

GEOTECHNICAL INVESTIGATIONS

Highway Construction
Km 1664.2 to 1674.2
Alaska Highway #1
Yukon 2001-2002
Volume 2 of 2



Community and Transportation Services
Transportation Engineering Branch

Geotechnical Services

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ORIGINAL - Do Not Remove From File

HIGHWAY CONSTRUCTION

GEOTECHNICAL INVESTIGATION

Km 1664.2 to Km 1674.2
YUKON 2001-2002

ALASKA HIGHWAY #1

Highway Construction
Km 1664.2 to 1674.2
Alaska Highway #1
Yukon 2001-2002
Volume 2 of 2

This Data Package prepared for project viewing:

February, 2001

Transportation Engineering Branch
Geotechnical Services
461 Range Road
Whitehorse, Yukon

CONTENTS

Volume 1 of 2

INTRODUCTION

Investigation notes, classification methods and legends.

2000 CENTRELINE TESTING ALASKA HIGHWAY

Subsurface Exploration and Testing Report Sheets are provided.

The reports for the centreline holes are arranged according to project location, starting at Km 1664+350 and increasing to Km 1673+855.

Laboratory Testing Result Sheets are provided.

The reports for the centreline holes are arranged according to test hole number, starting at 568-1768 and increasing to 576-887.

2000	TEST HOLES 1768 to 1789	shown with prefix 568-
	TEST HOLES 1790 to 1813	shown with prefix 569-
	TEST HOLES 1814 to 1833	shown with prefix 570-
	TEST HOLES 1848 to 1858	shown with prefix 572-
	TEST HOLES 1859 to 1878	shown with prefix 573-
	TEST HOLES 884 to 887	shown with prefix 576-

NOTE: 2000 Centreline Test Hole locations on the Subsurface Exploration and Testing Report Sheets are approximate. Actual Test Hole locations, compiled by GPS survey, are indicated on project plans.

CONTENTS (continued)**Volume 2 of 2****1978 CENTRELINE TESTING ALASKA HIGHWAY**

A Test Hole Location Reference Table and Subsurface Exploration & Testing Report Sheets are provided.

The reports for the centreline holes are arranged according to project location, starting at Km 1664+248 and increasing to Km 1674+291.

1978	TEST HOLES 26 to 31, 328 to 340, and 100 to 173	shown with no prefix
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IMPORTANT NOTE: Due to alignment revisions subsequent to the 1978 centreline testing the test hole locations indicated on the 1978 Subsurface Exploration and Testing Report sheets are invalid. Utilize the Test Hole Location Reference Table provided in order to determine the test hole locations relevant to the current alignment.

GRANULAR SOURCE Km 1654.3 LHS ALASKA HIGHWAY (Bear Creek Summit)

Location Plans and Subsurface Exploration and Testing Report Sheets are provided.

Backhoe Testing

1998	TEST PITS 20 to 27	shown with prefix 496-
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Laboratory Crush Results

1998	TEST PITS 20 to 23 and 26	shown with prefix 496-
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Auger Testing

2000	TEST HOLES 1451 to 1455, 1471 to 1479	shown with prefix 571-
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QUARRY SOURCE Km 1674 RHS ALASKA HIGHWAY

Location Plans and Subsurface Exploration and Testing Report Sheets are provided.

Air Rotary Drill Testing

2000	TEST HOLES 865 to 883	shown with prefix 576-
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HIGHWAY CONSTRUCTION

GEOTECHNICAL INVESTIGATION

Km 1664.2 to Km 1674.2
YUKON 2001-2002

ALASKA HIGHWAY #1

**1978 CENTRELINE TESTING
1664+248 to 1674+291
ALASKA HIGHWAY**

TEST HOLE LOCATION REFERENCE TABLE

Km 1664.2 to 1674.3

TEST HOLE #	DRILL LOG LOCATION		CURRENT LOCATION	
	STATION	OFFSET	STATION	OFFSET
30	1664+282	C.L.	1664+248	0.2 m Rt
29	1664+320	C.L.	1664+286	0.2 m Rt
26	1664+445	C.L.	1664+411	C.L.
27	1664+526	C.L.	1664+492	0.1 m Lt
28	1664+602	C.L.	1664+568	0.2 m Lt
31	1664+681	C.L.	1664+647	0.3 m Lt
328	1664+747	C.L.	1664+713	0.4 m Lt
329	1664+845	C.L.	1664+811	0.5 m Lt
330	1664+940	C.L.	1664+906	0.7 m Lt
331	1665+033	C.L.	1664+999	0.7 m Lt
332	1665+126	C.L.	1665+092	0.2 m Lt
333	1665+200	C.L.	1665+166	0.7 m Rt
334	1665+300	C.L.	1665+266	1.2 m Rt
335	1665+380	C.L.	1665+346	1.6 m Rt
336	1665+462	C.L.	1665+428	1.9 m Rt
337	1665+541	C.L.	1665+507	2.3 m Rt
338	1665+620	C.L.	1665+586	2.6 m Rt
339	1665+740	C.L.	1665+706	3.1 m Rt
340	1665+820	C.L.	1665+786	3.5 m Rt
100	1668+690	C.L.	1668+659	3.5 m Rt
101	1668+766	C.L.	1668+735	4.1 m Rt
102	1668+850	C.L.	1668+820	5.8 m Rt
103	1668+928	C.L.	1668+898	6.5 m Rt
104	1669+005	C.L.	1668+975	5.1 m Rt
105	1669+089	C.L.	1669+059	3.5 m Rt
106	1669+205	C.L.	1669+175	1.5 m Rt
107	1669+282	C.L.	1669+252	0.1 m Rt
108	1669+364	C.L.	1669+334	1.4 m Lt
109	1669+440	C.L.	1669+410	2.8 m Lt
110	1669+527	C.L.	1669+497	4.4 m Lt
111	1669+605	C.L.	1669+575	5.8 m Lt
112	1669+688	C.L.	1669+658	7.3 m Lt
113	1669+760	C.L.	1669+730	8.1 m Lt
114	1669+838	C.L.	1669+808	7.3 m Lt

TEST HOLE #	DRILL LOG LOCATION		CURRENT LOCATION	
	STATION	OFFSET	STATION	OFFSET
115	1669+913	C.L.	1669+883	5.4 m Lt
116	1669+995	C.L.	1669+965	3.2 m Lt
117	1670+070	C.L.	1670+040	1.3 m Lt
118	1670+152	C.L.	1670+122	0.9 m Rt
119	1670+225	C.L.	1670+195	2.8 m Rt
120	1670+293	C.L.	1670+263	4.4 m Rt
121	1670+362	C.L.	1670+332	4.1 m Rt
122	1670+435	C.L.	1670+406	2.3 m Rt
123	1670+582	C.L.	1670+553	0.2 m Rt
124	1670+655	C.L.	1670+626	0.1 m Lt
125	1670+782	C.L.	1670+753	0.1 m Lt
126	1670+860	C.L.	1670+831	0.1 m Lt
127	1670+937	C.L.	1670+908	0.1 m Lt
128	1670+995	C.L.	1670+966	0.1 m Lt
129	1671+088	C.L.	1671+059	C.L.
130	1671+160	C.L.	1671+131	C.L.
131	1671+235	C.L.	1671+206	C.L.
132	1671+310	C.L.	1671+281	C.L.
133	1671+385	C.L.	1671+356	C.L.
134	1671+465	C.L.	1671+436	C.L.
135	1671+535	C.L.	1671+506	C.L.
136	1671+609	C.L.	1671+580	C.L.
137	1671+680	C.L.	1671+651	0.1 m Rt
138	1671+760	C.L.	1671+731	0.1 m Rt
139	1671+827	C.L.	1671+798	0.1 m Rt
140	1671+900	C.L.	1671+871	0.1 m Rt
141	1671+974	C.L.	1671+945	0.1 m Rt
142	1672+040	C.L.	1672+011	0.1 m Rt
143	1672+115	C.L.	1672+086	0.1 m Rt
144	1672+183	C.L.	1672+154	0.2 m Rt
145	1672+256	C.L.	1672+227	0.2 m Rt
146	1672+325	C.L.	1672+296	0.2 m Rt
147	1672+400	C.L.	1672+371	0.2 m Rt
148	1672+468	C.L.	1672+439	0.2 m Rt
149	1672+540	C.L.	1672+511	0.2 m Rt
150	1672+619	C.L.	1672+590	0.2 m Rt
151	1672+691	C.L.	1672+662	0.2 m Rt

TEST HOLE #	DRILL LOG LOCATION		CURRENT LOCATION	
	STATION	OFFSET	STATION	OFFSET
152	1672+768	C.L.	1672+739	0.3 m Rt
153	1672+840	C.L.	1672+811	0.3 m Rt
154	1672+915	C.L.	1672+886	0.3 m Rt
155	1672+990	C.L.	1672+961	0.3 m Rt
156	1673+055	C.L.	1673+026	0.3 m Rt
157	1673+132	C.L.	1673+103	0.3 m Rt
158	1673+210	C.L.	1673+181	0.3 m Rt
159	1673+280	C.L.	1673+251	0.4 m Rt
160	1673+351	C.L.	1673+322	0.4 m Rt
161	1673+428	C.L.	1673+399	0.4 m Rt
162	1673+512	C.L.	1673+483	0.4 m Rt
163	1673+583	C.L.	1673+554	0.4 m Rt
164	1673+658	C.L.	1673+629	0.4 m Rt
165	1673+740	C.L.	1673+711	0.4 m Rt
166	1673+808	C.L.	1673+779	0.5 m Rt
167	1673+885	C.L.	1673+856	0.5 m Rt
168	1673+990	C.L.	1673+961	0.5 m Rt
169	1674+022	C.L.	1673+993	0.5 m Rt
170	1674+091	C.L.	1674+062	0.5 m Rt
171	1674+160	C.L.	1674+131	0.5 m Rt
172	1674+230	C.L.	1674+201	0.5 m Rt
173	1674+320	C.L.	1674+291	0.5 m Rt

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAIKWAK SEGMENT 9

HOLE No. 30

HOLE LOCATION 1664+282

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 30

TECHNICIAN R.K.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAIKWAK SEGMENT 9

HOLE No. 29

HOLE LOCATION 1664 + 320

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 30

TECHNICIAN R.K.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAIKWAK SEGMENT 9

HOLE No. 26

HOLE LOCATION 1664 + 445

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-23

DRILL UNIT B 30

TECHNICIAN R.K.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 27

HOLE LOCATION 1664 + 526

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-23

DRILL UNIT B 30

TECHNICIAN R.K.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 28

HOLE LOCATION 1664 + 602

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-23

DRILL UNIT B-30

TECHNICIAN R.K.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAIKWAK SEGMENT 9

HOLE No. 31

HOLE LOCATION 1664+681

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 30

TECHNICIAN R.K.

DEPTH (m.)	DESCRIPTION OF MATERIAL	PERMAFROST CLASSIFICATION	SAMPLE TYPE	SAMPLE DATA						STD PENETRATION BLOWS/300mm	0 - % MOISTURE CONTENT X - % < .074mm	LIQUID LIMIT	PLASTIC LIMIT
				FIELD No.	LAB No.	UNIFIED CLASSIFICATION	% GRAVEL	% SAND	% < .005mm				
1													
2			A/P 1	1775	CL	23 ^y	25.9				0	11	X
3													
4			A/P 2	1776	SC	25 ^b	338	19.6			0	11	X
END HOLE													
5													
6													
7													
8													
9													
10													

SUBSURFACE EXPLORATION AND TESTING REPORT

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 329

HOLE LOCATION 1664+845

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.11.10

DRILL UNIT

TECHNICIAN S.C.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAIKWAK SEGMENT 9

HOLE No. 330

HOLE LOCATION 1664+940

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.11.10

DRILL UNIT

TECHNICIAN S.C.

[illegible]



SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION **SHAKWAK SEGMENT 9**

HOLE No. **331**

HOLE LOCATION **1665+033**

ELEV.

DEPTH TO G.W.L.

DATE DRILLED **78.11.10**

DRILL UNIT

TECHNICIAN **S.C.**

DEPTH (m.)	DESCRIPTION OF MATERIAL	PERMAFROST CLASSIFICATION	SAMPLE TYPE	FIELD No.	LAB No.	SAMPLE DATA					STD. PENETRATION BLOWS/300 mm	O - % MOISTURE CONTENT		LIQUID LIMIT	PLASTIC LIMIT
						UNIFIED CLASSIFICATION	% GRAVEL	% SAND	% < .005 mm	X - % < .074 mm					
1															
2															
3			AIP 1	2329	GM	42	32	10			⊙	X	N.P.		
4															
5	END HOLE														
6															
7															
8															
9															
10															

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION **SHAKWAK SEGMENT 9**

HOLE No. 332

HOLE LOCATION 1665+126

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.11.15

DRILL UNIT

TECHNICIAN S.C.

[illegible]



SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHANAN SEG 9

HOLE No. 333

HOLE LOCATION 1665 + 200

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.11.23

DRILL UNIT

TECHNICIAN

DEPTH (m)	DESCRIPTION OF MATERIAL	SAMPLE DATA							STD. PENETRATION BLOWS / 300 mm	O - % MOISTURE CONTENT X - % < .074 mm	PLASTIC LIMIT	LIQUID LIMIT
		PERMAFROST CLASSIFICATION	SAMPLE TYPE	FIELD No.	LAB No.	UNIFIED CLASSIFICATION	% GRAVEL	% SAND				
1												
2												
3												
4		Alp	2	2325	CL	12	19	31	0	11	X	
5												
6												
7												
8												
9												
10												

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHANNON. SEG 9

HOLE No. 334

HOLE LOCATION 1665 + 300

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.11.23

DRILL UNIT

TECHNICIAN

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHARWAK. SEG 9

HOLE No. 335

HOLE LOCATION 11665+380

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78. 11. 24

DRILL UNIT

TECHNICIAN

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION	SLAWSON SEG 9	HOLE No.	336
HOLE LOCATION	1166S + 462	ELEV.	DEPTH TO G.W.L.
DATE DRILLED	78.11.24	DRILL UNIT	TECHNICIAN

[illegible]



SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHANNAK. SEG 9

HOLE No. 337

HOLE LOCATION 1665+541

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.11.24

DRILL UNIT

TECHNICIAN

DEPTH (m)	DESCRIPTION OF MATERIAL	SAMPLE DATA							PLASTIC LIMIT — LIQUID LIMIT	
		PERMAFROST CLASSIFICATION	SAMPLE TYPE	FIELD No.	LAB No.	UNIFIED CLASSIFICATION	% GRAVEL	% SAND	% < .005 mm	STD. PENETRATION BLOWS / 300 mm
1										
2										
3		Alp	1	2153	ML	9	14	26	⊙	TRACE X
4		Alp	2	2152	ML	1	33		⊙	N.P. X
5										
6										
7										
8										
9										
10										

0 - % MOISTURE CONTENT
X - % < .074 mm

PLASTIC LIMIT — LIQUID LIMIT

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK. SEG

HOLE No. 338

HOLE LOCATION 1665+620

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.11.25

DRILL UNIT

TECHNICIAN

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHALWAK. LG 2

HOLE No. 340

HOLE LOCATION - 16105 + 820

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.11.24

DRILL UNIT B40H - 5 A IGER

TECHNICIAN

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 100

HOLE LOCATION 1668+690

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-23

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 101

HOLE LOCATION	1668+766
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ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-23

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION	SHAKWAK SEGMENT 9		HOLE No.	102
HOLE LOCATION	1668+850	ELEV.	DEPTH TO G.W.L.	
DATE DRILLED	78-10-23	DRILL UNIT	B 40	TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 103

HOLE LOCATION 1668+928

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-23

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 104

HOLE LOCATION 1669 + 005

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]



SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION **SHAKWAK SEGMENT 9**

HOLE No. **105**

HOLE LOCATION **1669+089**

ELEV.

DEPTH TO G.W.L.

DATE DRILLED **78-10-24**

DRILL UNIT **B 40**

TECHNICIAN **T.M.**

DEPTH (m.)	DESCRIPTION OF MATERIAL	PERMAFROST CLASSIFICATION	SAMPLE TYPE	SAMPLE DATA							STD. PENETRATION BLOWS/300 mm	0 - % MOISTURE CONTENT		LIQUID LIMIT	PLASTIC LIMIT
				FIELD No.	LAB No.	UNIFIED CLASSIFICATION	% GRAVEL	% SAND	% < .005 mm	X - % < .074 mm					
1			A/P 1	2672	SM	15	48	14			0	X	TRACE		
2															
3															
4			A/P 2	2661	ML-OL	0	40	4							
5	END HOLE														
6															
7															
8															
9															
10															

SUBSURFACE EXPLORATION AND TESTING REPORT

[illegible]

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 108

HOLE LOCATION 1669+364

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAIKWAK SEGMENT 9

HOLE No. 109

HOLE LOCATION 1669 + 440

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 110

HOLE LOCATION 1669+527

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT

B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. III

HOLE LOCATION 1669 + 605

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 112

HOLE LOCATION 1669+688

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAIKWAK SEGMENT 9

HOLE No. 113

HOLE LOCATION 1669+760

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT / SECTION SHAKWAK SEGMENT 9

HOLE No. 114

HOLE LOCATION 1669 + 838

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 115

HOLE LOCATION 1669 + 913

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 40

TECHNICIAN T.M.

DEPTH (m.)	DESCRIPTION OF MATERIAL	PERMAFROST CLASSIFICATION	SAMPLE TYPE	SAMPLE DATA						STD PENETRATION BLOWS/300mm	0 - % MOISTURE CONTENT		
				FIELD No.	LAB No.	UNIFIED CLASSIFICATION	% GRAVEL	% SAND	% < .005mm		X - % < .074mm	LIQUID LIMIT	PLASTIC LIMIT
1			A/P 1	2639	ML	19	30			0	0	TRACE	X
2													
3			A/P 2	2646	CL	11	25	24		0	1		X
4													
5	END HOLE												
6													
7													
8													
9													
10													



Public Works
Canada

MATERIALS QUALITY CONTROL LABORATORY
WHITEHORSE, Y.T.

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION **SHAKWAK SEGMENT 9**

HOLE No. **116**

HOLE LOCATION **1669+995**

ELEV.

DEPTH TO G.W.L.

DATE DRILLED **78-10-24**

DRILL UNIT **B 40**

TECHNICIAN **T.M.**

DEPTH (m.)	DESCRIPTION OF MATERIAL	PERMAFROST CLASSIFICATION	SAMPLE TYPE	FIELD No.	LAB No.	SAMPLE DATA				STD. PENETRATION BLOWS/300 mm	LIQUID LIMIT — PLASTIC LIMIT	
						UNIFIED CLASSIFICATION	% GRAVEL	% SAND	% < .005 mm		0 - % MOISTURE CONTENT	X - % < .074 mm
			A/P 1	2641	SM	40	41	-				
1												
2												
3												
4			A/P 2	2683	CL-ML	10	32	20				
5	END HOLE											
6												
7												
8												
9												
10												

0 — % MOISTURE CONTENT
X — % < .074 mm
LIQUID LIMIT — PLASTIC LIMIT

0 10 20 30 40 50 60 70 80 90

⊙ X TRACE

⊙ H X



Public Works
Canada

MATERIALS QUALITY CONTROL LABORATORY
WHITEHORSE, Y.T.

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION	SHAKWAK SEGMENT 9	HOLE No.	117
HOLE LOCATION	1670+070	ELEV.	
DATE DRILLED	78-10-24	DRILL UNIT	B-40
		TECHNICIAN	T.M.

DEPTH (m.)	DESCRIPTION OF MATERIAL	PERMAFROST CLASSIFICATION	SAMPLE TYPE	FIELD No.	LAB No.	SAMPLE DATA				STD. PENETRATION BLOWS / 300mm	MOISTURE CONTENT	
						UNIFIED CLASSIFICATION	% GRAVEL	% SAND	% < .005mm		0 - %	X - % < .074mm
1			A/P 1	2644	ML	12	10					
2												
3			A/P 2	2680	CL-HL	13	21	23				
4												
5												
6	END HOLE											
7												
8												
9												
10												

0 - % MOISTURE CONTENT
X - % < .074mm

LIQUID LIMIT — PLASTIC LIMIT

0	10	20	30	40	50	60	70	80	90
O TRACE							X		

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAIKWAK SEGMENT 9

HOLE No. 118

HOLE LOCATION 1670+152

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 119

HOLE LOCATION 1670 + 22.5

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 120

HOLE LOCATION 1670+293

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]



Public Works
Canada

MATERIALS QUALITY CONTROL LABORATORY
WHITEHORSE, Y.T.

