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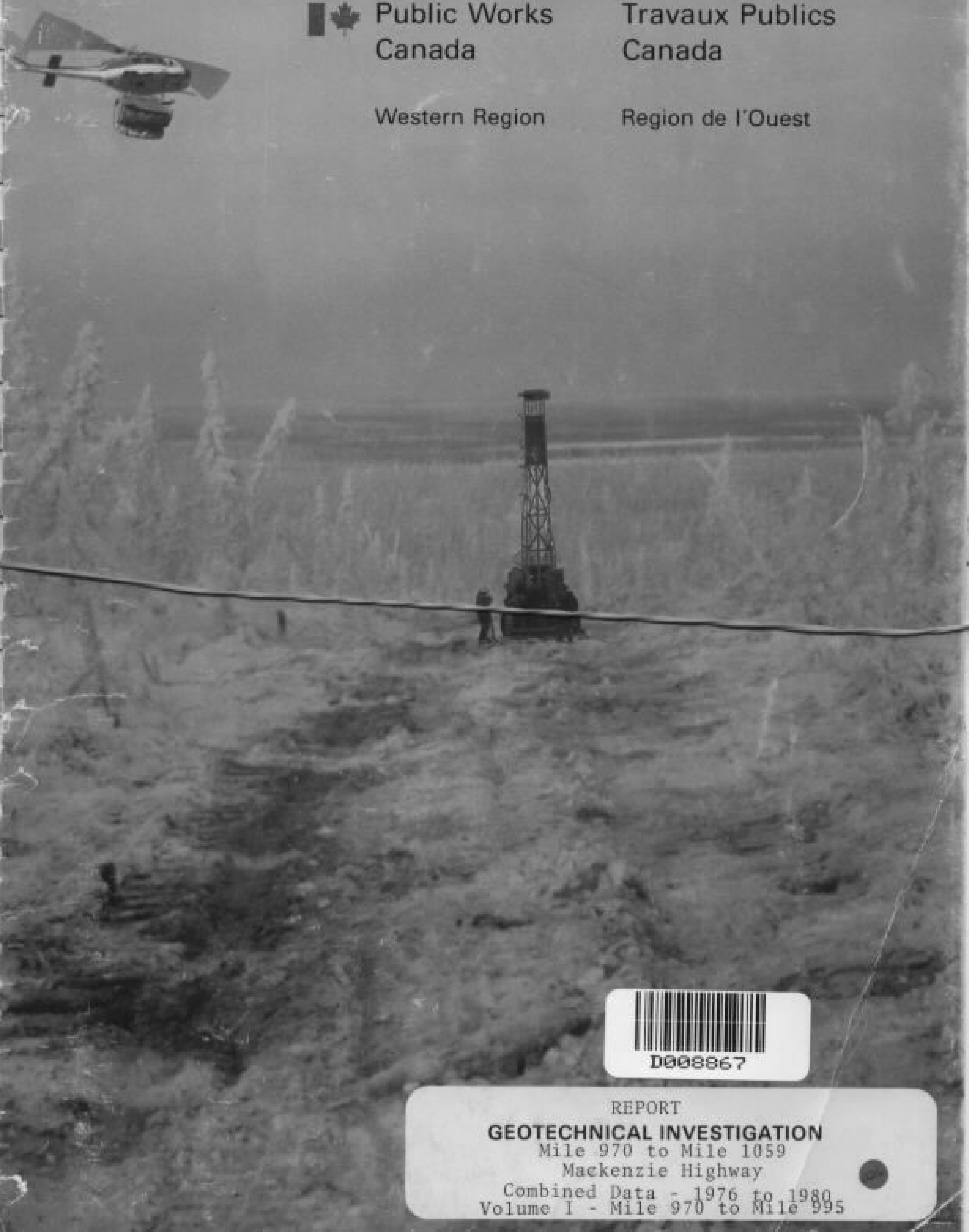

REPORT

GEOTECHNICAL INVESTIGATION

Mile 970 to Mile 1059
Mackenzie Highway

Combined Data - 1976 to 1980
Volume I - Mile 970 to Mile 995

PUBLIC WORKS CANADA
WESTERN REGION

REPORT
GEOTECHNICAL INVESTIGATION
MILE 970 (KM 0) TO MILE 1059 (KM 143)
(INUVIK TO TUKTOYAKTUK)
MACKENZIE HIGHWAY
COMBINED DATA - 1976 TO 1980

Submitted by R.D. Cook, P. Eng.
1981-04-15

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1. INTRODUCTION

1.1 General

This report summarizes all geotechnical field data available to date along the proposed MacKenzie Highway route between Inuvik and Tuktoyaktuk, N.W.T. Data herein has been obtained during the course of four separate field programmes between 1976 and 1980. Two previous geotechnical reports have been submitted (dated October 1976 and September 1977) and all data presented in those reports have been included herein.

There is a general lack of materials suitable for embankment construction in the Inuvik-Tuk area. Several alternate routings have been investigated and partially or totally rejected due either to unsuitable terrain or lack of construction materials. The present routing as shown on the location plan overleaf provides what is considered to be the optimum in terms of both terrain and materials availability, as well as satisfying location requirements, i.e., access to Parson Lake area, access to Eskimo Lakes, etc. The 1980 drilling programme concentrated on this final routing and included centerline drilling over the majority of its length.

Airphoto interpretation has been used extensively throughout the location and geotechnical work, and terrain knowledge has been enhanced by each successive drilling programme. However, because of the extremely variable ice content in virtually all subsoil types, regardless of landform, it remains impossible to confidently locate usable construction materials from airphotos.

2. GENERAL GEOLOGY AND AVAILABILITY OF CONSTRUCTION MATERIALS

There are two distinct terrain types between Inuvik and Tuktoyaktuk. To approximately km 50 (mile 1005) the route crosses an eastern extension of the Cariboo Hills consisting of unconsolidated materials overlying bedrock. Much of the relief is a direct reflection of the bedrock surface. The unconsolidated materials consist of varying thicknesses of morainal, glaciofluvial, lacustrine and organic sediments, containing varying quantities of subsoil ice as well as massive ice. The hummocky nature of parts of the area is a combination of glacial depositional features and thermokarst activity. In some areas, icy materials have been exposed and ice slumps (retrogressive - thaw flow slides) have developed which is indicative of the condition that could develop on unprotected highway - cut backslopes.

Bedrock as a viable construction material (that is low ice content material with minor overburden) has been proven at only two locations near the proposed route - km 1 near Inuvik and near km 45. In both cases, the bedrock is a relatively soft "compaction" type shale or clay-shale. There is also bedrock near km 11 and near km 35, however, both are unacceptable as borrow sources - the former due to extensive overburden and the latter due to overburden as well as high moisture (ice) contents in the bedrock material. There are no other materials suitable for embankment construction within reasonable haul distance of the route to km 50, without thawing and some drying. Materials suitable for construction with some drying would appear to be abundant - primarily glacial clay-tills - although pattern drilling would be required to locate areas free of massive ice.

North of km 50 the proposed alignment enters onto the Pleistocene Coastal Plain. This plain consists of unconsolidated sediments - glaciofluvial, morainic, fluvial, lacustrine, organic and thermokarst sediments - well over 30 m in thickness and containing variable subsoil ice plus extensive massive ice. Bedrock is nowhere within 30 m of the surface. Competent borrow materials north of km 50 consist entirely of granular deposits - either glaciofluvial features such as kames, or outwash sands and gravels. Major deposits exist near the route at km 50, km 103, km 113 and km 118. Lesser deposits in terms of either quality, quantity, and/or overburden exist near km 56 and km 95. There are abundant granular deposits (mostly kames) within a few kilometres of the route to the west, however, the extremely rough terrain precludes moving the route closer to these deposits, and at its present location the route is beyond the economical haul distance to these features.

Much of the route north of km 50 is located along the abandoned shoreline of Eskimo Lakes. Test borings on the old lakebed reveal relatively low moisture (ice) content clay tills at depth (1-2 m), suggesting that much of the subsoil ice may have been melted out during the period it was inundated. Again, pattern drilling would be required to confirm the extent of the low ice content material, however, it does appear that there is an abundance of material suitable for construction with thawing and some drying.

3. BORROW SOURCES

Sources of competent or quality borrow (i.e., materials that can be used at in-situ ice contents) are summarized below. Public Works Canada, on the basis of drilling programmes and airphoto analysis, consider the probability of locating additional sources of quality borrow material near the alignment to be extremently remote. It should also be noted that the granular deposits classified as competent borrow may not necessarily be at low ice contact - in fact, most granular deposits contain variable subsoil ice in the form of pore ice, segregated ice, and massive ice.

TABLE I

Kilometre	Material	Estimated Quantity (m^3)
1	Shale or clay shale	1,000,000
45	Shale or clay shale	1,000,000
56	Gravel with 3 m stripping	400,000
60 (Hans Creek)	Gravel	1,700,000 *(Gulf Canada)
95	Gravel	125,000
103	Gravel	800,000
113	Gravel	250,000
118	Gravel	200,000
140 (Tuktoyaktuk)		

*Note: Gulf Canada may have prior rights to this material.

4. DATA PRESENTATION

The report is presented in three volumes: Volume I contains the text of the report plus borehole logs and location mosaics from Inuvik to km 38 (Mile 995); Volume II contains borehole logs and location mosaics from Km 38 (Mile 995) to Km 78 (Mile 1020; Volume III contains borehole logs and location mosaics from Km 78 (Mile 1020) to Tuktoyaktuk.

Airphoto mosaics of a scale of 1:36,000 are included in Appendix A in each volume and centerline boreholes and some borrow search holes are shown thereon. Features investigated for borrow with close drilling patterns are outlined on the 1:36,000 mosaics and are numbered consecutively beginning at Inuvik and proceeding north toward Tuktoyaktuk. These areas and the drilling patterns are detailed on 1:12,000 (approx. 1" = 1000') airphoto mosaics in Appendix D of each volume.

Boreholes have been given different symbols on the mosaics to denote the year of drilling, and borehole logs are separated accordingly in the volumes as follows:

Appendix A - 1976 boreholes
Appendix B - 1977 boreholes
Appendix C - 1978-80 boreholes

Appendix D contains 1:12,000 airphoto mosaics of borrow 'search areas' plus logs for all boreholes in these areas regardless of drilling date. Landform descriptions, materials encountered, estimated volumes, stripping and recommendations for development of each potential borrow areas are also included.

Appendix E contains 13 pages outlining the terms and symbols used in the report, the classification system used for permafrost soils, and a brief description of drilling, sampling, and laboratory testing programmes.

5. SUMMARY OF RESULTS - MILE BY MILE COMMENTS

Following are comments along the route outlining potential problem areas, available borrow, construction recommendations, etc. The route on all mosaics is marked in miles, hence, the Imperial rather than Metric system will be used throughout this Summary.

5.1 Mile 971.5 to Mile 973.5

The proposed route departs the Inuvik Bypass (Marine Access Road) at mile 971.5 and to mile 972 crosses the gently sloping valley floor on ice-rich slopewash sediments. At mile 972, it enters into a relatively narrow tributary valley and follows this valley to approximately mile 973 where it emerges on the adjacent uplands. Within the valley, the route is on a cross-slope on ice rich, silty clay slopewash material. Surficial deposits on the upland are glacial till which contain low to moderate subsoil ice but with random massive ice inclusions. There is no opportunity within this section for cut and it is recommended the embankment 'roll over' the terrain including the high ground from sta 95 to sta 105. This area has been burned over relatively recently (approx. 1970), hence organic cover is thinner and thermal erosion is occurring on exposed areas. There is a major source of bedrock borrow on the upland adjacent to the route - See Appendix D - Area 2.

5.2 Mile 973.5 to Mile 976.0

Through this section, the route crosses very irregular hummocky terrain composed of clay till with variable ice content. Because of the irregular terrain, 'rolling' the grade line will result in high fills and it would be advantageous here to cut some of the ridges. Boreholes reveal the till in some ridges is at moisture contents on thawing below the liquid limit. This type of material could be used at the base of fills, and after draining and drying, would provide good embankment material. It is also believed that cut backslopes would 'heal' without extensive slumping at moisture contents less than the liquid limit. However, it must be emphasized here that a single 'good' test hole in a cut section does not mean the entire cut will be similar material and in fact, experience has shown the opposite to be true. If cut sections are to be considered, it is recommended at least three test holes be drilled every 50' of cut to confirm the subsoil to 5' below the ditch line before final design. Secondly, it is recommended cuts be avoided where the route is on a severe side slope and the upper backslope will, as a result, be extensive.

Areas that could be <u>considered</u> for cuts on the basis of drilling to date are:

Sta 125 to Sta 133	Hole #973-C-6
Sta 206 to Sta 210	Hole #975-C-1

and possibly scratch cuts at

Sta 217 to Sta 220	Hole #975-C-2
Sta 225 to Sta 228	Hole #975-C-3

A cut should be avoided in the area of Sta 237 as the upper 8-9' is ice rich organic material.

5.3 Mile 976.0 to Mile 977.2

The highway descends a gradual slope to a major creek crossing at Sta 279, then ascends a similar gentle slope to once again enter an area of hummocky terrain. There is no need or opportunity for cuts through this portion and minimum design fill heights should be maintained.

5.4 Mile 977.2 to Mile 980

This terrain is irregular and hummocky with numerous small lakes. Again, cut sections would be most beneficial, however, only one hole (979-C-1) at Sta 412 is indicative of suitable material and a cut only at Sta 412+00 would probably not be justified.

A major topographic feature (Area 6) within approximately 3,000' of the R.O.W. at mile 978.5 was test drilled as a borrow source. There is dry borrow material here, however, the extreme variability of both the overburden and the material itself negates against this area as a viable borrow source (See Appendix D), unless stage construction and the use of poor quality material is considered.

5.5 Mile 980 to Mile 981

The route descends to a creek crossing then rises to the hummocky uplands west of Noell Lake. There are no opportunities for cuts, and embankments should be not less than the design minimum.

5.6 Mile 981 to Mile 985

Through this section, the route follows a height of land along the west side of Noell Lake. The topography is hummocky glacial till that contains significantly more massive ice than preceeding sections. There are no opportunities for cuts here, however, should consideration be given to utilization of frozen glacial till as a borrow source, one area for investigation would be near Hole 984-4 (Sta 716+50) where till at moisture contents midway between the liquid and plastic limits was encountered.

There are two areas of granular crevasse fillings adjacent to route on the west between mile 983 and 985 (Areas 10 and 11). Unfortunately, deposits are small and contain massive ice (See Appendix D). These areas would, however, provide a ready source of granular material for culvert backfill.

5.7 Mile 985 to Mile 990

There is a significant drop in elevation through this section as the route descends from the height of land near Noell Lake to the vicinity of Jimmy Lake. Topography and subsoil are unchanged. Cuts would be most advantageous near Mile 986 and could possibly be considered from Sta 763 to Sta 777 (no massive ice in boreholes) however, extensive additional drilling would be required as moisture contents are near the liquid limit. The remainder of this section offers more gently rolling terrain and there is no opportunity for further cuts. The frequent occurance of massive ice in the random boreholes suggests a high probability of encountering massive ice in any cut section, and a low probability of locating a usable source of low moisture (ice) content till borrow.

5.8 Mile 990 to Mile 995

The route descends to lowlands adjacent to Jimmy Lake and for five miles crosses an area of subdued relief dissected by numerous drainage channels. Subsoil is largely glacial till with some overlying slopewash. Boreholes through this area indicate less massive ice, but soil moisture contents are not appreciably better. Hole 994-3 indicates the possibilty of locating low moisture (ice) content till.

There are no opportunities for cut sections here and embankment heights should be the design minimum.

5.9 Mile 995 to Mile 999

The route enters into an area of high ground that is an eastern extension of the Caribou Hills. Bedrock is relatively shallow with a thin till overlay. Glacial meltwater has cut large spillways that dissect the uplands to reveal soft, poorly indurated sandstone or 'compaction' shales in the steep-sided valley walls. As the terrain is relatively flat, there is little opportunity for cut, although consideration could be given to cuts near Sta 1410 and near 1423. Massive ground ice through this section was not encountered with frequency and subsoil moisture (ice) contents are relatively low (see holes 995-1, 995-3, 996-2, 997-1, 997-2 and 997-3) as the holes extend into material that is probably weathered bedrock. A 'roadside' borrow pit could possibly be developed through this section if a design decision was made to utilize material wet of optimum, and drying and stabilization following thaw. A close drilling pattern would be required to fully assess a potential borrow area.

5.10 Mile 999 to Mile 1000

This is the crossing of an old meltwater channel that is now occupied by a major creek. Bedrock is exposed downstream of the highway and is a strategic source of borrow material (See Area 18, Appendix E). A major cut could be considered from Sta 1580 to 1586 - Hole 999-1 indicates clay till at moisture contents less than the liquid limit. Additional drilling is recommended to evalute the risk of cut.

5.11 Mile 1000 to Mile 1002

To mile 1002 the route crosses a rolling till plain. Subsoil is clay till with frequent massive ice. Frost polygons are common in drainage channels or topographic lows. Cut sections are not recommended here and embankment heights should be the design minimum.

5.12 Mile 1002 to Mile 1006

Beginning near Mile 1002, the route enters into an area of thermokarst topography characterized by hummocks, deep pot-hole lakes and very abrupt elevation changes. From mile 1004 to 1006, features are kame-like, composed in part of granular deposits. Massive ice is abundant and variable throughout. It is impossible to 'roll' the gradeline through this section on the present alignment, and a location review here is recommended. Drifting snow will be a problem through this area due to the irregular terrain. It is not expected that a revised location will be able to eliminate all cuts. Holes 1104-1 to 1004-4 all reveal relatively low moisture content material at depth, and holes 1005-3 to 1005-5 reveal sandy gravel at depth, indicating that cuts may not be entirely unrealistic here. However, extensive drilling will be required following a location review. There is a gravel deposit near mile 1006 that may, despite variable overburden and massive ice, be a viable borrow source (see Area 19A - Appendix D).

5.13 Mile 1006 to Mile 1008

At mile 1006 the route leaves the hummocky terrain and for two miles crosses an area of little relief to the Hans Creek Valley. There are no opportunities for cuts and the minimum design embankment is recommended over the ice rich subsoil.

5.14 Mile 1008 to Mile 1009.5

This is the crossing of the Hans Creek Valley - a major stream on the route and containing extensive deposits of outwash sands and gravels. This material source has been investigated and documented by others (See "Granular Materials Inventory - Parsons Lake, N.W.T.", October 1974, by Klohn Leonoff Consultants Limited). A volume of sandy gravel in the order of two million cubic yards is estimated here, much of it immediately adjacent to the highway. Gulf Canada may have reserves on much of this gravel, thereby limiting the quantity available for highway construction.

Major cuts will be required on either side of the valley. On the south, holes 1008-1 and 1008-1A reveal some sandy gravel, however, a cut will require sub-cutting and backslope protection in part. On the north, boreholes indicate a cut will be primarily in gravel and sub-cut or backslope protection should not be necessary. A single test hole at the proposed crossing of Hans Creek encountered dense granular deposits which will provide a good base for a multiplate culvert.

Widening of the approach cut on the north to gain granular embankment material is recommended here.

5.15 Mile 1009.5 to Mile 1012.5

Within this section the route crosses a series of low till ridges near Eskimo Lakes with extensive areas of frost polygons in the intervening depressions. There are no opportunities for cuts as moisture (ice) contents in the till are near the liquid limit. Minimum design fill heights are recommended.

5.16 Mile 1012.5 to Mile 1014.0

Near mile 1012.5 the route climbs onto a high ridge with a north-south orientation and to mile 1014 follows the top of this ridge. Subsoil is clay till with occasional granular pockets, small granular ridges, and erratic and extensive massive ice. Several features were test drilled here for borrow, however, no suitable material was discovered in quantity. No cuts should be considered in this portion. Minor quantities of culvert gravel can be obtained from small gravel ridges, although massive ice will be a problem.

5.17 Mile 1014.0 to Mile 1018.0

Beginning near mile 1014, the highway descends to a flat expanse that is abandoned lake bed of nearby Eskimo Lakes. From mile 1014.2 to approximately 1014.8 is an area of high-centre frost polygons that is exceptionally rough. It is expected that differential thaw settlements will be severe and a minimum fill height of five feet is recommended across this area. Beyond mile 1014.8, the subsoil is silty clay lake sediments with very high ice contents in the upper 6-8'. Minimum design embankment height may be used here as less differential settlement is expected.

At mile 1015.8 is the crossing of Parsons Creek, one of the major streams between Inuvik and Tuk. The creek channel is narrow (250-300') and relatively deep (30-35'). Test borings in both banks reveal high ice contents in the upper 6-8' and cuts should be avoided if possible - alternately, backslope and sub-cut thaw protection will be required. Test drilling in the stream bed was not possible due to extensive snow drifting in the channel.

5.18 Mile 1018 to Mile 1019.5

At mile 1018, the abandoned lake-bed narrows, forcing the route onto higher abandoned beach ridges and benches. Deposits here are till-like in composition and, while some holes reveal relatively low moisture content material (ie #1018-1, 1018-4 & 1019-1), the remaining holes encountered some massive ice which is expected to be the norm in this area. No cuts are recommended here as the terrain is not especially rough. Some granular material was encountered adjacent to mile 1019, however, the deposits are very erratic and will provide little more than granular material for culverts.

5.19 Mile 1019.5 to Mile 1025

Throughout this section, the route continues across abandoned lake bed of the Eskimo Lakes varying betwen two distinct strand-line elevations. Subsoil for the most part is silty-clay with extensive ice in the upper 6-10'. Between mile 123 and 123.8 the route is on a significant cross-slope near the edge of the abandoned lake-bed, and from mile 123.4 to 123.8 is forced onto the adjacent upland where clay till was encountered. Consideration could be given to cuts in the till material, however, additional drilling will be required to confirm the suitability of the till (see hole 1023-2 and 1023-3). Mile 123-124 will present construction problems because of the proximity to the high ground and cross-slope and a location review is suggested here - possibly a shift to the east toward Eskimo Lakes would be beneficial to avoid this problem area, or alternately a more direct approach to the high ground to avoid the side-slope. There is a kame field 2-3 miles west of mile 1025, however, the combination of distance plus erratic ice-rich deposits make this area unsuitable as a borrow source (See Appendix D - Areas 23 to 23D).

5.20 Mile 1025 to Mile 1034.5

Near mile 1025, the route enters into an area of complex, dead-ice topography and the location alternates between abandoned lake-bed and till ridges. Kames or kame-like deposits are frequent although few contain granular deposits in significant quantity. There are numerous lakes and occasional pingoes. The till ridges often present marked elevation changes and cuts would be beneficial in most instances, although cuts can be considered in only a few areas (see holes 1026-3, 1028-1, 1028-2, 1030-1, 1033-2, 1033-3, 1034-1 and 1034-2). It would seem imperative that cuts be made at some locations (ie, mile 1034.1) and backslope and sub-cut protection will be required in most cases. On low ground, high ice contents are the norm in the surficial silty clay subsoil. Polygonal ground is common and a minimum fill height of five feet is recommended across these areas.

There are kame fields west of mile 1030 to 1032, however, again the erratic nature of the deposits and the haul distances make these areas generally unsuitable as borrow sources. There are several small kames within ½ mile of the alignment near mile 1029.5, which contain in the order of 150 to 200,000 yd^3 with little stripping. Development of these areas in winter without haul roads would appear feasible (See Appendix D - Areas 24 & 24A).

5.21 Mile 1034.5 to Mile 1042

To mile 1042, the route crosses a flat expanse that is abandoned lake bed of the adjacent Eskimo Lakes. Relief is virtually non-existent with the exception of occasional low, dead-ice deposits, usually ice rich materials with a granular cap. There are two sources of granular borrow within this section - at mile 1034 is a major kame complex (See Appendix D - Area 25) and at mile 1041 a below grade, gravel-sand deposit (See Appendix D - Areas 27 & 27A).

The subsoil is generally ice rich in the upper 6-10' with the exception of some low ridges which will provide small amounts of sandy, gravelly borrow (eg. hole #1037-1). The clay tills at depth in this area contain the lowest moisture (ice) content of any encountered along the route and although granular borrow is available, the possibility of using till borrow exists (See holes #1037-1, 1038-2, 1038-3, 1039-2, 1040-1 and 1040-2). There are few opportunities for cuts - at mile 1041.9 a cut in a low ridge would significantly reduce embankment requirements and should extend below an ice layer from 3-7' - sub-cut and backslope protection will be required.

5.22 Mile 1042 to Mile 1055

At mile 1042, the route climbs from the abandoned lake-bed of Eskimo Lakes onto thermokarst topography that is the most difficult terrain on the entire route. The landscape is marked by deep pot-hole lakes and depressions, abrupt elevation changes and extensive polygonal ground. The till subsoil generally contains extensive and erratic massive ice. There are granular kames, crevasse fillings, and similiar features, however, few contain suitable material in quantity that are devoid of massive ice blocks or layers. Although an occasional test hole on centerline did encounter relatively low moisture (ice) content till, the possibility of cut sections without sub-cut and backslope protection are considered remote. North of approximately km 1050, the relief becomes more subdued, however, there is no apparent decrease in the subsoil ice on massive ice. Embankment quantities through this section will be high due to the rough terrain. There is one source of granular borrow near mile 1044 where 250,000 cu.yd^3 are estimated which is insufficient for this section: other small features do exist, however, quantities are unproven and ice blocks make extraction difficult (See holes 1043-5 to 1043-9). Construction here will be costly unless 'poor' quality material is used for a pad with granular capping.

5.23 Mile 1055 to Mile 1059 (Tuktoyoktuk)

There has been no drilling carried out on this section. The terrain is relatively flat and there are no borrow sources. Subsoil here tends to be silty-sandy in composition and subsoil ice is relatively high. Again, construction will be very expensive unless local materials are utilized for the lower portion of the embankment and only capping material imported long distances.

Dredge material from the ocean bottom has apparently been used by others (Dome Petroleum) for road construction at Tuktoyaktuk and may be an alternate to long hauls from land-based borrow sources.

6. ALTERNATE ROUTINGS

Several possible alternate routings to portions of the alignment have been investigated where competent borrow sources are widely spaced. The general locations of these alternates are summarized below:

(1) Inuvik to Mile 990, 3-4 miles west of alignment.
(2) Inuvik to Mile 990, east of Noell Lake.
(3) Mile 1018 to Mile 1042, 5-7 miles west of alignment.
(4) Mile 1047 to 1055, 2-3 miles east of alignment.

Locations of boreholes along the alternates are included on the airphoto mosaics in each volume. Borehole logs are also included therein.

No discussion of the alternate routings is warranted. Insufficient borrow was located on any to justify the additional length or terrain difficulties that would be encountered were the alignment shifted.

PUBLIC WORKS CANADA
WESTERN REGION
Legend
Highway (constructed)
Highway (under construction)
Highway (proposed)
Highway mile post
Power transmission line
Parsons Lake Gas Field
Revision /date
REVISED DATE FEB 1977
MAY 1980
F-1
D008852
inuvik-tuk
highway
Scale 1:250,000
Miles
Kilometres
TUKTOYAKTUK
INUVIK

Appendix A

SCALE 1"=3000'

SCALE 1:36,000 (APPROX 1"=3,000') FEB. 1977

SCALE 1:36,000 (APPROX 1"=3,000') FEB. 1977

PAPER REVISION

INUVIK - TUK

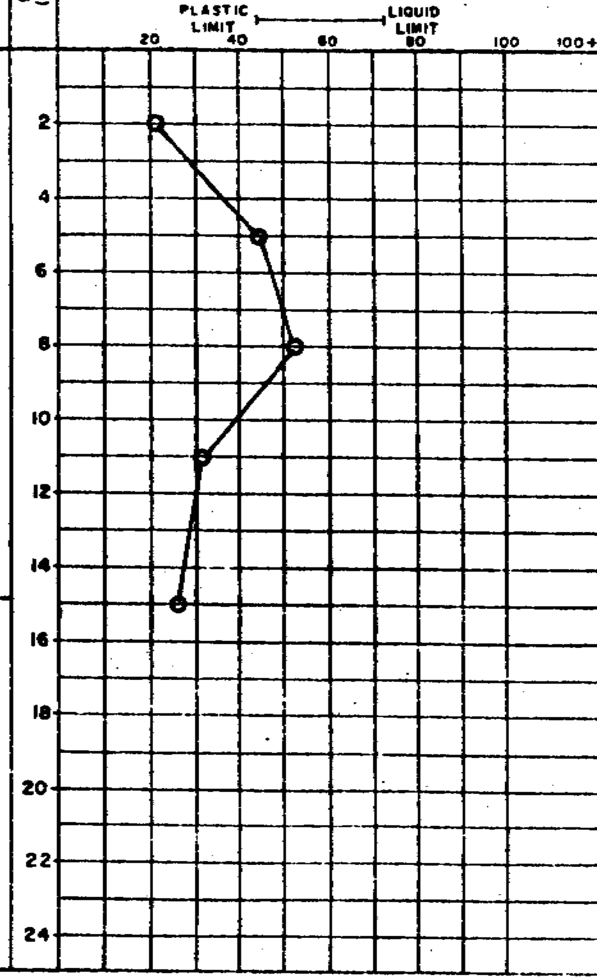
DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 18/3/76	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
971	C	12

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	PEAT 4"									
						CLAY - SILTY SANDY PEBBLES TO 6'									
2								Vc - Vr	74	19	7	MOIST			
5					CI	MED. PLASTIC		|	75	14	11	WET			
8								Vs	91	9	0	SAT.			
11'						SHALE - SILTY SOFT			59	41	0	MOIST			
15'						BOTTOM OF HOLE - 15'						MOIST			

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



PAPER REVISION

INUVIK - TUK.

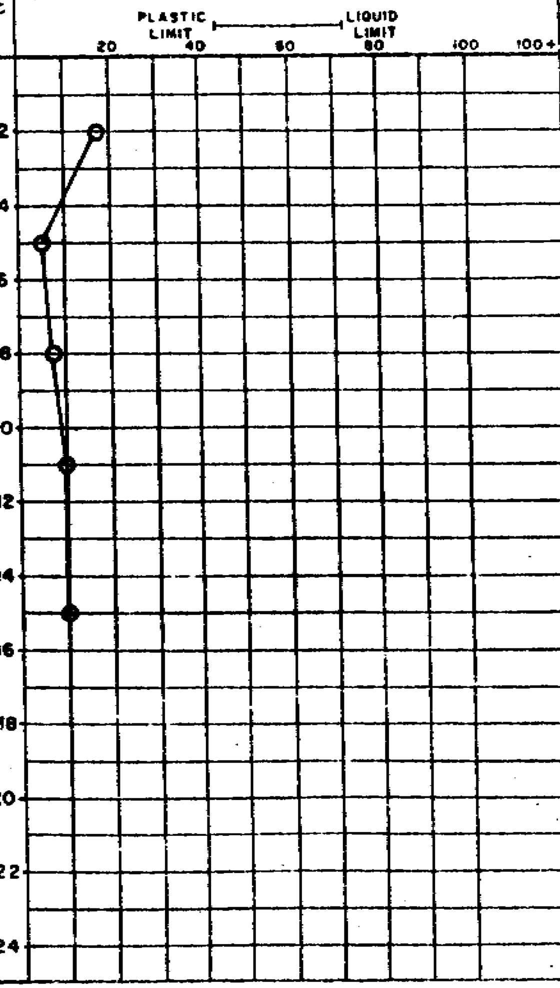
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

WN	FIELD ENG	DATE DRILLED 4/3/76	AIRPHOTO NO:	CHAINAGE	OFFSET
KD	TECH PRONYCH	RIG	SURFACE DRAINAGE:	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
971	C	[redacted]3

O = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–4"					Pt	PEAT 4"									
2					CI	CLAY - SILTY SANDY - PEBBLES 3'			58		37	5	WET		
4					SC	SAND - GRAVELLY SILTY CLAYEY 5'			12		70	18	MOIST		
6–8					GP	GRAVEL - SAND MIXTURE		VC - Vr To Vx	9		57	34	WET		
10					SP				14		55	31	WET		
14–15						15'			9		54	37	WET		
16						BOTTOM OF HOLE - 15'									
18						HOLE CAVING									
20															
22															
24															

GRAIN-SIZE ANALYSIS

PAPER REVISION

INUVIK - TUK.

DRILL HOLE REPORT

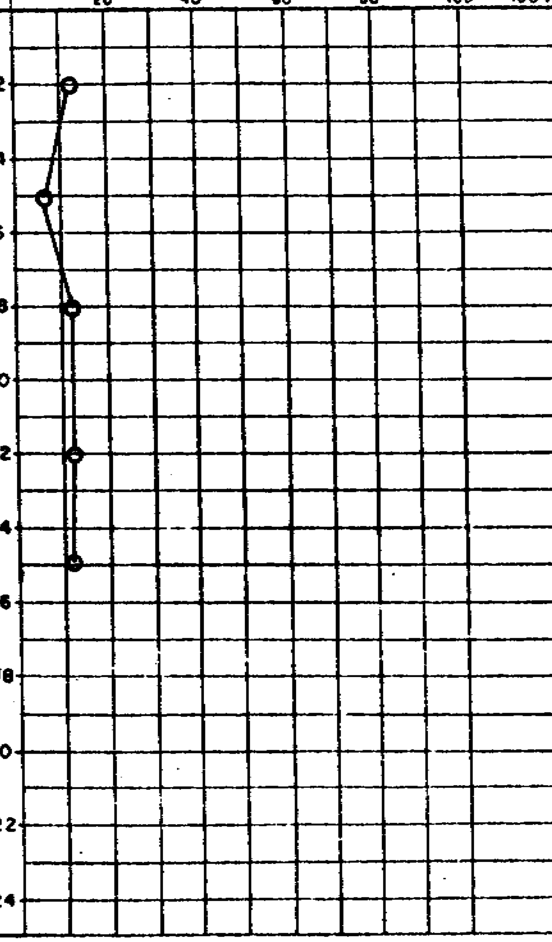
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 18/3/76	AIRPHOTO NO:	CHAINAGE:	OFFSET	TEST HOLE		
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV	MILE	B,C,S	NUMBER
						971	C	[redacted]4

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	PEAT 2"										
2					CI	CLAY - SILTY SANDY GRAVELLY 2.5'			2	52	36	12	Moist			
4–9					SM	SAND - GRAVELLY SILTY 9'		Vc-Vr	5	15	51	34	Moist			
									8	20	52	28	WET			
10					GW	GRAVEL - SANDY			12	9	39	52	SAT.			
14					GM	SILTY 15'			15	11	49	40	SAT.			
16						BOTTOM OF HOLE - 15'										

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ├──┤ LIQUID LIMIT



INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/76	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE 977-S

MILE	B,C,S	NUMBER
[redacted]		

REMARKS

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)
					Pt	PEAT — 4"										
2						CLAY - SILTY PEBBLES			2							
4									4							
6								Vs	6							
8									8	NO SAMPLES						
10									10							
12									12							
14									14							
16									16							
18									18							
20									20							
22									22							
24									24							

BOTTOM OF HOLE - 27'

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/76	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:
CHAINAGE:	OFFSET	VEGETATION:	ELEV

TEST HOLE 9T1-6

MILE	B,C,S	NUMBER
[redacted]		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–.5'					Pt	PEAT .5'											
2, 4, 6, 8, 10						GRAVEL - CLAYEY SANDY COBBLE		Vs	2, 4, 6, 8, 10	NO SAMPLES							
12, 14, 16						ICE		ICE	12, 14, 16								
18, 20, 22						CLAY - SILTY PEBBLES 23'		VS	18, 20, 22								
24						GRAVEL - CLAYEY SANDY		Vc - Vr	24								

BOTTOM OF HOLE - 30'

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DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

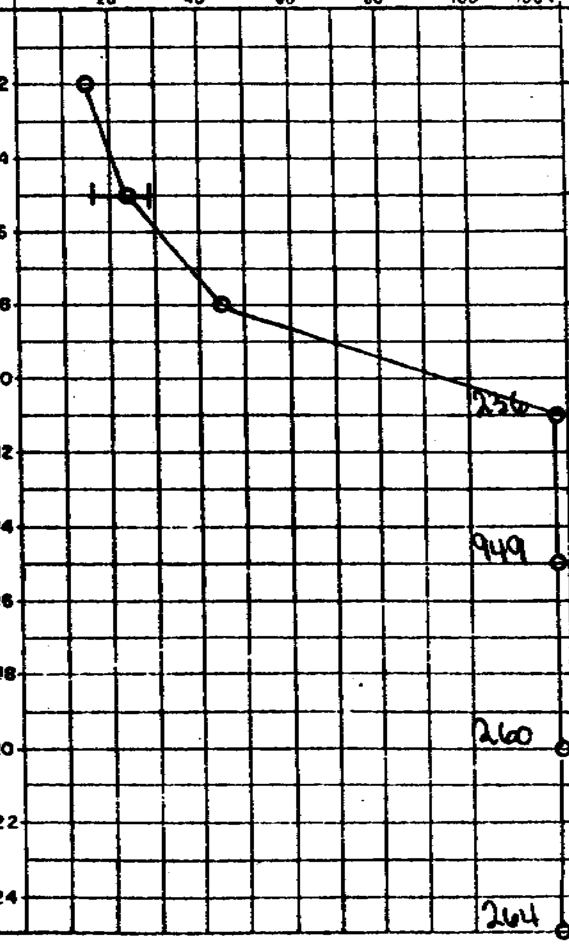
DWN	FIELD ENG	DATE DRILLED 24/3/74	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE 9TT-7

MILE	B,C,S	NUMBER
[redacted]		[redacted]

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0 – 4"					Pt	PEAT — 4"									
2						CLAY - SILTY SANDY PEBBLES		Vc - Vr	70	23	7		DAMP		
4–5					CL	LOW PLASTIC		Vs	53	36	11		SAT.		
8									72	19	9		SAT.		
8 – 25						ICE SOME SOIL ROCK CHIPS		ICE					FREEWATER		
12–13													✓	✓	
14–15													✓	✓	
20													✓	✓	
24–25													✓	✓	

O = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



BOTTOM OF HOLE - 30'

H.I.BAG.

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DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 26/3/76	AIRPHOTO NO:	CHAINAGE	OFFSET
CKD	TECH Prancy	RIG: A12	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE 978-5

MILE	B,C,S	NUMBER
[redacted]		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT 8"											
2					CL	CLAY - SILTY/ SANDY/ PEBBLES			2								
4								Vs	4								
6					CI				6								
8						9'			8								
10									10	NO SAMPLES							
12						ICE 13'		ICE	12								
14					CL	CLAY - SILTY SANDY GRAVELLY			14								
16					CI	17			16								
18						GRAVEL SANDY CLAYEY COBBLES		Vc - Vr	18								
20					GC				20								
22						23			22								
24						BOTTOM OF HOLE. 23			24								

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DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

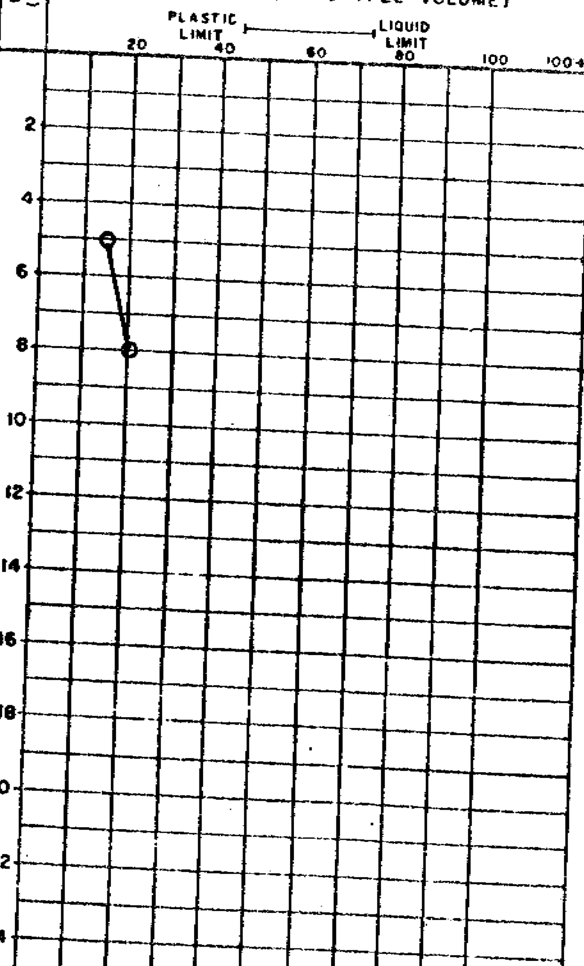
DWN	FIELD ENG	DATE DRILLED 13/4/76	AIRPHOTO NO:	CHAINAGE	
CKD	TECH PROINYCH	RIG AIR	SURFACE DRAINAGE	VEGETATION	OFFSET
					ELEV

TEST HOLE 980-4

MILE	B,C,S	NUMBER
[redacted]		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–2½'					Pt	PEAT 2½'									
2½'–8'					GM SM	GRAVEL - SILTY SANDY; SAND - GRAVELLY SILTY		Ve - Vr		17	44	39	SAT		
										19	45	36	SAT		
8'–15'						ICE 15'		ICE							
						BOTTOM OF HOLE - 15'									



Appendix B

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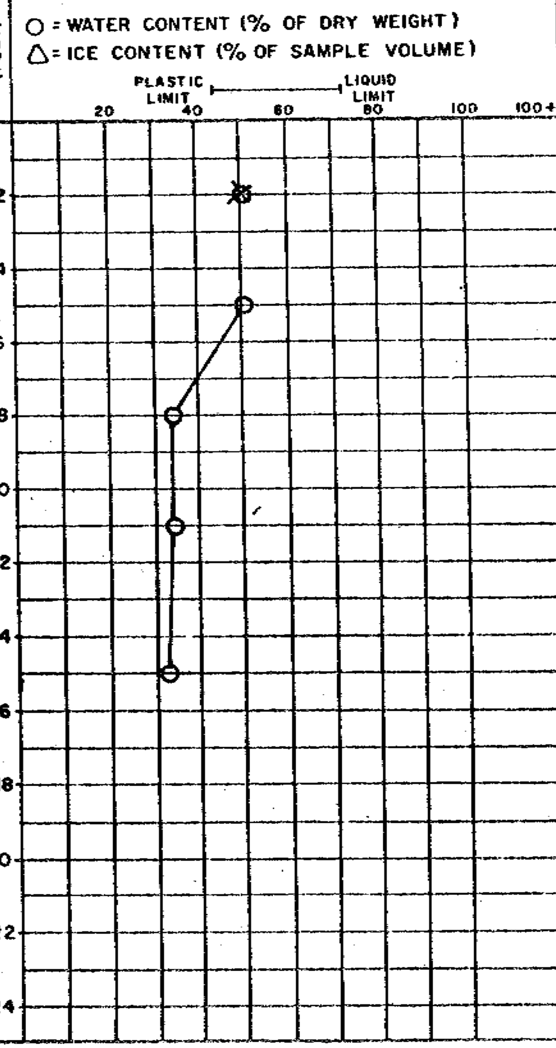
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 28/3/77	AIRPHOTO NO:	CHAINAGE: 44+00	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		1
MILE	B,C,S	NUMBER
972	C	[redacted]

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0					Pt	PEAT 8"		
1–15					CI	BROWN - CLAY - SILTY MED. PLASTIC		Vs (2–6); Vc-Vr (6–15)
15						15'		
						BOTTOM OF HOLE - 15'		



DEPTH (approx.)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
5	92-	8	0	SAT.			
8	92-	8	0	MOIST			
11	96-	4	0	MOIST			
15	96-	4	0	MOIST			

R073

INUVIK - TUK.

DRILL HOLE REPORT

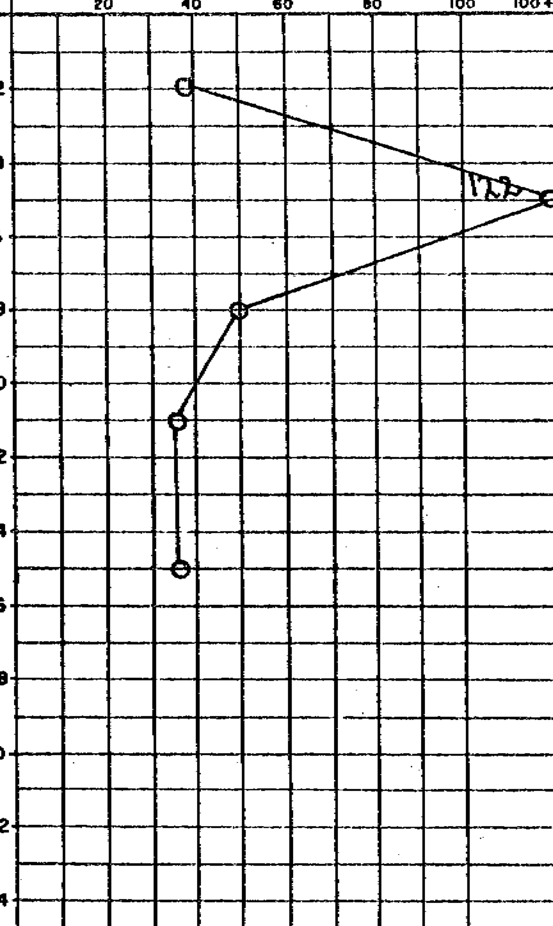
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 28/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
972	C	2[redacted]

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	PEAT 8"									
2						BROWN - CLAY - SILTY SANDY		Vc-Vr	88	10	2	MOIST			
4–6						MED. PLASTIC		Vs	86	13	1	FREE WATER			
8					CI			Vs	90	10	0	WET			
10–12								Vc - Vr	78	22	0	WET			
15						15'			84	16	0	WET			
16						BOTTOM OF HOLE - 15'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT —— LIQUID LIMIT



R073

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 28/3/77	AIRPHOTO NO:	CHAINAGE 84 + 50
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:

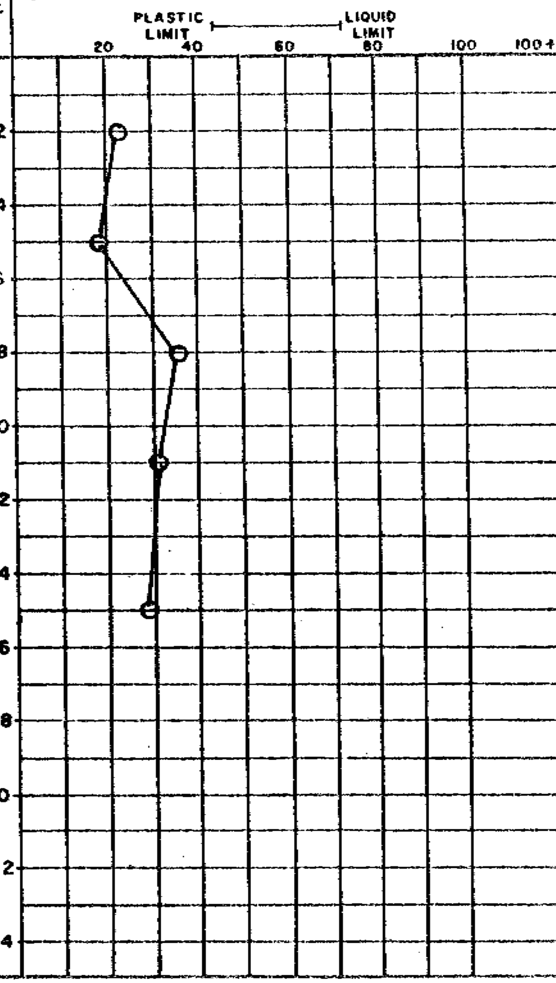
OFFSET:
ELEV

TEST HOLE		1
MILE	B,C,S	NUMBER
973	C	[redacted]

REMARKS

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)
					Pt	PEAT 8"									
2					CL	BROWN - CLAY SILTY SANDY PEBBLES LOW PLASTIC 6'		Vc - Vr	2	66	30	4		WET	
4								|	4	56	34	10		WET	
6									6						
8					CI	BROWN - CLAY - SILTY MED. PLASTIC 15'		Vs	8	80	8	12		SAT.	
10									10						
12									12	98	2	0		WET	
14									14	98	2	0		MOIST	
16						BOTTOM OF HOLE - 15'			16						
18									18						
20									20						
22									22						
24									24						

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



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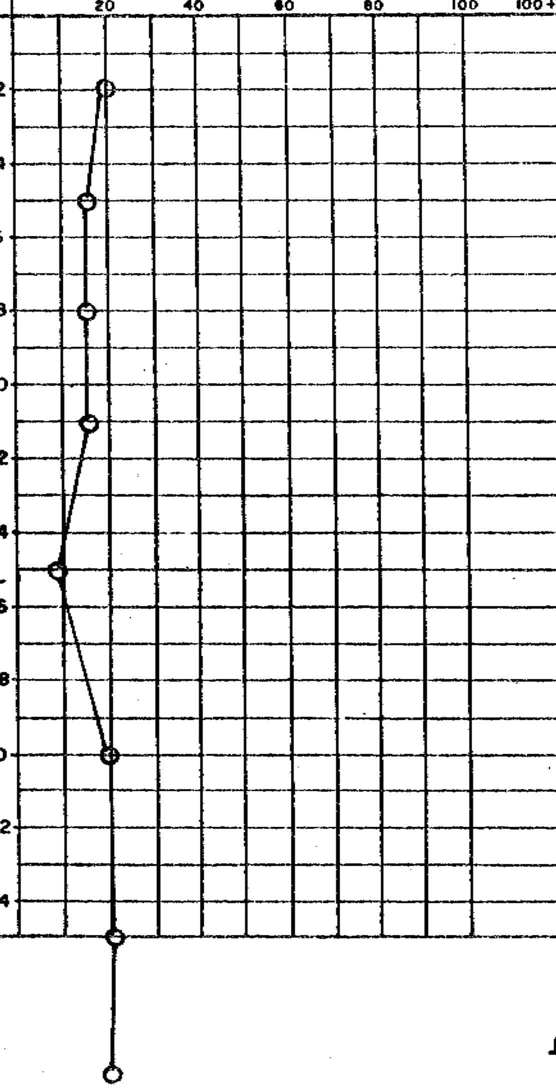
INUVIK - TUK.

DRILL HOLE REPORT	89+25	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 28/3/77	AIRPHOTO NO:	CHAINAGE: 600 SOUTH OF 2L	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		2
MILE	B,C,S	NUMBER
973	C	[redacted]

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	——— 8"									
2						BROWN - CLAY - SILTY/SANDY			50	44	6	MOIST			
4					CL	PEBBLES - GRAVELLY			59	30	11	MOIST			
6						LOW PLASTIC									
8						COBBLES OR BOULDERS		$V_c - V_r$	43	38	19	WET			
10						TO 15'			59	33	8	MOIST			
12															
14															
15					CI	MED. PLASTIC			36	42	22	DAMP			
16															
18															
20						SILTY			93	6	1	MOIST			
22															
24									95	5	0	MOIST			



94 - 6 - 0 MOIST

——— 30'

BOTTOM OF HOLE - 30'

R073

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

INUVIK - TUK

DWN	FIELD ENG.	DATE DRILLED 28/3/77	AIRPHOTO NO:	CHAINAGE: 500' SOUTH OF 2K
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:

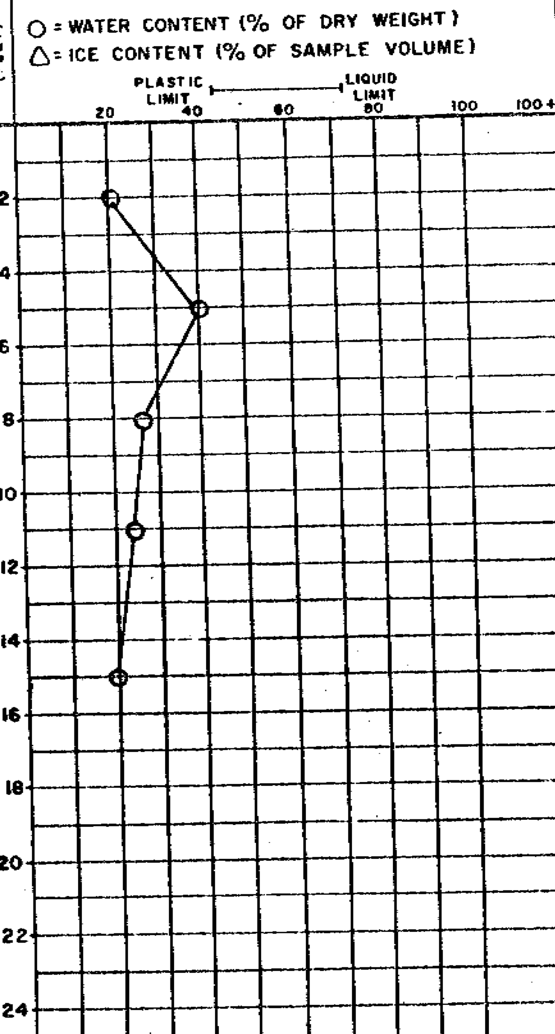
OFFSET

ELEV

TEST HOLE 3		
MILE	B,C,S	NUMBER
973	C	[redacted]

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0 – 8"					Pt	PEAT 8"		
8" – 15'					Cl	BROWN - CLAY, SILTY, PEBBLES; COBBLE OR BOULDER @ 4½'-5'; LOW PLASTIC 15'		$V_c - V_r$
15'						BOTTOM OF HOLE - 15		

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24



GRAIN-SIZE ANALYSIS

CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
83	16	1				MOIST
74	21	5				SAT.
81	16	3				WET
79	15	6				WET
78	19	3				MOIST

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INUVIK - TUK.

DRILL HOLE REPORT

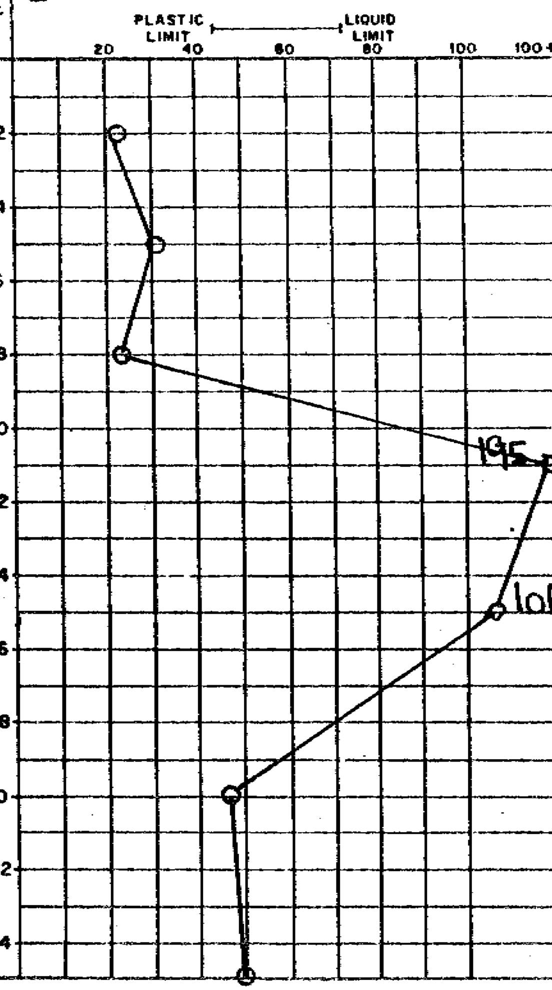
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO:	CHAINAGE: 300' SOUTH OF CURVE	OFFSET: NORTH END
CKD	TECH: PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION	ELEV

TEST HOLE		4
MILE	B,C,S	NUMBER
913	C	[illegible]

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	WATER CONTENT (% OF DRY WEIGHT)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0 – 8"					Pt	PEAT 8"										
2					CL	BROWN - CLAY - SILTY SANDY FEW PEBBLES LOW PLASTIC					81	17	2	MOIST		
5											86	14	0	WET		
8											77	20	3	WET		
11						ICE & CL - SC		ICE	195		55	43	2	FREE WATER		
15					CL	CLAY - SILTY SANDY PEBBLES		Vs	106		54	33	13	FREE WATER		
16 – 19						ICE		ICE								
20					CI	BROWN - CLAY - SILTY SANDY MED. PLASTIC					77	22	1	SAT.		
25											81	19	0	SAT.		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



R073

BOTTOM OF HOLE 30'

ICE FROM 28' - 30'

INUVIK - TUK.	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

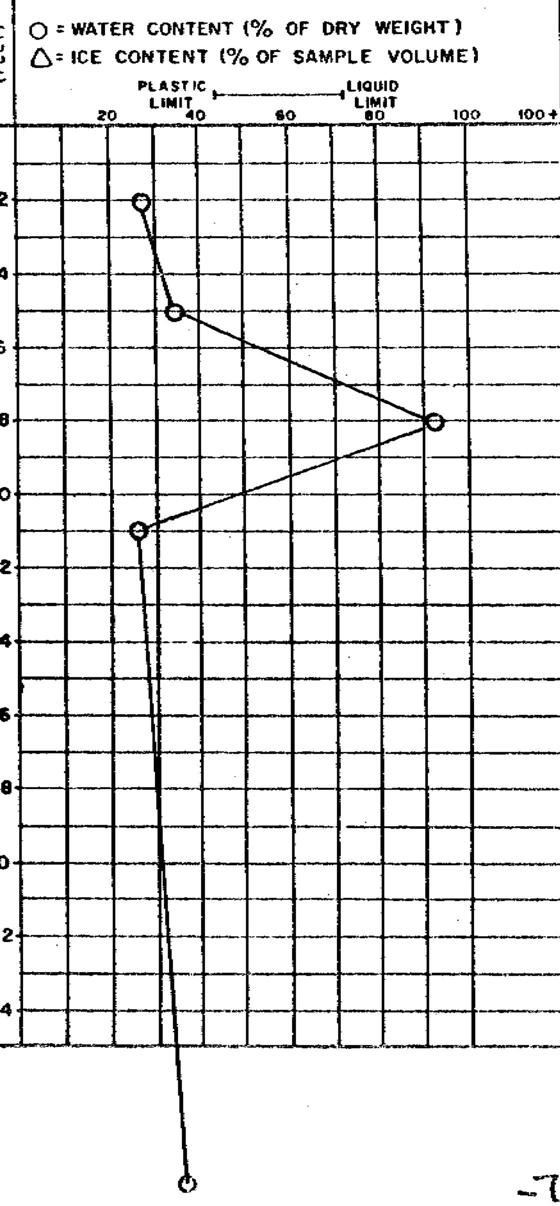
DWN	FIELD ENG.	DATE DRILLED 29/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	PEAT 8"										
2						CLAY - SILTY SANDY PEBBLES		$V_c - V_r$	2		63	35	2	WET		
4–6						LOW PLASTIC			4		83	17	0	WET		
8					CL			V_s	8		71	27	2	FREE WATER		
10–12								$V_c - V_r$	10		54	36	10	WET		
14–16						ICE		ICE	14							
18–24					CL	BROWN - CLAY SILTY SANDY LOW PLASTIC		V_s	18							
24–30								$V_c - V_r$			76	24	0	FREE WATER		

30'

BOTTOM OF HOLE - 30'



INUVIK - TUK.

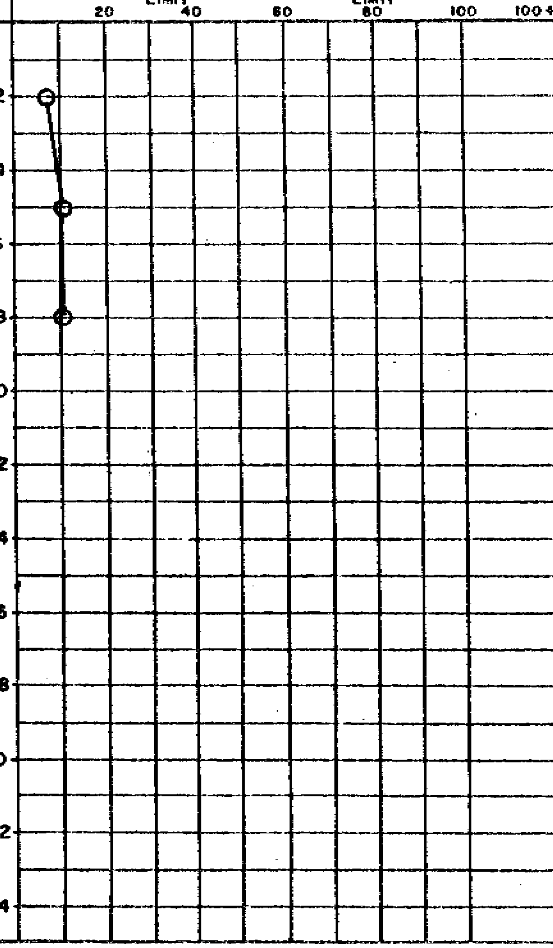
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 29/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		2

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ├──┤ LIQUID LIMIT



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–.5					Pt	PEAT .5'									
2					SC	BROWN - SAND SILTY GRAVELLY CLAYEY			21	-	58	21	MOIST		
5					CL	CLAY - SAND MIX		V_c-V_r	51	-	47	2	DAMP		
8					SC	SAND-CLAYEY GRAVELLY SILTY			13	-	52	35	SAT.		
11–13						ICE		ICE							
13–15						SAND & ICE LENSES									
15						BOTTOM OF HOLE - 15'									

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INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

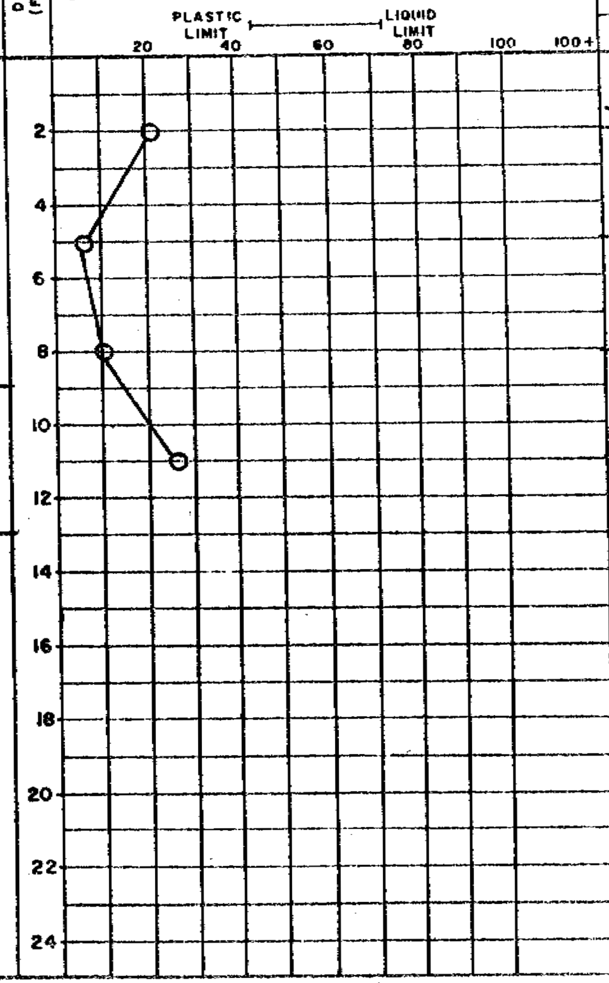
DWN	FIELD ENG	DATE DRILLED 29/3/77	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:

CHAINAGE:	OFFSET	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		3

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0 – 4"					Pt	PEAT — 4"		
4" – 3'					CI	BROWN - SANDY CLAY - SILTY PEBBLES — 3'		Vc - Vr
3' – 13'					SM	SAND - SILTY GRAVELLY		Vs
13' – 30'						ICE		ICE

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	77	-	21	2	MOIST		
5	18	-	71	11	WET		
8	8	-	55	37	SAT.		
11	14	-	74	12	FREE WATER		

R073

ICE ICE

30'

BOTTOM OF HOLE - 30'

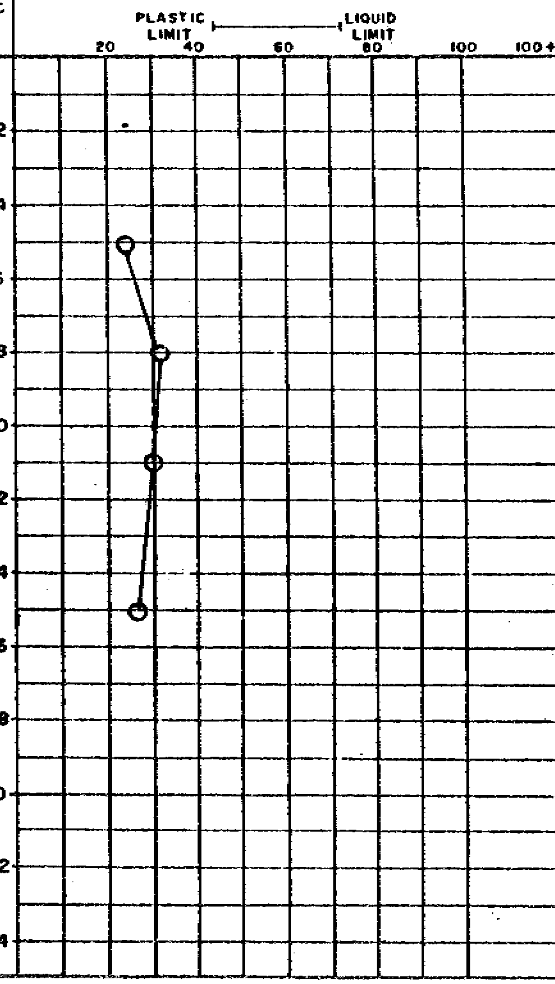
INUVIK - TUK.	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		4

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	PEAT 4"									
2						BROWN -							WET		
4						- CLAY									
5						- SILTY			79	20	1		WET		
6–7					CL	- SANDY									
8					-	- PEBBLES		Vc - Vr	93	6	1		WET		
10					CI	LOW - MED. PLASTIC									
11									78	20	2		WET		
15						15'			80	19	1		WET		
16						BOTTOM OF HOLE - 15'									
18–24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



R073

INUVIK - TUK.

DRILL HOLE REPORT

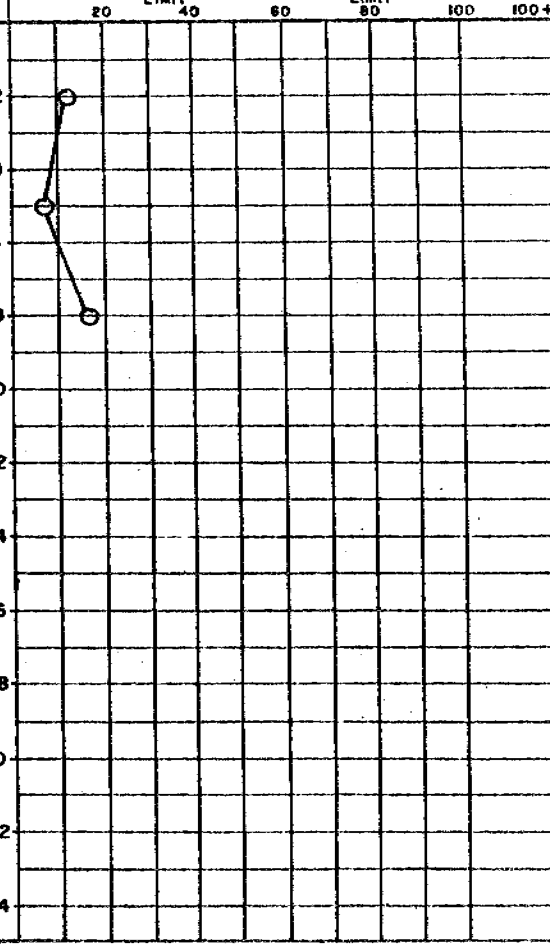
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		5

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	Peat 2"										
2						SAND - CLAYEY			2	3A-61	5	DAMP				
4					Sc	- GRAVELLY SILTY		Vx	4	12-65	23	DAMP				
6									6							
8						8' ~~BOTTOM OF HOLE 8'~~ 9'		Vc Vr	8	19-55	26	SAT.				
10									10							
12						ICE		ICE	12							
14						15			14							
16						BOTTOM OF HOLE 15'			16							
18									18							
20									20							
22									22							
24									24							

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ├──┤ LIQUID LIMIT



R073

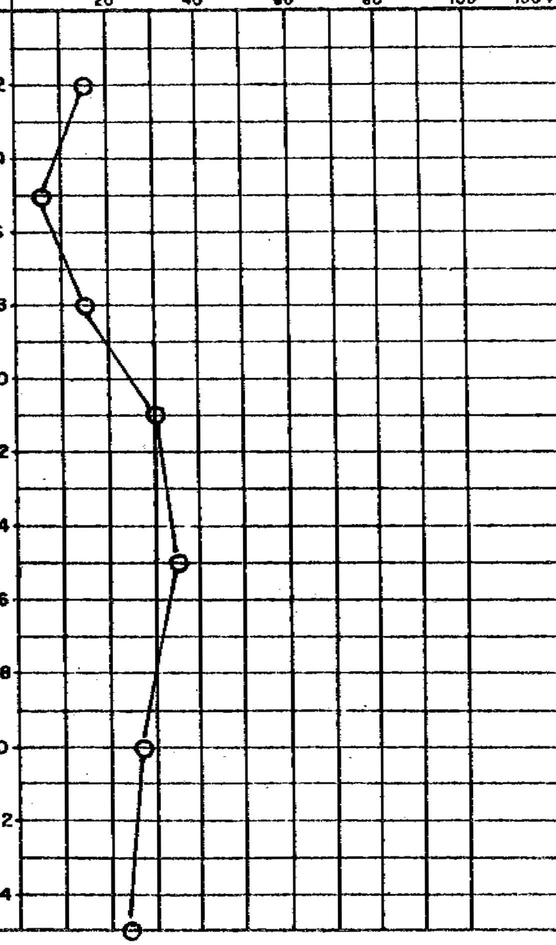
INUVIK - TUK.	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		6

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	PEAT 2"									
1					CL	CLAY - SANDY									
2									31	58	11		MOIST		
3								$V_c - V_r$							
4						SAND - SILTY									
5						CLAYEY		|	12	61	27		MOIST		
6					SC	GRAVELLY									
8								V_s	29	57	14		SAT.		
11						PEBBLES 11'			37	59	4		FREE WATER		
12						CLAY - SILTY									
14						SANDY									
15									78	22	0		SAT.		
16						LOW PLASTIC									
18					CL										
20									67	31	2		SAT.		
25									68	32	0		WET		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



BOTTOM of HOLE - 30'

DIRTY ICE - 27'-30'

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 29/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE

MILE	B,C,S	NUMBER
		7

DEPTH (FEET) | SAMPLE NUMBER | SAMPLE TYPE | % RECOVERY | PENETRATION RESISTANCE | UNIFIED SOIL SYMBOL | SOIL DESCRIPTION | LIMITS OF FROZEN GROUND | ICE DESCRIPTION | DEPTH (FEET)

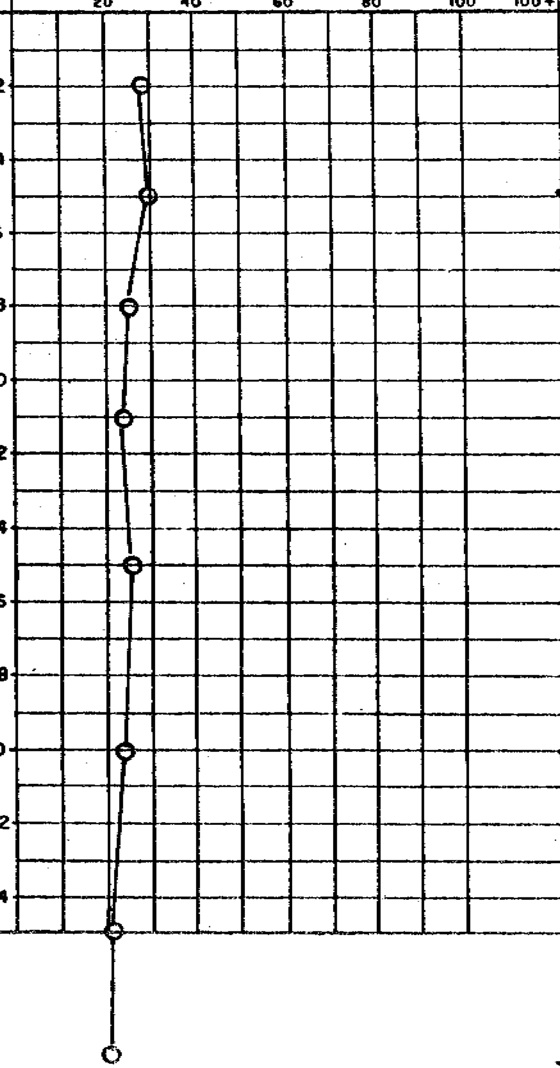
○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

Pt PEAT 4"

CI / CL

BROWN -
CLAY
- SILTY
- SANDY
FEW PEBBLES
MED. & LOW
PLASTIC

ICE DESCRIPTION: $V_c - V_r$



GRAIN-SIZE ANALYSIS

CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
84	16	0	WET			
72	21	7	WET			
83	17	0	WET			
82	17	1	WET			
89	11	0	WET			
88	11	1	WET			
84	15	1	MOIST			

BOTTOM OF HOLE - 30'

- 79 - 16 - 5 MOIST

R073

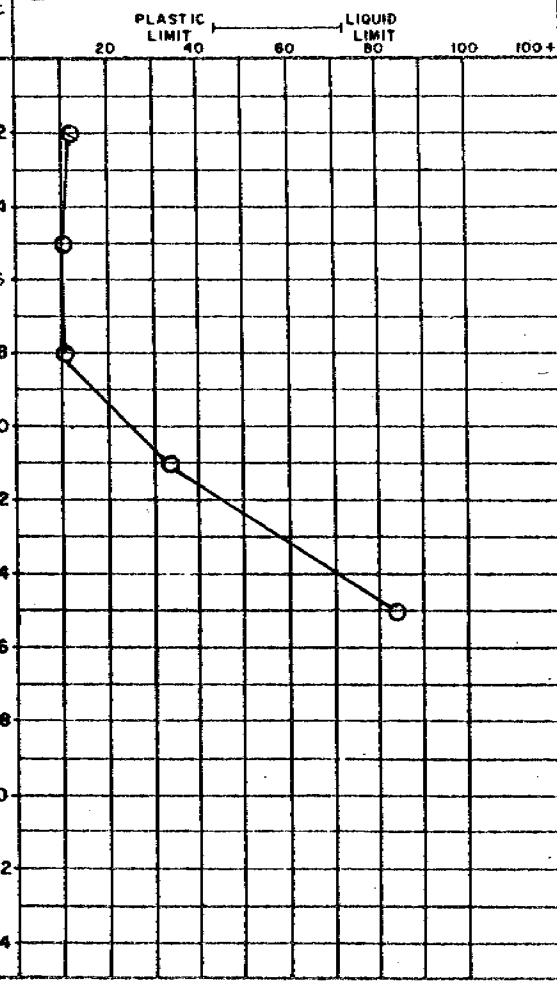
INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 28/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET	TEST HOLE
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV	MILE: — B,C,S: — NUMBER: 8

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0 – 4"					Pt	PEAT — 4"									
4" – 13					GC	GRAVEL-CLAY-SAND MIXTURE		V_c - V_r (to ~8.5); V_S (~8.5 – 13)							
2									30-		45	25	MOIST		
5									27-		48	25	WET		
8									21-		38	41	SAT		
11									68-		9	23	FREEWATER		
13 – 14						ICE		ICE							
14 – 18					SC	SAND - GRAVELLY CLAYEY SILTY		V_S							
15									38-		41	21	FREEWATER		
18 – 30						ICE		ICE							

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



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ICE ICE

30'

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

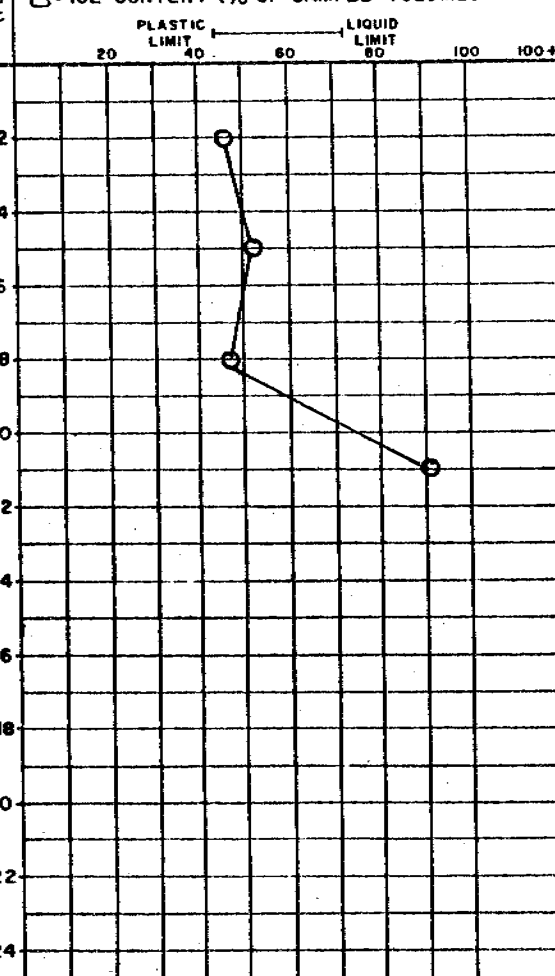
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 29/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		9

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0–0.5					Pt	PEAT .5'		
0.5–13					Cl	BROWN - CLAY - SILTY - SANDY FEW PEBBLES MED. PLASTIC		Vs
13–24						ICE & SOME SOIL		ICE

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	82	17	1	SAT.			
5	85	15	0	SAT.			
8	79	19	2	SAT.			
11	81	17	2	FREE WATER			

BOTTOM OF HOLE - 29'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

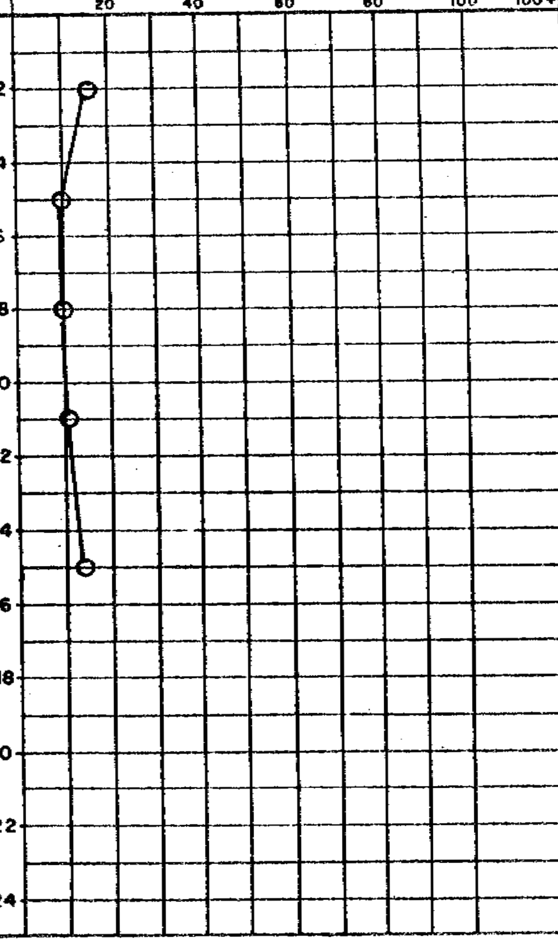
DWN	FIELD ENG	DATE DRILLED 30/3/77	AIRPHOTO NO:
CKD	TECH RONYCH	RIG: AIR	SURFACE DRAINAGE:

CHAINAGE: | OFFSET: | VEGETATION: | ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		10

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–15					GC	GRAVEL-SAND CLAY MIXTURE LOW - MED. PLASTIC		V_L - V_r							
2									-	31	35	34	MOIST		
5									-	26	38	36	MOIST		
8									-	26	48	26	MOIST		
11									-	25	33	42	WET		
15						15'			-	27	51	22	WET		
						BOTTOM OF HOLE - 15' HOLE SLOUGHING									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



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INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

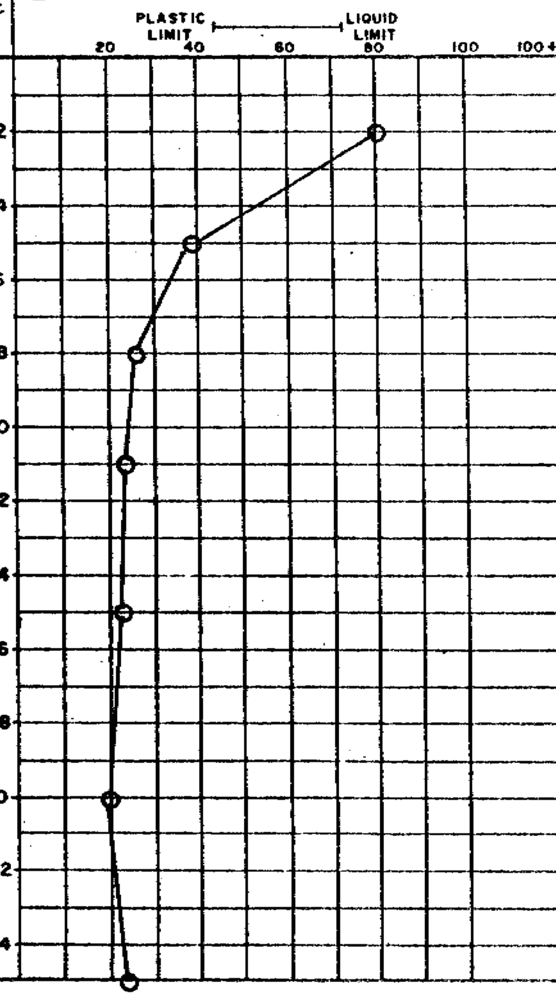
DWN	FIELD ENG.	DATE DRILLED 30/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
		11

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2					Pt	PEAT - BLACK		V_s					DAMP		
3						3'									
4						BROWN -									
5						- CLAY			80		19	1	SAT.		
6						- SANDY									
7						- SILTY									
8									78		20	2	WET		
10					CI	MED. PLASTIC									
11								$V_c - V_r$	82		18	0	MOIST		
12						PEBBLES									
15									73		20	7	MOIST		
20									76		20	4	MOIST		
25									88		10	2	DAMP		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



BOTTOM OF HOLE - 25'

BOTTOM OF HOLE - 25

INUVIK - TUK.

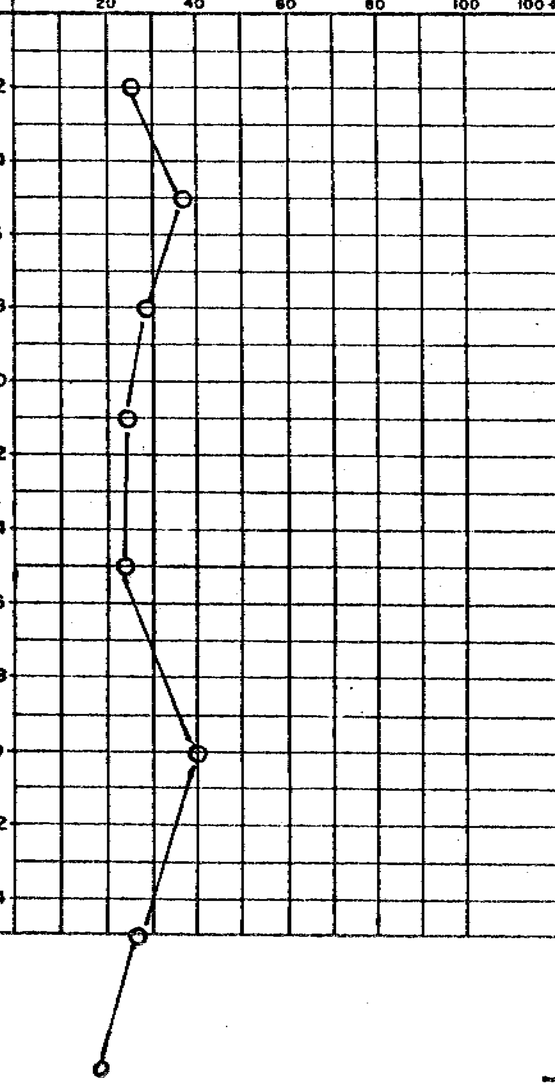
DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 30/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		12

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0–.5					Pt	PEAT .5		
2						BROWN -		Vc-Vr
4						- CLAY - SILTY		
6						- SANDY PEBBLES		Vc-Vr
8					CL	LOW-MED. PLASTIC		Vs
10					CI			
30						30' BOTTOM OF HOLE. 30'		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT



DEPTH (FEET)	GRAIN-SIZE ANALYSIS CLAY % - SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	83	16	1	MOIST		
5	86	13	1	WET		
8	80	19	1	WET		
11	82	15	3	MOIST		
15	86	13	1	MOIST		
20	77	15	8	SAT.		
25	64	25	11	WET		
30	52	42	6	WET		

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Inuvik - Tuk

DRILL HOLE REPORT

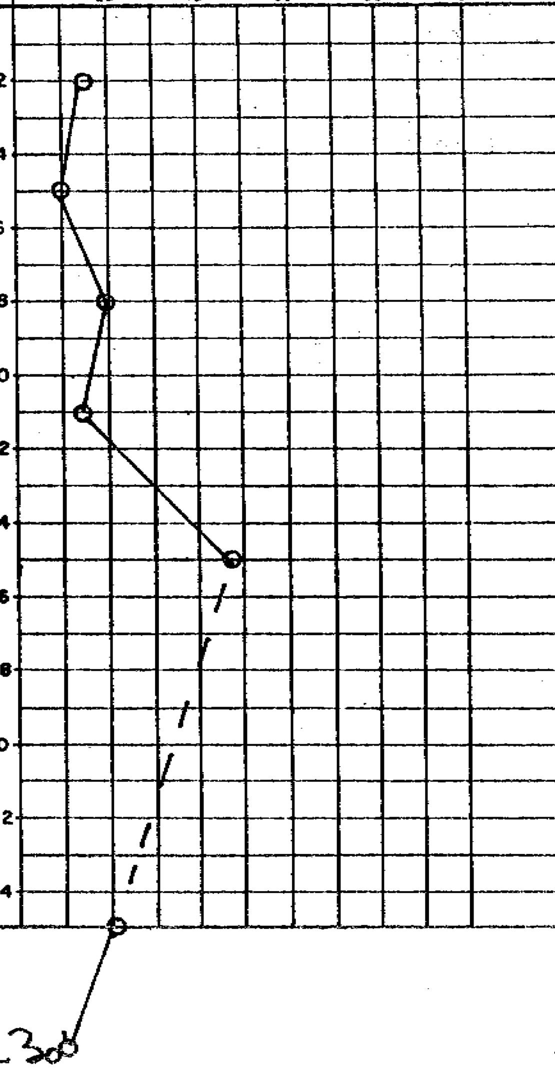
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 30/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
		13

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	PEAT 8"									
2–11					CL	BROWN - CLAY SILTY SAND GRAVELLY TO 13' LOW PLASTIC		Vs, I, Vc - Vr							
2									-31-		44	25	WET		
5									-31-		56	13	DAMP		
8									-33-		48	39	SAT.		
11					Sc	11' BROWN - SANDY CLAYEY SILT		Vs	-25-		58	17	WET		
15									-69-		29	2	FREE WATER		
16–23						ICE		ICE							
24–25					CL	CLAY SILTY SANDY WITH SOME ~~SAND~~ PEBBLES			-35-		62	3	SAT		
30						GRAVEL-SAND MIX CLAYEY 30'			-12-		44	44	WET		

BOTTOM of HOLE -30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 30/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		14

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	WATER / ICE CONTENT	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–13					Pt.	PEAT		Vs	0–13	NO SAMPLE							
13'–15'					CL	CLAY - SILTY - PEBBLES SANDY		Vc - Vr	13–15								
15'						BOTTOM OF HOLE - 15'											

DEPTH (FEET): 2 4 6 8 10 12 14 16 18 20 22 24

INUVIK - TUK.

