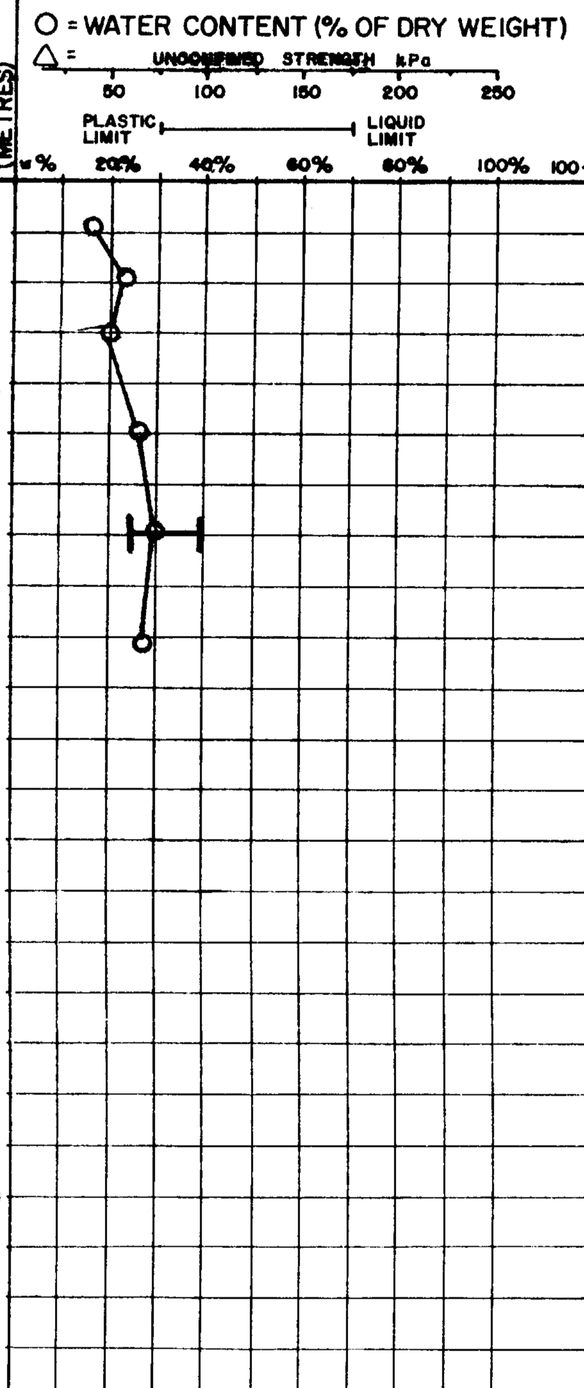
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/01/31	km 113	B.P. No. 39	HOLE No. 4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT.				-98-		2	0	DAMP			
4					1					MOIST			
6		1.8 m				-99-		1	0	MOIST			
8		CLAY. SILTY - ± P_L - LOW PLASTIC			2					MOIST			
10					3								
12	CL					-99-		1	0	WET			
14		4.6 m			4					WET			
16		BOTTOM OF HOLE - 4.6 m			5								
18													
20					6								
22													
24					7								
26													
28					8								
30					9								
32													
34					10								
36					11								
38													

GRAIN-SIZE ANALYSIS

O = WATER CONTENT (% OF DRY WEIGHT)



PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD Hwy.

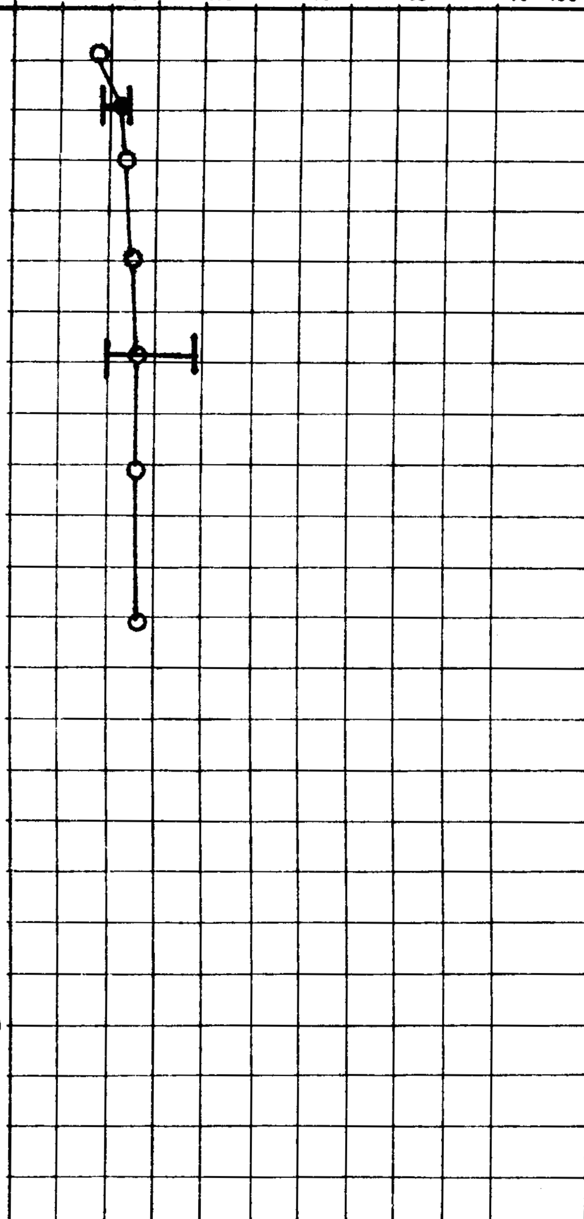
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYSCH	B-50	78/01/31	114	40	1

O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT -				99		1	0	DAMP			
4		1.2 m			1					MOIST			
	CL	CLAY - SILTY - LOW PLASTIC + P_L				100		0	0	DAMP-MOIST			
8					2					MOIST-WET			
12					3	100		0	0	WET			
16					4–5					WET			
20		6.1 m			6	100		0	0	WET			
22		BOTTOM OF HOLE - 6.1 m											

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. PRONYCH	RIG B-50	DATE 78/01/31	km 114	B.P. No. 40	HOLE No. 2

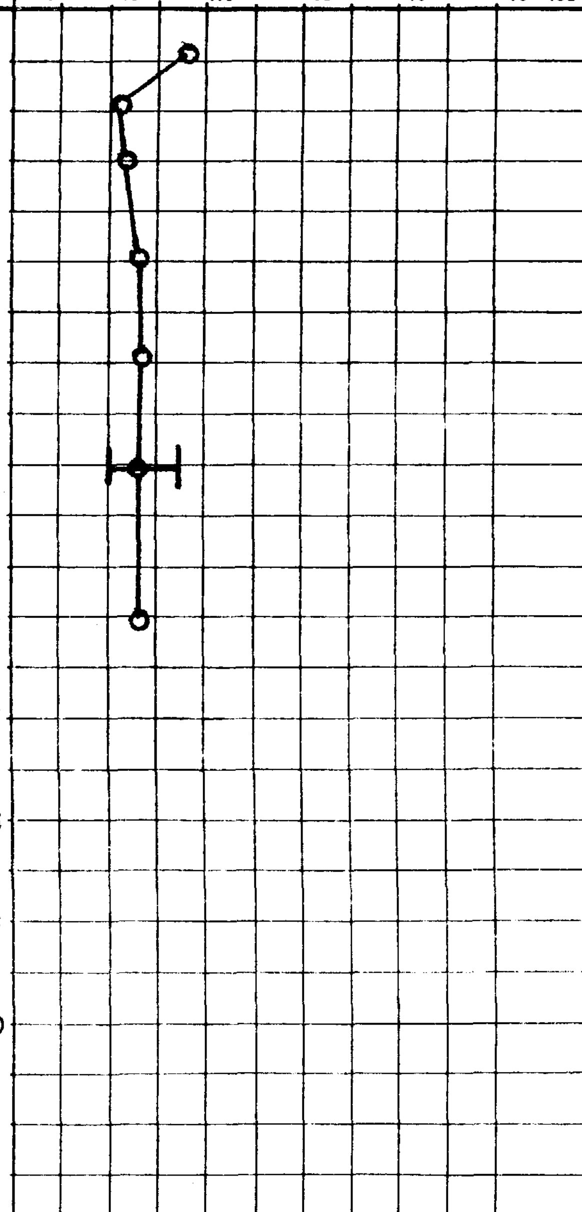
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
2		SILT -			
4	ML				1
6		2.1 m			2
8		CLAY - SILTY			
10		- LOW PLASTIC			3
12		- +PL			
14	CL				4
16					5
18					
20		6.1 m			6
22		BOTTOM OF HOLE - 6.1 m			
24					7
26					8
28					
30					9
32					
34					10
36					11
38					

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├───┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



Depth (m)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
~0.4					SAT.
1	99	-	1	0	MOIST
~1.5					MOIST
~2.5	99	-	1	0	WET
~3.5					WET
~4.5	100		0	0	WET
6					WET

CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/01/31	114	40	3

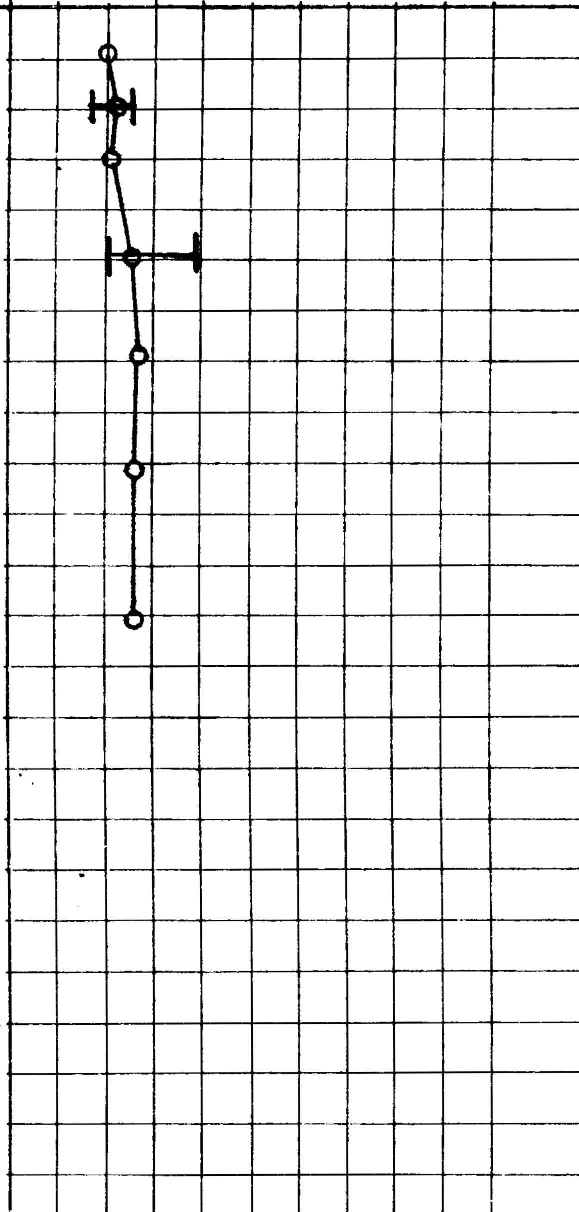
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–6	ML	SILT			0–1.8					MOIST			
					1	99		1	0	MOIST			
		1.8 m								MOIST			
6–20	CL	CLAY - SILTY - LOW PLASTIC +PL			1.8–6.1								
					2.5	100		0	0	MOIST - WET			
										M-W			
					4.5	100		0	0	M-W			
		6.1 m			6					M-W			
20		BOTTOM OF HOLE - 6.1 m											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├─┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/01/31	116	41	1

CHAINAGE	OFFSET

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–9	ML	SILT -		
		2.8 m		
9–20	CL	CLAY - SILTY - LOW PLASTIC +PL		
		6.1 m		
20		BOTTOM OF HOLE - 6.1 m		

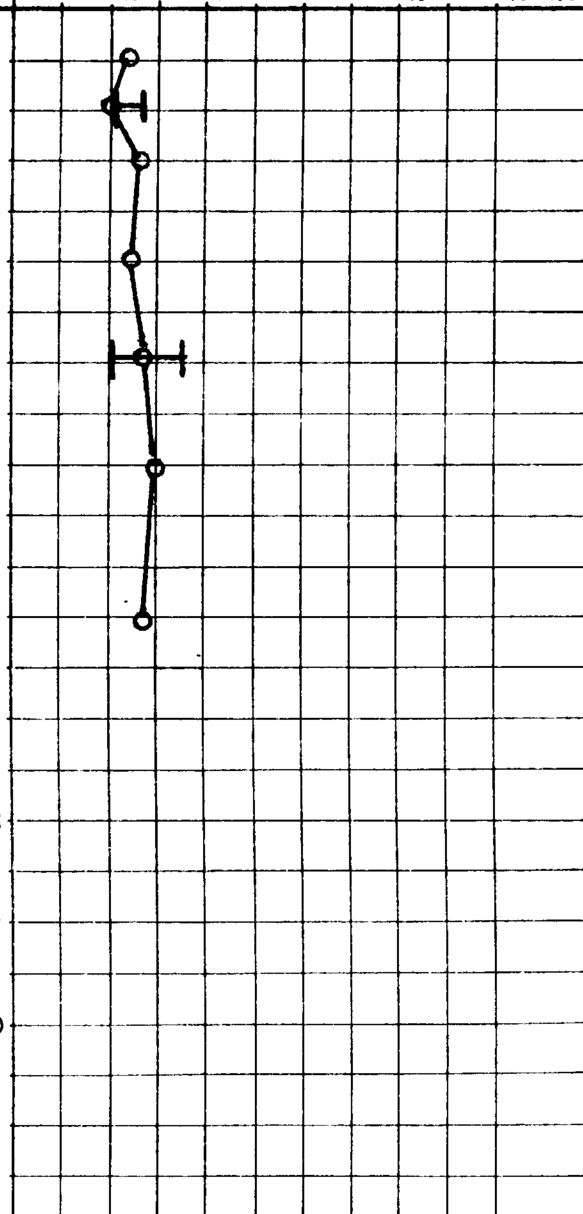
○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+

DEPTH (METRES) 1 2 3 4 5 6 7 8 9 10 11



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
99-		1	0	MOIST
				DAMP
99-		1	0	~~DAMP~~
				WET
99-		1	0	WET
				WET
100-		0	0	WET

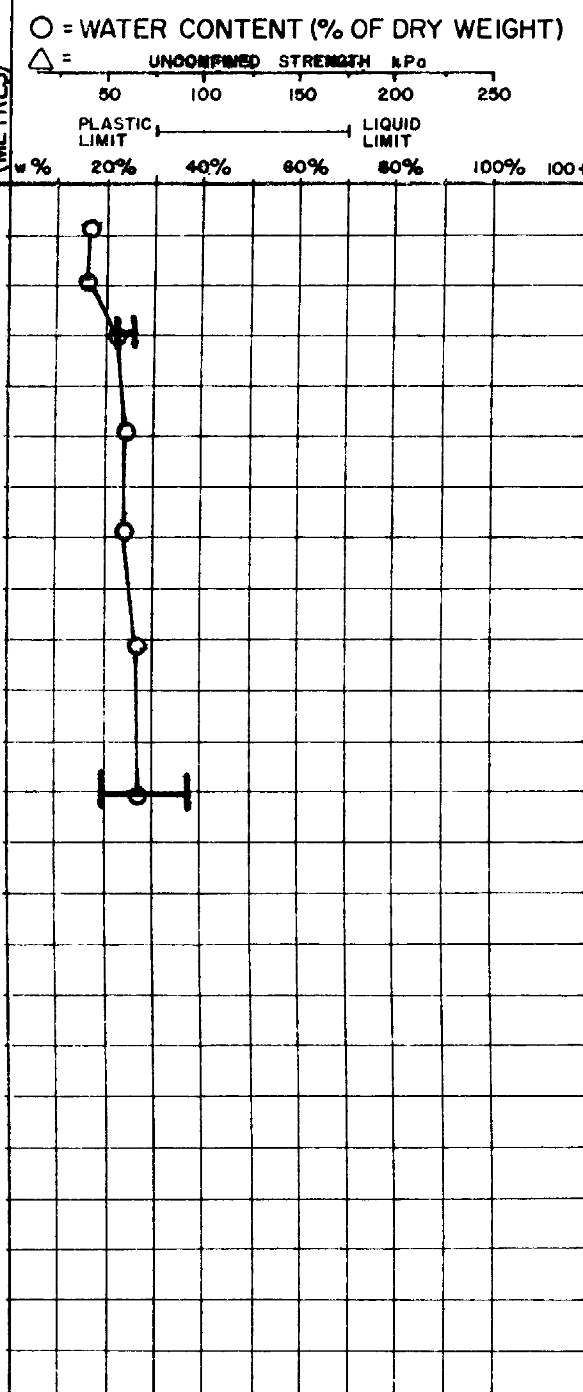
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD Hwy

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/01/31	116	41	2

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT -								DAMP	
					1		99	1	0	DAMP	
										MOIST	
		2.7m					100	0	0	MOIST	
	CL	CLAY - SILTY - LOW PLASTIC +PL								MOIST-WET	
							100	0	0	WET	
20		6.1m			6					WET	
		BOTTOM OF HOLE - 6.1m									



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. WEBBER	RIG B-50	DATE 78/01/31	km 116	B.P. No. 41	HOLE No. 3

CHAINAGE	OFFSET

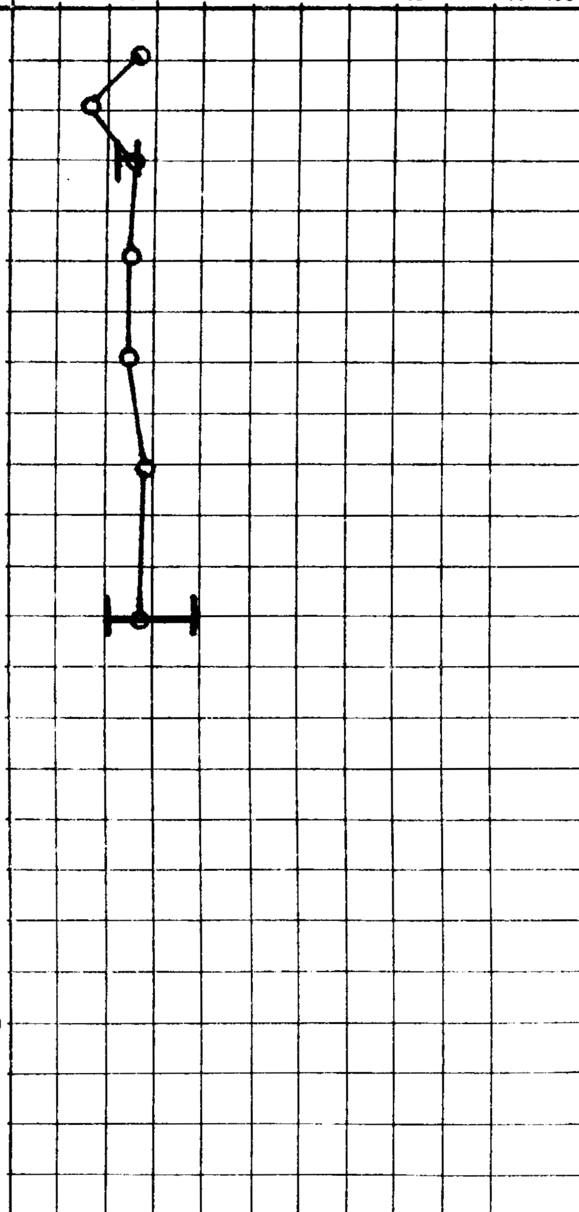
○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–9	ML	Silt.			0–2.7					SAT.	
					1		98	2	0	DAMP	
										WET	
										WET	
		2.7m			2.7						
9–20	CL	CLAY - SILTY - LOW PLASTIC - +P_L			2.7–6.1		100	0	0	MOIST	
										WET	
		6.1m			6		100	0	0	WET	
		BOTTOM OF HOLE. 6.1m									



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

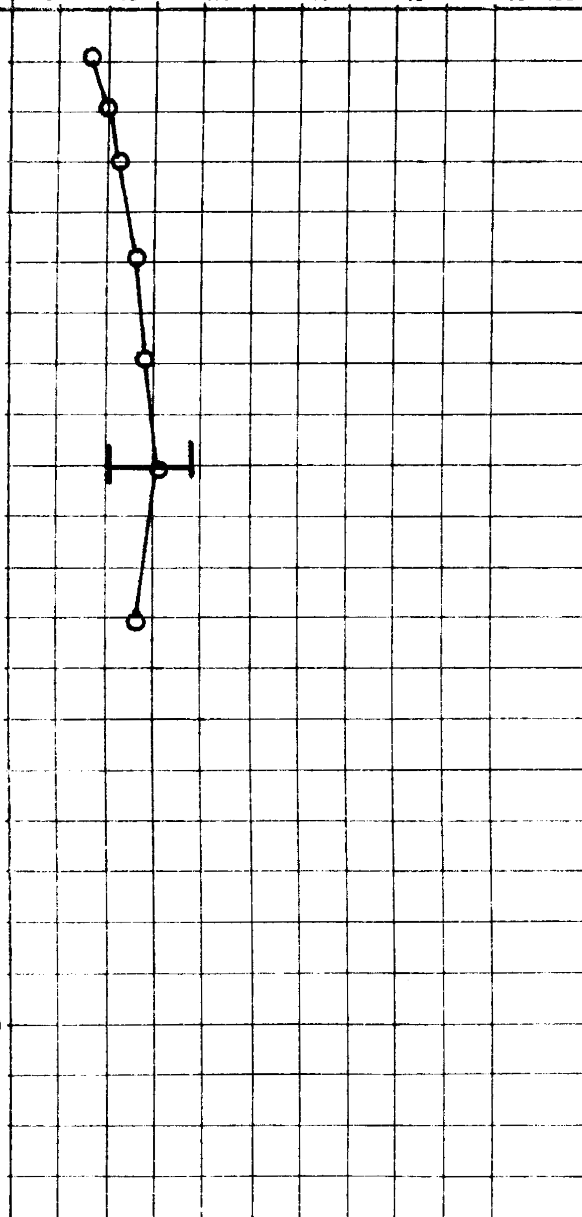
TECH. WEBBER	RIG B-50	DATE 78/01/31	km 116	B.P. No. 41	HOLE No. 4

Unified Soil Symbol	Soil Description	Penetration Resistance	Ice Description
ML	SILT -		
	1.5 m		
CL	CLAY - SILTY - LOW PLASTIC - + P_L		
	6.1 m		
	BOTTOM OF HOLE - 6.1 m		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT



Grain-Size Analysis: Clay %	Silt %	Sand %	Gravel %	Relative Moisture Content
				DAMP
-99-		1	0	DAMP-MOIST
				D-M
-100-		0	0	MOIST
				WET
-100-		0	0	WET
				WET

CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/01	km 118	B.P. No. 42	HOLE No. 1

CHAINAGE	OFFSET

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
						100		0	0	SAT.
										WET
						99		1	0	WET
										MOIST-WET
						99		1	0	SAT
										SAT.
		4.6 m								
		Bottom of Hole. 4.6 m								

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

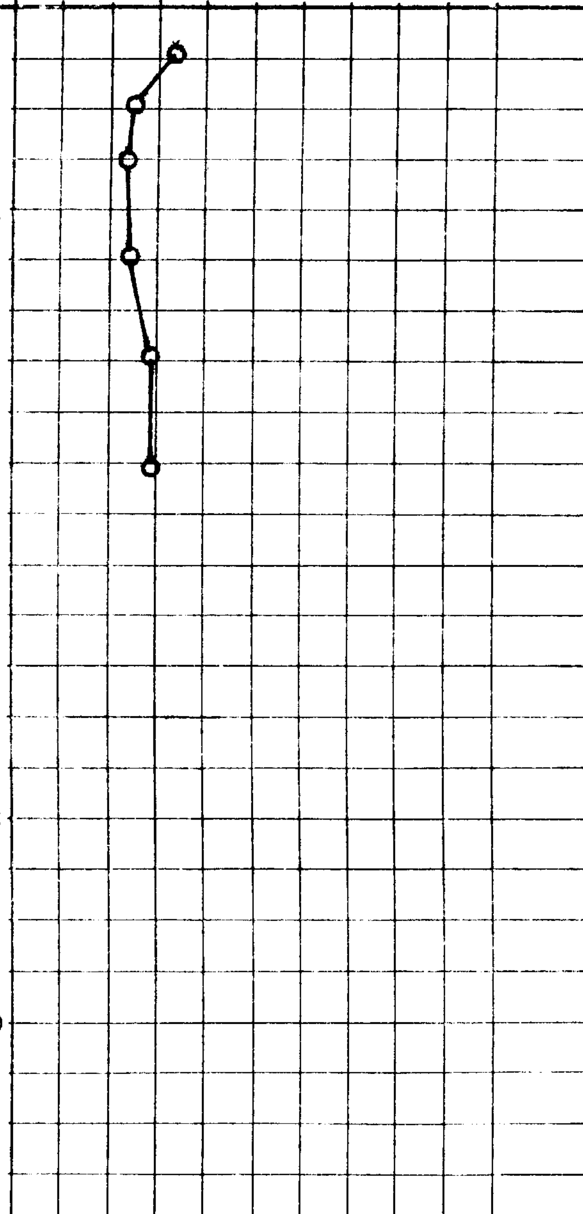
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

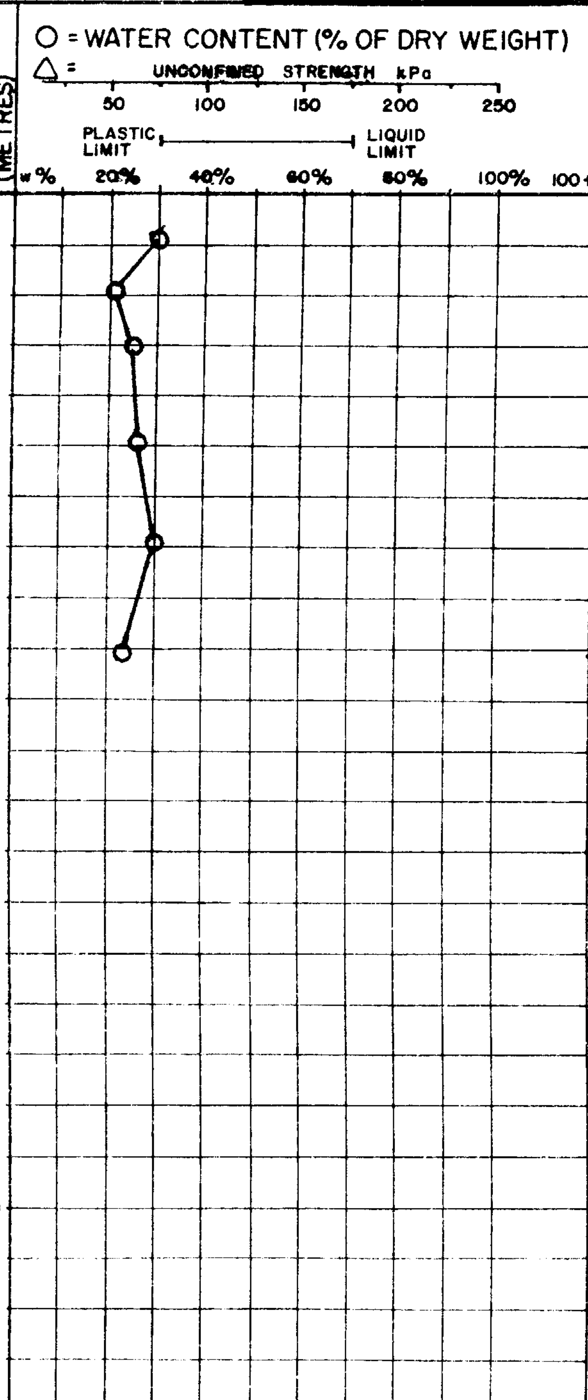


PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/01	18	42	2

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–7	ML	SILT.			0–2.1					SAT.	
					1	99		1	0	MOIST	
										MOIST	
		2.1m									
7–15	CL	CLAY - SILTY - LOW PLASTIC + P. SATURATED AFTER 3.4m			2.1–4.6	100		0	0	MOIST-WET	
										M-W	
		4.6m				95		5	0	M-W	
		BOTTOM OF HOLE - 4.6m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

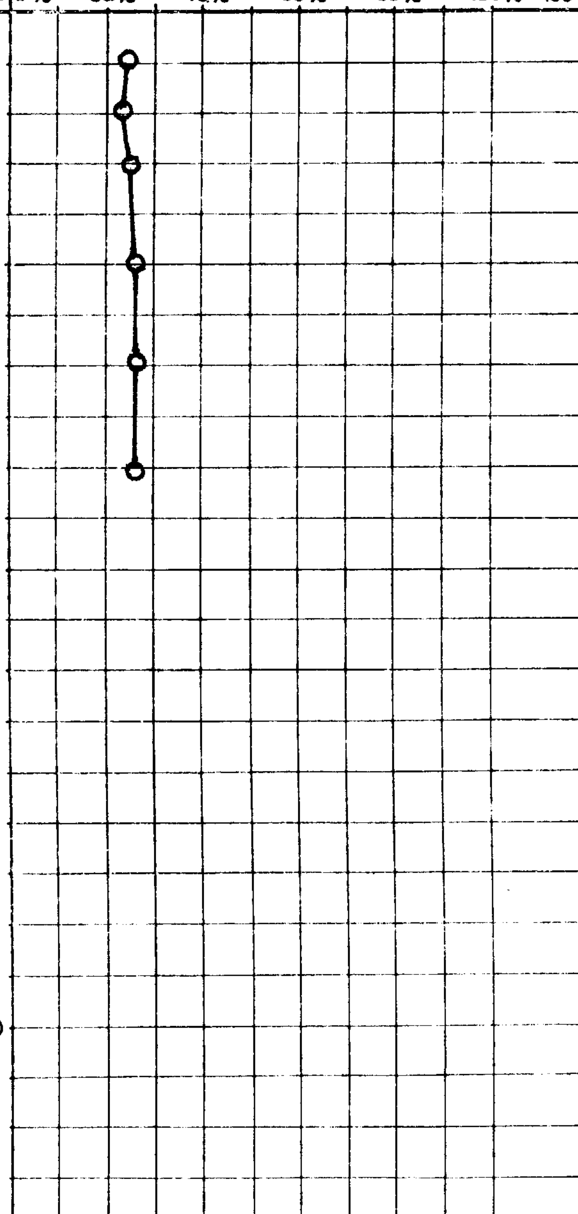
LIARD Hwy

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/01	118	42	3

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

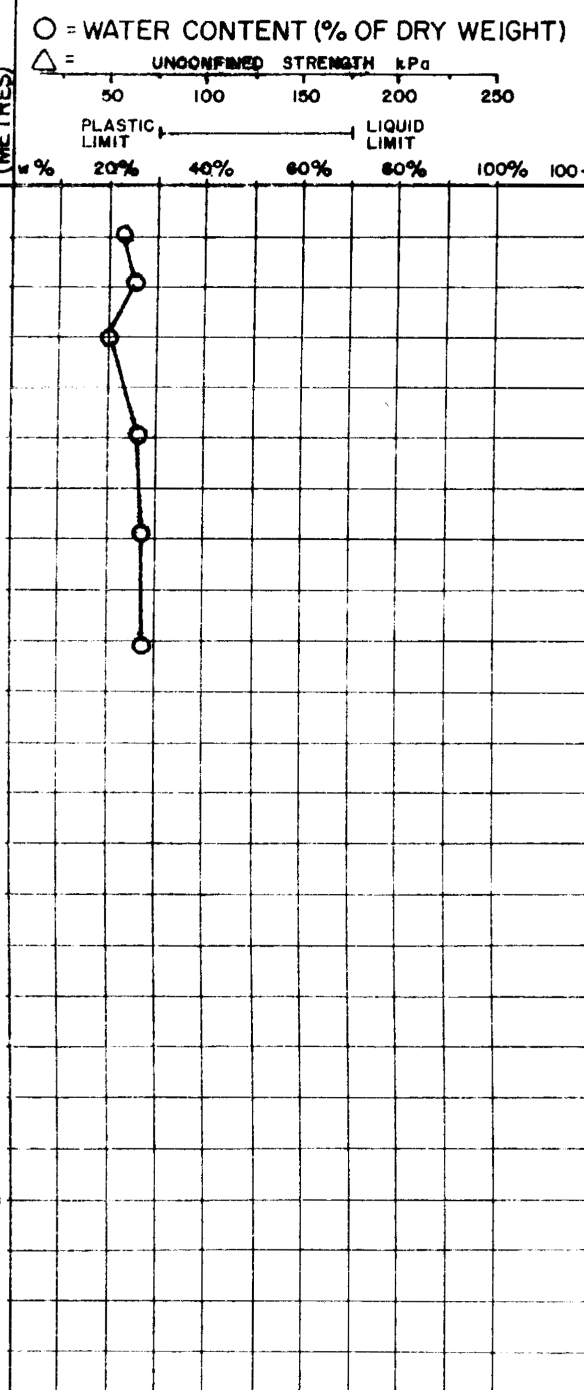
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT -				-99-		1	0	SAT.	
4	CL	CLAY - SILTY			1	-99-		1	0	WET	
6	ML	SILT - 2.1m								SAT.	
8		CLAY - SILTY			2	-100-		0	0	WET	
10	CL	- LOW PLASTIC			3						
12		+ Ox								WET	
14		SAT. AFTER 3.4m 4.6m			4	-97-		3	0	SAT.	
16		BOTTOM OF HOLE - 4.6m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/01	km 118	B.P. No. 42	HOLE No. 4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE / OFFSET / REMARKS
2	ML	SILT.								MOIST	
					1	-	100	0	0	WET	
4		1.2 m									
		CLAY - SILTY - LOW PLASTIC + P_L								MOIST	
8						-	100	0	0	WET	
10	CL	SATURATED AFTER 3.4 m			3						
12										WET	
14		4.6 m				-	97	3	0	WET	
16		BOTTOM OF HOLE - 4.6 m			5						



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

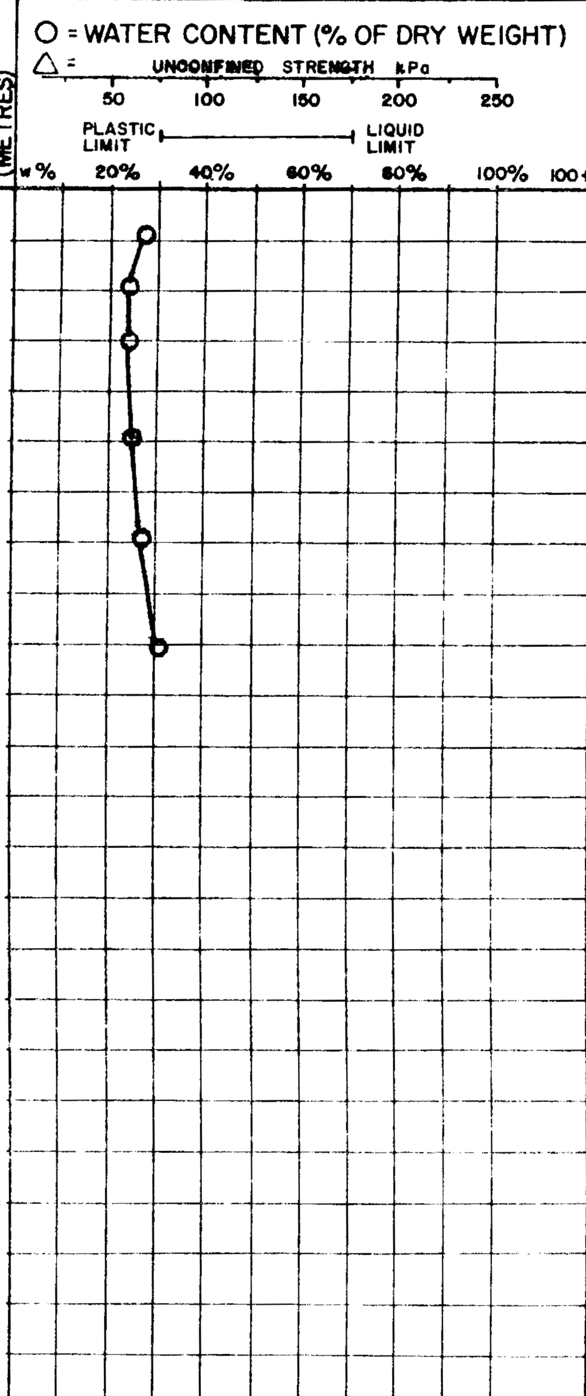
TECH. PRONYCH	RIG B-50	DATE 78/02/01	km 119	B.P. No. 43	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT -								SAT.	
4	ML	- CLAYEY			1	99	-	1	0	MOIST-WET	
										MOIST-WET	
7		2.1 m			2						
8		CLAY-SILT)									
9		- LOW PLASTIC				100	-	0	0	M-W	
12	CL	+ PL			3					WET	WATER BEARING LENSE @ 3.7 m
		SAT. AFTER 3.4 m									
15		4.6 m			4	98	-	2	0	WET	
		Bottom of Hole - 4.6 m			5						

CHAINAGE	OFFSET

Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (metres) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11



PUBLIC WORKS CANADA — DRILL HOLE REPORT

Liard Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	B-50	78/02/01	119	43	2

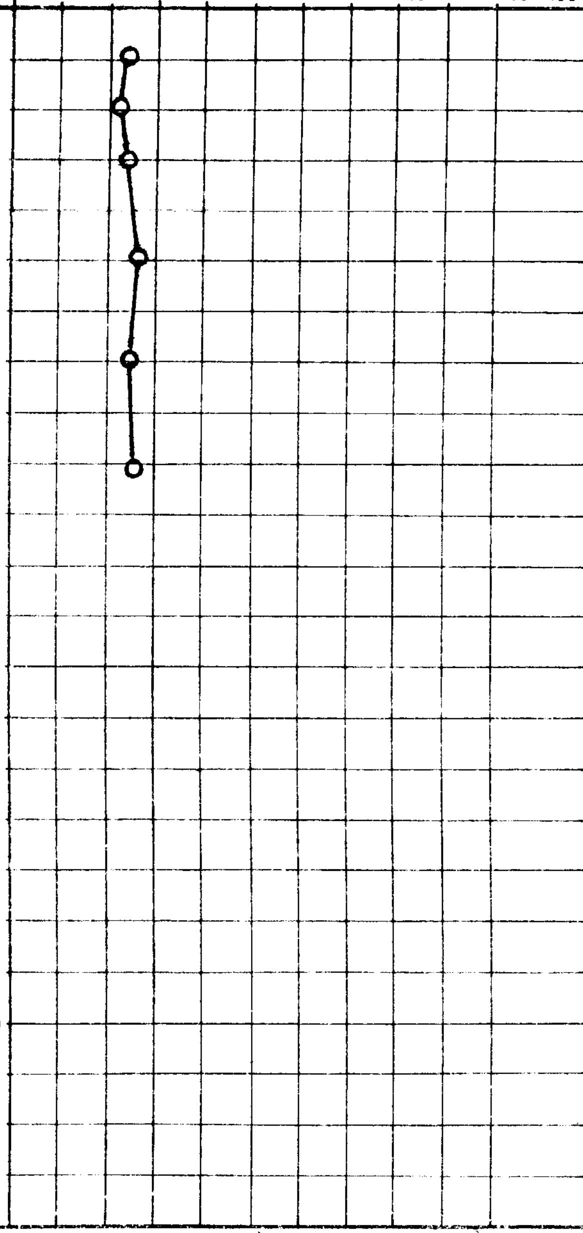
CHAINAGE	OFFSET

O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT |———| LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0 – .9m	ML	Silt.							Moist	
.9m – 4.6m	CL	Clay - Silty, low plastic, +PL. Sat. after 3.4m. Water bearing silt lense @ 3.7m			100		0	0	Moist	
									Damp-Moist	
									Moist-Wet	
					99		1	0	M-W	
									Wet	
4.6m		Bottom of Hole. 4.6m								

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy

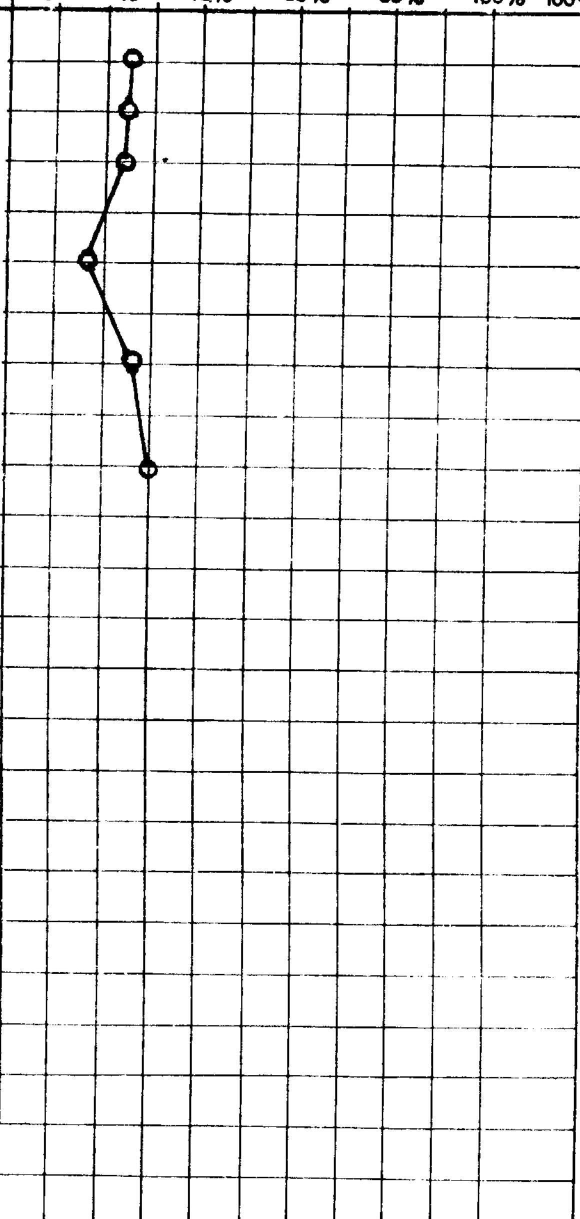
TECH. PRONYCH	RIG B-50	DATE 78/02/01	km 119	B.P. No. 43	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAYEY				99	-	1	0	SAT.	
4		1.2m			1					SAT.	
6		CLAY - SILTY LOW PLASTIC				100	-	0	0	MOIST	
8		+PL			2					MOIST-WET	
10		SAT. AFTER 3.4m			3						
12	CL	WATER BEARING SILT LENSE @ 3.7m				99	-	1	0	WET	
14–16		4.6m			4					SAT.	
16		BOTTOM OF HOLE 4.6m			5						

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT

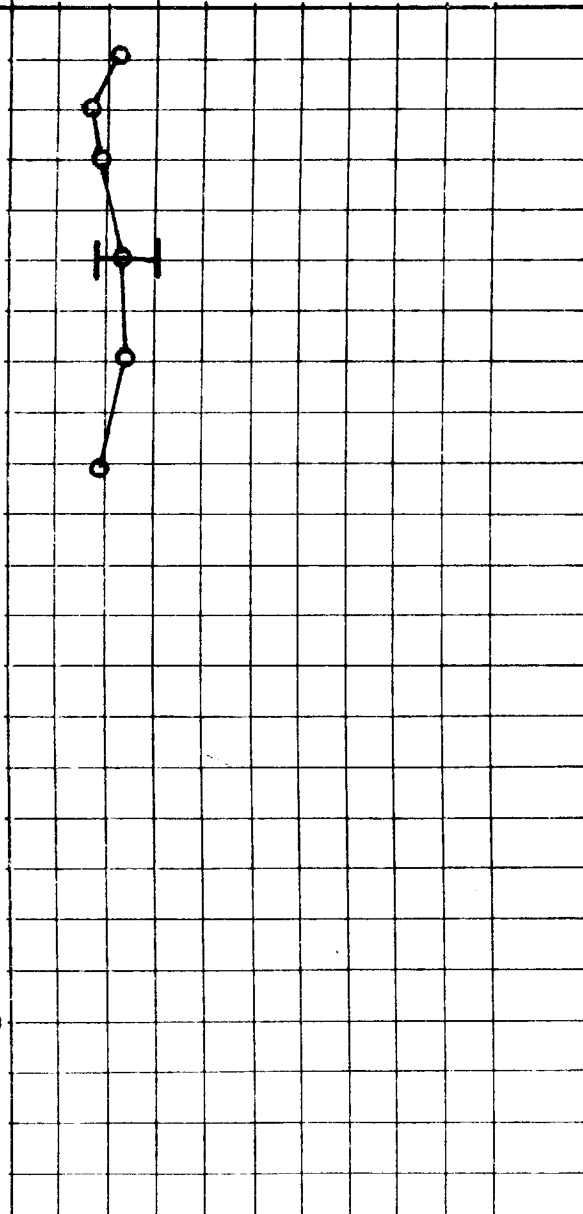
LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/02	121	44	1

CHAINAGE	OFFSET

Column headings: DEPTH (FEET) · UNIFIED SOIL SYMBOL · SOIL DESCRIPTION · PENETRATION RESISTANCE · ICE DESCRIPTION · DEPTH (METRES) · ○ = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT ├─┤ LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+ · GRAIN-SIZE ANALYSIS: CLAY %, SILT %, SAND %, GRAVEL % · RELATIVE MOISTURE CONTENT · REMARKS

Unified Soil Symbol	Soil Description
ML	SILT - 1.8m
CL	CLAY - SILTY - LOW PLASTIC + P_L SATURATED AFTER 3.4m SANDY 4.6m
	BOTTOM OF HOLE - 4.6 m



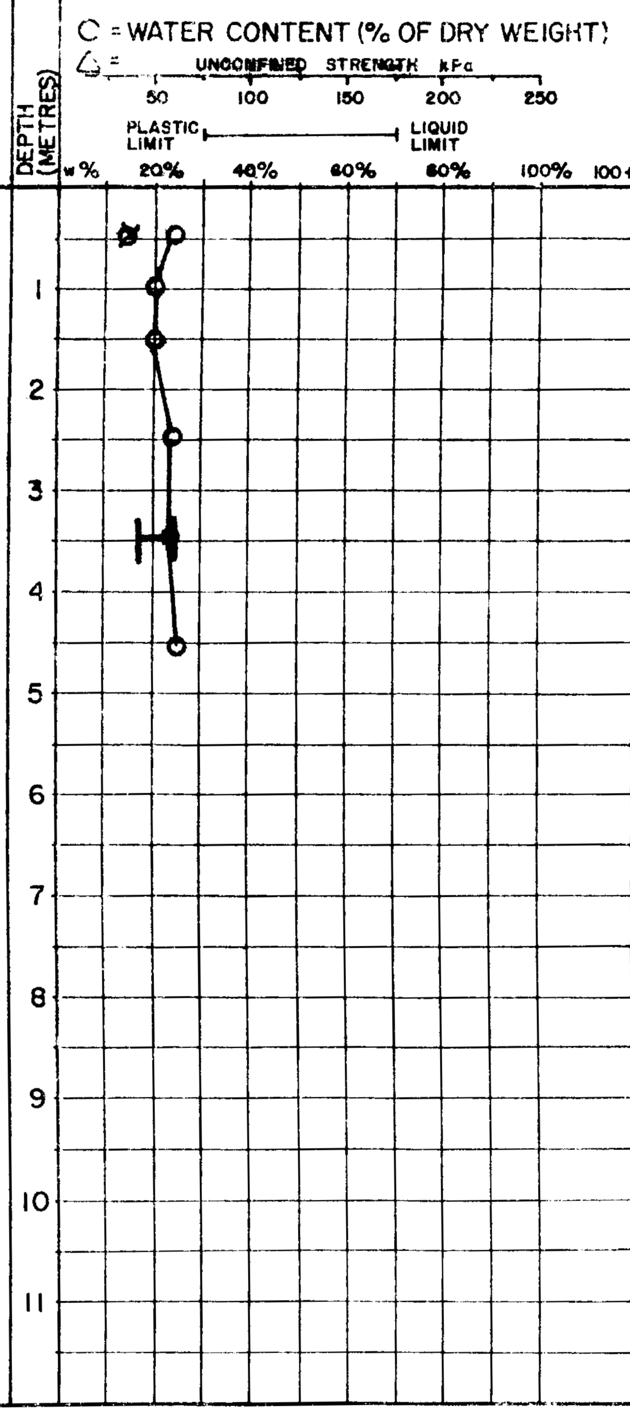
Depth (approx.)	Clay %	Silt %	Sand %	Gravel %	Relative Moisture Content
~0.4 m					DAMP-MOIST
~1 m	-	99	1	0	D-M
~1.5 m					D-M
~2.5 m	-	100	0	0	WET
~3.5 m					WET
~4.6 m	-	89	11	0	MOIST-WET

PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY

TECH. PRONYSCH	RIG B-50	DATE 78/02/02	km 121	B.P. No. 44	HOLE No. 2

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		CLAY - SILTY			96	-	4	0	DAMP-MOIST	
4		+ PL							D-M	
					99	-	1	0	MOIST	
8	CL	SATURATED AFTER 3.4m							MOIST-WET	
10	ML	SILT - CLAYEY			93	-	7	0	SAT.	
14	CL	CLAY - SILTY 4.6m							WET	
16		BOTTOM OF HOLE - 4.6m								



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY
TECH. PRONYCH	RIG B-50	DATE 78/02/02
km 121	B.P. No. 44	HOLE No. 3

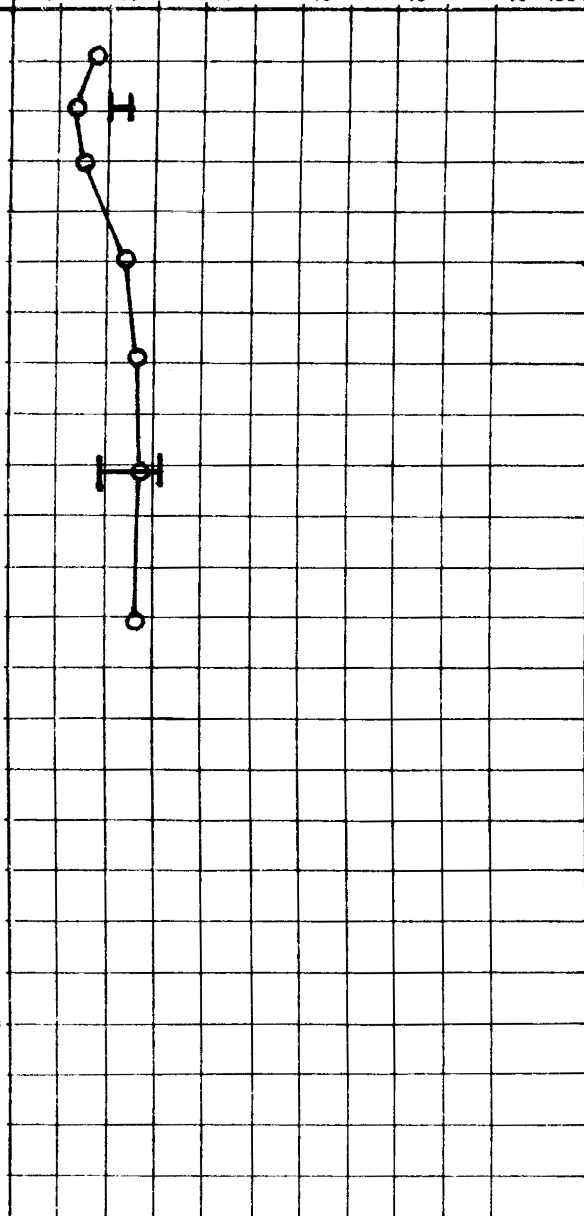
CHAINAGE | OFFSET

REMARKS

DEPTH (FEET) | UNIFIED SOIL SYMBOL | SOIL DESCRIPTION | PENETRATION RESISTANCE | ICE DESCRIPTION | DEPTH (METRES)

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa

PLASTIC LIMIT — LIQUID LIMIT



Depth (m)	Symbol	Soil Description
0–2.7m	ML	SILT.
2.7m–6.1m	CL	CLAY - SILTY - LOW PLASTIC +P_L WET
6.1m		BOTTOM OF HOLE. 6.1m

GRAIN SIZE ANALYSIS

Depth (m)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
~0.4					DAMP
1	-	99	1	0	DAMP
~1.5					DAMP
~2.5	-	100	0	0	WET
~3.4					WET
~4.5	-	99	1	0	WET
6					WET-SAT.

PUBLIC WORKS CANADA — DRILL HOLE REPORT

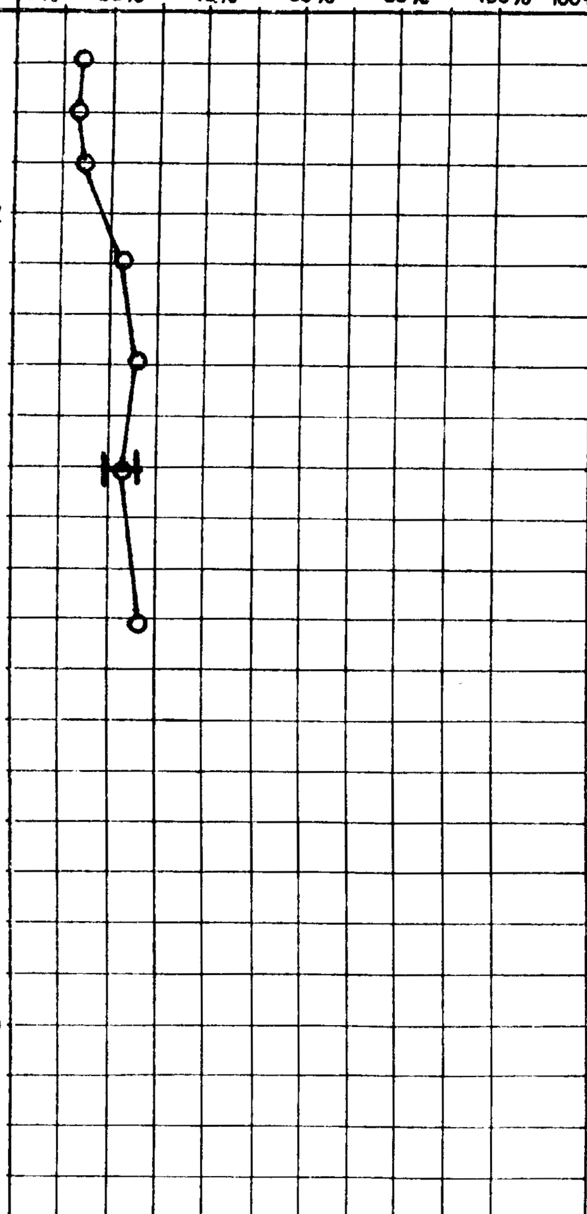
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/02	121	44	4

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–7	ML	SILT			0–2.1	99-		1	0	DAMP	
										DAMP	
										DAMP	
		2.1m									
7–20	CL	CLAY - SILTY - LOW PLASTIC + PL WET			2.1–6.1	100		0	0	MOIST	
										WET	
						99-		1	0	WET	
										WET	
		6.1m									
		BOTTOM OF HOLE - 6.1m									

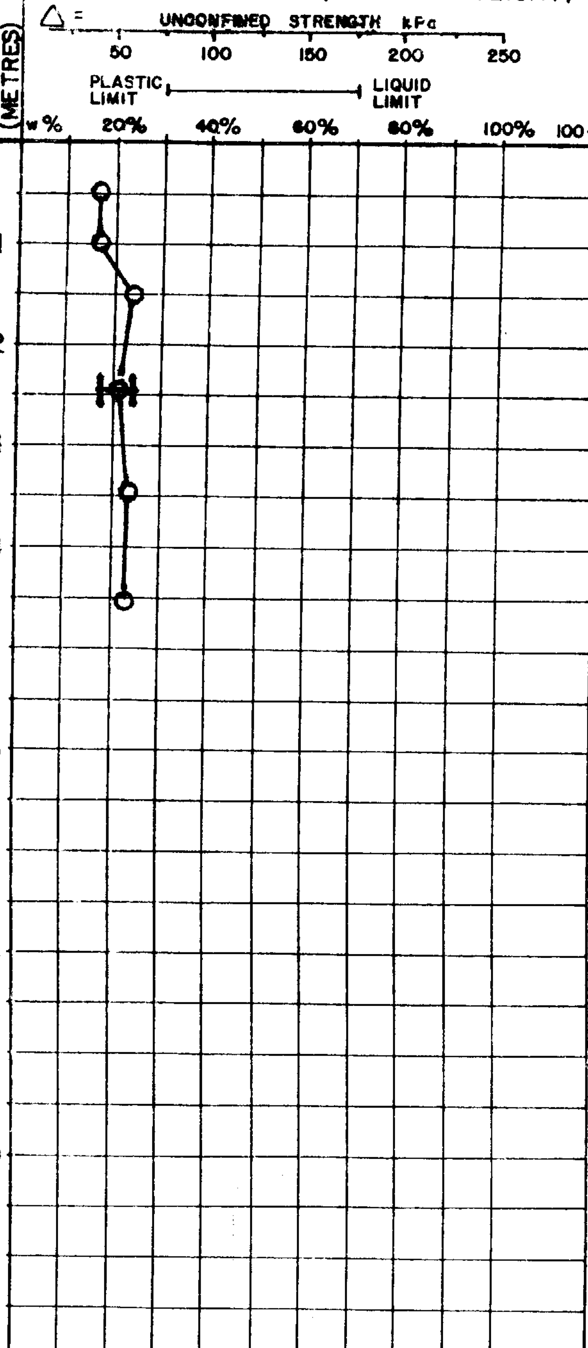


PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy.

TECH. PRONYCH	RIG B-50	DATE 78/02/02	km 122	B.P. No. 45	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT -								DAMP			
4		1.2 m			1	99		1	0	DAMP			
6		CLAY - SILTY								MOIST-WET			
8	CL	- LOW PLASTIC +P_L			2	92		8	0	MOIST			
10		SATURATED AFTER 3.7m			3								
12										WET			
14	ML	SILT - SANDY 4.6m			4	73		27	0	SAT.			
16		BOTTOM OF HOLE - 4.6m			5								
18													
20					6								
22													
24					7								
26					8								
28													
30					9								
32													
34					10								
36					11								
38													

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT

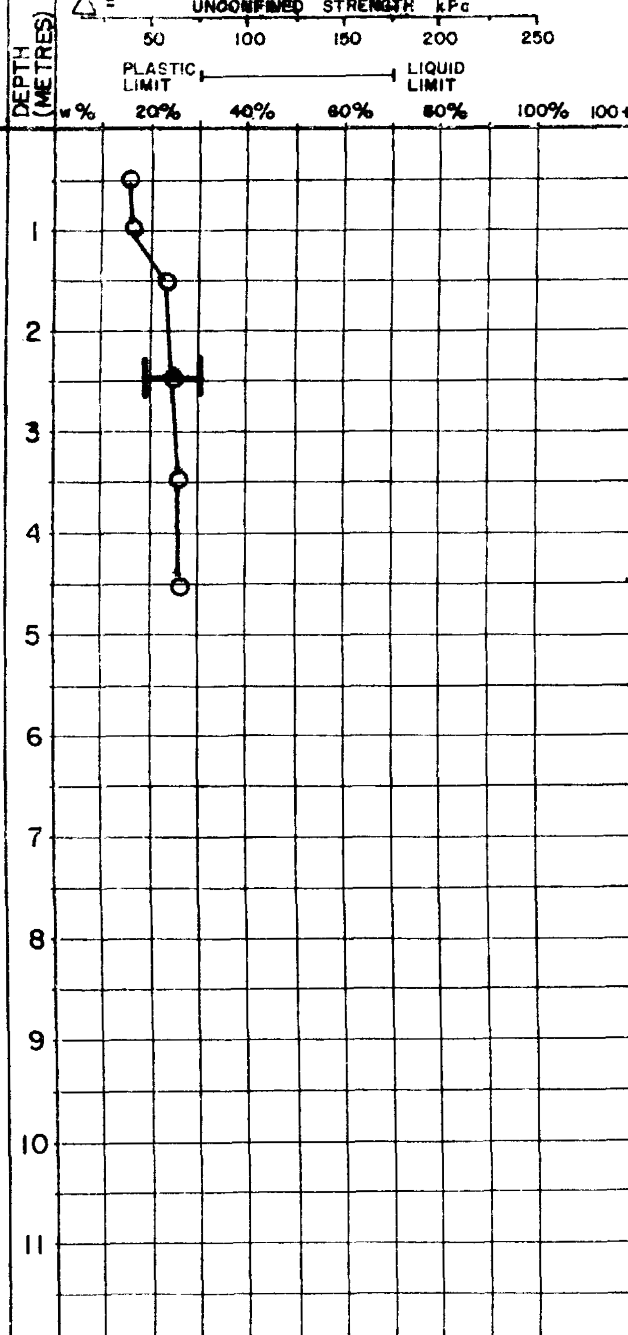
LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/02	122	45	3

CHAINAGE | OFFSET

Depth	Unified Soil Symbol	Soil Description	Penetration Resistance	Ice Description	Clay %	Silt %	Sand %	Gravel %	Relative Moisture Content	Remarks
	ML	SILT.							DAMP	
		1.2 m			99	-	0	0	DAMP	
	CL	CLAY - SILTY - LOW PLASTIC + P_L							MOIST	
					99	-	1	0	MOIST-WET	
		3.7 m							WET	
	ML	SILT - SANDY SATURATED 4.6 m			65	-	35	0	SAT.	
		BOTTOM OF HOLE - 4.6 m								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/02	km 122	B.P. No. 45	HOLE No. 4

CHAINAGE	OFFSET

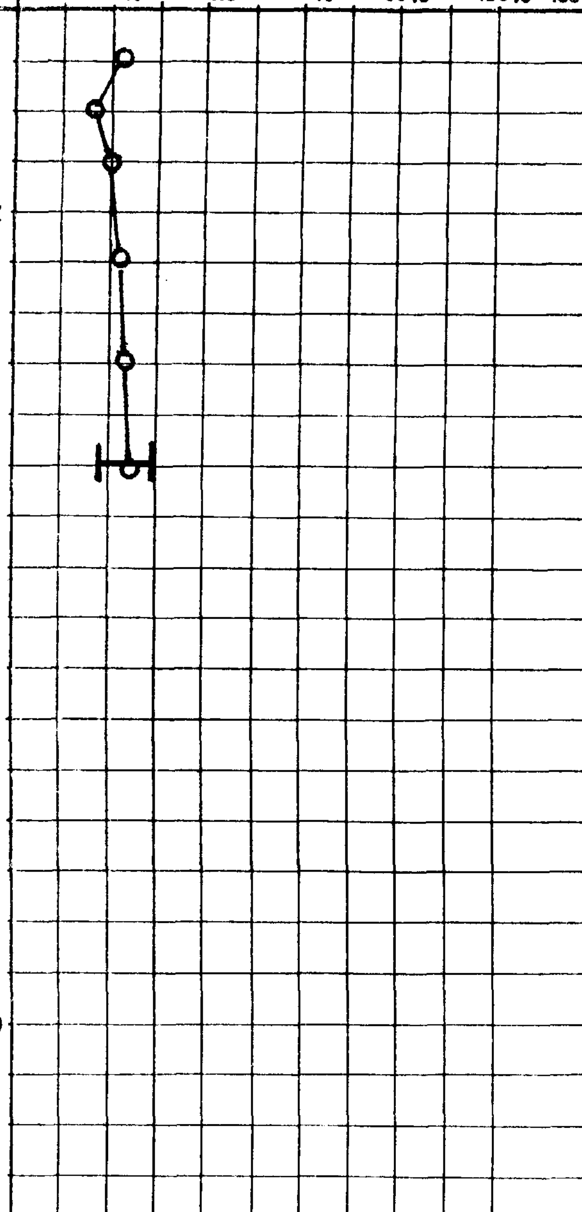
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT -									
2										DAMP	
4	ML				1		99	1	0	DAMP	
6		- CLAYEY								DAMP-MOIST	
8		2.4m			2						
		CLAY - SILTY					98	2	0	MOIST	
10		- LOW PLASTIC			3						
12	CL	±PL WET								WET	
14		4.6m			4		98	2	0	WET	
16		BOTTOM OF HOLE - 4.6 m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50 100 150 200 250

PLASTIC LIMIT ——— LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. WEBBER | RIG B-50 | DATE 78/02/02 | km 124 | B.P. No. A6 | HOLE No. 1

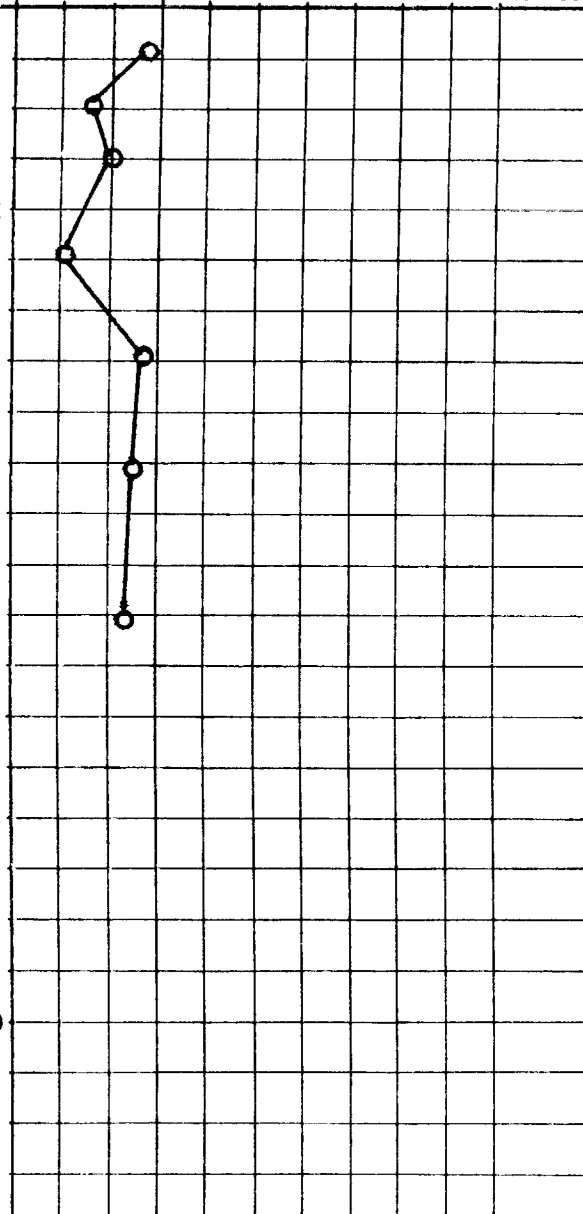
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
	ML	SILT-								SAT.
					1	-	99-	1	0	DAMP
										MOIST
		-SANDY				-	61-	39	0	MOIST
		3.4 m								
	CL	CLAY - SILTY WET + P_L LOW PLASTIC								WET
						-	97-	3	0	WET
		6.1 m			6					WET
		BOTTOM OF HOLE - 6.1 m								

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

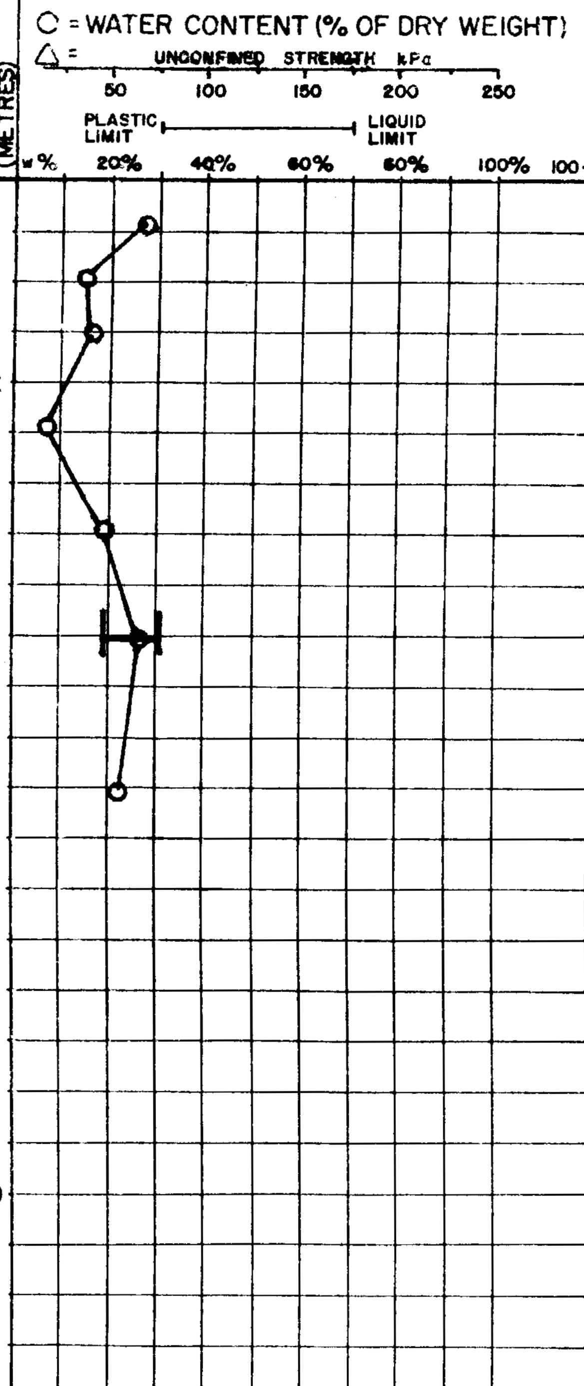
TECH. WEBBER	RIG B-50	DATE 78/02/02	km 124	B.P. No. 46	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT -			-99-		1	0	WET	
									DAMP	
									DAMP-MOIST	
		SAND - SILTY			-48-		52	0	D-M	
		3.4m								
	CL	CLAY - SILTY - LOW PLASTIC WET + P_L							MOIST	
					-98-		2	0	WET	
									WET	
		6.1m								
		BOTTOM OF HOLE - 6.1m								

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

CHAINAGE | OFFSET



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/02	km 124	B.P. No. 46	HOLE No. 3

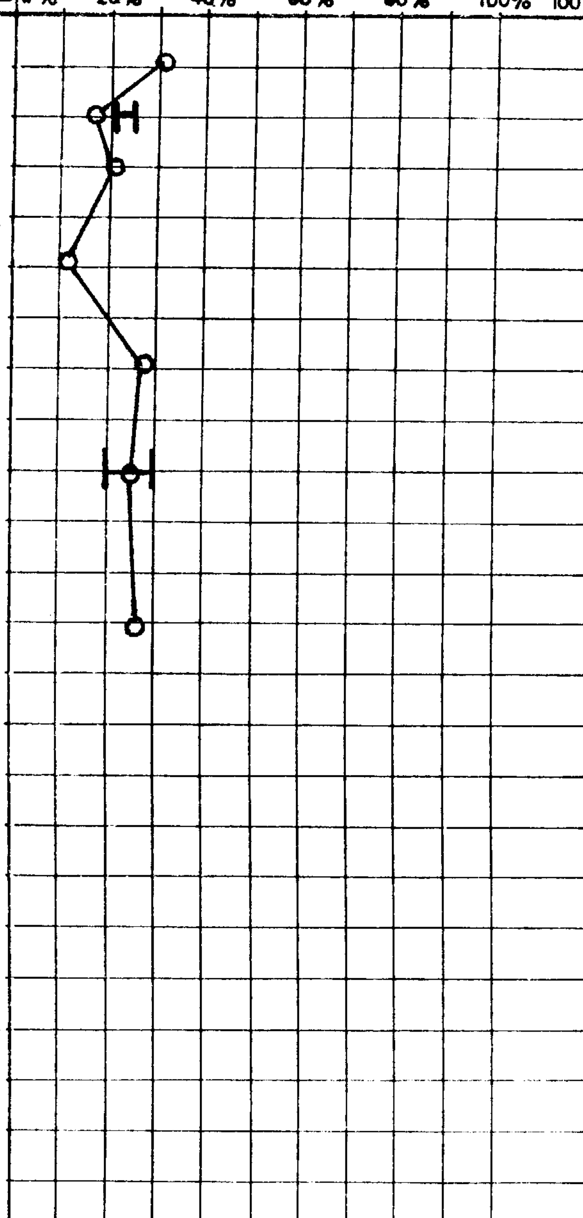
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
		SILT -			
4	ML				1
8		- SANDY			
11		3.4m			
12		CLAY - SILTY			
14		- LOW PLASTIC			
15		WET + P_L			
16	CL				
20		6.1m			6
22		BOTTOM OF HOLE. 6.1 m			

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0.5					SAT.
1.0	-	99	1	0	DAMP
1.5					MOIST
2.5	-	58	42	0	MOIST
3.5					WET
4.5	-	98	2	0	WET
6.0					WET

CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

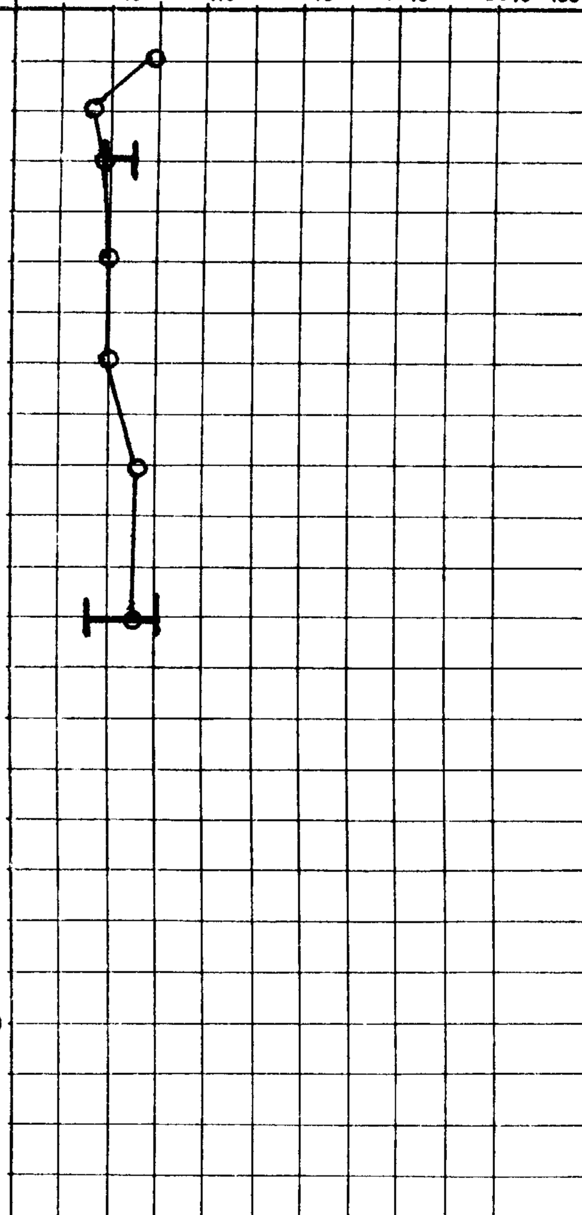
TECH. WEBBER	RIG B-50	DATE 78/02/02	km 124	B.P. No. 47	HOLE No. 1

CHAINAGE	OFFSET

Column headings: DEPTH (FEET) | UNIFIED SOIL SYMBOL | SOIL DESCRIPTION | PENETRATION RESISTANCE | ICE DESCRIPTION | DEPTH (METRES) | ○ = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT ├──┤ LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+ | GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL % | RELATIVE MOISTURE CONTENT | REMARKS

Soil description:

Depth	Unified Soil Symbol	Soil Description
0 – 4.0m	ML	Silt; Silt & Silty Clay
4.0m – 6.1m	CL	Clay - Silty . low Plastic Wet + PL
6.1m		Bottom of Hole - 6.1m



Grain-size analysis and relative moisture content:

Depth (m, approx.)	Clay % / Silt %	Sand %	Gravel %	Relative Moisture Content
0.5	99	1	0	SAT.
1				DAMP
1.5	99	1	0	DAMP
2.5				MOIST
3.5	92	8	0	WET
4.5				WET
6	97	3	0	WET

Depth (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

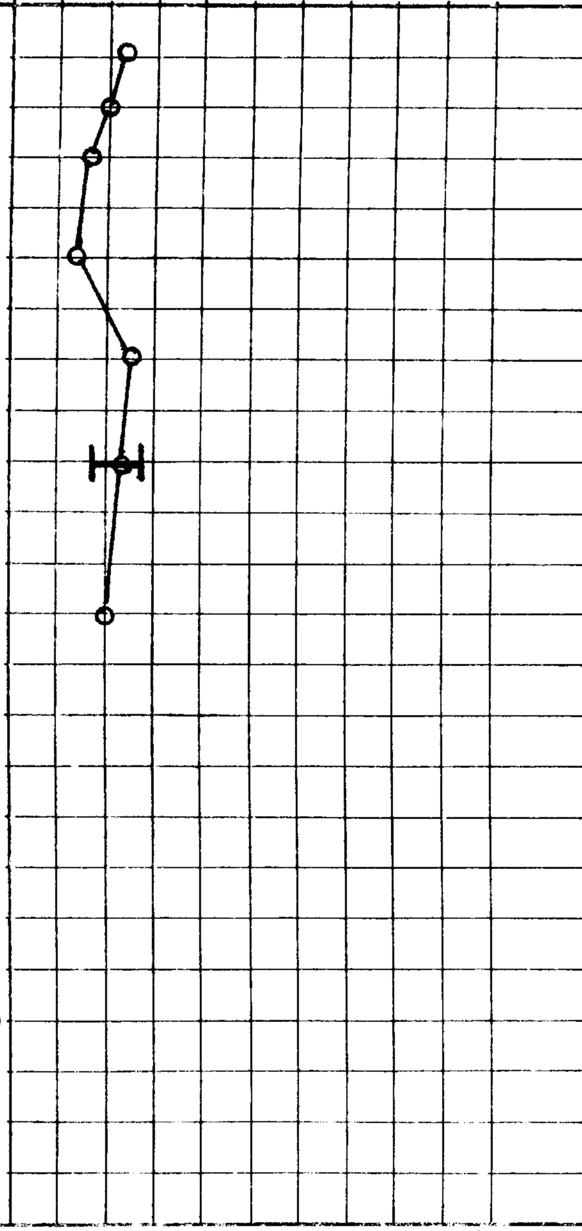
PUBLIC WORKS CANADA	DRILL HOLE REPORT	Liard Hwy.

TECH. Webber	RIG B-50	DATE 18/02/02	km 124	B.P. No. 47	HOLE No. 2

CHAINAGE | OFFSET | REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–13	ML	Silt - Sandy Silt		
13		4.0m		
13–20	CL	Clay - Silty -Low Plastic Wet + PL		
20		6.1m		
21		Bottom of Hole - 6.1m		

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



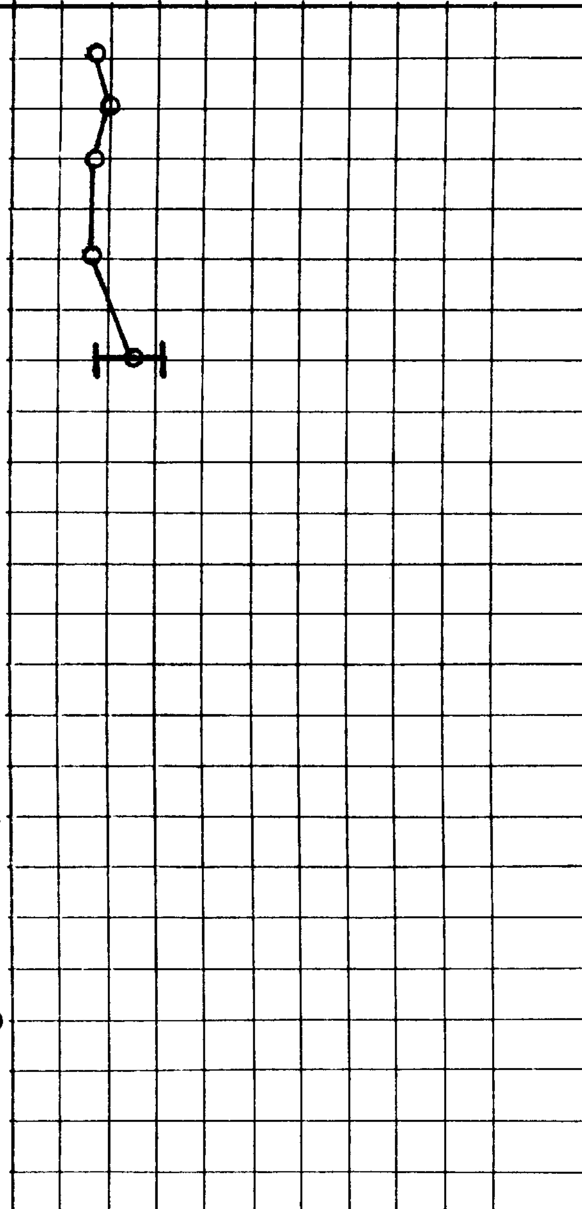
DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0.5					Moist
1	-	99	1	0	Moist
1.7					Moist
2.5	-	64	36	0	Moist
3.5					Sat.
4.5	94	-	6	0	Wet
6					Wet

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/02	km 124	B.P. No. 47	HOLE No. 3

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├───┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



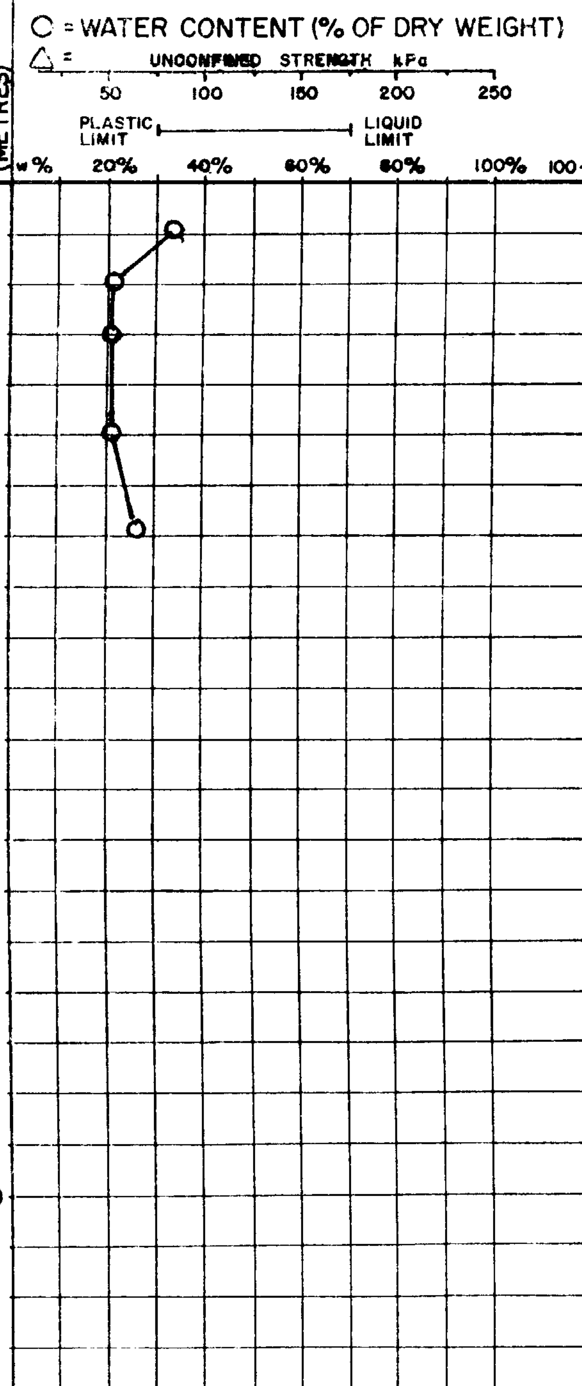
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT				-99-		1	0	DAMP	
4		- SANDY			1					DAMP	
6						-81-		19	0	MOIST	
8					2					MOIST	
10	CL	CLAY - SILTY 3.4 m			3						FREE WATER @ 3.1 m
12		BOTTOM OF HOLE - 3.4 m				-98-		2	0	WET	
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD Hwy

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/02	125	48	1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–8	ML	SILT			0–2.4
8–11	CL	CLAY - SILTY LOW PLASTIC + PL			2.4 m – 3.4 m
		BOTTOM of HOLE - 3.4 m			



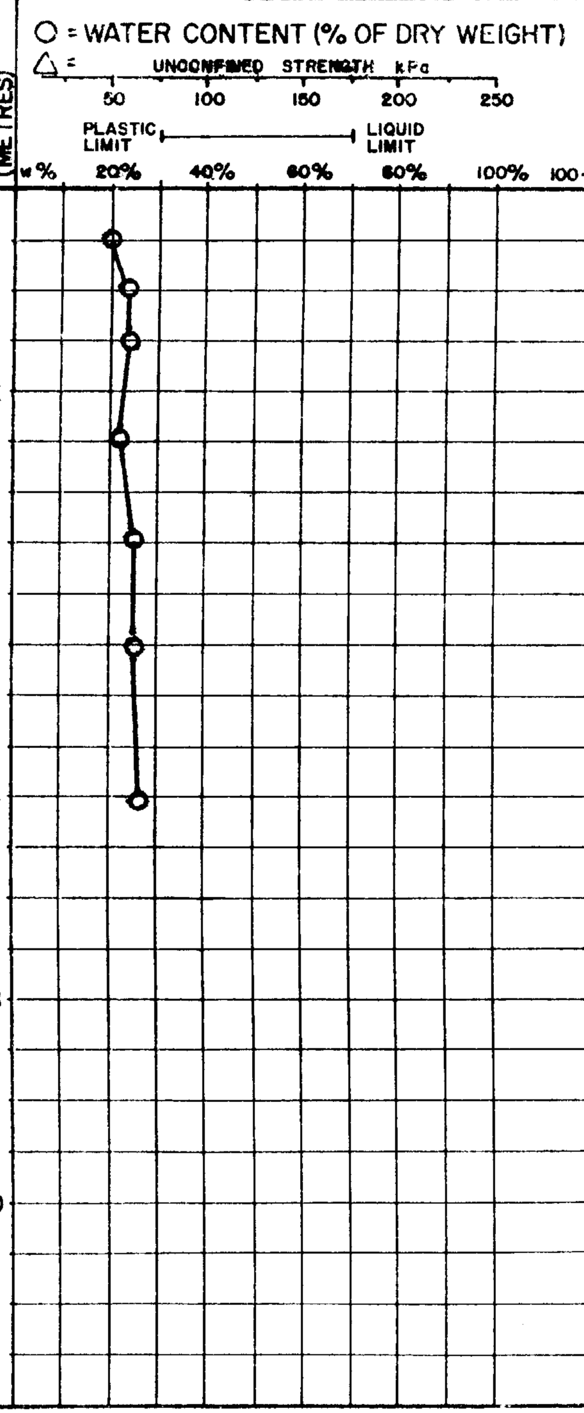
DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
~0.4					SAT.	
~1.0	-	99	1	0	MOIST	
~1.5					MOIST	
~2.5	-	99	1	0	MOIST	FREE WATER @3.1 m
~3.4					WET	

CHAINAGE	OFFSET

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/02	125	48	2

CHAINAGE	OFFSET



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–5	ML	SILT			0–1.5					DAMP-MOIST	
					1	-	99	1	0	MOIST-WET	
		1.5m			1.5					MOIST	
5–20	CL	CLAY - SILTY - LOW PLASTIC +P_L			2.5	-	99	1	0	MOIST	
					3.5					WET	
					4.5	-	100	0	0	WET	
					6					WET	
20		6.1m			6.1						
		BOTTOM OF HOLE - 6.1m									

PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD Hwy

TECH. WEBBER	RIG B-50	DATE 78/02/02	km 125	B.P. No. 48	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–8	ML	SILT		
8		2.4 m		
8–20	CL	CLAY - SILTY - LOW PLASTIC + PL WET		
20		6.1 m		
22		BOTTOM OF HOLE - 6.1 m		

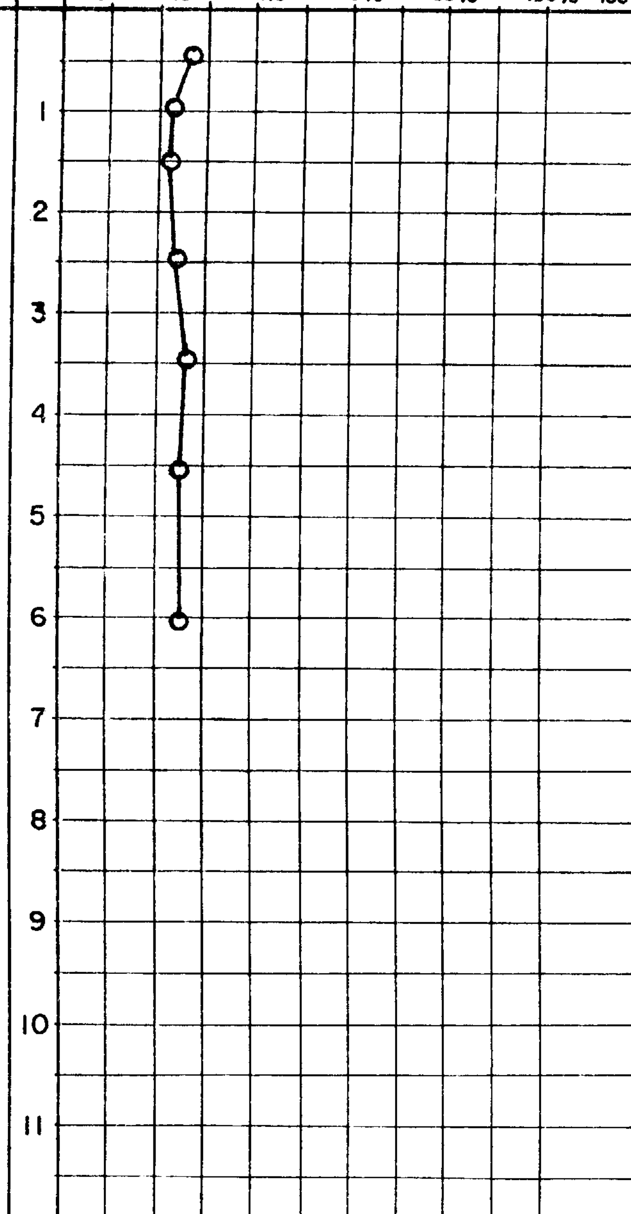
○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

DEPTH (METRES)



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
99		1	0	SAT.
				WET
99		1	0	WET
				WET
99		1	0	WET
				WET
100		0	0	WET

CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

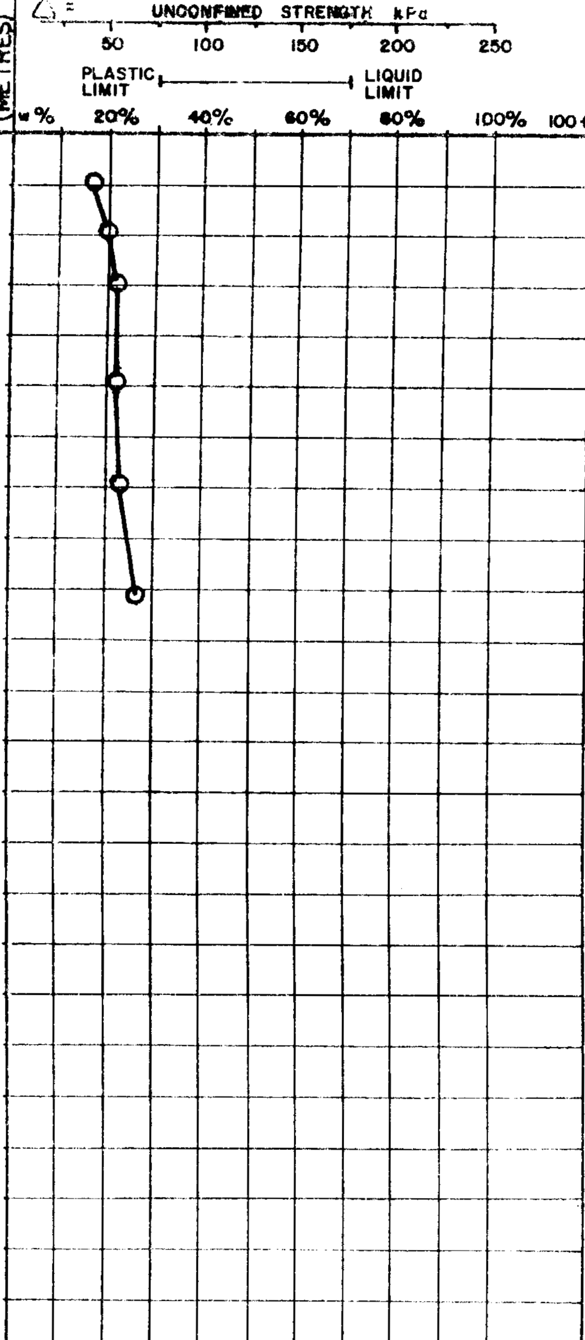
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/03	126	49	1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT. SANDY CLAYEY				-99-		1	0	DAMP	
										H.I.B.	
						-63-		37	0	MOIST	
										WET	
		3.4m									
	CL	CLAY - SILTY LOW PLASTIC +PL				-95-		5	0	MOIST	
		4.6m								WET	SAT. AFTER 3.4 m
		BOTTOM OF HOLE - 4.6m									

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 126	B.P. No. 49	HOLE No. 2

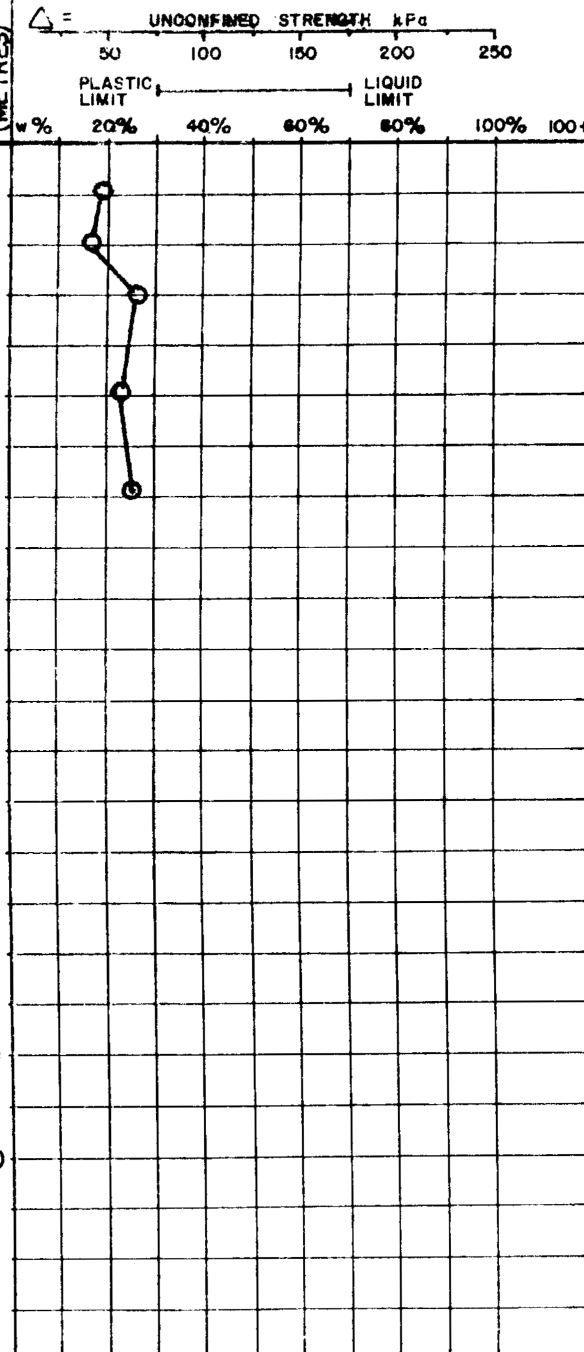
CHAINAGE	OFFSET

SOIL DESCRIPTION

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
		SILT			
2		SAT. AFTER 1.8 m			
4		- CLAYEY			1
6	ML				
8					2
10		3.4m			3
12		BOTTOM OF HOLE - 3.4m			
14					4
16					5
18					
20					6
22					
24					7
26					8
28					
30					9
32					
34					10
36					
38					11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	99	1	0	DAMP	
				DAMP	
	98	2	0	SAT.	
	99	1	0	H.I.B.	
	99	1	0	WET	

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 126	B.P. No. 49	HOLE No. 3

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w %: 20%, 40%, 60%, 80%, 100%, 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT - CLAYEY				-	98	2	0	SAT.	
4	ML				1					DAMP	MOISTURE CONTENTS MISPLACED
6						-	99	1	0	DAMP	
8					2					DAMP	
10		SAT. AFTER 2.7 m			3						
12						-	96	4	0	MOIST	
14	CL	CLAY - SILTY 4.6 m			4	-	97	3	0	SAT.	
16											
18		BOTTOM OF HOLE - 4.6 m			5						
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

CHAINAGE	OFFSET

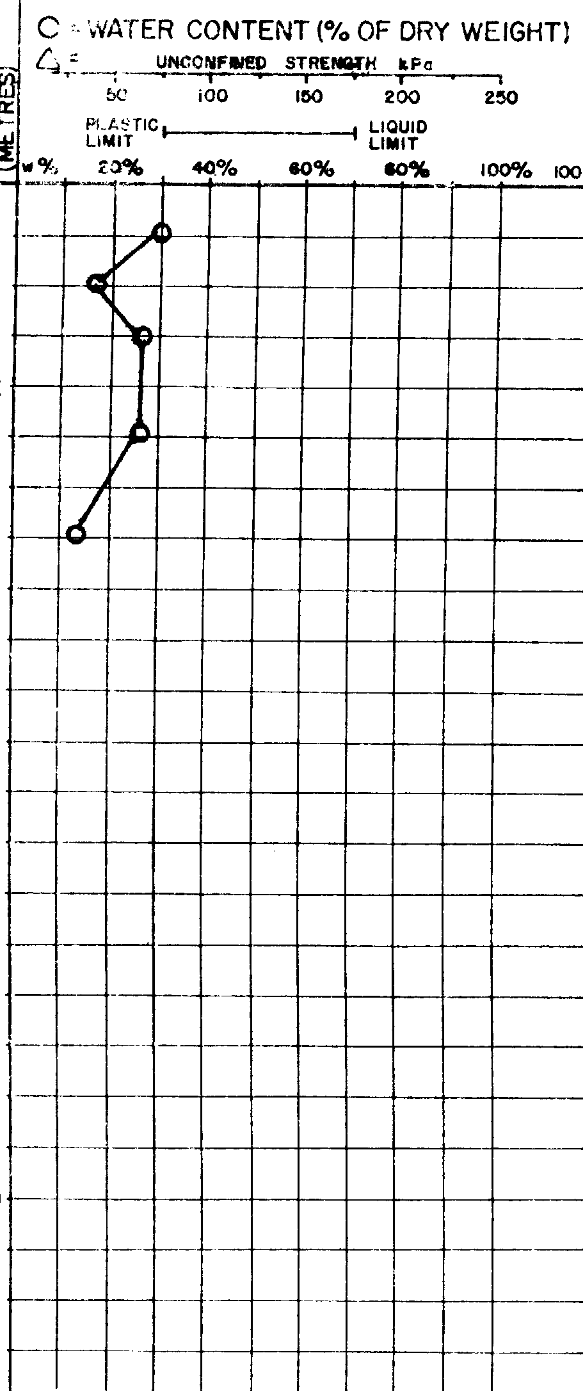
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy

TECH. Pronych	RIG B-50	DATE 78/02/03	km 126	B.P. No. 49	HOLE No. 4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT - SANDY CLAYEY				-	60	40	0	MOIST	
2	SM	SAND - SILTY			1					MOIST	
4	ML	SILT				-	97	3	0	WET - SAT	
6		SILT - SANDY CLAYEY			2						
8										SAT.	FREE WATER @ 2.7m
10	SM	SAND - SILTY PEBBLES 3.4 m			3	11	-	79	10	SAT.	
12		BOTTOM OF HOLE - 3.4 m									

CHAINAGE | OFFSET

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = UNCONFINED STRENGTH kPa



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

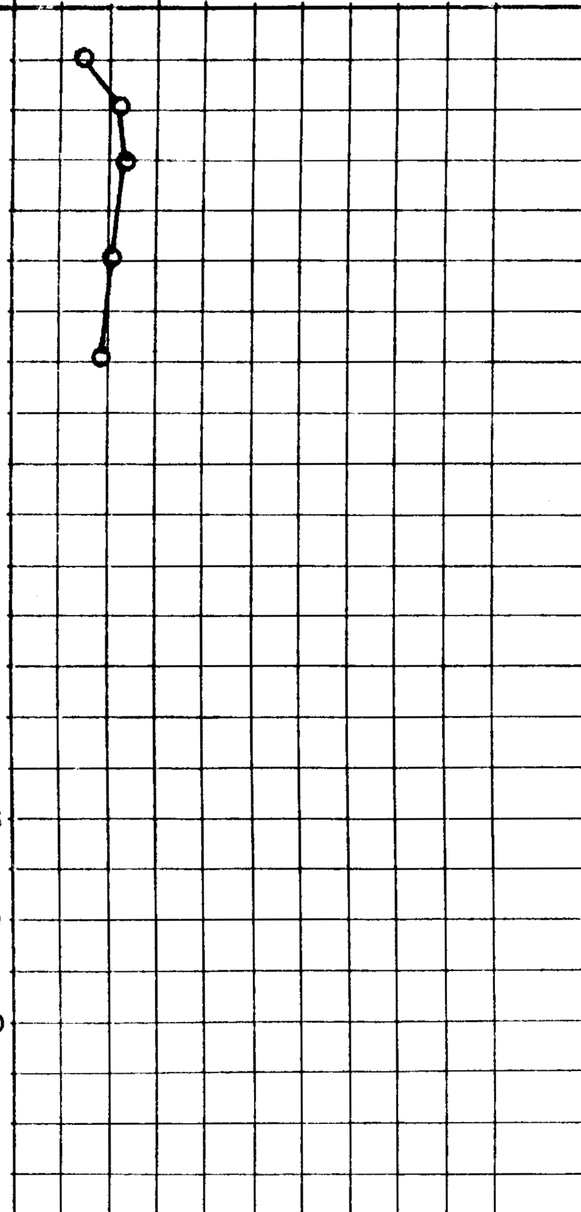
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/03	126	49	5

CHAINAGE	OFFSET

DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0.5	SM	SAND - SILTY			-	37	63	0	DAMP	
1	ML	SILT - SANDY							WET	
1.5		- CLAYEY			-	71	29	0	WET	
2.0		FREE WATER AFTER 2.7m								
2.5									WET	
3.4	SM	SAND - SILTY 3.4m			-	38	62	0	SAT.	
		BOTTOM OF HOLE - 3.4m								

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



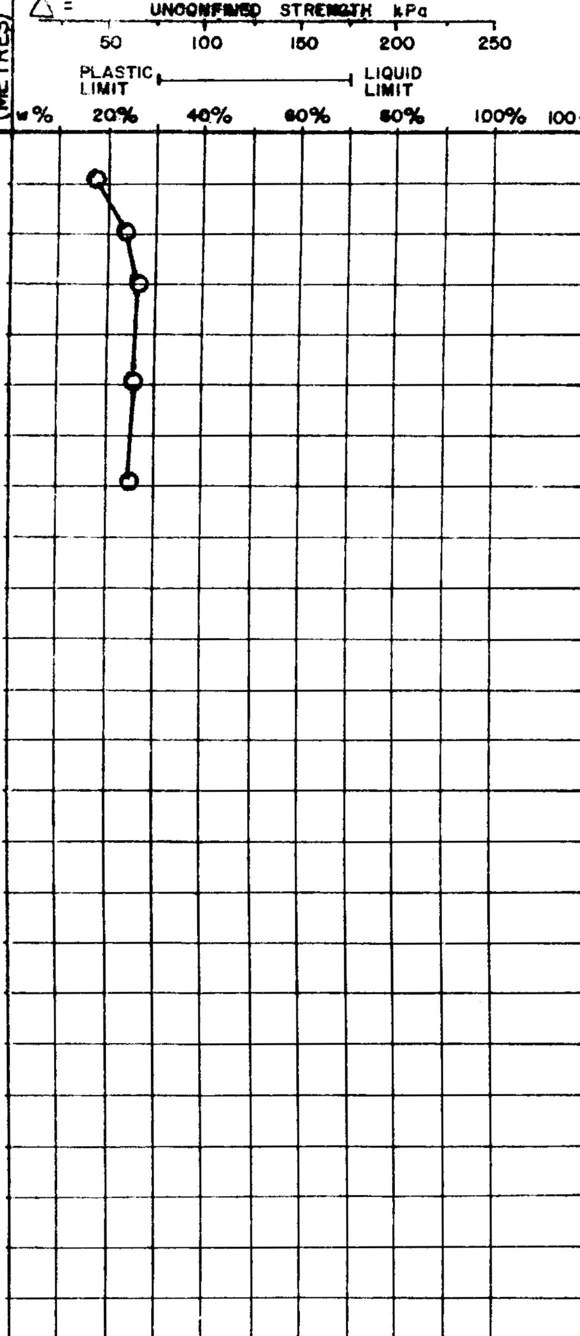
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/03	127	50	1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SILT				-99.		1	0	MOIST			
2					1					WET			
4		WET				-99.		1	0	WET			
6	ML	-			2								
8		CLAYEY								WET			
10		3.4m			3	-99.		1	0	WET			
12		BOTTOM OF HOLE - 3.4m											
14					4								
16					5								
18													
20					6								
22													
24					7								
26					8								
28													
30					9								
32													
34					10								
36					11								
38													

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 127	B.P. No. 50	HOLE No. 2

CHAINAGE	OFFSET

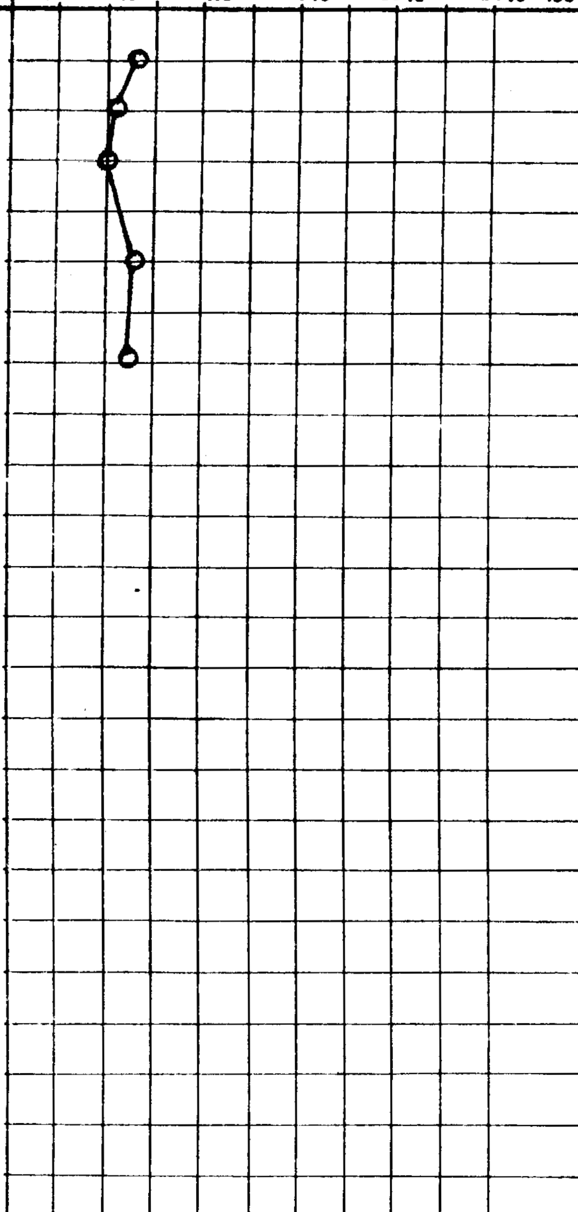
REMARKS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
		SILT								
2						100		0	0	WET
4					1					MOIST
6	ML					99		1	0	WET
8		- CLAYEY			2					SAT.
10		3.4m			3					
12						97		3	0	SAT.
14		BOTTOM OF HOLE 3.4m			4					
16										
18					5					
20					6					
22										
24					7					
26					8					
28										
30					9					
32										
34					10					
36					11					
38										

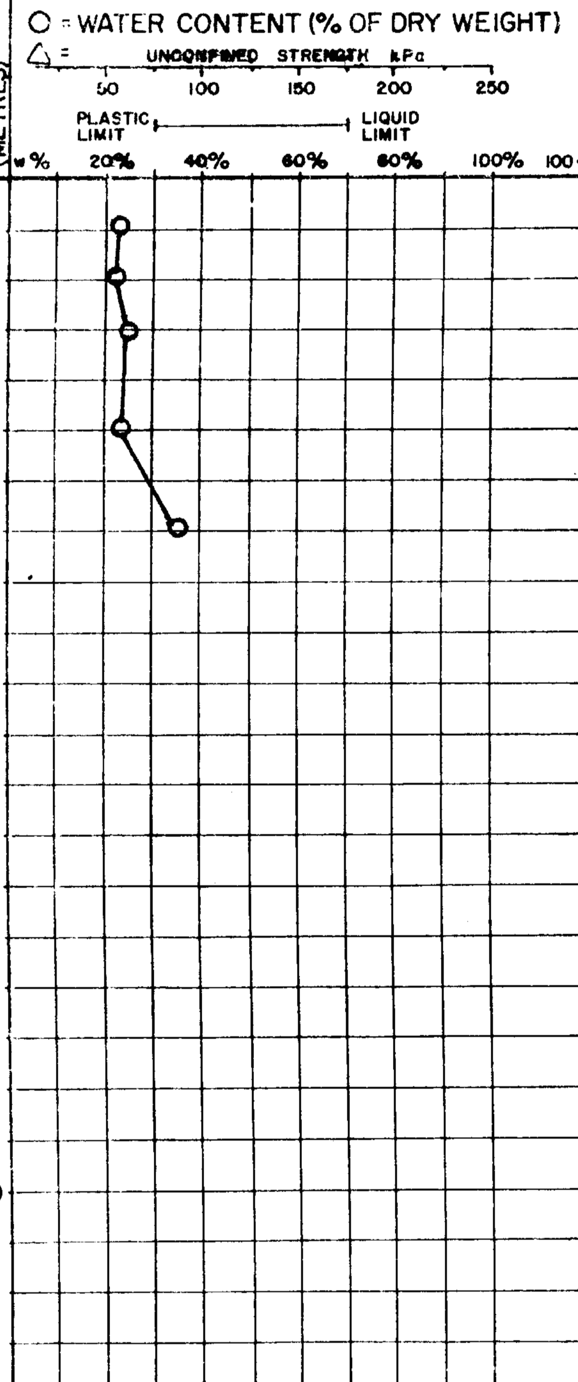
PUBLIC WORKS CANADA	DRILL HOLE REPORT	Liard Hwy.

TECH. Pronych	RIG B-50	DATE 78/02/03	km 127	B.P. No. 50	HOLE No. 3

Depth (Metres)	Unified Soil Symbol	Soil Description	Penetration Resistance	Ice Description	Clay % / Silt %	Sand %	Gravel %	Relative Moisture Content	Remarks
0–0.5	ML	Silt		Frozen	99	1	0	Wet	
1								Wet	
1.5				Ice lenses after 1.5m	100	0	0	Sat	
2		- Clayey							
2.5								Wet	
3–3.4	CL	Clay - Silty 3.4m			99	1	0	Wet-Sat.	