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION **SHAKWAK SEGMENT 9**

HOLE No. **121**

HOLE LOCATION **1670+362**

ELEV.

DEPTH TO G.W.L.

DATE DRILLED **78-10-24**

DRILL UNIT **B40**

TECHNICIAN **T.M.**

DEPTH (m)	DESCRIPTION OF MATERIAL	PERMAFROST CLASSIFICATION	SAMPLE TYPE	FIELD No.	LAB No.	SAMPLE DATA				STD PENETRATION BLOWS/300mm	MOISTURE CONTENT	
						UNIFIED CLASSIFICATION	% GRAVEL	% SAND	% < .005mm		0 - %	X - % < .074mm
1			A/P 1	2658	SM	39	42					
2												
3												
4			A/P 2	2655	CL	12	19	26				
5	END HOLE											
6												
7												
8												
9												
10												

0 - % MOISTURE CONTENT
X - % < .074mm
LIQUID LIMIT — PLASTIC LIMIT

0 10 20 30 40 50 60 70 80 90 100

⊙ X N P.

H ⊙ X

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 122

HOLE LOCATION 1670+435

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]



Public Works
Canada

MATERIALS QUALITY CONTROL LABORATORY
WHITEHORSE, Y.T.

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION **SHAKWAK SEGMENT 9** HOLE No. **123**
HOLE LOCATION **1670+582** ELEV. DEPTH TO G.W.L.
DATE DRILLED **78-10-24** DRILL UNIT **B40** TECHNICIAN **T.M.**

DEPTH (m.)	DESCRIPTION OF MATERIAL	PERMAFROST CLASSIFICATION	SAMPLE TYPE	FIELD No.	LAB No.	SAMPLE DATA				STD. PENETRATION BLOWS/300mm	MOISTURE CONTENT	
						UNIFIED CLASSIFICATION	% GRAVEL	% SAND	% < .005mm		0 - %	X - % < .074mm
				A/p 1	2664	SM	23	45				
1												
2				A/p 2	2660	SM	32	39	9			
3												
4				A/p 3	2665	CL	0	10	51			
5												
6				A/p 4	2666	CL-ML	10	28	3			
7	END HOLE											
8												
9												
10												

0 - % MOISTURE CONTENT
X - % < .074mm
LIQUID LIMIT — PLASTIC LIMIT

0 10 20 30 40 50 60 70 80 90

⊙ N.P. X

⊙ X TRACE

⊙

⊙

⊙ X

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 124

HOLE LOCATION 1670+655

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-24

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAIKWAK SEGMENT 9

HOLE No. 125

HOLE LOCATION 1670 + 782

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 126

HOLE LOCATION 1670 + 860

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 127

HOLE LOCATION 1670+937

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 128

HOLE LOCATION 1670+995

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T. M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 129

HOLE LOCATION 1671 + 088

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 130

HOLE LOCATION 1671 + 160

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 131

HOLE LOCATION 1671+235

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHIAKWAK SEGMENT 9

HOLE No. 132

HOLE LOCATION 1671 + 310

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 133

HOLE LOCATION 1671 + 385

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 134

HOLE LOCATION 1671 + 465

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T. M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 135

HOLE LOCATION 1671 + 535

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 136

HOLE LOCATION 1671 + 609

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 137

HOLE LOCATION 1671+680

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 138

HOLE LOCATION 1671-760

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T. M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 139

HOLE LOCATION 1671+827

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 140

HOLE LOCATION 1671 + 900

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 141

HOLE LOCATION 1671 + 974

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 142

HOLE LOCATION 1672+040

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 143

HOLE LOCATION 1672+115

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 144

HOLE LOCATION 1672 + 183

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-25.

DRILL UNIT B 40

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION	SHAKWAK SEGMENT 9		HOLE No.	145
HOLE LOCATION	1672+256	ELEV.	DEPTH TO G.W.L.	
DATE DRILLED	78-10-25	DRILL UNIT	B40	TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 146

HOLE LOCATION 1672+ 325

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.25

DRILL UNIT

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 147

HOLE LOCATION 1672 + 400

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.25

DRILL UNIT

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 148

HOLE LOCATION 1672 + 468

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 149

HOLE LOCATION 1672+540

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 150

HOLE LOCATION 1672+619

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 151

HOLE LOCATION 1672+691

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 152

HOLE LOCATION 1672 + 768

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 153

HOLE LOCATION 1672+840

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 154

HOLE LOCATION 1672+915

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T. M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 155

HOLE LOCATION 1672+990

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T. M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 156

HOLE LOCATION 1673+055

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 157

HOLE LOCATION

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T. M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAIKWAK SEGMENT 9

HOLE No. 158

HOLE LOCATION 1673+210

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 159

HOLE LOCATION 1673+280

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26.

DRILL UNIT

TECHNICIAN T.M.

[illegible]



Public Works
Canada

MATERIALS QUALITY CONTROL LABORATORY
WHITEHORSE, Y.T.

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION **SHAKWAK SEGMENT 9**

HOLE No. **160**

HOLE LOCATION **1673 + 351**

ELEV.

DEPTH TO G.W.L.

DATE DRILLED **78-10-26**

DRILL UNIT

TECHNICIAN **T.M.**

DEPTH (m.)	DESCRIPTION OF MATERIAL	SAMPLE DATA							STD. PENETRATION BLOWS/300mm	LIQUID LIMIT	PLASTIC LIMIT
		PERMAFROST CLASSIFICATION	SAMPLE TYPE	FIELD No.	LAB No.	UNITED CLASSIFICATION	% GRAVEL	% SAND			
1		A/p	1	2022	SM	34	38	-		0	0
2											
3		A/p	2	2016	CL	5	29	24		0	0
4											
5	END HOLE										
6											
7											
8											
9											
10											

0 - % MOISTURE
CONTENT
x - % < .074mm

LIQUID
LIMIT — PLASTIC
LIMIT

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 161

HOLE LOCATION 1673+428

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 162

HOLE LOCATION 1673 + 512

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAIKWAK SEGMENT 9

HOLE No. 163

HOLE LOCATION 1673+ 583

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78-10-26

DRILL UNIT

TECHNICIAN T.M

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 164

HOLE LOCATION 1673+ 658

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T. M

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 165

HOLE LOCATION 1673+740

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M

[illegible]



SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION **SHAKWAK SEGMENT 9**

HOLE No. **166**

HOLE LOCATION **1673+808**

ELEV.

DEPTH TO G.W.L.

DATE DRILLED **78-10-26**

DRILL UNIT

TECHNICIAN **T.M.**

DEPTH (m.)	DESCRIPTION OF MATERIAL	PERMAFROST CLASSIFICATION	SAMPLE TYPE	FIELD No.	LAB No.	SAMPLE DATA				STD. PENETRATION BLOWS/300mm	MOISTURE CONTENT									
						UNIFIED CLASSIFICATION	% GRAVEL	% SAND	% < .005mm		0 - %	x - % < .074mm								
											LIQUID LIMIT	PLASTIC LIMIT								
1	REFUSAL		A/p 1		1974	GM	38	32	9		0	10	20	30	40	50	60	70	80	90
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAIKWAK SEGMENT 9

HOLE No. 167

HOLE LOCATION 1673+885

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 168

HOLE LOCATION 1673+990

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAKWAK SEGMENT 9

HOLE No. 169

HOLE LOCATION 1674 + 022

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHIAKWAK SEGMENT 9

HOLE No. 470

HOLE LOCATION	1674+091
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ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAIKWAK SEGMENT 9

HOLE No. 171

HOLE LOCATION 1674+160

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.26

DRILL UNIT

TECHNICIAN T.M.

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

[illegible]

SUBSURFACE EXPLORATION AND TESTING REPORT

PROJECT/SECTION SHAIKWAK SEGMENT 9

HOLE No. 173

HOLE LOCATION 1674+320

ELEV.

DEPTH TO G.W.L.

DATE DRILLED 78.10.27

DRILL UNIT

TECHNICIAN T.M.

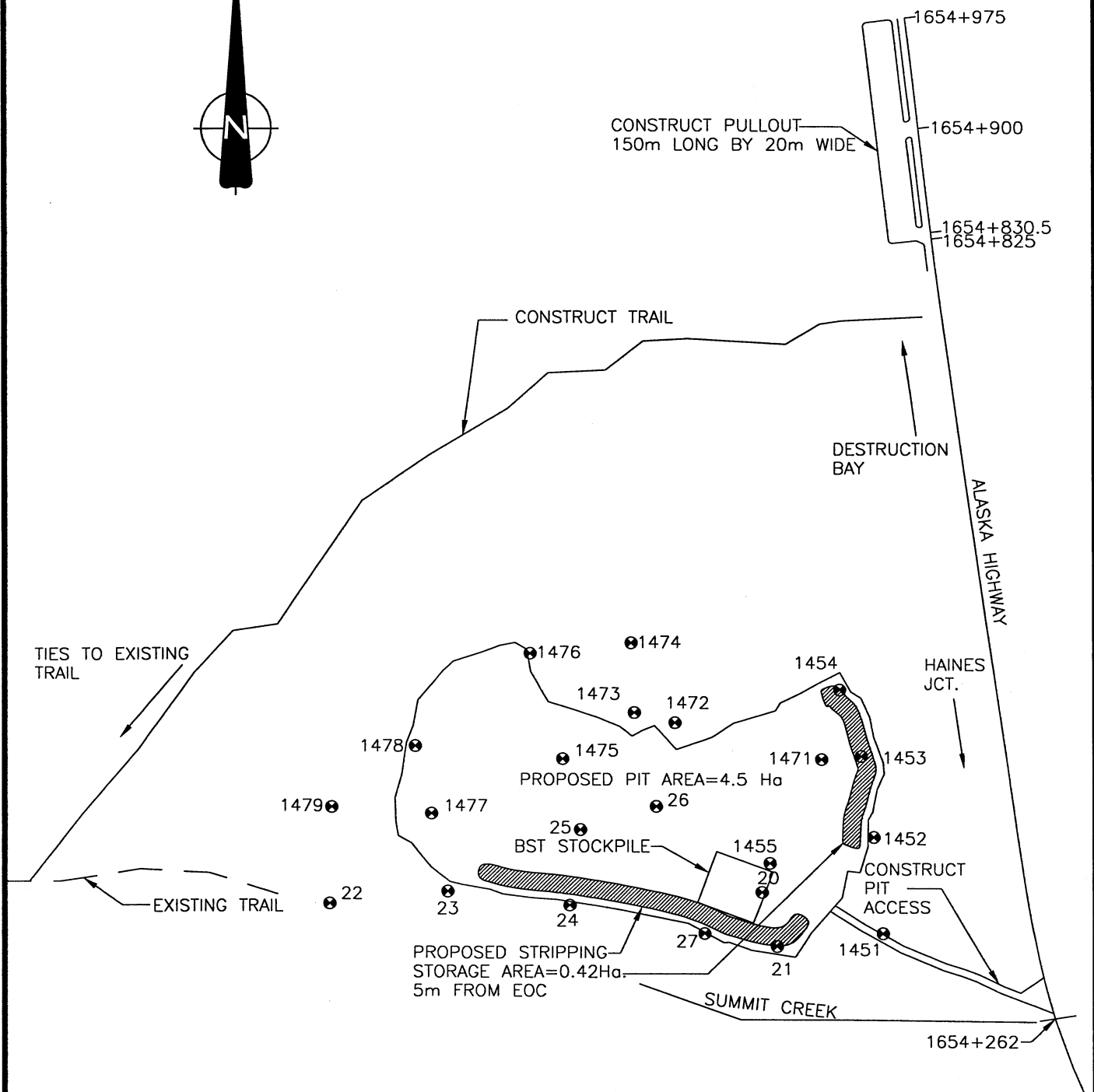
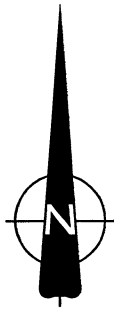
[illegible]

HIGHWAY CONSTRUCTION

GEOTECHNICAL INVESTIGATION
Km 1664.2 to Km 1674.2
YUKON 2001-2002

ALASKA HIGHWAY #1

GRANULAR SOURCE TESTING
Km 1654.3 LHS
ALASKA HIGHWAY



NOTES: TEST HOLES 20-27 LOG PREFIX 496
TEST HOLES 1451-1479 LOG PREFIX 571

Yukon

Community and Transportation Services

Transportation Engineering Branch

SITE PLAN
TRAIL & PIT DEVELOPMENT
Km 1654.3 L.H.S.
ALASKA HWY, YUKON

pit#:	115A-23S
drawn:	J.B.
app'd:	
date:	01-02-05
scale:	1:4000
drwg:	115A-23S.dwg

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		TEST PIT NO: 496-20	
SHAKWAK PROJECT SEGMENT 9		KM 1655 LHS		Project No: 092-202002-0201	
CAT 320L EXCAVATOR		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN		☒ S.P.T.		☒ AUGER	
		☐ BULK		☐ TUBE	
				☐ CORE	

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND / GRAVEL			DEPTH (m)
				PLASTIC	M.C.	LIQUID			PERCENT SAND	PERCENT GRAVEL		
											20	
0.0	SAND, SILT & ORGANIC											0.0
1.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -maximum 300mm material -estimate 20% +100mm material		56				GP					1.0
2.0												2.0
3.0												3.0
4.0	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -brown -damp -maximum 300mm material -estimate 20% +100mm material		57				GP					4.0
5.0	END HOLE at 4.8m											5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: D.T.	COMPLETION DEPTH: 4.8 m
		REVIEWED BY:	COMPLETE: 98/10/30
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		TEST PIT NO: 496-21	
SHAKWAK PROJECT SEGMENT 9		KM 1655 LHS		Project No: 092-202002-0201	
CAT 320L EXCAVATOR		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN		☒ S.P.T.		☒ AUGER	
		☐ BULK		☐ TUBE	
				☐ CORE	

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	SOIL SYMBOL	PERCENT SAND ◆		DEPTH (m)	
				PLASTIC	M.C.	LIQUID			PERCENT GRAVEL ■			
				20	40	60			20	40	60	
0.0	SAND, SILT, GRAVEL & ORGANIC											0.0
0.5	SILTY SAND WITH GRAVEL (SM) -brown -damp -maximum 50mm material		59					SM				0.8
2.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -maximum 200mm material -estimate 20% +100mm material		60					GP				2.5
4.0	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -brown -damp -maximum 200mm material -estimate 20% +100mm material		61					GP-GM				4.8
5.0	END HOLE at 5.0m											5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: D.T.	COMPLETION DEPTH: 5.0 m
		REVIEWED BY:	COMPLETE: 98/10/30
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		TEST PIT NO: 436-22	
SHAKWAK PROJECT SEGMENT 9		KM 1655 LHS		Project No: 092-252002-0201	
CAT 320L EXCAVATOR		LOCATION: SEE PLAN		ELEVATION: 0.00 (r)	
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND & GRAVEL			DEPTH (m)	
				PLASTIC	M.C.	LIQUID			PERCENT SAND	PERCENT GRAVEL			
				20	40	60	80		20	40	60	80	
0.0	ORGANIC												0.0
	POORLY GRADED GRAVEL WITH SAND (GP)												
	-dark brown												
	-maximum 200mm material												
	-estimate 20% +100mm material												
1.0			62					GP					1.0
2.0	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)												2.0
	-dark brown												
	-moist												
	-maximum 200mm material												
	-estimate 20% +100mm material												
3.0			63					GP-GM					3.0
4.0													4.0
5.0			64					GP-GM					5.0
6.0													6.0
	END HOLE at 4.6m												

Government of Yukon Transportation Engineering		LOGGED BY: D.T.	COMPLETION DEPTH: 4.6 m
		REVIEWED BY:	COMPLETE: 98/10/30
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		TEST PIT NO: 496-23	
SHAKWAK PROJECT SEGMENT 9		KM 1655 LHS		Project No: 092-202002-0201	
CAT 320L EXCAVATOR		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN		☒ S.P.T.		☒ AUGER	
		☐ BULK		☐ TUBE	
				☐ CORE	

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	SOIL SYMBOL	PERCENT SAND ◆		DEPTH (m)	
				PLASTIC	M.C.	LIQUID			PERCENT GRAVEL ■			
				20	40	60			20	40	60	
0.0	ORGANIC & GRAVEL											0.0
	POORLY GRADED GRAVEL WITH SAND (GP)											
	-brown											
	-damp											
	-maximum 200mm material											
	-estimate 20% +100mm material											
1.0			65					GP				1.0
2.0	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)											2.0
	-brown											
	-damp											
	-maximum 200mm material											
	-estimate 20% +100mm material											
3.0			66					GP-GM				3.0
4.0												4.0
5.0	SILT & ORGANIC											5.0
6.0	END HOLE at 4.6m											6.0

Government of Yukon Transportation Engineering	LOGGED BY: D.T.	COMPLETION DEPTH: 4.6 m
	REVIEWED BY:	COMPLETE: 98/10/30
	Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		TEST PIT NO: 496-24						
SHAKWAK PROJECT SEGMENT 9		KM 1655 LHS		Project No: 092-202002-0201						
CAT 320L EXCAVATOR		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)						
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE										
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80		USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80		DEPTH (m)
0.0	ORGANIC									0.0
1.0	POORLY GRADED GRAVEL WITH SAND TO POORLY GRADED GRAVEL WITH SILT & SAND (GP)-(GP-GM) -brown -damp -maximum 200mm material -estimate 20% +100mm material	67	▲				GP	◆	■	1.0
2.0										2.0
3.0										3.0
4.0	SILT, ORGANIC, SAND & GRAVELS						GP-GM	◆	■	4.0
5.0	END HOLE at 4.5m									5.0
6.0										6.0
Government of Yukon Transportation Engineering				LOGGED BY: D.T. REVIEWED BY: Fig. No:		COMPLETION DEPTH: 4.5 m COMPLETE: 98/10/30 Page 1 of 1				

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		TEST PIT NO: 496-25	
SHAKWAK PROJECT SEGMENT 9		KM 1655 LHS		Project No: 092-202002-0201	
CAT 320L EXCAVATOR		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)
0.0	ORGANIC						0.0	
	WELL TO POORLY GRADED GRAVEL WITH SAND (GW)-(GP)							
	-brown							
	-damp							
	-maximum 200mm material							
	-estimate 15% +100mm material							
1.0			69			GW	1.0	
	-small silt & organic lens 1.2-1.4m							
2.0							2.0	
			70			GP		
3.0							3.0	
4.0	SAND, SILT & ORGANIC						4.0	
	-some +5mm material							
5.0	END HOLE at 4.6m						5.0	
6.0							6.0	

Government of Yukon Transportation Engineering	LOGGED BY: D.T.	COMPLETION DEPTH: 4.6 m
	REVIEWED BY:	COMPLETE: 98/10/31
	Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		TEST PIT NO: 496-26	
SHAKWAK PROJECT SEGMENT 9		KM 1655 LHS		Project No: 092-202002-0201	
CAT 320L EXCAVATOR		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND / GRAVEL			DEPTH (m)	
				PLASTIC	M.C.	LIQUID			PERCENT SAND	PERCENT GRAVEL			
				20	40	60	80		20	40	60	80	
0.0	ORGANIC POORLY GRADED GRAVEL WITH SAND (GP) -brown -moist -maximum 100mm material												0.0
			71					GP					
1.0													1.0
2.0													2.0
			72					GP					
3.0													3.0
4.0													4.0
5.0													5.0
	END HOLE at 4.8m		73					GP					
6.0													6.0

Government of Yukon Transportation Engineering		LOGGED BY: D.T.	COMPLETION DEPTH: 4.8 m
		REVIEWED BY:	COMPLETE: 98/10/31
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		TEST PIT NO: 496-27	
SHAKWAK PROJECT SEGMENT 9		KM 1655 LHS		Project No: 092-202002-0201	
CAT 320L EXCAVATOR		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN		☒ S.P.T.		☒ AUGER	
		☐ BULK		☐ TUBE	
				☐ CORE	

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)
0.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -maximum 100mm material		74			GP		0.0
1.0								1.0
2.0	-maximum 300mm material below 2.0m -estimate 20% +100mm material below 2m							2.0
3.0			75			GP		3.0
4.0								4.0
5.0	SILT -brown -damp -some +5mm material -some sand END HOLE at 4.6m							5.0
6.0								6.0

Government of Yukon Transportation Engineering		LOGGED BY: D.T.	COMPLETION DEPTH: 4.6 m
		REVIEWED BY:	COMPLETE: 98/10/31
		Fig. No:	Page 1 of 1

PROJECT NUMBER: 092-202101-0363-1

CLIENT: ENGINEERING CAPITAL

PROJECT NAME: SHAKWAK SEG 9B

PROJECT LOCATION: KM 1655 LHS

DRILL UNIT: CAT 320L EXCAVATOR

HOLE LOCATION: SEE PLAN

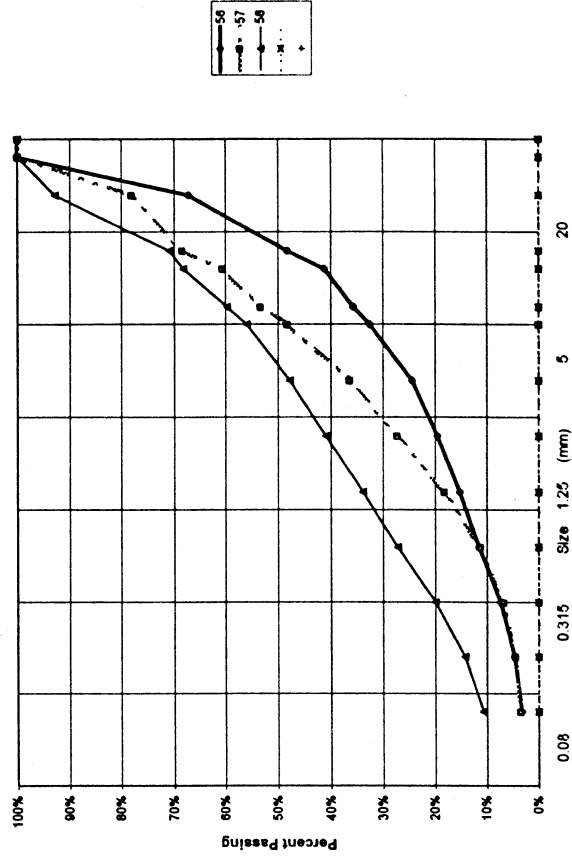
LOGGED BY: D.T.