DRILL HOLE REPORT

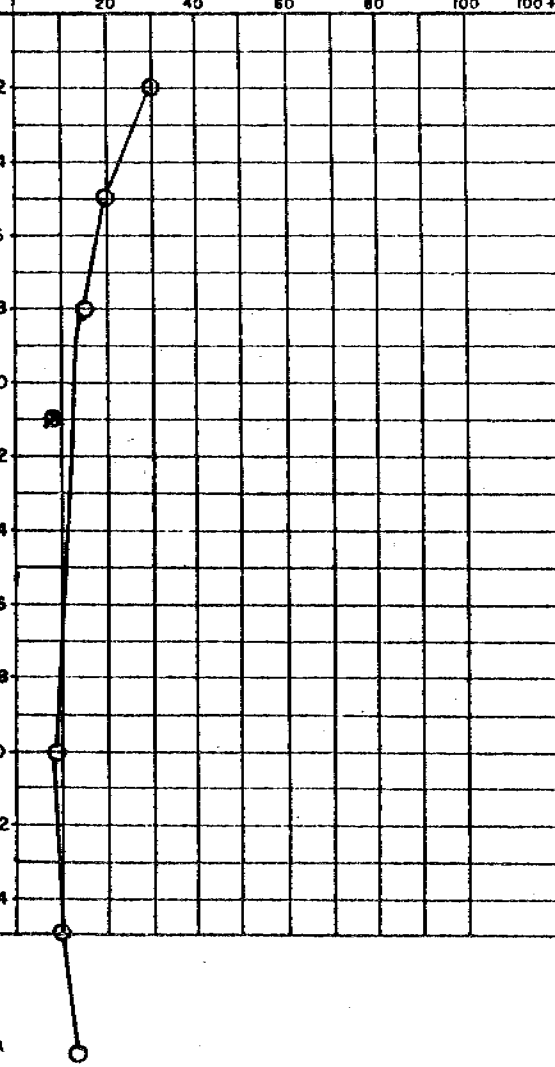
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 30/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		15

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–1					Pt	PEAT 1'									
2						CLAY - SILT		$V_c - V_r$	-	73	23	4	Moist		
4						SAND GRAVELLY		|							
5					CL	LOW PLASTIC		V_s	-	33	48	19	Free Water		
8									-	22	44	34	SAT.		
10–17						ICE		ICE							
18–23					GM	GRAVEL - SANDY SILTY		$V_c - V_r$							
20									-	16	38	46	SAT.		
23–24						ICE		ICE							
25									-	16	55	29	WET		
25–30					SM	SAND - GRAVELLY SILTY 30'									
30									-	17	59	24	SAT.		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



BOTTOM OF HOLE - 30'

R073

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DRILL HOLE REPORT

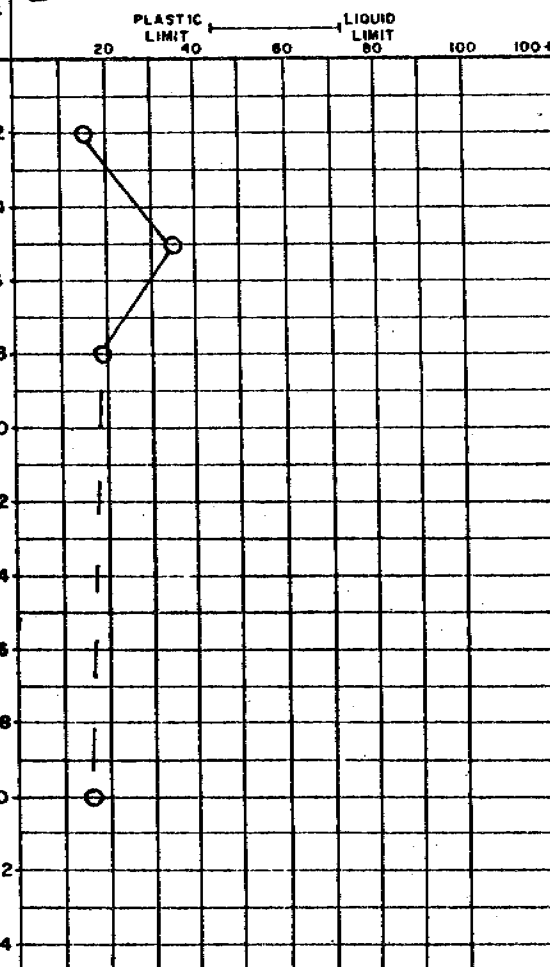
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 30/3/77	AIRPHOTO NO:	CHAINAGE:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:

OFFSET:
ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		16

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME).
PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–10					Pt	PEAT 8"									
					CL	CLAY - SILTY SANDY									
2					Sc	SAND - CLAYEY SILTY				38	54	8	DAMP		
4–5								Vc - Vr		63	25	2	SAT.		
7–8					SM	SAND - SILTY PEBBLES				25	67	8	WET		
10–17						ICE OCCASSIONAL SAND LENSE		ICE							
17–20					SM	SAND - SILTY PEBBLES		Vc - Vr		21	71	8	WET		

30'

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 30/3/77	AIRPHOTO NO:	CHAINAGE:
CKD:	TECH: RONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:

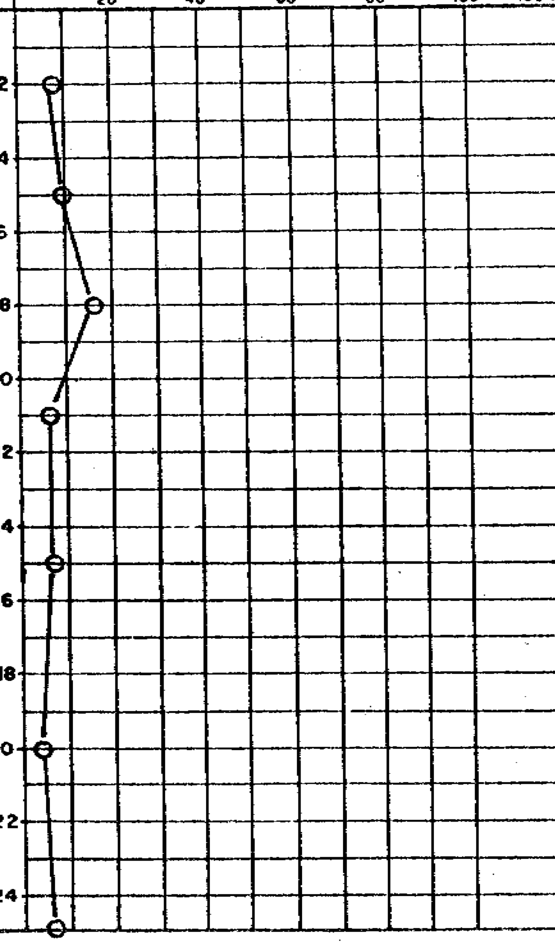
OFFSET:

ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		17

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0–1					Pt	PEAT 1'		
1–10					Gc	SAND-CLAY-GRAVEL MIX		Vx (to ~5'); Vc-Vr (~5'–9')
10–30					Gc	GRAVEL - SANDY SILTY CLAYEY		Vx

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2		29	52	19	DAMP		
5		25	39	36	WET		
8		22	45	33	SAT.		
11		16	34	50	DAMP		
15		20	53	27	DAMP		
20		13	21	66	DAMP		
25		26	43	31	DAMP		

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POOR CIRCULATION

30'

BOTTOM OF HOLE - 30'

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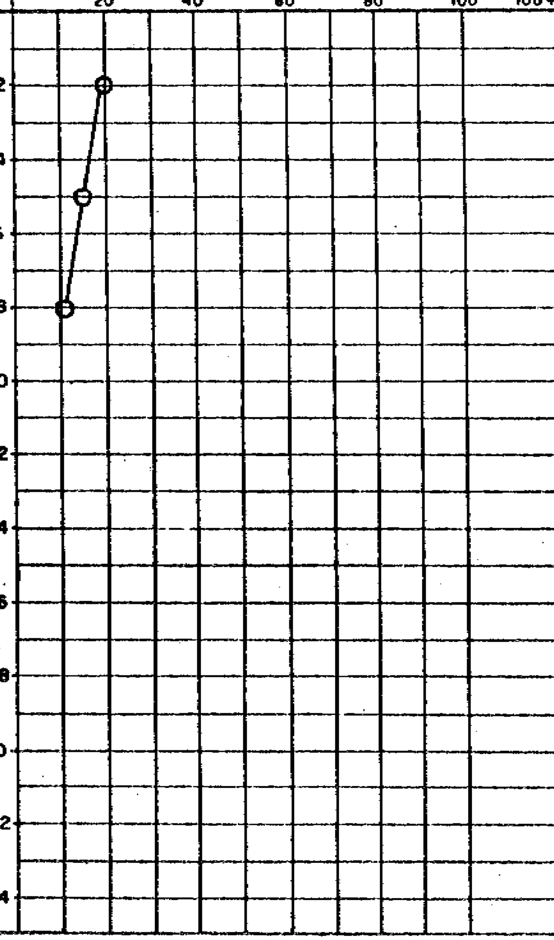
DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 30/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		18

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 1'										
2						GRAVEL-CLAY-SAND MIXTURE			2	35	42	23	SAT			
4								Vc-Vr	4							
6					GC				6	24	49	27	SAT			
8									8	16	34	50	SAT			
10									10							
12–24						ICE SMALL CLAY LENSE @ 17'		ICE	12–24							

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+



ICE ICE

———— 30'

BOTTOM OF HOLE - 30'

ICE ICE

INUVIK - TUK.

DRILL HOLE REPORT

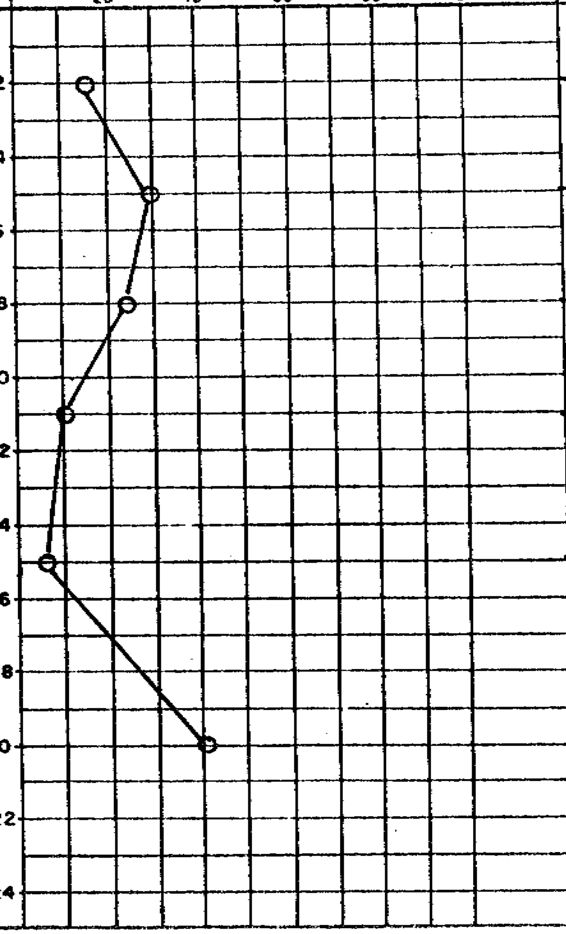
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 30/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		19

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS (CLAY % / SILT % / SAND % / GRAVEL %)	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0 – 8"					Pt	PEAT 8"						
2					CL	CLAY - SANDY SILTY PEBBLES, LOW PLASTIC		Vc - Vr	65-31 4	DAMP		
5									71-23 6	SAT.		
8									69-27 4	WET		H.I.B.
10						ICE		ICE				
11					GW	GRAVEL - SANDY		Vc - Vr	15-38 47	SAT.		
15						15.5'		Vs	9-44 47	SAT.		
15.5 – 20					CI	CLAY - SILTY, MED. PLASTIC						
20						BOTTOM OF HOLE 20'			92-4 4	WET		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ├──┤ LIQUID LIMIT



INUVIK - TUK

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 30/3/77	AIRPHOTO NO:	CHAINAGE:
				OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:
				ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		20

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 1'											
2						CLAY - SILTY			2								
4						FEW PEBBLES			4								
6						& ICE			6	NO SAMPLES							
8								Vs	8								
10									10								
12									12								
14									14								
16									16								
18									18								
20									20								
22									22								
24									24								

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30'

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 30/3/71	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:

CHAINAGE: | OFFSET: | VEGETATION: | ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		21

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

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

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	WATER / ICE CONTENT	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–9						ORGANIC & ICE	9'	ICE & Pt		NO SAMPLE							
9–10						SANDY GRAVEL	10'										
10–15						SILTY CLAY & ICE	15	ICE + CL									
15						BOTTOM OF HOLE - 15'											

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

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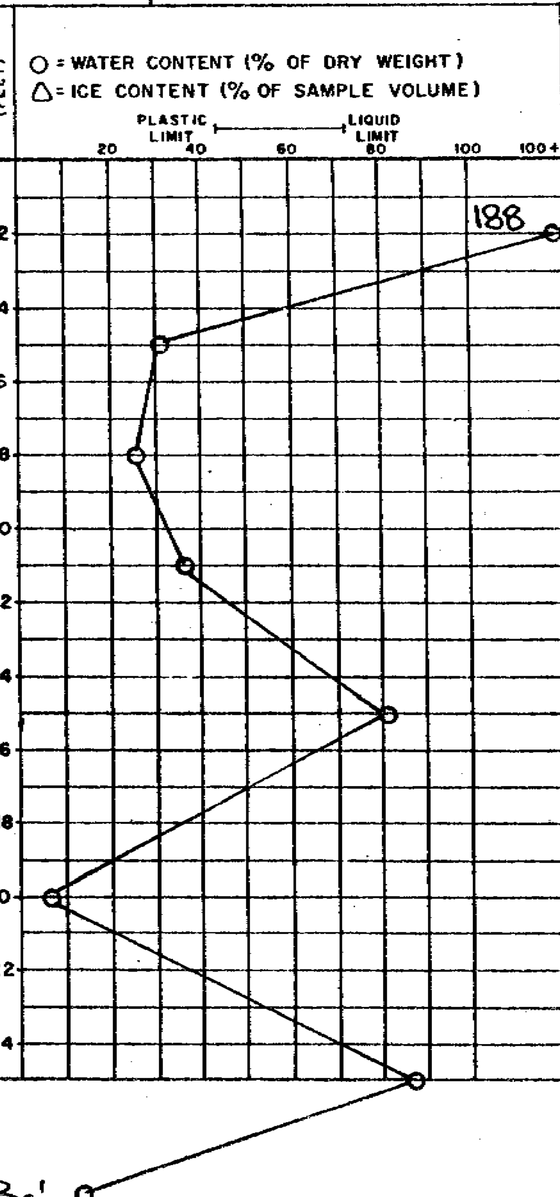
INUVIK - TUK.	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 31/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		22

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2					Pt	PEAT — 2½'									FREE WATER
5					CL - CI	CLAY - SILTY SANDY PEBBLES LOW - MED. PLASTIC			83		15	2			WET
8									86		18	2			WET
11						— 11.5'			74		22	4			SAT
15					SC	SAND - SILTY CLAYEY GRAVELLY		Vs	32		51	17			FREE WATER
20									25		66	9			DAMP, S.A.
25									17		62	21			FREE WATER, S.A.
30'															SAT

BOTTOM OF HOLE - 30'



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INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 31/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
		23

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT —— LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	WATER / ICE CONTENT	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–3					Pt	PEAT 3'											
3–6						GRAVEL - SILTY SANDY 6'		Vc - Vr									
6–9						CLAY - SILTY SANDY GRAVELLY 9'				NO SAMPLES							
9–12						ICE 12'		ICE									
12–15						CLAY - SILTY 15'		Vs									
						BOTTOM OF HOLE - 15'											

Depth scale: 2 4 6 8 10 12 14 16 18 20 22 24

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Inuvik - Tuk.

DRILL HOLE REPORT

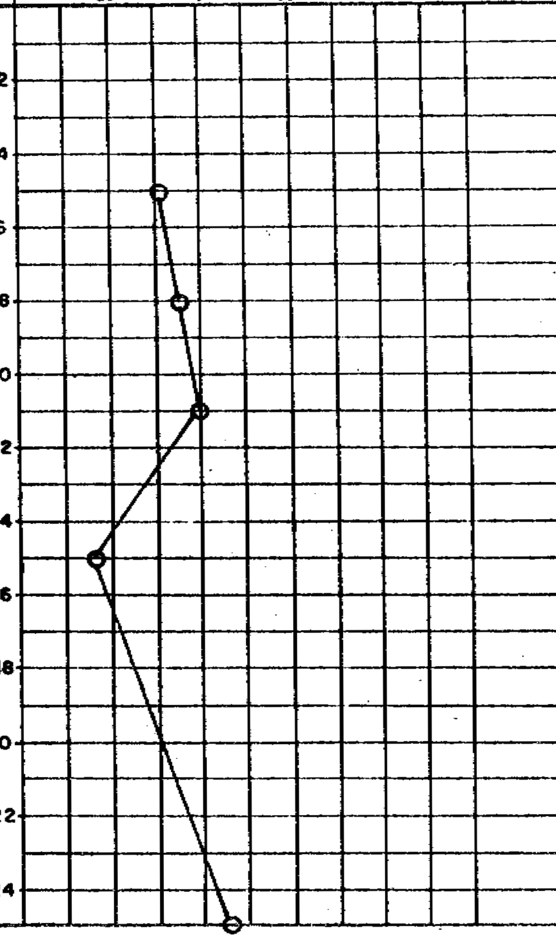
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 31/3/71	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
		24

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–4½					Pt	Peat									
4½–17					CI CH	Clay - Silty Sandy Pebbles; Med-High Plastic		$V_c - V_r$	66	30	4		SAT		
									92	7	1		Moist		
									87	12	1		Wet		
									65	28	7		Moist		
17–22						Alternating layers of clay & ice		Ice & Ci							
22–26						As above			95	5	0		Wet		

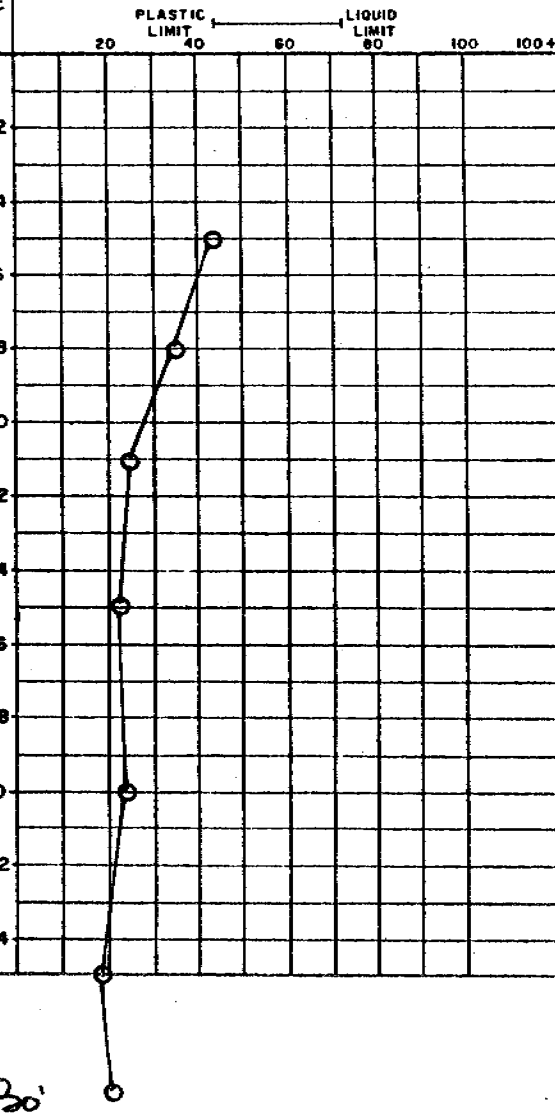
Bottom of Hole - 26'

INUVIK - TUK.	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 31/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		25

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0–2'					Pt	PEAT & ICE		Pt & ICE
2'–7'					SM	SAND - SILTY GRAVELLY		Vs
7'–9'					ML	SILT - CLAYEY SANDY		1
9'–30'					SM	SAND - SILTY		Vc - Vr



DEPTH (FEET)	GRAIN-SIZE ANALYSIS CLAY % / SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
5	17	67	16			FREE WATER
8	66	34	0			SAT.
11	22	77	1			MOIST
15	21	79	0			MOIST
20	30	70	0			MOIST
25	27	73	0			MOIST
30	26	74	0			MOIST

30'

BOTTOM OF HOLE - 30'

R073

Inuvik - Tuk.

DRILL HOLE REPORT

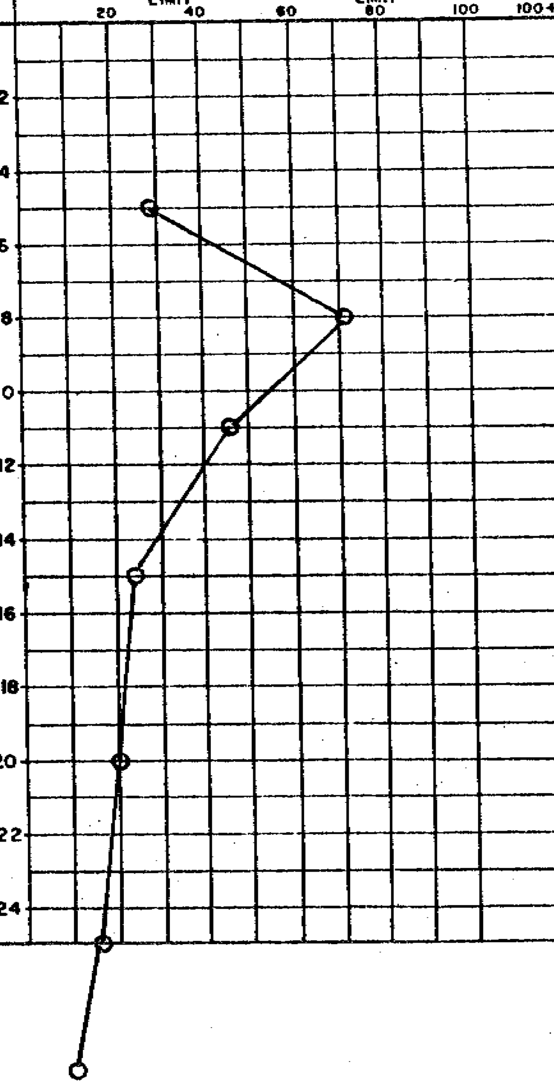
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 31/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		26

Columns: DEPTH (FEET) · SAMPLE NUMBER · SAMPLE TYPE · % RECOVERY · PENETRATION RESISTANCE · UNIFIED SOIL SYMBOL · SOIL DESCRIPTION · LIMITS OF FROZEN GROUND · ICE DESCRIPTION · DEPTH (FEET) · ○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME), PLASTIC LIMIT, LIQUID LIMIT, 20 40 60 80 100 100+ · GRAIN-SIZE ANALYSIS: CLAY %, SILT %, SAND %, GRAVEL % · WET DENSITY (P.C.F.) · DRY DENSITY (P.C.F.) · REMARKS

Unified soil symbol	Soil description	Ice description
Pt	PEAT — 1.5'	
CL CI	CLAY - SILTY SANDY FEW PEBBLES LOW - MEDIUM PLASTIC — 15½'	V_s
ML - SM	SAND - SILT MIXTURE	$V_c - V_r$
SM	SAND - SILTY	
	BOTTOM OF HOLE - 30'	



Grain-size analysis and remarks (written beside the chart)
89 - 10 1 WET
87 - 12 1 FREE WATER
83 - 15 2 SAT.
58 - 42 0 DAMP
49 - 51 0 DAMP
41 - 55 4 DAMP
13 - 87 - 0 WET

INUVIK - TUK.

DRILL HOLE REPORT

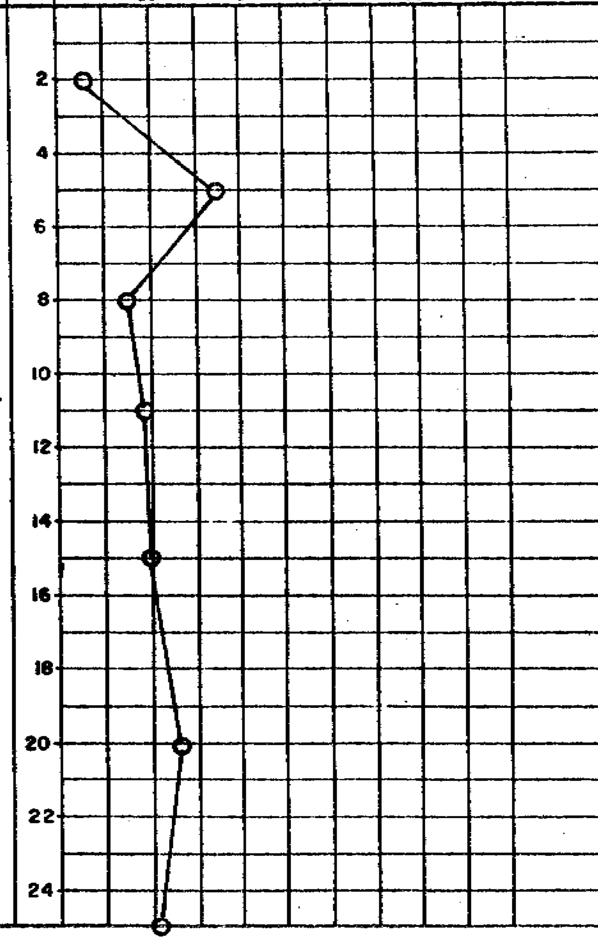
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 31/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		27

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0					Pt	PEAT 2"		
2						SAND - SILTY		
5								V_s
11								V_c-V_r
13					SM			|
15								V_s

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ├──┤ LIQUID LIMIT



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	-	11	83	6	DAMP		
5	-	48	52	0	FREE WATER		
8	-	21	79	0	MOIST		
11	-	15	85	0	WET		
15	-	14	86	0	WET		
20	-	31	69	0	SAT		
25	-	19	81	0	WET		

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OVER

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

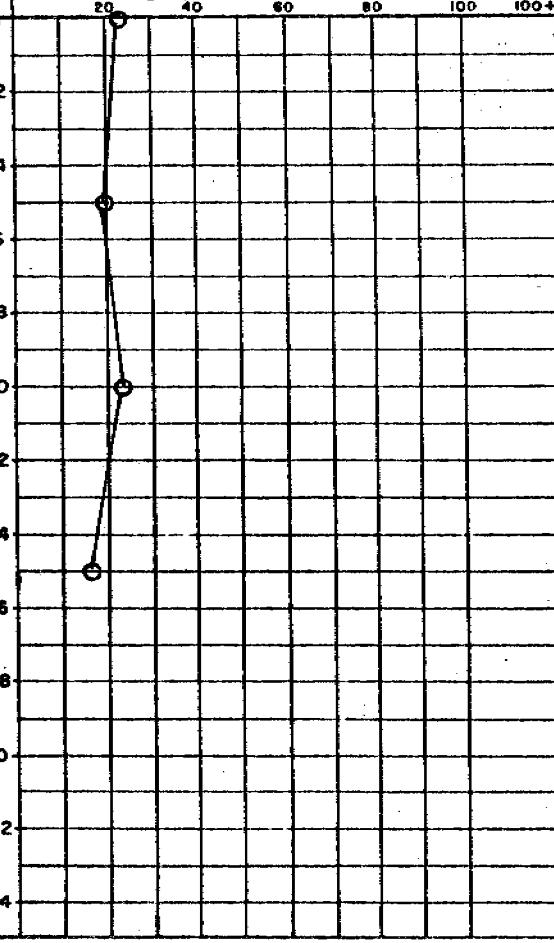
DWN	FIELD ENG.	DATE DRILLED	AIRPHOTO NO:	CHAINAGE:	OFFSET	
CKD	TECH	RIG:	SURFACE DRAINAGE:	VEGETATION:	ELEV:	

TEST HOLE

MILE	B,C,S	NUMBER
		27

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
									30	-	28	72	0	SAT.		
2						SAND			32							
4						- SILTY			34							
								Vc - Vr		-	25	75	0	WET		
6									36							
					SM											
8									38							
10									40	-	24	76	0	WET		
12									42							
14									44							
						45'				-	22	78	0	MOIST		
16						BOTTOM OF HOLE - 45'			46							
18									18							
20									20							
22									22							
24									24							

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



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DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 31/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		28

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	WATER/ICE CONTENT	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT .5'											
2						ICE 3'		ICE	2								
4						ICE & PEAT 6'		ICE & Pt	4								
6									6								
8						CLAY - SILTY			8	NO SAMPLES							
10								Vs	10								
12									12								
14						15'			14								
16						BOTTOM OF HOLE - 15'			16								
18									18								
20									20								
22									22								
24									24								

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INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN | FIELD ENG. | DATE DRILLED 31/3/77 | AIRPHOTO NO: | CHAINAGE: | OFFSET

CKD | TECH PRONYCH | RIG: AIR | SURFACE DRAINAGE: | VEGETATION: | ELEV

TEST HOLE

MILE	B,C,S	NUMBER
		29

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	WATER/ICE CONTENT	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–1					Pt	PEAT 1'											
1–9						CLAY - SILTY 9'		Vs	2–8	NO SAMPLES							
9–13						ICE SOME SOIL 13'		ICE & CL	10–12								
13–24						CLAY - SILTY FEW PEBBLES		Vs	14–24								

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——— 30'

BOTTOM OF HOLE 30'

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DRILL HOLE REPORT

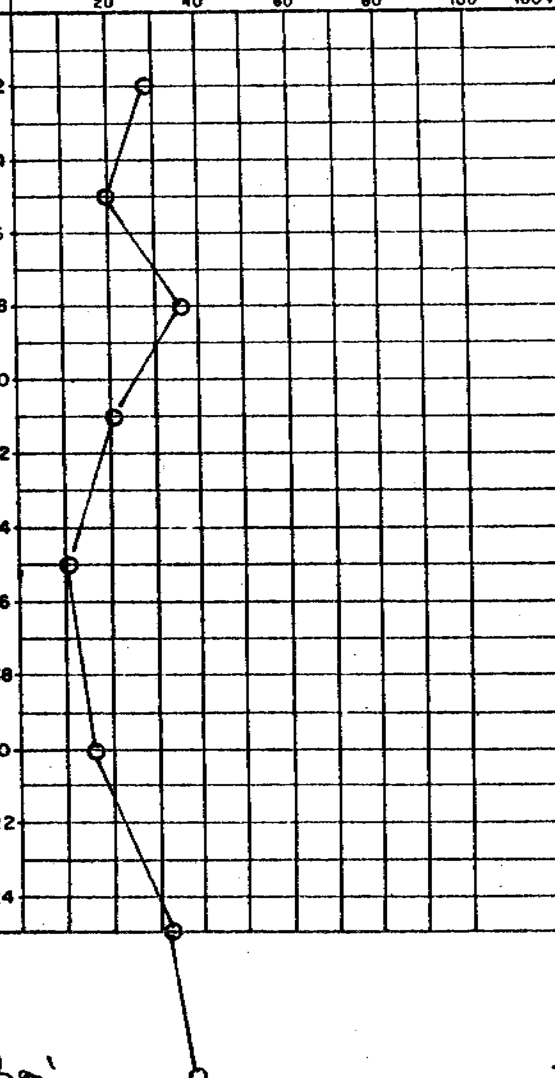
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 1/4/77	AIRPHOTO NO:
CKD	TECH: PRONYCH	RIG: AIR	SURFACE DRAINAGE:
CHAINAGE:	OFFSET:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		30

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ——— LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY % / SILT % / SAND % / GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT — 2'						
2						CLAY - SILTY SANDY GRDUELLY			-53-38 9			FREE WATER
4								Vs	-40-34 26			FREE WATER
6					CL	PEBBLES LOW PLASTIC						
8									-85-14 1			SAT.
10									-68-28 4			SAT. H.I.B.
12						— 13'						
14					SM	SAND - SILTY GRAVELLY			-17-62 21			SAT.
16												
18												
20								Vs	-7-75 18			SAT.
22												
24					SM	SAND - SILTY			-13-86 1			FREE WATER
						— 30'			-53-47-0			SAT.



BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 1/4/77	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:

CHAINAGE: | OFFSET | ELEV | VEGETATION:

TEST HOLE		
MILE	B,C,S	NUMBER
		31

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–10					Pt	PEAT 12"; CLAY - SILTY SANDY PEBBLES		Vs		NO SAMPLES							
10–16.5						ICE		ICE									
16.5–20.5						LENSES OF ICE & CLAY		ICE & CL									
20.5–28						CLAY - SILTY		Vc - Vr - Vs									

R073

28'

BOTTOM OF HOLE - 28'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 1/4/77	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:

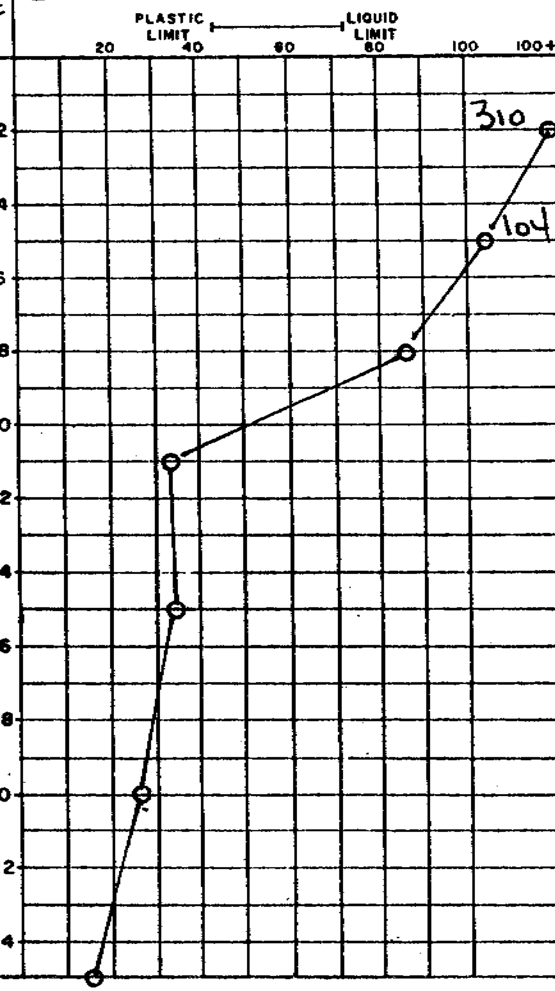
CHAINAGE: | OFFSET: | VEGETATION: | ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		32

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION
0–5'	Pt	PEAT	
5'–16'	CI	CLAY - SILTY SANDY PEBBLES MED. PLASTIC	Vs
16'–28'	SM	SAND - SILTY PEBBLES	Vs
28'–30'		ICE	ICE

BOTTOM OF HOLE - 30'

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



Approx. depth (feet)	Grain-size analysis (as written)	Remarks
2	78-22 0	FREE WATER
5	62-33 5	FREE WATER
8	74-19 7	FREE WATER
11	38-46 16	MOIST
15	91-9 0	SAT.
20	12-84 4	FREE WATER
24	17-73 10	FREE WATER

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 11/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		33

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–4						ICE & PEAT		ICE & Pt									
4–15						CLAY - SILTY SANDY PEBBLES 6" GRAVEL LENSES @ 6' & 13' 15'		Vs		NO SAMPLES							
15						BOTTOM OF HOLE - 15'											

Depth scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

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INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 1/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:	TEST HOLE
CKD:	TECH: PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:	MILE: / B,C,S: / NUMBER: 34

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 1'											
2						CLAY - SILTY SANDY PEBBLES			2								
4					CL				4								
6						6" GRAVELLY LAYERS @ 8' + 11' + 14'		Vc - Vr	6								
8					CI				8	NO SAMPLES							
10									10								
12						WET OR SAT. ON THAWING. 15'			12								
14									14								
16						BOTTOM OF HOLE. 15'			16								
18									18								
20									20								
22									22								
24									24								

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INUVIK - TUK

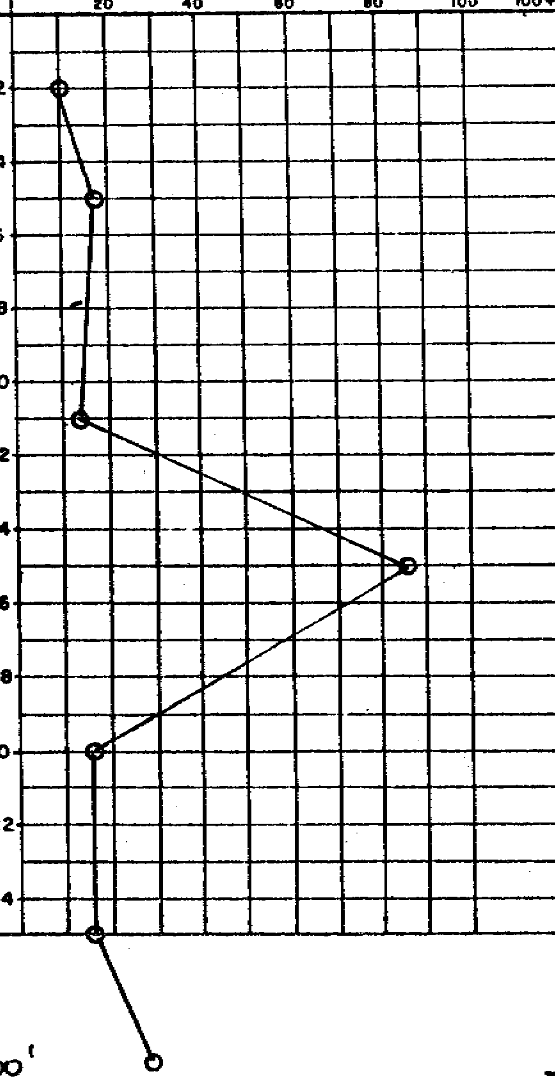
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 1/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		35

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0 – .5					Pt	PEAT .5		
.5 – 7'					SM	SAND - SILTY GRAVELLY 7'		Vc - Vr
7' – 9'						ICE & SAND 9'		ICE & SM
9' – 15'					GM	GRAVEL - SANDY SILTY 15'		
15' – 17'					CL	CLAY - SILTY SANDY 17'		
17' – 30'					SM	SAND - SILTY GRAVELLY		Vs
30'						SM PEBBLES 30'		



DEPTH (approx.)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	-	26	49	25			DAMP
5	-	16	48	36			SAT.
11	-	21	31	48			SAT.
15	-	79	21	0			FREEWATER
20	-	11	78	11			SAT.
23	-	8	80	12			
24.5	~~-~~	~~8~~	~~5~~	~~12~~			~~SAT.~~
30	-	13	84	3			FREEWATER

BOTTOM OF HOLE - 30'

INUVIK - TUK

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 1/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		36

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	WATER / ICE CONTENT	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–4						ICE & PEAT 4'		ICE + Pt									
4–6					SM	SAND - SILTY PEBBLES 6'											
6–9					GM	GRAVEL - SANDY SILTY 9'				NO SAMPLES							
9–15					ML	SILT - SANDY CLAYEY 15'		Vs									
						BOTTOM OF HOLE - 15'											

Depth scale: 2 4 6 8 10 12 14 16 18 20 22 24

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INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		37

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	WATER / ICE CONTENT	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–7						ICE & PEAT (7)		ICE & Pt									
7–15						CLAY - SILTY FEW PEBBLES (15)		Vs		NO SAMPLES							
15						BOTTOM OF HOLE 15											

Depth scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

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Inuvik - Tuk.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 4/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD:	TECH: PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE

MILE	B,C,S	NUMBER
		38

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–4						ICE & PEAT 4'		ICE & Pt									
4–24					CL CI	CLAY - SILTY - SANDY - PEBBLES GRAVELLY FROM 6'-9'		Vs		NO SAMPLE							

Depth scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

30'

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

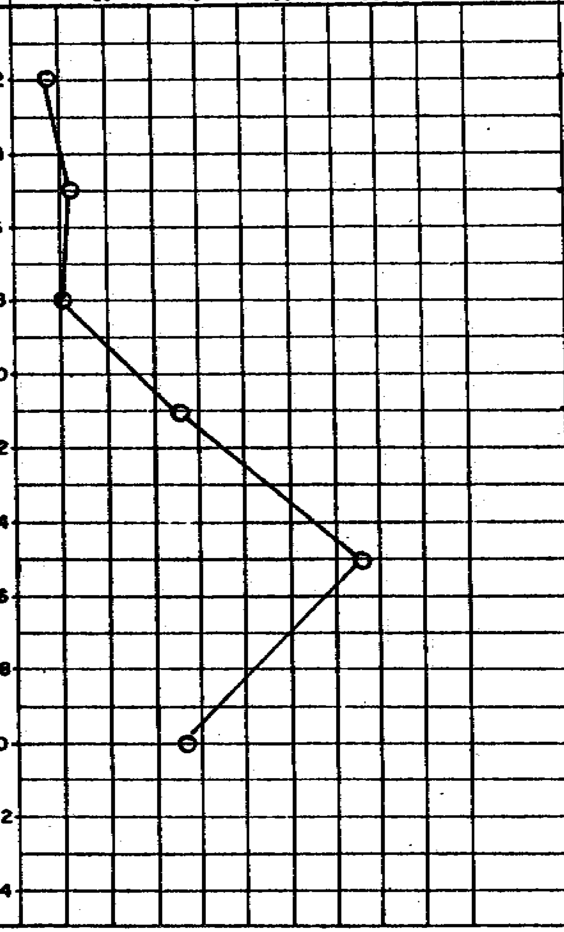
DWN	FIELD ENG.	DATE DRILLED 1/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
		39

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0 – 8"					Pt	PEAT ——— 8"		
8" – 11½'					GC	SAND - GRAVEL MIXTURE CLAYEY ——— 11½'		Vs
11½' –					CL - CI	CLAY - SILTY SANDY PEBBLES LOW - MED. PLASTIC		

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ——— LIQUID LIMIT
20 40 60 80 100 100+



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	-	22	45	33			DAMP
5	-	15	27	48			SAT.
8	-	14	56	30			SAT.
11	-	45	21	34			FREE WATER
15	-	84	14	2			FREE WATER
20	-	87	11	2			WET

——— 30'

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 1/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD:	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		4a

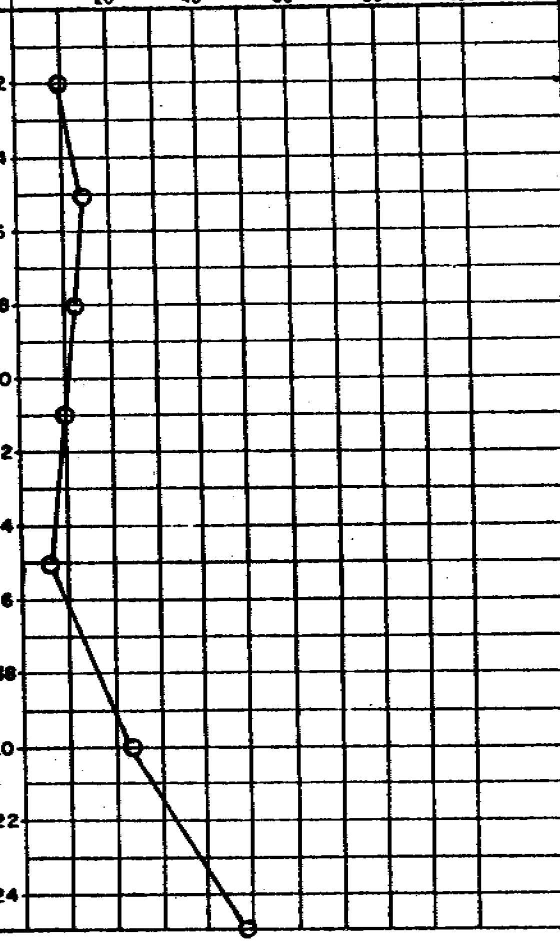
DEPTH (FEET) | SAMPLE NUMBER | SAMPLE TYPE | % RECOVERY | PENETRATION RESISTANCE | UNIFIED SOIL SYMBOL | SOIL DESCRIPTION | LIMITS OF FROZEN GROUND | ICE DESCRIPTION | DEPTH (FEET)

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL % | WET DENSITY (P.C.F.) | DRY DENSITY (P.C.F.) | REMARKS

Depth (feet)	Unified soil symbol	Soil description	Ice description
0 – 4"	Pt	PEAT	
4" – 21'	SM	SAND - SILTY GRAVELLY	Vs
		GRAVEL - SAND MIXTURE	
	GM	SILTY	
21' – 30'	CI	CLAY - SILTY MED. PLASTIC	Vs

BOTTOM OF HOLE - 30'



Depth (feet)	Grain-size analysis	Remarks
2	25 - 56 19	DAMP
5	26 - 52 22	SAT.
8	21 - 53 26	SAT.
11	9 - 50 41	SAT
15	8 - 47 45	SAT.
20	31 - 32 37	FREE WATER
25	98 - 2 0	SAT.

Depth scale: 2 4 6 8 10 12 14 16 18 20 22 24

CI MED. PLASTIC

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

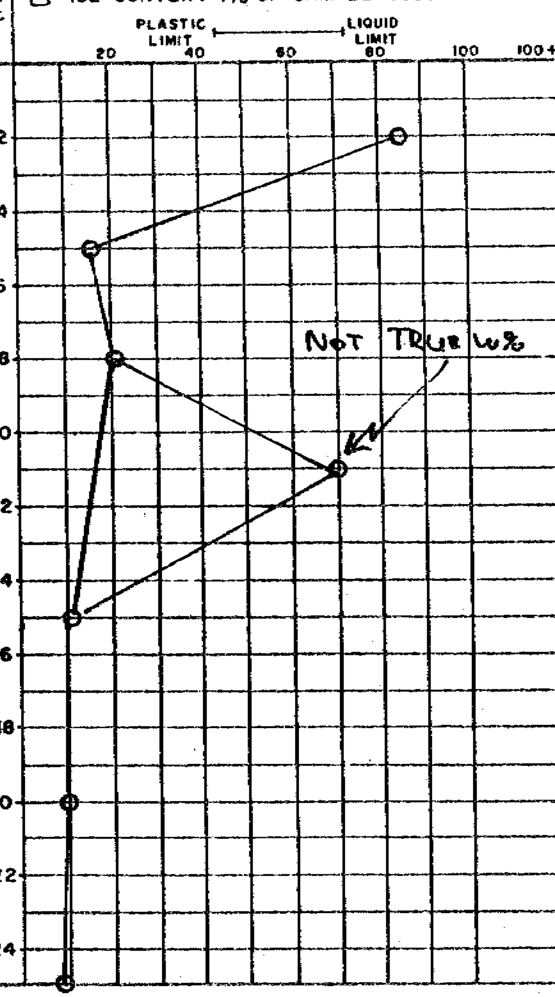
INUVIK - TUK.

DWN	FIELD ENG	DATE DRILLED 24/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		49

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0 – 2½'					Pt	PEAT		VS
2½' – 5'					CL	CLAY - SILTY SANDY		
5' –						SAND - SILTY GRAVELLY		Vc-Vr
						Rock BIT USED 0-15'		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2					SAT.		
5	24	-	62	14	SAT.		
8	36	-	49	15	WET		
11	27	-	59	14	DAMP		
15	8	-	73	19	WET		
20	17	-	49	34	SAT		
25	16	-	58	26	SAT		

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OVER

2 OF 2

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO:	CHAINAGE:	OFFSET:	TEST HOLE
CKD	TECH	RIG:	SURFACE DRAINAGE:	VEGETATION:	ELEV	

MILE	B,C,S	NUMBER
		49

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ——— LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
						SAND - GRAVELLY SILTY CLAYEY			30	-13-		56	31	SAT		
2									32							
					Sc											
4									34	-15-		70	15	WET		
6									36							
								V_c-Vr								
8									38							
10									40	-45-		46	9	WET		
12									42							
14									44	-13-		65	22	WET		
16						BOTTOM OF HOLE - 45'			46							
18									18							
20									20							
22									22							
24									24							

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INUVIK - TUK.

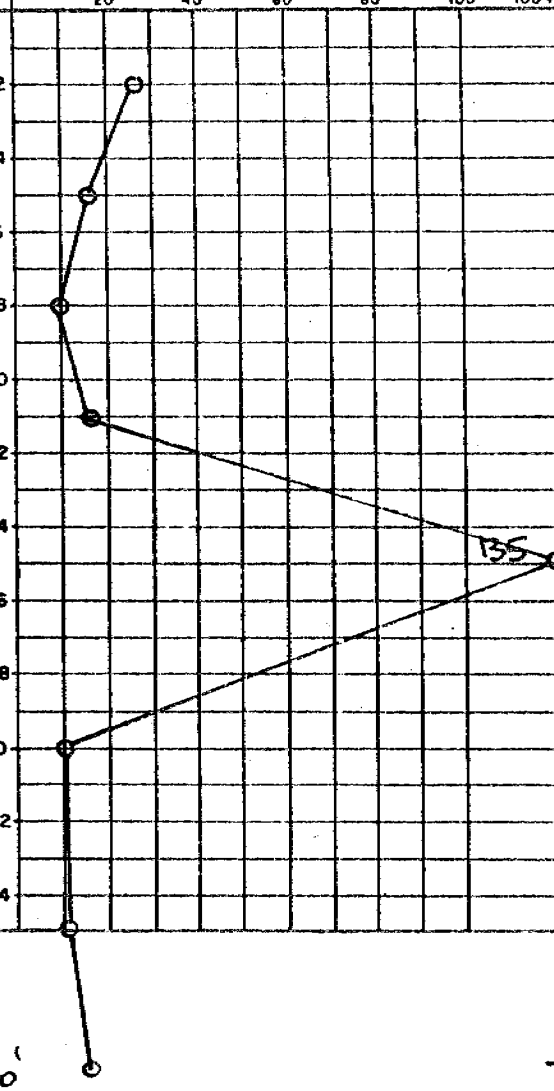
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 2/4/77	AIRPHOTO NO:	CHAINAGE:
CKD:	TECH: PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:
OFFSET:	ELEV:			

TEST HOLE		
MILE	B,C,S	NUMBER
		50

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY % - SILT % - SAND % - GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	PEAT — 4"						
2					CI	CLAY-SILTY SANDY-GRAVELLY — 4'		Vc-Vf	56-23 21 DAMP			
5						SAND-GRAVEL MIXTURE		Vs	15-60 25 SAT.			
8					GP				11-37 52 SAT			
11									9-65 26 SAT.			
15						Rock Bit USED AFTER 15'			135 23-28 49 FREE WATER			
20						SAND - SILTY GRAVELLY		Vs	31-60 6 SAT.			
22					SM							
25									18-50 32 SAT			
30						— 30'			-21-65-14 FREE WATER			

BOTTOM OF HOLE - 30'

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INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 2/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		51

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT; scale 20, 40, 60, 80, 100, 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	WATER / ICE CONTENT	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 8"											
0–7						SILTY CLAY		Vs									
7–15						ICE 15'		ICE		NO SAMPLES							
						BOTTOM OF HOLE. 15'											

Depth scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

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DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

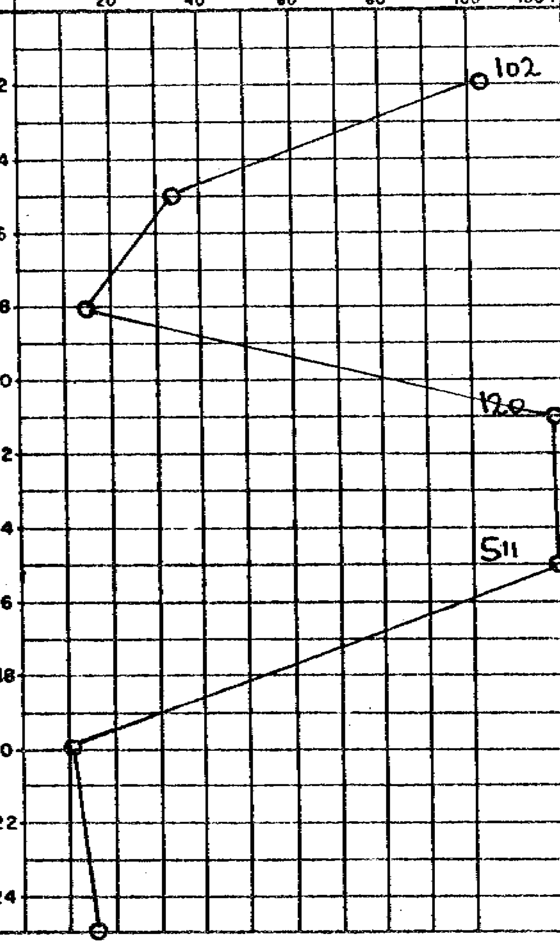
DWN	FIELD ENG:	DATE DRILLED 24/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE

MILE	B,C,S	NUMBER
		52

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0 – 8"					Pt	PEAT 8"		
8" – 3'					CL	CLAY - SILTY SANDY PEBBLES 3'		
3' – ~10.5'					SM	SAND - SILTY GRAVELLY		Vs
~10.5' – ~17'						ICE & CLAY		ICE & CL
~17' – 25'					GM	SAND - GRAVELLY SILTY		Vs

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	GRAIN-SIZE ANALYSIS: CLAY % / SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	47	49	4			FREE WATER
5	32	55	13			FREE WATER
8	29	61	10			SAT.
11	65	34	1			FREE WATER
15	75	22	3			FREE WATER
20	18	43	39			SAT.
25	15	74	11			SAT.

OVER

OVER

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

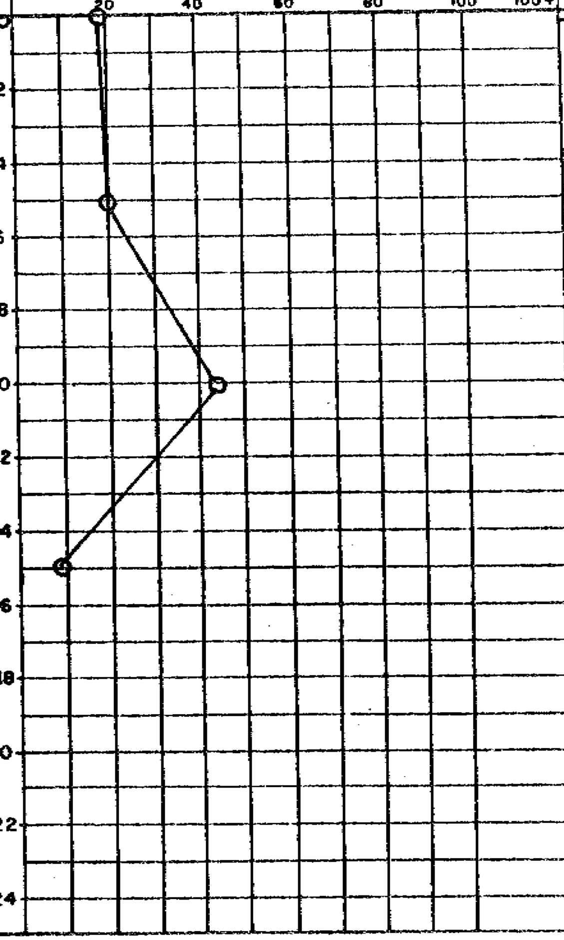
DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO:	CHAINAGE:	OFFSET	TEST HOLE
CKD	TECH	RIG:	SURFACE DRAINAGE:	VEGETATION:	ELEV	

MILE	B,C,S	NUMBER
		52

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					SC	SAND - SILTY CLAYEY PEBBLES ... GRAVELLY 45'		VS	30		26	70	4	SAT.		
4									35		30	62	8	SAT		
10									40		42	56	2	SAT.		
15						BOTTOM OF HOLE - 45' ROCK BIT USED			45		11	59	30	SAT.		

Depth scales: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24 / 30, 32, 34, 36, 38, 40, 42, 44, 46, 18, 20, 22, 24

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ├──┤ LIQUID LIMIT



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INUVIK - TUK.

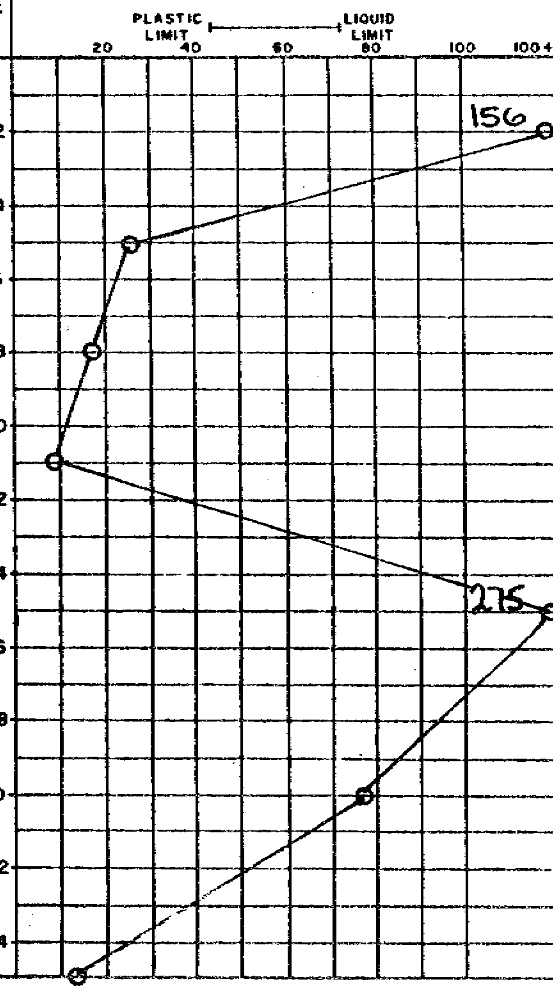
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 2/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		53

O = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2					Pt	PEAT 2.5'							FREE WATER		
4					SC	SAND - CLAYEY SILTY PEBBLES			29		68	3	FREE WATER		
8									23		73	4	SAT.		
12					SM	SILTY GRAVELLY PEBBLES		Vs	21		53	26	WET		
15									55		38	7	FREE WATER		
20									18		76	6	FREE WATER		
24						GRAVELLY			13		55	32	SAT.		

OVER

OVER

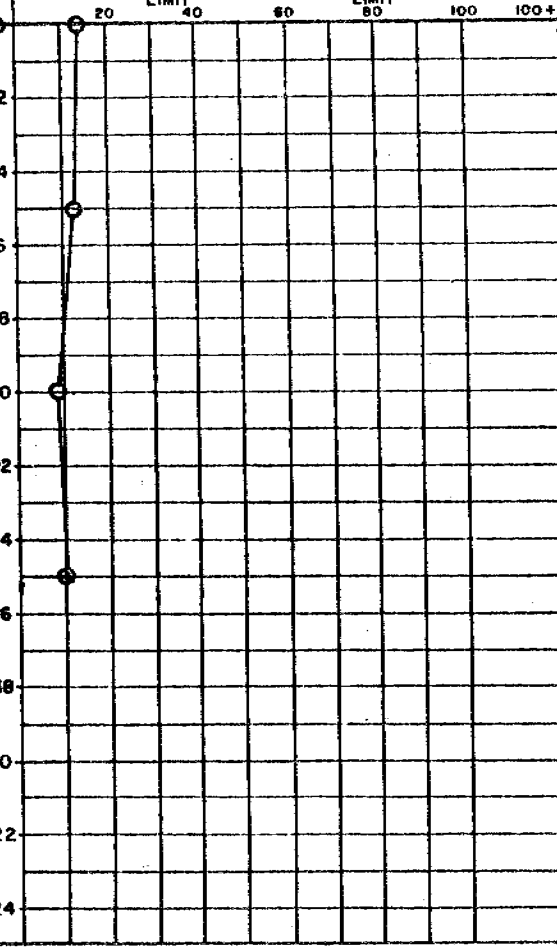
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED	AIRPHOTO NO:	CHAINAGE:	OFFSET:	TEST HOLE
CKD	TECH	RIG:	SURFACE DRAINAGE:	VEGETATION:	ELEV	MILE: / B,C,S: / NUMBER: 53

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0		SAND- SILTY		30	17-		79	4	SAT		
2	SM	. PEBBLES	Vs	32							
4			|	34	10-		84	6	SAT		
6			Vc - Vr	36							
8				38							
10				40	9-		77	14	WET		
12				42							
14		GRAVELLY 45'		44	8-		51	41	SAT		
16		BOTTOM OF HOLE - 45'		46							
18		ROCK BIT USED		18							
20				20							
22				22							
24				24							

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



R073

INUVIK - TUK

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

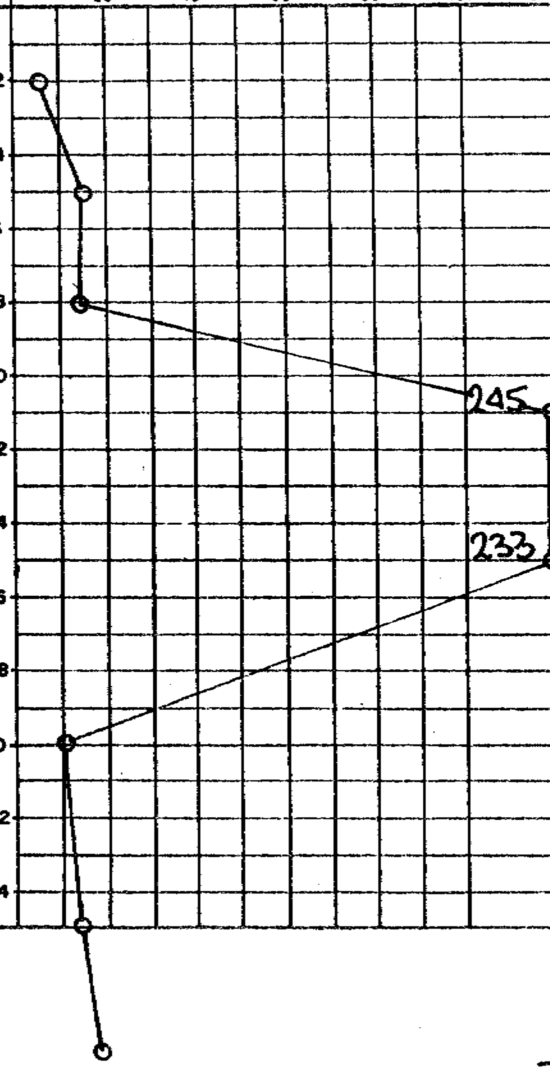
DWN:	FIELD ENG:	DATE DRILLED 2/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		54

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0–1					Pt	PEAT 1'		
1–9					SM	SAND - GRAVELLY SILTY 9'		Vs
9–14					CL	Rock Bit USED CLAY - SILTY, SANDY PEBBLES		
14–17						ICE		ICE
17–30					SM	SAND - GRAVELLY SILTY PEBBLES		Vs

BOTTOM OF HOLE - 30'

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ——— LIQUID LIMIT



DEPTH (FEET)	GRAIN SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	17-		52	31	DAMP		
5	18-		51	31	SAT.		
8	13-		73	14	SAT.		
11	69-		23	8	FREE WATER		
15	53-		27	20	FREE WATER		
20	17-		61	22	SAT.		
25	20-		67	13	SAT.		
30	-22-		69	9	SAT.		

R073

PEBBLES

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DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 2/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		55

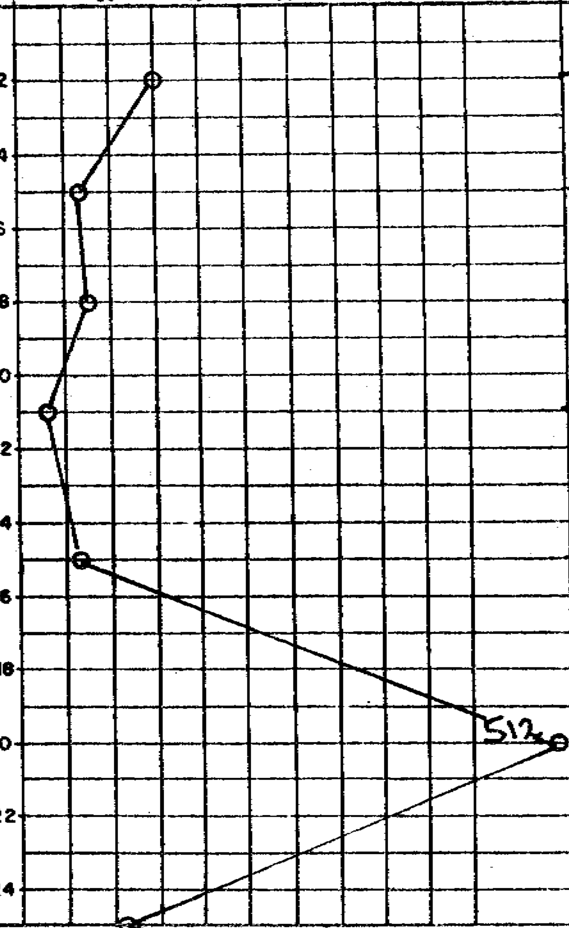
DEPTH (FEET) | SAMPLE NUMBER | SAMPLE TYPE | % RECOVERY | PENETRATION RESISTANCE | UNIFIED SOIL SYMBOL | SOIL DESCRIPTION | LIMITS OF FROZEN GROUND | ICE DESCRIPTION | DEPTH (FEET)

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL % | WET DENSITY (P.C.F.) | DRY DENSITY (P.C.F.) | REMARKS

Depth (ft)	Unified soil symbol	Soil description	Ice description
0 – .5'	Pt	PEAT .5'	
.5' – 4'	CI	CLAY - SILTY SANDY MED. PLASTIC 4'	
4' – 17'	SM	SAND - SILTY GRAVELLY	Vs
17' – 25'	CL CI	CLAY - SILTY SANDY PEBBLES; ROCK BIT USED	
25' – 30'	SM	SAND - SILTY GRAVELLY	

BOTTOM OF HOLE - 30'



-8 - 19 0 MOIST
21 - 60 19 SAT.
12 - 60 28 FREE WATER
14 - 69 17 FREE WATER
14 - 50 36 FREE WATER
70 - 23 7 FREE WATER
61 - 33 6 WET
77-0-19-66-15 FREE WATER

SAND - SILTY

DRILL HOLE REPORT

INUVIK - TUK

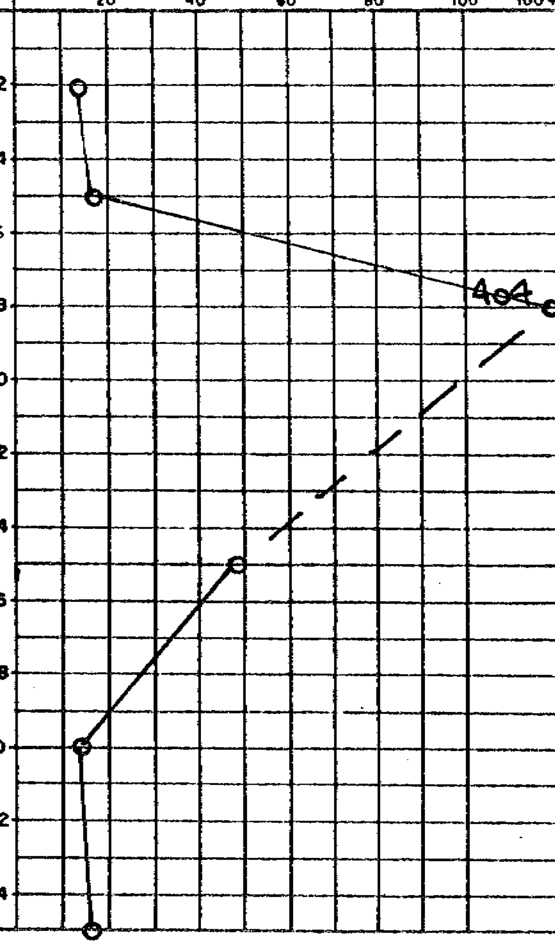
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		56

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0					Pt	PEAT 4"		
0–9					SM	SAND-GRAVELLY SILTY Rock Bit used to 15' PEBBLES 9'		Vs
9–13						ICE 13'		ICE
13–17					CL	CLAY - SILTY SANDY 17'		
17–25					SM	SAND-GRAVELLY SILTY		Vs

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	15-		54	31	SAT.		
5	38-		37	25	WET.		
8	51-		42	7	FREE WATER		
15	88-		12	0	FREE WATER		
20	12-		49	39	SAT.		
25	9-		80	11	SAT.		

OVER

DRILL HOLE REPORT

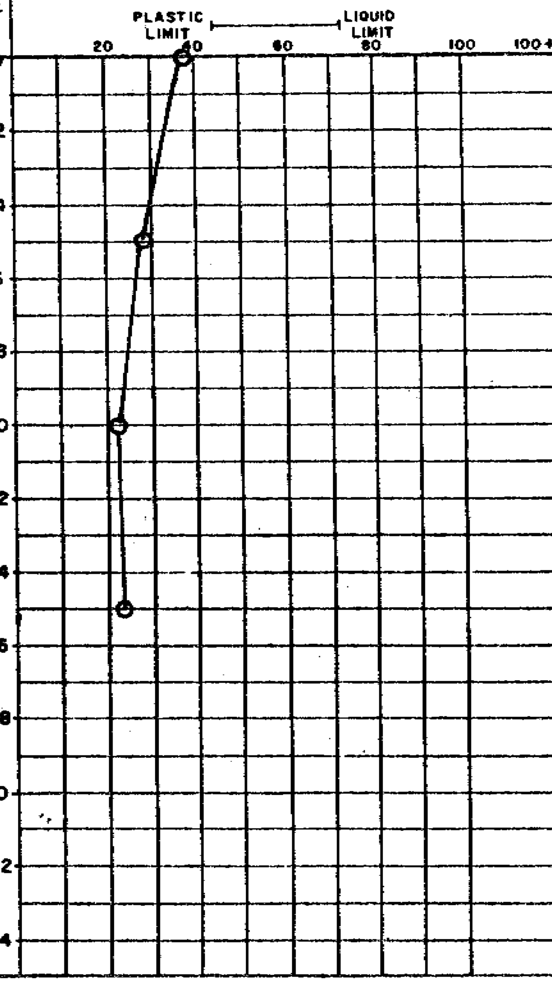
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED:	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD:	TECH:	RIG:	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		56

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
						SAND-SILTY			30	-	17	83	0			PORE WATER
2									32							
4					SM	PEBBLES			34	-	12	84	4			PORE WATER
6									36							
8									38	-	9	88	3			
10									40							PORE WATER
12									42							
14									44	-	3	90	7			PORE WATER
16						BOTTOM OF HOLE. 45'			46							
18									18							
20									20							
22									22							
24									24							

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



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DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
		57

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–7					Pt	PEAT		Vs								
7'						CLAY - SILTY SANDY PEBBLES		Vs								
15'						BOTTOM OF HOLE 15'										

Depth scale: 2 4 6 8 10 12 14 16 18 20 22 24

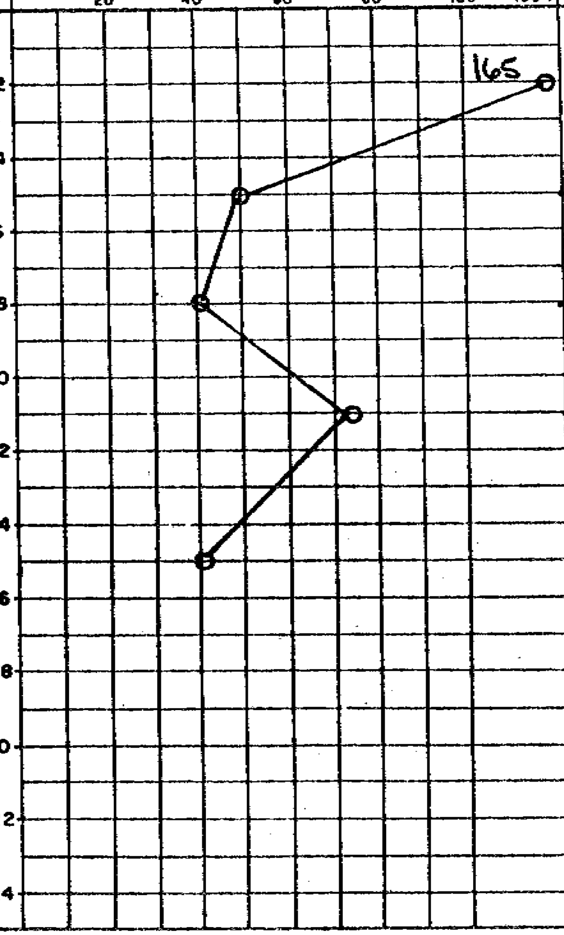
NO SAMPLES

6073

INUVIK - TUK.	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:	TEST HOLE
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV	MILE: / B,C,S: / NUMBER: 58

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT —— LIQUID LIMIT



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	WATER CONTENT	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–3					Pt	PEAT 3'			2	165							FRESH WATER
3–9					Cl	CLAY - SILTY SANDY PEBBLES			5		81	19	0				SAT.
									8		83	15	2				SAT.
9–12						ICE & SOIL		ICE & SOIL CL	11		84	16	0				FRESH WATER
12–15					CL / Cl	CLAY - SILTY SANDY PEBBLES 15'			15		77	20	3				SAT.
15						BOTTOM OF HOLE. 15'											

R073

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN: | FIELD ENG: | DATE DRILLED: 24/4/77 | AIRPHOTO NO: | CHAINAGE: | OFFSET:

CKD: | TECH: PRONYCH | RIG: AIR | SURFACE DRAINAGE: | VEGETATION: | ELEV:

TEST HOLE

MILE	B,C,S	NUMBER
		59

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0–3					Pt	PEAT — 3'		
3–15						SILT - - CLAYEY — 15'		Vc-Vr / Vs
15						BOTTOM OF HOLE. 15'		

O = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT; 20, 40, 60, 80, 100, 100+

NO SAMPLES

GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL % | WET DENSITY (P.C.F.) | DRY DENSITY (P.C.F.)

REMARKS

R073

INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 7/4/71	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		50

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–2					Pt	PEAT 2'											
2–9					ML	SILT - CLAYEY SANDY		Vs		NO SAMPLES							
9–11						ICE		ICE									
11–15					ML	SILT - CLAYEY SANDY PEBBLES 15											
15						BOTTOM OF HOLE - 15											

Depth scale (both depth columns): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

R073

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DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

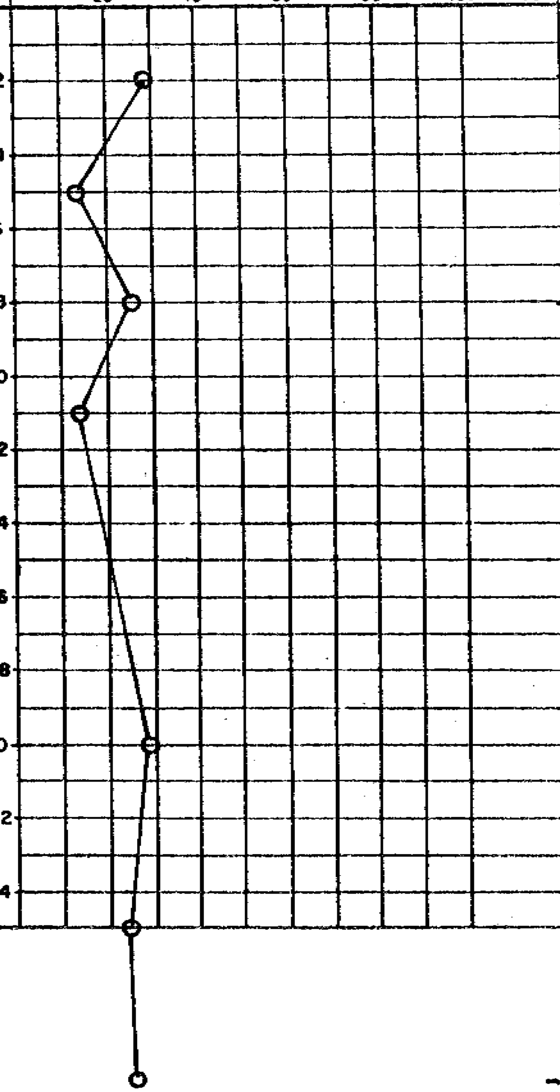
DWN	FIELD ENG.	DATE DRILLED 3/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:	
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:	

TEST HOLE

MILE	B,C,S	NUMBER
		61

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0					Pt	PEAT 8"		
2–10					CL	CLAY - SILTY SANDY PEBBLES LOW PLASTIC		Vs
10–20						ICE & CLAY LENSES		ICE & CL
20–24					CL	CLAY - SILTY SANDY PEBBLES LOW PLASTIC		Vs 1 Vc - Vr

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+



DEPTH (FEET)	GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	-75-	17	8	MOIST			
5	-82-	17	1	FREE WATER			
8	-62-	35	3	SAT.			
11	-26-	41	33	WET			
20	81-	17	2	SAT			
25	-82-	16	2	WET			

-84-15-1- WET

BOTTOM OF HOLE - 30'

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DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 21/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE

MILE	B,C,S	NUMBER
		62

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 8"											
2						CLAY - SILTY			2								
						FEW PEBBLES											
4						ICE LENSES			4								
6								Vs	6								
8									8	NO SAMPLES							
10									10								
12									12								
14						15'			14								
16						BOTTOM OF HOLE - 15'			16								
18									18								
20									20								
22									22								
24									24								

R073

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DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 24/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET		TEST HOLE
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:		ELEV	

MILE	B,C,S	NUMBER
		63

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	WATER / ICE CONTENT	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–2					Pt	PEAT 2'			2								
2–8						ICE		ICE	4, 6, 8	NO SAMPLE							
8–15					CL CI	CLAY - SILTY FEW PEBBLES ICE LENSES 15'		Vs	10, 12, 14								
15						BOTTOM OF HOLE - 15'			16, 18, 20, 22, 24								

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INUVIK - TUK.

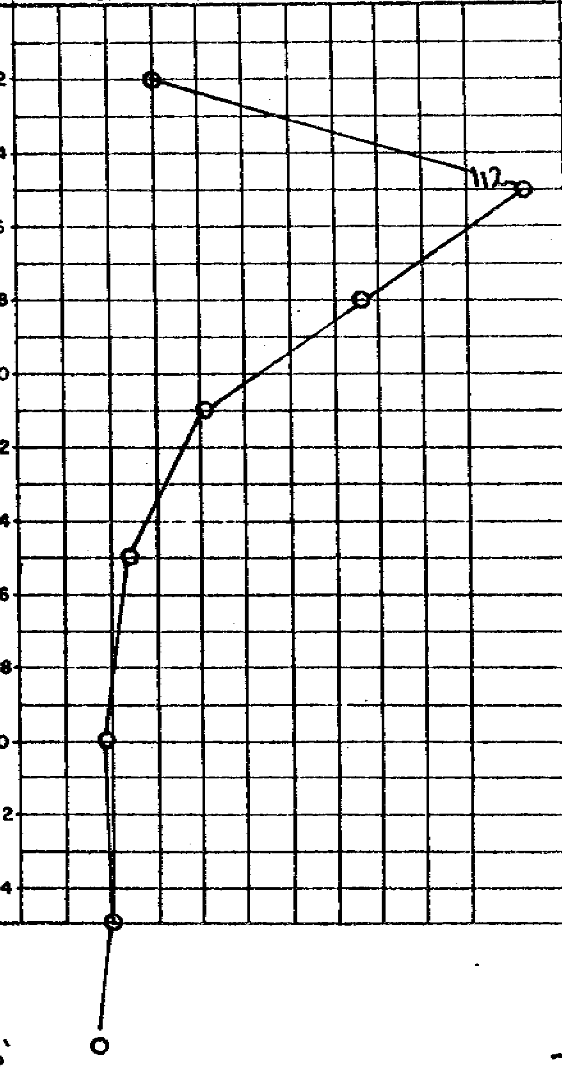
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 3/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD:	TECH: PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		64

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–5					Pt.	PEAT		Vs							
2															SAT.
5						5'			98	2	0				FREE WATER
5–30					Ci	CLAY - SILTY SANDY PEBBLES MED. PLASTIC		Vs - Vr							
8									89	11	0				MOIST
11									68	26	6				MOIST
15									67	25	8				DAMP
20									86	14	0				DAMP
25									52	47	1				MOIST
30						30'			83	15	2				DAMP

BOTTOM OF HOLE - 30'

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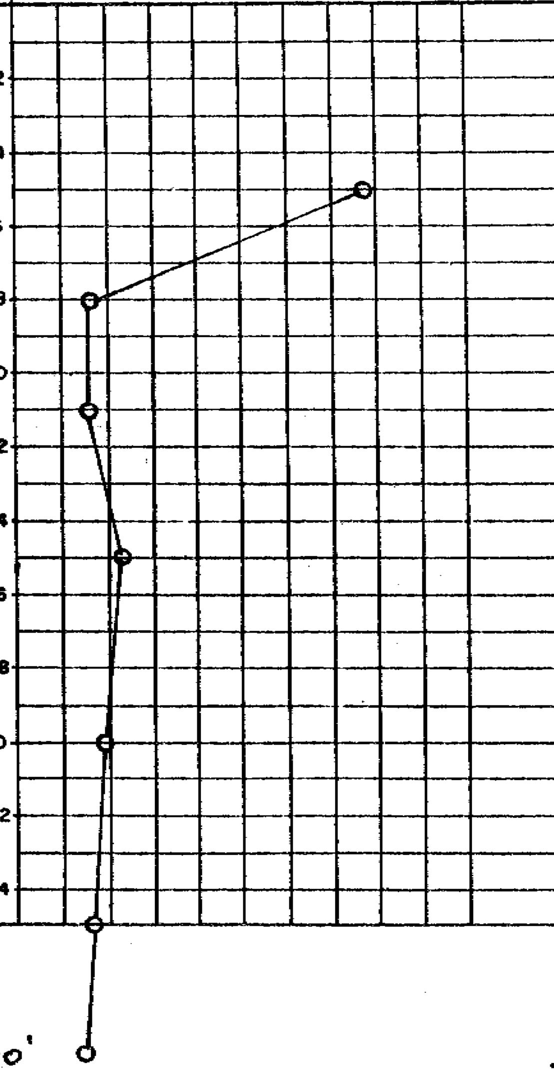
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 3/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		65

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT —— LIQUID LIMIT
20 40 60 80 100 100+



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0	Pt	PEAT .5'								
0.5–6	CL-CI	CLAY - SILTY SANDY GRAVELLY 6'	Vs		55	35	10			FREE WATER
6–19	SC	SAND - CLAYEY SILTY GRAVELLY; ICE LENSE 6" @ 10'; ROCK BIT USED AFTER 15' 19'			28	53	19			SAT.
					32	51	17			SAT.
					38	54	8			SAT.
19–	CL	CLAY - SILTY SANDY GRAVELLY	Vc-Vr		66	23	11			MOIST
					56	36	8			MOIST

GRAVEL LENSE 23'-24'

SAND - CLAYEY GRAVELLY 30' -38-45-17 MOIST

BOTTOM OF HOLE - 30'

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DRILL HOLE REPORT

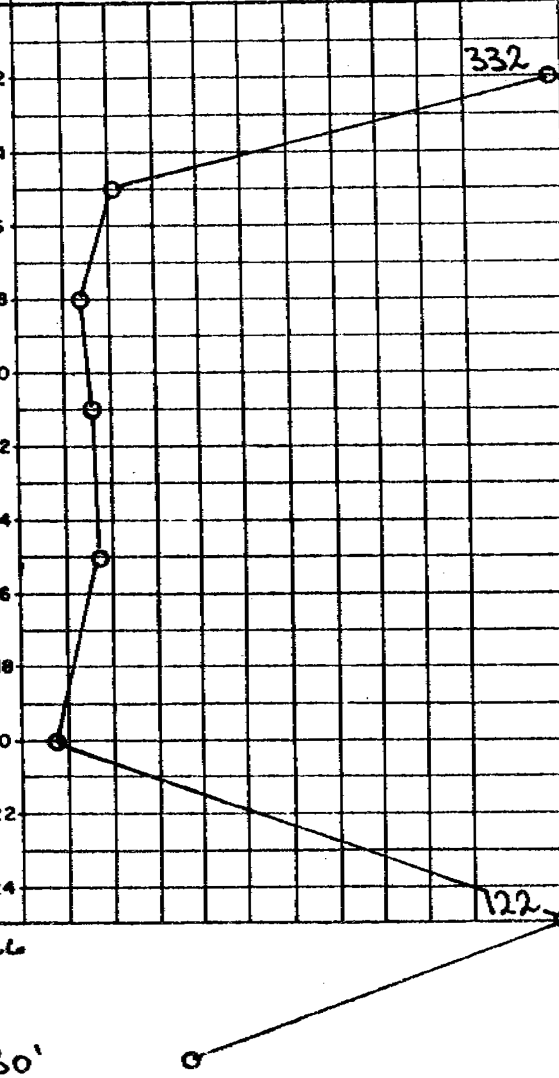
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 5/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:	TEST HOLE
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV	MILE: / B,C,S: / NUMBER: 66

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–1.5'					Pt	PEAT 1.5'									
1.5–3'					CL	CLAY-SILTY SANDY 3'			88	-	12	0			FREE WATER
3–6'					CL	CLAY - SILTY SANDY GRAVELLY 6'		Vc-Vr	48	-	41	11			SAT.
6–24'					GC	SAND-GRAVEL-CLAY MIXTURE		Vs	32	-	42	26			SAT.
									31	-	42	27			SAT.
									34	-	34	32			SAT.
						ROCK BIT USED AFTER 15'			26	-	47	27			DAMP
24–26'					CL	CLAY-SANDY SILTY GRAVELLY 26			52	-	38	10			FREE WATER
26–30'						ICE & CLAY		ICE & CL 30'							FREE WATER

BOTTOM OF HOLE-30'

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



ICE & CLAY

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DRILL HOLE REPORT

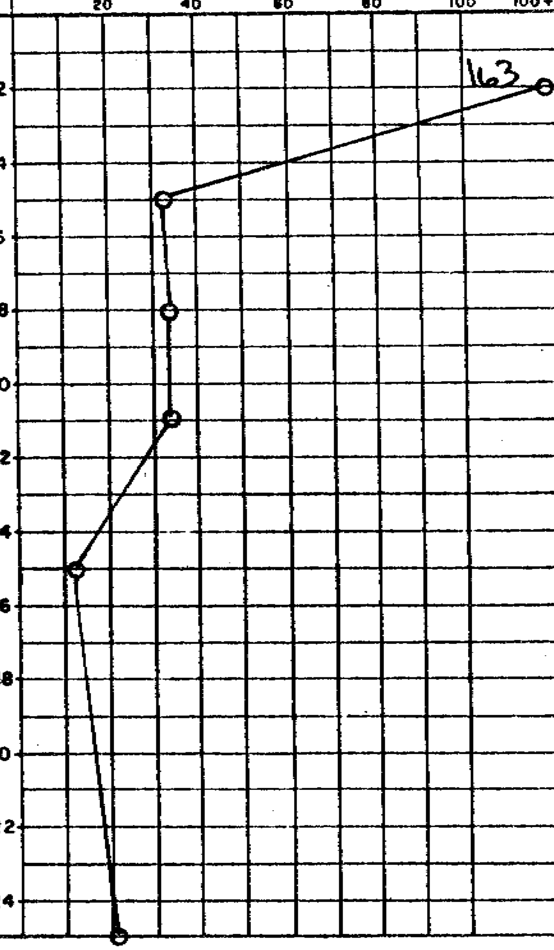
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 3/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:	TEST HOLE
CKO	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:	

MILE	B,C,S	NUMBER
		67

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–2					Pt	PEAT 2'			2	50	31	19				FREE WATER
2–14					CL	CLAY - SILTY SANDY PEBBLES LOW PLASTIC		Vs	4	85	15	0				SAT.
									8	74	20	6				SAT.
									11	71	23	7				SAT.
14–18					GC	GROVEL - SANDY SILTY CLAYEY 14'			15	19	26	55				SAT.
18–23						ICE		ICE								
23–26					CL	CLAY - SILTY SANDY GRAVELLY			25	44	43	13				FREE WATER
26–30						ICE		ICE	30							



BOTTOM OF HOLE - 30'

INUVIK - TUK

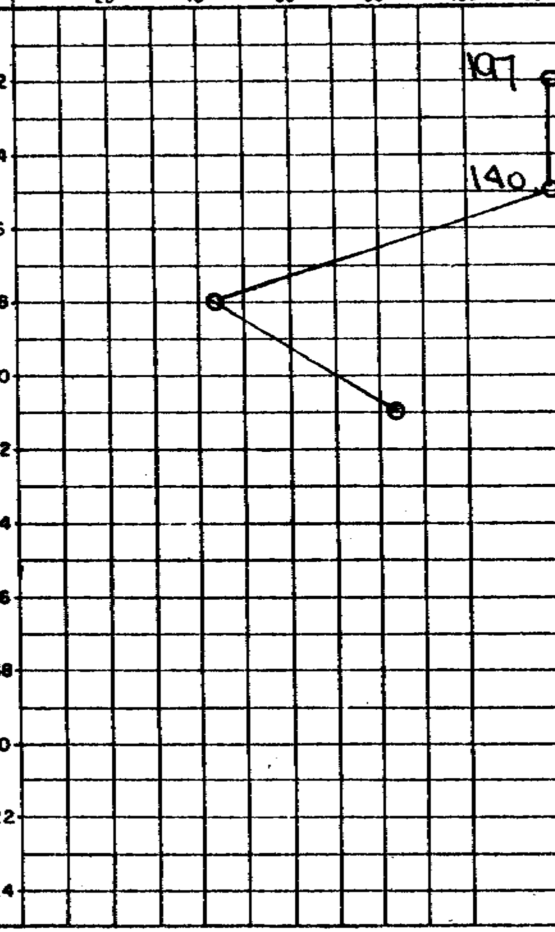
DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 3/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		68

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–5					Pt	PEAT & ICE 5'									SAT.
5									89	11	0				FREE WATER
5–14					CL	CLAY - SILTY SANDY LOW PLASTIC		Vs							
8									85	14	1				SAT. H.I.B.
11									88	12	0				FREE WATER
14–15						ICE 15'		ICE							
15						BOTTOM OF HOLE - 15'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



R073

INUVIK - TUK.