Bottom of Hole - 3.4m

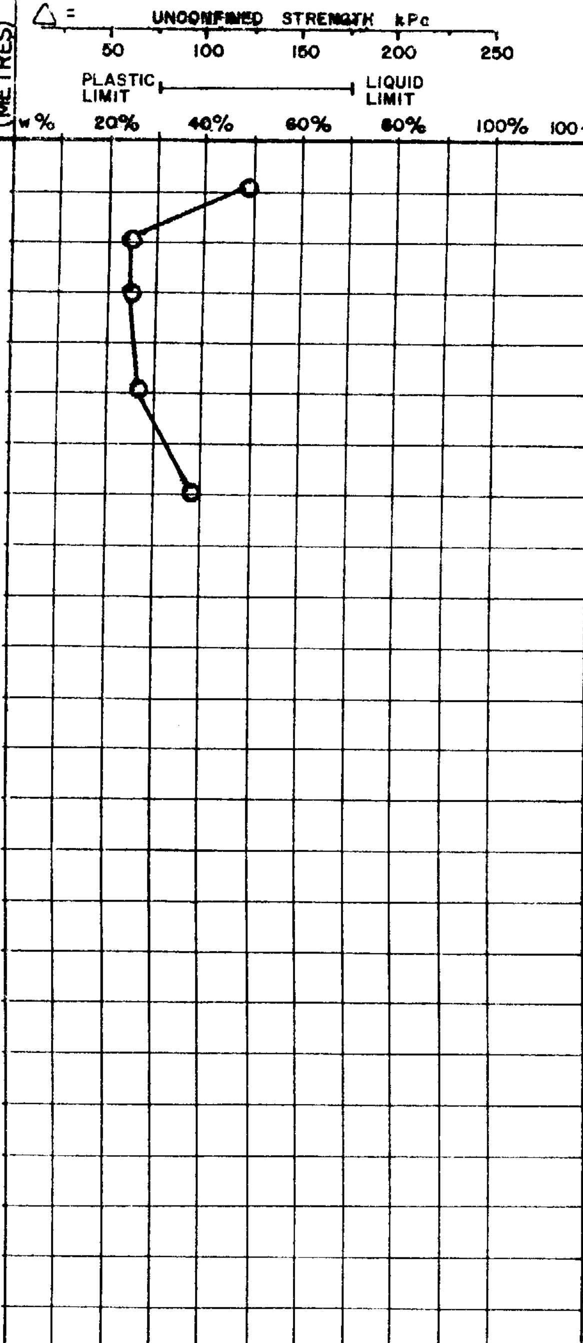
CHAINAGE | OFFSET



PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 127	B.P. No. 51	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = UNCONFINED STRENGTH kPa	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE / OFFSET / REMARKS
	ML	SILT- CLAYEY		FROZEN			-	100	0	0	FREE WATER	
											SAT.	
							-	100	0	0	SAT.	
											SAT.	
		3.4 m					-	93	7	0	FREE WATER	



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

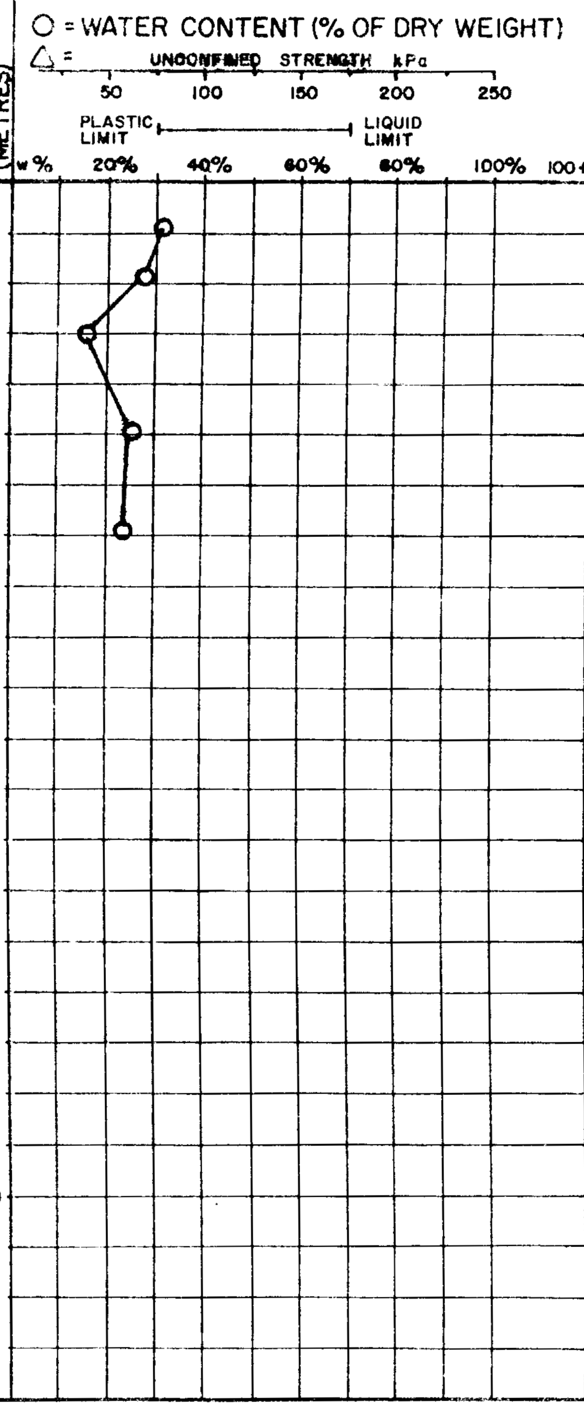
TECH. Pronych	RIG B-50	DATE 78/02/03	km 127	B.P. No. 51	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2		SILT - CLAYEY		FROZEN		-99-		1	0	SAT			
4		SILT -			1					WET-SAT.			
6	ML	SATURATED AFTER 2.1m			2	-91-		9	0	MOIST			
8		- CLAYEY				-96-		4	0	WET-SAT.			
10		3.4m			3					W-SAT.			
12		BOTTOM OF HOLE - 3.4m											
14					4								
16					5								
18													
20					6								
22													
24					7								
26					8								
28													
30					9								
32					10								
34													
36					11								
38													

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



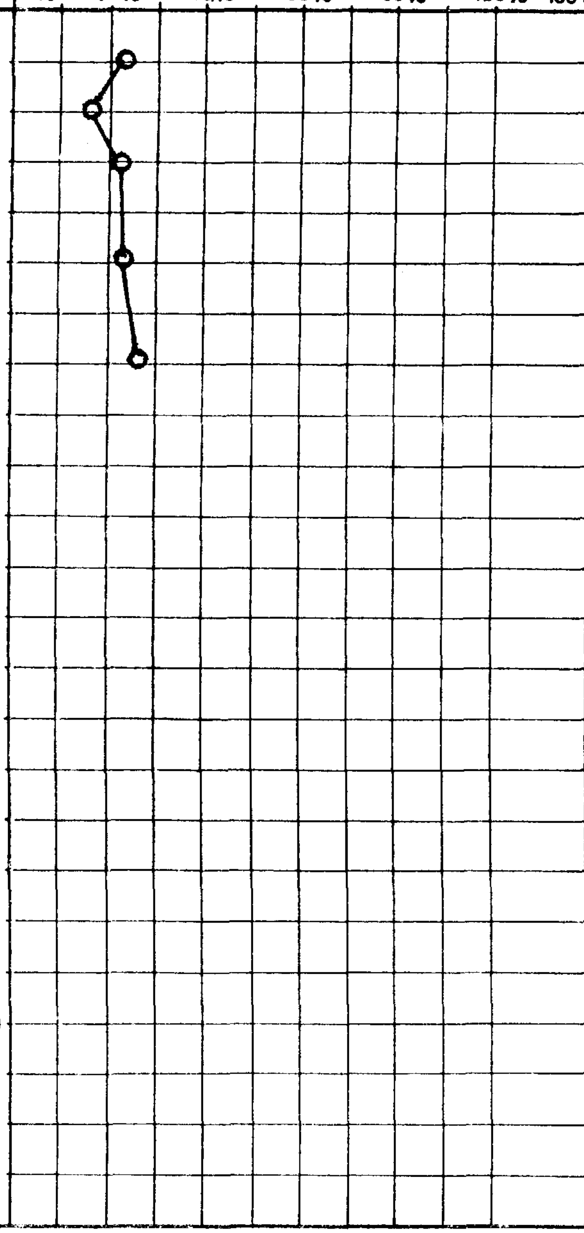
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/03	127	51	3

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT-SANDY									
2										WET-SAT.	
4					1	-	59	41	0	MOIST	
	ML	SAT. POREWATER AFTER 2.1m									
6										H.I.B.	
8					2	-	73	27	0	WET-SAT.	
10	CL	CLAY-SILTY SANDY 3.4m			3						
12										WET-SAT.	
		BOTTOM OF HOLE 3.4 m			4						
14											
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 127	B.P. No. 51	HOLE No. 4

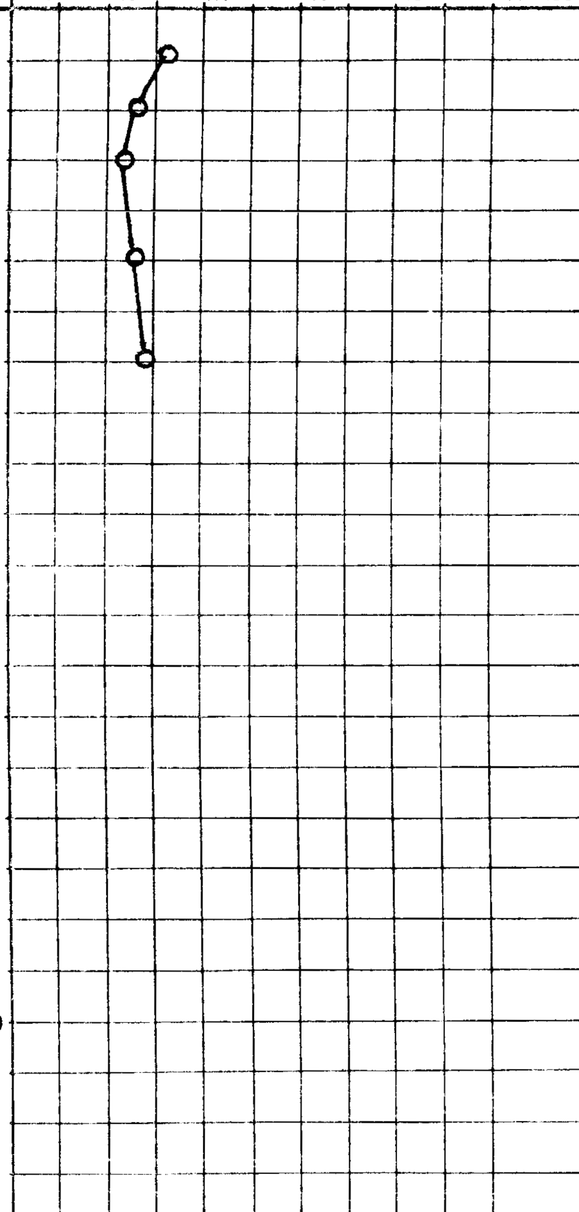
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SILT -											
						-98	-	2	0	FREE WATER			
					1					SAT.			
						-90	-	10	0	WET			
6	ML	SATURATED AFTER 1.8m			2								
										SAT.			
10		- CLAYEY 3.4m			3								
						-93	-	7	0	SAT.			
		BOTTOM OF HOLE - 3.4m			4								

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

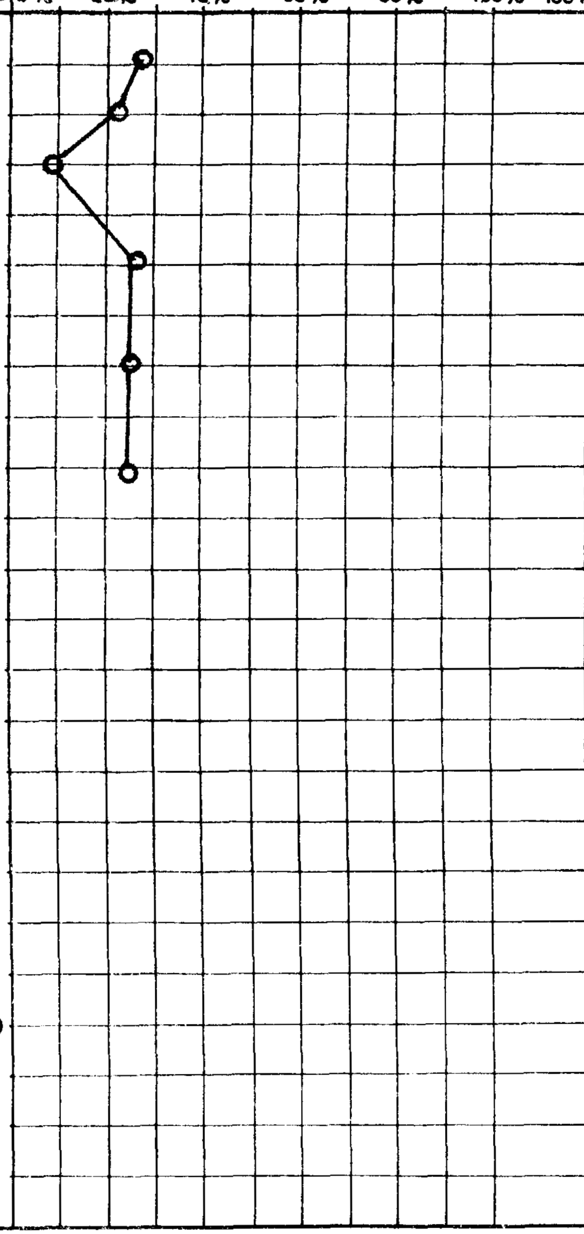


PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/03	128	52	1

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT — LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT -		FROZEN		-	99	1	0	WET	
4					1					MOIST	
6		- CLAYEY				-	97	3	0	DAMP	
8	ML			FROZEN	2					WET	
10		WET - SAT. AFTER 12' OR 3.7m			3						
12						-	99	1	0	WET	
14		4.6m			4						
16		BOTTOM OF HOLE - 4.6m			5					WET	
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Liard Hwy

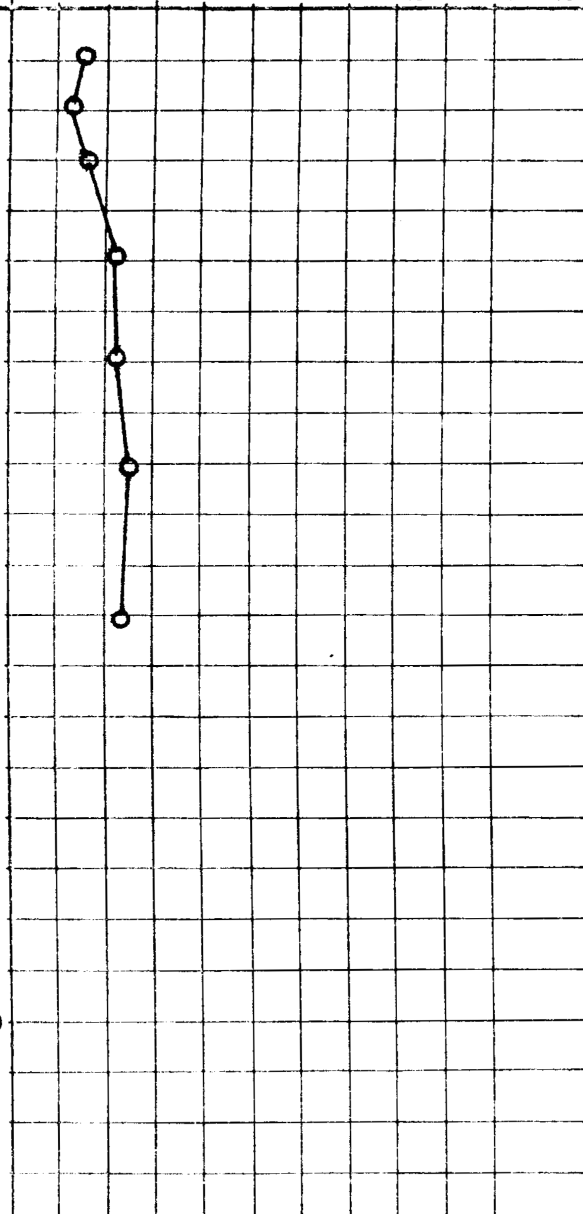
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronuych	B-50	78/02/03	128	52	2

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		Silt -					83			Damp	
2					1					Damp	
4										Damp	
6	ML				2						
8		· Clayey					99	1	0	Moist	
10					3					Moist	
12											
14		4.6m			4						
16		Clay - Silty					99	1	0	Moist	
18	CI	Med. Plastic +PL			5						
20		6.1m			6					Moist	
22		Bottom of Hole - 6.1m									
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT —— LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

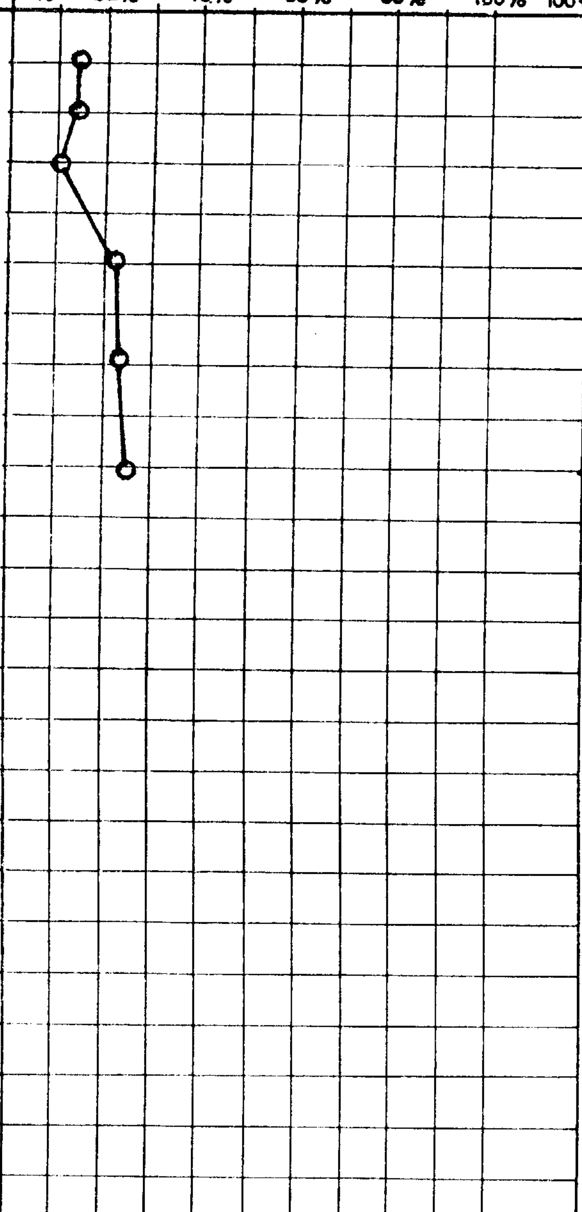
LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 128	B.P. No. 52	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT					99	1	0	DAMP	
4					1					DAMP	
6										DAMP	
8	ML				2		100	0	0	MOIST	
10					3						
12		· CLAYEY SATURATED AFTER 3.4m								MOIST	
14		4.6m			4		97	3	0	WET	
16		BOTTOM OF HOLE - 4.6m									
18					5						
20					6						
22											
24					7						
26											
28					8						
30					9						
32											
34					10						
36											
38					11						

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa — 50, 100, 150, 200, 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	B-50	78/02/03	128	52	4

CHAINAGE	OFFSET

Column headings: DEPTH (FEET) | UNIFIED SOIL SYMBOL | SOIL DESCRIPTION | PENETRATION RESISTANCE | ICE DESCRIPTION | DEPTH (METRES) | ○ = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+ | GRAIN-SIZE ANALYSIS: CLAY % SILT % SAND % GRAVEL % | RELATIVE MOISTURE CONTENT | REMARKS

Depth (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

Unified soil symbol: ML

Soil description:

SILT.

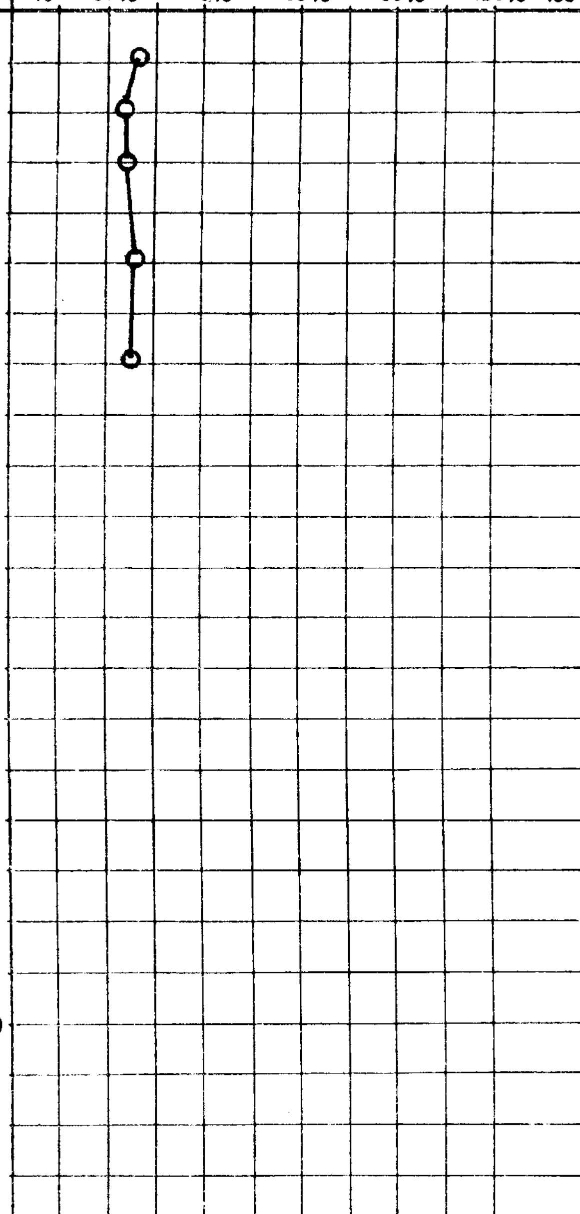
-CLAYEY

SATURATED AFTER 2.7m

3.4m

BOTTOM OF HOLE. 3.4m

Ice description: FROZEN



CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
-98		2	0	WET-SAT.
				W-S
-97		3	0	W-S
				W-S
-96		4	0	W-S

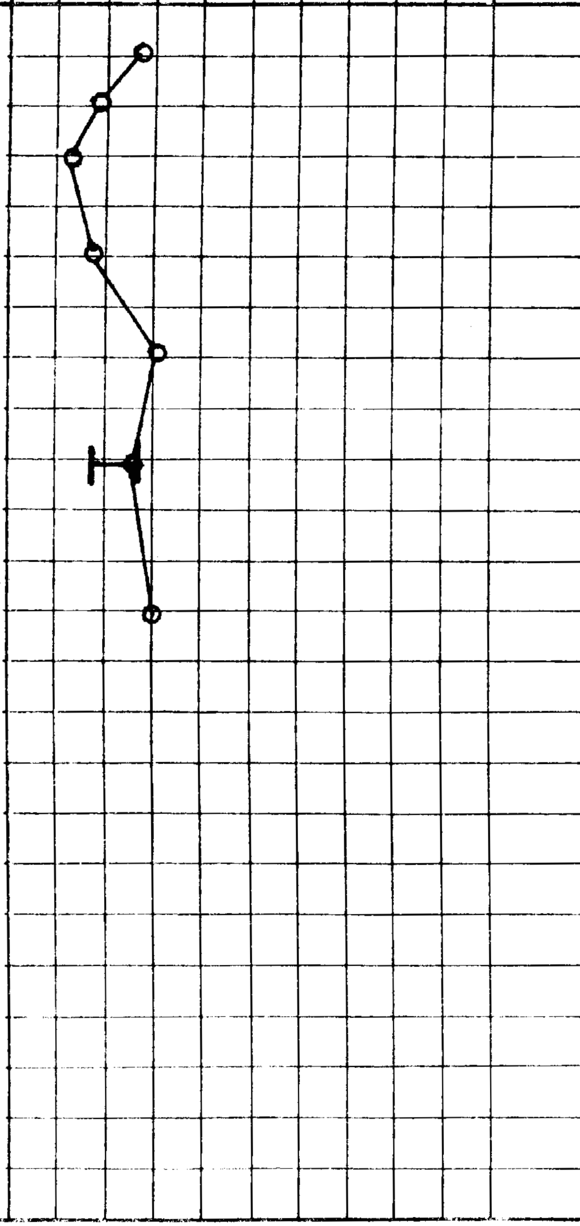
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	129	53	1

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT -				-	99 -	1	0	MOIST	
4					1					DAMP	
6										DAMP	
8					2	-	96 -	4	0	DAMP	
10	ML	- CLAYEY			3						
12										WET	
14					4						
16						-	99 -	1	0	WET - SAT.	
18					5						
20		6.1m			6					WET	
22		BOTTOM OF HOLE - 6.1m									
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

PUBLIC WORKS CANADA

DRILL HOLE REPORT

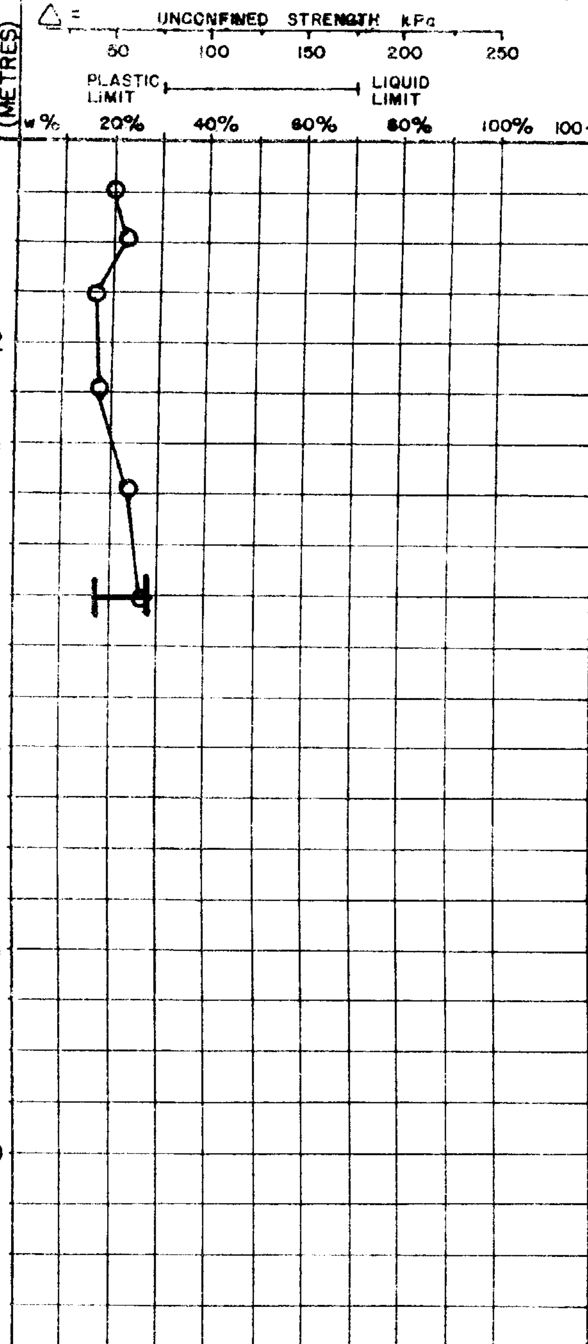
LIARD HWY.

TECH. WEBBER | RIG B-50 | DATE 78/02/03 | km 129 | B.P. No. 53 | HOLE No. 2

CHAINAGE | OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT.				-	99	1	0	MOIST	
4					1					MOIST	
6						-	98	2	0	MOIST	
8					2					MOIST	
10	ML				3						
12										WET SAT.	
14		-CLAYEY			4						
16		4.6m				-	98	2	0	W-S.	
18		BOTTOM OF HOLE. 4.6m			5						
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



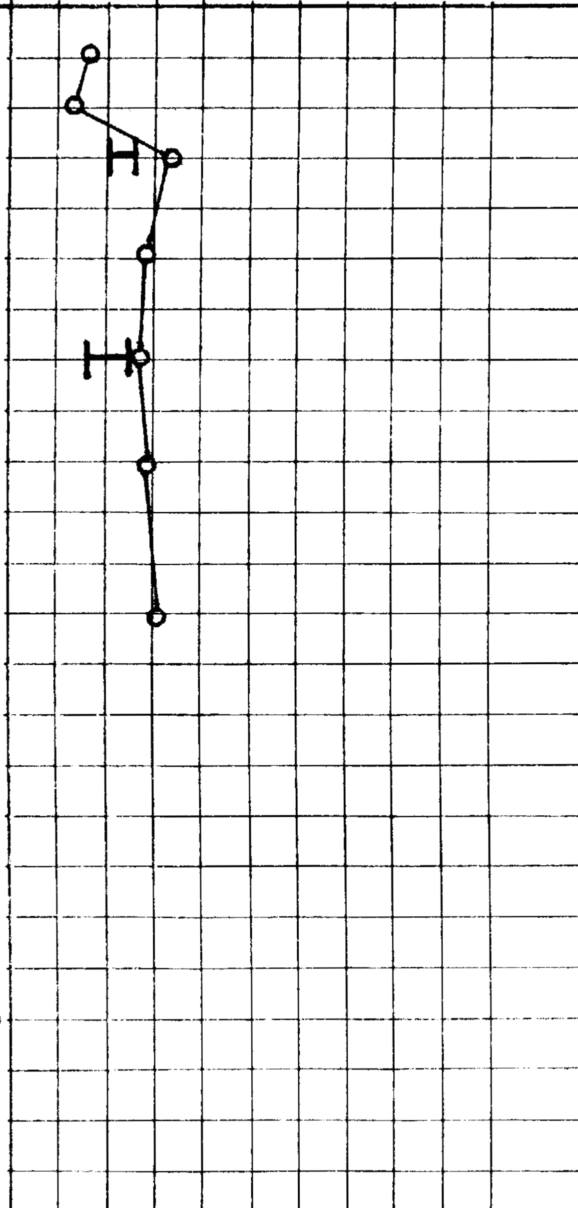
PUBLIC WORKS CANADA — DRILL HOLE REPORT

Liard Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	129	53	3

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		Silt.				-	97	3	0	DAMP	
4					1					DAMP	
6				Frozen		-	99	1	0	SAT.	
8					2					SAT.	
10	ML				3						
12		- clayey				-	91	9	0	SAT.	
14					4					SAT.	
16					5						
18											
20		6.1m			6	-	99	1	0	SAT.	
22		Bottom of Hole - 6.1m									
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

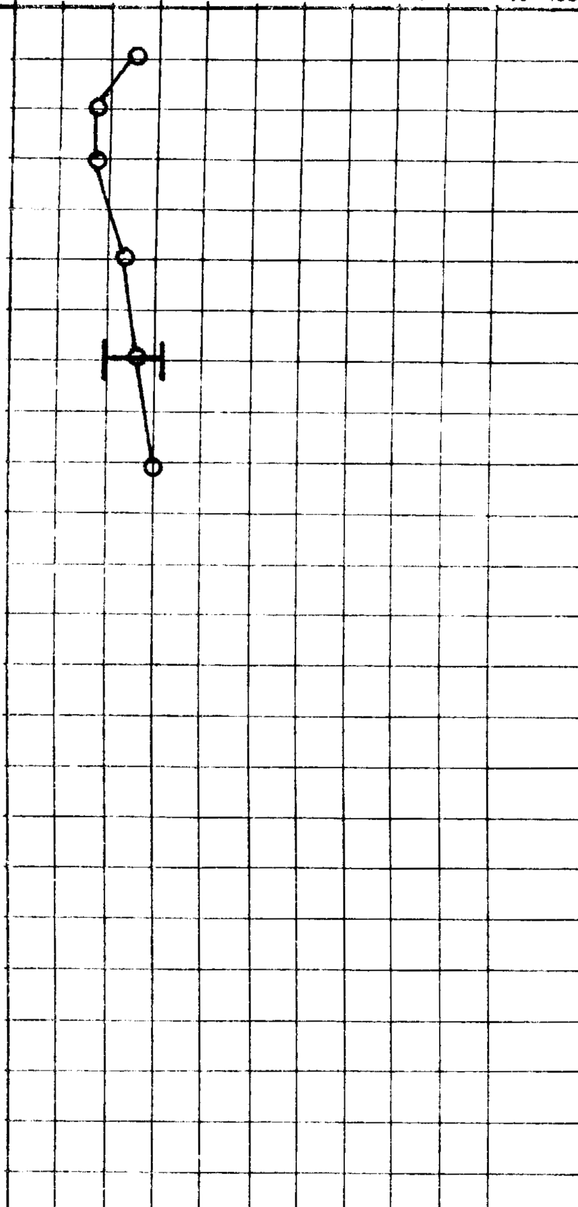
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	129	53	4

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT -			0.5	-99-		1	0	MOIST	
					1					DAMP	
					1.5	-99-		1	0	DAMP	
	ML				2.5					MOIST	
		- CLAYEY			3.5	-99-		1	0	MOIST	
		4.6m			4.5					SAT.	
		BOTTOM OF HOLE - 4.6m									



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/03	km 130	B.P. No. 54	HOLE No. 1

CHAINAGE	OFFSET

REMARKS

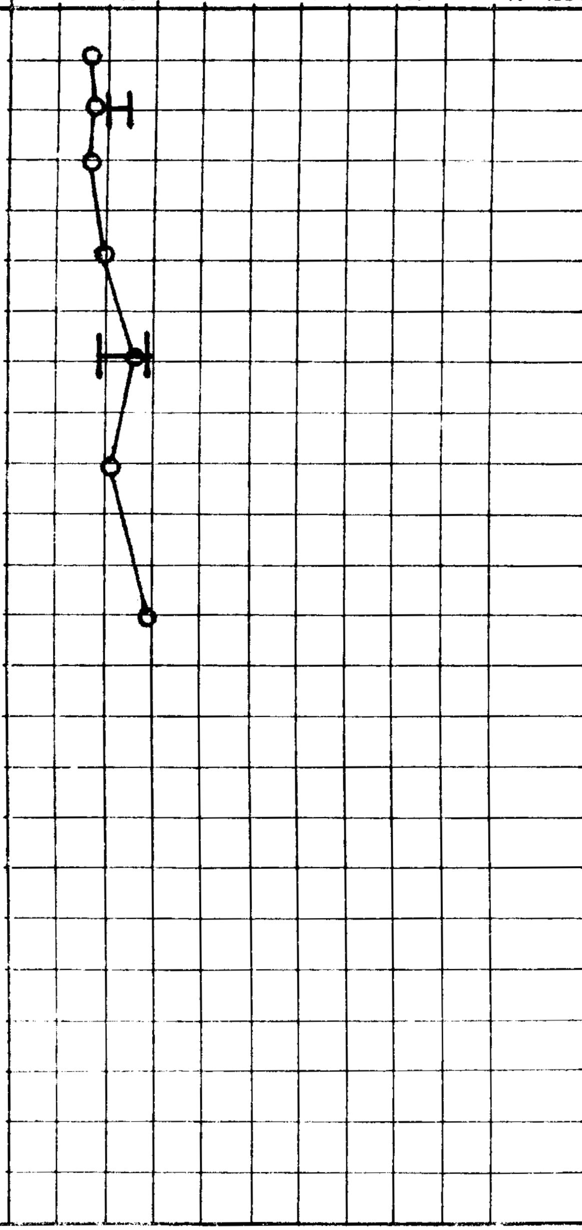
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
2		SILT-			
4					1
6					
8					2
10	ML	-CLAYEY			3
12					
14					4
16					
18					5
20		6.1m			6
22					
24		BOTTOM OF HOLE. 6.1m			7
26					8
28					
30					9
32					
34					10
36					11
38					

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				DAMP
-	99	1	0	DAMP
				DAMP
-	97	3	0	MOIST
-	99	1	0	WET
				SAT.
				SAT.

PUBLIC WORKS CANADA — DRILL HOLE REPORT

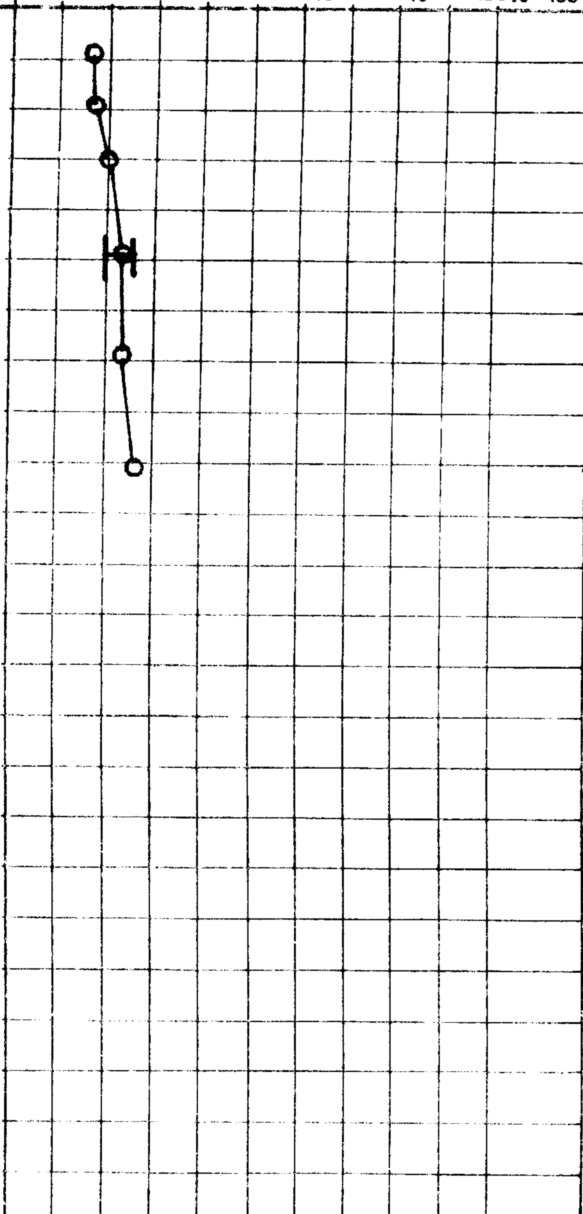
LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/03	km 130	B.P. No. 54	HOLE No. 2

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT — LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–15	ML	SILT -								DAMP	
					1	-	99	1	0	DAMP	
										MOIST	
					2.5	-	99	1	0	WET	
										WET	
		-CLAYEY			4.6	-	99	1	0	WET - SAT.	
		4.6m									
		BOTTOM OF HOLE - 4.6m									



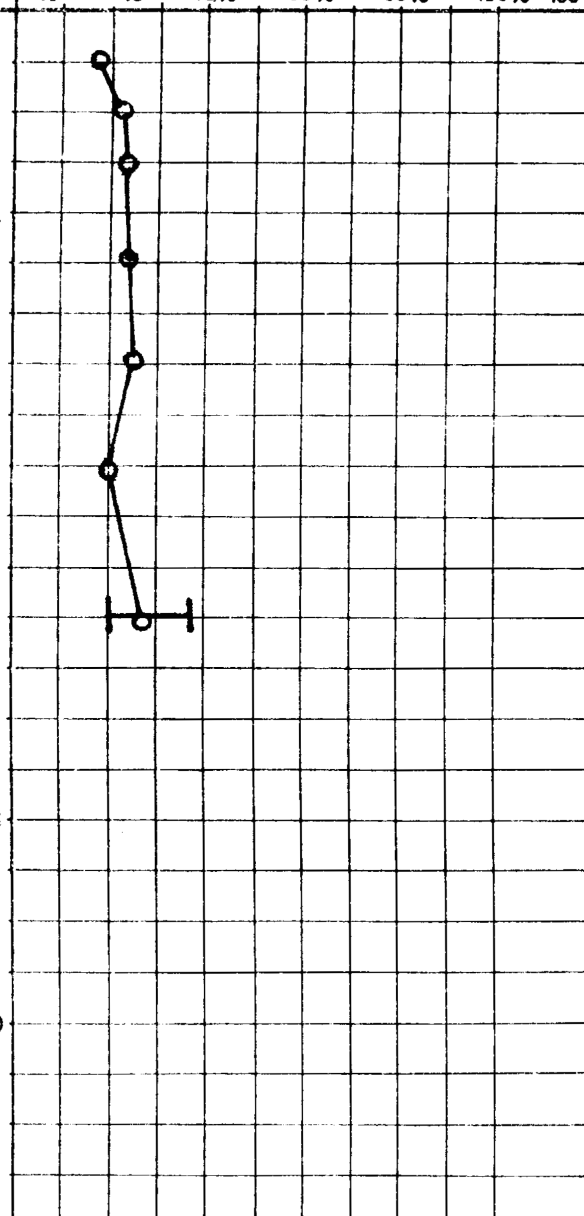
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/03	km 130	B.P. No. 54	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–20	ML	SILT -CLAYEY			0–6.1						
					0.5					DAMP	
					1		99	1	0	DAMP	
					1.5					DAMP	
					2.5					WET	
					3.5		100	0	0	WET-SAT.	
					4.5					WET	
					6		100	0	0	WET	
20		6.1m			6.1						
		BOTTOM OF HOLE- 6.1m									

CHAINAGE	OFFSET

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w%: 20%, 40%, 60%, 80%, 100%, 100+

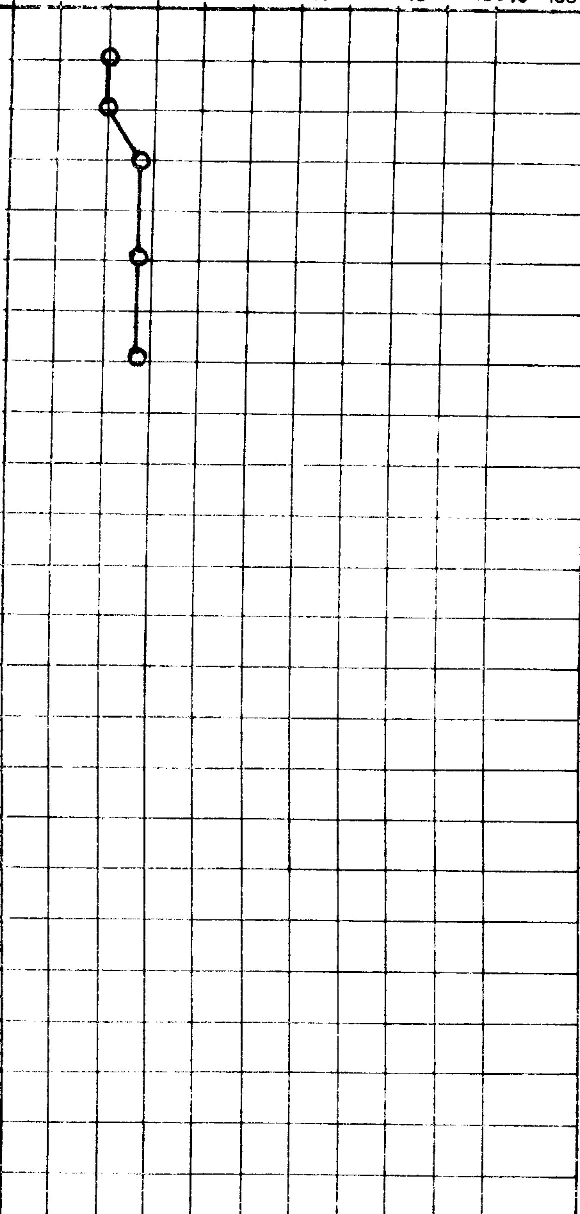


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/03	km 130	B.P. No. 55	HOLE No. 1

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT -								DAMP	
4					1	-100-		0	0	MOIST	
6	ML									WET	
8		- CLAYEY			2	-100-		0	0	WET	
10		3.4 m			3						
12										WET	
14		Bottom of Hole - 3.4 m			4						
16											
18					5						
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36											
38					11						

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/03	km 130	B.P. No. 55	HOLE No. 2

CHAINAGE	OFFSET

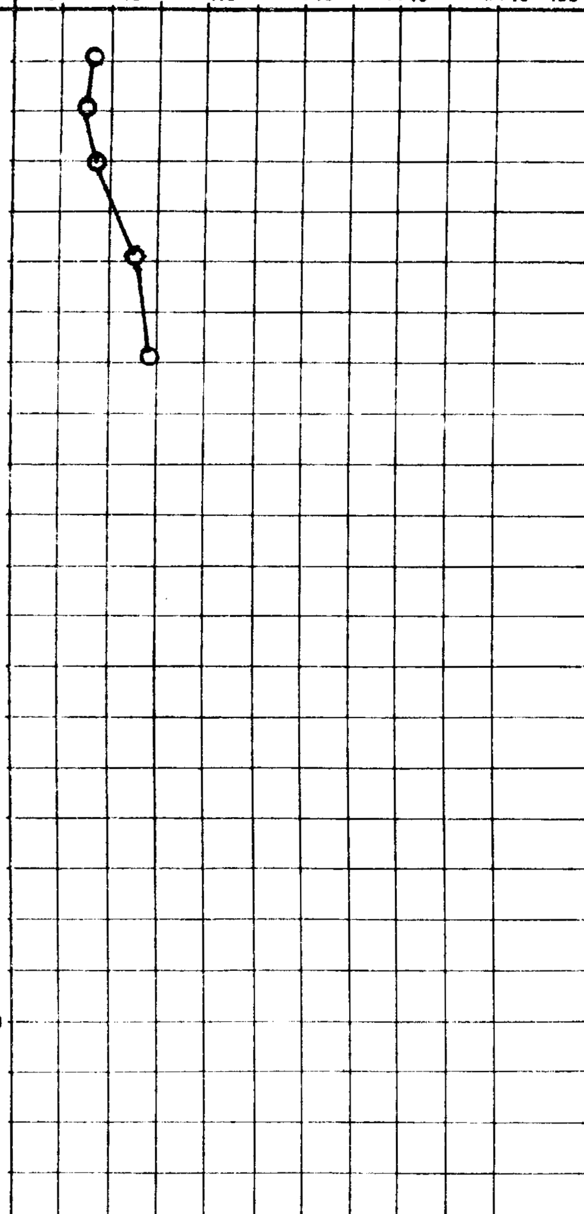
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT-								DAMP	
					1	96		4	0	DAMP	
										DAMP	
6	ML										
8		- CLAYEY				99		1	0	WET-SAT.	
		3.4m								WET-SAT.	
		Bottom of Hole - 3.4m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT |———| LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

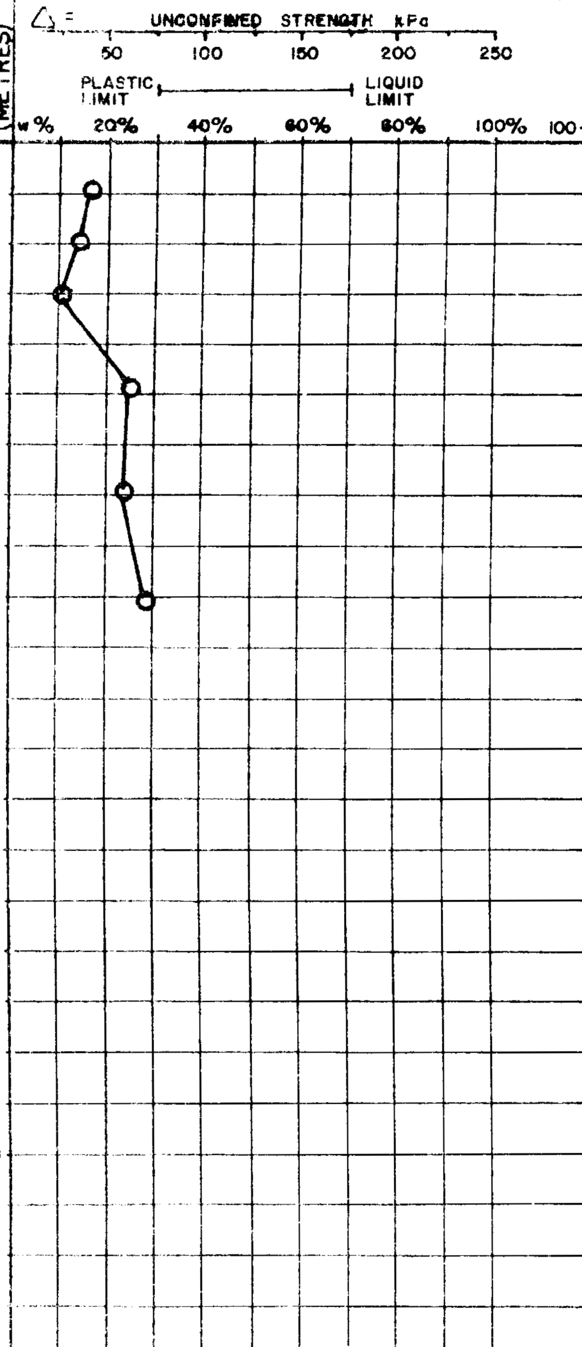
TECH. WEBBER	RIG B-50	DATE 78/02/03	km 130	B.P. No. 55	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2		SILT -								DAMP			
4					1	-	100	0	0	DAMP			
6										DAMP			
8	ML	- CLAYEY			2	-	98	2	0	WET			
10					3								
12										WET			
14		4.6m			4	-	99	1	0	WET-SAT.			
16		BOTTOM OF HOLE - 4.6m			5								
18													
20					6								
22					7								
24													
26					8								
28													
30					9								
32					10								
34													
36					11								
38													

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.			
TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 132	B.P. No. 56	HOLE No. 1

CHAINAGE	OFFSET

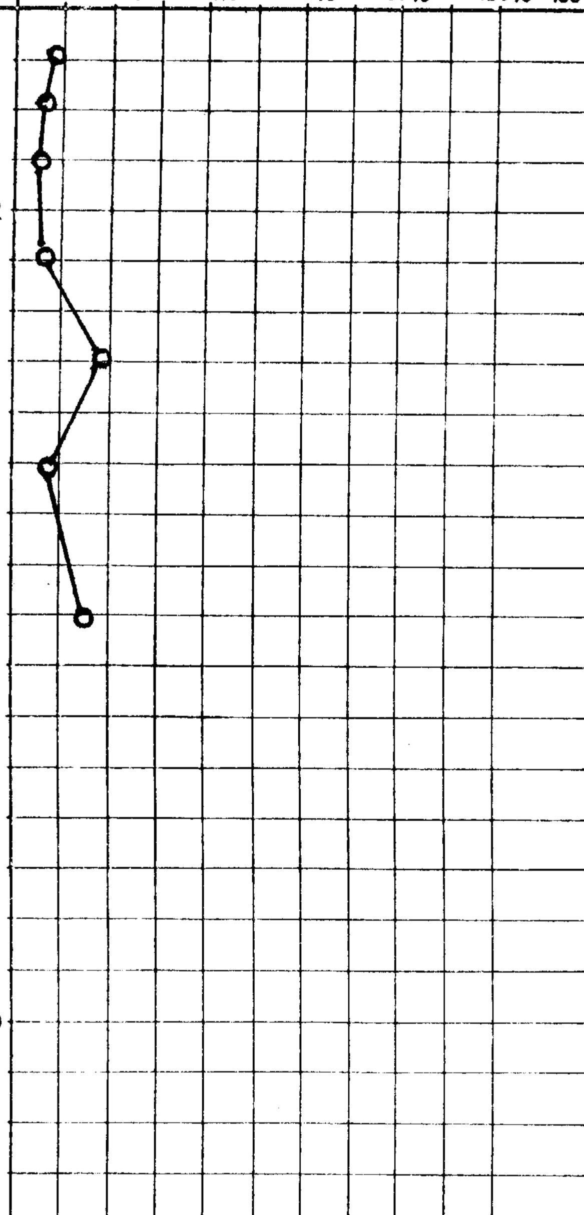
REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
2	SM	SAND - SILTY - PEBBLES		
6–8		- GRAVELLY		
10–12	ML SM	SAND - SILT MIXTURE PEBBLES		
14	GM	GRAVEL - SANDY SILTY		
18–20	CL	CLAY - SILTY SANDY GRAVELLY - TILL 5.5 6.1m		
22		BOTTOM OF HOLE - 6.1m		

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
-24-		67	9	DAMP
				DAMP MOIST
-9-		86	5	D-M
-12-		57	31	MOIST
-56-		42	2	MOIST
-21-		30	49	MOIST
-51-		31	18	WET

PUBLIC WORKS CANADA — DRILL HOLE REPORT

Liard Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	B-50	78/02/04	132	56	2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–10	CL	CLAY - SILTY Low-Med. Plastic @ or + P_L		
4	CL			
6	CL			
10		3.1 m		
10–20	SM	SAND - SILTY PEBBLES - GRAVELLY		
19	CL	CLAY - GRAVEL SAND MIX		
20		6.1 m		
22		BOTTOM OF HOLE - 6.1 m		

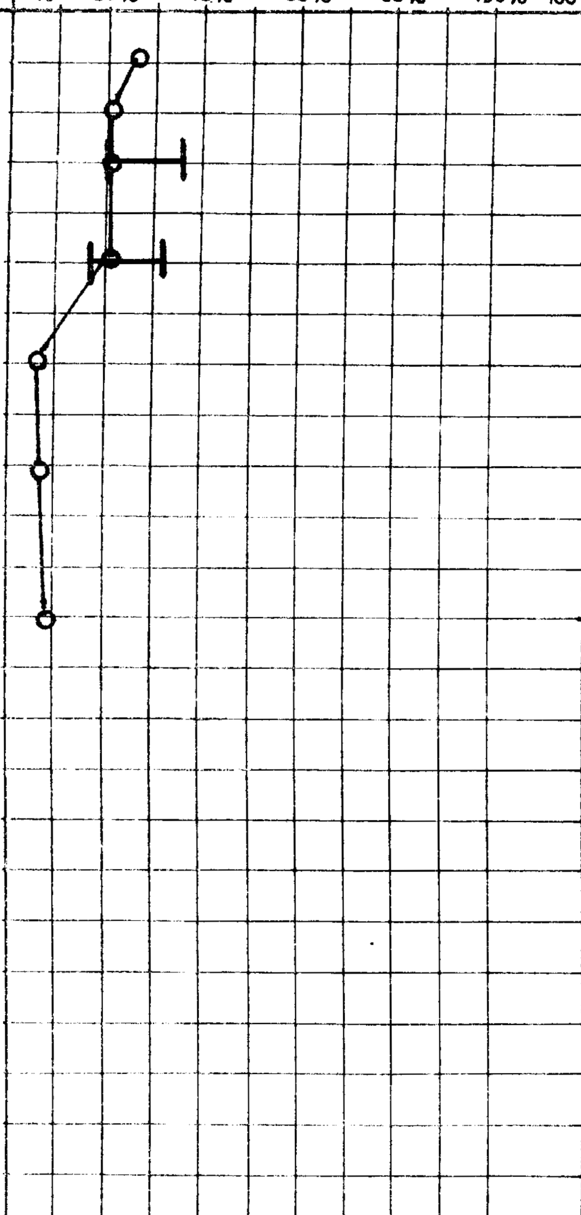
O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+

DEPTH (METRES) 1–11



DEPTH (METRES), approx.	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0.4	99		1	0	WET
0.9					MOIST
1.5					MOIST
2.5	94		6	0	MOIST
3.5	14		82	4	DAMP
4.5	24		44	32	MOIST
6.0	31		41	28	MOIST-WET

CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY

TECH. Pronych	RIG B-50	DATE 78/02/04	km 132	B.P. No. 56	HOLE No. 3

CHAINAGE	OFFSET

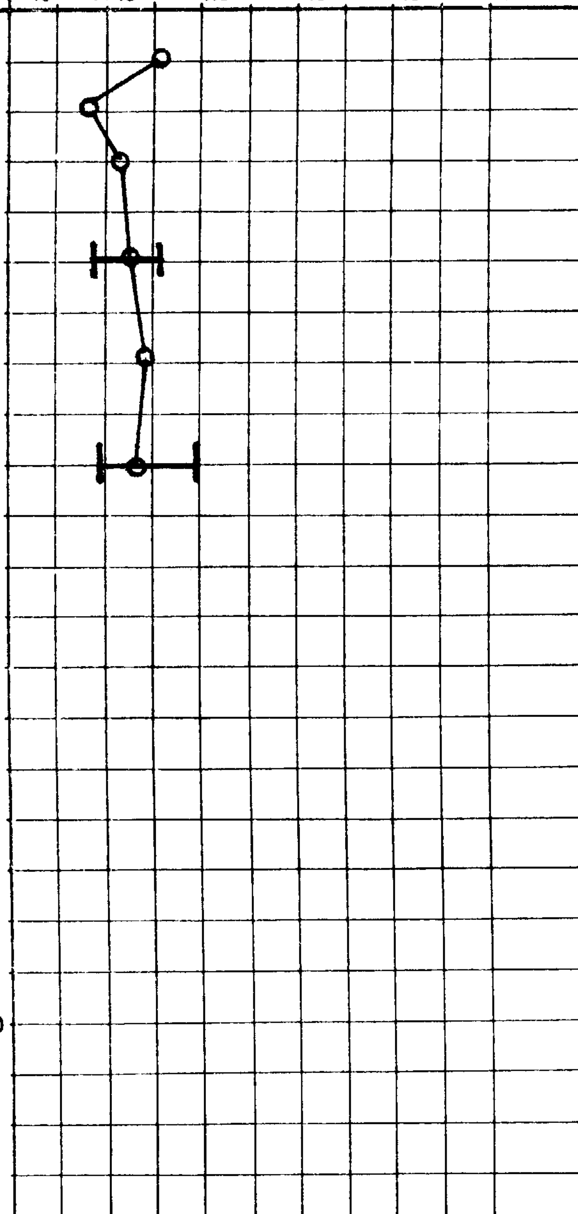
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–5	ML	SILT - CLAYEY			0–1.5	100		0	0	WET; DAMP	
		1.5m								MOIST	
5–15	CL CI	CLAY - SILTY - LOW. MED. PLASTIC +PL			1.5–4.6	100		0	0	MOIST	
										MOIST	
		4.6 m				99		1	0	WET	
		BOTTOM OF HOLE. 4.6m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

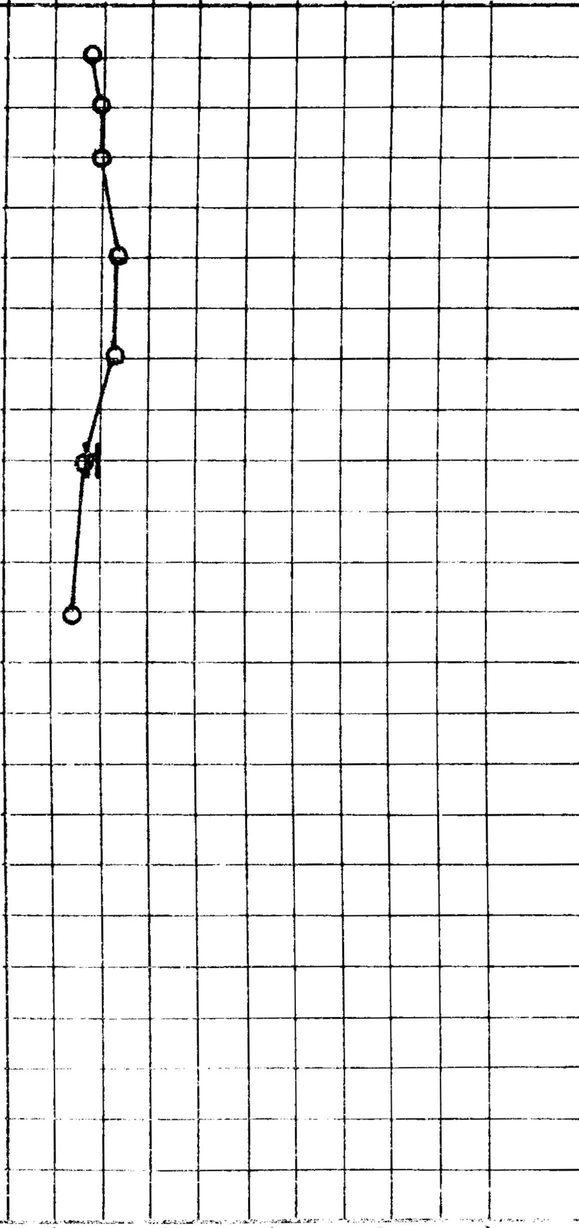


PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 134	B.P. No. 57	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT - CLAYEY								DAMP			
4					1	-98	-	2	0	DAMP			
6										DAMP			
8					2.5	-99	-	1	0	WET			
12		- CLAYEY SANDY			3.5					WET			
16	ML	- SANDY			4.5	-75	-	25	0	WET			
20		6.1m			6					WET			
22		BOTTOM OF HOLE 6.1m											

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT — LIQUID LIMIT
w %: 20%, 40%, 60%, 80%, 100%, 100+



DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

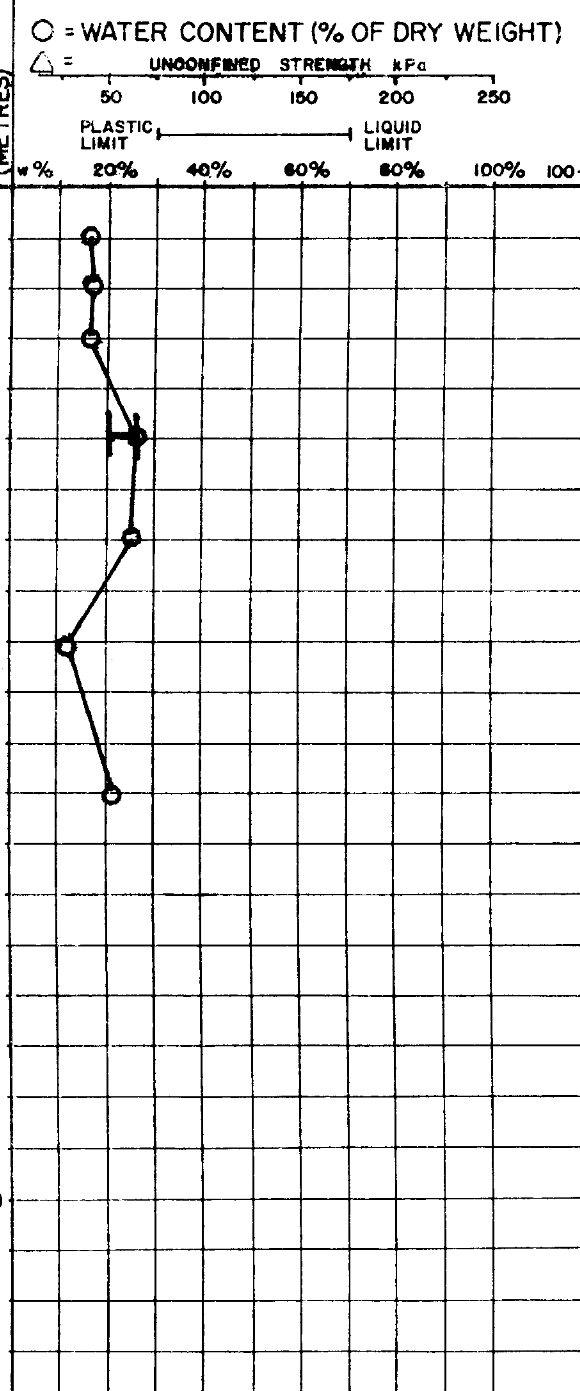
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 134	B.P. No. 57	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT - CLAYEY								DAMP	
2–4					1	-	95	5	0	DAMP-MOIST	
4–6										D-M	
8	ML	SILT -			2.5	-	100	0	0	WET	
12										WET	
15		SATURATED AFTER 4.9m								MOIST	
18–20	ML	- SANDY 6.1m			6	-	58	42	0	WET	
22		BOTTOM OF HOLE - 6.1m									

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa

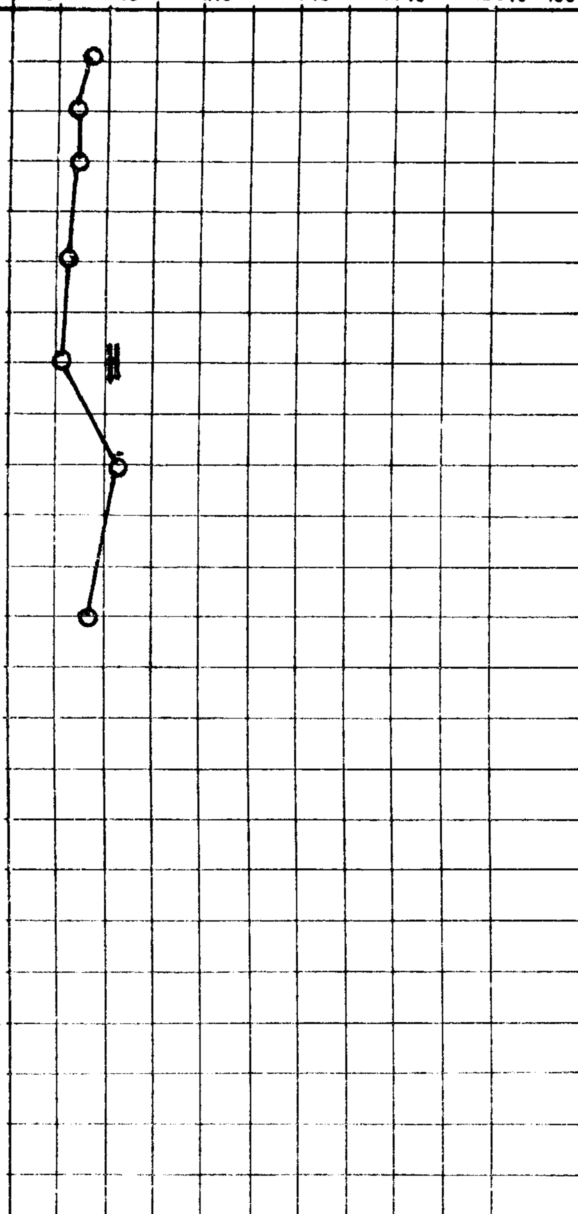


PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONUICH	B-50	78/02/04	134	57	3

UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
CL	CLAY-SILTY		100		0	0	DAMP
	.6m						
	SILT-	1					DAMP MOIST
			100		0	0	D-M
		2					D-M
ML		3					
			91		9	0	D-M
		4					WET
ML		5					
SM	SILT-SAND MIXTURE						
	6.1m	6	55		45	0	MOIST
	BOTTOM OF HOLE - 6.1m						

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



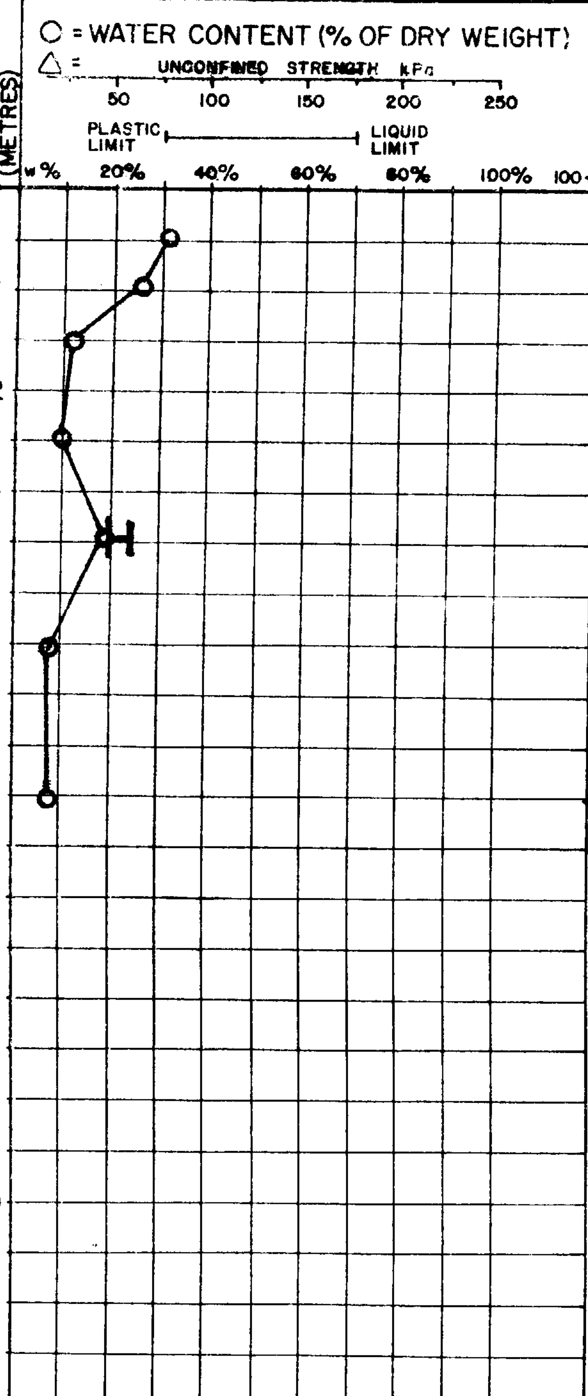
CHAINAGE | OFFSET

REMARKS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 135	B.P. No. 58	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–2	ML	Silty Clayey — .6m		Frozen		98	-	2	0	Wet			
2–4	CL	Clay - Silty			1	93	-	7	0	Damp-Moist			
4–10	ML	Silt - Sandy Low Plastic @ PL			1.5					Moist			
					2.5					Moist			
10–15	ML	Silt- — 4.6 m			3.5	97	-	3	0	Moist			
15–20	SM	Sand - Silty - Fine — 6.1m			4.5					Moist-Wet			
20					6	37	-	63	0	M-W			
22		Bottom of Hole - 6.1 m											

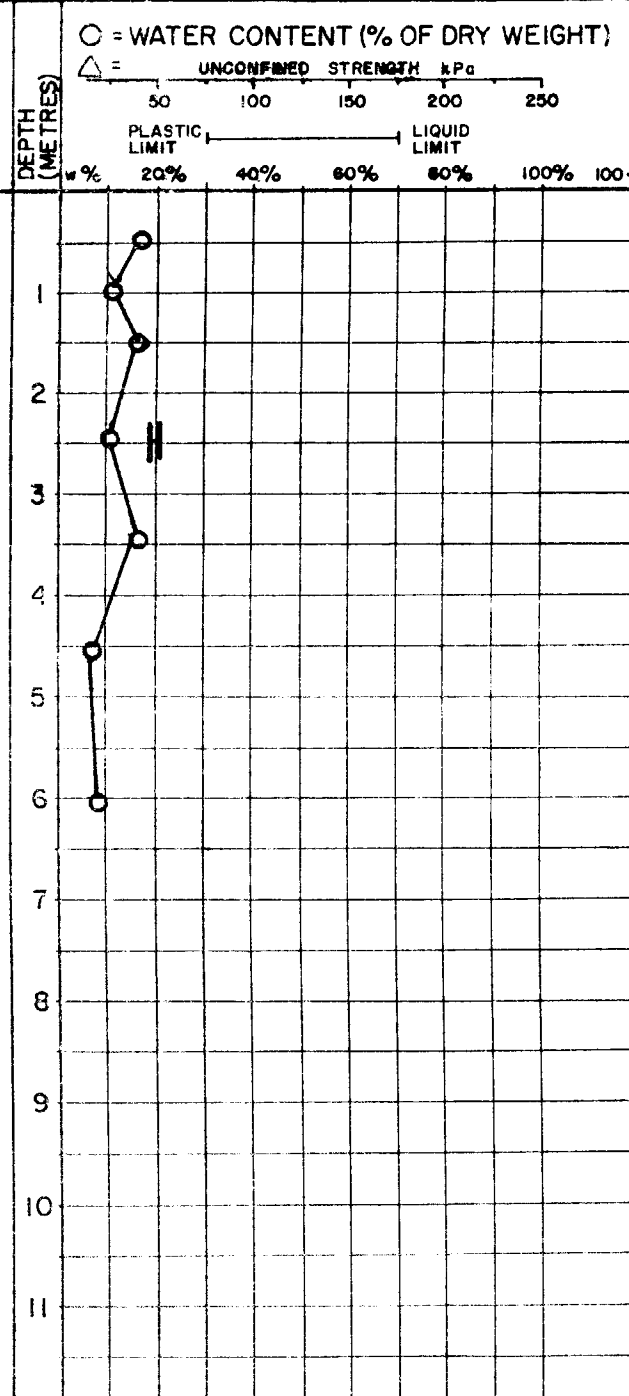


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 135	B.P. No. 58	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - CLAYEY SANDY			89		11	0	DAMP	
2		SILT - SANDY			85		15	0	DAMP-MOIST	
4									D-M	
6	ML									
8					93		7	0	D-M	
10										
12									D-M	
14					67		33	0	D-M	
16	ML									
18										
20		6.1m							D-M	
22		BOTTOM OF HOLE - 6.1m								
24										
26										
28										
30										
32										
34										
36										
38										

CHAINAGE | OFFSET

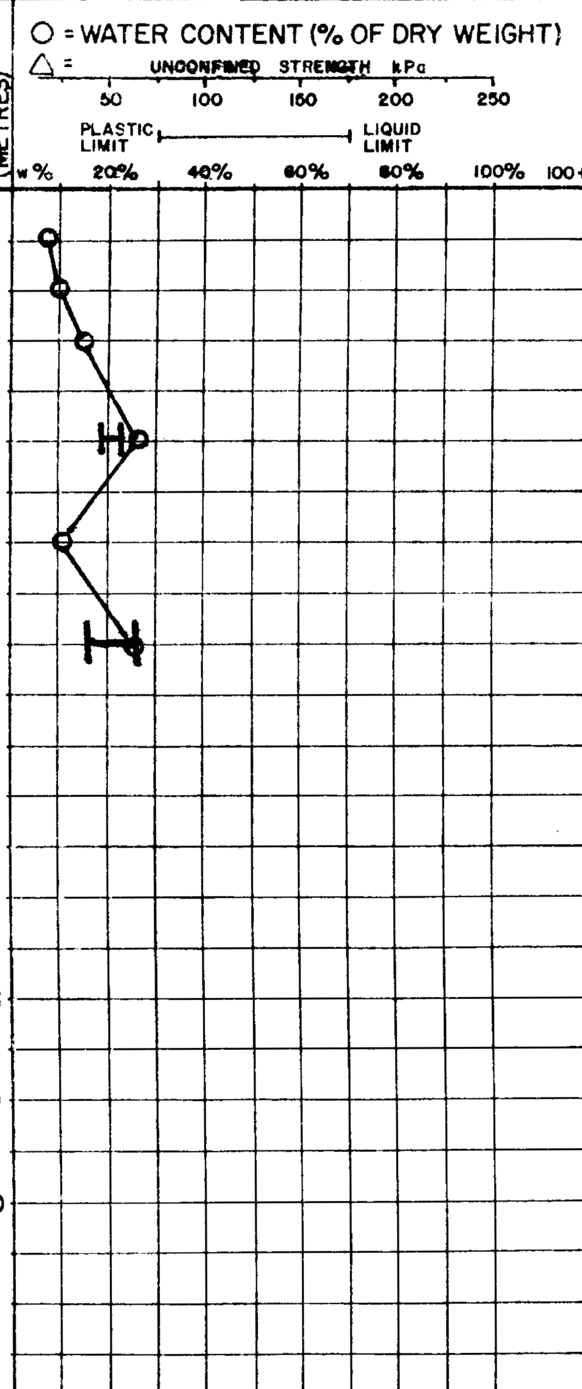


PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/04	135	58	3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - SANDY				-				DAMP	
				FROZEN		-	81	19	0	DAMP-MOIST	
										D-M	
	ML	- SANDY CLAYEY				-	91	9	0	WET	
		- SANDY								SAT.	
				FROZEN							
	CL	CLAY - SILTY SANDY 4.6m				-	90	10	0	WET	
		BOTTOM OF HOLE - 4.6 m									

CHAINAGE | OFFSET



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. PRONUCH	RIG B-50	DATE 78/02/04	km 136	B.P. No. 59	HOLE No. 1

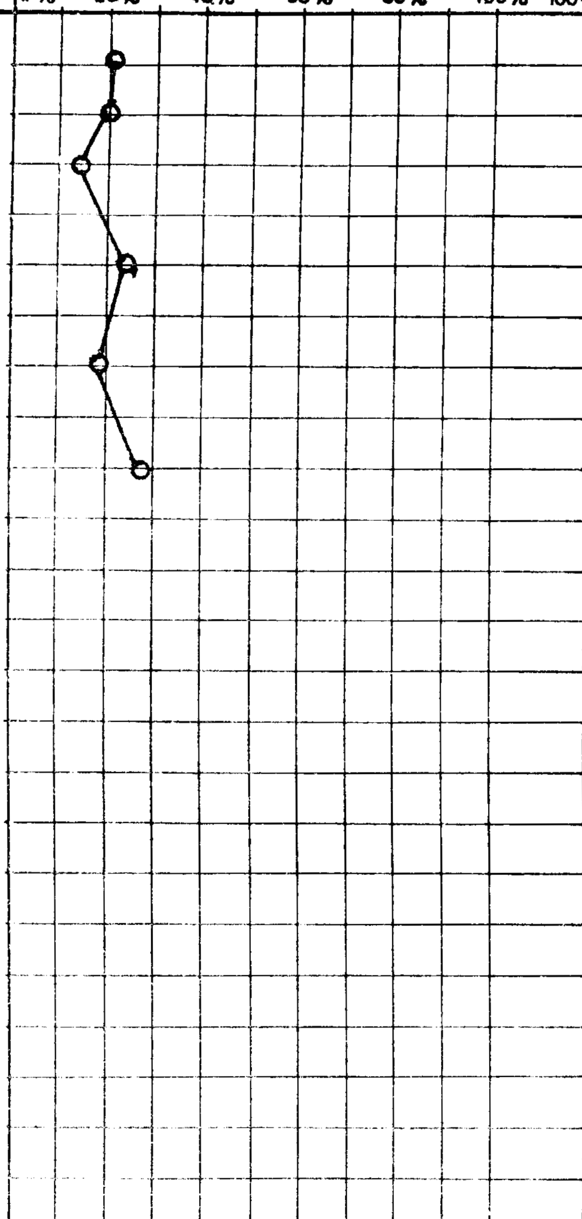
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–15	ML	Silt.			0–4.6
		Free Water after 3.7m			
		4.6m			4.6
		Bottom of Hole. 4.6m			

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				DAMP
-	91	9	0	DAMP-MOIST
				D-M
-	92	8	0	WET
				MOIST
-	88	12	0	SAT.

CHAINAGE	OFFSET

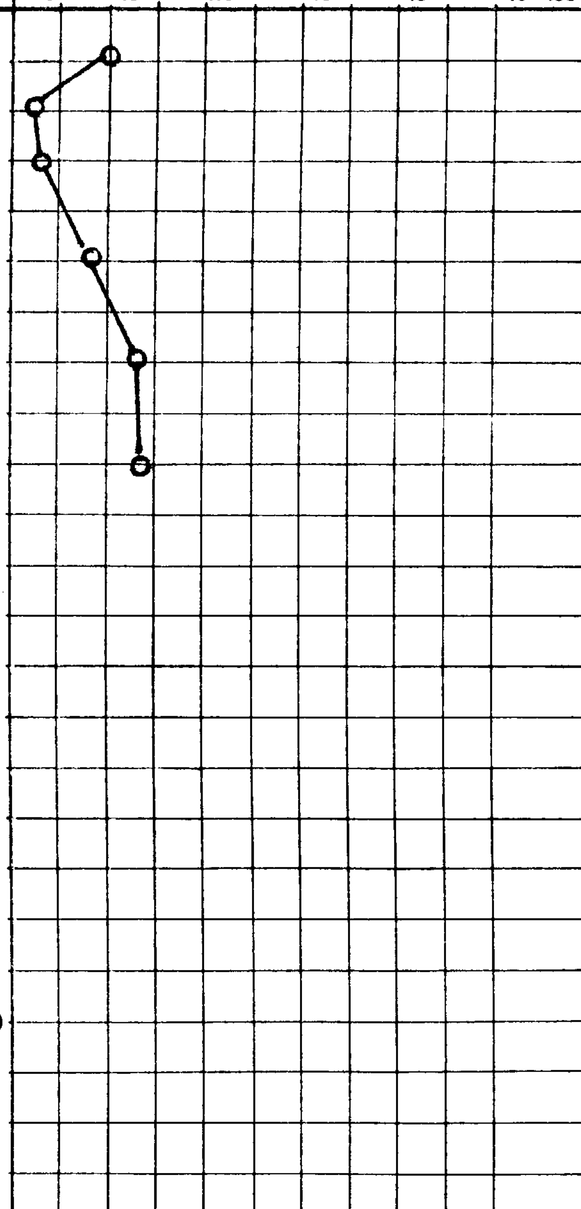
REMARKS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 136	B.P. No. 59	HOLE No. 2

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT — LIQUID LIMIT
w%: 20%, 40%, 60%, 80%, 100%, 100+



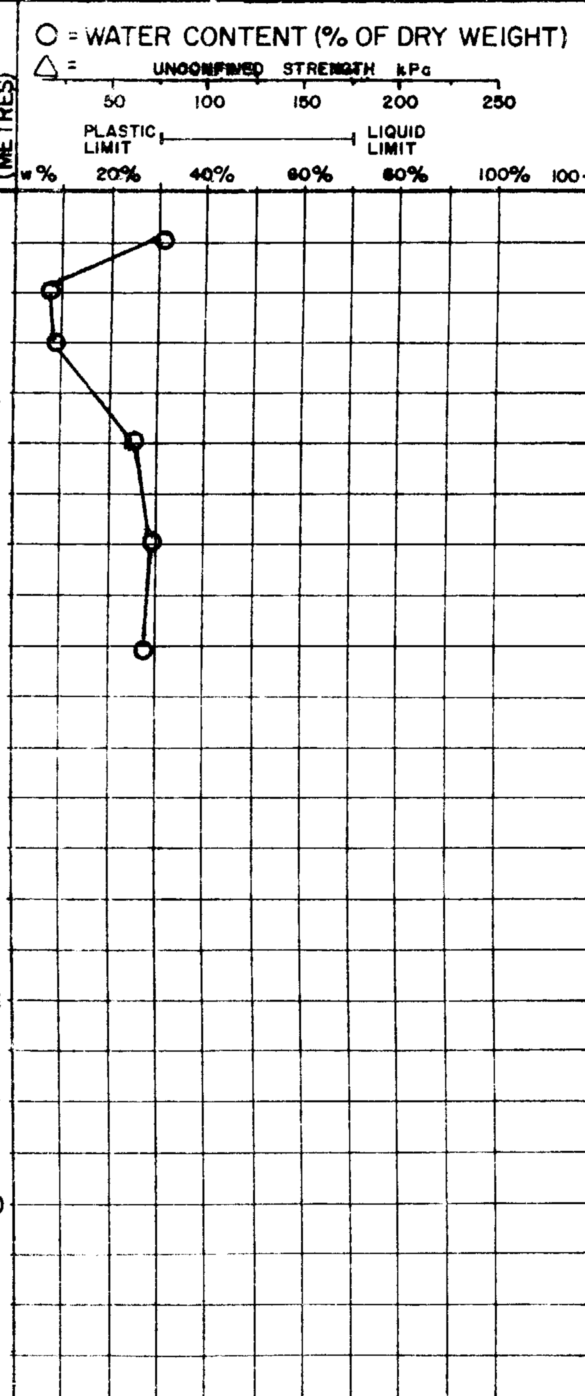
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT - SANDY								DAMP	
2		.6m									
		SAND - SILTY									
4	SM				1	-	38	62	0	DAMP	
										DAMP-MOIST	
6		1.8m									
		SILT -			2						
8						-	94	6	0	MOIST	
10		- CLAYEY			3						
	ML									WET	
12											
		FREE WATER AFTER 4.m			4						
14		4.6m				-	97	3	0	SAT.	
16		BOTTOM OF HOLE - 4.6m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/04	136	59	3

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAYEY				99		1	0	WET	
4		- SANDY			1					MOIST	
						61		39	0	MOIST	
6				FROZEN	2						
8		SILT -								WET	
10	ML	- CLAYEY			3	92		8	0	WET	
12		SATURATED AFTER 4.0 m			4						
14		4.6 m								WET	
16		BOTTOM OF HOLE - 4.6 m			5						
18–38					6–11						



PUBLIC WORKS CANADA — **DRILL HOLE REPORT** — LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–7	ML	SILT - SANDY			0–2.1	NO SAMPLES								
7		2.1 m			2.1									
7–11	SM	SAND - SILTY			2.1–3.4									
11		3.4 m			3.4									
		BOTTOM OF HOLE 3.4 m												

DEPTH (FEET) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. PRONYSCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	O = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE / OFFSET / REMARKS
0–7	ML	SILT- SANDY			0–2.1	NO SAMPLES						
		2.1m										
7–15	SM	SAND - SILTY			2.1–4.6							
		4.6m										
		BOTTOM OF HOLE - 4.6 m										

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 3

CHAINAGE	OFFSET

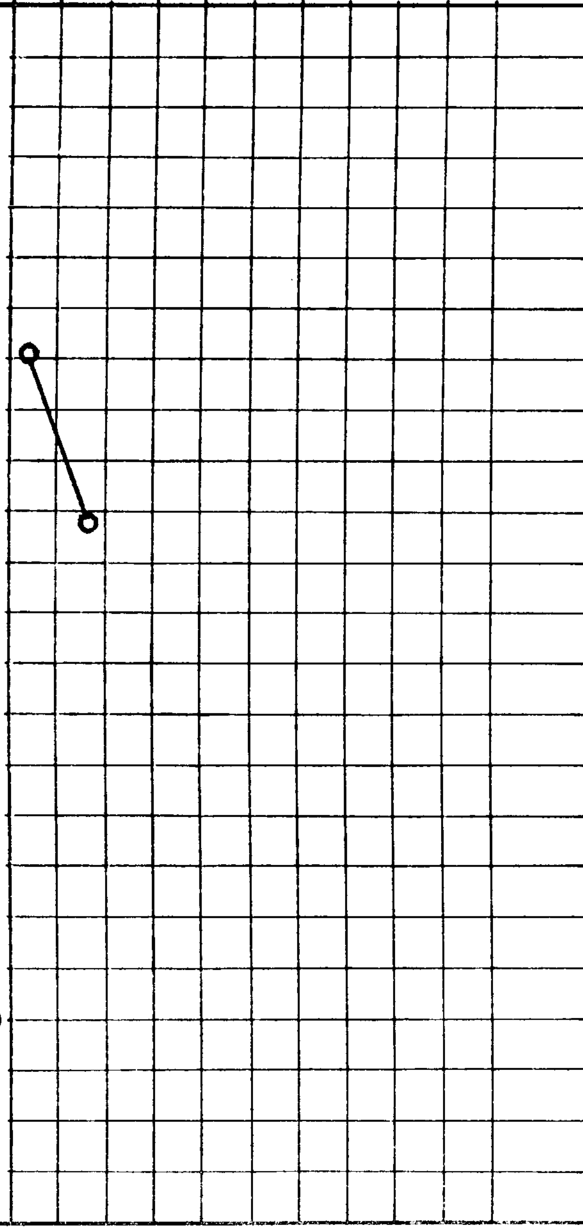
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	Pt	PEAT .5m										
2–4	ML	SILT-SANDY 1.2m			1							
4–10	GM	SAND-GRAVEL MIXTURE; FREE WATER @ 1.8 m			2	○	-9-		42	49	WET	
10–15	SM	SAND-GRAVELLY SILTY 4.6m			3.4	○	-35-		40	25	WET	
16–18		BOTTOM OF HOLE 4.6 m										

Chart scale: △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT |———| LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/06	138	60	4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT – LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–5	ML	SILT - SANDY			0–1.5									
		1.5 m												
5–10	SM	SAND - SILTY GRAVELLY			1.5–3.1									
		3.1 m												
10–18	GP	GRAVEL - SANDY			3.1–5.5									
					3.5	○	-	6	41	53	MOIST			
		APPR. WATER @ 4.0 m												
					5.1	○	-	4	33	63	WET			
		5.5 m												
18–21	SP	SAND - GRAVELLY			5.5–6.4									
		6.4 m												
		BOTTOM OF HOLE - 6.4 m												



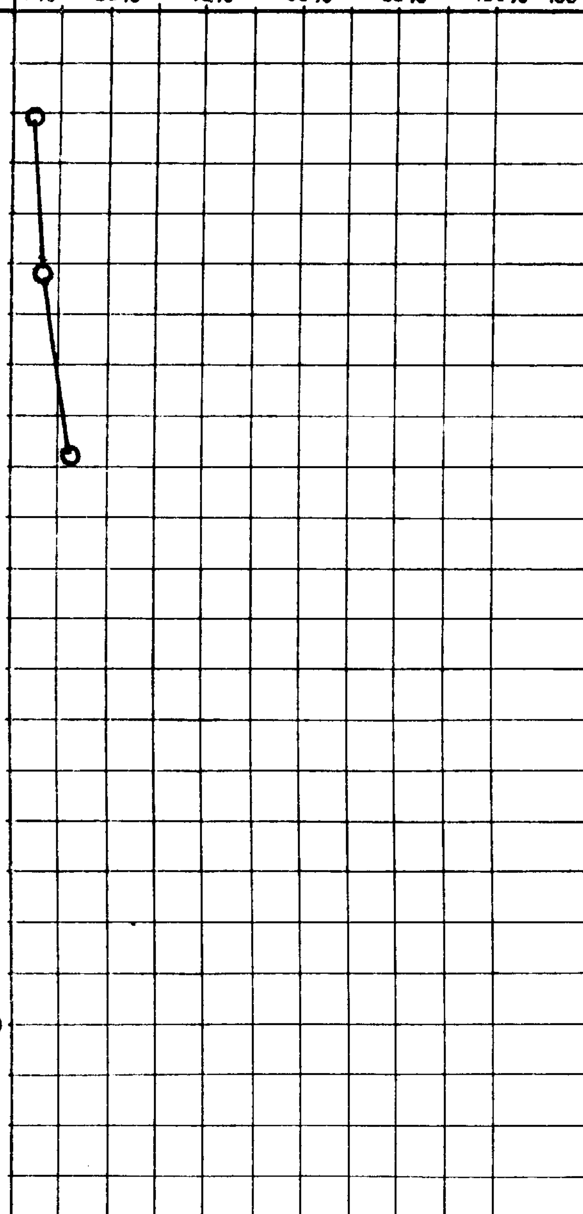
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/06	138	60	5

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |———| LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



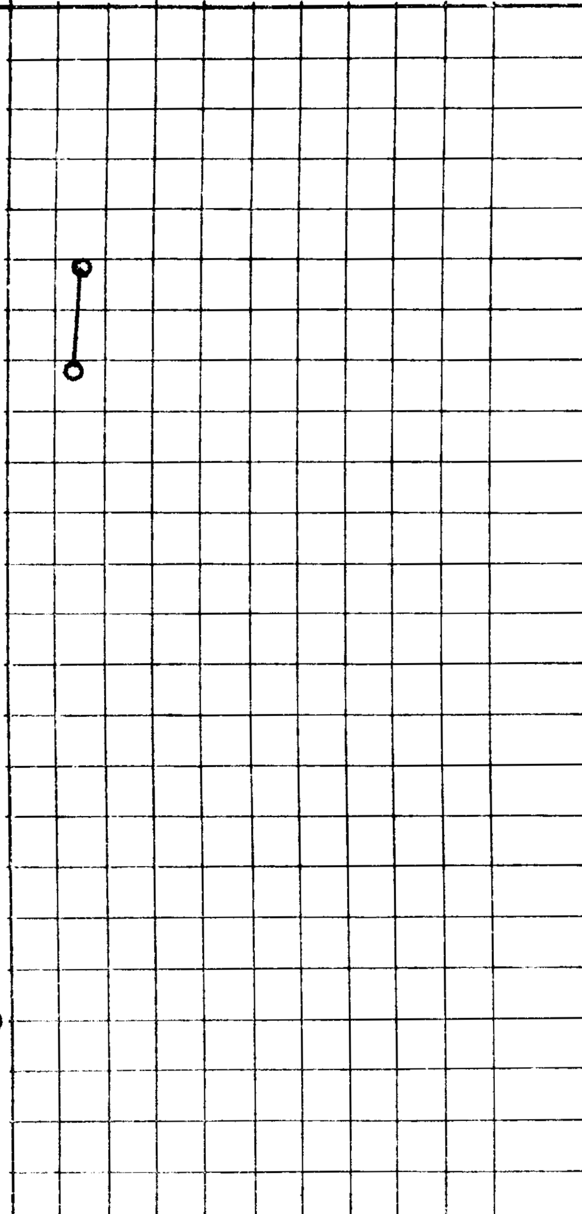
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - SANDY									
		.9m									
4		GRAVEL - SANDY			1	-	5	- 33	62	MOIST	
6	GW	FREE WATER AFTER 2.1m			2						
8						-	4	- 36	60	WET	
10					3						
12		4.0			4						
14	SP	SAND - GRAVELLY 4.6m				-	1	- 87	12	WET	
16		BOTTOM OF HOLE - 4.6m			5						
18–38					6–11						

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONVCH	B-50	78/02/06	138	60	6

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT — LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	PEAT .3m									
2		SILT - SANDY									
4	ML				1						
6		1.8m									
8	SM	SAND - GRAVELLY SILTY FREE WATER			2	18 -	52	30		WET	
10		SAND - GRAVELLY			3						
12	SP					3 -	82	15		WET	
14		4.6m			4						
16		BOTTOM OF HOLE. 4.6 m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 7

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = UNCONFINED STRENGTH kPa 50 100 150 200 250; PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
	Pt	PEAT .3m												
2	ML	SILT-SANDY -CLAYEY			1									
4														
6					2	NO SAMPLES								
8		2.4m												
10	SP	SAND-GRAVELLY FREE WATER			3									
12														
14		4.6m			4									
16		BOTTOM OF HOLE - 4.6m			5									
18														
20					6									
22														
24					7									
26														
28					8									
30					9									
32														
34					10									
36														
38					11									

PUBLIC WORKS CANADA

DRILL HOLE REPORT

LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 8

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
	Pt	PEAT .5 m												
2, 4	ML	SILT - SANDY 1.5 m			1									
6, 8, 10, 12, 14	SM	SAND - SILTY GRAVELLY FREE WATER PEBBLES 4.6 m			2, 3, 4	NO SAMPLE								
16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38		BOTTOM OF HOLE - 4.6 m			5, 6, 7, 8, 9, 10, 11									

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 10

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT — LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL %
RELATIVE MOISTURE CONTENT
CHAINAGE | OFFSET
REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	ML	SILT - SANDY			
2		.9m			
4		SAND - SILTY			1
6	SM				2
8		2.7m			
10	ML	SILT - SANDY			3
12		3.7m			
14	SM	SAND. SILTY GRAVELLY WET			4
16		4.6m			
18		BOTTOM OF HOLE - 4.6m			5
20					6
22					
24					7
26					
28					8
30					9
32					
34					10
36					11
38					

SAMPLES NOT TAKEN

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/06	138	60	11

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–2.5	ML	SILT-SANDY												
		.75 m												
2.5–12	SM	SAND-SILTY			2	NO SAMPLES								
		3.7 m												
12–16	CL	CLAY SILTY SANDY WET												
		4.9 m												
		BOTTOM OF HOLE - 4.9 m												

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 12

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE / OFFSET / REMARKS
2	ML	SILT - SANDY .75m										
4		SAND - SILTY			1							
6	SM				2	NO SAMPLES						
8		-CLAYEY										
10	SC	-WET			3							
12												
14					4							
16		4.9 m			5							
18		BOTTOM OF HOLE - 4.9m										
20					6							
22												
24					7							
26					8							
28												
30					9							
32												
34					10							
36					11							
38												

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/06	138	60	13

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–6	ML	SILTY SANDY			
6		1.8m			
6–14	SM	SAND-SILTY			
14		4.3 m			
14–15	CL	CLAY-SILTY SANDY			
15		4.6m			
		Bottom of Hole- 4.6m			

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT — LIQUID LIMIT
w %: 20%, 40%, 60%, 80%, 100%, 100+

No Samples

GRAIN-SIZE ANALYSIS: CLAY %, SILT %, SAND %, GRAVEL %

RELATIVE MOISTURE CONTENT

CHAINAGE | OFFSET

REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/06	138	60	14

CHAINAGE | OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT. SANDY										
2		.75m										
4		SAND - SILTY DRY			1							
6					2	NO SAMPLES						
8												
10		- CLAYEY - WET			3							
12												
14		4.6m			4							
16		BOTTOM OF HOLE - 4.6 m			5							
18												
20					6							
22												
24					7							
26					8							
28												
30					9							
32												
34					10							
36					11							
38												

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/05	km 138	B.P. No. 61	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250) PLASTIC LIMIT — LIQUID LIMIT (w% 20% 40% 60% 80% 100% 100+)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE / OFFSET / REMARKS
2	ML	SILT - SANDY WET										
4		— 1.2 m		FROZEN	1	NO SAMPLES						
6		SAND - FINE - COARSE SATURATED			2							
8	SW											
10		— 3.4 m			3							
12		BOTTOM OF HOLE - 3.4 m										
14					4							
16					5							
18												
20					6							
22												
24					7							
26					8							
28												
30					9							
32												
34					10							
36					11							
38												

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/05	km 138	B.P. No. 61	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–6	ML	SILT - SANDY WET												
6		1.8m			2	NO SAMPLES								
6–15	SM	SAND - SILTY FEW PEBBLES FREE WATER												
15		4.6m												
		BOTTOM OF HOLE - 4.6m												

Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (metres) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

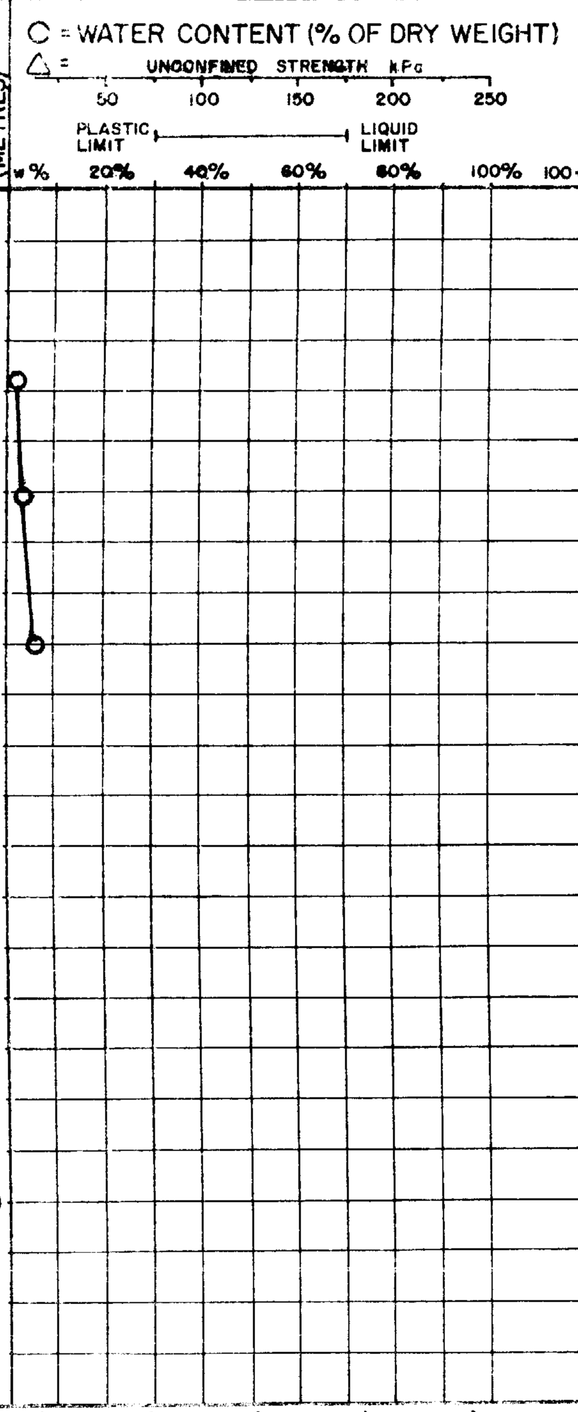
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/05	138	61	3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–3	ML	SILT - SANDY									
		.9m									
	SP - GP	SAND-GRAVEL MIX			2	-	2	58	40	MOIST	
		FREE WATER AFTER 3.7m			3	-	2	50	48	MOIST	
					4.5	-	4	49	47	WET	
16		4.9m									
		BOTTOM OF HOLE - 4.9m									

CHAINAGE | OFFSET



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/05	138	61	4

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	ML	SILT - SANDY .6m									
2–15	GW	GRAVEL - SANDY			1	-	3	-	36 61	DAMP	
		FREE WATER FROM 3.7m - 4.6m			2.5	-	4	-	42 54	MOIST	
		4.6m			4	-	2	-	42 56	WET	
15–18	CL	CLAY - SILTY SANDY - PEBBLES WET 5.5m									
		BOTTOM OF HOLE - 5.5m									

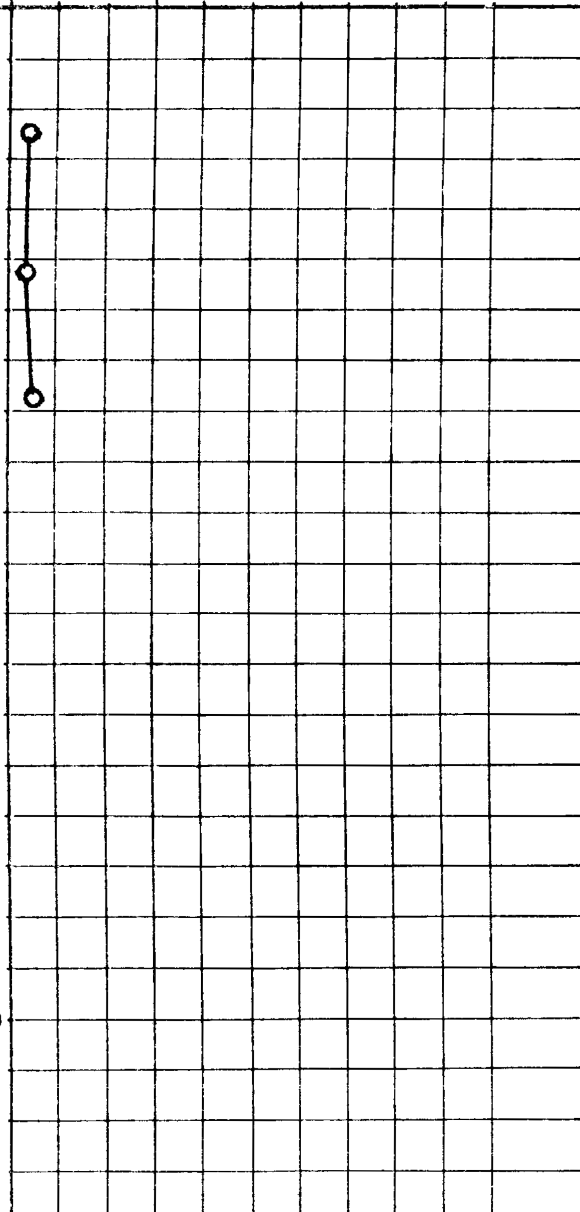
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Liard Hwy

TECH	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	B-50	78/02/05	138	61	5

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	Silt - Sandy									
4		1.2 m			1						
		Sand - Gravelly				-	6	70	24	Damp	
6					2						
8	SP	Free water after 3.7 m				-	7	69	24	Moist	
10					3						
12		4.0 m				-	5	62	33	Wet	
		Clay - Silty Sandy			4						
14	CL	Pebbles - Wet									
		4.6 m									
16		Bottom of Hole. 4.6 m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT — LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA	DRILL HOLE REPORT	Liard Hwy.	

TECH. Pronych	RIG B-50	DATE 78/02/05	km 138	B.P. No. 61	HOLE No. 6

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT ├─┤ LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2		Silt - Sandy												
4	ML				1									
6		Wet after 1.8m			2	No Samples								
8														
10		3.4m			3									
12														
14		Bottom of Hole. 3.4m			4									
16					5									
18														
20					6									
22														
24					7									
26					8									
28														
30					9									
32														
34					10									
36					11									
38														

PUBLIC WORKS CANADA — DRILL HOLE REPORT — Liard Hwy.

TECH. Pronych	RIG B-50	DATE 78/02/05	km 138	B.P. No. 61	HOLE No. 7

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–4		Silt - Sandy				No Samples								
4		1.2m												
4–11	SM	Sand - Silty, wet. Sat. after 2.7m												
11		3.4m												
		Bottom of Hole · 3.4m												

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38
Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/05	km 138	B.P. No. 61	HOLE No. 8

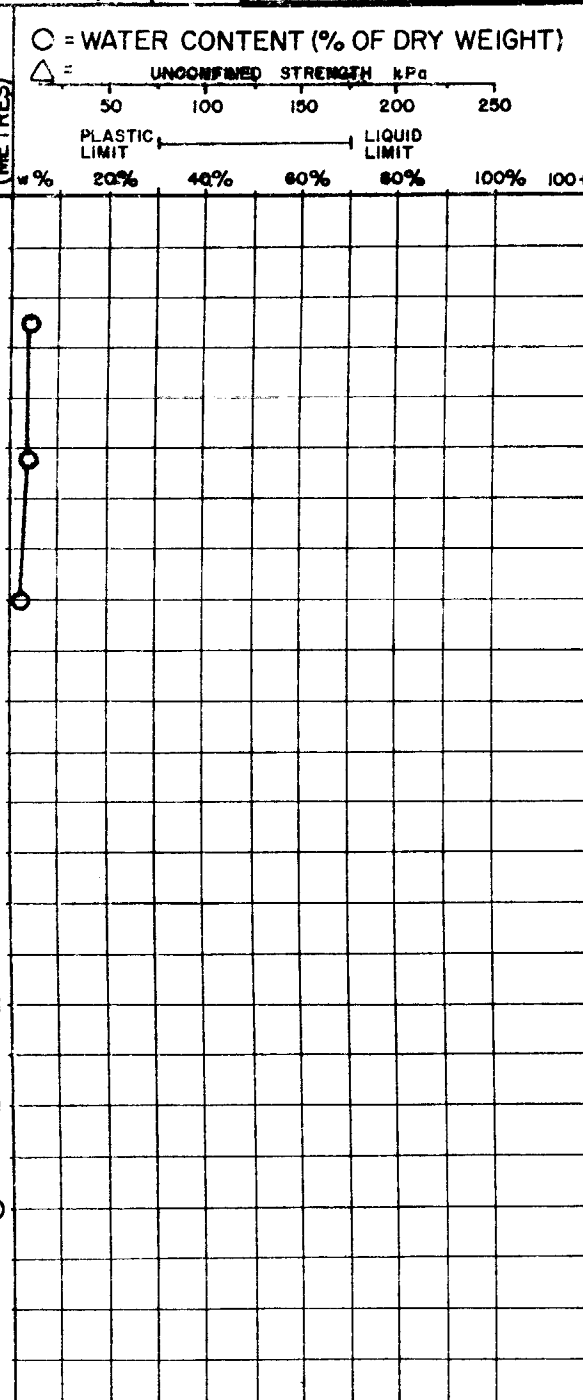
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT ├─┤ LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE / OFFSET / REMARKS
2	ML	SILT - SANDY .75m										
4	SM	SAND - SILTY			1							
6					2	NO SAMPLES						
8	SM	SATURATED AFTER 2.7m										
10		3.4m			3							
12		BOTTOM OF HOLE - 3.4m										
14					4							
16					5							
18												
20					6							
22					7							
24												
26					8							
28					9							
30												
32					10							
34												
36					11							
38												

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/05	138	61	9

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–4	ML	SILT - SANDY; 1.2m											
4–16	GW	GRAVEL - SANDY; FREE WATER AFTER 3.7m? ; 5.0m			1.2	6	-	47	47	DAMP			
					2.6	3	-	27	70	DAMP			
					4.0	4	-	42	54	DAMP			
16–20	CL	CLAY - SILTY SANDY PEBBLES WET; 6.1m											
		BOTTOM OF HOLE - 6.1m											

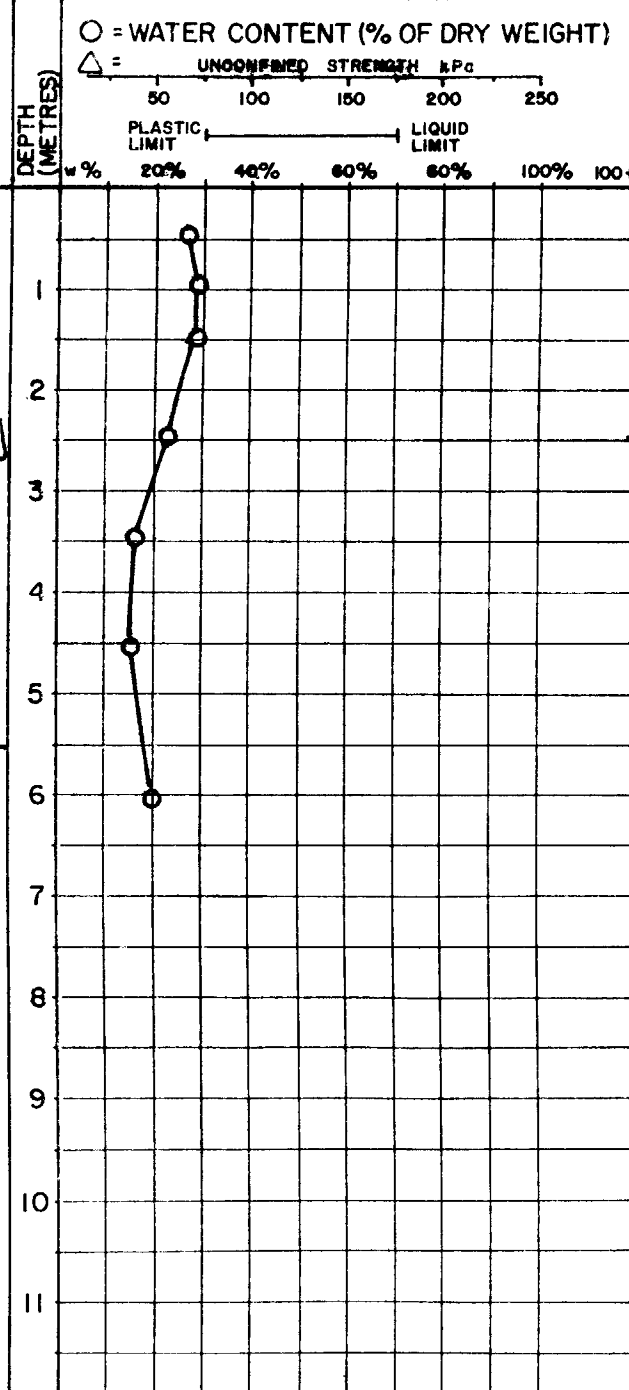


PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Liard Hwy.