HOLE No.: 496-20

DATE COMP 98-10-30

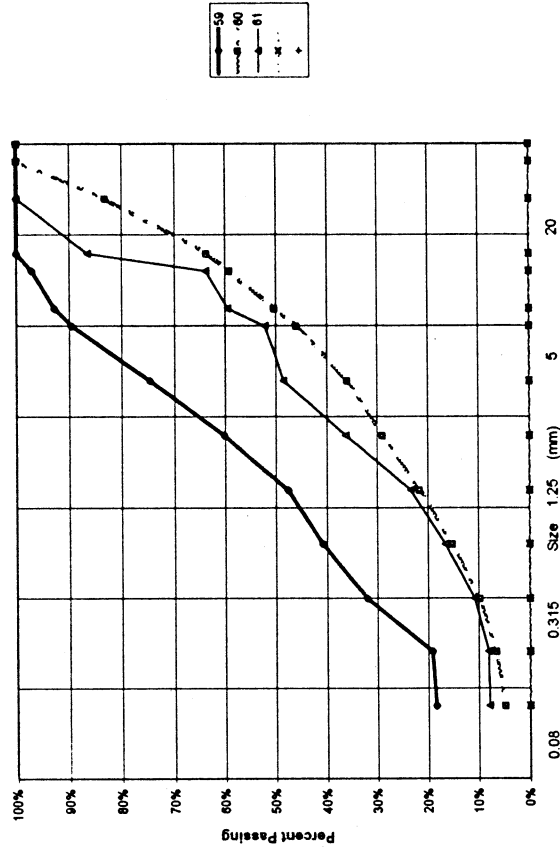
=====			=====			=====		
FIELD NO: 56	FIELD NO: 57	FIELD NO: 58	FIELD NO: 57	FIELD NO: 58	FIELD NO: 58	FIELD NO: 57	FIELD NO: 58	FIELD NO: 58
LAB NO: 1137	LAB NO: 1138	LAB NO: 1139	LAB NO: 22-2-6	LAB NO: 4-4-8	LAB NO: 4-4-8	LAB NO: 22-2-6	LAB NO: 4-4-8	LAB NO: 4-4-8
DEPTH: 0.8-1.2	DEPTH: 2.2-2.6	DEPTH: 4.4-4.8	DEPTH: 2.2-2.6	DEPTH: 4.4-4.8	DEPTH: 4.4-4.8	DEPTH: 2.2-2.6	DEPTH: 4.4-4.8	DEPTH: 4.4-4.8
TYPE: BULK	TYPE: BULK	TYPE: BULK	TYPE: BULK	TYPE: BULK	TYPE: BULK	TYPE: BULK	TYPE: BULK	TYPE: BULK
SIEVE SIZE	SIEVE SIZE	SIEVE SIZE	SIEVE SIZE	SIEVE SIZE	SIEVE SIZE	SIEVE SIZE	SIEVE SIZE	SIEVE SIZE
PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
80.0	100.0	80.0	100.0	80.0	80.0	100.0	80.0	80.0
50.0	67%	50.0	78%	50.0	78%	50.0	93%	50.0
25.0	48%	25.0	68%	25.0	68%	25.0	71%	25.0
20.0	41%	20.0	61%	20.0	61%	20.0	68%	20.0
12.5	36%	12.5	53%	12.5	53%	12.5	60%	12.5
10.0	32%	10.0	48%	10.0	48%	10.0	56%	10.0
5.0	24%	5.0	36%	5.0	36%	5.0	48%	5.0
2.5	18%	2.5	27%	2.5	27%	2.5	41%	2.5
1.25	15%	1.25	18%	1.25	18%	1.25	34%	1.25
0.630	11%	0.630	11%	0.630	11%	0.630	27%	0.630
0.315	7%	0.315	7%	0.315	7%	0.315	20%	0.315
0.160	5%	0.160	4%	0.160	4%	0.160	14%	0.160
0.080	3%	0.080	3%	0.080	3%	0.080	11%	0.080
M.C. (%): 0%	M.C. (%): 0%	M.C. (%): 0%	M.C. (%): 0%	M.C. (%): 0%	M.C. (%): 0%	M.C. (%): 0%	M.C. (%): 0%	M.C. (%): 0%
LIMITS	LIMITS	LIMITS	LIMITS	LIMITS	LIMITS	LIMITS	LIMITS	LIMITS
LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0
PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0
P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	P.I.: 0.0
% GRAVEL: 76	% GRAVEL: 64	% GRAVEL: 52	% GRAVEL: 64	% GRAVEL: 52	% GRAVEL: 52	% GRAVEL: 64	% GRAVEL: 52	% GRAVEL: 52
% SAND: 21	% SAND: 33	% SAND: 37	% SAND: 33	% SAND: 37	% SAND: 37	% SAND: 33	% SAND: 37	% SAND: 37
% FINES: 3	% FINES: 3	% FINES: 11	% FINES: 3	% FINES: 11	% FINES: 11	% FINES: 3	% FINES: 11	% FINES: 11
CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)

YTQ Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



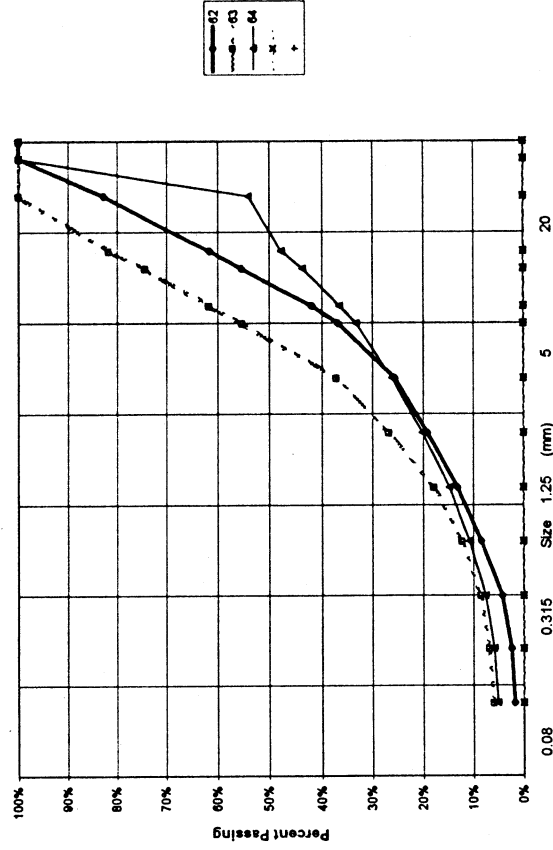
PROJECT NUMBER: 092-202101-0363-1		HOLE No.: 496-21	
CLIENT: ENGINEERING CAPITAL		DATE COMP 98-10-30	
PROJECT NAME: SHAKWAK SEG 8B			
PROJECT LOCATION: KM 1655 LHS			
DRILL UNIT: CAT 320L EXCAVATOR			
HOLE LOCATION: SEE PLAN			
LOGGED BY: D.T.			
=====		=====	
FIELD NO: 59	FIELD NO: 60	FIELD NO: 61	
LAB NO: 1140	LAB NO: 1141	LAB NO: 1142	
DEPTH: 0.6-1.0	DEPTH: 2.4-2.8	DEPTH: 4.6-5.0	
TYPE: BULK	TYPE: BULK	TYPE: BULK	
=====		=====	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%
80.0	100%	80.0	100%
50.0	100%	50.0	100%
25.0	100%	25.0	87%
20.0	97%	20.0	64%
12.5	93%	12.5	59%
10.0	89%	10.0	52%
5.0	75%	5.0	48%
2.5	60%	2.5	36%
1.25	47%	1.25	23%
0.630	41%	0.630	17%
0.315	32%	0.315	11%
0.160	19%	0.160	8%
0.080	18%	0.080	8%
=====		=====	
M.C.(%)	0%	M.C.(%)	0%
LIMITS		LIMITS	
LIQUID:	0.0	LIQUID:	0.0
PLASTIC:	0.0	PLASTIC:	0.0
P.I.:	0.0	P.I.:	0.0
=====		=====	
% GRAVEL:	25	% GRAVEL:	52
% SAND:	56	% SAND:	41
% FINES:	18	% FINES:	8
CLASSIFICATION:		CLASSIFICATION:	
SILTY SAND WITH GRAVEL (SM)		POORLY GRADED GRAVEL WITH SAND (GP)	
		POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	

YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



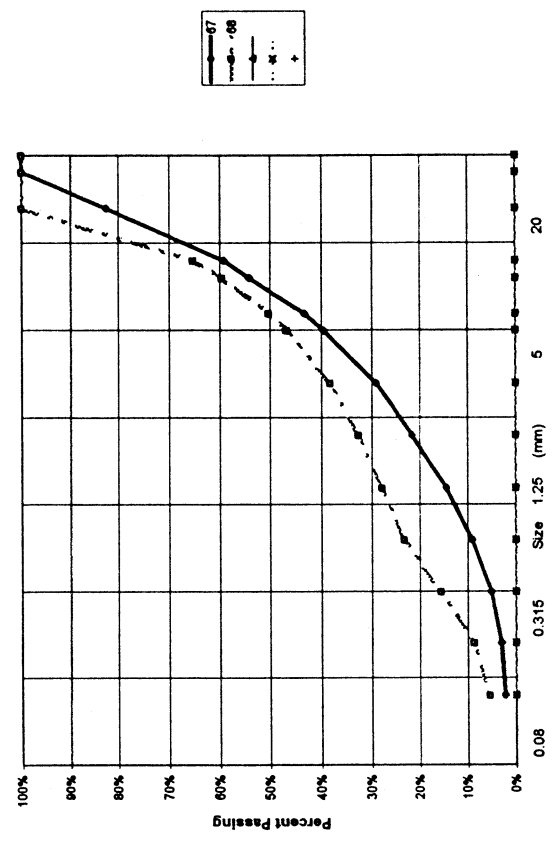
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CLIENT: ENGINEERING CAPITAL		DATE COMP 98-10-30	
PROJECT NAME: SHAKWAK SEG 9B			
PROJECT LOCATION: KM 1655 LHS			
DRILL UNIT: CAT 320L EXCAVATOR			
HOLE LOCATION: SEE PLAN			
LOGGED BY: D.T.			
=====		=====	
FIELD NO: 62	FIELD NO: 63	FIELD NO: 64	
LAB NO: 1143	LAB NO: 1144	LAB NO: 1145	
DEPTH: 0.3-0.7	DEPTH: 2.3-2.7	DEPTH: 4.2-4.6	
BULK	BULK	BULK	
=====		=====	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%
80.0	100%	80.0	100%
50.0	83%	50.0	54%
25.0	62%	25.0	48%
20.0	55%	20.0	44%
12.5	42%	12.5	37%
10.0	37%	10.0	33%
5.0	26%	5.0	26%
2.5	19%	2.5	20%
1.25	13%	1.25	15%
0.630	8%	0.630	11%
0.315	4%	0.315	8%
0.160	2%	0.160	6%
0.080	2%	0.080	5%
=====		=====	
M.C. (%): 0%	M.C. (%): 0%	M.C. (%): 0%	
LIMITS	LIMITS	LIMITS	
LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	
PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	
P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	
% GRAVEL: 74	% GRAVEL: 63	% GRAVEL: 74	
% SAND: 24	% SAND: 31	% SAND: 21	
% FINES: 2	% FINES: 6	% FINES: 5	
CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	

YTO Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



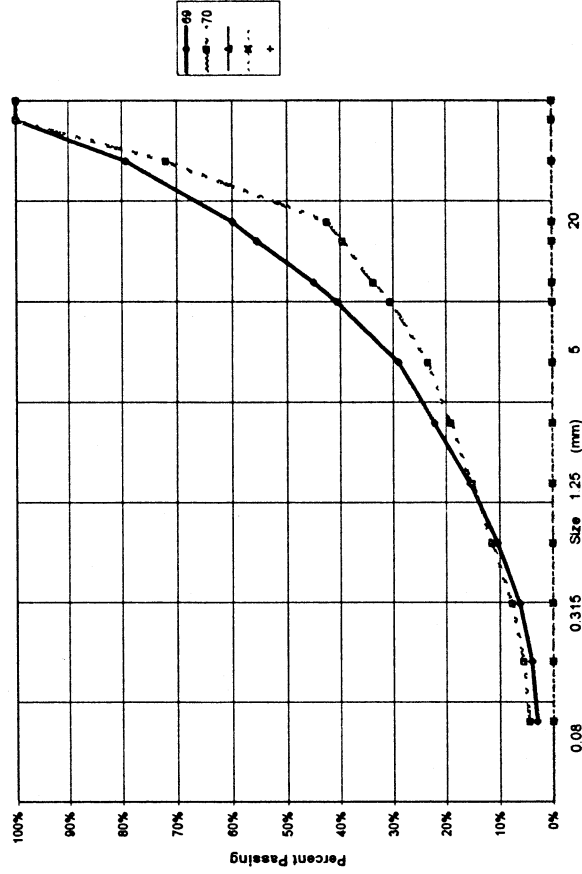
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CLIENT: ENGINEERING CAPITAL			
PROJECT NAME: SHAKWAK SEG 98			
PROJECT LOCATION: KM 1655 LHS			
DRILL UNIT: CAT 320L EXCAVATOR			
HOLE LOCATION: SEE PLAN			
LOGGED BY: D.T.		DATE COMP 98-10-30	
=====		=====	
FIELD NO: 67	FIELD NO: 68		
LAB NO: 1148	LAB NO: 1149		
DEPTH: 0.6-1.0	DEPTH: 2.2-2.6		
TYPE: BULK	TYPE: BULK		
=====		=====	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%
80.0	100%	80.0	100%
50.0	82%	50.0	100%
25.0	59%	25.0	65%
20.0	54%	20.0	60%
12.5	43%	12.5	50%
10.0	40%	10.0	47%
5.0	29%	5.0	38%
2.5	22%	2.5	33%
1.25	14%	1.25	28%
0.630	9%	0.630	23%
0.315	5%	0.315	16%
0.160	3%	0.160	9%
0.080	2%	0.080	6%
=====		=====	
M.C.(%): 0%	M.C.(%): 0%		
LIMITS	LIMITS		
LIQUID: 0.0	LIQUID: 0.0		
PLASTIC: 0.0	PLASTIC: 0.0		
P.I.: 0.0	P.I.: 0.0		
=====		=====	
% GRAVEL: 71	% GRAVEL: 62		
% SAND: 27	% SAND: 33		
% FINES: 2	% FINES: 6		
CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)		CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	

YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



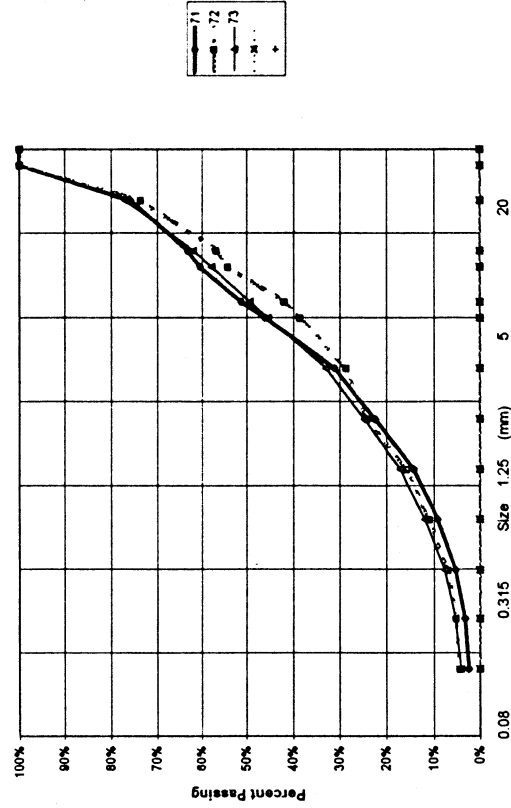
PROJECT NUMBER: 092-202101-0363-1 CLIENT: ENGINEERING CAPITAL PROJECT NAME: SHAKWAK SEG 9B PROJECT LOCATION: KM 1655 LHS DRILL UNIT: CAT 320L EXCAVATOR HOLE LOCATION: SEE PLAN LOGGED BY: D.T.		HOLE No.: 496-25 DATE COMP: 98-10-31																																																													
FIELD NO.: 69 LAB No.: 1150 DEPTH: 0.6-1.0 TYPE: BULK	FIELD No.: 70 LAB No.: 1151 DEPTH: 2.2-2.6 TYPE: BULK																																																														
<table border="1"> <thead> <tr> <th>SIEVE SIZE</th> <th>PERCENT PASSING</th> </tr> </thead> <tbody> <tr><td>100.0</td><td>100%</td></tr> <tr><td>80.0</td><td>100%</td></tr> <tr><td>50.0</td><td>79%</td></tr> <tr><td>25.0</td><td>60%</td></tr> <tr><td>20.0</td><td>55%</td></tr> <tr><td>12.5</td><td>45%</td></tr> <tr><td>10.0</td><td>41%</td></tr> <tr><td>5.0</td><td>29%</td></tr> <tr><td>2.5</td><td>22%</td></tr> <tr><td>1.25</td><td>15%</td></tr> <tr><td>0.630</td><td>10%</td></tr> <tr><td>0.315</td><td>6%</td></tr> <tr><td>0.160</td><td>4%</td></tr> <tr><td>0.080</td><td>3%</td></tr> </tbody> </table>	SIEVE SIZE	PERCENT PASSING	100.0	100%	80.0	100%	50.0	79%	25.0	60%	20.0	55%	12.5	45%	10.0	41%	5.0	29%	2.5	22%	1.25	15%	0.630	10%	0.315	6%	0.160	4%	0.080	3%	<table border="1"> <thead> <tr> <th>SIEVE SIZE</th> <th>PERCENT PASSING</th> </tr> </thead> <tbody> <tr><td>100.0</td><td>100%</td></tr> <tr><td>80.0</td><td>100%</td></tr> <tr><td>50.0</td><td>72%</td></tr> <tr><td>25.0</td><td>43%</td></tr> <tr><td>20.0</td><td>40%</td></tr> <tr><td>12.5</td><td>34%</td></tr> <tr><td>10.0</td><td>31%</td></tr> <tr><td>5.0</td><td>23%</td></tr> <tr><td>2.5</td><td>19%</td></tr> <tr><td>1.25</td><td>15%</td></tr> <tr><td>0.630</td><td>11%</td></tr> <tr><td>0.315</td><td>8%</td></tr> <tr><td>0.160</td><td>5%</td></tr> <tr><td>0.080</td><td>4%</td></tr> </tbody> </table>	SIEVE SIZE	PERCENT PASSING	100.0	100%	80.0	100%	50.0	72%	25.0	43%	20.0	40%	12.5	34%	10.0	31%	5.0	23%	2.5	19%	1.25	15%	0.630	11%	0.315	8%	0.160	5%	0.080	4%		
SIEVE SIZE	PERCENT PASSING																																																														
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M.C. (%): 0% LIMITS LIQUID: 0.0 PLASTIC: 0.0 P.L.: 0.0	M.C. (%): 0% LIMITS LIQUID: 0.0 PLASTIC: 0.0 P.L.: 0.0																																																														
% GRAVEL: 71 % SAND: 26 % FINES: 3	% GRAVEL: 77 % SAND: 19 % FINES: 4																																																														
CLASSIFICATION: WELL-GRADED GRAVEL WITH SAND (GW)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)																																																														

YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)

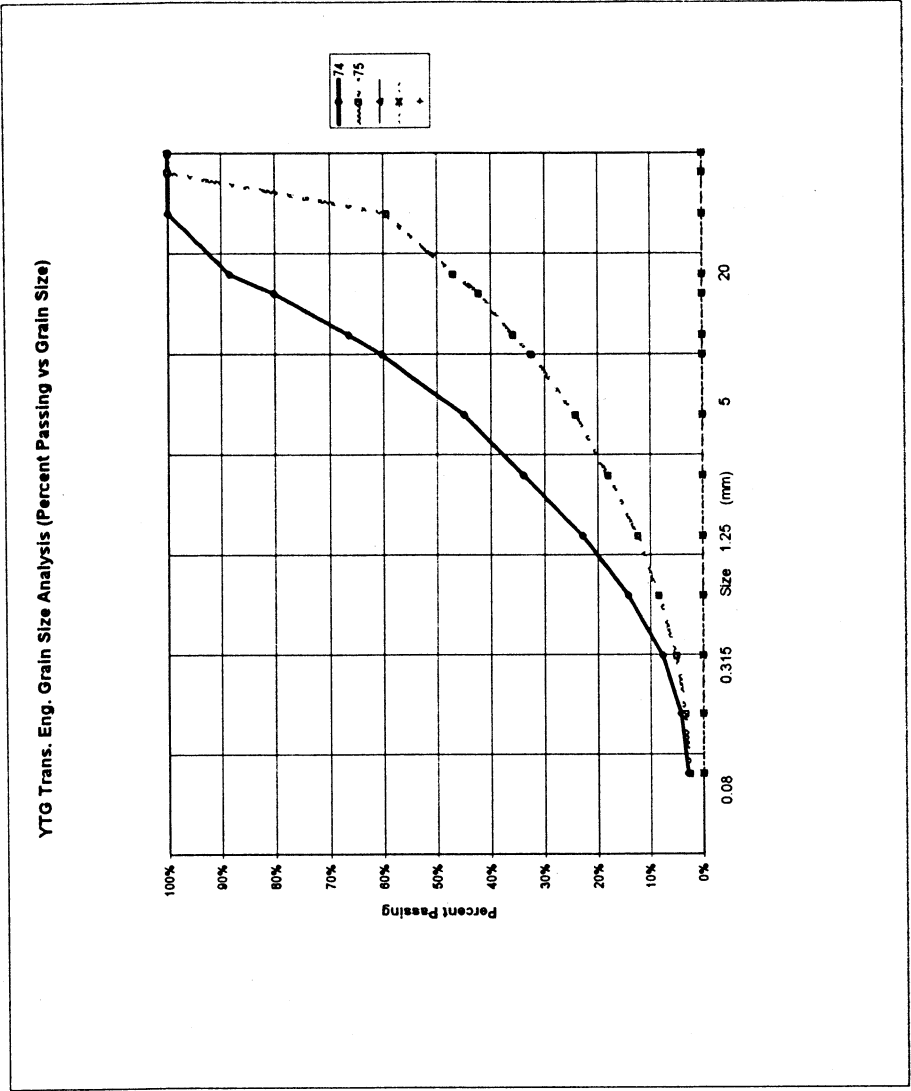


PROJECT NUMBER: 092-202101-0363-1		HOLE No.: 496-26	
CLIENT: ENGINEERING CAPITAL		DATE COMP 98-10-31	
PROJECT NAME: SHAKWAK SEG 9B			
PROJECT LOCATION: KM 1655 LHS			
DRILL UNIT: CAT 320L EXCAVATOR			
HOLE LOCATION: SEE PLAN			
LOGGED BY: D.T.			
FIELD NO: 71	FIELD No: 72	FIELD No: 73	
LAB No: 1152	LAB No: 1153	LAB No: 1154	
DEPTH: 0.4-0.6	DEPTH: 2.2-2.6	DEPTH: 4.4-4.8	
TYPE: BULK	TYPE: BULK	TYPE: BULK	
SIEVE SIZE	SIEVE SIZE	SIEVE SIZE	PERCENT PASSING
100.0	100.0	100.0	100%
80.0	80.0	80.0	100%
50.0	76%	50.0	77%
25.0	63%	25.0	62%
20.0	60%	20.0	58%
12.5	51%	12.5	48%
10.0	46%	10.0	45%
5.0	31%	5.0	33%
2.5	22%	2.5	25%
1.25	14%	1.25	17%
0.630	9%	0.630	12%
0.315	5%	0.315	8%
0.160	3%	0.160	5%
0.080	2%	0.080	4%
M.C.(%): 0%	M.C.(%): 0%	M.C.(%): 0%	
LIMITS	LIMITS	LIMITS	
LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	
PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	
P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	
% GRAVEL: 69	% GRAVEL: 71	% GRAVEL: 67	
% SAND: 29	% SAND: 24	% SAND: 29	
% FINES: 2	% FINES: 4	% FINES: 4	
CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)	

YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



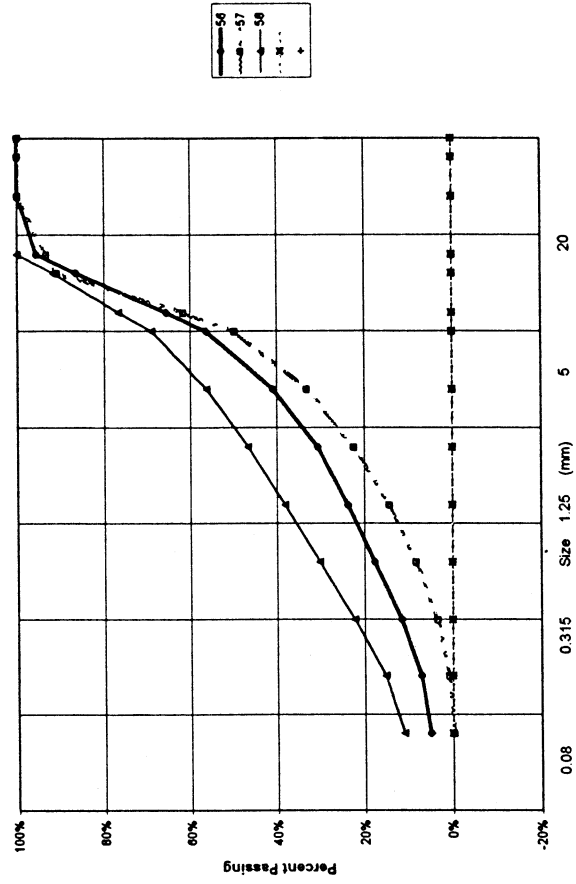
PROJECT NUMBER: 092-202101-0363-1		HOLE No.: 496-27	
CLIENT: ENGINEERING CAPITAL			
PROJECT NAME: SHAKWAK SEG 9B			
PROJECT LOCATION: KM 1655 LHS			
DRILL UNIT: CAT 320L EXCAVATOR			
HOLE LOCATION: SEE PLAN		DATE COMP 98-10-31	
LOGGED BY: D.T.			
=====		=====	
FIELD NO: 74	FIELD NO: 75		
LAB NO: 1155	LAB NO: 1156		
DEPTH: 0.4-0.8	DEPTH: 2.4-2.8		
TYPE: BULK	TYPE: BULK		
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%
80.0	100%	80.0	100%
50.0	100%	50.0	59%
25.0	88%	25.0	47%
20.0	80%	20.0	42%
12.5	68%	12.5	36%
10.0	60%	10.0	33%
5.0	45%	5.0	24%
2.5	34%	2.5	18%
1.25	23%	1.25	12%
0.630	14%	0.630	8%
0.315	8%	0.315	5%
0.160	4%	0.160	3%
0.080	3%	0.080	3%
M.C.(%)	0%	M.C.(%)	0%
LIMITS		LIMITS	
LIQUID	0.0	LIQUID	0.0
PLASTIC	0.0	PLASTIC	0.0
P.I.	0.0	P.I.	0.0
% GRAVEL:	55	% GRAVEL:	78
% SAND:	42	% SAND:	22
% FINES:	3	% FINES:	3
CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)		CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)	



LAB CRUSH RESULTS

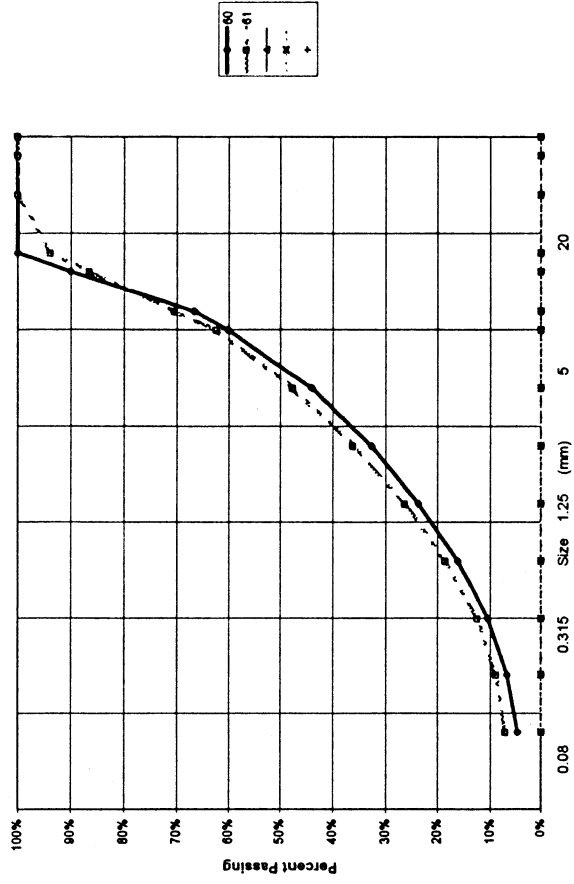
PROJECT NUMBER: 092-202101-0363		HOLE No.: 496-20	
CLIENT: Engineering Capital		DATE COMP 1998-10-30	
PROJECT NAME: Seg. 9			
PROJECT LOCATION: 01-1655 It			
DRILL UNIT: Cat 300LC Hoe			
HOLE LOCATION: SEE PLAN			
LOGGED BY: dt			
=====		=====	
FIELD NO: 56	FIELD NO: 57	FIELD NO: 58	
LAB NO: 1137cr	LAB NO: 1138cr	LAB NO: 1139cr	
DEPTH: 0.8-102	DEPTH: 2.2-26	DEPTH: 4.4-4.8	
TYPE: #N/A	TYPE: #N/A	TYPE: #N/A	
=====		=====	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%
80.0	100%	80.0	100%
50.0	100%	50.0	100%
25.0	96%	25.0	100%
20.0	86%	20.0	92%
12.5	65%	12.5	77%
10.0	56%	10.0	69%
5.0	41%	5.0	56%
2.5	31%	2.5	47%
1.25	24%	1.25	38%
0.630	18%	0.630	30%
0.315	12%	0.315	22%
0.160	7%	0.160	15%
0.080	5%	0.080	11%
cc 65.6%		cc 80.9%	
=====		=====	
M.C. (%): 0%	M.C. (%): 0%	M.C. (%): 0%	
LIMITS	LIMITS	LIMITS	
LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	
PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	
P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	
% GRAVEL: 50	% GRAVEL: 67	% GRAVEL: 44	
% SAND: 38	% SAND: 33	% SAND: 45	
% FINES: 5	% FINES: 0	% FINES: 11	
CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)	CLASSIFICATION: WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	

YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



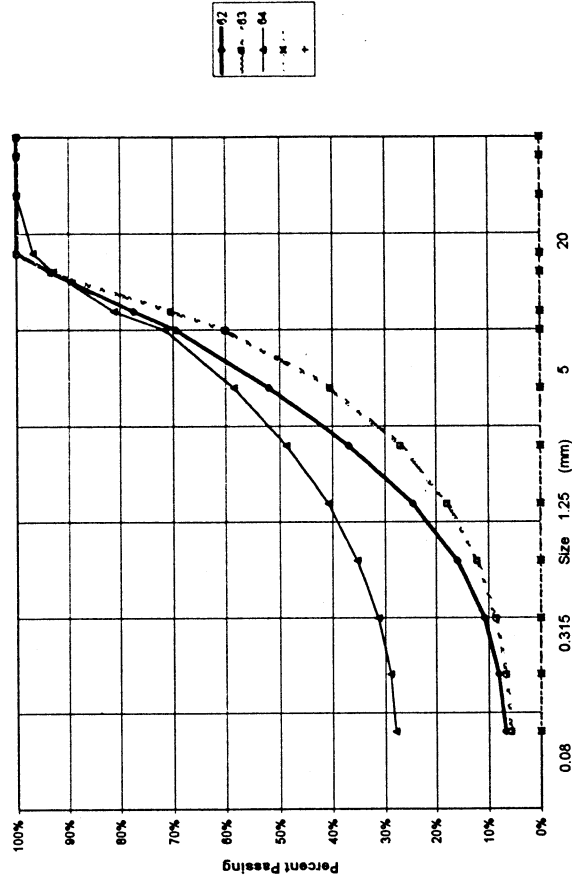
PROJECT NUMBER: 092-202101-0363		HOLE No.: 486-21	
CLIENT: Engineering Capital			
PROJECT NAME: Seg. 9			
PROJECT LOCATION: 01-1655 It			
DRILL UNIT: Cat 300LC Hoe			
HOLE LOCATION: SEE PLAN			
LOGGED BY: dt		DATE COMP 1998-10-30	
=====		=====	
FIELD NO: 60	FIELD No. 61		
LAB NO: 1141cr	LAB No. 1142cr		
DEPTH: 2.4-2.8	DEPTH: 4.6-5.0		
TYPE: BULK	TYPE: BULK		
=====		=====	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%
80.0	100%	80.0	100%
50.0	100%	50.0	100%
25.0	100%	25.0	94%
20.0	90%	20.0	86%
12.5	67%	12.5	70%
10.0	60%	10.0	62%
5.0	44%	5.0	48%
2.5	33%	2.5	36%
1.25	24%	1.25	26%
0.630	16%	0.630	19%
0.315	10%	0.315	13%
0.160	7%	0.160	9%
0.080	5%	0.080	7%
cc 65.9		cc 67.2	
=====		=====	
M.C. (%): 0%		M.C. (%): 0%	
LIMITS		LIMITS	
LIQUID: 0.0		LIQUID: 0.0	
PLASTIC: 0.0		PLASTIC: 0.0	
P.I.: 0.0		P.I.: 0.0	
=====		=====	
% GRAVEL: 56	% GRAVEL: 52		
% SAND: 39	% SAND: 41		
% FINES: 5	% FINES: 7		
CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)		CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	

YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



PROJECT NUMBER: 092-202101-0363		HOLE No.: 496-22	
CLIENT: Engineering Capital		DATE COMP 1988-10-30	
PROJECT NAME: Seg. 9		=====	
PROJECT LOCATION: 01-1655 ft		=====	
DRILL UNIT: Cat 300LC Hoe		=====	
HOLE LOCATION: SEE PLAN		=====	
LOGGED BY: dt		=====	
FIELD NO: 62	FIELD NO: 63	FIELD NO: 64	
LAB No: 1143cr	LAB No: 1144cr	LAB No: 1145cr	
DEPTH: 0.3-0.7	DEPTH: 2.3-2.7	DEPTH: 4.2-4.6	
BULK	BULK	BULK	
TYPE:	TYPE:	TYPE:	
SIEVE SIZE	SIEVE SIZE	SIEVE SIZE	PERCENT PASSING
100.0	100.0	100.0	100%
80.0	80.0	80.0	100%
50.0	50.0	50.0	100%
25.0	25.0	25.0	97%
20.0	20.0	20.0	93%
12.5	12.5	12.5	81%
10.0	10.0	10.0	71%
5.0	5.0	5.0	58%
2.5	2.5	2.5	49%
1.25	1.25	1.25	41%
0.630	0.630	0.630	35%
0.315	0.315	0.315	31%
0.160	0.160	0.160	29%
0.080	0.080	0.080	28%
cc 52.9%	cc 63.5%	cc 65.7%	
M.C.(%): 0%	M.C.(%): 0%	M.C.(%): 0%	
LIMITS	LIMITS	LIMITS	
LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	
PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	
P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	
% GRAVEL: 48	% GRAVEL: 60	% GRAVEL: 42	
% SAND: 45	% SAND: 35	% SAND: 31	
% FINES: 7	% FINES: 6	% FINES: 28	
CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	CLASSIFICATION: SILTY GRAVEL WITH SAND (GM)	

YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



PROJECT NUMBER: 092-202101-0363

CLIENT: Engineering Capital

PROJECT NAME: Seg. 9

PROJECT LOCATION: 01-1855 It

DRILL UNIT: Cat 300LC Hoe

HOLE LOCATION: SEE PLAN

LOGGED BY: dt

DATE COMP 1998-10-30

HOLE No.: 498-23

FIELD NO: 65

LAB NO: 1146cr

DEPTH: 7.1.0

TYPE: BULK

SIEVE SIZE PERCENT PASSING

100.0	100%
80.0	100%
50.0	100%
25.0	95%
20.0	88%
12.5	65%
10.0	55%
5.0	42%
2.5	34%
1.25	27%
0.630	19%
0.315	11%
0.160	5%
0.080	3%

cc 52.4%

M.C.(%): 0%

LIMITS

LIQUID: 0.0

PLASTIC: 0.0

P.L.: 0.0

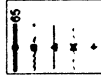
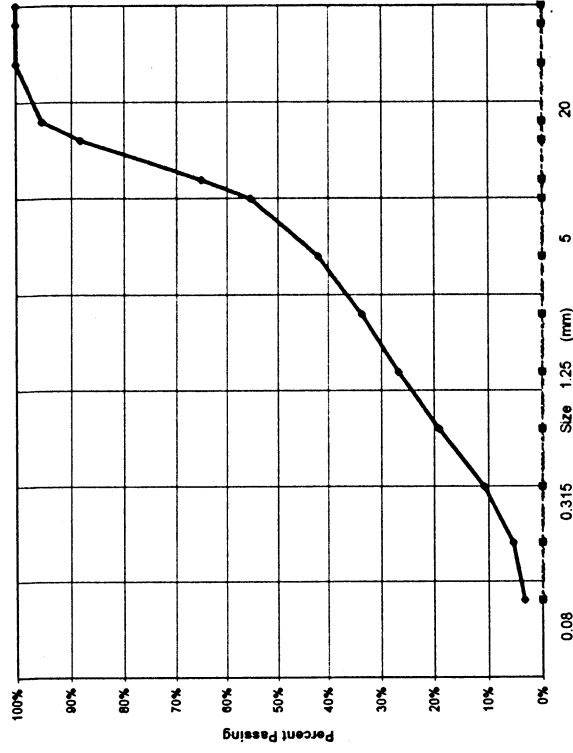
% GRAVEL: 58

% SAND: 39

% FINES: 3

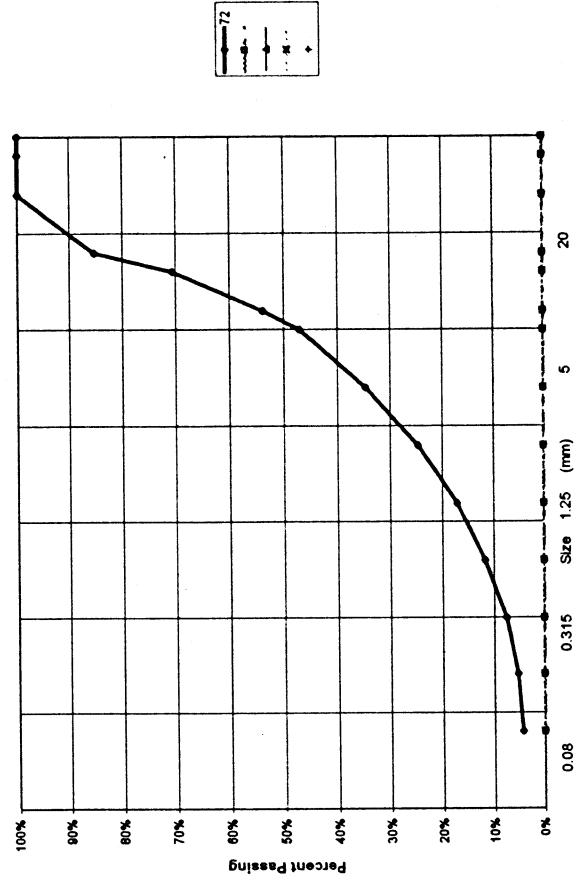
CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)

YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



PROJECT NUMBER: 092-202101-0363		HOLE No.: 496-26	
CLIENT: Engineering Capital			
PROJECT NAME: See 9			
PROJECT LOCATION: 01-1655 It			
DRILL UNIT: Cat 300LC Hoe			
HOLE LOCATION: SEE PLAN			
LOGGED BY: dt		DATE COMP 1998-10-30	
=====		=====	
FIELD NO: 72			
LAB NO: 1153cr			
DEPTH: 2.2,2.6			
TYPE: BULK			
=====		=====	
SIEVE SIZE	PERCENT PASSING		
100.0	100%		
80.0	100%		
50.0	100%		
25.0	85%		
20.0	71%		
12.5	54%		
10.0	47%		
5.0	35%		
2.5	25%		
1.25	17%		
0.630	12%		
0.315	8%		
0.160	5%		
0.080	4%		
cc 53.7%			
M.C. (%): 0%			
LIMITS			
LIQUID: 0.0			
PLASTIC: 0.0			
P.I.: 0.0			
% GRAVEL: 65			
% SAND: 30			
% FINES: 4			
CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)			

YTO Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



SUBSURFACE EXPLORATION AND TEST REPORT		SHAKWAK SEG 9		TEST PIT NO: 571-1451	
ENGINEERING CAPITAL		BEAR CREEK SUMMIT		Project No: 092-202101-0363	
MOBILE B 30 - D-4 CAT		LOCATION: SEE GPS		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND & GRAVEL		DEPTH (m)
				PLASTIC	M.C.	LIQUID			PERCENT SAND	PERCENT GRAVEL	
0.0	ORGANIC SILTY SAND WITH GRAVEL TO SILT WITH SAND (SM)-(ML) -grey -moist to wet -maximum 75mm material augered up -grindy drilling										0.0
1.0											1.0
2.0	-brown below 1.7m -wet below 1.7m -smooth drilling below 1.7m										2.0
3.0											3.0
4.0	-some sand & gravel contamination from above END HOLE @ 4.3m										4.0
5.0											5.0
6.0											6.0

Government of Yukon Transportation Engineering		LOGGED BY: JB	COMPLETION DEPTH: 4.3 m
		REVIEWED BY:	COMPLETE: 00/08/22
		Fig. No: 115-A-23	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		SHAKWAK SEG 9		TEST PIT NO: 571-1452	
ENGINEERING CAPITAL		BEAR CREEK SUMMIT		Project No: 092-202101-0363	
MOBILE B 30 - D-4 CAT		LOCATION: SEE GPS		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)
0.0	ORGANIC							0.0
	POORLY TO WELL TO POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)-(GW-GM)-(GP-GM)							
	-grey							
	-moist							
	-grindy drilling							
1.0								1.0
	-slow hard grindy drilling							
2.0								2.0
3.0								3.0
4.0								4.0
	END HOLE @ 4.3m							
5.0								5.0
6.0								6.0

Government of Yukon Transportation Engineering		LOGGED BY: JB	COMPLETION DEPTH: 4.3 m
		REVIEWED BY:	COMPLETE: 00/08/22
		Fig. No: 115-A-23	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		SHAKWAK SEG 9		TEST PIT NO: 571-1453	
ENGINEERING CAPITAL		BEAR CREEK SUMMIT		Project No: 092-202101-0363	
MOBILE B 30 - D-4 CAT		LOCATION: SEE GPS		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	SOIL SYMBOL	PERCENT SAND ◆			DEPTH (m)	
				PLASTIC	M.C.	LIQUID			PERCENT GRAVEL ■				
				20	40	60	80		20	40	60	80	
0.0	ORGANIC POORLY GRADED GRAVEL WITH SAND TO POORLY GRADED GRAVEL WITH SILT & SAND (GP)-(GP-GM) -grey -moist												0.0
1.0													1.0
2.0													2.0
3.0													3.0
4.0	SILTY SAND WITH GRAVEL (SM) -brown -wet -smoother drilling -sand & gravel contamination												4.0
5.0													5.0
6.0													6.0

Government of Yukon Transportation Engineering		LOGGED BY: JB	COMPLETION DEPTH: 4.3 m
		REVIEWED BY:	COMPLETE: 00/08/22
		Fig. No: 115-A-23	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		SHAKWAK SEG 9		TEST PIT NO: 571-1454	
ENGINEERING CAPITAL		BEAR CREEK SUMMIT		Project No: 092-202101-0363	
MOBILE B 30 - D-4 CAT		LOCATION: SEE GPS		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	SOIL SYMBOL	PERCENT SAND ◆		PERCENT GRAVEL ■	DEPTH (m)		
				PLASTIC	M.C.	LIQUID			20	40			60	80
0.0	ORGANIC											0.0		
0.0	SILTY SAND WITH GRAVEL (SM) -trace organic -grey -moist to wet -grindy drilling													
1.0		☒	1727	●	▲		SM	■	◆			1.0		
2.0	SILTY GRAVEL WITH SAND (GM) -grey -wet -hard slow grindy drilling													
2.0		☒	1728	●	▲		GM	■	◆			2.0		
3.0														
4.0		☒	1729	●	▲		GM	■	◆			4.0		
4.3	END HOLE @ 4.3m											4.3		
5.0												5.0		
6.0												6.0		

Government of Yukon Transportation Engineering		LOGGED BY: JB REVIEWED BY: Fig. No: 115-A-23	COMPLETION DEPTH: 4.3 m COMPLETE: 00/08/22 Page 1 of 1
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SUBSURFACE EXPLORATION AND TEST REPORT		SHAKWAK SEG 9		TEST PIT NO: 571-1455	
ENGINEERING CAPITAL		BEAR CREEK SUMMIT		Project No: 092-202101-0363	
MOBILE B 30 - D-4 CAT		LOCATION: SEE GPS		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	SOIL SYMBOL	PERCENT SAND ◆			DEPTH (m)
				PLASTIC M.C. LIQUID					◆ PERCENT SAND ◆			
				20	40	60			20	40	60	
0.0	ORGANIC											0.0
	SILTY GRAVEL WITH SAND TO WELL-GRADED GRAVEL WITH SAND (GM)-(GW)											
	-grey											
	-moist to wet											
	-grindy drilling											
1.0												1.0
2.0												2.0
		☒	1730	▲			GM	◆	■			
3.0												3.0
		☒	1731	▲			GW	◆	■			
4.0												4.0
	END HOLE @ 3.8m											
	-refusal											
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering	LOGGED BY: JB	COMPLETION DEPTH: 3.8 m
	REVIEWED BY:	COMPLETE: 00/08/23
	Fig. No: 115-A-23	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		SHAKWAK SEG 9		TEST PIT NO: 571-1471	
ENGINEERING CAPITAL		BEAR CREEK SUMMIT		Project No: 092-202101-0363	
MOBILE B 30 - D-4 CAT		LOCATION: SEE GPS		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND & GRAVEL		DEPTH (m)
				PLASTIC	M.C.	LIQUID			PERCENT SAND	PERCENT GRAVEL	
				20 40 60 80	20 40 60 80	20 40 60 80			20 40 60 80	20 40 60 80	
0.0	ORGANIC POORLY TO WELL TO POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)-(GW-GM)-(GP-GM) -grey -moist -grindy drilling										0.0
1.0		☒	1732				GP-GM				1.0
2.0											2.0
3.0		☒	1733				GW-GM				3.0
4.0		☒	1734				GP-GM				4.0
5.0											5.0
6.0											6.0
END HOLE @ 4.2m											

Government of Yukon Transportation Engineering		LOGGED BY: JB	COMPLETION DEPTH: 4.2 m
		REVIEWED BY:	COMPLETE: 00/08/23
		Fig. No: 115-A-23	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		SHAKWAK SEG 9		TEST PIT NO: 571-1472	
ENGINEERING CAPITAL		BEAR CREEK SUMMIT		Project No: 092-202101-0363	
MOBILE B 30 - D-4 CAT		LOCATION: SEE GPS		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND & GRAVEL		DEPTH (m)		
									◆ PERCENT SAND ◆	■ PERCENT GRAVEL ■			
				PLASTIC	M.C.	LIQUID							
				20	40	60	80		20	40	60	80	
0.0	ORGANIC												0.0
	POORLY GRADED GRAVEL WITH SAND (GP)												
	-grey												
	-moist												
	-grindy drilling												
1.0													1.0
	POORLY TO WELL-GRADED GRAVEL WITH SILT & SAND (GP-GM)-(GW-GM)												
	-grey												
	-moist												
	-hard tough drilling												
2.0													2.0
3.0													3.0
4.0	END HOLE @ 4.0m												4.0
	-refusal												
5.0													5.0
6.0													6.0

Government of Yukon Transportation Engineering	LOGGED BY: JB	COMPLETION DEPTH: 4.0 m
	REVIEWED BY:	COMPLETE: 00/08/23
	Fig. No: 115-A-23	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		SHAKWAK SEG 9		TEST PIT NO: 571-1473	
ENGINEERING CAPITAL		BEAR CREEK SUMMIT		Project No: 092-202101-0363	
MOBILE B 30 - D-4 CAT		LOCATION: SEE GPS		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	SOIL SYMBOL	PERCENT SAND ◆			DEPTH (m)			
				20	40	60			20	40	60		20	40	60
0.0	ORGANIC SILTY SAND -grey -moist											0.0			
1.0	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -grey -moist to wet	☒	1738					GP-GM				1.0			
2.0	SILTY SAND TO SILTY SAND WITH GRAVEL (SM) -grey -wet -smooth drilling											2.0			
3.0		☒	1739					SM				3.0			
4.0	-grindy drilling below 4.0m	☒	1740					SM				4.0			
5.0	END HOLE @ 4.3m											5.0			
6.0												6.0			

Government of Yukon Transportation Engineering		LOGGED BY: JB	COMPLETION DEPTH: 4.3 m
		REVIEWED BY:	COMPLETE: 00/08/24
		Fig. No: 115-A-23	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		SHAKWAK SEG 9		TEST PIT NO: 571-1474				
ENGINEERING CAPITAL		BEAR CREEK SUMMIT		Project No: 092-202101-0363				
MOBILE B 30 - D-4 CAT		LOCATION: SEE GPS		ELEVATION: 0.00 (m)				
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲	USC	SOIL SYMBOL	◆ PERCENT SAND ◆	DEPTH (m)
				20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80			20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	
0.0	ORGANIC							0.0
	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)							
	-grindy drilling							
1.0								1.0
		X	1741	▲		GP-GM	◆	
							■	
2.0								2.0
	-hard course drilling below 1.8m							
3.0								3.0
	END HOLE @ 3.0m	X	1742	▲		GP-GM	◆	
							■	
4.0								4.0
5.0								5.0
6.0								6.0
Government of Yukon Transportation Engineering				LOGGED BY: JB		COMPLETION DEPTH: 3.0 m		
				REVIEWED BY:		COMPLETE: 00/08/24		
				Fig. No: 115-A-23		Page 1 of 1		

SUBSURFACE EXPLORATION AND TEST REPORT		SHAKWAK SEG 9		TEST PIT NO: 571-1475	
ENGINEERING CAPITAL		BEAR CREEK SUMMIT		Project No: 092-202101-0363	
MOBILE B 30 - D-4 CAT		LOCATION: SEE GPS		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)
0.0	ORGANIC POORLY GRADED GRAVEL WITH SILT & SAND TO WELL-GRADED GRAVEL WITH SILT (GP-GM)-(GW-GM) -grey -moist -grindy drilling							0.0
1.0		☒	1743			GP-GM		1.0
2.0		☒	1744			GW-GM		2.0
3.0	-first refusal @ 2.2m (rock dust) -moved 2m & put on new bit							3.0
4.0	SILTY SAND WITH GRAVEL (SM) -moist -grey -soft drilling	☒	1745			SM		4.0
5.0	END HOLE @ 4.3m							5.0
6.0								6.0

Government of Yukon Transportation Engineering		LOGGED BY: JB	COMPLETION DEPTH: 4.3 m
		REVIEWED BY:	COMPLETE: 00/08/24
		Fig. No: 115-A-23	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		SHAKWAK SEG 9		TEST PIT NO: 571-1476	
ENGINEERING CAPITAL		BEAR CREEK SUMMIT		Project No: Q92-202101-0363	
MOBILE B 30 - D-4 CAT		LOCATION: SEE GPS		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	SOIL SYMBOL	PERCENT SAND ◆		PERCENT GRAVEL ■		DEPTH (m)				
				PLASTIC	M.C.	LIQUID			20	40	60	80		20	40	60	80
				20	40	60			80	20	40	60		80	20	40	60
0.0	ORGANIC POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -grey -moist -grindy drilling												0.0				
1.0													1.0				
2.0													2.0				
3.0	END HOLE @ 3.0m -refusal												3.0				
4.0													4.0				
5.0													5.0				
6.0													6.0				

Government of Yukon Transportation Engineering		LOGGED BY: JB	COMPLETION DEPTH: 3.0 m
		REVIEWED BY:	COMPLETE: 00/08/24
		Fig. No: 115-A-23	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		SHAKWAK SEG 9		TEST PIT NO: 571-1477								
ENGINEERING CAPITAL		BEAR CREEK SUMMIT		Project No: 092-202101-0363								
MOBILE B 30 - D-4 CAT		LOCATION: SEE GPS		ELEVATION: 0.00 (m)								
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE												
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND & GRAVEL			DEPTH (m)
				PLASTIC	M.C.	LIQUID			PERCENT SAND	PERCENT GRAVEL		
0.0	ORGANIC POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -grey -moist -grindy drilling											0.0
1.0		☒	1748	▲			GP-GM	▲		■		1.0
2.0												2.0
3.0		☒	1749	▲			GP-GM	▲		■		3.0
3.0	END HOLE @ 3.1m -refusal	☒	1750	▲			GP-GM	▲		■		3.0
4.0												4.0
5.0												5.0
6.0												6.0
Government of Yukon Transportation Engineering				LOGGED BY: JB		COMPLETION DEPTH: 3.1 m						
				REVIEWED BY:		COMPLETE: 00/08/24						
				Fig. No: 115-A-23		Page 1 of 1						

SUBSURFACE EXPLORATION AND TEST REPORT		SHAKWAK SEG 9		TEST PIT NO: 571-1478				
ENGINEERING CAPITAL		BEAR CREEK SUMMIT		Project No: 092-202101-0363				
MOBILE B 30 - D-4 CAT		LOCATION: SEE GPS		ELEVATION: 0.00 (m)				
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)
0.0	ORGANIC SILTY SAND -with organic							0.0
1.0	SANDY GRAVEL -some silt -moist -grey -smooth drilling							1.0
2.0	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -grindy drilling							2.0
3.0	END HOLE @ 2.8m -refusal	☒	1751	● ▲	GP-GM	▲▲▲◆■		3.0
4.0								4.0
5.0								5.0
6.0								6.0
Government of Yukon Transportation Engineering				LOGGED BY: JB		COMPLETION DEPTH: 2.8 m		
				REVIEWED BY:		COMPLETE: 00/08/24		
				Fig. No: 115-A-23		Page 1 of 1		

SUBSURFACE EXPLORATION AND TEST REPORT		SHAKWAK SEG 9		TEST PIT NO: 571-1479	
ENGINEERING CAPITAL		BEAR CREEK SUMMIT		Project No: 092-202101-0363	
MOBILE B 30 - D-4 CAT		LOCATION: SEE GPS		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

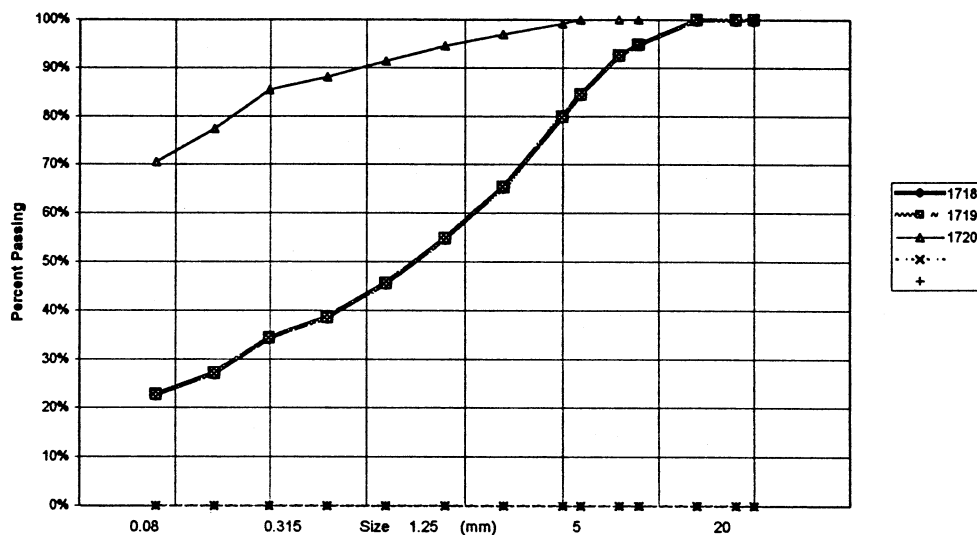
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND / GRAVEL			DEPTH (m)
				PLASTIC	M.C.	LIQUID			PERCENT SAND	PERCENT GRAVEL		
											20	
0.0	ORGANIC WELL-GRADED GRAVEL WITH SAND TO WELL-GRADED GRAVEL WITH SILT & SAND (GW)-(GW-GM) -grey -moist -grindy drilling											0.0
1.0			1752				GW					1.0
2.0												2.0
3.0			1753				GW-GM					3.0
4.0	SANDY SILT (ML) -grey/brown -wet -smooth easy drilling END HOLE @ 4.5m		1754				ML					4.0
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: JB	COMPLETION DEPTH: 4.5 m
		REVIEWED BY:	COMPLETE: 00/08/24
		Fig. No: 115-A-23	Page 1 of 1

PROJECT NUMBER: 092-202101-0363-1 HOLE No.: 571-1451
 CLIENT: ENGINEERING-CAPITAL
 PROJECT NAME: SHAKWAK SEG 9
 PROJECT LOCATION: BEAR CREEK SUMMIT KM 1655 LHS
 DRILL UNIT: MOBILE B 30 L D-4 CAT
 LOGGED BY: J.B.
 HOLE LOCATION: SEE GPS DATE COM 2000/08/22