DRILL HOLE REPORT

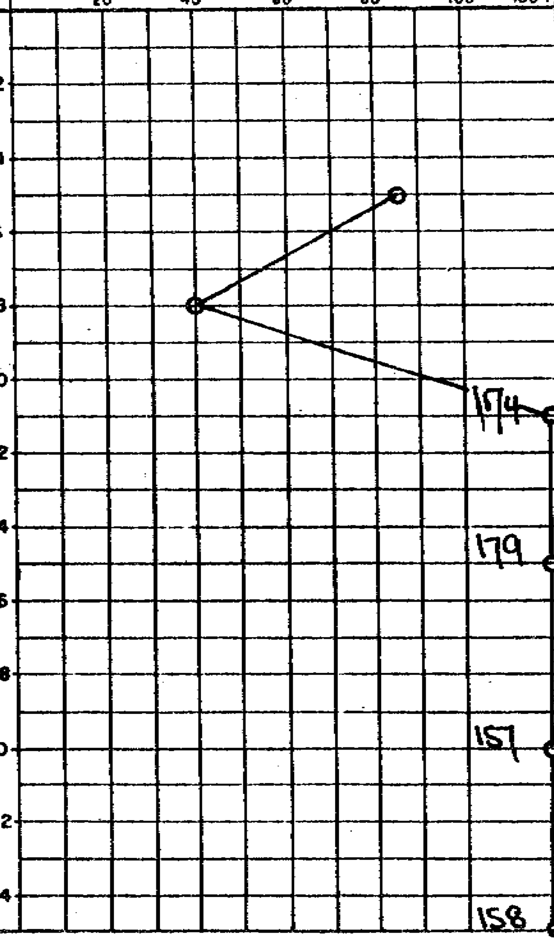
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 3/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		69

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0–3					Pt	ICE & PEAT — 3'		
3–30					CL / CI	CLAY - SILTY SANDY PEBBLES LOW-MED. PLASTIC		Vs

○ = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
5	53		45	2			FREE WATER
8	84		15	1			SAT.
11	83		15	2			FREE WATER
15	85		15	0			FREE WATER
20	91		9	0			FREE WATER
25	85		14	1			FREE WATER

——— 30'

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 31/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		70

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL %; WET DENSITY (P.C.F.); DRY DENSITY (P.C.F.); REMARKS

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0–2					Pt	PEAT 2'		
2–4½						ICE 4½		ICE
4½–15						ALTERNATING LAYERS OF ICE & CLAY 15'		V_s
15						BOTTOM OF HOLE - 15		

NO SAMPLES

R073

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

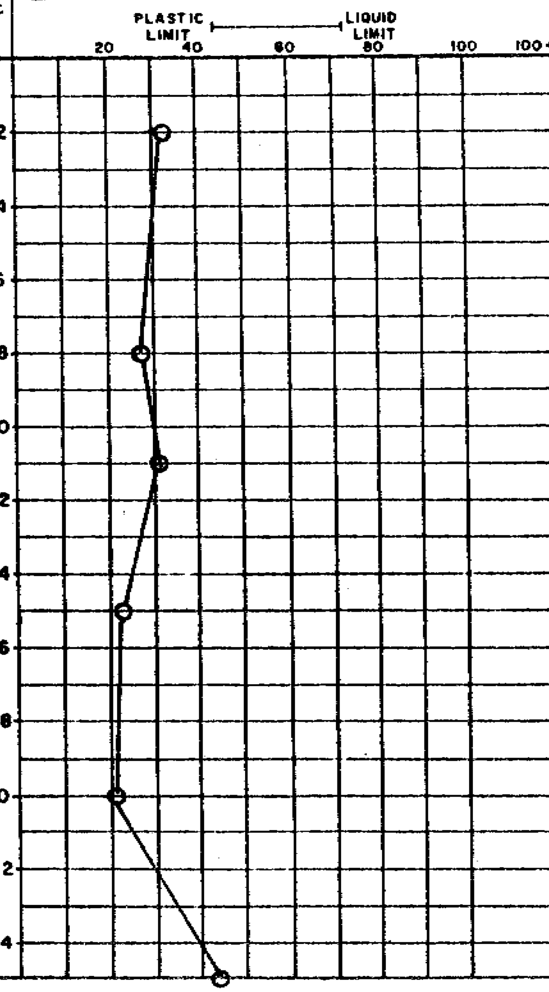
DWN	FIELD ENG.	DATE DRILLED 3/4/77	AIRPHOTO NO:	CHAINAGE:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:

OFFSET:
ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		T1

O = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–8'					Pt	PEAT 8'									
2						CLAY - SILTY SANDY		Vs	-81-		19	0	WET		
4–6					CL CI	LOW - MED. PLASTIC			90-		10	0			
8								Vc - Vr	90-		10	0	MOIST		
11						11'			94-		6	0	SAT.		
11–15					ML	SILT -									
15						15'			-45-		55	0	MOIST		
15–20					SC	SAND - SILTY CLAYEY									
20						20'			-83-		15	2	DAMP		
20–25					CI	CLAY - SILTY SANDY PEBBLES MED. PLASTIC		Vs	-80-		19	1	SAT.		



30'

BOTTOM OF HOLE - 30'

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

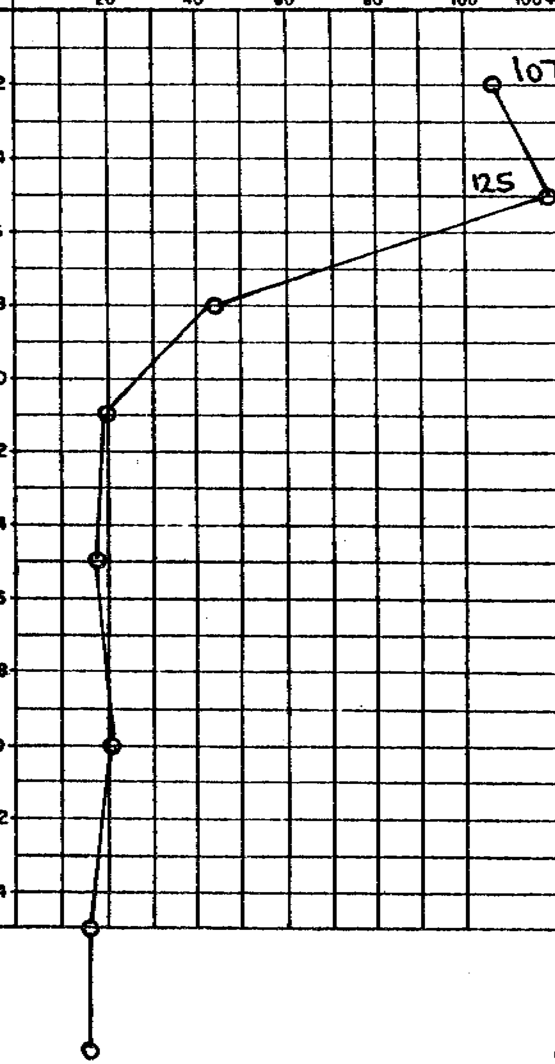
DWN	FIELD ENG.	DATE DRILLED	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH	RIG:	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		72

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION
0–2	Pt	PEAT 2'	
2–4		SAND-SILTY 4'	
4–		CLAY- SANDY SILTY	Vs
		SILTY FEW PEBBLES	
	CI	MED. PLASTIC	Vc–Vr

Columns: DEPTH (FEET) · SAMPLE NUMBER · SAMPLE TYPE · % RECOVERY · PENETRATION RESISTANCE · UNIFIED SOIL SYMBOL · SOIL DESCRIPTION · LIMITS OF FROZEN GROUND · ICE DESCRIPTION · DEPTH (FEET)

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
	12	88	0			FREEWATER
	83	17	0			FREEWATER
	96	4	0			FREEWATER
	87	11	2			DAMP
	92	8	0			DAMP
	87	13	0			DAMP
	94	5	1			DAMP
	85	14	1			DAMP

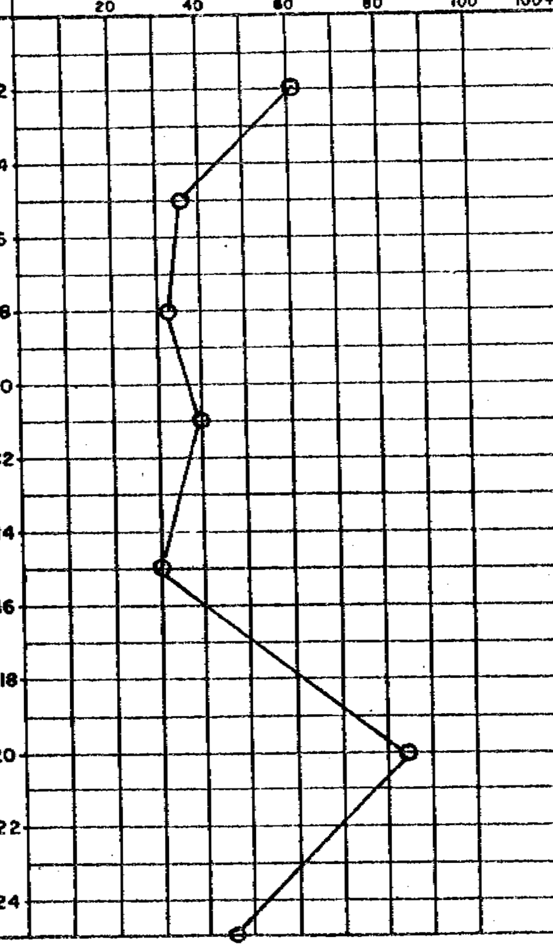
BOTTOM OF HOLE - 30'

R073

	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO:	CHAINAGE:	OFFSET:	TEST HOLE
CKD	TECH	RIG:	SURFACE DRAINAGE:	VEGETATION:	ELEV:	MILE / B,C,S / NUMBER 73

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
20 40 60 80 100 100+



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–2					Pt	PEAT 2'									
2						CLAY - SILTY			90-		10	0	MOIST		
4						SANDY			87-		11	2	SAT.		H.I.B.
6						PEBBLES									
8						LOW PLASTIC			84-		14	2	SAT.		
10									84-		14	2	SAT.		
12					CL										
14								Vs	83-		16	1	WET		
20									86-		14	0	FREEWATER		
24									84-		15	1	SAT		

R073

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET	
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV	

TEST HOLE		
MILE	B,C,S	NUMBER
		74

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	O = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–2.5'					Pt	PEAT											
2.5'–6.5'						ICE		ICE									
6.5'–15'						CLAY - SILTY		Vs		NO SAMPLES							
15'						BOTTOM OF HOLE - 15'											

Depth scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

R073

INUVIK - TUK

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 3/4/77	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:

CHAINAGE:
OFFSET:
VEGETATION:
ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		T5

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0–2					Pt	PEAT — 2'		
2–6					CL	CLAY - SILTY SANDY PEBBLES LOW PLASTIC — 6'		
6–					SM	SAND - GRAVELLY SILTY		V_c - Vr

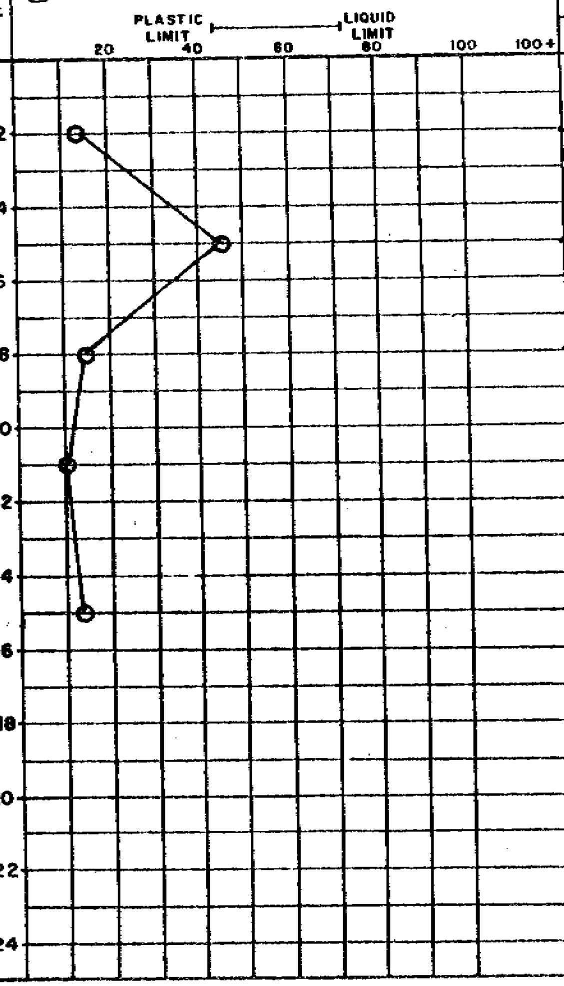
NO CIRCULATION AFTER 15'

LOOSE METERIAL?

ROCK BIT USED AFTER 8'

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ├──┤ LIQUID LIMIT



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	30	-	34	36	MOIST		
5	82	-	16	2	SAT.		
8	26	-	51	23	WET		
11	20	-	47	33	WET		
15	22	-	44	34	SAT.		

BOTTOM OF HOLE - 30'

INUVIK - TUK

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 3/4/77	AIRPHOTO NO:
CKD	TECH: PRONYCH	RIG: AIR	SURFACE DRAINAGE:

CHAINAGE:

OFFSET:

ELEV:

VEGETATION:

TEST HOLE		
MILE	B,C,S	NUMBER
		76

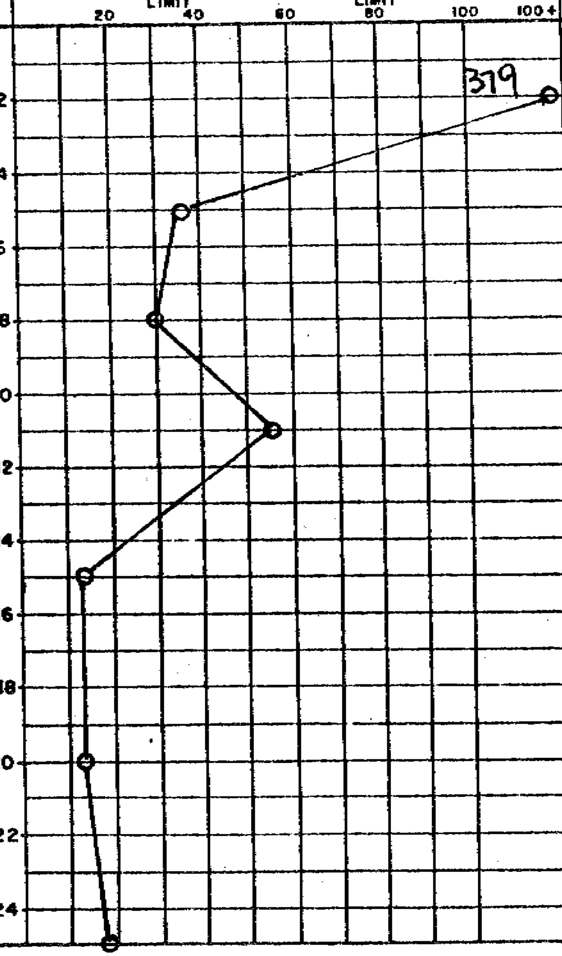
DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0–2.5'					Pt	Peat		
2.5'–9'					CL	Clay - Silty Sandy Low Plastic		
9'–30'					Sc	Sand - Silty Clayey Gravelly		Vs

Bottom of Hole - 30'

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	GRAIN-SIZE ANALYSIS: CLAY % – SILT % – SAND % – GRAVEL % (as written)	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2				Free Water
5	80-20 0			SAT.
8	85-14 1			SAT.
11	31-55 14			Free Water
15	22-51 27			SAT.
20	20-48 32			SAT.
25	29-34 37			Free Water

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

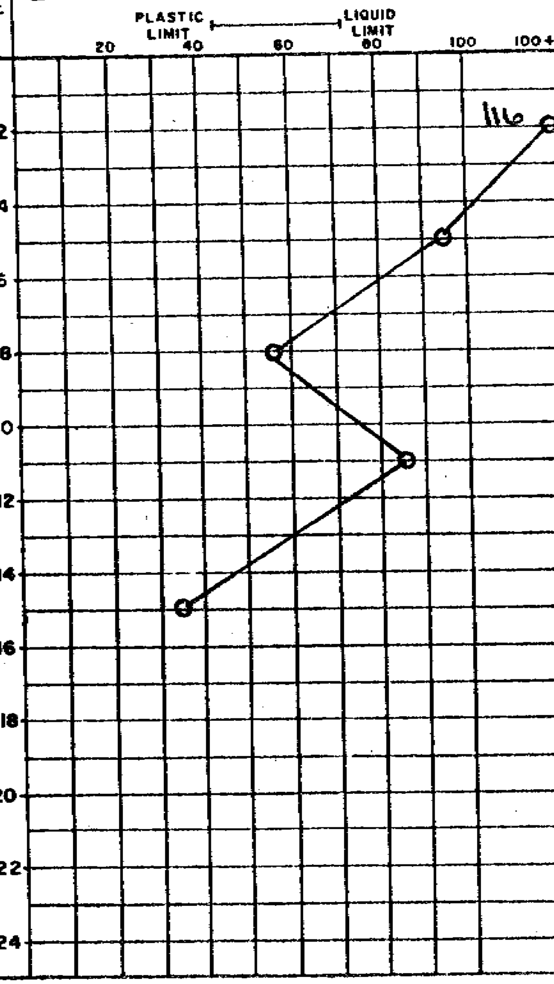
INUVIK - TUK.

DWN	FIELD ENG.	DATE DRILLED 3/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		37

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0–2.5					Pt	PEAT		
2.5–15					CL	CLAY - SILTY SANDY PEBBLES LOW PLASTIC		V_s
15						BOTTOM OF HOLE - 15		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	88	9	3				FREE WATER
5	84	13	3				FREE WATER
8	69	24	7				FREE WATER
11	82	16	2				FREE WATER
15	83	14	3				SAT

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DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

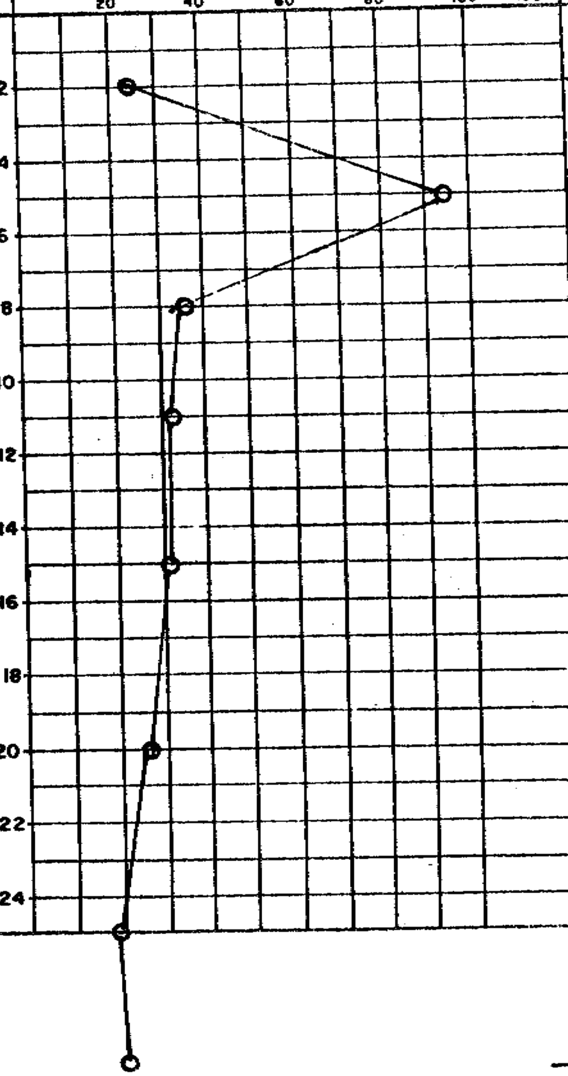
INUVIK - TUK.

DWN	FIELD ENG.	DATE DRILLED 3/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		78

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 8"										
2						CLAY - SILTY SANDY			2		61	28	11	MOIST		
4						PEBBLES		Vs	4		89	7	4	FREE WATER		
6						LOW - MED.			6							
8					CL	PLASTIC			8		91	9	0	WET		
10					CI			Vc - Vr	10		89	9	2	WET		
12									12							
14									14		90	9	1	WET		
16									16							
18									18							
20									20		90	10	0	MOIST		
22									22							
24									24		81	11	2	DAMP		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+



-94-6-0 DAMP

BOTTOM OF HOLE - 30'

R073

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

INUVIK - TUK.

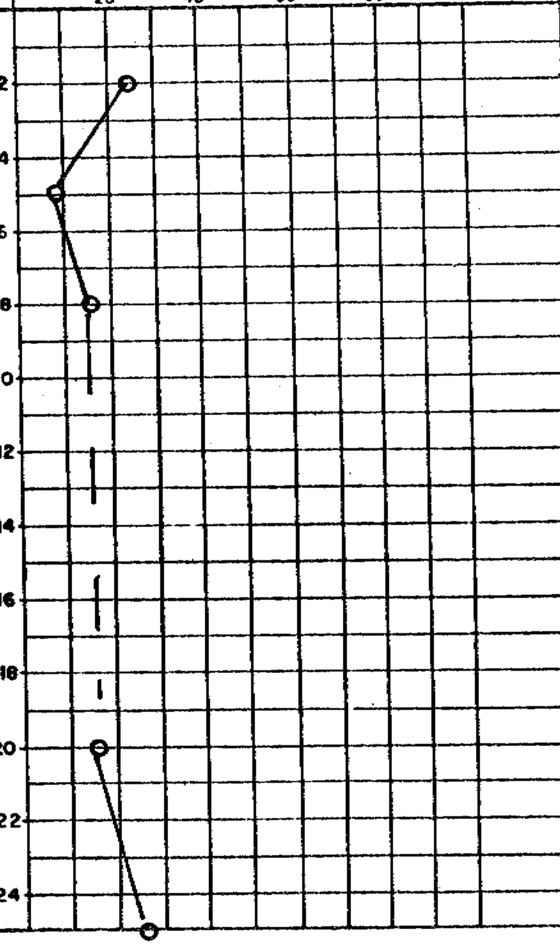
DWN	FIELD ENG.	DATE DRILLED 3/4/77	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:

CHAINAGE:
OFFSET
VEGETATION:
ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		79

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–2					Pt	PEAT 2'									
2–4					CI	CLAY-SILTY SANDY GRAVELLY 4'		Vc-Vr	-	60	27	13	MOIST		
4–8					SM	SAND-GRAVELLY SILTY PEBBLES			-	12	53	35	SAT		
									-	56	40	4	WET		H.I.B.
8–18						ICE		ICE							
18–23					SP	SAND-GRAVELLY		Vs	-	8	56	36	FREE WATER		
23–24						ICE		ICE							
24–						CLAY-			-	89	8	3	SAT.		H.I.B

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



CL
SILTY
PEBBLES
LOW PLASTIC 30'

BOTTOM OF HOLE - 30'

R073

INUVIK - TUK

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

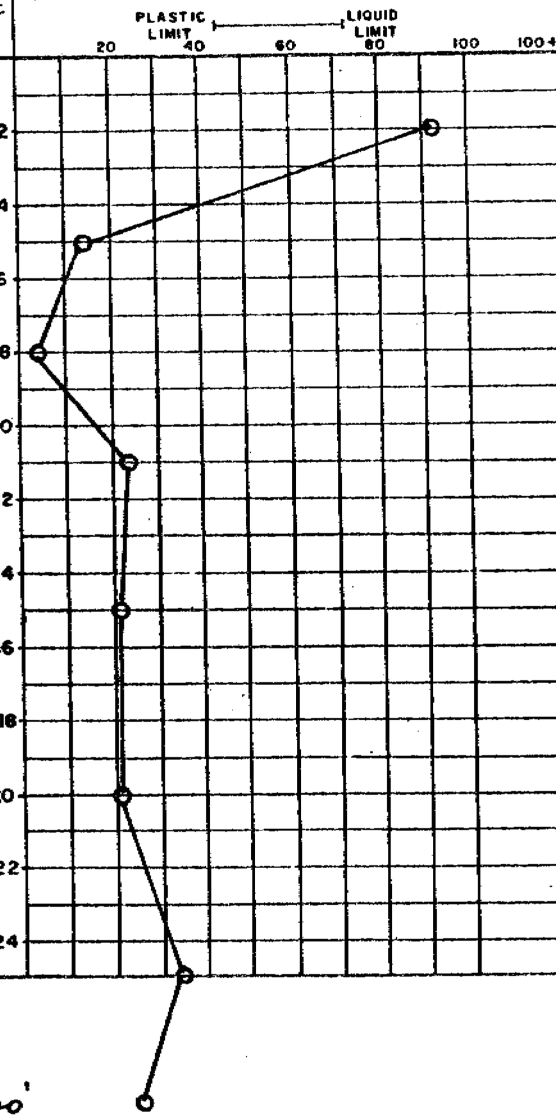
DWN	FIELD ENG	DATE DRILLED 3/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
		80

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–2½'					Pt.	PEAT				85	14	1	SAT.		H.I.B.
2½'–6'					SM	SAND - SILTY GRAVELLY		Vs		23	61	16	SAT.		H.I.B.
6'–10'					GW	GRAVEL - SANDY		1		4	40	56	WET		H.I.B.
10'–15'					SM	SAND - SILTY PEBBLES		Vc - Vr		23	72	5	SAT.		
15'–					ML	SILT - SANDY				53	47	0	MOIST		H.I.B.
										89	11	0	MOIST		H.I.B.
										70	30	0	FREE WATER		
30'										92	8	0	WET		

BOTTOM OF HOLE - 30'

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



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INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 3/4/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD:	TECH: PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
		81

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–8					Pt	PEAT — 4" CLAY - SILTY SANDY PEBBLES		Vc - Vr									
8–30						ICE DIRTY CLAY LENSES 17' - 19'		ICE		NO SAMPLES							
						CLAY - SILTY SANDY PEBBLES		Vs									

BOTTOM OF HOLE - 30'

R073

CLAY - SILTY SANDY

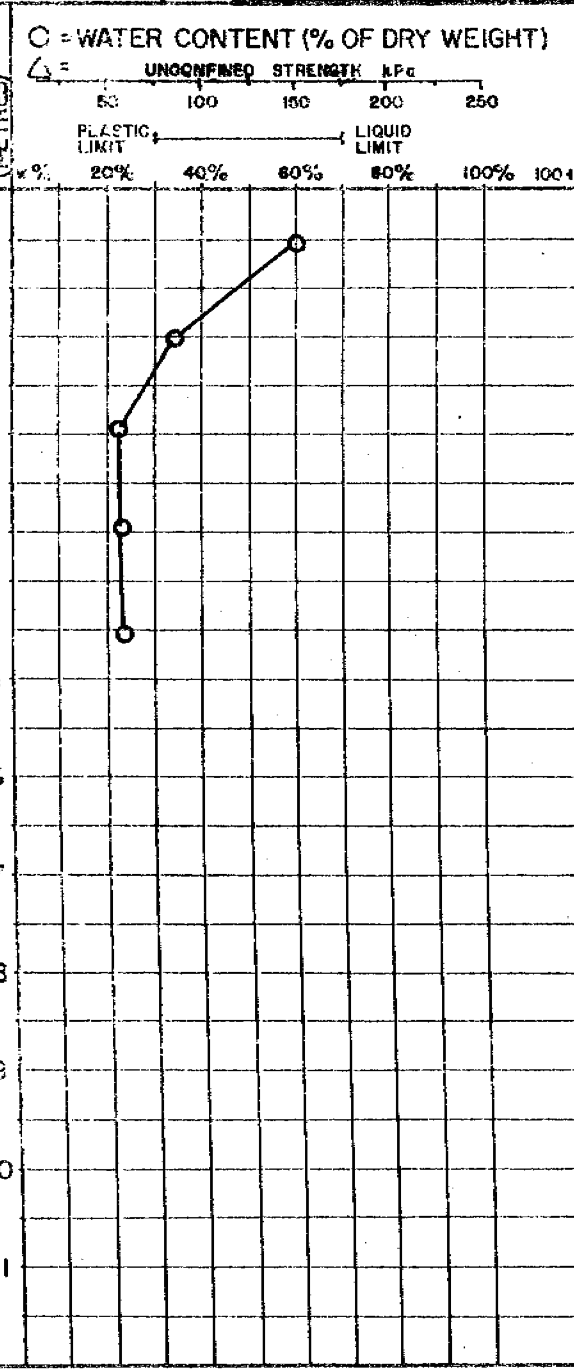
Appendix C

PUBLIC WORKS CANADA	DRILL HOLE REPORT	INUVIK - TUK.	973-C-5

TECH. PRONYCH	RIG AIR	DATE 78/04/07	km	B.P. No. [redacted]	HOLE No. [redacted]

CHAINAGE	OFFSET
114+50	[illegible]

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	Pt	PEAT .6m		HIGH ICE		85	13	2		MOIST	
2–15	CI	GREY - CLAY - SILTY, SHALE FRAGMENTS, MED. PLASTIC		Vs	1	91	9	0		WET	
					2	94	6	0		MOIST	
				MODERATE ICE, Vc - Vr	3	89	6	5		MOIST	
		4.6m			4	94	5	1		MOIST	
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

PUBLIC WORKS CANADA — DRILL HOLE REPORT

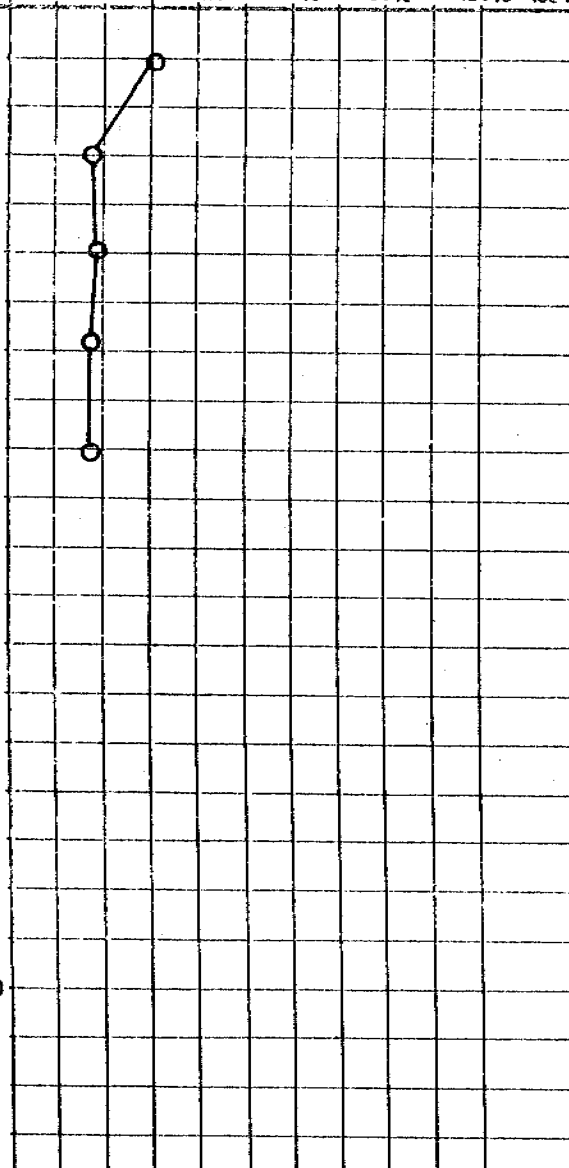
Inuvik - Tuk. 973-C-6

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	Air	78/04/07		[redacted]	[redacted]

CHAINAGE	OFFSET
130 + 50	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
	Pt	Peat. .5m		
2–14	CL - CI	Clay - Silty Sandy · Pebbles. Low - Med. Plastic. 4.6m		Low Ice. Vx
16		Bottom of Hole - 4.6 m		

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



DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
~0.5	86	11	3		Wet	
~1.5	78	19	3		Moist	
~2.5	76	22	2		Moist	
~3.4	82	16	2		Moist	
~4.5	82	15	3		Moist	

PUBLIC WORKS CANADA	DRILL HOLE REPORT	INUVIK - TUK.	974-C-1A

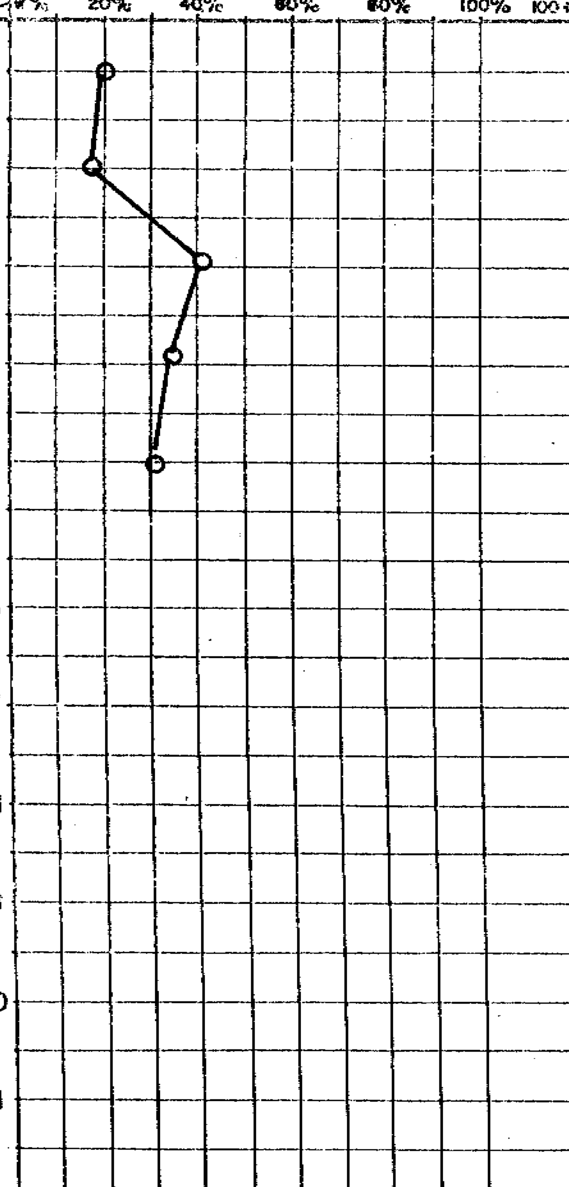
TECH. PRONYCH	RIG AIR	DATE 78/04/07	km	B.P. No. [redacted]	HOLE No. [redacted]

CHAINAGE	OFFSET
150+00	

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0	PT	PEAT — .2 m			
2–6	CI	CLAY - SILTY SANDY - PEBBLES MED. PLASTIC		MODERATE ICE $V_c - V_r$	0.2–2
8–14	CL	GREY LOW PLASTIC — 4.6m		HIGH ICE V_s	2–4.6
16–18		BOTTOM OF HOLE - 4.6m			

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



Approx. depth (m)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0.5	87		12	1	MOIST
1.5	73 (~~30~~)		23	4	MOIST
2.5	69		27	4	SAT.
3.4	57		42	1	SAT.
4.5	73		22	5	SAT.

PUBLIC WORKS CANADA	DRILL HOLE REPORT	INUVIK - TUK

TECH. PRONYCH	RIG AIR	DATE 78/04/08	km /974-	B.P. No.	HOLE No. 1

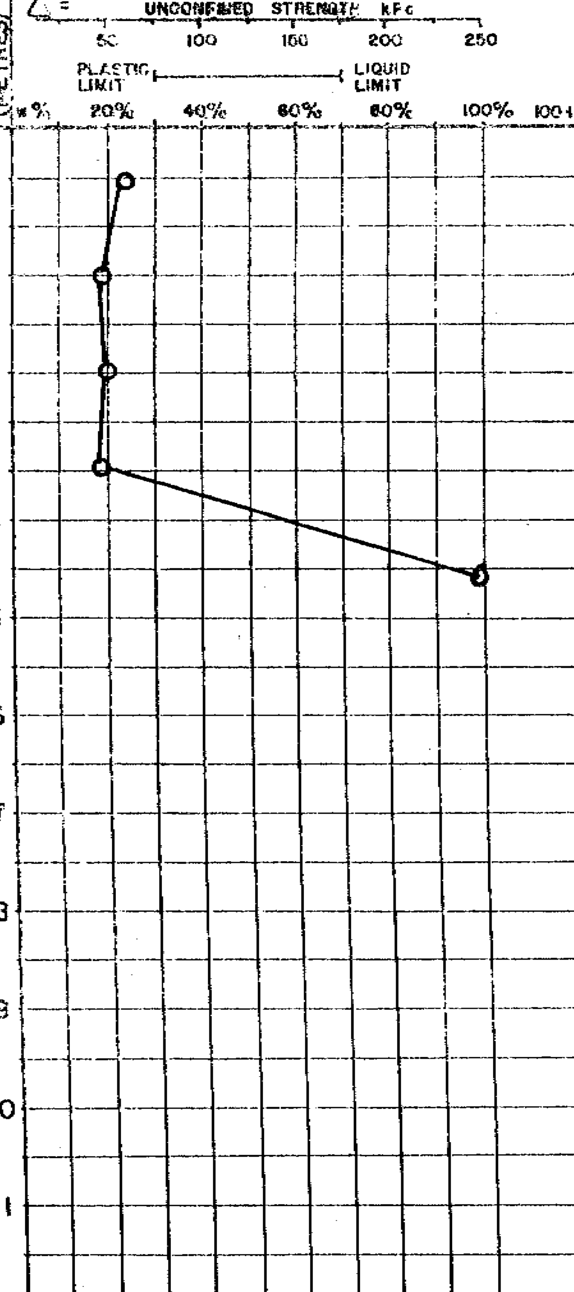
CHAINAGE	OFFSET
185+75	

REMARKS

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
2	PL	PEAT .6m				86	13	1		MOIST
4		BROWN - CLAY . SILTY SANDY . PEBBLES		Vx	1	75	20	5		MOIST
8		GREY -			2	77	20	3		WET
10	CL	LOW PLASTIC			3	79	19	2		WET
12				Vc - Vr	4					
14		4.6m		Vs		71	19	10		FREE WATER
18		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

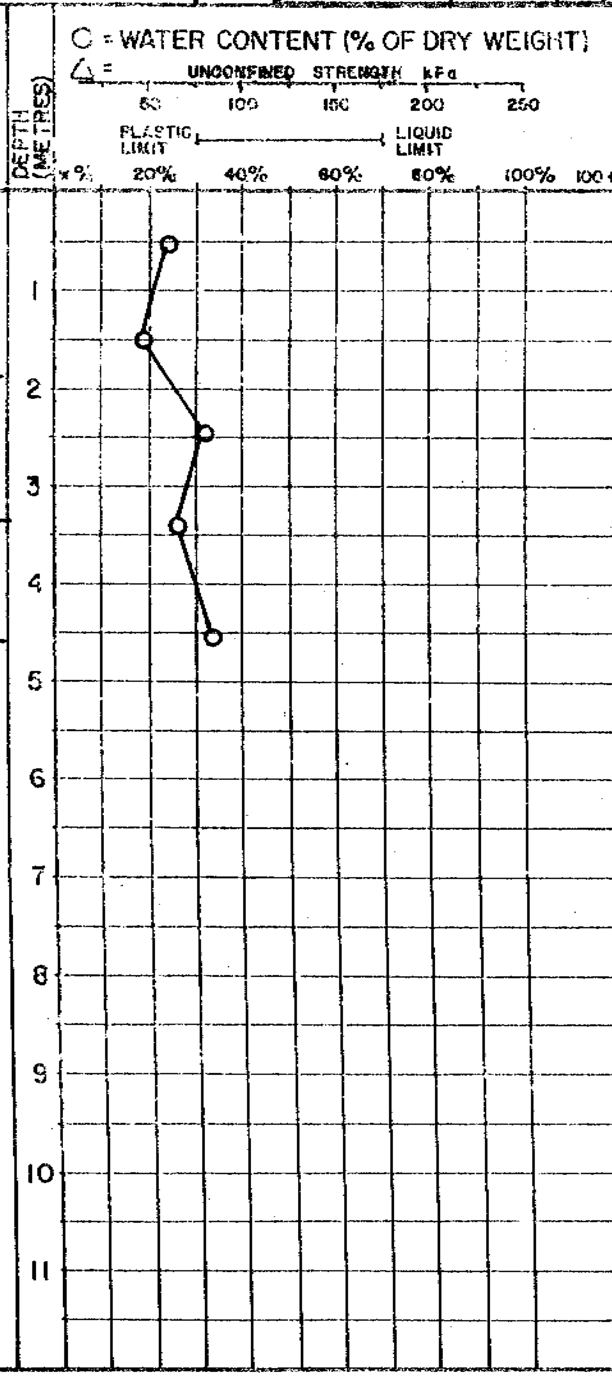
Depth (metres) scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	Air	78/04/08	974		2

CHAINAGE	OFFSET
194+00	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
	Pt.	Peat		
2		Brown -		Vs
4		Clay - Silty Sandy Pebbles		
6–8	CL			Vc-Vr
10		Low Plastic Grey -		
14		4.6m		VS
16–18		Bottom of Hole - 4.6m		



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
-	84	15	1	Wet
-	76	22	2	Wet
-	68	24	8	Sat.
-	63	21	16	Sat.
-	71	23	6	Sat.

REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT

INUVIK – TUK.

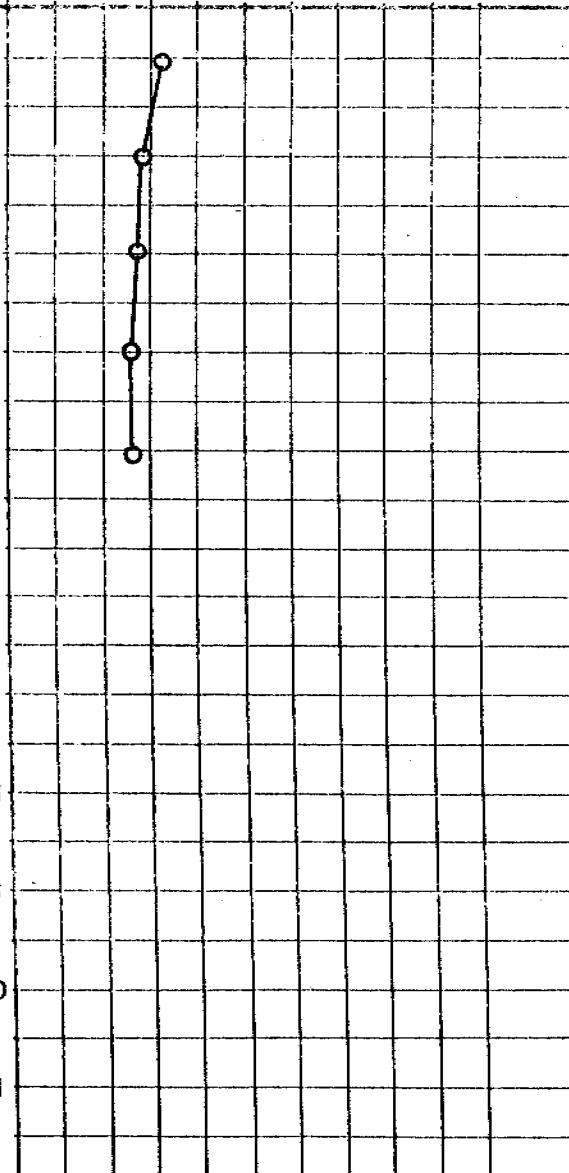
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	AIR	78/04/08	975		1

CHAINAGE	OFFSET
208+00	

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–15	CL	BROWN – CLAY – SILTY SANDY – PEBBLES LOW PLASTIC GREY.		MODERATE TO HIGH Vc–Vr | Vs	0–4.6
		4.6m			
		BOTTOM OF HOLE · 4.6m			

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



GRAIN-SIZE ANALYSIS

CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
-	82	15	3	SAT.
-	80	18	2	SAT.
-	78	20	2	SAT.
-	79	19	2	WET
-	74	25	1	WET

PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	Air	78/04/08	/ 975		2

CHAINAGE	OFFSET
218 - 50	

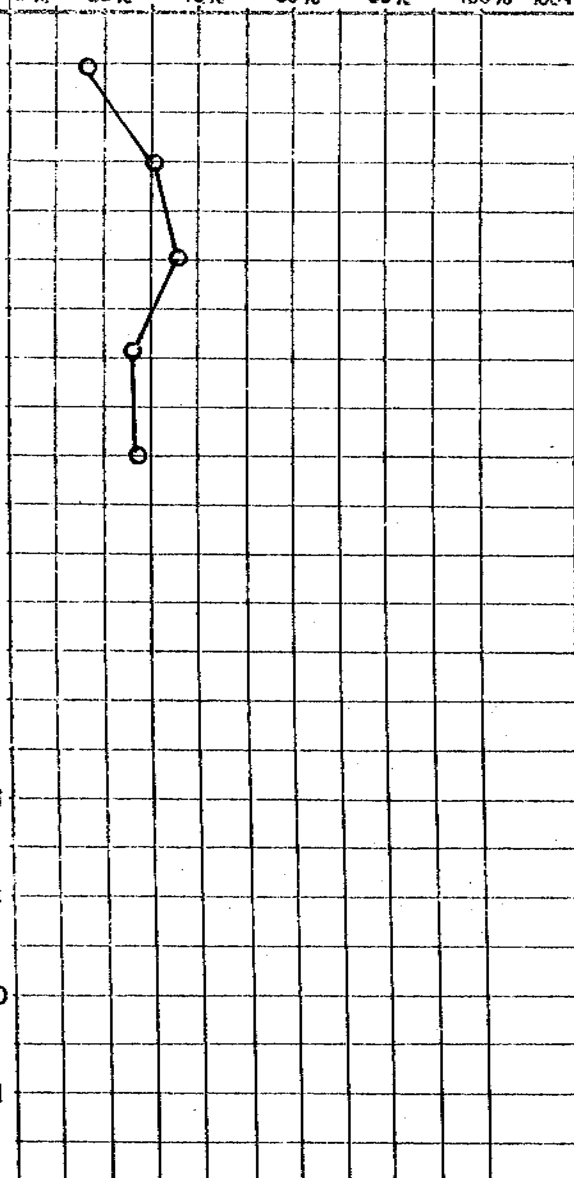
REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
2–8	CL	Brown - Clay - Silty Sandy - Pebbles Low Plastic		Vs	0–2
10–14		Grey.		Vc - Vr	3–4
15		4.6m			4.6
16		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

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



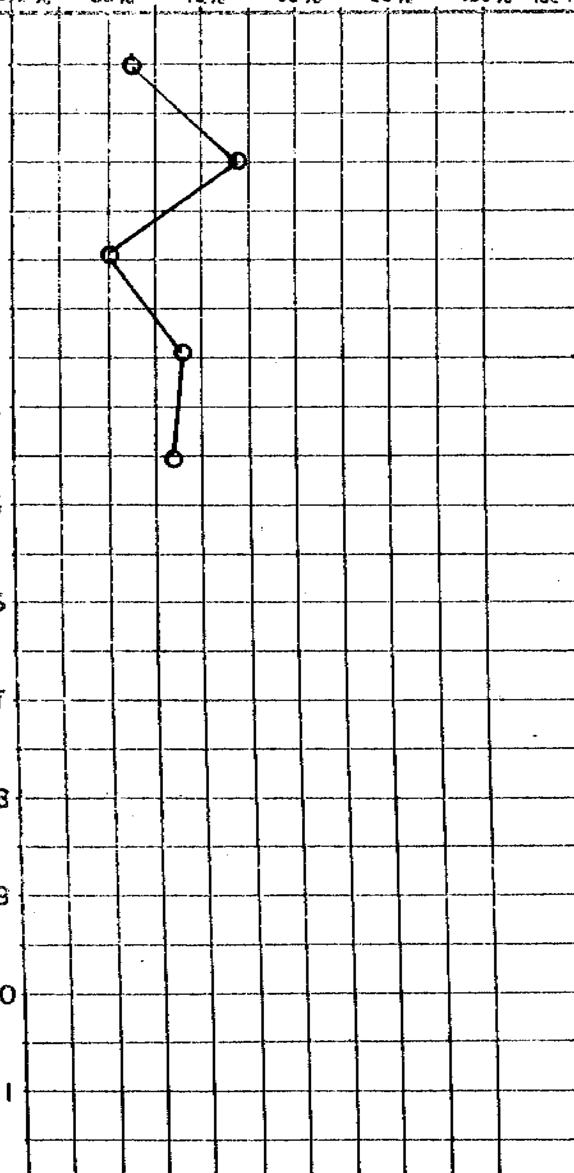
GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
73	-	23	4	Wet
73	-	24	3	Sat.
73	-	25	2	Sat.
72	-	24	4	Sat.
81	-	27	2	Sat.

PUBLIC WORKS CANADA	DRILL HOLE REPORT	Inuvik - Tuk.

TECH. Pronych	RIG Air	DATE 78/04/08	km 975	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
227+00	

C = WATER CONTENT (% OF DRY WEIGHT)
Δ = 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
0–7	CL	Brown - Clay - Silty Sandy Low Plastic; Clay - Silty — 2.1m		Vs	0–2.1	80	19	1		Wet	
						97	2	1		Sat.	
7–10	Pt	Peat - Moss - Roots Black — 3.1m			2.1–3.1	97	3	0		Sat.	
10–15	CL / CI	Clay - Silty Sandy Pebbles Low-Med. Plastic — 4.6m		Vs	3.1–4.6	55	38	7		Sat.	
						55	36	9		Sat.	

Bottom of Hole - 4.6m

PUBLIC WORKS CANADA — DRILL HOLE REPORT

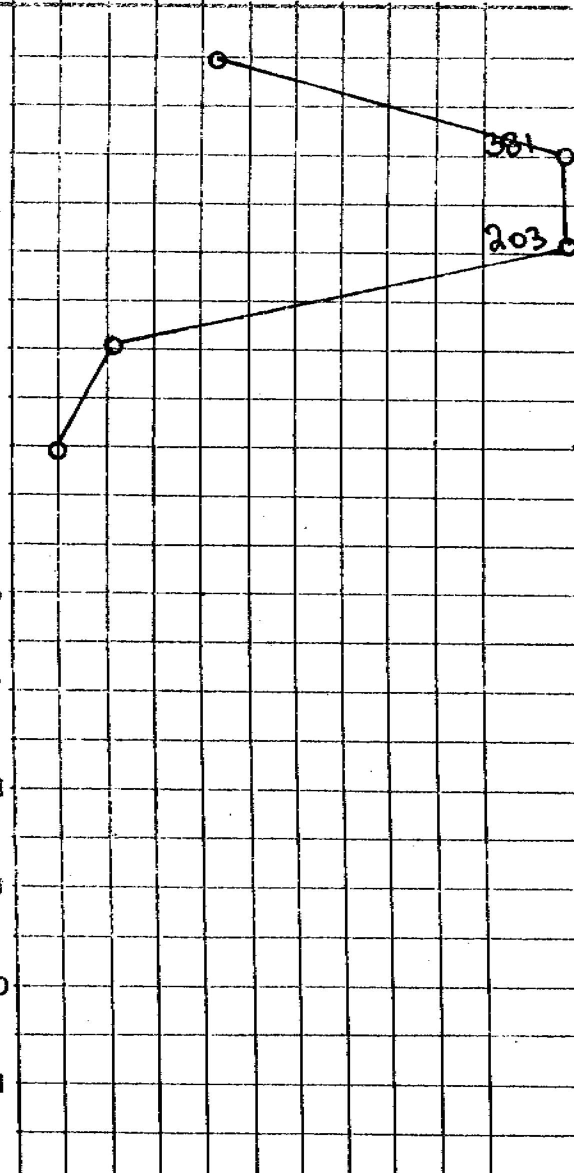
INUVIK - TUK.

TECH. PRONYCH	RIG AIR	DATE 78/04/08	km 1975	B.P. No.	HOLE No. 4

CHAINAGE	OFFSET
237+00	

REMARKS

○ = 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
2		PEAT -				87	-	11	2	DAMP
4	Pt	BROWN TO BLACK			1					
6										WET
8					2	92	-	7	1	SAT.
10		2.9m CLAY - SILTY SANDY - PEBBLES - LOW PLASTIC		Vs	3					
12	CL					47	-	46	7	SAT.
14		GRAVELLY 4.6m			4	36	-	37	27	WET
16					5					
18		BOTTOM OF HOLE. 4.6m								
20					6					
22										
24					7					
26										
28					8					
30					9					
32										
34					10					
36										
38					11					

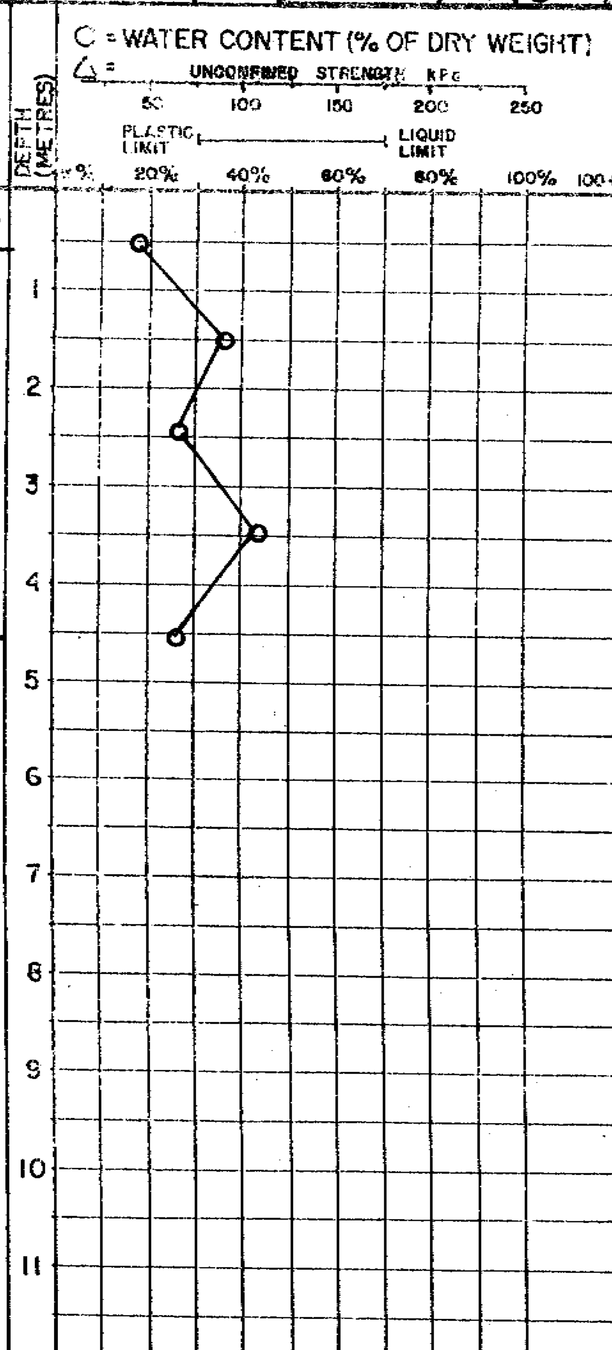
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Inuvik-Tuk.

TECH. Pronych | RIG Air | DATE 78/04/08 | km /976 | B.P. No. | HOLE No. 1

CHAINAGE: 250+75 | OFFSET:

REMARKS:

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–2		Brown - Clay- Silt) Sandy		Vc-Vr
2–15	CL	Pebbles Low Plastic		Vs
15		Grey 4.6m		
		Bottom of Hole - 4.6 m		



DEPTH (approx. m)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0.5	81-	-	19	0	Moist
1.5	79-	-	19	2	Sat.
2.5	75-	-	23	2	Sat.
3.5	89-	-	10	1	Sat.
4.5	69-	-	22	9	Sat.

PUBLIC WORKS CANADA — DRILL HOLE REPORT — INUVIK - TUK.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	AIR	78/04/08	/976		2

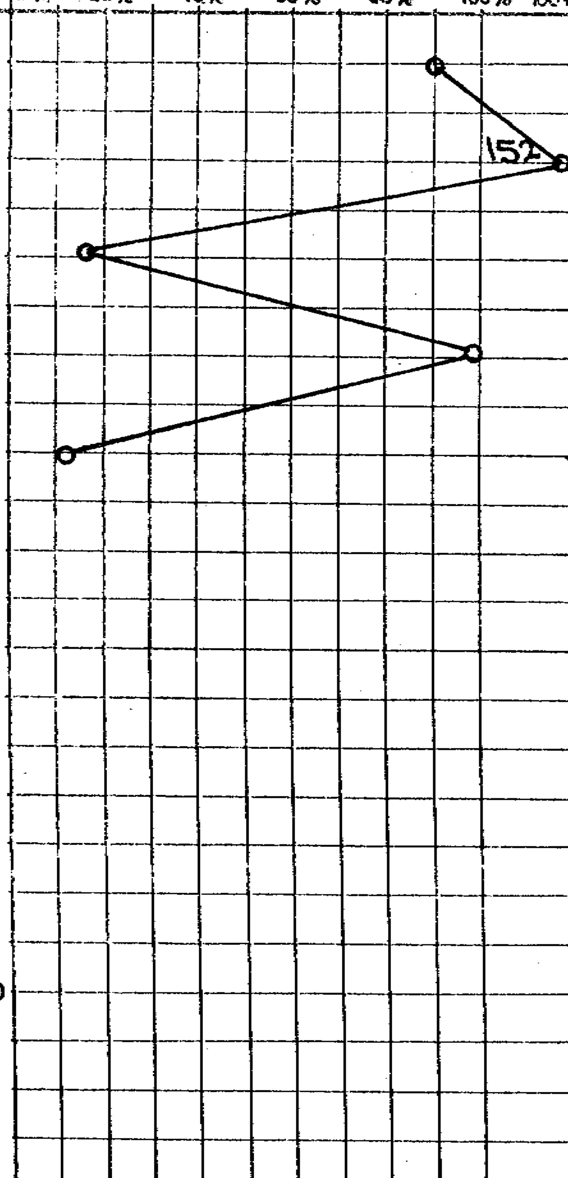
CHAINAGE	OFFSET
25' FROM CREEK	
278+30	

C = WATER CONTENT (% OF DRY WEIGHT)

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

PLASTIC LIMIT ├──┤ LIQUID LIMIT

x%: 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	Pt	BROWN - PEAT			0–2	84	15	1		MOIST	
						75	23	2		FREE WATER	
		2 m									
6–15	CL	BROWN - CLAY - SILTY SANDY PEBBLES - GRAVELLY		Vs	2–4.6	33	57	10		WET	
						75	20	5		FREE WATER	
14	SM	GRAVELLY SILTY SAND 4.6 m				15	52	33		SAT.	
16		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

Inuvik - Tuk.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	Air	78/04/08	976		3

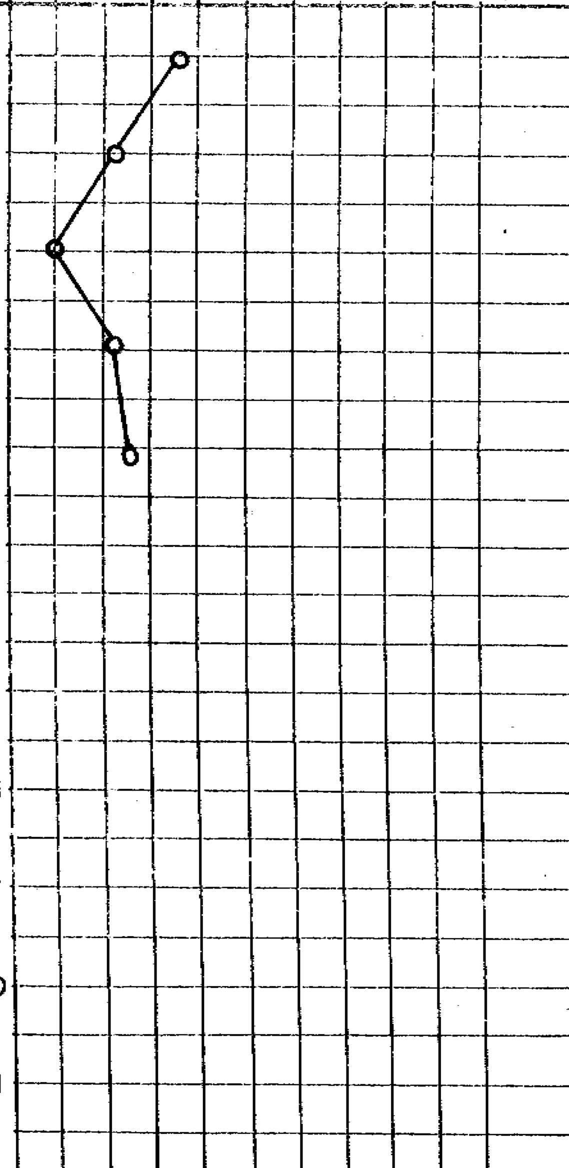
CHAINAGE	OFFSET
292+00	

○ = WATER CONTENT (% OF DRY WEIGHT)

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

PLASTIC LIMIT ├──┤ LIQUID LIMIT

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



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	Pt	Peat — .9m			85		15	0	WET	
4–6		CLAY - - Silty Sandy		Vs	59		36	5	WET	
8	CL	- Pebbles Low Plastic		Vc-Vr	23		60	17	WET	
12	CI	Grey - Med. Plastic			76		21	3	WET	
14		— 4.6m			73		22	5	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

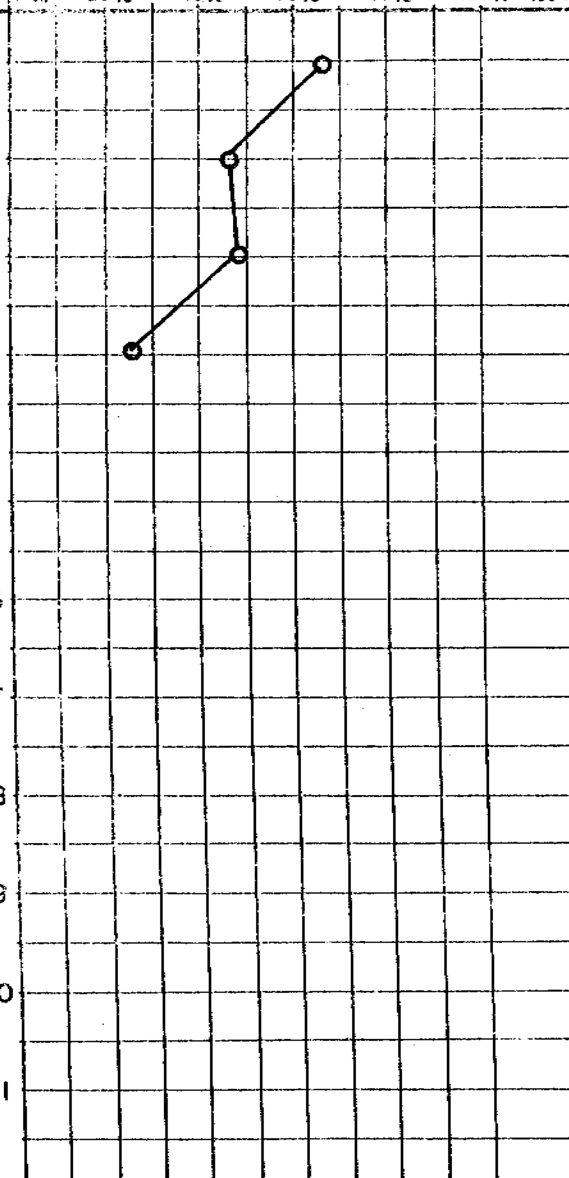
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT — INUVIK - TUK.

TECH. PRONYCH	RIG AIR	DATE 78 04 08	km /977	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
321+25	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
2 – 12	CI (at 8)	CLAY - SILTY - SANDY - PEBBLES MED. PLASTIC		V_s
4.1 – 4.6m		ICE & SOIL		ICE + SOIL
		BOTTOM OF HOLE - 4.6m		



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT / REMARKS
77	22	1		FREE WATER
83	26	1		SAT.
74	18	8		SAT.
79	21	0		WET

PUBLIC WORKS CANADA — DRILL HOLE REPORT — INUVIK - TUK.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	AIR	78/04/08	/977		2

CHAINAGE	OFFSET
333+22	

C = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT —— LIQUID LIMIT
0% 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
	Pt	PEAT .2m									
2		CLAY - SILTY - SANDY - PEBBLES				-	72	26	2	WET	
4				Vc - Vr	1	-	75	24	1	MOIST	
6–8					2	-	69	29	2	WET	
10–12		GRAY - 3.7			3	-	74	25	1	MOIST	
14		ICE & SOIL 4.6m		ICE & SOIL	4	-	75	23	2	WET	
16		BOTTOM OF HOLE - 4.6m			5						

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 — INUVIK - TUK.

TECH. PRONYCH	RIG AIR	DATE 78/04/08	km 1977	B.P. No.	HOLE No. 3

Depth	Unified Soil Symbol	Soil Description	Ice Description	Clay %	Silt %	Sand %	Gravel %	Relative Moisture Content
	Pt	PEAT .3m						
	CL	CLAY - SILTY - SANDY GRAVELLY LOW PLASTIC	Vs		77	22	1	SAT.
					60	30	10	SAT.
					47	30	23	WET
	CI	GREY - CLAY SILTY MED. PLASTIC 4m			95	5	0	WET
		ICE & SOIL 4.6m	ICE + SOIL		92	8	0	SAT.

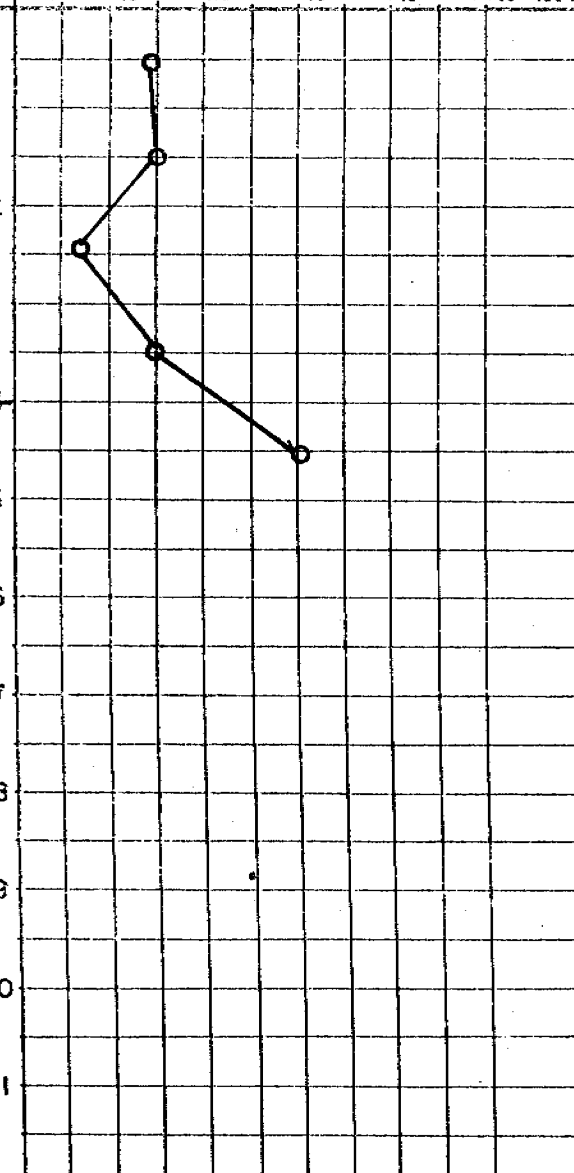
BOTTOM OF HOLE - 4.6m

C = 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): 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

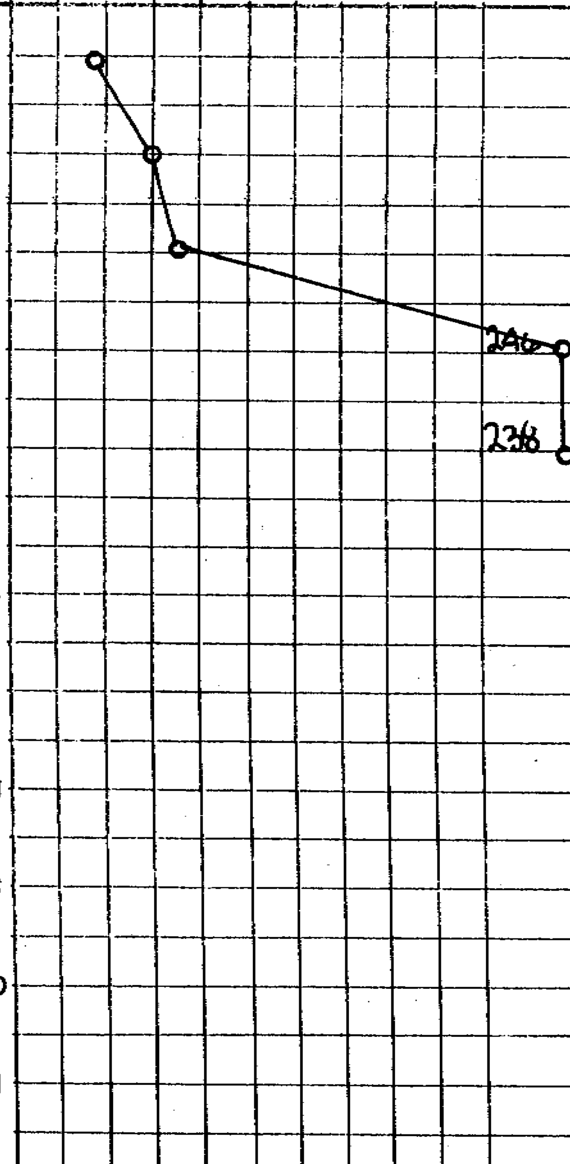
PENETRATION RESISTANCE | CHAINAGE | OFFSET | REMARKS

PUBLIC WORKS CANADA	DRILL HOLE REPORT	Inuvik - Tuk.

TECH. Pronych	RIG Air	DATE 78	km /977	B.P. No.	HOLE No. 4

CHAINAGE: 348+00 | OFFSET:

C = 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
	Pt	Peat — .2m									
2		Clay - Silty				76	23	1		H.I.B.	
4		- Sandy		V_c - Vr	1					Sat.	
6	CL	- Pebbles				71	25	4			
8		Low Plastic			2	73	18	9		Sat.	
10					3						
12				V_s		73	24	3		Free Water	
14					4	71	25	4		Free Water	
		4.6m									
16		Bottom of Hole. 4.6m			5						
18											
20					6						
22											
24					7						
26											
28					8						
30											
32					9						
34					10						
36											
38					11						

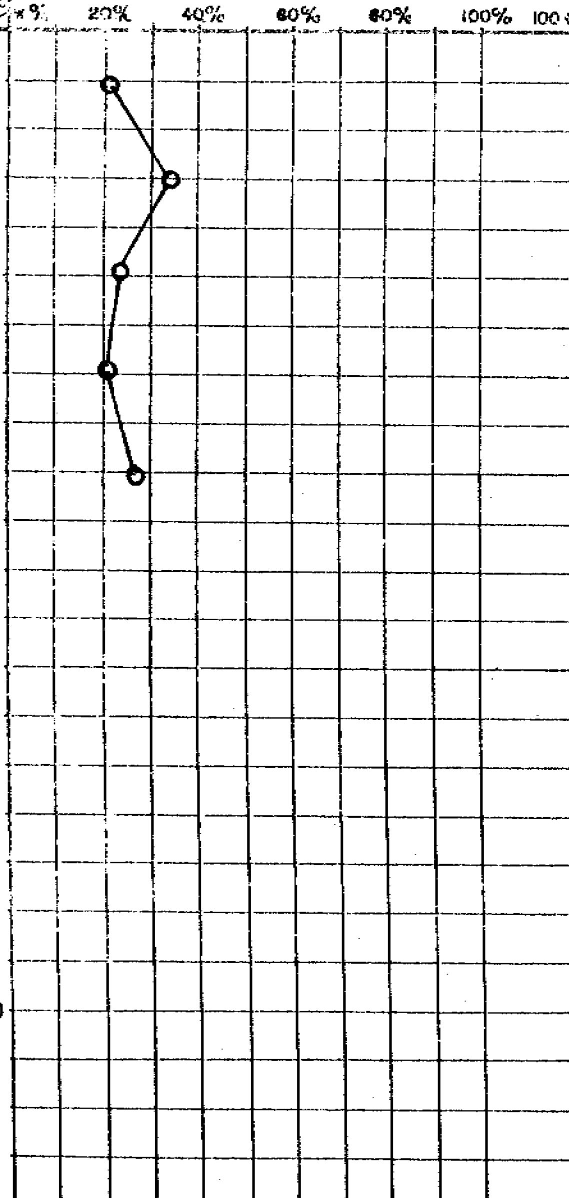
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Inuvik - Tuk.

TECH. Pronych | RIG Air | DATE 78/04/08 | km /978 | B.P. No. | HOLE No. 1

CHAINAGE: 363+00 | OFFSET:

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	Peat .3m									
2		Clay - Silty				78	19	3		Moist	
4		- Sandy			1						
		- Pebbles				76	23	7		Sat.	
6	CL			V_c - V_r	2						
8		Low - Med Plastic				80	17	3		Wet	
10	CI	Grey -			3						
12						81	18	1		Moist	
14		4.6m			4						
16		Bottom of Hole - 4.6m				79	20	1		Wet	
18					5						
20					6						
22											
24					7						
26											
28					8						
30					9						
32											
34					10						
36											
38					11						

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



PUBLIC WORKS CANADA — DRILL HOLE REPORT

INUVIK - TUK.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	AIR	78/04/08	978		2

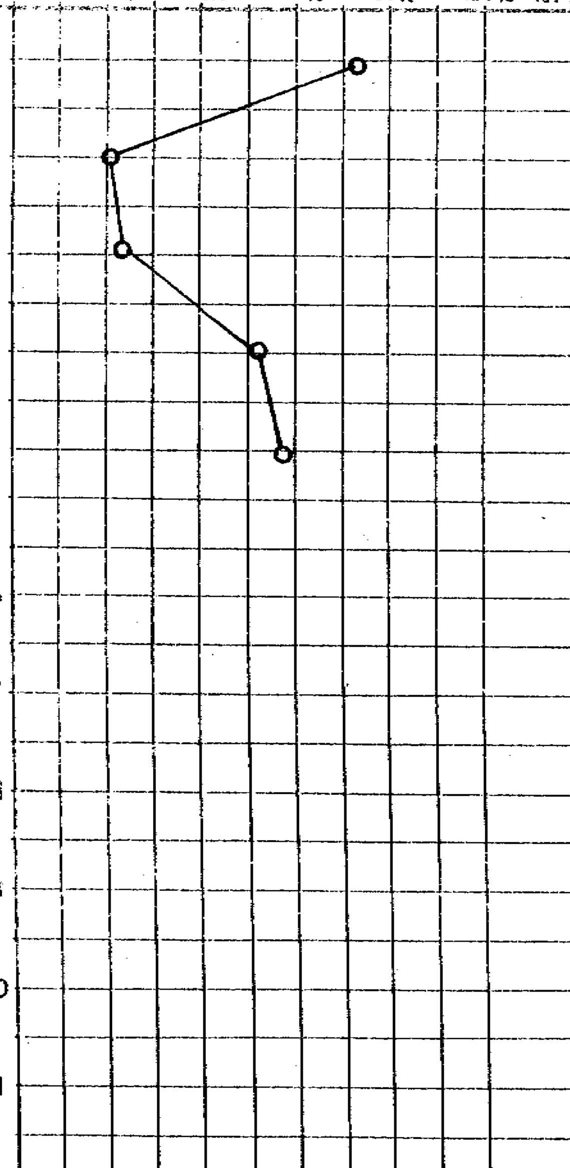
CHAINAGE	OFFSET
371+00	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
	Pt	PEAT .3m		
2–8		BROWN - CLAY, SILTY SANDY PEBBLES TO GRAVELLY		V_s
8–9	CL	LOW PLASTIC 2.7		
10		ORGANIC MATERIAL 3.2		
15		4.6m		
17		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 (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
0%, 20%, 40%, 60%, 80%, 100%

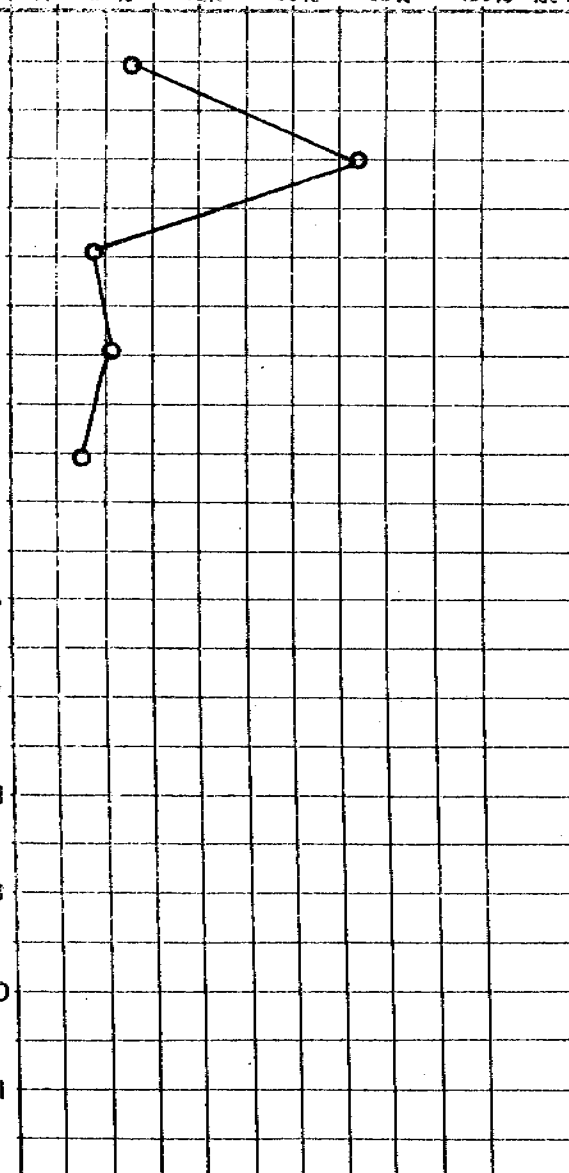


GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
36		52	12	FREE WATER	
59		34	7	SAT.	
37		56	7	SAT.	
33		57	10	FREE WATER	
38		50	12	FREE WATER	

PUBLIC WORKS CANADA	DRILL HOLE REPORT	INUVIK - TUK.	
TECH. PRONYCH	RIG AIR	DATE 78/04/08	km /978
B.P. No.	HOLE No. 3	CHAINAGE 376+90	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	PEAT .5m									
2		BROWN -				82	17	1		WET	
4		CLAY - SILTY SANDY		Vs	1						
6		- PEBBLES				87	13	0		PARA WATER	
6		ORGANICS @ 1.5 m			2						
8		LOW PLASTIC				56	37	7		WET	
10	CL			Vc-Vr	3						
12						58	34	8		SAT	
14		4.6m			4	66	30	4		MOIST	
16		BOTTOM OF HOLE. 4.6m			5						

○ = 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): 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** | Inuvik - Tuk.