TECH. Pronych	RIG B-50	DATE 78/02/06	km 139	B.P. No. 62	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	Silt - Clayey								
2		Clay - Silty							Damp	
4	CL	Low Plastic +P_L			-99-		1	0	Moist	-Wet
6									Wet	
7		2.1m								
8		Silt - Sandy		Frozen	-69-		31	0	Wet	
12		- Sandy							Wet	
15	ML				-75-		25	0	Wet	
20		6.1m							Wet-Moist	
22		Bottom of Hole - 6.1m								

CHAINAGE | OFFSET



▮✦ PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

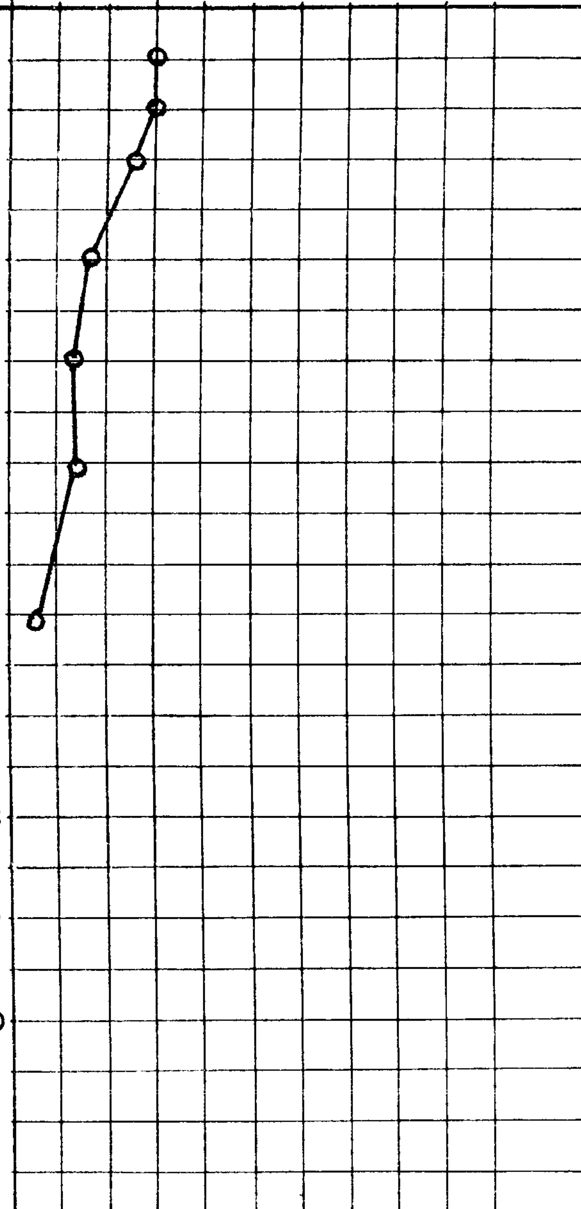
TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 139	B.P. No. 62	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–8	CL	CLAY - SILTY - LOW PLASTIC + P_L				96		4	0	MOIST-WET	
										M-W	
										M-W	
8		2.4 m									
8–18	ML	SILT - SANDY		FROZEN			69	31	0	MOIST	
										MOIST	
										MOIST-WET	
18		5.5 m									
18–20	SM	SAND - SILTY					15	85	0	M-W	
20		6.1 m									
22		BOTTOM OF HOLE - 6.1 m									

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/06	139	62	3

CHAINAGE	OFFSET

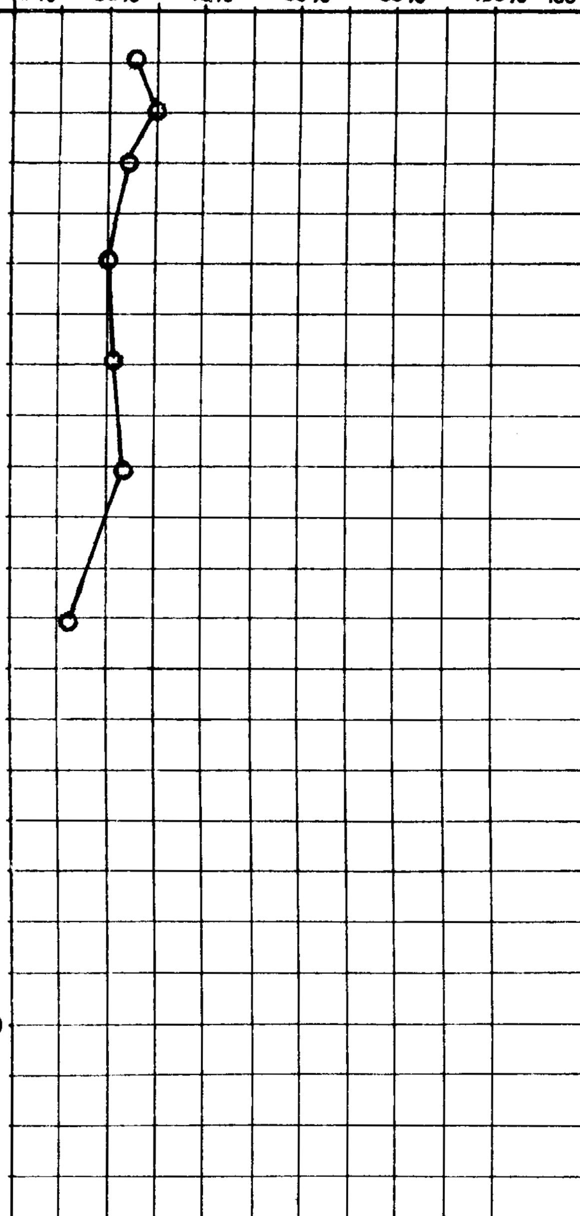
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–7	CL	CLAY - SILTY - LOW PLASTIC + PL								MOIST	
					1	-96-		4	0	WET	
										MOIST-WET	
		2.1m			2						
7–20	ML	SILTY - SANDY		FROZEN		-67-		33	0	MOIST	
					3						
										WET	
					4						
						-78-		22	0	WET	
					5						
										DAMP-MOIST	
		6.1m			6						
22		BOTTOM OF HOLE - 6.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

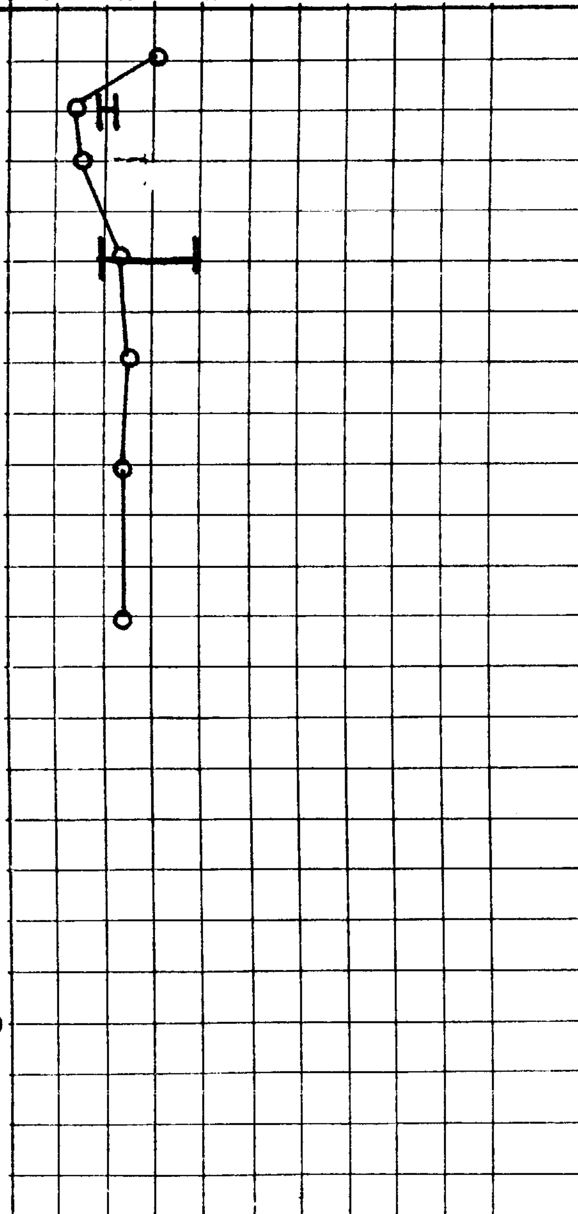
TECH. WEBBER	RIG B-50	DATE 78/02/06	km 142	B.P. No. 63	HOLE No. 1

CHAINAGE | OFFSET | REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–8	ML	SILT - CLAYEY - SANDY			0–2.4	96		4	0	WET; DAMP-MOIST; D-M
8		2.4m			2.4	100		0	0	D-M
8–20	CL	CLAY - SILTY Low Plastic +P$_L$ GREY.			2.4–6.1					D-M; WET
20	ML	SILT - CLAYEY 6.1m			6.1	92		8	0	WET

Bottom of Hole. 6.1 m

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT —— LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

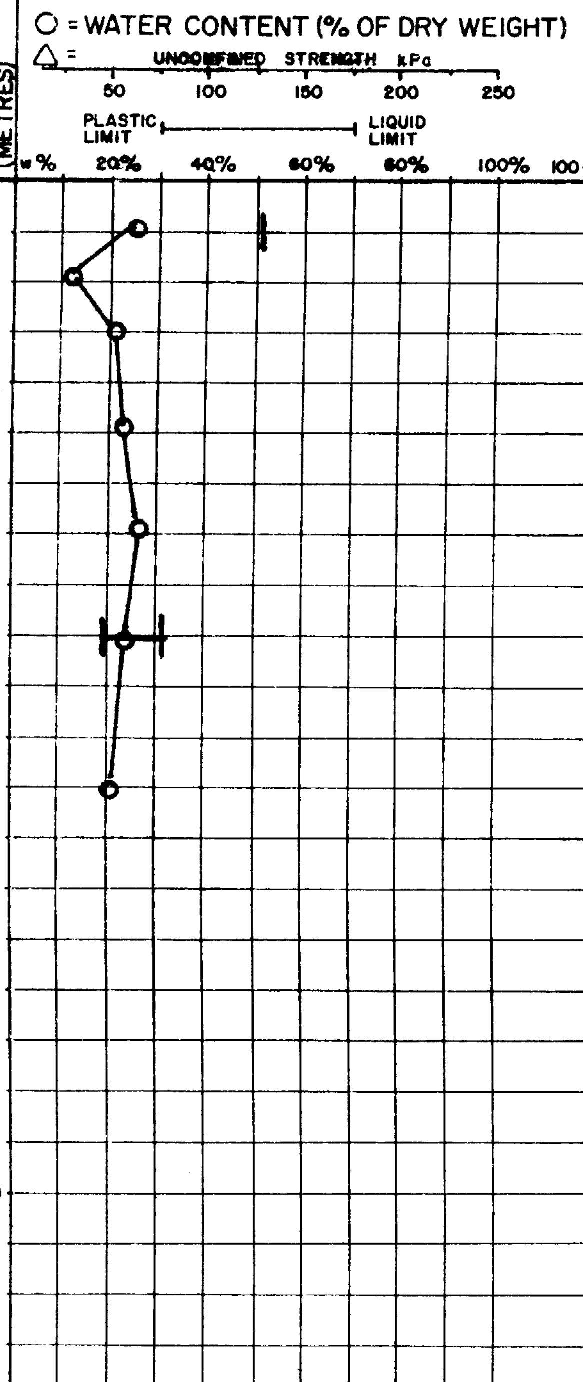
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/06	142	63	2

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–4	ML	SILT-								WET	
4		1.2m			1	97		3	0	MOIST	
4–20	CL - CI	CLAY - SILTY - LOW - MED PLASTIC +PL								DAMP-MOIST	
					2.5	100		0	0	MOIST	
					3.5					MOIST	
		GREY-			4.5	99		1	0	MOIST	
20		6.1m			6					MOIST	
		BOTTOM OF HOLE . 6.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

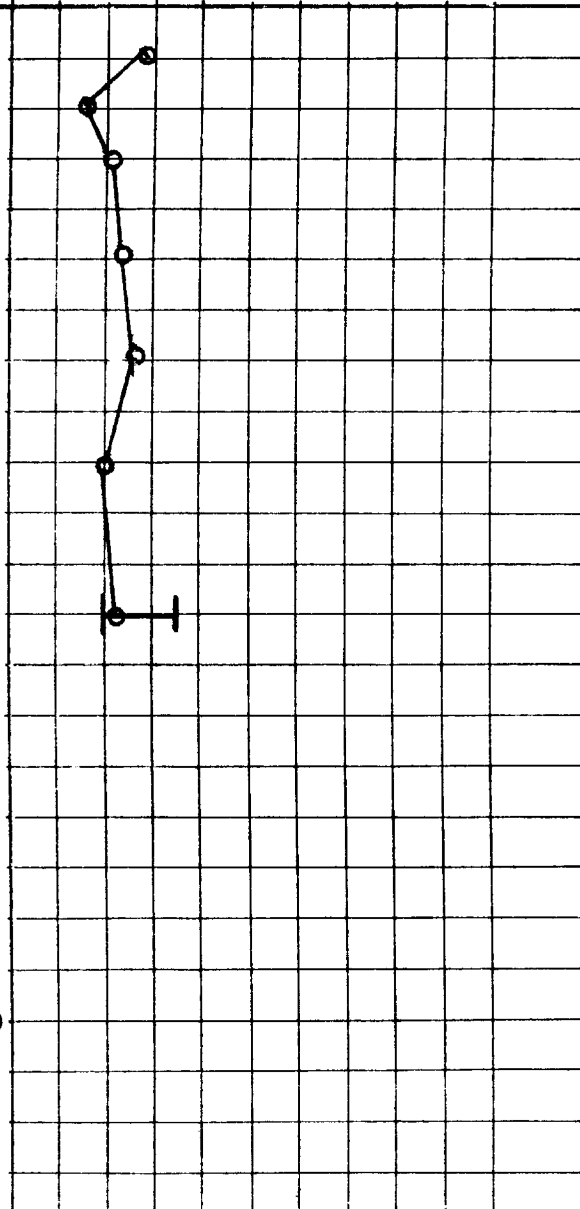
TECH. WEBBER	RIG B-50	DATE 78/02/06	km 142	B.P. No. 63	HOLE No. 3

CHAINAGE	OFFSET

DEPTH (FEET) | UNIFIED SOIL SYMBOL | SOIL DESCRIPTION | PENETRATION RESISTANCE | ICE DESCRIPTION | DEPTH (METRES)

SILT - CLAYEY
ML
1.2m
CLAY - SILTY
LOW - MED. PLASTIC
CL +PL
CI
6.1m
BOTTOM OF HOLE - 6.1m

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS				RELATIVE MOISTURE CONTENT	REMARKS
CLAY %	SILT %	SAND %	GRAVEL %		
				WET	
98		2	0	MOIST	
				DAMP-MOIST	
100		0	0	D-M	
				MOIST	
				MOIST	
100		0	0	MOIST	

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

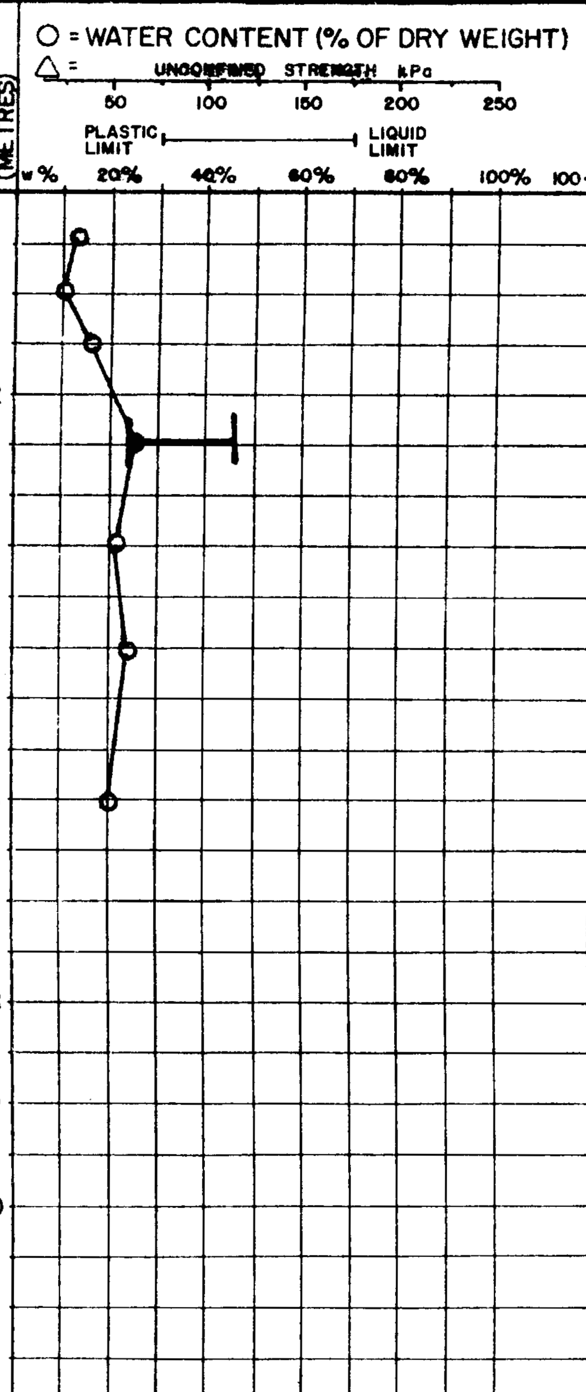
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/07	km 143	B.P. No. 64	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT -								DAMP-MOIST	
	ML	- CLAYEY			1		97	3	0	D-M	
										D-M	
7		2.1m									
	CL	CLAY - SILTY MED. PLASTIC +PL					100	0	0	DAMP	
										MOIST	
	CL	- LOW PLASTIC					100	0	0	MOIST-WET	
										MOIST	
20		6.1m			6						
		BOTTOM OF HOLE - 6.1m									

CHAINAGE | OFFSET



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy

TECH. PRONYCH	RIG B-50	DATE 78/02/07	km 143	B.P. No. 64	HOLE No. 2

CHAINAGE	OFFSET

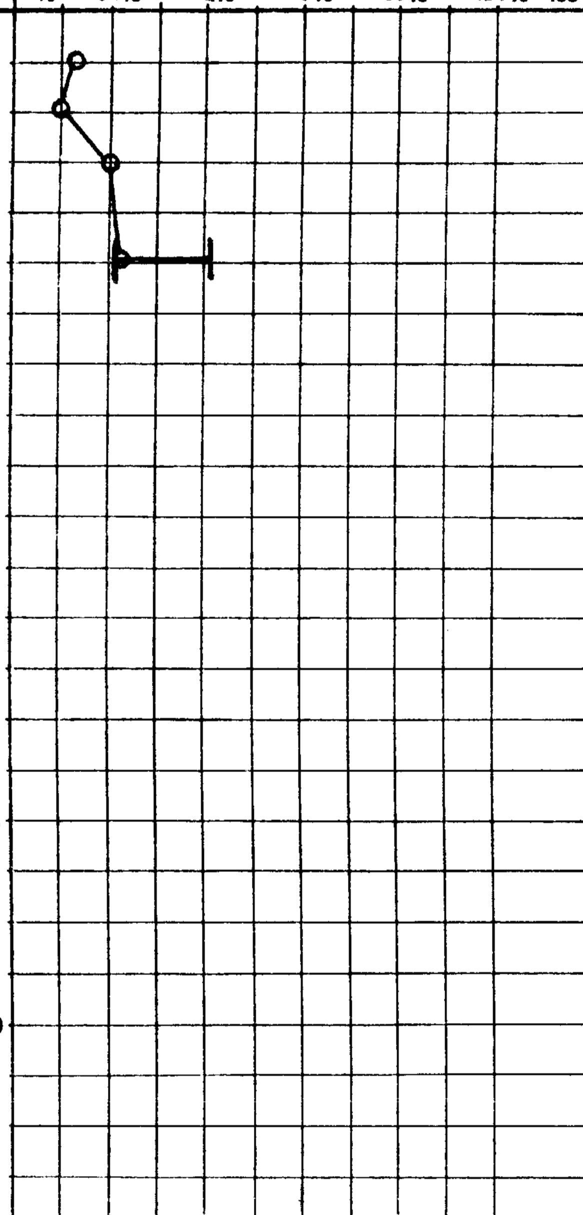
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–6	ML	SILT -			0–1.8					DAMP	
					1	-	99	1	0	DAMP	
		1.8m								DAMP	
6–11	CL CI	CLAY - SILTY LOW - MED PLASTIC +PL			1.8–3.4	-	100	0	0	DAMP	
		3.4m									
		BOTTOM OF HOLE. 3.4m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT |———| LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



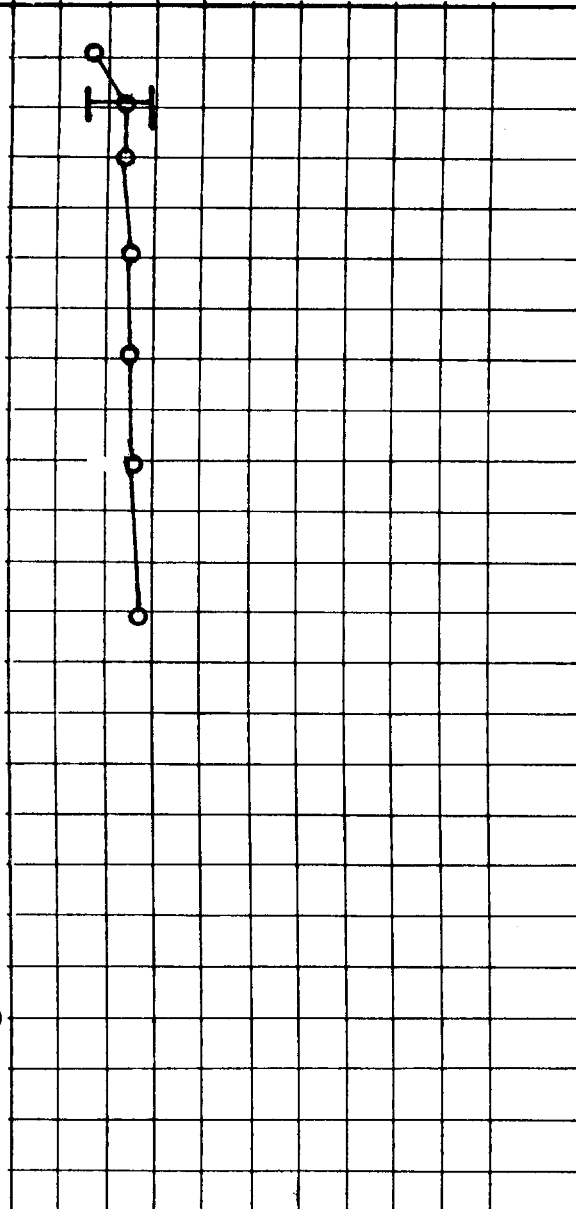
PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD Hwy.

TECH. PRONYCH	RIG B-50	DATE 78/02/07	km 144	B.P. No. 65	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAY SILTY - SILT - CLAYEY				94-		6	0	MOIST	
4					1					MOIST-WET	
6		1.5 m; CLAY - SILTY				98-		2	0	MOIST	
8		LOW PLASTIC			2					MOIST	
10	CL	+ P_L			3						
12										MOIST-WET	
14					4						
16		GREY - WET				98-		2	0	MOIST	
18					5						
20		6.1			6					MOIST-WET	
22		BOTTOM OF HOLE. 6.1									
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD Hwy.

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 146	B.P. No. 67	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–2	ML	SILT .6m		
2–20	CL	CLAY - SILTY - LOW PLASTIC + PL WET 6.1m		
22		BOTTOM OF HOLE - 6.1m		

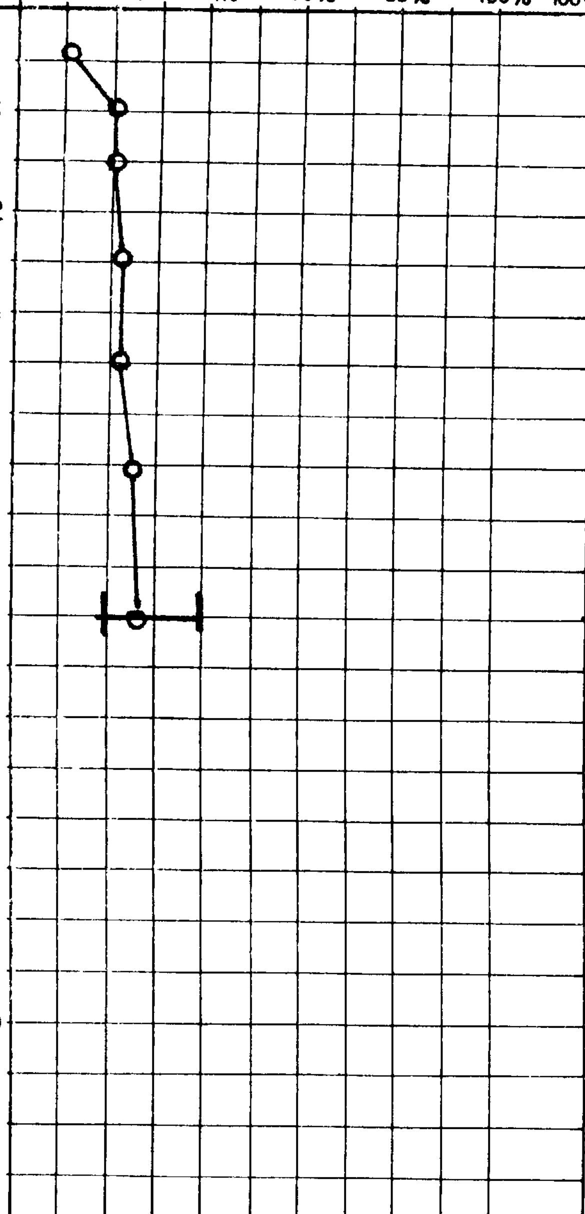
DEPTH (METRES)

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├───┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
	93	7	0	DAMP
				DAMP
	99	1	0	DAMP
				MOIST
	99	1	0	MOIST
				MOIST-WET
	99	1	0	MOIST-WET

CHAINAGE	OFFSET

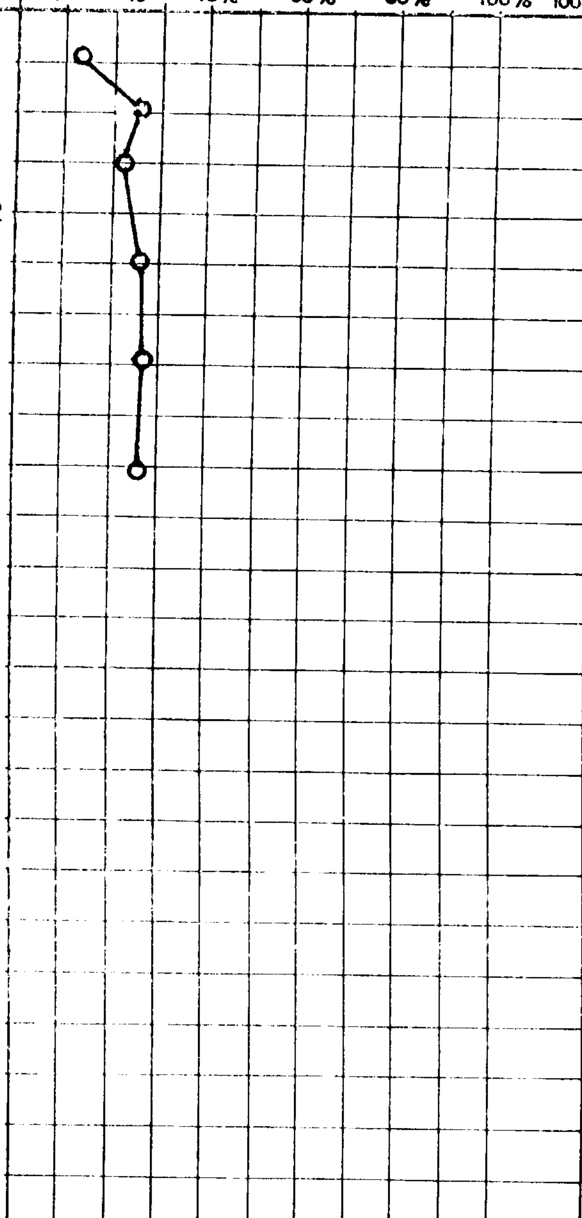
REMARKS

PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

TECH. PRONYCH | RIG B-50 | DATE 78/02/07 | km 145 | B.P. No. 66 | HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–3	ML	SILT - CLAYEY		
		.9m		
3–15	CL	CLAY - SILTY - LOW PLASTIC + P_L		
		4.6m		
		BOTTOM OF HOLE - 4.6 m		

DEPTH (METRES) | ○ = WATER CONTENT (% OF DRY WEIGHT) | △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250) | PLASTIC LIMIT — LIQUID LIMIT | w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				DAMP
99		1	0	DAMP
				DAMP
100		0	0	MOIST
				WET
				MOIST

CHAINAGE	OFFSET

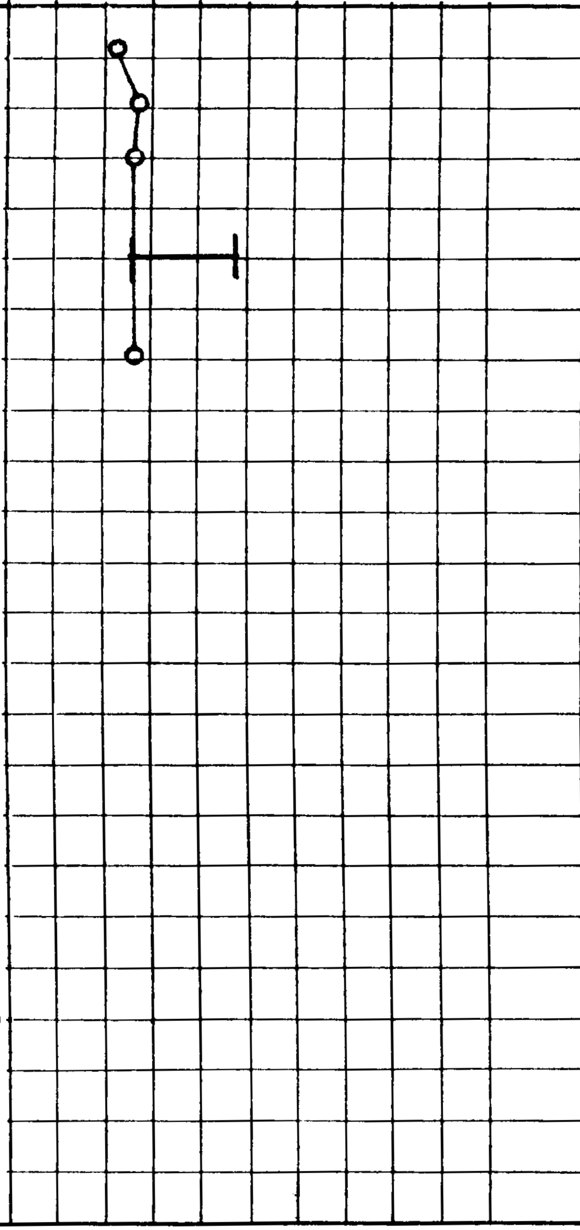
REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD Hwy

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYSCH	B-50	78/02/07	144	65	3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
	NL	SILT - CLAYEY .6 m								WET			
2–10	CL	CLAY - SILTY -LOW PLASTIC +PL		FROZEN ICE LENSES	1	-100-		0	0	MOIST-WET			
										MOIST-WET			
					2	-100-		0	0	WET			
		3.4m			3					WET			
12		BOTTOM OF HOLE. 3.4m											

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT — LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38
DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

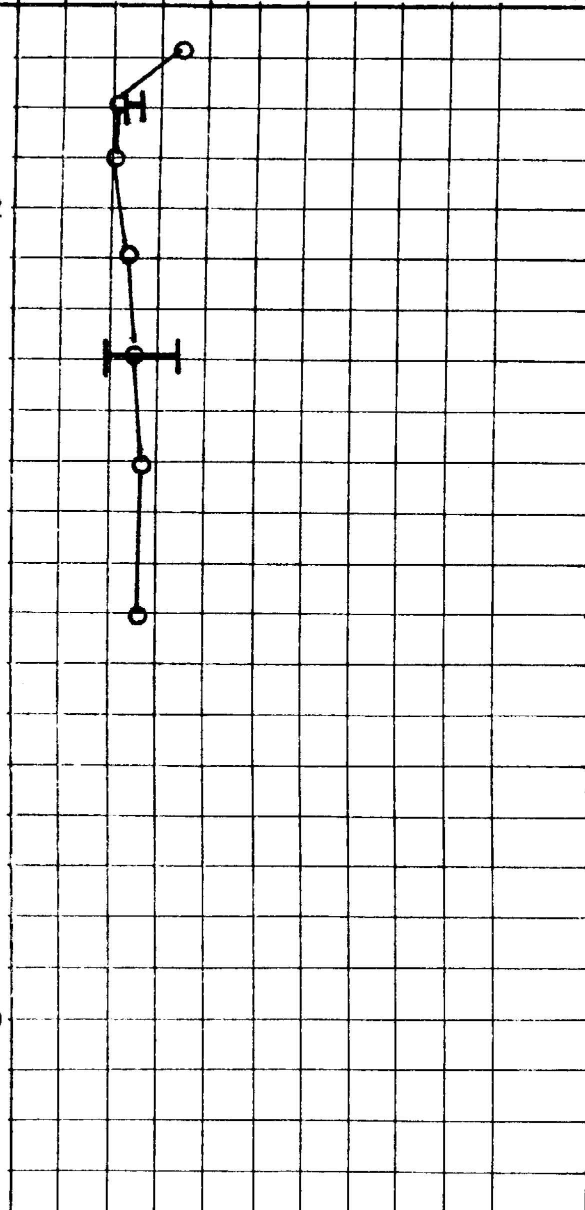
TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 146	B.P. No. 67	HOLE No. 3

CHAINAGE: | OFFSET:

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

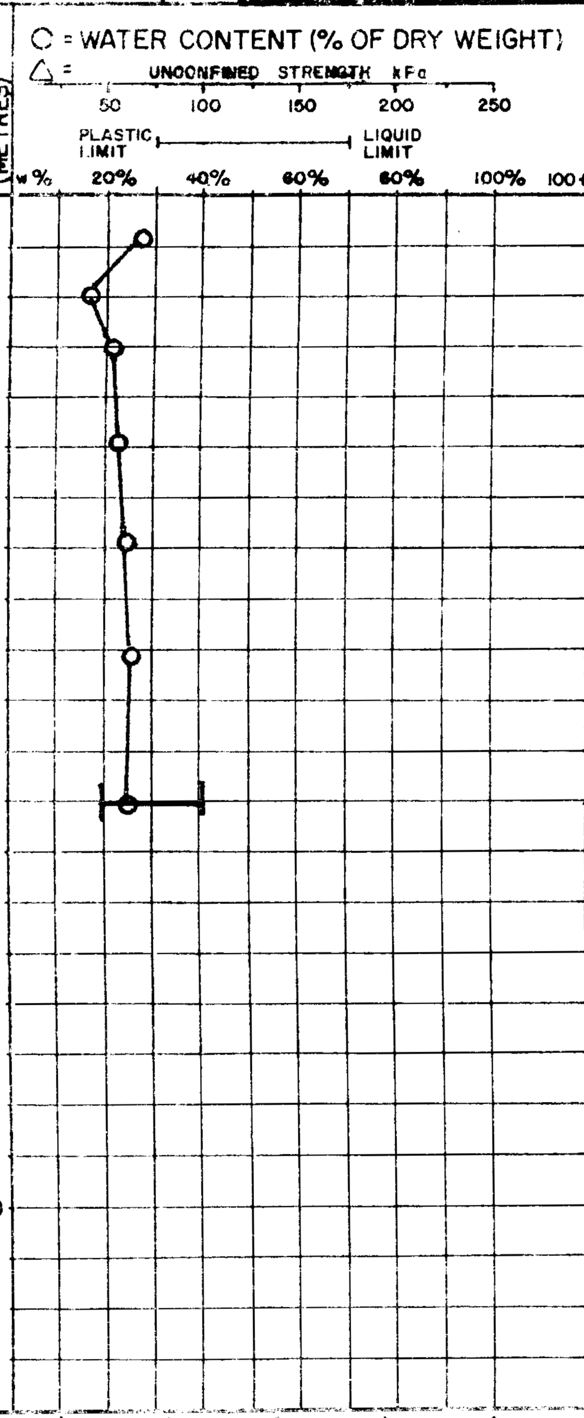


DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–6	ML	SILT -			0–1.8					SAT.	
4					1	-	99.	1	0	MOIST	
6		1.8 m								WET	
6–20	CL	CLAY - SILTY - LOW PLASTIC + PL			1.8–6.1					WET	
12		WET LENSE @ 3.1 m			3.5	-	99.	1	0	WET	
15		- WET			4.5					WET	
20		6.1 m			6	-	99.	1	0	WET	
20		BOTTOM OF HOLE - 6.1 m									

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 146	B.P. No. 67	HOLE No. 4

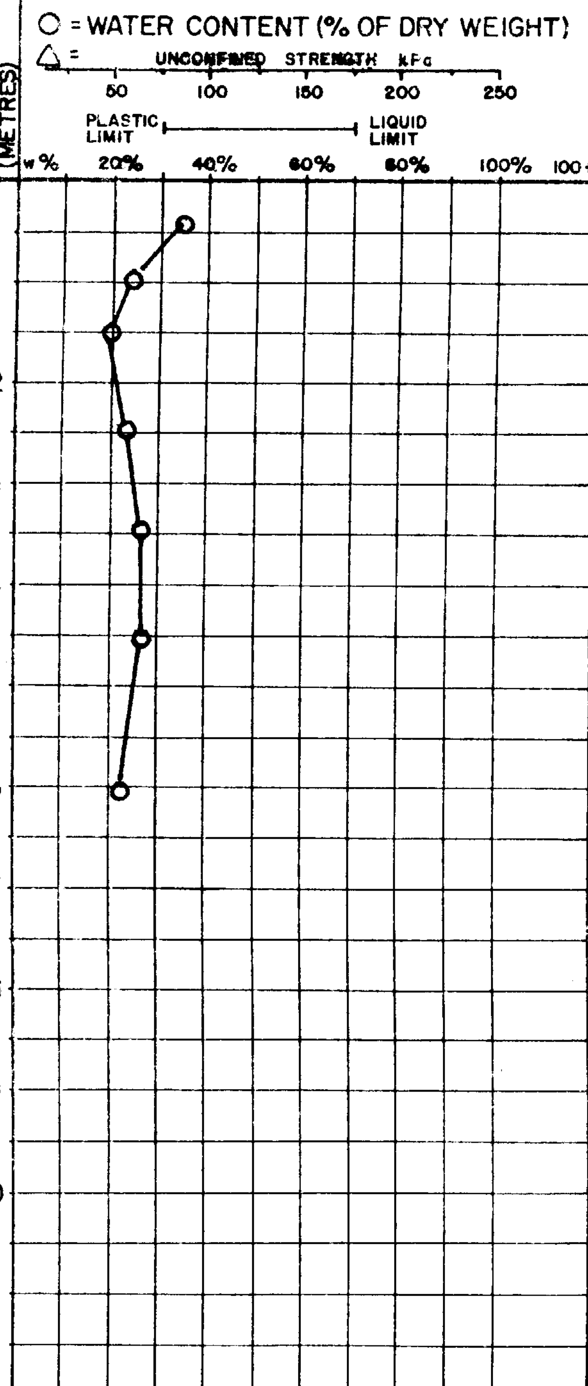
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SILT -								SAT.			
2	ML												
4		1.2m			1	-94-		6	0	MOIST			
		CLAY - SILTY				-98-		2	0	MOIST			
6		LOW - MED. PLASTIC			2								
8	CL					-99-		1	0	MOIST			
10	|	+ P_L			3								
12	CI									WET			
14					4								
										MOIST			
16					5								
18													
20		6.1m			6	-99-		1	0	MOIST			
22		BOTTOM OF HOLE - 6.1m											
24					7								
26					8								
28													
30					9								
32					10								
34													
36					11								
38													



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy

TECH. PRONYCH	RIG B-50	DATE 78/02/16	km 146	B.P. No. 68-	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SILT-								FREE WATER			
4		-SANDY			1		97-	3	0	SAT.			
6	ML						75-	25	0	WET			
8		- CLAYEY			2		94-	6	0	WET			
10		3.1m			3								
		CLAY - SILTY											
12		- LOW PLASTIC + P_L								WET			
15	CL				4		99-	1	0	WET			
20		6.1 m			6					MOIST			
22		BOTTOM OF HOLE 6.1m											



Depth (feet): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

Depth (metres): 1 2 3 4 5 6 7 8 9 10 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

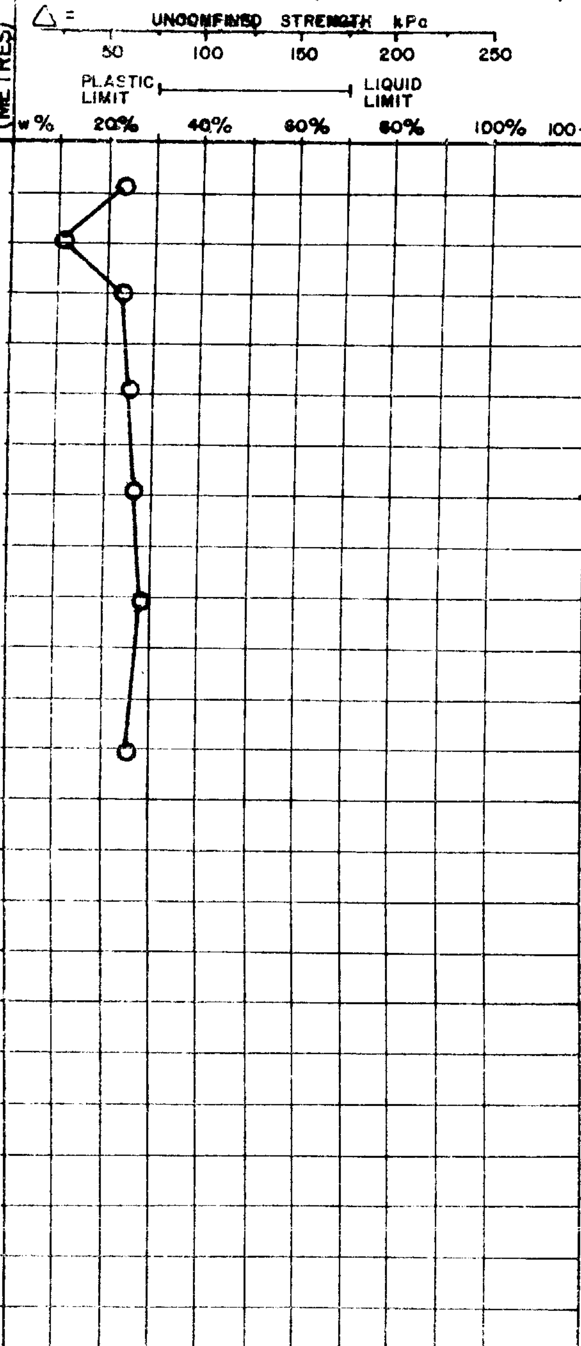
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/0	146	68	2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
2		SILT								WET
4	ML	- SANDY			1		80	20	0	MOIST
6		SILT -					97	3	0	WET
		2.1m			2					
8		CLAY - SILTY								MOIST
10		LOW-MED. PLASTIC			3					
12	CL - CI						98	2	0	WET
14					4					
16		GREY.								MOIST
18					5					
20		6.1m			6		98	2	0	WET
22		BOTTOM OF HOLE - 6.1 m								
24					7					
26					8					
28										
30					9					
32					10					
34										
36					11					
38										

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



GRAIN-SIZE ANALYSIS

CHAINAGE	OFFSET

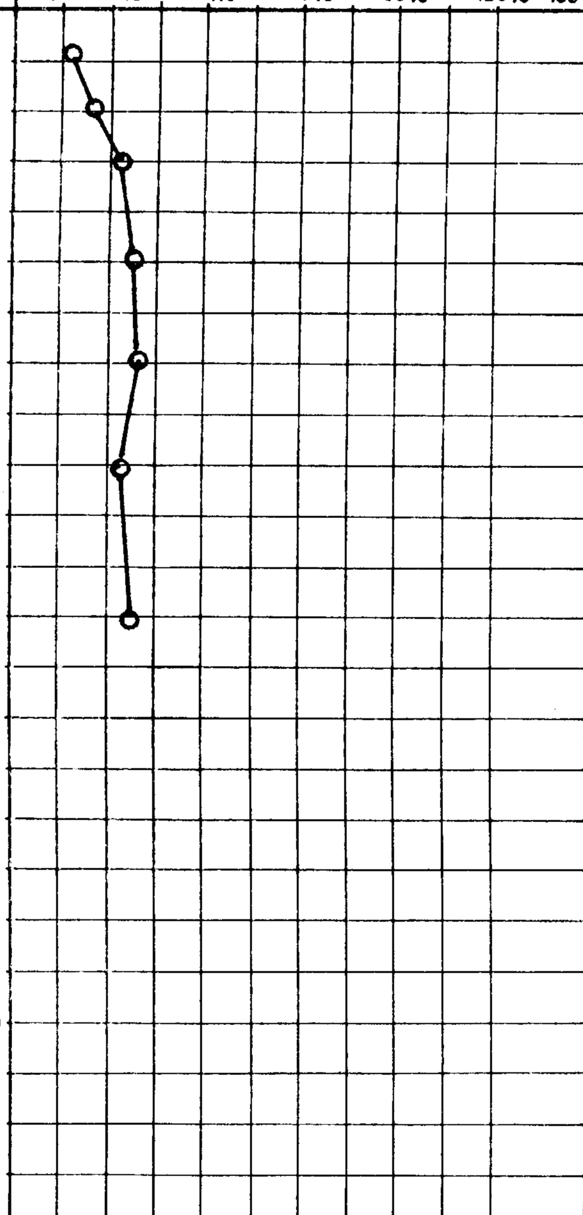
REMARKS

PUBLIC WORKS CANADA — **DRILL HOLE REPORT** — LIARD Hwy.

TECH. PRONYSCH	RIG B-50	DATE 78/02/16	km 146	B.P. No. 68	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–6	ML	SILT - SANDY		
6		1.8m		
6–20	CL - CI	CLAY - SILTY - LOW - MED PLASTIC +PL GREY.		
20		6.1m		
22		BOTTOM of HOLE - 6.1 m		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
~0.4					MOIST
1	-	80	20	0	MOIST
~1.5					WET
~2.5	-	99	1	0	MOIST
~3.5					WET
~4.5	-	99	1	0	MOIST
6					MOIST

CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH. PRONYCH | RIG B-50 | DATE 78/02/16 | km 146 | B.P. No. 68 | HOLE No. 4

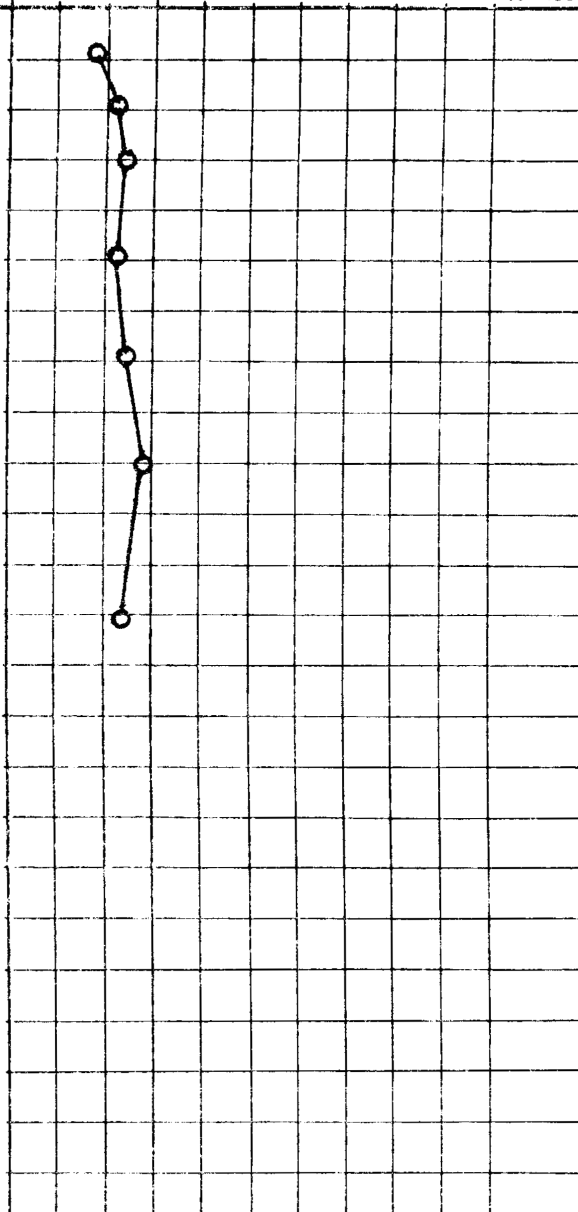
CHAINAGE | OFFSET

Soil Description (columns: DEPTH (FEET), UNIFIED SOIL SYMBOL, SOIL DESCRIPTION, PENETRATION RESISTANCE, ICE DESCRIPTION)

Unified Soil Symbol	Soil Description
ML	SILT -
	1.8m
CI	CLAY - SILTY - MED. PLASTIC + P_L
	GREY 6.1m
	BOTTOM OF HOLE - 6.1m

DEPTH (METRES)

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT — LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



Depth (m)	Clay %	Silt %	Sand %	Gravel %	Relative Moisture Content	Remarks
~0.4					MOIST	
~1.0	94		6	0	SAT-WET	
~1.5					WET	
~2.5	98		2	0	MOIST	
~3.5					MOIST	
~4.5	99		1	0	MOIST-WET	
~6.0					MOIST	

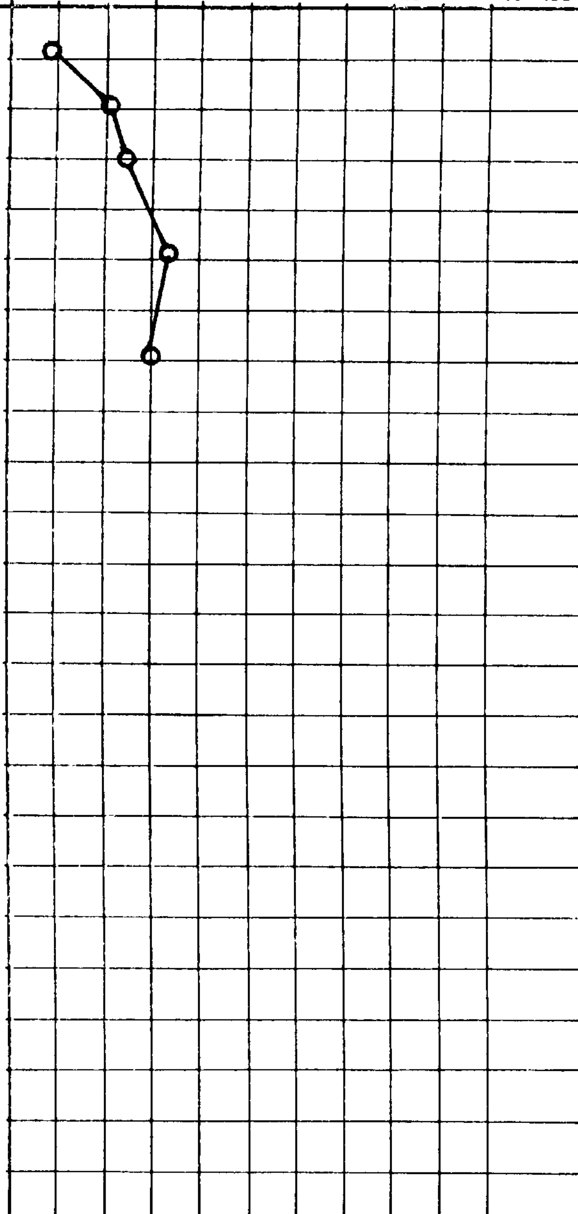
PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 148	B.P. No. 69	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - SANDY		FROZEN						MOIST	
4	ML	SILT -		ICE	1	-	74	26	0	SAT.	
6		1.8 m		LENSES		-	91	9	0	SAT.	
8	CI	CLAY - SILTY GREY - MED PLASTIC			2	-	99	1	0	SAT.	
10		3.4 m			3					SAT-WET	
12		BOTTOM OF HOLE - 3.4 m									

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+

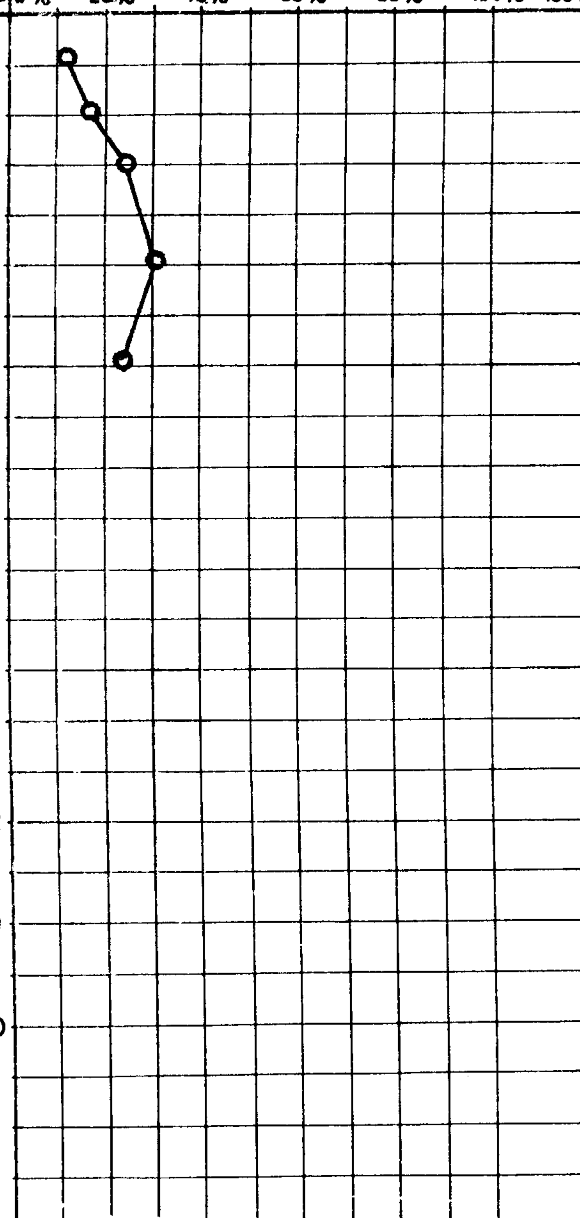


PUBLIC WORKS CANADA | DRILL HOLE REPORT | L[illegible] HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/16	km 148	B.P. No. 69	HOLE No. 2

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



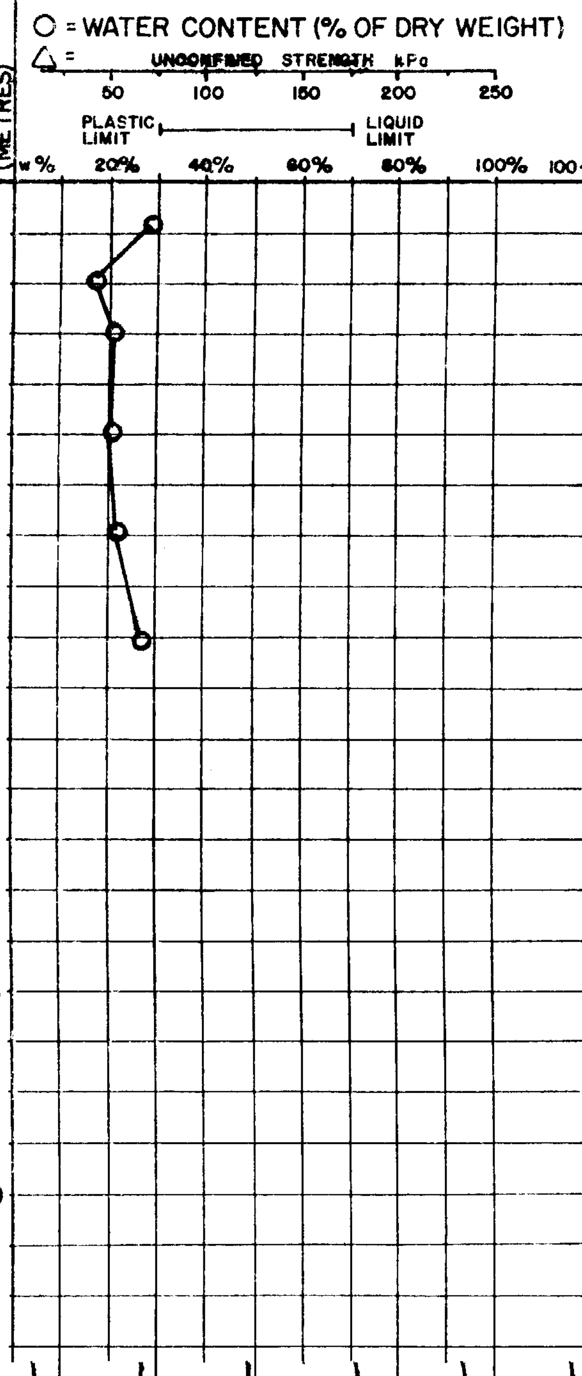
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SAND-SILT MIXTURE								MOIST	
2	SM			FROZEN	1	- 51 -		49	0	MOIST	
4		1.2 m CLAY-SILTY		ICE						WET	
6		- LOW PLASTIC		LENSES	2						
8	CL	+P.				99 -		1	0	SAT.	
10		GREY-			3					SAT.	
		3.4 m									
12											
14		BOTTOM OF HOLE - 3.4 m			4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-70	DATE 78/02/17	km 148	B.P. No. 70	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT-								SAT.	
					1	-98-		2	0	MOIST	
4		1.2 m									
	CL - CI	CLAY - SILTY - LOW-MED. PLASTIC + P_L								DAMP	
						-98-		2	0	DAMP	
						-100-		0	0	MOIST	
										MOIST-WET	
		4.6 m									
		BOTTOM OF HOLE. 4.6 m									

CHAINAGE | OFFSET

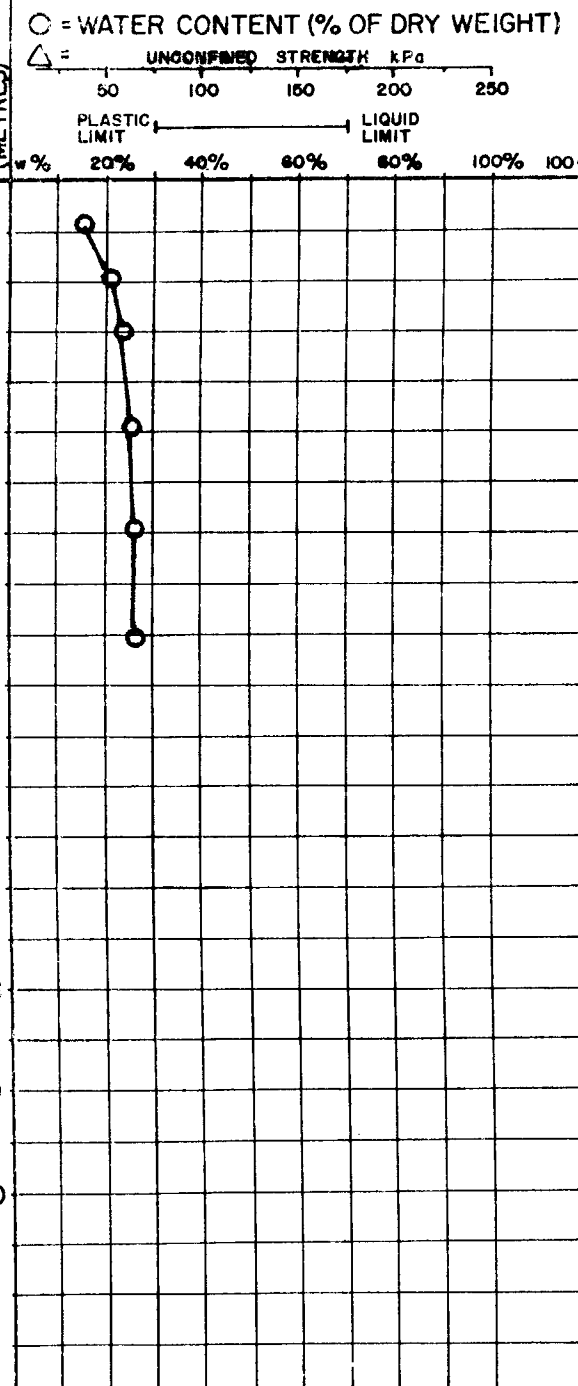


PUBLIC WORKS CANADA | DRILL HOLE REPORT | RD Hwy

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 148	B.P. No. 70	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT - SANDY				-90-		10	0	MOIST	
2		.6m									
		CLAY - SILTY			1					MOIST	
4		- LOW PLASTIC				-100-		0	0	MOIST	
6		+PL			2					WET	
8	CL										
10		WET			3	-100-		0	0	WET	
12											
14		4.6m			4					WET	
16		BOTTOM OF HOLE. 4.6m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

CHAINAGE | OFFSET



PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 149	B.P. No. 71	HOLE No. 1

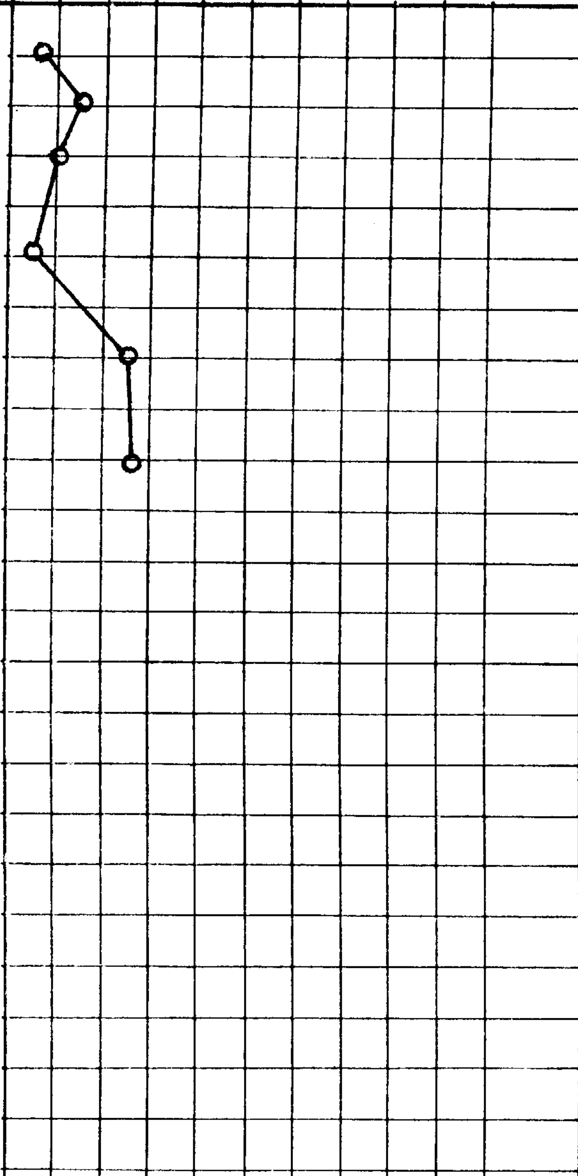
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–9	SM	SAND - SILTY			
		2.7m			2.7
9–15	CL	CLAY - SILTY - LOW PLASTIC + P_L WET			
		4.6m			4.6
		BOTTOM OF HOLE - 4.6m			

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



Depth (m, approx.)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0.5					MOIST
1	-	53	47	0	MOIST
1.5					MOIST
2.5	-	23	77	0	MOIST
3.5	-	97	3	0	WET
4.5					SAT.

CHAINAGE	OFFSET

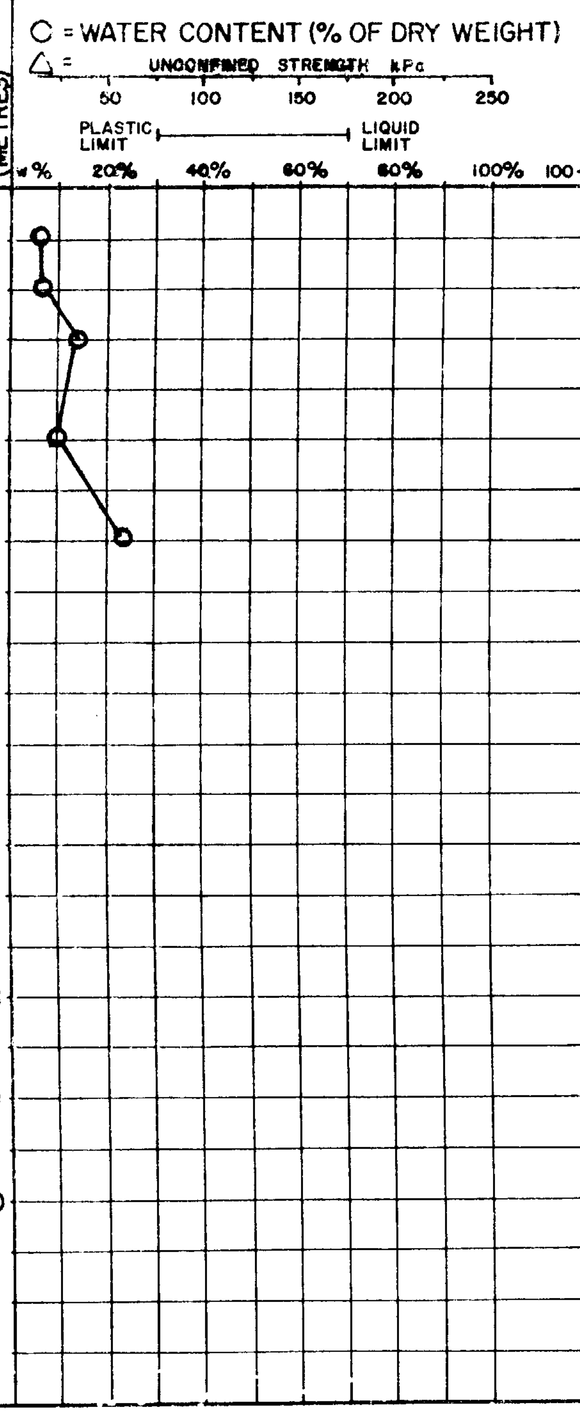
REMARKS

PUBLIC WORKS CANADA | DRILL HOLE REPORT

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 149	B.P. No. 71	HOLE No. 2

CHAINAGE	OFFSET

DEPTH (METRES)	SOIL DESCRIPTION	UNIFIED SOIL SYMBOL	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0.5	SAND - SILTY			FROZEN					MOIST	
1.0					-	29	71	0	MOIST	
1.5									MOIST	
2.5					-	32	68	0	MOIST	
3.4	SATURATED 3.4m								SAT.	
	BOTTOM OF HOLE - 3.4m									



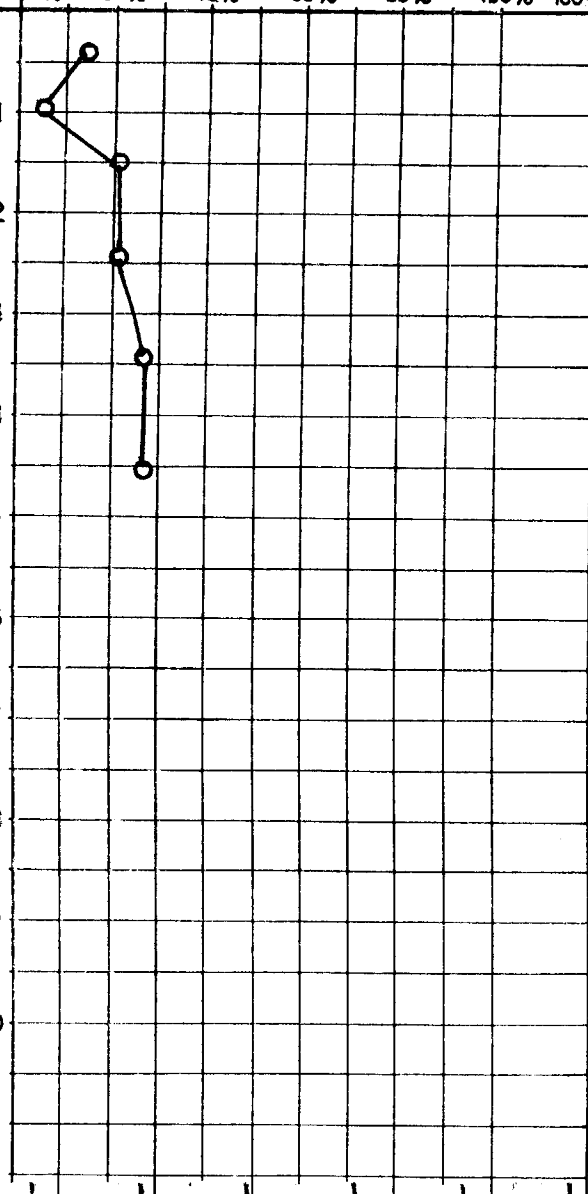
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/17	149	71	3

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT — LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SAND - SILTY								MOIST	
4		1.2 m			1		30	70	0	MOIST	
6		CLAY - SILTY - LOW PLASTIC								MOIST	
8	CL	+PL			2		98	2	0	WET	
10					3						
12		FREE WATER AFTER 3.7 m								WET	
14	ML	SILT - SANDY 4.6 m			4		84	16	0	SAT.	
16		BOTTOM OF HOLE. 4.6 m			5						
18											
20					6						
22											
24					7						
26											
28					8						
30					9						
32											
34					10						
36											
38					11						

PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYSCH	B-50	78/02/17	149	71	4

CHAINAGE | OFFSET

REMARKS

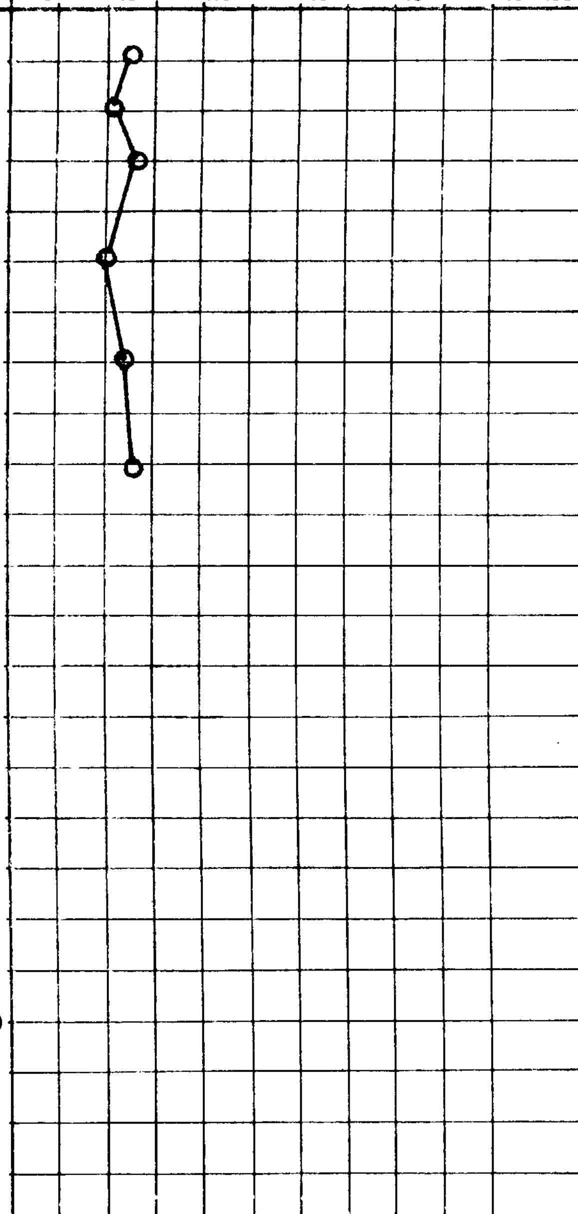
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
		SILT - SANDY			
2, 4	ML			FROZEN	1
6		1.8m		ICE	
		SAND - SILTY			2
8, 10	SM			LENSES	3
		GREY -			
12		3.8 m			4
		- LOW PLASTIC			
14	CL	CLAY - SILTY 4.6m			
16		BOTTOM OF HOLE. 4.6 m			5

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				SAT.
-	71	29	0	SAT.
				SAT.
-	40	60	0	SAT.
				SAT.
-	98	2	0	WET

DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/17	149	71	5

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–11	SM	SAND - SILTY SAT. AFTER 1.8 m			0–3.4
		3.4 m			
		BOTTOM OF HOLE. 3.4 m			

Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

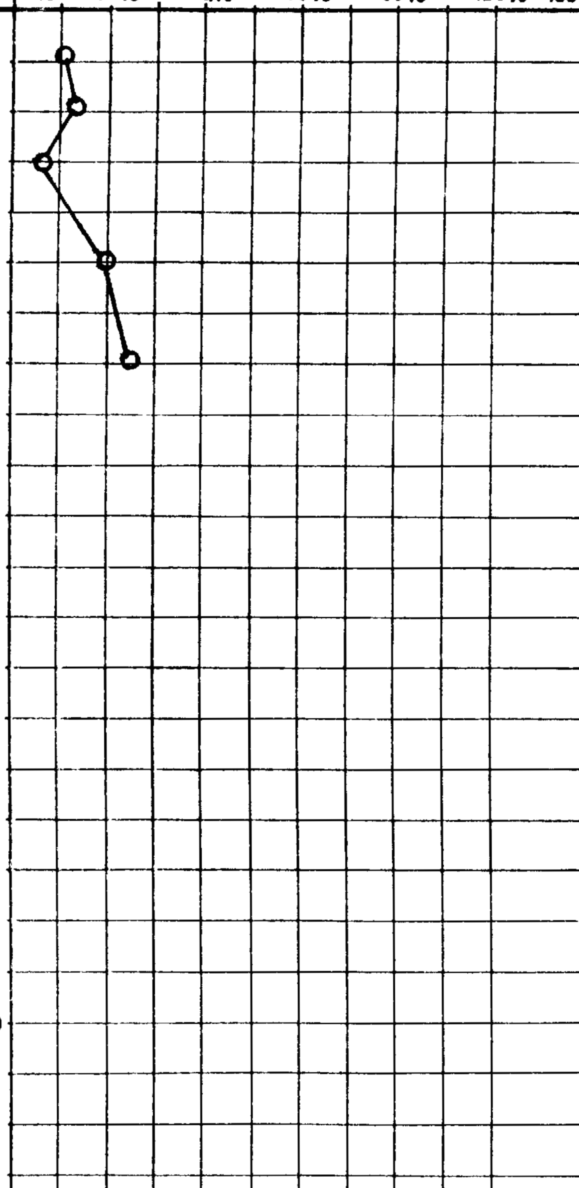
Depth (metres) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT |—| LIQUID LIMIT

w %: 20%, 40%, 60%, 80%, 100%, 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				MOIST
-	60	40	0	MOIST
				MOIST
-	38	62	0	WET-SAT.
				SAT.

CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 151	B.P. No. 72	HOLE No. 1

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SAND - SILTY			-27-		73	0	MOIST	
2									MOIST	
4	SM	WET-SAT. AFTER 1.8m							SAT.	
6		2.4m								
8		CLAY - SILTY			-97-		3	0	WET-SAT.	
10	CL	LOW PLASTIC +Pu								
		3.4m							W-SAT.	
12										
14		BOTTOM OF HOLE - 3.4m								

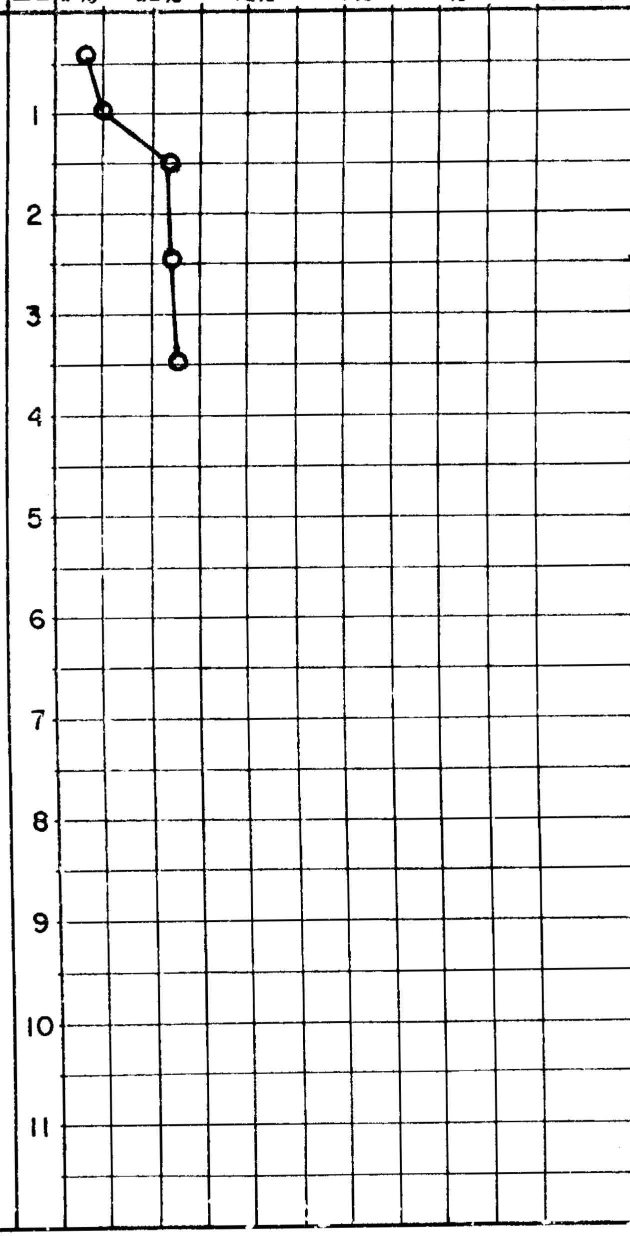
DEPTH (METRES)

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



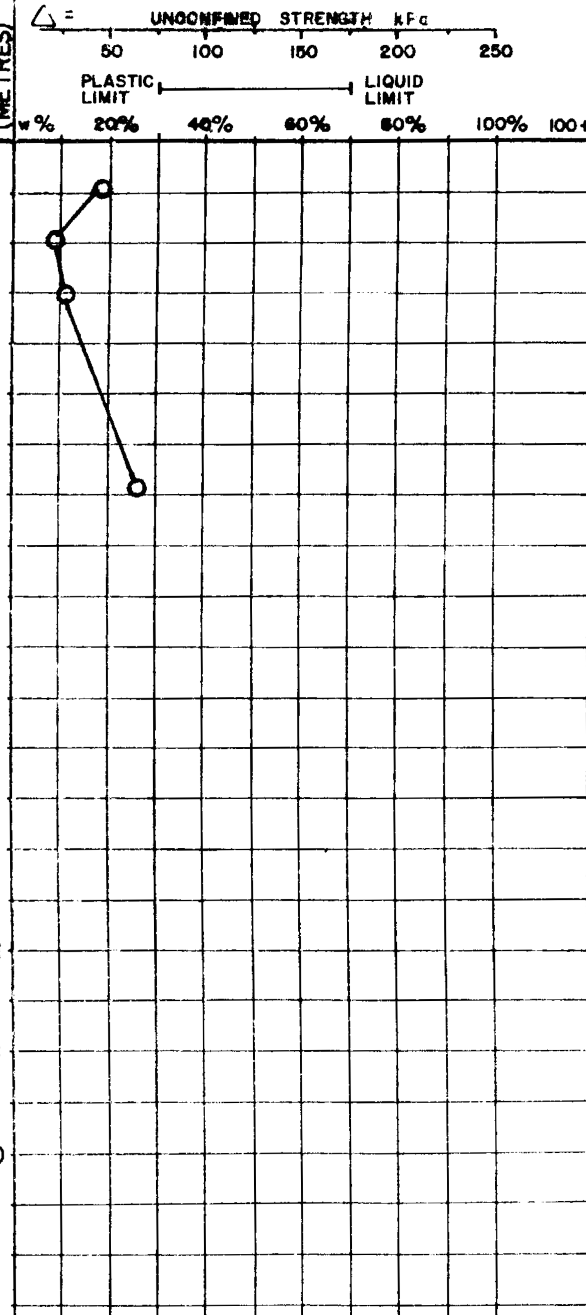
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B50	78/02/17	151	72	2

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION		PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	ML	SILT	.6m			-79-		21	0	MOIST	
2–5.5	SM	SAND - SILTY	1.7 m			-36-		66	0	MOIST	
										MOIST	
5.5–11	ML / CL	CLAY - SILTY SILT CLAYEY	3.4 m			-97-		3	0	H.I.B.	
						-98-		2	0	SAT.	
		BOTTOM OF HOLE - 3.4 m									

PUBLIC WORKS CANADA | DRILL HOLE REPORT | Liard Hwy

TECH. Pronych	RIG B-50	DATE 78/02/17	km 151	B.P. No. 72	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
	ML SM	Silt - Sand Mixture							Sat.
2–4					-	51	-	49 0	Moist
									Sat.
4–6	ML	Silt - Sandy							
8		2.4m							
8–10	CL	Clay - Silty -Low Plastic +P_L			-	97	-	3 0	Wet
10–11		3.4m							Wet
12		Bottom of Hole - 3.4m							

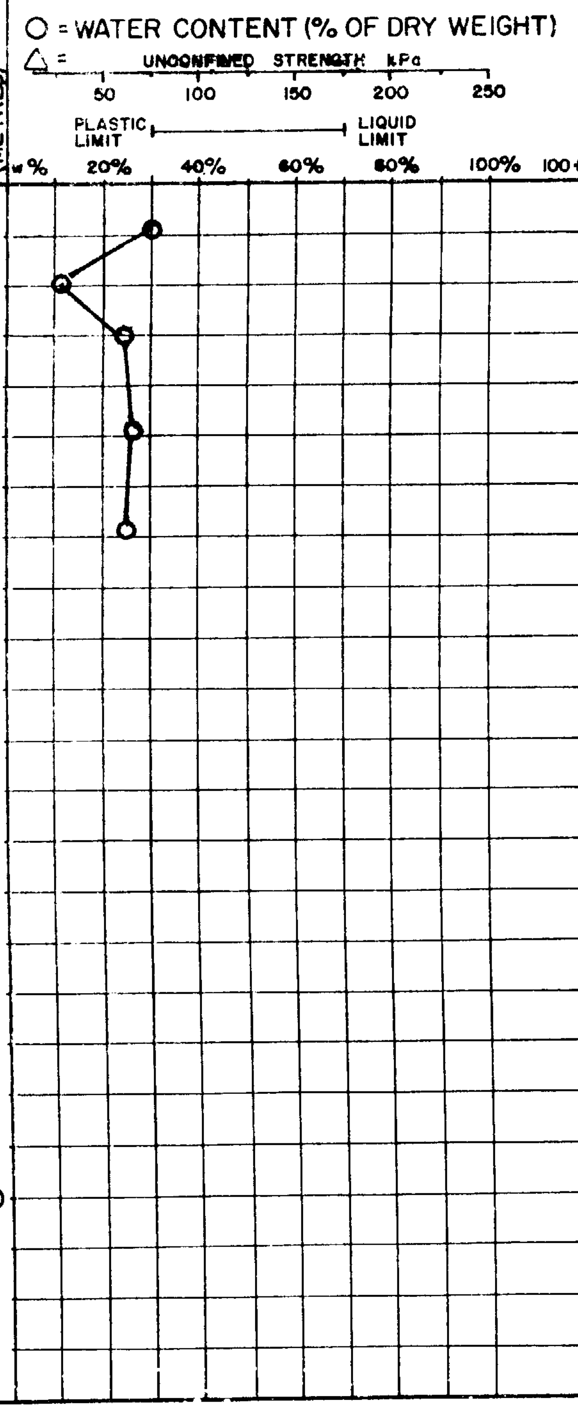
DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

GRAIN-SIZE ANALYSIS

CHAINAGE	OFFSET

REMARKS



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

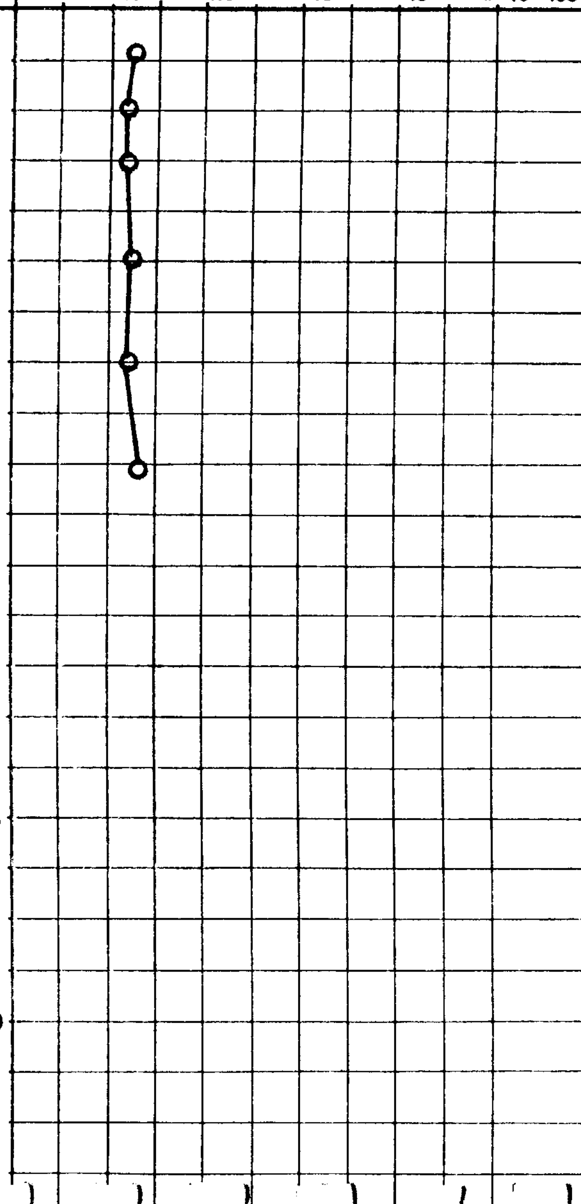
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/17	152	73	1

CHAINAGE | OFFSET

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–2	ML	SILT - CLAYEY .6m		
2–12	CL	CLAY - SILTY - LOW-MED. PLASTIC + P_L 3.7m		
12–15	ML	SILT - CLAYEY SATURATED 4.6m		
		BOTTOM OF HOLE - 4.6m		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
~0.4	-	95	5	0	DAMP
~1.0					MOIST
~1.5	-	99	1	0	MOIST
~2.5					MOIST
~3.5	-	99	1	0	MOIST
~4.5	-	98	2	0	SAT.

PUBLIC WORKS CANADA | DRILL HOLE REPORT | Liard Hwy.

TECH. Pronych | RIG B-50 | DATE 78/02/17 | km 152 | B.P. No. 73 | HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
		SILT								WET
2	ML				1	-	95	5	0	WET
4		- CLAYEY 1.8m				-	99	1	0	WET
6		CLAY - SILTY			2					
8		- LOW PLASTIC								WET
10	CL	+ P_L			3					
12						-	100	0	0	WET
14		GRAY - SATURATED 4.6m			4					WET
16		BOTTOM OF HOLE - 4.6m			5					
18										
20					6					
22										
24					7					
26					8					
28										
30					9					
32										
34					10					
36					11					
38										

GRAIN-SIZE ANALYSIS

CHAINAGE | OFFSET

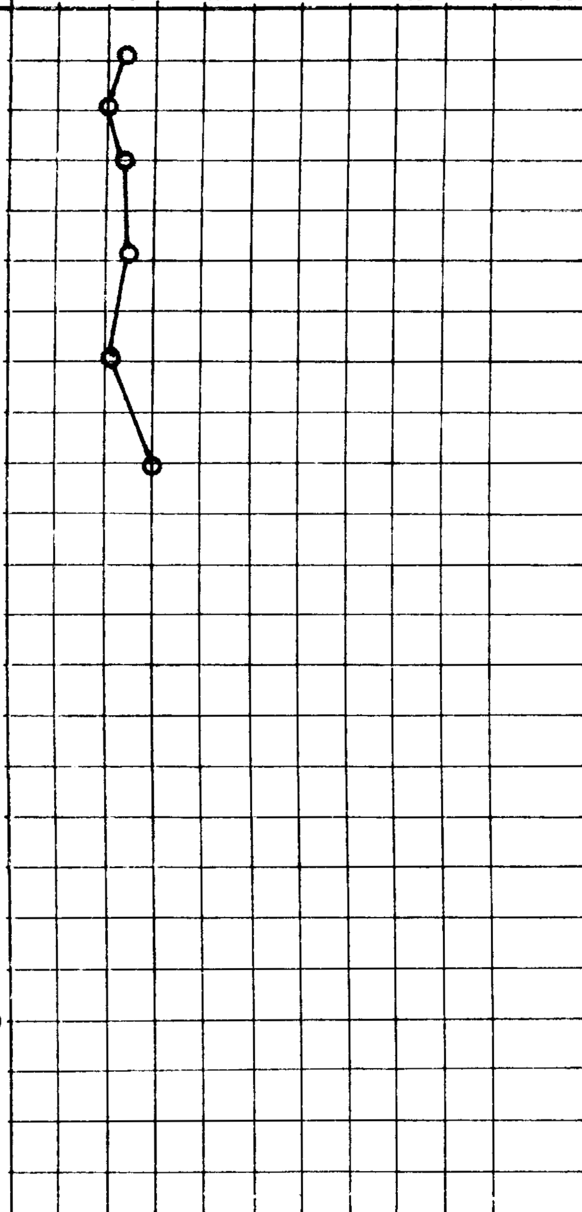
REMARKS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 152	B.P. No. 73	HOLE No. 3

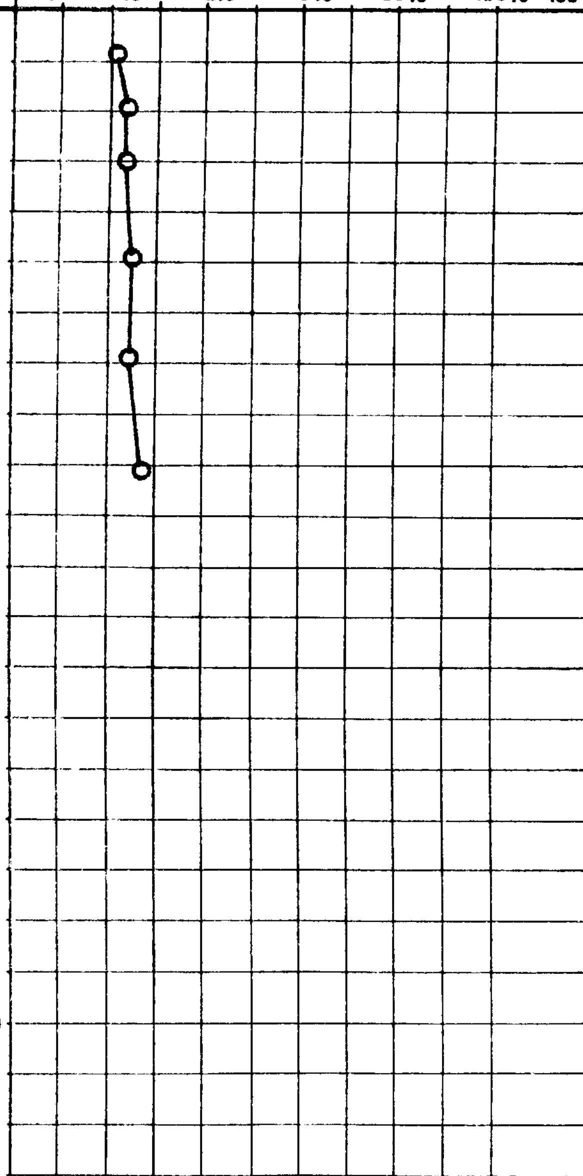
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–6	ML	SILT -							MOIST	
					-98-		2	0	WET	
		1.8 m							WET	H.I.B.
6–15	CL	CLAY - SILTY - LOW PLASTIC + P_L SATURATED AFTER 3.7 m GREY			-99-		1	0	WET	
									WET	
		4.6 m			-99-		1	0	WET-SAT.	
		BOTTOM OF HOLE. 4.6 m								

CHAINAGE | OFFSET

DEPTH (METRES)

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA | DRILL HOLE REPORT | Liard Hwy.

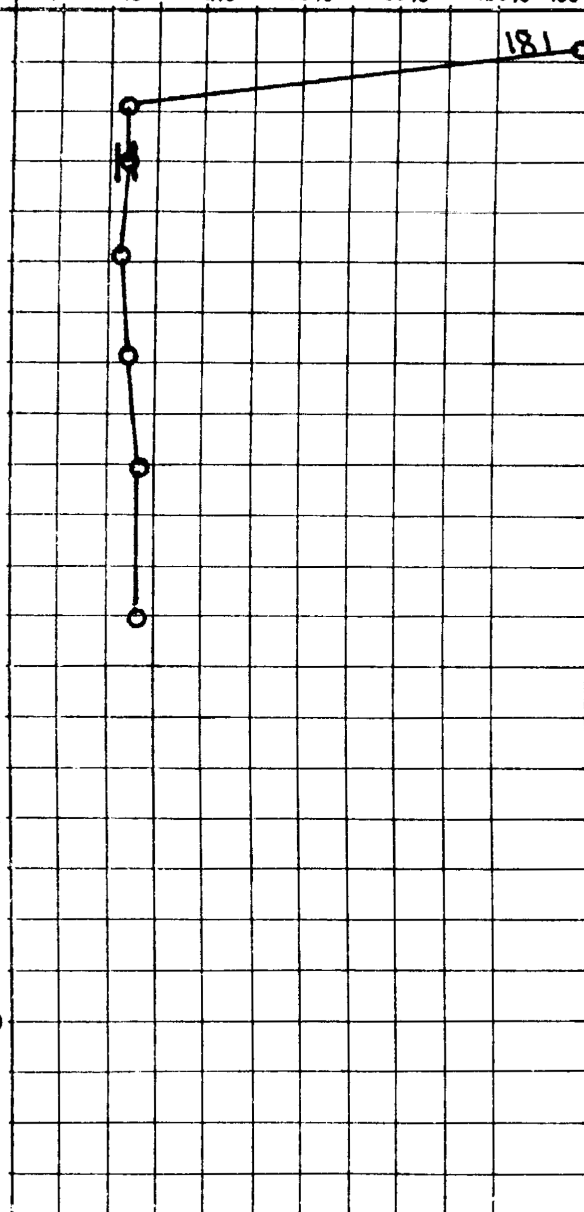
TECH. WEBBER	RIG B-50	DATE 78/02/17	km 153	B.P. No. 74	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–2	Pt	PEAT — .5m								FREE WATER
2–8	ML	SILT — 2.4m			1					MOIST
					1.5		99	1	0	WET
8–20	CL	CLAY - SILTY - LOW PLASTIC - P_L — 6.1m			2.5					MOIST-WET
					3.5		99	1	0	M-W
					4.5					M-W
					6		98	2	0	M-W
20		BOTTOM OF HOLE. 6.1m								

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT



CHAINAGE	OFFSET

REMARKS

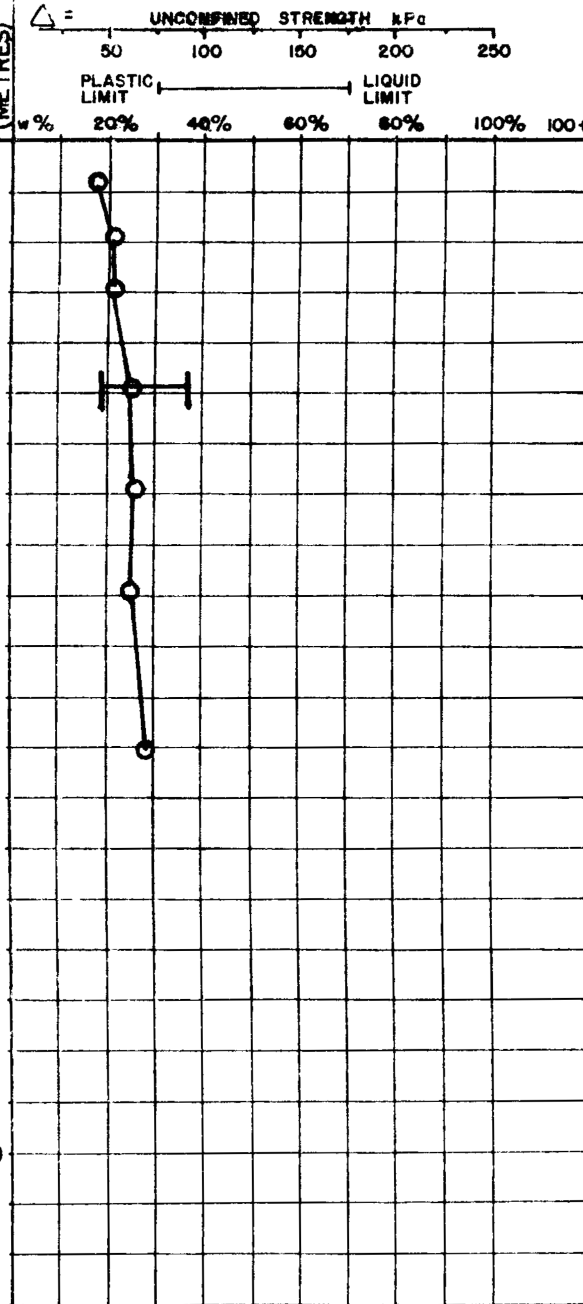
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 153	B.P. No. 74	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
	ML	SILT .6m								DAMP			
2		CLAY - SILTY - LOW PLASTIC + P_L											
4					1		99	1	0	MOIST			
6										MOIST			
8	CL				2		99	1	0	MOIST			
10					3								
12										MOIST			
14					4		99	1	0	WET			
16		GREY.			5								
18													
20		6.1m			6					WET			
22		BOTTOM OF HOLE. 6.1m											
24					7								
26					8								
28													
30					9								
32													
34					10								
36					11								
38													

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD Hwy

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 153	B.P. No. 74	HOLE No. 3

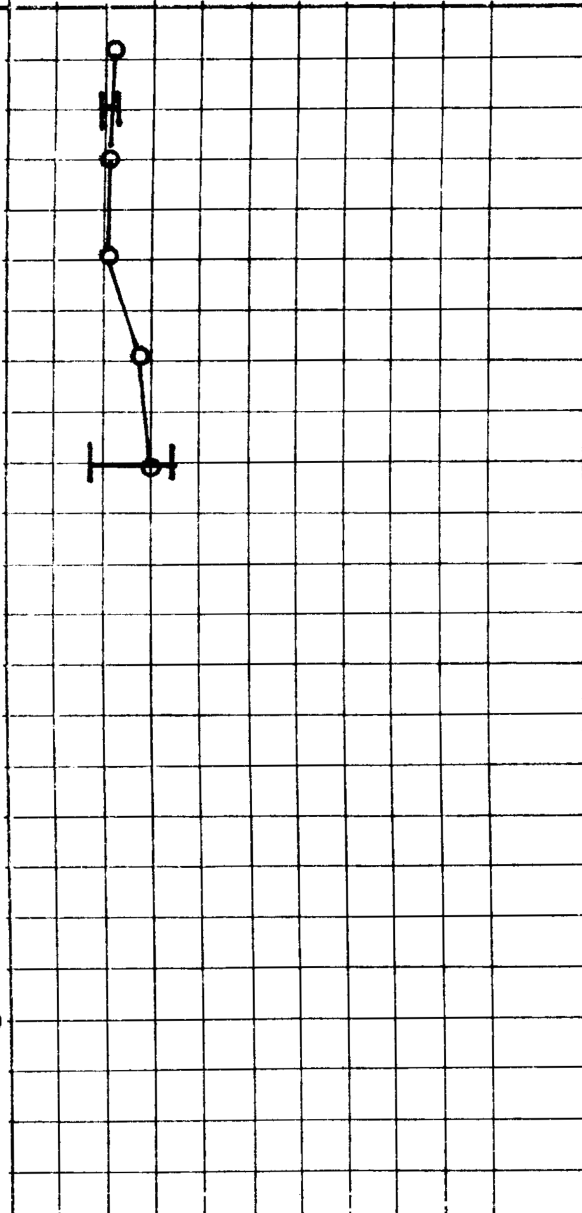
CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT |——| LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

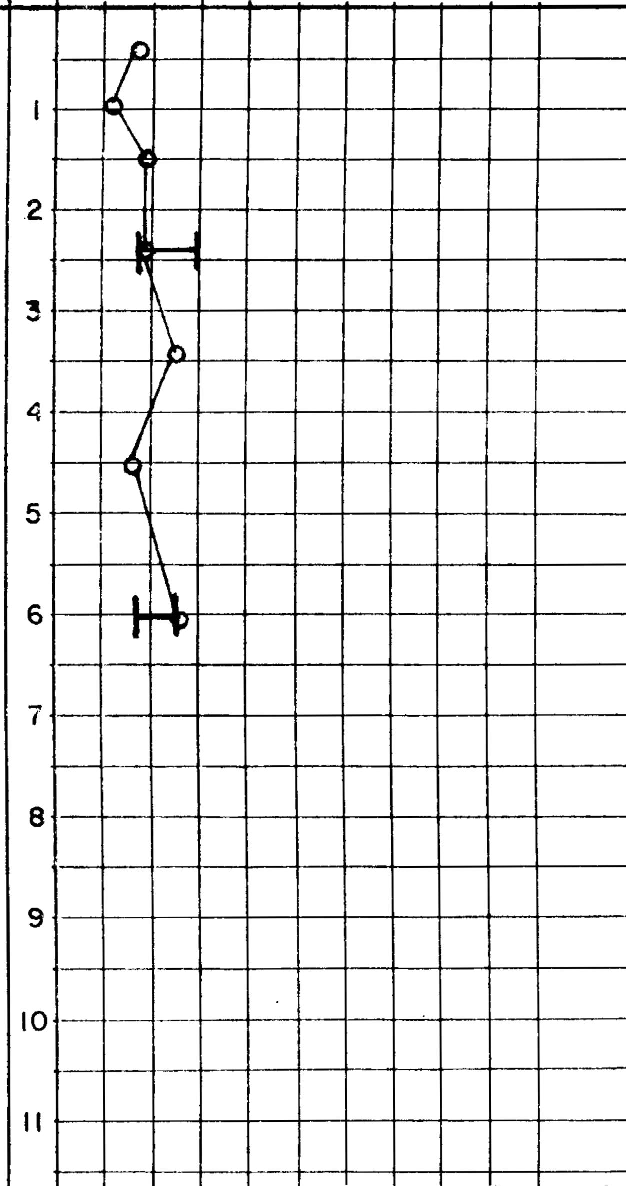


DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–6	ML	SILT - ... - CLAYEY (to 1.8m)			0–1.8	-	98	2	0	MOIST / HI B / WET	
6–15	CL	CLAY SILTY - LOW PLASTIC +PL; FREEWATER AFTER 4.0m (to 4.6m)			1.8–4.6	-	99	1	0	MOIST / MOIST	
						-	98	2	0	WET	
15		BOTTOM OF HOLE. 4.6m			4.6						

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY			
TECH. WEBBER	RIG B-50	DATE	km 154	B.P. No. 75	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–4	ML	SILT.		
4		1.2 m		
4–15	CL	CLAY - SILTY - LOW PLASTIC + P_L		
15		4.6 m		
15–20	ML	SILT - CLAYEY		
20		6.1 m		
		BOTTOM OF HOLE · 6.1 m		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
98		2	0	DAMP
				DAMP
99		1	0	MOIST
				MOIST
99		1	0	MOIST
				MOIST
97		3	0	SAT.

CHAINAGE	OFFSET

REMARKS

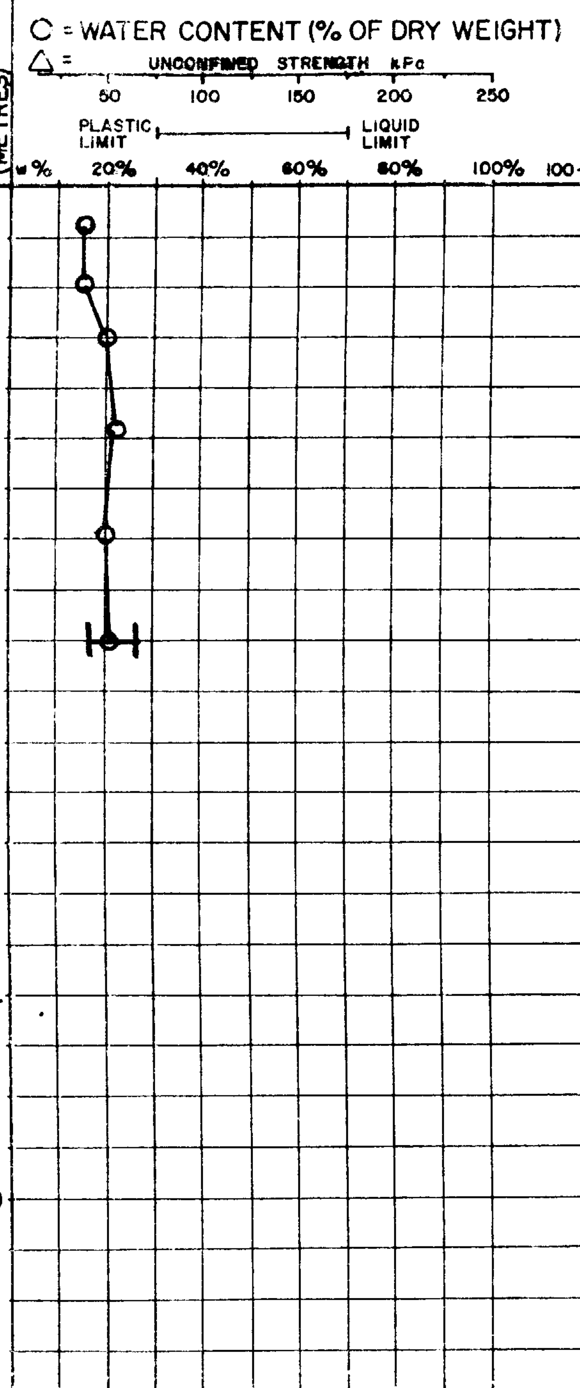
PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 154	B.P. No. 75	HOLE No. 2

CHAINAGE: | OFFSET:

REMARKS:

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–4	ML	SILT. (to 1.2m)								DAMP
					1		97	3	0	DAMP
4–20	CL	CLAY - SILTY - LOW PLASTIC + P_L								MOIST
					2		99	1	0	MOIST
					3.5					WET
		FREE WATER AFTER 4.9m			4.5		94	6	0	WET
20		6.1m			6					H.I.B.
		BOTTOM OF HOLE. 6.1m								



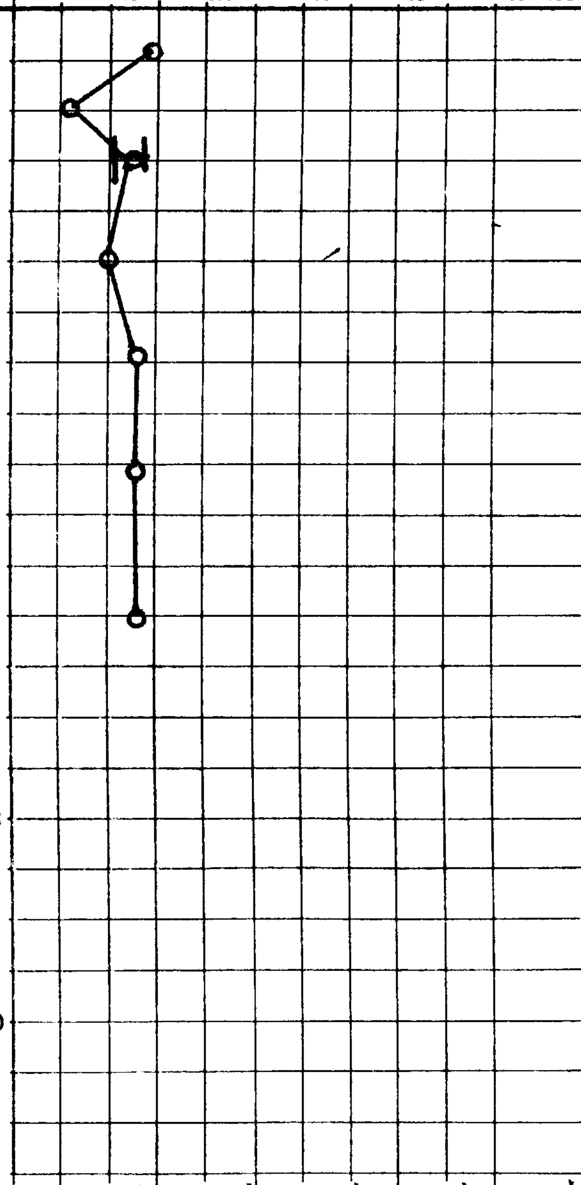
PUBLIC WORKS CANADA — DRILL HOLE REPORT

Liard Hwy

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/17	154	75	3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–4	ML	Silt -			0–1.2					Wet			
		1.2m			1	97		3	0	Moist			
4–15	CI	Clay - Silty - Med. Plastic + PL			1.2–4.6					Moist			
					2.5	99		1	0	Damp			
					3.5					Moist			
		4.6m			4.6	80		20	0	Wet			
15–20	ML	Silt - Sandy Free Water			4.6–6.1								
		6.1m			6					Sat.			
22		Bottom of Hole - 6.1m											

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

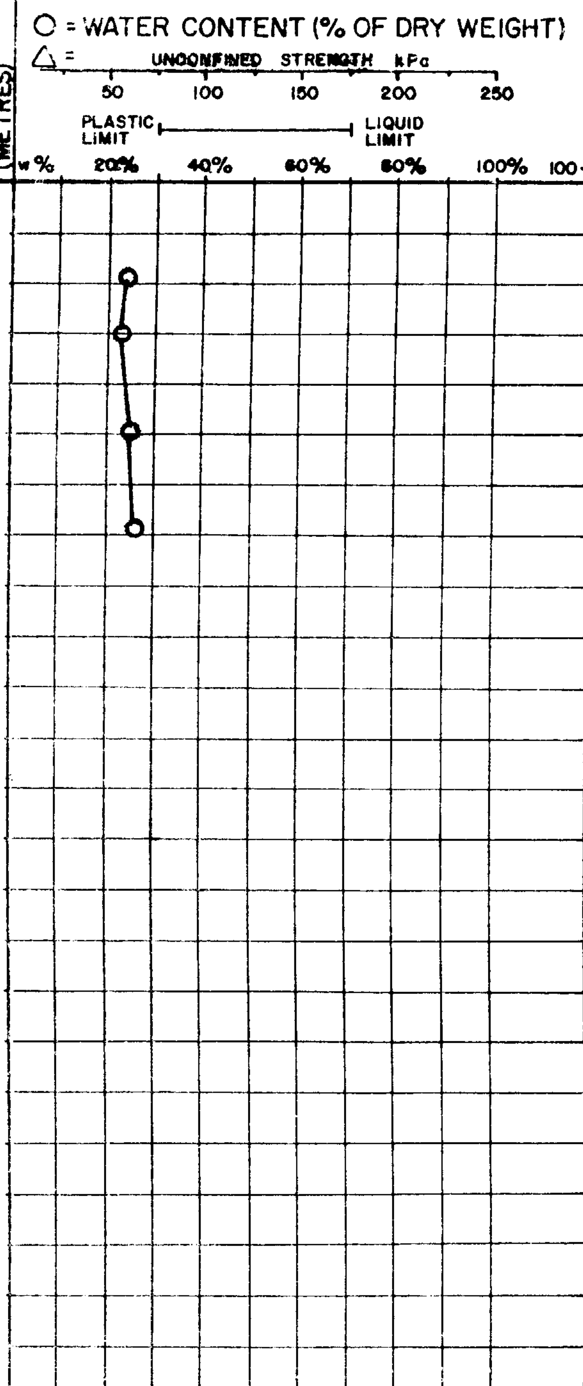


PUBLIC WORKS CANADA | DRILL HOLE REPORT | L...D ..y

TECH. Pronych	RIG B-50	DATE 78/02/18	km 157	B.P. No. 76	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		Silt-								H.I.B.			
2	ML												
4		Saturated after 1.8 m			1	98		2	0	Wet			
6										Wet			
8		- Clayey			2	99		1	0	Wet			
10	CL	Clay - Silty ——— 3.4 m			3					Wet			
12		Bottom of Hole - 3.4 m											
14					4								
16					5								
18													
20					6								
22													
24					7								
26					8								
28													
30					9								
32													
34					10								
36					11								
38													

GRAIN-SIZE ANALYSIS



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	157	76	2

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT-								DAMP	
	ML				1	-	98-	2	0	MOIST	
		SATURATED AFTER 2.1 m								WET	
		- CLAYEY			2	-	99-	1	0	WET	
		SILT- 3.4 m			3					H.I.B.	
		BOTTOM OF HOLE. 3.4 m									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

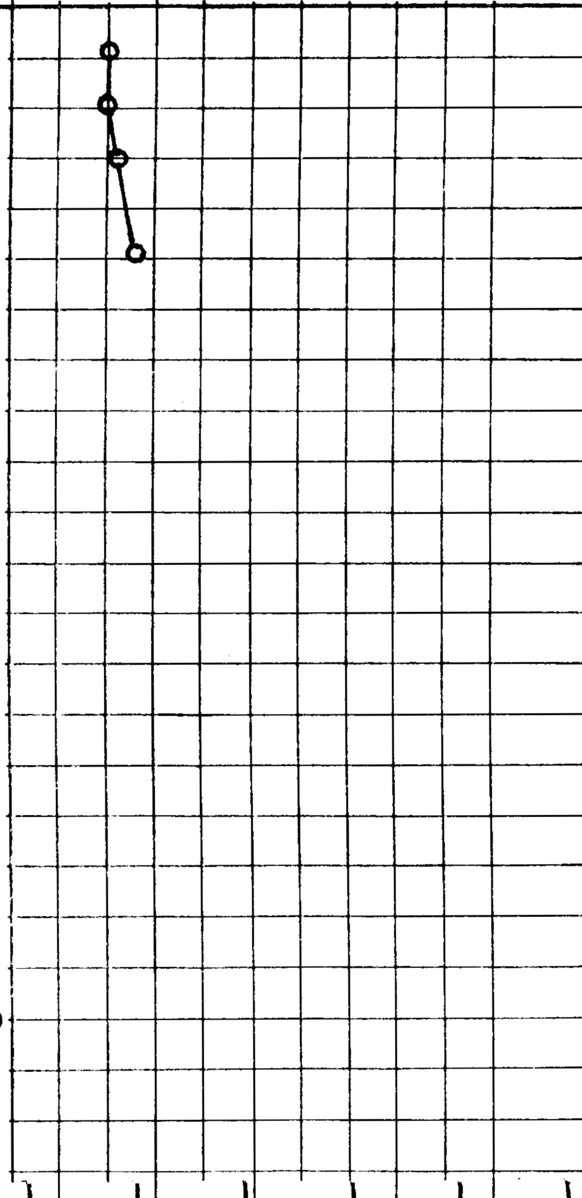
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA	DRILL HOLE REPORT	Liard Hwy.

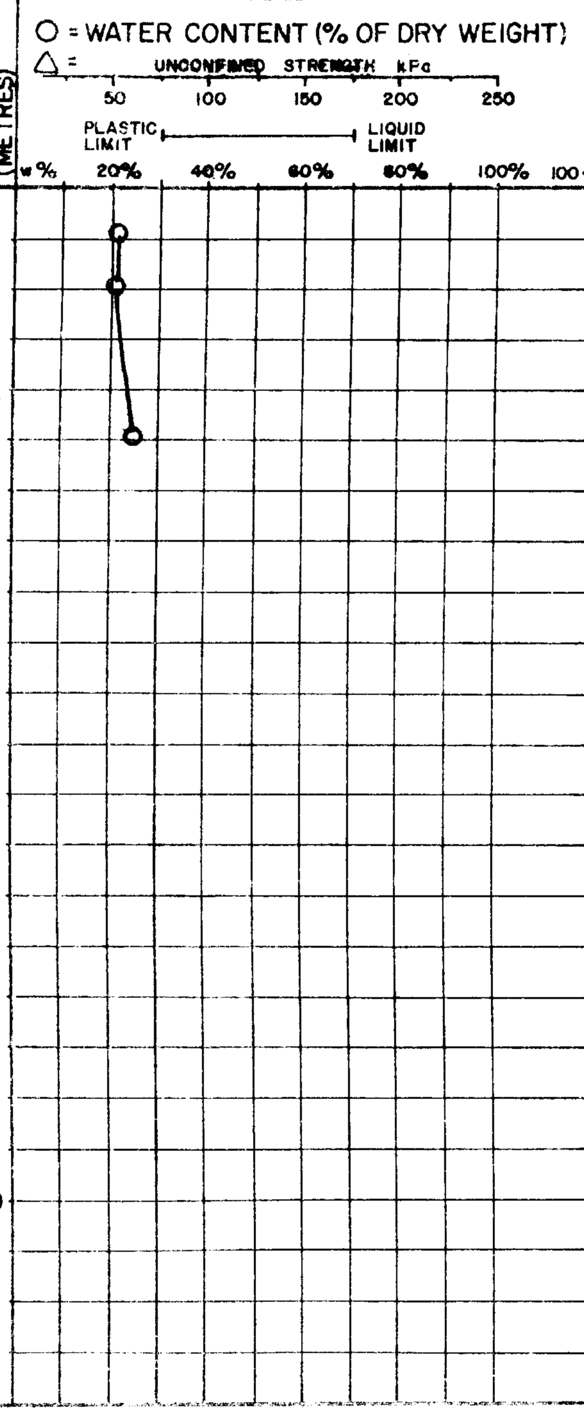
TECH. Pronych	RIG B-50	DATE 78/02/18	km 157	B.P. No. 76	HOLE No. 3

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT -								MOIST	
4					1	-	98	2	0	MOIST	
6	ML									H.I.B.	
8		- CLAYEY			2	-	100	0	0	WET	
10		3.4m			3					H.I.B.	
12		Bottom of Hole - 3.4m									

Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (metres) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

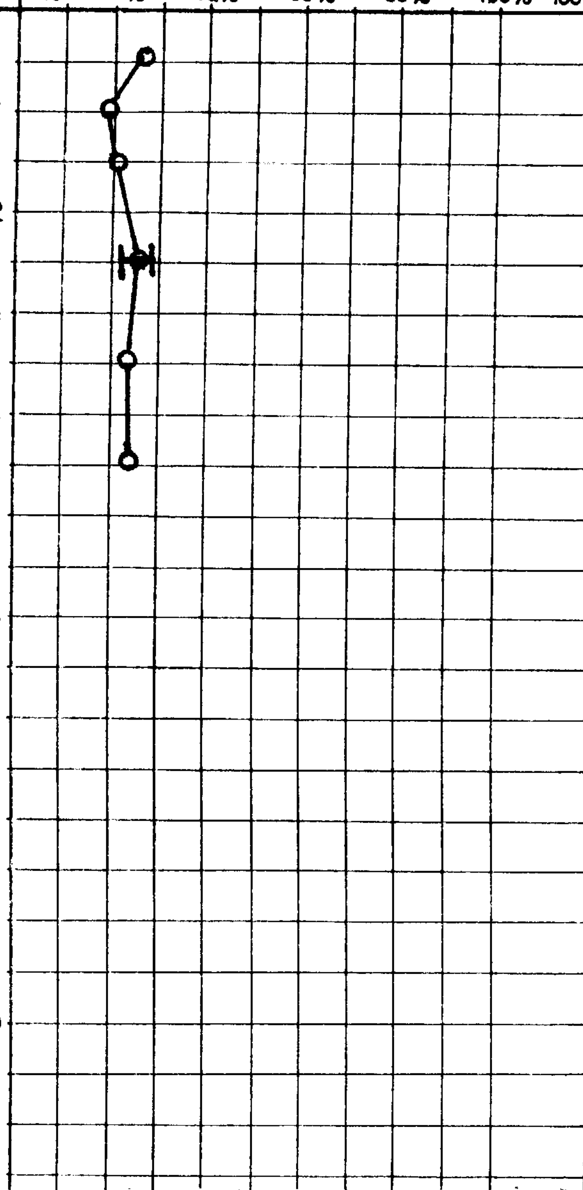


PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 158	B.P. No. 77	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	CL	CLAY - SILTY			
2	ML	SILT - CLAYEY			
4		CLAY - SILTY			1
6	CL	· LOW PLASTIC			
8		+ P_L			2
10		SATURATED WITH SOME FREE WATER AFTER 2.7m			3
12					
14	ML SM	SAND-SILT MIXTURE 4.6m			4
16		BOTTOM OF HOLE - 4.6m			5
18					
20					6
22					
24					7
26					8
28					
30					9
32					
34					10
36					
38					11

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
99		1	0	WET
99		1	0	MOIST
				MOIST
100		0	0	WET
				WET
50		50	0	SAT.

CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA | DRILL HOLE REPORT | [illegible] Hwy

TECH. Pronych	RIG B-50	DATE 78/02/18	km 158	B.P. No. 77	HOLE No. 2

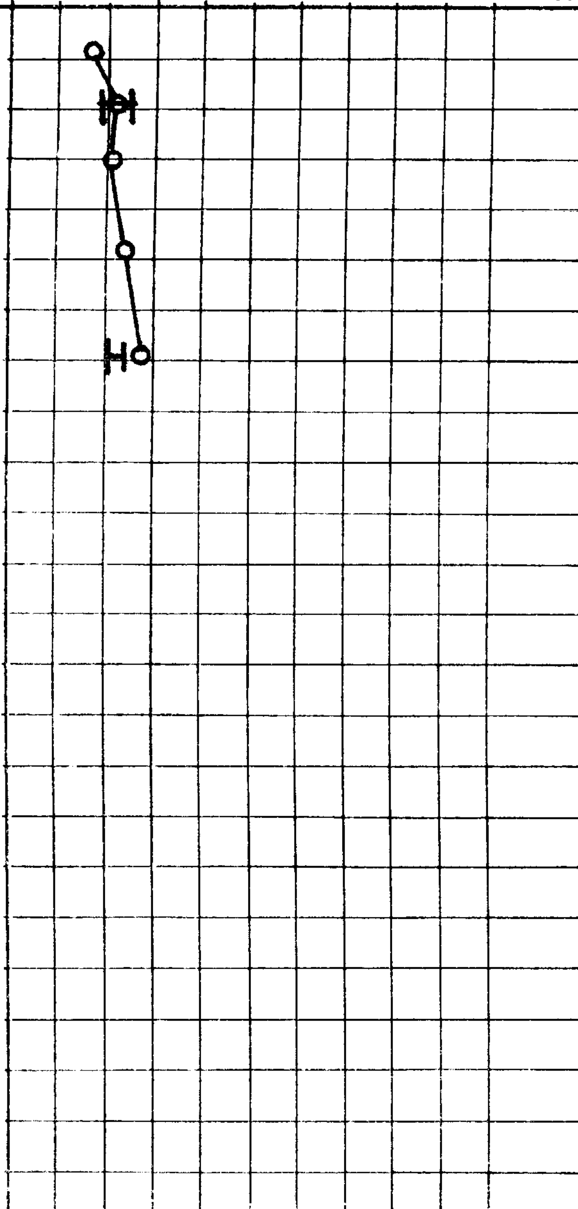
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SILT.											
2										DAMP			
4		- CLAYEY			1		100	0	0	MOIST			
6	ML	SATURATED AFTER 2.7m								WET			
8					2		99	1	0	WET			
10		3.4 m			3					SAT.			
12		BOTTOM OF HOLE - 3.4 m											
14					4								
16					5								
18													
20					6								
22													
24					7								
26					8								
28													
30					9								
32													
34					10								
36					11								
38													

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT |———| LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



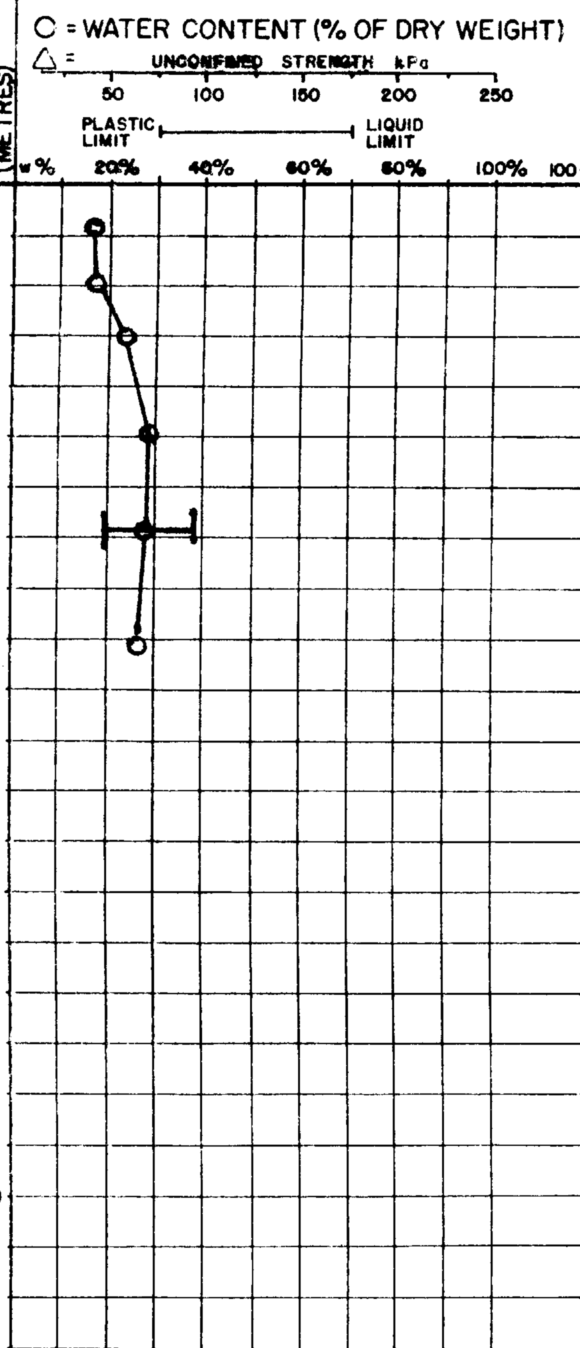
PUBLIC WORKS CANADA — DRILL HOLE REPORT

Liard Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	B-50	78/02/18	158	77	3

CHAINAGE | OFFSET | REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
2	ML	Silt -						Moist
4		1.2 m	1		99	1	0	Moist
6		Clay - Silty - Low Plastic						Moist
8	CL	+PL	2		98	2	0	Wet
10		Free Water @ 3.7m	3					
12		Sat. after 4.0m						Wet
14		Grey - Silt Sandy 4.6 m	4		65	35	0	Sat.
16			5					
18		Bottom of Hole - 4.6m						



PUBLIC WORKS CANADA | DRILL HOLE REPORT

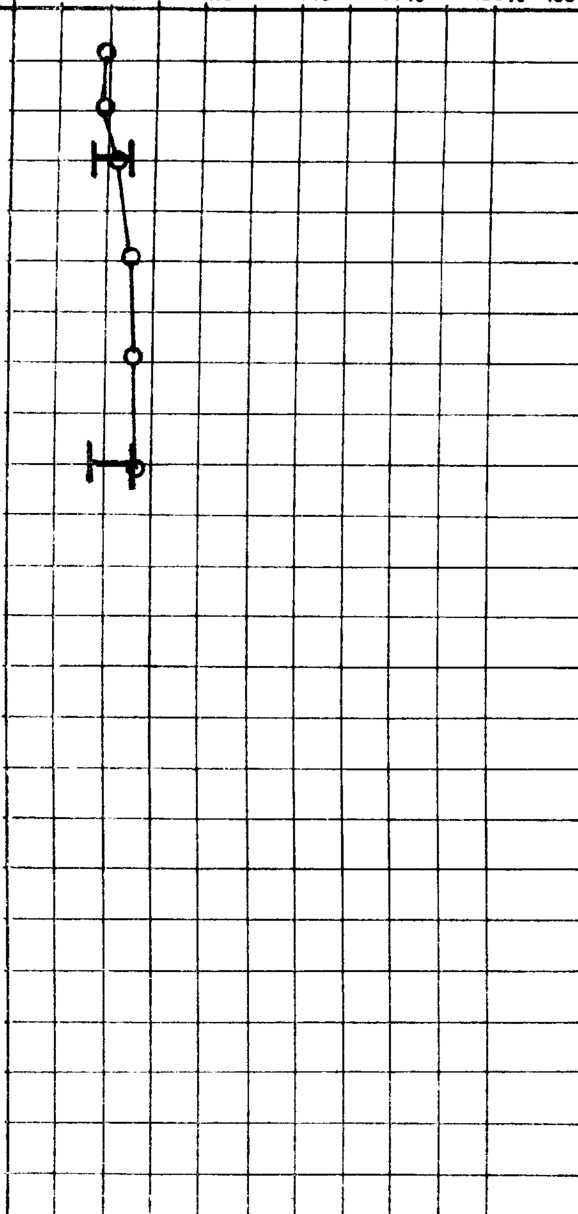
TECH. Pronych	RIG B-50	DATE 78/02/18	km 159	B.P. No. 78	HOLE No. 1

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–9	ML	SILT -CLAYEY 2.7m			0–2.7	-97-		3	0	DAMP, DAMP, WET	
						-99-		1	0	WET	
9–15	CL	CLAY - SILTY - LOW PLASTIC FREE WATER AFTER 4.0 m - SILTY SANDY 4.6m			2.7–4.6					MOIST	
						-78-		22	0	WET-SAT.	
		BOTTOM OF HOLE - 4.6m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



GRAIN-SIZE ANALYSIS

DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

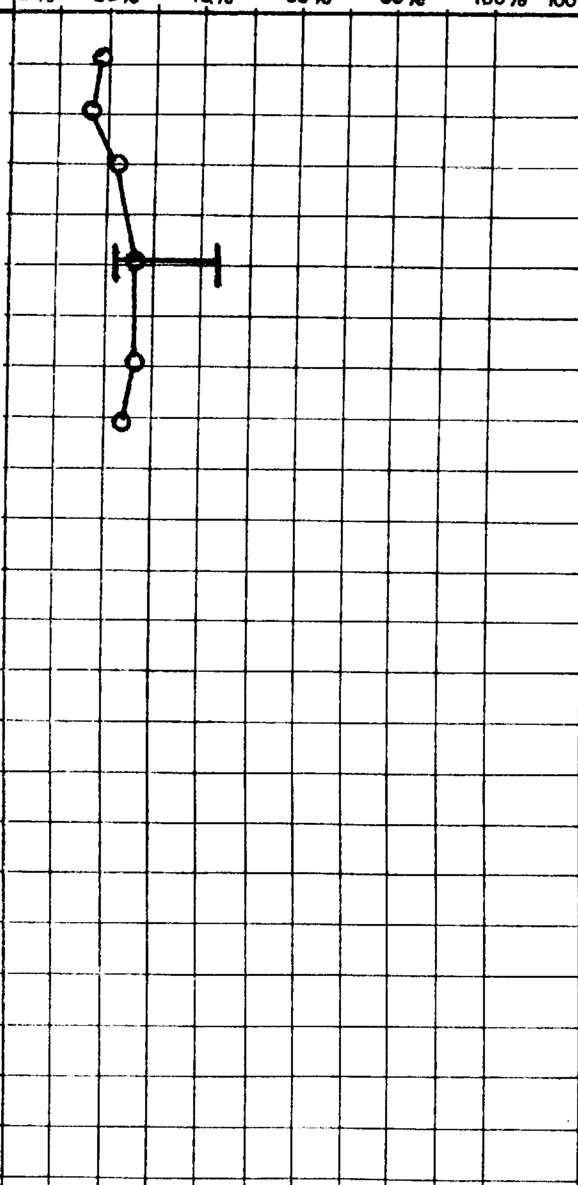
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	159	78	2

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT |—| LIQUID LIMIT
w%: 20%, 40%, 60%, 80%, 100%, 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT								H.I.B.	
4	ML				1	-	98	2	0	DAMP	
6										DAMP	
8		2.4m			2						
		CLAY - SILTY				-	99	1	0	MOIST	
10		GREY. - LOW PLASTIC + P_L			3						
12	CL	FREE WATER AFTER 3.7m								WET	
14		4.6m			4	-	78	22	0	WET-SAT.	
16		BOTTOM OF HOLE - 4.6m			5						
18											
20					6						
22											
24					7						
26											
28					8						
30					9						
32											
34					10						
36											
38					11						

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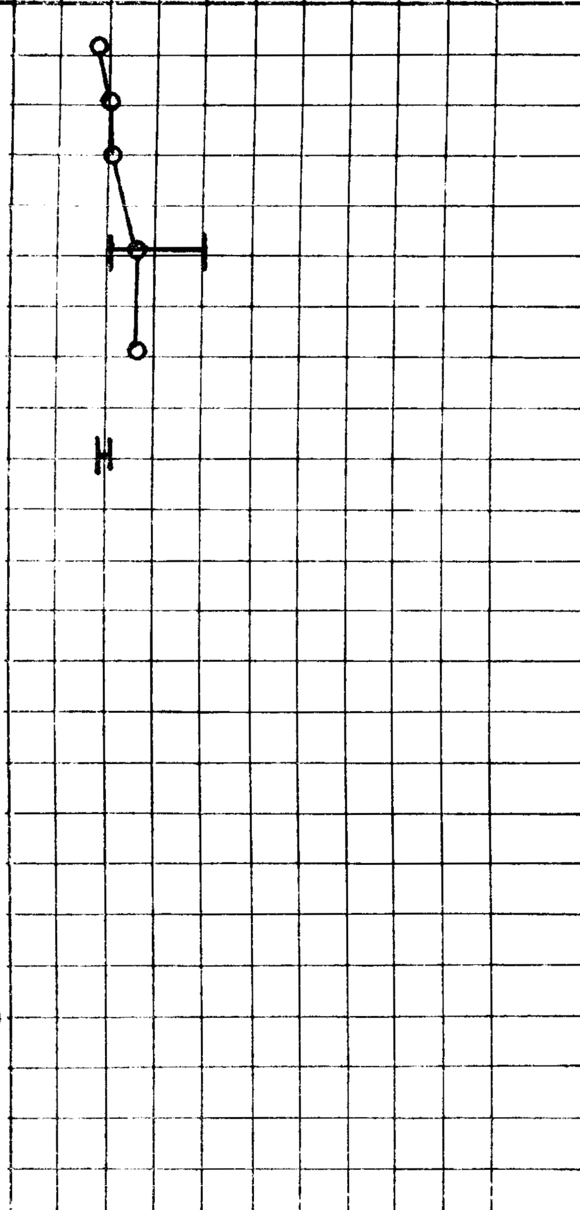
TECH. Pronych	RIG B-50	DATE 78/02/18	km 159	B.P. No. 78	HOLE No. 3

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |———| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	Silt				98		2	0	Damp	
2		.6m									
		Clay - Silty			1	98		2	0	Damp	
4		- Low Plastic								Moist	
6		+ PL			2						
8	CL					99		1	0	Moist	
10		Free Water After 4.0m			3					Moist-Wet	
12					4						
14	ML	Silt - Sandy 4.6m				68		32	0	H.I.B.	Free Water
16		Bottom of Hole - 4.6m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

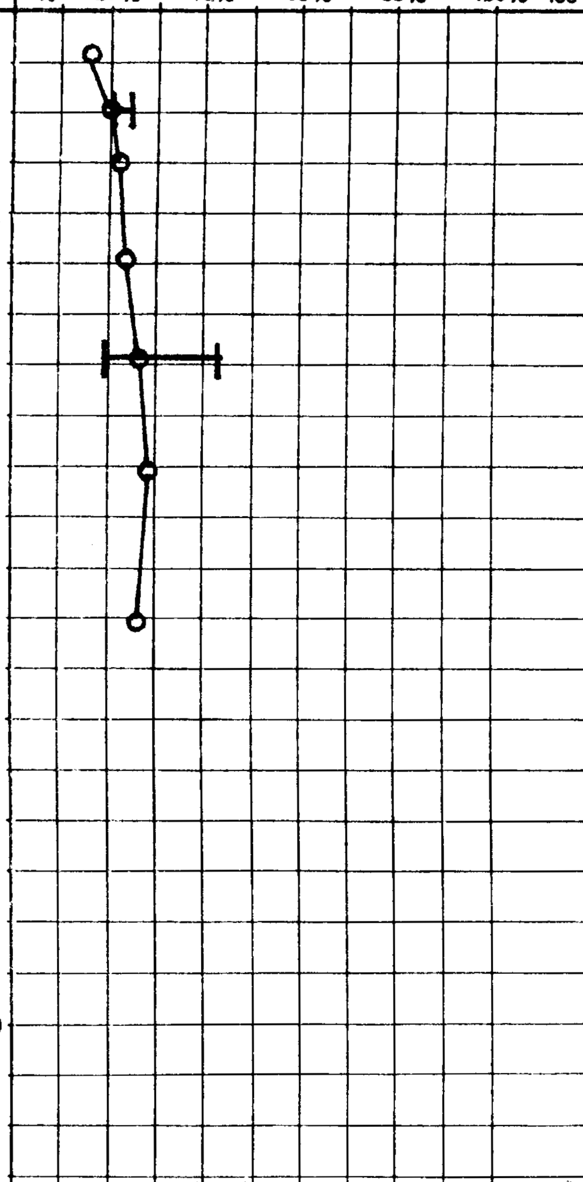


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 159	B.P. No. 78	HOLE No. 4

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–9	ML	SILT. - CLAYEY			0–2.7					DAMP	
					1	99		1	0	MOIST	
					1.5	97		3	0	MOIST	
					2.5					WET	
		2.7m									
9–13	CI	CLAY - SILTY - MED PLASTIC +P_L			2.7–4.0	98		2	0	MOIST	
		4.0m									
13–16	ML	SILT - SANDY			4.0–4.9	68		32	0	WET-SAT	FREE WATER AFTER 4.0m
		4.9m									
16–20	CL	CLAY - SILTY - LOW PLASTIC +P_L			4.9–6.1					W-SAT.	
		6.1m									

BOTTOM OF HOLE - 6.1m

PUBLIC WORKS CANADA — DRILL HOLE REPORT

L .RD. Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 162	B.P. No. 79	HOLE No. 1

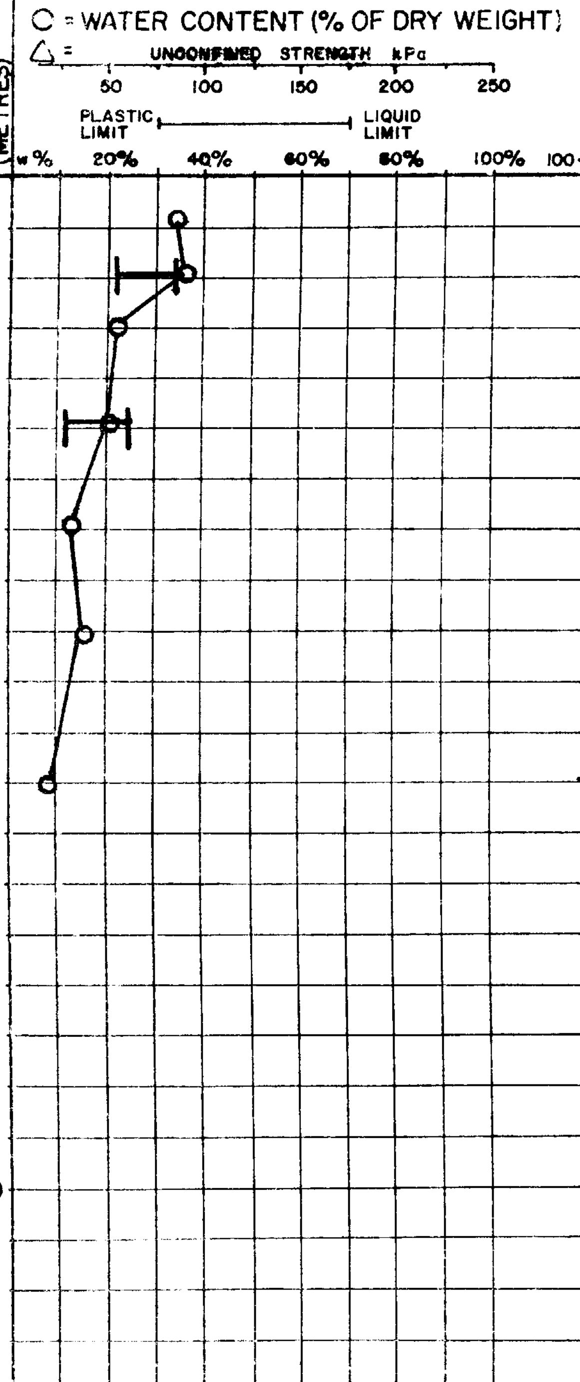
CHAINAGE	OFFSET

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
2		SILT - CLAYEY			
4	ML				1
6		- CLAYEY PEBBLES			
		2.1m			2
8		CLAY - SILTY SANDY			
		- PEBBLES			
10		- LOW PLASTIC			3
12	CL	@ PL			
14					4
		GREY - 4.6m			
16		SAND - GRAVELLY SILTY			5
18	SM	SATURATED			
20		6.1m			6
22		BOTTOM OF HOLE - 6.1m			
24					7
26					
28					8
30					9
32					
34					10
36					11
38					

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



GRAIN-SIZE ANALYSIS

CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				SAT.
99		1	0	WET
				WET
54		42	4	WET
				WET
69		26	5	DAMP
18		59	23	SAT.

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

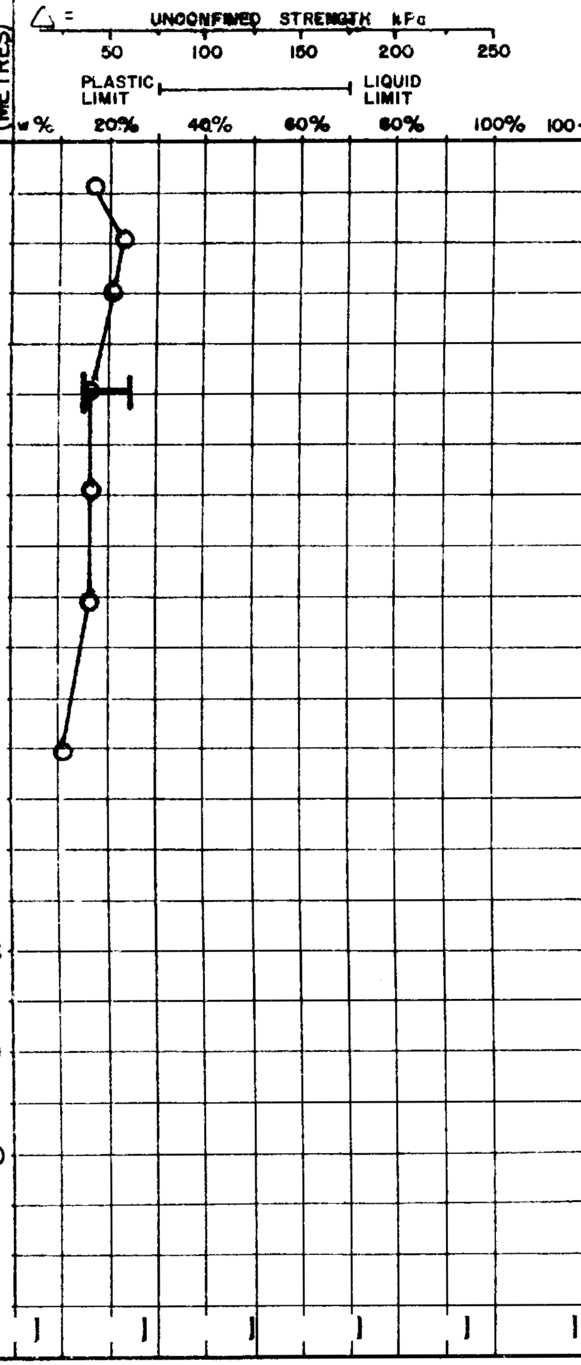
TECH. WEBBER	RIG B-50	DATE 78/02/18	km 162	B.P. No. 79	HOLE No. 2

CHAINAGE	OFFSET

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
2	ML	SILT -								DAMP
4		1.2m			1	-97-		3	0	MOIST
6		CLAY - SILTY - SANDY - PEBBLES								WET
8					2	-67-		30	3	MOIST-WET
10		-LOW PLASTIC @ P_L			3					
12	CL									M-W
14					4	-55-		40	5	M-W
16					5					
18										
20		GREY - 6.1m			6					MOIST
22		BOTTOM OF HOLE - 6.1m			7					
24										
26					8					
28										
30					9					
32										
34					10					
36					11					
38										

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA | DRILL HOLE REPORT | L.. RI ..

TECH. WEBBER | RIG B-50 | DATE 78/02/18 | km 162 | B.P. No. 79 | HOLE No. 3

CHAINAGE | OFFSET

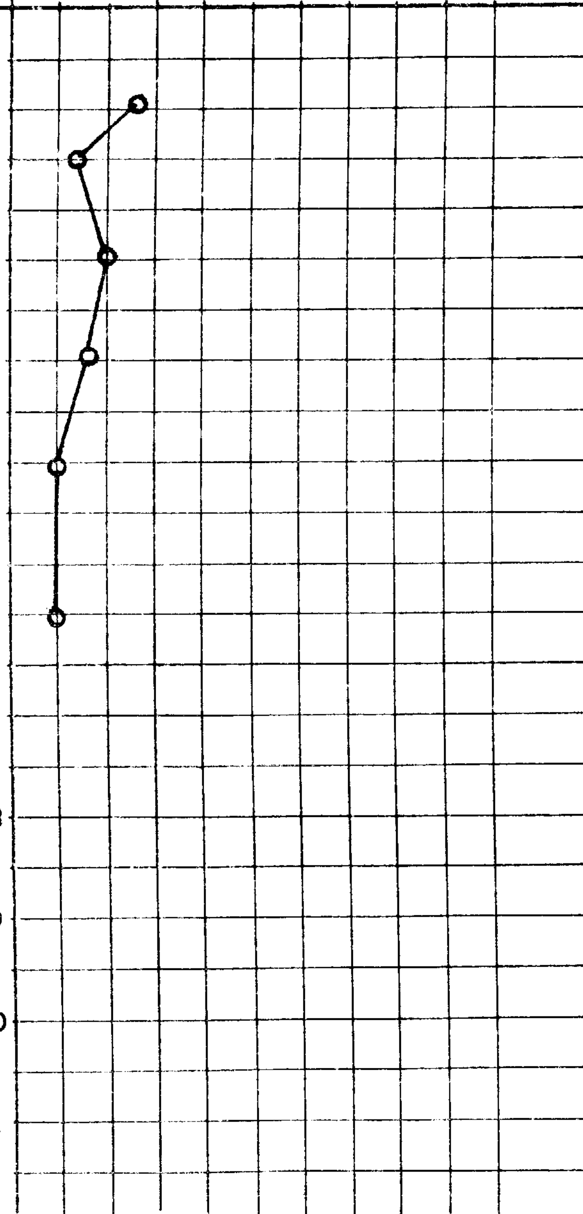
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT.			1	98		2	0	WET-SAT	
4		1.2 m									
6–12	CL	CLAY - SILTY - SANDY - PEBBLES LOW PLASTIC + PL			1.5					MOIST	
					2.5	82		16	2	WET	
					3.5					MOIST	
13		4.0 m									
14–18	CL / GC	GRAVEL - SANDY - SILTY - CLAYEY			4.5	21		27	52	DAMP	
20		6.1 m			6					DAMP	
22		BOTTOM OF HOLE - 6.1 m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/18	164	80	1

CHAINAGE | OFFSET | REMARKS

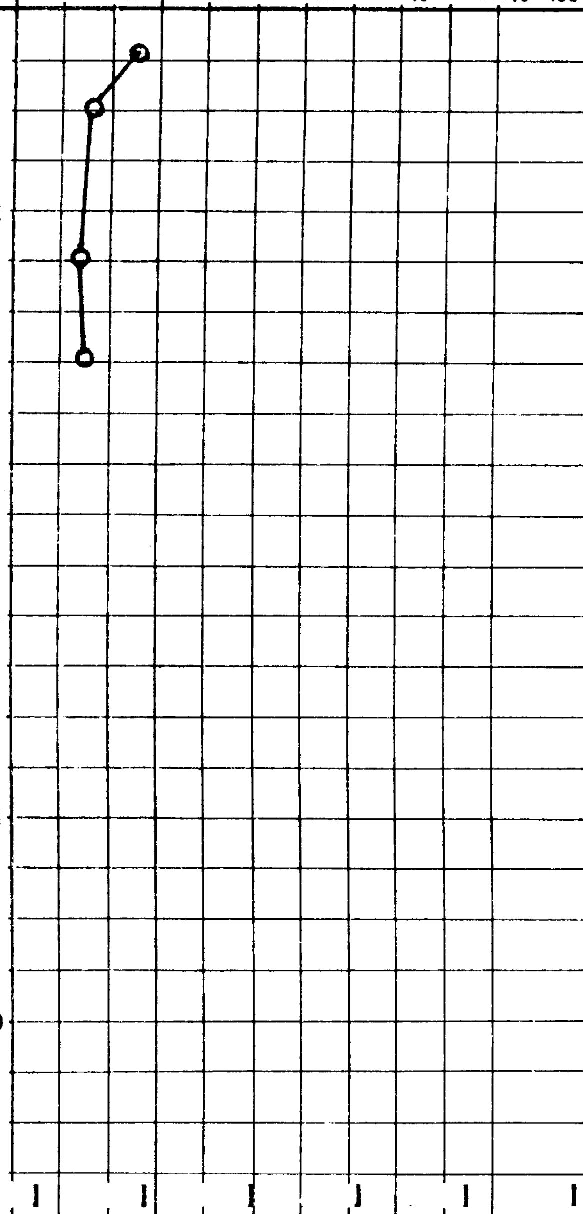
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
	ML	SILT -		FROZEN		97	-	3	0	MOIST
2		.6m								
4		CLAY - SILTY - SANDY - PEBBLES			1					MOIST
6	CL					64	-	30	6	H.I.B
8	CI	LOW-MED PLASTIC			2					
10					3					MOIST
12		- GRAVELLY 3.7m				58	-	27	15	MOIST
14		REFUSAL @ 3.7m			4					
16–38					5–11					

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA | DRILL HOLE REPORT | Liard Hwy.

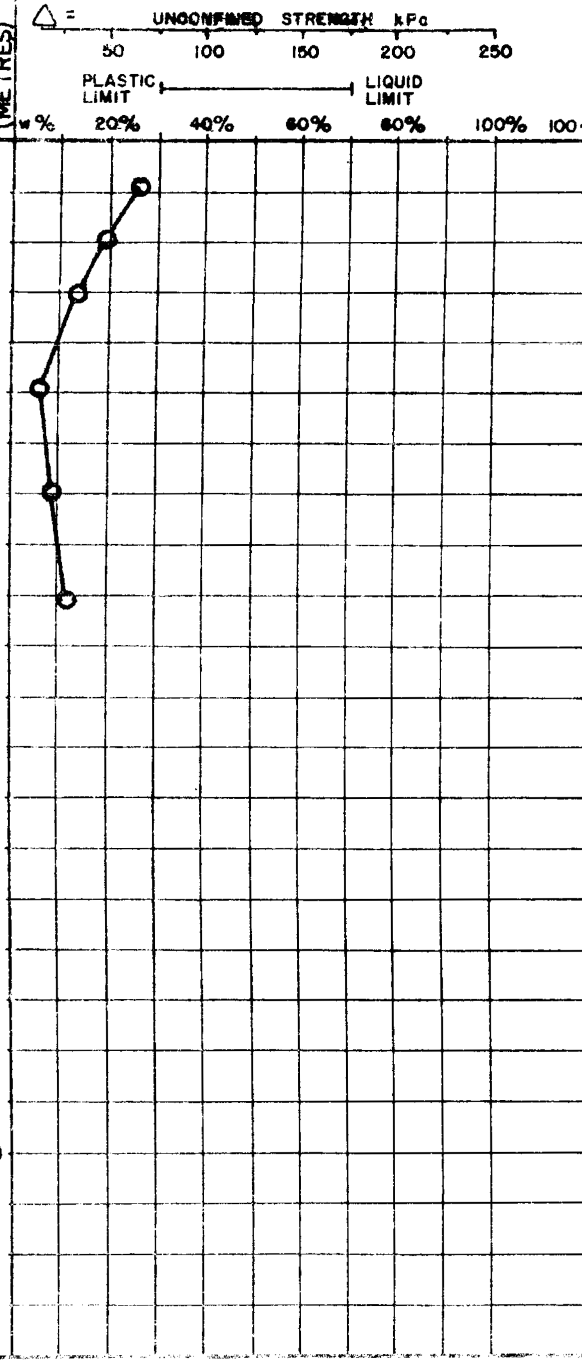
TECH. Pronych	RIG B-50	DATE 78/02/22	km 164	B.P. No. 81	HOLE No. 4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT - Clayey Sandy 1.2 m				99		1	0	SAT.			
4					1	84		16	0	MOIST			
6	CL CI	CLAY - Silty Sandy Pebbles 2.0 m				61		36	3	MOIST			
8	SP	SAND -			2	9		91	0	DAMP			
10	SM	- Silty Gravelly			3								
12						22		58	20	MOIST			
14					4								
16	ML	SILT - Pebbles Sandy 4.9 m				59		37	4	DAMP			
18		Bottom of Hole - 4.9 m Refusal			5								
20					6								
22													
24					7								
26					8								
28													
30					9								
32													
34					10								
36					11								
38													

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH. PRONYCH | RIG B-50 | DATE 78/02/22 | km 164 | B.P. No. 81 | HOLE No. 5

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–3	ML	SILT - CLAYEY - SANDY — .9m									
3–8	CL	CLAY - SILTY SANDY - PEBBLES BOULDERS @ 2.1 m — 2.4 m									
8–20	SM	SAND - SILTY PEBBLES TO GRAVELLY			~2.5	-	14	72	14	WET	
					~3.5	-	34	61	5	DAMP	
		FREE WATER AFTER 4.6 m			~4.5	-	12	78	10	SAT.	
20		6.1 m									
		BOTTOM OF HOLE - 6.1 m									

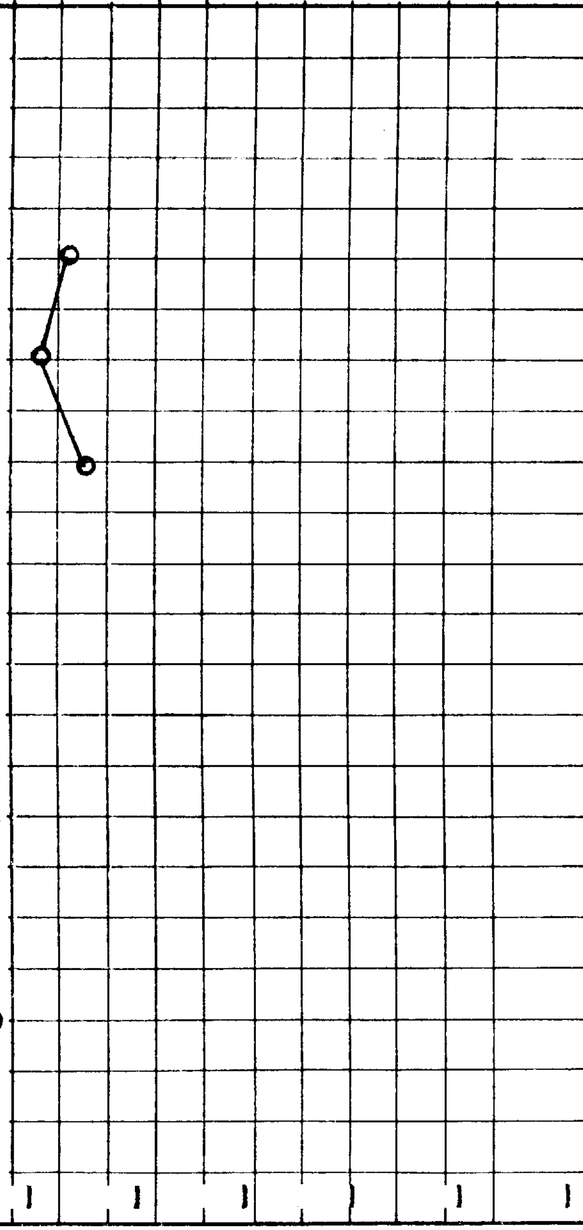
CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

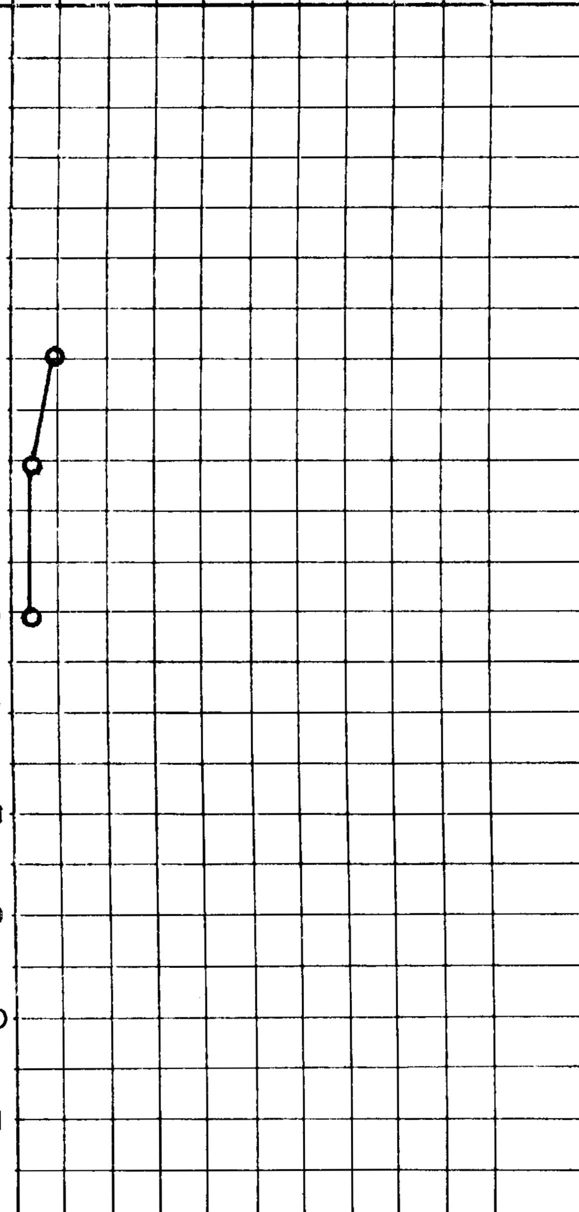


PUBLIC WORKS CANADA — DRILL HOLE REPORT — Liard Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	B-50	78/02/22	164	81	6

Depth (feet)	Unified Soil Symbol	Soil Description	Penetration Resistance	Ice Description
0 – 2.1m	ML	Silt - Clayey Sandy		
2.1m – 3.8m	CL - CI	Clay - Silty Sandy - Pebbles Low - Med. Plastic		
3.8m –	GM	Gravel - Sand Mix Silty		
– 7.6m	SM	Sand - Gravelly Silty		
7.6m		Bottom of Hole - 7.6 m		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT — LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



Depth (metres)	Clay %	Silt %	Sand %	Gravel %	Relative Moisture Content
~3.5	34		62	4	Moist
~4.5	13		44	43	Moist
~6.0	16		58	26	Damp

CHAINAGE	OFFSET

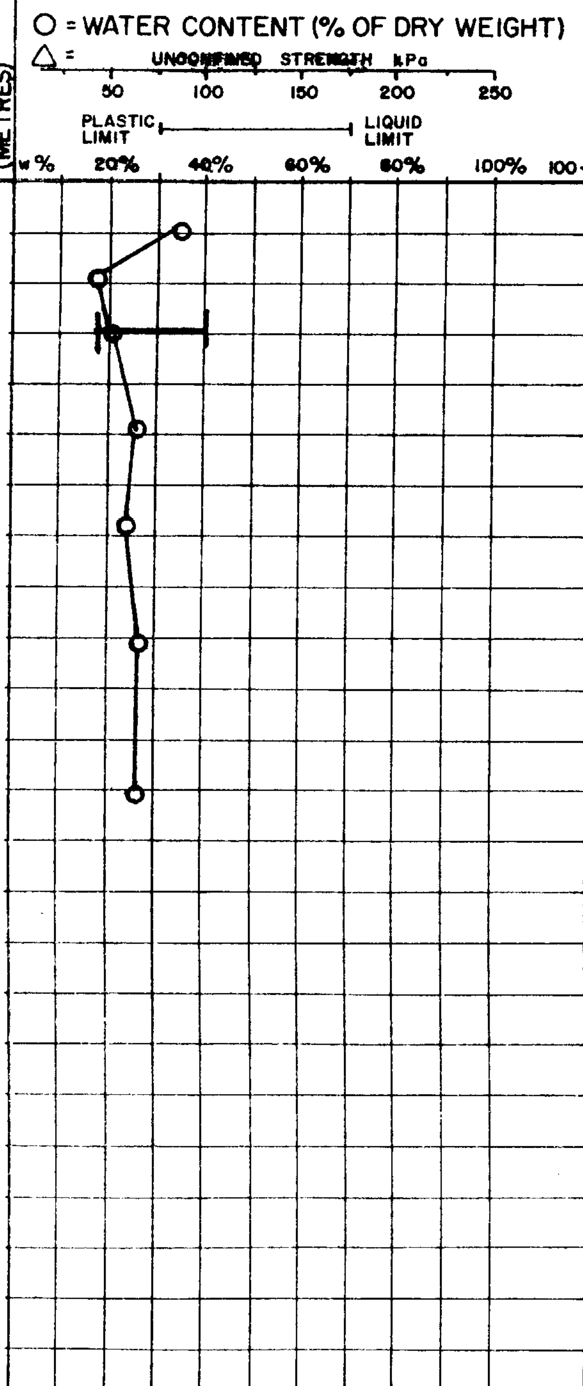
REMARKS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 153	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
153+110	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY								FREE WATER	
4		- LOW PLASTIC			1	99		1	0	MOIST	
6		+Pc								MOIST	
8	CL				2	99		1	0	MOIST	
12					3					MOIST	
16		WET 4.9m - 6.1m			4	97		3	0	WET	
20		6.1m			6					SAT.	
22		BOTTOM OF HOLE. 6.1m									



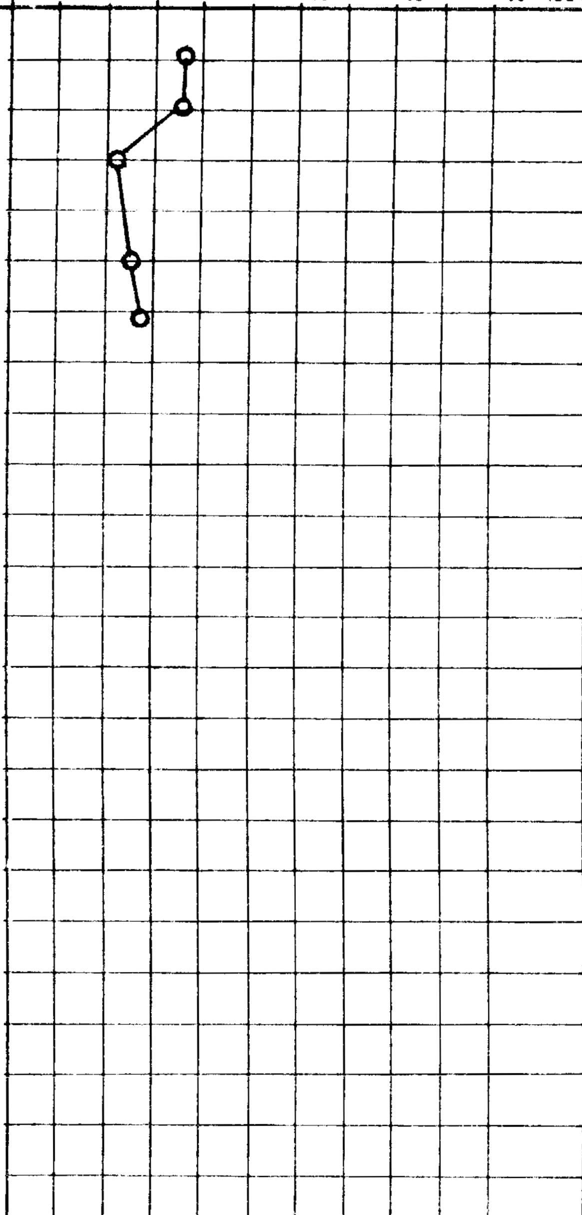
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 153	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
153+450	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–10	CL	CLAY - SILTY - LOW PLASTIC + P_L 3.1m			0–3.1
12		BOTTOM OF HOLE 3.1m			

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
~0.5					FREEWATER	
~1	99		1	0	FREEWATER	
~1.5					WET	
~2.5	100		0	0	WET	
~3					WET	

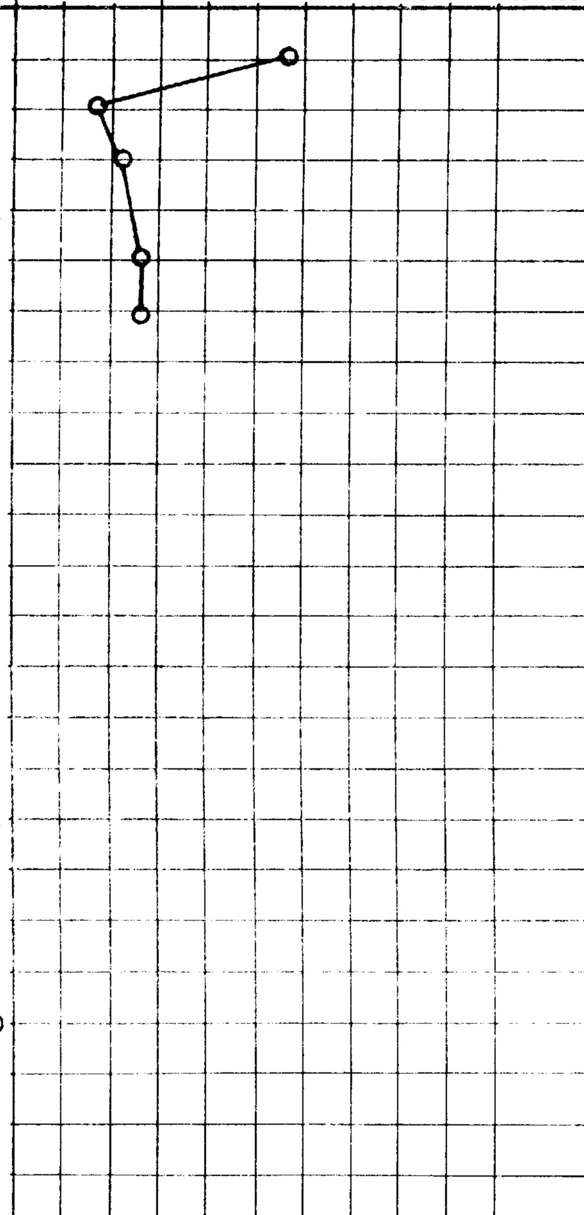
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/17	153		4

CHAINAGE	OFFSET
153+690	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |——| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY - ORGANICS				99		1	0	FREEWATER	
4		- SILTY			1					DAMP	
6	CL	- LOW PLASTIC				99		1	0	MOIST	
8		+ P_L			2					WET	
10		3.1 m			3	100		0	0	WET	
12		BOTTOM OF HOLE. 3.1 m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26											
28					8						
30					9						
32											
34					10						
36											
38					11						

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 153	B.P. No.	HOLE No. 5

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
2		CLAY - SILTY								DAMP
4		- LOW PLASTIC			1	-	100	0	0	MOIST
	CL	- + P_L								
6					2					MOIST-WET
8						-	100	0	0	M-W
10		3.1m			3					WET
12		Bottom of Hole . 3.1m								

CHAINAGE	OFFSET
153+810	℄

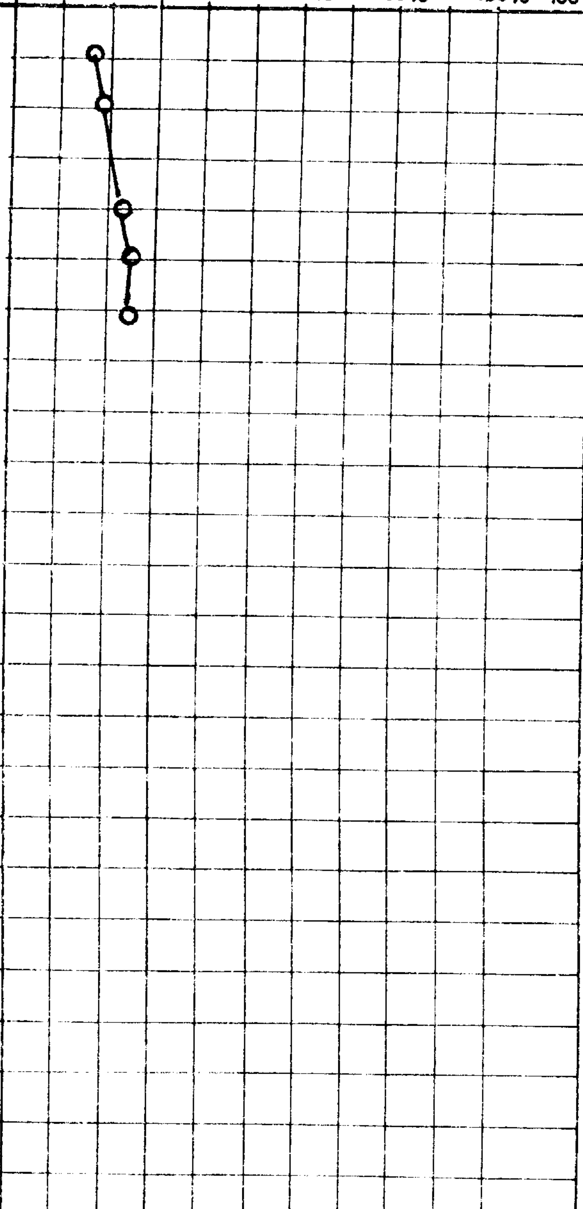
REMARKS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+

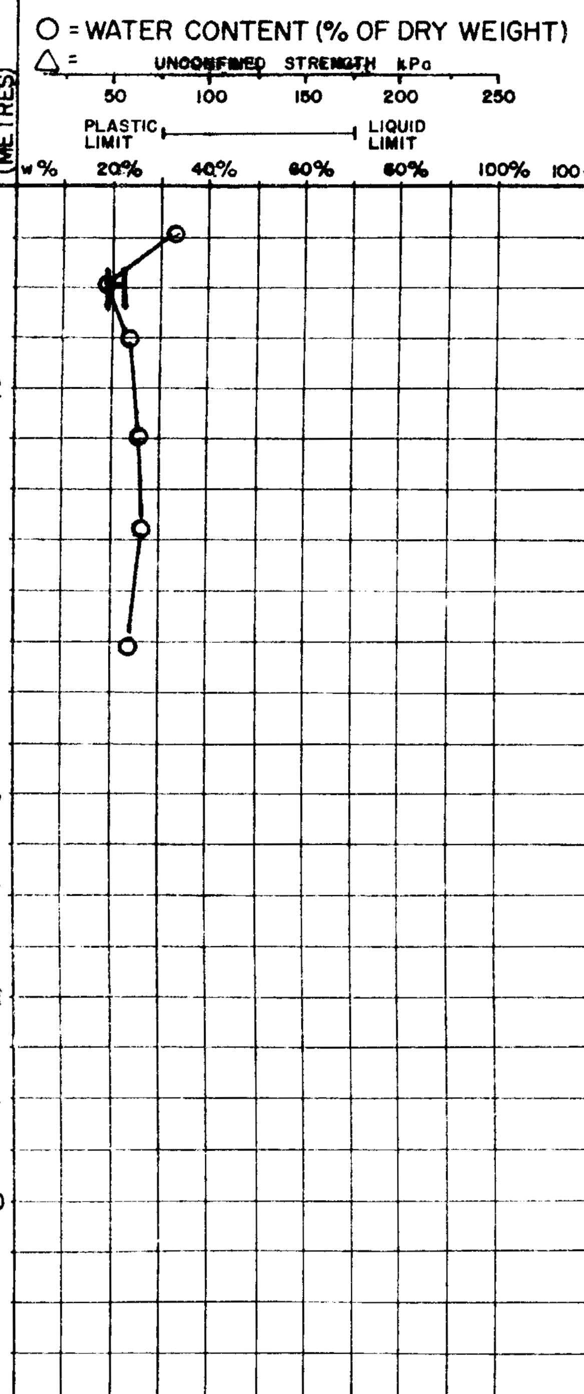


PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/17	153		6

CHAINAGE	OFFSET
153+900	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	CL	CLAY - SILTY				93		7	0	WET	
2–4	CL	- LOW PLASTIC			1					DAMP	
4–6	CL	+PL				98		2	0	MOIST	
8	CL				2					MOIST-WET	
11	CL				3	100		0	0	M-W	
14	CL	4.6m			4					SAT.	
16		BOTTOM OF HOLE - 4.6m			5						



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 154	B.P. No.	HOLE No. 1

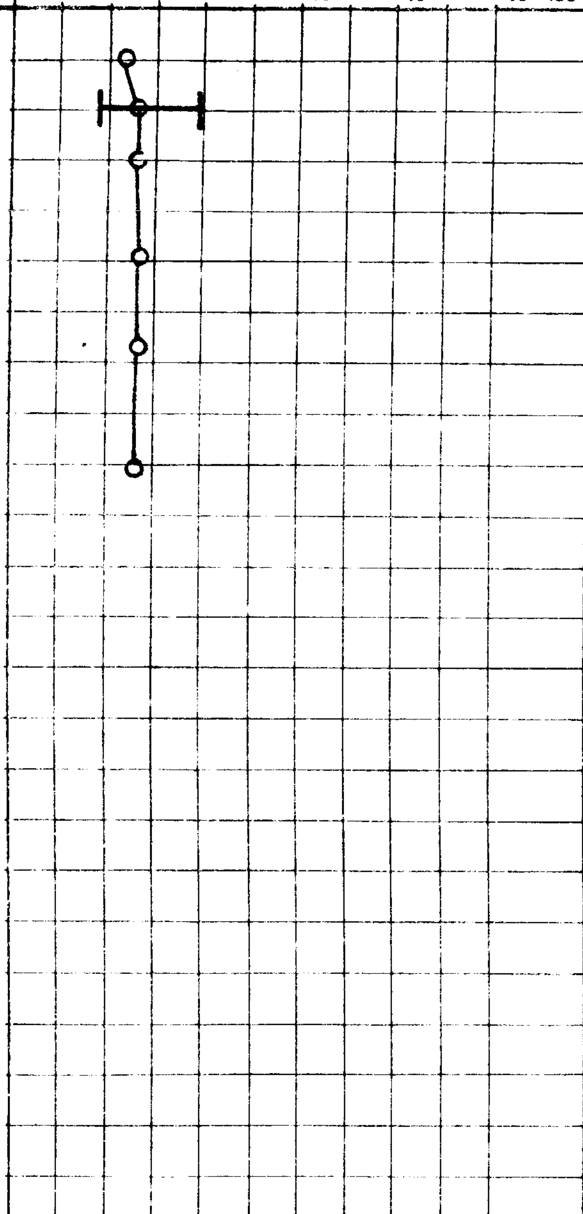
CHAINAGE	OFFSET
154+060	℄

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–15	CL	CLAY - SILTY - LOW PLASTIC +P₂			0–4.6					SAT.	
					1	100		0	0	MOIS-WET	
										M-W	
						95		5	0	SAT.	
										SAT.	
						96		4	0	SAT.	
		4.6m									
		BOTTOM OF HOLE - 4.6m									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/17	154		2

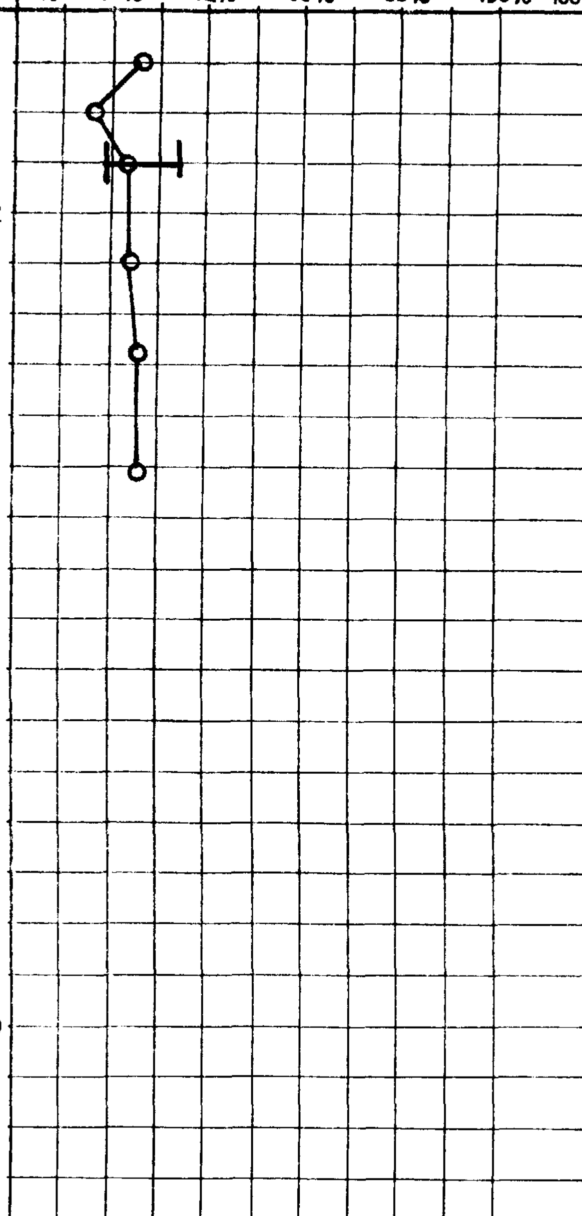
CHAINAGE	OFFSET
154+120	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w %: 20%, 40%, 60%, 80%, 100%, 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY - SILTY - LOW PLASTIC				98		2	0	SAT.	
					1					DAMP	
		+PL				100		0	0	MOIST-DAMP	
					2					WET	
					3	100		0	0	WET	
		4.6m			4					SAT.	
		BOTTOM OF HOLE - 4.6m			5						

DEPTH (FEET) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

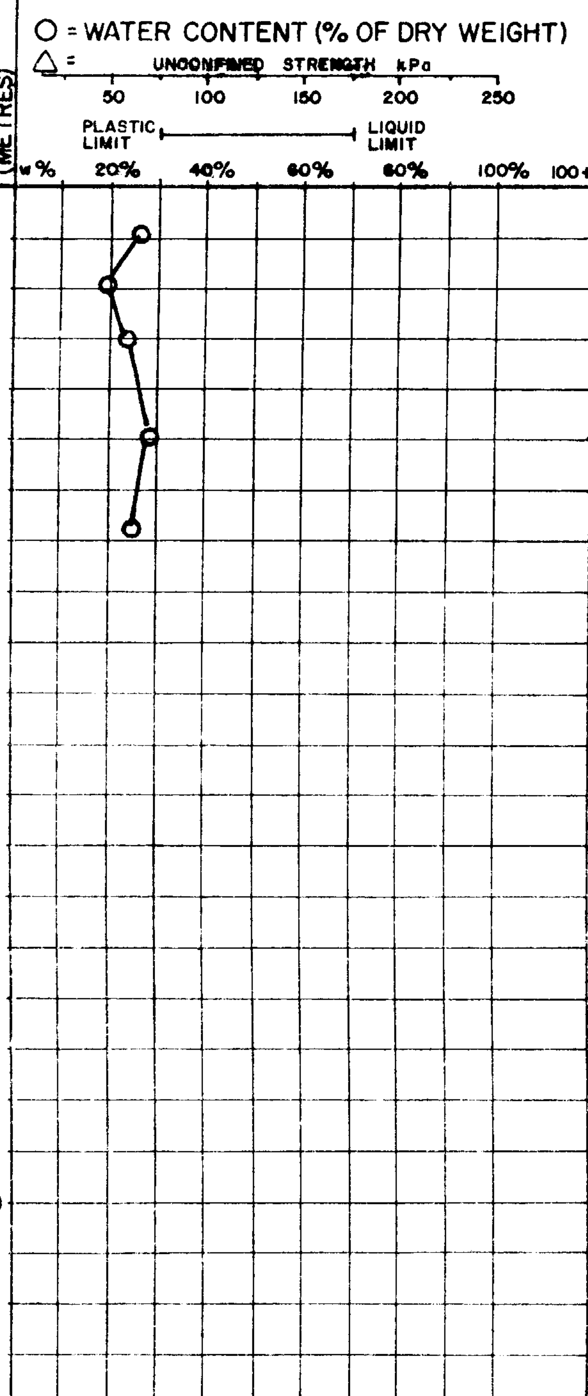


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 154	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
154+3.70	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	CL	CLAY - SILTY - LOW PLASTIC +PL								SAT.	
4					1	100		0	0	MOIST	
6										MOIST	
8					2	100		0	0	WET	
10					3						
12										WET	
14		4.6m			4						
16		BOTTOM OF HOLE - 4.6m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



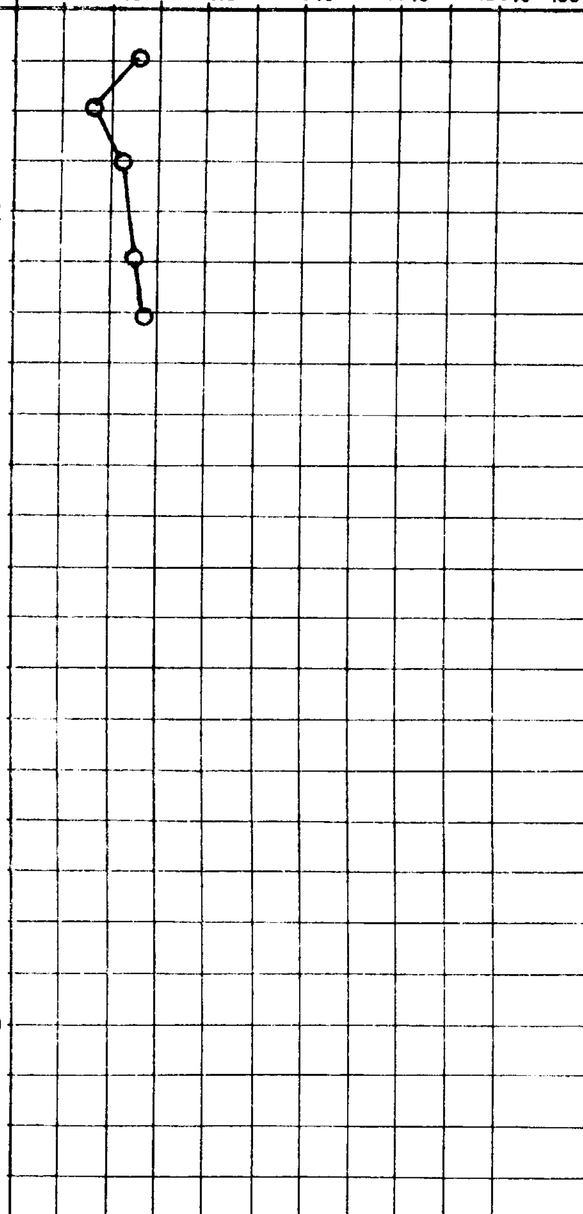
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 154	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
154+480	℄

REMARKS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
2		CLAY - SILTY								SAT.
4		- LOW PLASTIC			1	99		1	0	DAMP
6	CL	+P_L				100		0	0	DAMP-MOIST
8					2					MOIST
10		3.1m			3	100		0	0	WET
12		BOTTOM OF HOLE - 3.1m								
14					4					
16										
18					5					
20					6					
22										
24					7					
26					8					
28										
30					9					
32										
34					10					
36					11					
38										

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 154	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
154+670	E

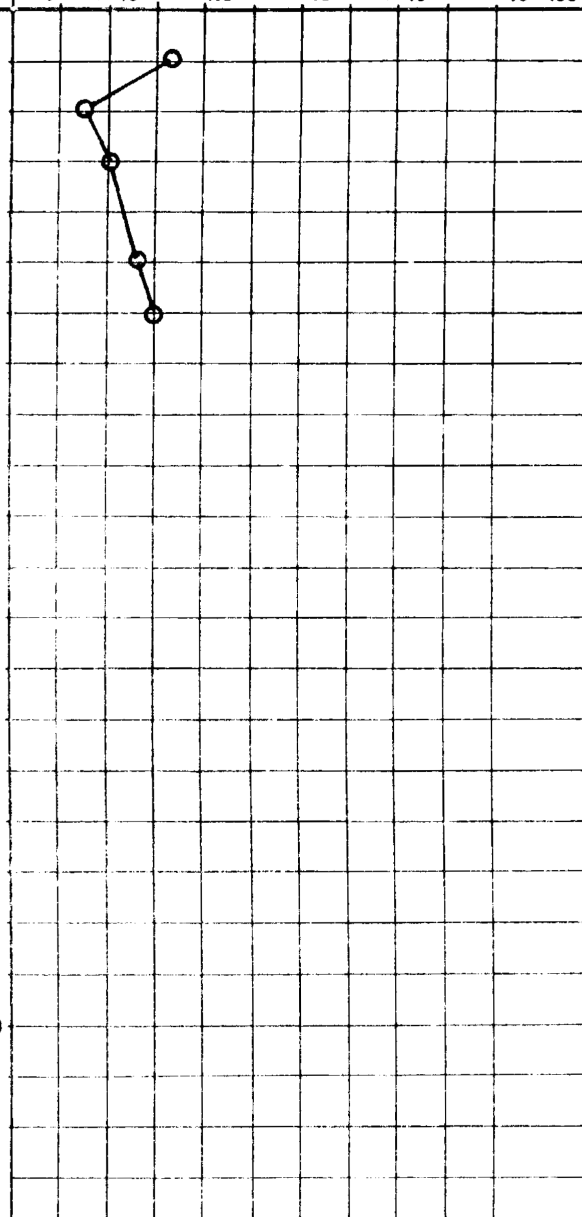
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY								SAT.	
4		- LOW PLASTIC			1	-	99	1	0	DAMP	
6	CL	+ P_L								DAMP-MOIST	
8					2	-	100	0	0	MOIST-WET	
10		3.1m			3					WET	
12		BOTTOM OF HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 154	B.P. No.	HOLE No. 6

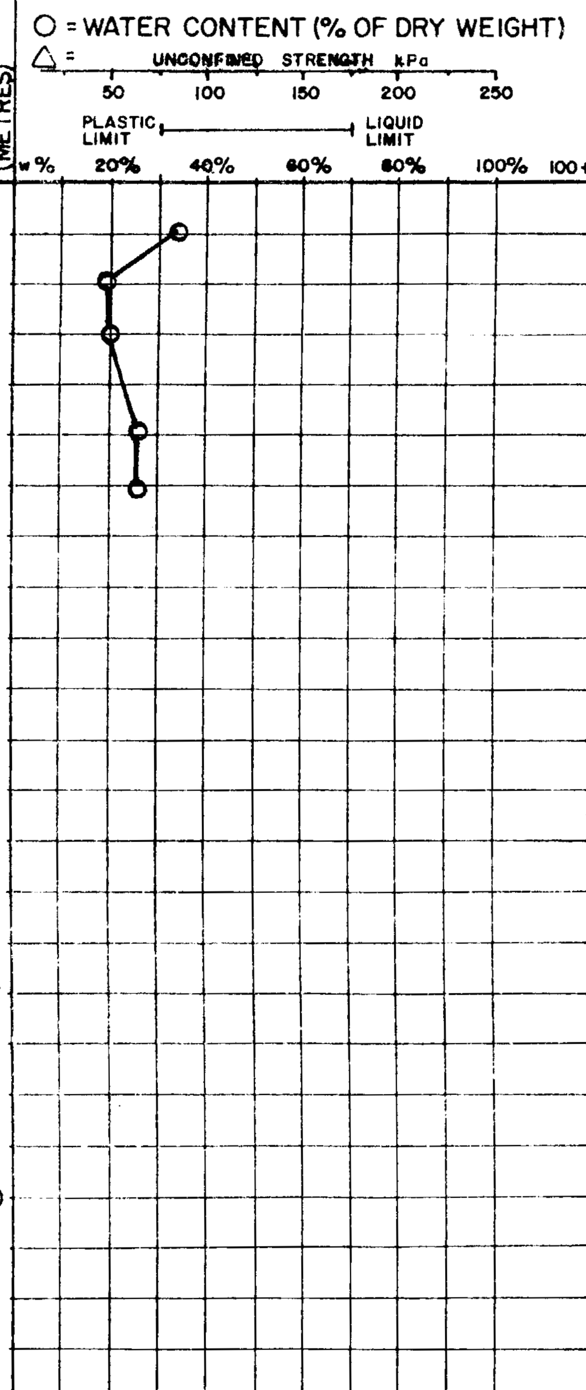
CHAINAGE	OFFSET
154+970	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	CL	CLAY. SILTY - LOW PLASTIC +PL								SAT.	
4					1	-	98	2	0	DAMP	
6										DAMP-MOIST	
8		FREE WATER 2.7m - 3.1m			2	-	99	1	0	MOIST-WET	
10		3.1m			3					SAT.	
12		BOTTOM OF HOLE 3.1m									
14					4						
16					5						
18											
20					6						
22					7						
24											
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



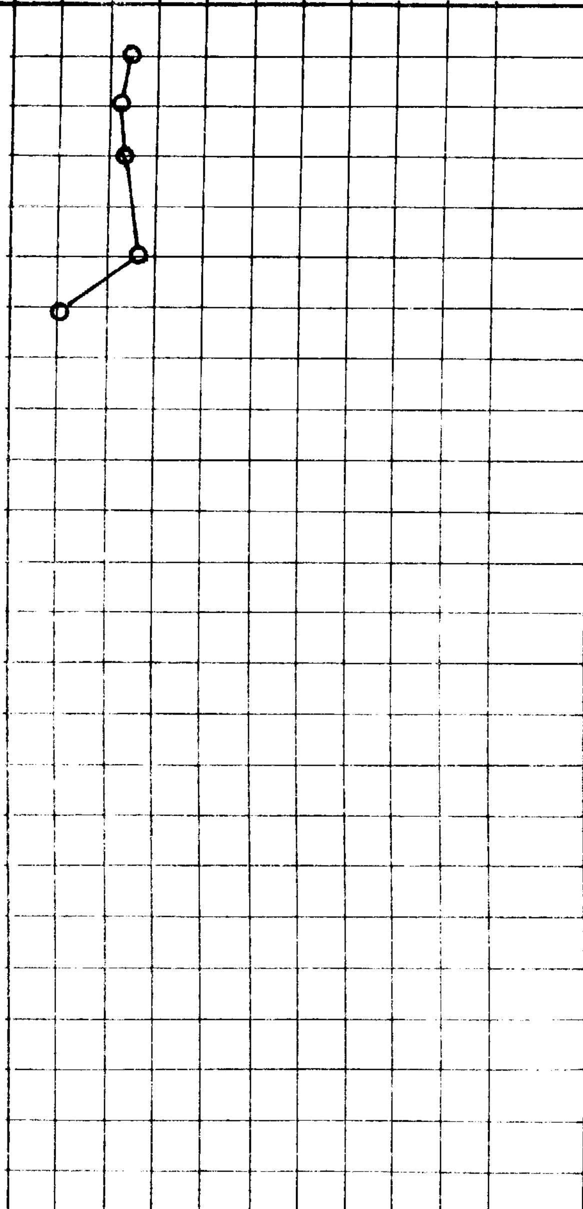
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/18	155		1

CHAINAGE	OFFSET
155+180	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ——— LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY				96		4	0	MOIST-WET	
		- LOW PLASTIC			1					M-W	
4	CL	+P_L				99		1	0	M-W	
6		~~FREE WATER 2.7m - 3.1m~~			2						
8										WET	
10	ML SM	SILT-SAND MIX 3.1m			3	53		47	0	DAMP-MOIST	
12		BOTTOM OF HOLE - 3.1 m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 155	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
155+280	℄

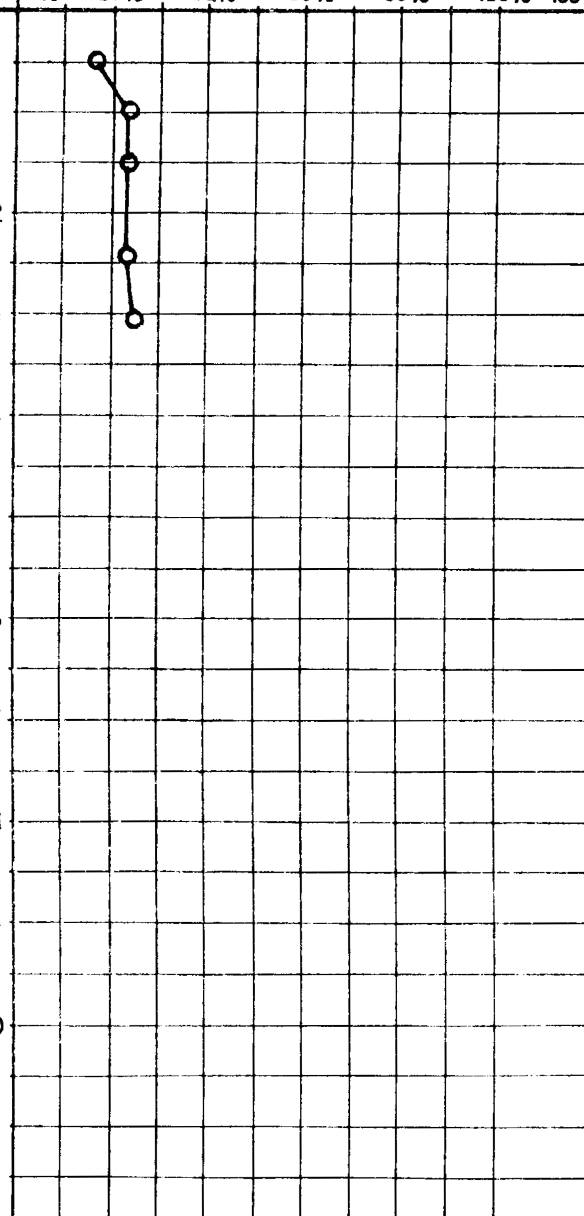
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		CLAY - SILTY									
2		- LOW PLASTIC				-				DAMP	
4		+P_L			1	-99-		1	0	WET	
6	CL									MOIST-WET	
8					2	-92-		8	0	WET	
10		3.1m			3	-95-		5	0	WET	
12		BOTTOM OF HOLE. 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w%: 20%, 40%, 60%, 80%, 100%, 100+



DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH. PRONYCH | RIG B-50 | DATE 78/02/18 | km 155 | B.P. No. | HOLE No. 3

CHAINAGE: 155+46.0 | OFFSET: ℄

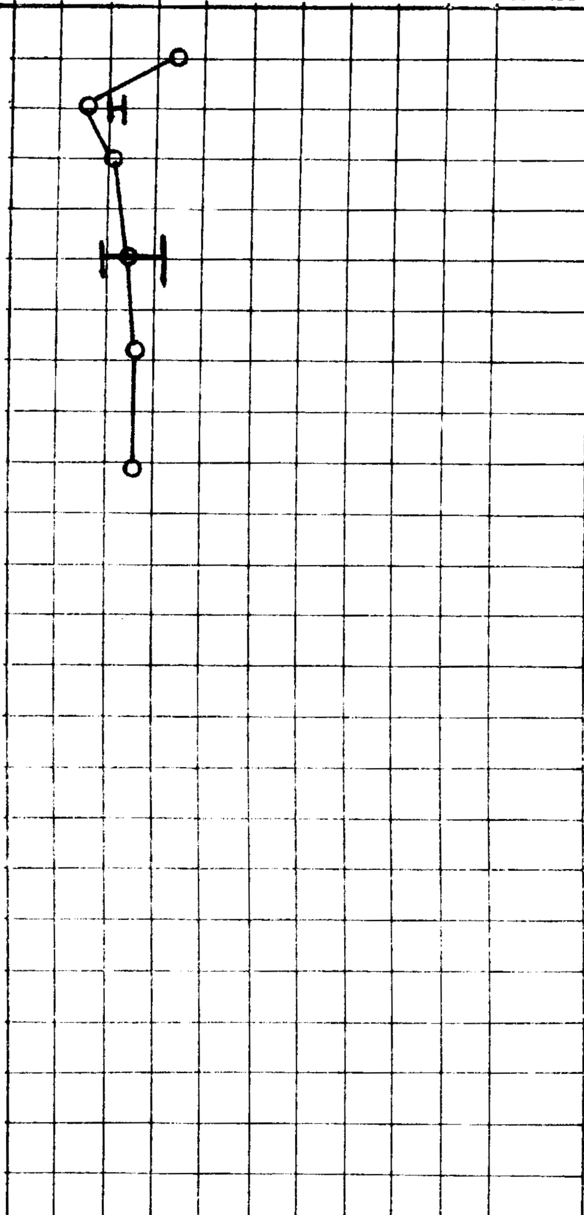
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY				-99-		1	0	SAT.	
4		- LOW PLASTIC			1					DAMP	
6		+PL				-99-		1	0	MOIST-WET	
8	CL	WET AFTER 2.7m			2					WET	
10					3						
12						-99-		1	0	MOIST-WET	
14		4.6m			4						
16		BOTTOM of HOLE - 4.6m								M-W	
18					5						
20					6						
22											
24					7						
26					8						
28											
30					9						
32					10						
34											
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYCH | RIG B-50 | DATE 78/02/18 | km 155 | B.P. No. | HOLE No. 4

CHAINAGE: 155+520 | OFFSET: ℄

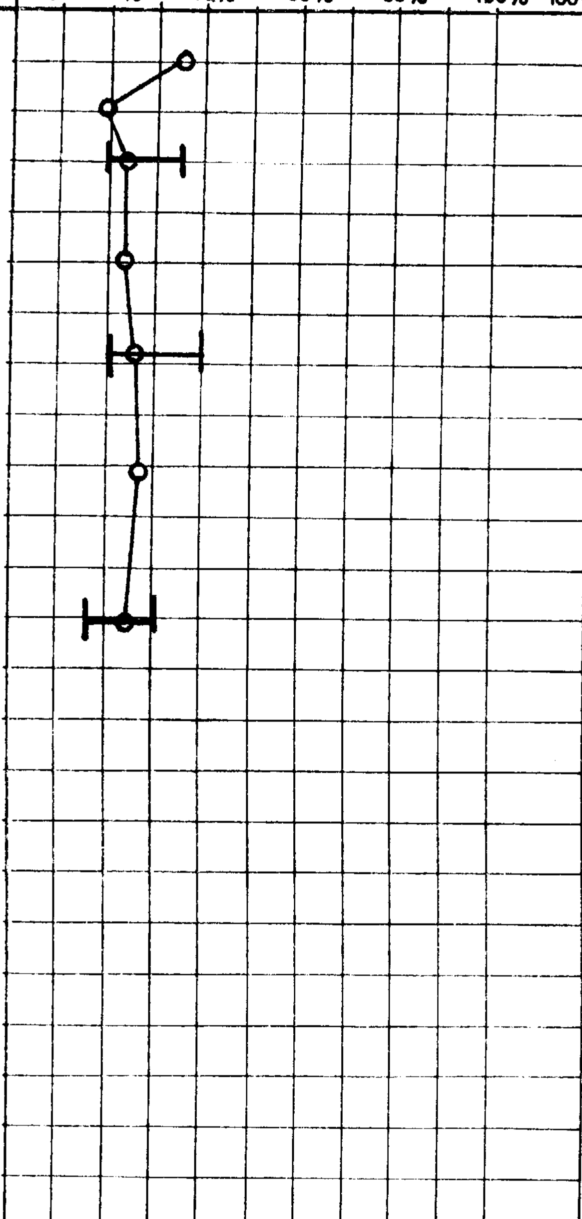
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
2		CLAY - SILTY			
4		- LOW PLASTIC			1
6		+P_L			
8					2
10	CL	WET - 2.1 - 3.1 m			3
12		SAT - 3.7m - 4.0m			
14		WET - 4.0m - 6.1m			4
16		GREY -			5
18					
20		6.1m			6
22		BOTTOM OF HOLE - 6.1m			
24					7
26					
28					8
30					9
32					
34					10
36					
38					11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT |———| LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
				FREE WATER	
-99-		1	0	DAMP	
				MOIST	
-100-		0	0	WET	
				MOIST-WET	
-99-		1	0	WET	
				WET	SAND CONTAMINATION

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 155	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
155+580	℄

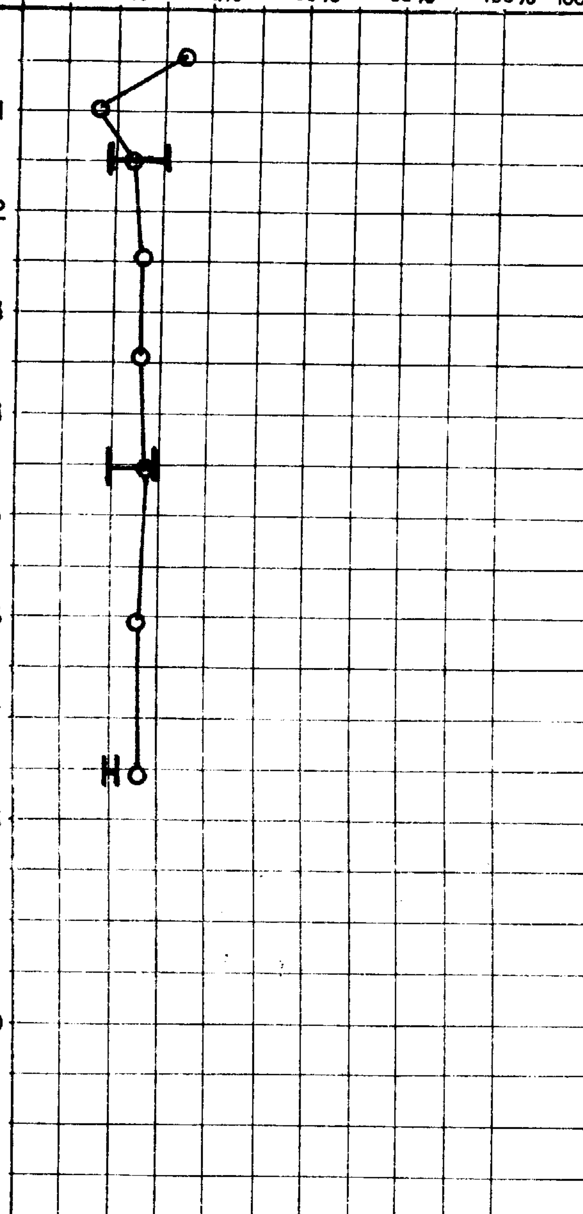
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
2–10	CL	CLAY - SILTY - LOW PLASTIC +PL			0–3
25 (7.6m)		7.6m			7.6
		BOTTOM OF HOLE - 7.6m			

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
99	1	0		SAT.
				DAMP
99	1	0		MOIST
99	1	0		MOIST-WET
				M-W
				M-W
100	0	0		WET
				SAT

REMARKS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 156	B.P. No.	HOLE No. 1

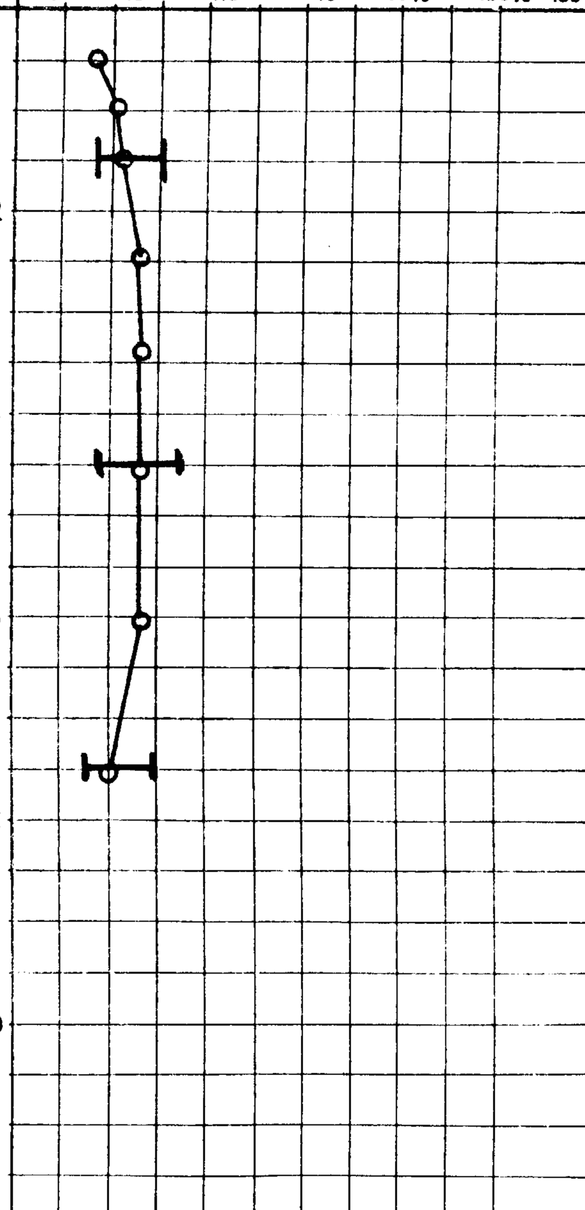
CHAINAGE	OFFSET
156+070	℄

O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa — 50, 100, 150, 200, 250

PLASTIC LIMIT |———| LIQUID LIMIT

w % — 20%, 40%, 60%, 80%, 100%, 100+



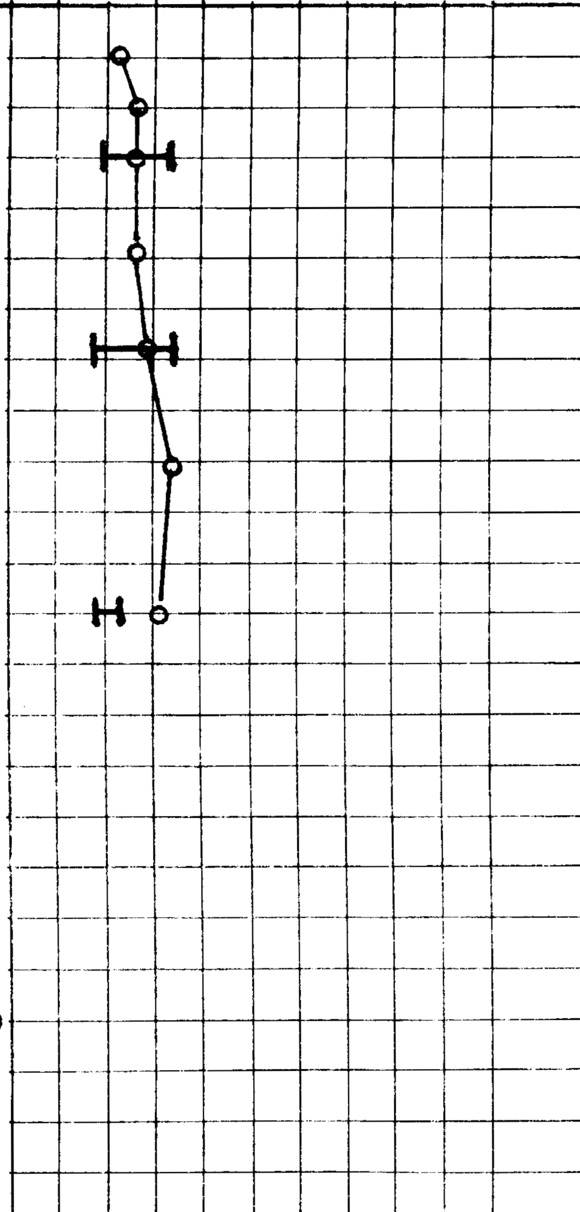
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY								DAMP	
4		- LOW PLASTIC			1	100		0	0	MOIST	
6		+PL								MOIST	
8					2	100		0	0	WET	
10	CL				3					MOIST-WET	
12		WET 2.1m - 3.1m									
14		WET 4.0m - 7.6m			4						
16						93		7	0	WET	
18					5						
20					6					WET	
22											
24		7.6m			7	88		12	0	WET	
26		BOTTOM OF HOLE 7.6m			8						
28											
30					9						
32											
34					10						
36											
38					11						

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	156		2

CHAINAGE	OFFSET
156+160	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2		CLAY - SILTY				96		4	0	MOIST	
2–4		LOW PLASTIC			1					WET	
4–6						98		2	0	MOIST-WET	
6–8		+PL			2					WET	
8–10	CL										
10–12					3	99		1	0	WET	
14–16		SATURATED AFTER 4pm			4					SAT.	
18–20		SANDY			5–6	75		25	0	SAT.	
20		6.1m			6						
22		BOTTOM OF HOLE - 6.1m									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

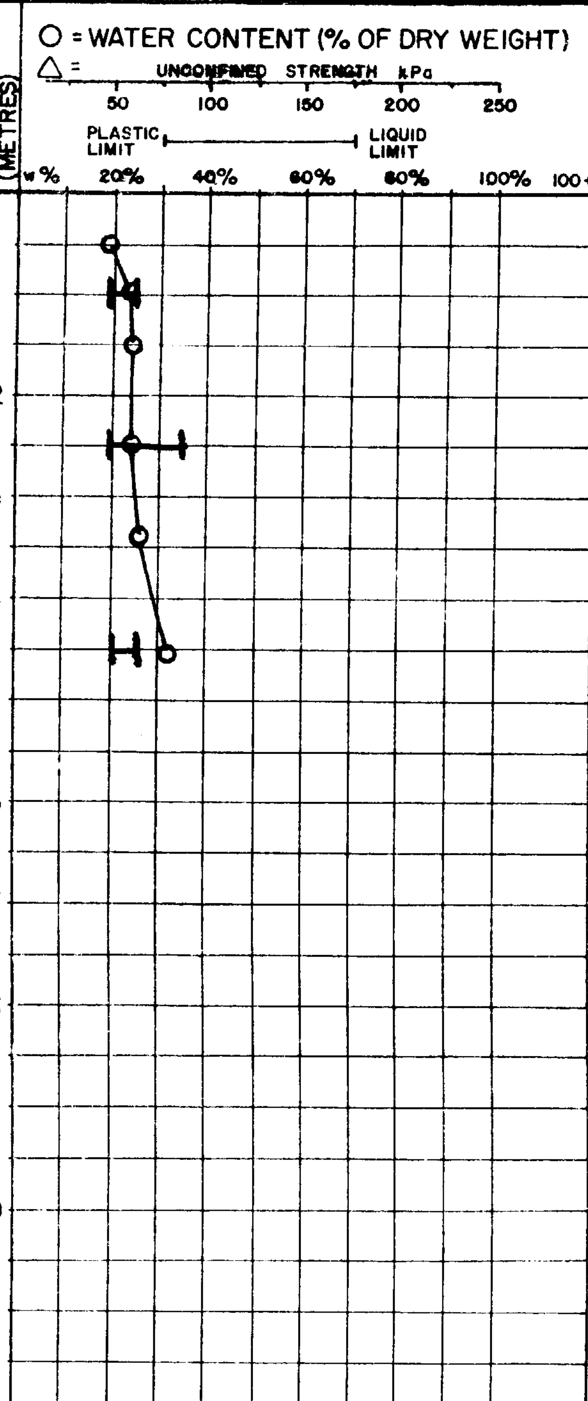
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYCH | RIG B-50 | DATE 78/02/18 | km 156 | B.P. No. | HOLE No. 3

CHAINAGE: 156+250 | OFFSET: ℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY - SILTY							DAMP	
	ML	SILT -			-100-		0	0	MOIST	
		CLAY - SILTY - LOW PLASTIC							WET	
		+PL			-100-		0	0	WET	
	CL	SAT AFTER 4.0m							WET	
	ML	SILT 4.6m			99-		1	0	SAT.	
		BOTTOM OF HOLE - 4.6m								



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

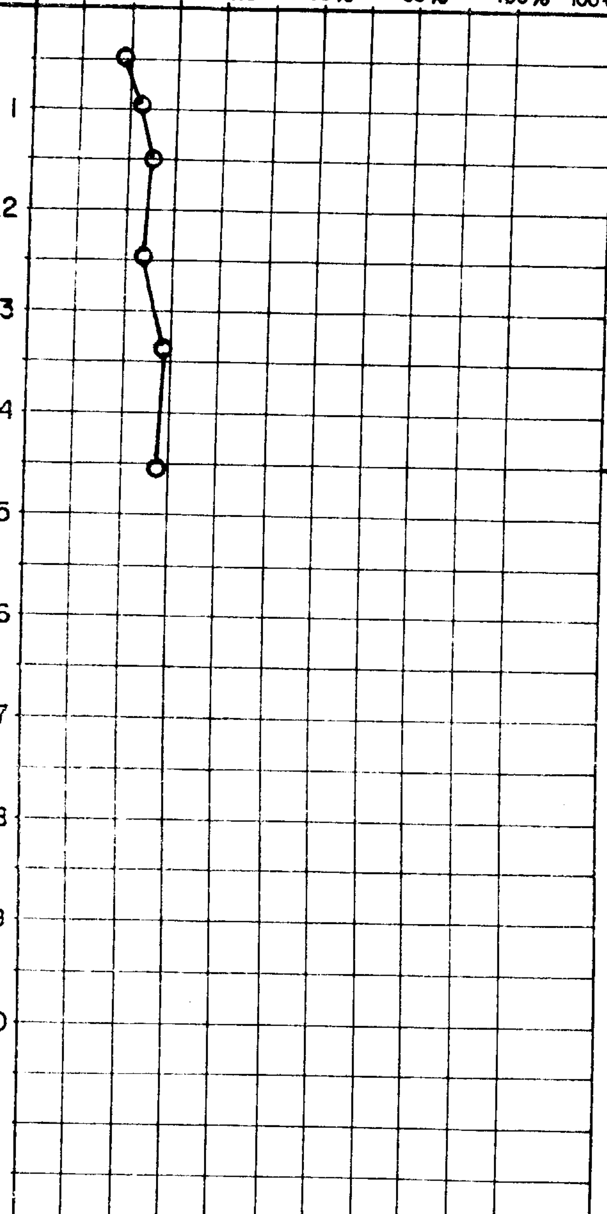
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	156		4

CHAINAGE	OFFSET
156+430	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION
0–2	CL	CLAY - SILTY
2–4	ML	SILT
4–15	CL	CLAY - SILTY - LOW PLASTIC +PL; SAT. AFTER 3.7m
15		4.6m
		BOTTOM OF HOLE - 4.6m

PENETRATION RESISTANCE | ICE DESCRIPTION | DEPTH (METRES)

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
98		2	0	DAMP
99		1	0	MOIST
				WET
99		1	0	WET.
				WET
89		11	0	SAT.

REMARKS

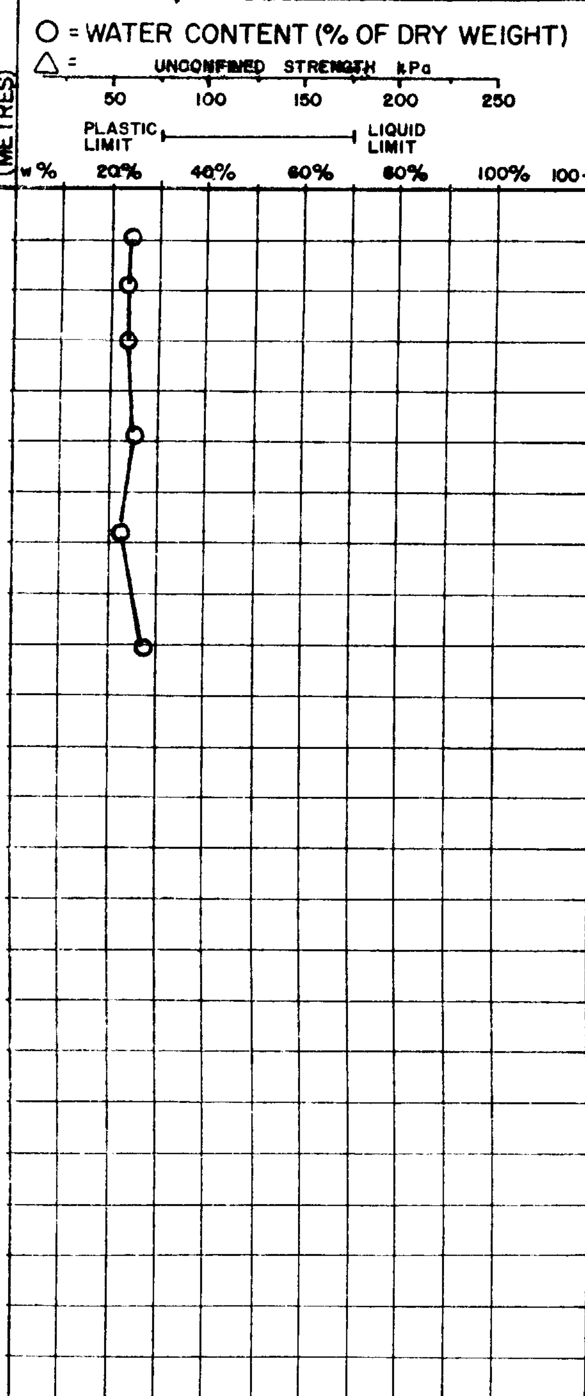
PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 156	B.P. No.	HOLE No. 5

CHAINAGE	OFFSET
156+550	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		CLAY - SILTY								MOIST	
2	CL	-LOW PLASTIC									
4		+PL			1	-99-		1	0	MOIST	
6										MOIST	
8					2	-100-		0	0	MOIST-WET	
10	CL SC	CLAY SILTY & SAND MIXTURE			3					M-W	
12		SAT. AFTER 4.0m									
14	ML	SILT 4.6m			4	-91-		9	0	SAT.	
16		BOTTOM OF HOLE. 4.6m			5						
18											
20					6						
22											
24					7						
26											
28					8						
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT

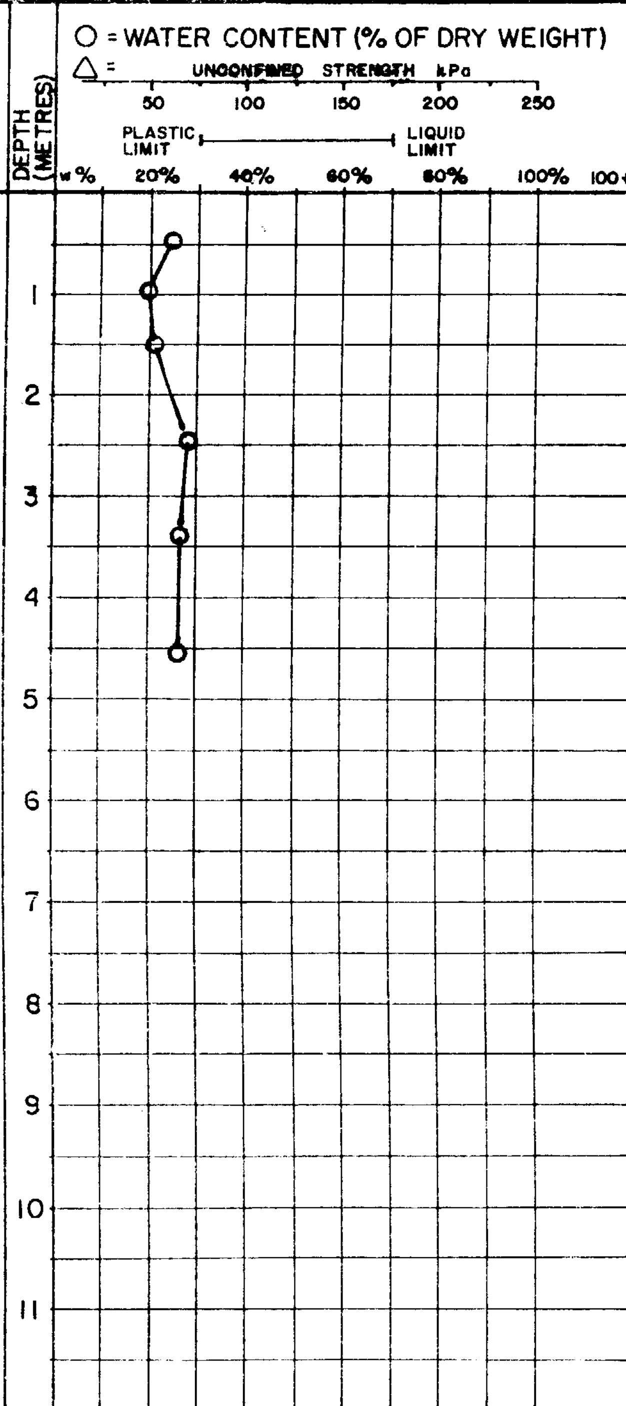
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	156		6

CHAINAGE	OFFSET
156+700	℄

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–7	ML	SILT			0–2.1	-99-		1	0	WET
										MOIST
						-99-		1	0	WET
		2.1 m								
7–15	CL	CLAY - SILTY LOW PLASTIC +PL SAT. AFTER 4.0m			2.1–4.6					MOIST-WET
						-99-		1	0	M-W
										SAT
		4.6 m								
		BOTTOM OF HOLE - 4.6m								



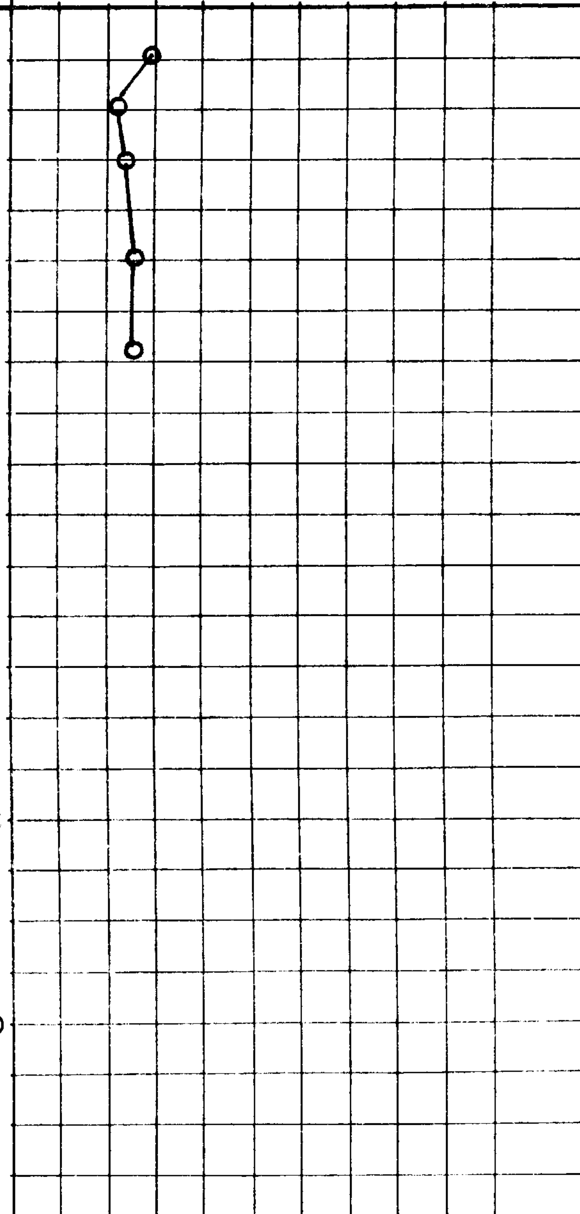
PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	156		7

CHAINAGE	OFFSET
156+950	℄

REMARKS

DEPTH	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0 – 1.5m	ML	SILT-		
1.5m – 3.3m	CL	CLAY - SILTY - LOW PLASTIC +PL SAT. AFTER 2.7m		
3.3m		BOTTOM OF HOLE -3.3m		



Depth (m)	Grain-size: Clay % / Silt %	Sand %	Gravel %	Relative Moisture Content
~0.4				SAT.
1	-99-	1	0	MOIST-WET
~1.5				WET
~2.5	-100-	0	0	WET
~3.4				WET

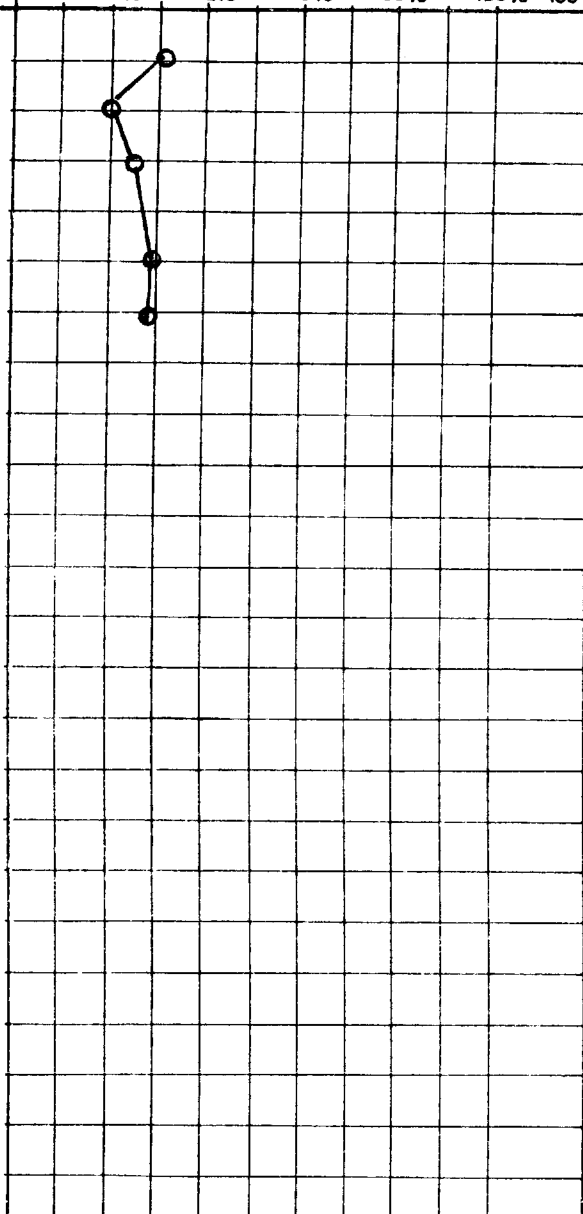
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Liard Hwy.

TECH. Pronych	RIG B-50	DATE 78/02/18	km 157	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
157+130	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–4	ML	Silt - Clayey			0–1.2					Sat.	
		1.2m			1	-	99	1	0	Damp-Moist	
4–10	CL	Clay - Silty - Low Plastic + P.								Moist-Wet	
					2.5	-	100	0	0	Wet	
		3.1m			3					Wet	
		Bottom of Hole - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

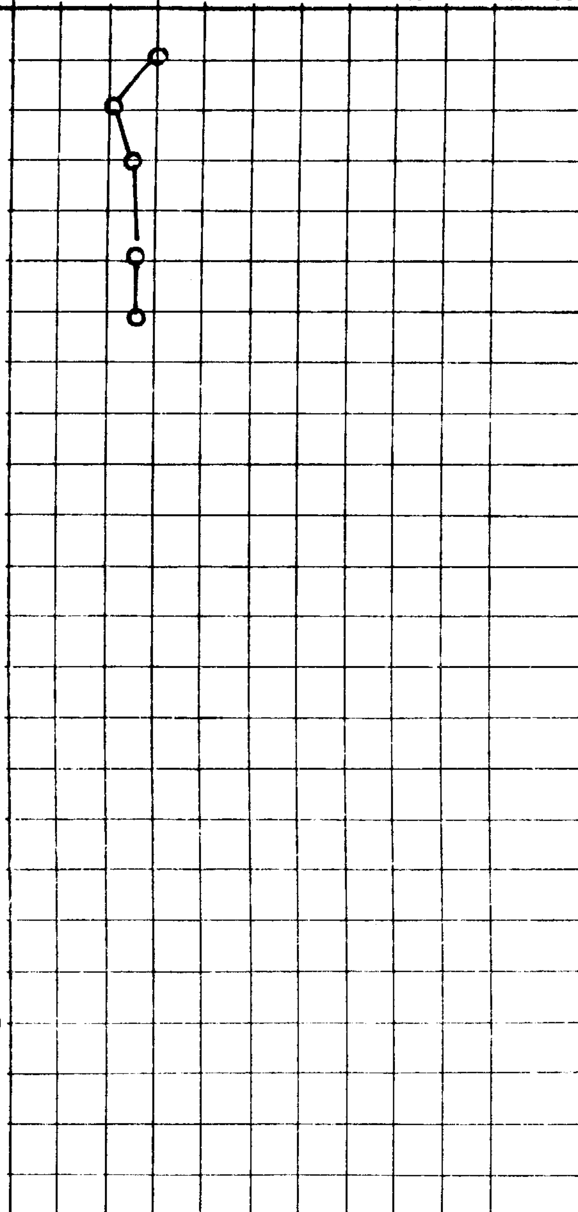
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONIUCH	B-50	78/02/18	157		2

CHAINAGE	OFFSET
157+280	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAYEY				98		2	0	SAT.	
4		1.2m			1					DAMP-MOIST	
6	CL	CLAY - SILTY LOW PLASTIC +PL				99		1	0	MOIST-WET	
8		SAT. AFTER 2.1m			2					WET	
10		3.1m			3	99		1	0	WET	
12		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT —— LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

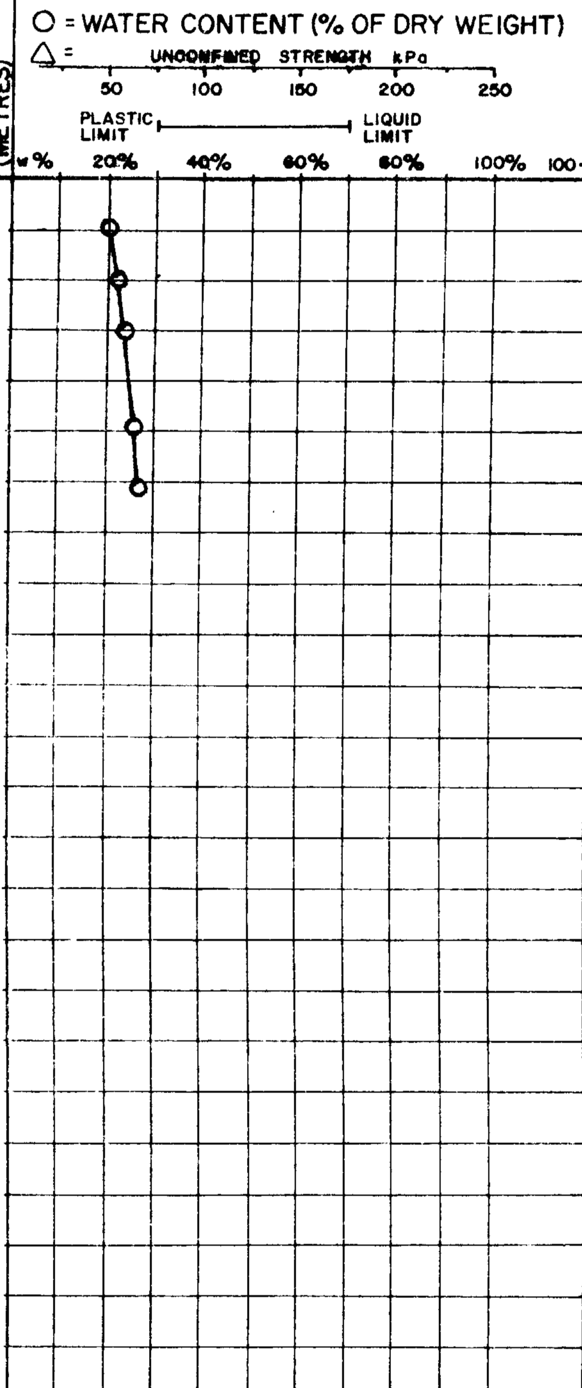


PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	157		3

CHAINAGE	OFFSET
157+530	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–6	ML	SILT - CLAYEY								Moist	
					1	98	-	2	0	WET	
		1.8m								WET	
6–10	CL	CLAY - SILTY - LOW PLASTIC			2						
		SAT. AFTER +PL 1.8 m				99	-	1	0	WET	
		3.1m			3					WET	
		BOTTOM OF HOLE - 3.1m									



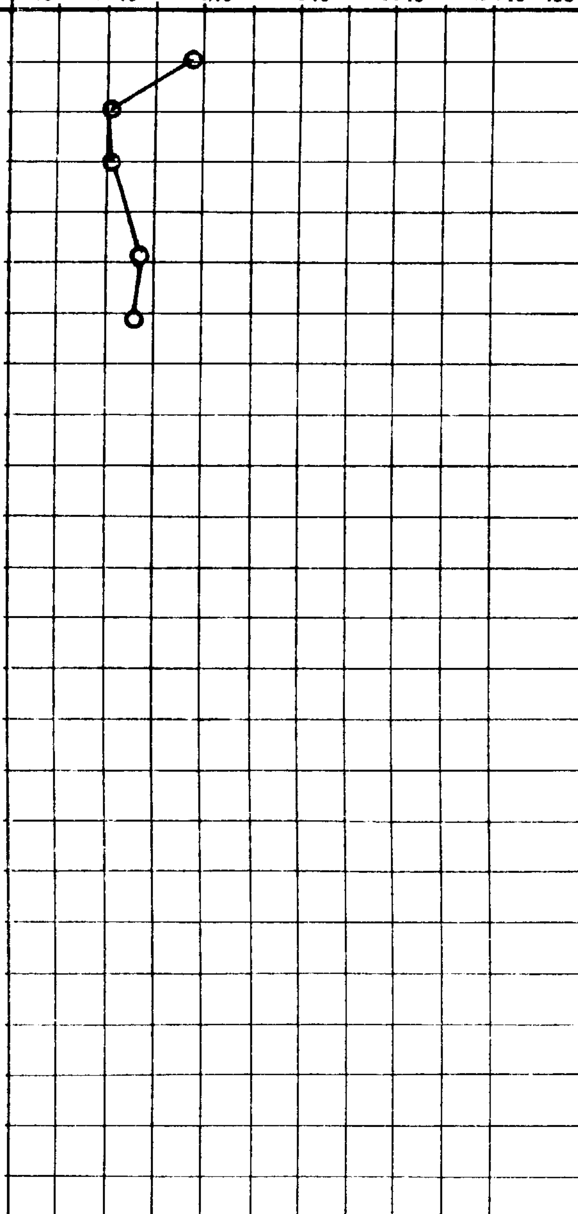
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY

TECH. PRONUCH	RIG B-50	DATE 78/02/18	km 157	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
157+650	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
2	CL	CLAY - SILTY - LOW PLASTIC +PL SAT. AFTER 2.6m			1
10		3.1m			3
12		BOTTOM OF HOLE - 3.1m			4

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
97	-	3	0	SAT.	
				DAMP-MOIST	
				MOIST-WET	
99	-	1	0	WET	
				WET-SAT.	