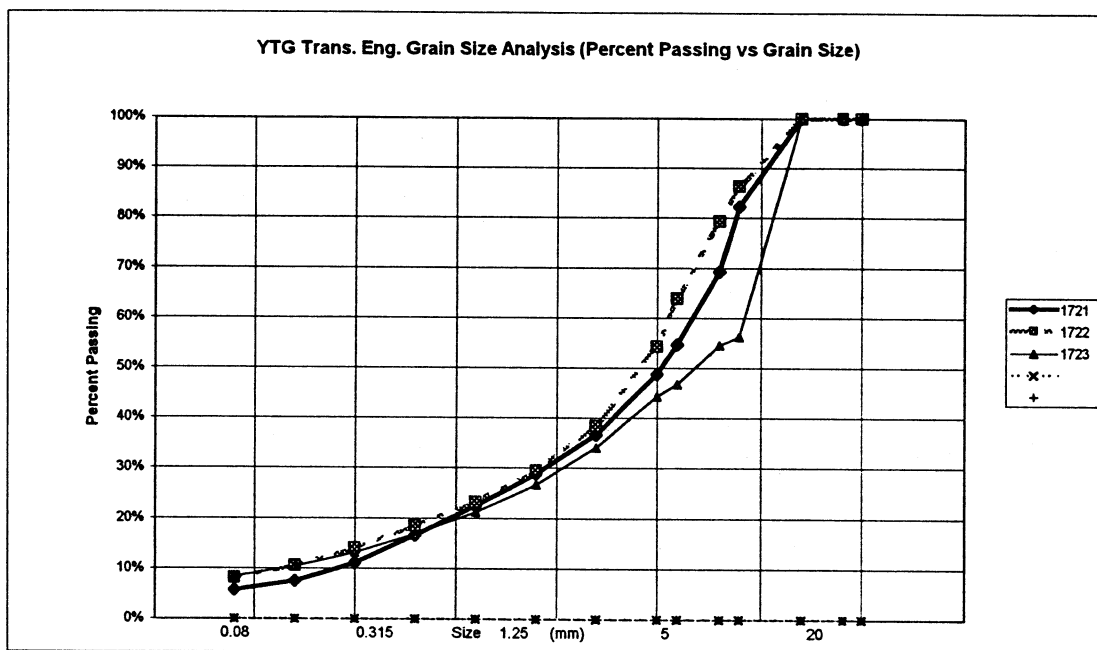
FIELD NO: 1718 LAB NO: 2189 DEPTH: 1.2-1.4 TYPE: AUGER		FIELD No. 1719 LAB No. 2190 DEPTH: 2.5-2.7 A AUGER		FIELD No: 1720 LAB No: 2191 DEPTH: 4.1-4.3 TYPE: AUGER	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%	100.0	100%
80.0	100%	80.0	100%	80.0	100%
50.0	100%	50.0	100%	50.0	100%
25.0	95%	25.0	95%	25.0	100%
20.0	93%	20.0	93%	20.0	100%
12.5	85%	12.5	85%	12.5	100%
10.0	80%	10.0	80%	10.0	99%
5.0	65%	5.0	65%	5.0	97%
2.5	55%	2.5	55%	2.5	95%
1.25	46%	1.25	46%	1.25	91%
0.630	39%	0.630	39%	0.630	88%
0.315	34%	0.315	34%	0.315	85%
0.160	27%	0.160	27%	0.160	77%
0.080	23%	0.080	23%	0.080	71%
M.C.(%):	3%	M.C.(%):	8%	M.C.(%):	29%
LIMITS		LIMITS		LIMITS	
LIQUID:	0.0	LIQUID:	0.0	LIQUID:	0.0
PLASTIC:	0.0	PLASTIC:	0.0	PLASTIC:	0.0
P.I.:	0.0	P.I.:	0.0	P.I.:	0.0
% GRAVEL	35	% GRAVEL	35	% GRAVEL	3
% SAND:	43	% SAND:	43	% SAND:	26
% FINES:	23	% FINES:	23	% FINES:	71
CLASSIFICATION: SILTY SAND WITH GRAVEL (SM)		CLASSIFICATION: SILTY SAND WITH GRAVEL (SM)		CLASSIFICATION: SILT WITH SAND (ML)	

YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



PROJECT NUMBER: 092-202101-0363-1 HOLE No: 571-1452
 CLIENT: ENGINEERING-CAPITAL
 PROJECT NAME: SHAKWAK SEG 9
 PROJECT LOCATION: BEAR CREEK SUMMIT KM 1655 LHS
 DRILL UNIT: MOBILE B 30 L D-4 CAT
 LOGGED BY: J.B.
 HOLE LOCATION: SEE GPS DATE COM 2000/08/22

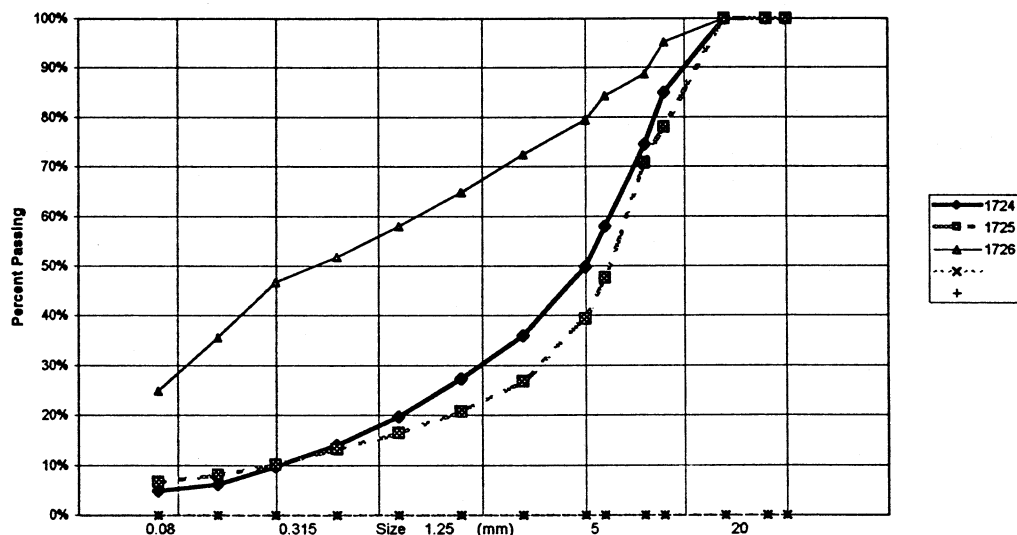
FIELD No: 1721 LAB No: 2192 DEPTH: 1.2-1.4 TYPE: AUGER	FIELD No: 1722 LAB No: 2193 DEPTH: 2.5-2.7 A AUGER	FIELD No: 1723 LAB No: 2194 DEPTH: 4.1-4.3 TYPE: AUGER	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%
80.0	100%	80.0	100%
50.0	100%	50.0	100%
25.0	82%	25.0	86%
20.0	69%	20.0	79%
12.5	55%	12.5	64%
10.0	49%	10.0	54%
5.0	37%	5.0	39%
2.5	29%	2.5	30%
1.25	22%	1.25	23%
0.630	17%	0.630	19%
0.315	11%	0.315	14%
0.160	8%	0.160	11%
0.080	6%	0.080	8%
M.C.(%): 2%	M.C.(%): 5%	M.C.(%): 3%	
LIMITS	LIMITS	LIMITS	
LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	
PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	
P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	
% GRAVEL 63	% GRAVEL 61	% GRAVEL 66	
% SAND: 31	% SAND: 30	% SAND: 26	
% FINES: 6	% FINES: 8	% FINES: 8	
CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	CLASSIFICATION: WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	



PROJECT NUMBER: 092-202101-0363-1 HOLE No.: 571-1453
 CLIENT: ENGINEERING-CAPITAL
 PROJECT NAME: SHAKWAK SEG 9
 PROJECT LOCATION: BEAR CREEK SUMMIT KM 1655 LHS
 DRILL UNIT: MOBILE B 30 L D-4 CAT
 LOGGED BY: J.B.
 HOLE LOCATION: SEE GPS DATE COM 2000/08/22

FIELD NO: 1724		FIELD No. 1725		FIELD No: 1726	
LAB NO: 2195		LAB No. 2196		LAB No: 2197	
DEPTH: 1.3-1.5		DEPTH 2.5-2.7		DEPTH: 4.1-4.3	
TYPE: AUGER		A AUGER		TYPE: AUGER	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%	100.0	100%
80.0	100%	80.0	100%	80.0	100%
50.0	100%	50.0	100%	50.0	100%
25.0	85%	25.0	78%	25.0	95%
20.0	75%	20.0	71%	20.0	89%
12.5	58%	12.5	48%	12.5	84%
10.0	50%	10.0	39%	10.0	80%
5.0	36%	5.0	27%	5.0	73%
2.5	27%	2.5	21%	2.5	65%
1.25	20%	1.25	16%	1.25	58%
0.630	14%	0.630	13%	0.630	52%
0.315	10%	0.315	10%	0.315	47%
0.160	6%	0.160	8%	0.160	36%
0.080	5%	0.080	7%	0.080	25%
M.C.(%):	3%	M.C.(%):	3%	M.C.(%):	12%
LIMITS		LIMITS		LIMITS	
LIQUID:	0.0	LIQUID:	0.0	LIQUID:	0.0
PLASTIC:	0.0	PLASTIC:	0.0	PLASTIC:	0.0
P.I.:	0.0	P.I.:	0.0	P.I.:	0.0
% GRAVEL	64	% GRAVEL	73	% GRAVEL	27
% SAND:	31	% SAND:	20	% SAND:	48
% FINES:	5	% FINES:	7	% FINES:	25
CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)		CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)		CLASSIFICATION: SILTY SAND WITH GRAVEL (SM)	

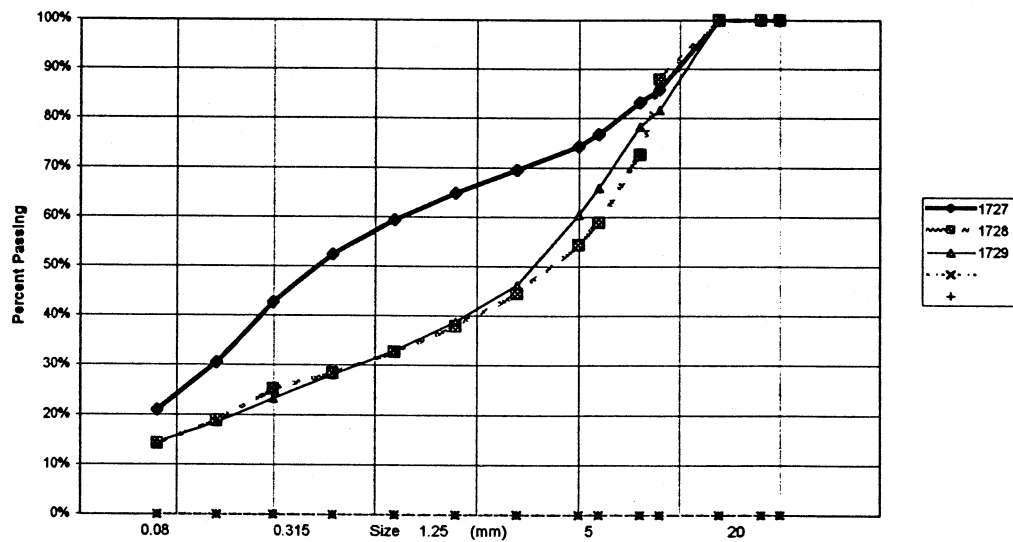
YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



PROJECT NUMBER: 092-202101-0363-1 HOLE No 571-1454
 CLIENT: ENGINEERING-CAPITAL
 PROJECT NAME: SHAKWAK SEG 9
 PROJECT LOCATION: BEAR CREEK SUMMIT KM 1655 LHS
 DRILL UNIT: MOBILE B 30 L D-4 CAT
 LOGGED BY: J.B.
 HOLE LOCATION: SEE GPS DATE COM 2000/08/22

FIELD No: 1727 LAB No: 2198 DEPTH: 1.1-1.3 TYPE: AUGER		FIELD No: 1728 LAB No: 2199 DEPTH: 2.3-2.5 A AUGER		FIELD No: 1729 LAB No: 2200 DEPTH: 4.1-4.3 AUGER	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%	100.0	100%
80.0	100%	80.0	100%	80.0	100%
50.0	100%	50.0	100%	50.0	100%
25.0	86%	25.0	88%	25.0	82%
20.0	83%	20.0	73%	20.0	78%
12.5	77%	12.5	59%	12.5	66%
10.0	74%	10.0	54%	10.0	60%
5.0	70%	5.0	45%	5.0	46%
2.5	65%	2.5	38%	2.5	39%
1.25	59%	1.25	33%	1.25	33%
0.630	53%	0.630	28%	0.630	28%
0.315	43%	0.315	25%	0.315	23%
0.160	31%	0.160	19%	0.160	19%
0.080	21%	0.080	14%	0.080	14%
M.C.(%):	13%	M.C.(%):	9%	M.C.(%):	7%
LIMITS		LIMITS		LIMITS	
LIQUID:	0.0	LIQUID:	0.0	LIQUID:	0.0
PLASTIC:	0.0	PLASTIC:	0.0	PLASTIC:	0.0
P.I.:	0.0	P.I.:	0.0	P.I.:	0.0
% GRAVEL	30	% GRAVEL	55	% GRAVEL	54
% SAND:	49	% SAND:	30	% SAND:	32
% FINES:	21	% FINES:	14	% FINES:	14
CLASSIFICATION:		CLASSIFICATION:		CLASSIFICATION:	
SILTY SAND WITH GRAVEL (SM)		SILTY GRAVEL WITH SAND (GM)		SILTY GRAVEL WITH SAND (GM)	

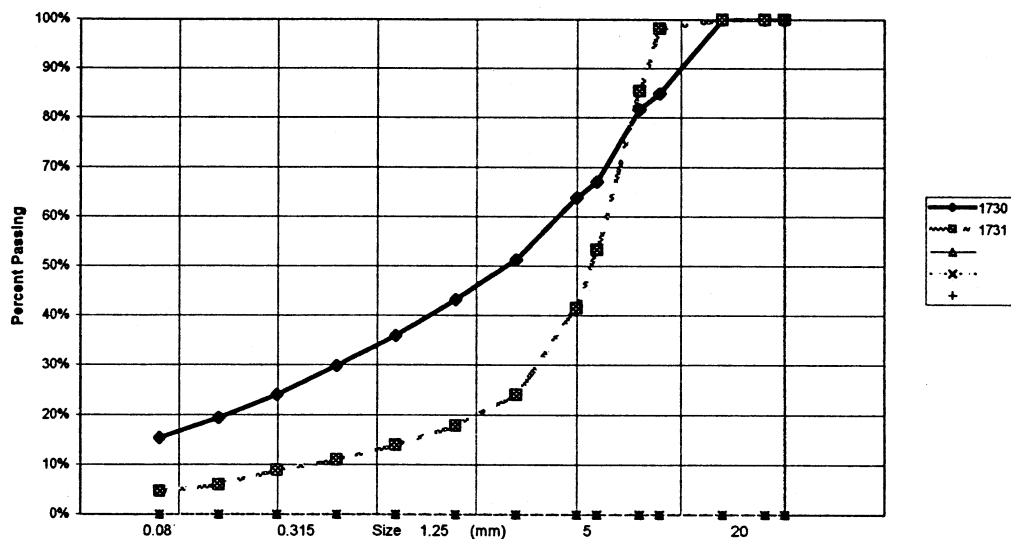
YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



PROJECT NUMBER:	092-202101-0363-1	HOLE No.:	571-1455
CLIENT:	ENGINEERING-CAPITAL		
PROJECT NAME:	SHAKWAK SEG 9		
PROJECT LOCATION:	BEAR CREEK SUMMIT KM 1655 LHS		
DRILL UNIT:	MOBILE B 30 L D-4 CAT		
LOGGED BY:	J.B.		
HOLE LOCATION:	SEE GPS	DATE COM	2000/08/22

SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%
80.0	100%	80.0	100%
50.0	100%	50.0	100%
25.0	85%	25.0	98%
20.0	82%	20.0	86%
12.5	67%	12.5	53%
10.0	64%	10.0	42%
5.0	51%	5.0	24%
2.5	43%	2.5	18%
1.25	36%	1.25	14%
0.630	30%	0.630	11%
0.315	24%	0.315	9%
0.160	19%	0.160	6%
0.080	15%	0.080	5%
M.C.(%):	8%	M.C.(%):	2%
LIMITS		LIMITS	
LIQUID:	0.0	LIQUID:	0.0
PLASTIC:	0.0	PLASTIC:	0.0
P.I.:	0.0	P.I.:	0.0
% GRAVEL	49	% GRAVEL	76
% SAND:	36	% SAND:	19
% FINES:	15	% FINES:	5
CLASSIFICATION:		CLASSIFICATION:	
SILTY GRAVEL WITH SAND (GM)		WELL-GRADED GRAVEL WITH SAND (GW)	

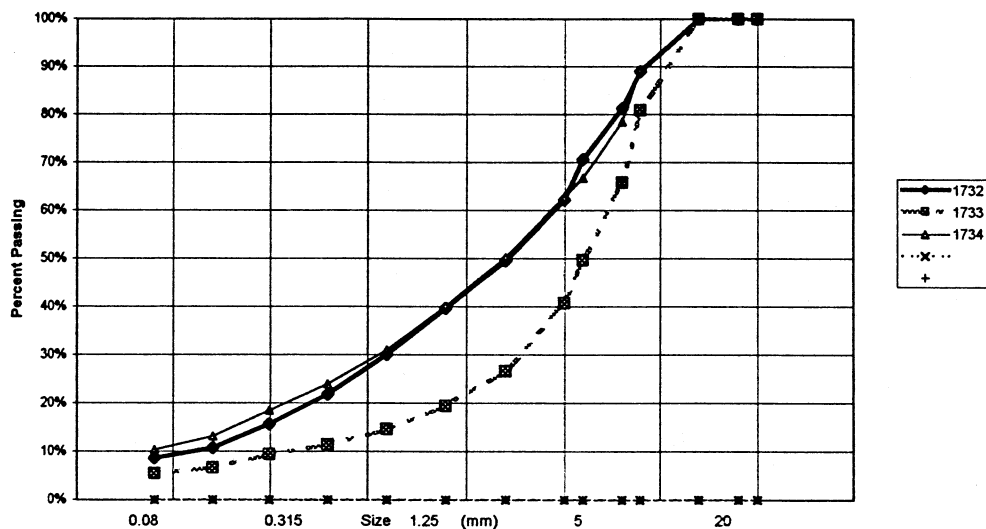
YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



PROJECT NUMBER: 092-202101-0363-1 HOLE No.: 571-1471
 CLIENT: ENGINEERING-CAPITAL
 PROJECT NAME: SHAKWAK SEG 9
 PROJECT LOCATION: BEAR CREEK SUMMIT KM 1655 LHS
 DRILL UNIT: MOBILE B 30 L D-4 CAT
 LOGGED BY: J.B.
 HOLE LOCATION: SEE GPS DATE COM 2000/08/22

FIELD NO: 1732		FIELD No. 1733		FIELD No: 1734	
LAB NO: 2203		LAB No. 2204		LAB No: 2205	
DEPTH: 1.1-1.3		DEPTH 2.7-2.9		DEPTH: 4.0-4.1	
TYPE: AUGER		A AUGER		AUGER	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%	100.0	100%
80.0	100%	80.0	100%	80.0	100%
50.0	100%	50.0	100%	50.0	100%
25.0	89%	25.0	81%	25.0	90%
20.0	81%	20.0	66%	20.0	79%
12.5	71%	12.5	50%	12.5	67%
10.0	62%	10.0	41%	10.0	63%
5.0	50%	5.0	27%	5.0	50%
2.5	40%	2.5	19%	2.5	40%
1.25	30%	1.25	15%	1.25	31%
0.630	22%	0.630	11%	0.630	24%
0.315	16%	0.315	9%	0.315	19%
0.160	11%	0.160	7%	0.160	13%
0.080	9%	0.080	5%	0.080	10%
M.C.(%):	3%	M.C.(%):	2%	M.C.(%):	4%
LIMITS		LIMITS		LIMITS	
LIQUID:	0.0	LIQUID:	0.0	LIQUID:	0.0
PLASTIC:	0.0	PLASTIC:	0.0	PLASTIC:	0.0
P.I.:	0.0	P.I.:	0.0	P.I.:	0.0
% GRAVEL	50	% GRAVEL	73	% GRAVEL	50
% SAND:	41	% SAND:	21	% SAND:	40
% FINES:	9	% FINES:	5	% FINES:	10
CLASSIFICATION:		CLASSIFICATION:		CLASSIFICATION:	
POORLY GRADED GRAVEL		WELL-GRADED GRAVEL		POORLY GRADED GRAVEL	
WITH SILT & SAND (GP-GM)		WITH SILT & SAND (GW-GM)		WITH SILT & SAND (GP-GM)	

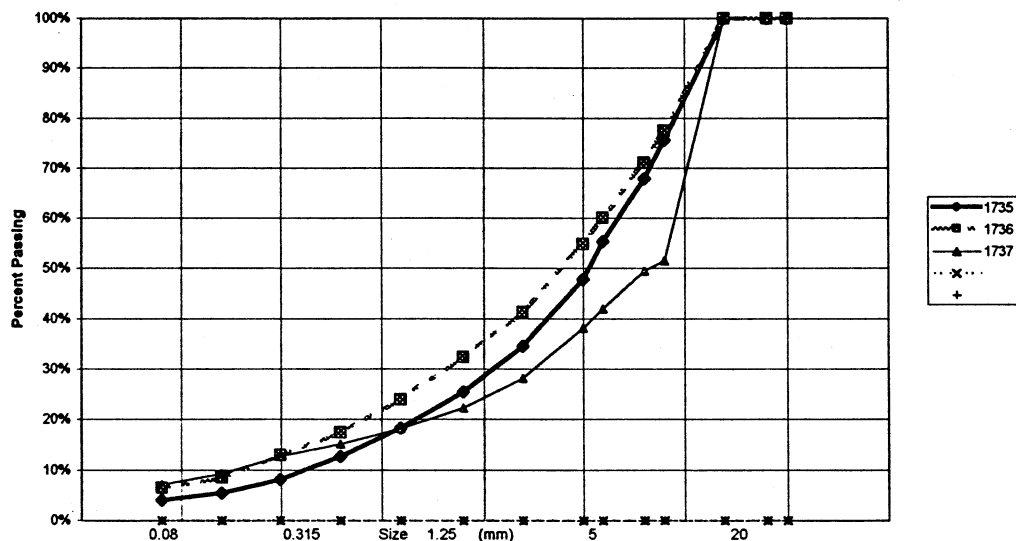
YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