TECH. Pronyck	RIG Air	DATE 78/04/10	km 1978	B. P. No.	HOLE No. 4

CHAINAGE	OFFSET
399 + 00	

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 (20%, 40%, 60%, 80%, 100%)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	Peat .3 m										
2		Clay - Silty										
4					1							
6												
8		Ice & Soil		Ice + Soil	2							
10					3	No Samples						
12												
14		4.6m			4	Taken						
16												
18		Bottom of Hole - 4.6m			5							
20					6							
22												
24					7							
26												
28					8							
30					9							
32												
34					10							
36					11							
38												

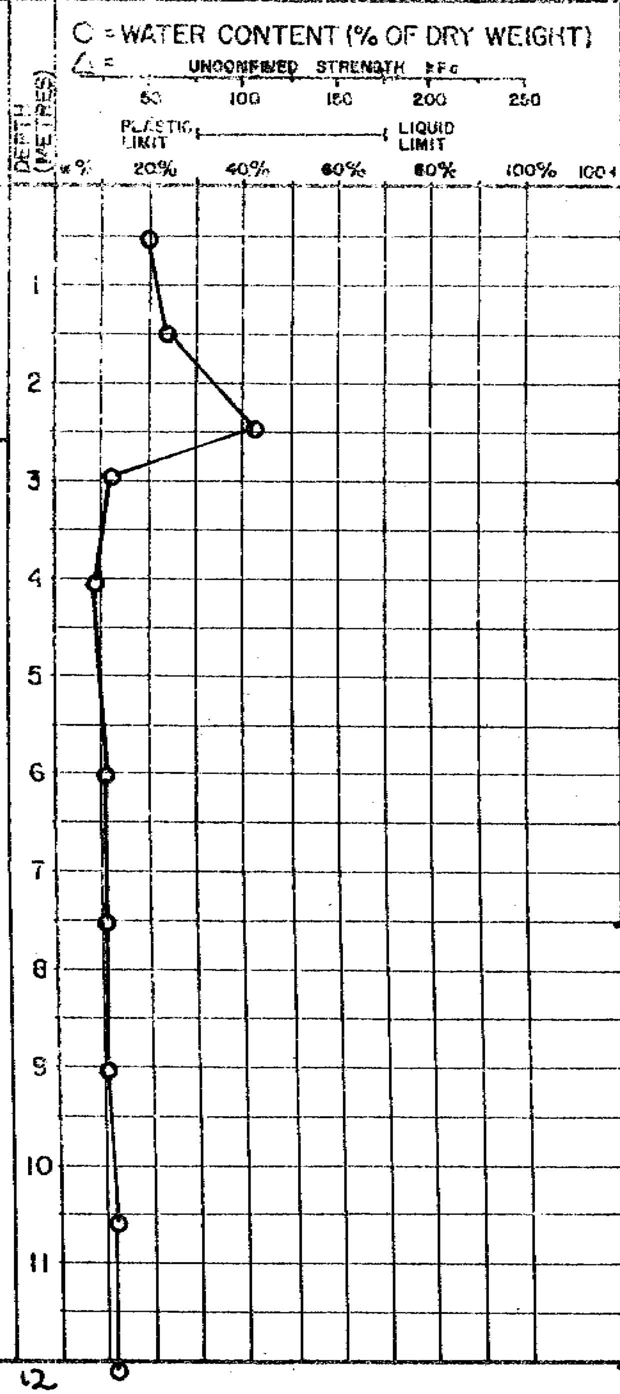
PUBLIC WORKS CANADA	DRILL HOLE REPORT	INUVIK - TUK

TECH. PRONYCH	RIG AIR	DATE 78/04/10	km 979	B.P. No.	HOLE No. 1

CHAINAGE	OFFSET
412+00	

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
	Pt	PEAT .3m		
2–8		BROWN - CLAY - SILTY SANDY - GRAVELLY LOW PLASTIC		Vs
10–38	CL	GREY -		Vx
38–40	SM	SAND GRAVELLY SILTY		



DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0.5		77	21	2	MOIST
1.5		46	44	10	SAT.
2.5		52	38	10	FREE WATER
3		39	52	9	WET
4		27	49	24	MOIST
6		46	41	13	MOIST
7.5		48	44	8	MOIST
9		42	47	11	MOIST
10.5		41	49	10	WET
12		20	52	28	SAT

PUBLIC WORKS CANADA — DRILL HOLE REPORT

TECH.	RIG	DATE	km	B.P. No.	HOLE No.

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; 20% 40% 60% 80% 100%	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE / OFFSET / REMARKS
2, 4	SM	SAND - GRAVELLY - SILTY		Vx	12, 13		20		52	28	SAT.	
45		13.7m		Vs			15		70	15	FREE WATER	
6, 8		Bottom of Hole - 13.7m			14							

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

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

PUBLIC WORKS CANADA — DRILL HOLE REPORT — INUVIK - TUK

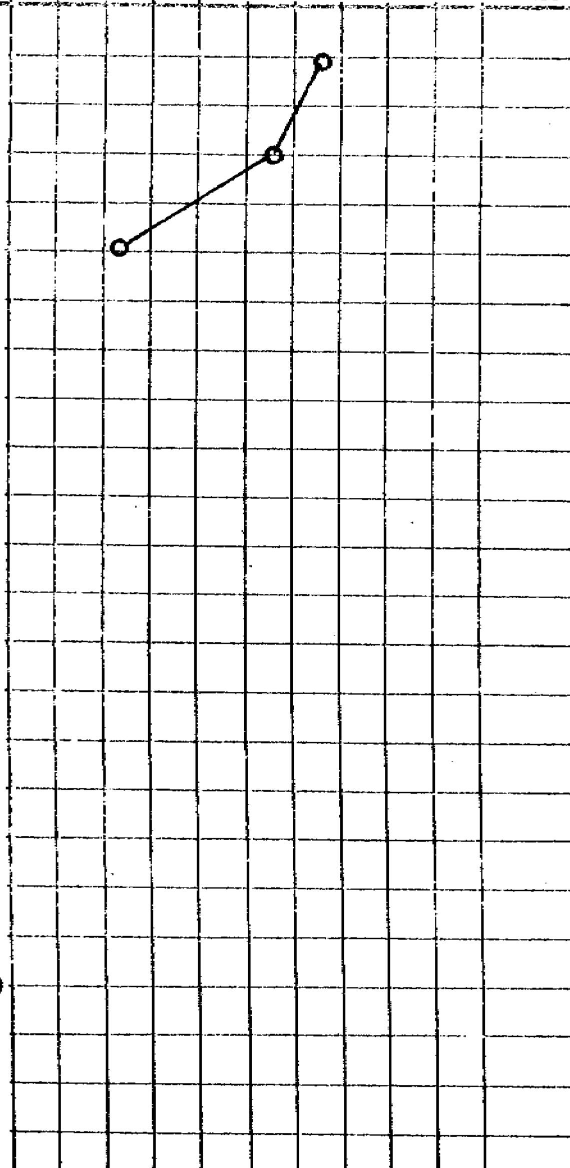
TECH. PRONYCH	RIG AIR	DATE 78/04/10	km 979	B.P. No.	HOLE No. 2

CHAINAGE	OFFSET
418+00	

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
2	Pt	PEAT .6m		
4–8		BROWN - CLAY · SILTY SANDY PEBBLES; GREY - GRAVELLY 2.7m		Vs
10–14		ICE & SOIL 4.6m		ICE & SOIL
16–18		BOTTOM OF HOLE - 4.6m		
20–38				

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH KPa 50 100 150 200 250
PLASTIC LIMIT — LIQUID LIMIT
20% 40% 60% 80% 100% 100+%
DEPTH (METRES) 1 2 3 4 5 6 7 8 9 10 11



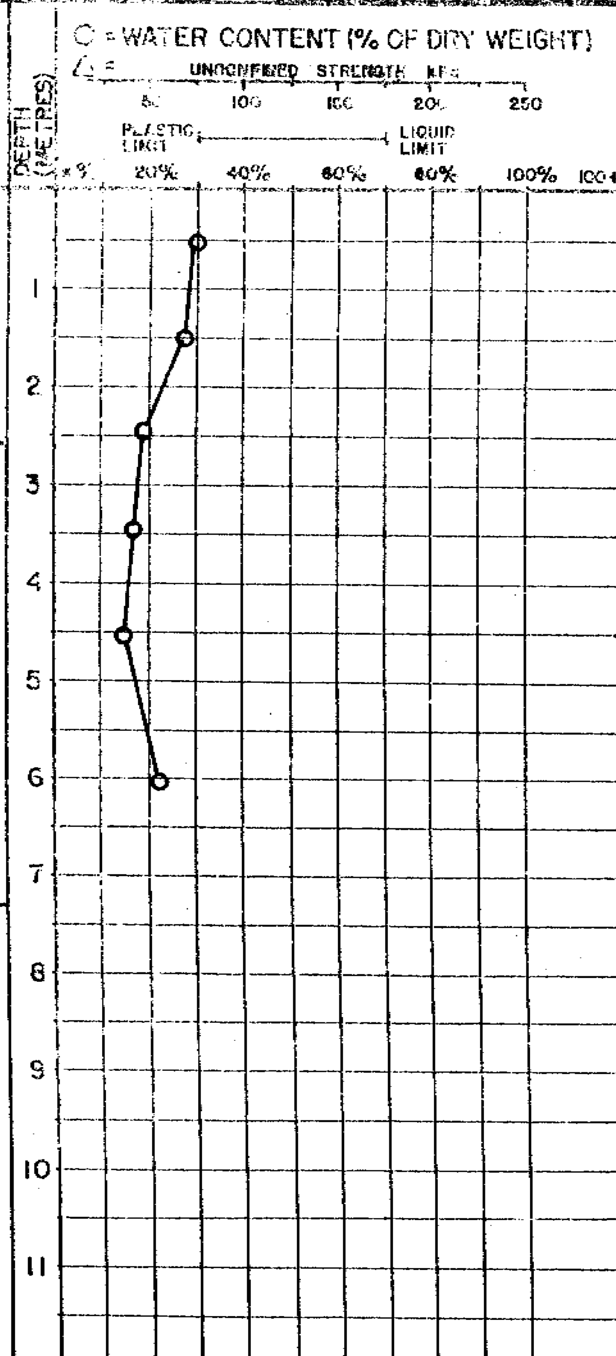
GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
80	20		0	WET
79	19		2	FREE WATER
54	34		12	SAT.

PUBLIC WORKS CANADA | DRILL HOLE REPORT | INUVIK - TUK.

TECH. PRONYCH	RIG AIR	DATE 78/04/10	km 979	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
430+00	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–2	Pt	PEAT		
		.6m		
2–24	CL	BROWN - CLAY - SILTY SANDY - GRAVELLY, LOW PLASTIC		Vs
		GREY -		Vc-Vr
		- PEBBLES		
24		7.3m		
		BOTTOM OF HOLE - 7.3m		



GRAIN-SIZE ANALYSIS

CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
64		33	3	SAT.
52		38	10	SAT.
40		47	13	SAT.
52		37	11	WET
56		40	4	WET
66		31	3	SAT.

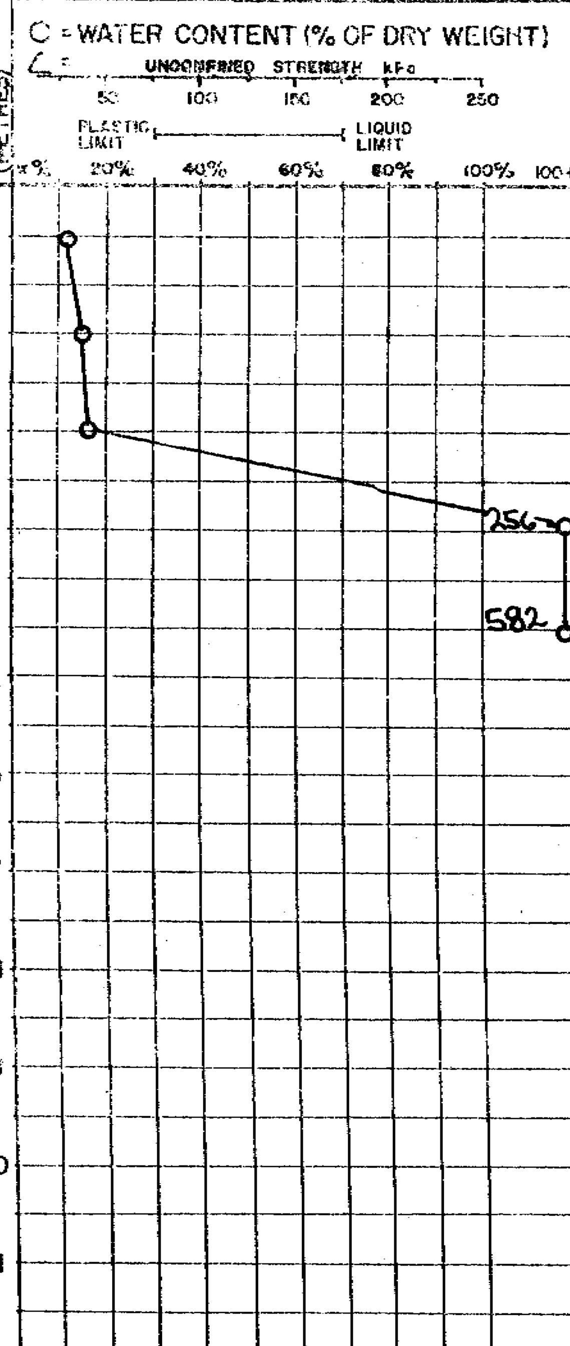
REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT — Inuvik - Tuk

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	Air	78\04\10	979		4

CHAINAGE	OFFSET
441+50	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	Peat — .3m									
2–10	CL	Brown - Clay - Silty Sandy - Pebbles Low Plastic		Vs Vc-Vr		40	49	11		Wet	
						61	36	3		Wet	
						42	50	8		Wet	
		3.2									
12–14		Ice & Soil		Ice & Soil		81	18	1		Free Water	
		4.6m				87	12	1		Free Water	
		Bottom of Hole - 4.6m									



PUBLIC WORKS CANADA	DRILL HOLE REPORT	Inuvik - Tuk.

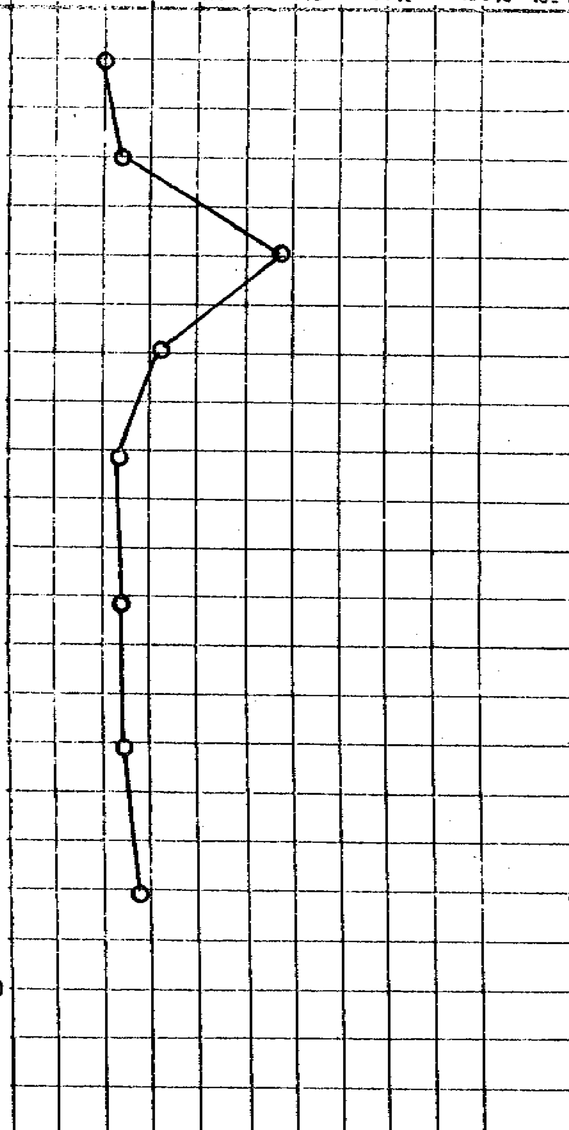
TECH. Pronych	RIG Air	DATE 78/04/10	km 979	B.P. No.	HOLE No. 5

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

CHAINAGE	OFFSET
459+00	

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
	Pt	Peat .2m								
2		Brown - Organic Clay - Sandy Pebbles					54	42	4	Moist
4		Clay - Silty Pebbles			1					
6				Vs			92	7	1	H.I.B.
8		Med. Plastic			2		94	6	0	Sat.
10	CI			Vc-Vr	3					
12		Grey.					90	9	1	Wet
14					4					
16							91	8	1	H.I.B.
18					5					
20					6		89	10	1	Moist
22	CI									
24					7					
26		7.9m					90	9	1	Moist
		Ice Lense		Ice	8					
28	CI	8.2m Clay - Silty Pebbles								
30		9.1m			9		90	9	1	Moist
32		Bottom of Hole. 9.1m			10					
34										
36					11					
38										



36

PUBLIC WORKS CANADA — DRILL HOLE REPORT — INUVIK - TUK.

TECH. PRONYCH | RIG AIR | DATE 78/04/10 | km / 980 | B.P. No. | HOLE No.

CHAINAGE: 483 +50 | OFFSET:

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	C = WATER CONTENT (% OF DRY WEIGHT)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	PEAT .3m										
2–6	CL CI	BROWN - CLAY . SILTY SANDY LOW - MED . PLASTIC PEBBLES 2m		Vs	1		81	-	19	0	SAT.	
							78	-	19	3	SAT	
8–14		ICE SOME SOIL 4.6m		ICE SOME SOIL	2–4							
16		Bottom of Hole - 4.6m			5							

Chart scale: UNCONFINED STRENGTH kPa 50, 100, 150, 200, 250; PLASTIC LIMIT — LIQUID LIMIT; w% 20%, 40%, 60%, 80%, 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.

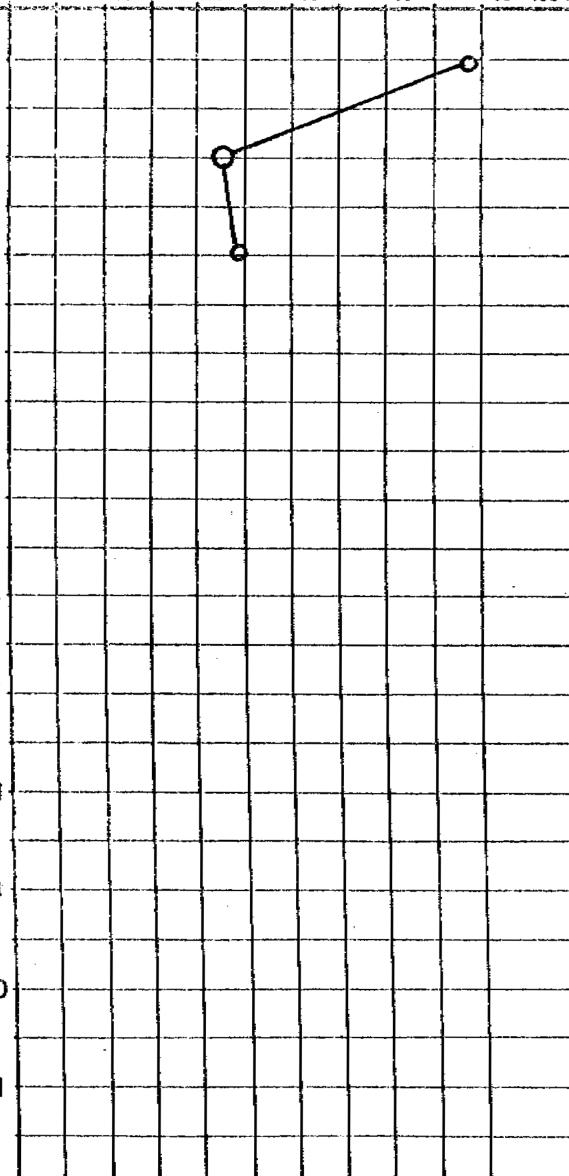
PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	Air	78/04/10	/980		2

CHAINAGE	OFFSET
493+00	

○ = 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
0–2.6	Pt	Peat .8m			0–0.8	-	77	20	3	Moist	
2.6–8.9	CI	Brown - Clay - Silty Sandy - Pebbles Med. Plastic 2.7m		Vs	0.8–2.7	-	57	36	7	Free water	
						-	39	60	1	Sat.	
8.9–15		Ice 4.6m		Ice	2.7–4.6						
		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

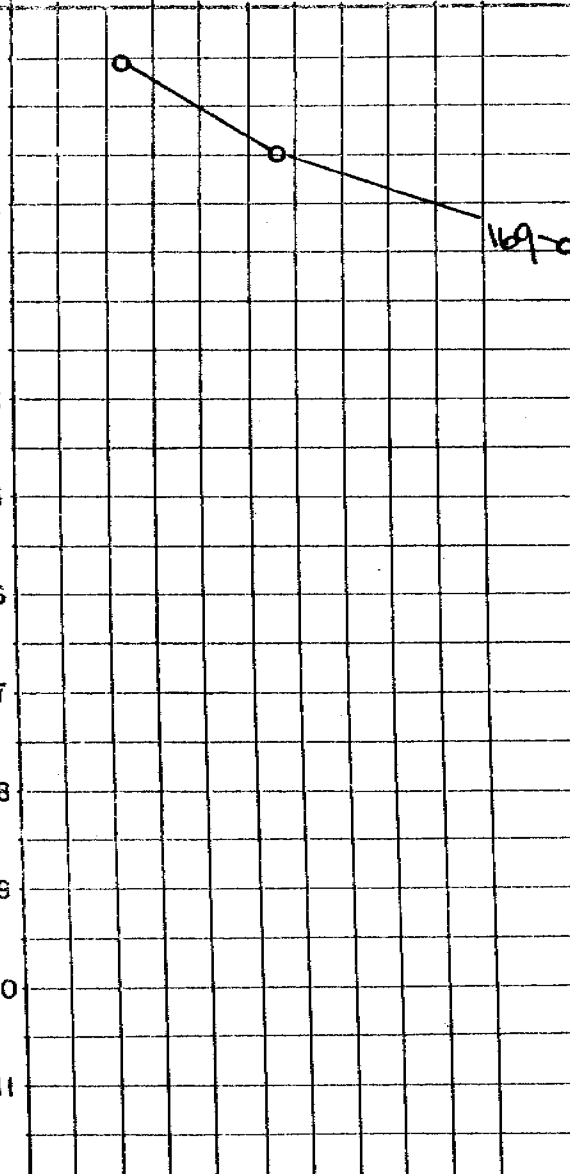
PUBLIC WORKS CANADA	DRILL HOLE REPORT	Inuvik - Tuk

TECH. Pronych	RIG Air	DATE 78/04/10	km 980	B.P. No.	HOLE No. 3

CHAINAGE	OFFSET
499 +50	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	Pt	Peat .9m				94		6	0	SAT.	
4–10		Brown - Clay - Organic - Silty Sandy 3.4m		Vs	1–3	41		42	17	SAT.	
						90		10	0	SAT.	
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

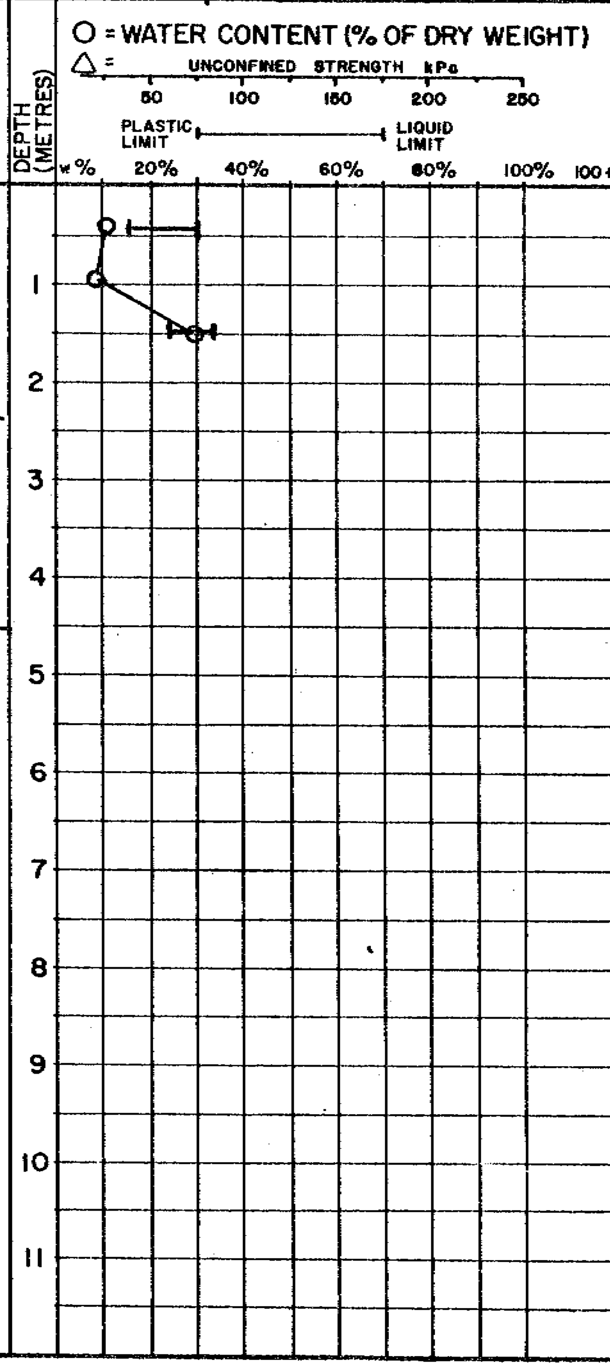
PUBLIC WORKS CANADA — DRILL HOLE REPORT

INUVIK - TUK.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
D. PRONYCH	AIR	80/03/16			980-4

CHAINAGE	OFFSET
509 -	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–.1		PEAT .1								
2	CI	CLAY - GRAVELLY SANDY		Vc , Vr	35	-	43	22	MOIST	
4					18	-	43	39	WET	
6	GC	GRAVEL - SANDY SILTY CLAYEY			17	-	33	50	SAT.	
8–15		ICE		ICE						
15		4.6m								
16		BOTTOM OF HOLE - 4.6								



PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Inuvik - Tuk.

TECH. D.COOK	RIG Air	DATE 80/04/07	km	B.P. No.	HOLE No. 981-1

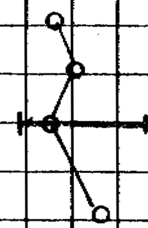
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	○ = WATER CONTENT (% OF DRY WEIGHT)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET
	Pt	Peat .3m										522+00	
2		Clay - Silty, Sandy, Pebbles, Med. Plastic, Till		Vs, 1		Al 4 Samples	-86-		14	0	Moist		
4				Vc - Vr	1		-82-		17	1	Wet		
6							-66-		33	1	Wet		
8	Ci	2.4m			2		-55-		42	3	Wet		
10–14		Ice & Soil		Ice & Ci	3–4								
15		4.6m											
16		Bottom of Hole - 4.6m			5								

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

PLASTIC LIMIT ├──┤ LIQUID LIMIT

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

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

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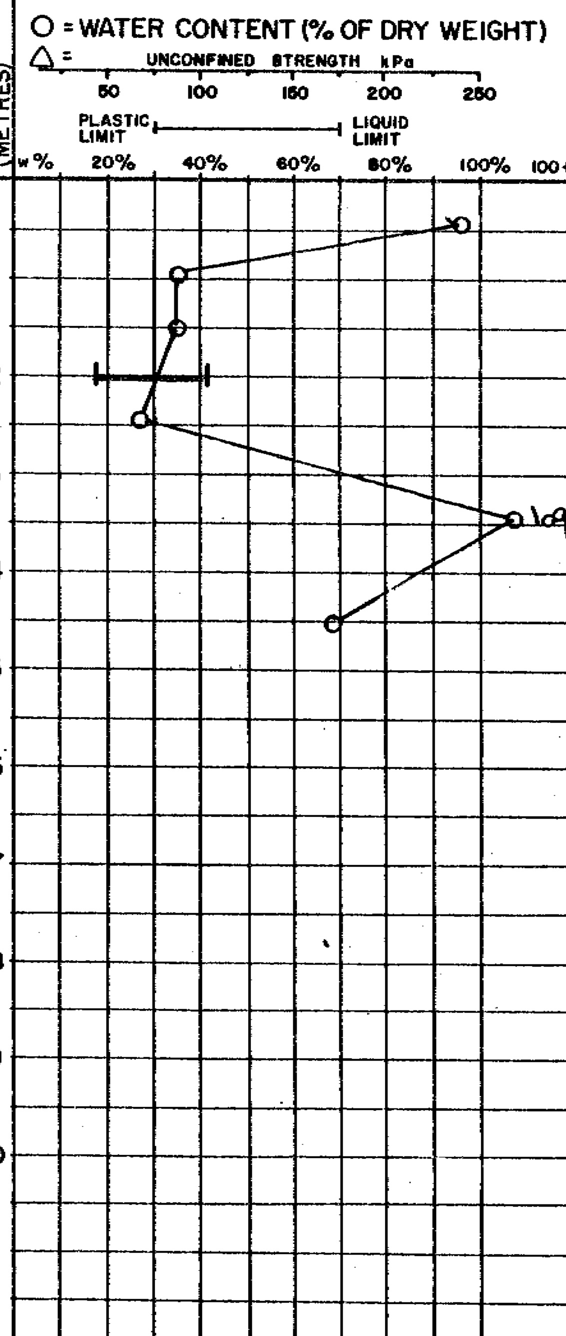
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | INUVIK - TUK.

TECH. D. COOK	RIG AIR	DATE	km	B.P. No.	HOLE No. 981-2

CHAINAGE	OFFSET
536+00	

REMARKS

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



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
87		13	0	FREE H_2O
69		31	0	✓
76		21	3	WET
67		25	8	WET
81		15	4	FREE H_2O
82		14	4	✓

PUBLIC WORKS CANADA — DRILL HOLE REPORT

INUVIK - TUK

TECH. D. COOK	RIG Air	DATE 80/04/07	km	B.P. No.	HOLE No. 981-3

CHAINAGE	OFFSET
a. P.I. 548+73	

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)	WATER CONTENT	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	PEAT .3m										
2	CL ML	Clay - Silty .9m				O (~25%)	-84-		16	0	Moist	
4–14		ICE		ICE	1–4							
		4.6m										
16		Bottom of Hole. 4.6m			5							

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

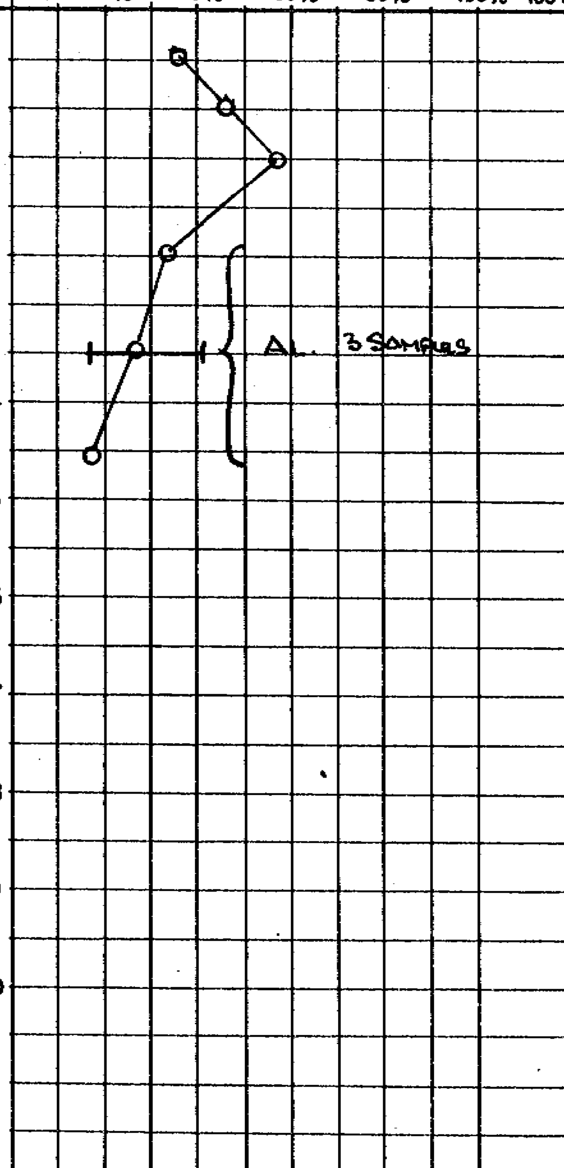
Inuvik - Tuk.

TECH. D. Cook	RIG Air	DATE 80/04/07	km	B.P. No.	HOLE No. 982-1

CHAINAGE	OFFSET
589 + 00	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	Peat .3m									
2		Clay - Silty Org.				69	-	31	0	Wet	
4		Sandy		Vs	1	85	-	15	0	Pbns 4.0	
6		Pebbles				83	-	16	1	✓	
8	CI	Med. Plastic			2	75	-	23	2	Sat	
10					3						
12						84	-	15	1	Wet	
14		4.6m		Vc-Vr	4	74	-	24	2	Wet	
16		Bottom of Hole - 4.6m			5						

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

INUVIK -TUK

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
D. COOK	AIR	80/04/07			982-2

CHAINAGE	OFFSET
610+00	

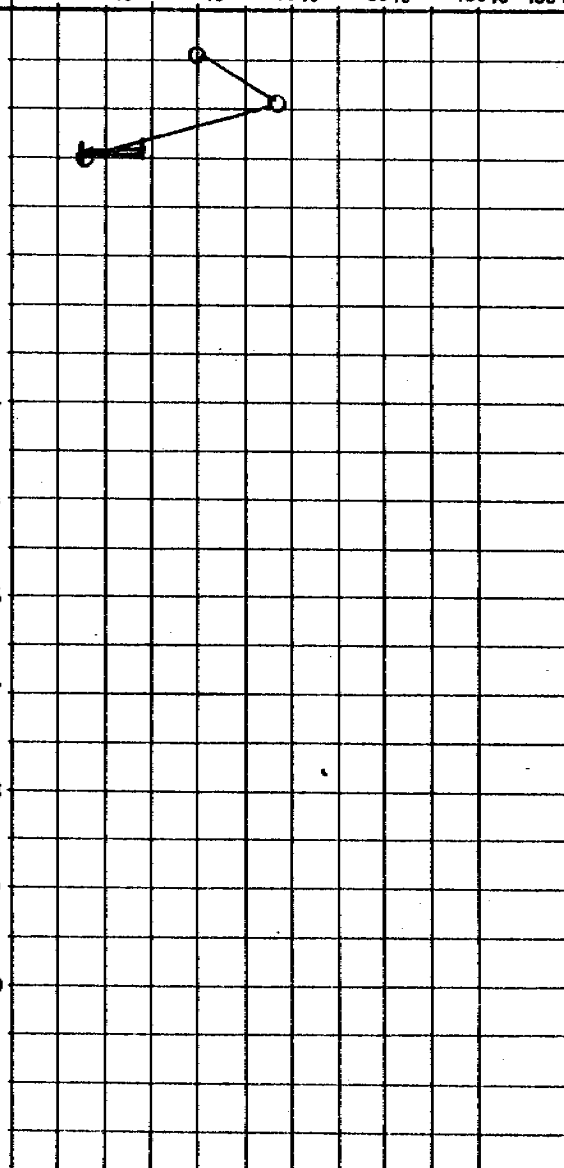
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–7	Pt.	PEAT.			
	CL	CLAY - SILTY SANDY PEBBLES LOW PLASTIC		Vs	
		2.1m			2.1
7–15		ICE TRACE OF SOIL		ICE & CL	
		4.6m			4.6
		BOTTOM OF HOLE - 4.6m			

○ = 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 (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
~0.5	-	60	38	2	FREE H_2O	
~1.0	-	73	27	0	✓	
~1.5	-	69	30	1	MOIST-WET	

PUBLIC WORKS CANADA — DRILL HOLE REPORT

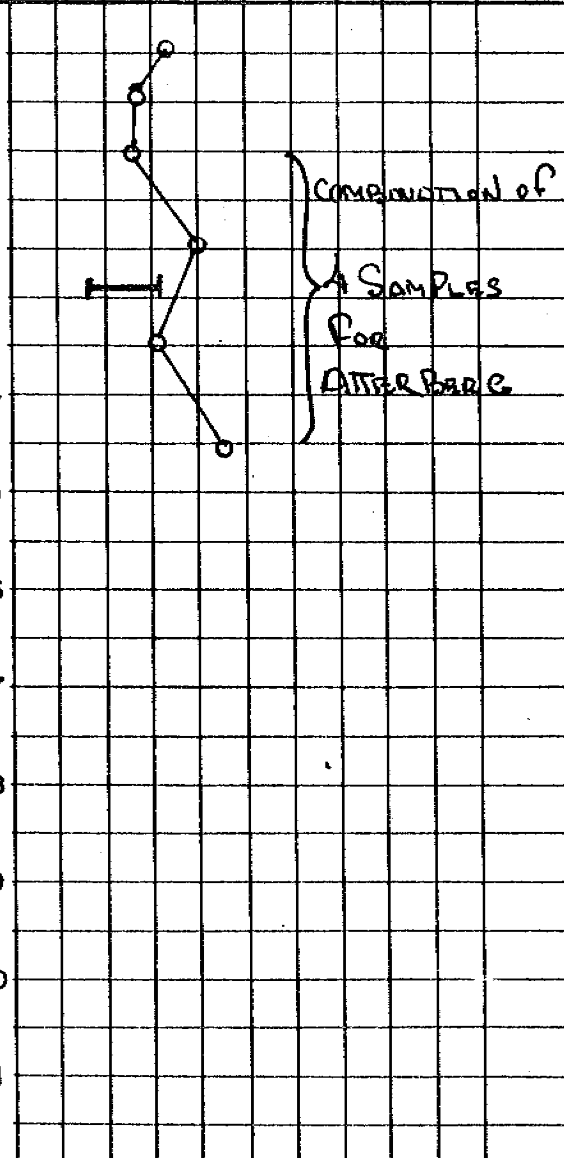
INUVIK - TUK

TECH. D. COOK	RIG AIR	DATE 80/04/07	km	B.P. No.	HOLE No. 983+2

CHAINAGE: 630 + 00
OFFSET:

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	PEAT — .3m									
2		CLAY. SILTY ORG.				88	-	12	0	MOIST	
4		SANDY			1	76	-	24	0	SAT.	
6		PEBBLES				71	-	17	2	FREE H_2O	
8	CI	MED. PLASTIC		Vs	2	73	-	26	1	✓	
10		TILL			3						
12						73	-	25	2	SAT.	
14		4.6m			4	66	-	34	0	FREE H_2O	
16		BOTTOM OF HOLE . 4.6m			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+



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PUBLIC WORKS CANADA	DRILL HOLE REPORT	INUVIK - TUK

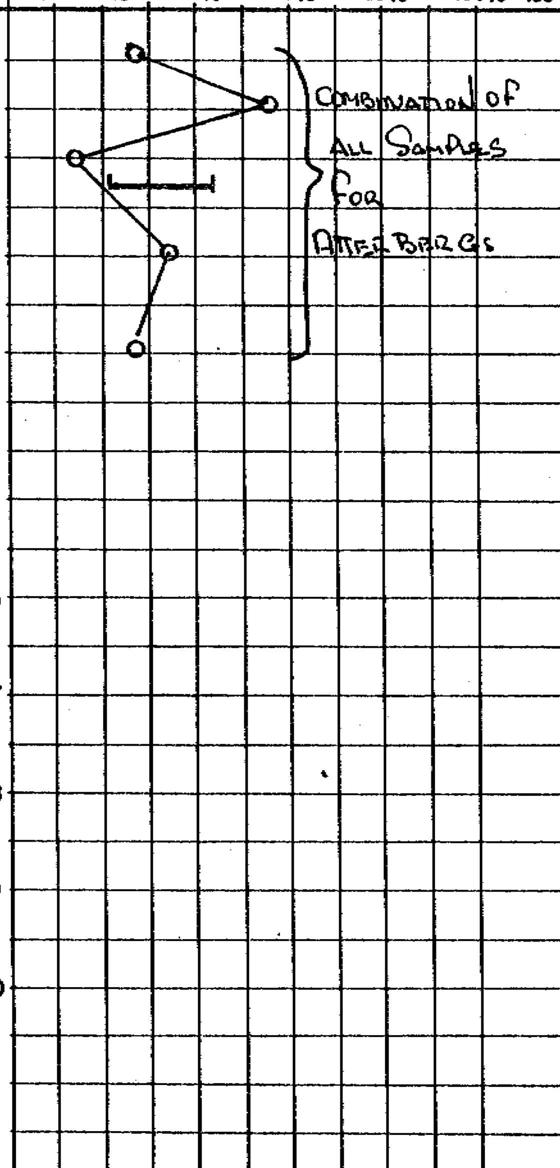
TECH. D. COOK	RIG AIR	DATE 80/04/07	km	B.P. No.	HOLE No. 983-3

CHAINAGE	OFFSET
653+50	

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	Pt	PEAT .3m			
2		CLAY - SILTY SANDY PEBBLES			
4					1
6	CI	GRAVELLY		Vs	
8		PEBBLES			2
10		MED. PLASTIC TILL 3.4m			3
12		ICE		ICE	
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

○ = 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
78-		19	3	MOIST
85-		15	0	FREE H_2O
77-		4	19	✓
85-		14	1	SAT.
80-		19	1	WET

PUBLIC WORKS CANADA — DRILL HOLE REPORT

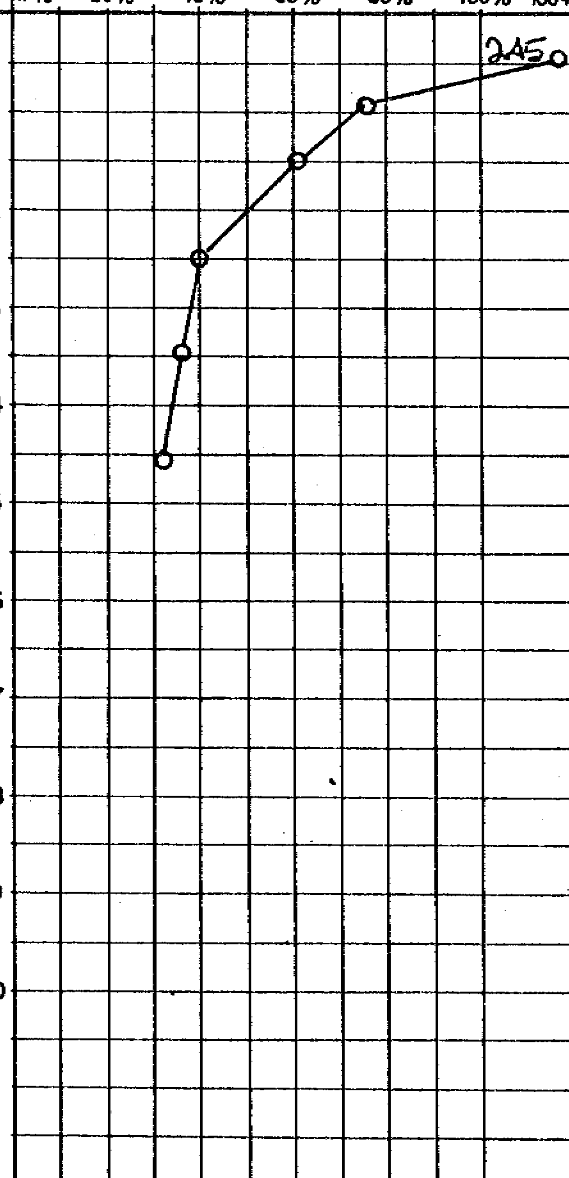
Inuvik - Tuk

TECH. D. Cook	RIG Air	DATE 80/04/07	km	B.P. No.	HOLE No. 984 - 1

CHAINAGE	OFFSET
624+00	

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 ——— .5m								Pore H_2O	
2		Clay - Silty									
4		Pebbles			1					✓	
6	CL	Low-Med. Plastic								✓	
8	|				2					Sat.	
10	CI				3						
12										Sat	
14		——— 4.6m			4					Wet	
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

Inuvik - Tuk

TECH. D. COOK	RIG AIR	DATE 30/04/07	km	B.P. No.	HOLE No. 984-2

CHAINAGE	OFFSET
586+50	

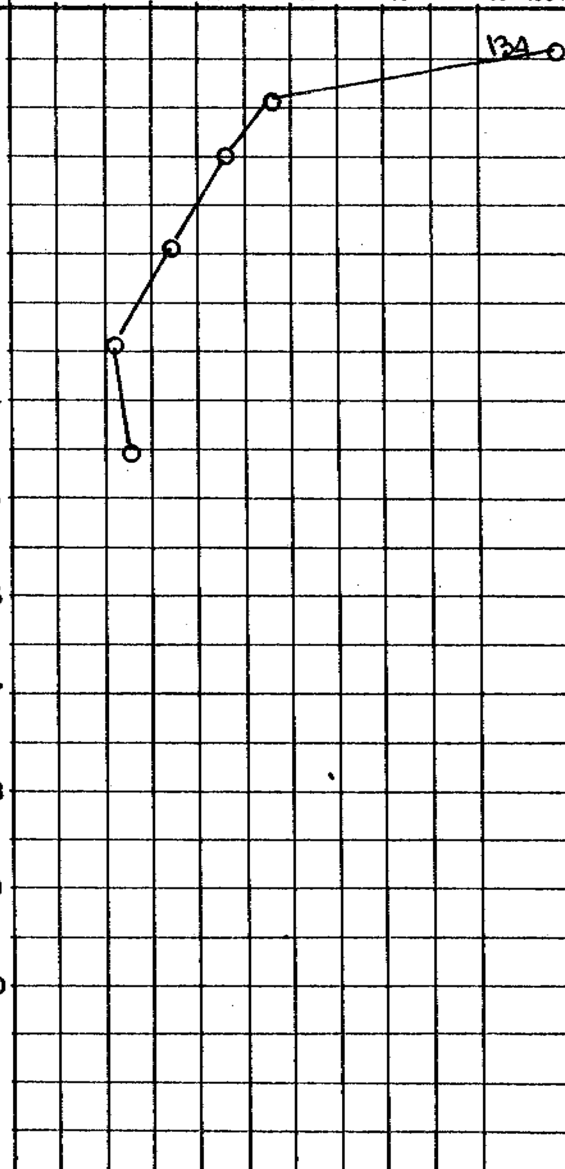
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	PEAT .3m					
2		CLAY - SILTY ORG.		Vs		FREE WATER	
4		PEBBLES			1	✓	
	CL	LOW - MED. PLASTIC				SAT.	
6	|						
8	CI				2	SAT.	
10					3		
12				Vc-Vr		WET	
14		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							

○ = 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 %

PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk

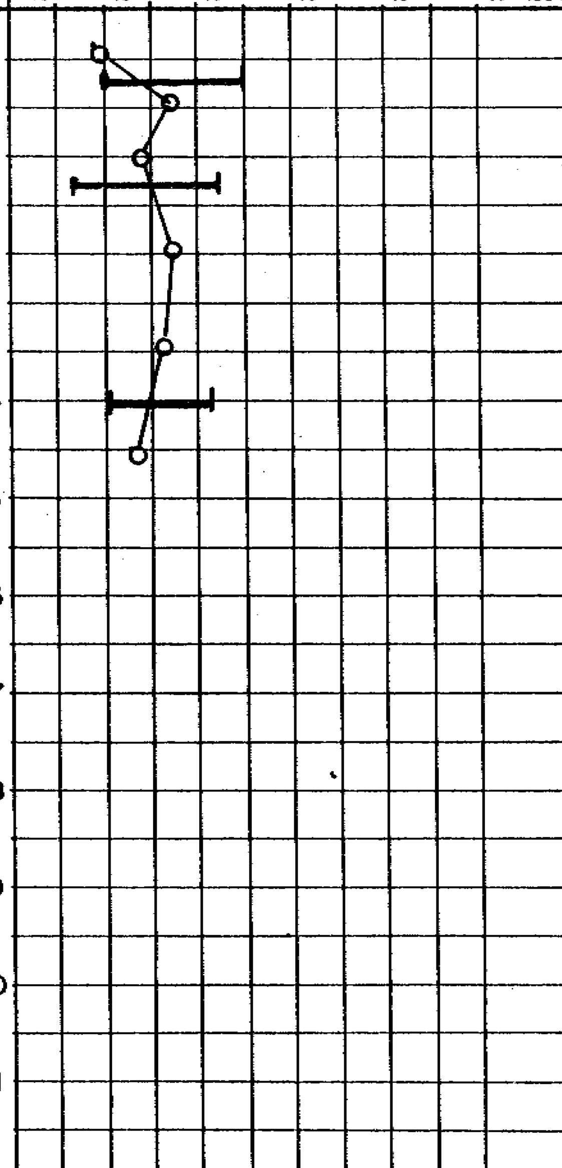
TECH. D.Cook	RIG Air	DATE 80/04/07	km	B.P. No.	HOLE No. 98A-4

CHAINAGE	OFFSET
716+50	

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
	Pt	PEAT .3m								
2		CLAY - SILTY				87	-	12	1	DAMP
4		SANDY			1	81	-	18	1	WET
6		PEBBLES				62	-	36	2	WET
		MED. PLASTIC		Vc - Vr	2					
8	CI					83	-	17	0	WET
10					3					
12						77	-	21	2	WET
14		4.6m			4	79	-	21	0	MOIST-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										

○ = 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

Inuvik - Cook

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
D. Cook	Air	80/04/06			985-1

CHAINAGE	OFFSET

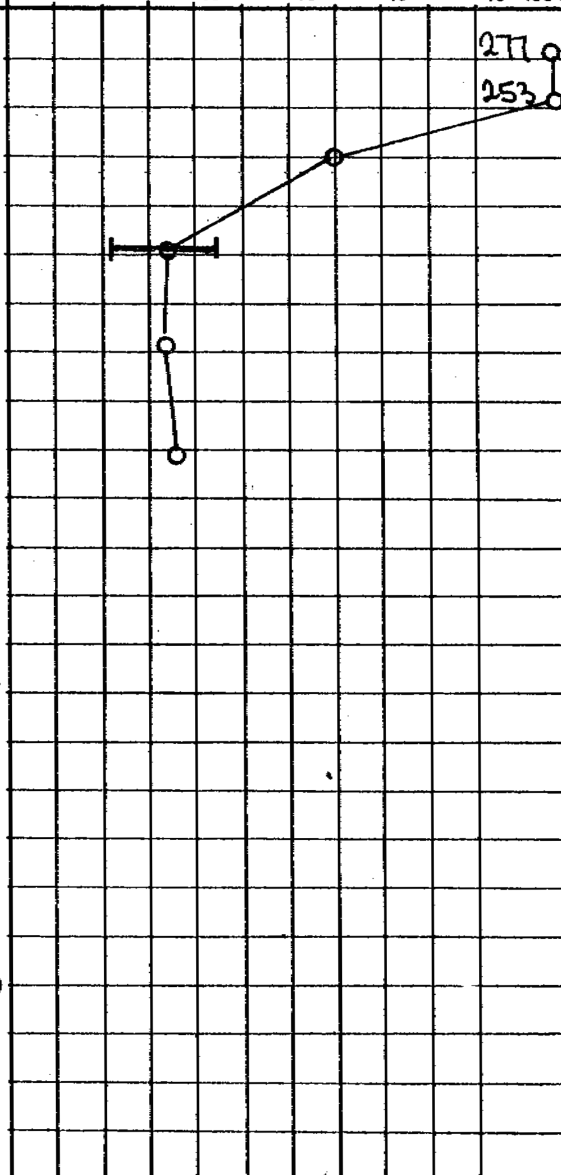
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2	Pt	Peat				94		6	0	Free H_2O	
		1.0m		Vs	1	90		10	0	V	
4		Clay - Silty				91		9	0	V	
6		Sandy - Pebbles			2						
8	CI	Med. Plastic				72		24	4	Wet	
10					3						
12				Vs		78		19	3	Wet	
14					4						
		4.6m				83		17	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+

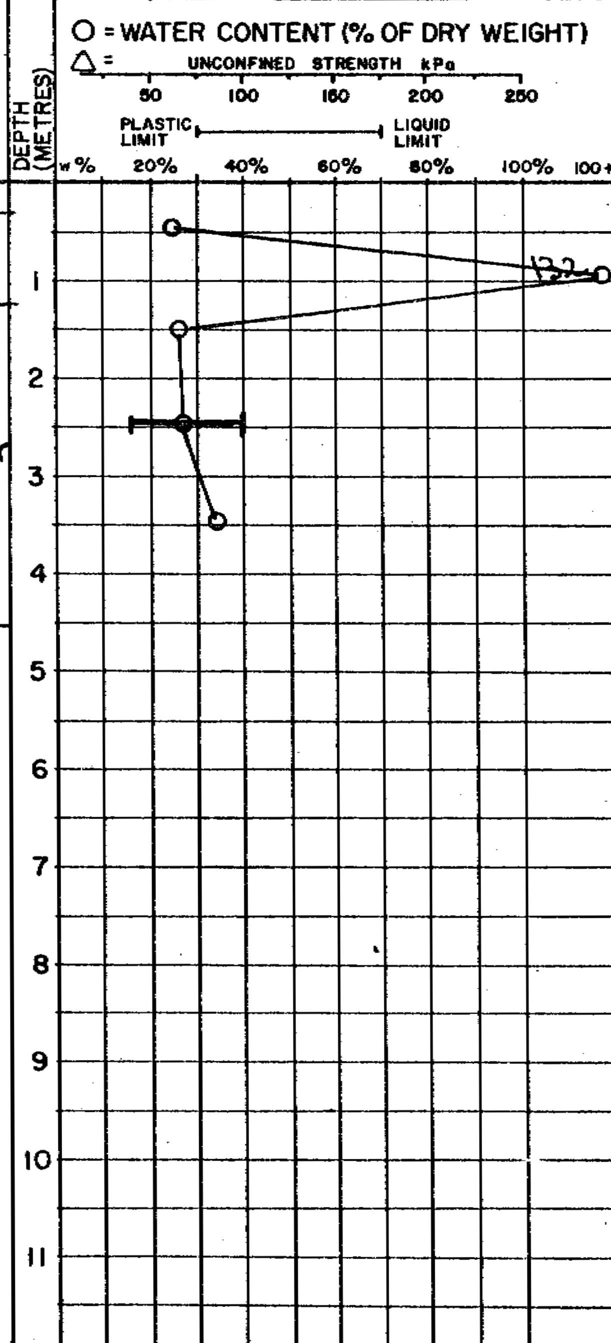


PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | INUVIK - TUK

TECH. D. COOK	RIG AIR	DATE 80/04/06	km	B.P. No.	HOLE No. C85-2

CHAINAGE	OFFSET
747+00	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
	Pt	PEAT .3m		
2		CLAY - SILTY .6m		ICE + CL
4		ICE & SOIL 1.2m		
6–14	CI	CLAY - SILTY - SANDY - PEBBLES - MED. PLASTIC 4.6m		Vc-Vr
16		BOTTOM OF HOLE - 4.6m		



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
82-		17	1	DAMP	
82-		18	0	FREE H_2O	
44-		53	3	✓	
74-		23	3	WET	
75-		22	3	SAT.	

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PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk.

TECH. D. Cook	RIG Air	DATE 80/04/06	km	B.P. No.	HOLE No. 985-3

CHAINAGE	OFFSET
766+00	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	Peat .5m				Free H_2O	
2–4		Clay - Silty Pebbles low - med. Plastic			1	✓	
4–6	CL - CL					Sat.	
8				Vs	2	Sat.	
12					3	Sat.	
15		4.6m			4.6	Sat.	
16		Bottom of Hole - 4.6m			5		

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

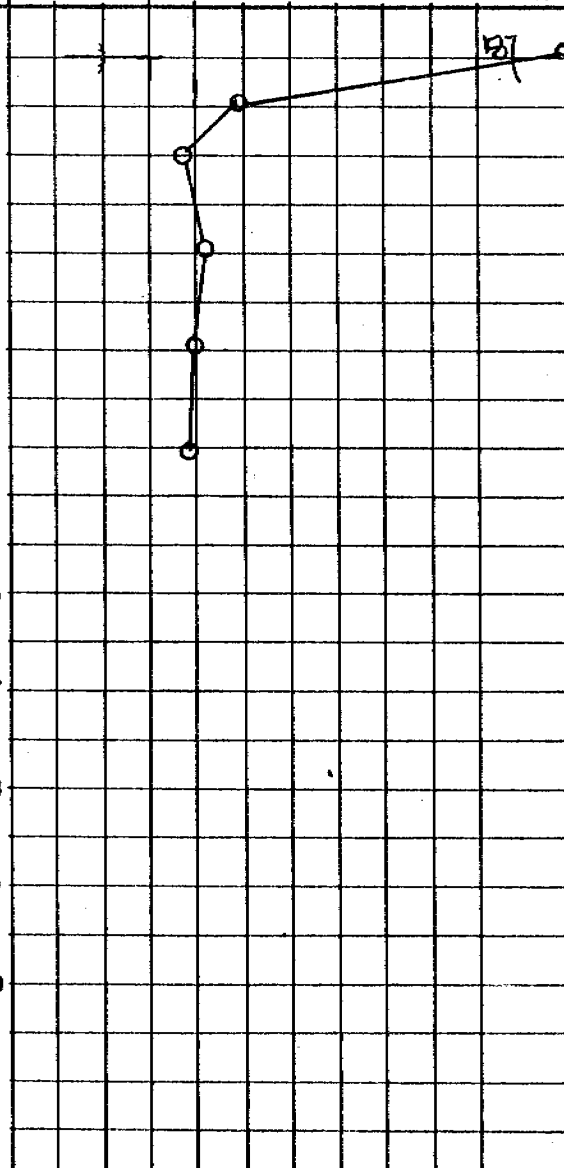
Depth scale (metres): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = 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 %

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | INUVIK - TUK.

TECH. D. COOK	RIG AIR	DATE 80/04/06	km	B.P. No.	HOLE No. 985-4

CHAINAGE	OFFSET
774 + 50	

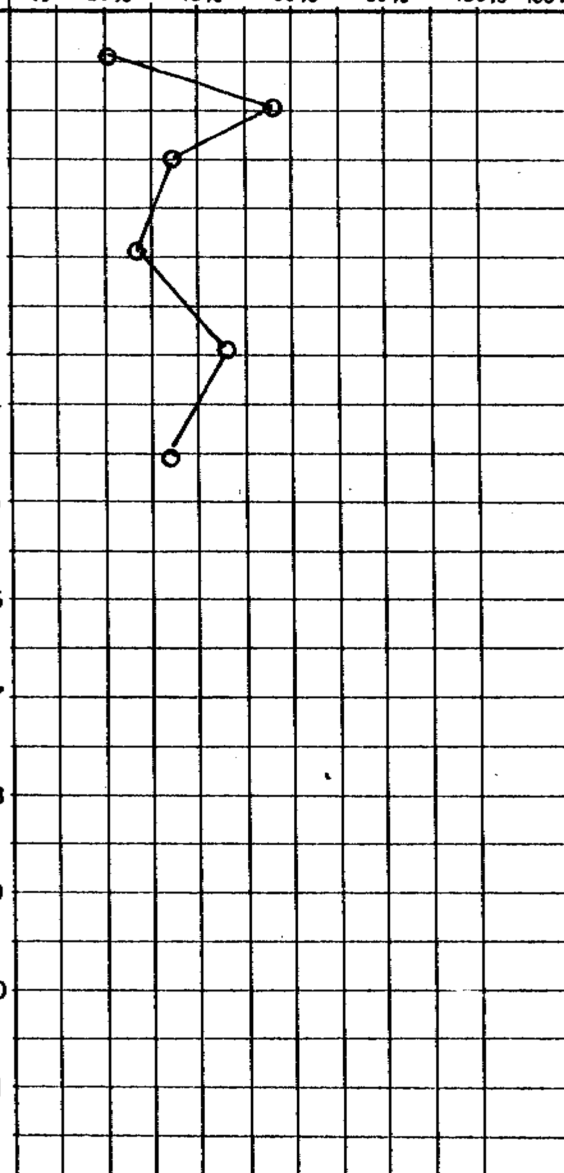
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	PEAT .3m					
2		CLAY - SILTY PEBBLES		ICE		MOIST	
4		LOW - MED. PLASTIC		&	1	FREE H_2O	
6	CL - CI			CL - CV		SAT	
8					2	WET	
10				Vs	3		
12						SAT.	
14		4.6m			4		
16		BOTTOM OF HOLE - 4.6m				SAT.	

○ = 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 %

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PUBLIC WORKS CANADA	DRILL HOLE REPORT	INUVIK - TUK. BORROW SEARCH

TECH. D.COOK	RIG Air	DATE 80/04/06	km	B.P. No.	HOLE No. 986-1

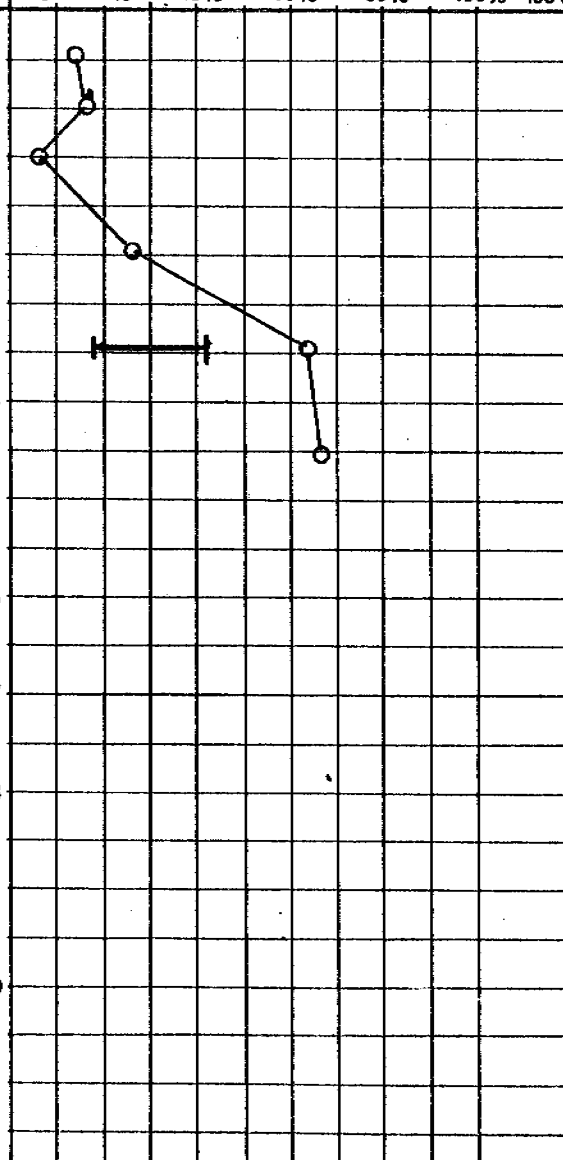
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0 – 1	Pt	Peat .3m									
1 – 7	SC	Sand - Silty Gravelly - Clayey 2.1m		$V_c - V_r$	0.3 – 2.1	26	-	61	13	WET	
						23	-	48	29	SAT.	
						14	-	37	49	SAT.	
7 – 15	CI	Clay - Silty Sandy Pebbles Med Plastic Ice & Soil 4.6m		Ice & Cl	2.1 – 4.6	80	-	12	8	WET	
						67	-	28	5	Free H_2O	
						67	-	28	5	Free H_2O	
		Bottom of Hole - 4.6m									

CHAINAGE	OFFSET

O = WATER CONTENT (% OF DRY WEIGHT)

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

PLASTIC LIMIT ├──┤ LIQUID LIMIT



PUBLIC WORKS CANADA — DRILL HOLE REPORT

INUVIK - TUK

TECH. D. COOK	RIG Air	DATE 80/04/06	km	B.P. No.	HOLE No. 986-2

CHAINAGE	OFFSET
784+50	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	RELATIVE MOISTURE CONTENT	REMARKS
0–1	Pt	PEAT .3m				
1–7	CL	CLAY - SILTY PEBBLES 2.1		ICE & CL	MOIST SAT. SAT.	
7–9		ICE 2.7		ICE		
9–15		ICE & SOIL 4.6m		ICE & CL		
		BOTTOM OF HOLE - 4.6m				

Water content plot headings: 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 2 3 4 5 6 7 8 9 10 11

GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL %

DEPTH (FEET) scale: 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

Inuvik - Tuk.

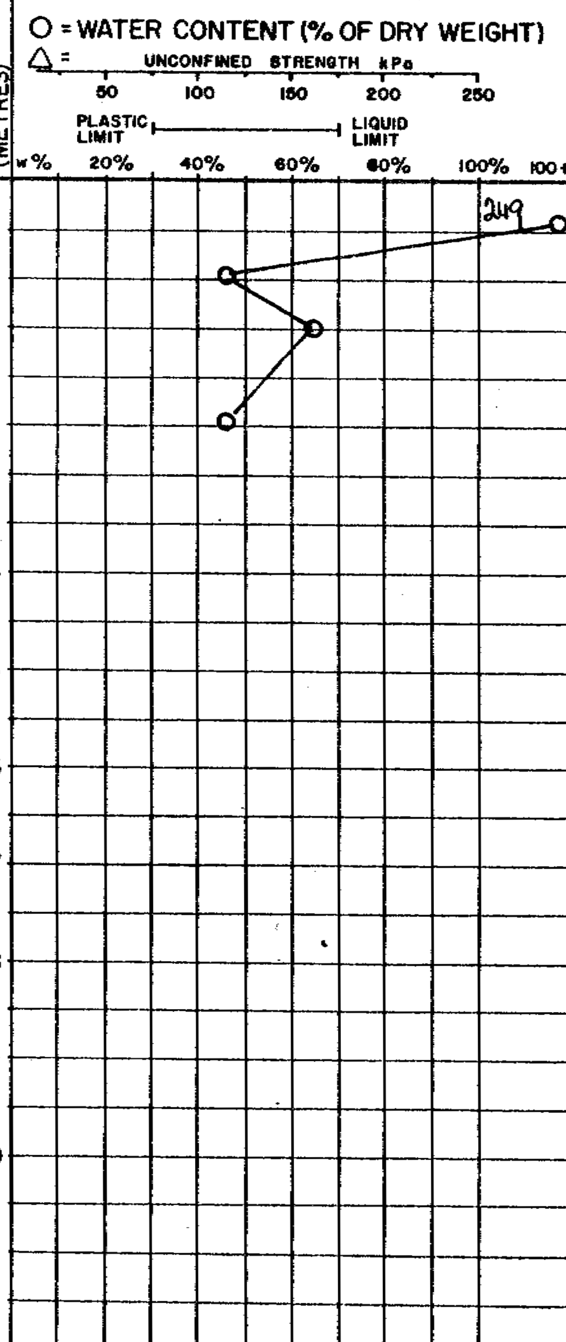
TECH. D.COOK	RIG Air	DATE 80/04/06	km	B.P. No.	HOLE No. 986-3

CHAINAGE	OFFSET
811+00	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	RELATIVE MOISTURE CONTENT
	Pt	PEAT .3m			
2		CLAY - SILTY		Ice & CL	Free H_2O
4					✓
6					✓
8	CL				SAT
10		Ice & Soil		Ice & CL	
12					
14		Pebbles 4.6m			
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



GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL %

REMARKS

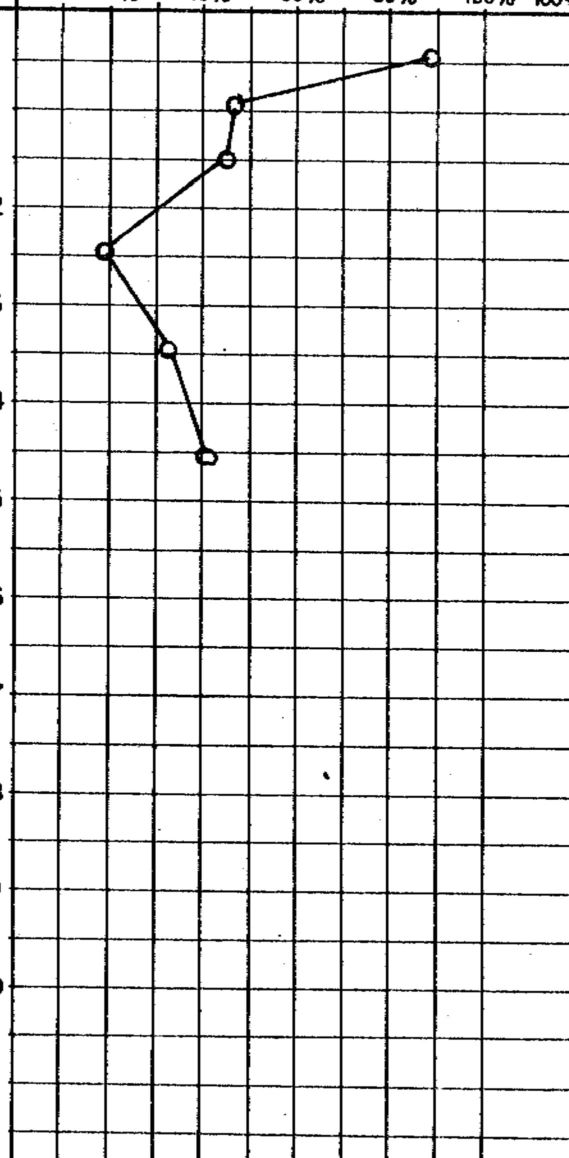
PUBLIC WORKS CANADA	DRILL HOLE REPORT	Inuvik - Tuk

TECH. D. Cook	RIG Air	DATE 80/04/06	km	B. P. No.	HOLE No. 987-2

CHAINAGE	OFFSET
884+50	

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	Pt	Peat .5m								Sat.	
4		Clay - Silty			1					Sat.	
6	CL	Low - Med. Plastic								Free H_2O	
8	I			Vs	2					Wet	
10	CI			Ice &	3						
12				CL-CI						Wet	
14		4.6m			4						
16		Bottom of Hole - 4.6m								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

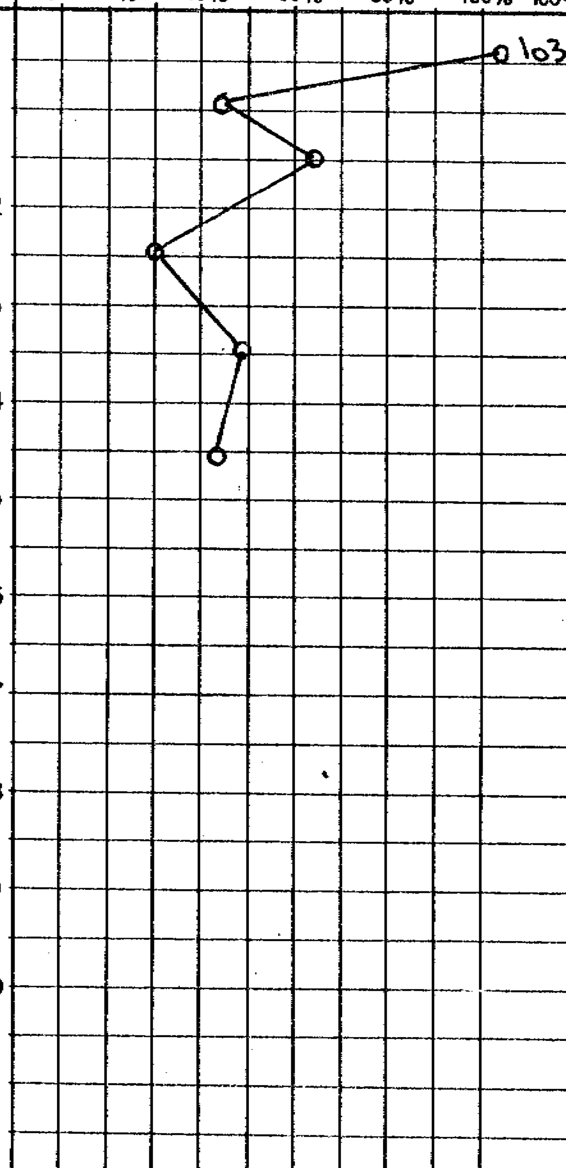
Inuvik - Tuk.

TECH. D. Cook | RIG Air | DATE 80/04/06 | km | B. P. No. | HOLE No. 987-3

CHAINAGE: 853+00 | OFFSET:

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	Peat — .5m					
2		Clay - Silty				Wet	
4	CL	Low Plastic		Ice & CL-CI	1	Free H2O	
6						✓	
8					2	Sat.	
10		Med. Plastic					
12	CI				3	Sat.	
14		— 4.6m			4	Sat.	
16		Bottom of Hole - 4.6m					
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 %

PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
D. Cook	Air	80/04/06			987-4

CHAINAGE	OFFSET
879+00	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
0–2	Pt	PEAT .15m				SAT.	
2–4	CL	CLAY - SILTY, LOW PLASTIC			1	SAT.	
6					1.5	SAT.	
8	CI	MED. PLASTIC		Vs	2.5	WET	
12					3.5	SAT.	
14		4.6m			4.6	SAT.	
16		Bottom of Hole - 4.6m					

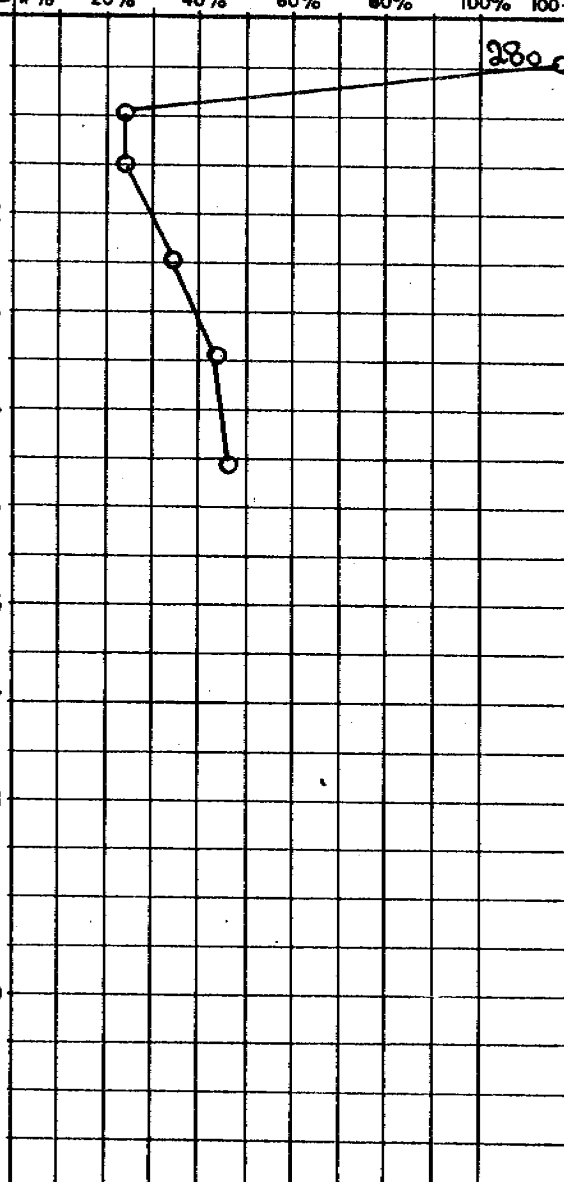
O = WATER CONTENT (% OF DRY WEIGHT)

△ = 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 %



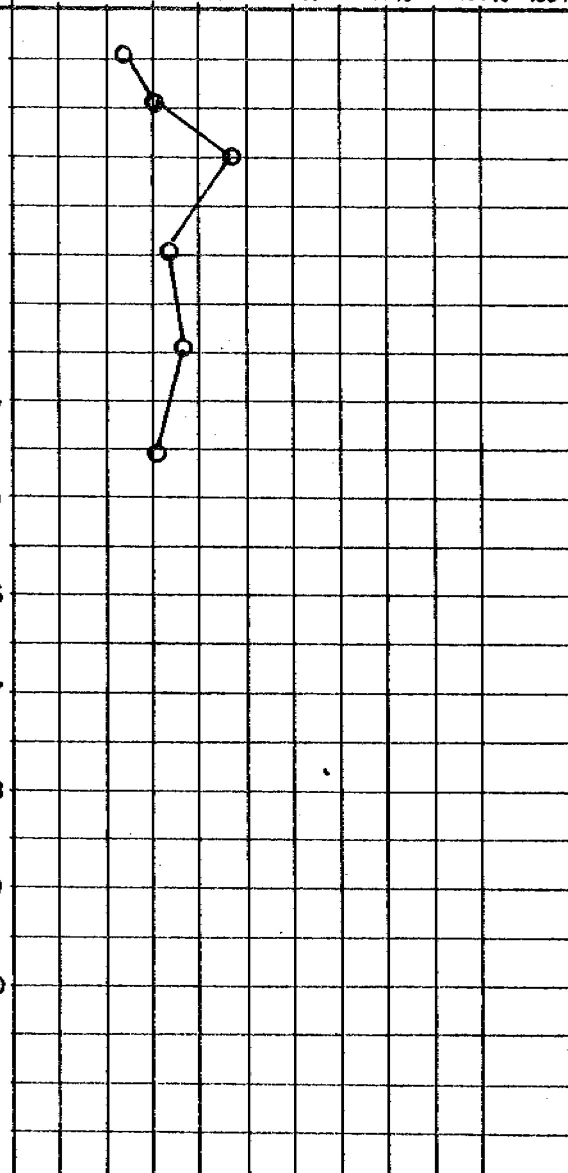
PUBLIC WORKS CANADA	DRILL HOLE REPORT	INUUK - TUK		
TECH. D. COOK	RIG Air	DATE 80/04/06	km	B.P. No.

HOLE No. 988-2

CHAINAGE	OFFSET
898+00	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	PEAT ——— .1m					
2		CLAY - SILTY				MOIST	
4		LOW PLASTIC			1	SAT.	
				Vs		Free H2O	
6	CL				2		
8						SAT	
10					3		
12						SAT.	
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							

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 %

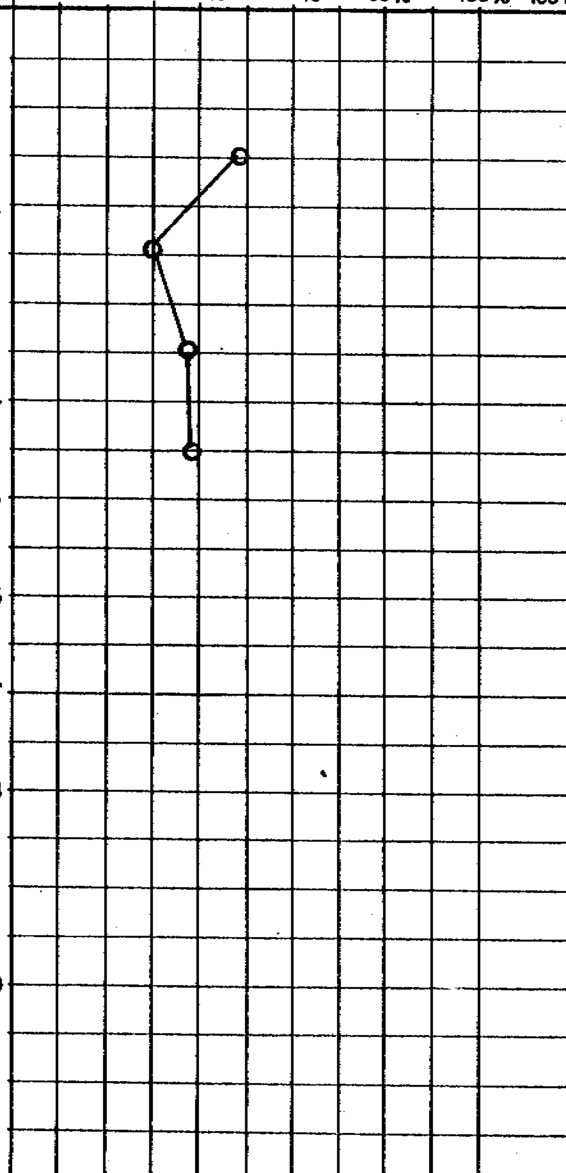
PUBLIC WORKS CANADA	DRILL HOLE REPORT	INUVIK - TUK

TECH. D.COOK	RIG AIR	DATE 80/04/06	km	B.P. No.	HOLE No. 988-3

CHAINAGE	OFFSET
925+00	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	Pt	PEAT .3m			
2		ICE & SOIL		ICE & CL	
4					1
6	CL	PEBBLES			
8	|	LOW-MED. PLASTIC CLAY - SILTY		Vs	2
10	CI				3
12					
14		4.6m			4
16		BOTTOM OF HOLE - 4.6m			
18					5
20					
22					6
24					
26					7
28					8
30					
32					9
34					
36					10
38					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
				FREE H_2O	
				WET	
				WET	
				WET	

PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk

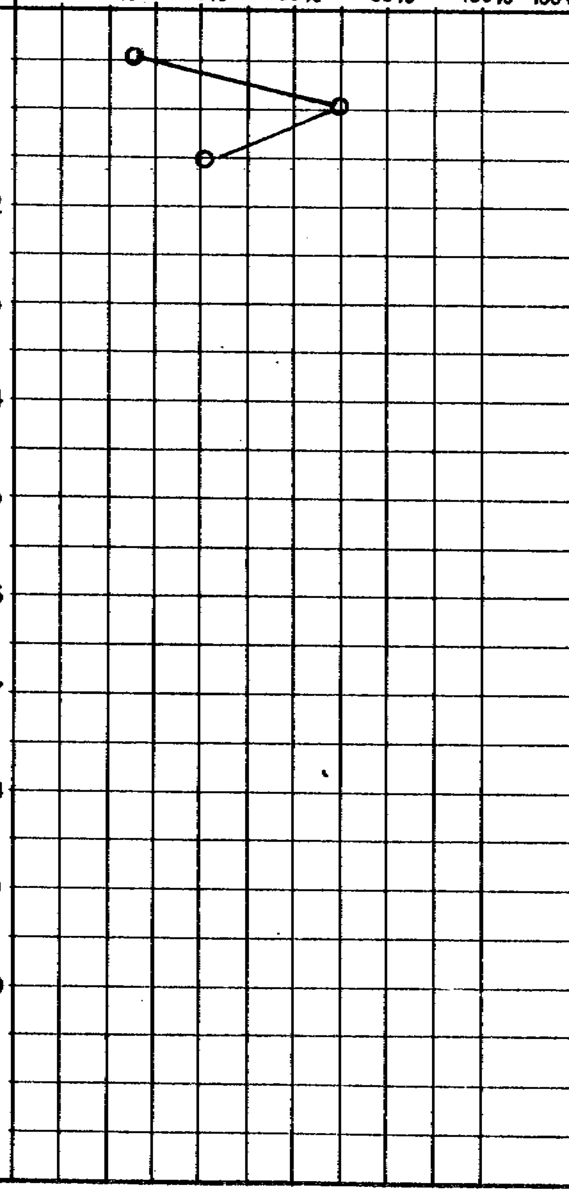
TECH. D.Cook	RIG Air	DATE 80/04/06	km	B.P. No.	HOLE No. 989-1

CHAINAGE	OFFSET
951+10	

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT
	Pt	Peat 0.5 m				
2		Clay - Silty				Damp
4	CL	Low Plastic		Vs	1	Free H_2O
6		2.1m				V
8					2	
10		Ice		Ice	3	
12						
14		4.6m			4	
16		Bottom of Hole - 4.6m				
18					5	
20						
22					6	
24					7	
26						
28					8	
30					9	
32						
34					10	
36						
38					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 %

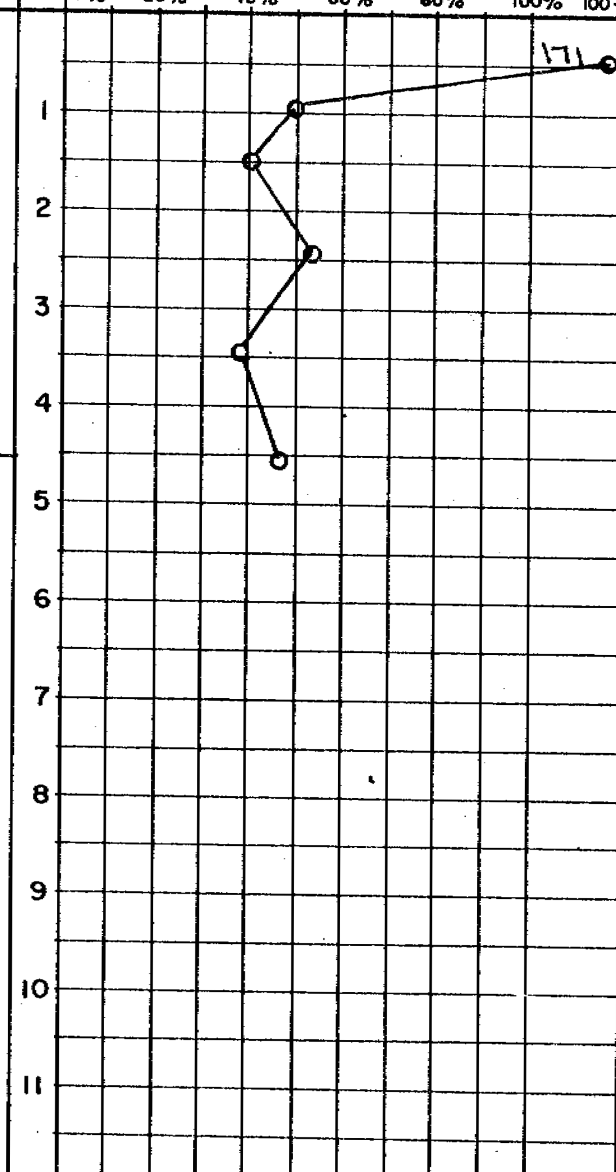
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | INUVIK-TUK.