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD Hwy.

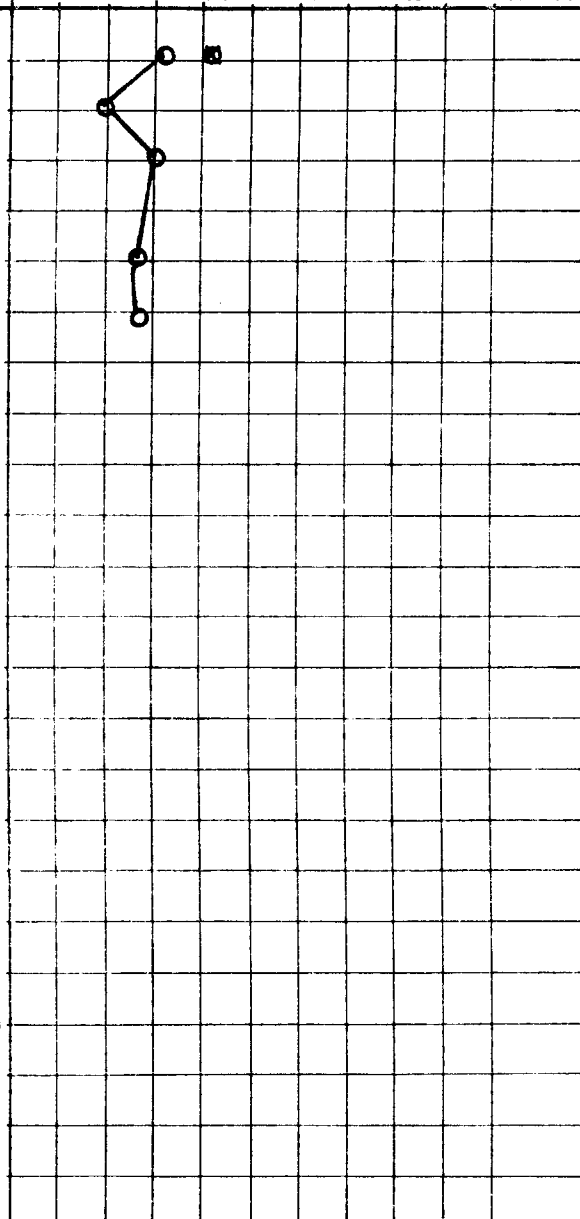
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	157		5

CHAINAGE	OFFSET
157+860	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		CLAY - SILTY								SAT.	
2		- LOW PLASTIC									
4	CL	+P_L			1	98		2	0	DAMP-MOIST	
6										WET	
8		SAT. AFTER 2.1m			2	99		1	0	WET	
10	ML	SILT - ~~SANDY~~ 3.1m			3	97		3	0	SAT.	
12		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

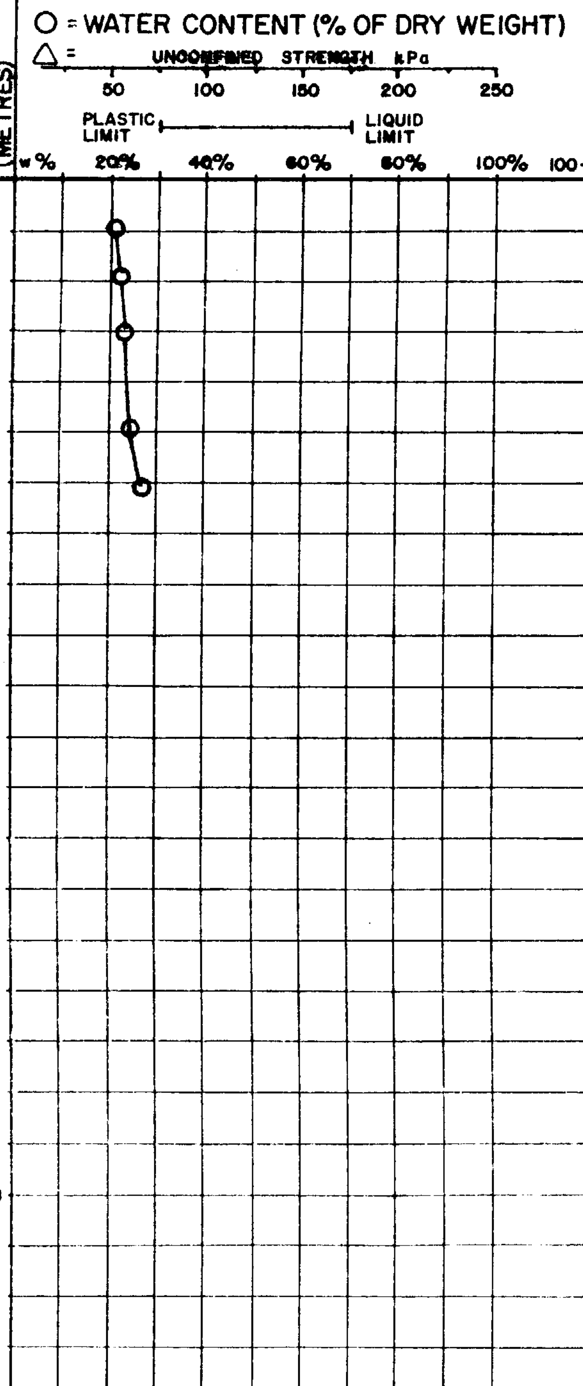


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 158	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
158+200	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - CLAYEY									
2	ML	SILT -				98-		2	0	MOIST	
4		1.2m			1					WET	
		CLAY - SILTY				98-		2	0	WET	
6	CL	LOW PLASTIC + PL			2						
8										WET	
10		SAT AFTER 2.7m 3.1m			3	95-		5	0	SAT.	
12		BOTTOM OF HOLE - 3.1m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



PUBLIC WORKS CANADA — DRILL HOLE REPORT

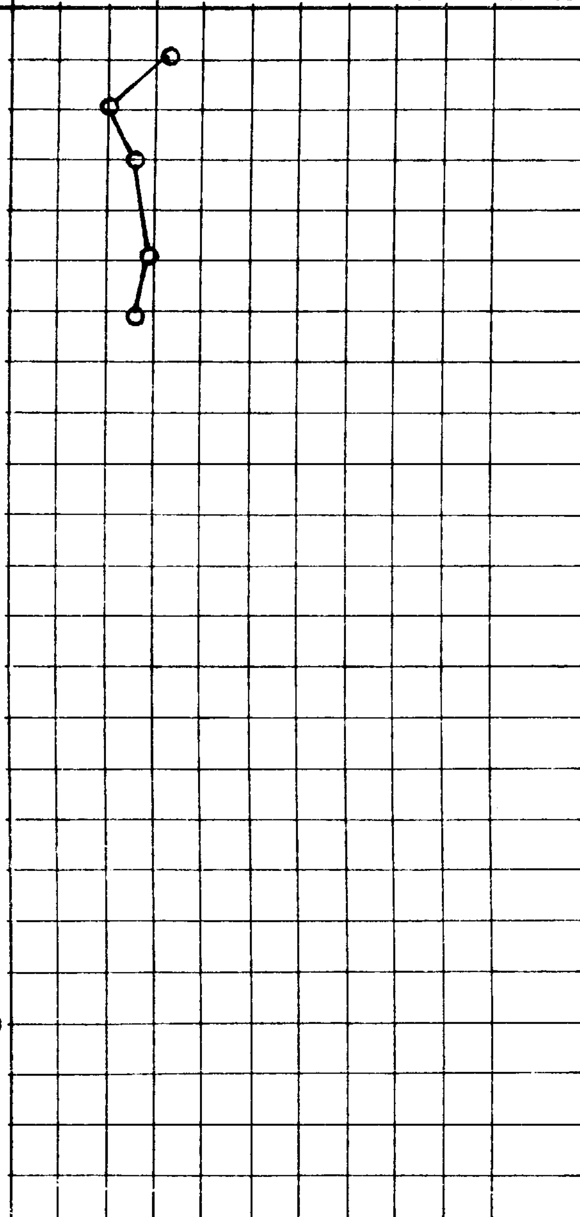
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	158		2

CHAINAGE	OFFSET
158 + 560	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–8	CL	CLAY - SILTY LOW PLASTIC +P_L 2.4m			0–2.4					SAT.	
					1	-98-		2	0	DAMP-MOIST	
										WET	
8–10	ML	SILT SAT AFTER 2.1m 3.1m			2.4–3.1	-99-		1	0	SAT.	
					3					SAT.	
12		BOTTOM OF HOLE - 3.1m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

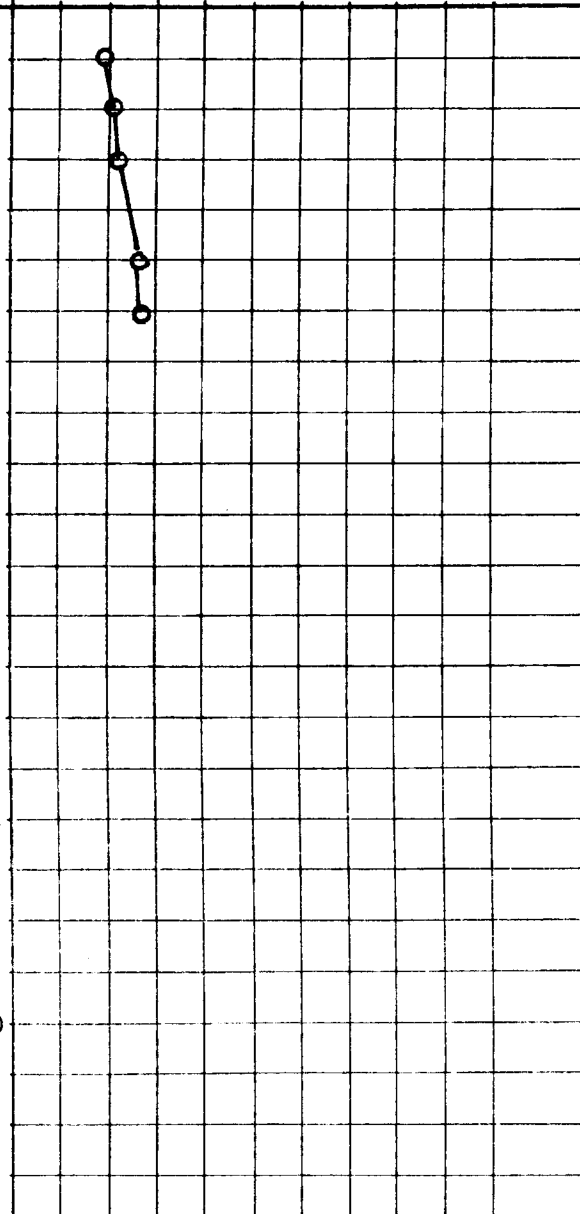
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	158		3

CHAINAGE	OFFSET
158+900	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAYEY SILT.								DAMP	
		1.2 m			1		99	1	0	MOIST	
4–8	CL	CLAY. SILTY LOW PLASTIC +P								MOIST	
							99	1	0	WET	
10		3.1 m			3					WET	WATER BEARING SAND LENSE @ 2.9
12		BOTTOM OF HOLE. 3.1 m									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT — LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

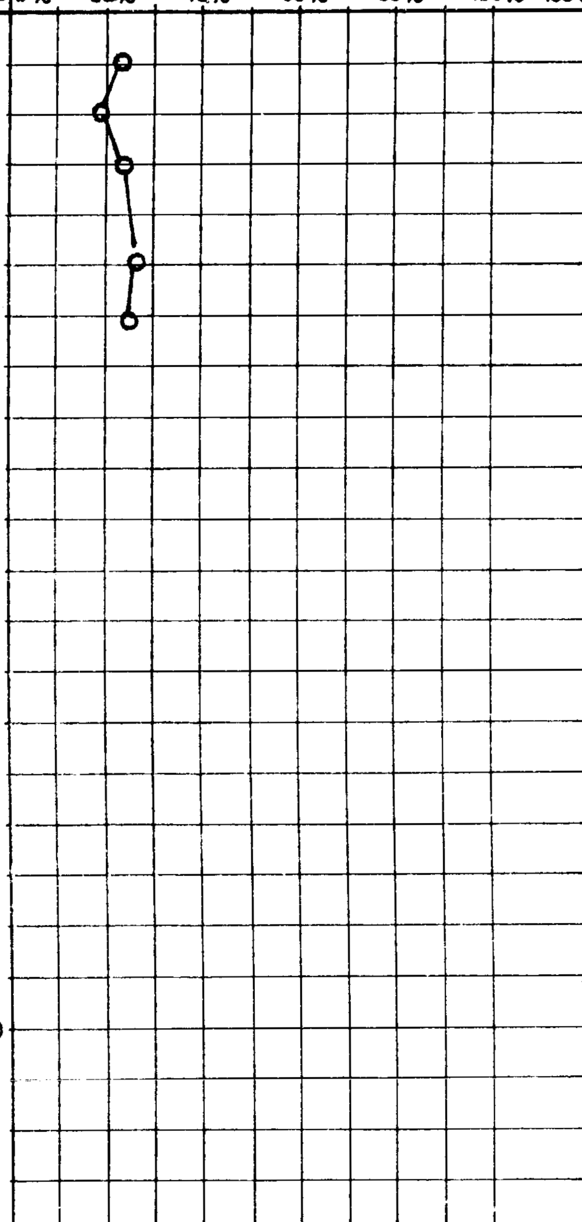
LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	159		1

CHAINAGE	OFFSET
159+230	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–4	ML	SILT - CLAYEY			0–1.2	99	-	1	0	MOIST / DAMP	
		1.2 m									
4–10	CL	CLAY - SILTY - LOW PLASTIC +PL			1.2–3.1	94	-	6	0	MOIST-WET / M-W / WET	
		3.1 m									
		BOTTOM OF HOLE - 3.1 m									



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 159	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
159+420	℄

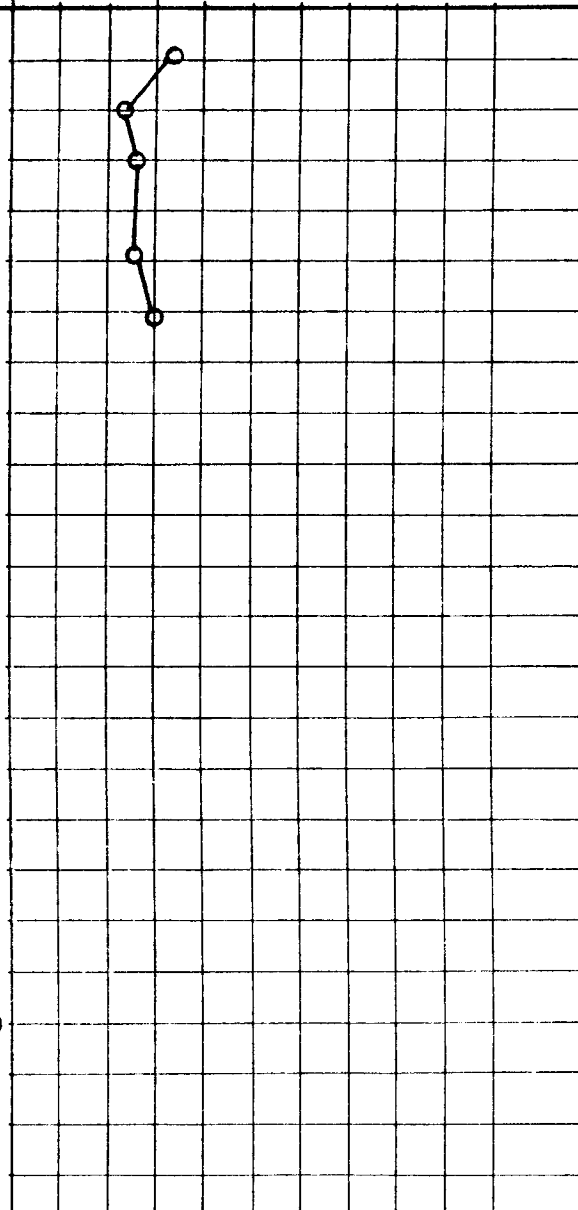
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY				96-		4	0	SAT	
4	CL	- LOW PLASTIC +PL			1					DAMP-MOIST	
6		WATER BEARING SAND @ 3.1 m				99-		1	0	MOIST-WET	
8					2					MOIST-WET	
10		- SANDY 3.1 m			3	58-		42	0	WET	
12		BOTTOM OF HOLE · 3.1 m									
14–38					4–11						

O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 159	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
159+840	℄

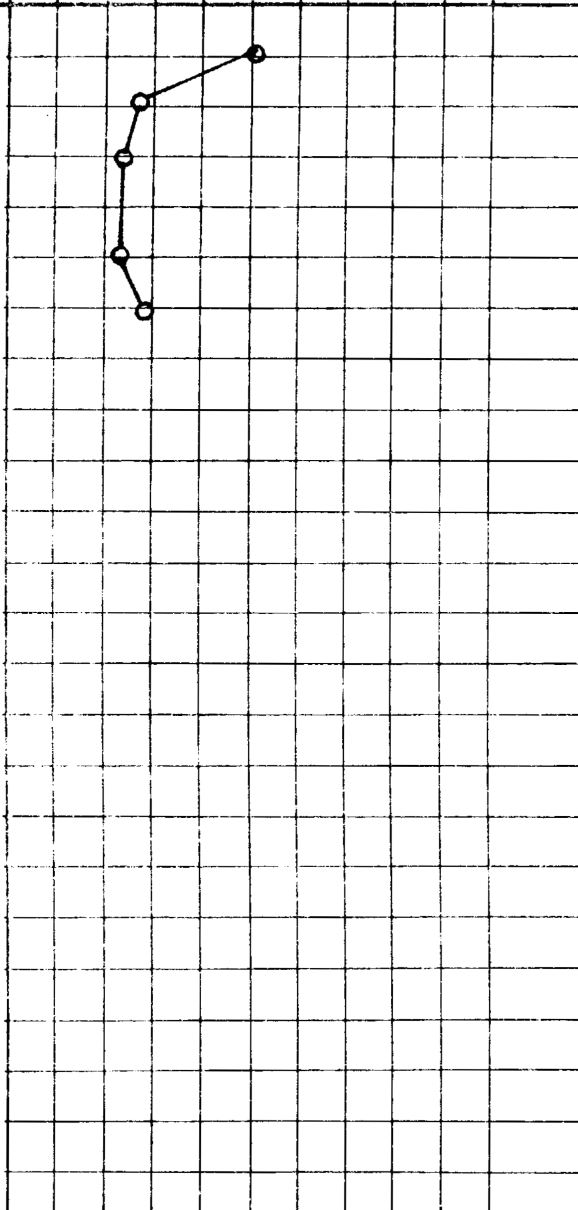
Depth (m)	Unified Soil Symbol	Soil Description	Penetration Resistance	Ice Description	Clay %	Silt %	Sand %	Gravel %	Relative Moisture Content	Remarks
0 – .3m		ICE		ICE						
.3m –		SILT - CLAYEY WITH ORGANICS							SAT.	
– 2.4m	ML	SILT			99	-	1	0	SAT. / WET	
2.4m – 3.1m	CL	CLAY - SILTY - LOW PLASTIC			99	-	1	0	MOIST	
3.1m									MOIST-WET	
		BOTTOM OF HOLE - 3.1m								

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT — LIQUID LIMIT

w%: 20%, 40%, 60%, 80%, 100%, 100+



DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 160	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
160+120	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	Pt	PEAT .6m								WET	
4	ML	SILT-CLAYEY TO CLAY SILTY			1	98		2	0	MOIST-WET	
6	CL									WET	
8		2.4m			2						
	CL	CLAY-SILTY LOW PLASTIC 3.4m				99		1	0	MOIST-WET	
10					3					WET	
12		BOTTOM OF HOLE - 3.4m									

Depth (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

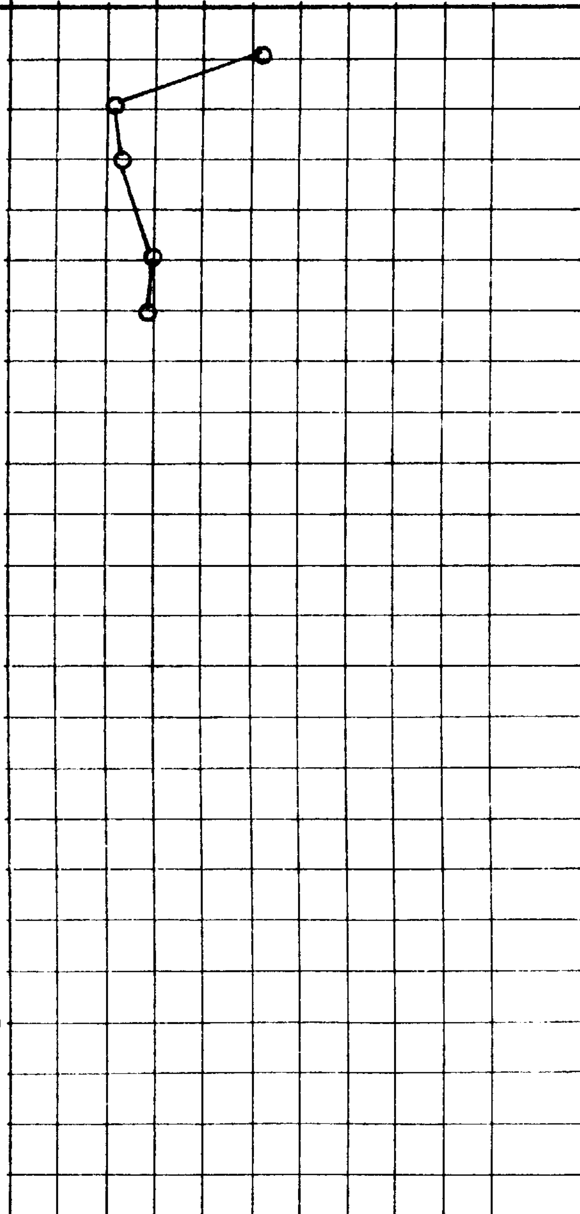
Depth (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

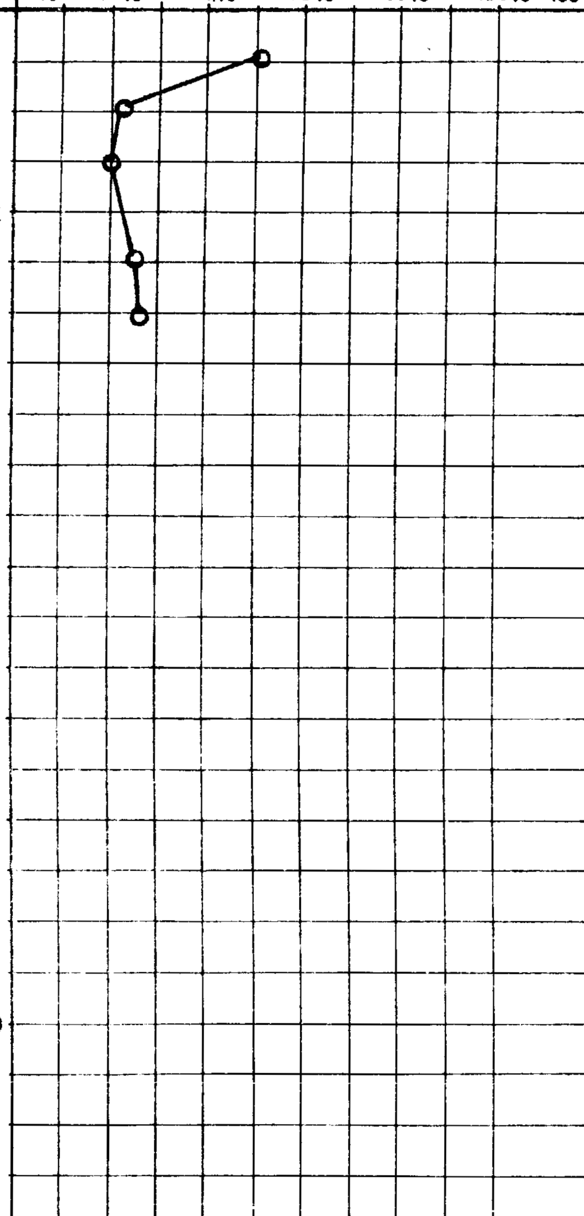


PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/18	160 -		2

CHAINAGE	OFFSET
160+450	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT —— LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	OL	SILT - ORGANIC								WET	
2–4	ML	SILT -			1	-	99 -	1	0	MOIST-WET	
					1.5					M-W	
8		2.4m									
	CL	CLAY-SILT)			2.5	-	97 -	3	0	M-W	FREE WATER
10	SM	SAND - SILTY 3.1m			3	-	46 -	54	0	SAT.	2.7m - 3.1m
		BOTTOM OF HOLE 3.1m									

PUBLIC WORKS CANADA — DRILL HOLE REPORT

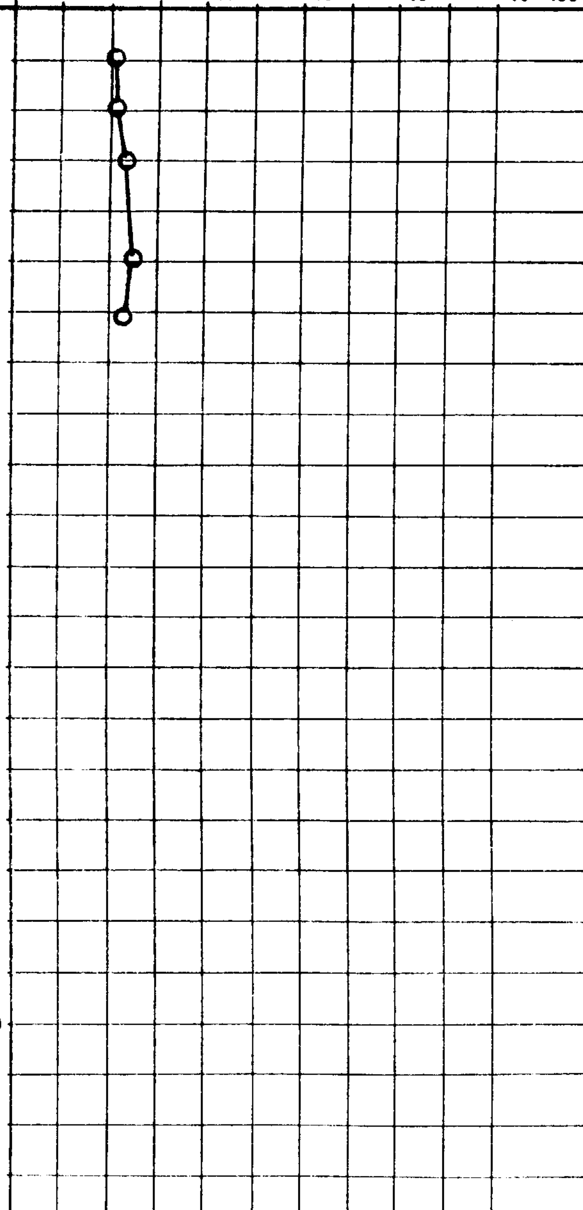
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/18	160		3

CHAINAGE	OFFSET
160+910	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	ML	SILT - CLAYEY — .6m			99		1	0	WET	
									WET	
2–10	CL	CLAY - SILTY · LOW PLASTIC +PL - SANDY — 3.1m			88		12	0	WET	
									MOIST-WET	
									M-W	
		BOTTOM OF HOLE - 3.1m								

DEPTH (METRES) / ○ = WATER CONTENT (% OF DRY WEIGHT) / △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250) / PLASTIC LIMIT — LIQUID LIMIT / w% 20% 40% 60% 80% 100% 100+



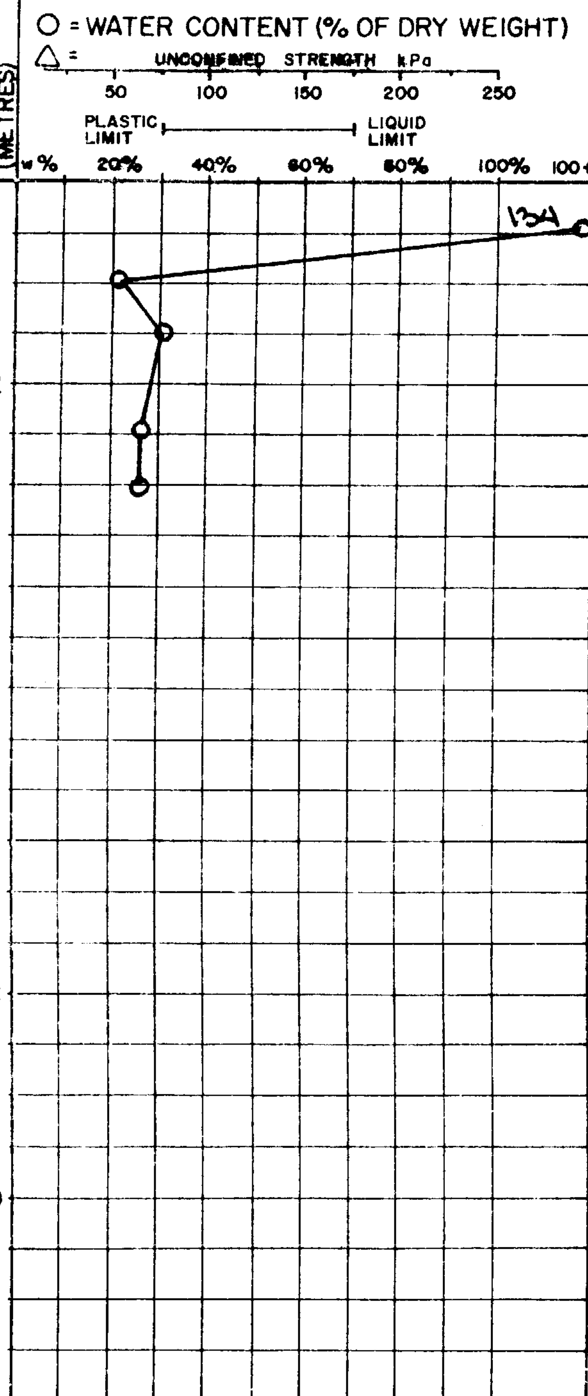
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/18	161		1

CHAINAGE	OFFSET
161+370	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	PEAT								SAT.	
2		.6m									
	CL	CLAY - SILTY - LOW - MED PLASTIC + Pt			1					MOIST	
4	Ci					-98-		2	0	MOIST	
6					2						
8		2.4m									
	ML	GREY - SILT								WET	FREE WATER 2.7m - 3.1m
10		3.1m			3	-98-		2	0	WET	
12		BOTTOM OF HOLE - 3.1m									

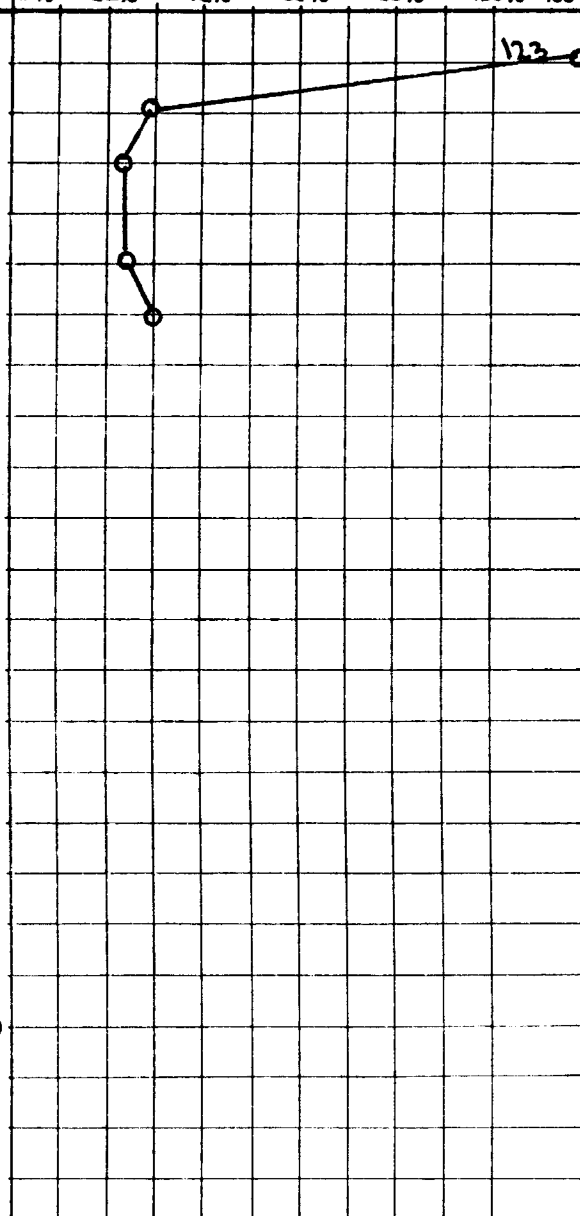


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 161	B.P. No.	HOLE No. 2

CHAINAGE: 161+880 | OFFSET: ℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |—| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–1 m	Pt	PEAT — 1 m							SAT.	
									SAT.	
	ML	SILT - SANDY CLAYEY			—	98	2	0	WET	
									SAT.	WET 2.1m - 3.1m
3.1 m	CL	CLAY - SILTY — 3.1m			—	91	9	0	MOIST-WET	
		BOTTOM OF HOLE - 3.1m								

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

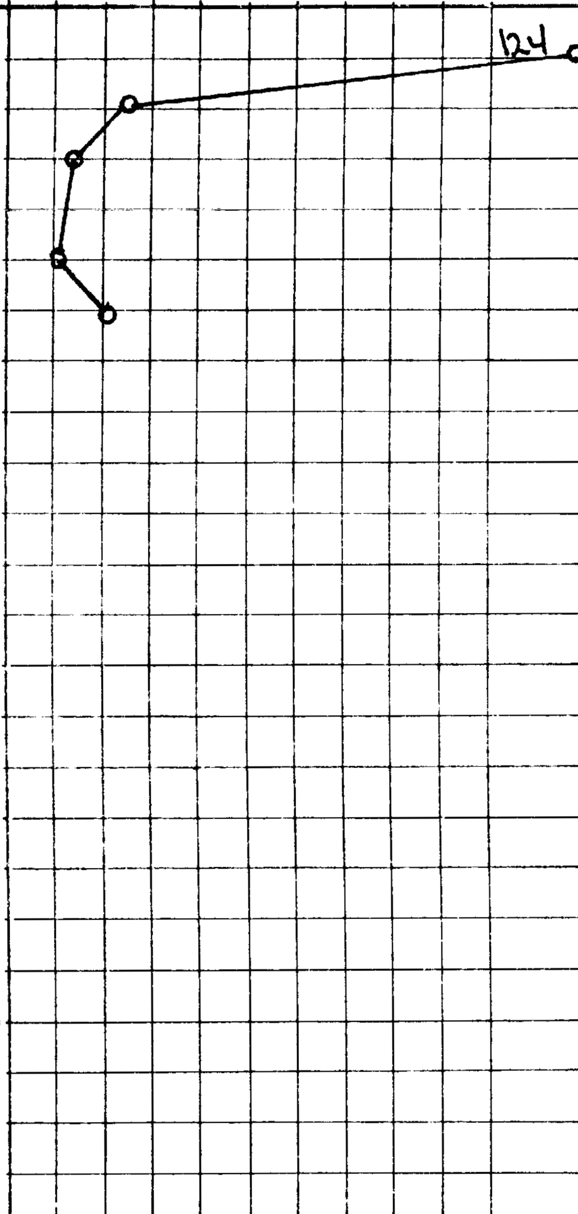
TECH. WEBBER	RIG B-50	DATE 78/02/18	km 162	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
162+280	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	Pt ML	SILT & PEAT .9 m								FREE WATER	
	ML	SILT - SANDY			1		81	19	0	SAT.	FREE WATER
4–8	SM	SAND - SILTY - PEBBLES 2.4			1.5		27	64	9	SAT.	
8–10	CL	CLAY - SILTY SANDY GRAVELLY 3.1 m			2.5	42	37	21		SAT.	
					3					WET	

BOTTOM OF HOLE - 3.1 m

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

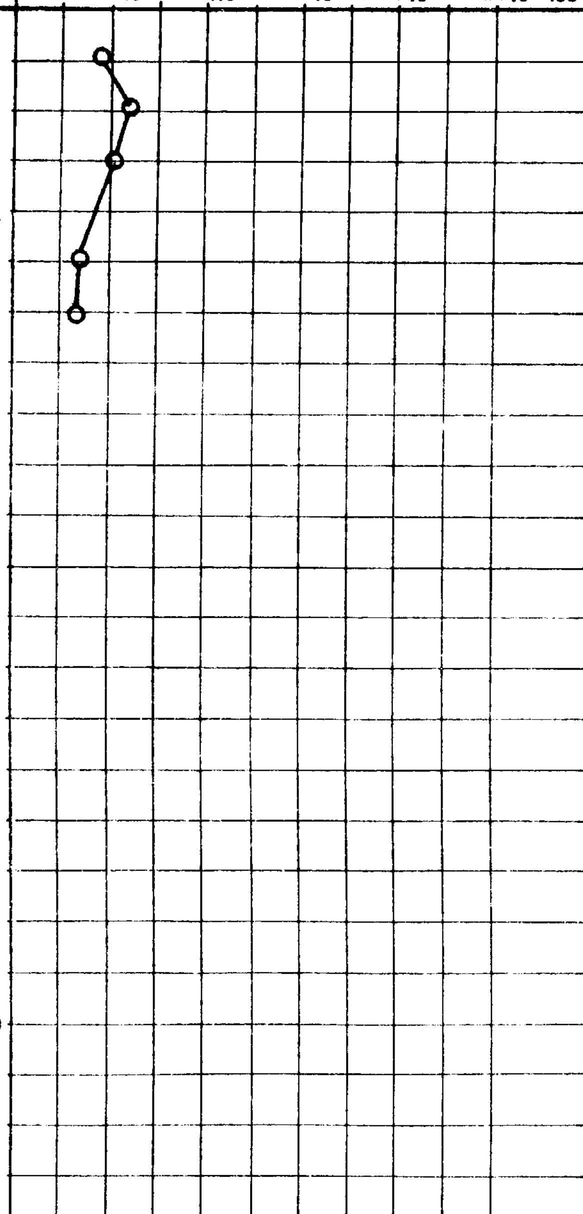
TECH. WEBBER	RIG B-50	DATE 78/02/18	km 162	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
162+460	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT-				98-		2	0	DAMP	
4					1					WET	
		1.5m				78-		20	2	MOIST	
6		CLAY - SILTY SANDY									
		- PEBBLES			2						
8	CL	- LOW PLASTIC								MOIST	
10		- TILL 3.1 m			3	67-		30	3	MOIST	
12		BOTTOM of HOLE - 3.1 m									
14					4						
16											
18					5						
20											
22					6						
24					7						
26											
28					8						
30					9						
32											
34					10						
36					11						
38											

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



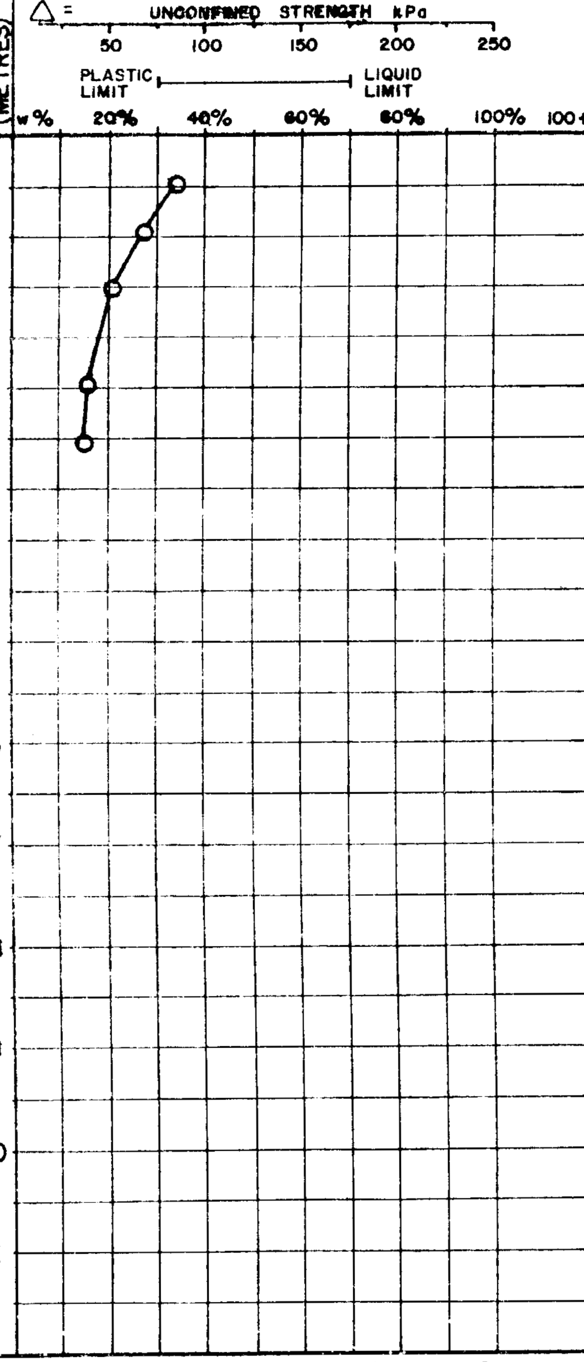
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 162	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
162+800	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT.				97	-	3	0	SAT.	
					1					SAT.	
		1.5m				65	-	23	12	WET.	FREE WATER 1m - 1.8m
8	CL	CLAY · SILTY SANDY PEBBLES TILL LOW PLASTIC			2					MOIST-WET	
10		3.1m			3	69	-	28	3	MOIST	
12		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa

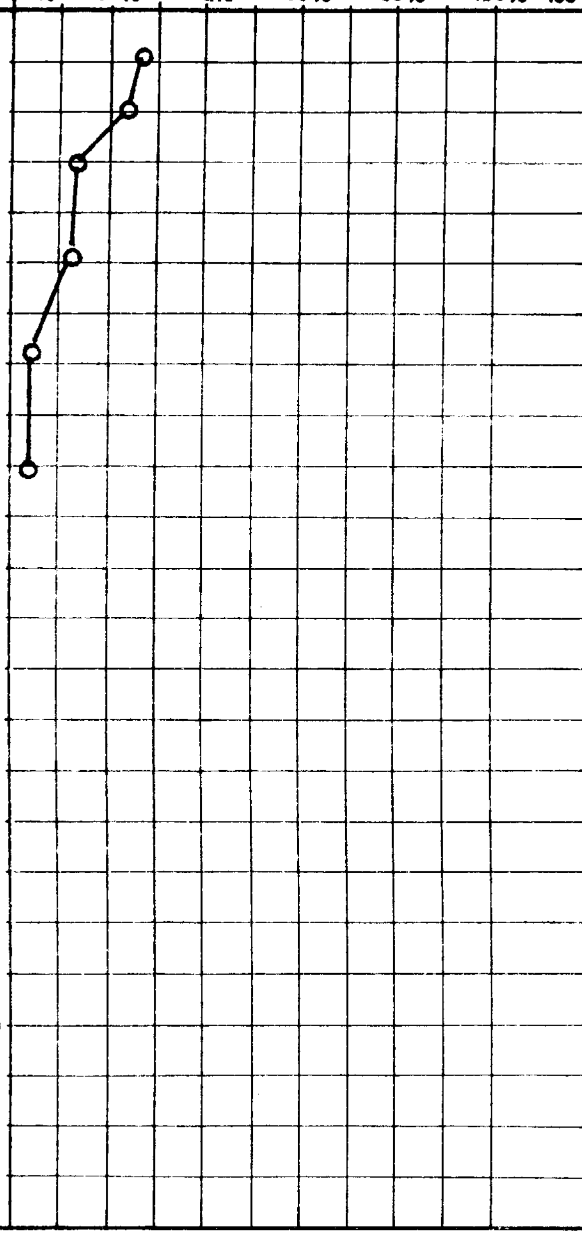


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 162	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
162+980	℄

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAYEY				-98-		2	0	WET	
4		SILT -			1					WET	
		1.5 m				-72-		26	2	DAMP-MOIST	
6		CLAY - SILTY, SANDY, PEBBLES			2						
8	CL	LOW PLASTIC								WET	
10		3.1 m			3						
12	SP	SAND - FINE, PEBBLES				-12-		81	7	HUMID-DAMP	
14		4.6 m			4	-8-		90	2	HUMID-DAMP	
16		BOTTOM OF HOLE - 4.6 m			5						
18											
20					6						
22											
24					7						
26											
28					8						
30											
32					9						
34					10						
36											
38					11						

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 163	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
163+130	E

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT. .6m							SAT.	
	CL	CLAY - SILTY			98		2	0	MOIST-WET	
		LOW PLASTIC							WET	
									MOIST-WET	
		GREY - SANDY - PEBBLES			74		21	5	DAMP-MOIST	
	CL	4.6m							D-M	
		BOTTOM OF HOLE - 4.6m								

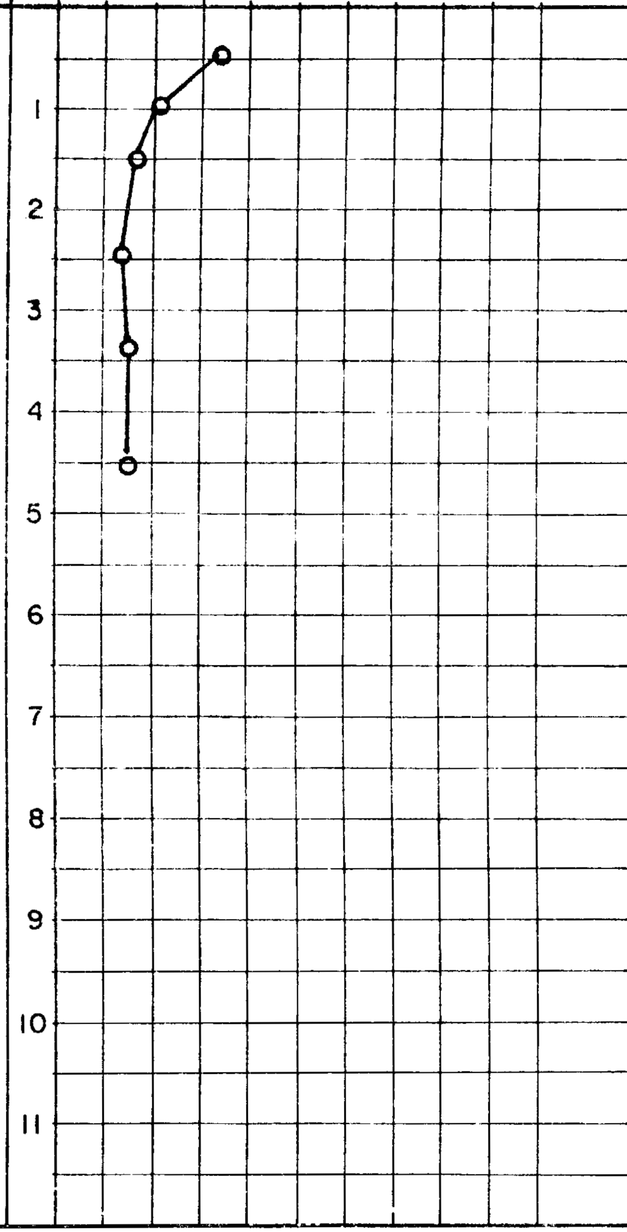
DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT — LIQUID LIMIT

DEPTH (METRES) | w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 163	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
163+230	℄

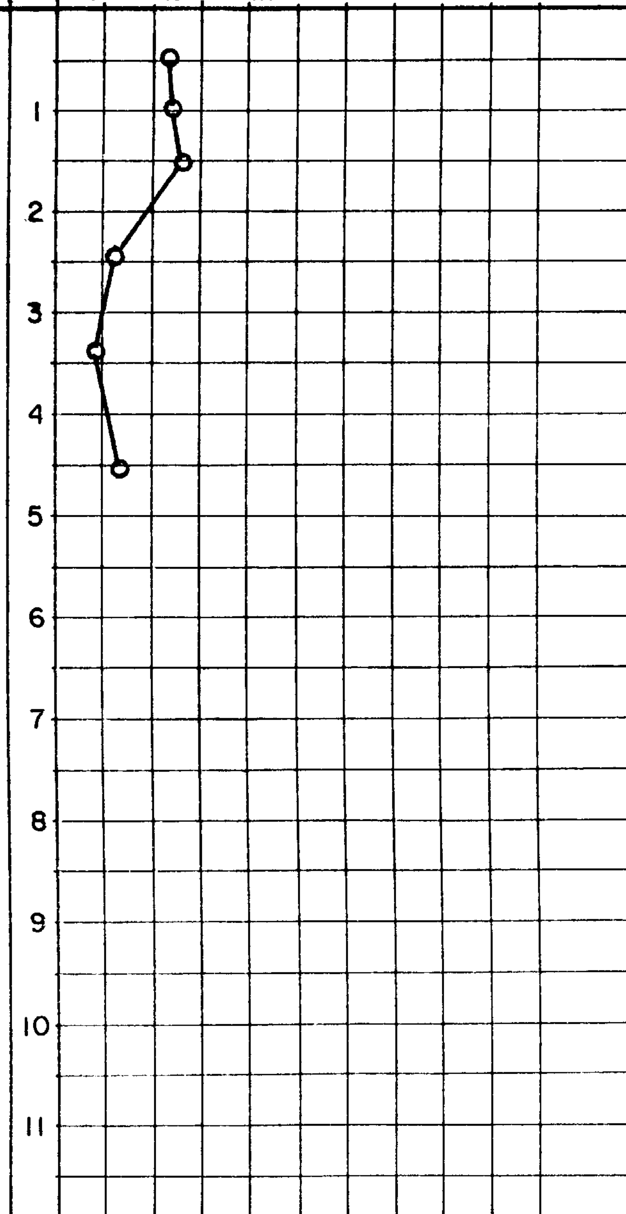
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–5	ML	SILT.		
		1.5 m		
5–15	CL	CLAY - SILTY - SANDY PEBBLES - LOW PLASTIC GRAVELLY		
		4.6 m		
		BOTTOM OF HOLE - 4.6 m		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				DAMP-MOIST
99		1	0	WET
				WET
62		31	7	MOIST
				MOIST
52		29	19	MOIST

REMARKS

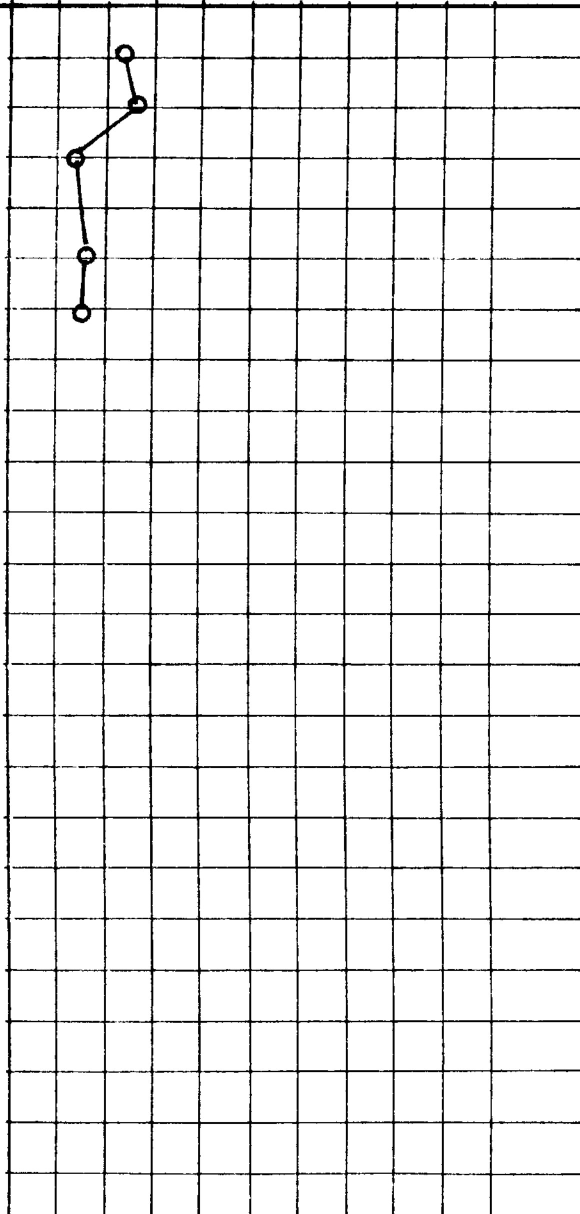
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 163	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
163+320	℄

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT — LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT. .6m				-99-		1	0	WET	
2		CLAY - SILTY									
4					1					WET	
										MOIST	
6	CL	- SANDY - PEBBLES			2						
8		- LOW PLASTIC				-68-		27	5	MOIST	
10		3.1m			3					MOIST	
12		BOTTOM OF HOLE - 3.1m									—
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/18	163		4

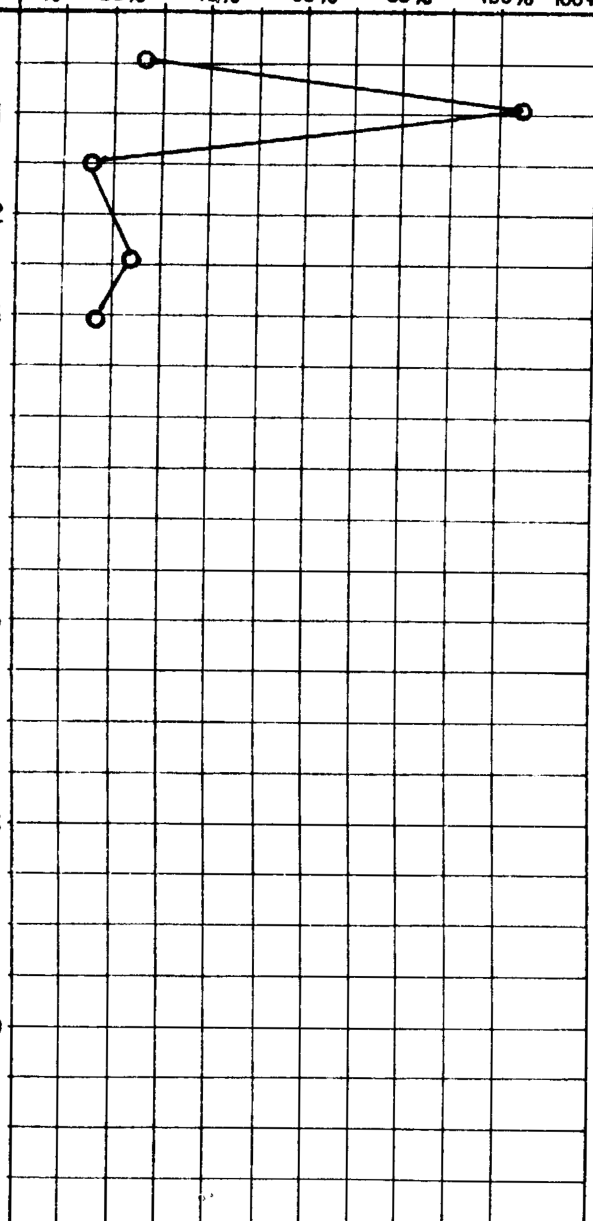
CHAINAGE	OFFSET
163+530	℄

DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0 – 2.4m	ML	SILT - CLAYEY		FROZEN					WET	
1									FREE WATER	
1.5					-	69	27	4	SAT.	
2.4m – 3.1m	CL	CLAY - SILTY SANDY - PEBBLES							WET	
3.1m					-	70	27	3	MOIST-WET	
		BOTTOM OF HOLE . 3.1m								

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT



■♣ PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

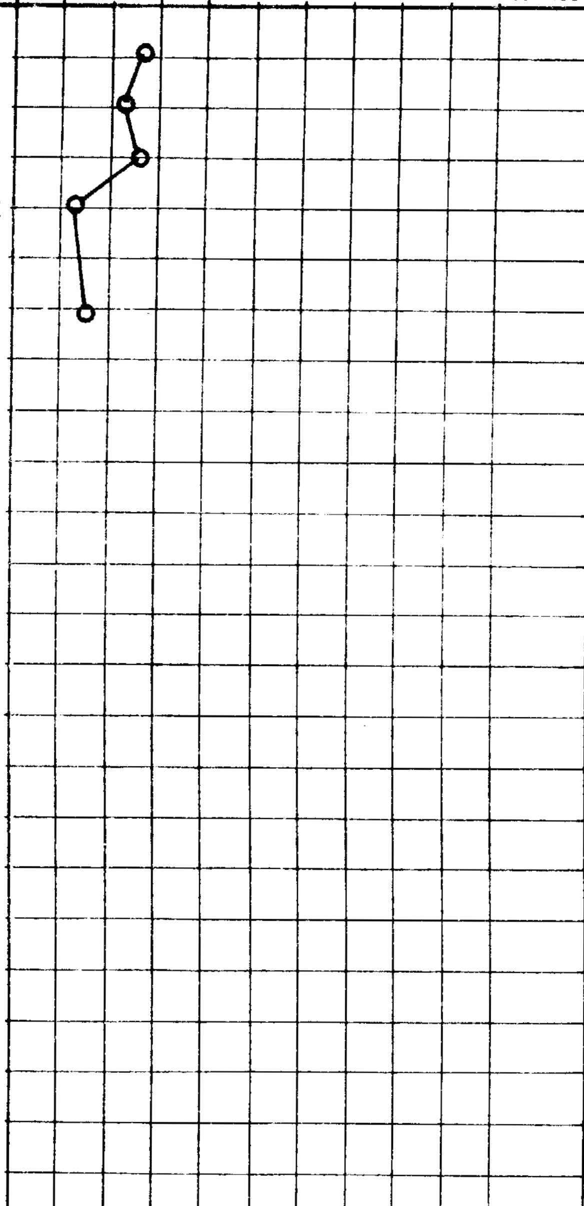
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/18	163		5

CHAINAGE	OFFSET
163+840	℄

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - CLAYEY								SAT.	
2–4	ML	SILT.			1	99		1	0	MOIST	
										MOIST	
8		2.4m			2					DAMP	
	CL	CLAY. SILTY SANDY									
10	CI	. PEBBLES @PL 3.1m			3	62		31	7	DAMP	
12		BOTTOM OF HOLE - 3.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 163	B.P. No.	HOLE No. 6

CHAINAGE	OFFSET
163+990	

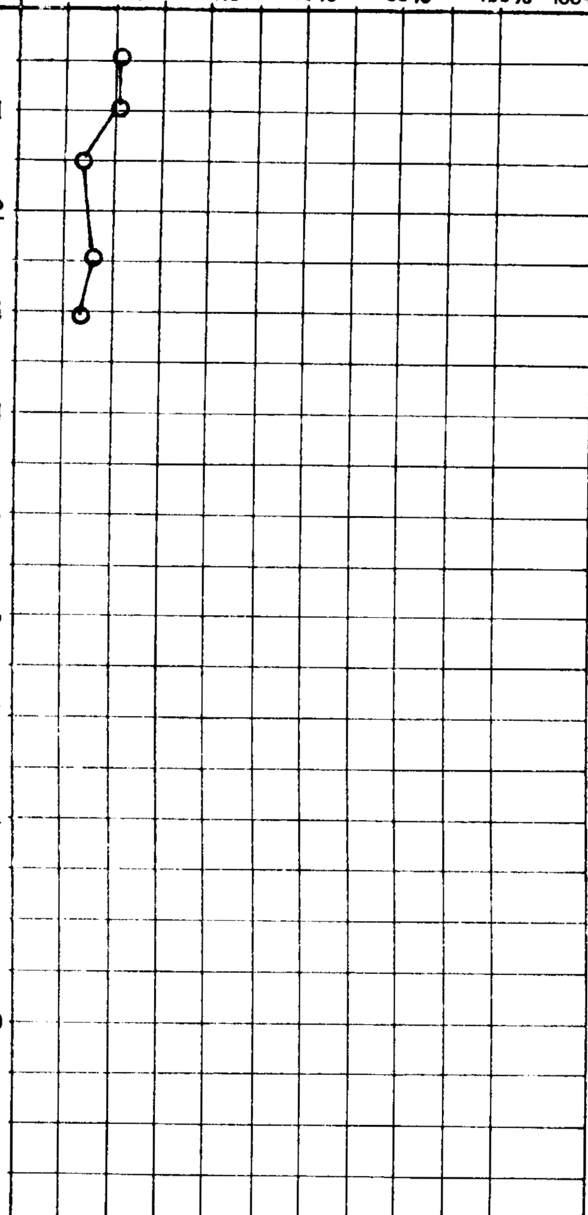
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–4	ML	SILT - CLAYEY								WET-SAT	
4		1.2 m			1	-	73	9	18	DAMP	
4–10	CL CI	CLAY - SILTY SANDY PEBBLES @PL LOW - MED. PLASTIC								DAMP	
						-	66	29	5	DAMP	
10		3.1 m			3					DAMP	
12		BOTTOM OF HOLE. 3.1 m									

O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



BORROW PIT HOLES

Borrow Pits #38 to #81

PUBLIC WORKS CANADA — DRILL HOLE REPORT

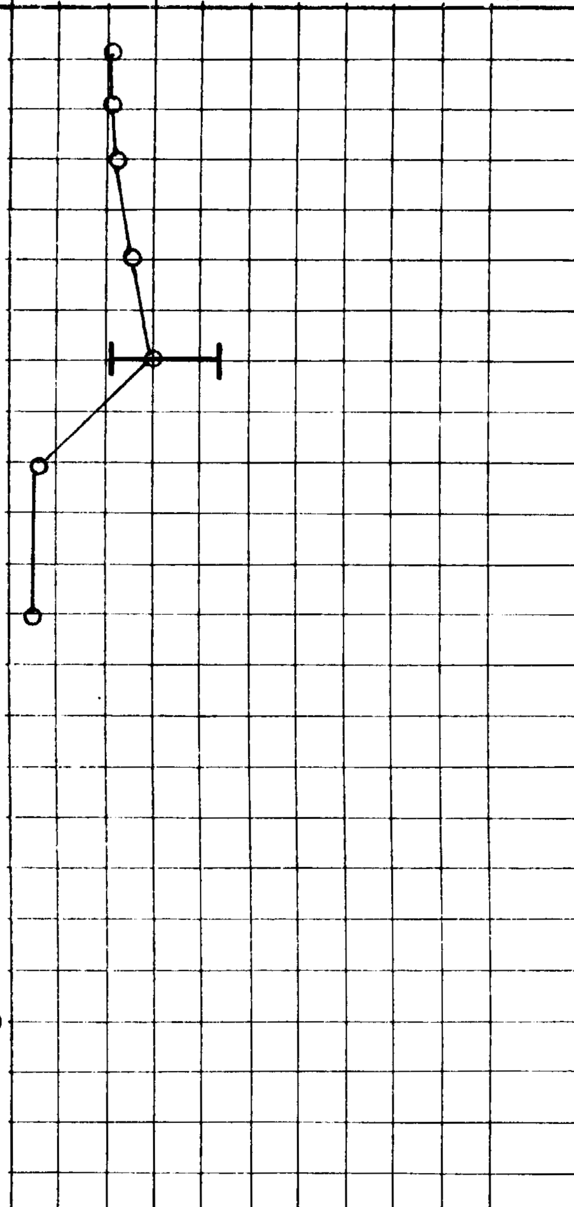
LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	B-50	78/01/30	109	38	1

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–13	CL	CLAY - SILTY @ & ABOVE P_L Low PLASTIC			0–4.0	99		1	0	DAMP	
										DAMP	
						100		0	0	MOIST	
										MOIST	
						99		1	0	WET	
13		4.m			4.0						
13–20	SM	SAND - SILTY			4.0–6.1					HUMID	
						34		66	0	HUMID	
20		6.1m			6.1						
		Bottom of Hole 6.1m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

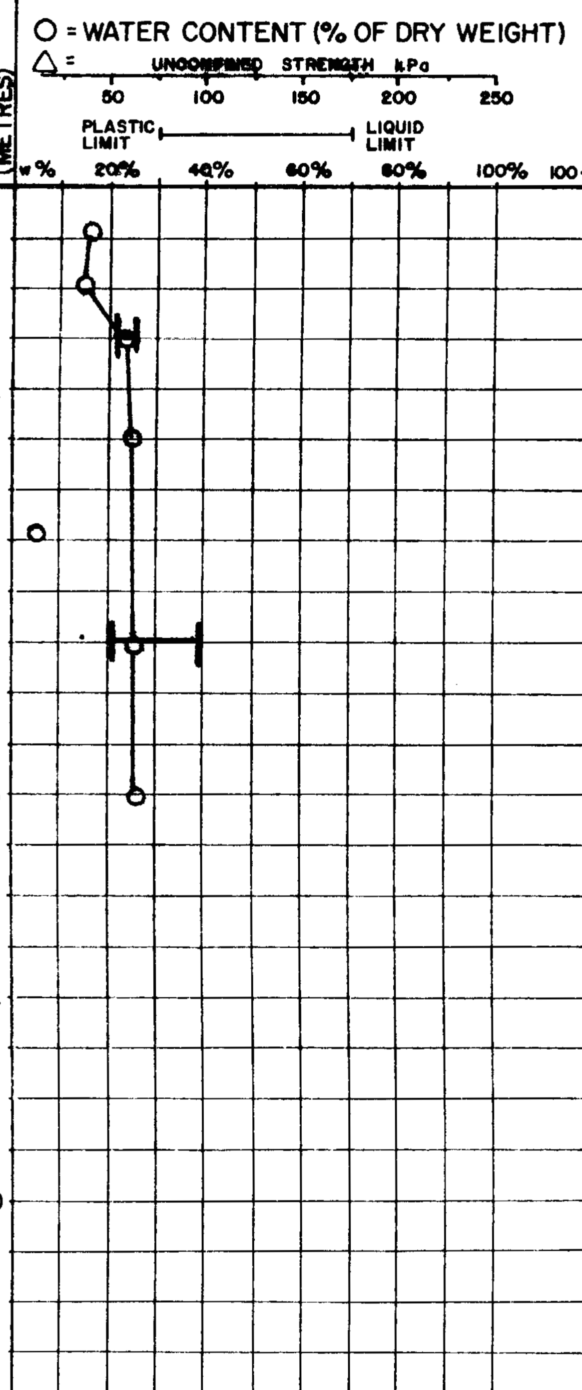
Liard Hwy.

TECH. Pronych	RIG B-50	DATE 78/01/31	km 113	B.P. No. 39	HOLE No. 2

CHAINAGE	OFFSET

REMARKS

Depth (m)	Unified Soil Symbol	Soil Description	Penetration Resistance	Ice Description	Clay %	Silt %	Sand %	Gravel %	Relative Moisture Content
0.4	ML	Silt.				99	1	0	Damp
1.0									Damp
1.6									Moist
2.1		2.1m							
2.5	CL	Clay. Silty - Low Plastic + P_L				100	0	0	Moist
3.4									H.I.B.
4.5						100	0	0	Moist
6.0									Moist
6.1		6.1m							
		Bottom of Hole. 6.1m							

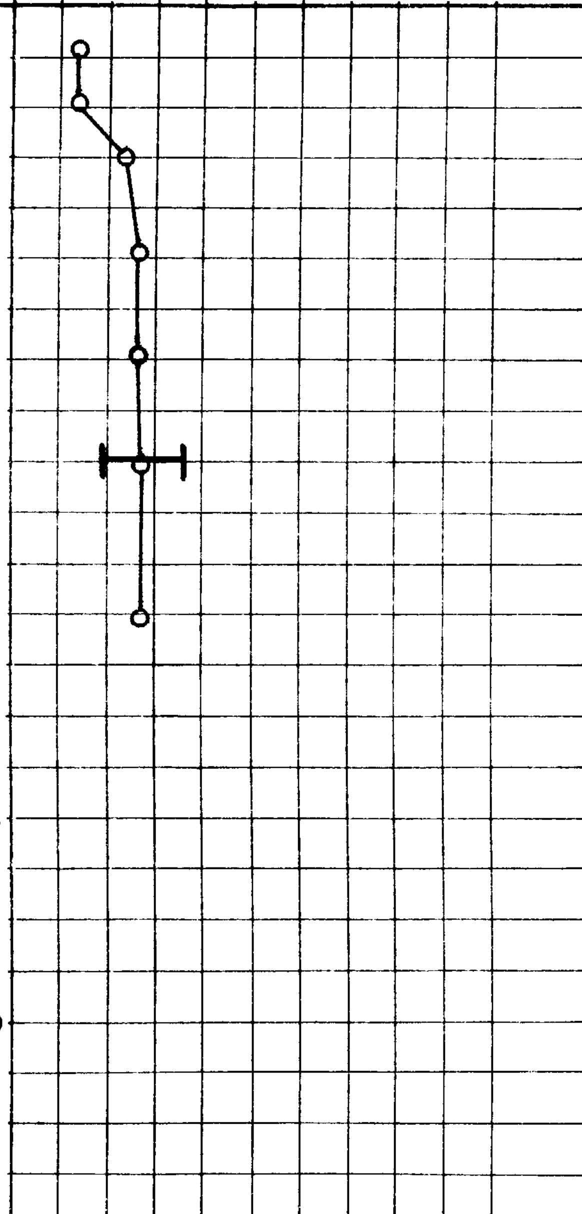


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/01/31	km 113	B.P. No. 39	HOLE No. 3

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT -								DAMP			
4					1	-98-		2	0	DAMP			
6		2.1m								MOIST			
8		CLAY - SILTY + PL · LOW PLASTIC			2	-99-		1	0	MOIST-WET			
10					3								
12										M-W			
14	CL				4	-99-		1	0	M-W			
16					5								
18													
20		6.1m			6					M-W			
22		BOTTOM OF HOLE - 6.1m											
24					7								
26					8								
28													
30					9								
32													
34					10								
36					11								
38													



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/01/31	km 113	B.P. No. 39	HOLE No. 4

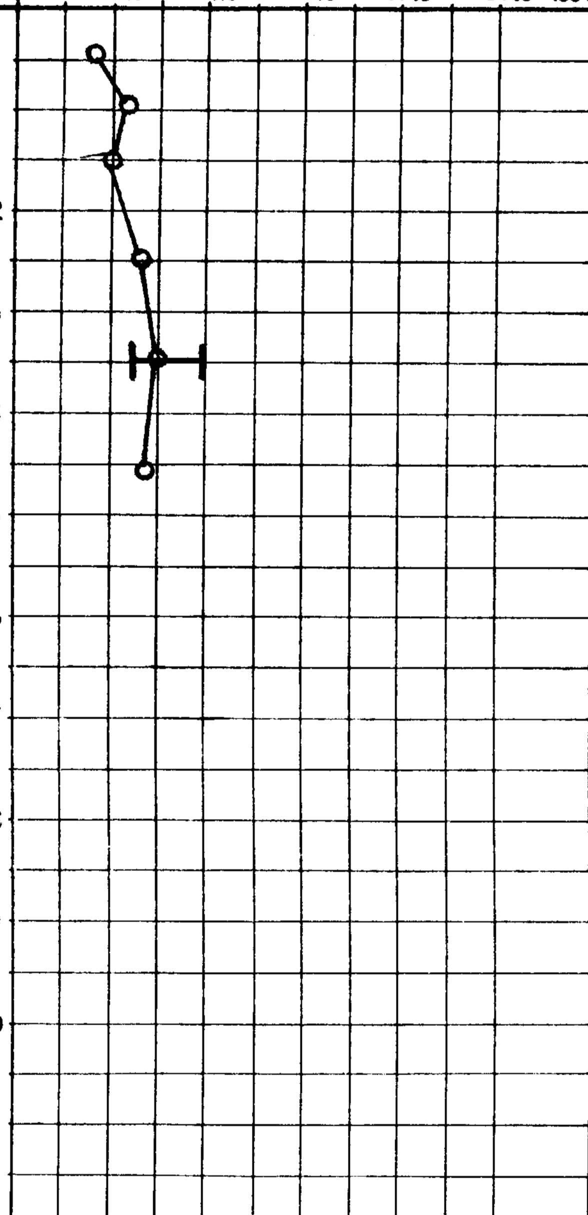
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–6	ML	SILT.			0–1.8
		1.8 m			
6–15	CL	CLAY. SILTY - + P_L - LOW PLASTIC			1.8–4.6
		4.6 m			
		BOTTOM OF HOLE - 4.6 m			

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├────┤ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
-98-		2	0	DAMP
				MOIST
-99-		1	0	MOIST
				MOIST
-99-		1	0	WET
				WET

CHAINAGE	OFFSET

REMARKS

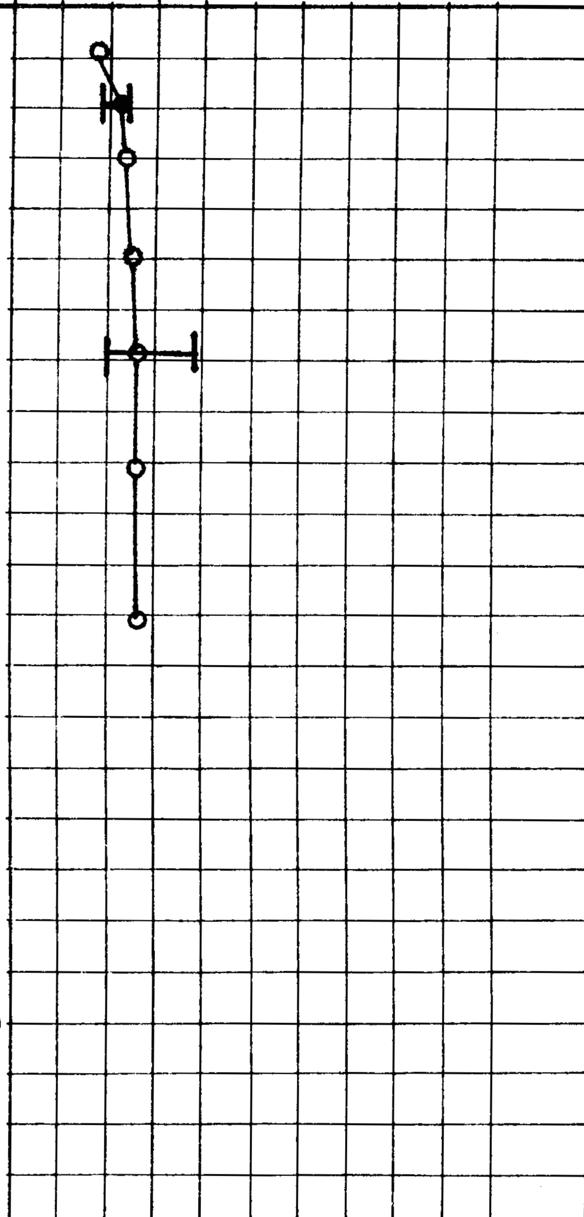
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. PRONYSCH	RIG B-50	DATE 78/01/31	km 114	B.P. No. 40	HOLE No. 1

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–4	ML	SILT -				-99-		1	0	DAMP	
		1.2 m			1					MOIST	
4–20	CL	CLAY - SILTY - LOW PLASTIC + P_L				-100-		0	0	DAMP-MOIST	
					2					MOIST-WET	
					3	-100-		0	0	WET	
					4					WET	
20		6.1m			6	-100-		0	0	WET	
		BOTTOM OF HOLE - 6.1m									

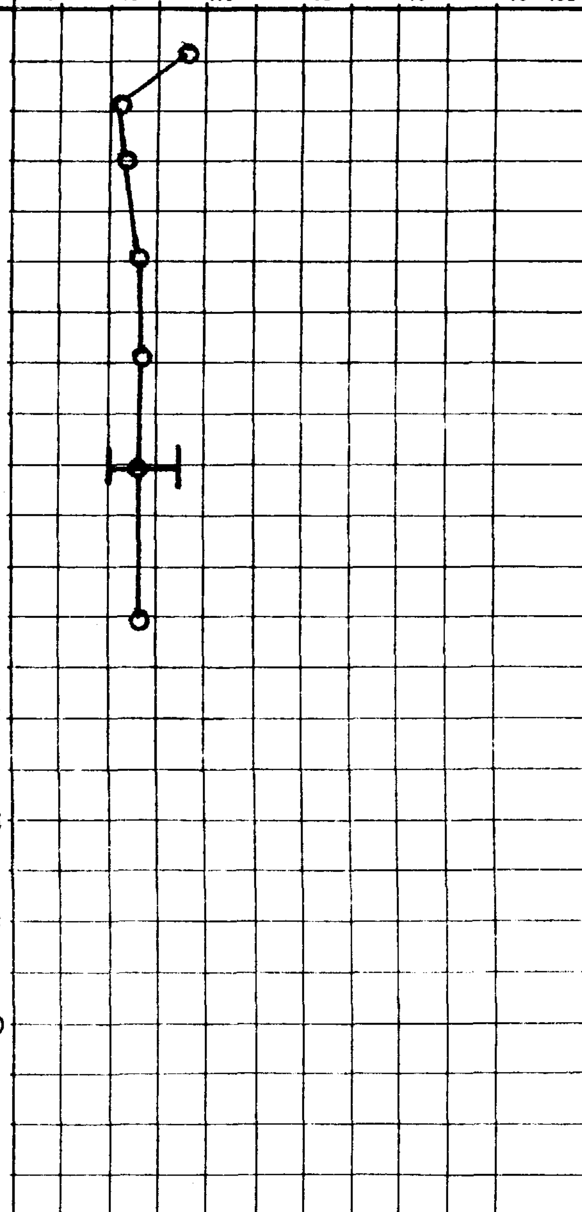
PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/01/31	114	40	2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–7	ML	SILT - (to 2.1 m)			0–2.1					SAT.
					1	99	-	1	0	MOIST
										MOIST
7–20	CL	CLAY - SILTY - LOW PLASTIC - +PL (2.1 m to 6.1 m)			2.1–6.1	99	-	1	0	WET
										WET
						100	0	0	0	WET
					6					WET
		BOTTOM OF HOLE - 6.1 m								

CHAINAGE | OFFSET | REMARKS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

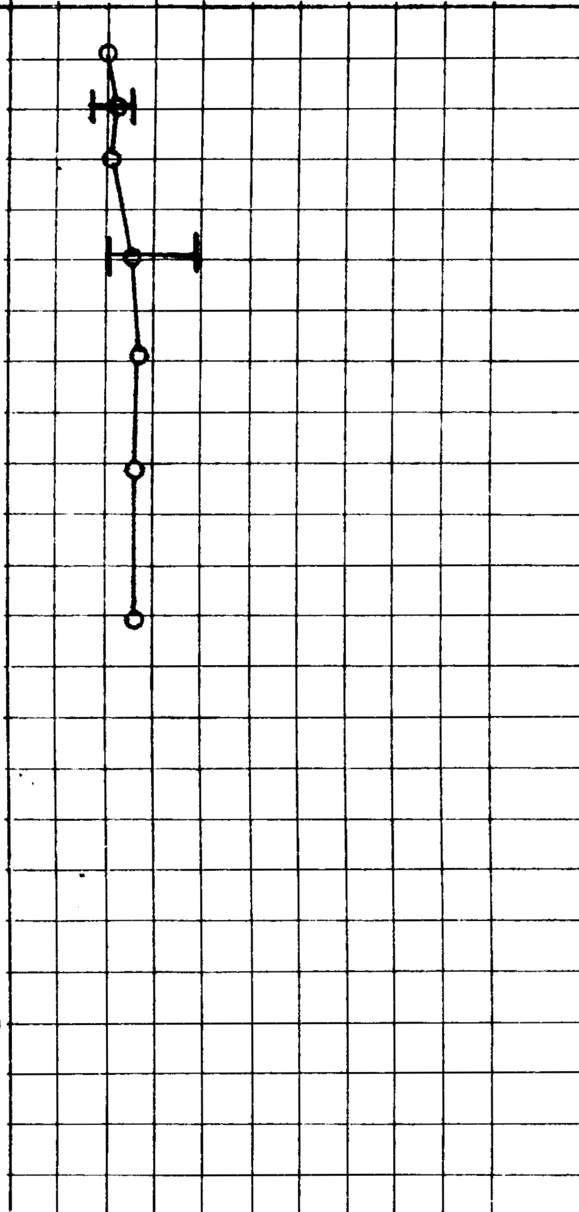
TECH. PRONYCH	RIG B-50	DATE 78/01/31	km 114	B.P. No. 40	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT								MOIST	
4	ML				1		99	1	0	MOIST	
		1.8 m								MOIST	
6		CLAY - SILTY - LOW PLASTIC +PL			2						
8							100	0	0	MOIST - WET	
					3					M-W	
12	CL				4						
							100	0	0	M-W	
20		6.1m			6					M-W	
		BOTTOM OF HOLE - 6.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

PLASTIC LIMIT ├──┤ LIQUID LIMIT

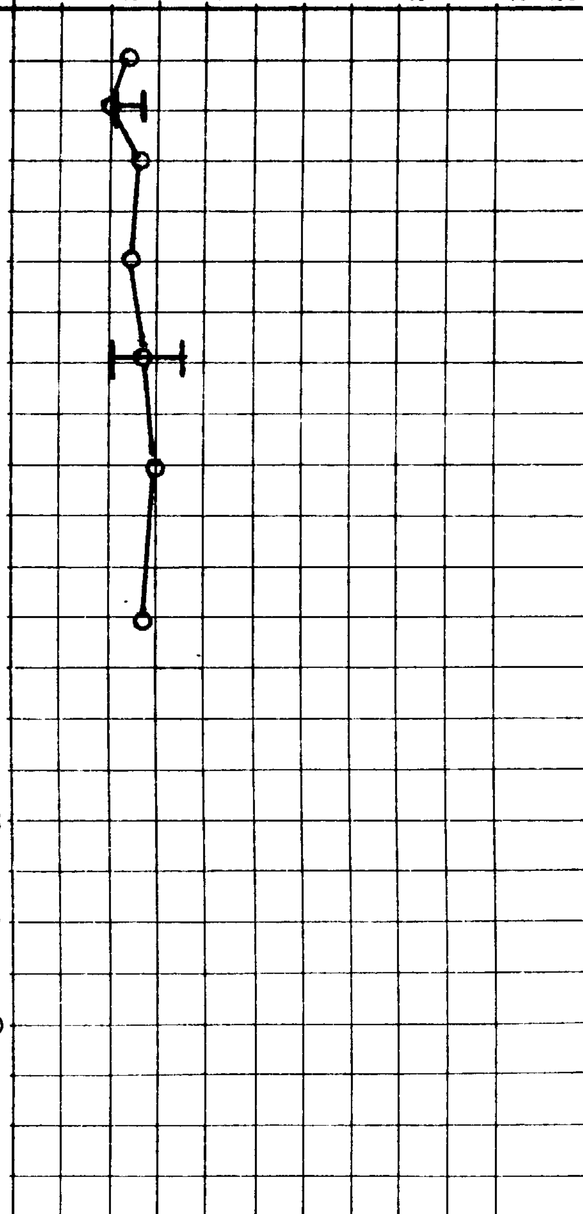


CHAINAGE | OFFSET

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY			
TECH. WEBBER	RIG B-50	DATE 78/01/31	km 116	B.P. No. 41	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2		SILT -				99-	1	0		MOIST			
4	ML				1					DAMP			
6						99-	1	0		~~DAMP~~			
8					2					WET			
		2.8 m											
10		CLAY - SILTY			3								
12		- LOW PLASTIC				99-	1	0		WET			
14		+PL			4								
16	CL				5					WET			
18													
20		6.1m			6	100-	0	0		WET			
22		BOTTOM OF HOLE - 6.1m											
24					7								
26													
28					8								
30					9								
32													
34					10								
36					11								
38													

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/01/31	116	41	2

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
	ML	SILT -		
		2.7 m		
	CL	CLAY - SILTY - LOW PLASTIC + P_L		
20		6.1m		
		BOTTOM of HOLE - 6.1 m		

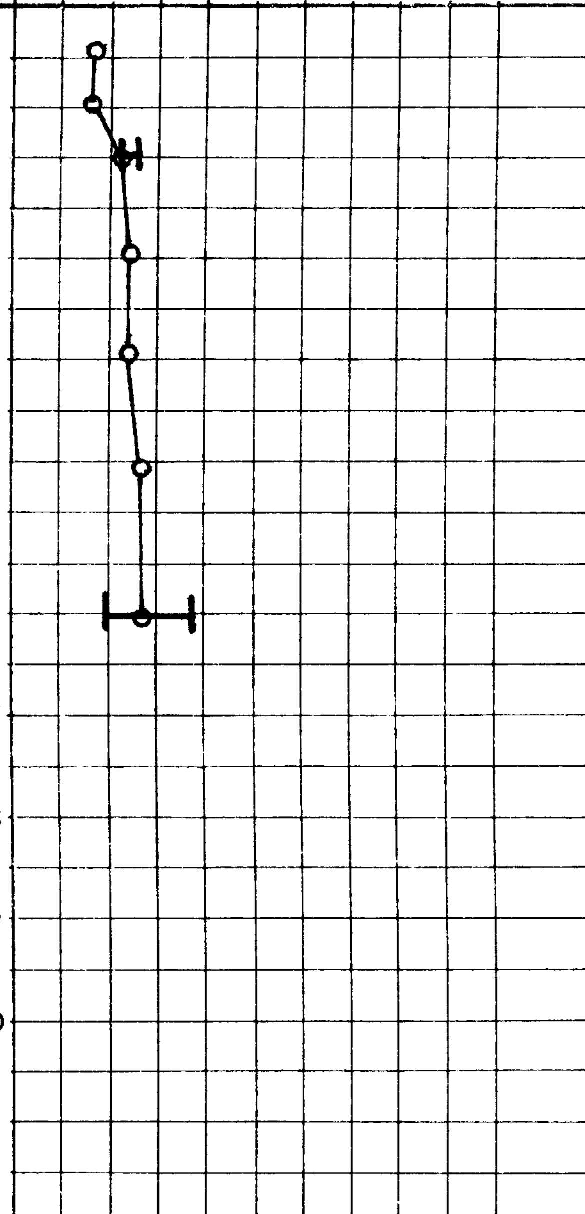
DEPTH (METRES)

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				DAMP
99		1	0	DAMP
				MOIST
100		0	0	MOIST
				MOIST-WET
100		0	0	WET
				WET

REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/01/31	116	41	3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–9	ML	SILT.			0–2.7						
					~0.4					SAT.	
					1		98	2	0	DAMP	
					~1.5					WET	
					~2.4					WET	
		2.7m			2.7						
9–20	CL	CLAY - SILTY - LOW PLASTIC - +PL			2.7–6.1						
					~3.5		100	0	0	MOIST	
					~4.5					WET	
		6.1m			6		100	0	0	WET	
		Bottom of Hole. 6.1m									

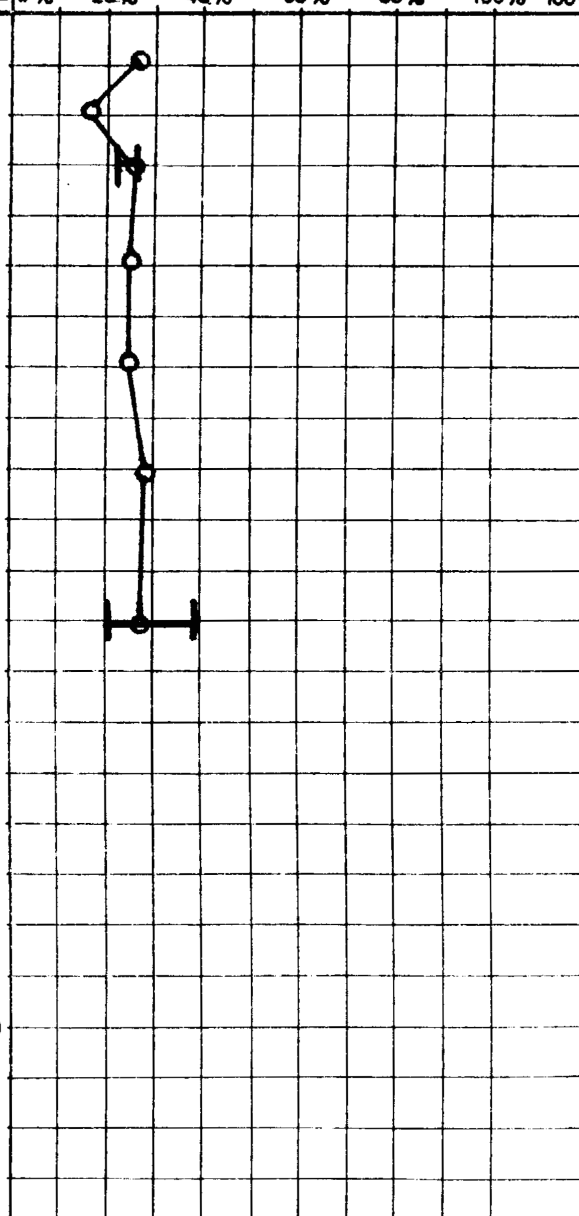
CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

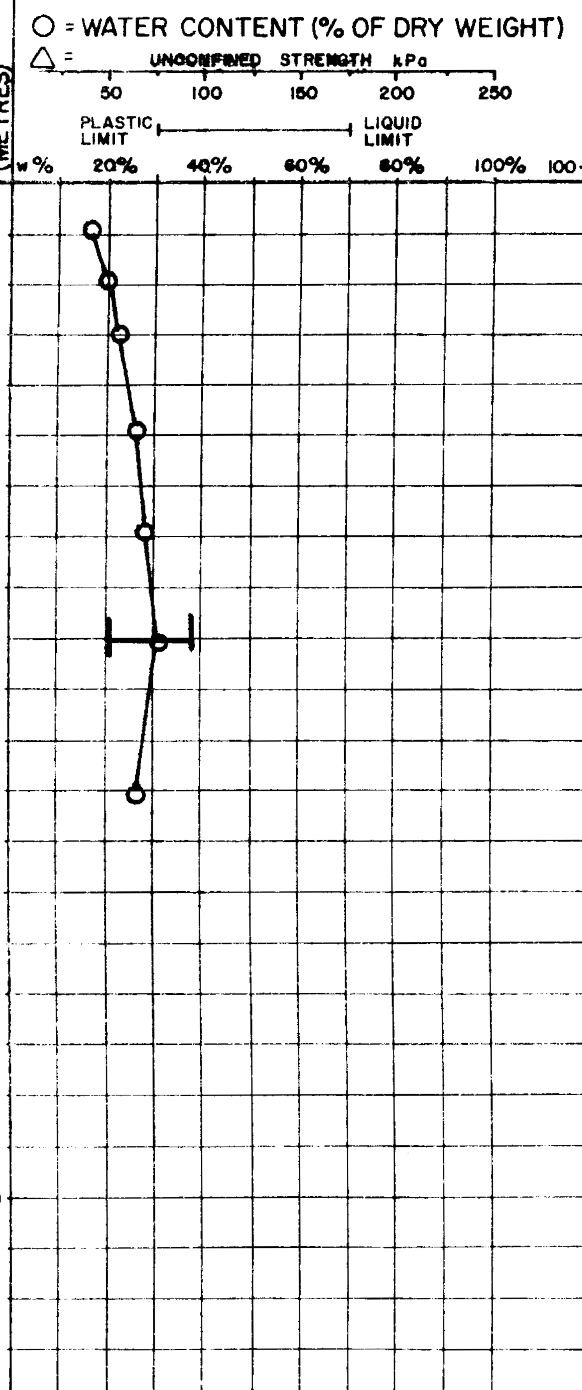
LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/01/31	116	41	4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–5	ML	SILT -			0–1.5					DAMP			
					1		99	1	0	DAMP-MOIST			
		1.5 m								D-M			
5–20	CL	CLAY - SILTY - LOW PLASTIC - + P_L			1.5–6.1		100	0	0	MOIST			
										WET			
							100	0	0	WET			
		6.1 m			6					WET			
		BOTTOM OF HOLE - 6.1 m											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/01	km 118	B.P. No. 42	HOLE No. 1

CHAINAGE	OFFSET

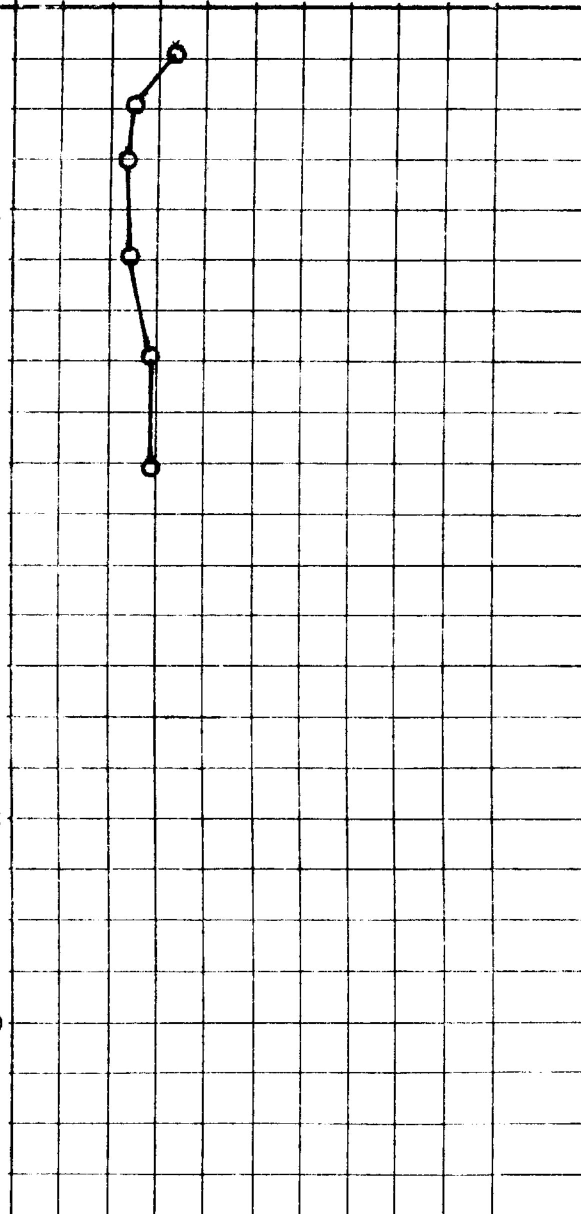
DEPTH (FEET) | UNIFIED SOIL SYMBOL | SOIL DESCRIPTION | PENETRATION RESISTANCE | ICE DESCRIPTION | DEPTH (METRES)

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



Depth (feet)	Soil description	Depth (metres)	Clay %	Silt %	Sand %	Gravel %	Relative moisture content	Remarks
2				100	0	0	SAT.	
4		1					WET	
6				99	1	0	WET	
8		2					MOIST-WET	
10		3						
12				99	1	0	SAT	
14		4						
	4.6 m						SAT.	
16	Bottom of Hole. 4.6 m	5						
18								
20		6						
22								
24		7						
26								
28		8						
30		9						
32								
34		10						
36								
38		11						

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/01	18	42	2

CHAINAGE	OFFSET

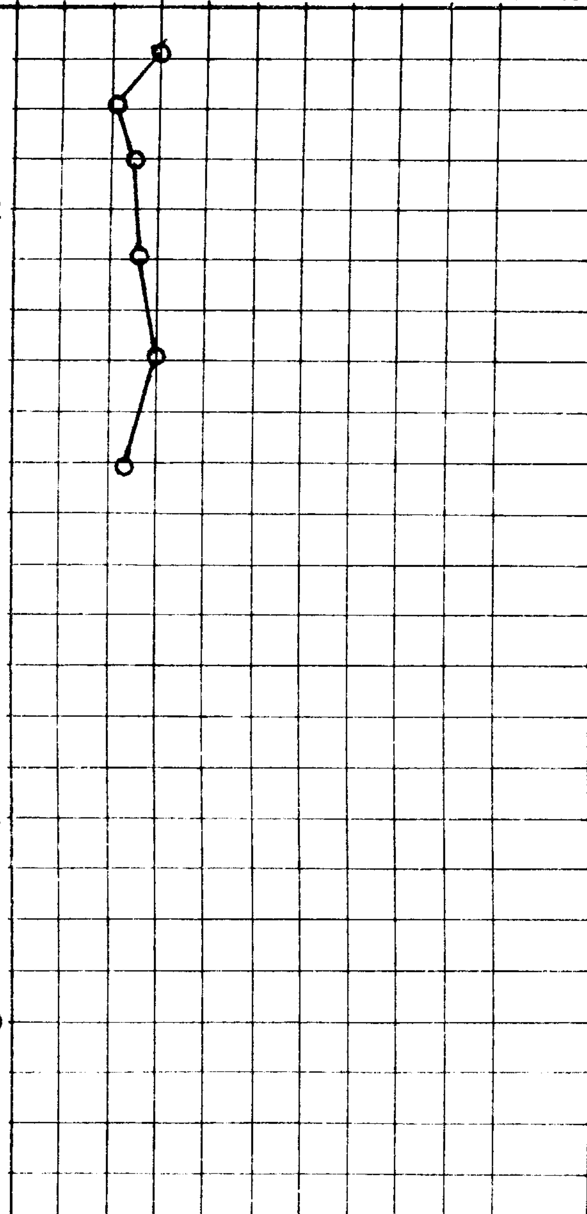
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–7	ML	SILT.			0–2.1					SAT.	
					~1		99	1	0	MOIST	
										MOIST	
		2.1m			2.1						
7–15	CL	CLAY - SILTY - LOW PLASTIC + P_L SATURATED AFTER 3.4m			2.1–4.6		100	0	0	MOIST-WET	
										M-W	
		4.6m			4.6		95	5	0	M-W	
		BOTTOM OF HOLE - 4.6m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT |———| LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/01	118	42	3

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT -				-99-		1	0	SAT.	
	CL	CLAY - SILTY			1	-99-		1	0	WET	
	ML	SILT - 2.1m								SAT.	
	CL	CLAY - SILTY - LOW PLASTIC + Pc SAT. AFTER 3.4m				-100-		0	0	WET	
										WET	
		4.6m				-97-		3	0	SAT.	
		BOTTOM OF HOLE - 4.6m									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

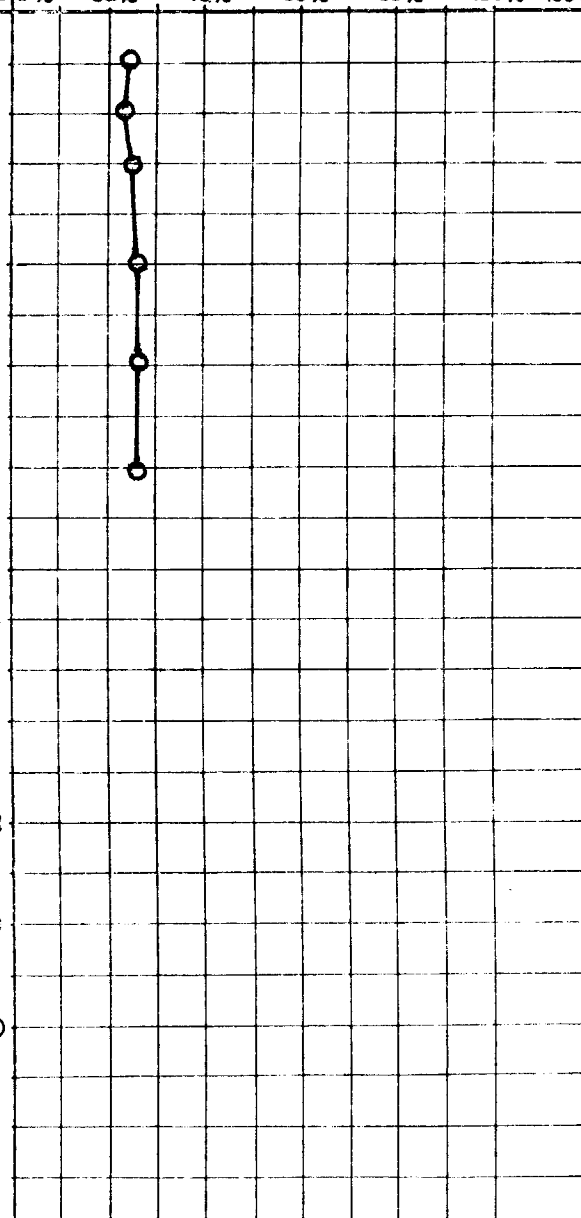
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



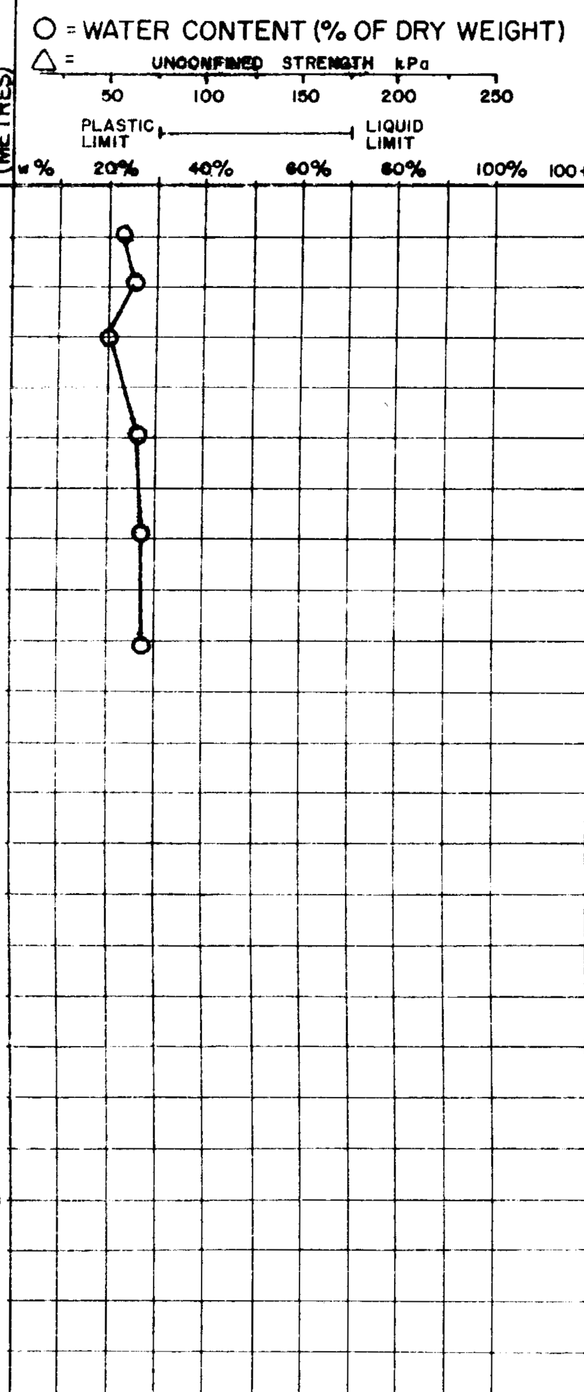
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/01	km 118	B.P. No. 42	HOLE No. 4

CHAINAGE	OFFSET

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–4	ML	SILT. 1.2m			0.5					MOIST
					1.0	-	100	0	0	WET
4–15	CL	CLAY - SILTY - LOW PLASTIC + P_L			1.5					MOIST
					2.5	-	100	0	0	WET
		SATURATED AFTER 3.4m			3.5					WET
		4.6m			4.5	-	97	3	0	WET
		BOTTOM OF HOLE - 4.6 m								

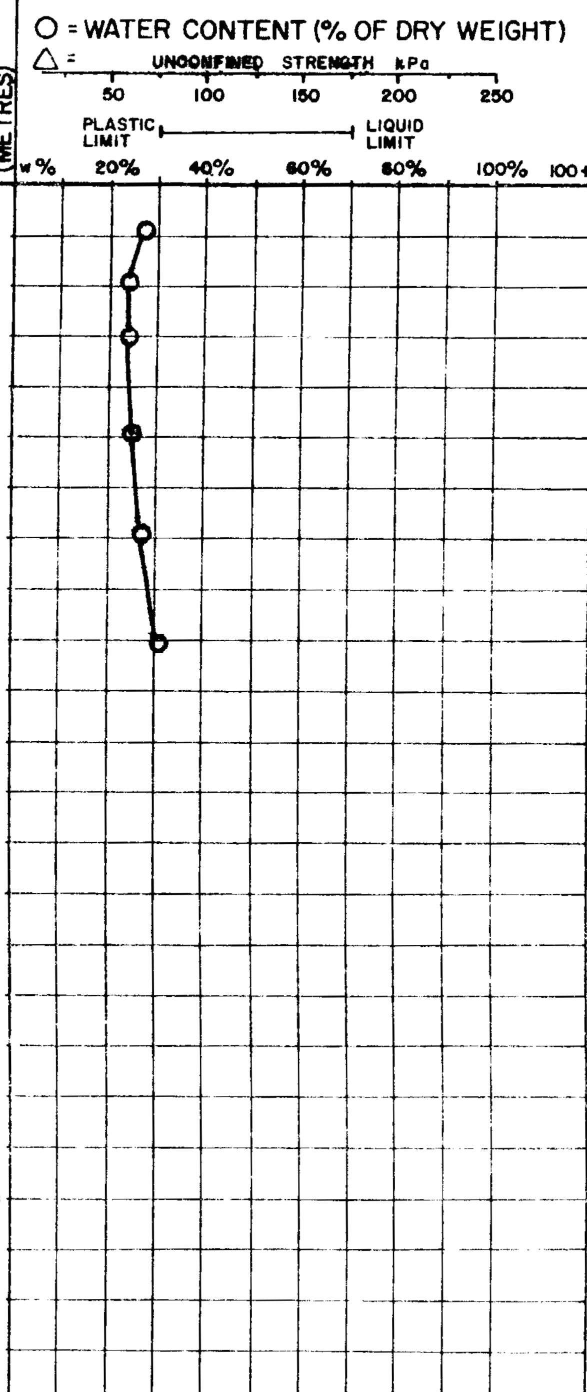


PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/01	km 119	B.P. No. 43	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–7	ML	SILT - CLAYEY			0–2.1					SAT.	
					1	99		1	0	MOIST-WET	
					1.5					MOIST-WET	
		2.1m									
7–15	CL	CLAY-SILT) - LOW PLASTIC + PL SAT. AFTER 3.4 m			2.1–4.6						
					2.5	100		0	0	M-W	
					3.5					WET	WATER BEARING LENSE @ 3.7 m
		4.6m			4.6	98		2	0	WET	
		Bottom of Hole 4.6 m									

CHAINAGE | OFFSET



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYCH | RIG B-50 | DATE 78/02/01 | km 119 | B.P. No. 43 | HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT.								MOIST	
		.9m			1	100		0	0	MOIST	
4	CL	CLAY - SILTY, LOW PLASTIC								DAMP-MOIST	
8		+PL			2					MOIST-WET	
10		SAT. AFTER 3.4 m			3						
12		WATER BEARING SILT LENSE @ 3.7m				99		1	0	M-W	
14		4.6m			4					WET	
		BOTTOM OF HOLE. 4.6 m			5						

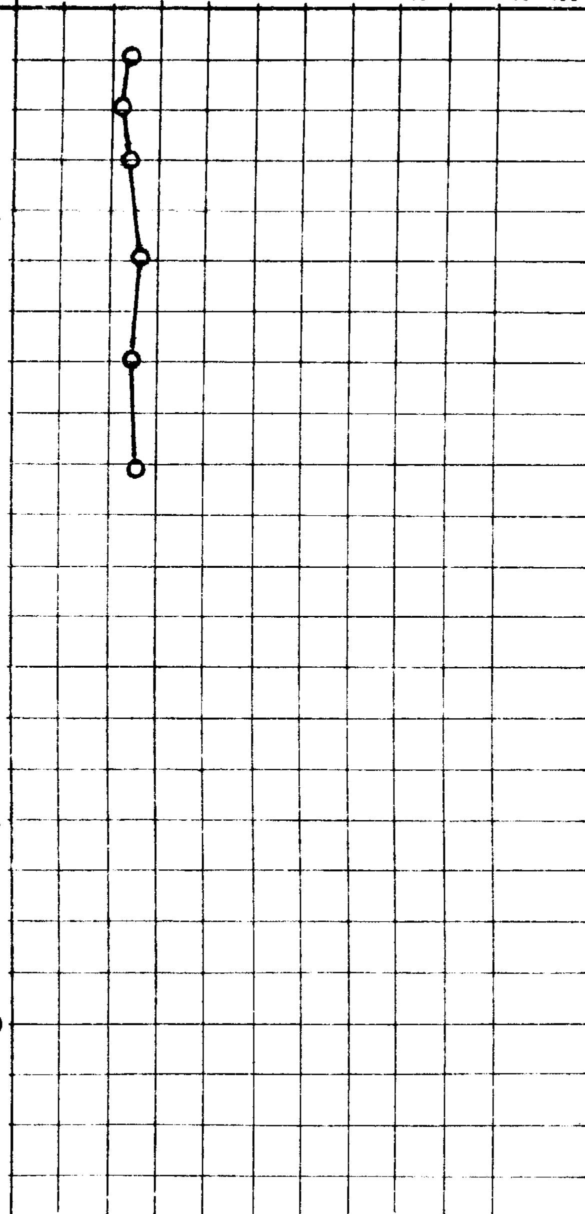
CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy

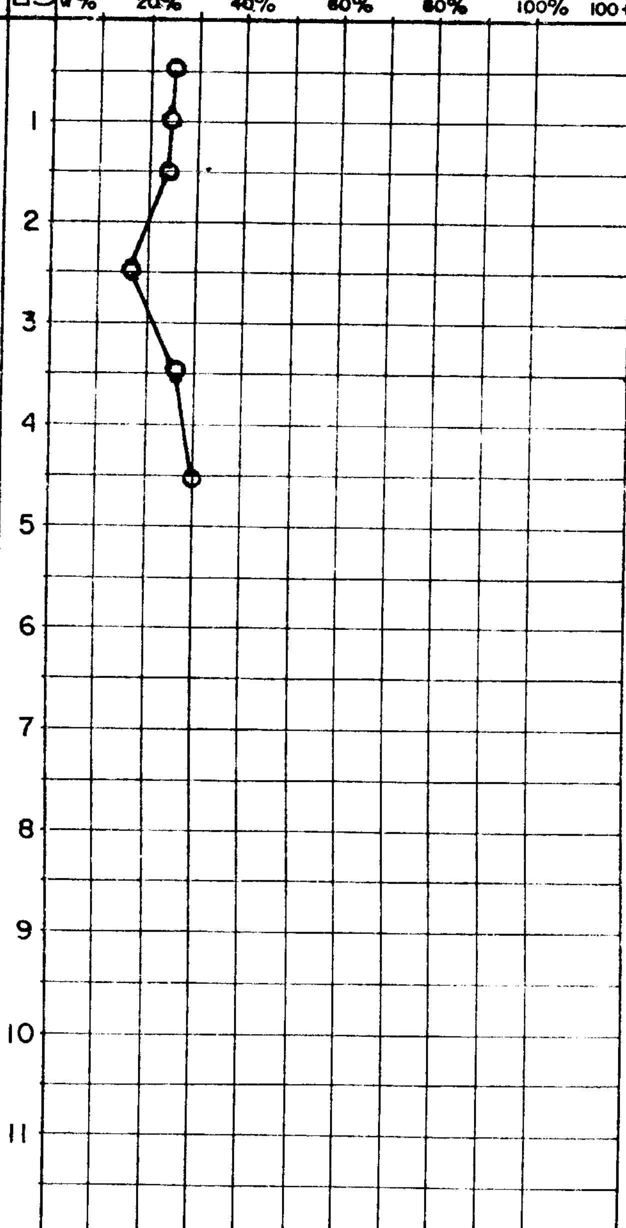
TECH. PRONYCH	RIG B-50	DATE 78/02/01	km 119	B.P. No. 43	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–4	ML	SILT - CLAYEY			0.5	99		1	0	SAT.			
		1.2 m			1					SAT.			
4–15	CL	CLAY - SILTY LOW PLASTIC +PL SAT. AFTER 3.4m WATER BEARING SILT LENSE @ 3.7m			1.5	100		0	0	MOIST			
					2.5					MOIST-WET			
					3.5	99		1	0	WET			
		4.6m			4.5					SAT.			
		BOTTOM OF HOLE 4.6m											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

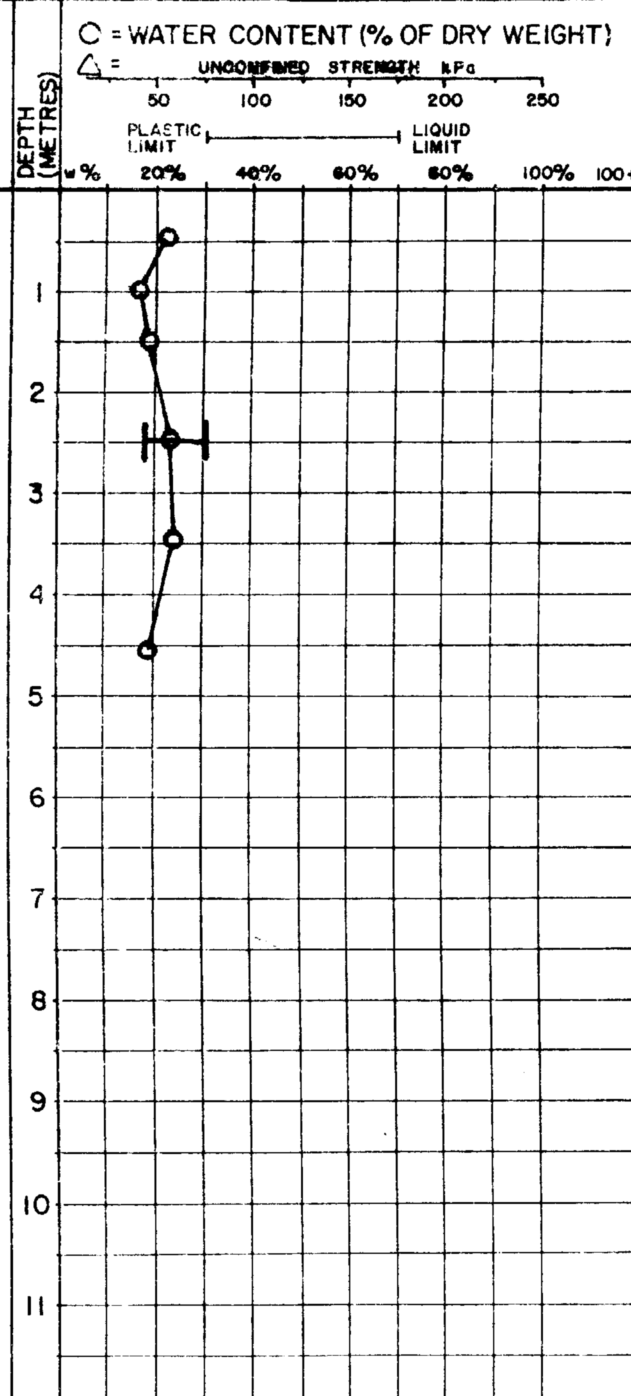
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy

TECH. PRONYCH	RIG B-50	DATE 78/02/02	km 121	B.P. No. 44	HOLE No. 1

Unified Soil Symbol	Soil Description	Penetration Resistance	Ice Description
ML	Silt - 1.8m		
CL	Clay - Silty - Low Plastic +PL Saturated After 3.4m Sandy 4.6m		
	Bottom of Hole - 4.6 m		



Grain-Size Analysis: Clay % / Silt % / Sand % / Gravel %	Relative Moisture Content
	Damp-Moist
99 - 1 0	D-M
	D-M
100 - 0 0	Wet
	Wet
89 - 11 0	Moist-Wet

Chainage	Offset

REMARKS

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY

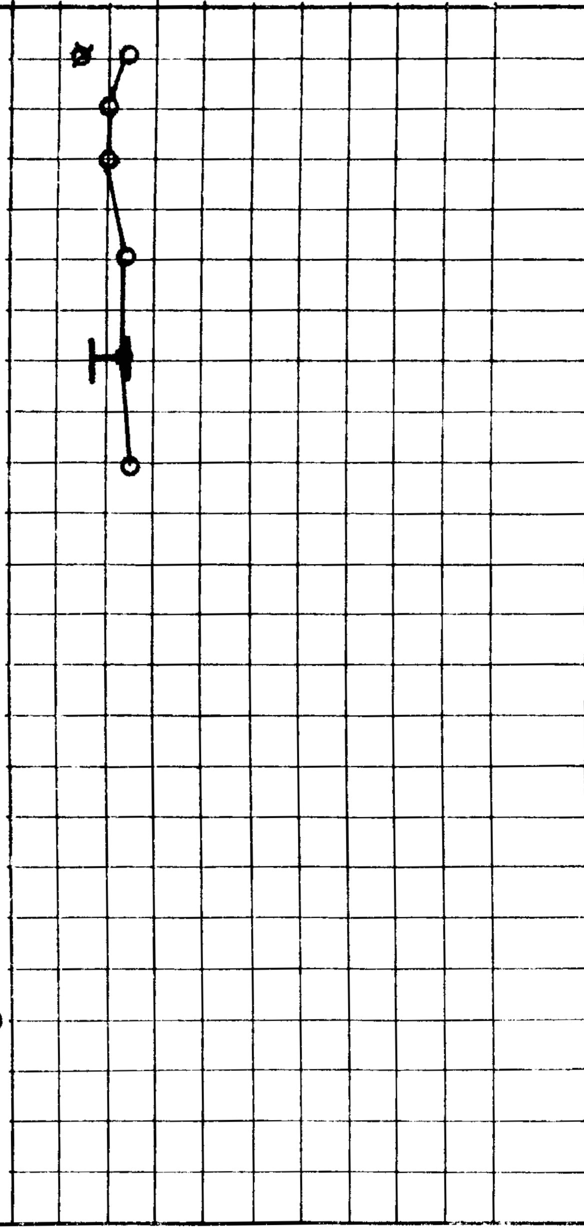
TECH. PRONYCH | RIG B-50 | DATE 78/02/02 | km 121 | B.P. No. 44 | HOLE No. 2

CHAINAGE | OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		CLAY - SILTY									
2						96	-	4	0	DAMP-MOIST	
4		+ P_L			1					D-M	
6						99	-	1	0	MOIST	
8	CL	SATURATED AFTER 3.4 m			2					MOIST-WET	
10					3						
12	ML	SILT - CLAYEY				93	-	7	0	SAT.	
14	CL	CLAY - SILTY 4.6 m			4					WET	
16		BOTTOM OF HOLE - 4.6 m			5						
18											
20					6						
22											
24					7						
26											
28					8						
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



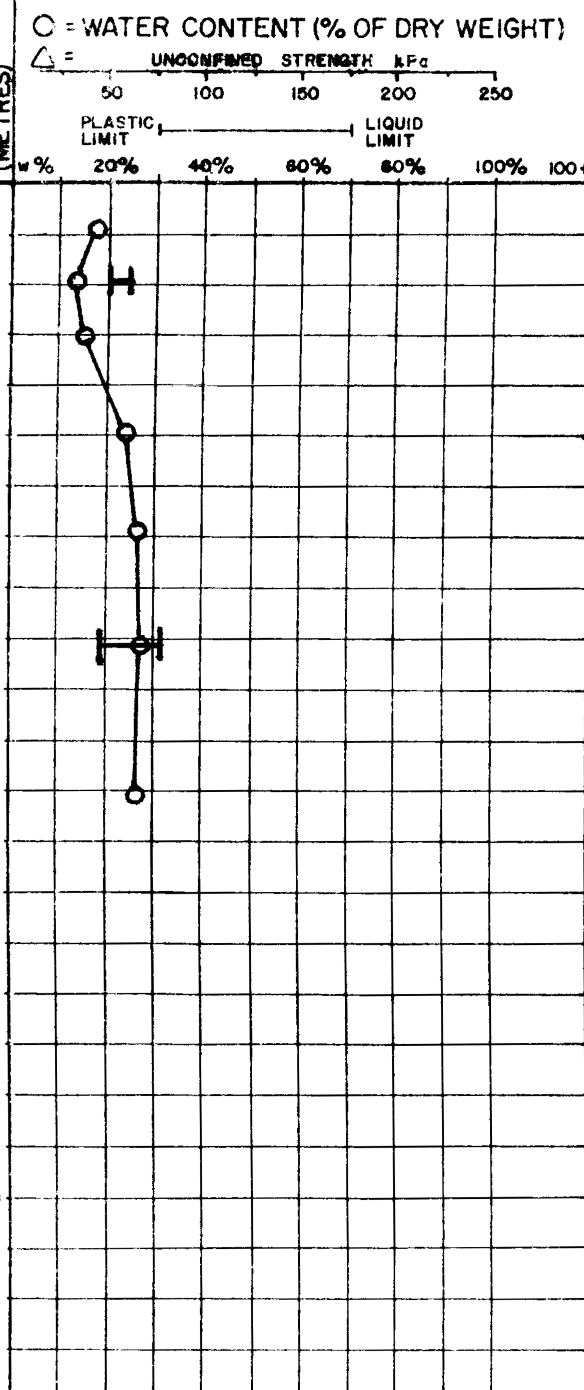
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/02	km 121	B.P. No. 44	HOLE No. 3

CHAINAGE	OFFSET

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
2		SILT.			
4					1
6	ML				2
8		2.7m			
10		CLAY - SILTY			3
12		- LOW PLASTIC			
14	CL	+PL			4
16		WET			5
18					
20		6.1m			6
22		BOTTOM OF HOLE. 6.1m			7
24					
26					8
28					
30					9
32					
34					10
36					11
38					



GRAIN SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				DAMP
-99-		1	0	DAMP
				DAMP
-100-		0	0	WET
				WET
-99-		1	0	WET
				WET-SAT.