TECH. D.COOK	RIG AIR	DATE 80/04/06	km	B.P. No.	HOLE No. 989-2

CHAINAGE	OFFSET
965+00	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	PEAT .3m				
2	CL	CLAY. SILTY			FREE H_2O	
4		PEBBLES			✓	
6	CI	MED. PLASTIC			SAT.	
8				Vs	SAT.	
10						
12					WET	
14	CI	4.6m				
16		BOTTOM OF HOLE - 4.6m			WET	
18						
20						
22						
24						
26						
28						
30						
32						
34						
36						
38						

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 %

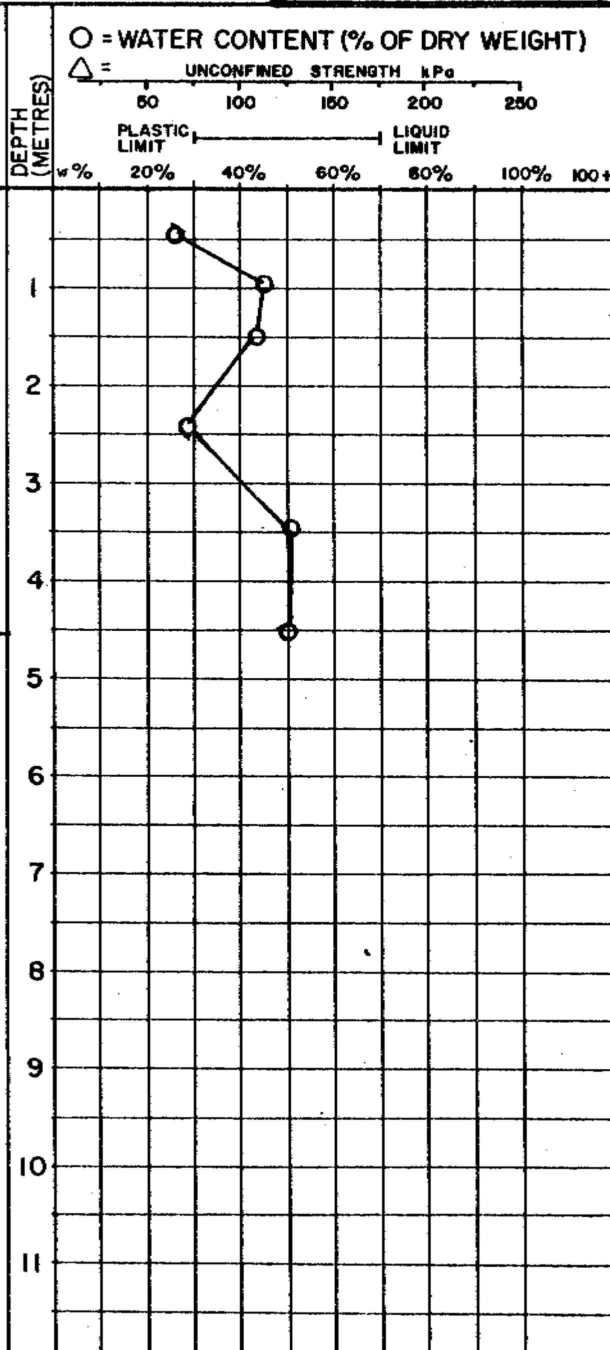
PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk

TECH. D. Cook	RIG Air	DATE 80/04/06	km	B.P. No.	HOLE No. 989-3

CHAINAGE	OFFSET
979+00	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	Peat — .3m				
2		Clay - Silty			Moist	
4	CL	Low - Med. Plastic			Free H2O	
	|				Sat	
6						
8	CI	Pebbles		Vs	Wet	
10						
12					Sat.	
14		— 4.6m			Sat.	
16		Bottom of Hole - 4.6m				
18						
20						
22						
24						
26						
28						
30						
32						
34						
36						
38						



GRAIN-SIZE ANALYSIS			
CLAY %	SILT %	SAND %	GRAVEL %

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Inuvik - Tuk

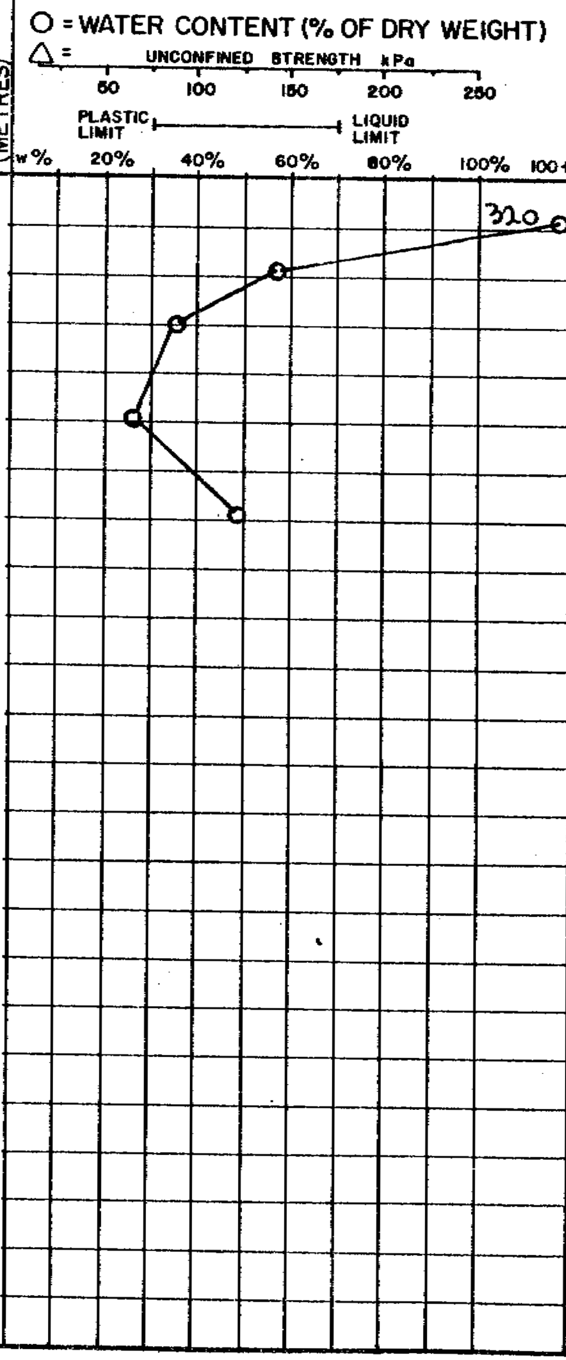
TECH. D. Cook	RIG Air	DATE 80/04/06	km	B.P. No.	HOLE No. 990-1

CHAINAGE	OFFSET
1001+50	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT
0–2	Pt	PEAT .5m				
2		CLAY. SILTY GRAVELLY				Free H_2O
4					1	✓
6	CL	PEBBLES				SAT.
8	1	LOW - MED. PLASTIC		Vs	2	
10	CI				3	WET
12						Free Water
14					4	
15		4.6m				
16		BOTTOM OF HOLE - 4.6m			5	

O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL %

REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT

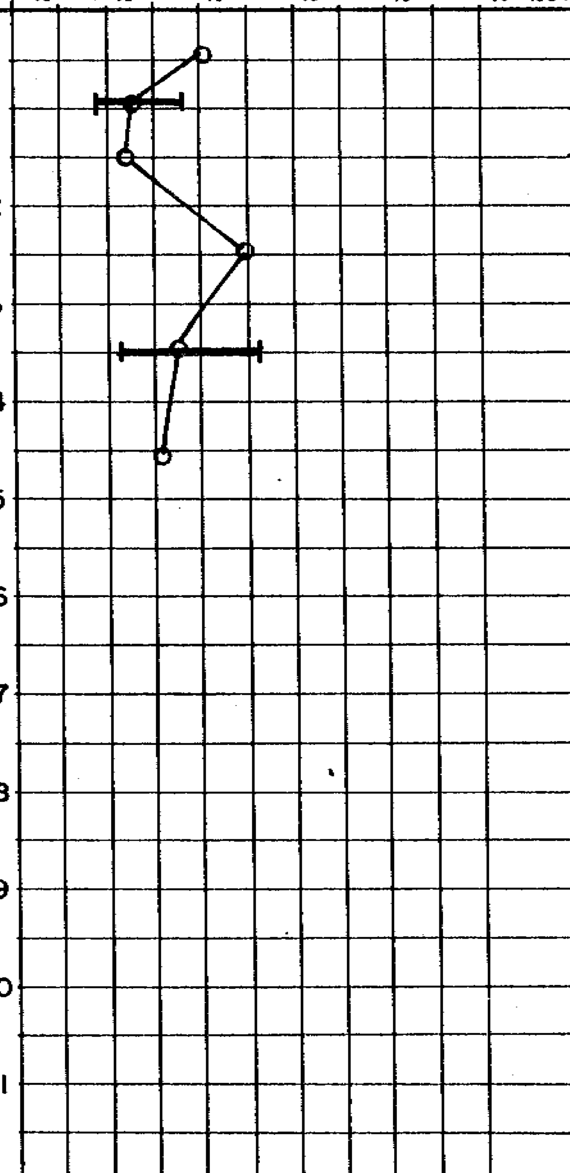
Inuvik - Tuk

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
D. Cook	Air	80/04/06			990-2

CHAINAGE	OFFSET
1018+90	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	Pt	Peat .3m			
2		Clay - Silty Sandy			
4	CI	Pebbles			1
6		Clay - Silty			
8		Med. Plastic		Vs	2
10					3
12	CH	High Plastic			
14		4.6m			4
16		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
79	21	0	Sat.
73	27	0	Wet
60	34	6	Wet
92	8	0	Sat
94	6	0	Sat.
80	20	0	Wet

REMARKS

PUBLIC WORKS CANADA — DRILL HOLE REPORT

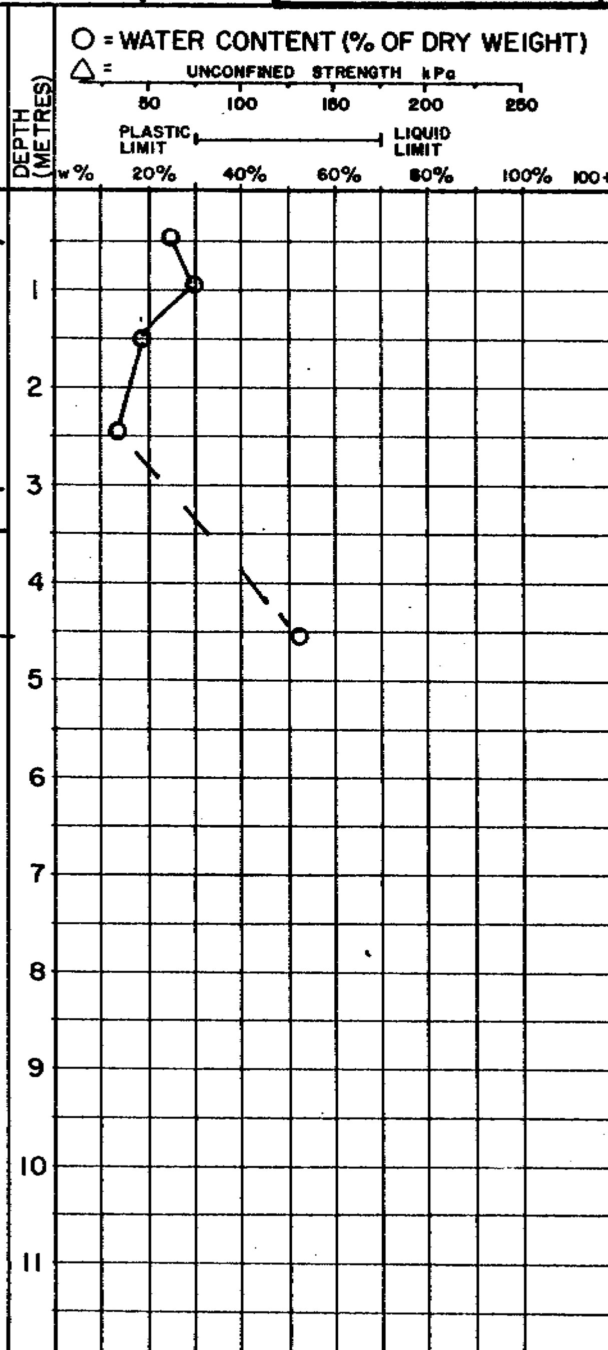
INUVIK - TUK.

TECH. D. COOK | RIG AIR | DATE 80/04/06 | km | B.P. No. | HOLE No. 990-3

CHAINAGE: 1026+50 | OFFSET:

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–2	Pt	PEAT — .5m		Vs						
2–4	CL	CLAY - SILTY SANDY PEBBLES — 1.2m			75	21	4		WET	
					65	31	4		FREE H$_2$O	
4–10	SM	SAND - GRAVELLY SILTY — 3.1 m		Vs	27	56	17		FREE H$_2$O	
					22	60	18		WET	
10–11		ICE — 3.5 m		ICE						
12–15	CL	CLAY - SILTY PEBBLES — 4.6m		Vs	89	9	2		FREE WATER	

BOTTOM OF HOLE - 4.6m



PUBLIC WORKS CANADA	DRILL HOLE REPORT	Inuvik - Tuk.		
TECH. D. COOK	RIG Air	DATE 80/04/06	km	B.P. No. / HOLE No. 991-1

CHAINAGE: 1043+00 | OFFSET: | REMARKS:

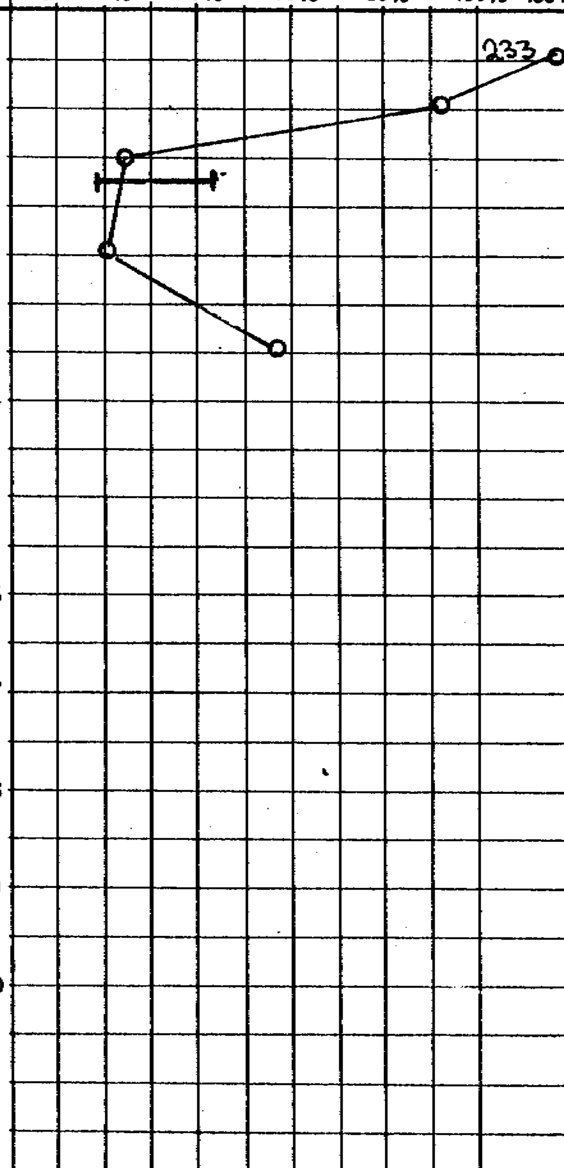
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0–1	P_1	PEAT — .3m								
1–2	P_2	PEAT — .6m				89		11	0	SAT.
2–15	Cl	CLAY - SILTY ORG. SANDY PEBBLES MED. PLASTIC — 4.6m		V_s	1	76		23	1	FREE H_2O
						59		29	12	WET
						93		7	0	WET
						65		26	9	SAT.
16		BOTTOM OF HOLE - 4.6m			5					

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): 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

34

PUBLIC WORKS CANADA — DRILL HOLE REPORT

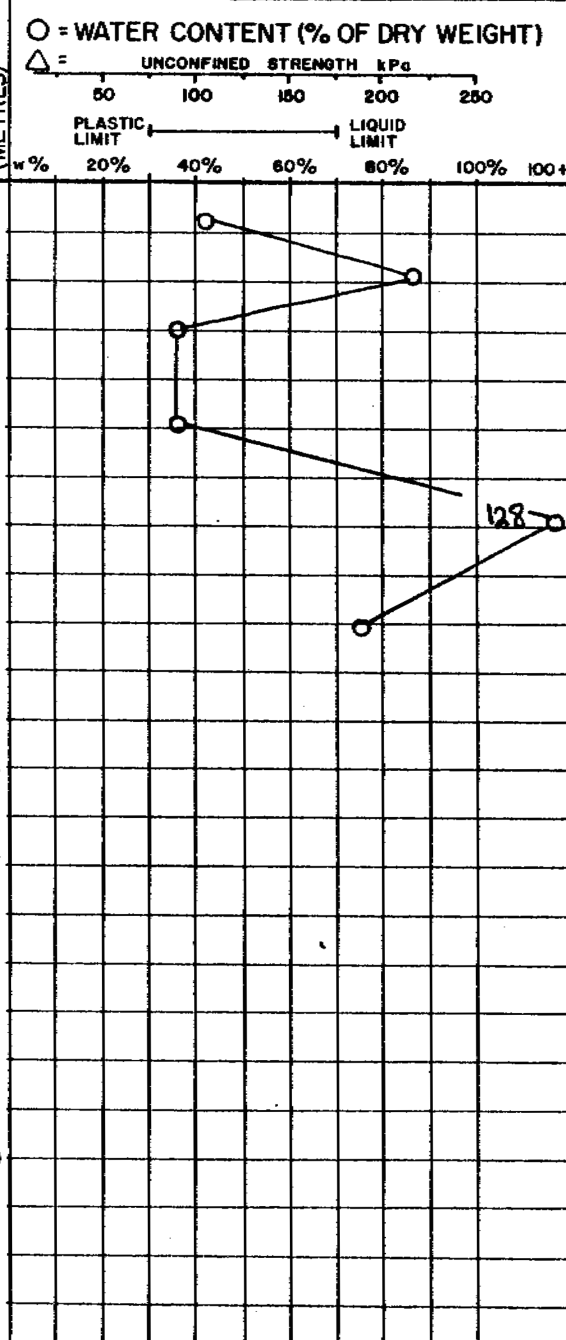
Inuvik - Tuk.

TECH. D. Pronych	RIG Air	DATE 80/03/18	km	B.P. No.	HOLE No. 991-2

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
0–1	Pt.	Peat .3					
2		Clay. Silty				WET	
4	CL / CI			Vs	1	Free H_2O	
6						Free H_2O	
8				Vc - Vr	2	Free H_2	
10		Grey - Few Pebbles			3		
12				Vs		Free H_2O	
14		4.6m			4	Free H_2O	
16		Bottom of Hole - 4.6 m			5		

GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL %



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

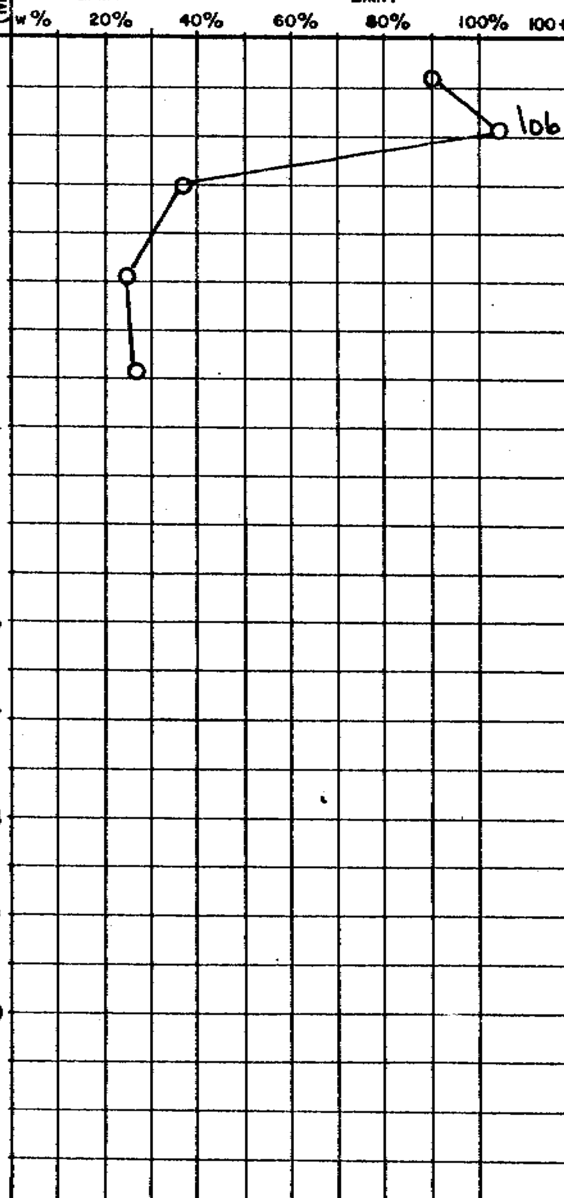
PUBLIC WORKS CANADA	DRILL HOLE REPORT	INUVIK - TUK.

TECH. D. PRONYCH	RIG AIR	DATE 80/03/18	km	B.P. No.	HOLE No. 991-3

CHAINAGE	OFFSET
1185+00	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
2	Pt	PEAT .6m		Vs		Frozen H_2O	
4	CL	CLAY - SILTY SANDY FEW PEBBLES			1	Frozen H_2O	
6				Vc - Vr		Frozen H_2O	
8	CI			|	2	WET	
10				Vs	3		
12						WET	
14		GREY - CLAY SILTY 4.6m			4		
16		BOTTOM OF HOLE - 4.6m					
18					5		
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



GRAIN-SIZE ANALYSIS			
CLAY %	SILT %	SAND %	GRAVEL %

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Inuvik - Tuk.

TECH. D. Pronych	RIG Air	DATE 80/03/18	km	B.P. No.	HOLE No. 991-4

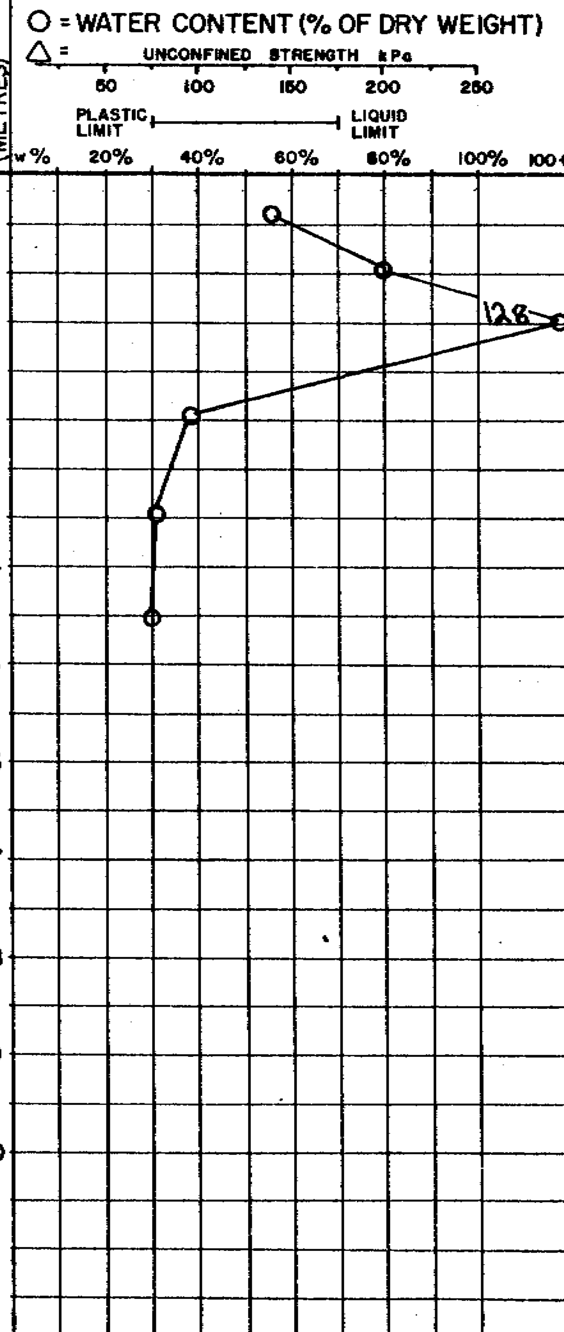
CHAINAGE	OFFSET
1183+73	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	Peat .3					
2		Clay - Silty Sandy				Free H_2O	
4	CL	Pebbles			1	Free H_2O	
6	-	Low - Med. Plastic		Vs		Free H_2O	
8	CI				2	Free H_2O	
10							
12		Grey -			3	Wet	
14					4	Wet	
		4.6 m					
16		Bottom of Hole. 4.6m					
18					5		
20					6		
22							
24					7		
26					8		
28							
30					9		
32							
34					10		
36					11		
38							

GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL %

O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa



PUBLIC WORKS CANADA	DRILL HOLE REPORT	INUVIK - TUK.

TECH. D. PRONYCH	RIG AIR	DATE 80/03/18	km	B.P. No.	HOLE No. 991-5

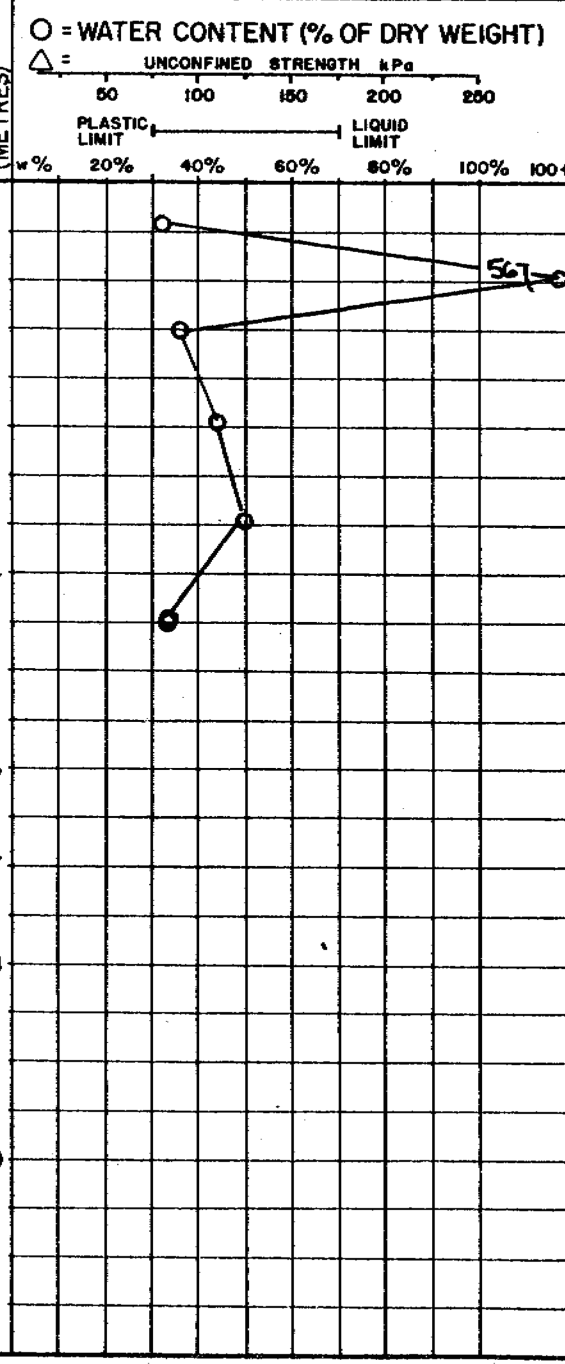
CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
	Pt.	PEAT					
2		.5m				MOIST	
		CLAY - SILTY					
4		WATER		ICE	1	FREE H_2O	
		CLAY SILTY				WET	
6		MED. PLASTIC		Vc-Vr	2		
8	CI					WET	
10				Vs	3		
12		GREY				WET-SAT	
14					4		
		4.6m				WET	
16		BOTTOM OF HOLE. 4.6m			5		
18							
20					6		
22							
24					7		
26							
28					8		
30					9		
32							
34					10		
36					11		
38							

O = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL %



PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk.

TECH. D. Pronych	RIG Air	DATE 80/03/19	km	B.P. No.	HOLE No. 992-1

CHAINAGE	OFFSET
1222	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
2	Pt	Peat .6m				Free H_2O	
4		Clay - Silty Sandy Gravelly		Vs	1	Free H_2O	
6						Free H_2O	
8	CL	Clay - Silty Sandy			2	Wet	
10		~~Grey~~			3		
12		Water + Soil		Ice & Soil			
14		Clay Silty 4.6m		Vs	4	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							

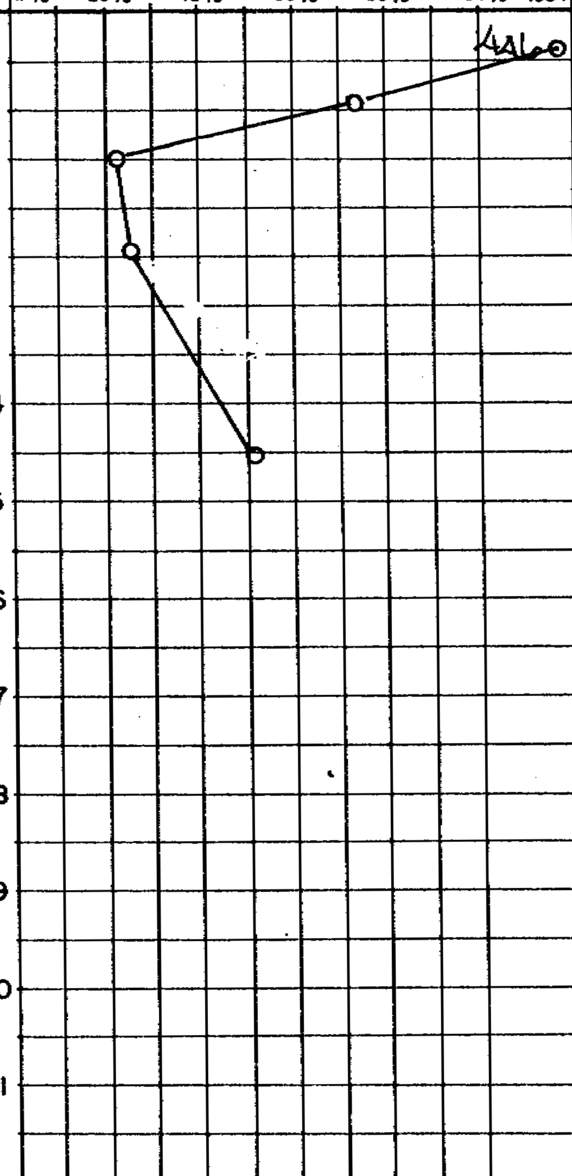
O = WATER CONTENT (% OF DRY WEIGHT)

△ = 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 %



PUBLIC WORKS CANADA — DRILL HOLE REPORT

INUVIK - TUK.

TECH. D. PRONYCH	RIG AIR	DATE 80/03/19	km	B.P. No.	HOLE No. 992.0

CHAINAGE	OFFSET
1240+00	

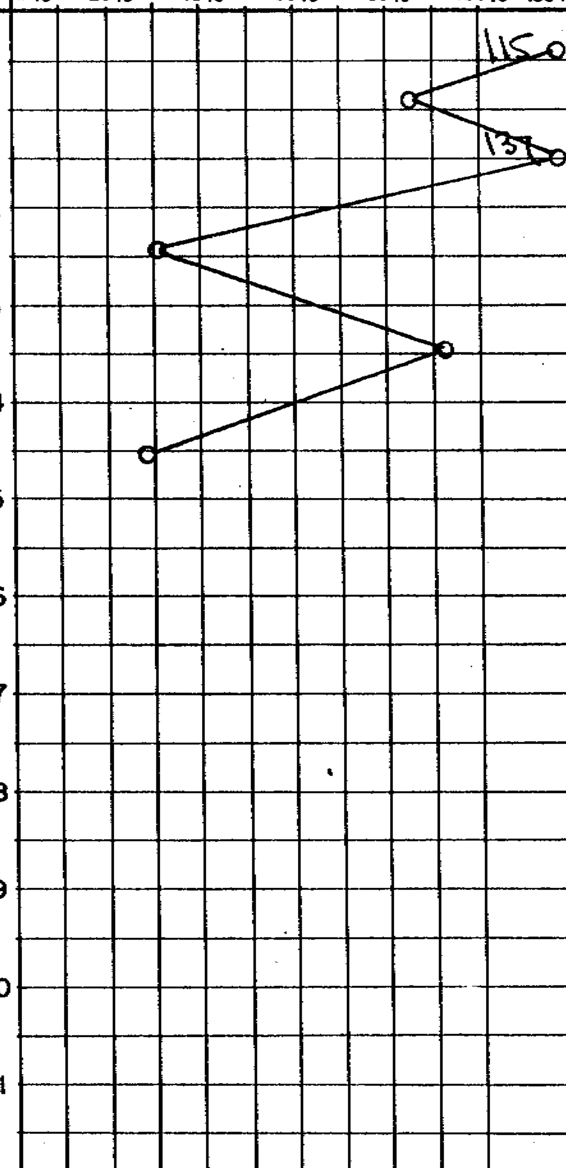
DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
	Pt.	PEAT				FREE H_2O	
2	Pt	PEAT & CLAY (.6m)				WET	
4		CLAY - SILTY		Vs	1		
6	CL					FREE H_2O	
8					2	SAT.	
10	CL - CI				3		
12		GREY				WET	
14		4.6m		Vc-Vr	4	MOIST	
16		BOTTOM OF HOLE - 4.6m			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			
CLAY %	SILT %	SAND %	GRAVEL %

34

PUBLIC WORKS CANADA — DRILL HOLE REPORT

INUVIK - TUK

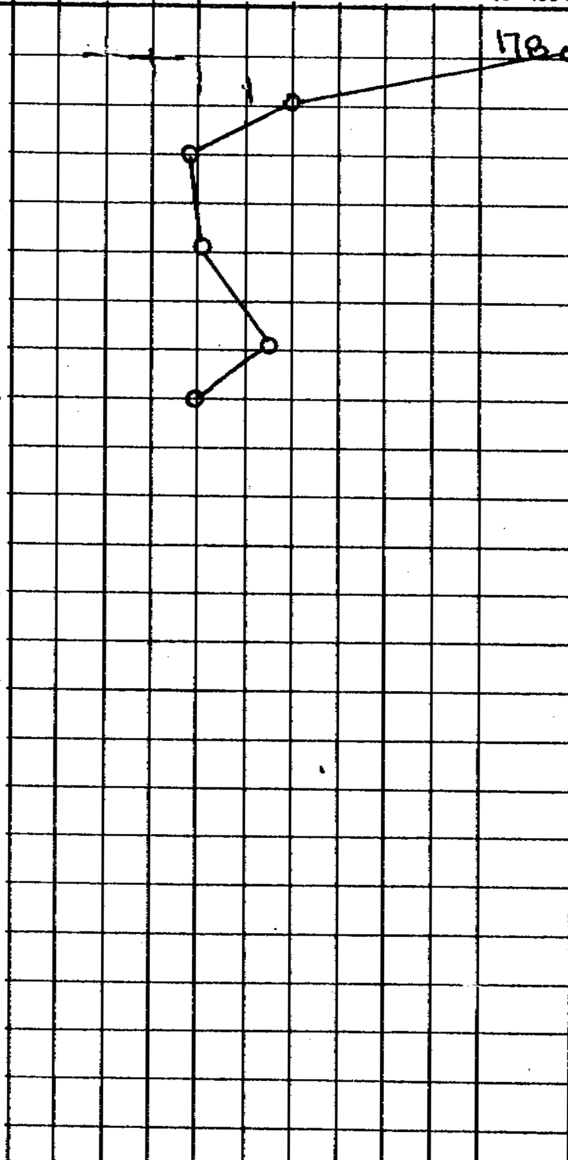
TECH. D. PRONYCH	RIG AIR	DATE 80/03/19	km	B.P. No.	HOLE No. 992-3	

CHAINAGE	OFFSET
EST. 1251 + 75	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	PEAT .25m					
2	CL	CLAY - SILTY		Vs		FREE WATER	
	CI	LOW-MED. PLASTIC			1	FREE WATER	
4–6		GREY				WET	
8	CI	MED. PLASTIC		Vc - Vr	2		
10	CH	HIGH PLASTIC			2.5	WET	
12					3.5	WET-SAT	
13		4m			4	WET	

Depth scales: feet 2–38; 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 %

PUBLIC WORKS CANADA — DRILL HOLE REPORT

INUVIK - TUK.

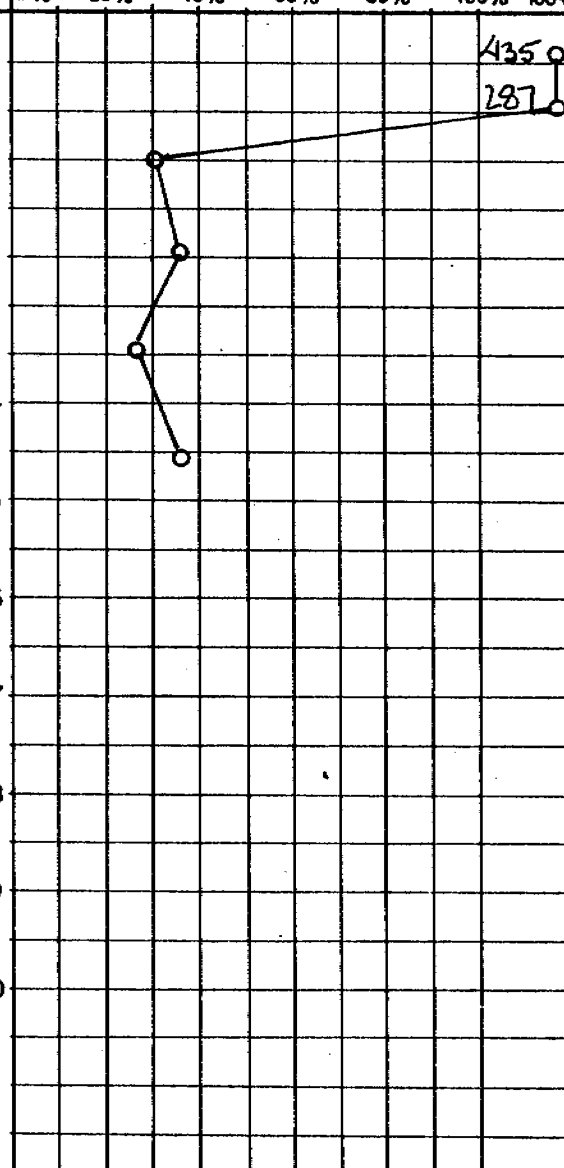
TECH.	RIG	DATE	km	B.P. No.	HOLE No.
D. PRONYCH	AIR	80/03/19			993-1

CHAINAGE	OFFSET
262 + 60	

○ = 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	RELATIVE MOISTURE CONTENT	REMARKS
0–3	Pt	WATER & PEAT — .9m		ICE & SOIL	WATER FREE WATER	
3–10	CL	CLAY - SILTY FEW PEBBLES LOW PLASTIC		Vs	SAT. FREE WATER	
10–15	CI-CH	GREY - CLAY SILTY MED - HIGH PLASTIC — 4.6m		Vc - Vr	WET WET	
15		BOTTOM OF HOLE - 4.6m				

GRAIN-SIZE ANALYSIS			
CLAY %	SILT %	SAND %	GRAVEL %

PUBLIC WORKS CANADA	DRILL HOLE REPORT	Inuvik - Tuk.

TECH. D. PRONYCH	RIG Air	DATE 80/03/19	km	B.P. No.	HOLE No. 993-2

CHAINAGE	OFFSET
1277+75	

○ = 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	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–1.6	Pt	Peat .5m		Ice & Soil		970.0					Free Water	
2–9	CL	Clay - Silty, Sandy, Pebbles, Low Plastic		Ice & Soil	1–2						Free Water; Wet - Sat.; Sat.	
10–12	CI	- Clay - Silty, Med. - High Plastic		Vc - Vr	3						H.I.B	
12–15	CI-CH	Grey - 4.6m		Vs	4						Sat.	

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

Inuvik - Tuk.

TECH. D. Pronych	RIG Air	DATE 80/03/19	km	B.P. No.	HOLE No. 993-3

CHAINAGE	OFFSET
1295+50	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
	Pt.	Peat — .2m					
2	CL	CLAY - SILTY		ICE			
4		LOW - MED PLASTIC		Vs	1	H.I.B	
6						MOIST-WET	
8	CI				2		
10				Vc-Vr	3		
12				Vs		H.I.B.	
14		4.6 m			4		
16							
18		BOTTOM OF HOLE - 4.6m			5		

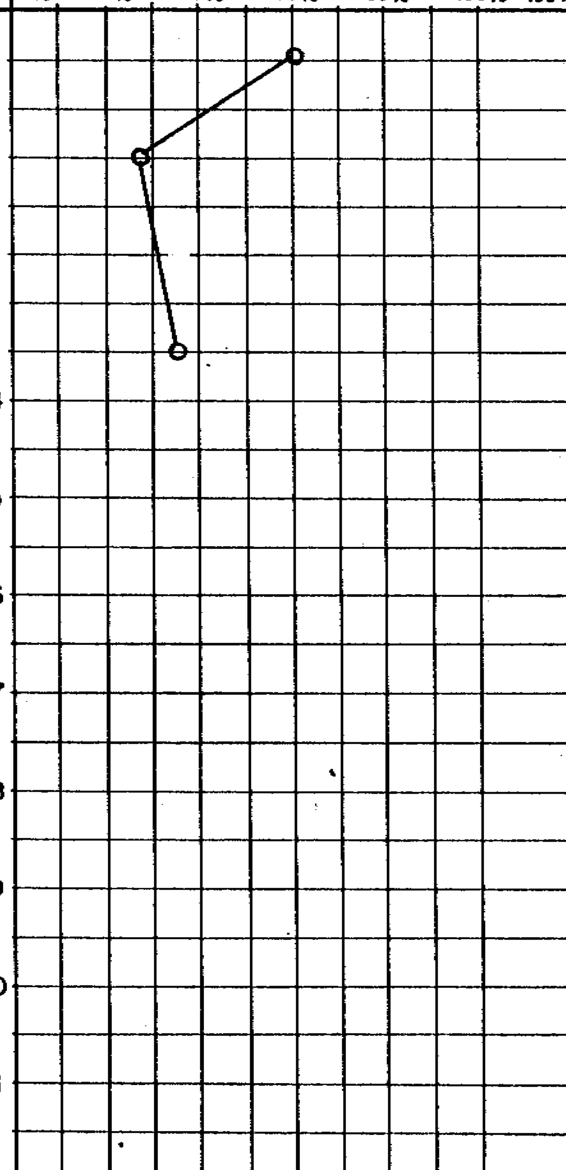
O = WATER CONTENT (% OF DRY WEIGHT)

△ = 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 %



PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk.

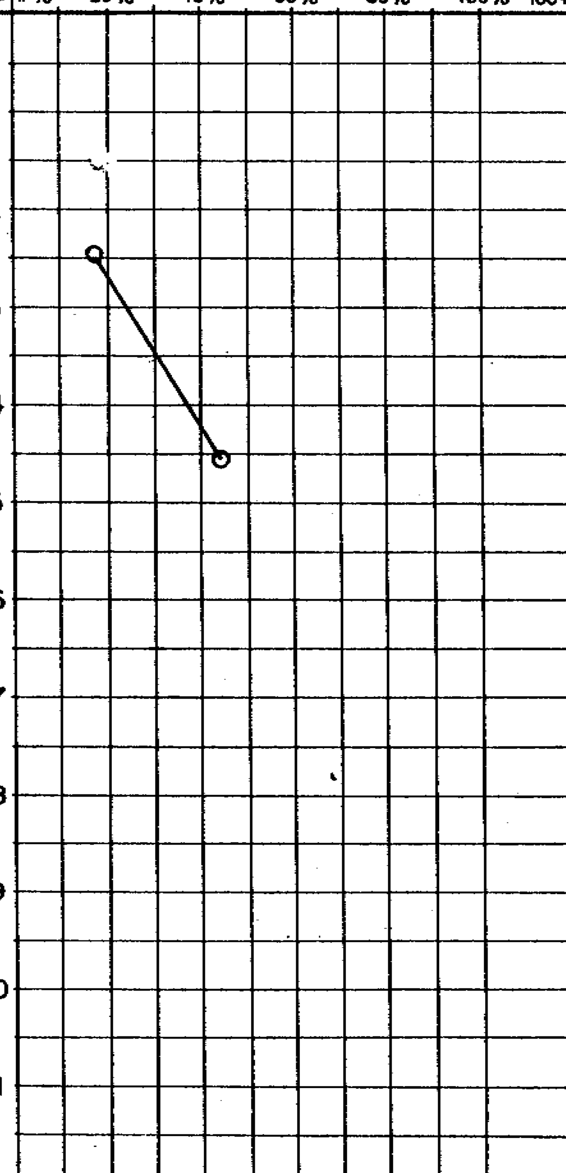
TECH. D. Pronych	RIG Air	DATE 80/03/19	km	B.P. No.	HOLE No. 993-4

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	RELATIVE MOISTURE CONTENT	REMARKS
	PT	PEAT — .3 m				
2		ICE		ICE		
4	CL - CI	CLAY - SILTY		HIGH ICE CONTENT Vs	H.I.B	
6		LOW - MED PLASTIC			H.I.B	
8		FEW PEBBLES			MOIST - WET	
12				Vc - Vr	H.I.B	
14		— 4.6 m			H.I.B	
16		BOTTOM OF HOLE - 4.6 m				

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+



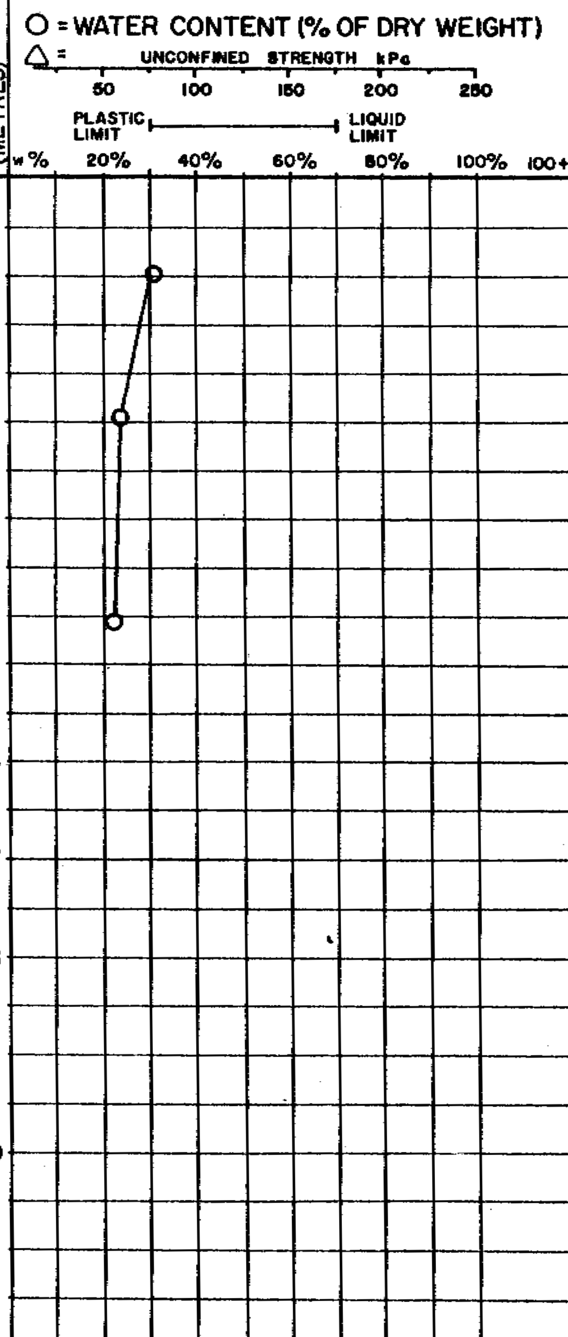
GRAIN-SIZE ANALYSIS			
CLAY %	SILT %	SAND %	GRAVEL %

PUBLIC WORKS CANADA	DRILL HOLE REPORT	INUVIK - TUK.

TECH. D. PRONYCH	RIG AIR	DATE 80/03/19	km	B. P. No.	HOLE No. 994-1

CHAINAGE	OFFSET
1319+50	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	RELATIVE MOISTURE CONTENT	REMARKS
2		CLAY - SILTY				H.I.B	
4	CL	LOW - MED. PLASTIC		Vc - Vr	1	MOIST	
6	-			-		H.I.B	
8	CI			Vx	2	H.I.B	
10–14					3–4	H.I.B	
15		4.6m				H.I.B	
16		BOTTOM OF HOLE - 4.6m			5		



GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL %

PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk.

TECH. D. Pronych	RIG Air	DATE 80/03/19	km	B.P. No.	HOLE No. 994-2

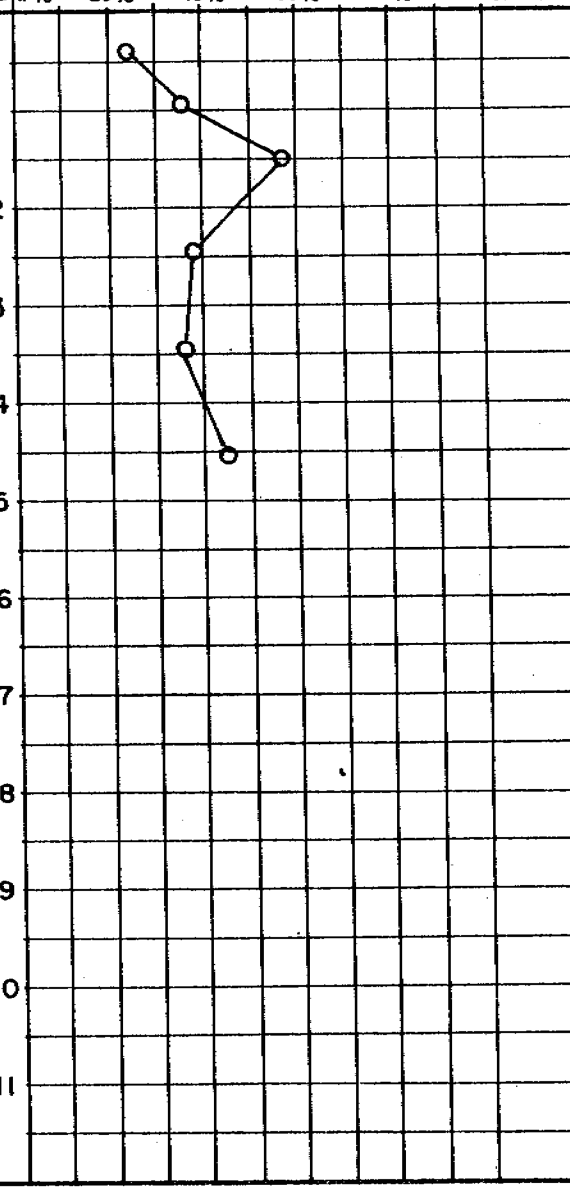
CHAINAGE	OFFSET
1328+75	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	RELATIVE MOISTURE CONTENT	REMARKS
	Pt	Peat .2m				
2	CL	Clay - Silty .6			Moist	
4–6		Ice & Soil .2.1m		Ice & Soil	Wet; Free H_2O	
8–14	CI	Clay - Silty Med. Plastic 4.6m		Vc - Vr / Vs	Wet; Wet; Wet	
16		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 %

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

134

PUBLIC WORKS CANADA — DRILL HOLE REPORT

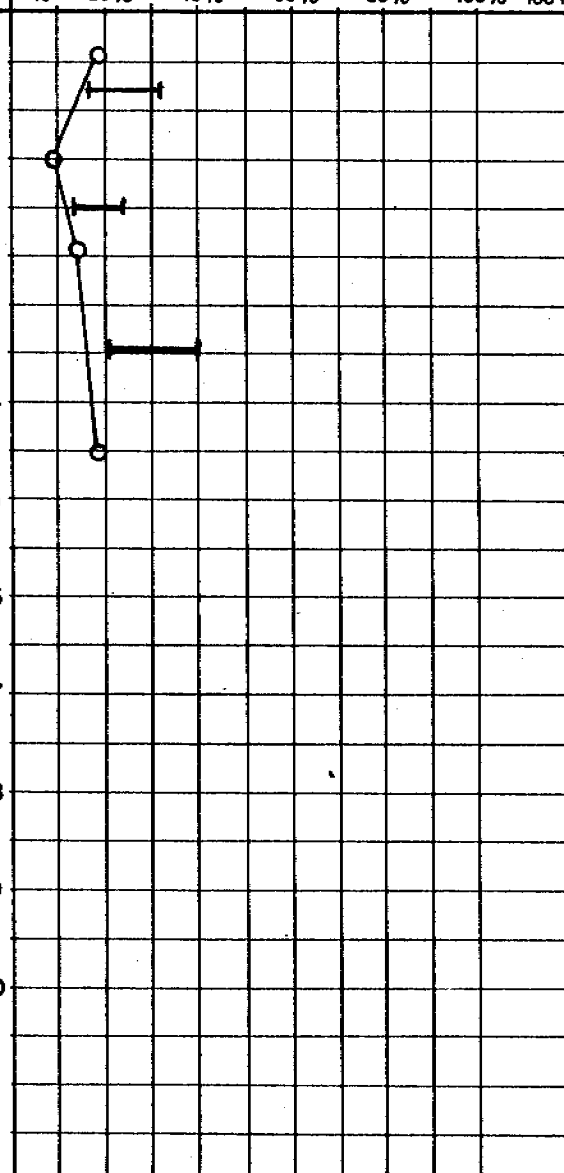
INUVIK - TUK.

TECH.	RIG	DATE	km	B. P. No.	HOLE No.
D. PRONYCH	AIR	80/03/19			994-3

CHAINAGE	OFFSET
1339+47	

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
	Pt	PEAT .3m		
2	Cl	CLAY - SILTY SANDY PEBBLES		
6	CL	LOW PLASTIC GRAVELLY PEBBLES		Vc - Vr, Vx
10	Cl	MED. PLASTIC		
15		4.6m		
16		BOTTOM OF HOLE - 4.6m		

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
-48-		45	7	MOIST	
-56-		37	7	H.I.B	
-27-		68	15	MOIST	
-30-		61	9	WET	
-87-		9	4	H.I.B	
-68-		29	3	WET	

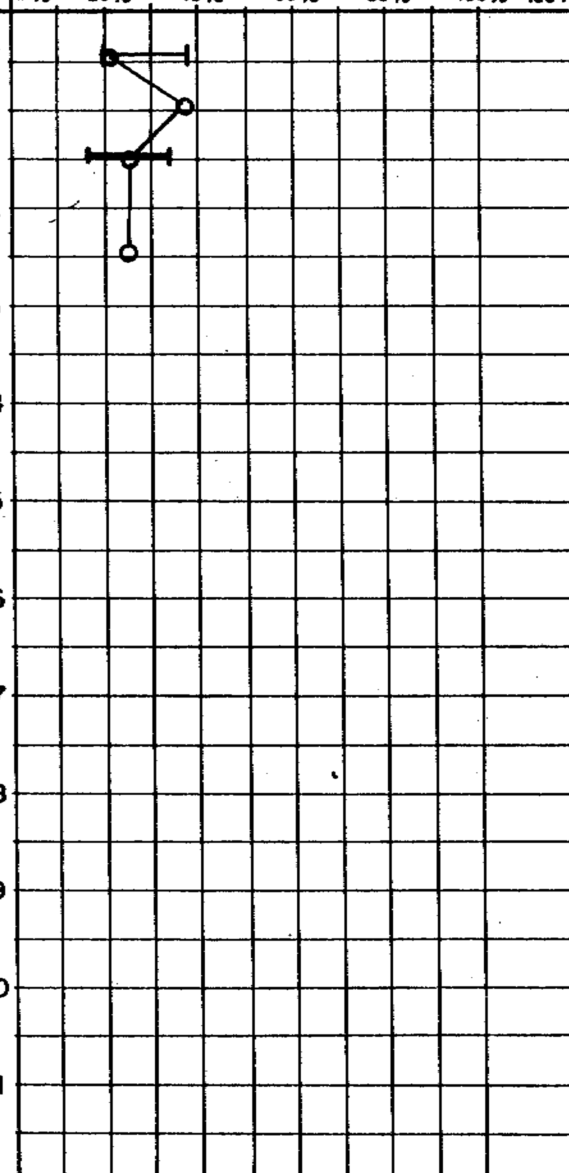
PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk.

TECH. D. Pronych	RIG Air	DATE 80/03/19	km	B.P. No.	HOLE No. 994-4

CHAINAGE	OFFSET
1349+40	

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
	Pt	Peat .3m									
2		CLAY - Silty Sandy		Vc - Vr		-	80	19	1	Moist	
4		Pebbles			1	-	70	25	5	SAT.	
6		Med. Plastic		Vs		-	69	25	6	Wet	
8	Cl				2	-	67	27	6	Wet	
10					3						
12		Dirty Ice		Ice							
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	INUVIK - TUK

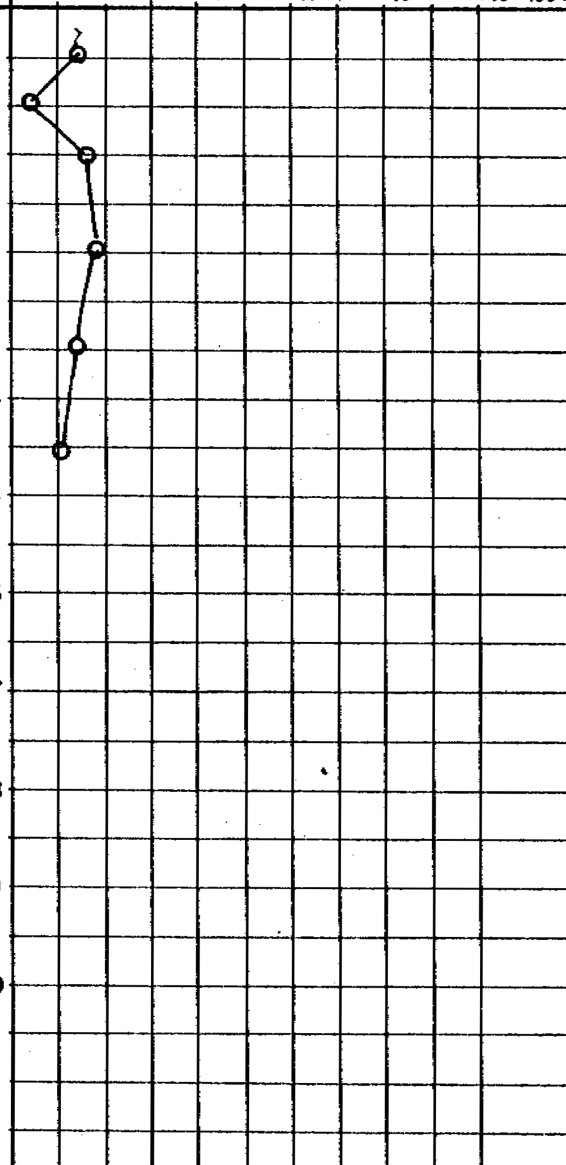
TECH. D. COOK	RIG AIR	DATE 80/04/06	km	B.P. No.	HOLE No. 994-5

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
	Pt	PEAT .3m		
2	SM	SAND - SILTY PEBBLES GRAVELLY		Vc-Vr
15		4.6		
16	CI	CLAY. SILTY 4.9		
18–28		ICE TRACE of SOIL		ICE & CL
30		9.1m		
32		BOTTOM OF HOLE - 9.1m		

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

DEPTH (METRES): 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
-37-		59	4	MOIST
-12-		64	24	DAMP
-22-		68	10	WET
-23-		75	2	WET
-9-		63	28	WET
-15-		65	20	WET

CHAINAGE	OFFSET

REMARKS

Appendix D

SEARCH AREAS #1, #2 and #3

Landform and Location:	A bedrock controlled escarpment located one to two miles east and north of Inuvik, and at approximately Mile 972 of the Mackenzie Highway.
Material:	Shale or clay shale soft to medium hard.
Stripping:	Probably nine to ten feet to shale.
Volume:	Unlimited.
Conclusion:	Excellent source of embankment borrow. Suitable for large scale development. Area #2 considered the best area for a large borrow pit.

Topography

This search area is a portion of a bedrock controlled escarpment that begins immediately east of Inuvik and continues toward the north. The escarpment is a line of demarkation between uplands to the east, associated with the Caribou Hills, and the modern Mackenzie Delta and adjacent terraces to the west. The uplands are covered by variable thicknesses of glacial till and isolated patches of glacial outwash, most of which contain an abundance of ice, in many cases massive ice. Some gravelly outwash is present along the rim of the escarpment overlooking Inuvik. There are three narrow, but relatively deep erosion channels or canyons cut perpendicular to the escarpment within the areas test drilled. The route alignment ascends the escarpment within the middle channel. Retrogressive - thaw flow slides have developed in the surficial ice - rich sediments along the rims of the canyons, and the faces of these slumps have retreated some distance back from the rims and from the escarpment. As a result, overburden soils over bedrock are thinnest and relatively free of massive ice near the edge of the escarpment. Mud flow debris from the upland slumps have been deposited in the bottom of the erosion channels and on benches adjacent to the rims.

At present a large number of shallow failures confined to the active layer are present along the canyons. These are a result of a recent fire (approximately 1970), which caused the active layer to thicken and shallow ice-rich sediments to melt. A schematic cross-section across the rim of an erosion canyon through the escarpment is included overleaf.

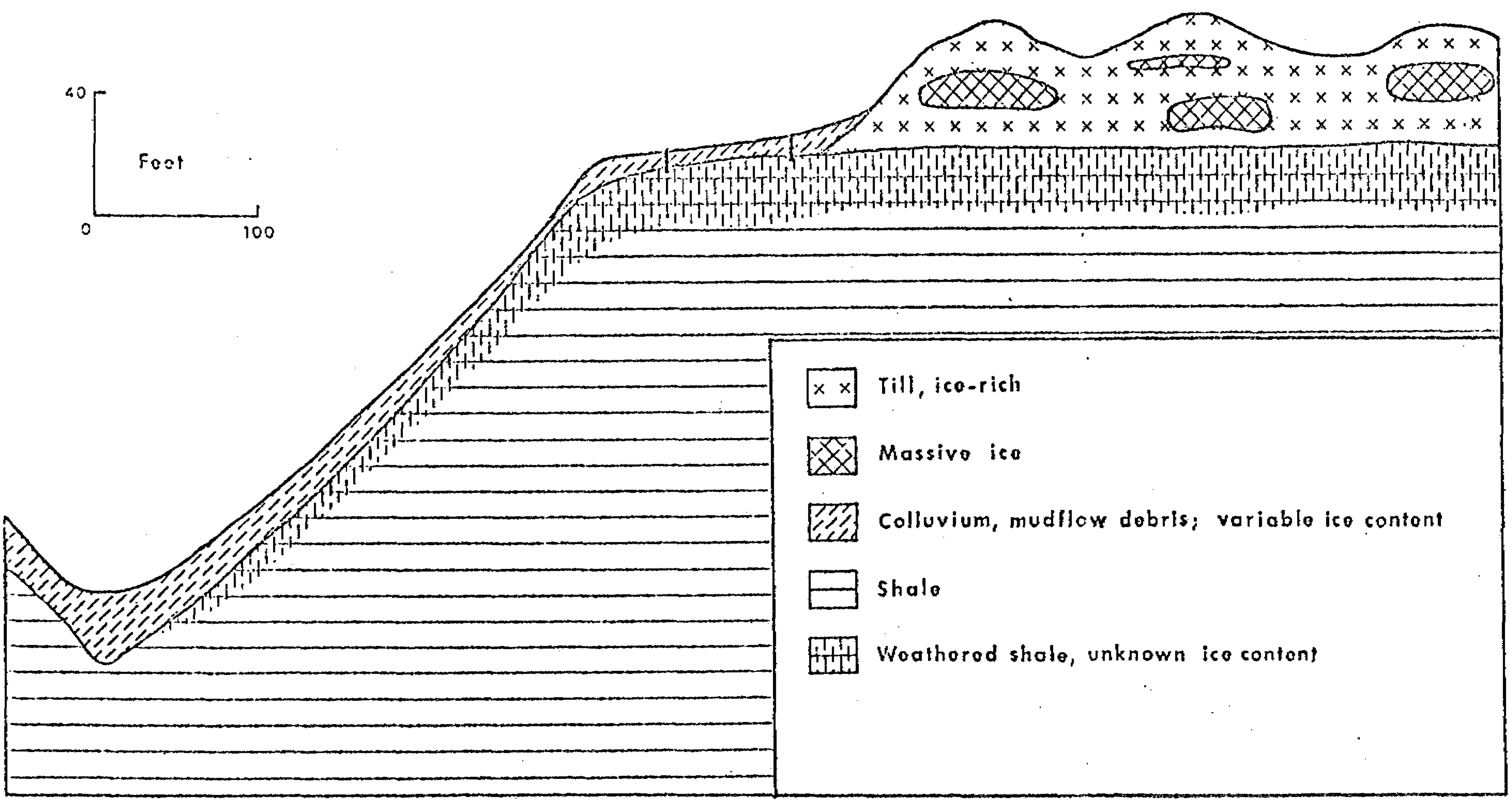
Materials and Quantities

There is shale at depth throughout the areas drilled, although the overburden soils are widely variable in terms of both depth and ice content. In general, overburden is least along the edges of the erosion canyons through the escarpment, however the lateral extent of the shallow bedrock along the canyons is limited. The minimum overburden encountered was in the order of nine to 10 feet, most of which was ice-rich silty clay which is conventially unsuitable for construction use and will have to be wasted. The maximum depth drilled was 110' into shale in hole #11 and Area #2. The shale is described as soft to medium hard throughout and is a 'compaction' shale or clay shale. Construction with similar shale on the Inuvik airport road indicates this shale can either be drilled and shot, or ripped successfully with heavy equipment.

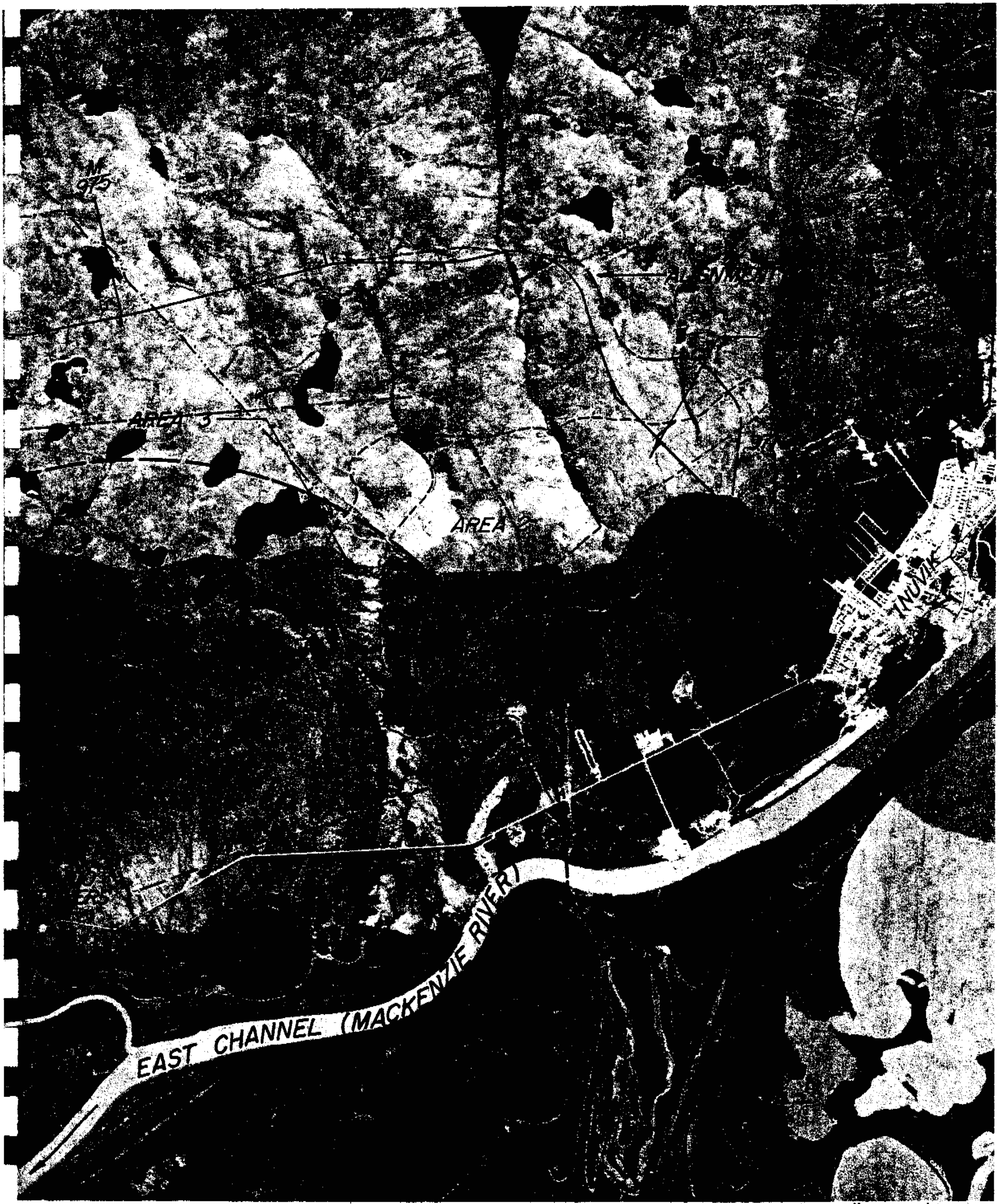
It is estimated that in excess of 1,000,000 cu. yds. could be required from this escarpment if only dry, competant materials are to be used for construction, i.e., roughly 14 miles of embankment or close to 1 X 10^6 cu. yds. would be required. Area #2 is the preferred portion of the escarpment although shallow bedrock was also encountered in Area #1 (holes #1, #2 and #5). A rough outline of the Area #2 where the overburden is minimal is shown on the 1 : 12,000 mosaic with the borehole locations.

The shale or clay shale is frozen throughout and occasional thin ice lenses were noted in some holes, however generally the shale is relatively dry with a moisture content near 10%. Overburden soils are mostly silty clay with variable ice content - the majority is at moisture contents on thawing between the liquid and plastic limits and could be used successfully for embankment with some drying in place.

All borehole logs for Areas #1, #2 and #3 are included on the following pages for easy reference.



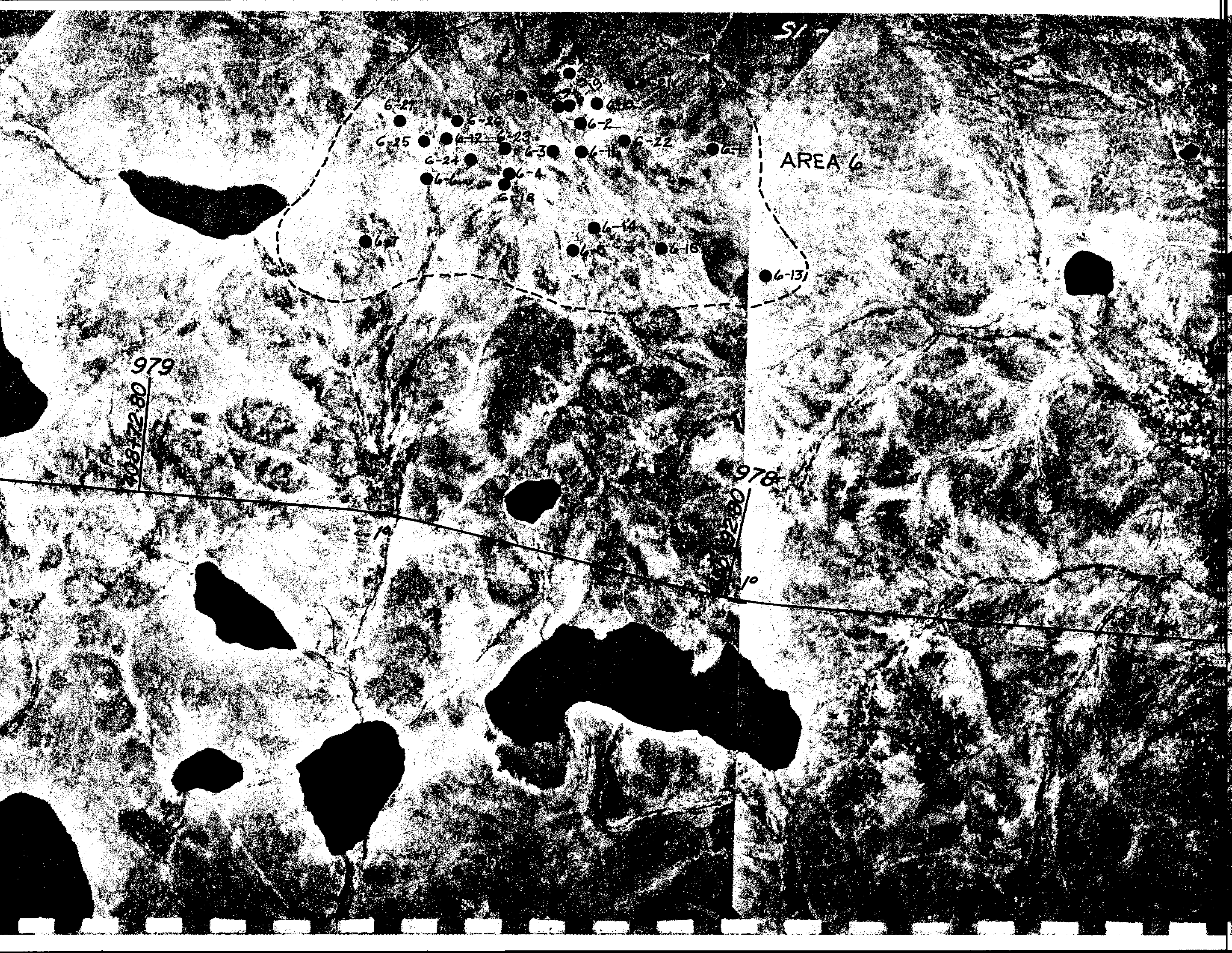
Schematic cross-section across canyon rim east of Inuvik.

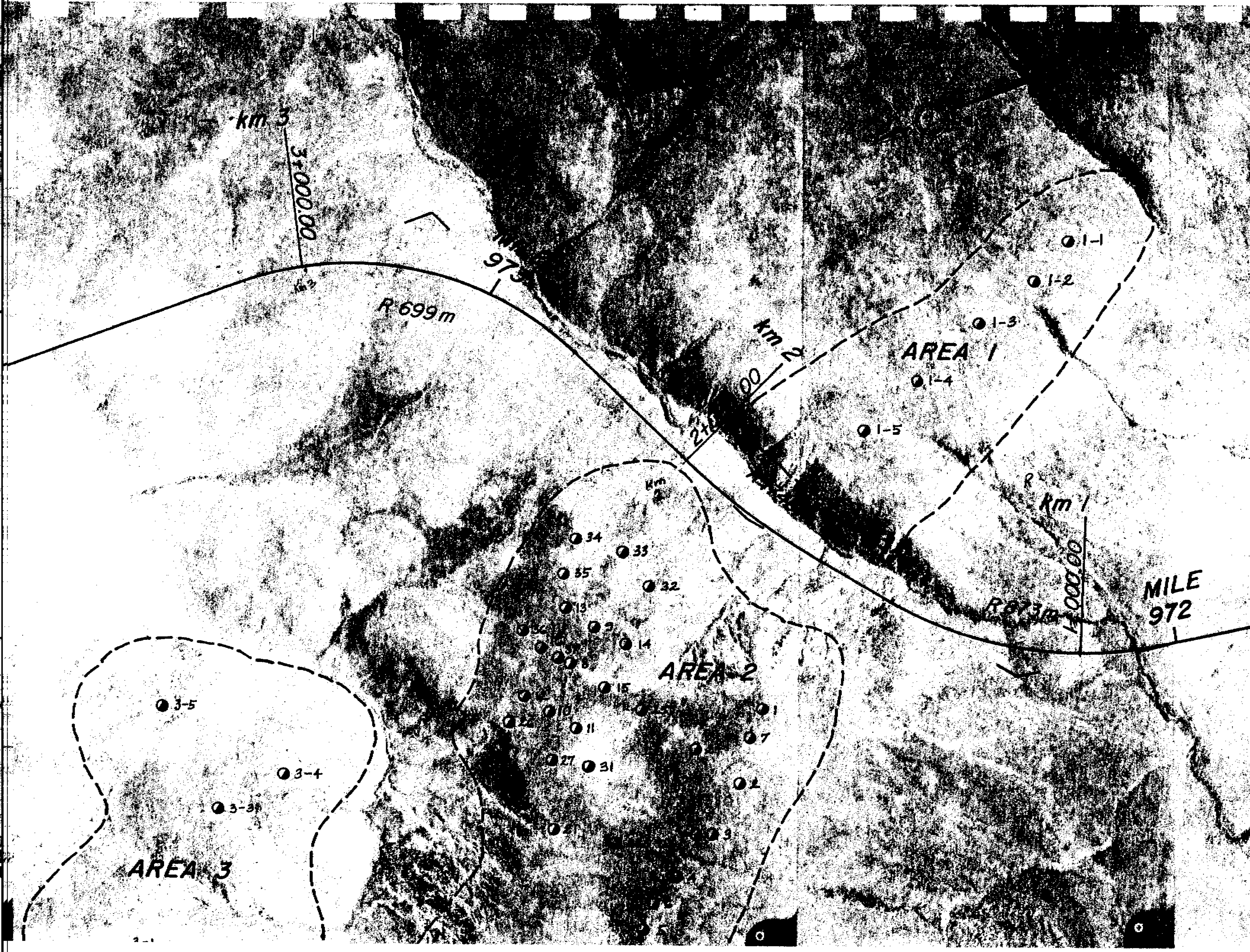


SCALE 1:36,000 (APPROX 1"=3,000')


AREA 9
AREA 6
EXISTIN
WINTE
ROAD

WINTER ROAD
AREA 9
9-3
9-1
514+32.80


AREA 6
979
408+72.80
978
6-27
6-26
6-25
6-24
6-23
6-22
6-2
6-3
6-4
6-11
6-18
6-14
6-16
6-13



km 3
3+000.00
973
R 699m
km 2
2+000
AREA 1
1-1
1-2
1-3
1-4
1-5
km 1
1+000.00
R 873m
MILE
972
AREA 2
34
33
35
32
13
14
15
11
27
31
7
2
3
AREA 3
3-5
3-4
3-3

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

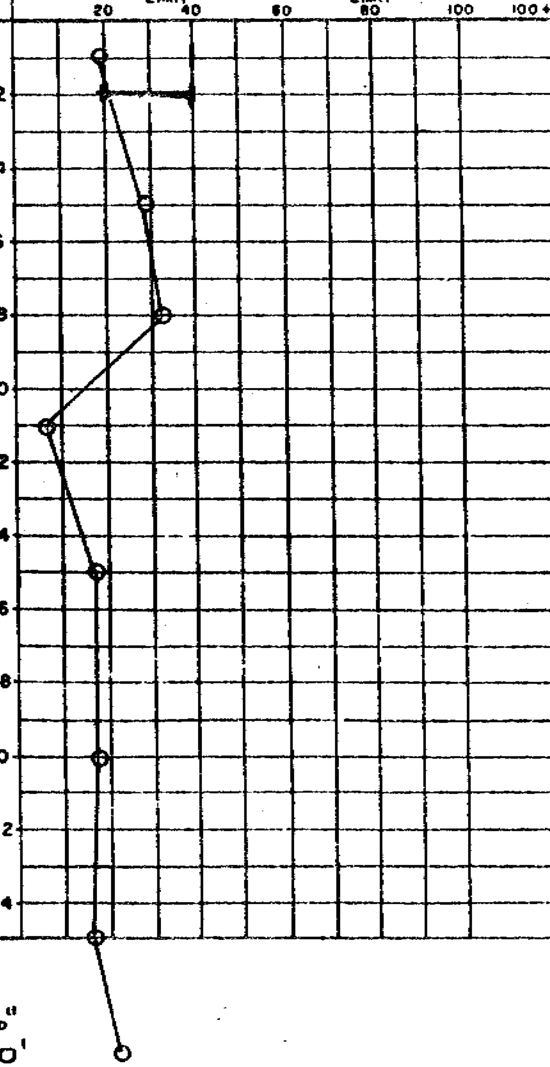
DWN	FIELD ENG	DATE DRILLED 14/3/76	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRODYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
972	1	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT — 2"										
0–9					CI	CLAY - SILTY SANDY PEBBLES MED. PLASTIC SHALE FRAGMENTS — 9'		V_c - V_r			78	18	4	MOIST		
											73	21	6	WET		
											65	31	4	WET		
9–30						SHALE - SOFT SILTY		V_x						HUMID		
														DAMP		
														DAMP		
														DAMP		
														MOIST		

○ = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)



ICE 6"
30'

BOTTOM OF HOLE - 30'

INUVIK - TUK

DRILL HOLE REPORT

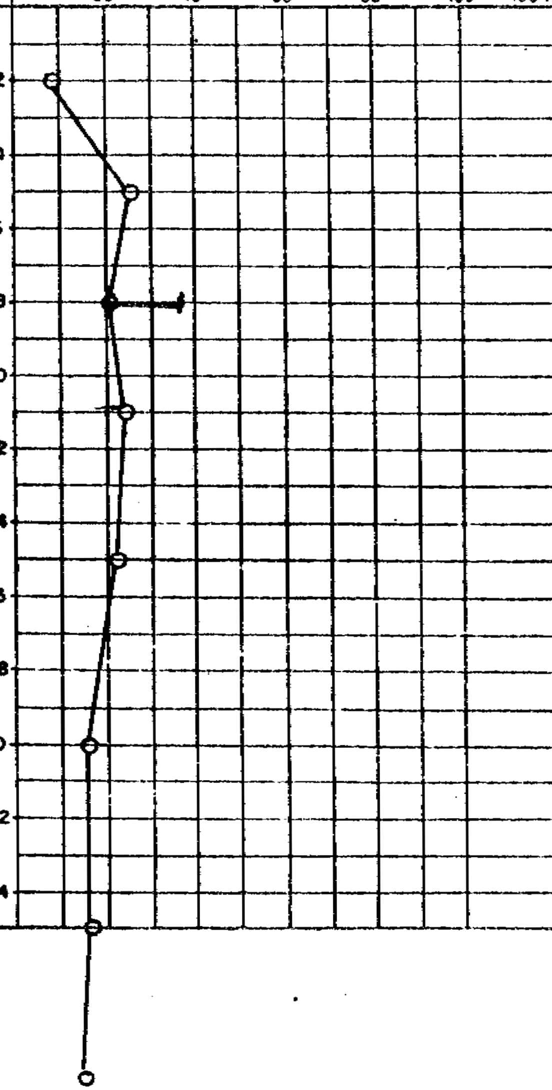
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/3/76	AIRPHOTO NO:	CHAINAGE
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION
OFFSET				
ELEV				

TEST HOLE		
MILE	B,C,S	NUMBER
972 -	1 -	2

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
0					Pt	PEAT — 2"									
2						CLAY-GRAVEL-SAND MIX		$V_c - V_r$	-	19	41	40	WET		
4–5						CLAY - SILTY SANDY GRAVELLY			-	71	12	17	WET		
6					Cl										
8						PEBBLES MED. PLASTIC			-	91	7	2	MOIST		
10						— 10'									
11						SHALE - SOFT SILTY							MOIST		
15								V_x					DAMP		
20													DAMP		
23								ICE							
25													DAMP		
30													DAMP		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



BOTTOM OF HOLE - 30'

INUVIK - TUK

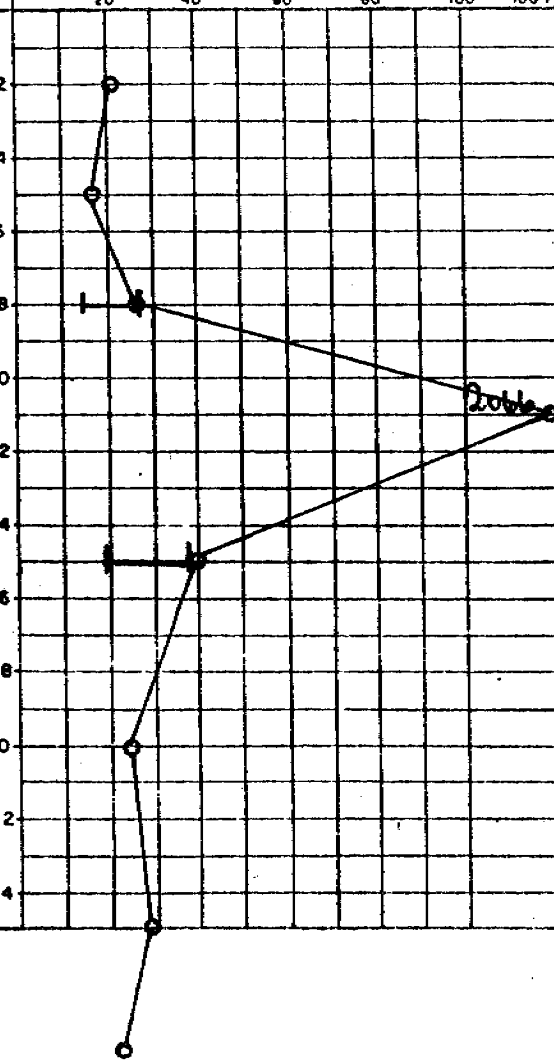
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 19/3/76	AIRPHOTO NO	CHAINAGE	OFFSET	TEST HOLE
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE	VEGETATION	ELEV	MILE 972 — B,C,S 1 — NUMBER 3

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	PEAT 2"										
2						CLAY - SILTY SANDY PEBBLES			2	75		19	6	WET		
4–6					CL	LOW PLASTIC GRAVELLY			5	67		29	4	MOIST		
8									8	42		45	13	SAT.		
10–13						ICE		ICE	11					FREE WATER		
13–20					CI	CLAY - SILTY PEBBLES MED. PLASTIC SHALE FRAGMENTS 20'			15	89		8	3	SAT.		
20						SHALE - SILTY SOFT			20					MOIST		
25									25					MOIST		
30									30					MOIST		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ├──┤ LIQUID LIMIT



BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

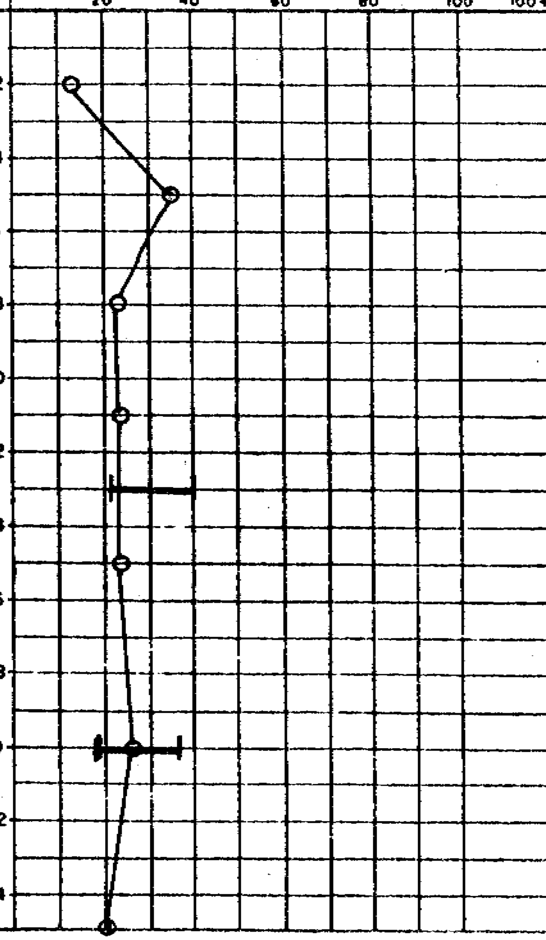
DWN	FIELD ENG	DATE DRILLED 9/3/76	AIRPHOTO NO.	CHAINAGE 550 NORTH OF 3	OFFSET 50'N OF SEISMIC LINE
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
972	1	4

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ├──┤ LIQUID LIMIT

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	PEAT 2"									
2						CLAY - SILTY, SANDY, PEBBLES			81	-	18	1	MOIST		
4–5						MED. PLASTIC		Vs	80	-	19	1	SAT.		
8									73	-	20	7	MOIST		
10–11					CI			Vc-Vr	83	-	17	0	MOIST		
15									81	-	18	1	MOIST		
20									91	-	8	1	WET		
25									75	-	19	6	WET		



BOTTOM OF HOLE - 25'

INUVIK - TUK

DRILL HOLE REPORT

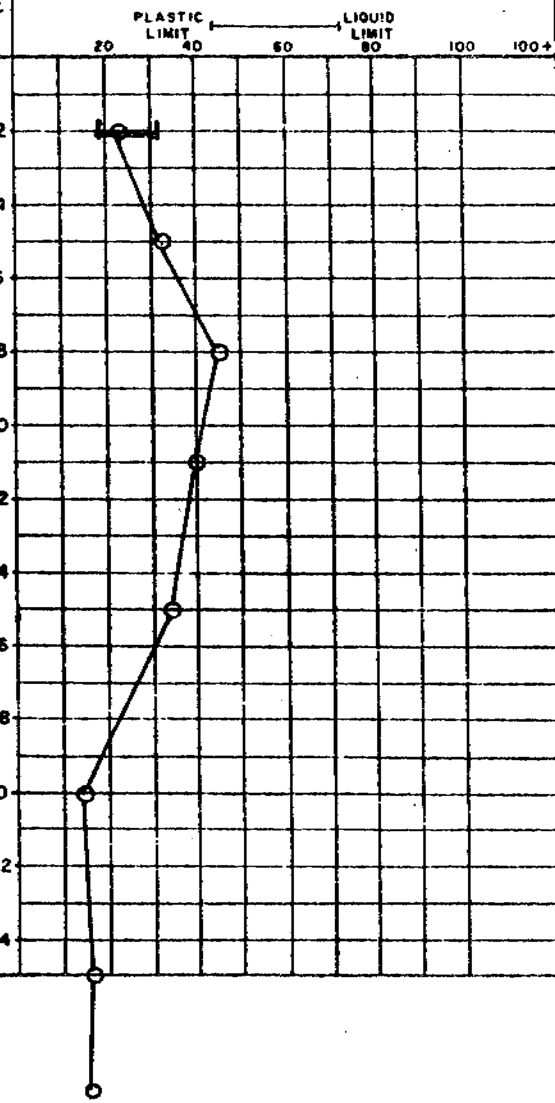
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 9/3/76	AIRPHOTO NO.	CHAINAGE 900' NORTH OF SEISMIC LINE	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
972	1	5

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0 – 2"					PT	PEAT 2"									
2" – 11'					CI	CLAY - GRAVELLY, SILTY, SANDY, PEBBLES; MED. PLASTIC		Vs							
2									59		23	18	SAT.		
5									68		31	1	WET		
8									72		28	0	WET		
11' –						SHALE - SOFT, SILTY		Vc – Vr							
11													MOIST		
15													MOIST		
19 –								Vx							
20													MOIST		
25													MOIST		
30													MOIST		



BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 22/3/76	AIRPHOTO NO:	CHAINAGE	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE	VEGETATION	ELEV

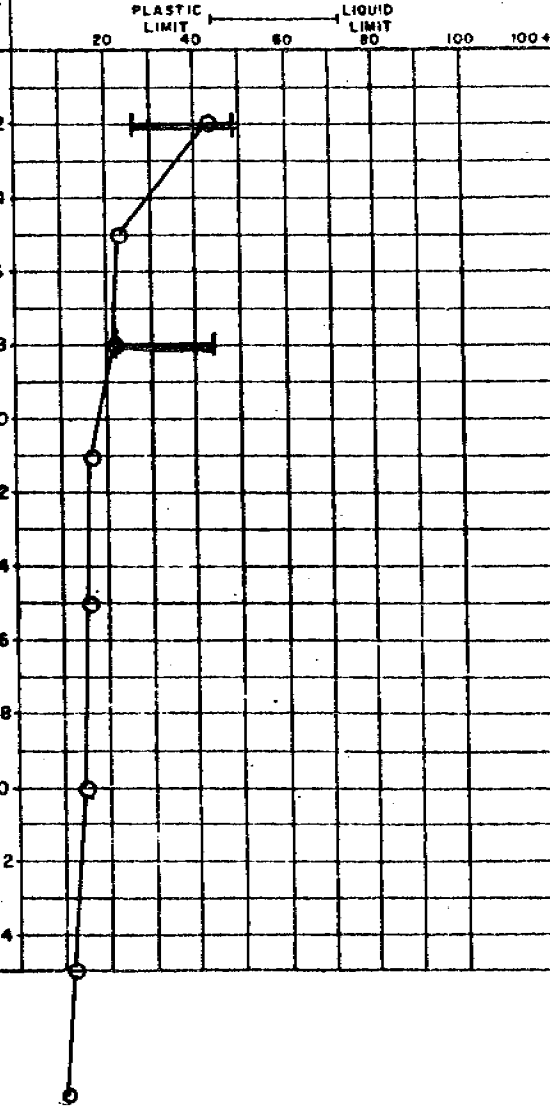
TEST HOLE		
MILE	B,C,S	NUMBER
972-	2-	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
					Pt	PEAT 4"		
2						CLAY - SILTY MED. PLASTIC		Vc-Vr
4					CI			
6								
8						SHALE FRAGMENTS 9'		
10						SHALE - SOFT SILTY		
12								
14								Vx
16								
18								
20								
22								
24								

O = WATER CONTENT (% OF DRY WEIGHT)

△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT



GRAIN-SIZE ANALYSIS						
CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
100		0	0	WET		
100		0	0	MOIST		
100		0	0	DAMP		
				DAMP		
				DAMP		
				DAMP		
				HUMID		

BOTTOM OF HOLE - 30'

HUMID

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

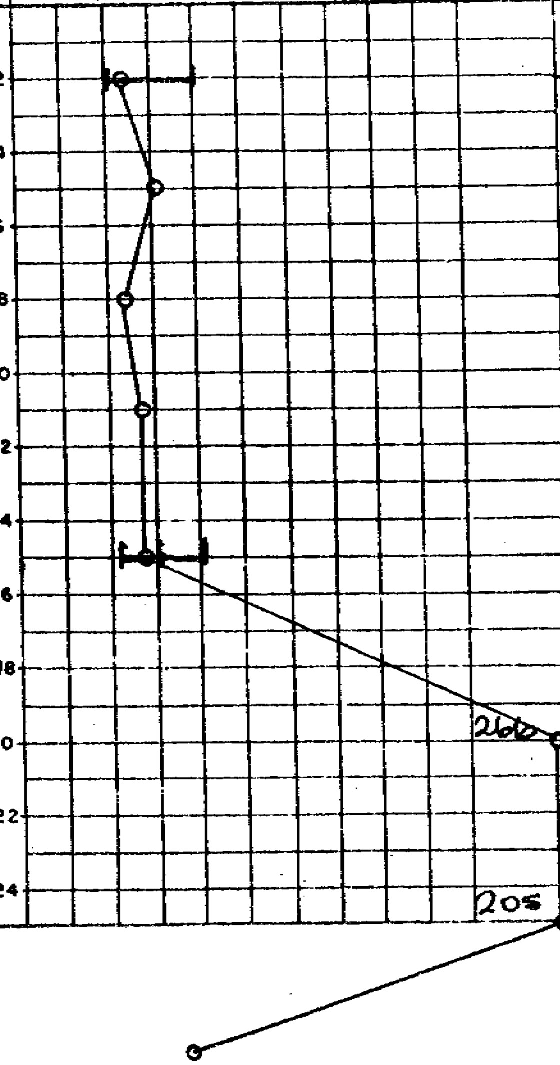
INUVIK-TUK.

TOWN	FIELD ENG	DATE DRILLED 20/3/76	AIRPHOTO NO:	CHAINAGE:	OFFSET 100'S OF POWER LINE	TEST HOLE
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION	ELEV	

MILE	B,C,S	NUMBER
972	2	2

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)
0–4"	Pt	PEAT — 4"						
2		CLAY - SILTY SANDY PEBBLES MED. PLASTIC	Vc-Vr	84	14	2		WET
5				76	18	6		SAT.
8	Cl		Vs	80	19	1		WET
11				95	5	0		WET
15				96	3	0		WET
20		ICE WITH Rock CHIPS TO 25'	ICE	27	17	56		FREE WATER
25				15	53	33		FREE WATER
		CLAY - SILTY SANDY Rock CHIPS	Vs					SAT.

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



REMARKS

BOTTOM OF HOLE - 30'

INUVIK - TUK

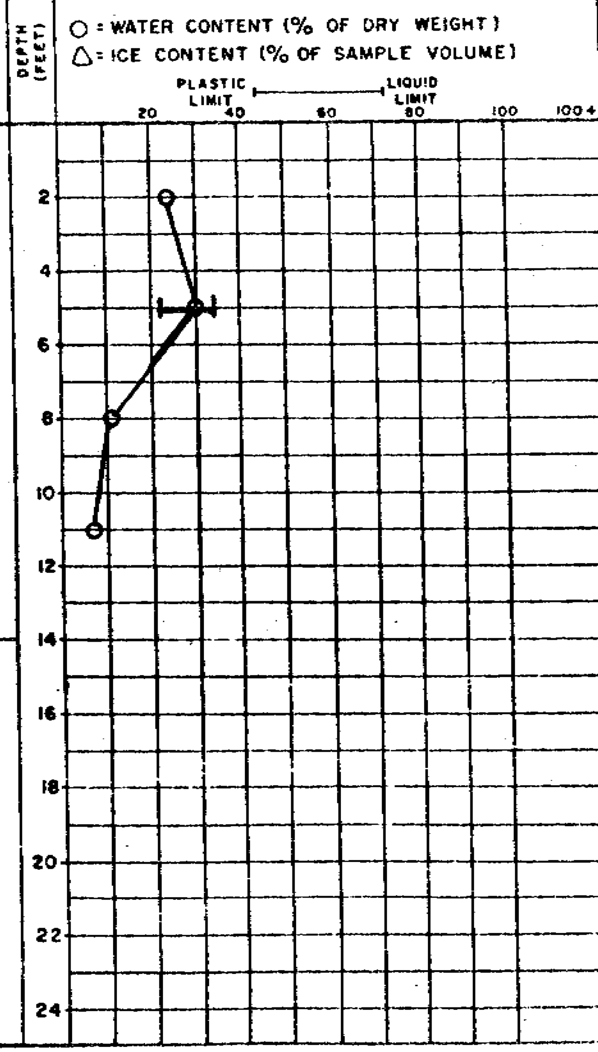
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 22/3/76	AIRPHOTO NO:	CHAINAGE:	OFFSET 400 NORTH OF
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION	ELEV POWER LINE

TEST HOLE		
MILE	B,C,S	NUMBER
972+	2-	3

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–4"					Pt	PEAT 4"									
4"–6'					CI	CLAY - SILTY, SANDY, PEBBLES, MED. PLASTIC 6'			88	-	10	2	MOIST		
									81	-	18	1	WET		
6'–14'					SC, GC	CLAY - SAND - GRAVEL, ROCK CHIPS, BOULDERS & COBBLES 14'		$V_c - V_r$	24	-	52	24	WET		
									22	-	43	35	WET		
14'						BOTTOM OF HOLE - 14', REFUSAL									



INUVIK - TUK

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

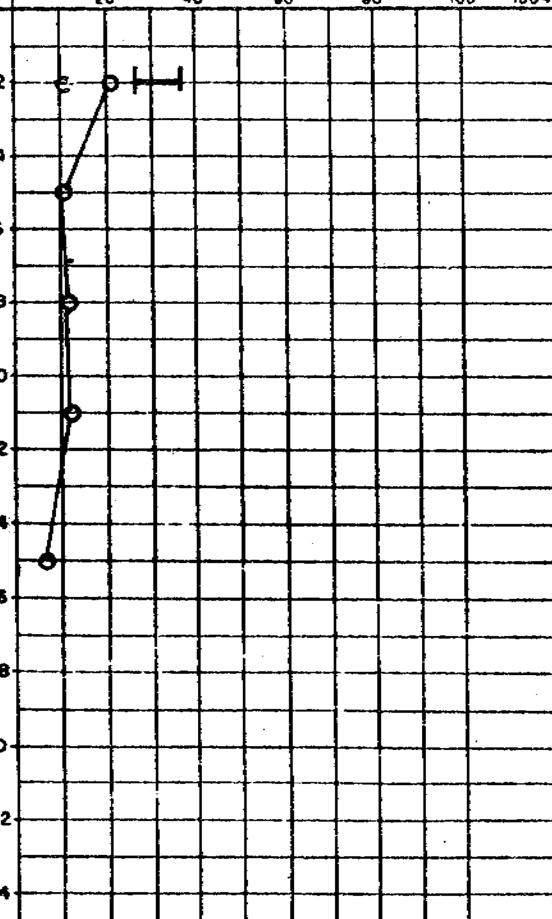
DWN	FIELD ENG	DATE DRILLED 24/3/76	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:

CHAINAGE 900' NORTH OF POWERLINE | OFFSET | VEGETATION | ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
972	2	4

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	PEAT — 4"									
2					CL	CLAY - ORGANIC TO 3' SANDY SILTY PEBBLES LOW PLASTIC — 5'			75	-	16	9	MOIST		
5					GW	GRAVEL-SANDY		Vc-Vr	9	-	39	52	SAT.		
8					SC	SAND-GRAVELLY			7	-	62	31	WET		
11						SILTY CLAYEY			29	-	63	8	WET		
15						— 15'			11	-	53	36	WET		
16						BOTTOM OF HOLE - 15 CAVING									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT —— LIQUID LIMIT



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INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/74	AIRPHOTO NO:
CKD	TECH HRONYCH	RIG AIR	SURFACE DRAINAGE

CHAINAGE 400' NORTH OF #4 | OFFSET | VEGETATION | ELEV

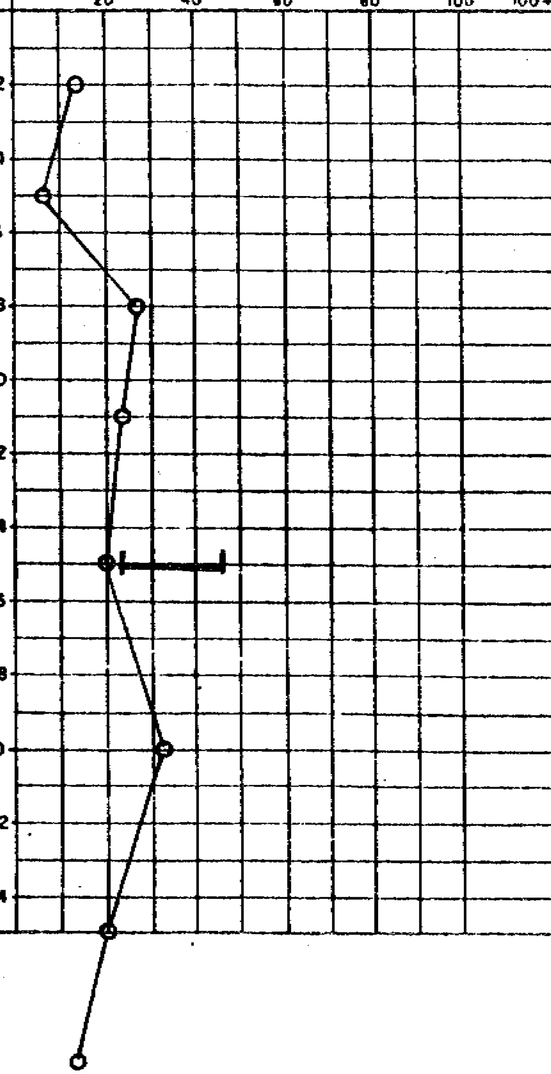
TEST HOLE		
MILE	B,C,S	NUMBER
972 -	2 -	5

REMARKS

UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION
Pt	PEAT — 6"	
CL	CLAY - SANDY PEBBLES SILTY — 2.5'	
GC	GRAVEL - SAND - CLAY MIXTURE — 6'	
CI	CLAY - SILTY SANDY PEBBLES MED. PLASTIC	V_x
		$V_c - V_r$
	SHALE FRAGMENT'S	
	SHALE	

BOTTOM OF HOLE - 30'

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)



GRAIN-SIZE ANALYSIS

CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)
49 -		48	3	MOIST	
29 -		43	28		
				MOIST	
95 -		5	0	MOIST	
93 -		4	3	MOIST	
97 -		2	1	DAMP	
96 -		3	1	WET	
99 -		1	0	DAMP	
				DAMP	

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED [illegible]/3/76	AIRPHOTO NO.	CHAINAGE Between 4 & 5
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE	VEGETATION

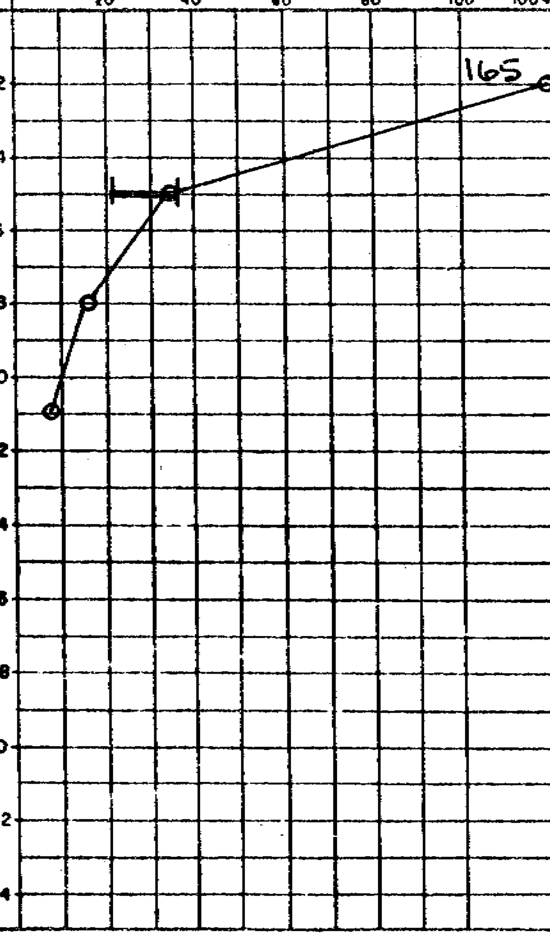
OFFSET

ELEV

TEST HOLE

MILE	B,C,S	NUMBER
972	2	6

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–3'					Pt	ORGANIC & ICE — 3'		Vs	89	-	11	0	FREE WATER		
3–8'					CI	CLAY - SILTY SANDY MED. PLASTIC — 8'			86	-	14	0	SAT.		
8–14'					GC	SAND - GRAVELLY SILTY — 14'		Vc - Vr	35	-	46	19	WET		
								Vx	20	-	58	22	WET		
14'						BOTTOM OF HOLE - 14' REFUSAL									

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

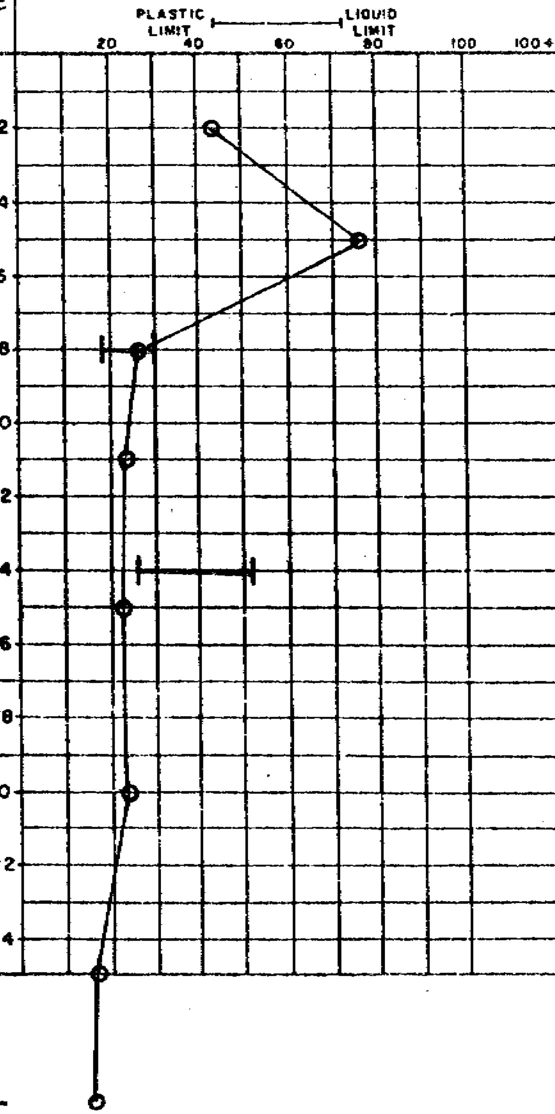
DWN	FIELD ENG	DATE DRILLED 22/3/76	AIRPHOTO NO:	CHAINAGE 250' NORTH OF 1	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
972-2-7		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–1.5					Pt	PEAT 1.5'									
1.5–2.5					OH	ORGANIC CLAY 2.5'			87-		13	0	DAMP		
2.5–8					CL	CLAY - SANDY SILTY PEBBLES LOW PLASTIC		VS	61-		36	3	FREEWATER		
8						SILTY			57-		41	2	WET		
8–17					CI - CH	MED. PLASTIC TO HIGH PLASTIC		Vc-Vr	93-		6	1	DAMP		
15									99-		1	0	MOIST		
17–19						ICE		ICE							
20'						SHALE - SILTY VERY SOFT		Vx	94-		4	2	MOIST		
25									-100		0	0	DAMP		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ├──┤ LIQUID LIMIT



BOTTOM OF HOLE - 30'

DAMP

INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

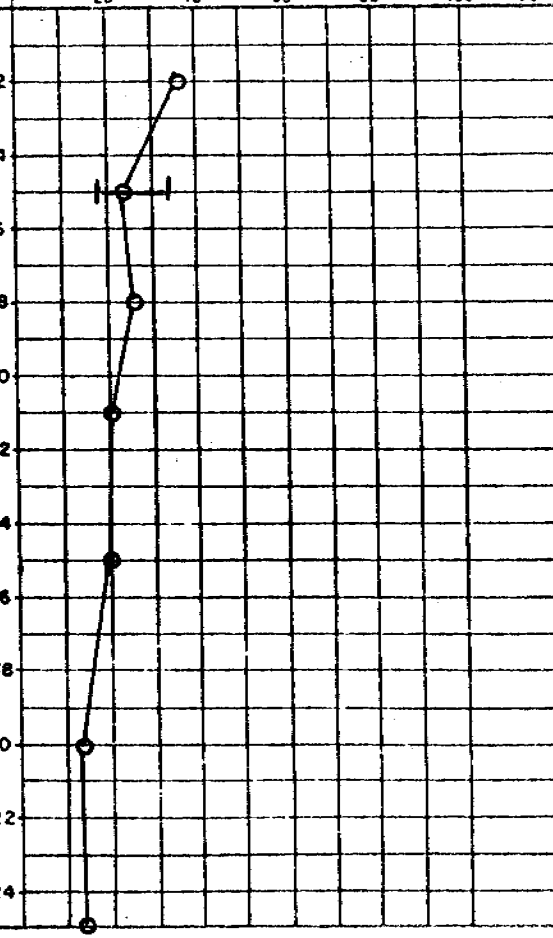
DWN	FIELD ENG	DATE DRILLED 2/3/76	AIRPHOTO NO.	CHAINAGE 500' Back From Power Line	OFFSET On Small Ridge
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
972	2	8

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ├──┤ LIQUID LIMIT



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.) / DRY DENSITY (P.C.F.)	REMARKS
0 – 4"	Pt	PEAT — 4"							
2		CLAY - SILTY, SANDY, PEBBLES	Vs	71	—	23	6	SAT.	
5		MED. PLASTIC	Vc – Vr	65	—	28	7	WET	
8	CI		Vc – Vr	88	—	5	7	WET	
11				98	—	2	0	MOIST	
12		— 12							
12 –		SHALE - SOFT, SILTY	Vx						
15								DAMP	
20								HUMID	
24								HUMID	

HUMID

BOTTOM OF HOLE - 30'

INUVIK - TUK.

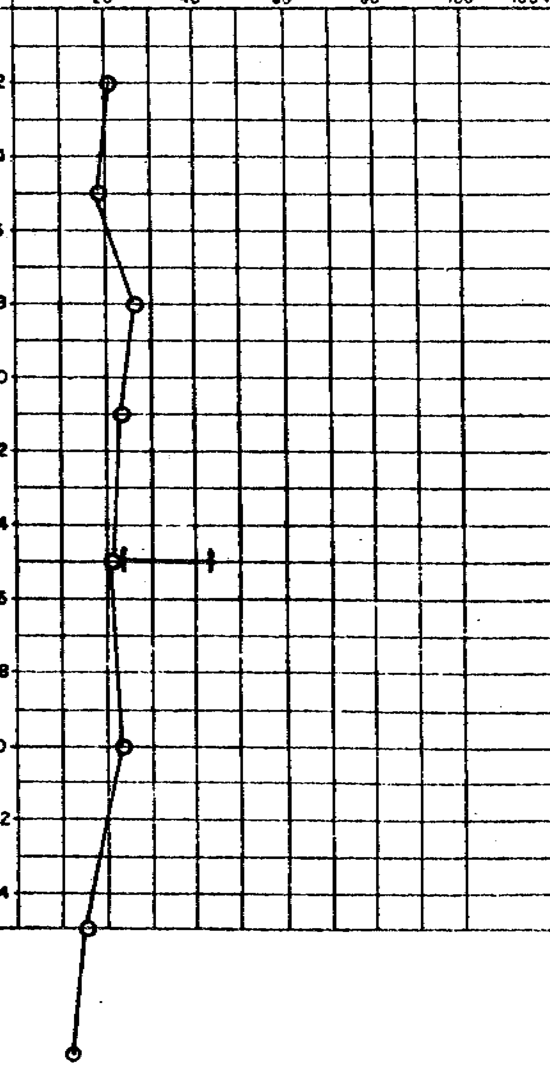
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 22/3/76	AIRPHOTO NO:	CHAINAGE 550' SOUTH OF 8	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
972	2	9

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 6"									
2						CLAY - SILTY SANDY PEBBLES TO 5'			78		18	4	WET		
4								Vc-Vr	54		43	3	WET		
6					CI	MED. PLASTIC									
8									94		6	0	WET		
10									98		2	0	MOIST		
12															
14						POSSIBLE SOFT SHALE?			98		2	0	DAMP		
16						SHALE FRAGMENTS		Vx							
18															
20									98		2	0	MOIST		
22															
24													DAMP		

SHALE - SOFT SILTY

HUMID

BOTTOM OF HOLE - 30'

SILTY

INUVIK - TUK.

DRILL HOLE REPORT

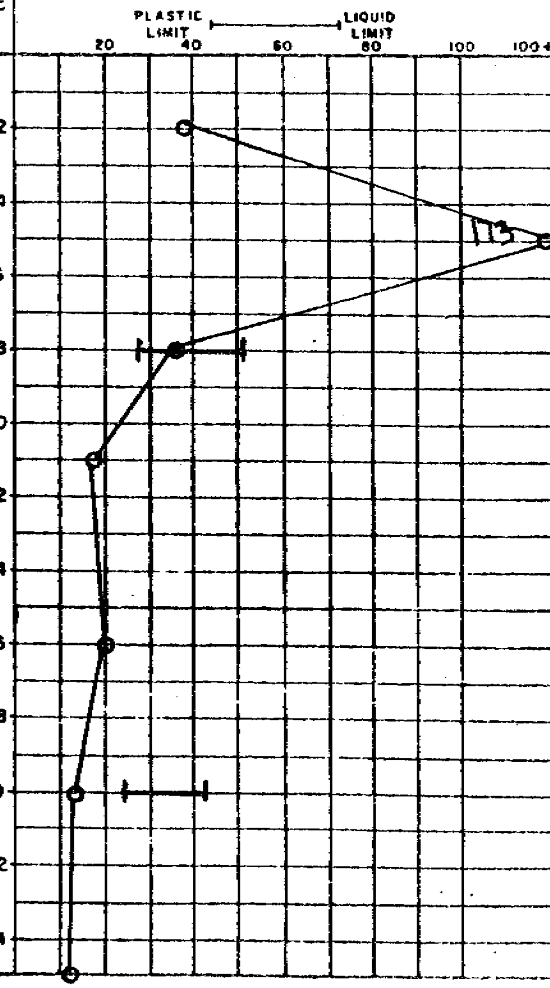
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/76	AIRPHOTO NO:	CHAINAGE 400' NORTH OF 8	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
972	2 -	10

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0 – 6"	Pt	PEAT — 6"								
6" – 11'	CI	CLAY - SILTY SANDY	Vs							
2					83	15	2	WET		
5		SILTY			96	4	0	FREE WATER		
6		MED. - HIGH								
8	CH	PLASTIC	Vc – Vr		99	1	0	MOIST		
11'		SHALE - SILTY VERY SOFT	Vx		100	0	0	DAMP		
16					100	0	0	MOIST		
20					100	0	0	HUMID		
25								HUMID		



OVER →

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO:	CHAINAGE	OFFSET	TEST HOLE
CKD	TECH	RIG	SURFACE DRAINAGE	VEGETATION	ELEV	MILE / B,C,S / NUMBER

DEPTH (FEET) | SAMPLE NUMBER | SAMPLE TYPE | % RECOVERY | PENETRATION RESISTANCE | UNIFIED SOIL SYMBOL | SOIL DESCRIPTION | LIMITS OF FROZEN GROUND | ICE DESCRIPTION | DEPTH (FEET)

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL % | WET DENSITY (P.C.F.) | DRY DENSITY (P.C.F.) | REMARKS

Soil description	Depth (feet)	Wet density
SHALE - SILTY SOFT	25	HUMID
	27	
	29	
	30	HUMID
	31	
	33	
	35	HUMID
	37	
	39	
		HUMID
	41	
	43	
45' BOTTOM OF HOLE - 45'	45	HUMID

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

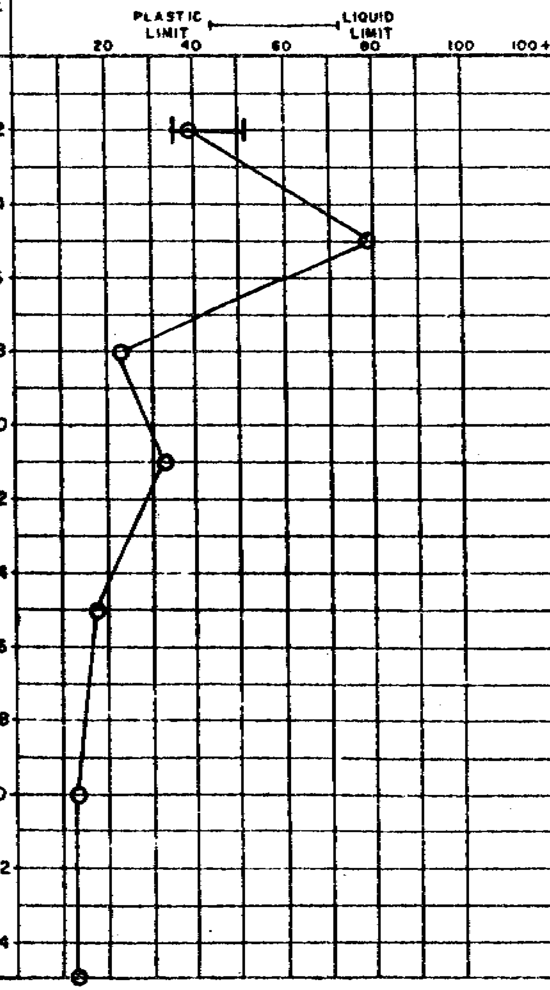
DWN	FIELD ENG	DATE DRILLED 22/3/76	AIRPHOTO NO:	CHAINAGE
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION

OFFSET
ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
972	2	11

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0 – .5					Pt	PEAT .5									
2					CH	CLAY- ORG. TO 3' SILTY			99-		1	0	WET		
4 – 7					CH	HIGH PLASTIC ICE & CLAY		ICE & CH	100-		0	0	FREE WATER		
8						8' CLAY & SOFT SHALE FRAG'S POSSIBLE GROUND DOWN SHALE			100-		0	0	MOIST		
11									99-		1	0	WET		
15						15 SHALE - SOFT							DAMP		
20													DAMP		
25													DAMP		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT —— LIQUID LIMIT



DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

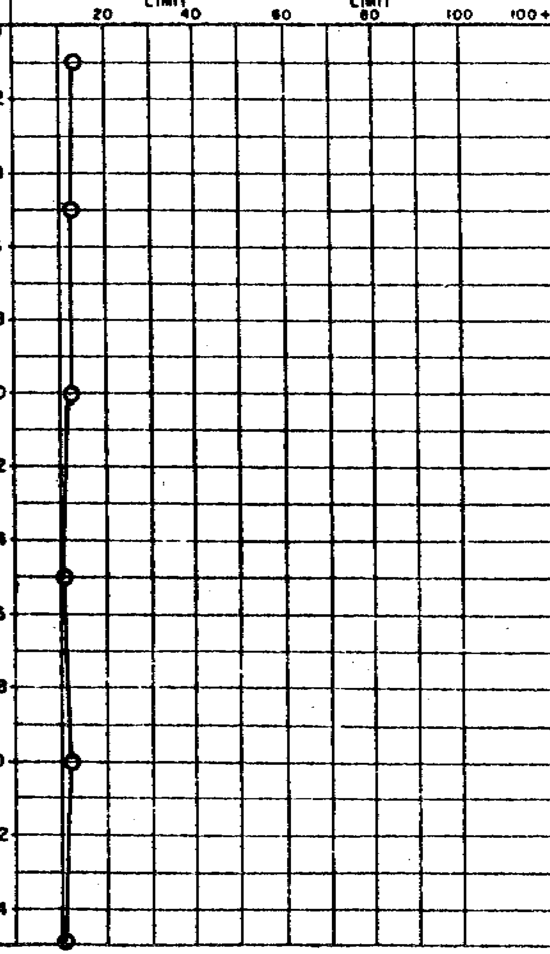
OWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO:	CHAINAGE	OFFSET	TEST HOLE
CKD	TECH	RIG	SURFACE DRAINAGE	VEGETATION	ELEV	

MILE	B,C,S	NUMBER
972	2	11

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
						SHALE - SOFT			30					DAMP		
									32							
4									34							
6									36					HUMID		
8									38							
10									40					HUMID		
12									42							
14									44					HUMID		
									46							
18									48							
20									50					HUMID		
22									52							
24									54					HUMID		

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ├──┤ LIQUID LIMIT



DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO	CHAINAGE	OFFSET
CKD	TECH	RIG	SURFACE DRAINAGE	VEGETATION	ELEV

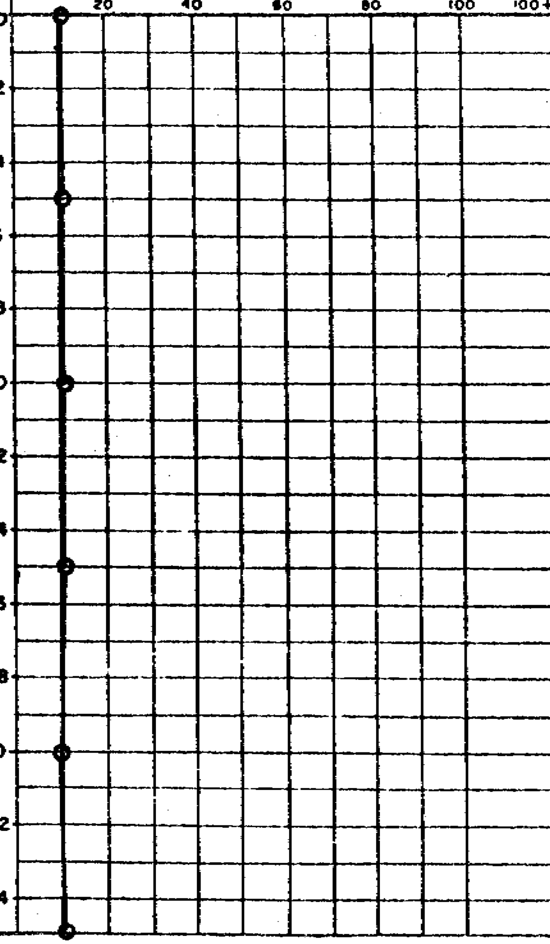
TEST HOLE

MILE	B,C,S	NUMBER
972	2	11

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

20 40 60 80 100 100+



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
						SHALE - SOFT			60					HUMID		
2									62							
4									64					HUMID		
6									66							
8									68							
10									70					HUMID		
12									72							
14									74					HUMID		
16									76							
18									78							
20									80					HUMID		
22									82							
24									84					HUMID		

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO:	CHAINAGE:	OFFSET	TEST HOLE
CKD	TECH	RIG	SURFACE DRAINAGE:	VEGETATION:	ELEV	

MILE	B,C,S	NUMBER
972	2	11

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
						SHALE - SOFT			90					DAMP		
2									92							
4									94							
6									96					HUMID		
8									98							
10									100					HUMID		
12									102							
14									104							
16									106					HUMID		
18									108							
20						110			110					HUMID		
						BOTTOM OF HOLE 110										
22									22							
24									24							

INUVIK - TUK.

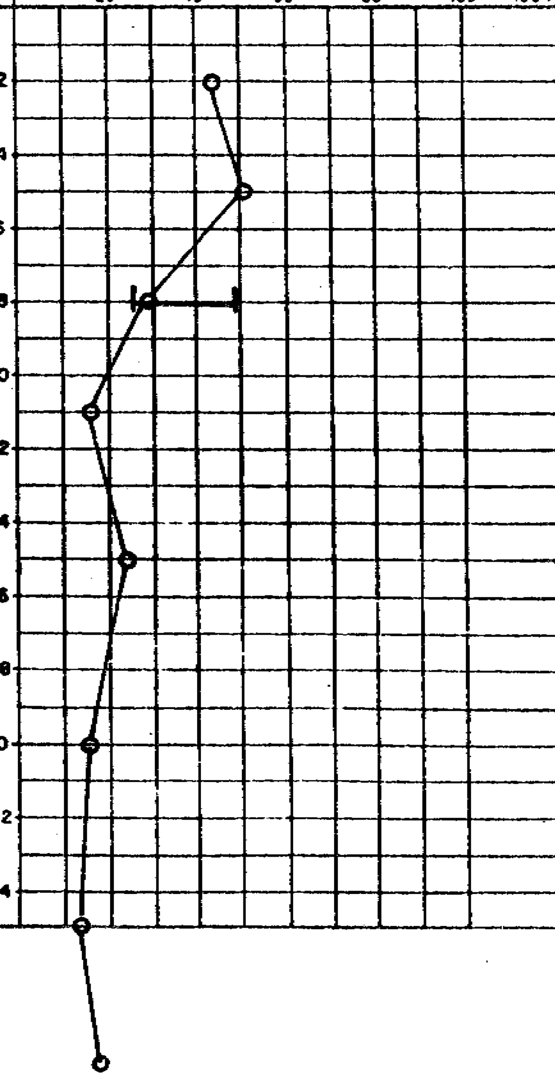
DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

TOWN	FIELD ENG	DATE DRILLED 24/3/76	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
972-	2 -	12

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–8"					Pt	PEAT — 8"									
2						CLAY - SILTY			90	9	1	MOIST			
4–7					CI - CH	MED. - HIGH PLASTIC ICE & CLAY		ICE & CH	100	0	0	SAT.			
8					CH	CLAY - SILTY — 9'			100	0	0	MOIST			
10–11						SHALE - VERY SOFT			100	0	0	DAMP			
15						SOFT			100	0	0	DAMP			
20												DAMP			
25												HUMID			
30												HUMID			

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT



BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 22/3/76	AIRPHOTO NO.
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE

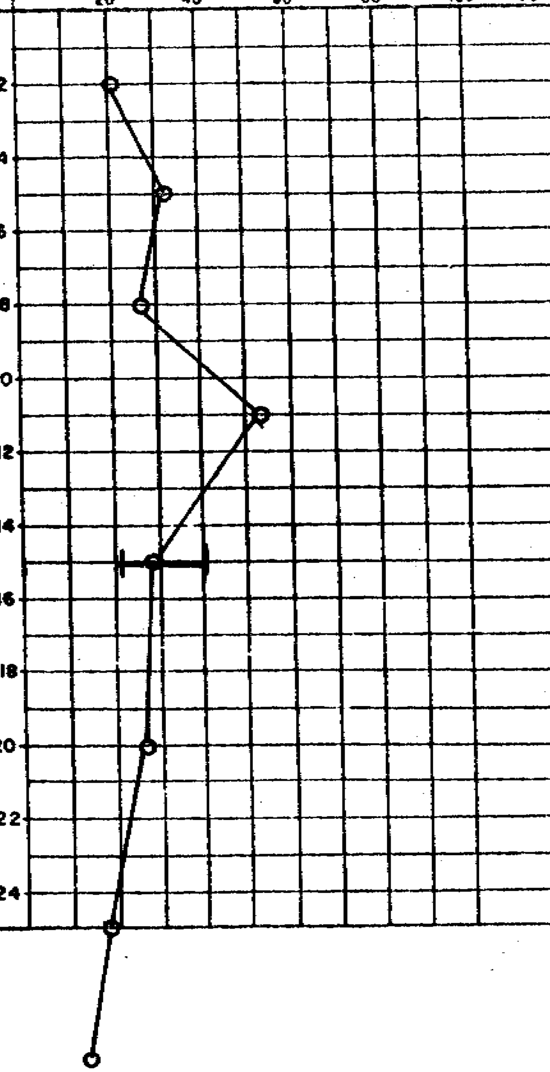
CHAINAGE | OFFSET | VEGETATION | ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
972	2	13

REMARKS

DEPTH (FEET) | SAMPLE NUMBER | SAMPLE TYPE | % RECOVERY | PENETRATION RESISTANCE | UNIFIED SOIL SYMBOL | SOIL DESCRIPTION | LIMITS OF FROZEN GROUND | ICE DESCRIPTION | DEPTH (FEET)

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+



Depth (feet)	Unified soil symbol	Soil description	Ice description
0	Pt	PEAT 6"	
2–18	CI	CLAY - SILTY; SANDY; MED. PLASTIC; SILTY	Vc-Vr / Vs
19'–25		SHALE FRAGMENTS & SILTY CLAY POSSIBLE GROUND DOWN SHALE	Vx
25–30		SHALE - SOFT	

BOTTOM OF HOLE - 30'

GRAIN-SIZE ANALYSIS

Depth (approx. ft)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.) / DRY DENSITY (P.C.F.)
2	84		15	1	MOIST
5	84		16	0	WET
8	86		13	1	WET
11	98		2	0	SAT.
15	93		6	1	WET
20	96		4	0	MOIST
25	99		1	0	DAMP
30					HUMID

INUVIK - TUK.

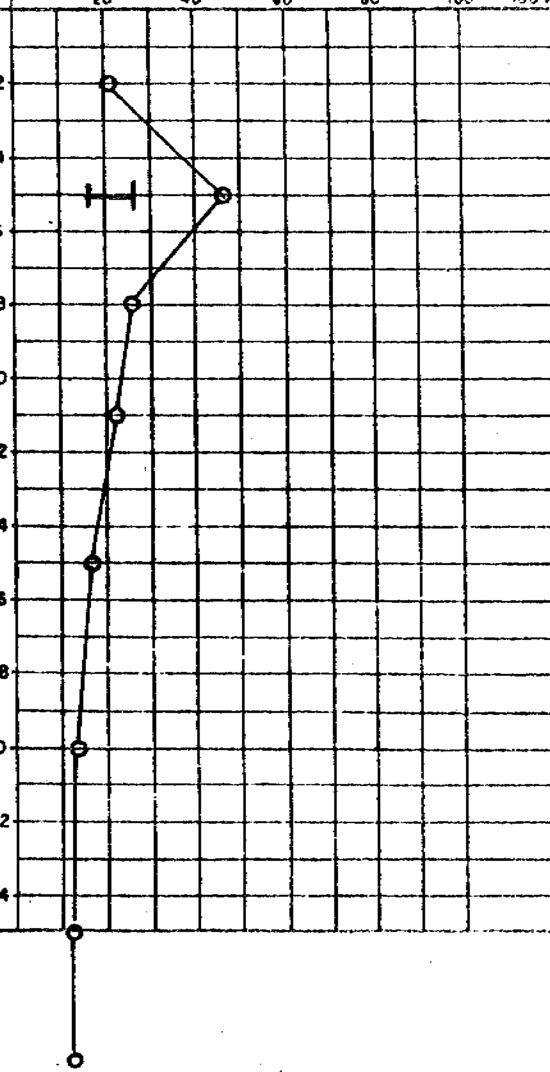
DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 22/3/76	AIRPHOTO NO.	CHAINAGE	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
972	2	14

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION
0 – .5	Pt	PEAT	
.5 – 10.5'	CL	CLAY - SILTY SANDY LOW PLASTIC	$V_c - V_r$ TO V_s
10.5' –		SHALE - SOFT	V_x

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT —— LIQUID LIMIT
20 40 60 80 100 100+



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	REMARKS
2		79	20	1	WET
5		92	8	0	FREE WATER
8		77	22	1	WET
11		99	1	0	MOIST
15					DAMP
20					HUMID
25					HUMID
30					DAMP

BOTTOM OF HOLE - 30'

INUVIK - TUK.

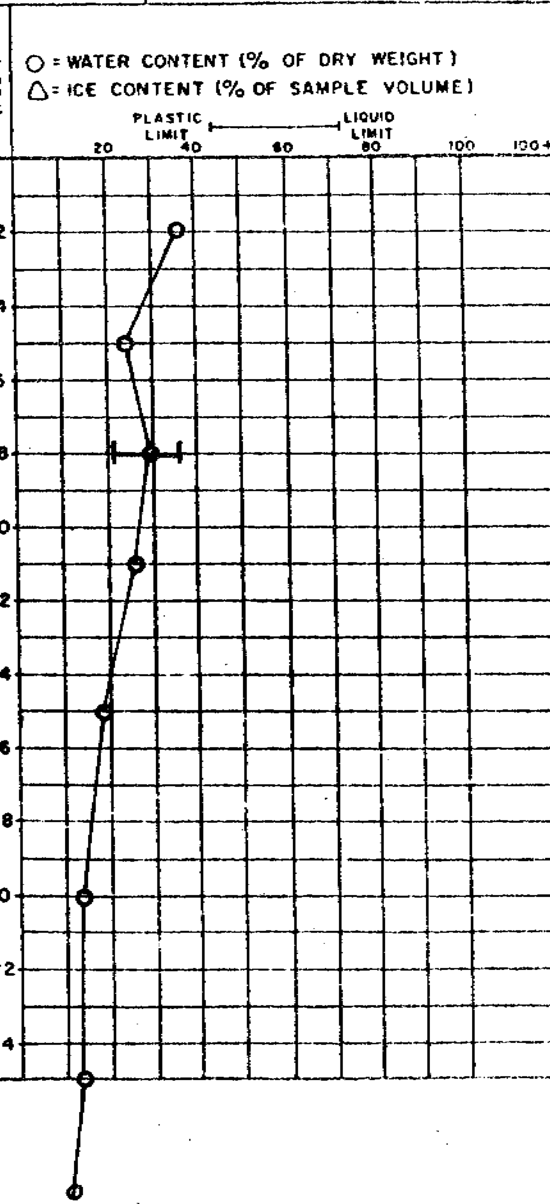
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 22/3/76	AIRPHOTO NO:	CHAINAGE	OFFSET	TEST HOLE
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION	ELEV	

MILE	B,C,S	NUMBER
972	2	15

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT .5'									
2						CLAY - SILTY SANDY PEBBLES		Vc - Vr	78	21	1		WET		
4–6					CI	MED. PLASTIC		TO Vs	55	43	2		SAT.		
8									73	23	4		WET		
11.5						11.5'			98	2	0		MOIST		
12–14						SHALE - SILTY VERY SOFT									
15								Vx	97	3	0		DAMP		
20									100	0	0		HUMID		
22						SOFT									
25													HUMID		
28													HUMID		



BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 22/3/76	AIRPHOTO NO:	CHAINAGE
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE	VEGETATION

OFFSET

ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
972	- 2 -	16

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–.5'					Pt	PEAT .5'										
2						CLAY - SILTY SANDY PEBBLES			2	73	22	5		WET		
4					CL	LOW PLASTIC		Vc — Vr	4	56	33	11		WET		
8						9'			8	75	17	8		WET		
10						CLAY - SILTY SHALE FRAGMENTS			10	99	1	0		MOIST		
12						POSSIBLE GROUND DOWN SHALE VERY SOFT		NR - Vc	12							
14									14	100	0	0		MOIST		
20						20' SHALE - SOFT			20					MOIST		
24								Vx	24					MOIST		

BOTTOM OF HOLE - 30'

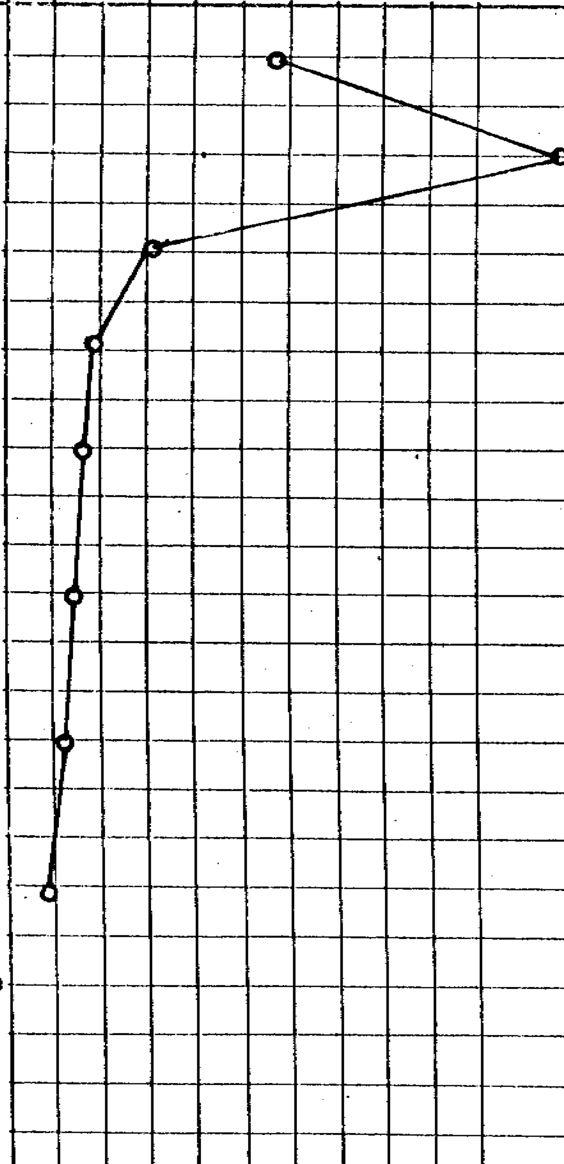
MOIST

PUBLIC WORKS CANADA	DRILL HOLE REPORT	Inuvik - Tuk.

TECH. Pronych	RIG 1250 Air	DATE 78/04/07	km		B.P. No. 2	HOLE No. 21

Depth (feet)	Unified Soil Symbol	Soil Description	Penetration Resistance	Ice Description
0–11	CL / CI	Brown - Clay - Silty Sandy, Few Pebbles, Low-Med Plastic		High Ice, V_s
		Grey -		Moderate Ice
3.4 m		Shale - Soft Grey		V_c-V_r
				Low Ice, V_x
9.14 m		Bottom of Hole - 9.14 m		Non

○ = 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, approx.)	Grain-size: Clay / Silt %	Sand %	Gravel %	Relative Moisture Content	Remarks
0.5	86	11	3	Free Water	
1.5	97	3	0	Free Water	
2.5	99	1	0	Wet	
3.5	22	63	15	Damp	Plus #40 Dry Sieved
4.5	5	46	49	Damp	
6.0	11	52	37	Humid	
7.5	10	45	45	Humid	
9.1	8	41	51	Humid	

CHAINAGE | OFFSET | REMARKS

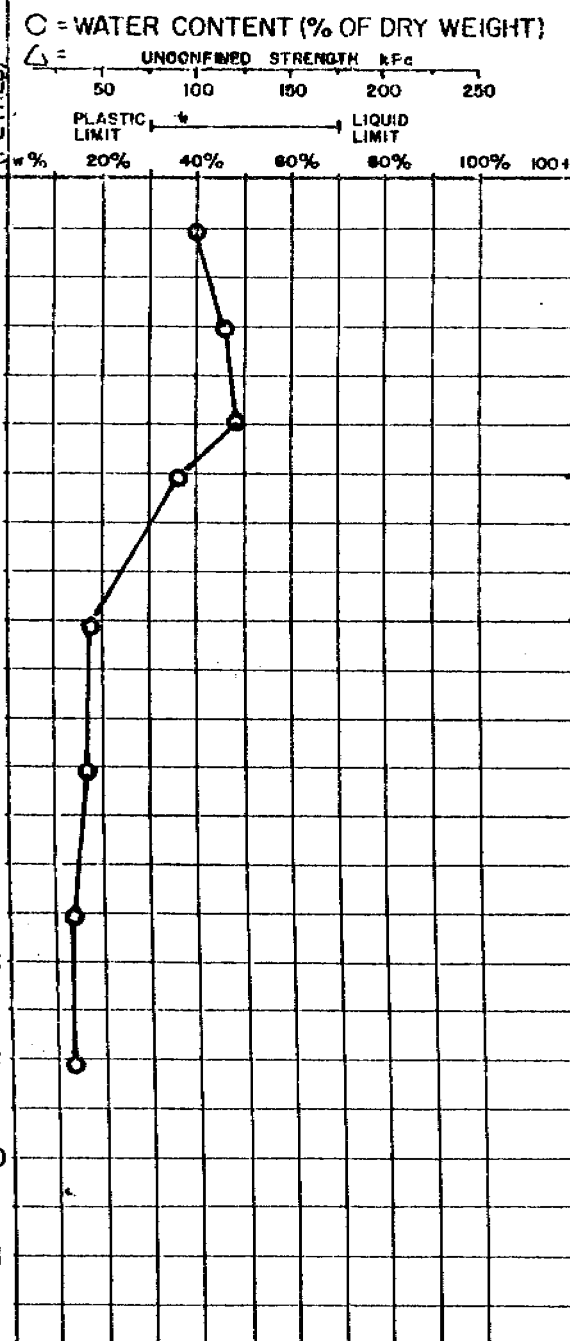
PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	Air	78/04/07		2	22

DEPTH (FEET)	SOIL DESCRIPTION	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0–11	Brown Clay - Silty Sandy Pebbles	High ice Vs	0.5	90	10	0	Wet	
			1.5	73	19	8	Free Water	
	Grey Clay Silty		2.5	97	3	0	Sat.	
	3.3 m		3.0	100	0	0	Wet	
11–30	Grey - Shale - Soft	Moderate ice Vc - Vr	4.5	51	48	1	Damp	Plus # 40 Dry Sieved
			6.0	6	51	43	Damp	
			7.5	6	38	56	Humid	
	9.14 m		9.0	7	44	49	Humid	
	Bottom of Hole - 9.14 m							

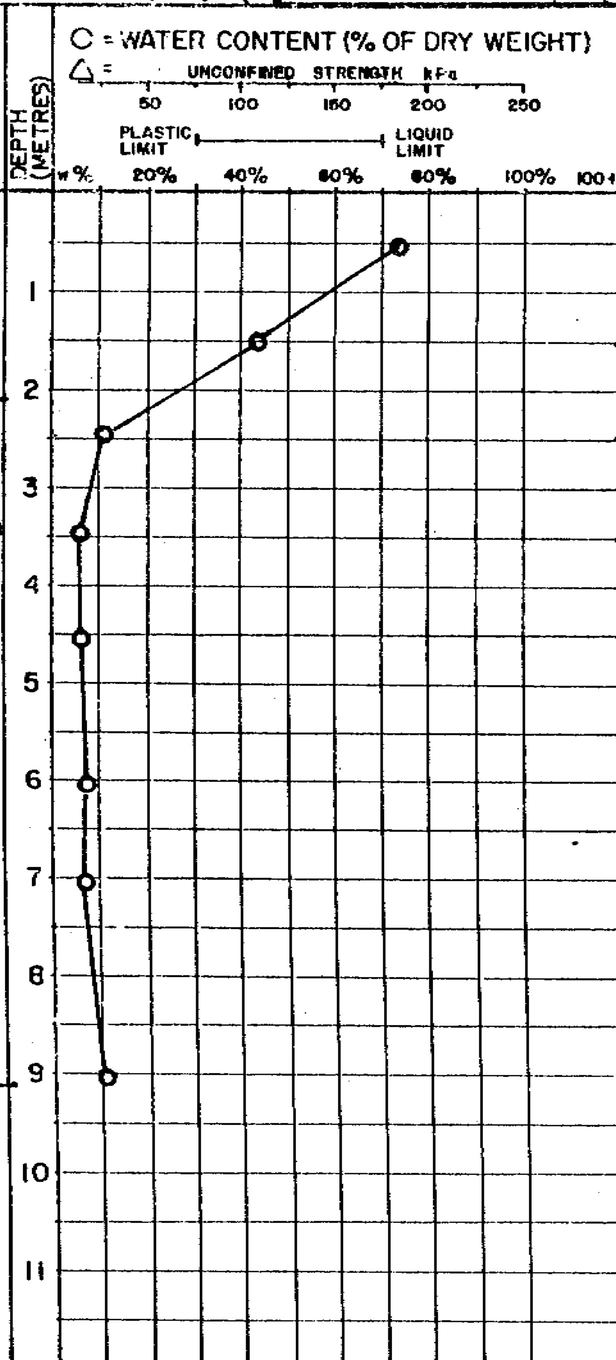
Other column headings: UNIFIED SOIL SYMBOL; PENETRATION RESISTANCE; GRAIN-SIZE ANALYSIS; CHAINAGE; OFFSET.



PUBLIC WORKS CANADA	DRILL HOLE REPORT	Inuvik - Tuk.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	Air	78/04/07		2	23

UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
Pt	PEAT .3m	HIGH ICE					
CL	CLAY - SILTY SANDY - PEBBLES		85		13	2	Free Water
CI	LOW - MED. PLASTIC 2.1m	Vs	88		11	1	SAT.
GW	GRAVEL - SANDY SILTY		25		40	35	WET
		MODERATE TO LOW ICE	13		30	57	WET
	6.1m		14		29	57	WET
SM	SAND - GRAVELLY SILTY	Vc - Vr	24		39	37	WET
		Vx	27		48	25	MOIST
GC	CLAY - SAND - GRAVEL 9.1m		35		32	33	WET
	BOTTOM OF HOLE - 9.1m						



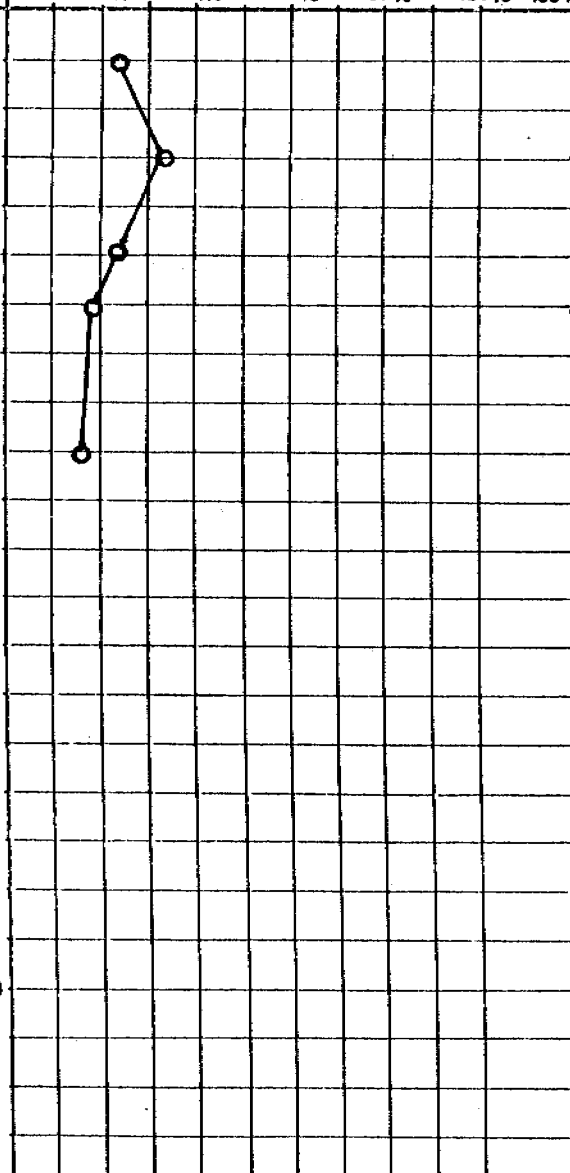
PUBLIC WORKS CANADA — DRILL HOLE REPORT

INUVIK – TUK

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYJCLI	AIR	78/04/07		2	24

CHAINAGE	OFFSET

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 (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
2		BROWN – CLAY – SILTY – SANDY		MODERATE ICE		84		15	1	MOIST	
4–6	CL	GREY – CLAY SILTY SANDY		V_c – V_s	1	75		25	0	WET	RUNS #40 DRY SIEVED
8	CL	– SILTY; LOW-MED. PLASTIC; SHALE FRAGMENTS		LOW ICE	2	99		1	0	WET	
10					3	99		1	0	WET	
12		—— 3.8 m		V_x							
14		SHALE – SOFT			4		6	57	37	DAMP	RUNS #40 DRY SIEVED
15		—— 4.6 m									
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

Inuvik - Tuk.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
Pronych	Air	78/04/07		2	25

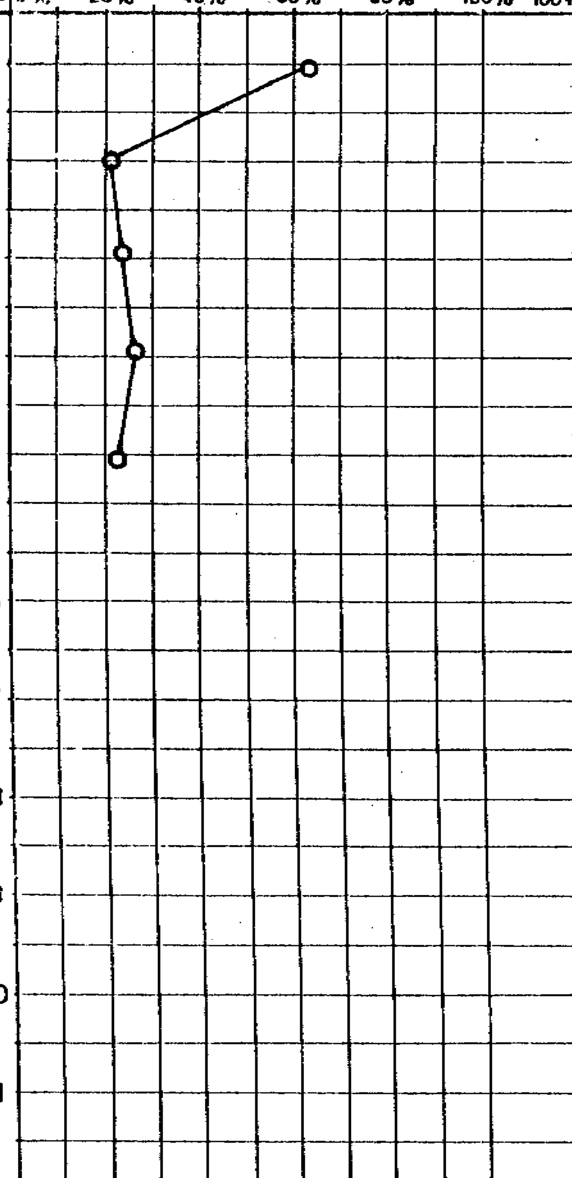
CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–2	Pt	Peat .5m		High ice Vs
2–14	Cl	Clay - Brown - Silty Sandy - Pebbles Med. Plastic Shale Fragments		Moderate ice Vc-Vr
14–15		Gray - Clay Silty - Shale 4.6m		
16		Bottom of Hole - 4.6m		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = UNCONFINED STRENGTH kPa

PLASTIC LIMIT ├───┤ LIQUID LIMIT



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
92		7	1	Moist
70		25	5	Wet
70		28	2	Wet
72		26	2	Wet
94		6	0	Moist

REMARKS

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | Inuvik - Tuk.

TECH. Pronych | RIG Air | DATE 78/04/07 | km | B.P. No. 2 | HOLE No. 26

CHAINAGE | OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
	Pt	Peat .2 m		High Ice
2–6	CL - CI	Clay - Silty Sandy - Organics - Pebbles, Low - Med. Plastic		Vs
8		2.4 m		
8–30		Shale. Soft - Grey		Moderate To Low Ice Vc-Vr / Vx
30		9.1 m		
32		Bottom of Hole - 9. m.		

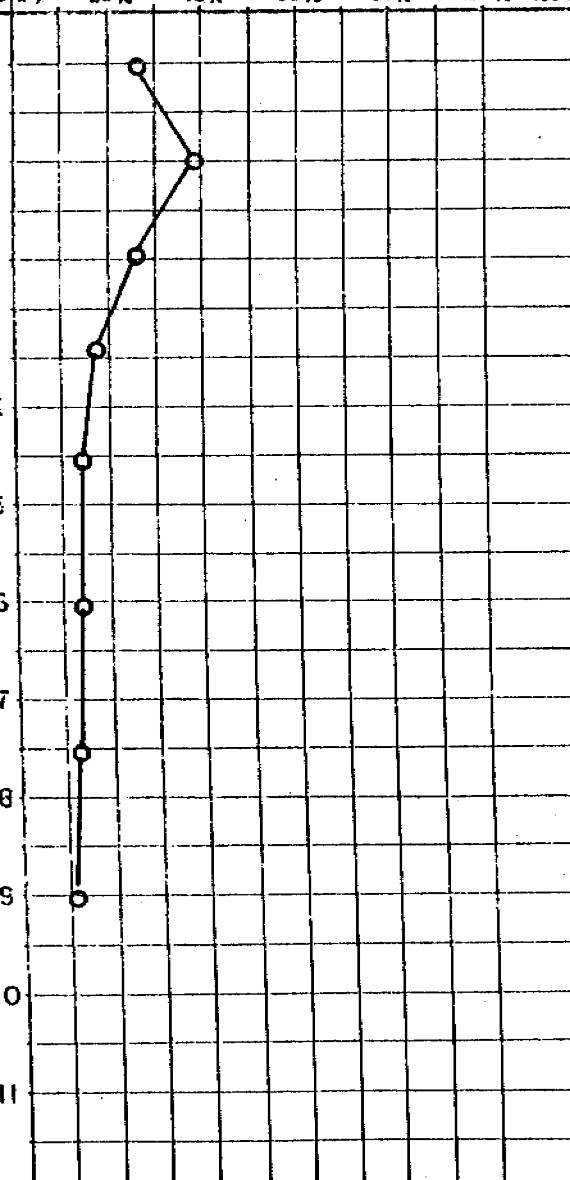
Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

Depth (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



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
81	-	15	4	Moist	
74	-	24	2	Sat.	
100	-	0	0	Wet	
54	-	46	0	Damp	Rus #40 Dry Sieved
5	-	42	53	Humid	✓
6	-	47	47	Humid	✓
11	-	48	41	Humid	✓
9	-	43	48	Humid	✓

PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk.

TECH. Pronych	RIG Air	DATE 78/04/07	km	B.P. No. 2	HOLE No. 2T

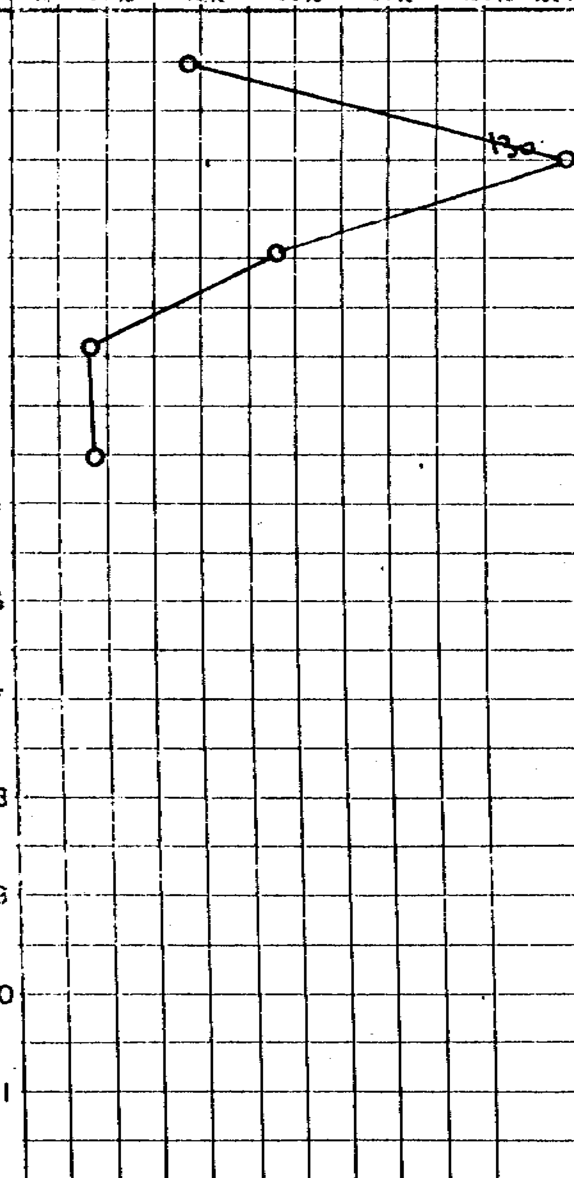
CHAINAGE | OFFSET

Depth	Unified Soil Symbol	Soil Description	Penetration Resistance	Ice Description	Clay %	Silt %	Sand %	Gravel %	Relative Moisture Content	Remarks
0–.2m	Pt	Peat								
.2m–3.1m	CI	Clay - Silty, Med. Plastic		High Ice Vs	96		4	0	Wet	
					97		3	0	Free Water	
					99		1	0	Sat.	
3.1m–4.6m		Shale - Soft		Vc-Vr Moderate Ice	6		53	41	Damp	Plus # 40 Dry Sieved
				Frozen	4		44	52	Damp	✓
4.6m		Bottom of Hole - 4.6m								

C = WATER CONTENT (% OF DRY WEIGHT)

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

PLASTIC LIMIT — LIQUID LIMIT



INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 28/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		2-28
MILE	B,C,S	NUMBER
		[redacted]

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 8"											
2						CLAY - SILTY - SANDY - PEBBLES		Vc - Vr	2								
4									4								
6									6	NO SAMPLES							
8								Vs	8								
10									10								
12									12								
14							15'		14								
16						BOTTOM OF HOLE - 15'			16								
18									18								
20									20								
22									22								
24									24								

R073

INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 28/3/77	AIRPHOTO NO:	CHAINAGE:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:

OFFSET:

ELEV:

TEST HOLE 2-29		
MILE	B,C,S	NUMBER
		[redacted]

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT

20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	WATER / ICE CONTENT	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 8"											
2						SAND - SILTY CLAYEY PEBBLES			2								
					Sc												
4						5'		$V_c - V_r$	4								
6						GRAVEL - SANDY SILTY			6	NO SAMPLE							
8					GM				8								
10						10 1/2' ICE 11'		ICE	10								
12						GRAVEL		$V_c - V_r$	12								
14						15			14								
16						BOTTOM OF HOLE - 15'			16								
18									18								
20									20								
22									22								
24									24								

R073

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

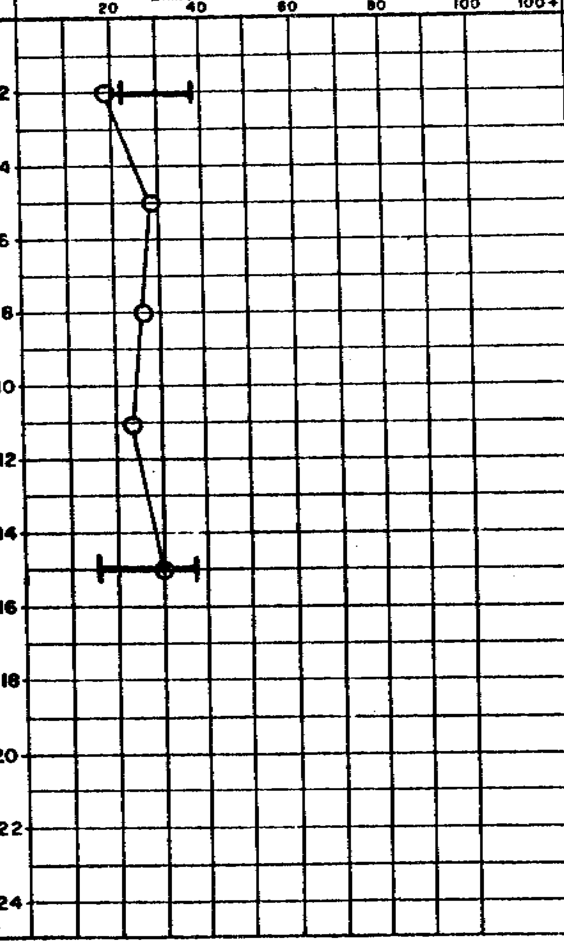
DWN	FIELD ENG.	DATE DRILLED 28/3/77	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:

CHAINAGE: | OFFSET: | VEGETATION: | ELEV:

TEST HOLE 2-30		
MILE	B,C,S	NUMBER
		[redacted]

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0 – 8"					Pt	PEAT 8"		
8" – 15'					CI	CLAY - SILTY, SANDY, PEBBLES. MED. PLASTIC 15'		Vc - Vr
15'						BOTTOM OF HOLE - 15'		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT —— LIQUID LIMIT



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	62	29	10		DAMP		
5	80	15	5		WET		
8	77	19	4		WET		
11	80	17	3		MOIST		
15	75	23	2		WET		

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DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

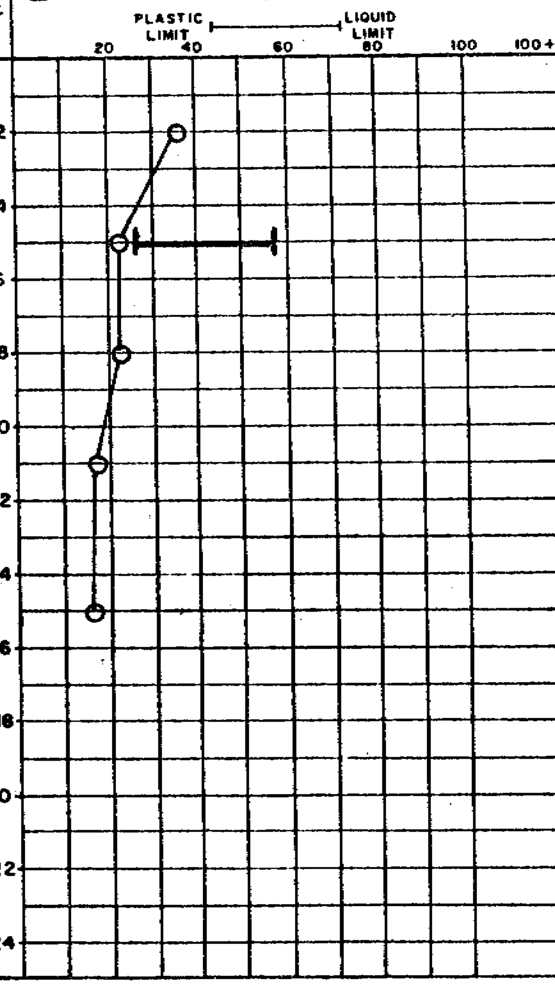
DWN	FIELD ENG:	DATE DRILLED 28/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE 2-31		
MILE	B,C,S	NUMBER
		[redacted]

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0 – .5					Pt	PEAT .5									
2						CLAY - SILTY			98-		2	0	MOIST		
4					CH	HIGH PLASTIC			99-		1	0	DAMP		
6								Vx							
8									98-		2	0	DAMP		
10						10									
11						SHALE - SOFT SILTY			8-		56	34	DAMP		+40 DRY SIEVED
15						15'			19-		62	19	DAMP		" "
15						BOTTOM OF HOLE - 15'									

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



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DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

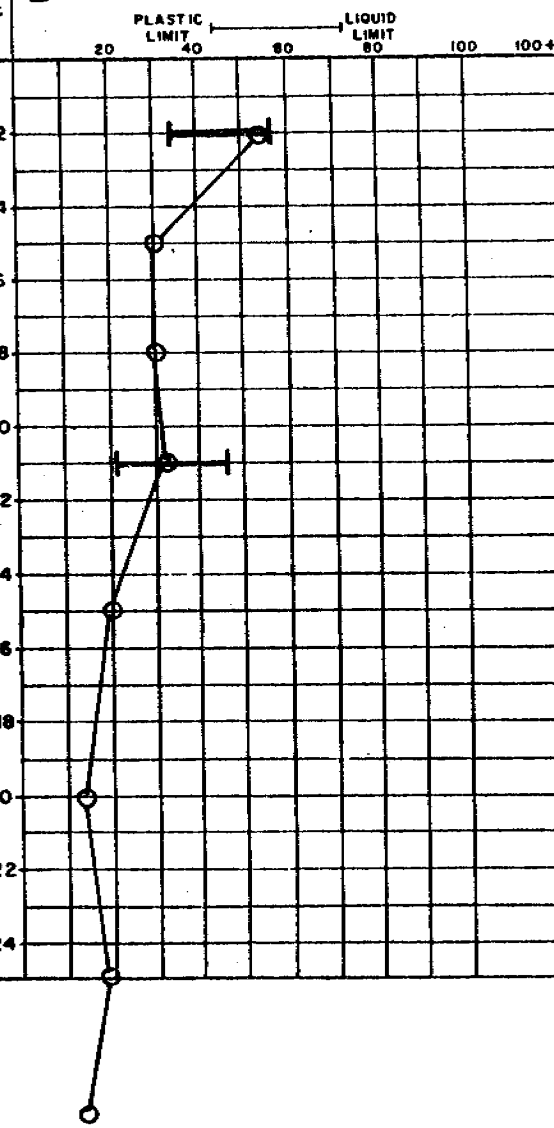
DWN	FIELD ENG.	DATE DRILLED 28/3/77	AIRPHOTO NO:	CHAINAGE:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:

OFFSET

ELEV

TEST HOLE 2-32		
MILE	B,C,S	NUMBER
		[redacted]

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ├──┤ LIQUID LIMIT



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0 – .8"					Pt	PEAT .8"									
2						CLAY - SILTY - BROWN SANDY		Vc - Vr	89	10	1		WET		
4–6						GREY - SILTY			69	26	5		WET		
8									96	4	0		WET		
11						13'			99	1	0		WET		
15						SHALE - SOFT		Vx	15	66	19		MOIST		+40 DRY SIEVED
20									6	43	51		HUMID		" "
25									21	65	14		MOIST		" "
30						30'			9	47	44		HUMID		" "

BOTTOM OF HOLE - 30'

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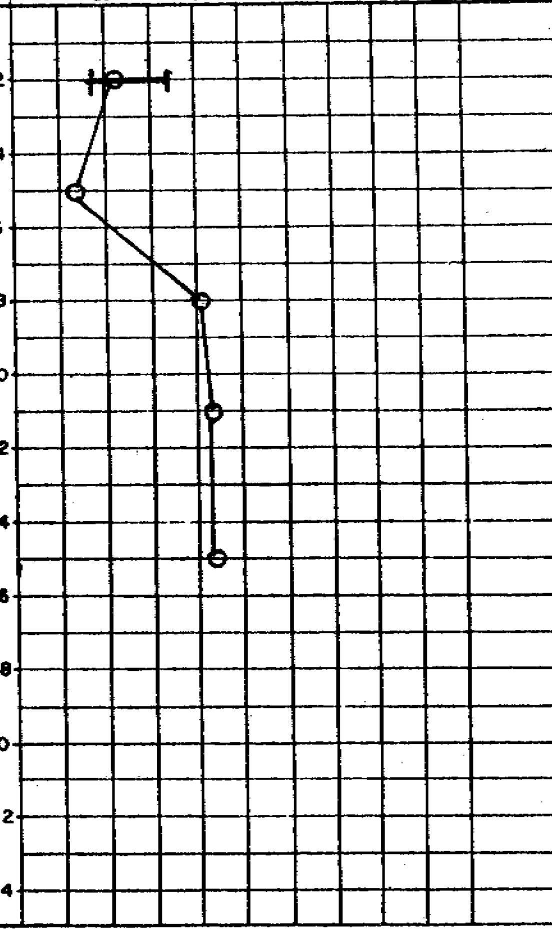
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	
CKD	
FIELD ENG.	
TECH	PRONYCH
DATE DRILLED	
RIG	AIR
AIRPHOTO NO:	
SURFACE DRAINAGE:	
CHAINAGE:	
VEGETATION:	
OFFSET:	
ELEV	
TEST HOLE	2-33
MILE	
B,C,S	
NUMBER	[redacted]

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ├──┤ LIQUID LIMIT



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–.5'					Pt	PEAT .5'									
2									78	21	1		WET		
3					CI	CLAY - SANDY CI SILTY									
5					SC	SAND - GRAVELLY CLAYEY SILTY			19	50	31		WET		
7								Vc - Vr							+ 40
8						CLAY - SILTY - PEBBLES			32	57	11		SAT.		DRY SIEVED
10						MED. PLASTIC									
11					CI			Vs	95	5	0		WET		" "
15						15'			94	6	0		WET		" "
						BOTTOM OF HOLE - 15'									

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DRILL HOLE REPORT

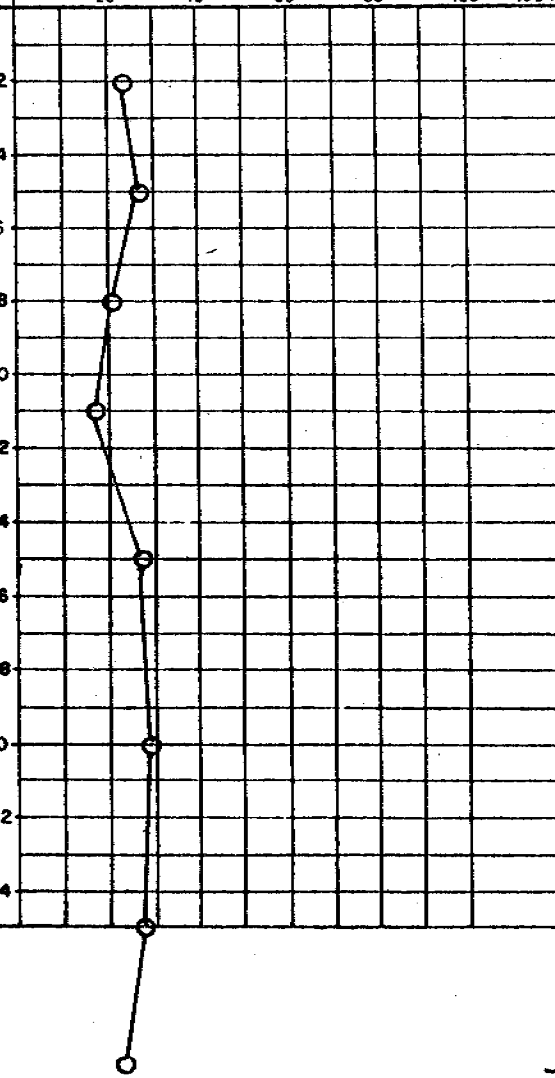
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 28/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:	TEST HOLE 2-34
CKD	TECH RONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV	

MILE	B,C,S	NUMBER
		[redacted]

DEPTH (FEET) | SAMPLE NUMBER | SAMPLE TYPE | % RECOVERY | PENETRATION RESISTANCE | UNIFIED SOIL SYMBOL | SOIL DESCRIPTION | LIMITS OF FROZEN GROUND | ICE DESCRIPTION | DEPTH (FEET)

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+



UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION
Pt	PEAT 8"	
	CLAY - SILTY SANDY PEBBLES	
CL - CI	SILTY LOW - MED. PLASTIC	$V_c - V_r$

GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
78	19	3	MOIST			
73	22	5	WET			
74	23	3	MOIST			
71	27	2	MOIST			
92	8	0	MOIST WET			
94	6	0	WET			
88	12	0	WET			

30'
BOTTOM OF HOLE - 30'

94-6-0 MOIST

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DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 28/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE 2-35		
MILE	B,C,S	NUMBER
		[redacted]

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ——— LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	WATER / ICE CONTENT	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–1					Pt	PEAT 1'											
1–6						CLAY - SILTY FEW PEBBLES		Vc - Vr		NO SAMPLE							
6–15						ICE 15'		ICE									
15						BOTTOM OF HOLE 15'											

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

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DRILL HOLE REPORT

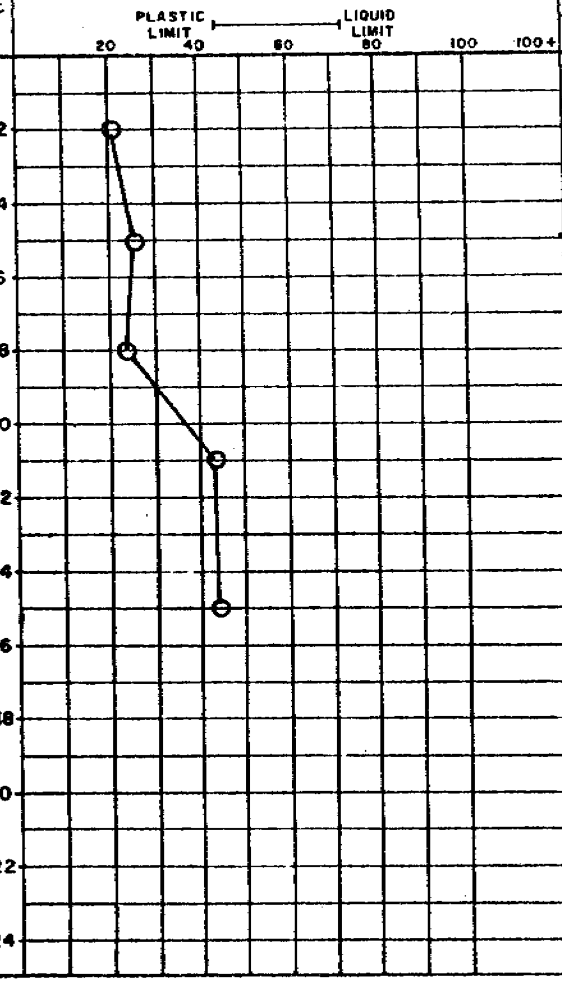
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 28/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD:	TECH: PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE	2-36	
MILE	B,C,S	NUMBER
		[redacted]

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–1					Pt	PEAT 1'									
2						CLAY - SANDY		Vc-Vr		78	21	1	MOIST		
4					CL	SILTY									
5						FEW PEBBLES				74	26	0	WET		
8						MED & LOW PLASTIC				79	17	4	WET		
11					CI			Vs		89	11	0	SAT.		
15						15'				98	2	0	WET		
16						BOTTOM OF HOLE - 15'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



INUVIK - TUK.