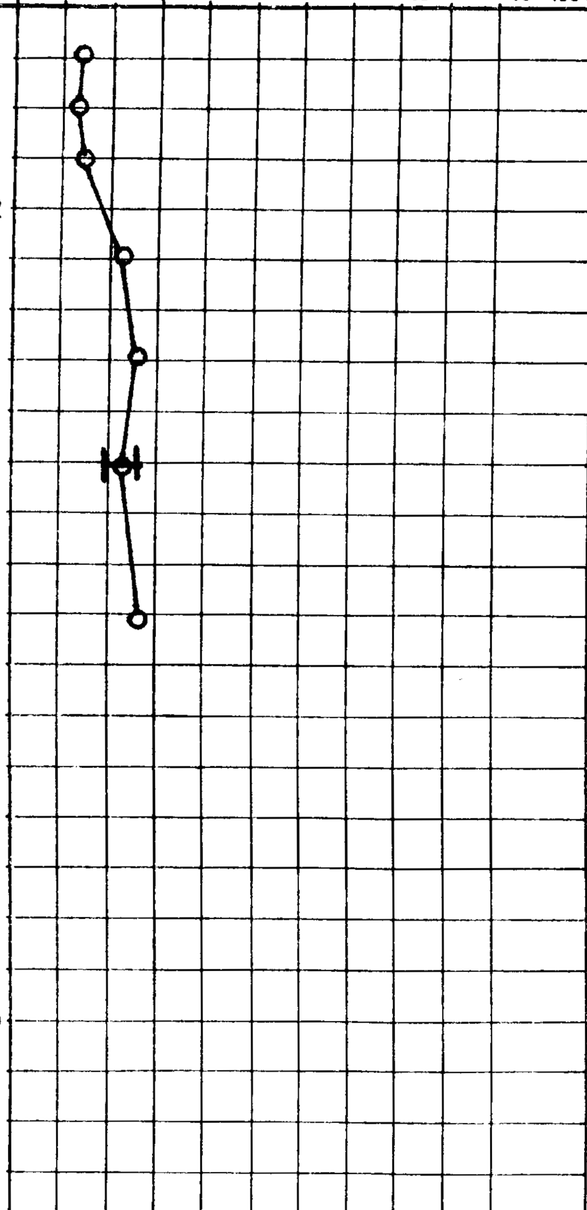
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/02	km 121	B.P. No. 44	HOLE No. 4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT				99	-	1	0	DAMP			
4					1					DAMP			
6										DAMP			
		2.1m			2								
8		CLAY - SILTY - LOW PLASTIC				100		0	0	MOIST			
10		+ PL			3								
12										WET			
14	CL	WET			4								
16						99	-	1	0	WET			
18					5								
20		6.1m			6					WET			
22		BOTTOM OF HOLE - 6.1m											
24					7								
26					8								
28													
30					9								
32													
34					10								
36					11								
38													

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



■ PUBLIC WORKS CANADA

DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/02	122	45	1

CHAINAGE	OFFSET

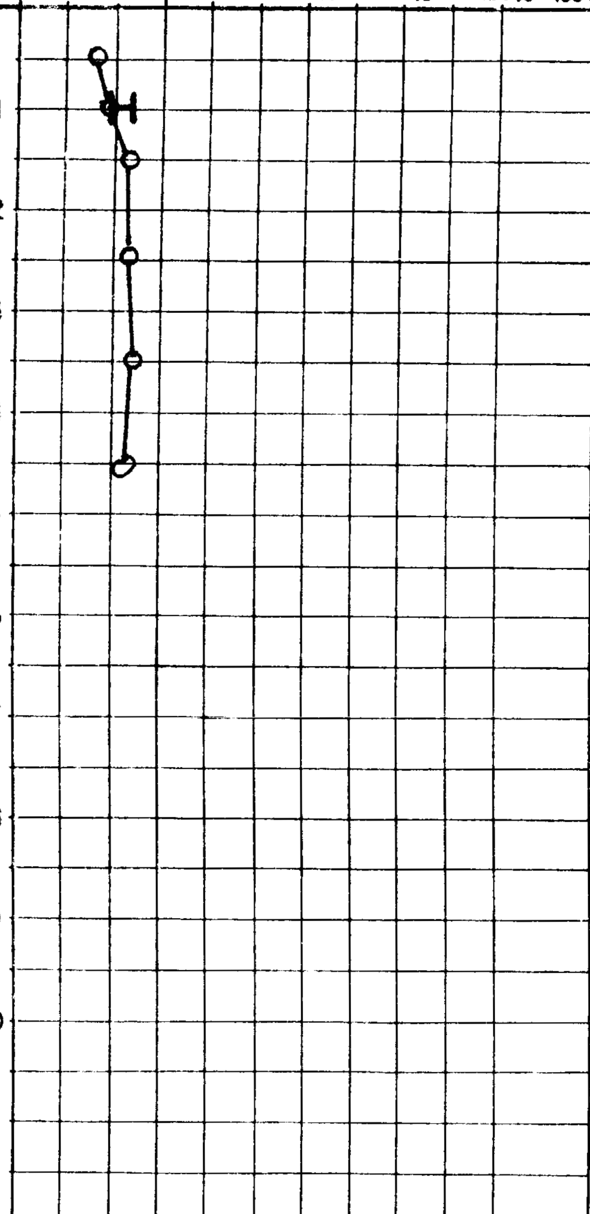
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–11	ML	SILT - · CLAYEY		
11 (3.4m)				
11–15	CL	CLAY - SILTY · LOW PLASTIC + P_L		
15 (4.6 m)		BOTTOM OF HOLE - 4.6m		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT |—| LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

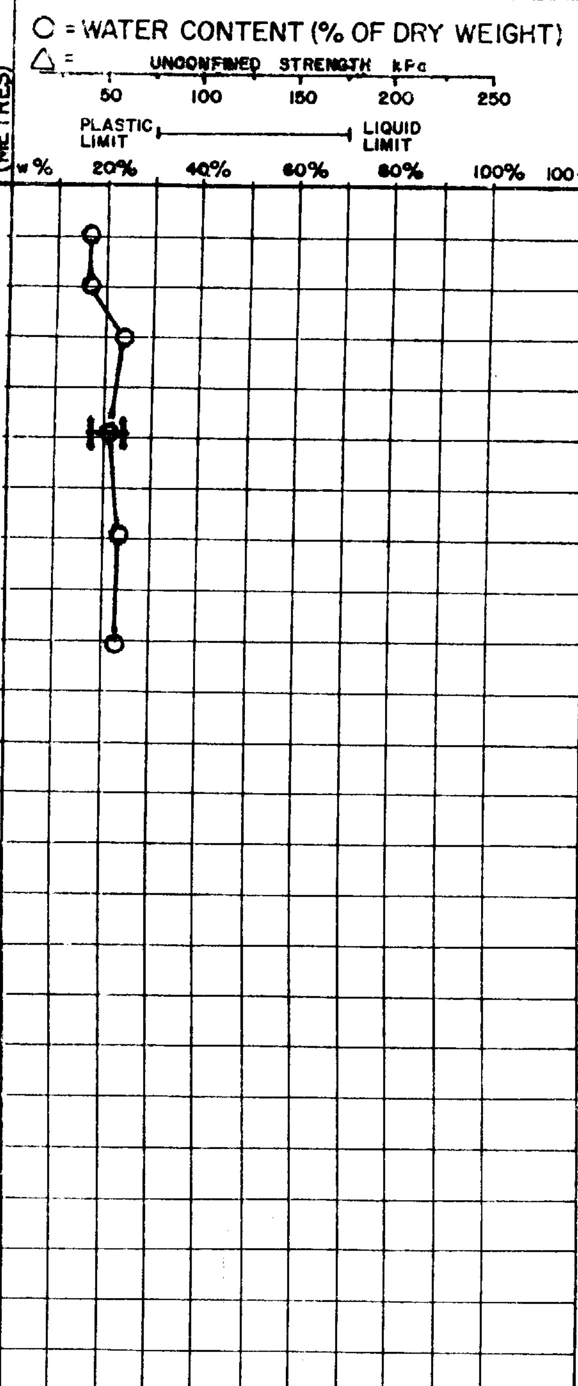


DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0.5					DAMP	
1.0		99	1	0	MOIST	
1.5					MOIST-WET	
2.5		99	1	0	M-W	
3.5					WET	
4.5		98	2	0	MOIST	

PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD Hwy.

TECH. PRONYCH	RIG B-50	DATE 78/02/02	km 122	B.P. No. 45	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT -								DAMP			
4		1.2 m			1	99		1	0	DAMP			
6		CLAY - SILTY								MOIST-WET			
8	CL	- LOW PLASTIC +P_L			2	92		8	0	MOIST			
10		SATURATED AFTER 3.7m			3								
12										WET			
14	ML	SILT - SANDY 4.6m			4	73		27	0	SAT.			
16		BOTTOM OF HOLE - 4.6m			5								
18													
20					6								
22													
24					7								
26													
28					8								
30					9								
32													
34					10								
36					11								
38													



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY

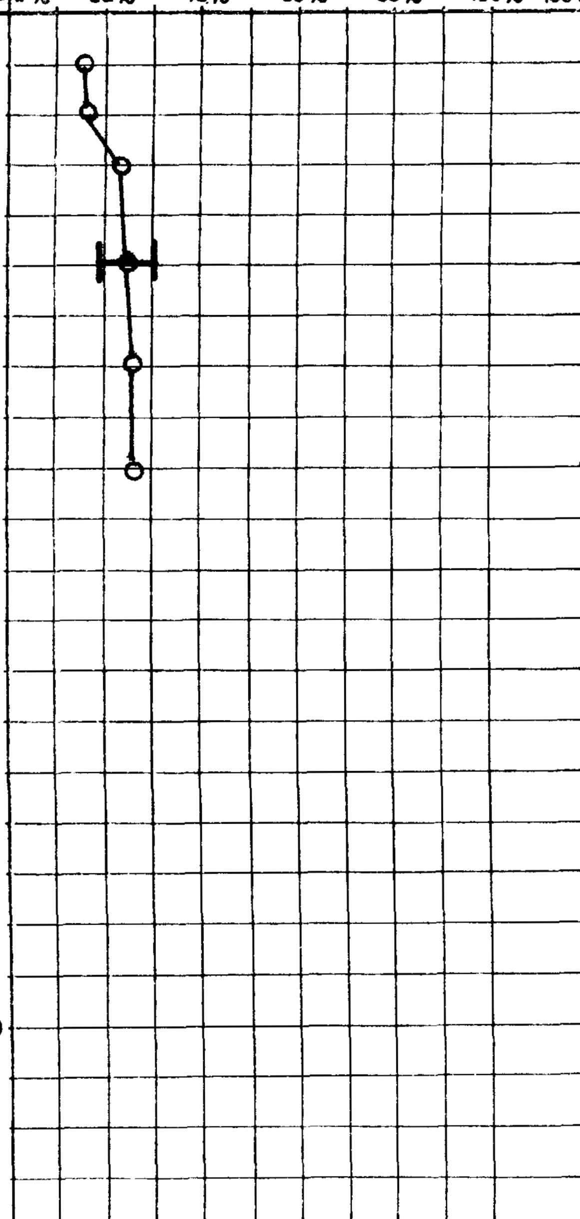
TECH. PRONYCH | RIG B-50 | DATE 78/02/02 | km 122 | B.P. No. 45 | HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
2	ML	SILT.								DAMP
4		1.2 m			1	99	-	0	0	DAMP
6	CL	CLAY - SILTY - LOW PLASTIC + P_L								MOIST
8					2	99	-	1	0	MOIST-WET
10					3					
12		3.7 m								WET
14	ML	SILT - SANDY SATURATED 4.6 m			4	65	-	35	0	SAT.
16					5					
18		BOTTOM OF HOLE - 4.6 m								
20					6					
22										
24					7					
26					8					
28										
30					9					
32					10					
34										
36					11					
38										

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/02	km 122	B.P. No. 45	HOLE No. 4

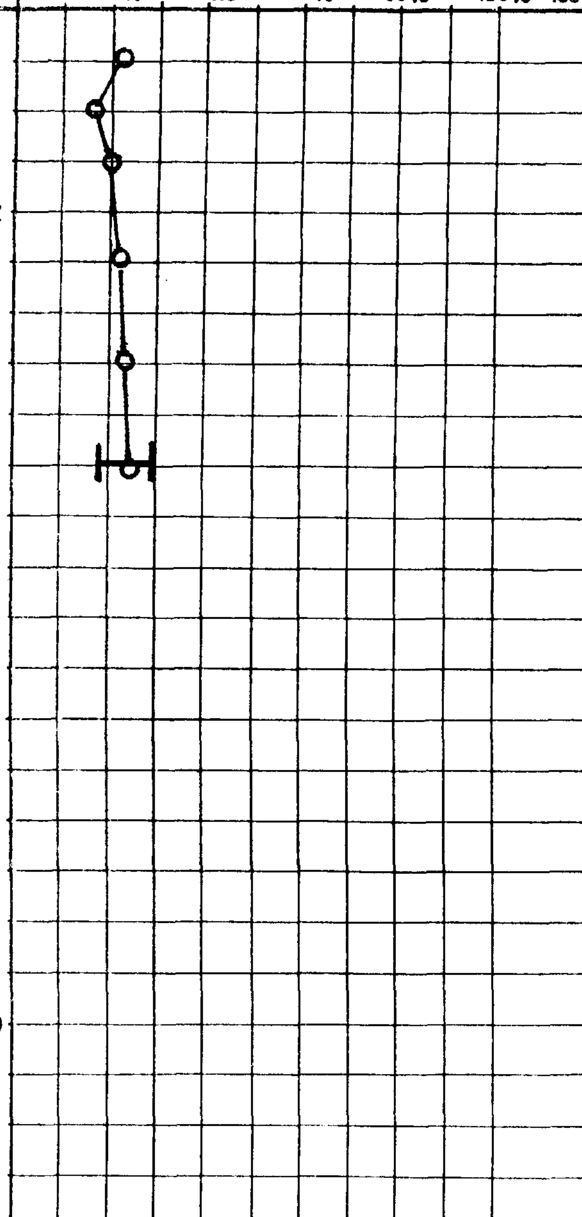
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–8	ML	SILT - - CLAYEY 2.4m		
8–15	CL	CLAY - SILTY - LOW PLASTIC +PL WET 4.6m		
		BOTTOM OF HOLE - 4.6 m		

C = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT —— LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0.5					DAMP
1	99	-	1	0	DAMP
1.5					DAMP-MOIST
2.5	98	-	2	0	MOIST
3.5					WET
4.5	98	-	2	0	WET

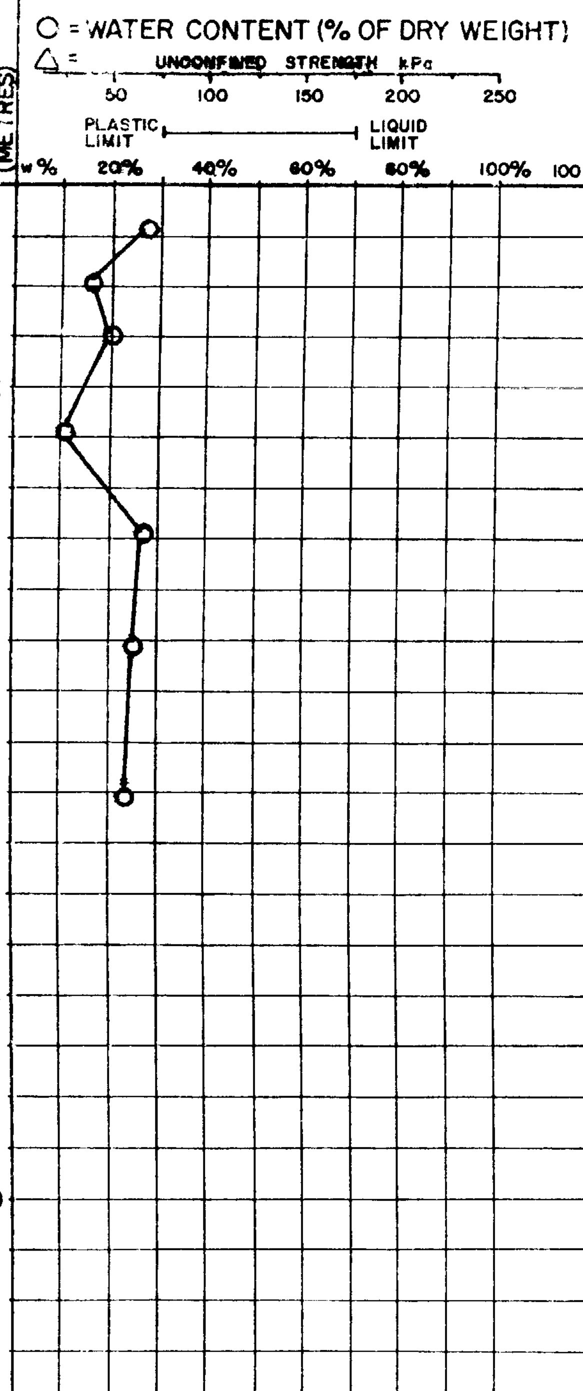
CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.			
TECH. WEBBER	RIG B-50	DATE 78/02/02	km 124	B.P. No. A6	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–11	ML	SILT-			0–3.4					SAT.	
					1	-99-		1	0	DAMP	
										MOIST	
		-SANDY				-61-		39	0	MOIST	
		3.4 m									
11–20	CL	CLAY - SILTY WET + PL LOW PLASTIC			3.4–6.1					WET	
						-97-		3	0	WET	
		6.1 m								WET	
		BOTTOM OF HOLE - 6.1 m									

CHAINAGE | OFFSET



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/02	km 124	B.P. No. 46	HOLE No. 2

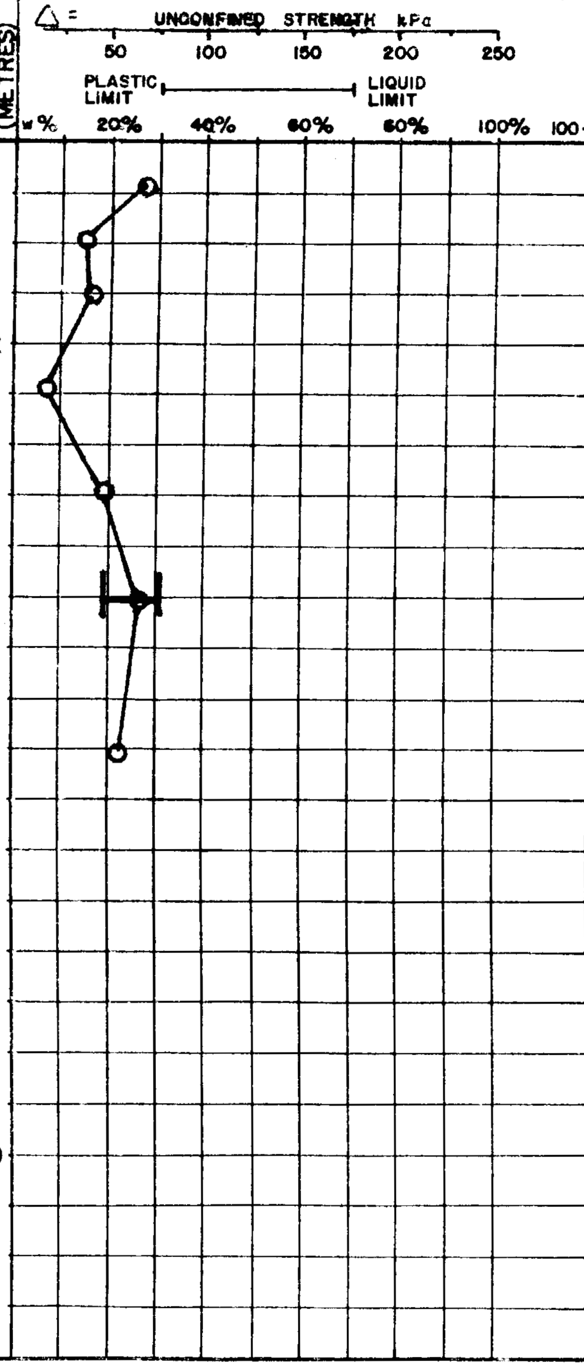
CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT -				-99-		1	0	WET	
4					1					DAMP	
6	ML									DAMP-MOIST	
8		SAND - SILTY			2	-48-		52	0	D-M	
10		3.4m			3						
12		CLAY - SILTY - LOW PLASTIC								MOIST	
14		WET +PL			4	-98-		2	0	WET	
16	CL				5						
18											
20		6.1m			6					WET	
22		BOTTOM OF HOLE - 6.1m									
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT



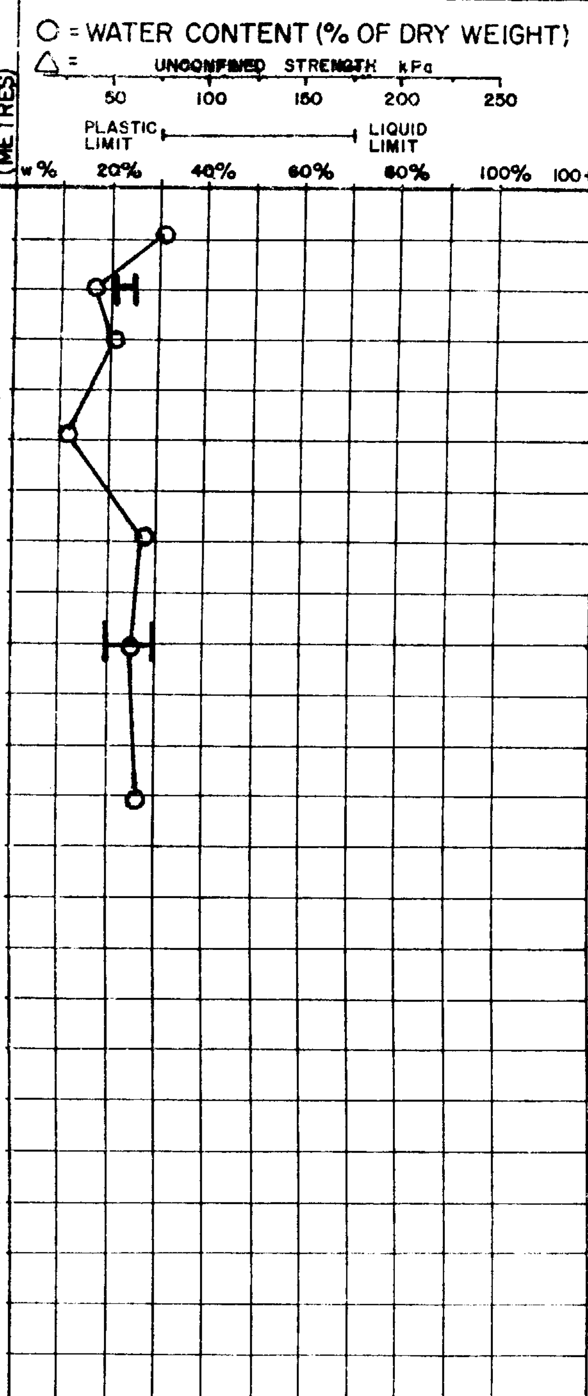
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/02	124	46	3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT-								SAT.	
	ML				1	99	1	0		DAMP	
										MOIST	
		- SANDY				58	42	0		MOIST	
		3.4m									
		CLAY - SILTY								WET	
		- LOW PLASTIC									
	CL	WET + P_L				98	2	0		WET	
20		6.1m			6					WET	
		BOTTOM OF HOLE. 6.1m									

CHAINAGE | OFFSET



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

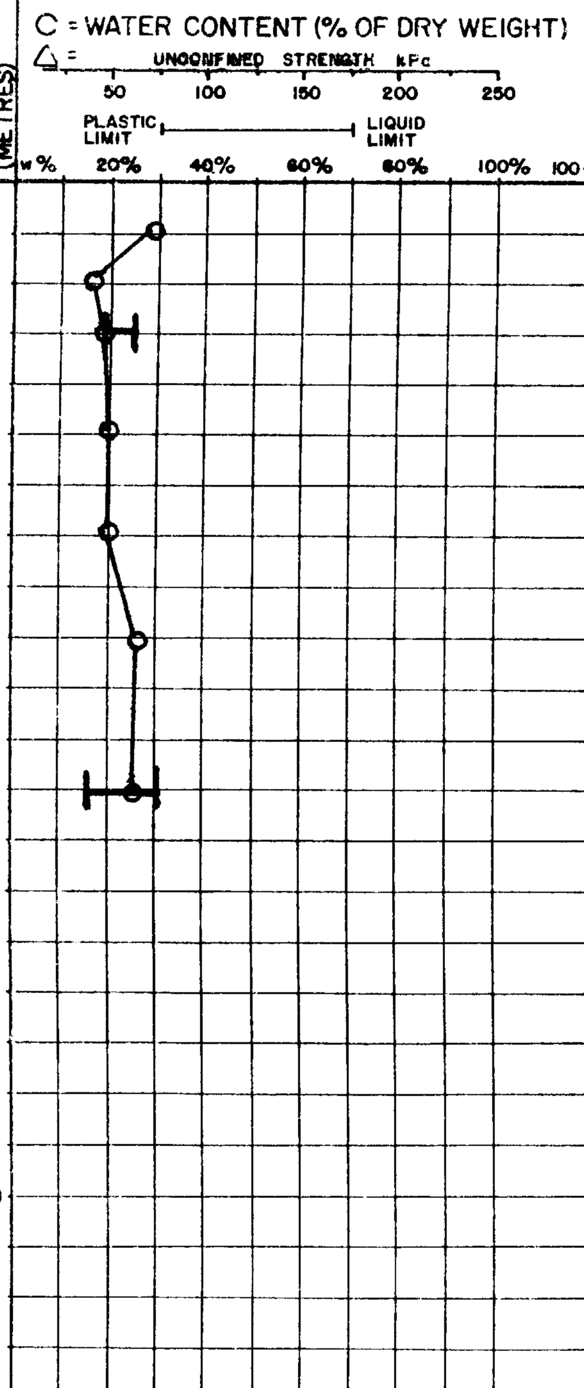
TECH. WEBBER	RIG B-50	DATE 78/02/02	km 124	B.P. No. 47	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SILT			0.5	-	99	1	0	SAT.			
					1					DAMP			
	ML				1.5	-	99	1	0	DAMP			
					2.5					MOIST			
		SILT & SILTY CLAY			3.5	-	92	8	0	WET			
		4.0m											
		CLAY - SILTY . LOW PLASTIC WET + PL			4.5					WET			
	CL												
		6.1m			6	-	97	3	0	WET			
		BOTTOM OF HOLE - 6.1m											

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

GRAIN-SIZE ANALYSIS



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 18/02/02	km 124	B.P. No. 47	HOLE No. 2

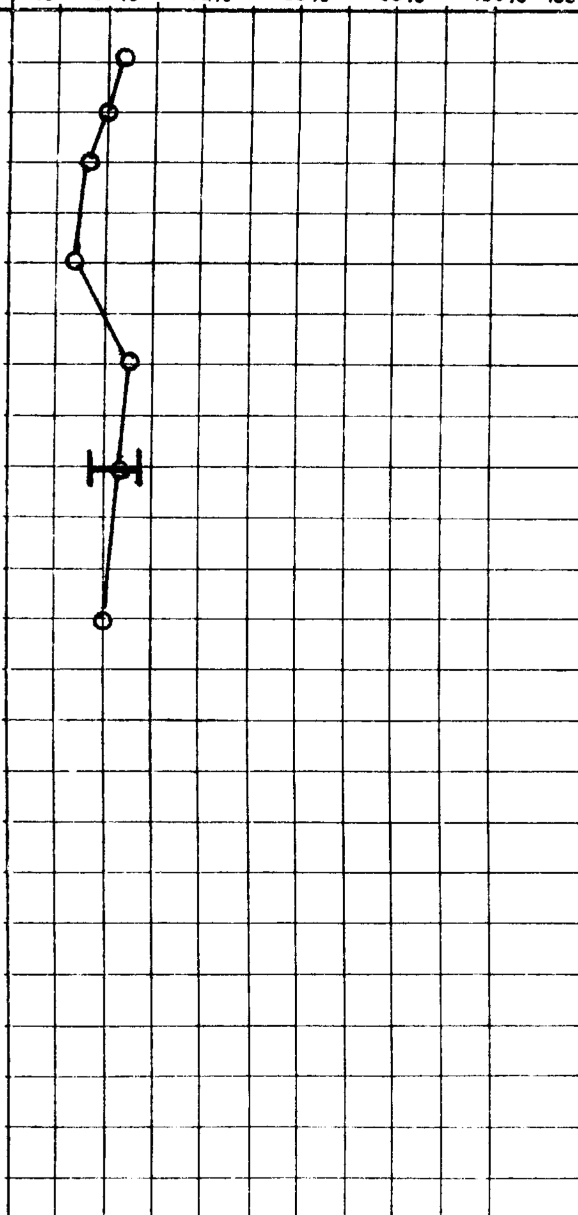
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SILT								MOIST			
4					1	-	99	1	0	MOIST			
6	ML									MOIST			
8		- SANDY				-	64	36	0	MOIST			
12		SILT								SAT.			
13		4.0m			4								
14		CLAY - SILTY - LOW PLASTIC WET + PL					94	6	0	WET			
17	CL												
20		6.1m			6					WET			
22		BOTTOM OF HOLE - 6.1m											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

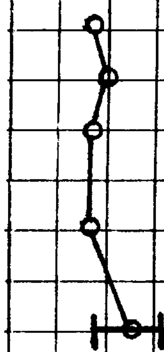
w% 20% 40% 60% 80% 100% 100+



■ PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

TECH. WEBBER | RIG B-50 | DATE 78/02/02 | km 124 | B.P. No. 47 | HOLE No. 3

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SILT											
2	ML					-99-		1	0	DAMP			
4		- SANDY			1					DAMP			
6						-81-		19	0	MOIST			
8					2					MOIST			
10	CL	CLAY - SILTY 3.4 m			3								FREE WATER @ 3.1 m
12						-98-		2	0	WET			
		BOTTOM OF HOLE - 3.4 m			4								
14													
16					5								
18													
20					6								
22													
24					7								
26					8								
28													
30					9								
32													
34					10								
36					11								
38													

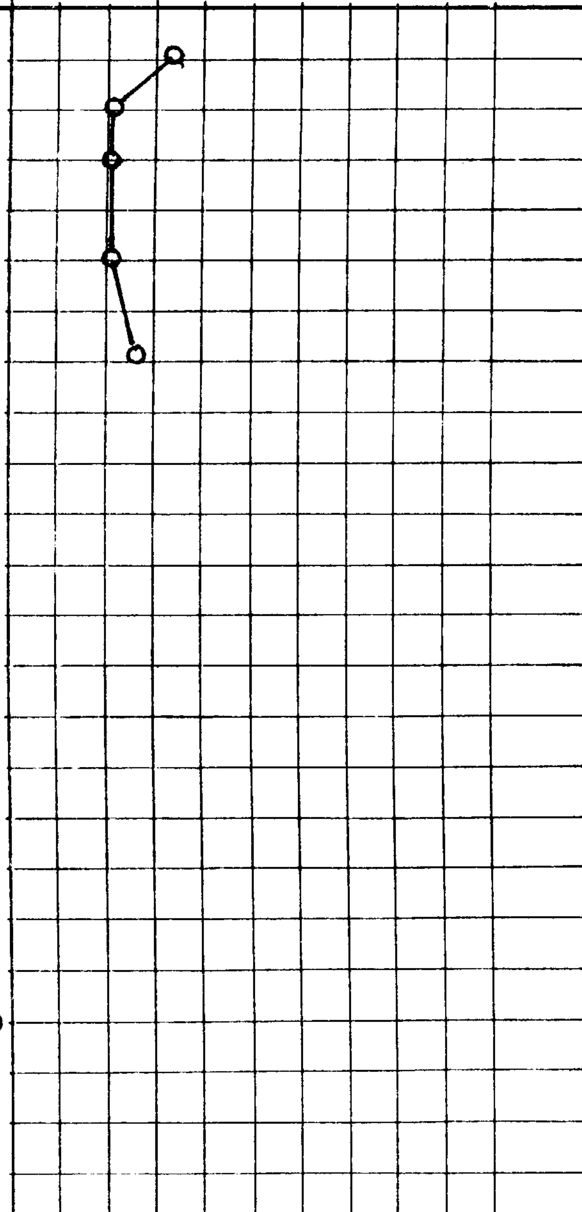
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy

TECH. WEBBER	RIG B-50	DATE 78/02/02	km 125	B.P. No. 48	HOLE No. 1

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT								SAT.	
2	ML				1	-	99	1	0	MOIST	
6										MOIST	
8		2.4 m			2	-	99	1	0	MOIST	
10	CL	CLAY - SILTY LOW PLASTIC + PL 3.4 m			3					WET	FREE WATER @3.1 m
12		BOTTOM of HOLE - 3.4 m			4						

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

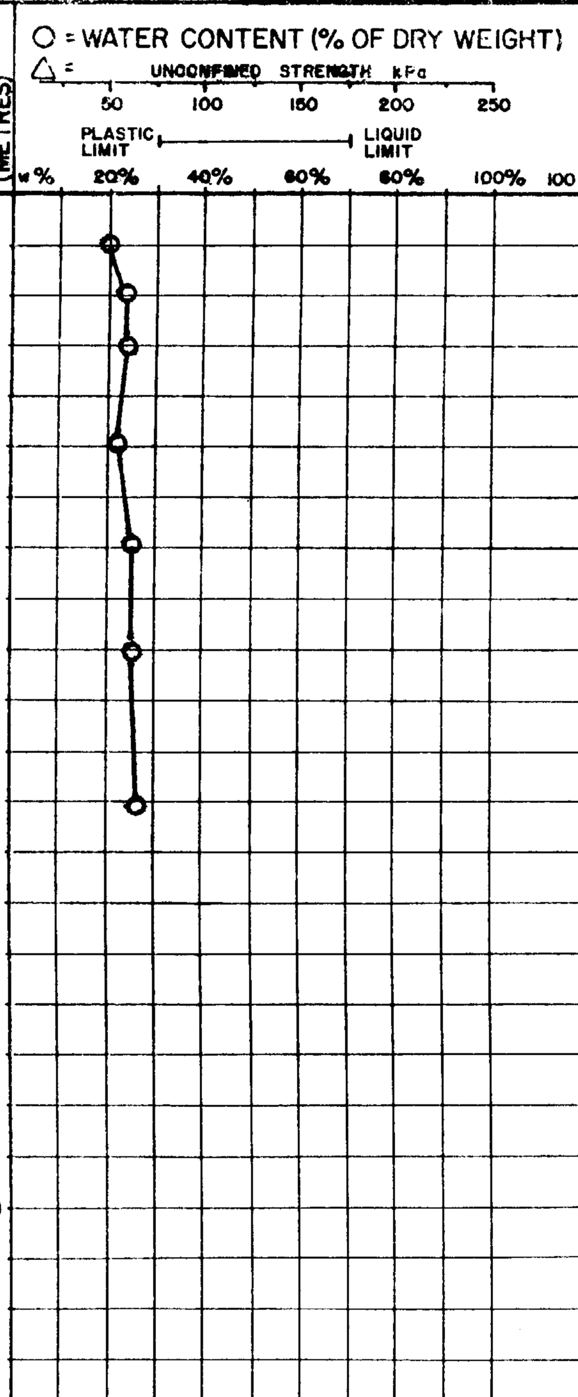
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/02	125	48	2

CHAINAGE | OFFSET | REMARKS

Depth (metres)	Unified Soil Symbol	Soil Description	Penetration Resistance	Ice Description	Clay %	Silt %	Sand %	Gravel %	Relative Moisture Content
0.5	ML	SILT							DAMP-MOIST
1					-	99	1	0	MOIST-WET
1.5		1.5m							
1.5	CL	CLAY - SILTY - LOW PLASTIC +P_L							MOIST
2.5					-	99	1	0	MOIST
3.5									WET
4.5					-	100	0	0	WET
6									WET
6.1		6.1m							
		Bottom of Hole 6.1m							

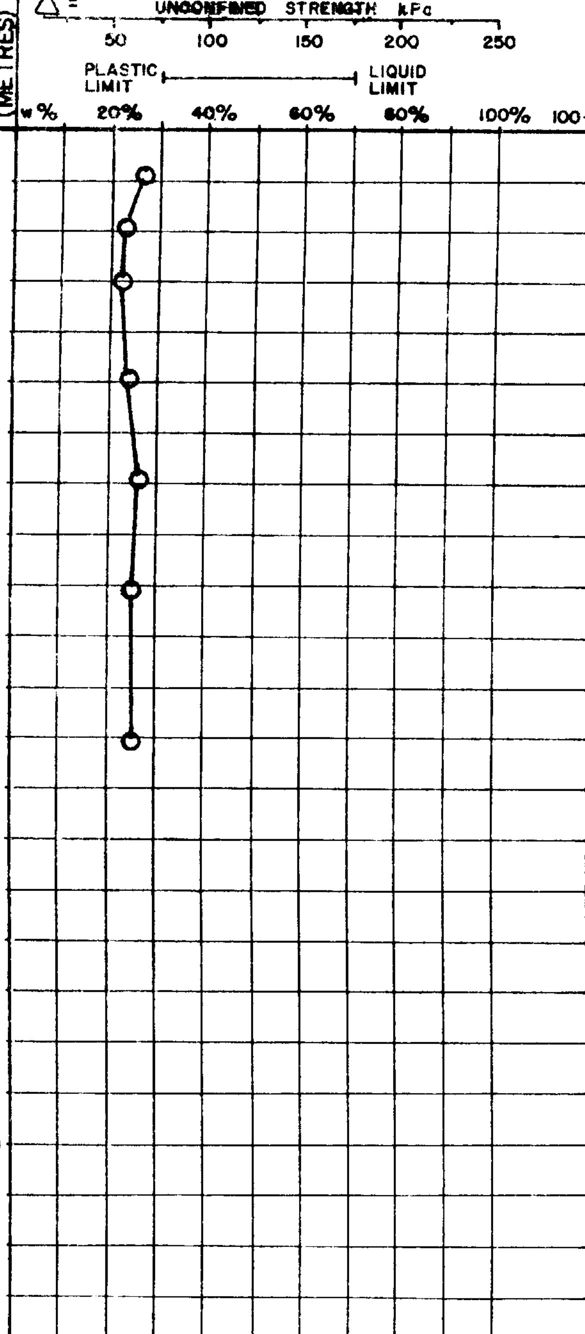


PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/02	km 125	B.P. No. 48	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–8	ML	SILT			0.5	99		1	0	SAT.			
					1					WET			
					1.5	99		1	0	WET			
8		2.4m											
8–20	CL	CLAY - SILTY - LOW PLASTIC + P_L WET			2.5					WET			
					3.5	99		1	0	WET			
					4.5					WET			
20		6.1m			6	100		0	0	WET			
22		BOTTOM OF HOLE - 6.1m											

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 126	B.P. No. 49	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT.									
2						99		1	0	DAMP	
4		. SANDY CLAYEY			1					H.I.B.	
6	ML					63		37	0	MOIST	
8					2					WET	
10		3.4m			3						
12		CLAY - SILTY				95		5	0	MOIST	
14	CL	LOW PLASTIC +PL			4						
		4.6m								WET	SAT. AFTER 3.4 m
16		BOTTOM OF HOLE - 4.6m			5						
18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38					6, 7, 8, 9, 10, 11						

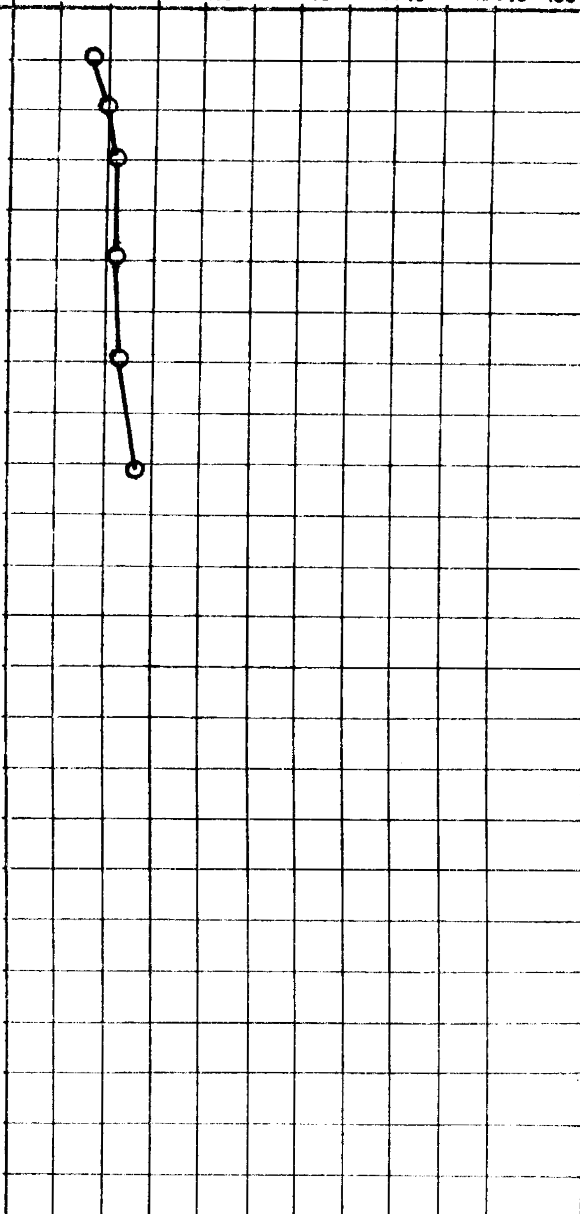
CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ——— LIQUID LIMIT

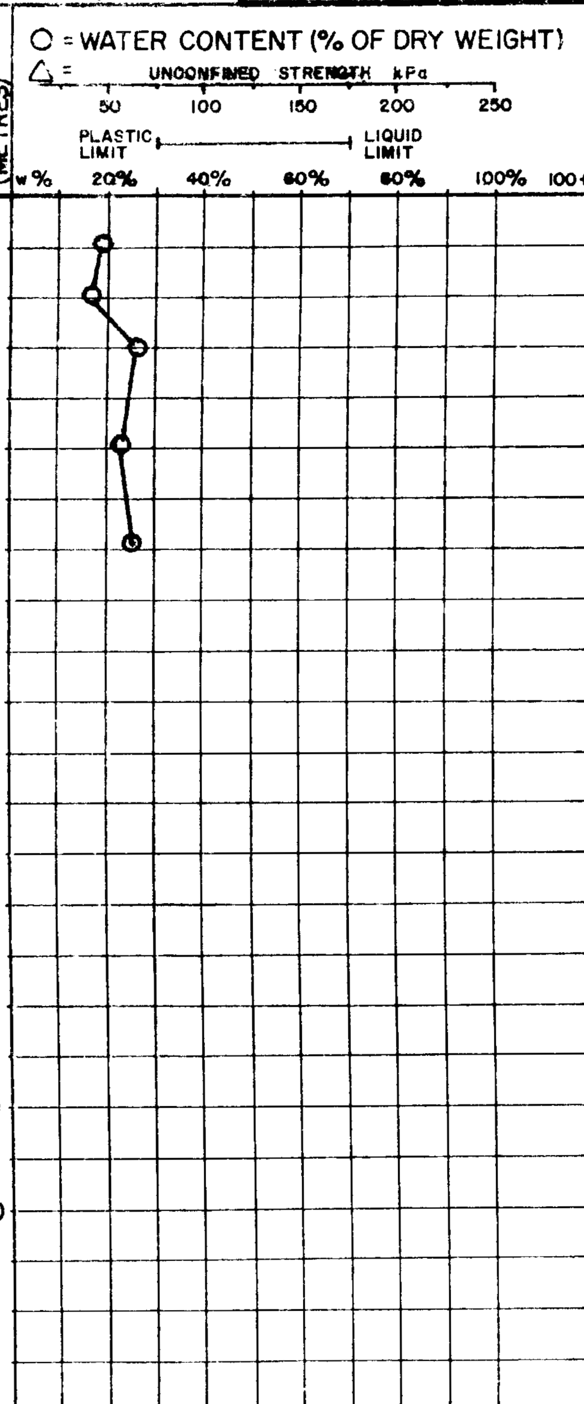
w % 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 126	B.P. No. 49	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SILT					99	1	0	DAMP			
2		SAT. AFTER 1.8 m			1					DAMP			
4		- CLAYEY					98	2	0	SAT.			
6	ML				2								
8							99	1	0	H.I.B.			
10					3								
		3.4m					99	1	0	WET			
12		BOTTOM OF HOLE - 3.4m											
14					4								
16					5								
18													
20					6								
22													
24					7								
26					8								
28													
30					9								
32					10								
34													
36					11								
38													



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Wiard Hwy

TECH. Pronych | RIG B-50 | DATE 78/02/03 | km 126 | B.P. No. 49 | HOLE No. 3

CHAINAGE: | OFFSET:

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2		Silt - Clayey			0.5 (water content ○ ≈ 30%)	-	98	2	0	Sat.	
4	ML				1					Damp	Moisture Contents Misplaced
6					1.5	-	99	1	0	Damp	
8					2.2					Damp	
9		Sat. After 2.7 m									
12					3.5	-	96	4	0	Moist	
14–15	CL	Clay - Silty 4.6 m			4.6	-	97	3	0	Sat.	
18		Bottom of Hole - 4.6 m									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

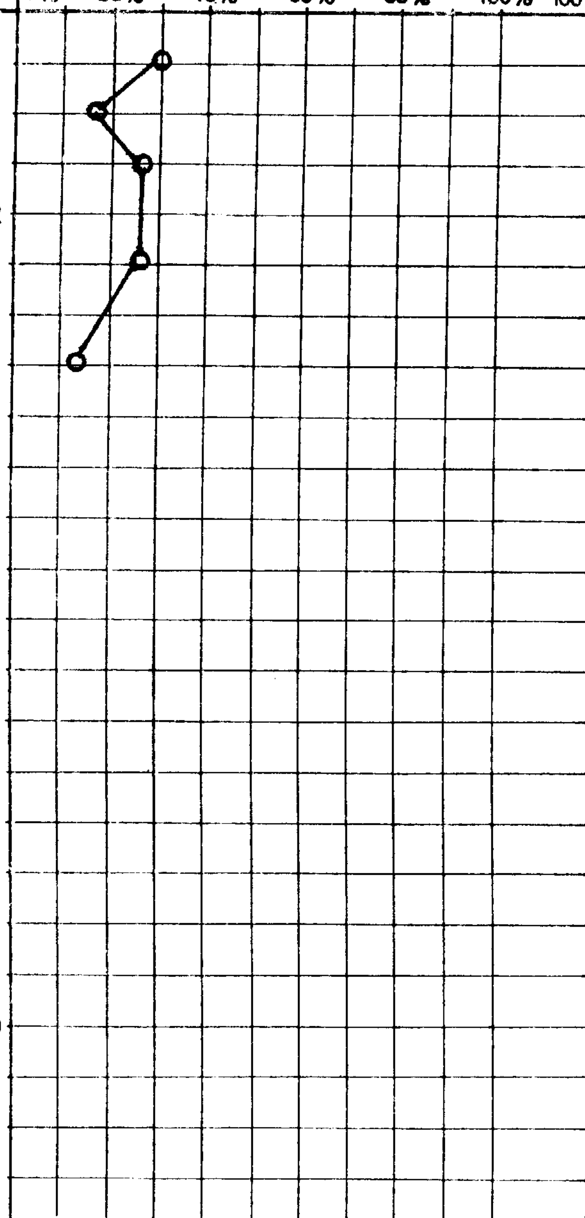
PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD Hwy

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 126	B.P. No. 49	HOLE No. 4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
	ML	SILT - SANDY CLAYEY		
2	SM	SAND - SILTY		
4	ML	SILT		
6–8		SILT - SANDY CLAYEY		
10	SM	SAND. SILTY PEBBLES 3.4 m		
12		BOTTOM OF HOLE . 3.4 m		

DEPTH (METRES) 1–11

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT —— LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



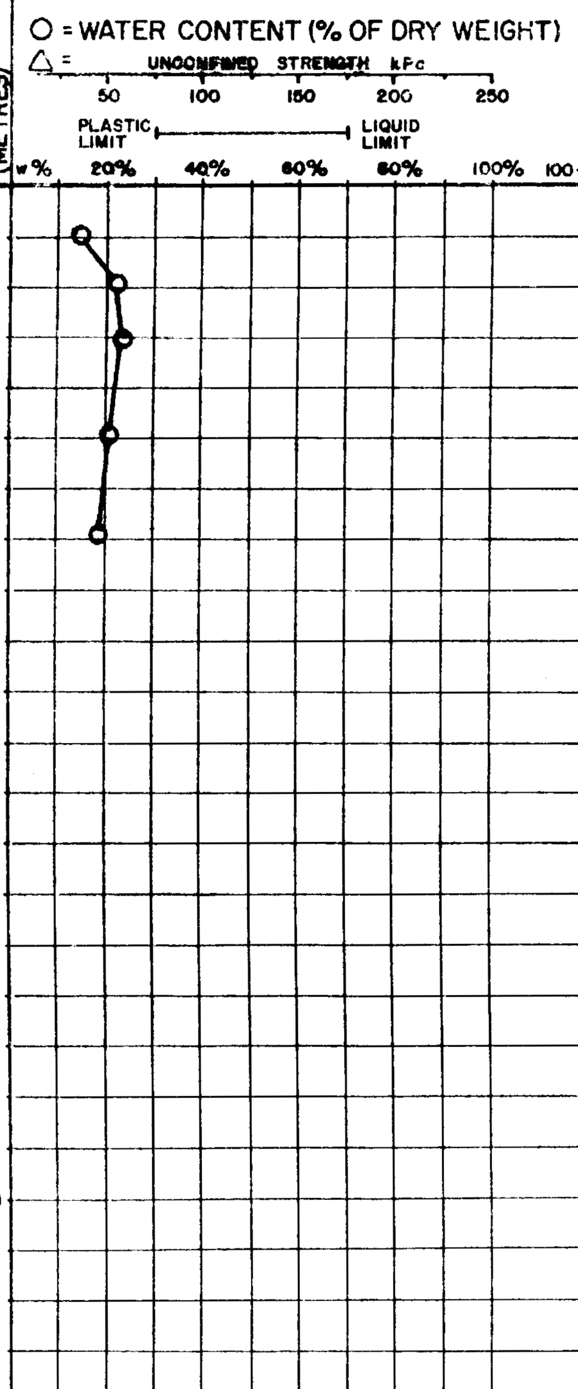
GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
-	60	40	0	MOIST	
				MOIST	
-	97	3	0	WET - SAT	
				SAT.	FREE WATER @ 2.7 m
11	-	79	10	SAT.	

CHAINAGE	OFFSET

PUBLIC WORKS CANADA	DRILL HOLE REPORT	Liard Hwy

TECH. Pronych	RIG B-50	DATE 78/02/03	km 126	B.P. No. 49	HOLE No. 5

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
	SM	SAND - SILTY				-	37	63	0	DAMP			
2	ML	SILT - SANDY			1					WET			
4		- CLAYEY				-	71	29	0	WET			
6		Free Water after 2.7m			2								
8										WET			
10	SM	SAND - SILTY 3.4m			3	-	38	62	0	SAT.			
12		Bottom of Hole - 3.4m											
14					4								
16					5								
18													
20					6								
22													
24					7								
26													
28					8								
30					9								
32													
34					10								
36					11								
38													

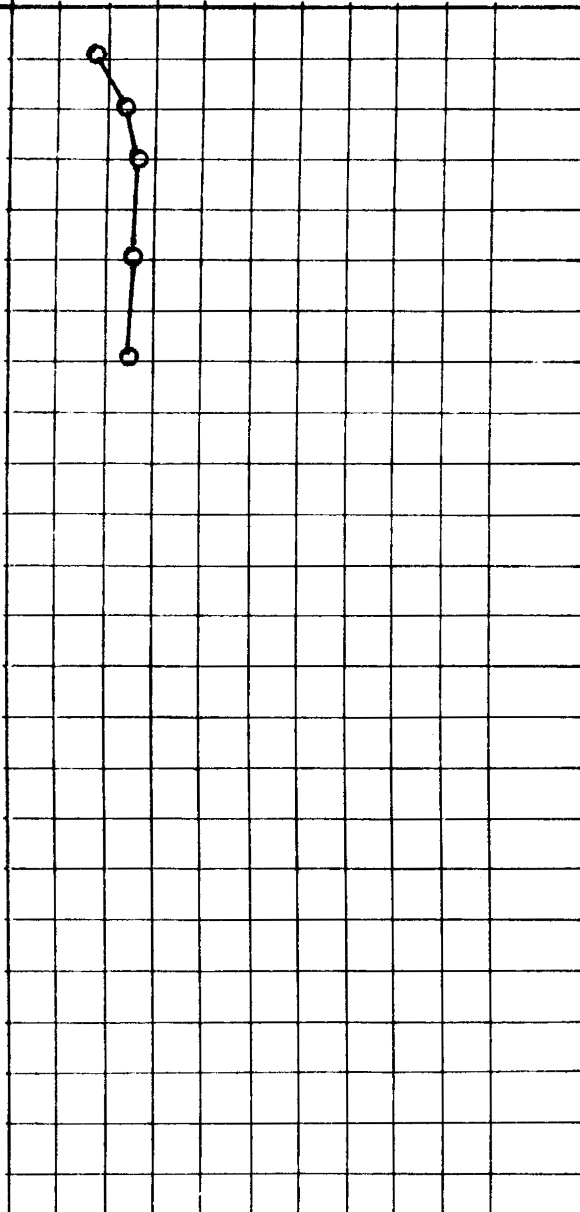


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 127	B.P. No. 50	HOLE No. 1

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT — LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SILT				-99.		1	0	MOIST			
		WET			1					WET			
6	ML					-99.		1	0	WET			
8		- CLAYEY			2					WET			
		3.4m			3	-99.		1	0	WET			
12		BOTTOM OF HOLE - 3.4m			4								



Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (metres) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 127	B.P. No. 50	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT									
2						100		0	0	WET	
4					1					MOIST	
						99		1	0	WET	
6	ML				2						
8		- CLAYEY								SAT.	
10		3.4m			3						
12						97		3	0	SAT.	
14		BOTTOM OF HOLE 3.4m			4						

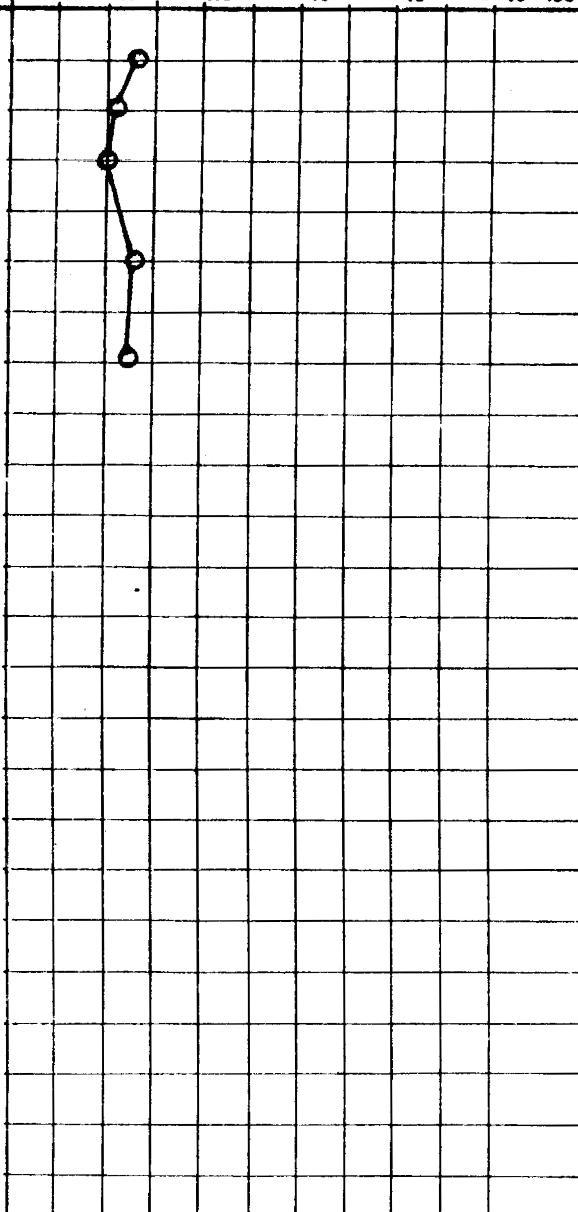
CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

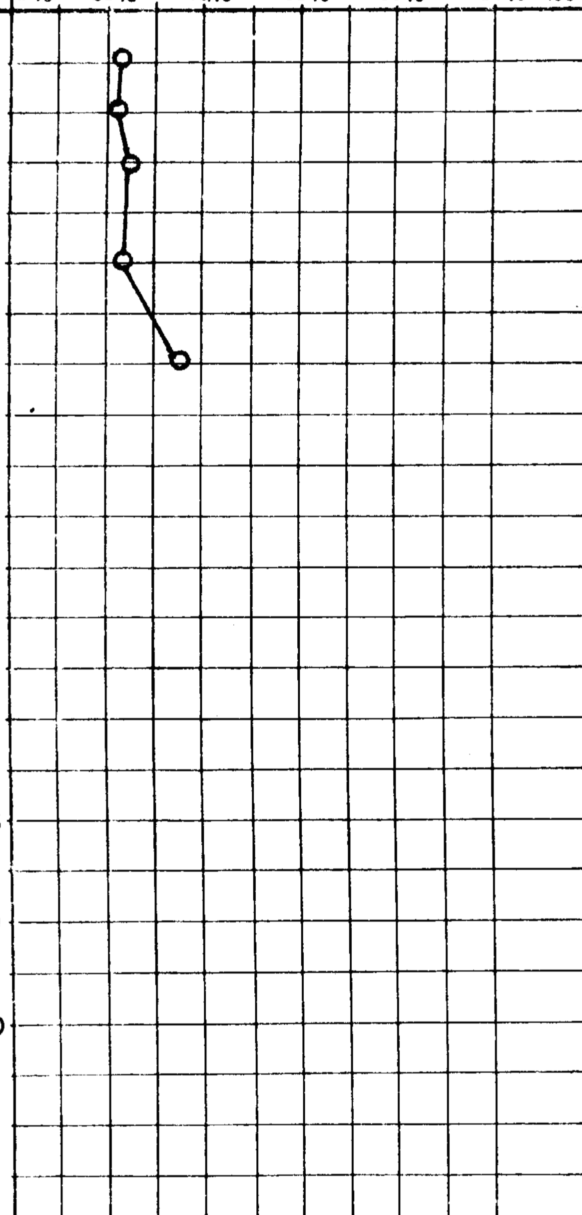
Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	Liard Hwy.

TECH. Pronych	RIG B-50	DATE 78/02/03	km 127	B.P. No. 50	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		Silt		Frozen		-99-		1	0	Wet			
2	ML				1					Wet			
4						-100-		0	0	Sat			
6		- Clayey		Ice lenses after 1.5 m	2								
8										Wet			
10	CL	Clay - Silty 3.4m			3	-99-		1	0	Wet-Sat.			
12		Bottom of Hole - 3.4m											
14					4								
16					5								
18													
20					6								
22													
24					7								
26					8								
28													
30					9								
32													
34					10								
36					11								
38													

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

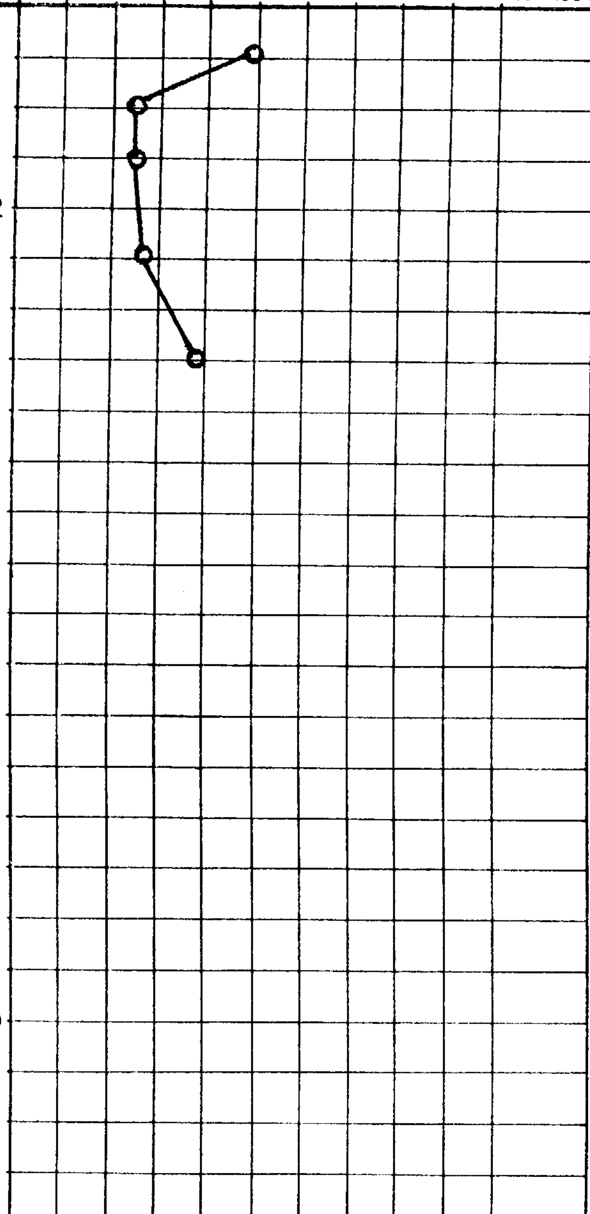
LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 127	B.P. No. 51	HOLE No. 1

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–11	ML	SILT- CLAYEY		FROZEN		100		0	0	FREE WATER	
					1					SAT.	
						100		0	0	SAT.	
										SAT.	
		3.4 m				93		7	0	FREE WATER	



DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 127	B.P. No. 51	HOLE No. 2

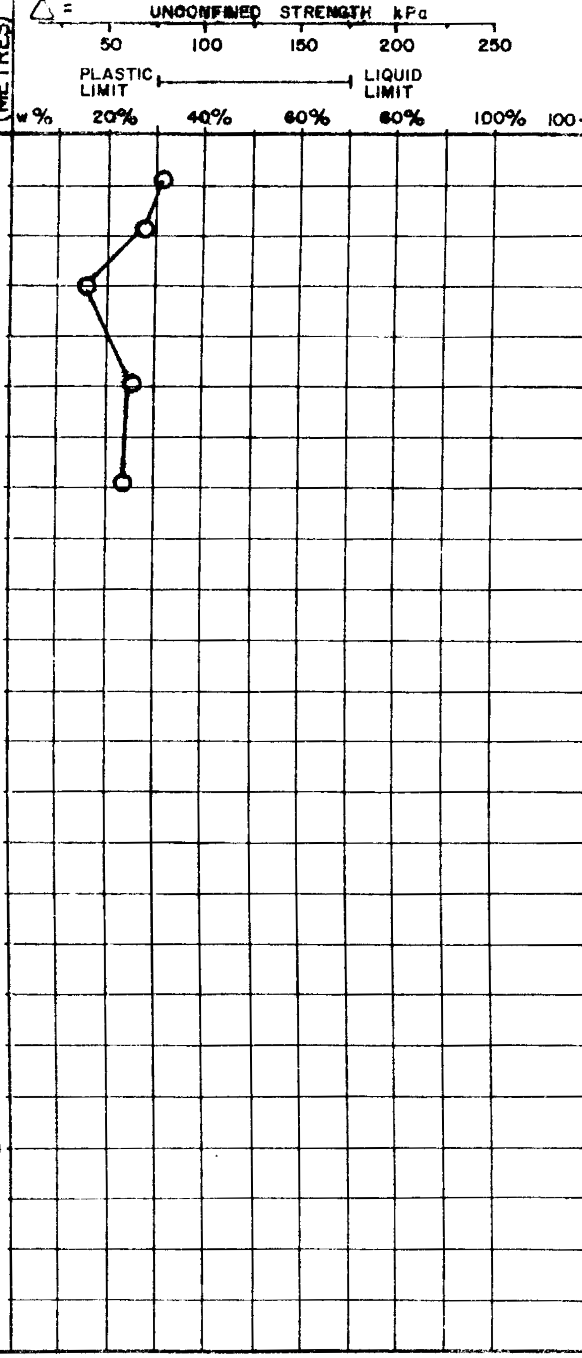
CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - CLAYEY		FROZEN		-99-		1	0	SAT	
2		SILT -			1					WET-SAT.	
4	ML					-91-		9	0	MOIST	
6		SATURATED AFTER 2.1m			2						
8		- CLAYEY				-96-		4	0	WET-SAT.	
10		3.4m			3					W-SAT.	
12		BOTTOM OF HOLE - 3.4m									
14					4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT



PUBLIC WORKS CANADA — DRILL HOLE REPORT

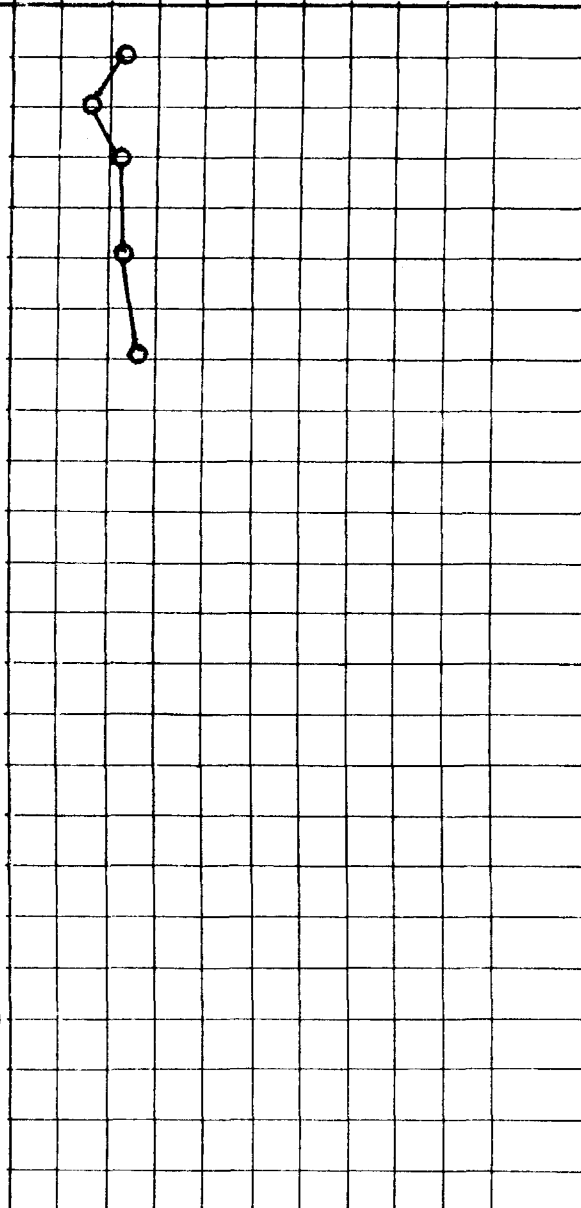
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/03	127	51	3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT-SANDY								WET-SAT.	
4	ML	SAT. FREE WATER AFTER 21m			1	-	59	41	0	MOIST	
										H.I.B.	
8					2.5	-	73	27	0	WET-SAT.	
10	CL	CLAY-SILTY SANDY 3.4m									
										WET-SAT.	
12		BOTTOM OF HOLE - 3.4 m									

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

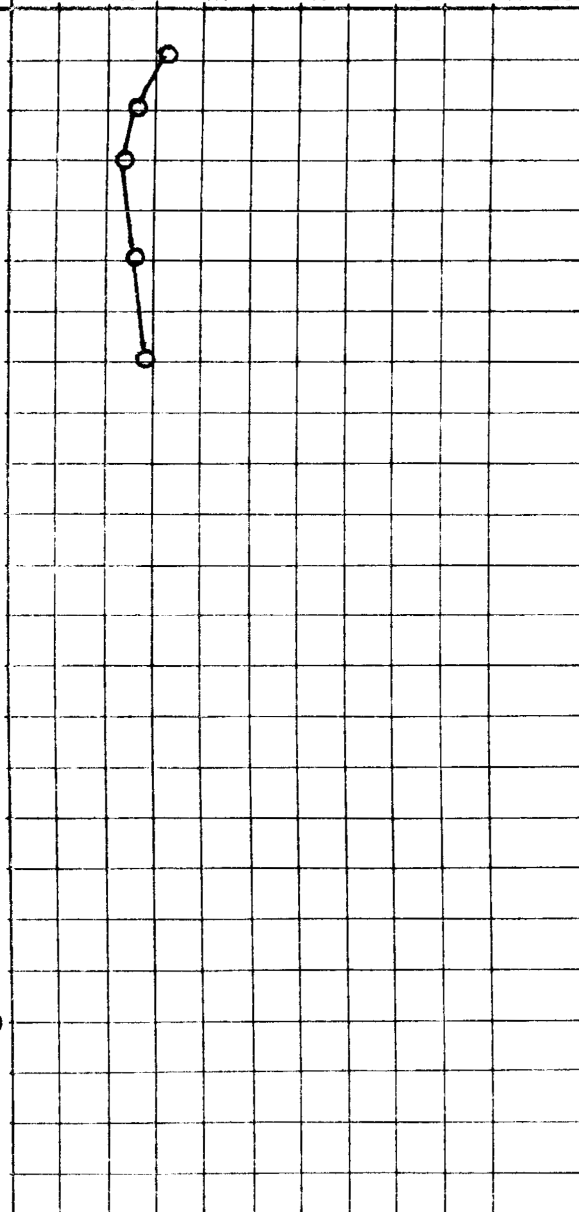
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/03	km 127	B.P. No. 51	HOLE No. 4

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT — LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
		SILT -								
2						-	98 -	2	0	FREE WATER
4					1					SAT.
						-	90 -	10	0	WET
6	ML	SATURATED AFTER 1.8m			2					
8										SAT.
10		- CLAYEY 3.4m			3					
12						-	93 -	7	0	SAT.
		BOTTOM OF HOLE - 3.4m			4					
14										
16					5					
18										
20					6					
22										
24					7					
26					8					
28										
30					9					
32										
34					10					
36					11					
38										



CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/03	128	52	1

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT -		FROZEN		-99-		1	0	WET	
4					1					MOIST	
6		- CLAYEY				-97-		3	0	DAMP	
8	ML			FROZEN	2					WET	
10–12		WET - SAT. AFTER 12' OR 3.7m			3	-99-		1	0	WET	
14–16		4.6m			4					WET	
16		BOTTOM OF HOLE - 4.6m			5						

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

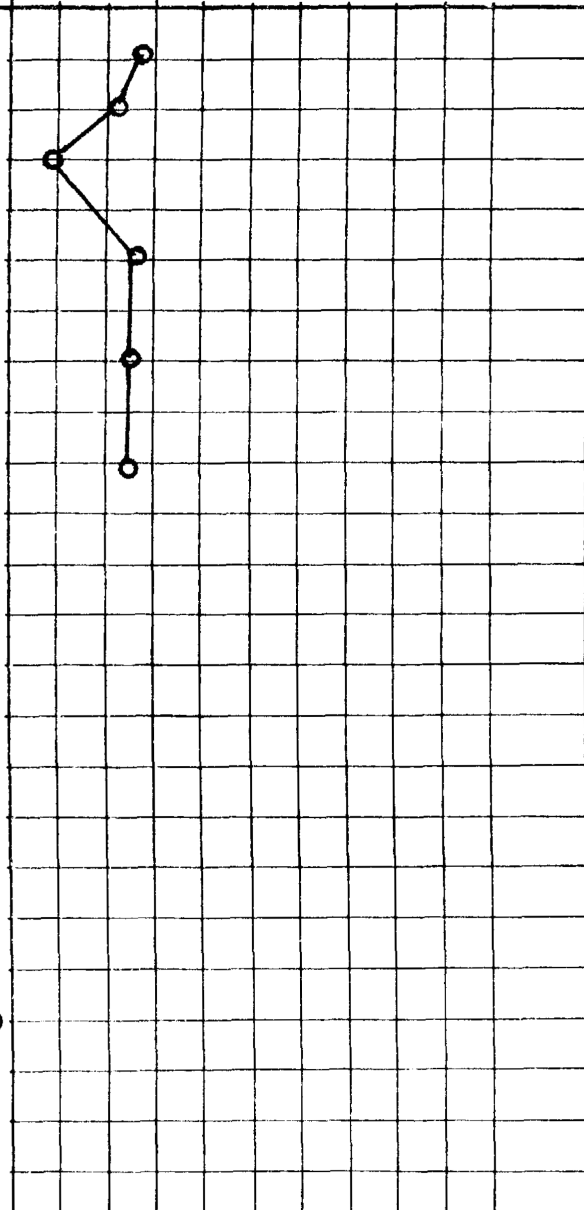
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├───┤ LIQUID LIMIT

w%: 20%, 40%, 60%, 80%, 100%, 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. PRONYUCH	RIG B-50	DATE 78/02/03	km 128	B.P. No. 52	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SILT -					83			DAMP			
2										DAMP			
4					1					DAMP			
6	ML	· CLAYEY			2		99	1	0	MOIST			
8–12					3					MOIST			
14		4.6m			4		99	1	0	MOIST			
16–18	CI	CLAY - SILTY MED. PLASTIC +PL			5								
20		6.1m			6					MOIST			
22		BOTTOM OF HOLE - 6.1m											

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

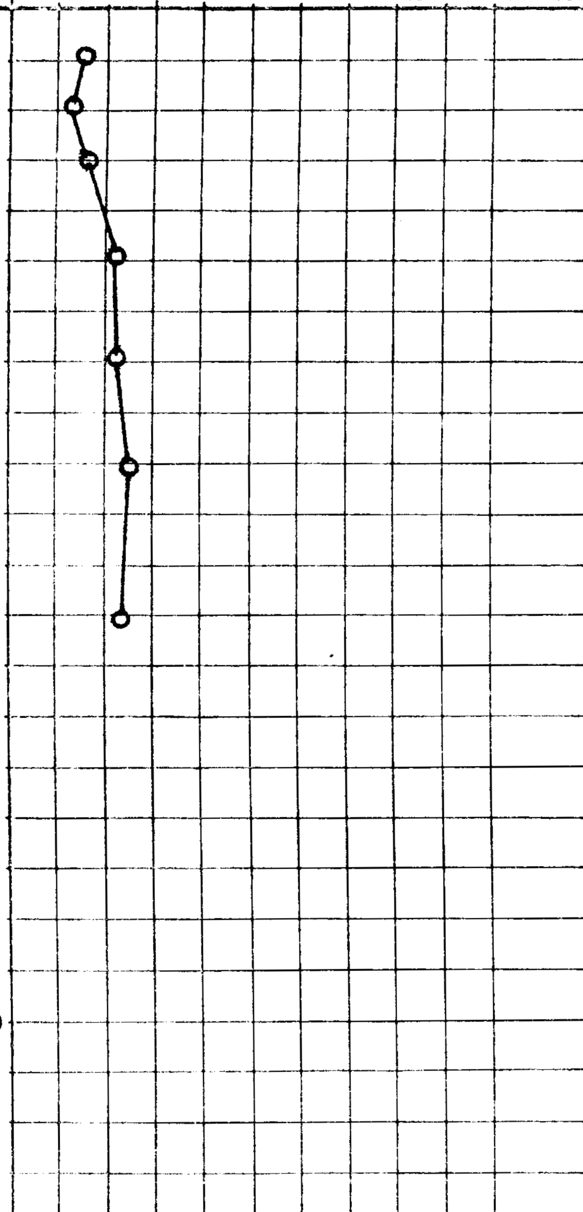
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa — 50, 100, 150, 200, 250

PLASTIC LIMIT ——— LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



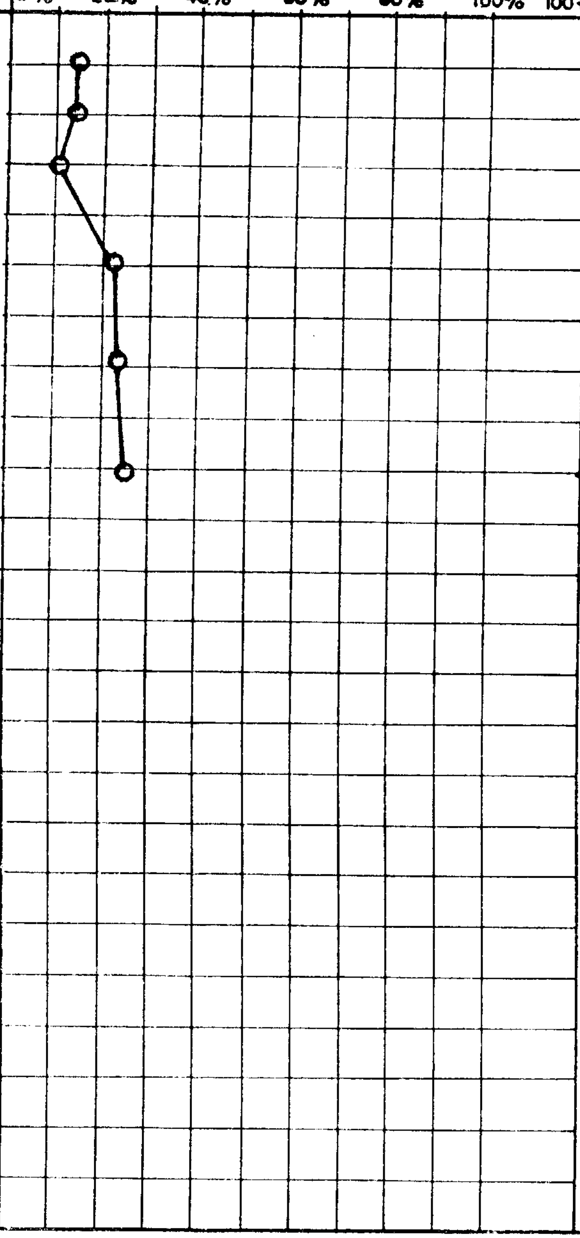
GRAIN-SIZE ANALYSIS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYSCH	RIG B-50	DATE 78/02/03	km 128	B.P. No. 52	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2		SILT				99	-	1	0	DAMP			
4					1					DAMP			
6										DAMP			
8	ML				2	100	.	0	0	MOIST			
10					3								
12		· CLAYEY SATURATED AFTER 3.4m								MOIST			
14		4.6m			4	97	-	3	0	WET			
16		BOTTOM OF HOLE - 4.6m			5								
18													
20					6								
22													
24					7								
26													
28					8								
30					9								
32													
34					10								
36													
38					11								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



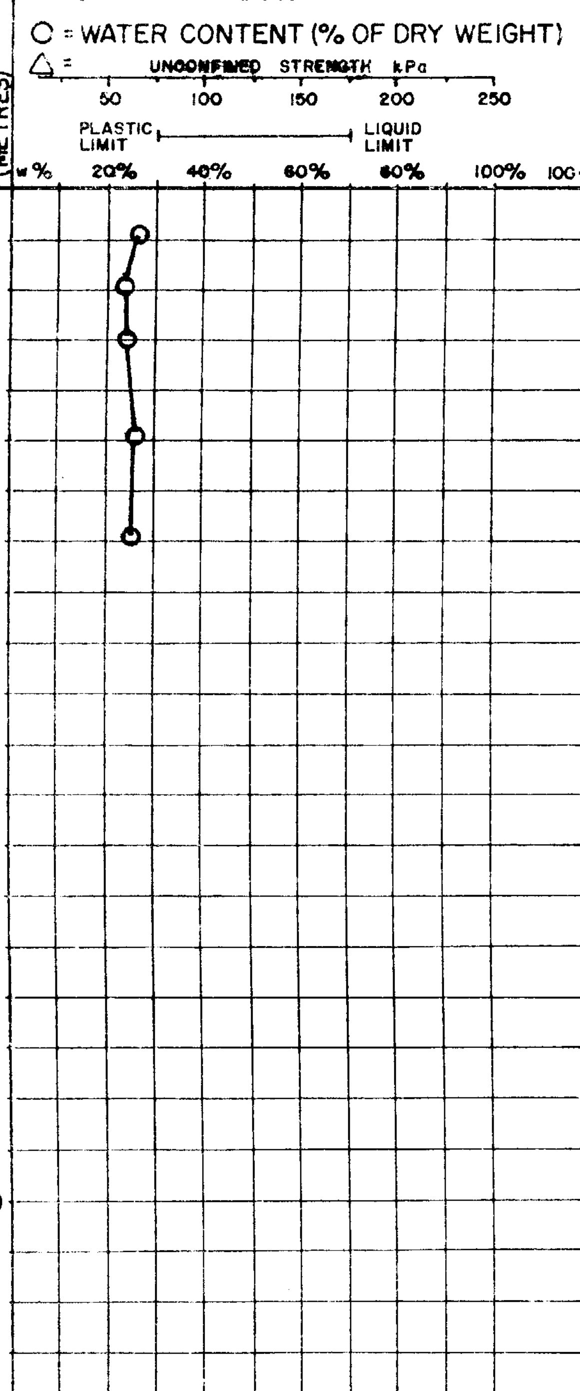
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYSCH	B-50	78/02/03	128	52	4

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT-					98	2	0	WET-SAT.	
4				FROZEN	1					W-S	
6	ML						97	3	0	W-S	
8		-CLAYEY			2					W-S	
10		SATURATED AFTER 2.7m			3						
12		3.4m					96	4	0	W-S	
		BOTTOM OF HOLE. 3.4m			4						



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	129	53	1

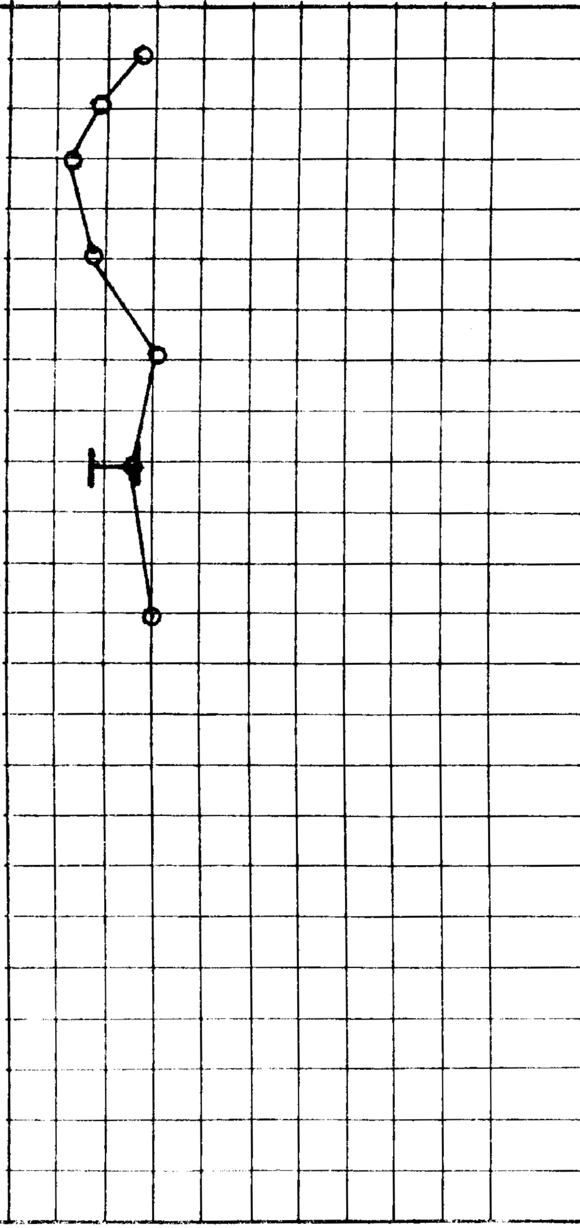
CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



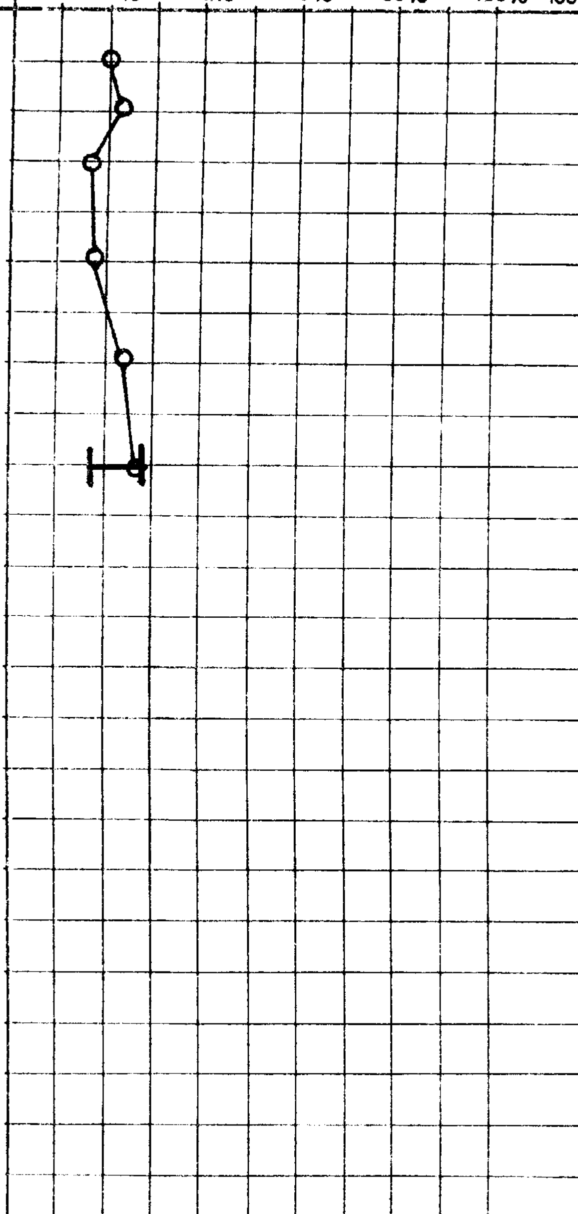
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT -				-99-		1	0	MOIST	
4					1					DAMP	
6										DAMP	
8					2	-96-		4	0	DAMP	
10	ML	- CLAYEY			3						
12										WET	
14					4						
16						-99-		1	0	WET - SAT.	
18					5						
20		6.1 m			6					WET	
22		BOTTOM OF HOLE - 6.1m									
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/03	km 129	B.P. No. 53	HOLE No. 2

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT — LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		Silt.				-	99	1	0	Moist	
					1					Moist	
						-	98	2	0	Moist	
										Moist	
10	ML				3					Wet Sat.	
		-Clayey 4.6m				-	98	2	0	W-S.	
		Bottom of Hole. 4.6m									

PUBLIC WORKS CANADA	DRILL HOLE REPORT	Liard Hwy.

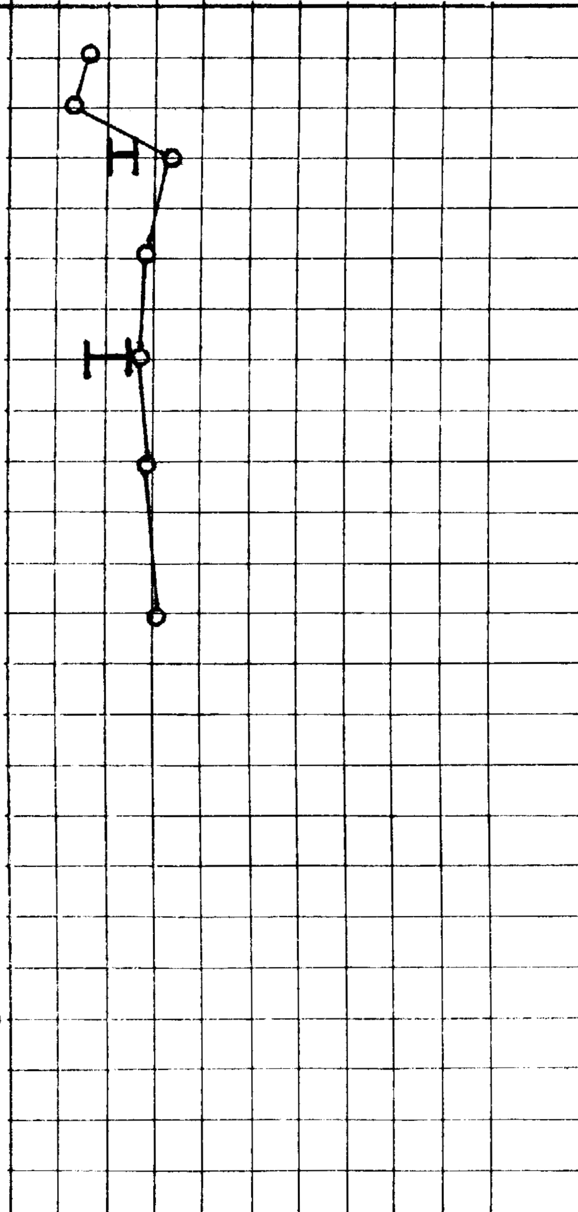
TECH. WEBBER	RIG B-50	DATE 78/02/03	km 129	B.P. No. 53	HOLE No. 3

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		Silt.		Frozen		-97-		3	0	DAMP	
					1					DAMP	
						-99-		1	0	SAT.	
					2					SAT.	
10	ML				3						
		-Clayey				-91-		9	0	SAT.	
					4					SAT.	
					5						
20		6.1m			6	-99-		1	0	SAT.	
		Bottom of Hole - 6.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

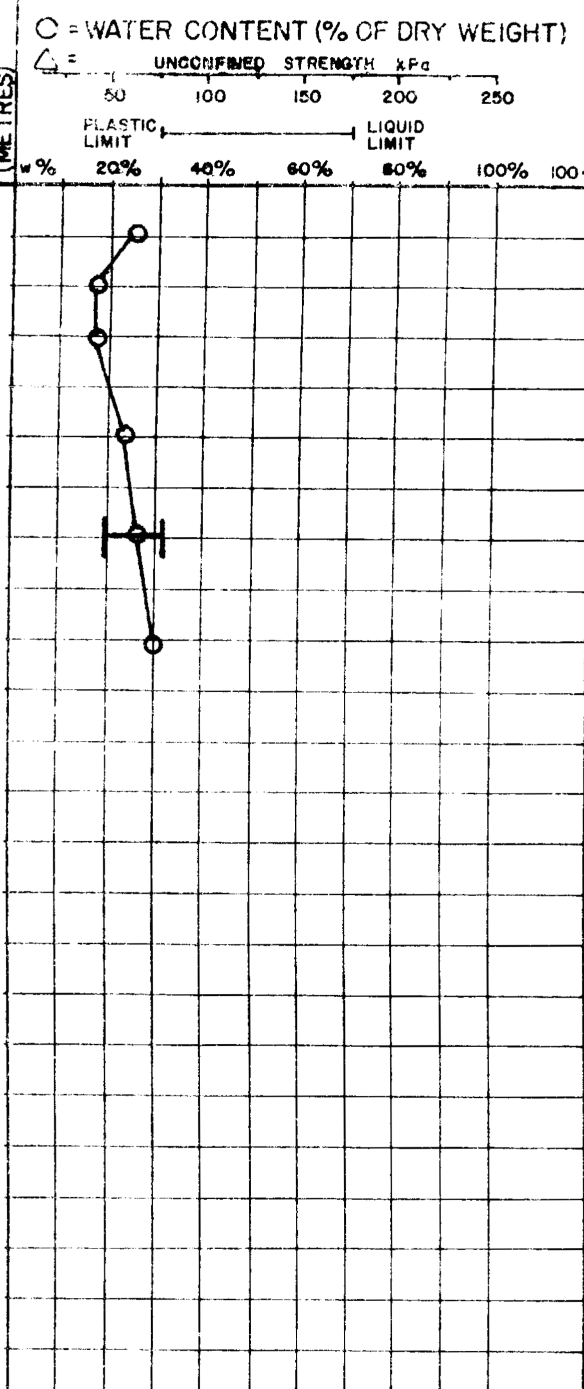
TECH. WEBBER | RIG B-50 | DATE 78/02/03 | km 129 | B.P. No. 53 | HOLE No. 4

CHAINAGE | OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT-				-99-		1	0	MOIST	
					1					DAMP	
						-99-		1	0	DAMP	
	ML									MOIST	
		- CLAYEY				-99-		1	0	MOIST	
		4.6m								SAT.	
		BOTTOM OF HOLE - 4.6m									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11



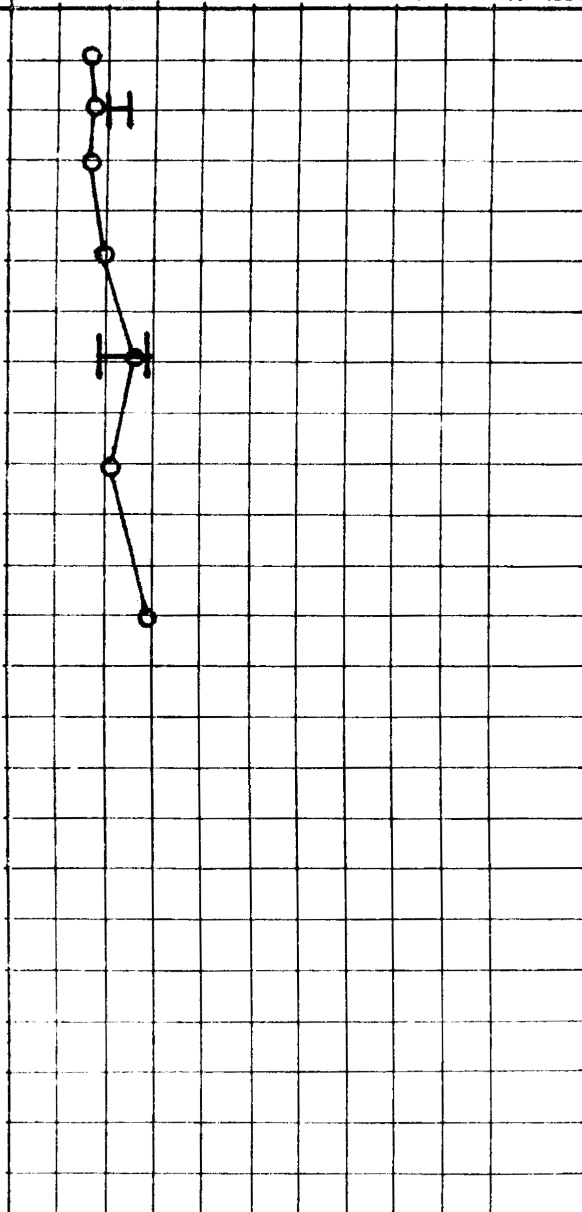
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	130	54	1

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2		SILT-								DAMP	
4					1	-99-		1	0	DAMP	
5										DAMP	
8						-97-		3	0	MOIST	
10	ML	-CLAYEY									
12						-99-		1	0	WET	
14										SAT.	
20		6.1m			6					SAT.	
23		BOTTOM OF HOLE. 6.1m									

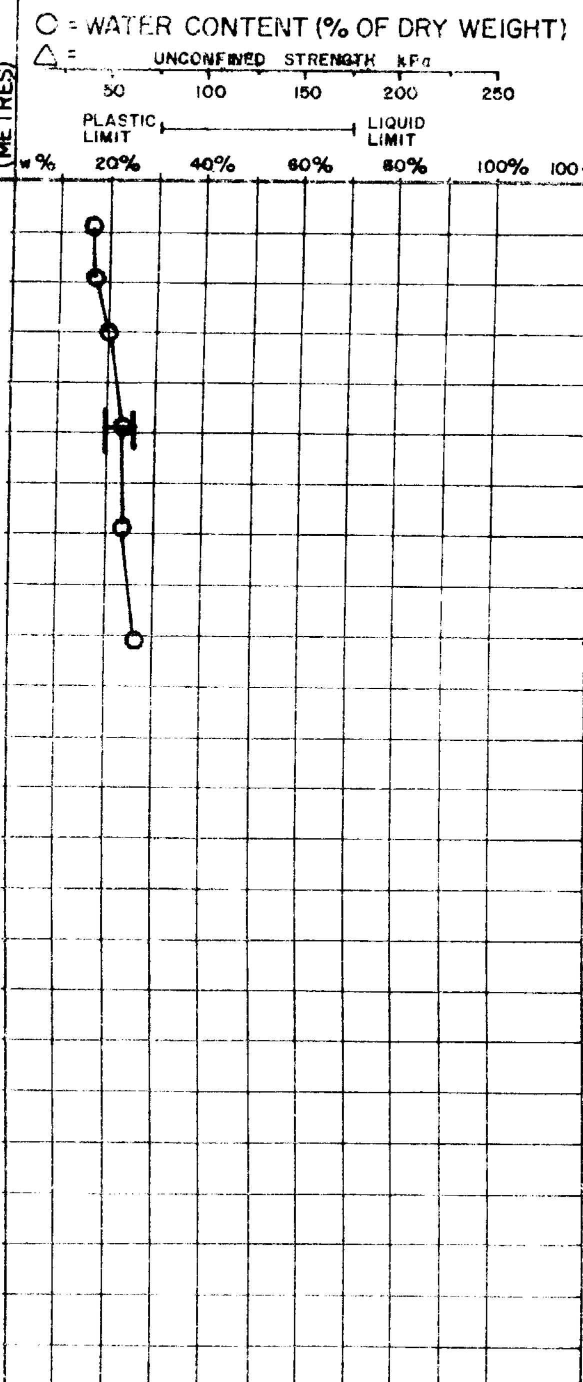
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/03	km 130	B.P. No. 54	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
	ML	SILT -								DAMP			
					1	-	99	-	1	0 DAMP			
										MOIST			
					2.5	-	99	-	1	0 WET			
										WET			
		-CLAYEY											
		4.6m			4.5	-	99	-	1	0 WET - SAT.			
		BOTTOM OF HOLE - 4.6m											

Depth (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11



PUBLIC WORKS CANADA — DRILL HOLE REPORT

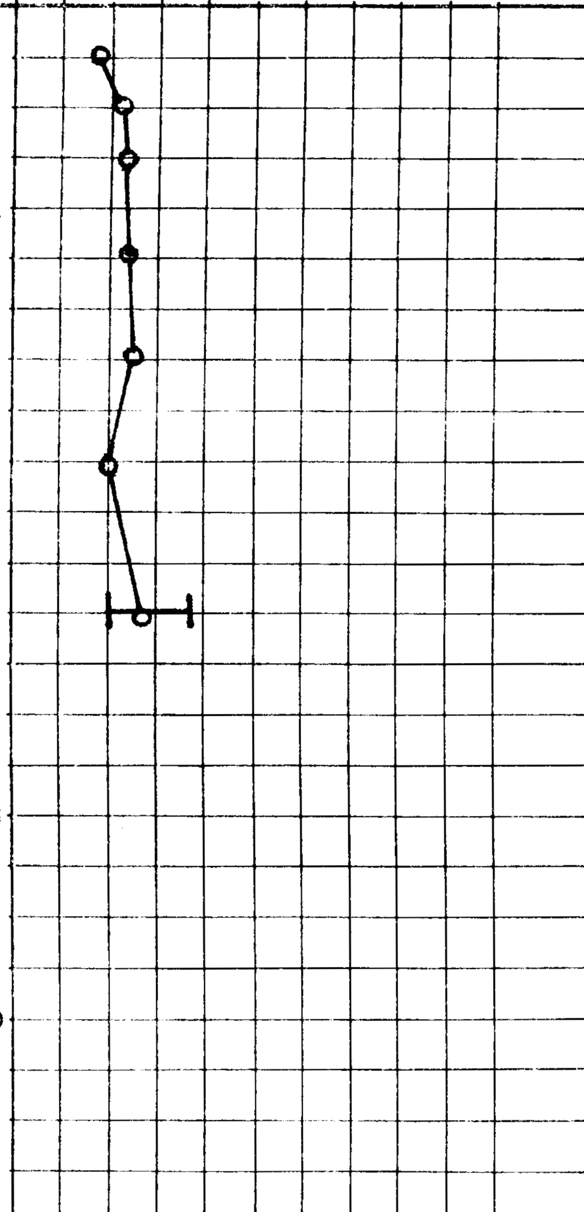
LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	130	54	3

CHAINAGE	OFFSET

DEPTH (METRES)	DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0.5	2		SILT-							DAMP	
1.0	3					-99-		1	0	DAMP	
1.5	5									DAMP	
2.5	8	ML	-CLAYEY							WET	
3.5	11.5					-100-		0	0	WET-SAT.	
4.5	15									WET	
6.0	20		6.1m			-100-		0	0	WET	
	22		BOTTOM OF HOLE- 6.1m								

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |———| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

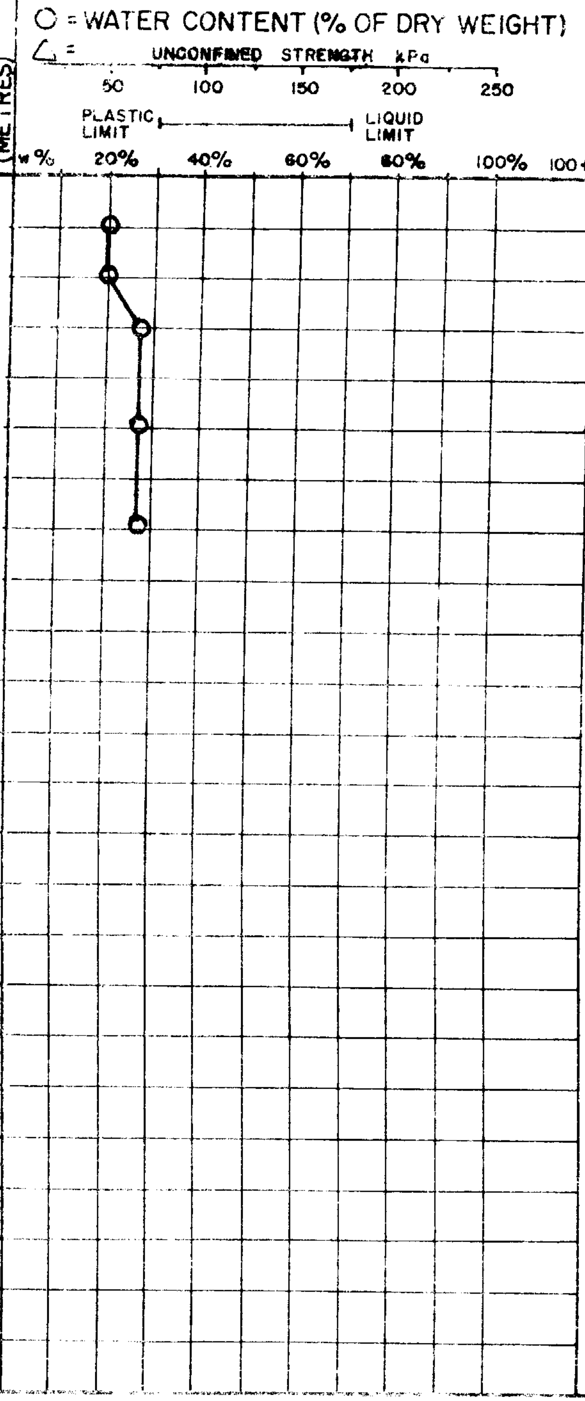


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/03	km 130	B.P. No. 55	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT -								DAMP	
4					1		100	0	0	MOIST	
6	ML									WET	
8		- CLAYEY			2		100	0	0	WET	
10		3.4 m			3						
12										WET	
14		Bottom of Hole - 3.4 m			4						

CHAINAGE | OFFSET



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/03	km 130	B.P. No. 55	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT-								DAMP	
					1		96-	4	0	DAMP	
6	ML									DAMP	
8		- CLAYEY			2		99-	1	0	WET-SAT.	
10		3.4m			3					WET-SAT.	
12											
14		Bottom of Hole - 3.4m			4						

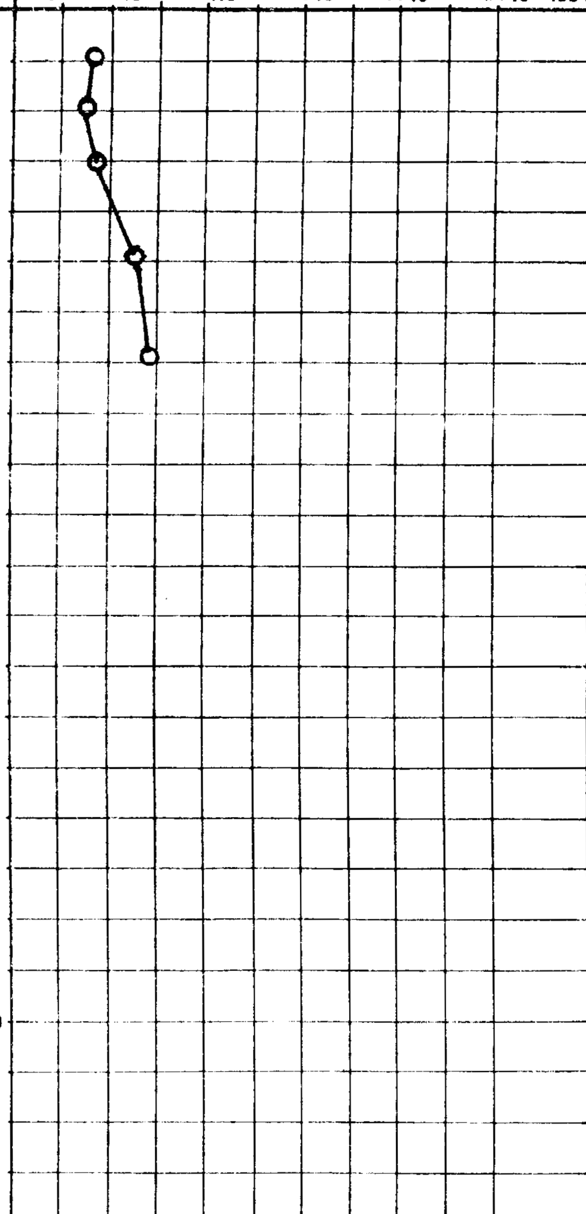
CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/03	130	55	3

CHAINAGE	OFFSET

DEPTH (FEET) | UNIFIED SOIL SYMBOL | SOIL DESCRIPTION | PENETRATION RESISTANCE | ICE DESCRIPTION | DEPTH (METRES)

Unified soil symbol: ML

SOIL DESCRIPTION:

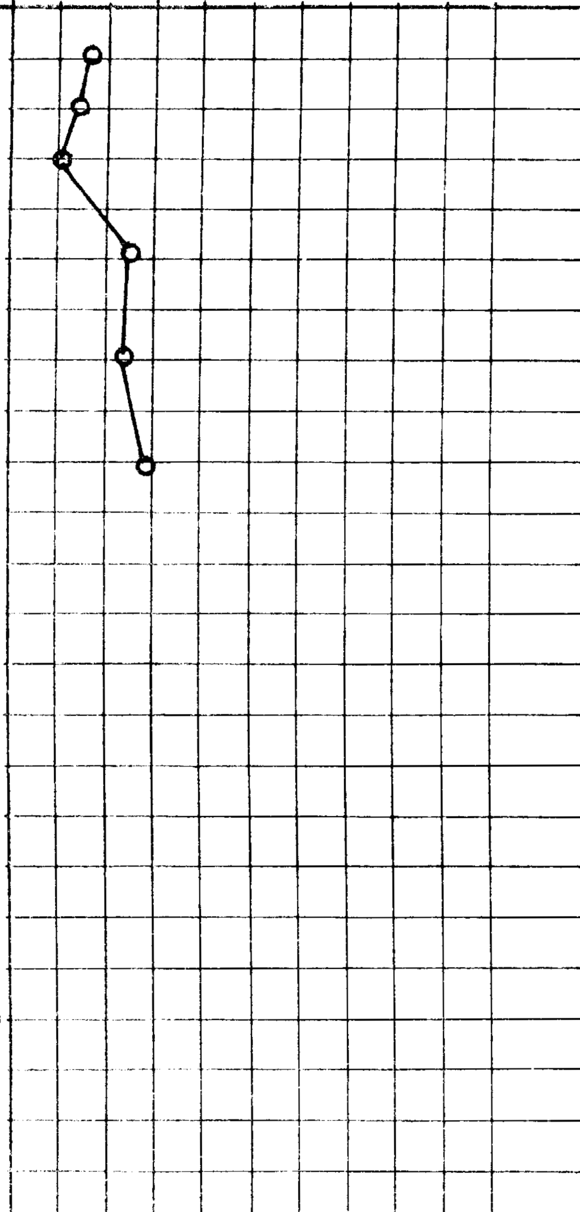
SILT -

- CLAYEY

4.6m

Bottom of Hole - 4.6m

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				DAMP
-	100	0	0	DAMP
				DAMP
-	98	2	0	WET
				WET
-	99	1	0	WET-SAT.

REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT

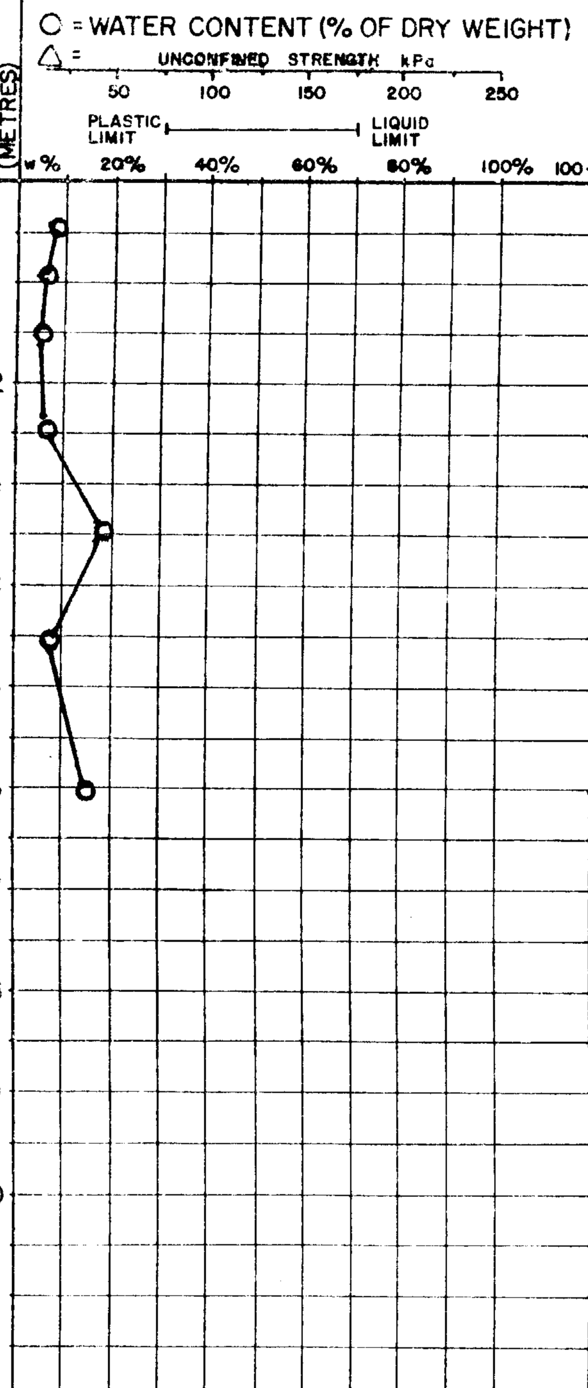
LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 132	B.P. No. 56	HOLE No. 1

CHAINAGE | OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY % / SILT % / SAND % / GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	SM	SAND - SILTY - PEBBLES				24 - 67 9	DAMP	
4					1		DAMP MOIST	
6		- GRAVELLY				9 - 86 5	D-M	
8					2	12 - 57 31	MOIST	
10	ML SM	SAND - SILT MIXTURE PEBBLES			3	56 - 42 2	MOIST	
14	GM	GRAVEL - SANDY SILTY			4	21 - 30 49	MOIST	
18		5.5			5			
20	CL	CLAY - SILTY SANDY GRAVELLY - TILL 6.1m			6	51 - 31 18	WET	
22		BOTTOM OF HOLE - 6.1m						

Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38. Depth (metres) scale: 1–11.

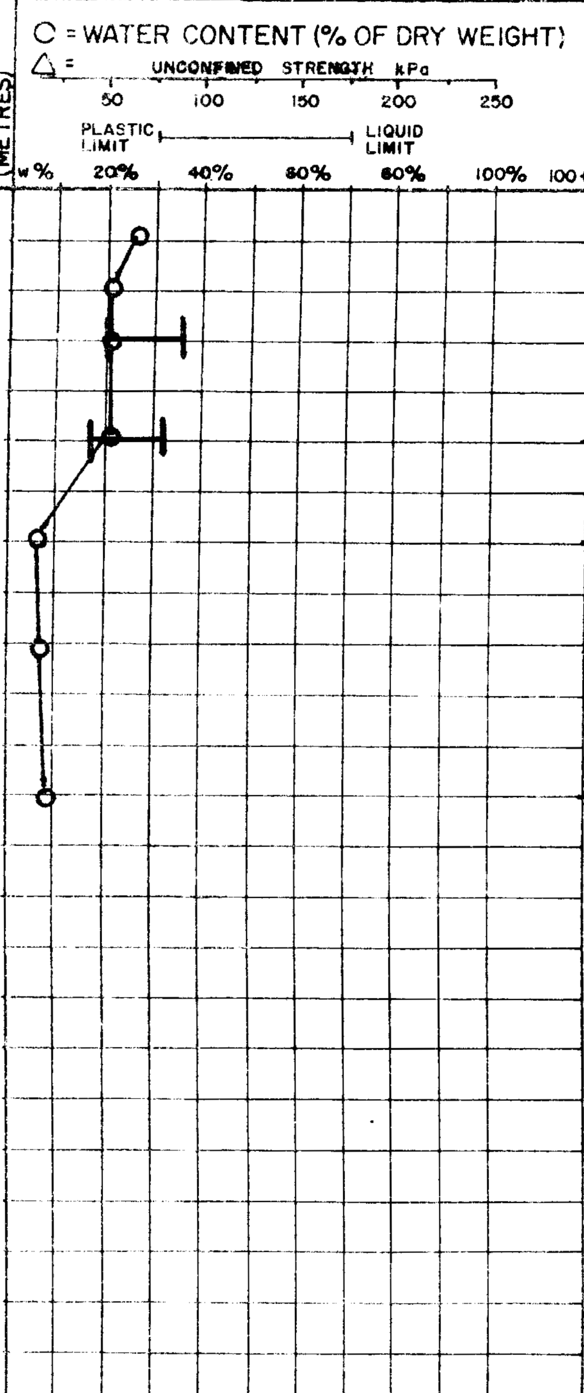


PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 132	B.P. No. 56	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY				99		1	0	WET	
4	CL	LOW-MED. PLASTIC @ OR + P_L			1					MOIST	
6	CL									MOIST	
8					2	94		6	0	MOIST	
10		3.1m — SAND - SILTY PEBBLES			3						
12						14		82	4	DAMP	
14	SM	- GRAVELLY			4	24		44	32	MOIST	
16					5						
18	CL	CLAY-GRAVEL SAND MIX									
20		6.1m			6	31		41	28	MOIST-WET	
22		BOTTOM OF HOLE - 6.1m									

CHAINAGE | OFFSET



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 132	B.P. No. 56	HOLE No. 3

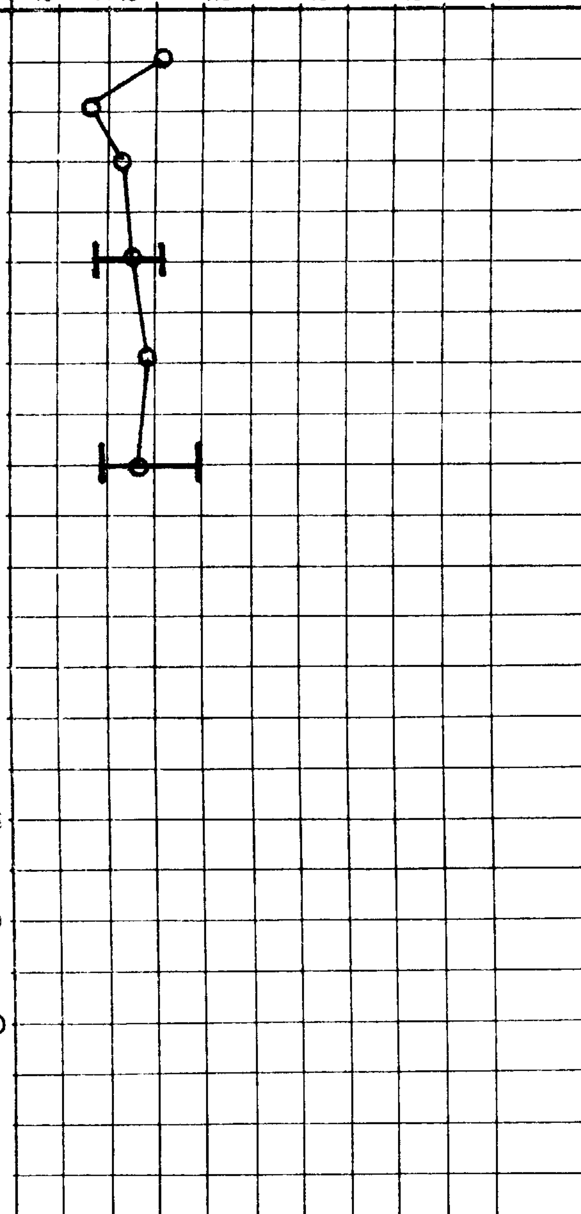
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–5	ML	SILT - CLAYEY — 1.5m			0–1.5	100		0	0	WET / DAMP / MOIST			
5–15	CL CI	CLAY - SILTY - LOW. MED. PLASTIC +PL — 4.6 m			1.5–4.6	100		0	0	MOIST / MOIST			
						99		1	0	WET			
15		BOTTOM OF HOLE. 4.6m											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT |——| LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

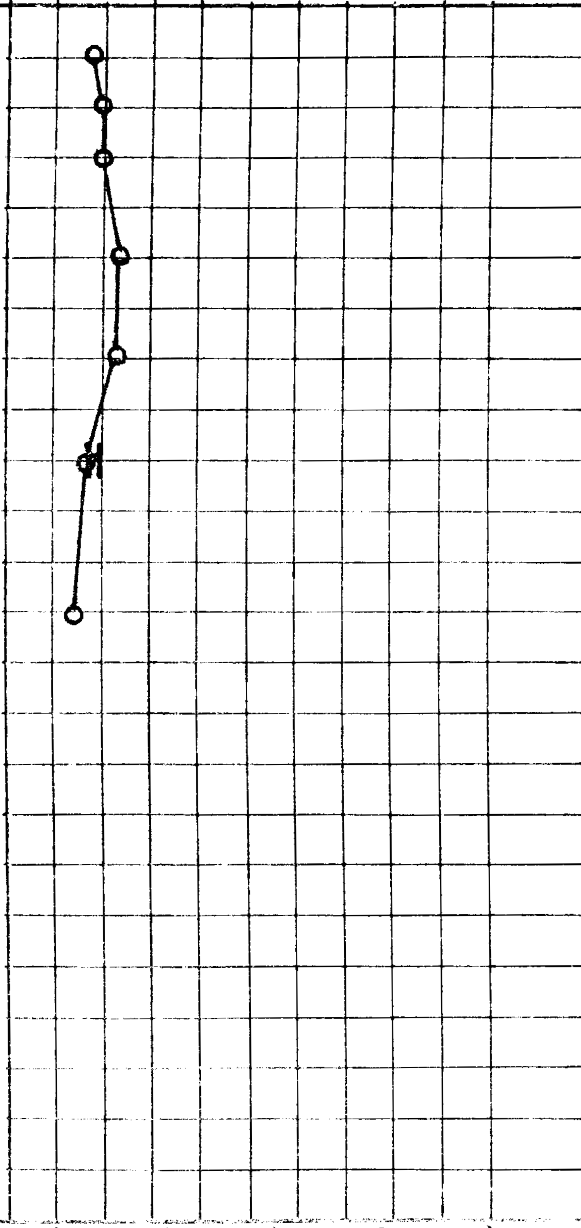
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 76/02/04	km 134	B.P. No. 57	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT - CLAYEY								DAMP			
					1	-	98	2	0	DAMP			
										DAMP			
						-	99	1	0	WET			
										WET			
		- CLAYEY SANDY											
	ML	- SANDY				-	75	25	0	WET			
20		6.1 m			6					WET			
22		BOTTOM OF HOLE 6.1 m											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

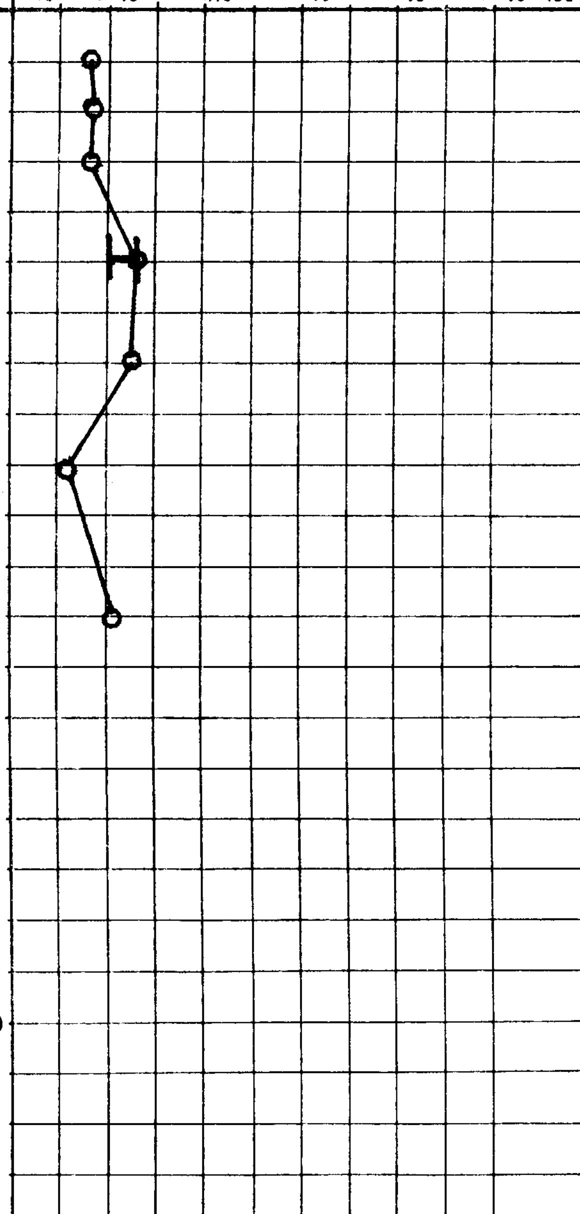


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 134	B.P. No. 57	HOLE No. 2

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |—| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	Silt - Clayey								Damp	
2–4					1	-	95	5	0	Damp-Moist	
										D-M	
8	ML	Silt -			2.5	-	100	0	0	Wet	
12					3.5					Wet	
15		Saturated After 4.9m			4.5					Moist	
19–20	ML	- Sandy 6.1m			6	-	58	42	0	Wet	
22		Bottom of Hole - 6.1m									

PUBLIC WORKS CANADA — DRILL HOLE REPORT

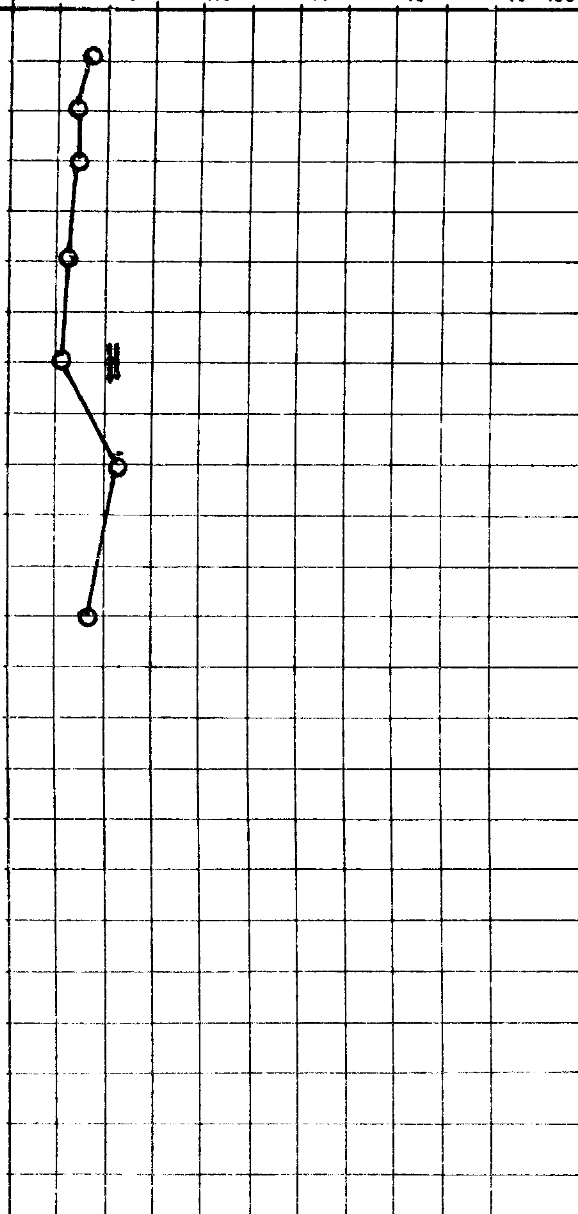
LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONUICH	B-50	78/02/04	134	57	3

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–2	CL	CLAY- SILTY .6m		
2–18	ML	SILT-		
18–20	ML SM	SILT- SAND MIXTURE 6.1m		
20		BOTTOM OF HOLE - 6.1m		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT —— LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



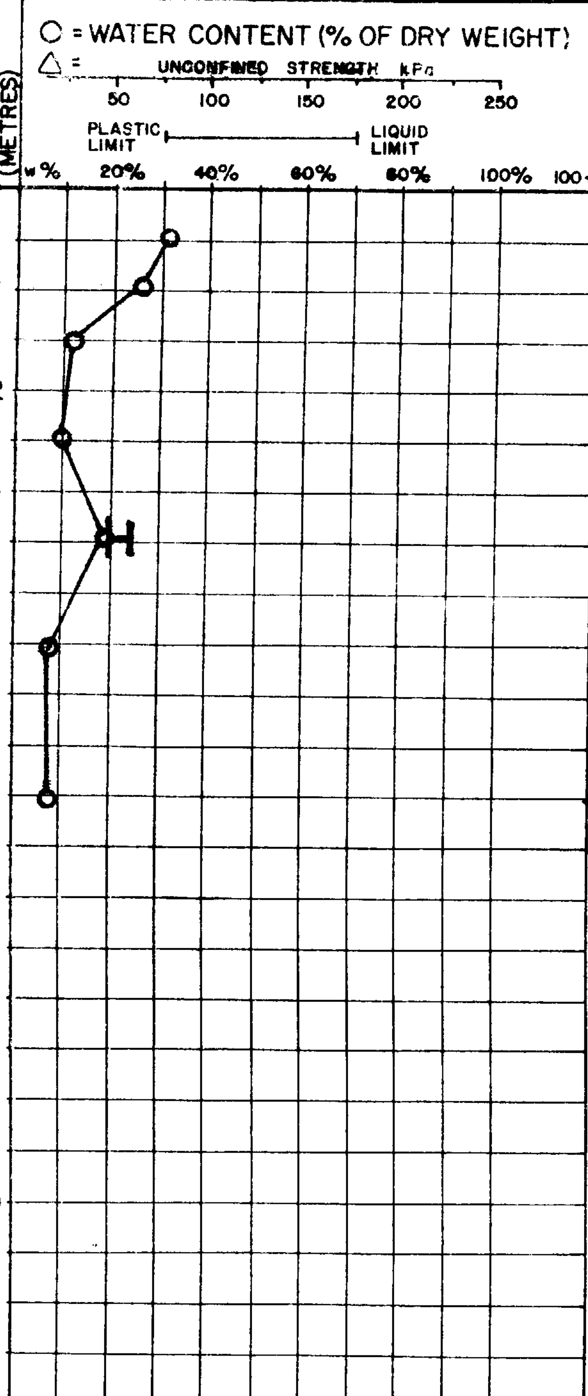
DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0.5		100	0	0	DAMP	
1					DAMP MOIST	
1.5		100	0	0	D-M	
2.5					D-M	
3.5		91	9	0	D-M	
4.5					WET	
6		55	45	0	MOIST	

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 135	B.P. No. 58	HOLE No. 1

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	ML	SILTY CLAYEY — .6m		FROZEN		98-		2	0	WET	
2–4	CL	CLAY - SILTY			1	93-		7	0	DAMP-MOIST	
4–10	ML	SILT - SANDY LOW PLASTIC @ PL								MOIST	
										MOIST	
10–15	ML	SILT -				97-		3	0	MOIST	
		— 4.6m									
15–20	SM	SAND - SILTY - FINE								MOIST-WET	
		— 6.1m			6	37-		63	0	M-W	
		BOTTOM OF HOLE - 6.1 m									



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD Hwy.

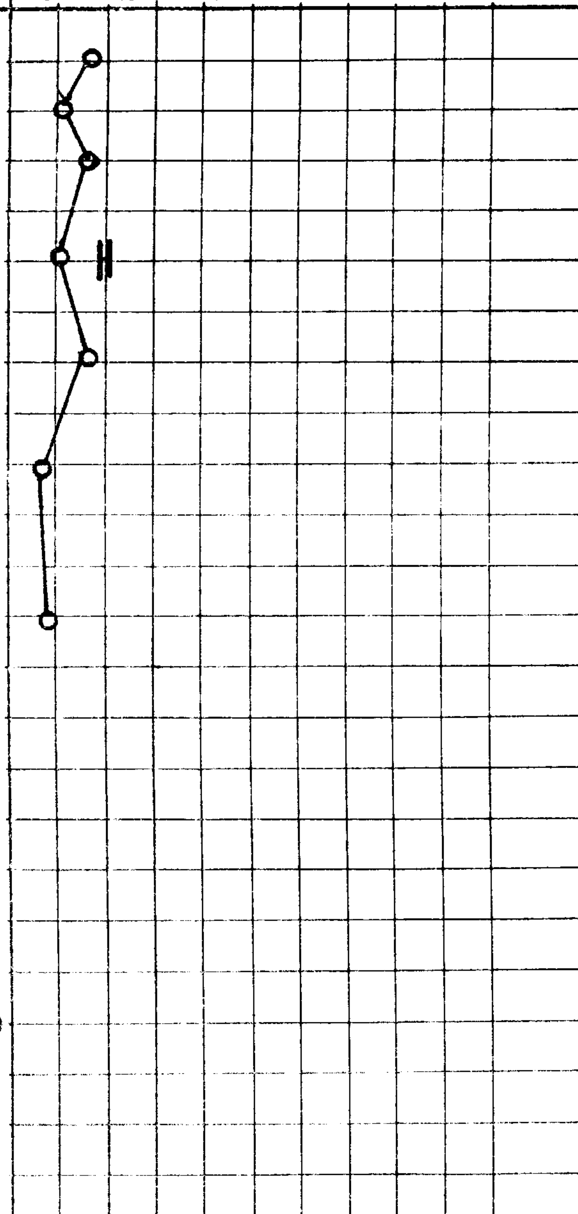
TECH. PRONYCH | RIG B-50 | DATE 78/02/04 | km 135 | B.P. No. 58 | HOLE No. 2

CHAINAGE | OFFSET

REMARKS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |——| LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+

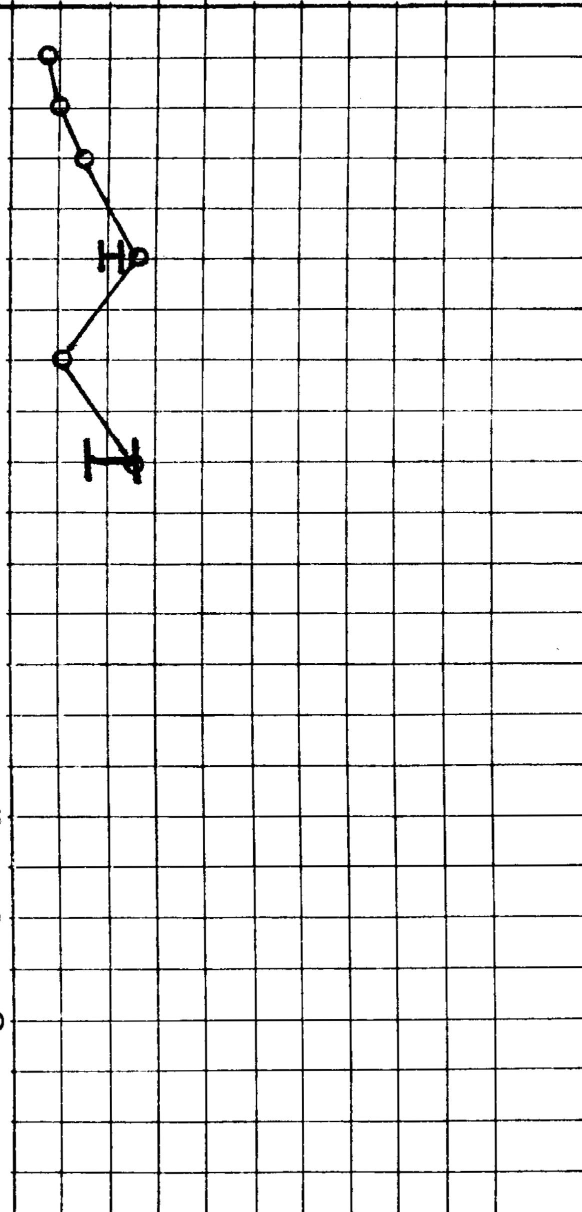
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
		SILT - CLAYEY SANDY				89		11	0	DAMP
2		SILT - SANDY			1	85		15	0	DAMP-MOIST
4										D-M
6	ML				2					
8						93		7	0	D-M
10					3					
12										D-M
14					4	67		33	0	D-M
16	ML				5					
18										D-M
20		6.1m			6					
22		BOTTOM OF HOLE - 6.1m								
24					7					
26					8					
28										
30					9					
32										
34					10					
36					11					
38										



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 135	B.P. No. 58	HOLE No. 3

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE / OFFSET / REMARKS
0–2		SILT - SANDY			0.5	-				DAMP	
2–4					1	-	81-	19	0	DAMP-MOIST	
4–6	ML			FROZEN	1.5					D-M	
8		- SANDY CLAYEY			2.5	-	91-	9	0	WET	
10–12		- SANDY			3.5					SAT.	
14	CL	CLAY - SILTY SANDY 4.6m		FROZEN	4.5	-	90-	10	0	WET	
16		BOTTOM OF HOLE - 4.6m									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

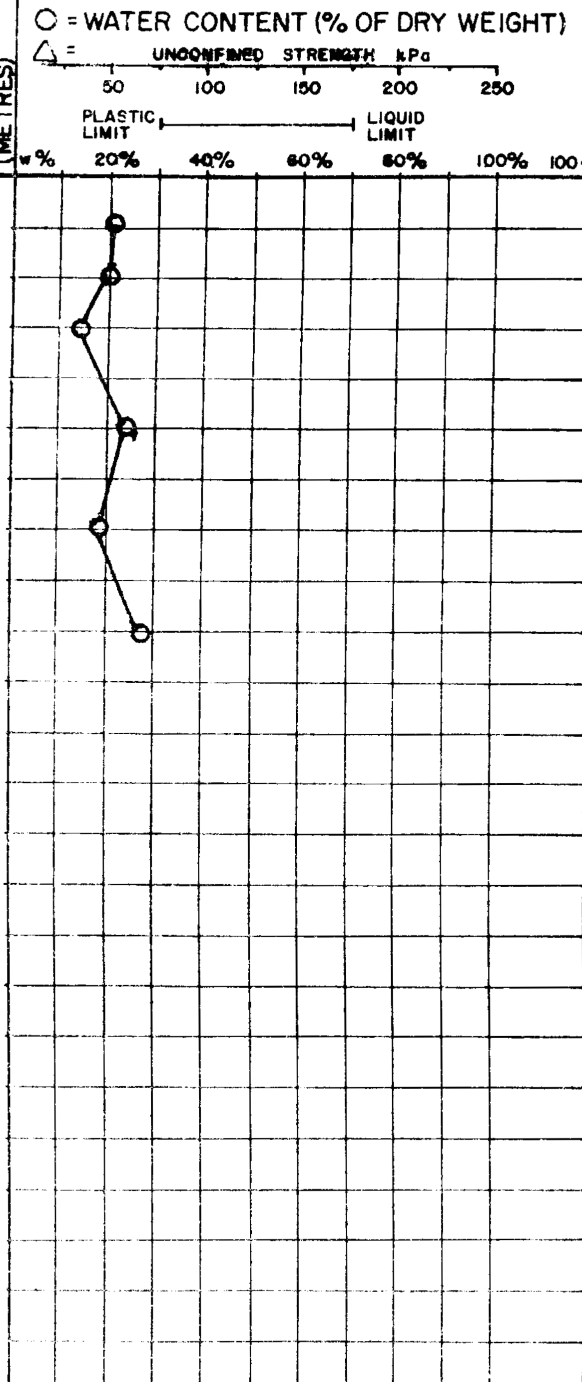
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD Hwy.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYUCH	B-50	78/02/04	136	59	1

DEPTH (METRES)	SOIL DESCRIPTION	UNIFIED SOIL SYMBOL	PENETRATION RESISTANCE	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0.5	SILT-								DAMP			
1					-91-		9	0	DAMP-MOIST			
1.5									D-M			
2.5		ML			-92-		8	0	WET			
3.5	FREE WATER AFTER 3.7m								MOIST			
4.6	4.6m				-88-		12	0	SAT.			
	BOTTOM OF HOLE- 4.6m											



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY

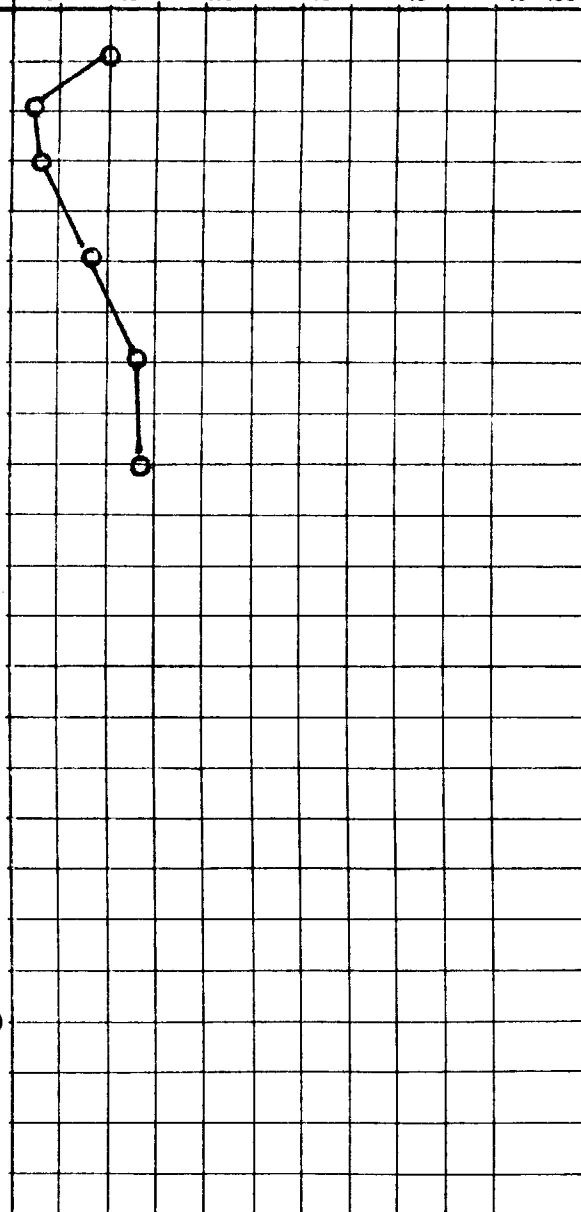
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/04	136	59	2

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0 – .6 m	ML	SILT - SANDY							DAMP	
.6 m – 1.8 m	SM	SAND - SILTY			-	38	62	0	DAMP	
									DAMP-MOIST	
1.8 m – 4.6 m	ML	SILT - CLAYEY			-	94	6	0	MOIST	
									WET	
		FREE WATER AFTER 4 m			-	97	3	0	SAT.	

BOTTOM OF HOLE - 4.6 m



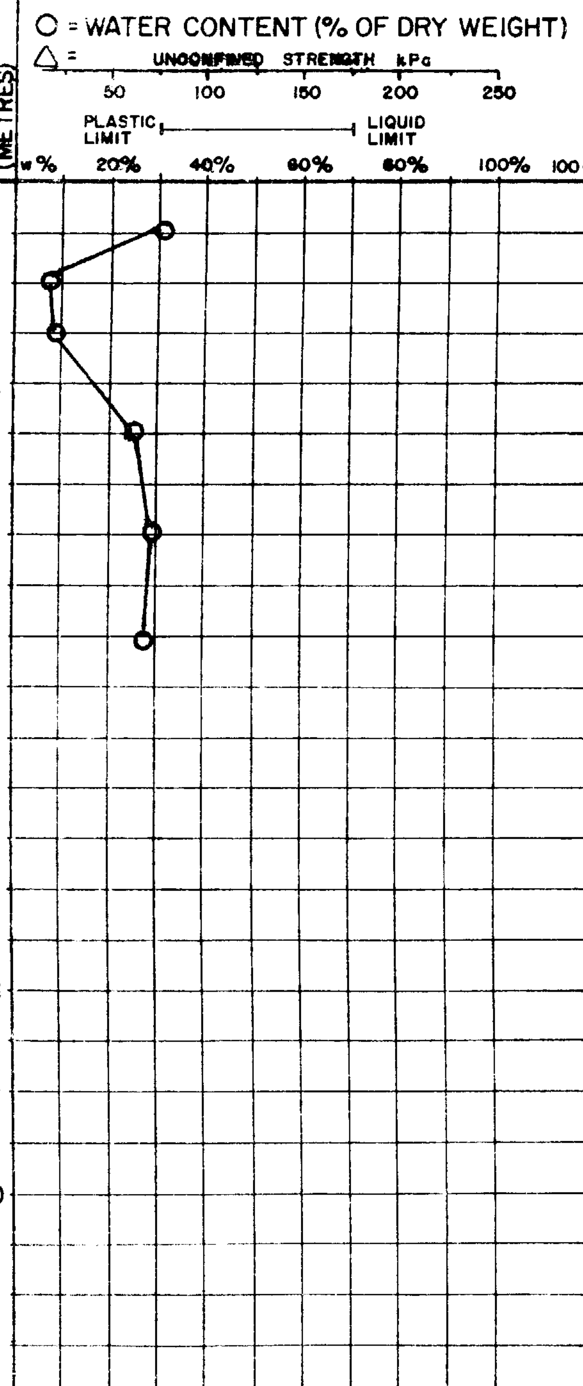
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/04	km 136	B.P. No. 59	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT - CLAYEY									
2	ML					99		1	0	WET	
		- SANDY			1					MOIST	
4						61		39	0	MOIST	
6				FROZEN	2						
8		SILT -								WET	
10	ML	- CLAYEY			3	92		8	0	WET	
12											
		SATURATED AFTER 4.0 m			4						
14		4.6 m								WET	
16		BOTTOM OF HOLE - 4.6 m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

CHAINAGE	OFFSET

GRAIN-SIZE ANALYSIS



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.	
TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138
B.P. No. 60	HOLE No. 1		

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = UNCONFINED STRENGTH kPa	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
	ML	SILT - SANDY												
		2.1m				NO SAMPLES								
	SM	SAND - SILTY												
		3.4m												
		BOTTOM OF HOLE 3.4m												

Chart scale: 50, 100, 150, 200, 250 (kPa); PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+

Depth (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SILT- SANDY												
2	ML				1									
4														
6		2.1m			2	NO SAMPLES								
8		SAND - SILTY												
10					3									
12	SM													
14		4.6m			4									
16					5									
18		BOTTOM OF HOLE - 4.6 m												
20					6									
22														
24					7									
26					8									
28														
30					9									
32														
34					10									
36					11									
38														

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYSCH	B-50	78/02/06	138	60	3

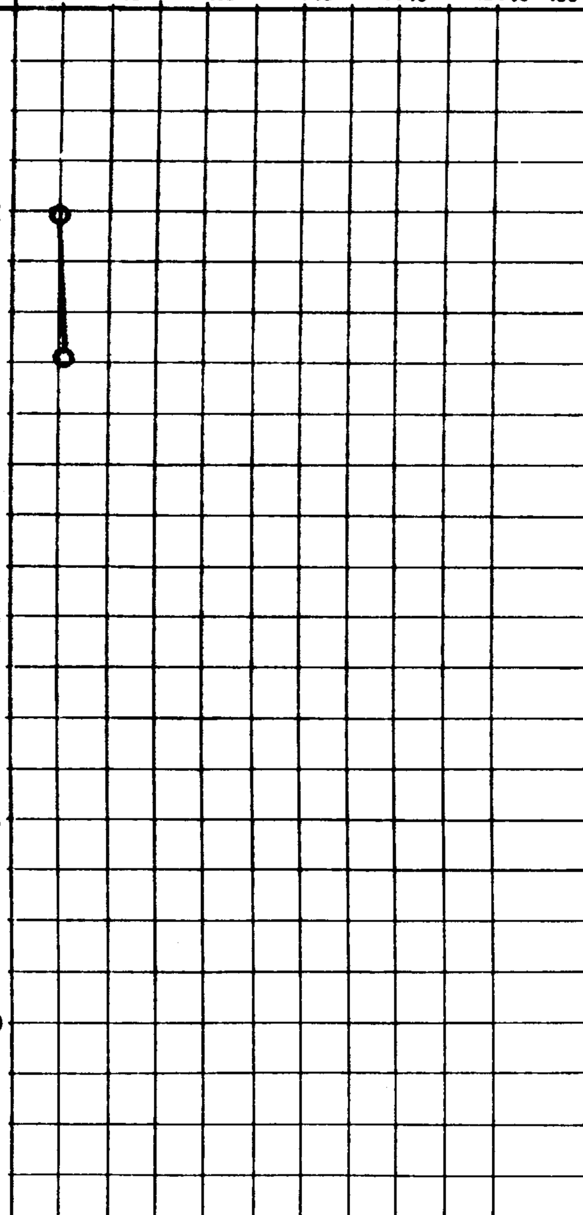
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
	Pt	PEAT .5m											
2	ML	SILT-SANDY 1.2m			1								
4–6	GM	SAND-GRAVEL MIXTURE			2	9	-	42	49	WET			
8	GM	FREE WATER @ 1.8m											
10–12	SM	SAND-GRAVELLY SILTY			3	35	-	40	25	WET			
14		4.6m			4								
16–18		BOTTOM OF HOLE 4.6m			5								

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

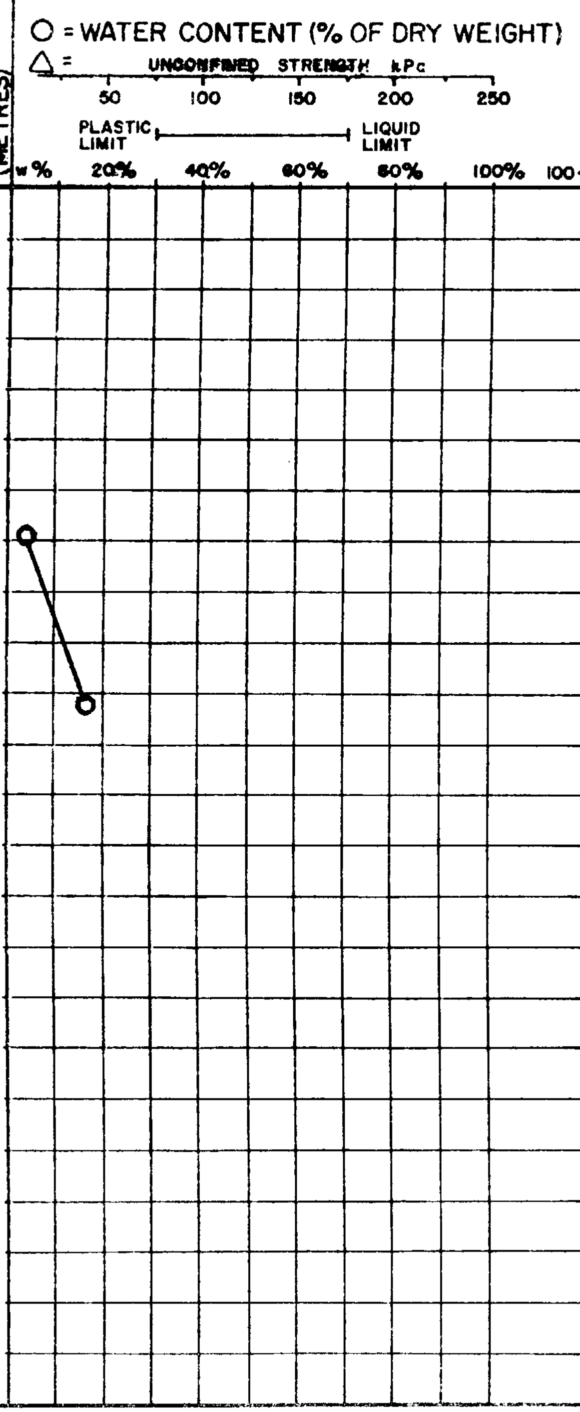


PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/06	138	60	4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–5	ML	SILT - SANDY — 1.5 m											
5–10	SM	SAND - SILTY GRAVELLY — 3.1 m											
10–18	GP	GRAVEL - SANDY APPR. WATER @ 4.0 m — 5.5 m			≈3.5	-	6 -	41	53	MOIST			
					≈5.1	-	4 -	33	63	WET			
18–21	SP	SAND - GRAVELLY — 6.4 m											
		BOTTOM OF HOLE - 6.4 m											



PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 5

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - SANDY .9m									
4		GRAVEL - SANDY			1	-	5	33	62	MOIST	
6	GW	FREE WATER AFTER 2.1m			2						
8–12					3	-	4	36	60	WET	
14	SP	4.0 SAND - GRAVELLY 4.6m			4	-	1	87	12	WET	
16–18		BOTTOM OF HOLE - 4.6m			5						
20–38					6–11						

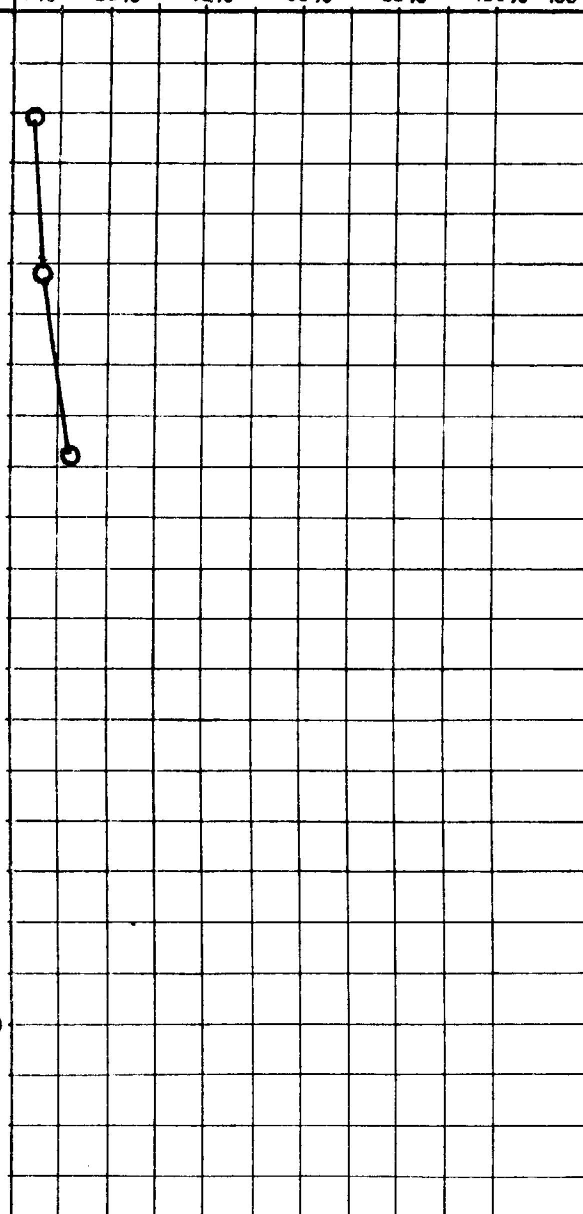
CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

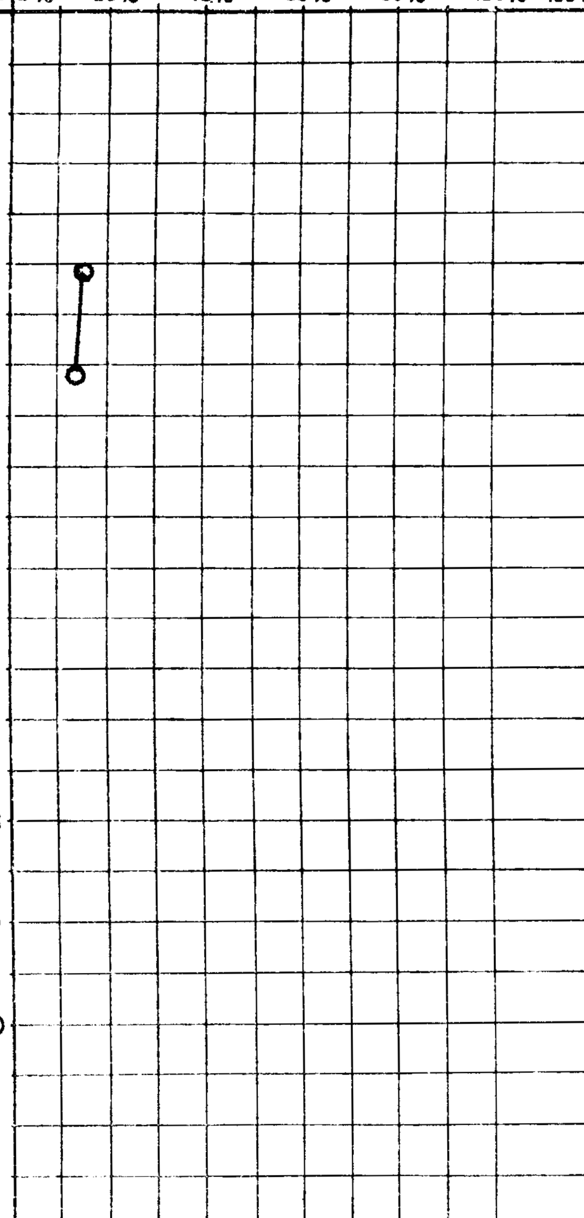


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 6

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	PEAT .3m									
2–4	ML	SILT - SANDY 1.8m			1						
6–10	SM	SAND - GRAVELLY SILTY FREE WATER			2–3		18	52	30	WET	
10–14	SP	SAND - GRAVELLY 4.6m			3–4		3	82	15	WET	
16		BOTTOM OF HOLE. 4.6 m			5						

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 7

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
	Pt	PEAT — .3m												
2, 4, 6	ML	SILT-SANDY CLAYEY — 2.4m			1, 2	NO SAMPLES								
8, 10, 12, 14	SP	SAND-GRAVELLY FREE WATER — 4.6m			3, 4									
16		BOTTOM OF HOLE - 4.6m			5									

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 8

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	Pt	PEAT .5 m			
2–4	ML	SILT - SANDY 1.5 m			1
6–14	SM	SAND - SILTY GRAVELLY FREE WATER PEBBLES 4.6 m			2, 3, 4
16		BOTTOM OF HOLE - 4.6 m			5

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT — LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+

NO SAMPLE

GRAIN-SIZE ANALYSIS				RELATIVE MOISTURE CONTENT
CLAY %	SILT %	SAND %	GRAVEL %	

CHAINAGE	OFFSET

REMARKS

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 10

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = UNCONFINED STRENGTH kPa 50 100 150 200 250; PLASTIC LIMIT ├──┤ LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–3	ML	SILT - SANDY												
		.9m												
3–9	SM	SAND - SILTY												
		2.7m												
9–12	ML	SILT - SANDY				SAMPLES NOT TAKEN								
		3.7m												
12–15	SM	SAND. SILTY GRAVELLY WET												
		4.6m												
		BOTTOM OF HOLE - 4.6m												

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy.

TECH. PRONYICH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 11

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = UNCONFINED STRENGTH kPa 50 100 150 200 250; PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT-SANDY												
		.75 m			1									
4	SM	SAND-SILTY												
6					2	NO SAMPLES								
8														
10					3									
12		3.7 m												
14	CL	CLAY SILTY SANDY WET			4									
16		4.9 m			5									
18		Bottom of Hole - 4.9 m												
20					6									
22														
24					7									
26					8									
28														
30					9									
32														
34					10									
36					11									
38														

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 12

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE / OFFSET / REMARKS
2	ML	SILT - SANDY ———— .75m										
4		SAND - SILTY			1							
6	SM				2	NO SAMPLES						
8		-CLAYEY										
10	SC	-WET			3							
12												
14					4							
16		———— 4.9 m			5							
18		BOTTOM OF HOLE - 4.9m										
20					6							
22					7							
24												
26					8							
28												
30					9							
32					10							
34												
36					11							
38												

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 13

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE / OFFSET / REMARKS
0–6	ML	SILTY SANDY										
6		1.8m										
6–14	SM	SAND - SILTY				No SAMPLES						
14		4.3 m										
14–15	CL	CLAY - SILTY SANDY										
15		4.6m										
		Bottom of Hole - 4.6m										

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 138	B.P. No. 60	HOLE No. 14

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	O = WATER CONTENT (% OF DRY WEIGHT) / △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250) / PLASTIC LIMIT — LIQUID LIMIT (w% 20% 40% 60% 80% 100% 100+)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE / OFFSET / REMARKS
	ML	SILT. SANDY										
2		.75m										
4		SAND-SILTY DRY			1							
6					2	NO SAMPLES						
8												
10		-CLAYEY -WET			3							
12												
14		4.6m			4							
16		BOTTOM OF HOLE- 4.6 m			5							
18												
20					6							
22												
24					7							
26					8							
28												
30					9							
32												
34					10							
36					11							
38												

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/05	km 138	B.P. No. 61	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	C = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT – LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT - SANDY WET												
4		1.2 m		FROZEN	1	NO SAMPLES								
6		SAND - FINE - COARSE SATURATED			2									
8	SW													
10		3.4 m			3									
12		BOTTOM OF HOLE - 3.4 m												
14					4									
16					5									
18														
20					6									
22														
24					7									
26					8									
28														
30					9									
32														
34					10									
36					11									
38														

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/05	138	61	2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT) / △ = UNCONFINED STRENGTH kPa / PLASTIC LIMIT – LIQUID LIMIT	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–6	ML	SILT - SANDY WET 1.8m				NO SAMPLES						
6–15	SM	SAND - SILTY FEW PEBBLES FREE WATER 4.6m										
		BOTTOM OF HOLE - 4.6m										

CHAINAGE | OFFSET

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

Water content scale: w% 20% 40% 60% 80% 100% 100+; Strength: 50 100 150 200 250

PUBLIC WORKS CANADA — DRILL HOLE REPORT

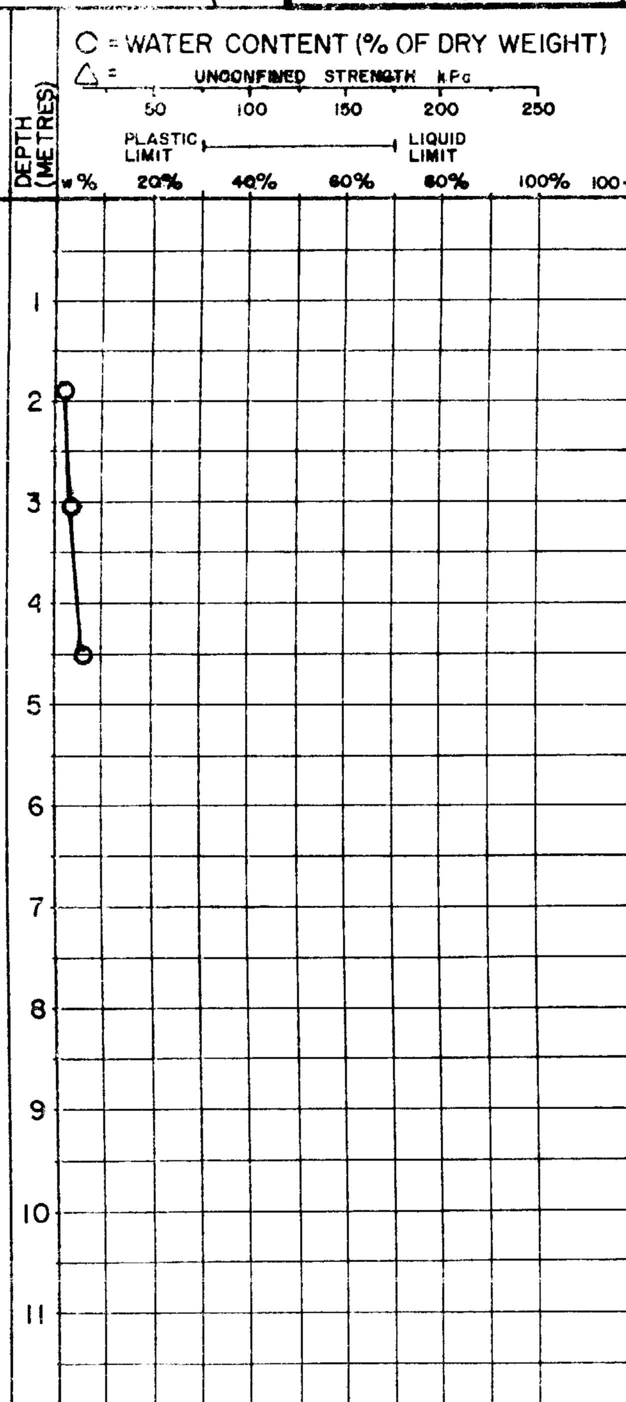
LIARD Hwy.

TECH. PRONYCH | RIG B-50 | DATE 78/02/05 | km 138 | B.P. No. 61 | HOLE No. 3

CHAINAGE | OFFSET

REMARKS

Depth	Unified soil symbol	Soil description	Penetration resistance	Ice description	Clay %	Silt %	Sand %	Gravel %	Relative moisture content
0–.9m	ML	SILT - SANDY							
.9m									
	SP / GP	SAND-GRAVEL MIX							
2 m					- 2 -		58	40	MOIST
3 m		FREE WATER AFTER 3.7m			- 2 -		50	48	MOIST
4.5 m					- 4 -		49	47	WET
4.9m									
		BOTTOM OF HOLE - 4.9m							



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/05	km 138	B.P. No. 61	HOLE No. 4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	ML	SILT - SANDY .6m									
2–15	GW	GRAVEL-SANDY			1	-	3	36	61	DAMP	
		FREE WATER FROM 3.7m - 4.6m			2.5	-	4	42	54	MOIST	
		4.6m			4	-	2	42	56	WET	
15–18	CL	CLAY - SILTY SANDY - PEBBLES WET 5.5m									
		BOTTOM OF HOLE - 5.5m									

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT ——— LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

CHAINAGE | OFFSET

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/05	138	61	5

CHAINAGE	OFFSET

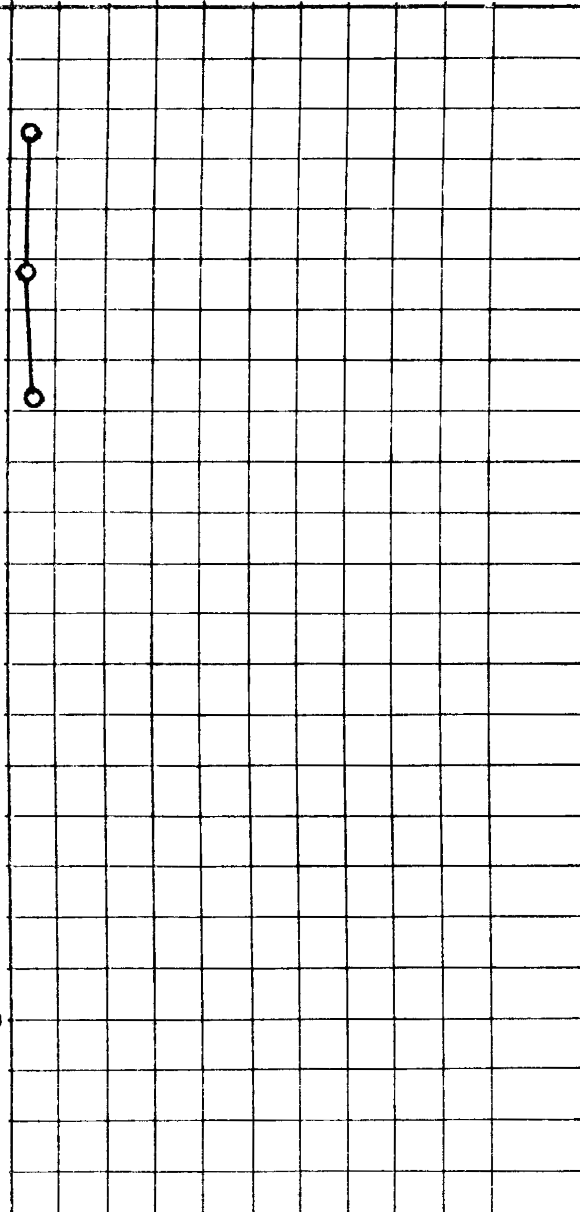
○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - SANDY									
4		1.2 m			1	-	6	70	24	DAMP	
		SAND - GRAVELLY									
6					2						
8	SP	FREE WATER AFTER 3.7m				-	7	69	24	MOIST	
10					3						
12		4.0 m									
		CLAY - SILTY SANDY			4	-	5	62	33	WET	
14	CL	PEBBLES - WET									
		4.6 m									
16		BOTTOM OF HOLE. 4.6m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/05	km 138	B.P. No. 61	HOLE No. 6

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT); △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT — LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2		SILT - SANDY												
4					1									
6	ML	WET AFTER 1.8m			2	NO SAMPLES								
8														
10		3.4m			3									
12														
14		BOTTOM OF HOLE. 3.4m			4									
16														
18					5									
20					6									
22														
24					7									
26					8									
28														
30					9									
32														
34					10									
36					11									
38														

PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/05	km 138	B.P. No. 61	HOLE No. 7

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250); PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–4		SILT - SANDY												
4		1.2m			1									
4–11	SM	SAND - SILTY WET			2	NO SAMPLES								
		SAT. AFTER 2.7m												
11		3.4m			3									
12		BOTTOM OF HOLE 3.4m												

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/05	km 138	B.P. No. 61	HOLE No. 8

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = UNCONFINED STRENGTH kPa 50 100 150 200 250; PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT; w% 20% 40% 60% 80% 100% 100+	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT - SANDY .75m												
4		SAND - SILTY			1									
6						NO SAMPLES								
8	SM	SATURATED AFTER 2.7m			2									
10		3.4m			3									
12		BOTTOM OF HOLE - 3.4m												
14					4									
16					5									
18														
20					6									
22														
24					7									
26					8									
28														
30					9									
32														
34					10									
36					11									
38														

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/05	km 138	B.P. No. 61	HOLE No. 9

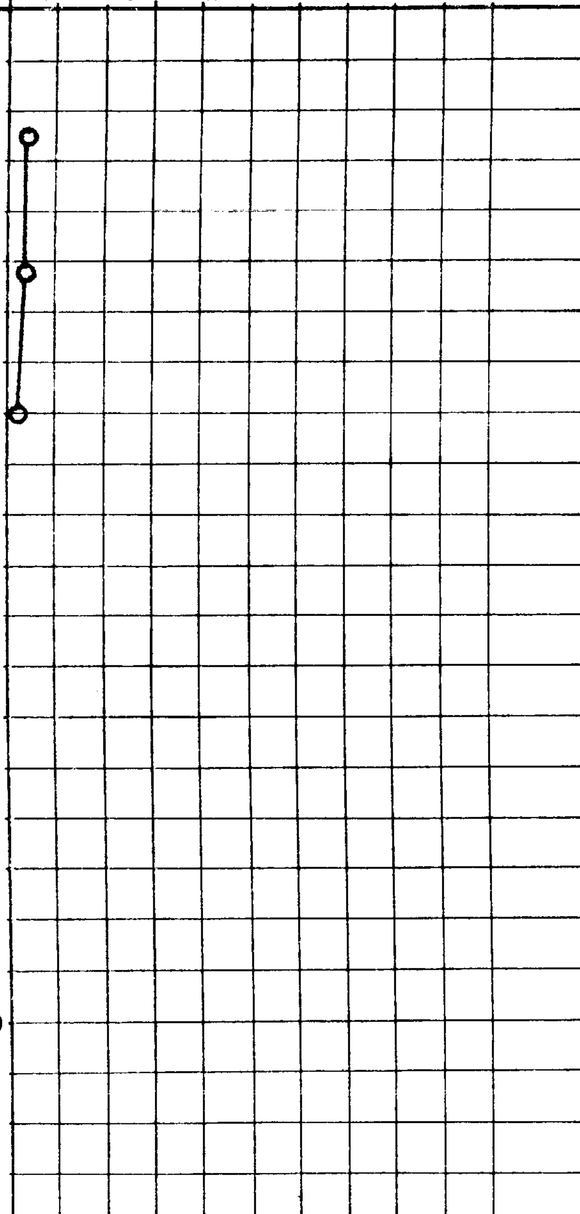
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–4	ML	SILT - SANDY — 1.2m											
					~1.2	6	-	47	47	DAMP			
4–16	GW	GRAVEL - SANDY FREE WATER AFTER 3.7m ? — 5.0m											
					~2.6	3	-	27	70	DAMP			
					~4.0	4	-	42	54	DAMP			
16–20	CL	CLAY - SILTY SANDY PEBBLES WET — 6.1m											
		BOTTOM OF HOLE - 6.1m											

Depth (feet) scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (metres) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

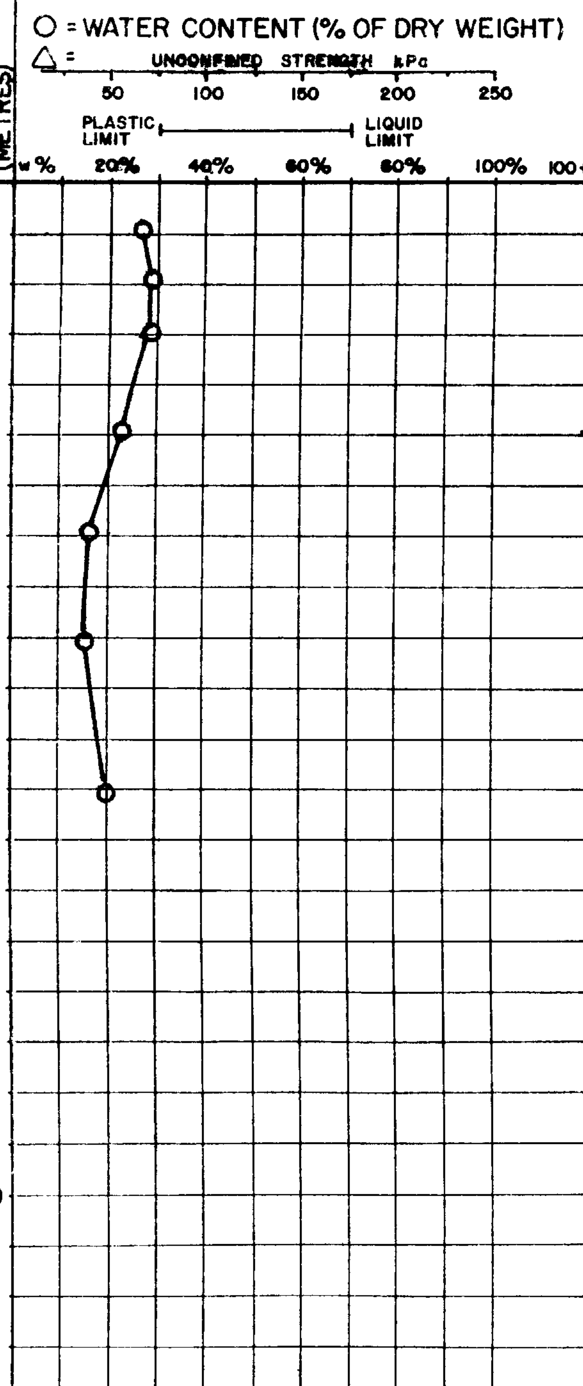


PUBLIC WORKS CANADA — **DRILL HOLE REPORT** — LIARD Hwy.

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 139	B.P. No. 62	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	ML	SILT - CLAYEY								DAMP	
2–6	CL	CLAY - SILTY, LOW PLASTIC + P_L			1	-99-		1	0	MOIST - WET	
					1.5					WET	
7		2.1m									
7–14		SILT - SANDY		FROZEN	2.5	-69-		31	0	WET	
		- SANDY			3.5					WET	
14–20	ML				4.5	-75-		25	0	WET	
20		6.1m			6					WET - MOIST	
22		BOTTOM OF HOLE - 6.1m									

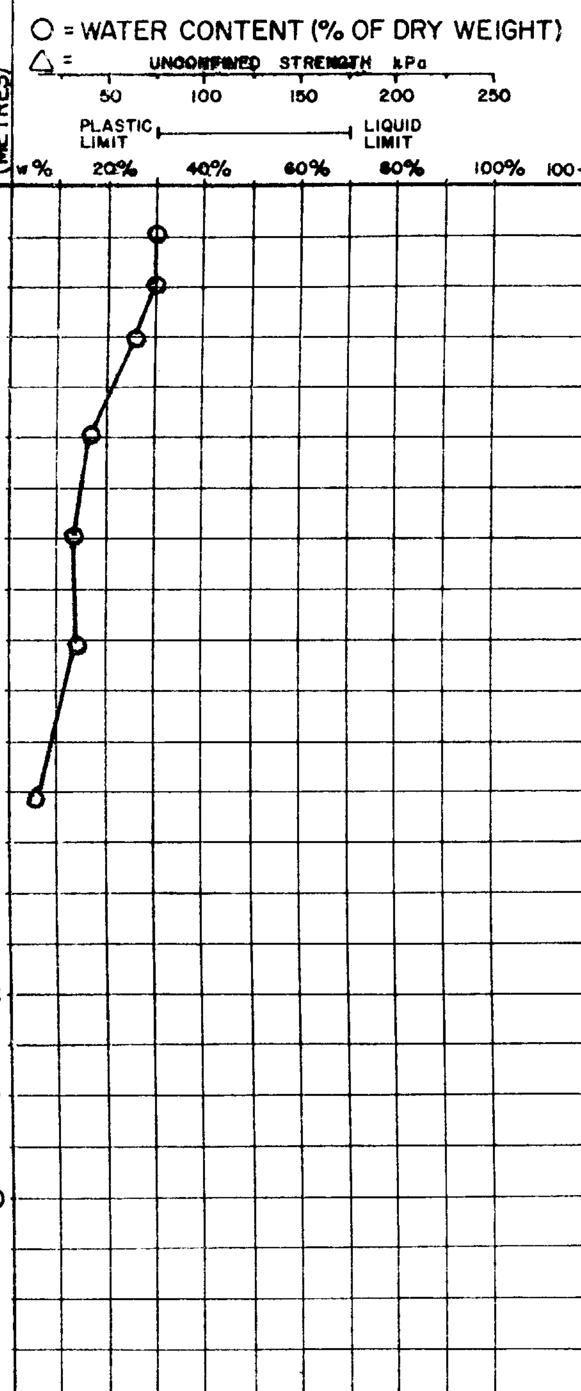
CHAINAGE | OFFSET



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 139	B.P. No. 62	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–8	CL	CLAY - SILTY - LOW PLASTIC +PL			0–2.4	96-		4	0	MOIST-WET			
										M-W			
										M-W			
8		2.4m			2.4								
8–18	ML	SILT - SANDY		FROZEN	2.4–5.5	69-		31	0	MOIST			
										MOIST			
										MOIST-WET			
18		5.5m			5.5								
18–20	SM	SAND-SILTY			5.5–6.1	15-		85	0	M-W			
20		6.1m			6.1								
22		BOTTOM OF HOLE - 6.1m											

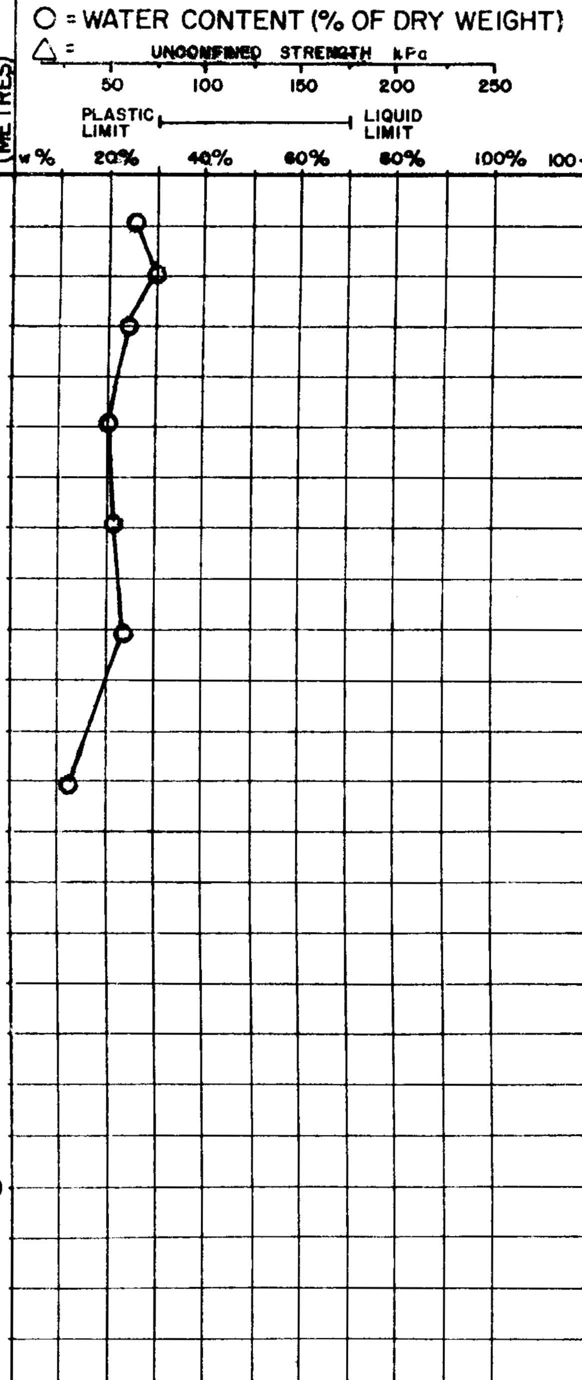


PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/06	km 139	B.P. No. 62	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
2	CL	CLAY - SILTY - LOW PLASTIC +PL								MOIST
4					1		96	4	0	WET
6										MOIST-WET
7		2.1m			2					
8		SILTY - SANDY					67	33	0	MOIST
10				FROZEN	3					
12	ML									WET
14					4					
15							78	22	0	WET
16					5					
18										DAMP MOIST
20		6.1m			6					
22		BOTTOM OF HOLE - 6.1m								
24					7					
26					8					
28										
30					9					
32										
34					10					
36					11					
38										

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



GRAIN-SIZE ANALYSIS

CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/06	142	63	1

CHAINAGE	OFFSET

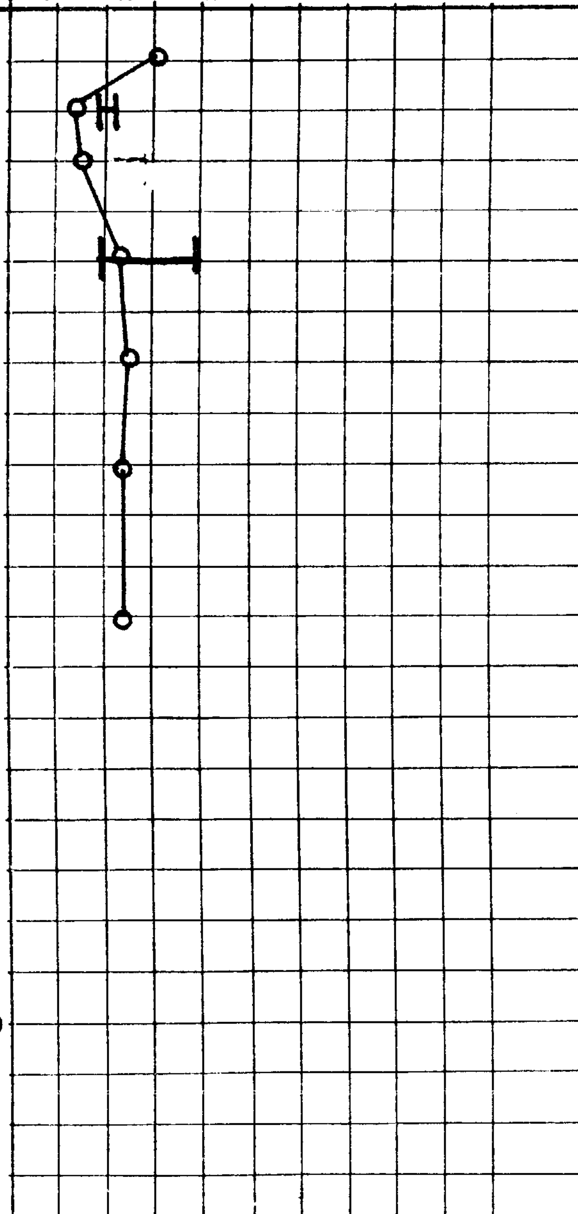
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–8	ML	SILT - CLAYEY - SANDY		
8		2.4m		
8–20	CL	CLAY - SILTY LOW PLASTIC +PL GREY.		
18–20	ML	SILT - CLAYEY		
20		6.1m		
		BOTTOM OF HOLE. 6.1 m		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

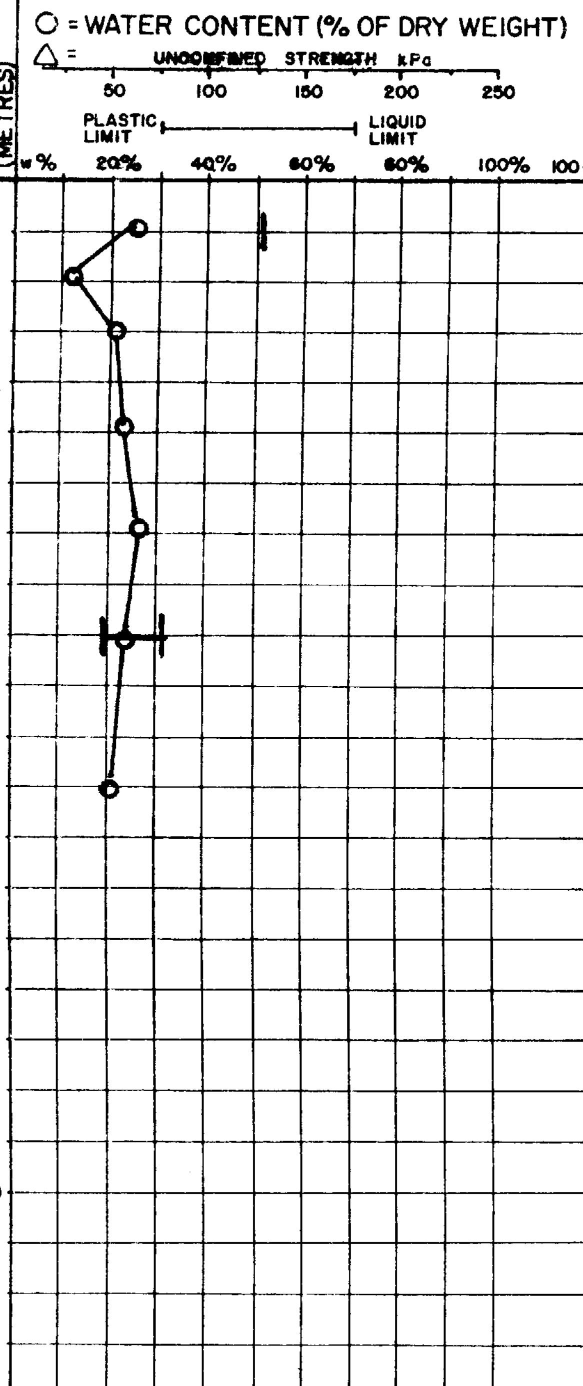


DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
~0.5					WET	
1	-96-		4	0	DAMP-MOIST	
1.5					D-M	
2.4	-100-		0	0	D-M	
3.5					D-M	
4.5					WET	
6	-92-		8	0	WET	

PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY.

TECH. WEBBER | RIG B-50 | DATE 78/02/06 | km 142 | B.P. No. 63 | HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT-								WET			
4		1.2m			1	97-		3	0	MOIST			
6		CLAY - SILTY - LOW - MED PLASTIC +PL			2					DAMP-MOIST			
8						100-		0	0	MOIST			
10	CL - CI				3					MOIST			
14					4								
16		GREY-				99-		1	0	MOIST			
20		6.1m			6					MOIST			
22		BOTTOM OF HOLE - 6.1m			7								



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

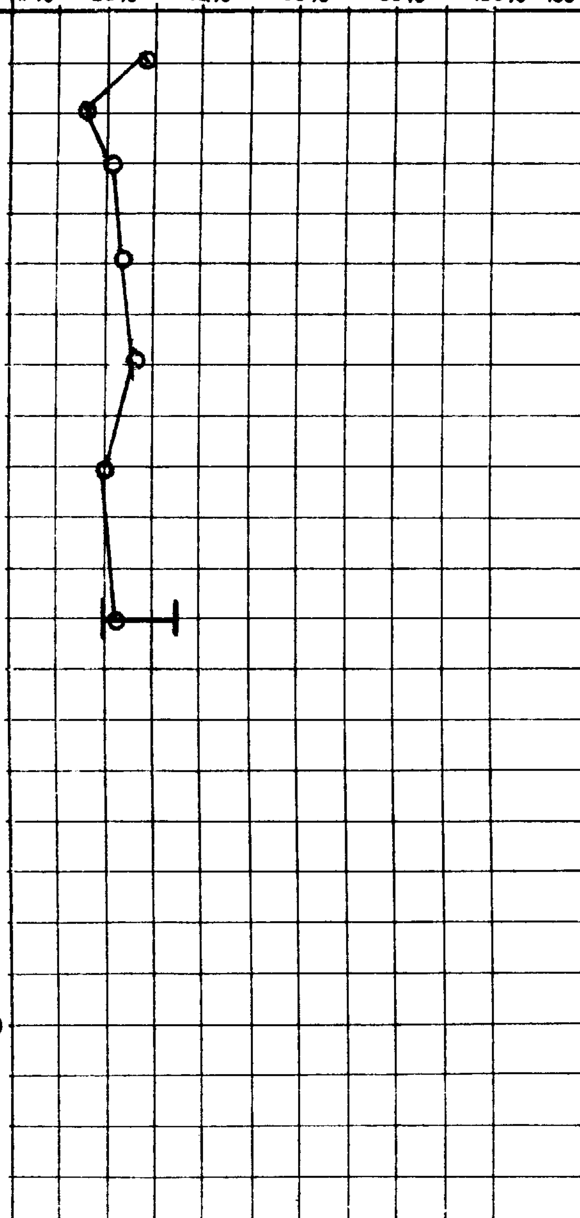
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/06	142	63	3

Depth (m)	Unified Soil Symbol	Soil Description	Penetration Resistance	Ice Description	Clay / Silt %	Sand %	Gravel %	Relative Moisture Content	Chainage	Offset	Remarks
0–1.2	ML	SILT - CLAYEY						WET			
~1					98	2	0	MOIST			
1.2		1.2m									
1.2–6.1	CL, CI	CLAY - SILTY, LOW-MED. PLASTIC, +PL						DAMP-MOIST			
~2.5					100	0	0	D-M			
~3.5								MOIST			
~4.5								MOIST			
~6					100	0	0	MOIST			
6.1		6.1m									
		BOTTOM OF HOLE - 6.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT



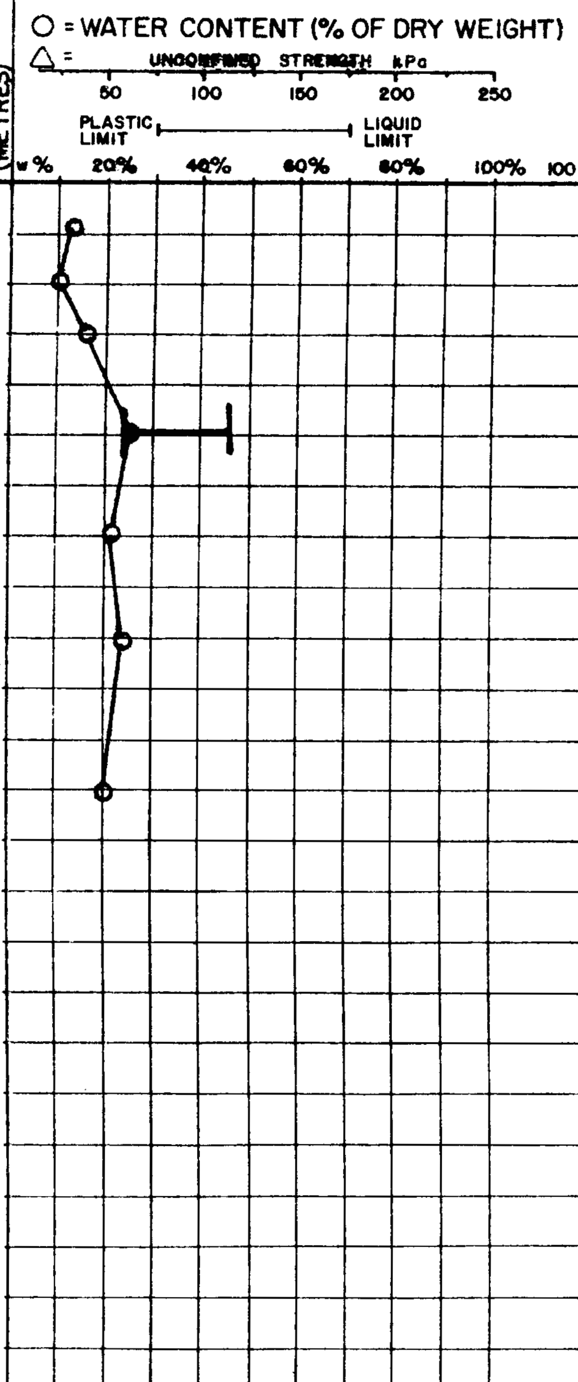
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY.

TECH. PRONYUCH	RIG B-50	DATE 78/02/07	km 143	B.P. No. 64	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT -								DAMP-MOIST	
4	ML	- CLAYEY			1	97-	3	0		D-M	
										D-M	
7		2.1m			2						
8–10	CL	CLAY - SILTY MED. PLASTIC $+P_L$			2.5	100-	0	0		DAMP	
					3.5					MOIST	
14	CL	- LOW PLASTIC			4.5	100-	0	0		MOIST - WET	
20		6.1m			6					MOIST	
22		BOTTOM OF HOLE - 6.1m									

CHAINAGE	OFFSET



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy

TECH. PRONYCH | RIG B-50 | DATE 78/02/07 | km 143 | B.P. No. 64 | HOLE No. 2

CHAINAGE: | OFFSET:

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–6	ML	SILT -			0–1.8	-	99	1	0	DAMP / DAMP / DAMP	
6		1.8m									
6–11	CL / CI	CLAY - SILTY LOW - MED PLASTIC +PL			1.8–3.4	-	100	0	0	DAMP	
11		3.4m									
		BOTTOM OF HOLE. 3.4m									

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy.

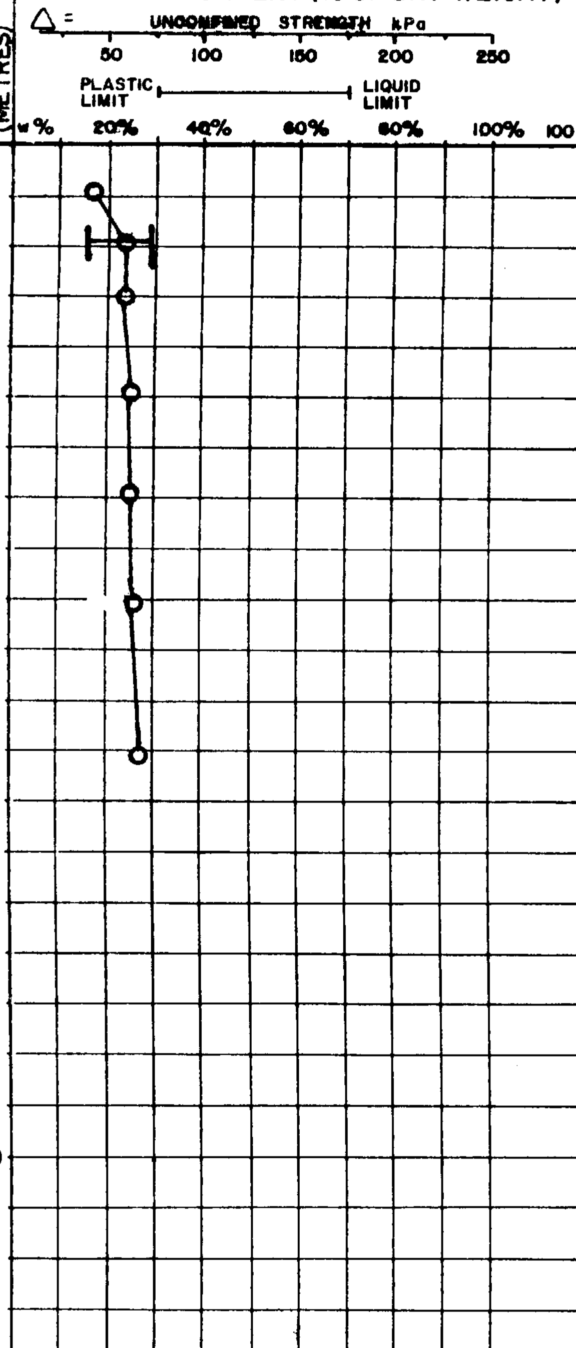
TECH. PRONYCH	RIG B-50	DATE 78/02/07	km 144	B.P. No. 65	HOLE No. 1

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAY SILTY - SILT - CLAYEY				94-		6	0	MOIST	
4					1					MOIST-WET	
		1.5 m				98-		2	0	MOIST	
6		CLAY - SILTY									
8		LOW PLASTIC			2					MOIST	
10	CL	+ P_L			3						
12										MOIST-WET	
14					4	98-		2	0	MOIST	
16		GREY - WET			5						
18											
20		6.1			6					MOIST-WET	
22		BOTTOM OF HOLE . 6.1									
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD Hwy.

TECH. PRONYCH | RIG B-50 | DATE 78/02/17 | km 146 | B.P. No. 67 | HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT					93	7	0	DAMP	
2		.6m									
		CLAY - SILTY									
4		- LOW PLASTIC			1					DAMP	
6		+ PL					99	1	0	DAMP	
8					2					MOIST	
10	CL				3						
12							99	1	0	MOIST	
14		WET			4						
16					5					MOIST-WET	
18											
20		6.1m			6		99	1	0	MOIST-WET	
22											
24		BOTTOM OF HOLE - 6.1m			7						
26											
28					8						
30					9						
32											
34					10						
36											
38					11						

CHAINAGE | OFFSET

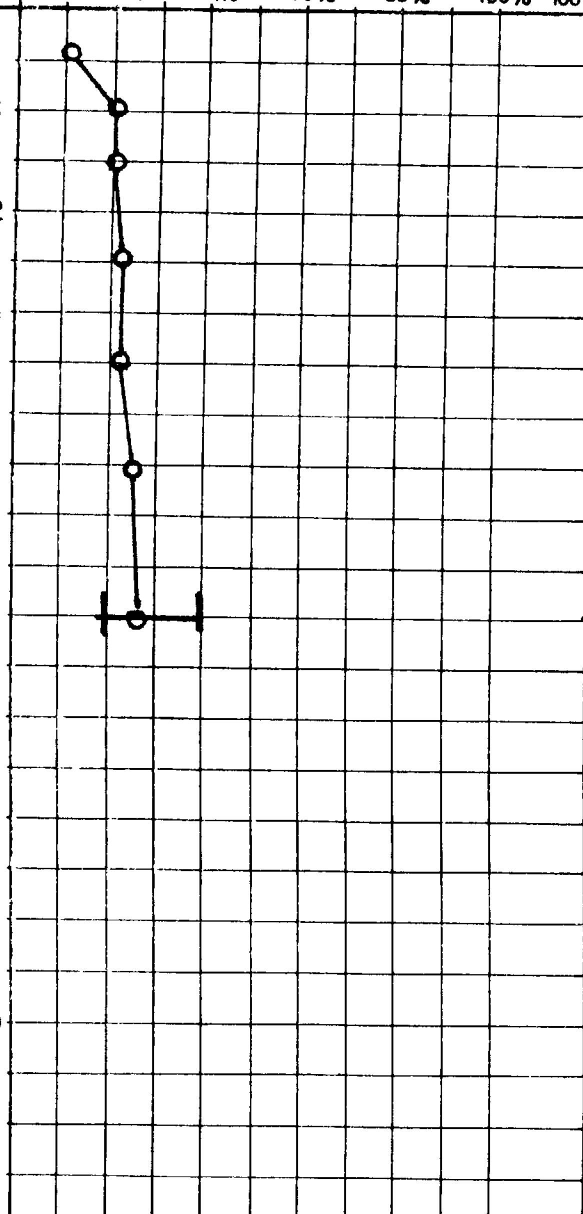
○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w%: 20%, 40%, 60%, 80%, 100%, 100+

GRAIN-SIZE ANALYSIS



PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

TECH. PRONYCH | RIG B-50 | DATE 78/02/07 | km 145 | B.P. No. 66 | HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT - CLAYEY								DAMP	
		.9m			1		99	1	0	DAMP	
4	CL	CLAY - SILTY - LOW PLASTIC + PL								DAMP	
6					2						
8							100	0	0	MOIST	
10					3						
12										WET	
14		4.6m			4						
16										MOIST	
18		BOTTOM OF HOLE - 4.6 m			5						
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

CHAINAGE | OFFSET

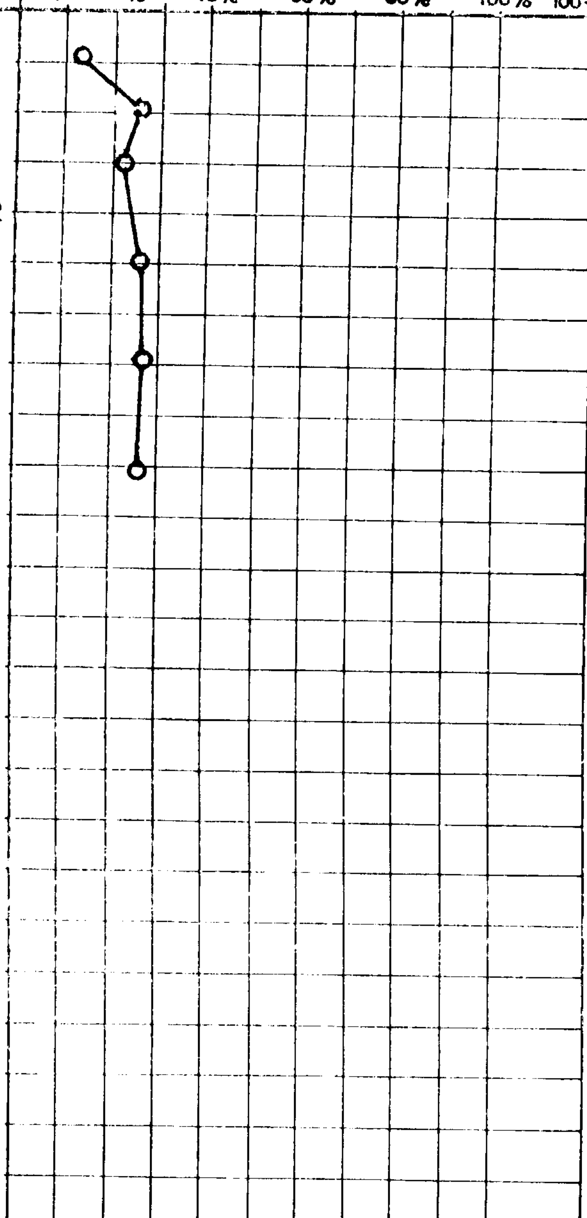
○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

GRAIN-SIZE ANALYSIS



PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/07	144	65	3

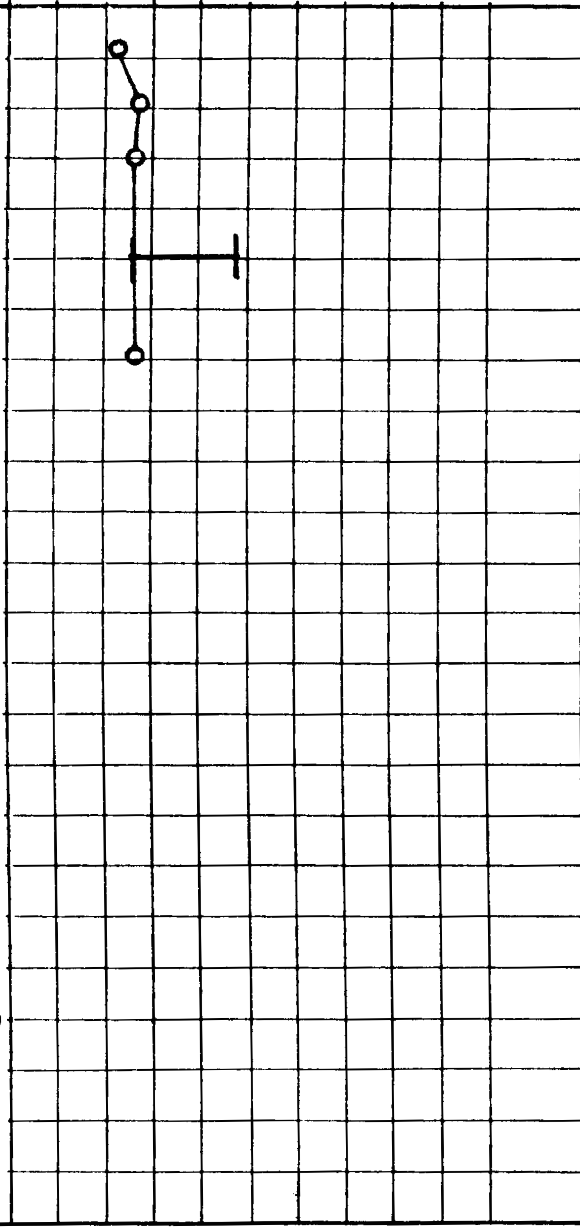
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
	ML	SILT - CLAYEY .6 m								WET			
2–10	CL	CLAY - SILTY -LOW PLASTIC +PL		FROZEN ICE LENSES	1		100	0	0	MOIST-WET			
										MOIST-WET			
							100	0	0	WET			
		3.4m								WET			
		BOTTOM OF HOLE. 3.4m											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



Depth scale (feet): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

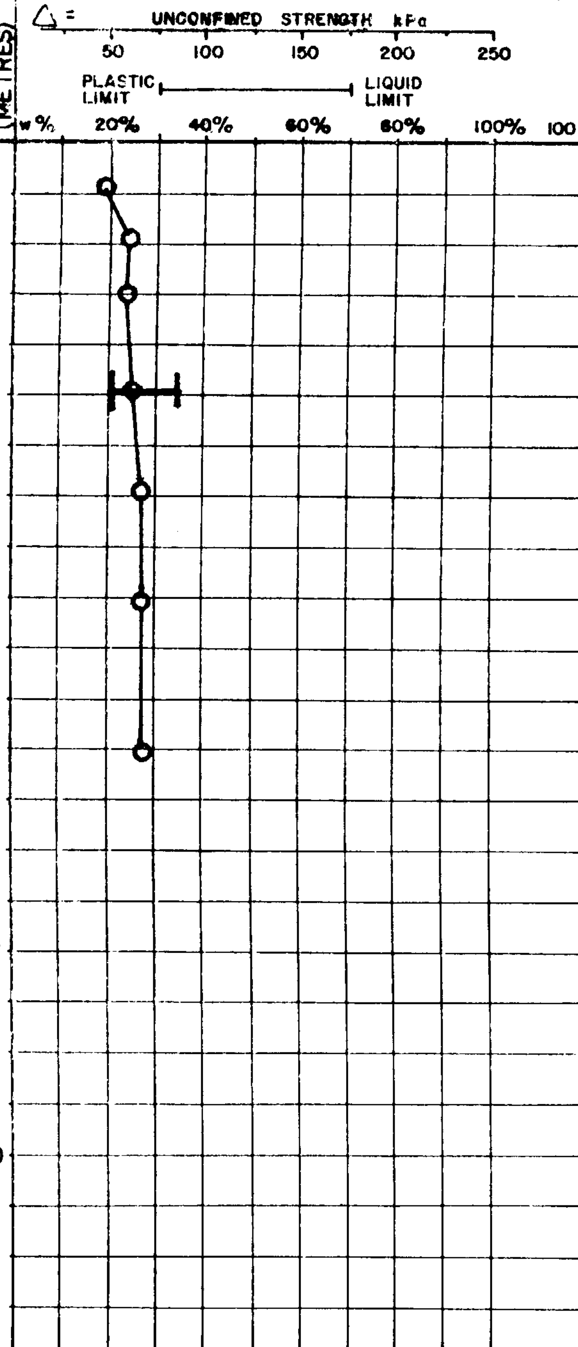
Depth scale (metres): 1 2 3 4 5 6 7 8 9 10 11

PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/07	km 145	B.P. No. 66	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
		SILT-								MOIST
2		.6m								
		CLAY - SILTY			1	.99-	1	0		DAMP
4		-LOW - MED. PLASTIC								MOIST
6	CL	+ PL			2					
8						.98-	2	0		MOIST
10	CI				3					
12										MOIST
14					4	.99-	1	0		MOIST
16					5					
18										
20		6.1m			6					MOIST
22		BOTTOM OF HOLE. 6.1m								
24					7					
26					8					
28										
30					9					
32					10					
34										
36					11					
38										

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa



GRAIN-SIZE ANALYSIS

CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD Hwy.

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 146	B.P. No. 67	HOLE No. 3

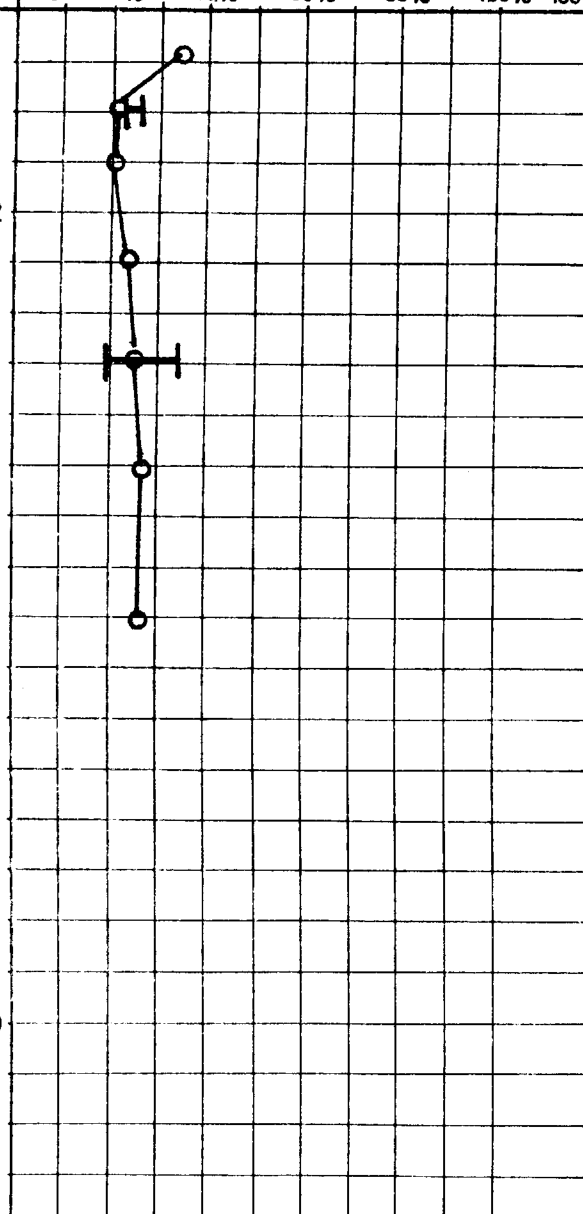
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–6	ML	SILT -		
6		1.8 m		
6–20	CL	CLAY - SILTY - LOW PLASTIC + P_L WET LENSE @ 3.1 m - WET		
20		6.1 m		
		BOTTOM OF HOLE - 6.1 m		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w %: 20%, 40%, 60%, 80%, 100%, 100+



DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
~0.4					SAT.
1	-99.		1	0	MOIST
~1.5					WET
~2.5					WET
~3.5	-99.		1	0	WET
~4.6					WET
6	-99.		1	0	WET

CHAINAGE	OFFSET

REMARKS

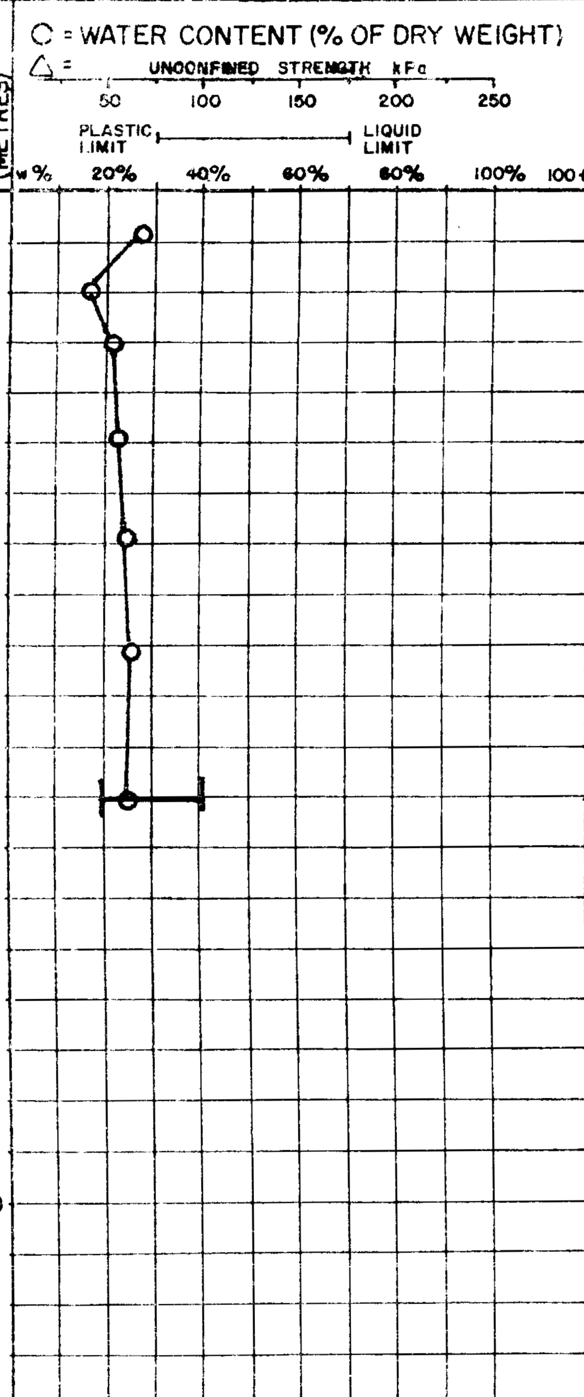
PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 146	B.P. No. 67	HOLE No. 4

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	ML	SILT-								SAT.	
4		1.2m			1	-	94-	6	0	MOIST	
		CLAY - SILTY				-	98-	2	0	MOIST	
6		LOW - MED. PLASTIC			2						
8	CL					-	99-	1	0	MOIST	
10	‖	+ P_L			3						
12	CI									WET	
14					4					MOIST	
16					5						
18											
20		6.1m			6	-	99-	1	0	MOIST	
22		BOTTOM OF HOLE - 6.1m									
24					7						
26					8						
28											
30					9						
32					10						
34											
36					11						
38											



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

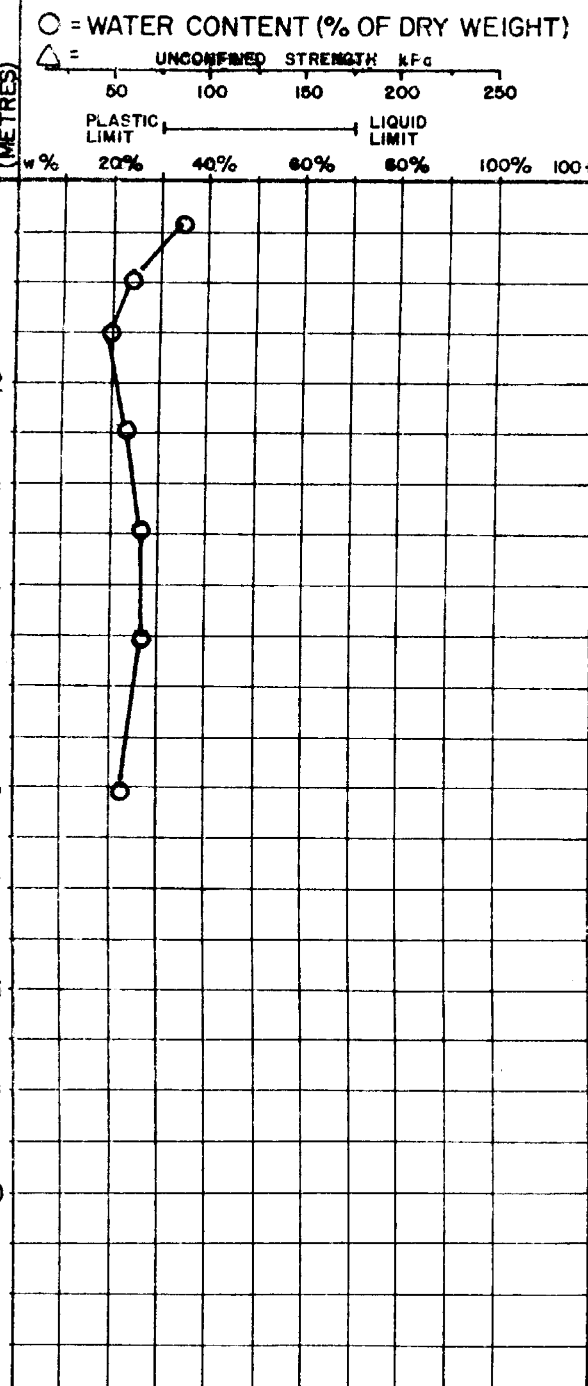
TECH. PRONYCH	RIG B-50	DATE 78/02/16	km 146	B.P. No. 68-	HOLE No. 1

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY / SILT / SAND / GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–10	ML	SILT - SANDY - CLAYEY			0–3.1			
					~0.4		FREE WATER	
					1	97 - 3 0	SAT.	
					~1.5	75 - 25 0	WET	
					~2.5	94 - 6 0	WET	
10		3.1 m			3			
10–20	CL	CLAY - SILTY - LOW PLASTIC ± P_L			3.1–6.1		WET	
					~4.5	99 - 1 0	WET	
20		6.1 m			6		MOIST	
22		BOTTOM OF HOLE 6.1 m						

○ = WATER CONTENT (% OF DRY WEIGHT)

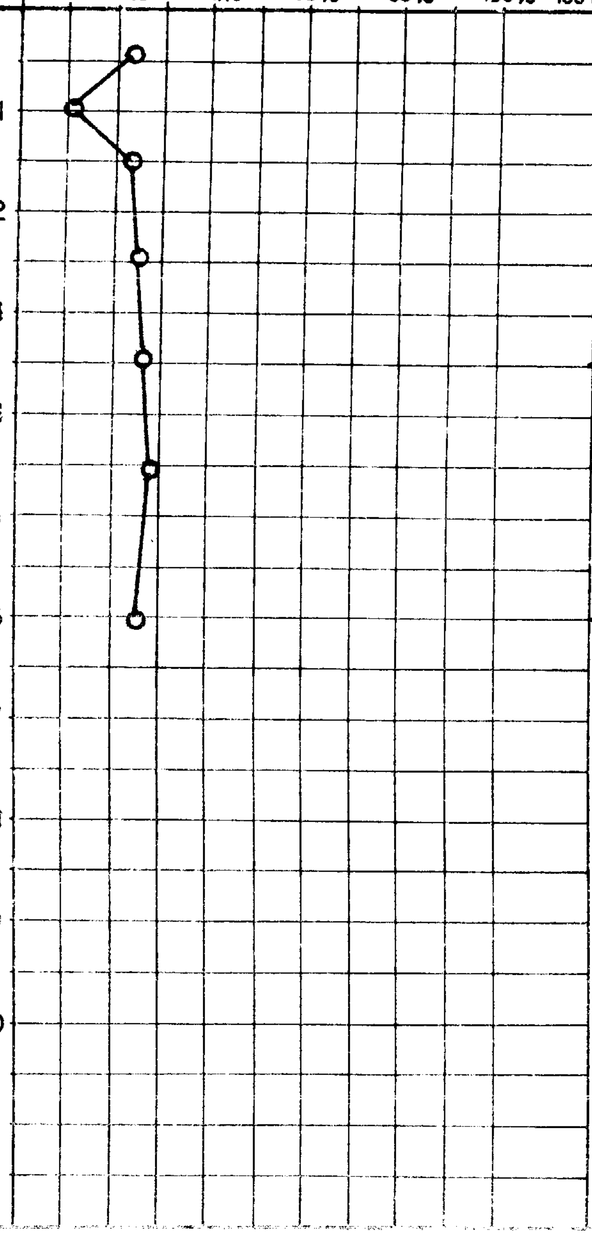
△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD Hwy.

TECH. PRONYCH	RIG B-50	DATE 78/02/0	km 146	B.P. No. 68	HOLE No. 2

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
	ML	SILT - SANDY								WET			
					1	-	80	20	0	MOIST			
		SILT -				-	97	3	0	WET			
		2.1m			2								
	CL - CI	CLAY - SILTY LOW-MED. PLASTIC								MOIST			
					3	-	98	2	0	WET			
		GREY.			4					MOIST			
20		6.1m			6	-	98	2	0	WET			
		BOTTOM OF HOLE - 6.1 m			7								

DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

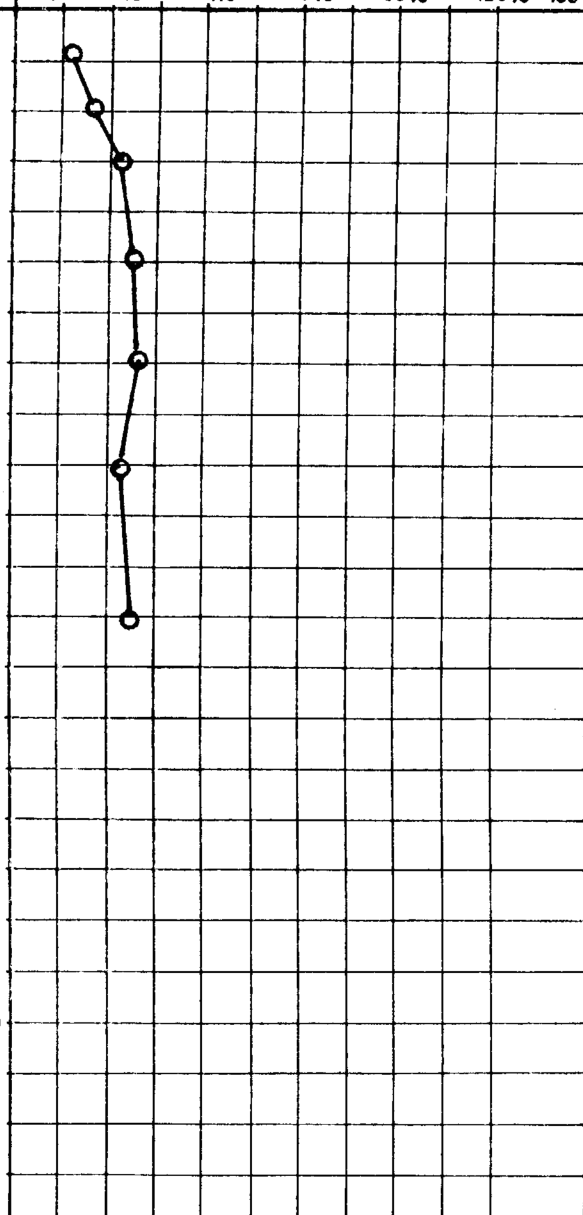
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy.

TECH. PRONYSCH	RIG B-50	DATE 78/02/16	km 146	B.P. No. 68	HOLE No. 3

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT |—| LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SILT - SANDY								MOIST	
4	ML				1	-80-		20	0	MOIST	
										WET	
6		1.8m									
		CLAY - SILTY			2						
8		- LOW - MED PLASTIC				-99-		1	0	MOIST	
10					3						
12	CL - CI	+PL								WET	
14					4						
16		GREY.				-99-		1	0	MOIST	
18					5						
20		6.1m			6					MOIST	
22		BOTTOM OF HOLE - 6.1m									
24					7						
26											
28					8						
30					9						
32											
34					10						
36					11						
38											



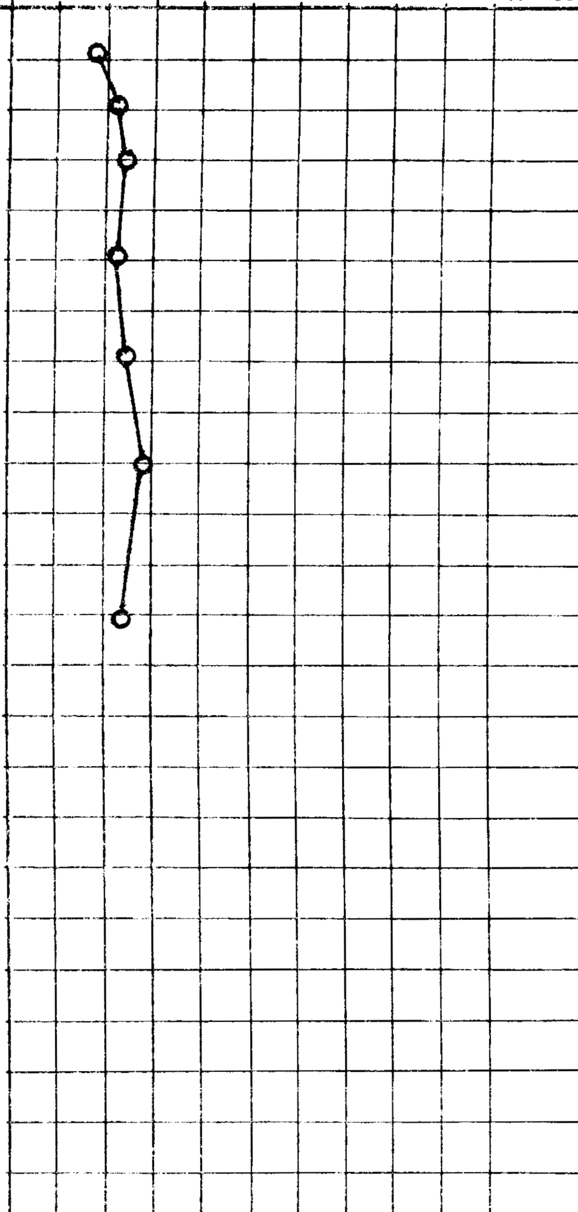
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYCH | RIG B-50 | DATE 78/02/16 | km 146 | B.P. No. 68 | HOLE No. 4

CHAINAGE | OFFSET

REMARKS

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–6	ML	SILT -								MOIST
					1	-	94	6	0	SAT-WET
										WET
6		1.8m			2					
6–20	CI	CLAY - SILTY - MED. PLASTIC + P_L				-	98	2	0	MOIST
					3–4					MOIST
						-	99	1	0	MOIST-WET
20		GREY 6.1m			6					MOIST
22		BOTTOM OF HOLE - 6.1m								

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

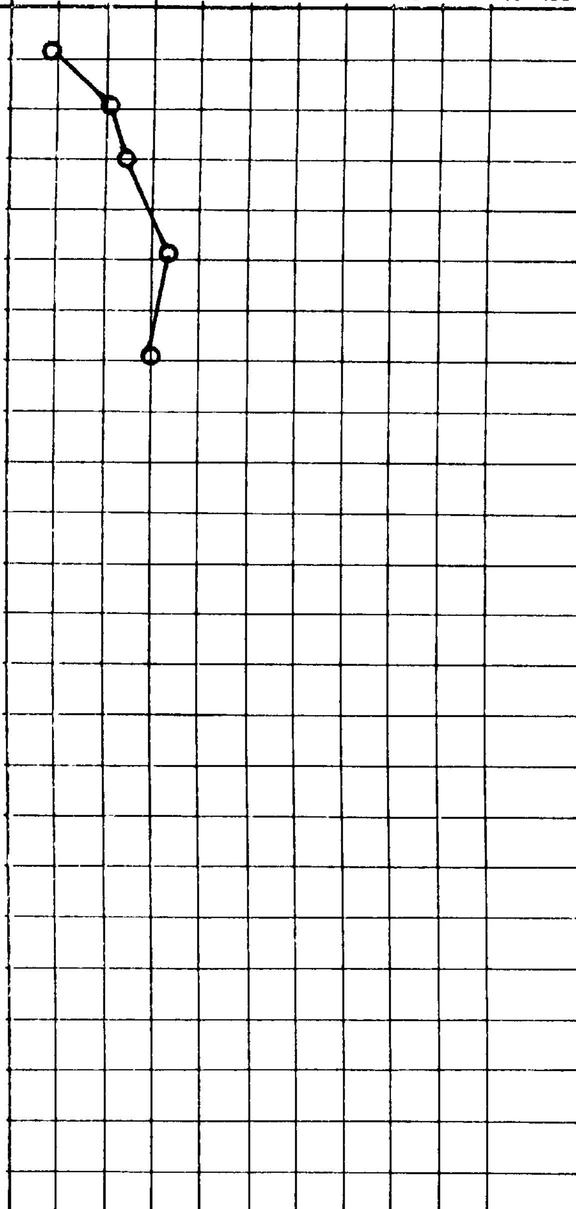
PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/17	148	69	1

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2		SILT - SANDY		FROZEN						MOIST	
4	ML	SILT -		ICE	1	-74-		26	0	SAT.	
6		1.8m		LENSES		-91-		9	0	SAT.	
8	CI	CLAY - SILTY GREY - MED PLASTIC			2	-99-		1	0	SAT.	
10		3.4m			3					SAT-WET	
12		BOTTOM OF HOLE - 3.4m									



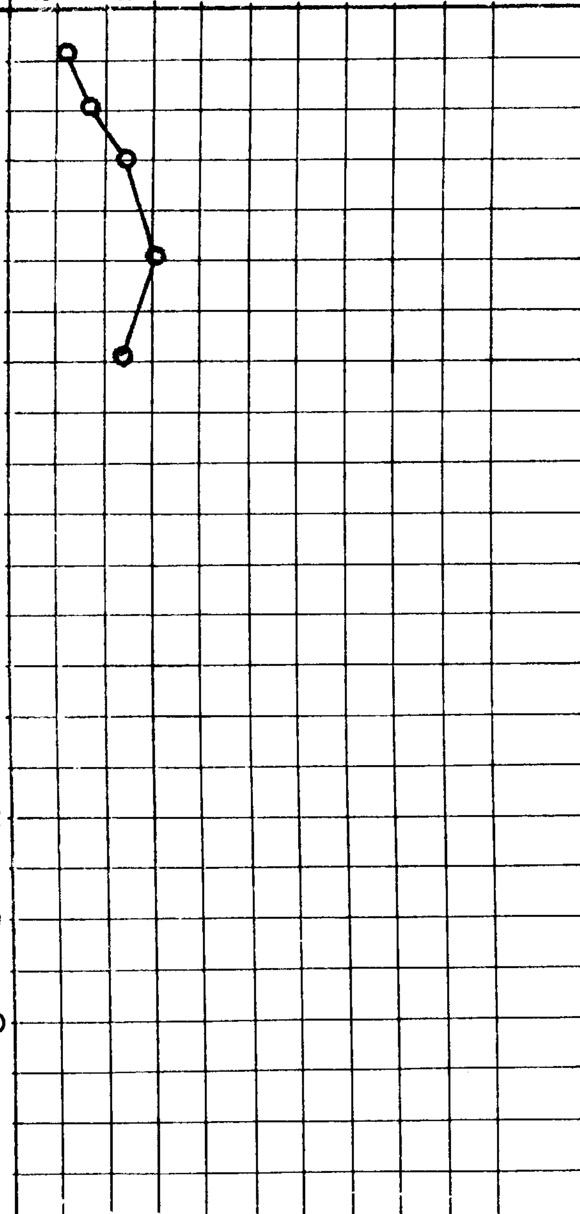
DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA | DRILL HOLE REPORT | L[illegible] HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/16	148	69	2

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SAND - SILT MIXTURE								MOIST	
2	SM			FROZEN	1	-	51 -	49	0	MOIST	
4		1.2 m									
		CLAY - SILTY		ICE						WET	
6		- LOW PLASTIC		LENSES	2						
8	CL	+ P.				99 -		1	0	SAT.	
10		GREY -			3					SAT.	
		3.4 m									
12											
14		BOTTOM OF HOLE - 3.4 m			4						
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-70	DATE 78/02/17	km 148	B.P. No. 70	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT-								SAT.			
4		1.2 m			1		98	2	0	MOIST			
6	CL - CI	CLAY - SILTY - LOW-MED. PLASTIC + PL			2					DAMP			
8							98	2	0	DAMP			
10					3								
12							100	0	0	MOIST			
14					4								
16		4.6 m								MOIST-WET			
		BOTTOM OF HOLE. 4.6 m			5								
18													
20					6								
22													
24					7								
26					8								
28													
30					9								
32													
34					10								
36					11								
38													

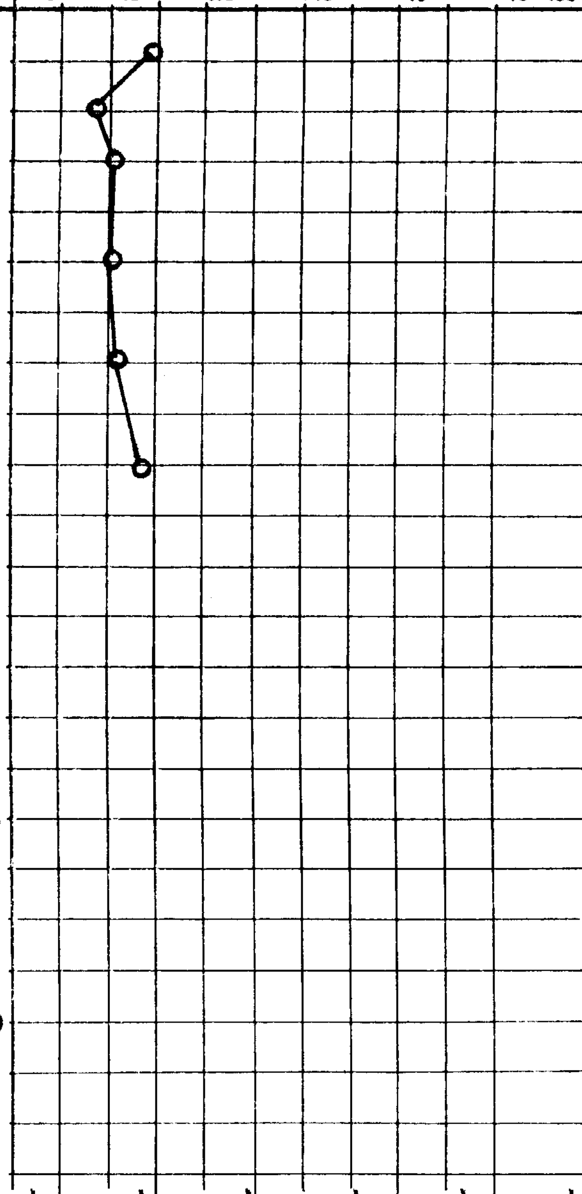
○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w%: 20%, 40%, 60%, 80%, 100%, 100+

GRAIN-SIZE ANALYSIS



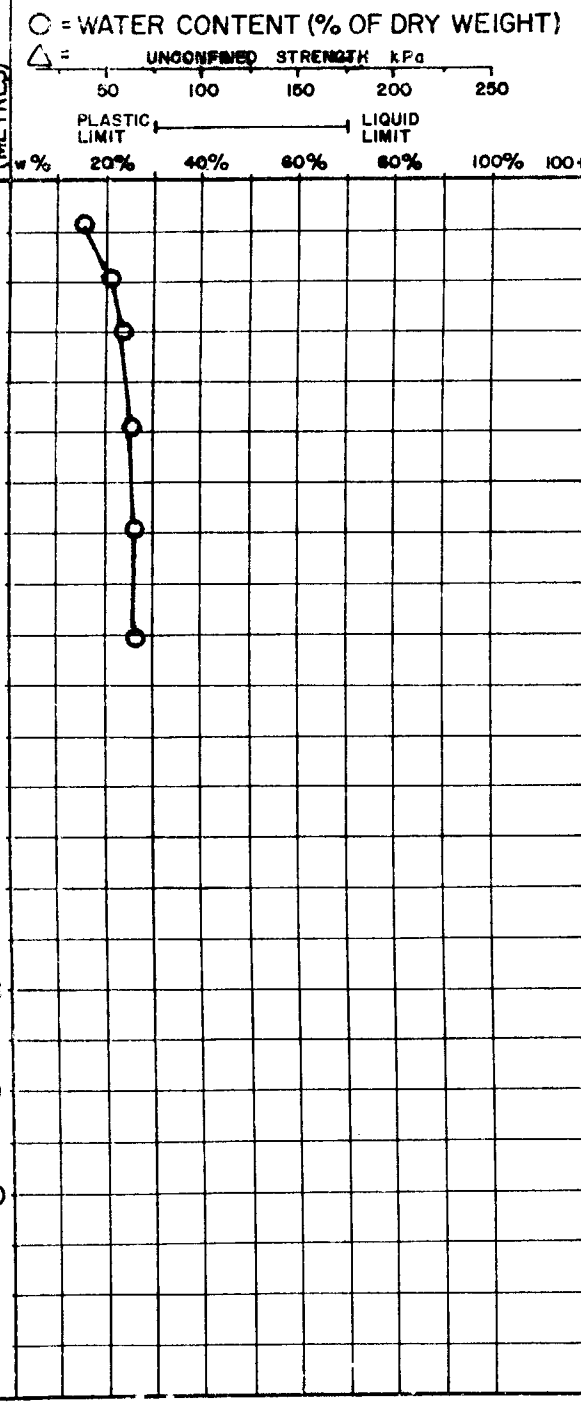
PUBLIC WORKS CANADA | DRILL HOLE REPORT | [illegible] RD Hwy

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 148	B.P. No. 70	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT - SANDY				-90-		10	0	MOIST	
2		.6m									
		CLAY - SILTY			1					MOIST	
4		- LOW PLASTIC				-100-		0	0	MOIST	
6		+ P_L			2					WET	
8	CL										
10		WET			3	-100-		0	0	WET	
12											
14		4.6m			4					WET	
16		BOTTOM OF HOLE - 4.6m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

CHAINAGE	OFFSET

GRAIN-SIZE ANALYSIS



PUBLIC WORKS CANADA — DRILL HOLE REPORT

LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 149	B.P. No. 71	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–9	SM	SAND - SILTY			0–2.7					MOIST	
					1		53	47	0	MOIST	
										MOIST	
		2.7m			2.5		23	77	0	MOIST	
9–15	CL	CLAY - SILTY - LOW PLASTIC + P_L WET			2.7–4.6						
					3.5		97	3	0	WET	
		4.6m			4.5					SAT.	
		BOTTOM OF HOLE - 4.6m									

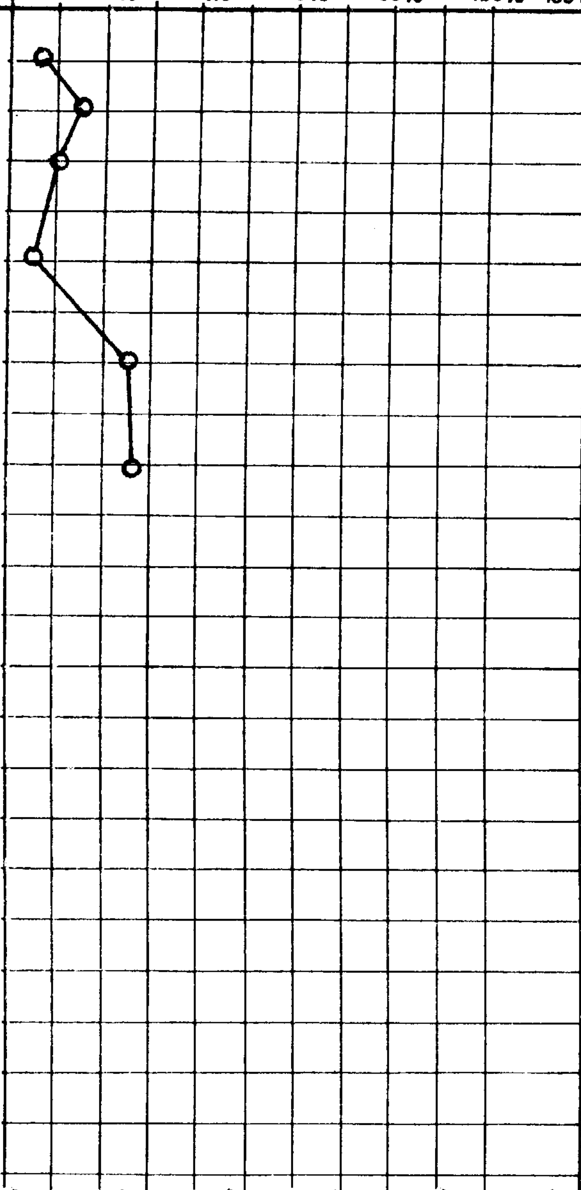
CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

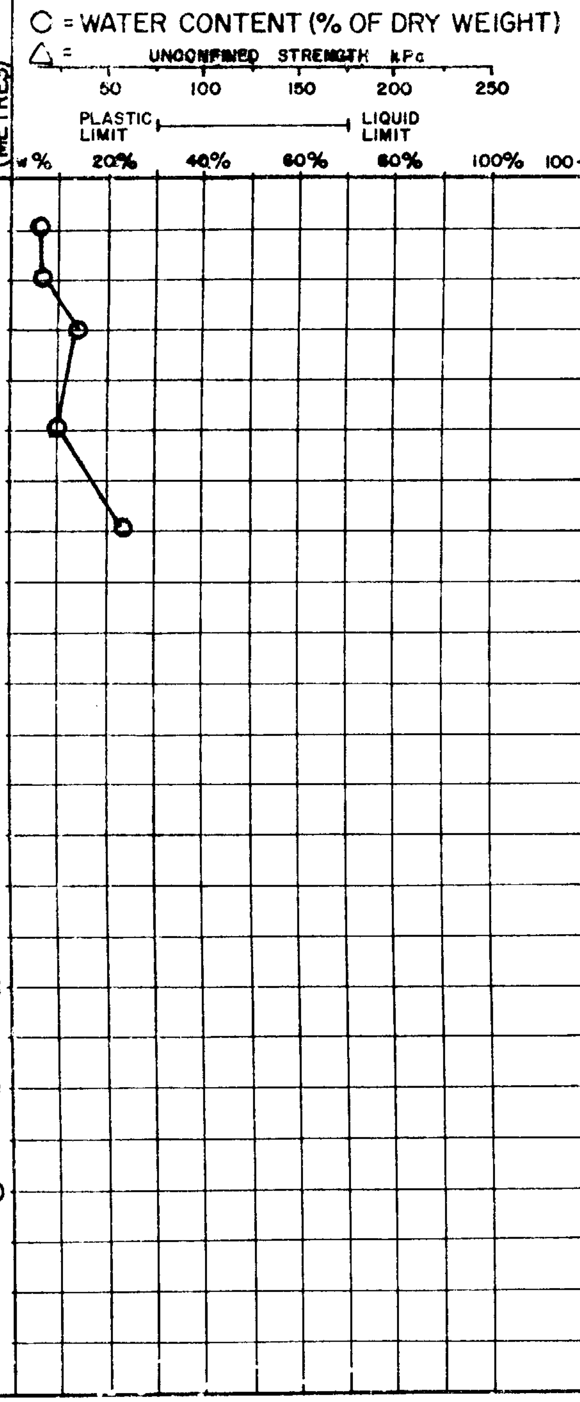


PUBLIC WORKS CANADA | DRILL HOLE REPORT | [illegible]

TECH. PRONYCH | RIG B-50 | DATE 78/02/17 | km 149 | B.P. No. 71 | HOLE No. 2

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		SAND - SILTY		FROZEN						MOIST	
4					1	-29-		71	0	MOIST	
6										MOIST	
8					2	-32-		68	0	MOIST	
10		SATURATED 3.4m			3					SAT.	
12		BOTTOM OF HOLE - 3.4m			4						



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD Hwy.

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 149	B.P. No. 71	HOLE No. 3

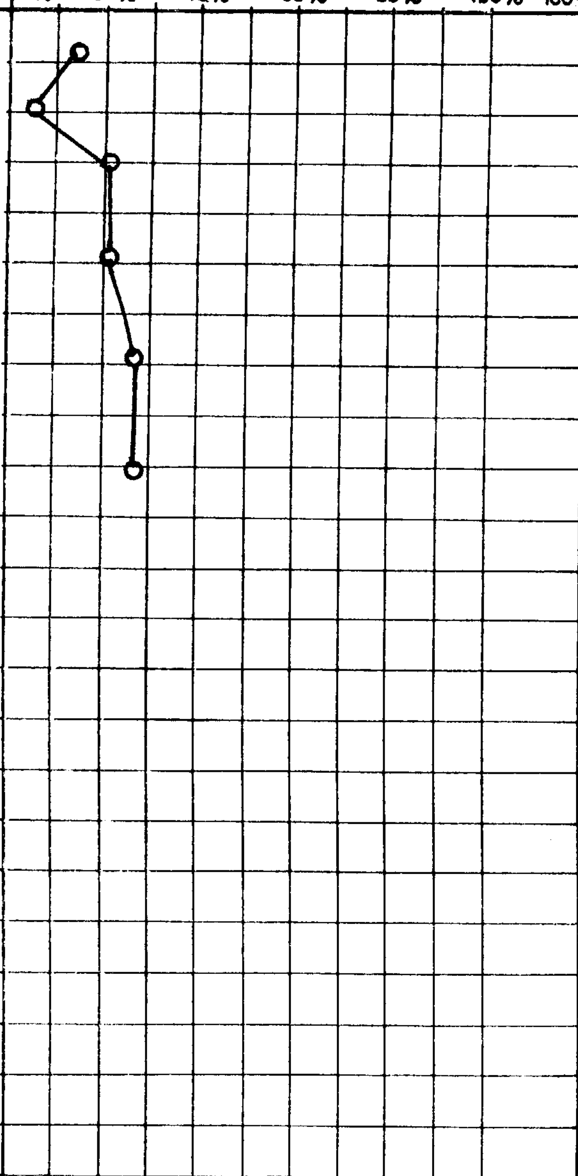
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SAND - SILTY											
2	ML									MOIST			
4		1.2 m			1		30	70	0	MOIST			
		CLAY - SILTY											
6		- LOW PLASTIC								MOIST			
8	CL	+P_L			2	98	2	0		WET			
10					3								
12		FREE WATER AFTER 3.7 m								WET			
14	ML	SILT - SANDY 4.6 m			4								
						84	16	0		SAT.			
16		BOTTOM OF HOLE. 4.6 m			5								
18													
20					6								
22													
24					7								
26													
28					8								
30													
32					9								
34					10								
36													
38					11								

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+

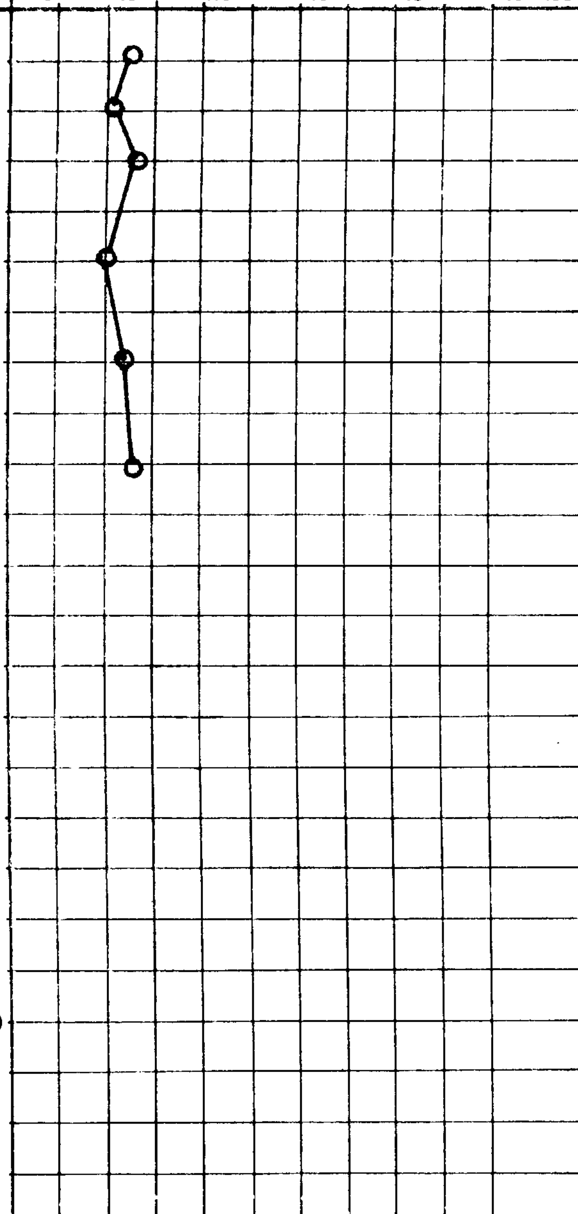


PUBLIC WORKS CANADA | DRILL HOLE REPORT | [illegible]

TECH. Pronysch	RIG B-50	DATE 78/02/17	km 149	B.P. No. 71	HOLE No. 4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SILT - SANDY								SAT.			
2	ML			FROZEN	1		71	29	0	SAT.			
4										SAT.			
6		1.8m — SAND - SILTY		ICE	2								
8	SM			LENSES			40	60	0	SAT.			
10		GREY -			3					SAT.			
12		3.8m — - LOW PLASTIC			4								
14	CL	CLAY - SILTY — 4.6m					98	2	0	WET			
16		BOTTOM OF HOLE. 4.6m			5								
18–38					6–11								

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

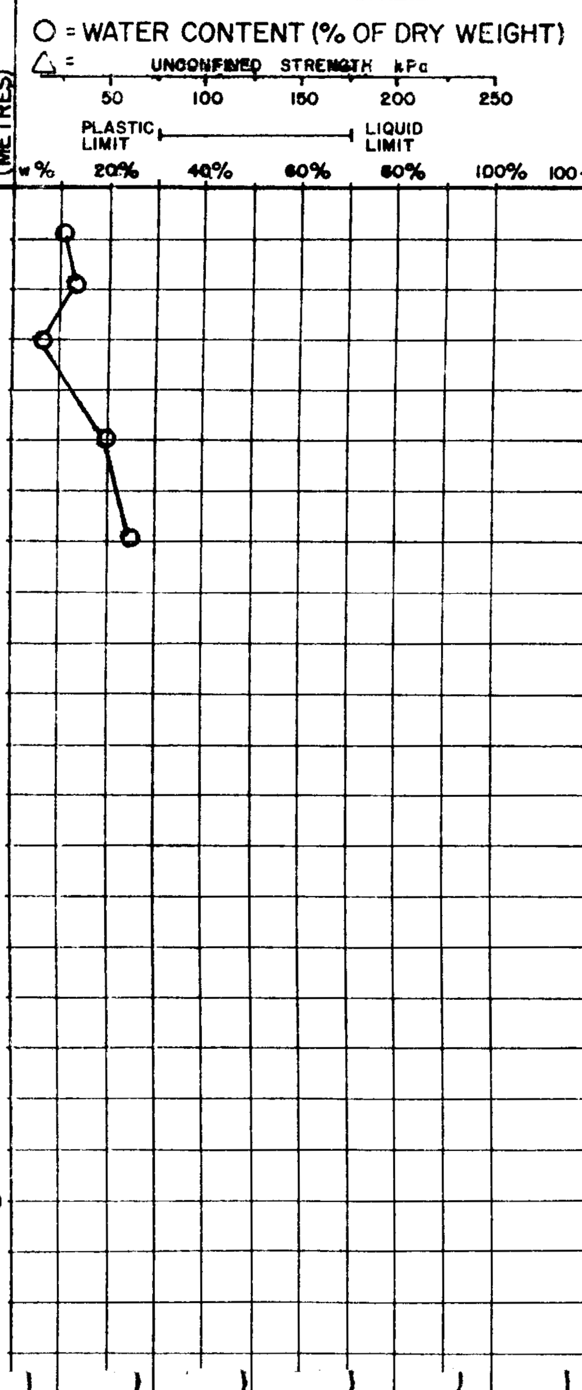


PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/17	149	71	5

DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0.4	SM	SAND - SILTY					MOIST
0.9			-	60	40	0	MOIST
1.5		SAT. AFTER 1.8 m					MOIST
2.5			-	38	62	0	WET-SAT.
3.4		3.4 m					SAT.
		BOTTOM OF HOLE. 3.4 m					

Column headings: DEPTH (FEET); UNIFIED SOIL SYMBOL; SOIL DESCRIPTION; PENETRATION RESISTANCE; ICE DESCRIPTION; DEPTH (METRES); GRAIN-SIZE ANALYSIS: CLAY %, SILT %, SAND %, GRAVEL %; RELATIVE MOISTURE CONTENT; CHAINAGE; OFFSET; REMARKS



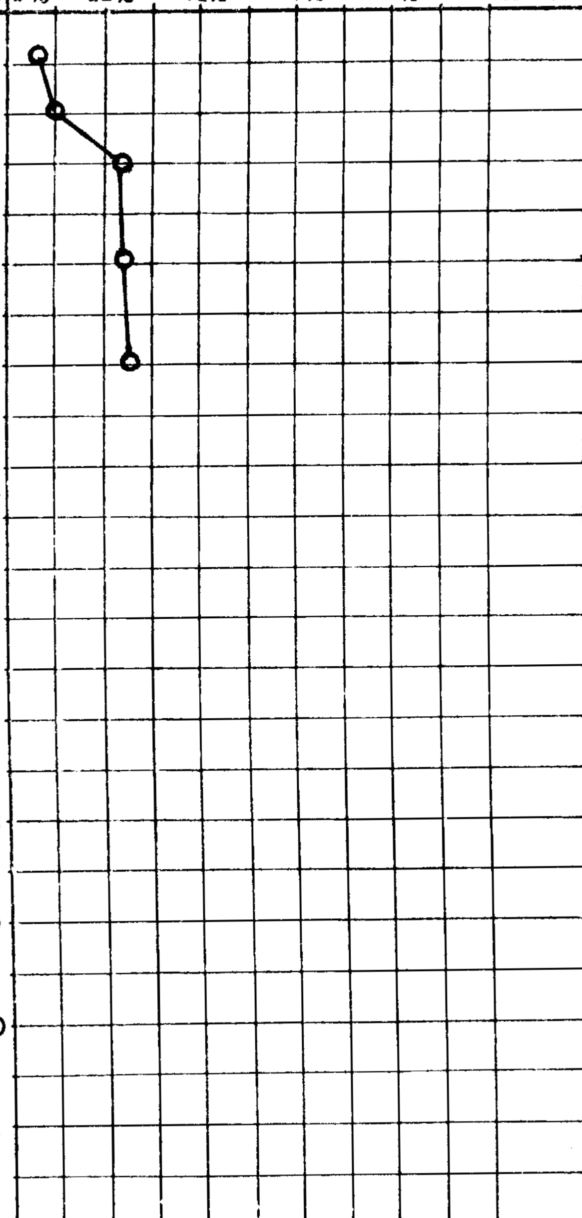
PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 151	B.P. No. 72	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	SM	SAND - SILTY				-	27	73	0	MOIST	
					1					MOIST	
		WET-SAT. AFTER 1.8m								SAT.	
		2.4m									
	CL	CLAY - SILTY LOW PLASTIC + PL				-	97	3	0	WET-SAT.	
		3.4m								W-SAT.	
		BOTTOM OF HOLE - 3.4m									

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B50	DATE 78/02/17	km 151	B.P. No. 72	HOLE No. 2

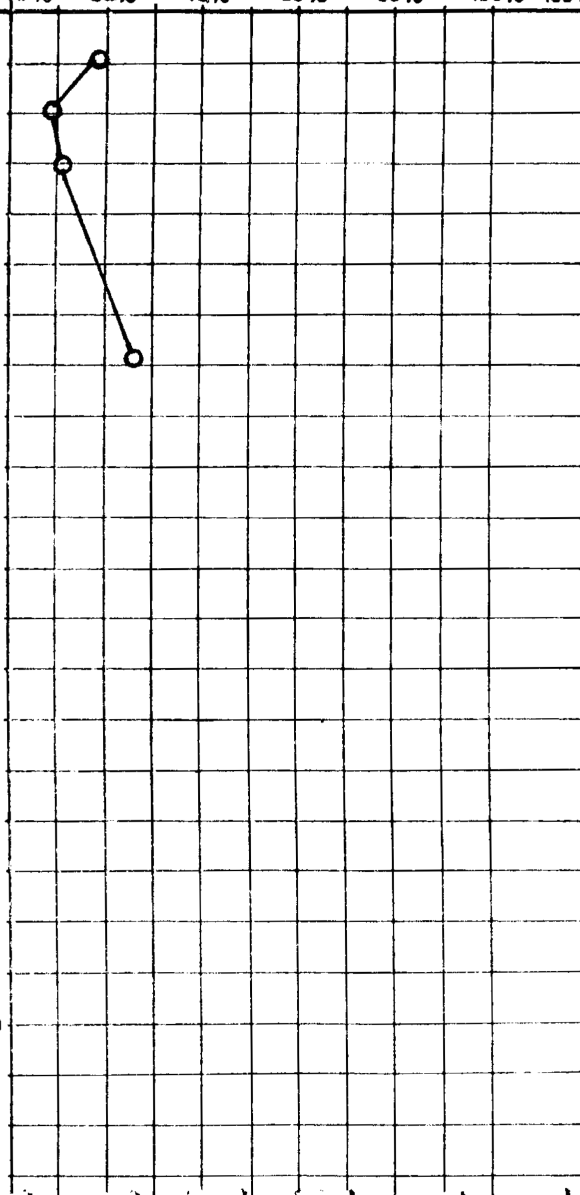
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	ML	SILT			
2		.6m			
		SAND - SILTY			1
4	SM				
		1.7m			
6					
	ML	CLAY - SILTY			2
8		SILT CLAYEY			
10	CL	3.4 m			3
12		BOTTOM OF HOLE - 3.4 m			
14					4
16					5
18					
20					6
22					
24					7
26					8
28					
30					9
32					
34					10
36					11
38					

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS

CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
-	79	21	0	MOIST
-	36	66	0	MOIST
				MOIST
-	97	3	0	H.I.B.
-	98	2	0	SAT.

CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA | DRILL HOLE REPORT | Liard Hwy

TECH. Pronych	RIG B-50	DATE 78/02/17	km 151	B.P. No. 72	HOLE No. 3

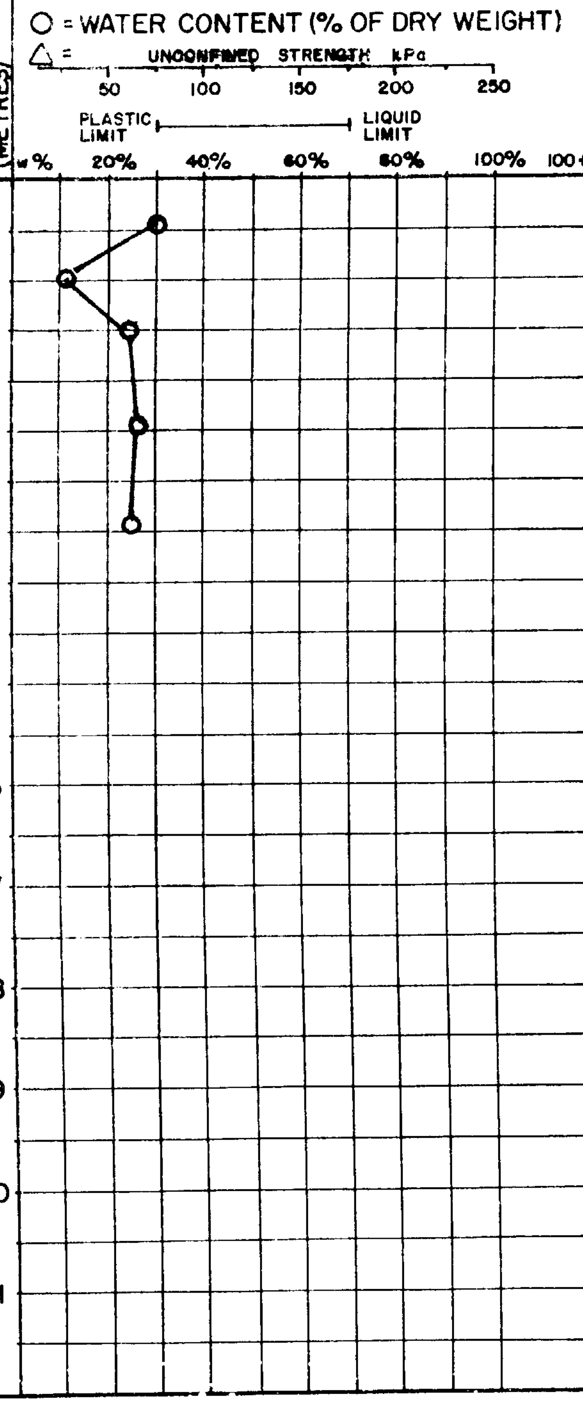
CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	Silt - Sand Mixture								Sat.	
2	SM				1	-51	-	49	0	Moist	
4										Sat.	
6	ML	Silt - Sandy			2						
8		2.4m				-97	-	3	0	Wet	
10	CL	Clay - Silty -Low Plastic +P_L			3						
		3.4m								Wet	
12		Bottom of Hole - 3.4m									

DEPTH (FEET): 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 4, 5, 6, 7, 8, 9, 10, 11

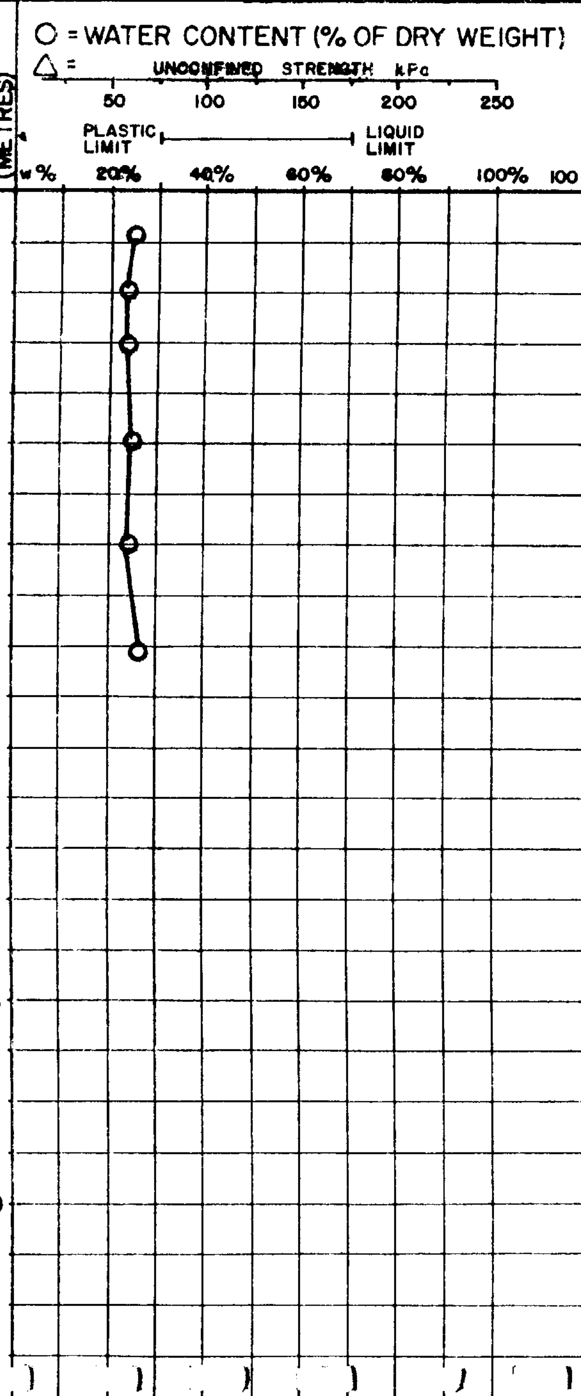
GRAIN-SIZE ANALYSIS



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 152	B.P. No. 73	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–2	ML	SILT - CLAYEY .6m				-	95	5	0	DAMP			
2–12	CL	CLAY - SILTY - LOW-MED. PLASTIC + P_L 3.7m			1					MOIST			
						-	99	1	0	MOIST			
					2–3					MOIST			
						-	99	1	0	MOIST			
12–15	ML	SILT - CLAYEY SATURATED 4.6m			4	-	98	2	0	SAT.			
16		BOTTOM OF HOLE - 4.6m			5								



PUBLIC WORKS CANADA | DRILL HOLE REPORT | Liard Hwy.

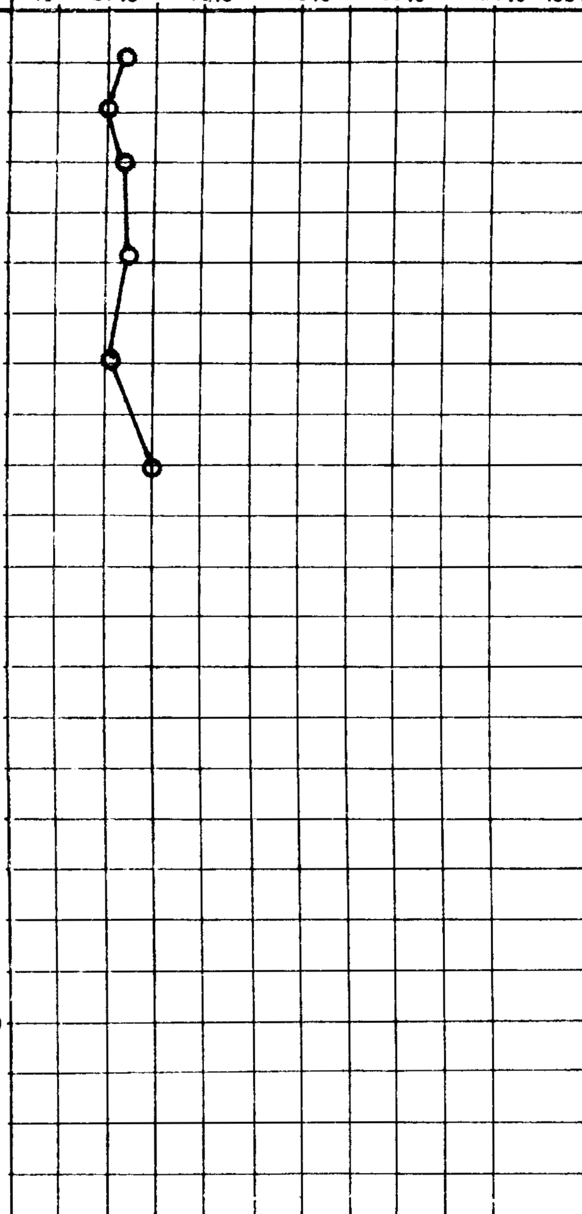
TECH. Pronych	RIG B-50	DATE 78/02/17	km 152	B.P. No. 73	HOLE No. 2

Depth (feet)	Unified soil symbol	Soil description	Penetration resistance	Ice description	Depth (metres)	Clay %	Silt %	Sand %	Gravel %	Relative moisture content	Remarks
		Silt								WET	
2–4	ML				1	-	95	5	0	WET	
4–6		- Clayey 1.8m				-	99	1	0	WET	
6–8		Clay - Silty			2						
8		- Low Plastic								WET	
10	CL	+ P_L			3						
12						-	100	0	0	WET	
14		Gray - Saturated 4.6m			4					WET	
16		Bottom of Hole - 4.6m			5						

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT —— LIQUID LIMIT



CHAINAGE | OFFSET

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/17	km 152	B.P. No. 73	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–6	ML	SILT -			0–1.8					MOIST	
					1	-	98	2	0	WET	
		1.8 m								WET	H.I.B.
6–15	CL	CLAY - SILTY - LOW PLASTIC + PL			2	-	99	1	0	WET	
		SATURATED AFTER 3.7 m			3					WET	
		GREY 4.6 m			4	-	99	1	0	WET-SAT.	
16		BOTTOM OF HOLE. 4.6 m			5						

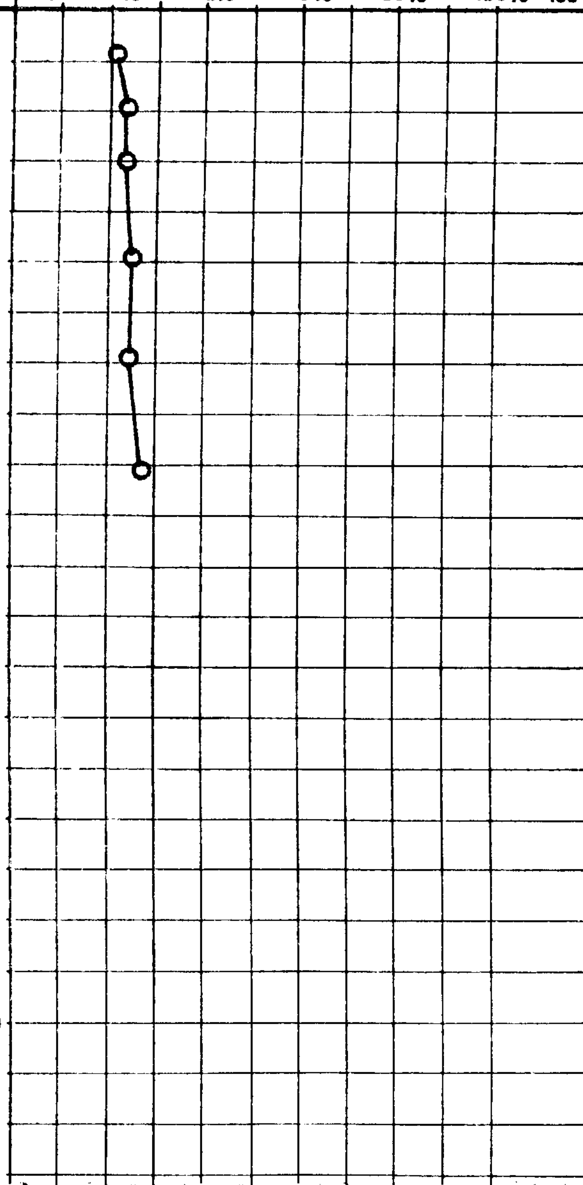
CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)

PLASTIC LIMIT |——| LIQUID LIMIT

w % 20% 40% 60% 80% 100% 100+



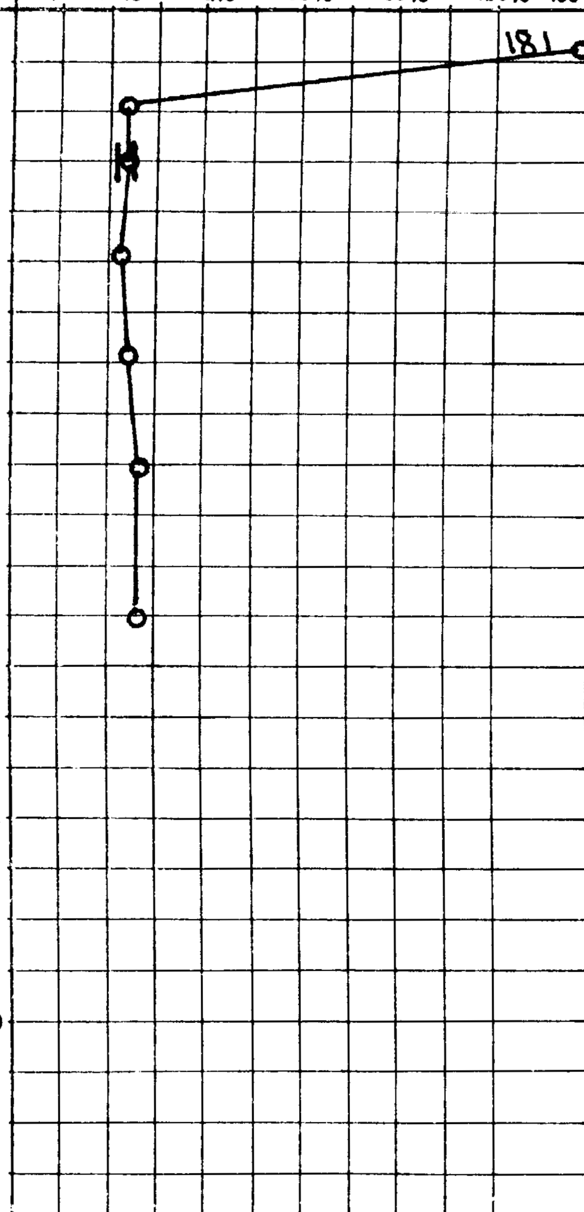
PUBLIC WORKS CANADA	DRILL HOLE REPORT	

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 153	B.P. No. 74	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
	Pt	PEAT .5m								FREE WATER			
2		SILT -											
					1					MOIST			
4	ML					99		1	0	WET			
6					2								
8		2.4m								MOIST-WET			
		CLAY - SILTY											
10		- LOW PLASTIC			3								
12		- P_L				99		1	0	M-W			
14	CL				4								
16										M-W			
18					5								
20		6.1m			6	98		2	0	M-W			
		BOTTOM OF HOLE. 6.1m											
22													
24					7								
26					8								
28													
30					9								
32													
34					10								
36					11								
38													

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT — LIARD Hwy.

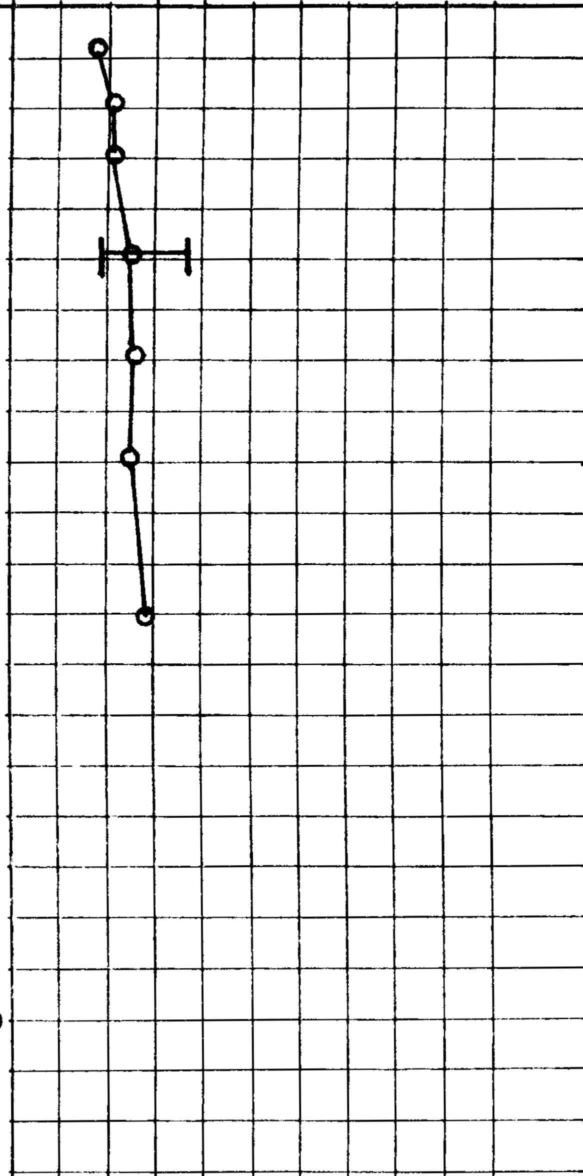
TECH. WEBBER | RIG B-50 | DATE 78/02/17 | km 153 | B.P. No. 74 | HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	ML	SILT .6m								DAMP	
2		CLAY - SILTY - LOW PLASTIC + P_L			1	99		1	0	MOIST	
4										MOIST	
6					2						
8	CL					99		1	0	MOIST	
10					3						
12										MOIST	
14					4	99		1	0	WET	
16		GREY.			5						
18											
20		6.1m			6					WET	
22		BOTTOM OF HOLE. 6.1m									
24					7						
26					8						
28											
30					9						
32											
34					10						
36					11						
38											

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

GRAIN-SIZE ANALYSIS



PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD Hwy

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 153	B.P. No. 74	HOLE No. 3

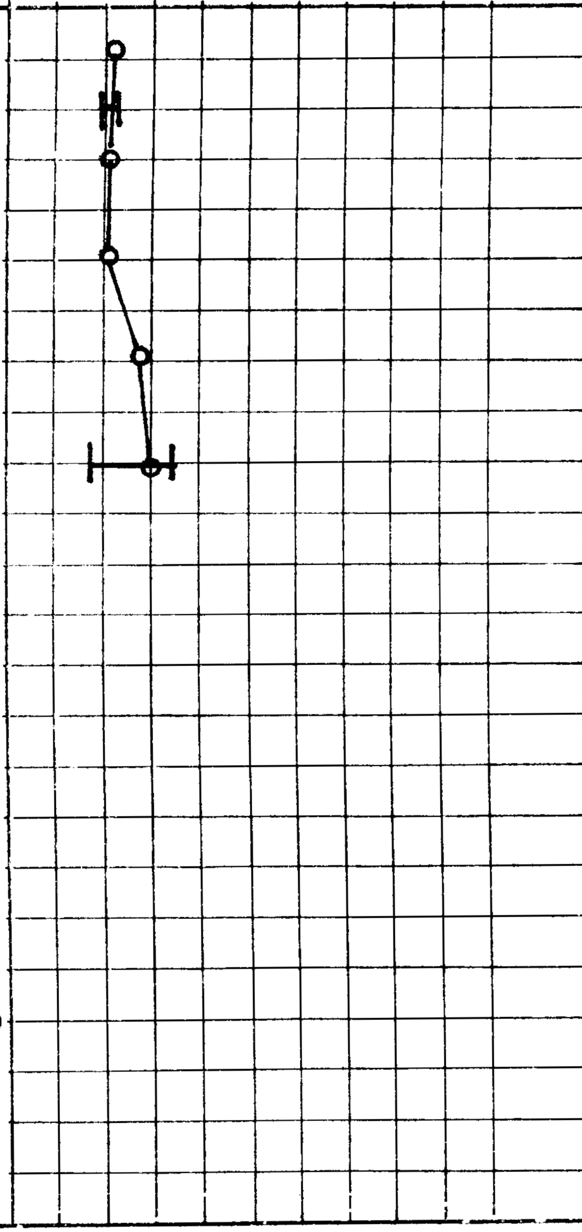
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		SILT -								MOIST			
2–4	ML				1		98	2	0	HI B			
		- CLAYEY 1.8m								WET			
6–8		CLAY SILTY - LOWPLASTIC			2		99	1	0	MOIST			
10–12	CL	+PL			3					MOIST			
12–14		FREEWATER AFTER 4.0m			4								
14–16		4.6m					98	2	0	WET			
16		BOTTOM OF HOLE. 4.6m			5								

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

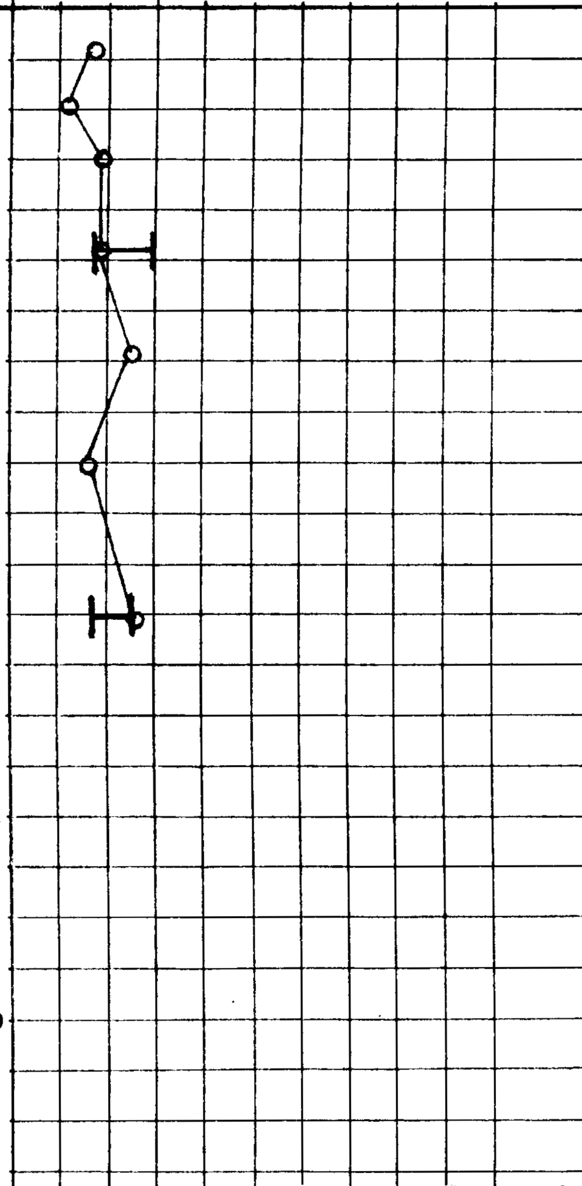
LIARD HWY

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50		154	75	1

CHAINAGE: | OFFSET:

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–4	ML	SILT. — 1.2 m			0–1.2
4–15	CL	CLAY - SILTY - LOW PLASTIC + P_L — 4.6 m			1.2–4.6
15–20	ML	SILT - CLAYEY — 6.1 m			4.6–6.1
20		BOTTOM OF HOLE · 6.1 m			6.1

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w % 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
98		2	0	DAMP	
				DAMP	
99		1	0	MOIST	
				MOIST	
99		1	0	MOIST	
				MOIST	
97		3	0	SAT.	

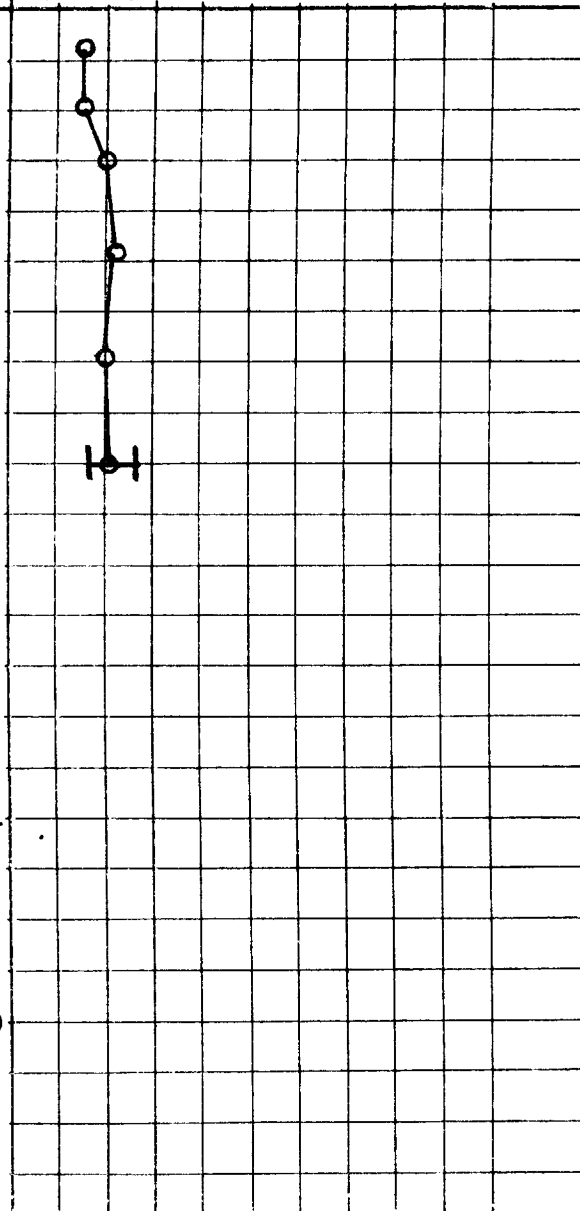
PUBLIC WORKS CANADA | DRILL HOLE REPORT | LIARD HWY

TECH. WEBBER	RIG B-50	DATE 78/02/17	km 154	B.P. No. 75	HOLE No. 2

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–4	ML	SILT.			0–1.2					DAMP	
					1	-	97	3	0	DAMP	
4		1.2m									
4–20	CL	CLAY - SILTY - LOW PLASTIC +PL			1.2–6.1					MOIST	
					2.4	-	99	1	0	MOIST	
					3.5					WET	
		FREE WATER AFTER 4.9m			4.5	-	94	6	0	WET	
20		6.1m			6					H.I.B.	
		BOTTOM OF HOLE. 6.1m									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



PUBLIC WORKS CANADA — DRILL HOLE REPORT

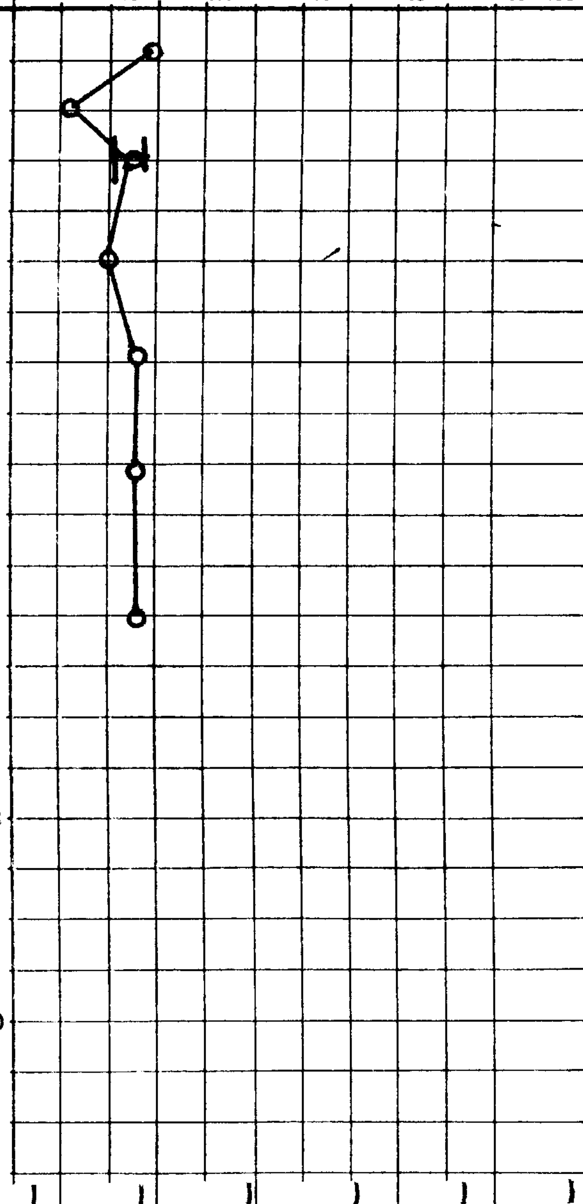
Liard Hwy

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Webber	B-50	78/02/17	154	75	3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
0–4	ML	Silt - 1.2m			0–1.2	97		3	0	Wet / Moist			
4–15	CI	Clay - Silty - Med. Plastic + P_L 4.6m			1.2–4.6	99		1	0	Moist / Damp / Moist			
15–20	ML	Silt - Sandy Free Water 6.1m			4.6–6.1	80		20	0	Wet / Sat.			
		Bottom of Hole - 6.1m											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA | DRILL HOLE REPORT | L...D ...y

TECH. Pronych	RIG B-50	DATE 78/02/18	km 157	B.P. No. 76	HOLE No. 1

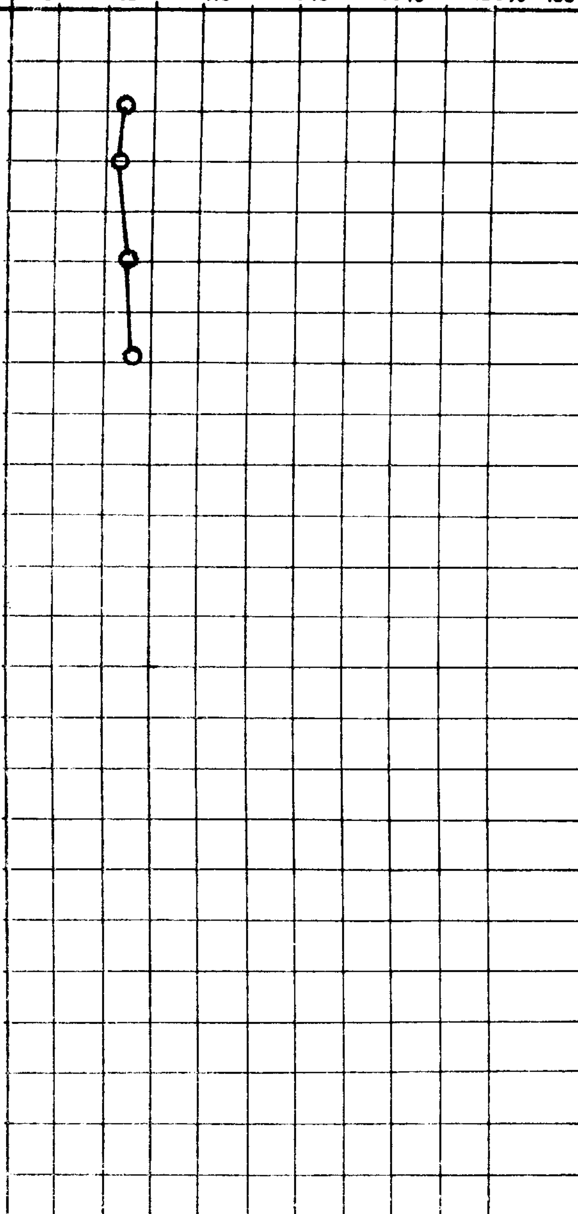
O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w %: 20%, 40%, 60%, 80%, 100%, 100+

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
		Silt-								H.I.B.			
2	ML												
4		Saturated after 1.8 m			1		98-	2	0	Wet			
6										Wet			
8		-Clayey			2		99-	1	0	Wet			
10	CL	Clay-Silty ____ 3.4 m			3					Wet			
12		Bottom of Hole - 3.4 m											
14					4								
16													
18					5								
20					6								
22													
24					7								
26													
28					8								
30					9								
32													
34					10								
36					11								
38													



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 157	B.P. No. 76	HOLE No. 2

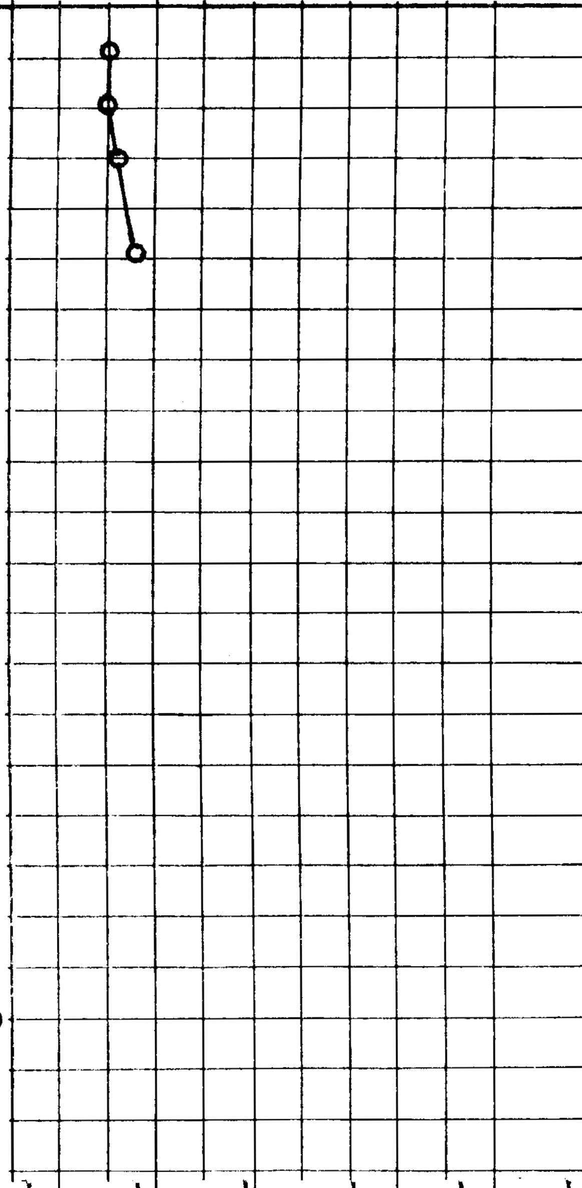
CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT-									
2										DAMP	
4					1	-	98-	2	0	MOIST	
	ML									WET	
6		SATURATED AFTER 2.1m			2						
8		- CLAYEY				-	99-	1	0	WET	
10		SILT- 3.4m			3					H.I.B.	
12											
		BOTTOM OF HOLE. 3.4m			4						
14											
16					5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36											
38					11						

PUBLIC WORKS CANADA | DRILL HOLE REPORT | Liard Hwy.

TECH. Pronych	RIG B-50	DATE 78/02/18	km 157	B.P. No. 76	HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		Silt-								Moist	
2–4					1	98		2	0	Moist	
6	ML									H.I.B.	
8		-clayey			2	100		0	0	Wet	
10–12		3.4m			3					H.I.B.	
12		Bottom of Hole - 3.4m									

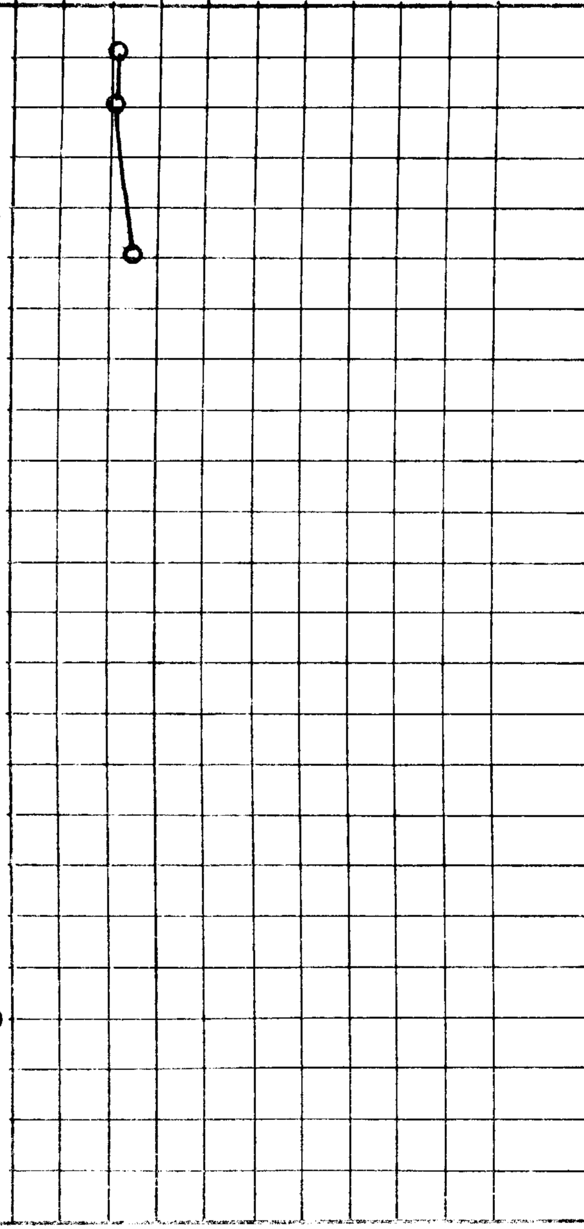
CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

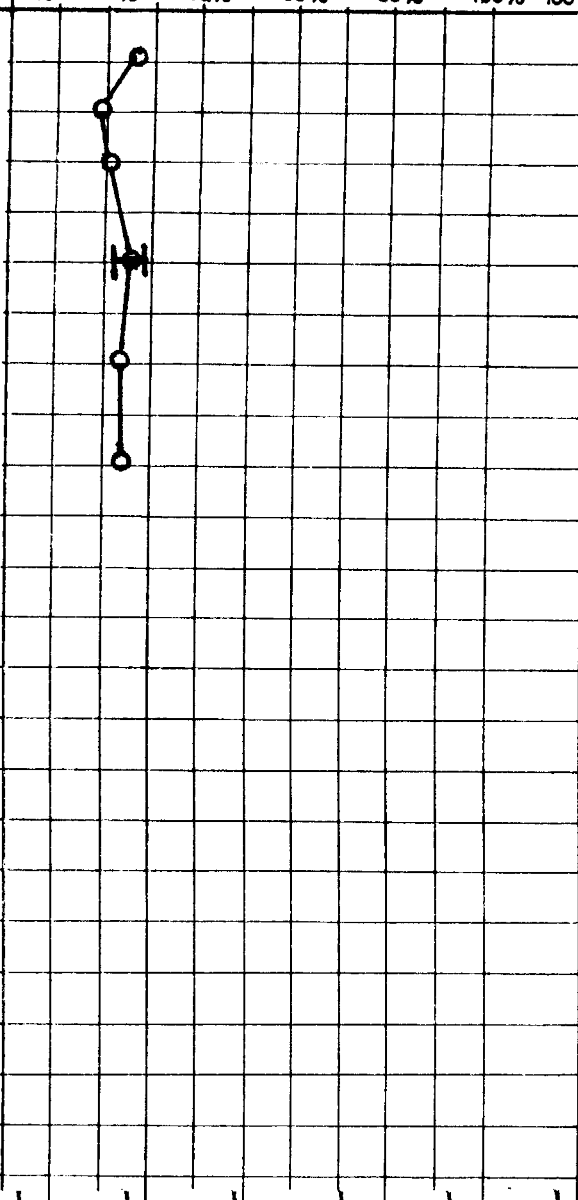
Liard Hwy.

TECH. Pronych	RIG B-50	DATE 78/02/18	km 158	B.P. No. 77	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	CL	CLAY - SILTY									
2	ML	SILT - CLAYEY				-99-		1	0	WET	
4		CLAY - SILTY			1	-99-		1	0	MOIST	
6	CL	· LOW PLASTIC								MOIST	
8		+ P_L			2	-100-		0	0	WET	
10		SATURATED WITH SOME FREE WATER AFTER 2.7m			3						
12										WET	
14	ML SM	SAND-SILT MIXTURE 4.6m			4	-50-		50	0	SAT.	
16		BOTTOM OF HOLE - 4.6m			5						
18											
20					6						
22											
24					7						
26					8						
28											
30					9						
32											
34					10						
36											
38					11						

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa 50 100 150 200 250
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



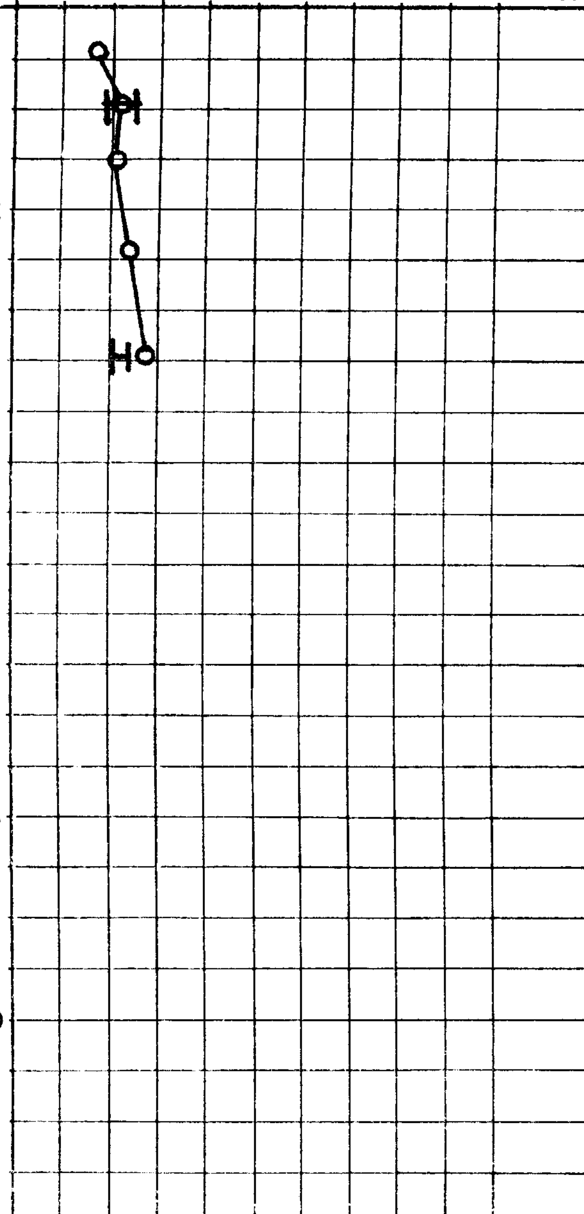
PUBLIC WORKS CANADA | DRILL HOLE REPORT | L...D Hwy

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 158	B.P. No. 77	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SILT-								DAMP	
		- CLAYEY			1		100	0	0	MOIST	
	ML	SATURATED AFTER 2.7m								WET	
					2–3		99	1	0	WET	
		3.4 m								SAT.	
		BOTTOM OF HOLE - 3.4 m									

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

DEPTH (METRES): 1 2 3 4 5 6 7 8 9 10 11

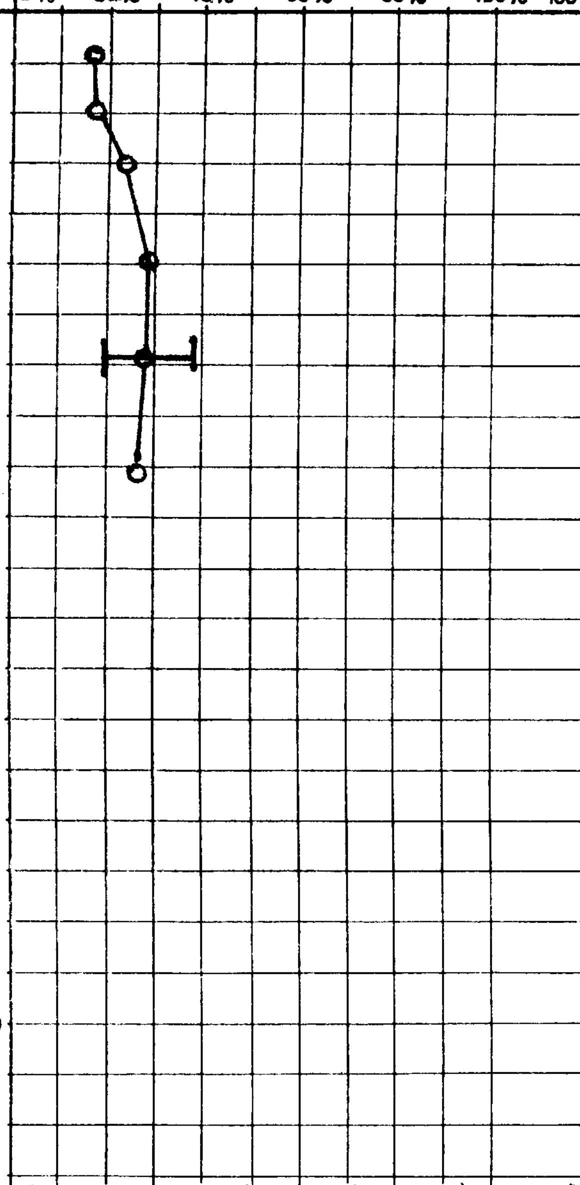
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONIUCH | RIG B-50 | DATE 78/02/18 | km 158 | B.P. No. 77 | HOLE No. 3

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT -								MOIST			
4		1.2 m			1		99	1	0	MOIST			
		CLAY - SILTY								MOIST			
6		- LOW PLASTIC			2								
8	CL	+PL					98	2	0	WET			
10		FREE WATER @ 3.7 m			3								
12		SAT. AFTER 4.0 m								WET			
14		GREY - SILT SANDY 4.6 m			4		65	35	0	SAT.			
16					5								
18		BOTTOM OF HOLE - 4.6 m											
20					6								
22													
24					7								
26					8								
28													
30					9								
32													
34					10								
36					11								
38													

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa — 50, 100, 150, 200, 250
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+

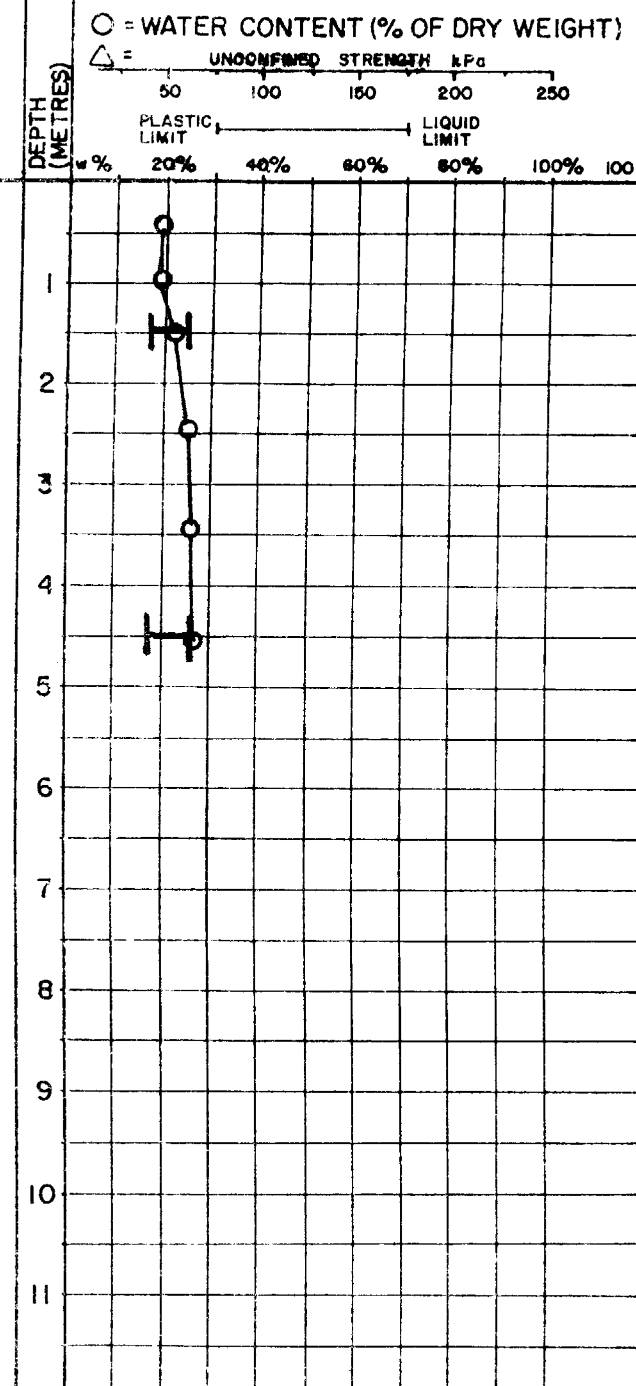


PUBLIC WORKS CANADA | DRILL HOLE REPORT

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 159	B.P. No. 78	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
	ML	SILT							DAMP			
					97		3	0	DAMP			
									WET			
		- CLAYEY 2.7m			99		1	0	WET			
	CL	CLAY - SILTY - LOW PLASTIC										
		FREEWATER AFTER 4.0m							MOIST			
		- SILTY SANDY 4.6m			78		22	0	WET-SAT.			
		BOTTOM OF HOLE - 4.6m										

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

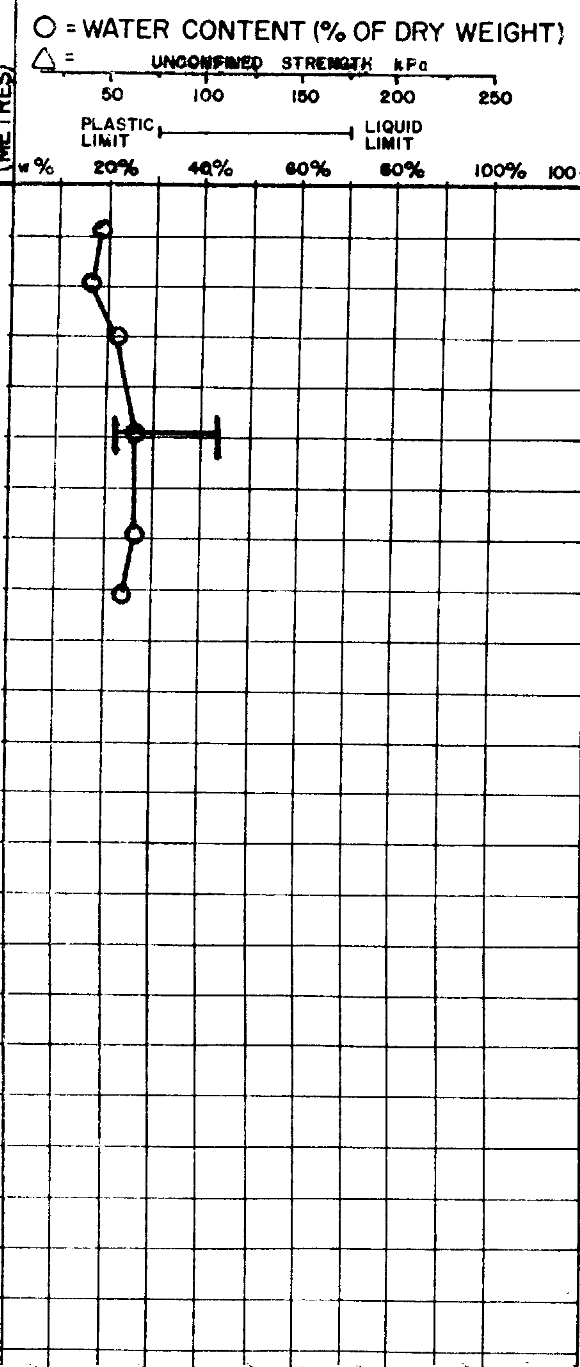


PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 159	B.P. No. 78	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–8	ML	SILT			0–2.4					H.I.B.	
					1	-	98	2	0	DAMP	
										DAMP	
8		——— 2.4m									
8–15	CL	CLAY - SILTY - LOW PLASTIC + P_L GREY. FREE WATER AFTER 3.7m			2.4–4.6	-	99	1	0	MOIST	
										WET	
					4	-	78	22	0	WET-SAT.	
15		——— 4.6m									
		BOTTOM OF HOLE - 4.6m									

CHAINAGE | OFFSET



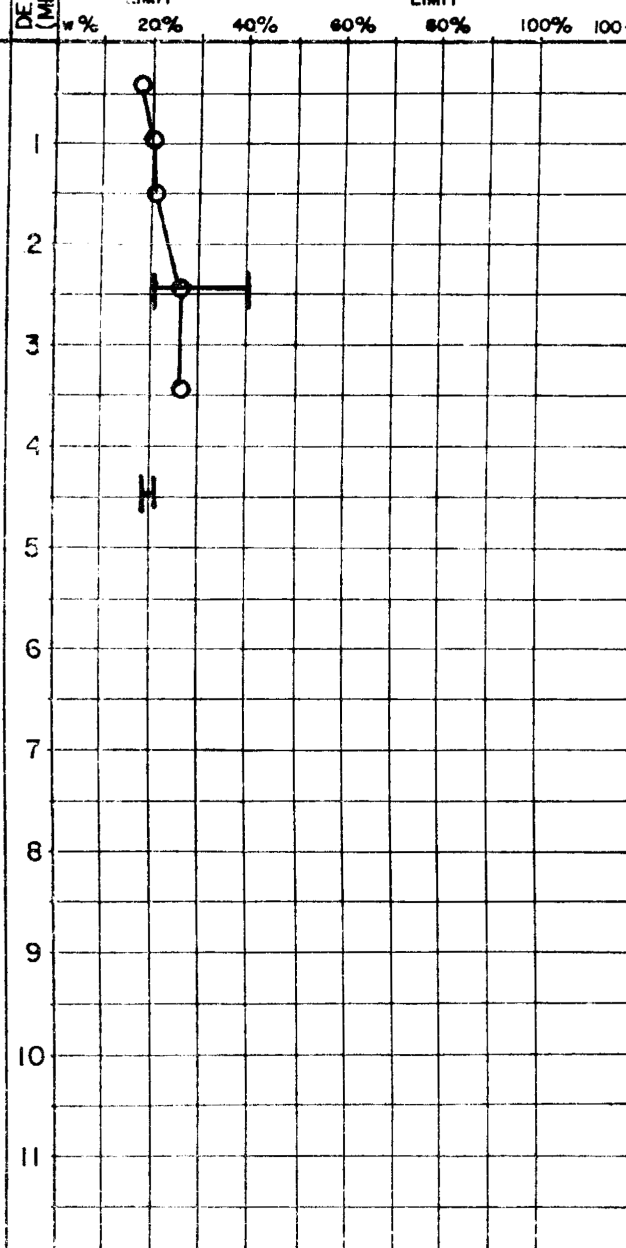
PUBLIC WORKS CANADA | DRILL HOLE REPORT | [illegible]

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	B-50	78/02/18	159	78	3

DEPTH (METRES)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0 – .6m	ML	SILT				98	2	0	DAMP	
.6m – 4.6m	CL	CLAY - SILTY - LOW PLASTIC + PL; FREE WATER AFTER 4.0m				98	2	0	DAMP	
									MOIST	
						99	1	0	MOIST	
									MOIST-WET	
4.6m	ML	SILT-SANDY				68	32	0	H.I.B.	FREE WATER
		BOTTOM OF HOLE - 4.6m								

CHAINAGE | OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT — LIQUID LIMIT



PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/18	km 159	B.P. No. 78	HOLE No. 4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
		SILT.		
4	ML	- CLAYEY		
		2.7m		
10	CI	CLAY - SILTY - MED PLASTIC + P_L		
		4.0m		
14	ML	SILT - SANDY		
		4.9m		
18	CL	CLAY - SILTY - LOW PLASTIC + P_L		
		6.1m		
		BOTTOM OF HOLE - 6.1m		

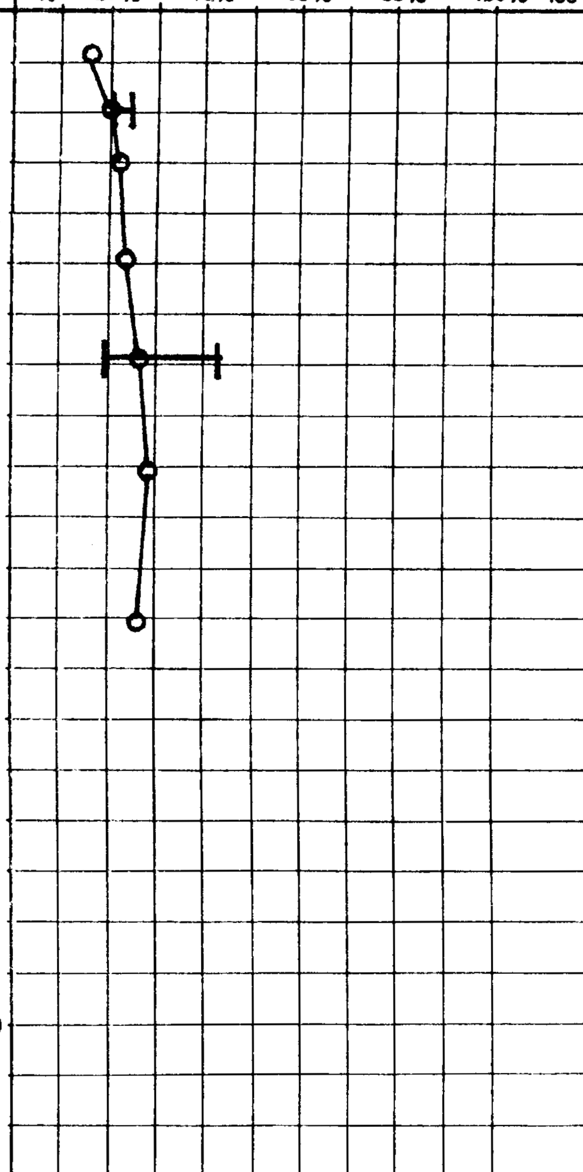
DEPTH (METRES)

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT |———| LIQUID LIMIT

w%: 20%, 40%, 60%, 80%, 100%, 100+



DEPTH (METRES)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
~0.4					DAMP
1	-99-		1	0	MOIST
~1.5	-97-		3	0	MOIST
~2.5					WET
~3.5	-98-		2	0	MOIST
~4.5	-68-		32	0	WET-SAT
6					W-SAT.

CHAINAGE	OFFSET

REMARKS

FREE WATER AFTER 4.0m

PUBLIC WORKS CANADA | DRILL HOLE REPORT | L... RD... Hwy.

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 162	B.P. No. 79	HOLE No. 1

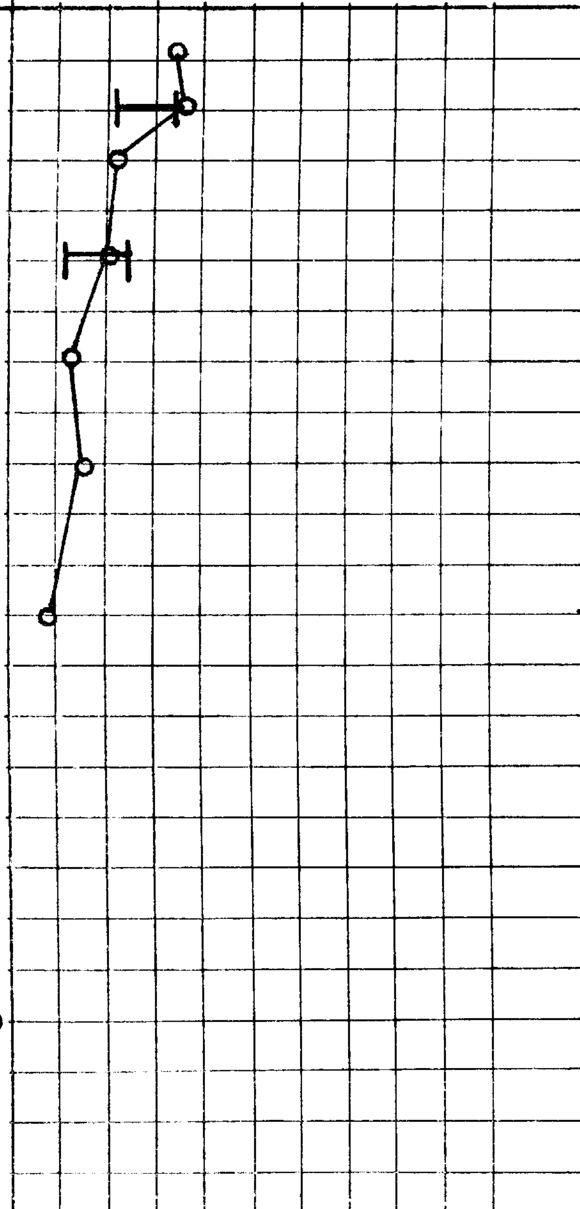
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
		SILT - CLAYEY			
2	ML				1
4		- CLAYEY PEBBLES			
6		2.1 m			2
8		CLAY - SILTY SANDY			
		- PEBBLES			
10		- LOW PLASTIC			3
12	CL	@ PL			
14					4
		GREY - 4.6 m			
16		SAND - GRAVELLY SILTY			5
18	SM	SATURATED			
20		6.1 m			6
22		BOTTOM OF HOLE - 6.1 m			
24					7
26					8
28					
30					9
32					
34					10
36					11
38					

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa 50 100 150 200 250

PLASTIC LIMIT — LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
				SAT.
99		1	0	WET
				WET
54		42	4	WET
				WET
69		26	5	DAMP
18		59	23	SAT.

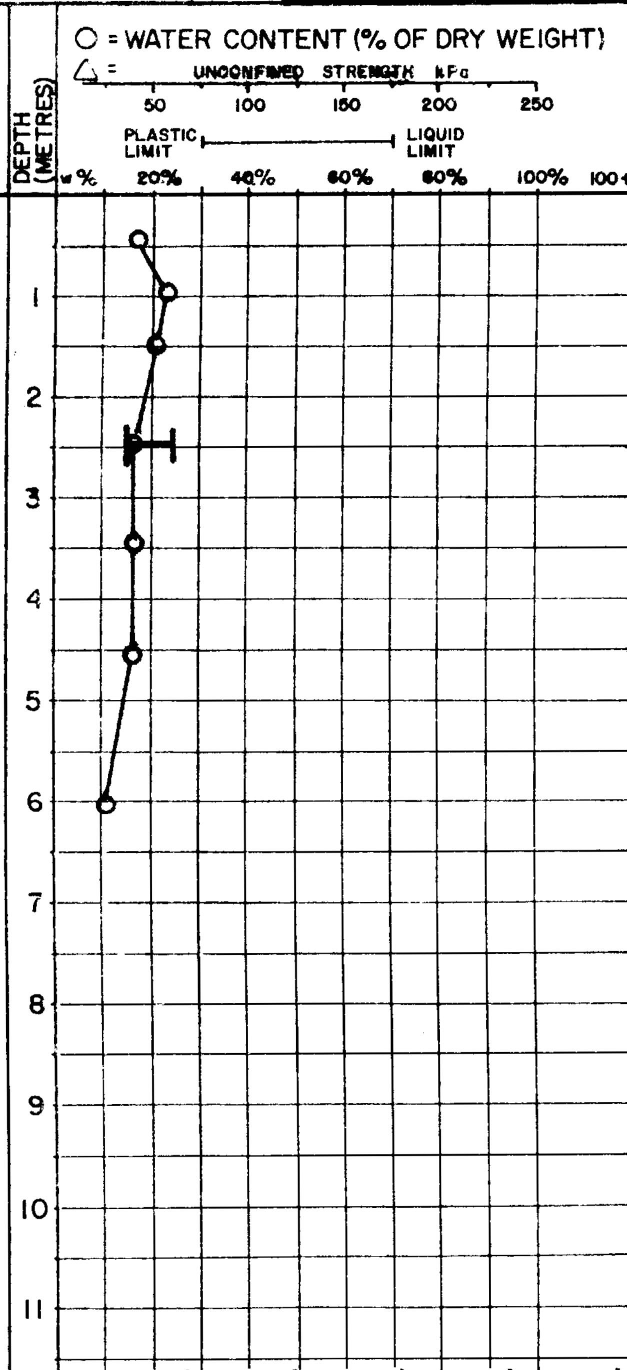
CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 162	B.P. No. 79	HOLE No. 2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT -								DAMP			
					1	-	97	3	0	MOIST			
4		1.2m											
	CL	CLAY - SILTY - SANDY - PEBBLES - LOW PLASTIC @ P_L								WET			
8						-	67	30	3	MOIST-WET			
12	CL									M-W			
14						-	55	40	5	M-W			
20		GREY - 6.1m			6					MOIST			
22		BOTTOM OF HOLE - 6.1m											



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | [illegible]

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
WEBBER	B-50	78/02/18	162	79	3

CHAINAGE	OFFSET

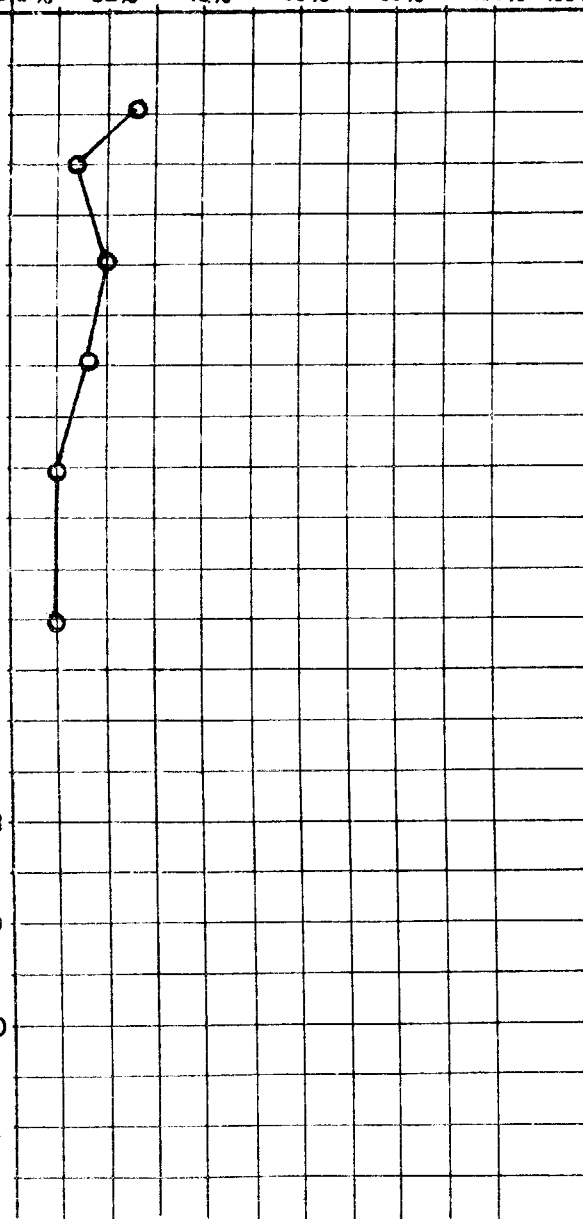
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–4	ML	SILT. — 1.2 m			1	98		2	0	WET-SAT	
4–13	CL	CLAY - SILTY - SANDY - PEBBLES LOW PLASTIC + PL — 4.0 m			1.5					MOIST	
					2.5	82		16	2	WET	
					3.5					MOIST	
13–20	CL / GC	GRAVEL - SANDY - SILTY - CLAYEY — 6.1 m			4.5	21		27	52	DAMP	
					6					DAMP	
20		BOTTOM OF HOLE - 6.1 m									

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w %: 20%, 40%, 60%, 80%, 100%, 100+



DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

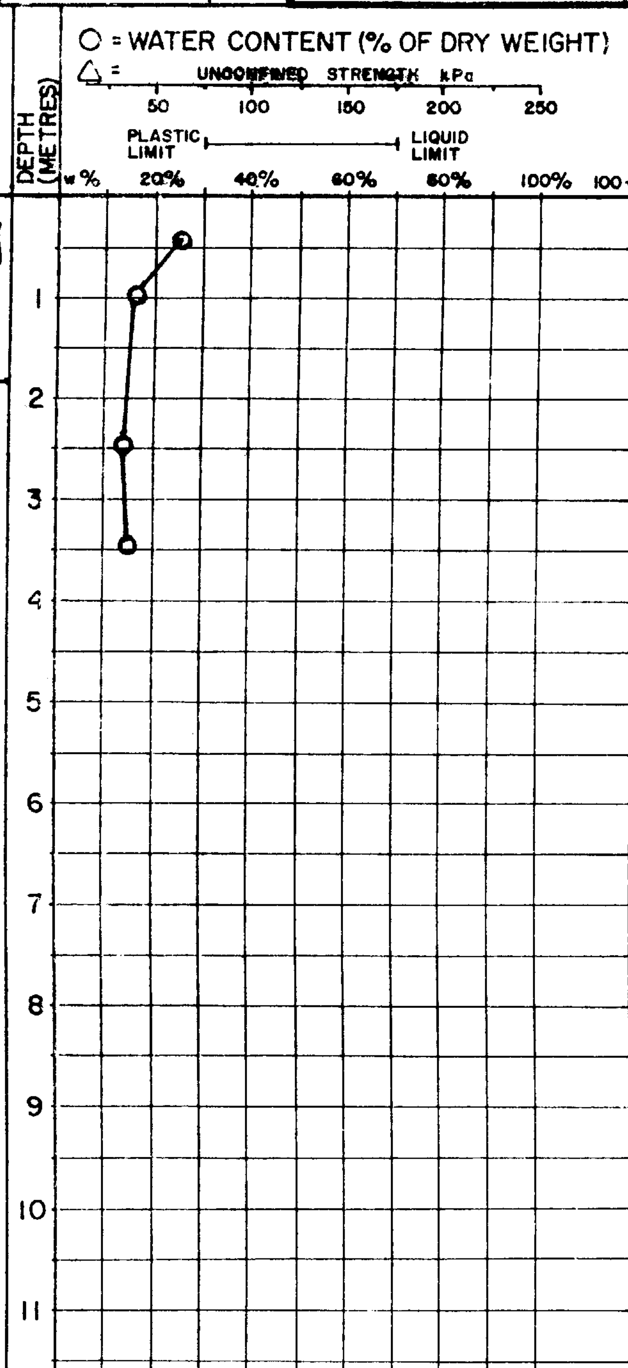
PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. WEBBER	RIG B-50	DATE 78/02/18	km 164	B.P. No. 80	HOLE No. 1

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
	ML	SILT - .6m		FROZEN		97	-	3	0	MOIST
2–12	CL · CI	CLAY - SILTY - SANDY - PEBBLES LOW-MED PLASTIC -GRAVELLY 3.7m			1					MOIST
						64	-	30	6	H.I.B
										MOIST
						58	-	27	15	MOIST
		REFUSAL @ 3.7m								

CHAINAGE | OFFSET

REMARKS



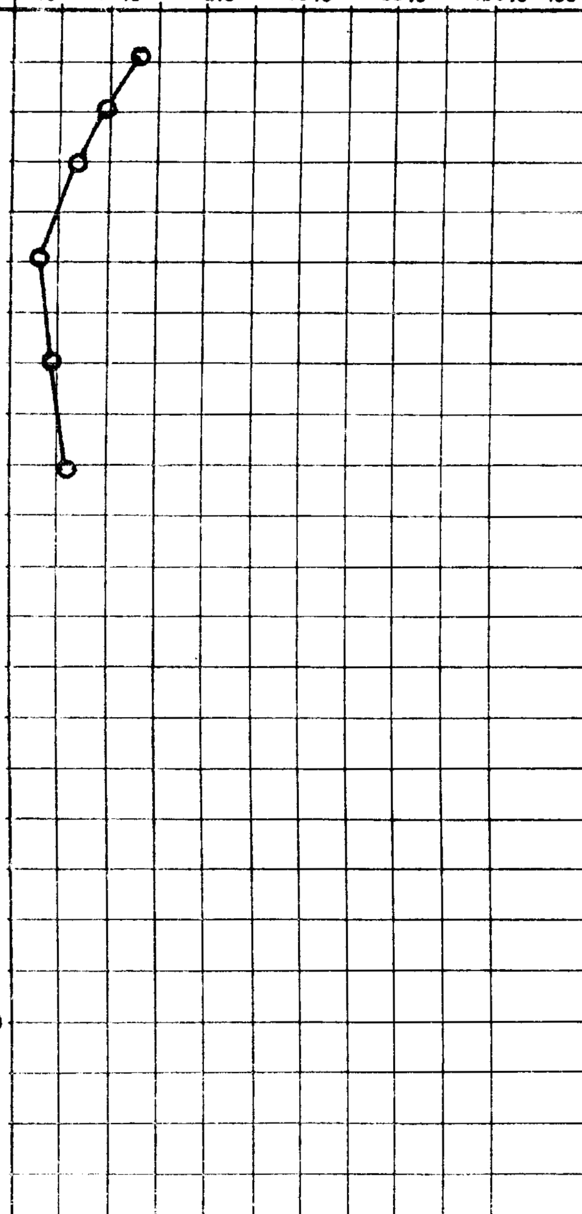
PUBLIC WORKS CANADA | DRILL HOLE REPORT | Liard Hwy.

TECH. Pronych	RIG B-50	DATE 78/02/22	km 164	B.P. No. 81	HOLE No. 4

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
2	ML	SILT - CLAYEY SANDY 1.2 m		
4–6	CL CI	CLAY - SILTY SANDY PEBBLES 2.0 m		
8	SP	SAND -		
10–12	SM	- SILTY GRAVELLY		
14–16	ML	SILT - PEBBLES SANDY 4.9 m		
18–20		BOTTOM OF HOLE - 4.9 m REFUSAL		

DEPTH (METRES)

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS: CLAY / SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
99	1	0	SAT.
84	16	0	MOIST
61	36	3	MOIST
9	91	0	DAMP
22	58	20	MOIST
59	37	4	DAMP

CHAINAGE	OFFSET

REMARKS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONYCH	RIG B-50	DATE 78/02/22	km 164	B.P. No. 81	HOLE No. 5

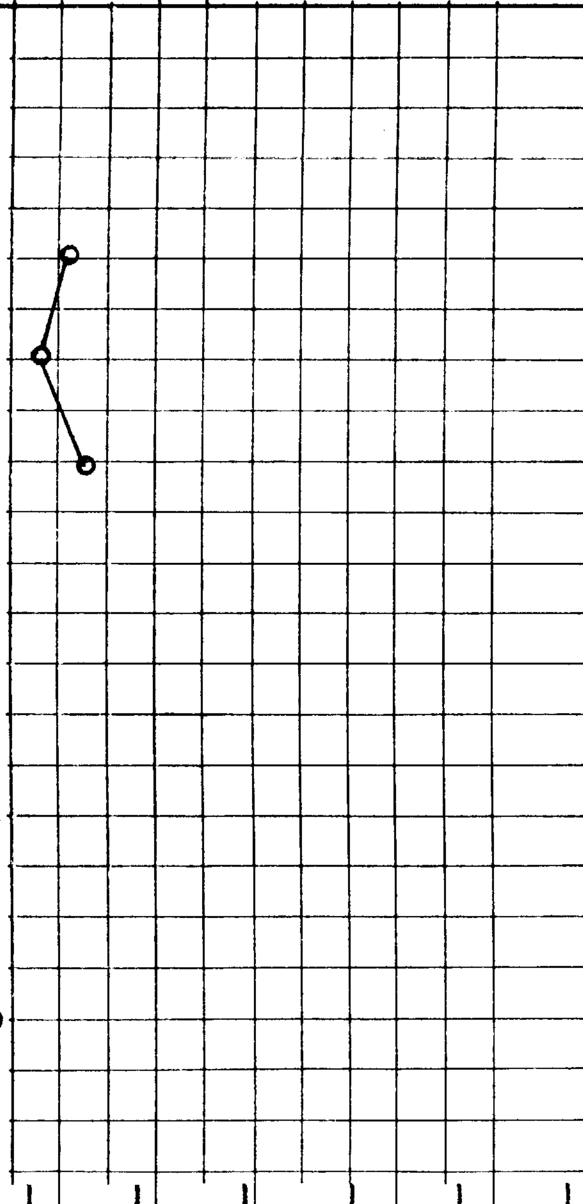
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS
2	ML	SILT - CLAYEY - SANDY											
		.9 m											
4, 6	CL	CLAY - SILTY SANDY - PEBBLES BOULDERS @ 2.1 m			1, 2								
8		2.4 m				14		72	14	WET			
10, 12		SAND - SILTY PEBBLES TO GRAVELLY			3	34		61	5	DAMP			
14	SM	FREE WATER AFTER 4.6 m			4	12		78	10	SAT.			
16, 18, 20		6.1 m			5, 6								
22		BOTTOM OF HOLE - 6.1 m											

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa: 50 100 150 200 250

PLASTIC LIMIT ├──┤ LIQUID LIMIT

w% 20% 40% 60% 80% 100% 100+



GRAIN-SIZE ANALYSIS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	LIARD HWY.

TECH. PRONIYCH	RIG B-50	DATE 78/02/22	km 164	B.P. No. 81	HOLE No. 6

CHAINAGE	OFFSET

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–7	ML	SILT - CLAYEY SANDY — 2.1m								
7–12	CL - CI	CLAY - SILTY SANDY - PEBBLES LOW - MED. PLASTIC — 3.8m			3.5	34	-	62	4	MOIST
12–17	GM	GRAVEL - SAND MIX SILTY			4.5	13	-	44	43	MOIST
17–25	SM	SAND - GRAVELLY SILTY — 7.6m			6.0	16	-	58	26	DAMP
26		BOTTOM OF HOLE - 7.6 m