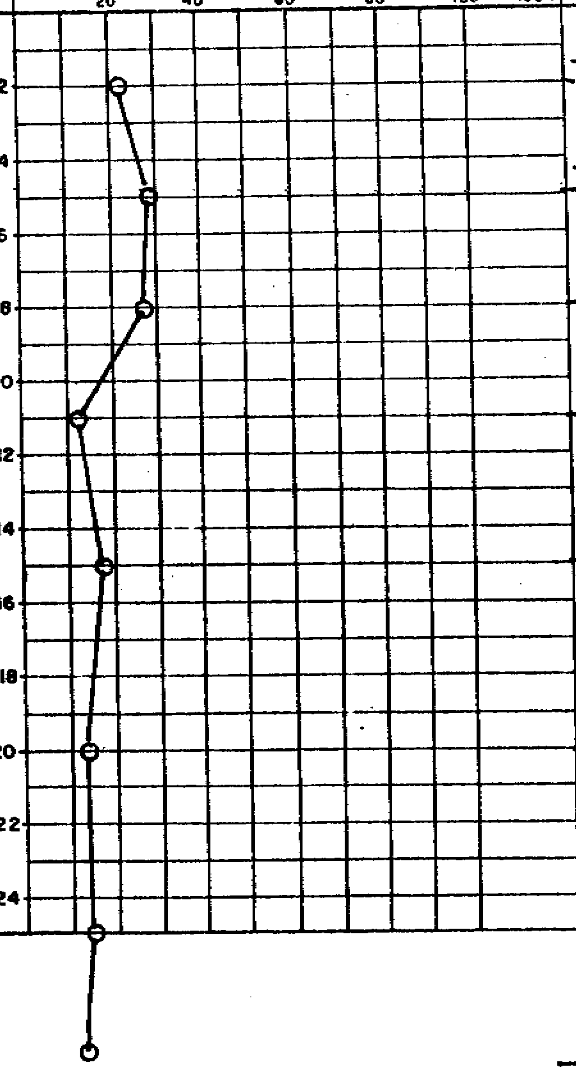
DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 28/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE 2-37		
MILE	B,C,S	NUMBER
		[redacted]

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT .5'									
2						BROWN -			77	21	2	Moist			
4					CL	CLAY - SILTY SANDY		Vc - Vr	74	23	3	Wet			
6						PEBBLES		Vs							
8						GRAVELLY at 11'			61	33	6	SAT.			
10					CL - CI	PEBBLES			44	28	28	Moist			
12															
14						15½'		Vx	78	16	6	Moist			
16						GREY - SHALE - Soft									
18															
20									5	32	63	Humid			+40 DRY SIEVED
22															
24									5	37	58	Humid			"
						30'			5	43	52	Humid			



BOTTOM OF HOLE - 30'

R073

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

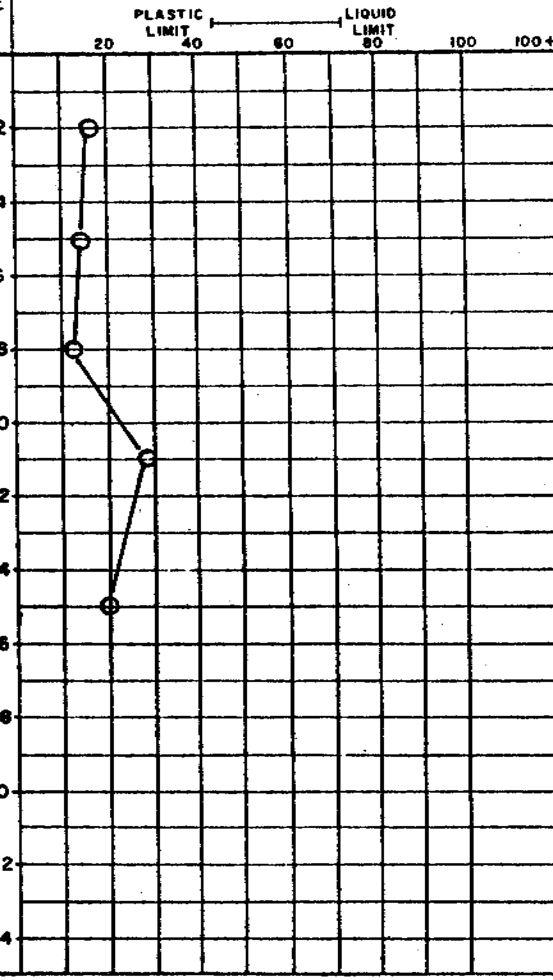
DWN	FIELD ENG	DATE DRILLED 28/3/77	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
		[redacted]

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	PEAT .5									
						BROWN -									
2					CI	- CLAY			64 -		33	3	MOIST		
						- SILTY - SANDY									
4						- PEBBLES									
5								$V_c - V_r$	65 -		30	5	MOIST		
6															
7					SP	GRAVELLY SAND									
8									18 -		58	24	SAT.		
10															
11									71 -		15	14	MOIST		
12					CI	CLAY									
13						SILTY SANDY									
15						15'			90 -		10	0	MOIST		
16						BOTTOM OF HOLE. 15									
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



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DRILL HOLE REPORT

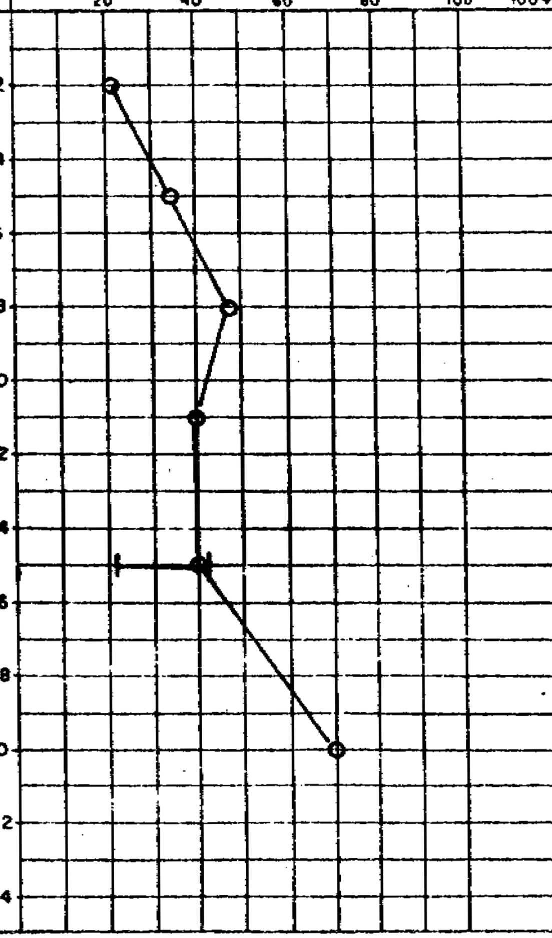
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN | FIELD ENG | DATE DRILLED 20/3/76 | AIRPHOTO NO: | CHAINAGE: | OFFSET

CKD | TECH RONYCH | RIG: AIR | SURFACE DRAINAGE: | VEGETATION: | ELEV

TEST HOLE — MILE 972 - B,C,S 3 - NUMBER 1

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	REMARKS
0	Pt	PEAT — 4"						
2	CI	CLAY - SILTY, MED. PLASTIC	V_c-V_r	82	17	1		MOIST
5				93	7	0		WET
8				93	7	0		SAT.
11			V_s	89	10	1		SAT.
15				94	6	0		SAT
20				94	6	0		FREE WATER
20–24		ICE	ICE					

ICE ICE

BOTTOM OF HOLE - 30'

ICE ICE

INUVIK - TUK.

DRILL HOLE REPORT

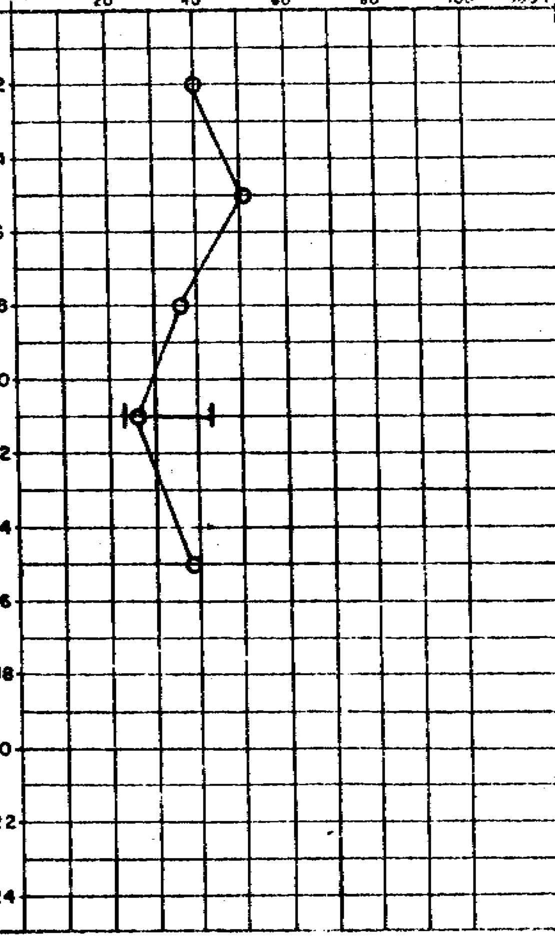
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 29/3/76	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:
CHAINAGE	OFFSET	VEGETATION	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
972	3	2

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
0–2"					Pt	PEAT									
2"–3.5					CI	CLAY - SILTY ORGANIC'S		Vc-Vr	95	5	0				DAMP
3.5–7						ICE VERY LITTLE SOIL		ICE	100	0	0				FREE WATER
7–15'					CI	CLAY - SILTY MED. PLASTIC		Vc-Vs	98	2	0				WET
									98	2	0				MOIST
									98	2	0				WET
15'						BOTTOM OF HOLE - 15'									

INUVIK - TUK.

DRILL HOLE REPORT

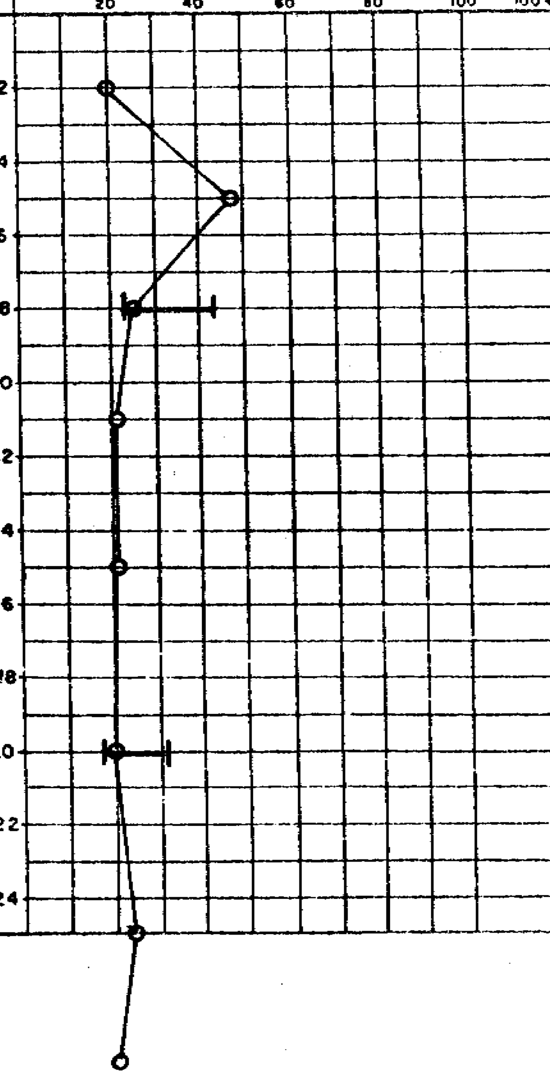
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 20/3/76	AIRPHOTO NO.	CHAINAGE	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
972	3	3

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	PEAT 4" SOME ORGANIC'S									
2								Vc-Vr	-	76	24	0	Moist		
4–5						CLAY - SILTY MED. PLASTIC			-	95	5	0	Wet		
8									-	91	9	0	Moist		
9–11					CI			To	-	95	5	0	Moist		
15								Vx	-	94	6	0	Moist		
20									-	96	4	0	Moist		
25									-	100	0	0	Moist		
30									-	93	6	1	Moist		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



BOTTOM OF HOLE - 30'

-93-6-1 MOIST

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 20/3/74	AIRPHOTO NO:	CHAINAGE	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION	ELEV

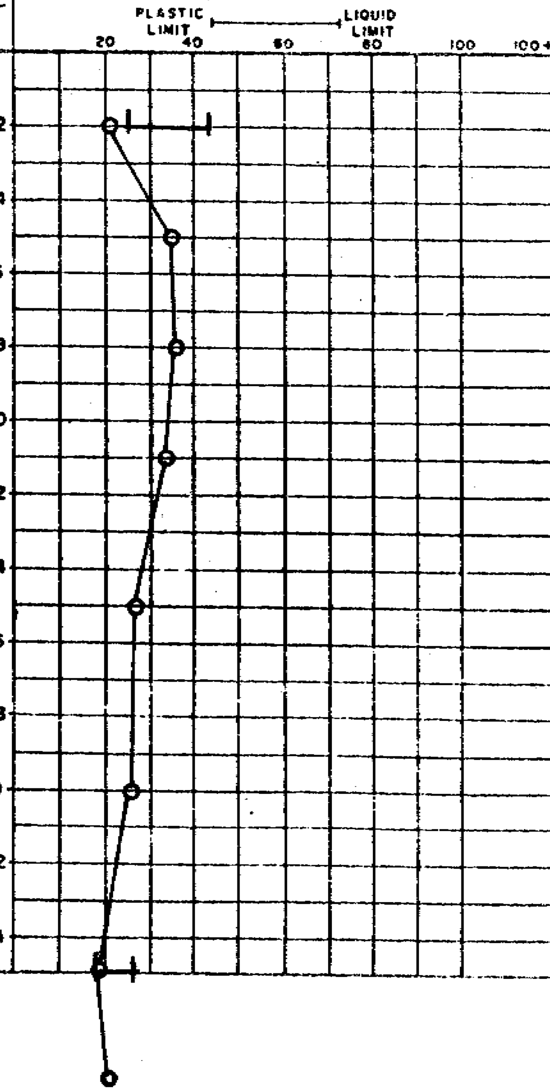
TEST HOLE

MILE	B,C,S	NUMBER
972-3-4		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0 – .5'					PT	PEAT .5'		
.5' – 3					CI	CLAY - SILTY LOW - MED. PLASTIC		Vx
3 – 12								Vs
12 – 25					CL			Vc-Vr

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	96	4	0		DAMP		
5	95	4	1		SAT.		
8	98	2	0		SAT.		
11	98	2	0		SAT.		
15	97	3	0		WET		
20	97	3	0		WET		
25	98	2	0		DAMP		

BOTTOM OF HOLE - 30'

-96-4-0 WET

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

OWN	FIELD ENG	DATE DRILLED 20/3/76	AIRPHOTO NO:	CHAINAGE	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE	VEGETATION	ELEV

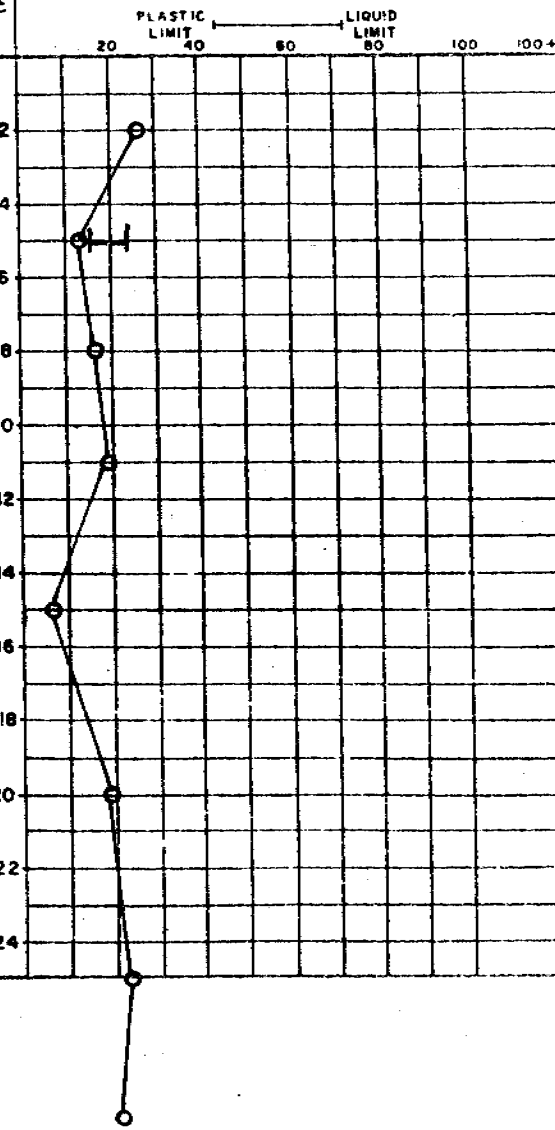
TEST HOLE

MILE	B,C,S	NUMBER
972	3	5

REMARKS

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)
	Pt	PEAT — 4"								
2	CL	CLAY - SANDY SILTY LOW PLASTIC				63	31	6	WET	
4	SC	SAND - CLAYEY — 5.5'				38	51	11	WET	
6		GRAVEL LENSE — 6.5								
8	SC	SAND - SILTY PEBBLE CLAYEY GRAVELLY — 11.5'		Vs		23	72	5	SAT.	
10						23	60	17	FREE WATER	
12–16	GW	GRAVEL - SANDY — 17'	F			7	47	46	SAT.	
18–20	CL CI	CLAY - SILTY SANDY PEBBLES		Vc-Vr		83	10	7	MOIST	
24						85	9	6	WET	
						95	4	1	MOIST	

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



BOTTOM OF HOLE - 30'

SEARCH AREAS #6 and #9

Landform and Location:	Hilly terrain south of Noell Lake near Miles 979 - 980 of the Mackenzie Highway - roughly seven miles north of Inuvik.
Material:	Variable: primarily ice-rich glacial till but some fissile decomposed bedrock - shale, siltstone, sandstone and minor sandy gravel.
Stripping:	Variable - no stripping on the top of hillcocks - rapidly increasing on flanks of slopes to 20'+.
Volume:	Volume on top of each hillcock where stripping would be minimal is in the order of 20 - 25,000 cu. yds. - thus could possibly obtain a total of 100,000 cu. yds. in Areas #6 and #9 combined (two hills in each Area). Further borrow would require extensive stripping.
Conclusions:	Areas are highly visible and pit development would leave obvious scars. Because of stripping required to develop substantial volumes here, this source is not recommended. Consideration should only be given to Area #6 if staged construction is proposed, and stripping can be used in the embankment with thawing and drying in place.

Topography

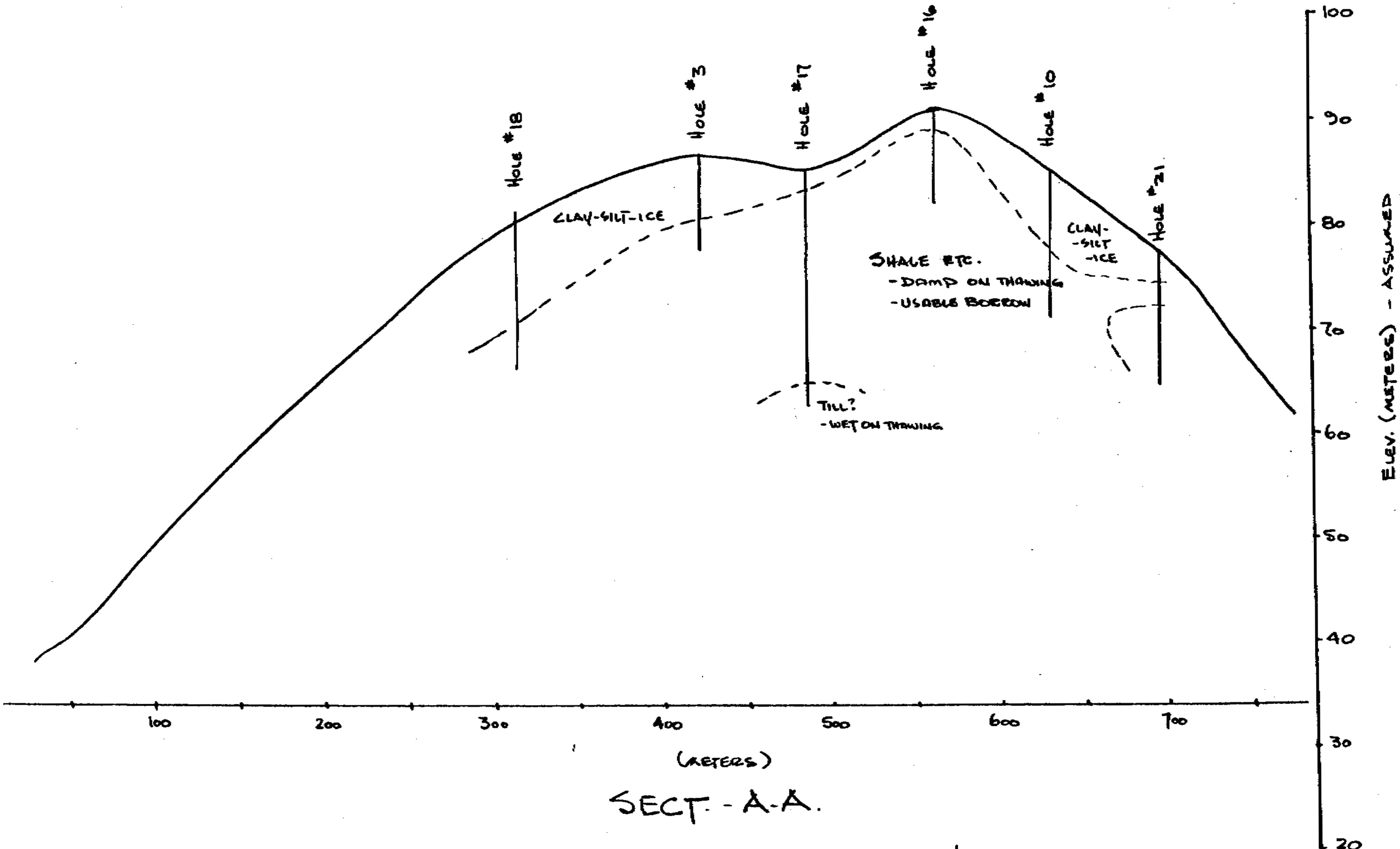
This search area is in an area of hummocky terrain immediately south of Noell Lake at approximately Mile 978 of the Mackenzie Highway. For the most part the hummocks are attributed to either surficial deposits of glacial origin, or a combination of ground ice and thermokarst, however some of the higher hills have bedrock cores. The tops of the high hills are relatively bare of glacial till, whereas the flanks are covered with either till or colluvium. There are isolated high points in Areas #6 and #9 which have weathered decomposed shale, siltstone and sandstone chips on the surface.

Materials and Quantities

For the most part the terrain is devoid of dry, competant borrow - only glacial till at variable ice content that would require thawing and drying. The hill which comprises Area #6 is the highest feature for many miles and is the most complex deposit encountered on the highway. There are two portions of Area #6 (exposed 'points') that show bedrock partings on the surface, and test holes on these exposures reveal relatively dry material - fissile shale, siltstone, sandstone, bentonite, etc., extending to significant depth (100'+). However test holes on the flanks of the exposures, encountered substantial ice-rich till and/or collovium above the bedrock, and a progressive increase in thickness of the overburden with distance from the exposures. Cross-sections of Area #6 have been plotted and are included as plates #1 to #5 overleaf. These sections show clearly the bedrock cores and overburden, and while there is some good borrow available here, the stripping required to develop a worthwhile pit area would be prohibitive. Area #6 could possibly be considered as a viable borrow source if stripping were used for construction and allowed to thaw and drain in place. However one serious drawback to Area #6 is the volume of dry bentonite in the core of the hill - this material absorbs well in excess of its own weight of free water, expands significantly, and is very slippery when wet - it is very poor material for embankment construction and would have to be incorporated within high fills where it would be protected from free water.

Area #9 has similar cores of good borrow material but with very limited areal extent - e.g. holes #9-4 encountered 30' of excellent rock borrow, and hole #9-8 encountered 15' of sandy gravel, but adjacent test holes revealed much ice-rich material. Thus development of a borrow pit for the limited material available would be impractical, and this area is not recommended.

Map.
D 0088856



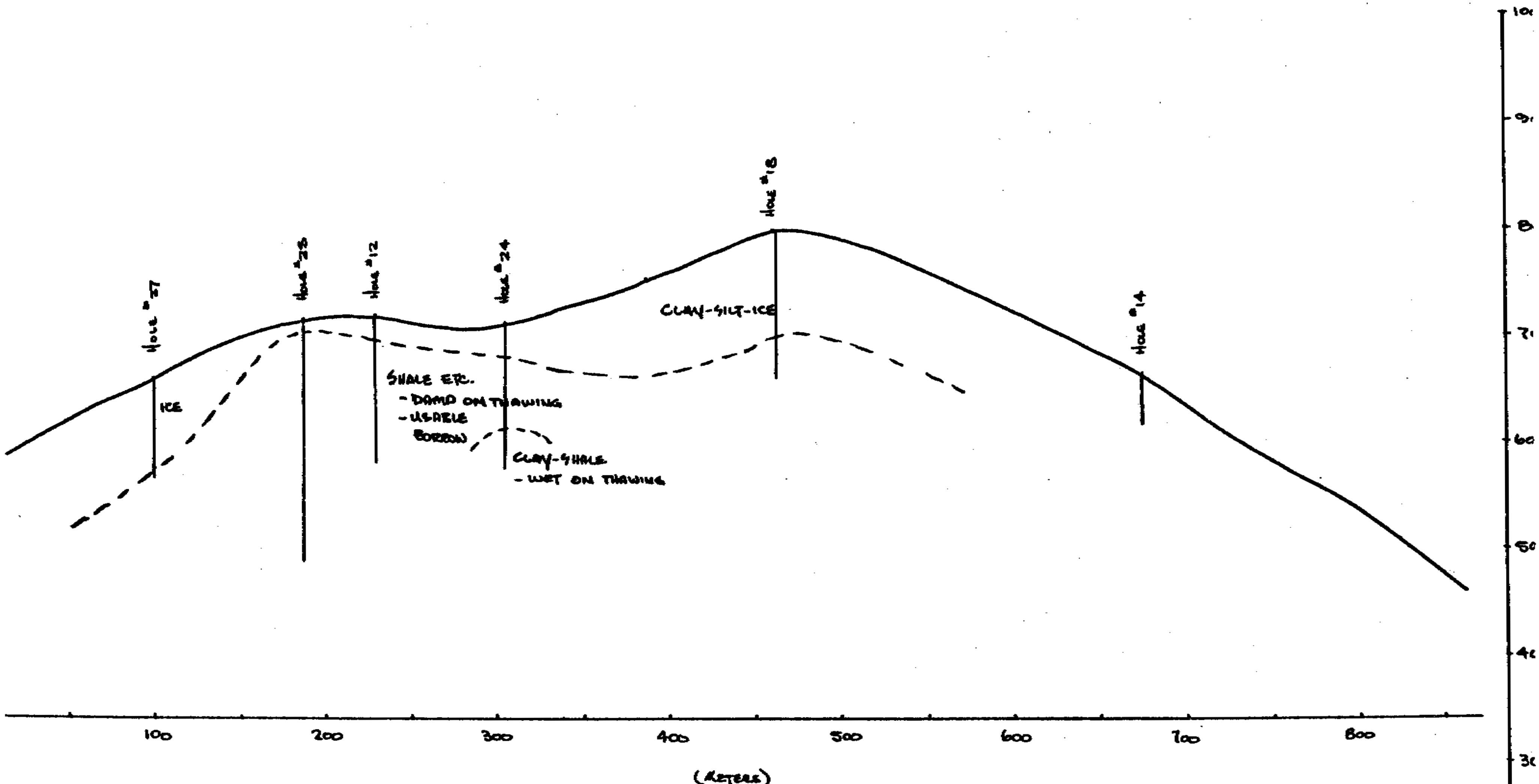
SECT - A-A.

BORROW AREA NO. 6

MILE 978 - INUVIK-TUK. HWY.

HORIZONTAL SCALE : 1:2500
VERTICAL SCALE : 1: 400

SECT. - A-A.



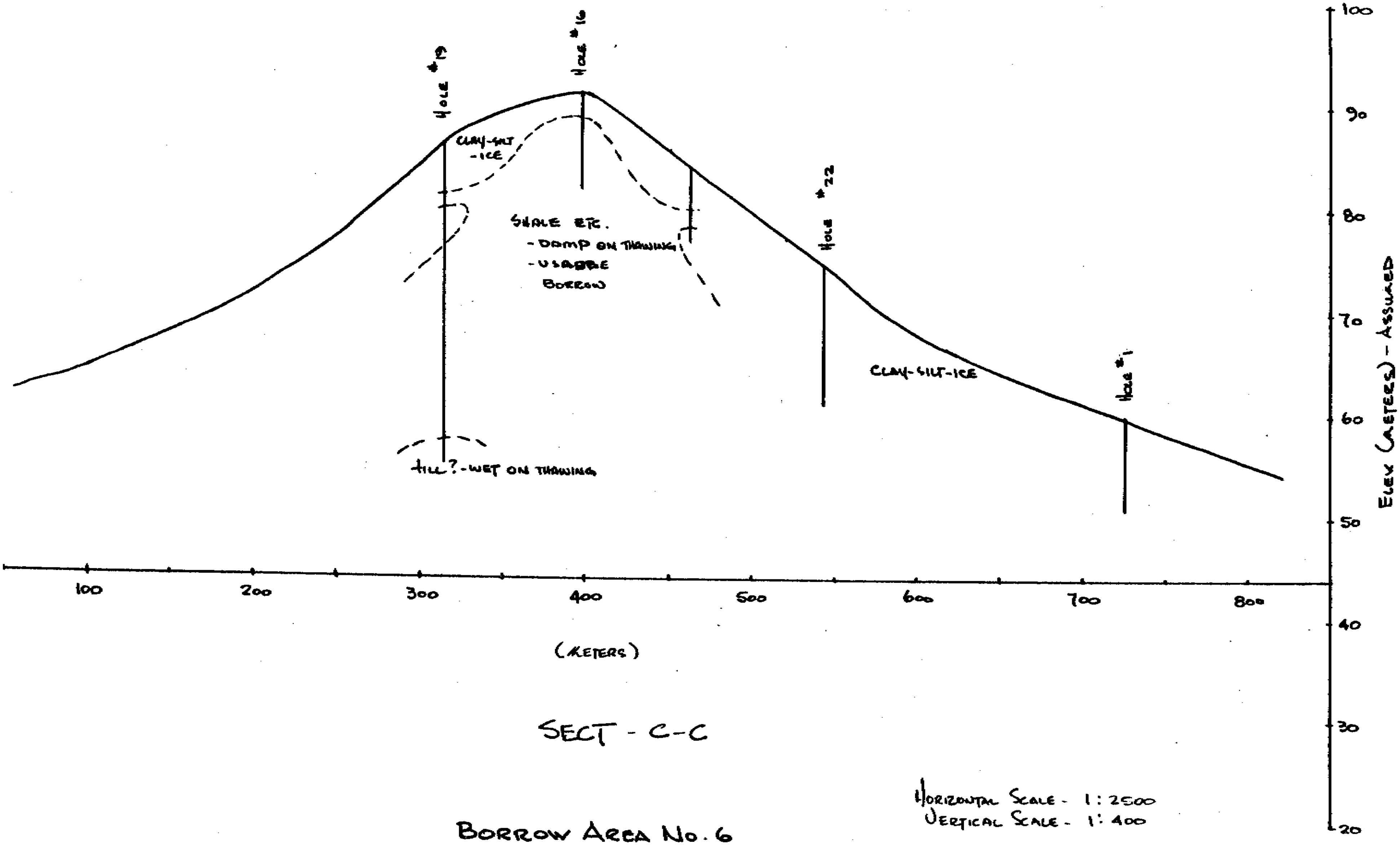
SECT. B-B

BORROW AREA NO. 6

HORIZONTAL SCALE 1:2500
VERTICAL SCALE 1:400

MILE 978 - INUVIK-TUK. HGY.

SECT. B-B

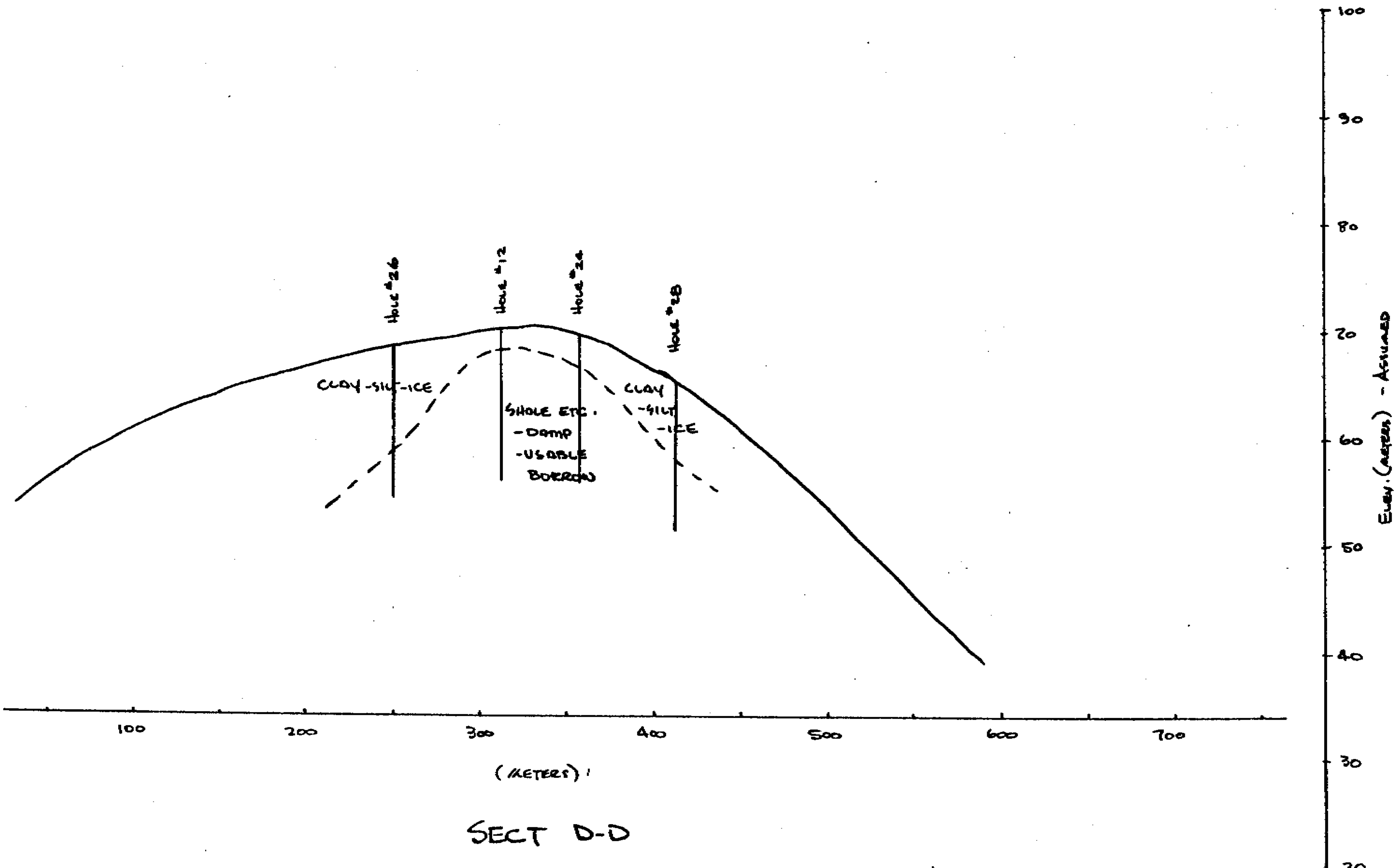


SECT - C-C

HORIZONTAL SCALE - 1:2500
VERTICAL SCALE - 1:400

BORROW AREA NO. 6

MILE 978 - INUVIK-TUK. HGY.



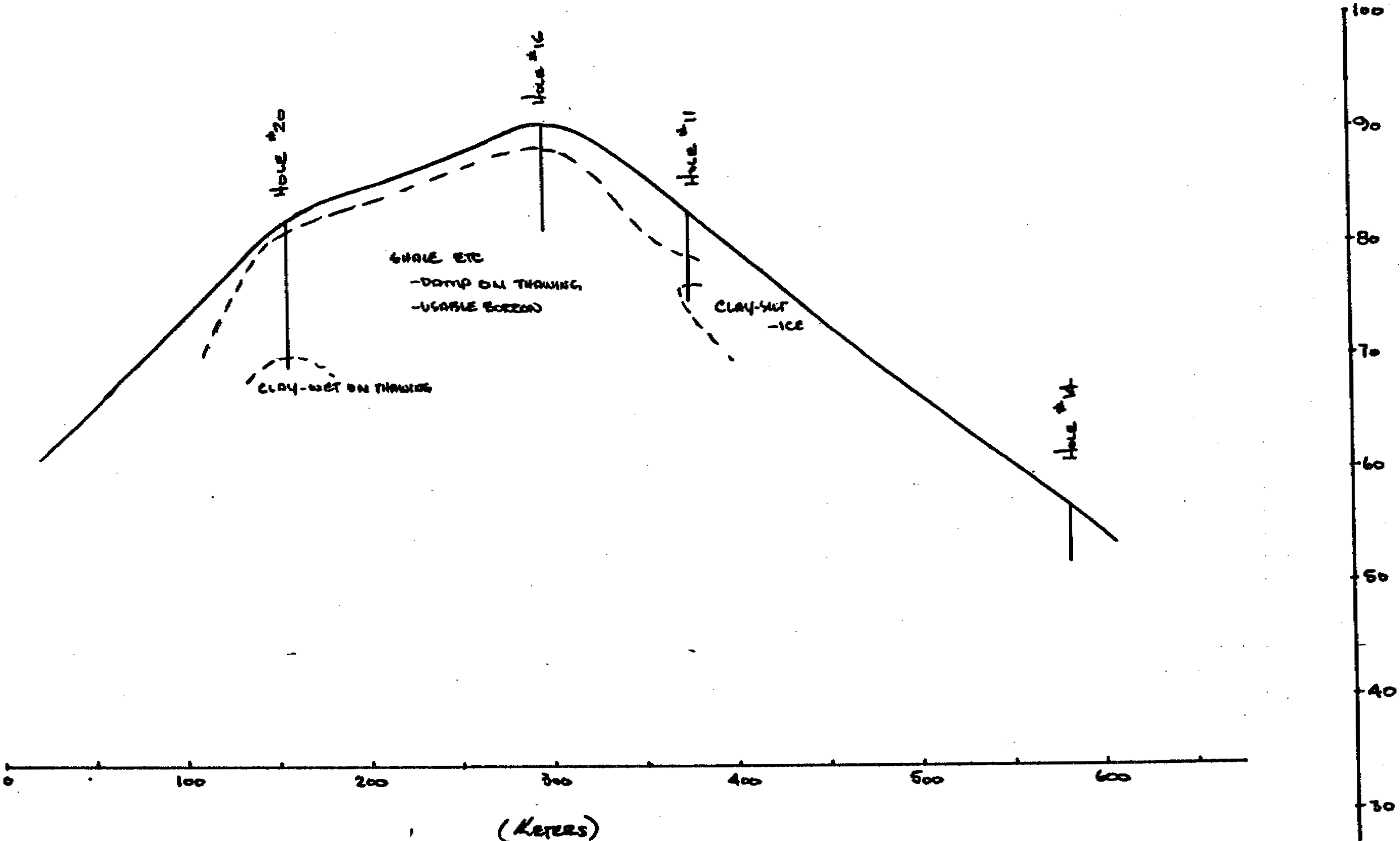
SECT D-D

BORROW AREA NO. 6

MILE 978 - INUVIK - TUK. HGY.

Horizontal Scale - 1" = 2500
Vertical Scale - 1" = 400

SECT D-D



SECT. E-E.

HORIZONTAL SCALE 1:2500
VERTICAL SCALE 1:400

BORROW AREA NO 6

MILE 978 - INUVIK-TUK. HGY.

SECT. F-F

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

WN	FIELD ENG	DATE DRILLED 23/3/76	AIRPHOTO NO	CHAINAGE	OFFSET
KD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA - 6 - 1		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	WATER / ICE CONTENT	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 4"											
2						CLAY - SILTY PEBBLES		Vs	2								
4									4								
6									6								
8									8								
10									10	NO SAMPLES							
12									12								
14									14								
16						ICE - SOME SOIL			16								
18									18								
20						CLAY - SILTY		Vs	20								
22									22								
24									24								

28'

GRAVEL - SANDY

BOTTOM OF HOLE - 30'

INUVIK - TUK

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

TEST HOLE

MILE	B,C,S	NUMBER
AREA-6-2		

OWN | FIELD ENG | DATE DRILLED 23/3/76 | AIRPHOTO NO: | CHAINAGE | OFFSET

CKD | TECH PRONYCH | RIG AIR | SURFACE DRAINAGE | VEGETATION | ELEV

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
0–4						CLAY - SILTY PEBBLES (4')											HOLE LOCATED ON APEX OF HILL
4–14						SHALE - SOFT - DAMP TO MOIST - FISSILE - MUCH BROKEN AND DECOMPOSED SHALE.				NO SAMPLES							-SHALE FRAGMENTS ON SURFACE -LITTLE OR NO VEGETATION

Depth scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

LOST RETURN @ 32'

BOTTOM OF HOLE - 32'

LOST RETURN

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

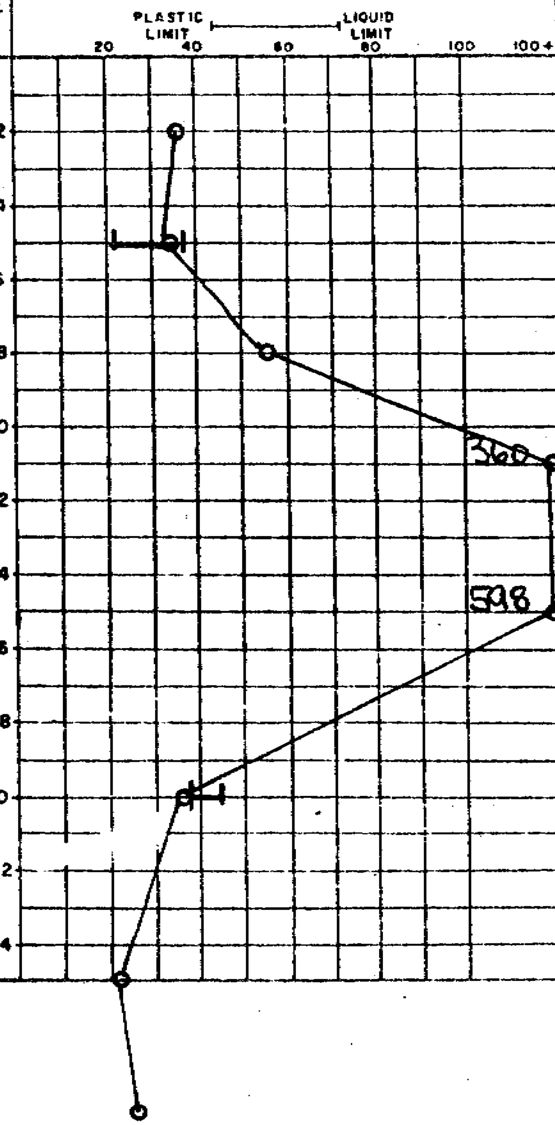
DWN	FIELD ENG	DATE DRILLED 23/3/76	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE
CHAINAGE	OFFSET	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA-6-3		

REMARKS

O = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS (CLAY-SILT-SAND)	
0	Pt	PEAT 2"			
0–9	Cl	CLAY-SILTY MED. PLASTIC			
2				94-5-1	WET
5				94-5-1	WET
8				90-10-0	SAT.
9–19		ICE & SHALE PARTINGS	ICE & SHALE		
11				51-49-0	FREE WATER
15				36-64-0	" "
19–25		SHALE - SOFT LAYERS OF YELLOW VERY HIGH PLASTIC MATERIAL POSSIBLE BENTONITE			
20				69-31-0	MOIST
25				26-70-4	MOIST
30				53-43-4	DAMP



BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

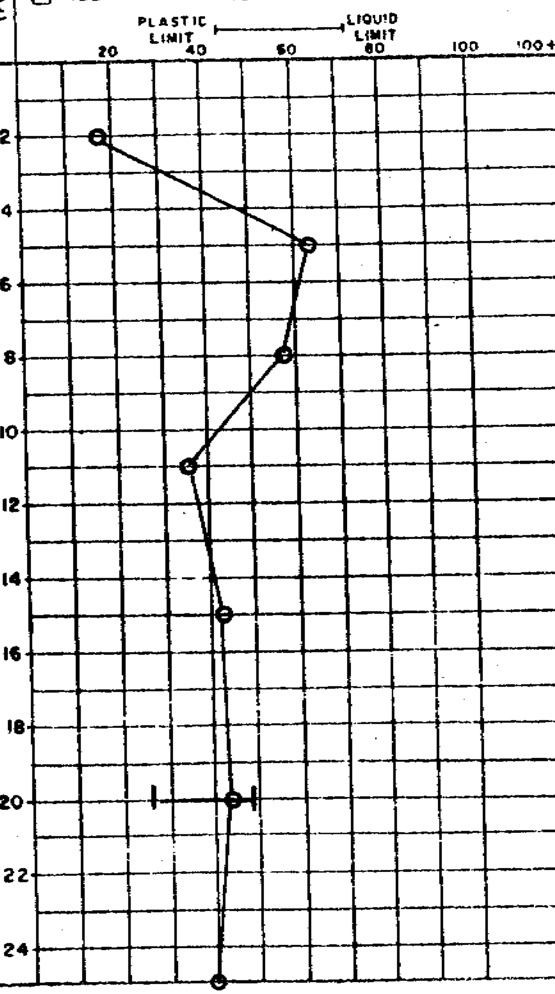
TOWN	FIELD ENG	DATE DRILLED 23/3/76	AIRPHOTO NO
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE

CHAINAGE | OFFSET | ELEV | VEGETATION

TEST HOLE: MILE | B,C,S | NUMBER — AREA - 6 - 4

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0					Pt	Peat 4"		
1–9						CLAY - SILTY, SANDY, PEBBLES; SILTY, MED. PLASTIC		Vs
9–27					CL	SHALE FRAG'S		Vc - Vr

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	64	36	0				MOIST
5	63	31	6				FREE WATER
8	92	7	1				FREE WATER
11	93	6	1				WET
15	88	11	1				WET
20	96	4	0				WET
25	49	51	0				WET

27'

BOTTOM OF HOLE - 27'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

INUVIK - TUK.			
(DR)WN	FIELD ENG	DATE DRILLED 23/3/76	AIRPHOTO NO:
(CH)KD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:
CHAINAGE:	OFFSET	VEGETATION	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
AREA- 6-5		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT — 2"											
						CLAY - SILTY - PEBBLES			2								
4						— 5'			4								
6						GRAVEL - CLAYEY SILTY			6								
8							F	VS	8								
10						COBBLES			10	NO SAMPLES							
12					GC	POSSIBLE BOULDERS			12								
14									14								
									16								
18									18								
20						— 21'			20								
22						GRAVEL - CLAY			22								
24					GC	MIXTURE			24								

BOTTOM OF HOLE - 30'

INUVIK - TUK

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DRAWN	FIELD ENG	DATE DRILLED 23/3/74	AIRPHOTO NO:	CHAINAGE	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA - 6 - 6		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
0					Pt	PEAT — 2"											
2–18						CLAY - SILTY PEBBLES		Vs	2–18	NO SAMPLES							
19'						ICE & SOIL			20–24								

BOTTOM OF HOLE - 30'

INUVIK - TUK

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 23/3/76	AIRPHOTO NO	CHAINAGE	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA-6-7		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT — 2"											
2						CLAY - SILTY PEBBLES — 3'		VS	2								
4						GRAVEL - SANDY CLAYEY			4								
6					GC				6								
8									8	NO SAMPLES							
10						— 10'			10								
12					CI	CLAY - SILTY GRAVELLY			12								
14						— 13' SHALE - SOFT			14								
16						— 15' BOTTOM OF HOLE - 15'			16								
18									18								
20									20								
22									22								
24									24								

INUVIK - TUK

DRILL HOLE REPORT

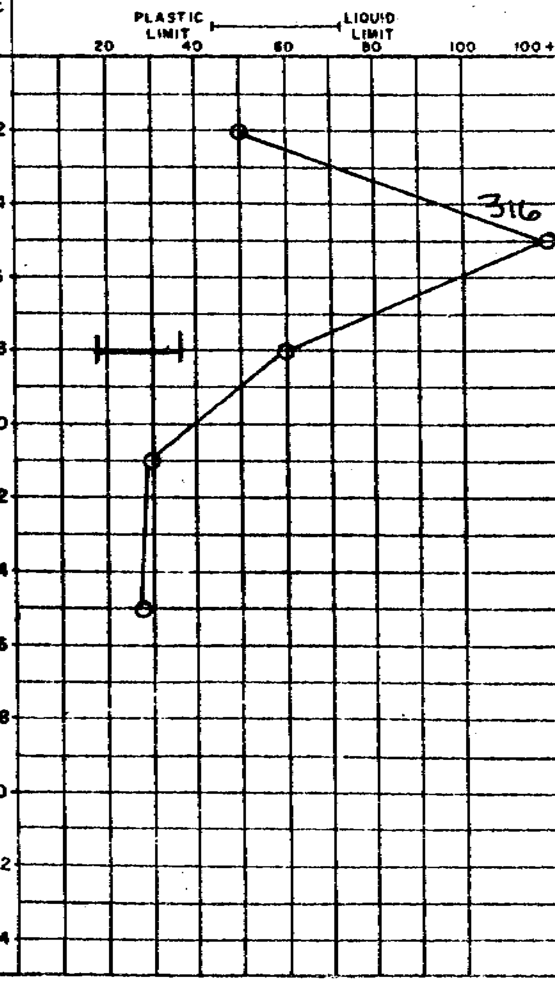
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 23/3/76	AIRPHOTO NO:	CHAINAGE	OFFSET	TEST HOLE
CKD	TECH PRODYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION	ELEV	

MILE	B,C,S	NUMBER
AREA-6-8		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
0					Pt	PEAT .5'									
2						CLAY - SILTY PEBBLES			89	9	2				MOIST
5								Vs	92	8	0				FREE WATER
8					CI	SANDY MED. PLASTIC			78	18	4				FREE WATER
11								Vc-Vr	84	15	1				WET
15						15'			65	27	8				WET
						BOTTOM OF HOLE 15'									

O = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

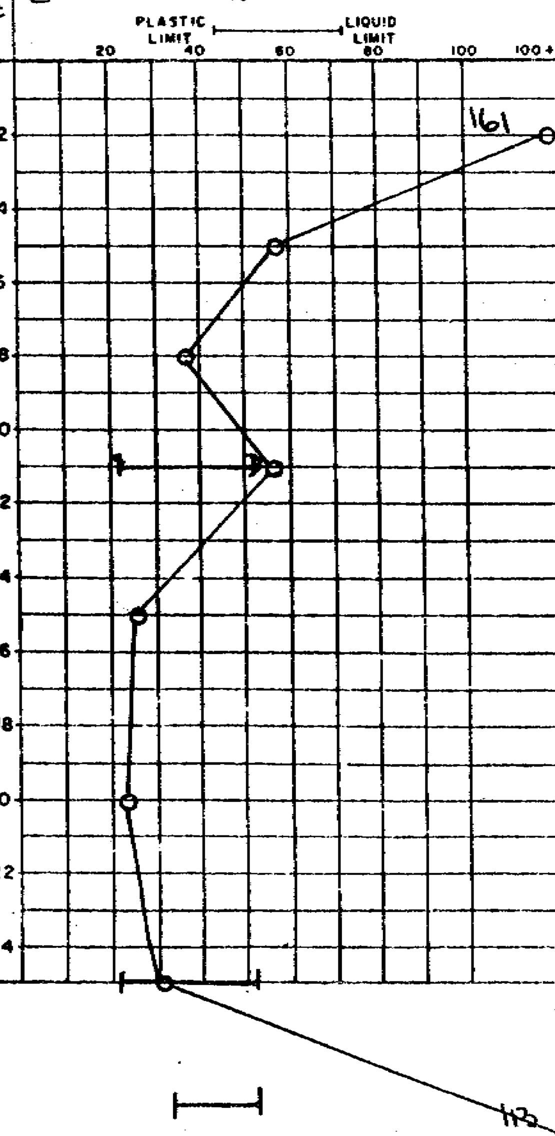


INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 23/3/76	AIRPHOTO NO:	CHAINAGE	OFFSET	TEST HOLE
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE	VEGETATION	ELEV	MILE / B,C,S / NUMBER: AREA - 6 - 9

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT .5' ORGANIC		Vs								
2									2	84	16	0		DAMP		
4						SHALE FRAGMENTS			4							
						CLAY - SILTY SANDY MED - PLASTIC		Vc - Vr		69	31	0		WET		
6									6							
8									8	52	47	1		MOIST		
10						POSSIBLE SOFT SHALE FROM 13' - 21'			10							
					CI					78	22	0		MOIST		
12									12							
14									14							
										45	52	3		DAMP		
16									16							
18									18							
20									20	59	40	1		DAMP		
22									22							
					CH	HIGH PLASTIC										
24									24	90	10	0		MOIST		



CH HIGH PLASTIC Vs

~~112~~ 89-9-2 FREE WATER

BOTTOM OF HOLE - 30'

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

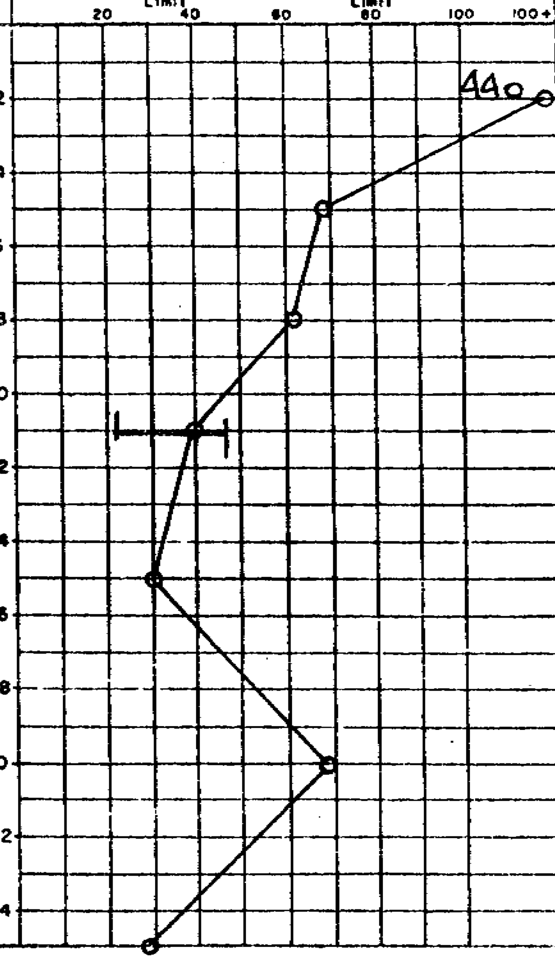
INUVIK - TUK

DWN	FIELD ENG	DATE DRILLED 23/3/76	AIRPHOTO NO:	CHAINAGE	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA - 6 - 10		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 4"										
2						ICE		ICE	2	61		34	5			FREE WATER
4						SOME SOIL			4							
										69		29	2			FREE WATER
6									6							
8						CLAY - SILTY		VS	8	89		10	1			SAT.
						FEW PEBBLES										
10									10							
						MED. PLASTIC				90		9	1			WET
12									12							
14									14							
					C					91		8	1			WET
16									16							
18									18							
20									20	88		12	0			SAT.
22									22							
24									24	70		30	0			WET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ——— LIQUID LIMIT



OVER

DRILL HOLE REPORT

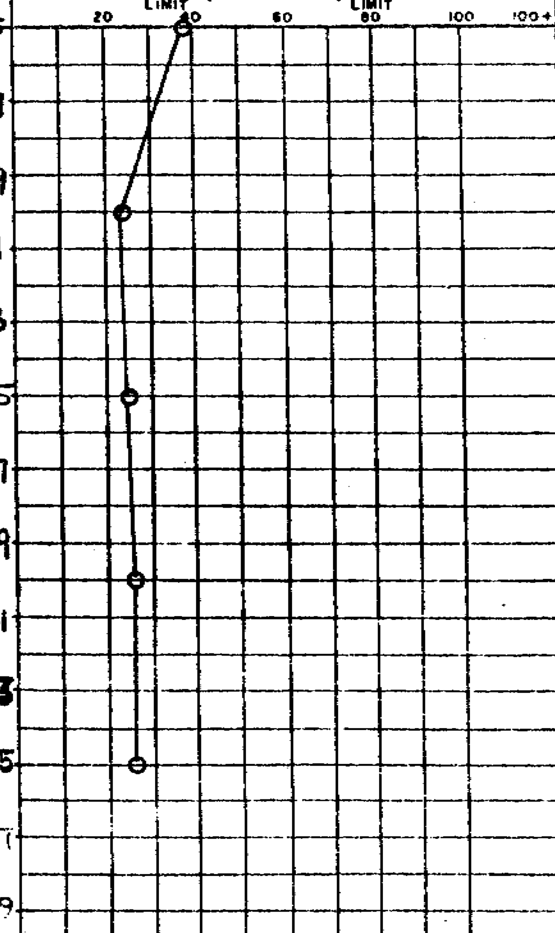
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO:	CHAINAGE	OFFSET	TEST HOLE
CKD	TECH	RIG	SURFACE DRAINAGE:	VEGETATION	ELEV	

MILE	B,C,S	NUMBER
AREA	-6-	10

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
									25		66	34	0	DAMP		
						26' SHALE - SOFT			27							
									29		68	32	0	DAMP		
								Vc-Vr	31							
									33							
									35		68	32	0	DAMP		
									37							
									39		59	41	0	MOIST		
									41							
									43							
						45' BOTTOM OF HOLE. 45'			45					DAMP		
									47							
									49							

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



INUVIK - TUK

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

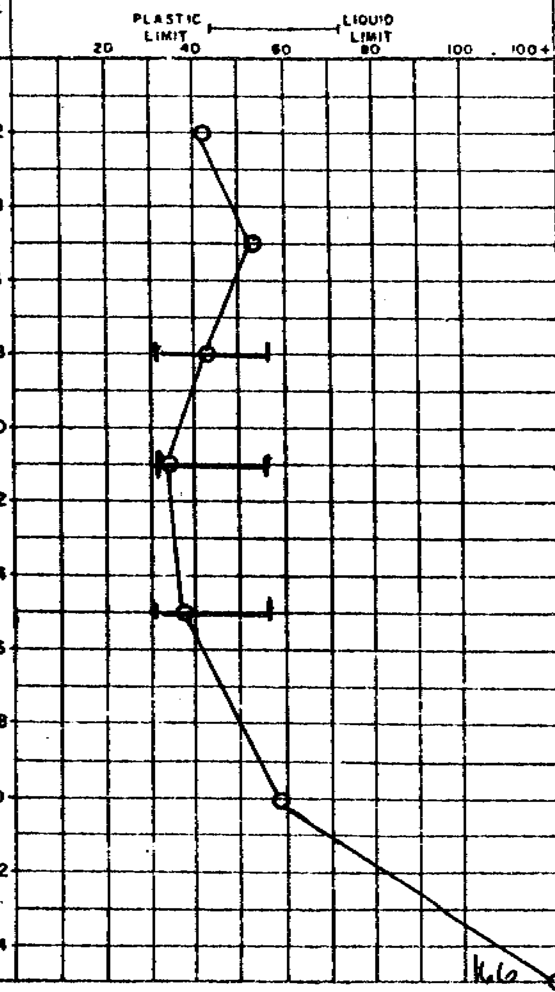
DWN	FIELD ENG	DATE DRILLED 23/3/74	AIRPHOTO NO:	CHAINAGE	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
AREA - 6 - 11		

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0 – .5'	Pt	PEAT								
2	CI	CLAY - SILTY SANDY MED. PLASTIC	Vs	68		32	0	SAT.		
5				70		30	0	SAT.		
8 (13')	CH	CLAY - SILTY & SHALE SOFT - SHALE PARTINGS	Vc-Vr	19		81	0	WET		
11				72		28	0	WET		
15				17		82	1	WET		
20				94		6	0	SAT.		
20 – 25	CI / CH	CLAY - SILTY MED. - HIGH PLASTIC SANDY	Vs	76		16	0	FREE WATER		

O = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



BOTTOM OF HOLE - 25'

BOTTOM OF HOLE - 25

INUVIK - TUK.

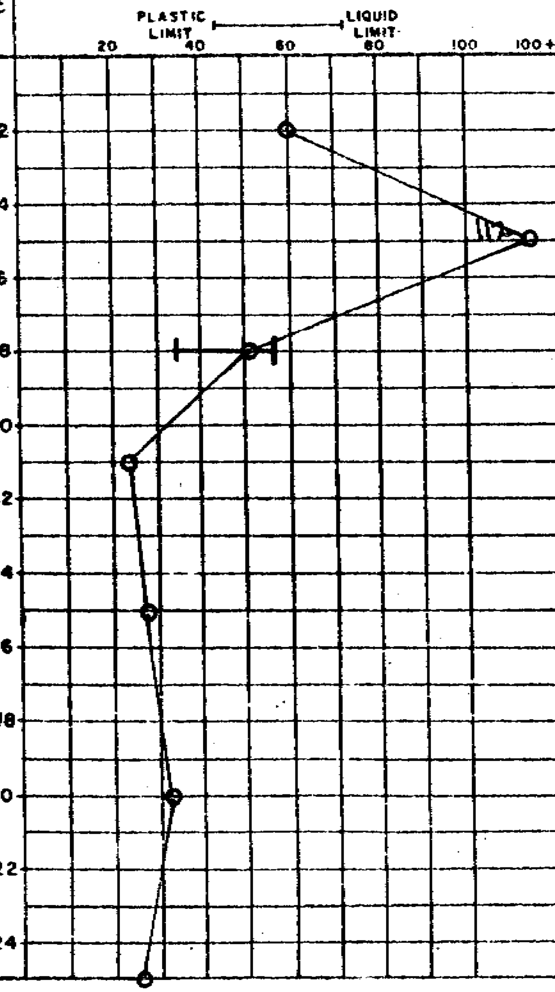
DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 13/4/76	AIRPHOTO NO:	CHAINAGE	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA - 6 - 12		

DEPTH (FEET) | SAMPLE NUMBER | SAMPLE TYPE | % RECOVERY | PENETRATION RESISTANCE | UNIFIED SOIL SYMBOL | SOIL DESCRIPTION | LIMITS OF FROZEN GROUND | ICE DESCRIPTION | DEPTH (FEET)

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL % | WET DENSITY (P.C.F.) | DRY DENSITY (P.C.F.) | REMARKS

Unified soil symbol	Soil description	Ice description
CI	CLAY - SILTY SANDY MED - HIGH PLASTIC BENTONITE ?	VS
CH	SOFT SHALE & CLAY - SILTY ROCK CHIPS	VC - VR
		VX

Grain-size analysis (as written)	
78 - 22 0	SAT.
68 - 32 0	FREE WATER
73 - 27 0	SAT.
76 - 24 0	MOIST
54 - 31 15	MOIST
69 - 28 3	MOIST
84 - 13 3	DAMP

REMARKS

- HOLE LOCATED ON KNOB WITH SHALE FRAGMENTS ON SURFACE
- NO VEGETATION IN AREA OF HOLE.

NEXT PAGE

NEXT PAGE

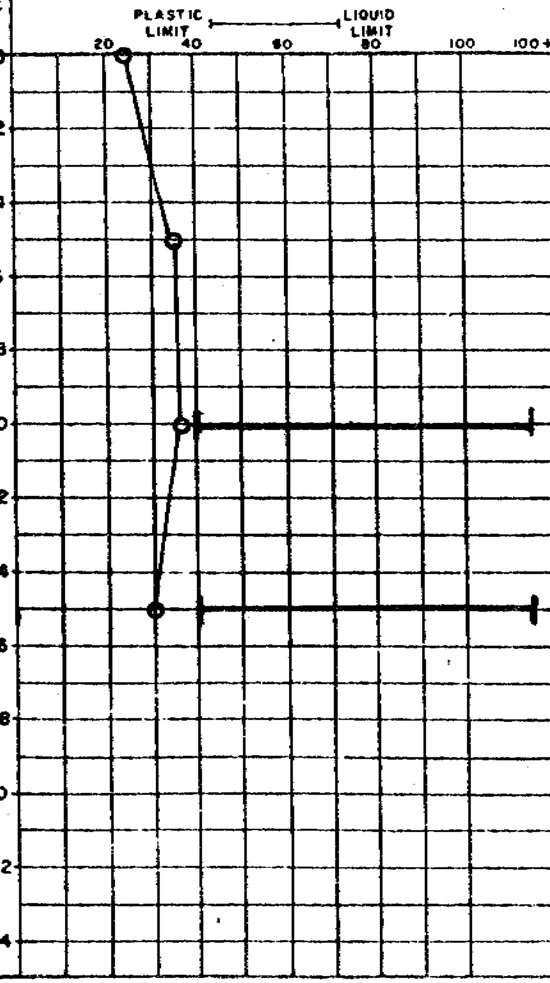
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO:	CHAINAGE	OFFSET
CKD	TECH	RIG	SURFACE DRAINAGE	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA - 6-12		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
						CLAY-SANDY PEBBLES SHALE SOFT MIXTURE			30	48	47	5		DAMP		
									35	45	51	4		DAMP		
					CH	HIGH PLASTIC		Vx	40	73	27	0		MOIST		
						45'			45	83	14	3		WET		
						BOTTOM OF HOLE 45'										

Depth scale (left): 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24
Depth scale (chart): 30, 32, 34, 36, 38, 40, 42, 44, 46, 18, 20, 22, 24

INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

WN	FIELD ENG	DATE DRILLED 13/4/76	AIRPHOTO NO:	CHAINAGE:	OFFSET
KD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA - 6 - 13		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					PT	PEAT 2"										
2						CLAY - SILTY SANDY PEBBLES		VS	2							
4									4							
6									6							
8									8							
10									10							
12									12							
14						ICE 15		ICE	14							
16						BOTTOM OF HOLE - 15'			16							
18									18							
20									20							
22									22							
24									24							

Inuvik - Tuk.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

WN	FIELD ENG	DATE DRILLED 15/4/16	AIRPHOTO NO:	CHAINAGE	OFFSET	TEST HOLE
KD	TECH Pronych	RIG Air	SURFACE DRAINAGE	VEGETATION	ELEV	

MILE	B,C,S	NUMBER
AREA-6-14		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–1"					Pt	Peat 1"											
1"–12						Clay - Silty Sandy Pebbles		Vs		No Samples							
12–15						Ice		Ice									

Depth scale (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

WN	FIELD ENG	DATE DRILLED 13/4/76	AIRPHOTO NO:	CHAINAGE:	OFFSET	TEST HOLE
KD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION	ELEV	

MILE	B,C,S	NUMBER
AREA - 6 + 15		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	O = WATER CONTENT (% OF DRY WEIGHT) Δ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P C F)	DRY DENSITY (P C F)	REMARKS
0–7					Pt	PEAT 2' CLAY - SILTY SANDY PEBBLES		Vs	2, 4, 6								
7–15						ICE		ICE	8, 10, 12, 14	NO SAMPLES							
15–24									16, 18, 20, 22, 24								

Depth scale: 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

PUBLIC WORKS CANADA	DRILL HOLE REPORT	INUVIK - TUK.

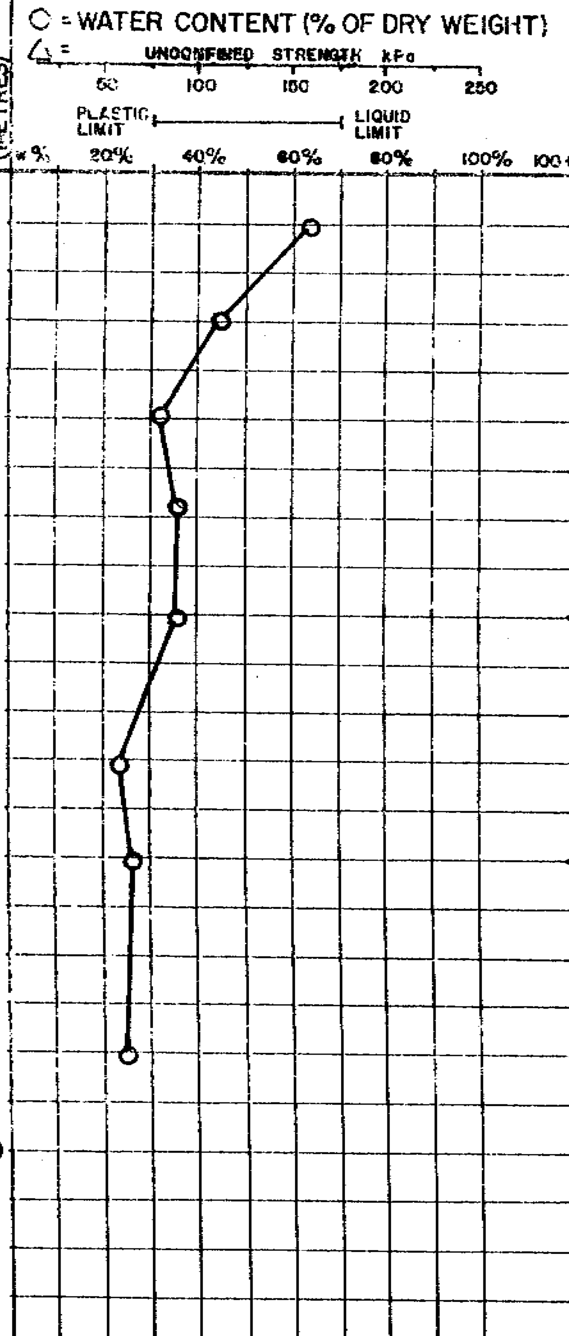
TECH. PRONYCH	RIG AIR	DATE 78/04/09	km	B.P. No. 6	HOLE No. 16

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
0–10		CLAY - SILTY SANDY		V_s (0–1.2 m)	0–3.1
		BENTONITE & SHALE FRAG'S			
10		——— 3.1 m		Ice Lenses	3.1
10–30		SHALE - CLAY MIXTURE		$V_c - V_r$	
		YELLOW - GREY TO YELLOW		Nbn	
30		——— 9.1 m			9.1
		BOTTOM OF HOLE - 9.1 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



CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
	85	14	1	SAT.	
	71	29	0	WET	
	79	21	0		
	~~52~~	~~48~~	~~0~~	MOIST	
	74	25	1	MOIST	
	68	32	0	MOIST	
	46	42	12	HUMID	PASS # 40 DRY SIEVED
	38	46	16	HUMID	✓
	32	61	7	HUMID	✓

PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk.

TECH. Pronych	RIG Air	DATE 78/10/09	km	B.P. No. 6	HOLE No. 17

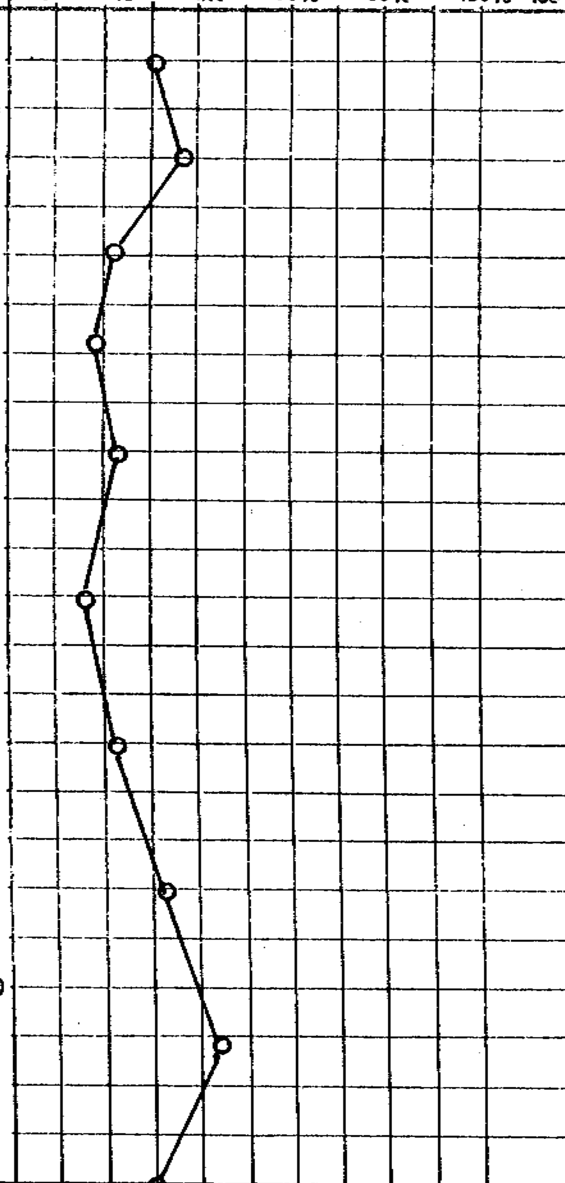
CHAINAGE | OFFSET

SOIL DESCRIPTION

- Black - Clay-Shale
  - some organics to .5m
  - ice lenses
- (1.9m) Shale. Black.
- (10.7m) Clay - Shale Mixture. Some Bentonite

ICE DESCRIPTION: Vs; Nbn; Ice Lenses

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



GRAIN-SIZE ANALYSIS

Clay %	Silt %	Sand %	Gravel %	Relative Moisture Content
	24	74	2	SAT.
	9	77	14	SAT.
	15	68	17	HUMID
	11	55	34	HUMID
	10	60	30	HUMID
	14	70	16	HUMID
	22	60	18	DAMP
	20	61	19	DAMP
	16	45	39	WET
	13	70	17	MOIST

REMARKS: All Sample Plus #40 Dry Sieved

10.7m 16-45 39 WET

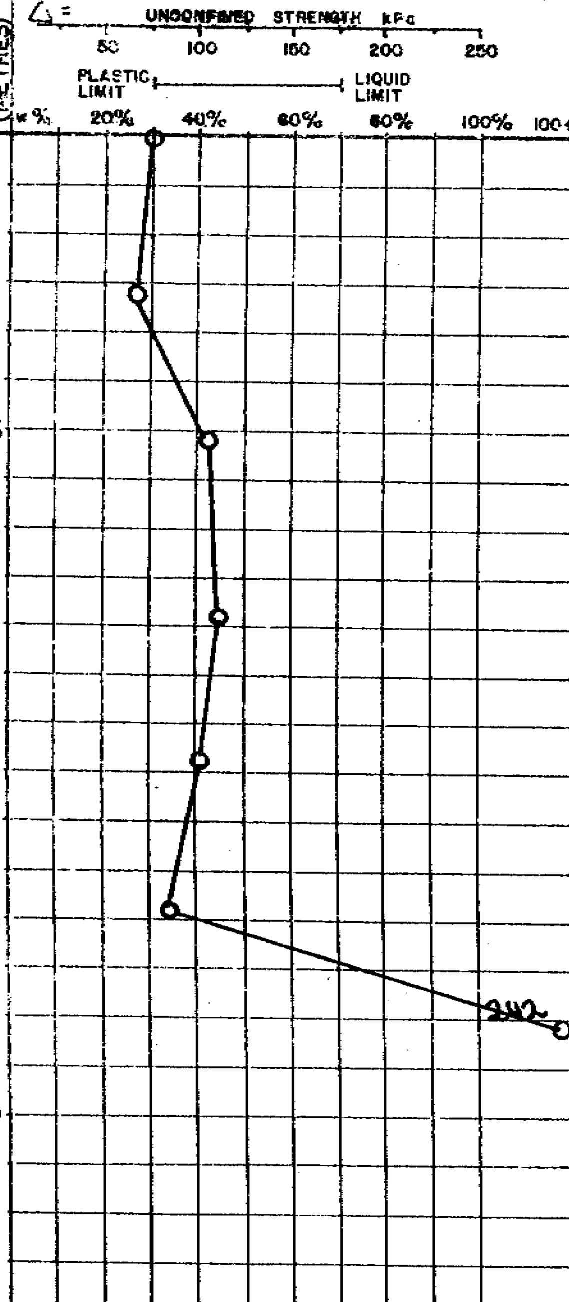
PUBLIC WORKS CANADA — DRILL HOLE REPORT

TECH.	RIG	DATE	km	B.P. No.	HOLE No.

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
40					12	13	70	17	MOIST	
42		CLAY - SHALE								
44		SOME BENTONITE			13					
46						16	74	10	HUMID	
48		BROKEN DOWN SOFT SHALE		ICE CONTENT	14					
50					15	19	62	19	MOIST	
52				INCREASES						
54				AFTER	16					
56				16 m	17	12	77	11	MOIST	
58										
60					18					
62						10	68	22	MOIST	
64					19					
66					20	10	71	19	MOIST	
68		NO RETURNS AFTER 21.0 m								
70		——— 21.3 m			21	WATER			FREE WATER	
32										
34		BOTTOM OF HOLE - 21.3			10					
36		HOLE DRILLED TO 22.9 m			11					
38										

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



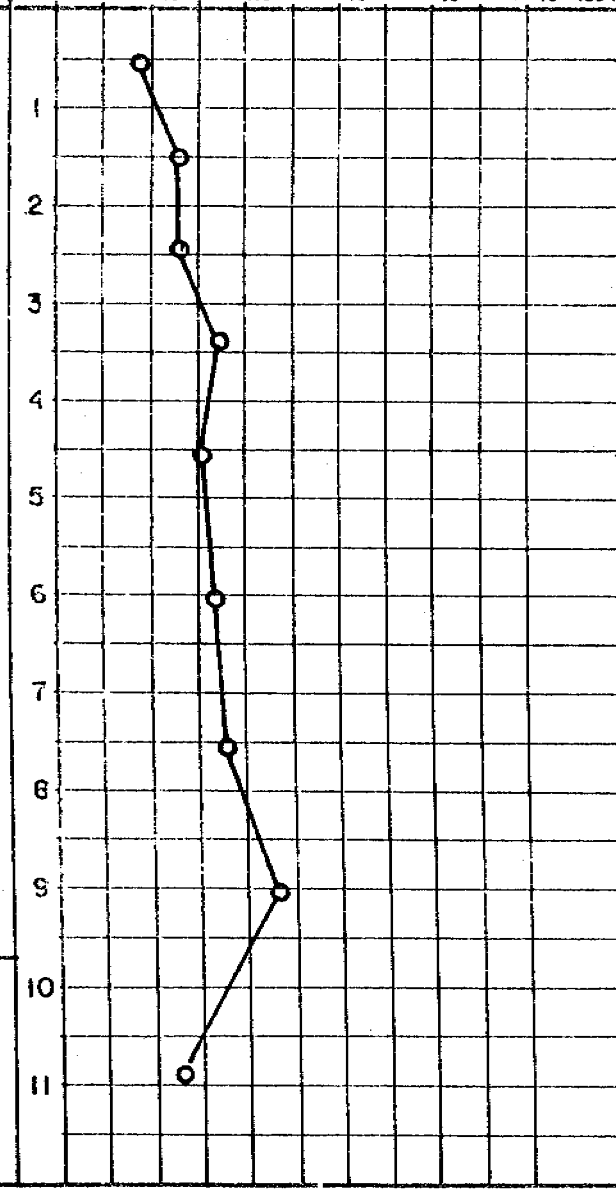
PUBLIC WORKS CANADA	DRILL HOLE REPORT	Inuvik - Tuk.

TECH. Pronych	RIG AIR	DATE 78/04/09	km	B.P. No. 6	HOLE No. 18

Column headings: 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; 20%, 40%, 60%, 80%, 100% | GRAIN-SIZE ANALYSIS: CLAY %, SILT %, SAND %, GRAVEL % | RELATIVE MOISTURE CONTENT | CHAINAGE | OFFSET | REMARKS

Soil log

Unified soil symbol	Soil description	Ice description
Pt	Peat .3m	
CI	Clay - Silty Sandy Gravelly	Vs
	Grey - Pebbles	
	Shale Fragments	
	Med. Plastic	
	Clay - Silty, Trace of Organics	
	Shale Fragments	Nbn



Grain-size analysis and moisture

Grain-size (as written)	Relative moisture content	Remarks
-20-58 22	Wet	
51-40 9	Sat.	
-72-25 3	Wet	
-70-29 1	Sat.	
-78-22 0	Wet	
-99- 1 0	Wet	
-96- 3 1	Wet	
-77-18 5	Wet	
-23-64 13	Damp	Plus #40 Dry Sieved

PUBLIC WORKS CANADA — DRILL HOLE REPORT

INUVIK - TUK.

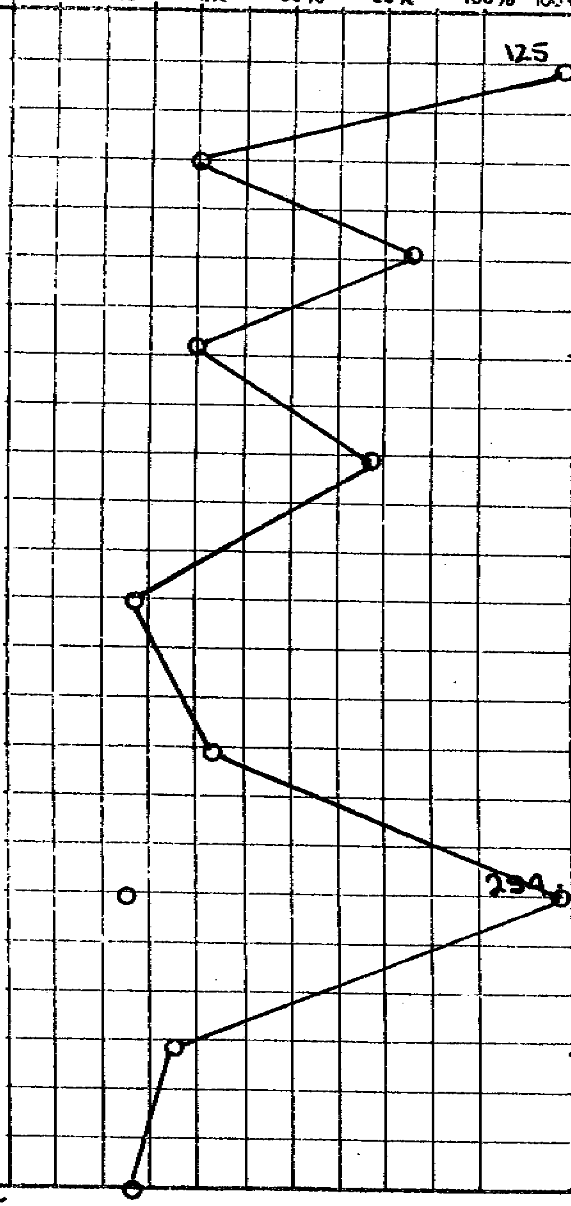
TECH. PRONYCH	RIG AIR	DATE 78/04/09	km	B.P. No. 6	HOLE No. 19

CHAINAGE | OFFSET | REMARKS

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 (20%, 40%, 60%, 80%, 100%) | GRAIN-SIZE ANALYSIS: CLAY %, SILT %, SAND %, GRAVEL % | RELATIVE MOISTURE CONTENT | REMARKS

Soil description (depth in feet 2–40, metres 1–12):

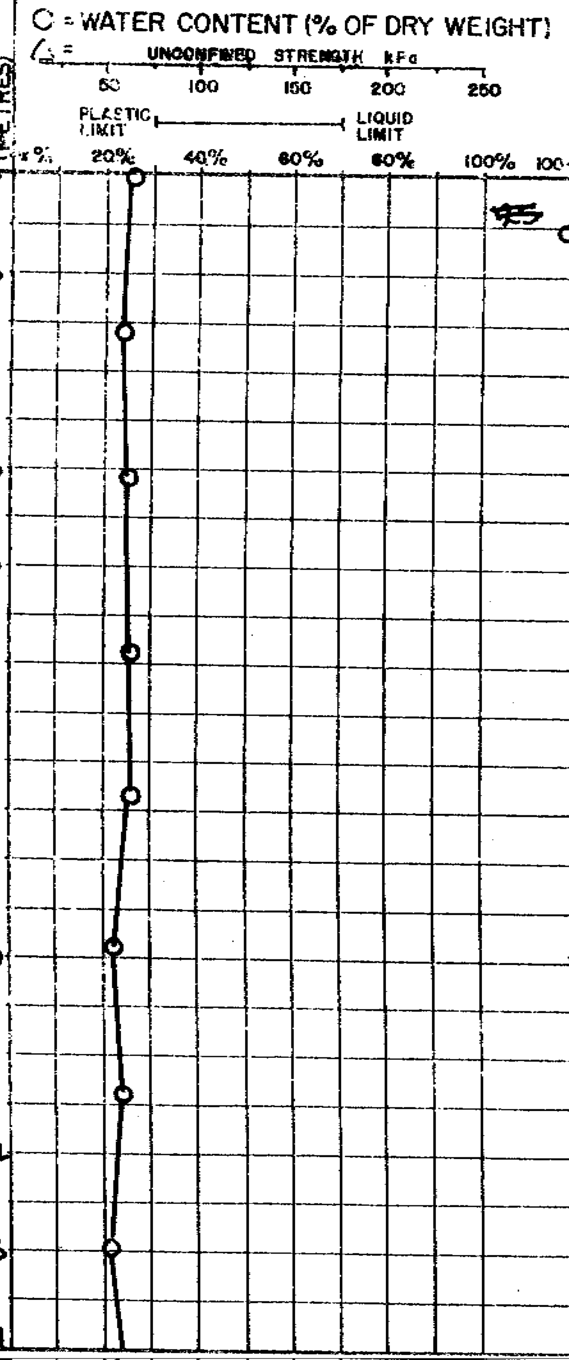
- Pt — PEAT
- .6m
- CLAY SILTY - SOME ORG.
- - SILTY
- - SHALE FRAGMENTS
- Ice description: V_s
- MED. PLASTIC
- CI
- BENTONITE ?
- GREY



Depth (m, approx.)	Clay %	Silt %	Sand %	Gravel %	Relative moisture content	Remarks
0.6		90	10	0	FREE WATER	
1.5		81	12	7	WET	
2.5		58	42	0	FREE WATER	
3.4		79	21	0	SAT.	
4.6		56	43	1	FREE WATER	
6		6	56	38	MOIST	PASS #40 DRY SIEVED
7.6		74	21	5	SAT.	
9		89	9	2	FREE WATER	
10.6		74	25	1	WET	
12		8	78	14	DAMP	PASS #40 DRY SIEVED

PUBLIC WORKS CANADA — DRILL HOLE REPORT

TECH.	RIG	DATE	km	B.P. No.	HOLE No.



DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
40					12	8	-	78	14	DAMP	Washed Dry Sieved
42		Soft Shale & Clay Mixture									
44				Moderate	13						
46				To		12	-	81	7	DAMP	✓
48				Low	14						
50				Ice	15	8	-	75	17	DAMP	✓
52				V_c-V_r							
54		Shale - Soft		/	16						
56				Nbn							
58					17	11	-	77	12	DAMP	✓
60					18						
62						7	-	41	52	DAMP	✓
64					19						
66					20	6	-	49	45	DAMP	✓
68											
70					21						
72						7	-	69	24	DAMP	✓
74					22						
76					23	6	-	50	44	DAMP	✓
78											
80					24						✓

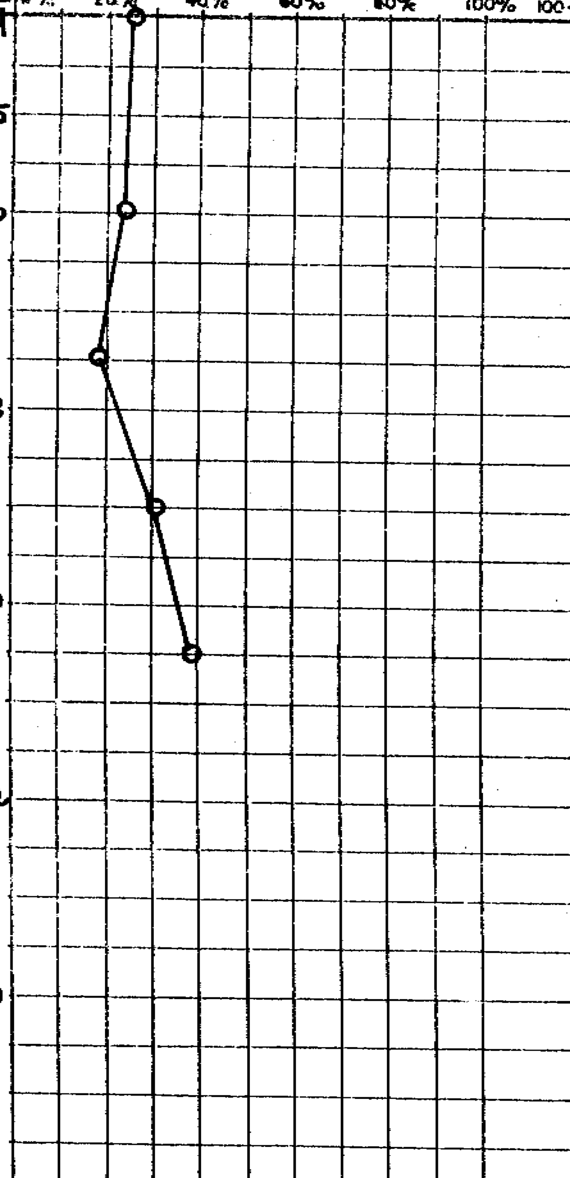
CHAINAGE	OFFSET

PUBLIC WORKS CANADA — DRILL HOLE REPORT

TECH.	RIG	DATE	km	B.P. No.	HOLE No.

CHAINAGE	OFFSET

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa (50, 100, 150, 200, 250)
PLASTIC LIMIT ├──┤ LIQUID LIMIT
0% 20% 40% 60% 80% 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
80		Shale - Soft		Vc-Vr	24	- 5 -		46	49	DAMP	Plus # 40 Dry Sieved
86				Moderate to	26	- 12 -		62	26	DAMP	✓
92				High	27	- 6 -		50	44	DAMP	✓
96		29 m Clay - Silty - Shale Frag's		10%	29	- 15 -		59	26	MOIST	✓
102	CH	Clay Silty High Plastic 31.4		Vs	30	- 71 -		28	1	WET	✓
103		Bottom of Hole - 31.4			31.4						

Depth (feet) scale: 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 103, 26, 28, 30, 32, 34, 36, 38

Depth (metres) scale: 24, 25, 26, 27, 28, 29, 30, 31, 32, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

INUVIK - TUK.

TECH. PRONYCH	RIG AIR	DATE 78/04/09	km	B.P. No. 6	HOLE No. 20

CHAINAGE	OFFSET

SOIL DESCRIPTION (UNIFIED SOIL SYMBOL: CI)

YELLOW BROWN ORG. TO .3m
CLAY - SILTY
- SHALE FRAGMENTS

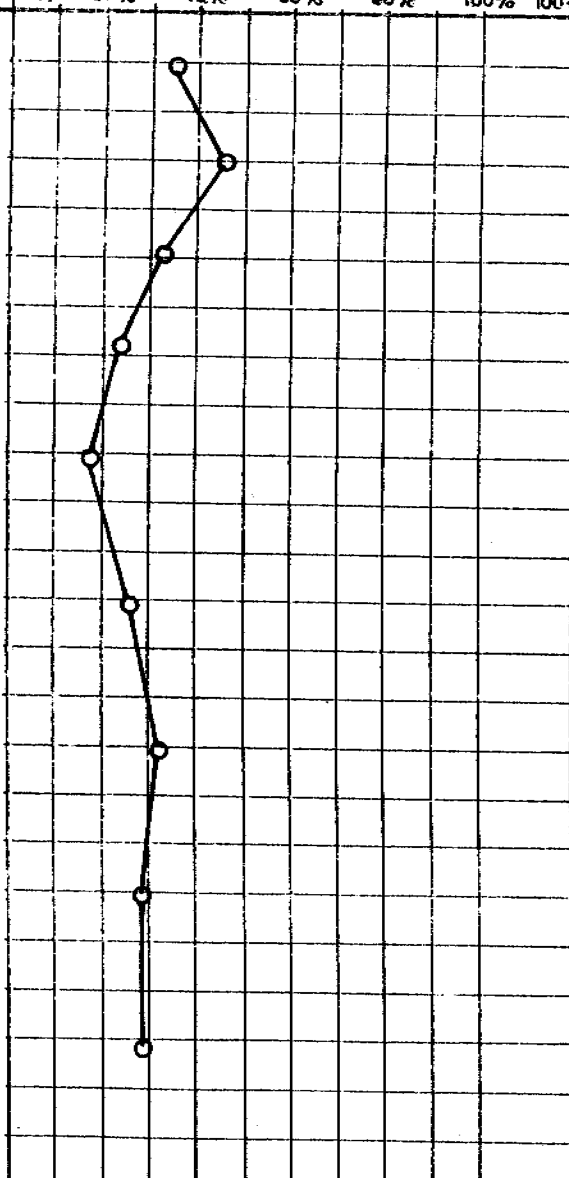
BROWN - YELLOW 1.5 m
SHALE
- SOFT
- BENTONITE

CLAY - SILTY, SHALE FRAG'S.
TALCUM ?

ICE DESCRIPTION

MODERATE TO LOW ICE
V_c-V_r
|
VX

○ = 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
-	64	33	3	DAMP
-	14	74	12	SAT.
-	12	71	17	MOIST
-	10	43	47	DAMP
-	14	53	33	HUMID
-	8	53	39	DAMP
-	12	57	31	WET
-	6	61	33	MOIST
-	15	66	19	HUMID

REMARKS

ALL SAMPLES PLUS # 40 DRY SIEVED

DRILLED TO 12.8 m ...

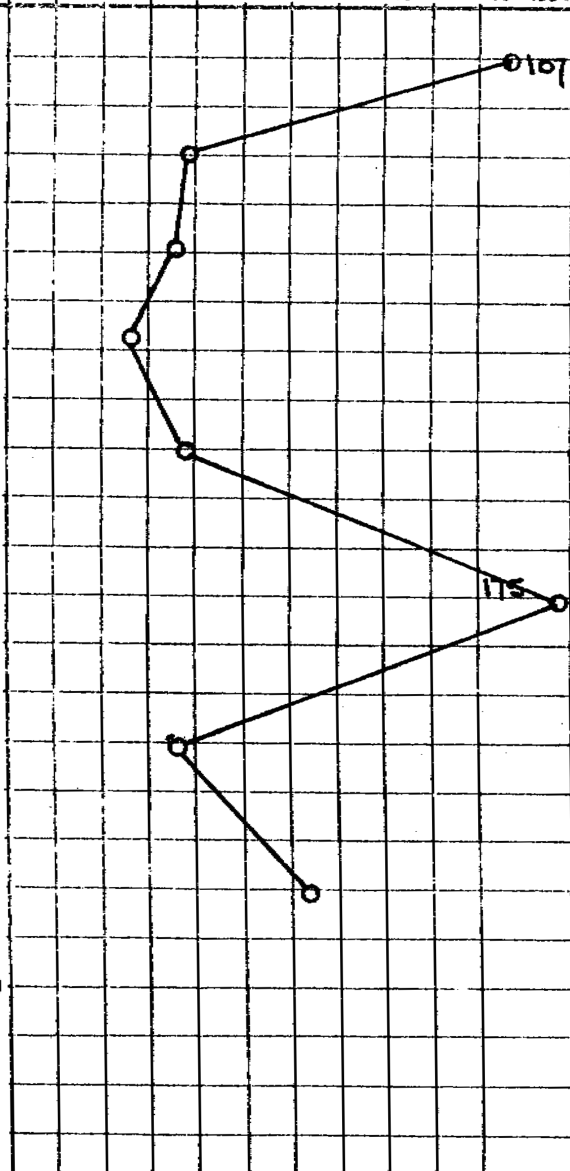
PUBLIC WORKS CANADA — DRILL HOLE REPORT — INUVIK - TUK.

TECH. PRONYCH | RIG Air | DATE 78/04/09 | km | B.P. No. 6 | HOLE No. 21

CHAINAGE | OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
	Pt	PEAT — .2 m		
2–8	CL - CI	BROWN - CLAY - SILTY SANDY - SHALE - FRAGS — 2.4 m		V_s
8–20		SHALE - SOFT. GREY - YELLOW BENTONITE — 6.1 m		
20–32	CI, CH	GREY - CLAY - SILTY MED - HIGH PLASTIC 6.4 - 9.8 SOIL + ICE — 9.8		
32–38		DIRTY ICE		ICE V_s

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



DEPTH (METRES) (approx.)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT
0.6	83		17	0	FREE WATER
1.5	60		40	0	SAT.
2.5	38		61	1	SAT.
3.4	12		61	27	MOIST
4.5	11		81	8	MOIST
6.1	60		39	1	FREE WATER
7.6	63		37	0	WET
9.1	83		17	0	SAT.

REMARKS

ALL SAMPLES PLUS # 40 DRY SIEVED

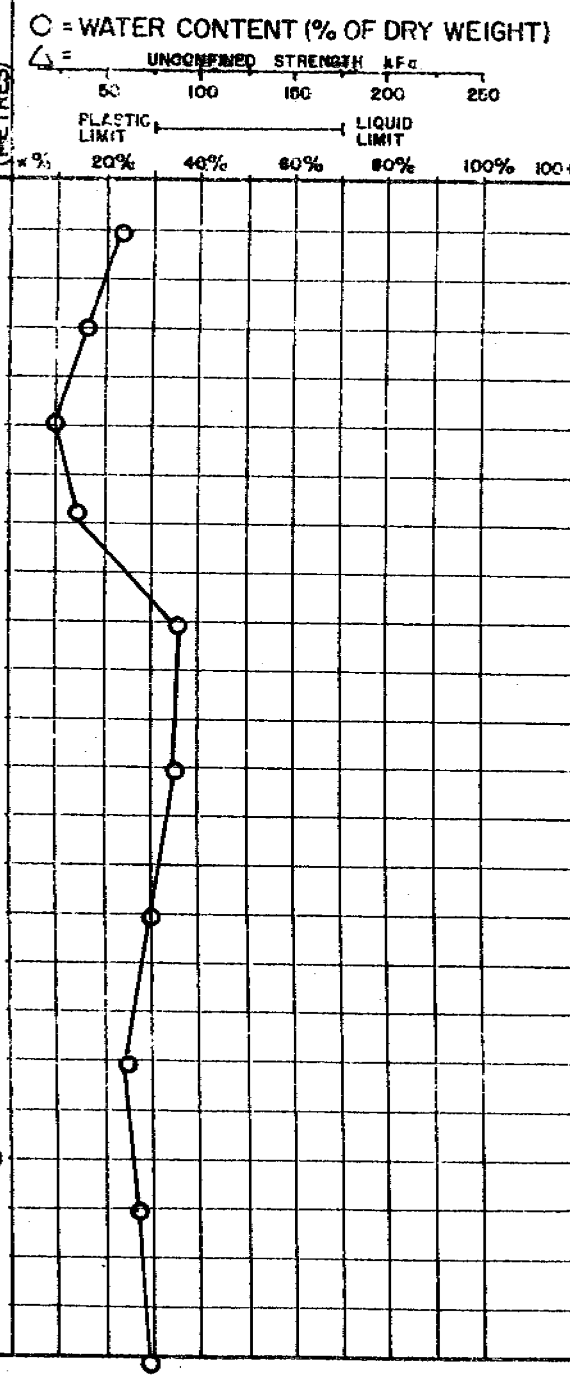
BOTTOM OF HOLE 10.7

DIRTY ...

PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | INUVIK - TUK.

TECH. PRONYCH | RIG AIR | DATE 78/04/09 | km | B.P. No. 6 | HOLE No. 22

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 .3m								
2–4	CI	CLAY-SILTY SANDY GRAVELLY		Vc-Vr		60	32	8	WET	
6	GM	GRAVEL-SHALE - SILT		I	1–2	37	36	27	SAT.	
8–10				Vx	2–3	29	30	41	WET	
12					3–4	23	41	36	SAT.	
14–16		4.3m CLAY - SILTY SANDY ICE, SHALE FRAGMENTS		ICE	4–5	71	23	6	WET	PLUS # 40 DRY SIEVED
20–22		GREY - CLAY - SILTY . SANDY - PEBBLES		Vs	6	80	19	1	WET	✓
24–26	CL I CI	LOW - MED. PLASTIC		I	7–8	68	29	3	WET	✓
28–30				Vc-Vr	9	80	19	1	MOIST	✓
34					10–11	87	13	0	WET	✓
38					12	85	13	2	WET	
						87	13		WET	✓



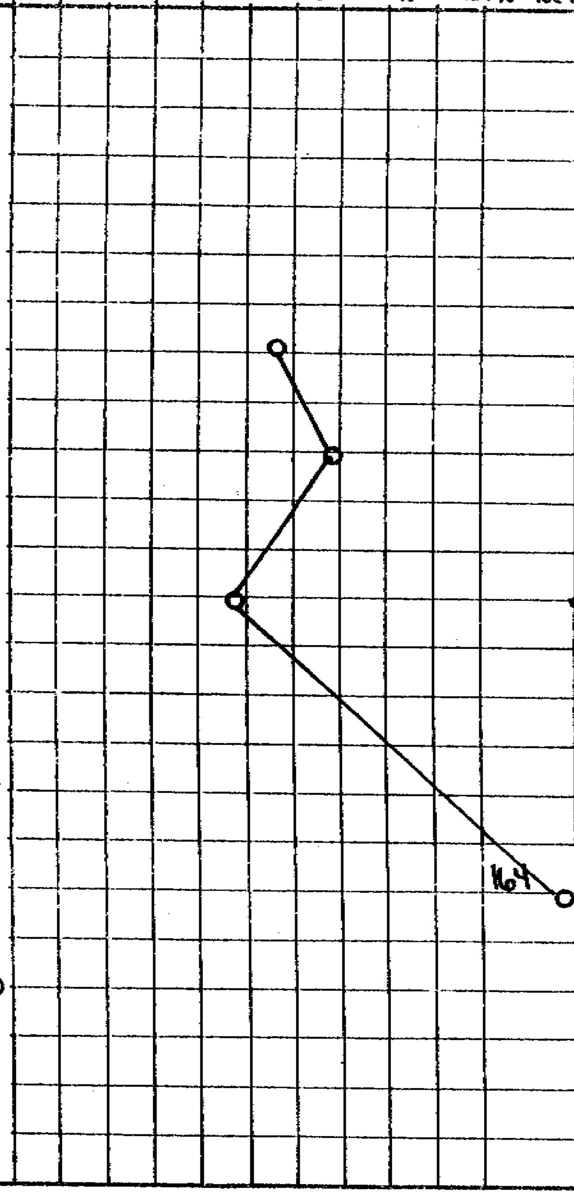
PUBLIC WORKS CANADA	DRILL HOLE REPORT	INUVIK - TUK.

TECH. PRONYCH	RIG AIR	DATE 78/04/09	km	B.P. No. 6	HOLE No. 23

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
0–1.5	Pt	PEAT .5m			0–0.5						
1.5–9		ICE & SOIL		ICE & SOIL	0.5–2.7						
9–21	CI	GREY - CLAY SILTY - SANDY - FEW PEBBLES MED. PLASTIC		V_s	2.7–6.3						
					~3.5	78-	20	2		Free Water	
					~4.6	91-	9	0		Free Water	
					~6	82-	18	0		SAT.	
21–27		ICE		ICE	6.3–8.2						
27–30	CI	CLAY - SILTY SANDY FEW PEBBLES 9.1m		V_s	8.2–9.1						
					~9.1	88-	11	1		Free Water	
30		BOTTOM OF HOLE - 9.1m									



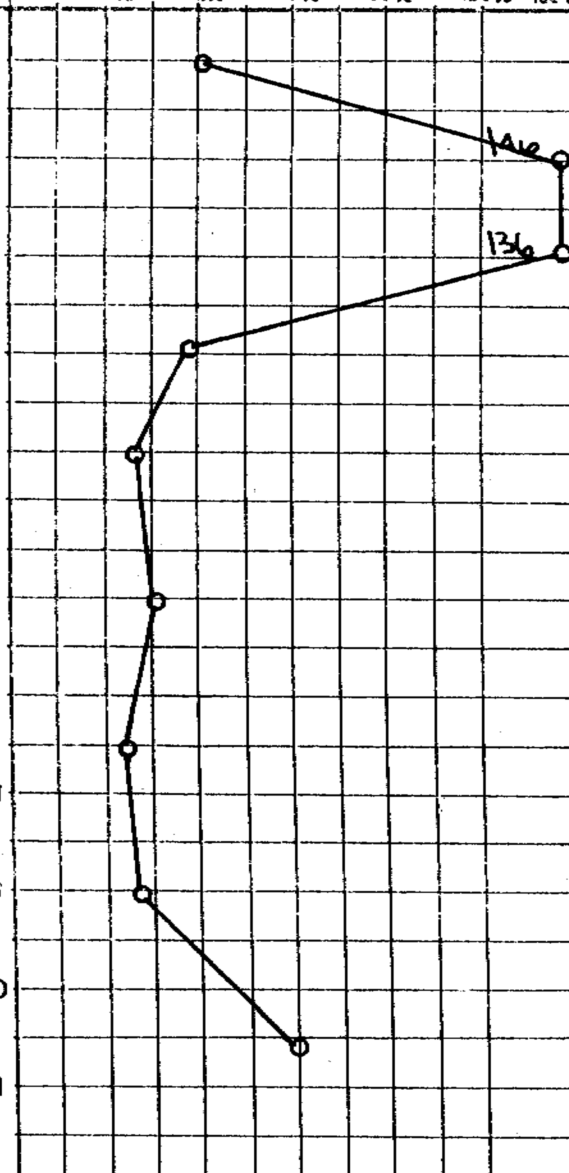
PUBLIC WORKS CANADA — DRILL HOLE REPORT

INUVIK - TUK.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	AIR	78/04/09		6	24

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	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0	Pt	PEAT .3m								
2		CLAY - SILTY - SANDY			84		14	2	WET	
4–6		GREY - PEBBLES			95		5	0	FREE WATER	
8	CI	MED. PLASTIC			86		14	0	FREE WATER	
10–12		GREY - YELLOW CLAY - SILTY - BENTONITE		VS	84		16	0	WET	
14		BLACK - SHALE FRAGMENTS			35		65	0	MOIST	PLUS #40 DRY SIEVED TO 9.1 m
20		GREY - YELLOW SHALE - SOFT			16		71	13	MOIST	
24					11		70	19	MOIST	
30					10		76	14	MOIST	
34		BROWN -			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
DEPTH (METRES): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

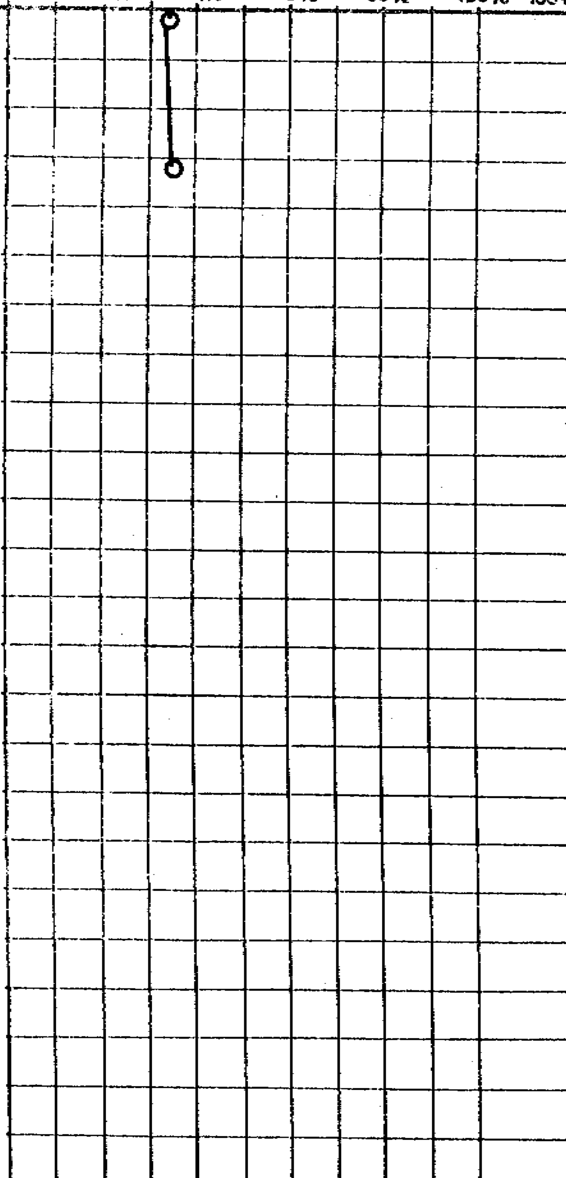
PUBLIC WORKS CANADA — DRILL HOLE REPORT

TECH.	RIG	DATE	km	B.P. No.	HOLE No.

CHAINAGE	OFFSET

O = WATER CONTENT (% OF DRY WEIGHT)
△ = UNCONFINED STRENGTH kPa: 50, 100, 150, 200, 250
PLASTIC LIMIT — LIQUID LIMIT
<5% 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
	CI	GREY - CLAY - SILTY PEBBLES - SANDY		Vc - Vr	12	-	59	- 39	2	SAT.	
		YELLOW BROWN - SHALE - SILT CLAY 13.7m			13	-	64	- 36	0	HUMID	?
		BOTTOM OF HOLE - 13.7m			14						



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

DEPTH (METRES): 12, 13, 14, 15, 4, 5, 6, 7, 8, 9, 10, 11

PUBLIC WORKS CANADA — DRILL HOLE REPORT

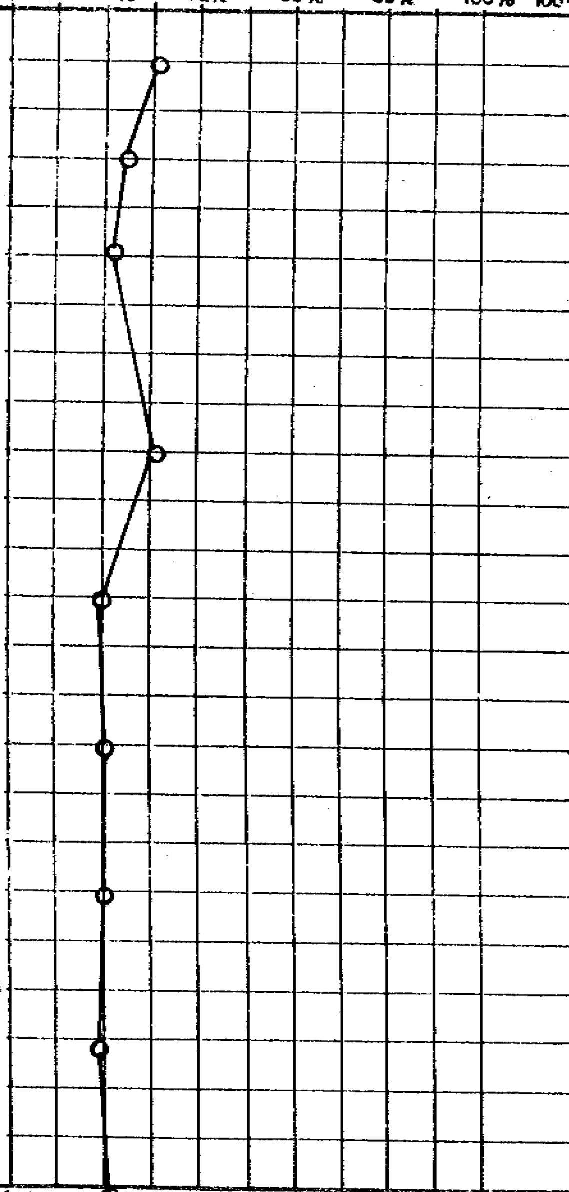
INUVIK - TUK.

TECH.	RIG	DATE	km	B.P. No.	HOLE No.
PRONYCH	AIR	78/04/10		6	25

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION
0–.2 m	Pt	PEAT		
2–8 (.2 m – 2.4 m)	CI	BROWN - CLAY SILTY SHALE FRAGMENTS MED. PLASTIC		
8–38 (2.4 m –)		BROWN - BENTONITE & SHALE GREY-YELLOW		FROZEN Nbn

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



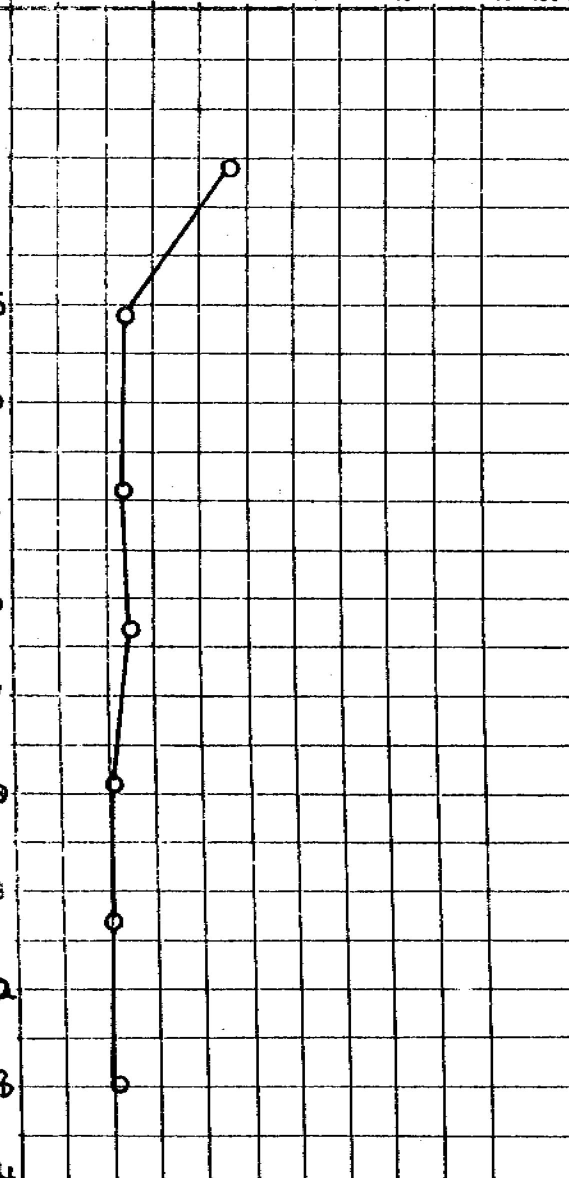
DEPTH (METRES) (approx.)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
0.5	60		40	0	MOIST	+ #40 DRY SIEVED
1.5	41		56	3	MOIST	✓
2.5	13		62	25	DAMP	✓
4.5	9		61	30	MOIST	✓
6	8		55	37	DAMP	✓
7.5	11		66	23	DAMP	✓
9	22		63	15	DAMP	✓
10.6	10		48	42	DAMP	✓
12	11		63	26	DAMP	✓

PUBLIC WORKS CANADA — DRILL HOLE REPORT

TECH.	RIG	DATE	km	B.P. No.	HOLE No.

CHAINAGE	OFFSET

C = 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)	SOIL DESCRIPTION	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
42	Grey - Shale Soft-Med.	Ice Lense	13						
6	Clay - Shale Mix	13.4 m - 13.9 m	14	57	-	42	1	SAT.	Dry Sieved
10			15	84	-	14	2	MOIST	Washed
12	Shale - Soft		16						
16			17	25	-	74	1	DAMP	+ 40 Dry Sieved
20			18	8	-	71	21	DAMP	✓
24		Vx	19						
26			20	9	-	67	24	DAMP	✓
30			21	7	-	70	23	DAMP	✓
32			22						
36	22.9 m		23	16	-	66	18	DAMP	
38	Bottom of Hole - 22.9 m		24						

Depth (feet) scale: 42, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 34

PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk.

TECH. Pronych | RIG Air | DATE 78/04/10 | km | B.P. No. 6 | HOLE No. 26

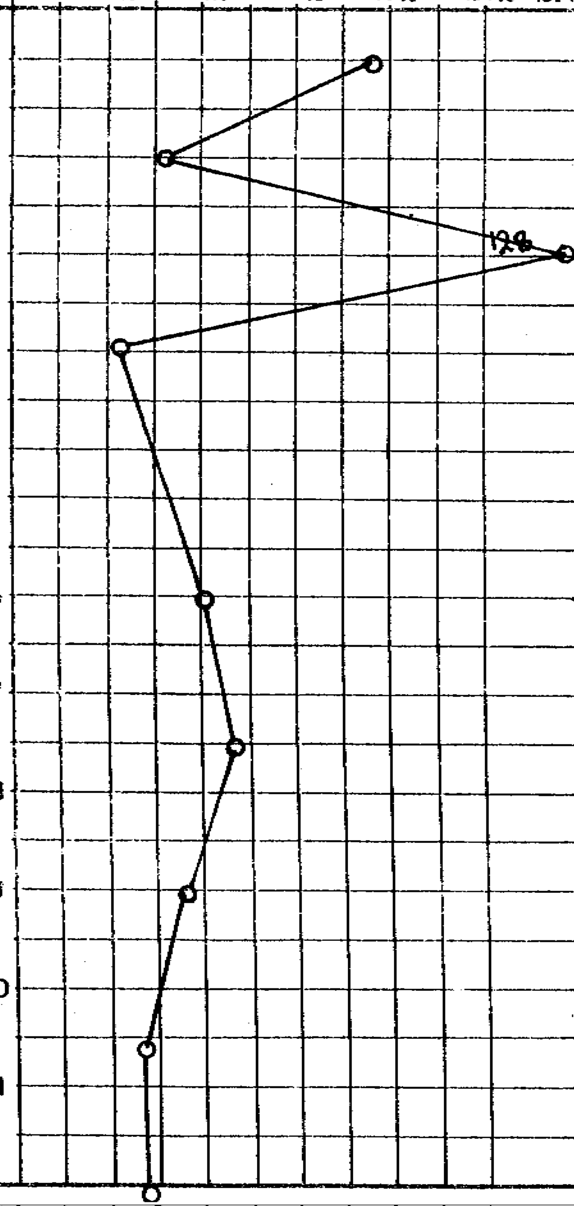
CHAINAGE | OFFSET

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

Pt Peat
.6m
Organic Clay & Shale.
Brown
Clay - Silty Sandy
- Pebbles
Grey - Clay Silty
Pebbles
3.4m
Yellow Brown
Shale & Bentonite
Clay - Silty Sandy
Gravelly
- Clay Silty
9.8m
Shale - Soft

1.8m
Ice
5.2m
V_c-V_r
|
Vx
'
Vs

○ = 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
15	78	7	Moist	Dry Sieved
47	40	13	Sat.	Wet
90	8	2	Free Water	Wet
24	53	23	Damp	Dry Sieved
54	30	16	Sat.	
94	5	1	Sat.	
89	5	6	Moist	
10	70	20	Damp	+40 Dry Sieved
11	69	20	Damp	

PUBLIC WORKS CANADA — DRILL HOLE REPORT

TECH.	RIG	DATE	km	B.P. No.	HOLE No.

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
		SHALE - SOFT					-11-		69	20	DAMP	
45		13.7m			13		-12-		72	16	DAMP	
					14							

Chart scale: △ = 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: 13, 14, 3, 4, 5, 6, 7, 8, 9, 10, 11

CHAINAGE | OFFSET

PUBLIC WORKS CANADA — DRILL HOLE REPORT — Inuvik - Tuk.

TECH. Pronych	RIG Air	DATE 78/04/10	km	B.P. No. 6	HOLE No. 27

CHAINAGE	OFFSET

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	Pt	Peat .2m			
2		Clay - Silty			
4		Few Pebbles .9m			1
6		Dirty Ice		Vs	2
8				Ice	
10					3
12					
14					4
16					5
18					
20					6
22					
24					7
26					8
28		8.5m Clay & Shale		Vs Frozen	
30		9.1m			9
32		Bottom of Hole - 9.1m			
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+

No Samples Taken

GRAIN-SIZE ANALYSIS				RELATIVE MOISTURE CONTENT	REMARKS
CLAY %	SILT %	SAND %	GRAVEL %		

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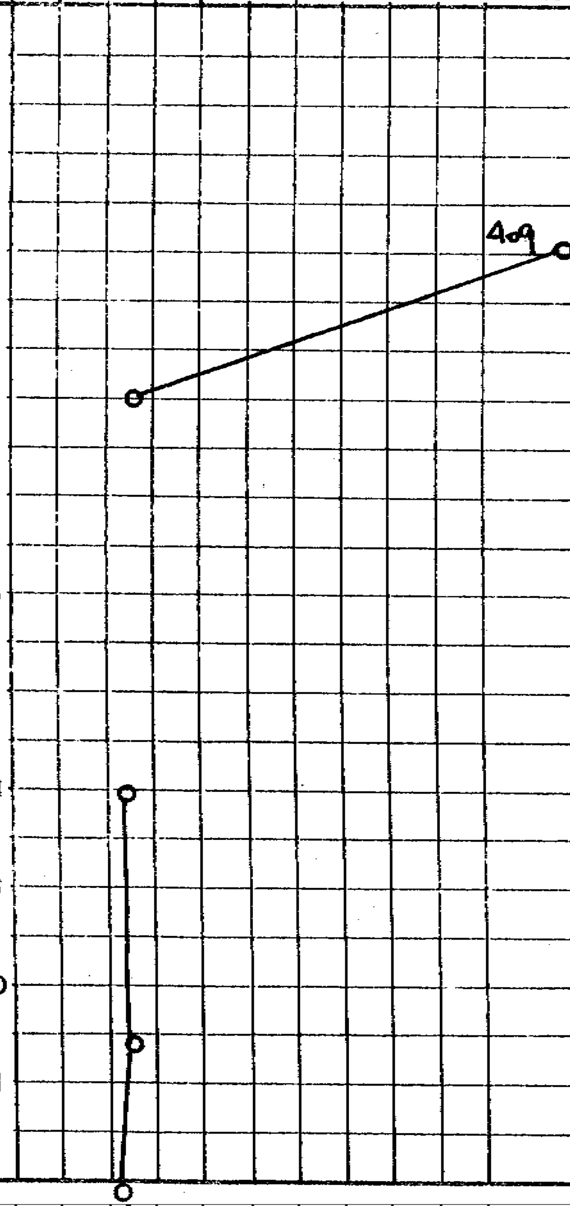
PUBLIC WORKS CANADA | **DRILL HOLE REPORT** | INUVIK - TUK.

TECH. PRONYCH | RIG AIR | DATE 78/04/10 | km | B.P. No. 6 | HOLE No. 28

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	Pt	PEAT .2m			
2–6		ICE & SOME SOIL FEW PEBBLES 1.8m		ICE & SOIL	1
6–16	CL	BROWN - CLAY - SILTY SHALE FRAGMENTS LOW PLASTIC 5.2m		VS	2–5
18–24		ICE & SOIL 7.3m		ICE & SOIL	5–7
24–30		BLACK - CLAY SILTY SANDY - SHALE FRAGMENTS 9.5m			7–9
30–38		BLACK - SHALE - SOFT CRYSTAL LIKE			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	CHAINAGE / OFFSET / REMARKS
-	80	20	0	POOL WATER	
-	49	45	6	SAT.	
-	11	68	21	DAMP	+40 DRY SIEVED
-	17	72	11	DAMP	✓
-	14	70	16	DAMP	

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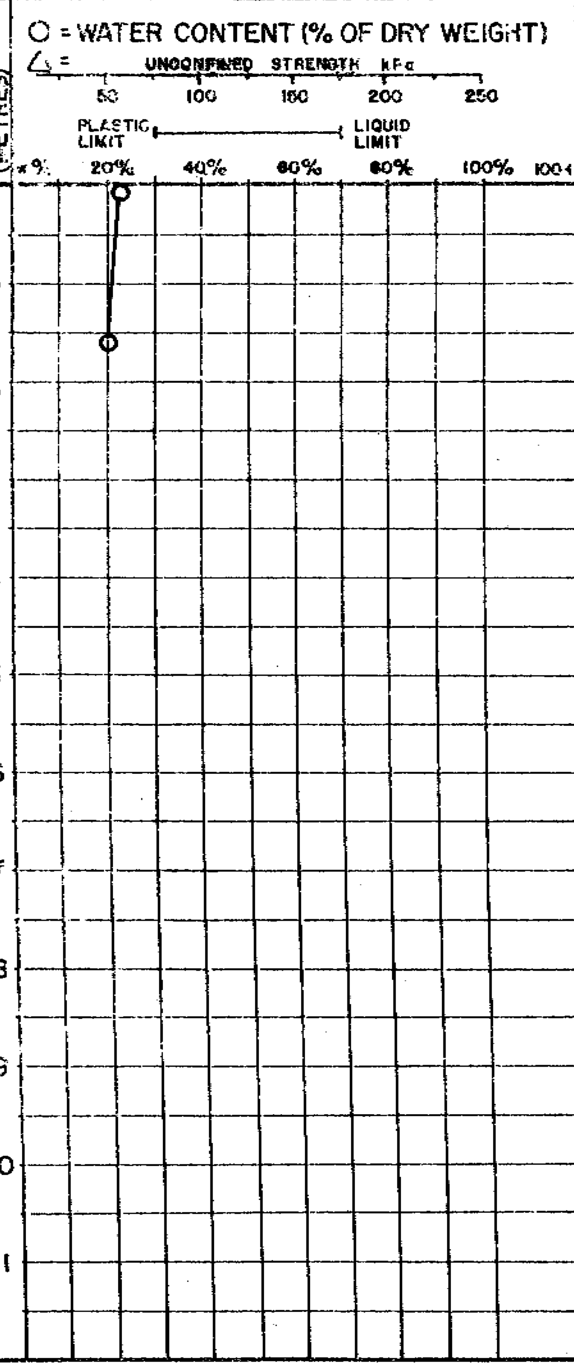
PUBLIC WORKS CANADA — DRILL HOLE REPORT

TECH.	RIG	DATE	km	B.P. No.	HOLE No.

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)	CLAY %	SILT %	SAND %	GRAVEL %	RELATIVE MOISTURE CONTENT	REMARKS
		SHALE - SOFT				-14-		70	16	DAMP	+40 DRY SIEVED
2											
4		GREY-WHITE CRYSTAL LIKE			13						✓
4.5		CLAY SILTY - SHALE FRAGS. 13.7m				-22-		72	6	DAMP	
6					14						
8											
10					3						
12											
14					4						
16											
18					5						
20					6						
22											
24					7						
26											
28					8						
30					9						
32											
34					10						
36					11						
38											

CHAINAGE	OFFSET



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INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/76	AIRPHOTO NO:	CHAINAGE	OFFSET	TEST HOLE
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE	VEGETATION	ELEV	

MILE	B,C,S	NUMBER
AREA	9	1

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	WATER / ICE CONTENT	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
0 – 4"					Pt	PEAT 4"										
4" – 13'						CLAY - SILTY PEBBLES 13'		VS	NO SAMPLES							
13' – 19.5'						ICE 19.5'		ICE								
19.5' – 26'								VS								

BOTTOM OF HOLE - 26'

INUVIK - TUK

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 29/3/76	AIRPHOTO NO:	CHAINAGE:
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:

OFFSET

ELEV

TEST HOLE

MILE	B,C,S	NUMBER
AREA-9-2		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT .5											
2 – 16						CLAY - SILTY PEBBLES HIGH ICE		Vs	2 – 16	NO SAMPLES							
16 – 19						ICE		ICE	16 – 19								
20 – 24						CLAY-SILTY PEBBLES			20 – 24								

ICE ICE

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/76	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
AREA - 9-3		

DEPTH (FEET)	SOIL DESCRIPTION	ICE DESCRIPTION	REMARKS
0–.5'	Pt PEAT .5'		
.5'–13'	CLAY - SILTY - PEBBLES	Vs	
13'–16'	ICE	ICE	
16'–18'	GRAVEL - SANDY		
18'–26'	LAYERS OF CLAY-SILT & ICE	Vs	
26'–30'	CLAY - SILTY PEBBLES		

NO SAMPLES

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)

BOTTOM OF HOLE - 30'

INUVIK - TUK

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 20/3/76	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRODIYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
AREA - 9 - 4		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
					Pt	PEAT .5'		
2–14						COMBINATION OF SILT - SAND-STONE LIMESTONE & SHALE LOOSE RED & YELLOW LAYERS - DAMP TO MOIST THROUGHOUT		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

NO SAMPLES

GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL % | WET DENSITY (P.C.F.) | DRY DENSITY (P.C.F.)

REMARKS

HOLE LOCATED ON A SMALL KNOB WITH SHALE & SANDSTONE FRAGMENTS ON SURFACE.

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/76	AIRPHOTO NO:	CHAINAGE	OFFSET	
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV	

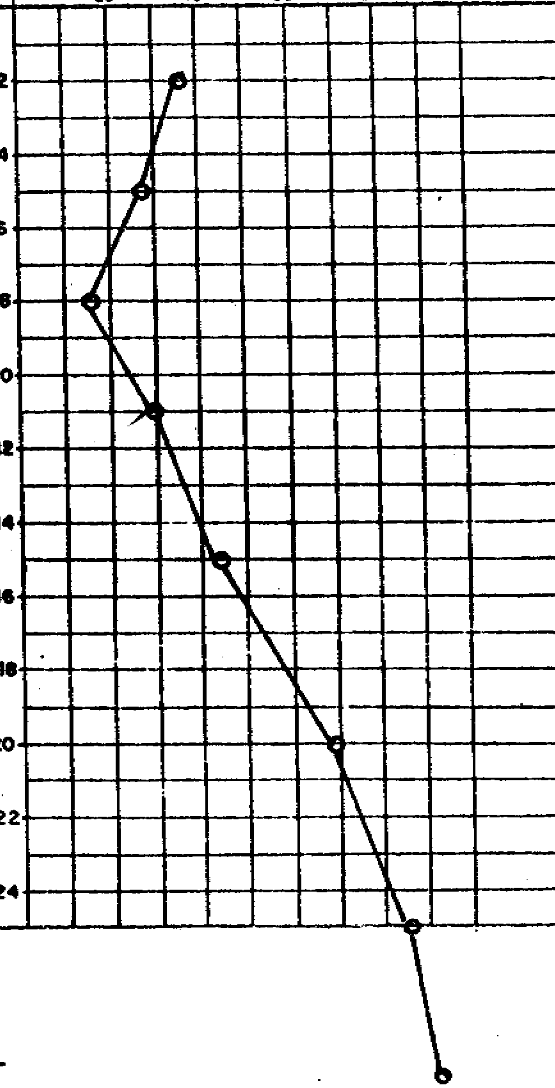
TEST HOLE		
MILE	B,C,S	NUMBER
AREA - 9 - 5		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)
					Pt	PEAT .5'			
					ML	SILT - SANDY		VS	2
8						GROVELLY			8
10					CL CI	CLAY - SILTY SANDY			10
14						ICE WITH A LITTLE SOIL		ICE	14

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT

20 40 60 80 100 100+



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	79	-	21	0	WET		
5	54		45	1	SAT.		
8	44	-	31	25	WET		
11	81	-	19	0	FREE WATER		
15	74	-	26	0	SAT.		
20	63	-	37	0	FREE WATER		
25	91	-	9	0	FREE WATER		
30	82	-	18	0	SAT.		

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/70	AIRPHOTO NO:	CHAINAGE:	OFFSET	
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV	

TEST HOLE

MILE	B,C,S	NUMBER
AREA -9	- 6	

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 1'											
2						SOIL & ICE		ICE	2								
4									4								
6									6								
8									8	NO SAMPLES							
10						11'			10								
12						CLAY - SILTY -SANDY -PEBBLES		V_s	12								
14						15'			14								
16						BOTTOM OF HOLE - 15'			16								
18									18								
20									20								
22									22								
24									24								

Inuvik - Tuk.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/76	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
AREA-9-7		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 1'											
2						SOIL & ICE		ICE	2								
4						5.5			4								
6						CLAY - SILTY PEBBLES			6								
8									8								
10									10	NO SAMPLES							
12								Vs	12								
14									14								
16									16								
18									18								
20									20								
22									22								
24									24								

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/76	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE

MILE	B,C,S	NUMBER
AREA - 9 - 8		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0					Pt	PEAT — 8"		
2						GRAVEL - SANDY		
4						COBBLES		
6						- DRY		
8								
10								
12						CLAYEY @ 11'		
14						— 15'		
16						BOTTOM OF HOLE - 15'		
18						- HOLE CAVING.		
20								
22								
24								

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT —— LIQUID LIMIT
20 40 60 80 100 100+

NO SAMPLES

GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL %
WET DENSITY (P.C.F.) | DRY DENSITY (P.C.F.)

REMARKS

HOLE LOCATED ON A SMALL KNOB OF GRAVEL.

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/76	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:
CHAINAGE:	OFFSET	VEGETATION:	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
AREA-9-9		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0–1'					Pt	PEAT		
1'–8'						CLAY - SILTY		Vs
8'–13'						GRAVEL- SANDY CLAYEY		
13'–15'						CLAY - SILTY		
15'–						SOIL & ICE		ICE

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

NO SAMPLES

GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL %
WET DENSITY (P.C.F.) | DRY DENSITY (P.C.F.)

REMARKS

BOTTOM OF HOLE - 30'

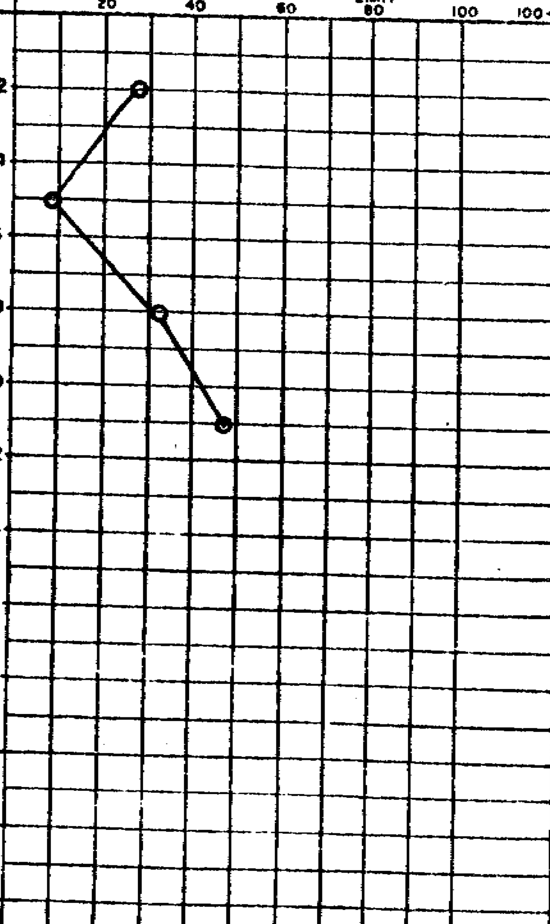
INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 13/4/76	AIRPHOTO NO:	CHAINAGE:		TEST HOLE
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION	OFFSET	MILE / B,C,S / NUMBER: AREA-9-10
					ELEV	

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
20 40 60 80 100 100+



DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–2"					Pt	PEAT 2"									
2"–4'					CI	CLAY-SILTY SANDY 4'		Vc-Vr	62		38	0	WET.		
4'–11'					SC	SAND-GRAVELLY SILTY-CLAYEY 11'		Vs	37		44	19	MOIST		
									28		58	14	FREE WATER		
11'–13'					CL CI	CLAY-SILTY 13'			89		11	0	SAT.		
13'–15½'						ICE 15½'		ICE							
15½'–20'						SHALE FRAG'S. GRAVEL SAND 20									
20'–24'						ICE		ICE							

BOTTOM OF HOLE - 80'

INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 18/4/76	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA - 9 - 11		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 3"											
2						CLAY - SILTY			2								
4					CL CI			Vs	4								
6									6								
8									8	NO SAMPLE							
10						ICE		ICE	10								
12									12								
14									14								
16						BOTTOM OF HOLE - 15'			16								
18									18								
20									20								
22									22								
24									24								

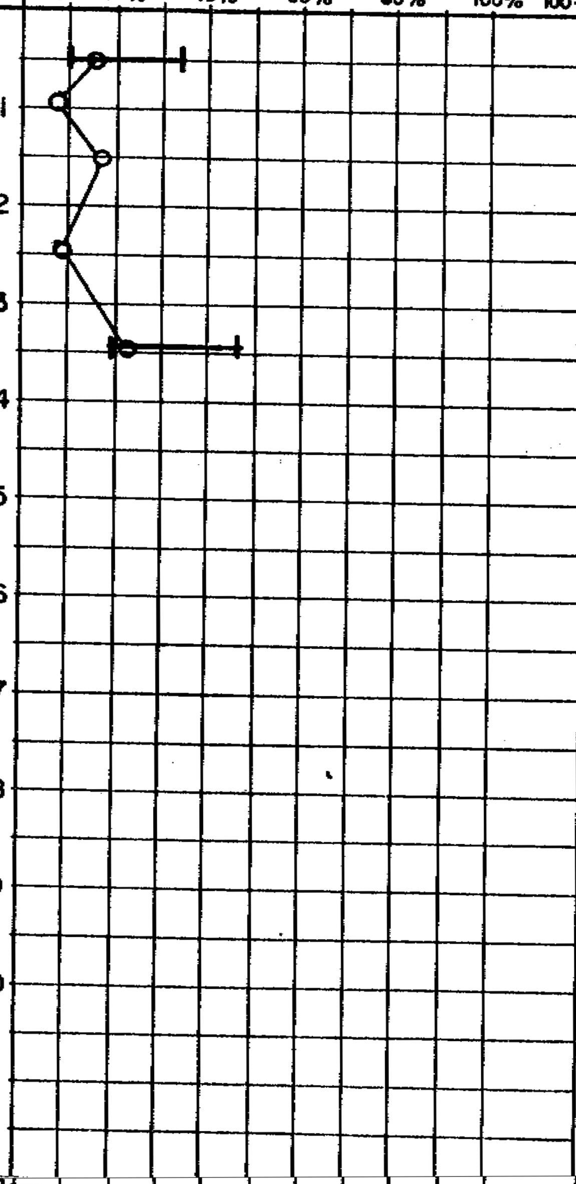
PUBLIC WORKS CANADA — DRILL HOLE REPORT

Inuvik - Tuk.

TECH. D. Pronych	RIG Air	DATE 80/03/15	km	B.P. No.	HOLE No. [redacted]9-12

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION RESISTANCE	ICE DESCRIPTION	DEPTH (METRES)
	Pt	Peat .3 m			
2–8	CI	Clay - Silty Gravelly - Sandy - Pebbles		Vr - Vc	1
8–10	GM	Gravel-Sand Mix Silty		Frozen	2
10–13	CI	Clay - Silty Sandy Med. Plastic 4.0			3
14		Ice & Soil 4.6 m		Vs	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+



GRAIN-SIZE ANALYSIS			
CLAY %	SILT %	SAND %	GRAVEL %
51	-	36	13
33	-	45	22
49	-	41	10
12	-	45	43
82	-	15	3

RELATIVE MOISTURE CONTENT	CHAINAGE	OFFSET	REMARKS

SEARCH AREAS #10 and #11

Landform and Location:	A series of small glacio-fluvial deposits - possible kames and/or crevasse fillings - west of Noell Lake at approximately Mile 984 of the Mackenzie Highway.
Material:	Sand and gravel cap over massive ice.
Volume:	Very limited - less than 25,000 cu. yds. total in several small features.
Conclusion:	Unsuitable for development. Features are very small and shallow. Will provide culvert gravel with selective extraction. Suggest periodic stripping of gravel from features during summer when construction in progress.


NOELL LAKE
M
985
AREA 11


POWER
10-1
10-2
10-7

985
984
2°30'
WINTER ROAD
AREA

INUVIK - TUK

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 25/3/76	AIRPHOTO NO:	CHAINAGE	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE	VEGETATION	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
AREA - 10 - 1		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 2"											
2						CLAY - SILTY SANDY PEBBLE			2								
4									4								
6								$V_c - V_r$	6								
8									8	NO SAMPLES							
10									10								
12									12								
14									14								
16								V_x	16								
18									18								
20									20								
22									22								
24									24								

BOTTOM OF HOLE - 30'

INUVIK - TUK

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN | FIELD ENG | DATE DRILLED 25/3/76 | AIRPHOTO NO | CHAINAGE

CKD | TECH PRONYCH | RIG AIR | SURFACE DRAINAGE | OFFSET | VEGETATION | ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA-10-1		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2						PEAT & ICE			2								
6						SOIL & ICE			4, 6								
8, 10, 12, 14, 16						GRAVEL - SANDY CLAYEY		Vc-Vr	8, 10, 12, 14, 16	NO SAMPLES							
20, 22						17.5' CLAY - SILTY - SANDY - PEBBLES		Vs	18, 20, 22, 24								

INUVIK - TUK.

DRILL HOLE REPORT

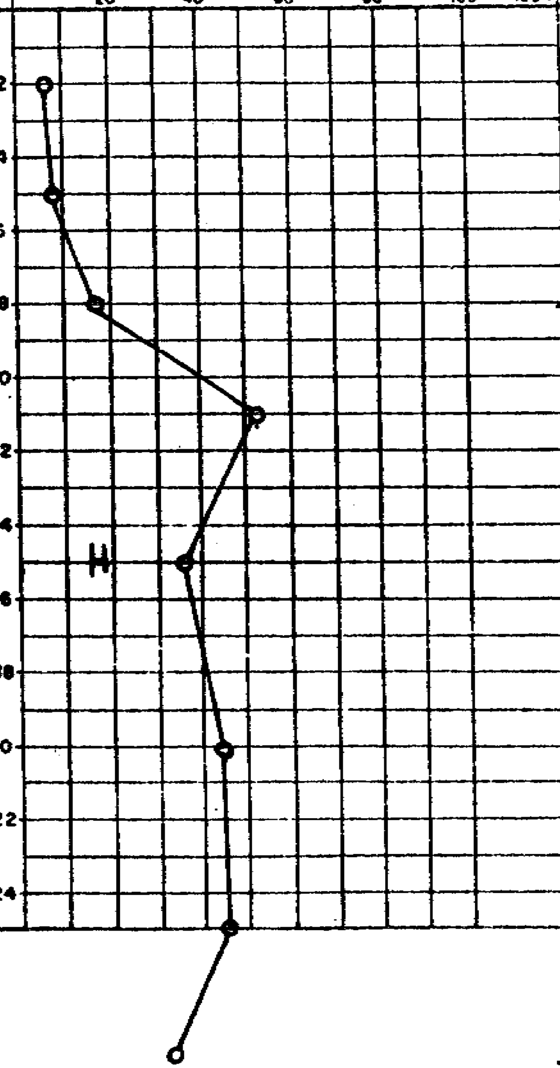
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/70	AIRPHOTO NO:	CHAINAGE	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA - 10 - 3		

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION
0 – 4'	Pt	PEAT	
4' – 9'	SC	SAND - SILTY, GRAVELLY, CLAYEY	Vx
9' – 30'	ML	SILT - CLAYEY, SANDY	Vs

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



DEPTH (FEET)	CLAY / SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)
2	29	59	12	DAMP	
5	22	58	20	MOIST	
8	28	62	10	WET	
11	84	16	0	FREE WATER	
15	56	44	0	✓	✓
20	77	23	0	✓	✓
25	84	16	0	✓	✓
30	84	16	0	WET	

REMARKS

BOTTOM OF HOLE - 30'

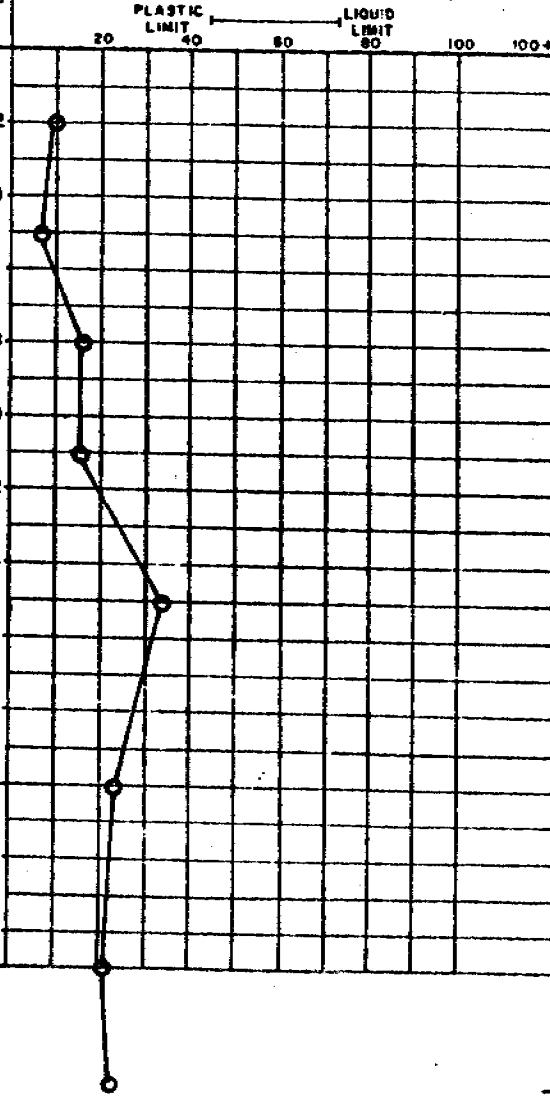
INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 26/3/76	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA -	10	- 4

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0–.5'					Pt	PEAT .5'		
.5'–12'					GM	GRAVEL - SANDY SILTY		Vc - Vr
12'–17'					CL CI	CLAY - SILTY SANDY PEBBLES		
17'–					SC	SAND - SILTY CLAYEY PEBBLES		



DEPTH (FEET)	GRAIN-SIZE ANALYSIS: CLAY % / SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.) / DRY DENSITY (P.C.F.)
2	22	32	46	DAMP
5	12	41	47	MOIST
8	18	49	33	SAT.
11	16	53	31	SAT.
15	80	19	1	WET
20	32	66	2	SAT
25	21	78	1	SAT
	18	80	2	SAT.

REMARKS

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

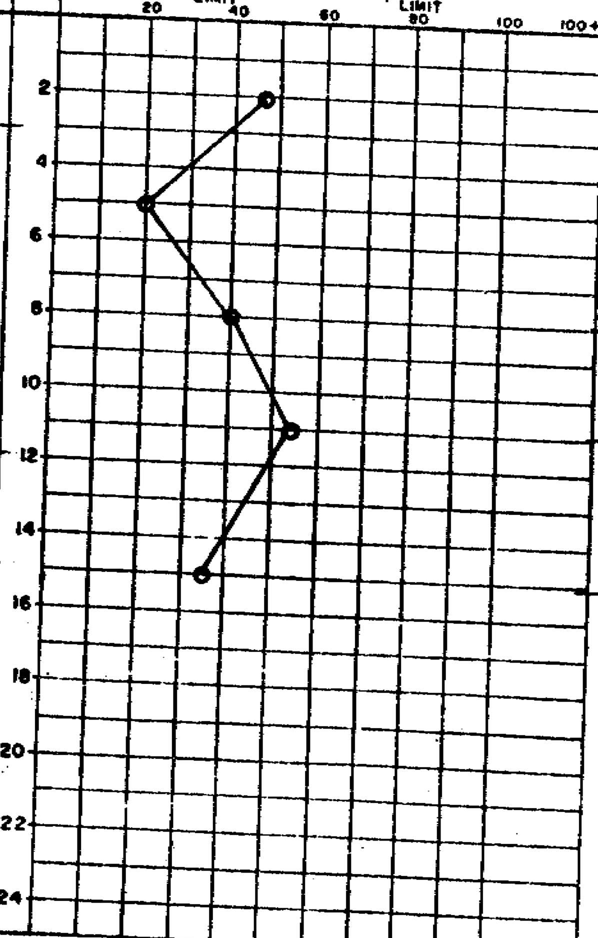
DWN	FIELD ENG	DATE DRILLED 24/3/76	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:
CHAINAGE:	OFFSET	VEGETATION:	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
AREA - 10 - 5		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
					Pt	PEAT — 4"		
2					CL / CI	CLAY - SILTY SANDY		
6, 8, 10						SOIL & ICE (CLAY SILTY)		
12, 14					CL / CI	CLAY - SILTY SANDY — 15		
16						BOTTOM OF HOLE - 15'		
20, 22, 24								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
-	88 -	12	0	DAMP		
-	74 -	25	1	SAT.		
-	89 -	11	0	SAT.		
-	84 -	16	0	FREE WATER		
-	86 -	14	0	SAT.		

Inuvik - Tuk.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

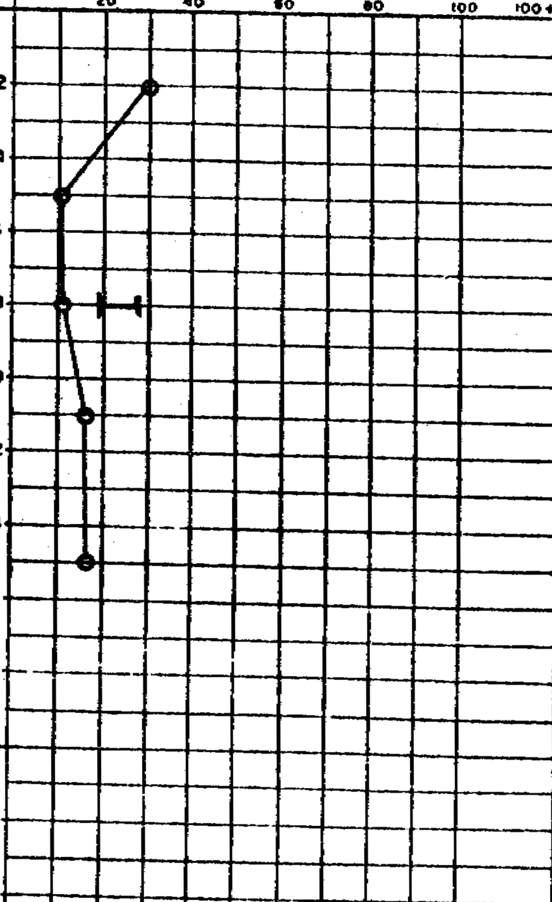
DWN	FIELD ENG	DATE DRILLED 13/4/76	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:
CHAINAGE:	OFFSET	VEGETATION	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
AREA - 10 - 6		

DEPTH (FEET)	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0 – 2"	Pt	PEAT								
2" – 2½'		CLAY - SILTY SANDY								
2				80	20	0		Moist		
2½' –	GC	GRAVEL - SAND - CLAY MIX.	Vc - Vr							
5				25	39	36		Wet		
8				18	34	48		Wet		
11				14	44	42		SAT.		
15				25	47	28		Sat		
18		NO RETURN'S AFTER 18'								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ——— LIQUID LIMIT



BOTTOM OF HOLE - 30'

Inuvik - Tuk.	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 13/4/76	AIRPHOTO NO:	CHAINAGE	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
AREA - 10 - 7		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	Peat — 4"											
2					CL	CLAY - SILTY			2								
4–12						ICE		ICE	4–12	NO SAMPLES							
14						— 15'			14								
						BOTTOM OF HOLE - 15'											
16–24									16–24								

INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 13/4/71	AIRPHOTO NO:	CHAINAGE
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION
OFFSET	ELEV			

TEST HOLE		
MILE	B,C,S	NUMBER
AREA - 10-B		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0–7'					Pt	PEAT		Vs
7'–15'						CLAY - SILTY		
15'						BOTTOM OF HOLE - 15'		

○ = WATER CONTENT (% OF DRY WEIGHT)

△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT

20 40 60 80 100 100+

NO SAMPLES

GRAIN-SIZE ANALYSIS: CLAY % | SILT % | SAND % | GRAVEL %

WET DENSITY (P.C.F.) | DRY DENSITY (P.C.F.)

REMARKS

INUVIK - TUK.

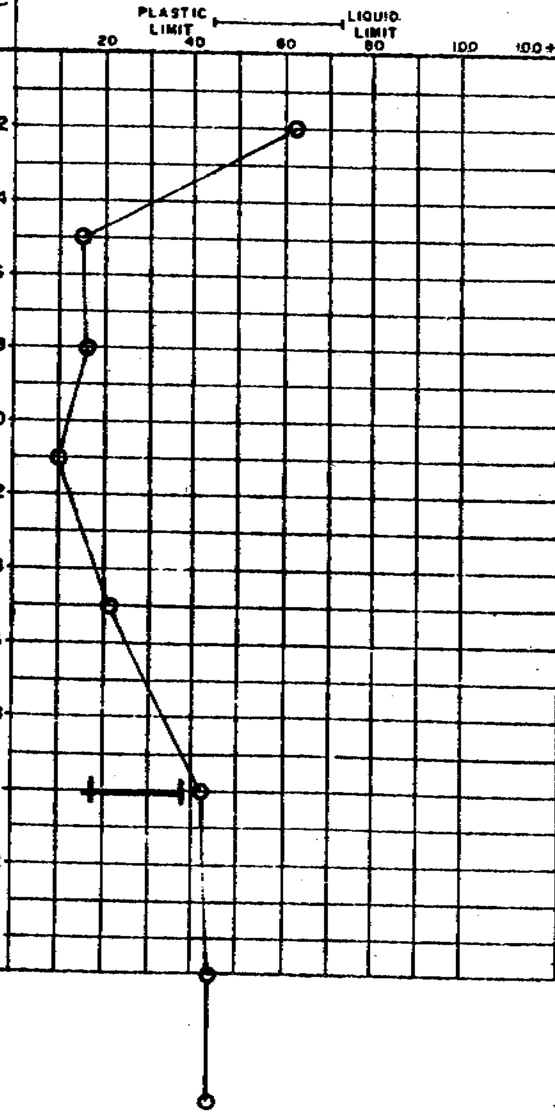
DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 13/4/76	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA - 11 - 1		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0					Pt	PEAT		
0–4'					Sc	SAND - SILTY CLAYEY PEBBLES GRAVELLY		Vs
4'–13'					Sc			Vc - Vr
13'–25'					Cl	CLAY - SILTY SANDY PEBBLES MED. PLASTIC		Vs

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
-	26	65	9			Free Water
-	19	54	27			Sat.
-	19	61	20			Wet
-	19	41	40			Wet
-	64	28	8			Wet
-	86	19	1			Sat.
-	83	15	2			Sat.

BOTTOM OF HOLE - 30'

- 76 - 19 - 5 Sat.

INUVIK - TUK.

DRILL HOLE REPORT

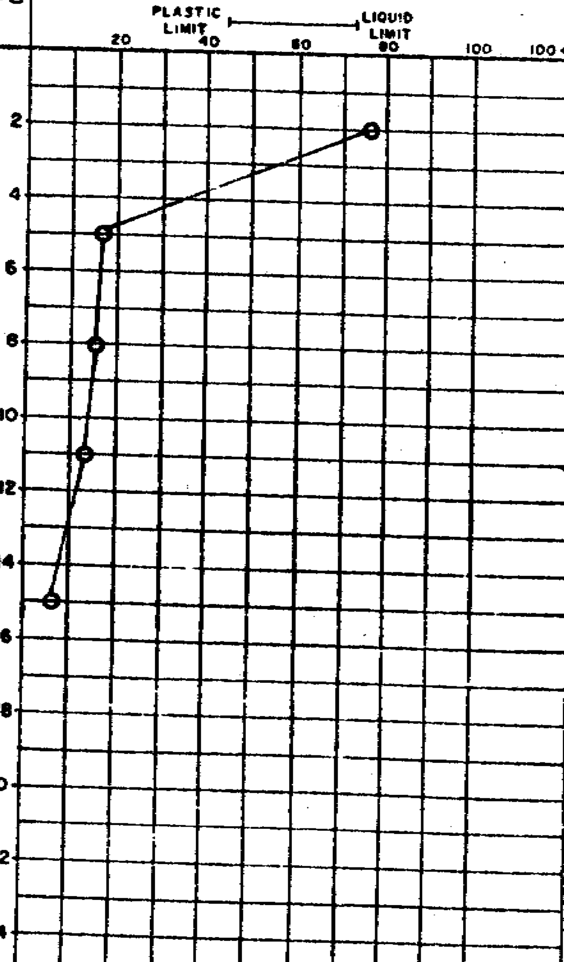
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 13/4/76	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:
CHAINAGE:	OFFSET	VEGETATION	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA - 11 - 2		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT .4"										
2						ICE + SOIL 2.5'		ICE & CL	2	88		12	0	SAT.		
6					GC	GRAVEL-SAND MIXTURE CLAYEY		Vc - Vr	6	19		50	31	SAT.		
8									8	15		47	38	SAT.		
12									12	18		42	40	SAT.		
16					CL CI	15.5' CLAY - SILTY SANDY		Vs	16	17		48	35	HUMID		
20–24						ICE		ICE								

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)



ICE ICE

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 13/4/76	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:

CHAINAGE:

OFFSET

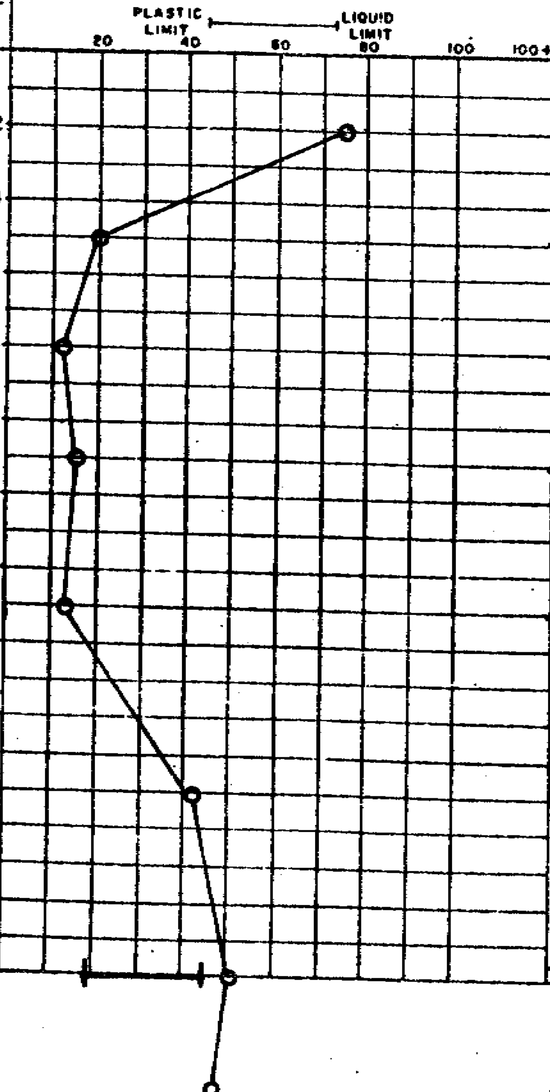
VEGETATION

ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA - 11 - 3		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0					Pt	PEAT 4"		
2					SM	SAND - SILTY PEBBLES		
4–6					SC	GRAVELLY CLAYEY		Vs
8								Vc-Vr
16						16'		
16–20						CLAY - SILTY SANDY PEBBLES		
22					CI	MED. PLASTIC		Vs

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)



GRAIN-SIZE ANALYSIS: CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
	46	52	2	FREE WATER		
	36	52	12	SAT.		
	25	60	15	WET		
	20	48	32	SAT.		
	19	47	34	SAT.		
	81	17	2	SAT.		
	83	16	1	SAT.		
	66	23	11	SAT.		

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

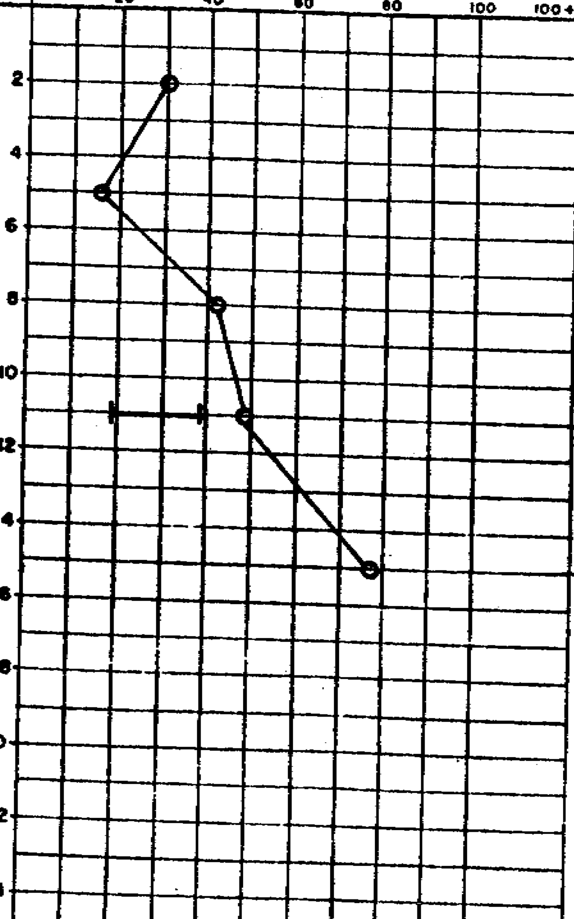
DWN	ENG	DATE DRILLED 13/4/76	AIRPHOTO NO:	CHAINAGE	OFFSET
CKD	RONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
AREA - 11 - 4		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0 – 4"				Pt	PEAT — 4"		
4" – 3'				CL	CLAY - SILTY SANDY PEBBLES — 3'		
3' – 7'				GM	GRAVEL - SAND - SILT MIXTURE — 7'		
7' – 15'				CI	CLAY - SILTY SANDY PEBBLES MED. PLASTIC — 15'		Vs
15'					BOTTOM OF HOLE - 15'		

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT —— LIQUID LIMIT



DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	74	24	2		SAT.		
5	17	45	38		SAT.		
8	70	24	6		SAT.		
11	79	18	3		FREE WATER		
15	78	20	2		FREE WATER		

SEARCH AREA #12

Landform and Location:	The narrow canyon of Douglas Creek which has been incised to underlying shale bedrock through a morainic plain - three to four miles west of the Mackenzie Highway near Mile 985.
Material:	Ice-rich lacustrine silts and clays and glacial till over shale bedrock.
Stripping:	Probably 20 - 25' to usable till. Shale exposed at the bottom of the canyon probably 80 - 100' below the plain.
Volume:	Unlimited.
Conclusion:	Unsuitable as a borrow source because of excess stripping. Not recommended.

SCALE 1:36,000 (APPROX 1"=3,000')


AREA 12

INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/76	AIRPHOTO NO:	CHAINAGE	OFFSET
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
AREA - 12 - 1		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT											
2						CLAY - SILTY -SANDY -PEBBLES		VS	2								
4									4								
6									6								
8									8								
10									10	NO SAMPLES							
12								Vc-Vr	12								
14									14								
16									16								
18									18								
20								Vx	20								
22									22								
24									24								

BOTTOM OF HOLE - 30'

INUVIK - TUK

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/	AIRPHOTO NO:
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE
CHAINAGE	OFFSET	VEGETATION	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
AREA - 12 - 2		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT — 4"											
2 – 12						CLAY - SILTY - SANDY - PEBBLES		Vs	2 – 12	NO SAMPLES							
14 – 16								Vc – Vr	14 – 16								
18 – 24								Vx	18 – 24								

BOTTOM OF HOLE - 30'

Inuvik - Tuk.

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG.	DATE DRILLED 24/3/76	AIRPHOTO NO:	CHAINAGE:	OFFSET	
CKD	TECH PRONYCH	RIG AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV	

TEST HOLE

MILE	B,C,S	NUMBER
AREA - 12-3		

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	WATER CONTENT / ICE CONTENT	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0					Pt	Peat 3"											
2						Clay - Silty / - Sandy - Pebbles		V_s	2								
4									4								
6									6								
8									8								
10									10	No Samples							
12								$V_c - V_r$	12								
14									14								
16									16								
18									18								
20								V_x	20								
22									22								
24									24								

Bottom of Hole - 30'

INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/76	AIRPHOTO NO:	CHAINAGE:	OFFSET	TEST HOLE
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV	

TEST HOLE

MILE	B,C,S	NUMBER
AREA - 12 - 4		

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0–8					Pt	PEAT 3" CLAY - SILTY - SANDY - PEBBLES		Vs	2, 4, 6, 8								
8–19								Vc - Vr	10, 12, 14, 16, 18	NO SAMPLES							
19–24								Vx	20, 22, 24								

BOTTOM OF HOLE - 30'

INUVIK - TUK.

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 24/3/74	AIRPHOTO NO:	CHAINAGE:	OFFSET
CKD	TECH PRONYCH	RIG: AIR	SURFACE DRAINAGE:	VEGETATION:	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
AREA - 12	-	5

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT 4"											
2						CLAY - SILTY - SANDY - PEBBLES		Vs	2								
4									4								
6									6								
8									8	NO SAMPLES							
10									10								
12									12								
14								Vc - Vr	14								
16									16								
18									18								
20									20								
22								Vx	22								
24									24								

BOTTOM OF HOLE-30'

INUVIK - TUK

DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 22/3/76
CKD	TECH PRONYCH	RIG AIR

AIRPHOTO NO: | CHAINAGE: | OFFSET
SURFACE DRAINAGE: | VEGETATION: | ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
ARED - 12 - 6		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

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

GRAIN-SIZE ANALYSIS: CLAY %, SILT %, SAND %, GRAVEL %; WET DENSITY (P.C.F.); DRY DENSITY (P.C.F.); REMARKS

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
0 – 4"					Pt	PEAT 4"		
0 – ~3						CLAY - SILTY		
~3 – ~8						SOIL & ICE		
~8 – ~17						CLAY - SILTY		Vs
~17 – ~22								Vc - Vr
~22 – 24								Vx

NO SAMPLES

BOTTOM OF HOLE - 30'

Appendix E

APPENDIX E

1 Drilling and Sampling

A Failing 1250 rotary drilling rig was used throughout the field programme. This rig advances a hole by high speed rotation of tungsten-carbide insert bits, and soil cuttings are brought to the surface by a continuous flow of pressurized air. Samples are taken by collecting cuttings at the ground surface. Although the samples are disturbed, a specific depth can be sampled as cuttings are instantaneously brought to the surface by the flow of air.

Holes were generally drilled to a depth of 30 feet with samples taken at depths of 2', 5', 8', 11', 15', 20', 25 and 30'. Where much excess or massive ice was encountered, sampling was discontinued.

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

2 Soils Classification

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

Soil samples were also categorized in the laboratory using a series of terms to indicate the relative moisture content of the soil in the thawed state. 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.

3 Ice Description

The ice classification system used is a modification of that outlined in the National Research Council Technical Memorandum No. 73 "A Guide to a Field Description of Permafrost." A brief outline of the N.R.C. system is included at the end of this Appendix.

The N.R.C. system requires relatively large undisturbed samples in order to establish if the ground ice is stratified, random, in individual crystals, or occurs as coating on larger soil particles. With the air circulation rig used on this project, the sample cutting sizes returned to the surface ranged from chips of 3/4" maximum dimension, to powder. Large ice lenses (1/2" or more) could be detected by close observation of drill cuttings, and ice crystals or ice coatings could be determined from the soil chips, however accurate classification of the intervening excess ice formations was impossible. During past testing programmes in the N.W.T., technicians have had the opportunity to compare drill cuttings with drill cores and have developed a 'feel' for ground ice through visual observation of disturbed cuttings. Therefore, the classification of the ground ice that is recorded on the borehole logs, using the N.R.C. symbols, is at least partially inferred or estimated.

In addition to the N.R.C. classification system, the logging technicians also used a series of relative terms to indicate the amount of visual ground ice. These terms and the 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 (1/2"+) ice lenses.

Relative Term	Visual Ground Ice
'very high'	- continuous large ice lenses.
'ice'	- ice with some soil, or clear ice.

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, comprised 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.
Gravel	Soil particles smaller than 3" in diameter and larger than 2.0 mm in diameter.

Glaciolacustrine Pertaining to glacial-lake conditions, as in

Ground Ice	Bodies of more or less clear ice in permanently frozen ground.
Ground Moraine	A moraine with low relief, devoid of transverse 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; opposed 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 deposition 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 actio and having constructional topography independent of control by the surface on which the drift lie
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 $32^{\circ}F$ 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.
Proglacial	Pertaining to features of glacial origin beyond the limits of the glacier itself, as...streams,...deposits,...sand.

Sand	Soil particles smaller than 2.0mm. in diameter and larger than 0.06mm. in diameter.
Screes	A heap of rock waste at the base of a cliff or a sheet of coarse debris mantling a mountain slope.
Seasonal Frost	Freezing of the ground during the winter. The term implies that the frost so formed will thaw during the following spring or summer.
Silurian	The third in order of age of the geologic periods comprised in the Paleozoic era, in the 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 action 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
COARSE-GRAINED SOILS (more than half by weight larger than 200 sieve)	BOULDERS		N/A		LARGER THAN 8 INCHES DIAMETER
	COBBLES		N/A		3 TO 8 INCHES DIAMETER
	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.