PROJECT NUMBER: 092-202101-0363-1 HOLE No.: 571-1472
 CLIENT: ENGINEERING-CAPITAL
 PROJECT NAME: SHAKWAK SEG 9
 PROJECT LOCATION: BEAR CREEK SUMMIT KM 1655 LHS
 DRILL UNIT: MOBILE B 30 L D-4 CAT
 LOGGED BY: J.B.
 HOLE LOCATION: SEE GPS DATE COM 2000/08/22

FIELD NO: 1735 LAB NO: 2206 DEPTH: 1.1-1.3 TYPE: AUGER	FIELD No: 1736 LAB No: 2207 DEPTH: 2.7-2.9 A AUGER	FIELD No: 1737 LAB No: 2208 DEPTH: 3.9-4.1 AUGER	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%
80.0	100%	80.0	100%
50.0	100%	50.0	100%
25.0	76%	25.0	77%
20.0	68%	20.0	71%
12.5	55%	12.5	60%
10.0	48%	10.0	55%
5.0	35%	5.0	41%
2.5	26%	2.5	32%
1.25	18%	1.25	24%
0.630	13%	0.630	18%
0.315	8%	0.315	13%
0.160	6%	0.160	9%
0.080	4%	0.080	6%
M.C.(%): 3%	M.C.(%): 4%	M.C.(%): 3%	
LIMITS	LIMITS	LIMITS	
LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	
PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	
P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	
% GRAVEL 65	% GRAVEL 59	% GRAVEL 72	
% SAND: 30	% SAND: 35	% SAND: 21	
% FINES: 4	% FINES: 6	% FINES: 7	
CLASSIFICATION: POORLY GRADED GRAVEL WITH SAND (GP)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	CLASSIFICATION: WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	

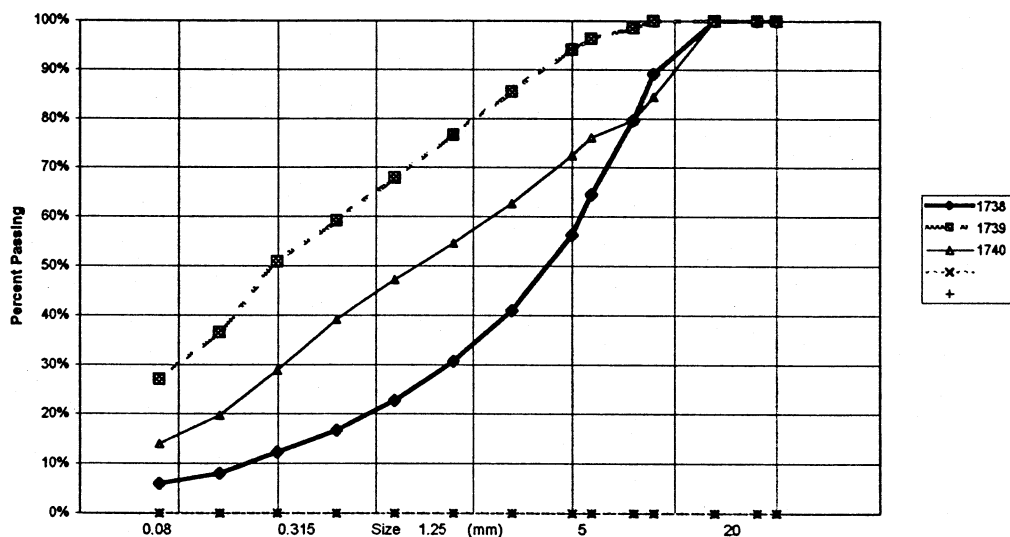
YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



PROJECT NUMBER: 092-202101-0363-1 HOLE No: 571-1473
 CLIENT: ENGINEERING-CAPITAL
 PROJECT NAME: SHAKWAK SEG 9
 PROJECT LOCATION: BEAR CREEK SUMMIT KM 1655 LHS
 DRILL UNIT: MOBILE B 30 L D-4 CAT
 LOGGED BY: J.B.
 HOLE LOCATION: SEE GPS DATE COM 2000/08/22

FIELD NO: 1738 LAB NO: 2209 DEPTH: 1.1-1.3 TYPE: AUGER	FIELD No: 1739 LAB No: 2210 DEPTH: 2.7-2.9 A AUGER	FIELD No: 1740 LAB No: 2211 DEPTH: 4.0-4.1 TYPE: AUGER	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%
80.0	100%	80.0	100%
50.0	100%	50.0	100%
25.0	89%	25.0	100%
20.0	80%	20.0	99%
12.5	65%	12.5	96%
10.0	56%	10.0	94%
5.0	41%	5.0	86%
2.5	31%	2.5	77%
1.25	23%	1.25	68%
0.630	17%	0.630	59%
0.315	12%	0.315	51%
0.160	8%	0.160	37%
0.080	6%	0.080	27%
M.C.(%): 3%	M.C.(%): 12%	M.C.(%): 8%	
LIMITS	LIMITS	LIMITS	
LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	
PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	
P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	
% GRAVEL 59	% GRAVEL 14	% GRAVEL 37	
% SAND: 35	% SAND: 59	% SAND: 49	
% FINES: 6	% FINES: 27	% FINES: 14	
CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	CLASSIFICATION: SILTY SAND (SM)	CLASSIFICATION: SILTY SAND WITH GRAVEL (SM)	

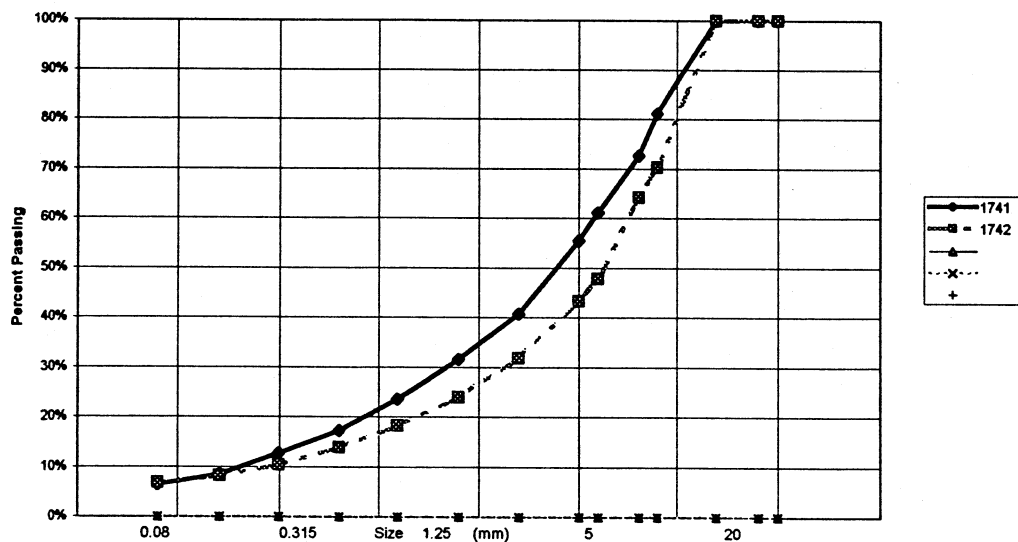
YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



PROJECT NUMBER: 092-202101-0363-1 HOLE No.: 571-1474
 CLIENT: ENGINEERING-CAPITAL
 PROJECT NAME: SHAKWAK SEG 9
 PROJECT LOCATION: BEAR CREEK SUMMIT KM 1655 LHS
 DRILL UNIT: MOBILE B 30 L D-4 CAT
 LOGGED BY: J.B.
 HOLE LOCATION: SEE GPS DATE COM 2000/08/22

FIELD NO: 1741		FIELD No: 1742			
LAB NO: 2212		LAB No: 2213			
DEPTH: 1.1-1.3		DEPTH: 2.7-2.9			
TYPE: AUGER		A AUGER			
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING		
100.0	100%	100.0	100%		
80.0	100%	80.0	100%		
50.0	100%	50.0	100%		
25.0	81%	25.0	70%		
20.0	73%	20.0	64%		
12.5	61%	12.5	48%		
10.0	56%	10.0	43%		
5.0	41%	5.0	32%		
2.5	32%	2.5	24%		
1.25	24%	1.25	18%		
0.630	17%	0.630	14%		
0.315	13%	0.315	11%		
0.160	8%	0.160	8%		
0.080	6%	0.080	7%		
M.C.(%):	3%	M.C.(%):	2%		
LIMITS		LIMITS			
LIQUID:	0.0	LIQUID:	0.0		
PLASTIC:	0.0	PLASTIC:	0.0		
P.I.:	0.0	P.I.:	0.0		
% GRAVEL	59	% GRAVEL	68		
% SAND:	34	% SAND:	25		
% FINES:	6	% FINES:	7		
CLASSIFICATION:		CLASSIFICATION:			
POORLY GRADED GRAVEL		POORLY GRADED GRAVEL			
WITH SILT & SAND (GP-GM)		WITH SILT & SAND (GP-GM)			

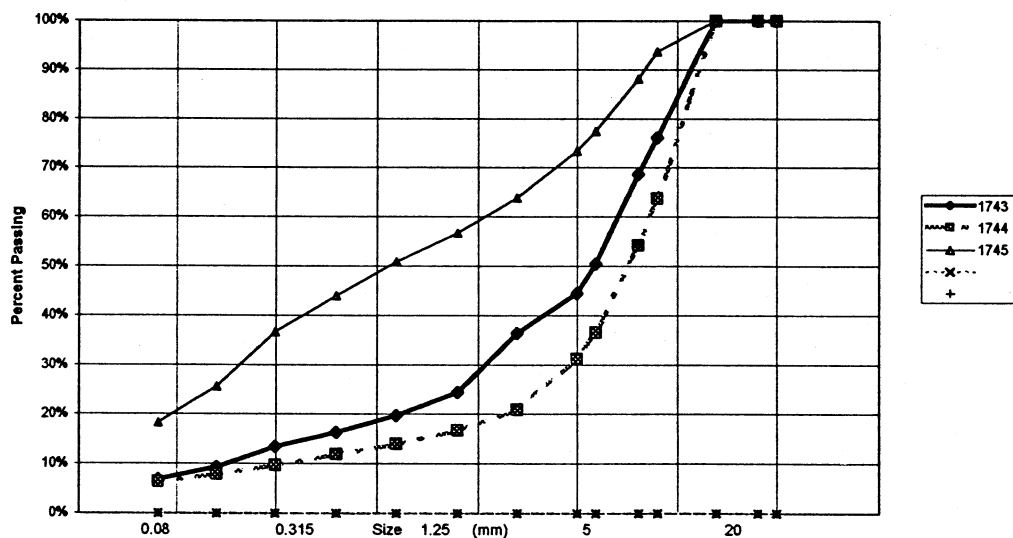
YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



PROJECT NUMBER: 092-202101-0363-1 HOLE No.: 571-1475
 CLIENT: ENGINEERING-CAPITAL
 PROJECT NAME: SHAKWAK SEG 9
 PROJECT LOCATION: BEAR CREEK SUMMIT KM 1655 LHS
 DRILL UNIT: MOBILE B 30 L D-4 CAT
 LOGGED BY: J.B.
 HOLE LOCATION: SEE GPS DATE COM 2000/08/22

FIELD NO: 1743	FIELD No: 1744	FIELD No: 1745	
LAB NO: 2214	LAB No: 2215	LAB No: 2216	
DEPTH: 1.1-1.3	DEPTH: 2.3-2.5	DEPTH: 4.0-4.2	
TYPE: AUGER	A AUGER	TYPE: AUGER	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%
80.0	100%	80.0	100%
50.0	100%	50.0	100%
25.0	76%	25.0	94%
20.0	69%	20.0	88%
12.5	50%	12.5	77%
10.0	44%	10.0	73%
5.0	36%	5.0	64%
2.5	25%	2.5	57%
1.25	20%	1.25	51%
0.630	16%	0.630	44%
0.315	14%	0.315	37%
0.160	9%	0.160	26%
0.080	7%	0.080	18%
M.C.(%): 4%	M.C.(%): 3%	M.C.(%): 8%	
LIMITS	LIMITS	LIMITS	
LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	
PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	
P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	
% GRAVEL 64	% GRAVEL 79	% GRAVEL 36	
% SAND: 30	% SAND: 15	% SAND: 46	
% FINES: 7	% FINES: 6	% FINES: 18	
CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	CLASSIFICATION: WELL-GRADED GRAVEL WITH SILT (GW-GM)	CLASSIFICATION: SILTY SAND WITH GRAVEL (SM)	

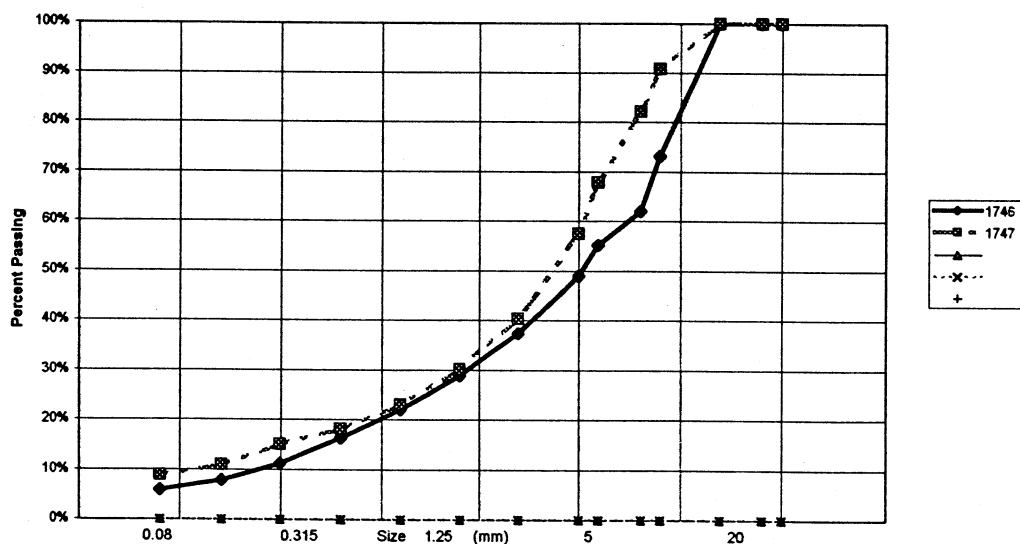
YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



PROJECT NUMBER: 092-202101-0363-1 HOLE No.: 571-1476
 CLIENT: ENGINEERING-CAPITAL
 PROJECT NAME: SHAKWAK SEG 9
 PROJECT LOCATION: BEAR CREEK SUMMIT KM 1655 LHS
 DRILL UNIT: MOBILE B 30 L D-4 CAT
 LOGGED BY: J.B.
 HOLE LOCATION: SEE GPS DATE COM 2000/08/22

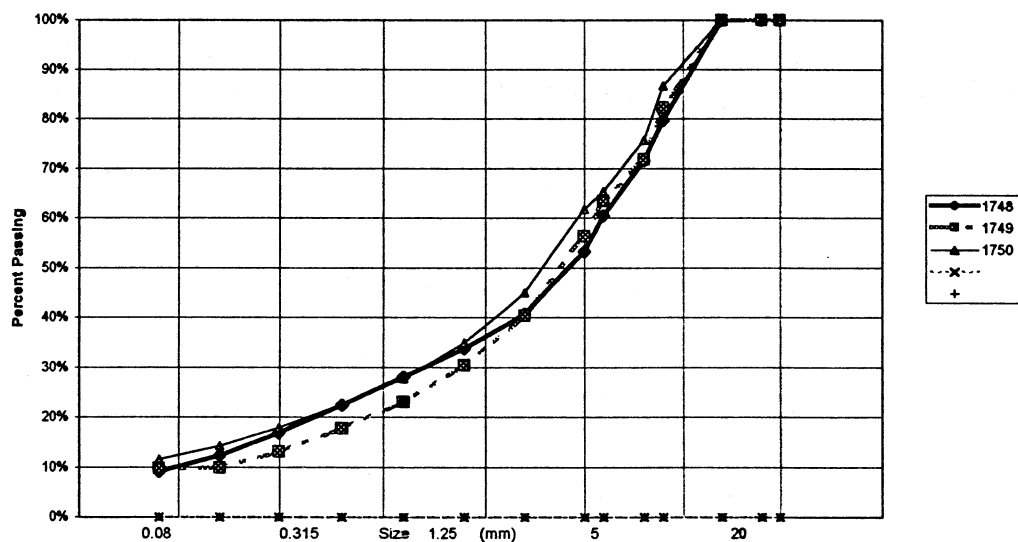
FIELD NO: 1746		FIELD No: 1747	
LAB NO: 2217		LAB No: 2218	
DEPTH: 1.1-1.3		DEPTH: 2.5-2.7	
TYPE: AUGER		A AUGER	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%
80.0	100%	80.0	100%
50.0	100%	50.0	100%
25.0	73%	25.0	91%
20.0	62%	20.0	82%
12.5	55%	12.5	68%
10.0	49%	10.0	58%
5.0	37%	5.0	40%
2.5	29%	2.5	30%
1.25	22%	1.25	23%
0.630	16%	0.630	18%
0.315	11%	0.315	15%
0.160	8%	0.160	11%
0.080	6%	0.080	9%
M.C.(%):	3%	M.C.(%):	3%
LIMITS		LIMITS	
LIQUID:	0.0	LIQUID:	0.0
PLASTIC:	0.0	PLASTIC:	0.0
P.I.:	0.0	P.I.:	0.0
% GRAVEL	63	% GRAVEL	60
% SAND:	31	% SAND:	31
% FINES:	6	% FINES:	9
CLASSIFICATION:		CLASSIFICATION:	
POORLY GRADED GRAVEL		POORLY GRADED GRAVEL	
WITH SILT & SAND (GP-GM)		WITH SILT & SAND (GP-GM)	

YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



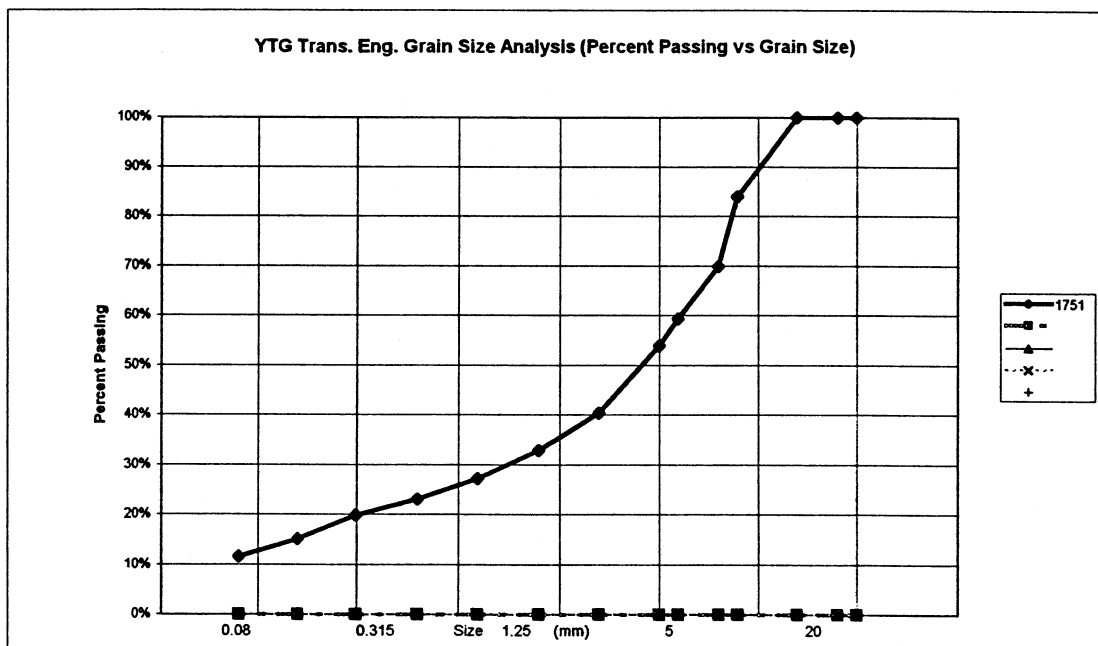
PROJECT NUMBER: 092-202101-0363-1		HOLE No: 571-1477	
CLIENT: ENGINEERING-CAPITAL			
PROJECT NAME: SHAKWAK SEG 9			
PROJECT LOCATION: BEAR CREEK SUMMIT KM 1655 LHS			
DRILL UNIT: MOBILE B 30 L D-4 CAT			
LOGGED BY: J.B.			
HOLE LOCATION: SEE GPS		DATE COM 2000/08/22	
=====		=====	
FIELD No: 1748	FIELD No: 1749	FIELD No: 1750	
LAB No: 2219	LAB No: 2220	LAB No: 2221	
DEPTH: 1.0-1.2	DEPTH: 2.7-2.9	DEPTH: 3.0-3.1	
TYPE: AUGER	TYPE: AUGER	TYPE: AUGER	
=====		=====	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%
80.0	100%	80.0	100%
50.0	100%	50.0	100%
25.0	80%	25.0	87%
20.0	72%	20.0	76%
12.5	60%	12.5	65%
10.0	53%	10.0	62%
5.0	41%	5.0	45%
2.5	34%	2.5	35%
1.25	28%	1.25	28%
0.630	22%	0.630	23%
0.315	17%	0.315	18%
0.160	12%	0.160	14%
0.080	9%	0.080	12%
=====		=====	
M.C.(%): 5%	M.C.(%): 2%	M.C.(%): 3%	
LIMITS	LIMITS	LIMITS	
LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	
PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	
P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	
=====		=====	
% GRAVEL 59	% GRAVEL 60	% GRAVEL 55	
% SAND: 32	% SAND: 31	% SAND: 34	
% FINES: 9	% FINES: 10	% FINES: 12	
=====		=====	
CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	

YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)



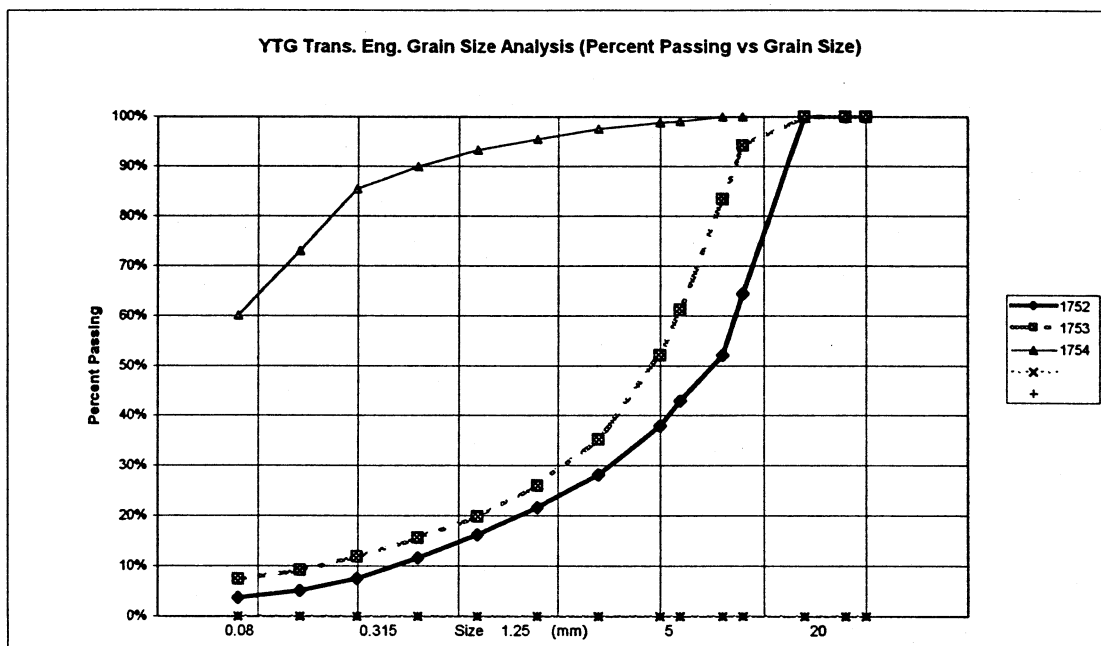
PROJECT NUMBER:	092-202101-0363-1	HOLE No.:	571-1478
CLIENT:	ENGINEERING-CAPITAL		
PROJECT NAME:	SHAKWAK SEG 9		
PROJECT LOCATION:	BEAR CREEK SUMMIT KM 1655 LHS		
DRILL UNIT:	MOBILE B 30 L D-4 CAT		
LOGGED BY:	J.B.		
HOLE LOCATION:	SEE GPS	DATE COM	2000/08/22

FIELD NO: 1751 LAB NO: 2222 DEPTH: 2.6-2.8 TYPE: AUGER				
SIEVE SIZE	PERCENT PASSING			
100.0	100%			
80.0	100%			
50.0	100%			
25.0	84%			
20.0	70%			
12.5	59%			
10.0	54%			
5.0	40%			
2.5	33%			
1.25	27%			
0.630	23%			
0.315	20%			
0.160	15%			
0.080	12%			
M.C.(%):	5%			
LIMITS				
LIQUID:	0.0			
PLASTIC:	0.0			
P.I.:	0.0			
% GRAVEL	60			
% SAND:	29			
% FINES:	12			
CLASSIFICATION: POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)				



PROJECT NUMBER: 092-202101-0363-1 HOLE No.: 571-1479
 CLIENT: ENGINEERING-CAPITAL
 PROJECT NAME: SHAKWAK SEG 9
 PROJECT LOCATION: BEAR CREEK SUMMIT KM 1655 LHS
 DRILL UNIT: MOBILE B 30 L D-4 CAT
 LOGGED BY: J.B.
 HOLE LOCATION: SEE GPS DATE COM 2000/08/22

FIELD No: 1752 LAB No: 2223 DEPTH: 1.2-1.4 TYPE: AUGER	FIELD No: 1753 LAB No: 2224 DEPTH: 2.7-2.9 A AUGER	FIELD No: 1754 LAB No: 2225 DEPTH: 4.4-4.5 AUGER	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	PERCENT PASSING
100.0	100%	100.0	100%
80.0	100%	80.0	100%
50.0	100%	50.0	100%
25.0	64%	25.0	94%
20.0	52%	20.0	83%
12.5	43%	12.5	61%
10.0	38%	10.0	52%
5.0	28%	5.0	35%
2.5	22%	2.5	26%
1.25	16%	1.25	20%
0.630	12%	0.630	16%
0.315	8%	0.315	12%
0.160	5%	0.160	9%
0.080	4%	0.080	8%
M.C.(%): 2%	M.C.(%): 3%	M.C.(%): 22%	
LIMITS	LIMITS	LIMITS	
LIQUID: 0.0	LIQUID: 0.0	LIQUID: 0.0	
PLASTIC: 0.0	PLASTIC: 0.0	PLASTIC: 0.0	
P.I.: 0.0	P.I.: 0.0	P.I.: 0.0	
% GRAVEL 72	% GRAVEL 65	% GRAVEL 2	
% SAND: 25	% SAND: 28	% SAND: 38	
% FINES: 4	% FINES: 8	% FINES: 60	
CLASSIFICATION: WELL-GRADED GRAVEL WITH SAND (GW)	CLASSIFICATION: WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	CLASSIFICATION: SANDY SILT (ML)	



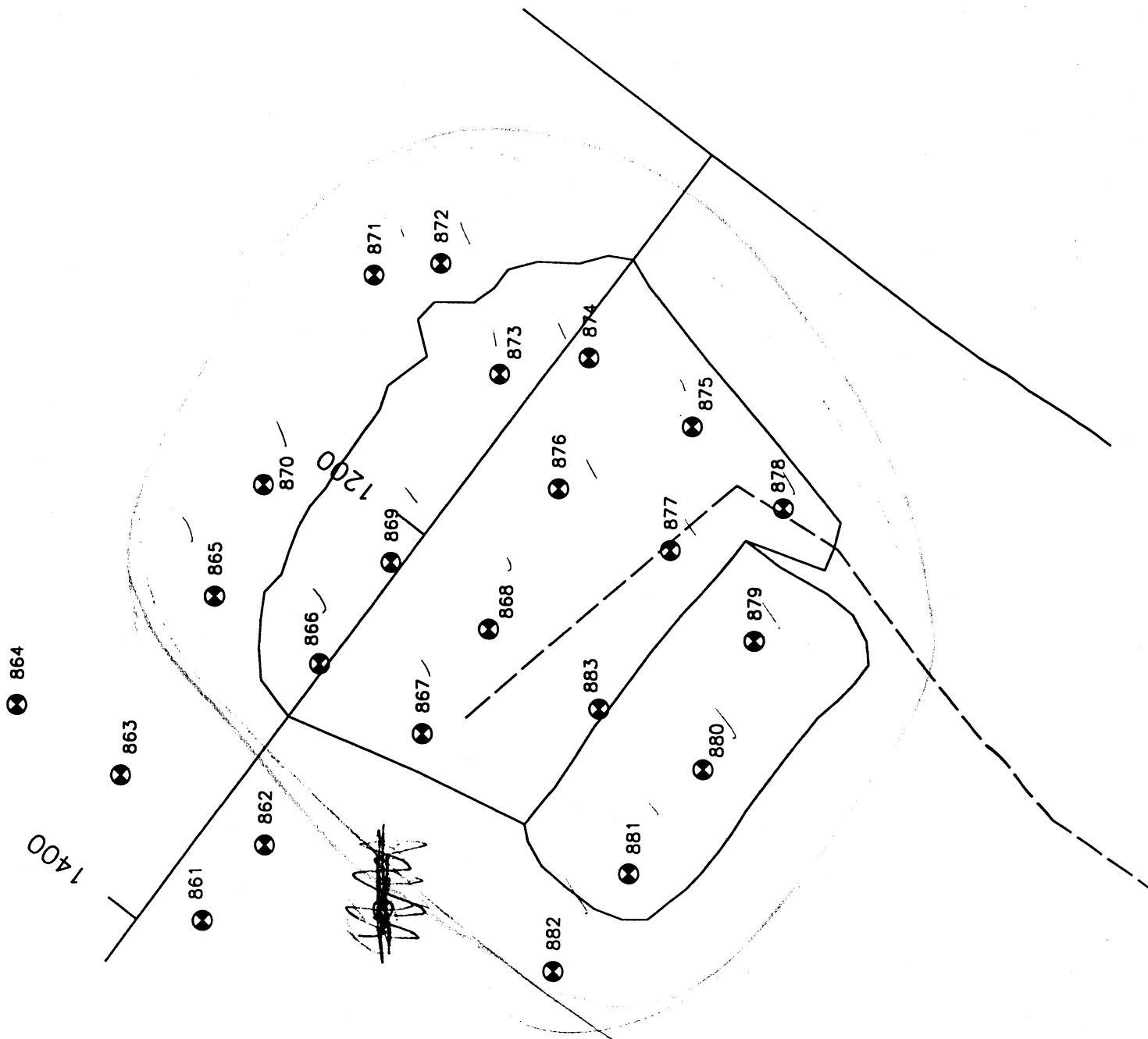
HIGHWAY CONSTRUCTION

GEOTECHNICAL INVESTIGATION

Km 1664.2 to Km 1674.2
YUKON 2001-2002

ALASKA HIGHWAY #1

QUARRY SOURCE TESTING
Km 1674 RHS
ALASKA HIGHWAY



SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-865	
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363	
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)
0.0	ROCK @ 1.1m -slow drilling							0.0
1.0								1.0
2.0								2.0
3.0								3.0
4.0								4.0
5.0								5.0
6.0								6.0
7.0								7.0
8.0								8.0
9.0								9.0
10.0	END HOLE @ 10.4m Note: visible surface rock 15m downchain -visible surface rock 12m rt of test hole. -water in hole 3 days after drilling							10.0
11.0								11.0
12.0								12.0
13.0								13.0
14.0								14.0
15.0								15.0
16.0								16.0

Government of Yukon Transportation Engineering	LOGGED BY: G.C.	COMPLETION DEPTH: 10.4 m
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SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-866	
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363	
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND			PERCENT GRAVEL			DEPTH (m)
				PLASTIC	M.C.	LIQUID			20	40	60	80	20	40	
0.0														0.0	
1.0														1.0	
2.0	ROCK @ 2.1m													2.0	
3.0	-white rock dust 2.1 to 10.4m													3.0	
4.0	-slow drilling													4.0	
5.0	-no coarse chips													5.0	
6.0														6.0	
7.0														7.0	
8.0														8.0	
9.0														9.0	
10.0														10.0	
11.0	END HOLE @ 10.4m													11.0	
12.0	Note: visible surface rock between testhole #866 & #865													12.0	
13.0	-no water in testhole 2000-09-03													13.0	
14.0														14.0	
15.0														15.0	
16.0														16.0	

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Transportation Engineering		REVIEWED BY:		COMPLETE: 00/08/31	
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SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-867			
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363			
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)			
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE							
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC SOIL SYMBOL ◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)	
0.0	ROCK @ 1.5m -white rock dust 1.5m to 10.4m -slow drilling -no coarse chips					0.0	
1.0						1.0	
2.0							2.0
3.0							3.0
4.0							4.0
5.0							5.0
6.0							6.0
7.0							7.0
8.0							8.0
9.0							9.0
10.0	END HOLE @ 10.4m Note: Steep slope below testhole -surface rock 3m upchain -water in hole 3 days after drilling					10.0	
11.0						11.0	
12.0							12.0
13.0							13.0
14.0							14.0
15.0							15.0
16.0							16.0

Government of Yukon

Transportation Engineering

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SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-868			
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363			
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)			
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE							
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)
0.0							0.0
1.0	ROCK @ 1.1m -slow drilling -coarse rock chips						1.0
2.0							2.0
3.0							3.0
4.0							4.0
5.0							5.0
6.0							6.0
7.0	END HOLE @ 6.7m Note: surface rock 10 & 15m rt -steep slope below test hole -H2O in hole 3 days after drilling						7.0
8.0							8.0
9.0							9.0
10.0							10.0
11.0							11.0
12.0							12.0
13.0							13.0
14.0							14.0
15.0							15.0
16.0							16.0
Government of Yukon Transportation Engineering				LOGGED BY: G.C. REVIEWED BY: Fig. No:		COMPLETION DEPTH: 6.7 m COMPLETE: 00/09/01 Page 1 of 1	

SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-869				
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363				
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)				
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)
0.0								0.0
1.0	ROCK @ .61m							1.0
	-slow drilling							
	-no large rock chips							
2.0								2.0
3.0								3.0
4.0								4.0
5.0								5.0
6.0								6.0
7.0								7.0
8.0								8.0
9.0								9.0
10.0								10.0
11.0	END HOLE @ 10.4m							11.0
	Note: no visible surface rock.							
	-water in hole 3 days after drilling							
12.0								12.0
13.0								13.0
14.0								14.0
15.0								15.0
16.0								16.0
Government of Yukon				LOGGED BY: G.C.		COMPLETION DEPTH: 10.4 m		
Transportation Engineering				REVIEWED BY:		COMPLETE: 00/09/01		
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SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-870	
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363	
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)	
0.0	ROCK -broken rock - still dusty -slow drilling below 1.1m -solid below 3.0m							0.0	
1.0								1.0	
2.0									2.0
3.0									3.0
4.0									4.0
5.0									5.0
6.0									6.0
7.0									7.0
8.0									8.0
9.0									9.0
10.0	END HOLE @ 10.4m Note: water in hole 3 days after drilling							10.0	
11.0								11.0	
12.0								12.0	
13.0								13.0	
14.0								14.0	
15.0								15.0	
16.0								16.0	

Government of Yukon Transportation Engineering	LOGGED BY: G.C.	COMPLETION DEPTH: 10.4 m
	REVIEWED BY:	COMPLETE: 00/08/31
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SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-871	
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363	
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)
0.0								0.0
1.0								1.0
2.0								2.0
3.0								3.0
4.0	ROCK @ 3.7m -light brown -slow drilling							4.0
5.0								5.0
6.0								6.0
7.0								7.0
8.0								8.0
9.0								9.0
10.0								10.0
11.0								11.0
12.0								12.0
13.0								13.0
14.0	END HOLE @ 14.0m Note: no visible surface rock around hole - water in hole 3 days after drilling							14.0
15.0								15.0
16.0								16.0

Government of Yukon Transportation Engineering	LOGGED BY: G.C.	COMPLETION DEPTH: 14.0 m
	REVIEWED BY:	COMPLETE: 00/08/31
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SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-872	
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363	
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☐ RETURN		☒ S.P.T.		☒ AUGER	
		☐ BULK		☐ TUBE	
				☐ CORE	

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND / GRAVEL			DEPTH (m)
				PLASTIC	M.C.	LIQUID			PERCENT SAND	PERCENT GRAVEL		
0.0	BROWN DUST											0.0
1.0	-possibly oxidized -easy drilling (speed) fracture											1.0
2.0	ROCK											2.0
3.0	-white -slow drilling											3.0
4.0												4.0
5.0												5.0
6.0												6.0
7.0												7.0
8.0	-some brown or oxidized rock dust 7.3m to 9.1m											8.0
9.0												9.0
10.0												10.0
11.0	10.4HOLE @ 10.1m Note: Test hole in a small gulley -Water in hole 3 days after drilling -visible rock on surface											11.0
12.0												12.0
13.0												13.0
14.0												14.0
15.0												15.0
16.0												16.0

Government of Yukon Transportation Engineering		LOGGED BY: G.C.	COMPLETION DEPTH: 10.4 m
		REVIEWED BY:	COMPLETE: 00/08/31
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SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-873						
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363						
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)						
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE										
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80		USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80		DEPTH (m)
0.0										0.0
1.0										1.0
2.0										2.0
3.0										3.0
4.0	ROCK @ 3.7m									4.0
5.0										5.0
6.0										6.0
7.0										7.0
8.0	-damp cuttings 7.3 to 9.1m									8.0
9.0	-possibly sandstone									9.0
	-damp (moisture)									
	-easy drilling									
	-dry dust below 9.1m									
10.0										10.0
11.0	END HOLE @ 10.4m									11.0
	Note: test hole in gully									
	- water in hole immediately after drilling (5 min.)									
12.0										12.0
13.0										13.0
14.0										14.0
15.0										15.0
16.0										16.0
Government of Yukon Transportation Engineering				LOGGED BY: G.C.		COMPLETION DEPTH: 10.4 m				
				REVIEWED BY:		COMPLETE: 00/09/03				
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SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-874	
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363	
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)
0.0								0.0
1.0								1.0
2.0	ROCK @ .1.5m							2.0
3.0								3.0
4.0								4.0
5.0								5.0
6.0								6.0
7.0								7.0
8.0								8.0
9.0	ROCK CHIPS 8.5m TO 10.4m -brown -large chips 12.5mm							9.0
10.0								10.0
11.0	END HOLE @ 10.4m Note: visible rock 15m lt & 3m rt -visible surface rock 25m downchain on trail 50m rt of testhole #877 -water in hole 3 days after drilling							11.0
12.0								12.0
13.0								13.0
14.0								14.0
15.0								15.0
16.0								16.0

Government of Yukon Transportation Engineering		LOGGED BY: G.C.	COMPLETION DEPTH: 10.4 m
		REVIEWED BY:	COMPLETE: 00/08/31
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SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-875	
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363	
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND			DEPTH (m)
				PLASTIC	M.C.	LIQUID			PERCENT GRAVEL			
0.0												0.0
1.0	ROCK @ 0.9m											1.0
2.0												2.0
3.0												3.0
4.0												4.0
5.0												5.0
6.0												6.0
7.0												7.0
8.0												8.0
9.0												9.0
10.0												10.0
11.0	END HOLE @ 10.4m Note: Visible surface rock 5m from Testhole.											11.0
12.0												12.0
13.0												13.0
14.0												14.0
15.0												15.0
16.0												16.0

Government of Yukon Transportation Engineering		LOGGED BY: G.C.	COMPLETION DEPTH: 10.4 m
		REVIEWED BY:	COMPLETE: 00/08/31
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SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-876				
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363				
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)				
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲	USC	SOIL SYMBOL	◆ PERCENT SAND ◆	DEPTH (m)
				20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80			20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	
0.0	ROCK @ 2.4m							0.0
1.0								1.0
2.0								2.0
3.0								3.0
4.0								4.0
5.0								5.0
6.0								6.0
7.0								7.0
8.0								8.0
9.0								9.0
10.0	END HOLE @ 10.4m Note: last length of steel was wet when it was removed. -water in hole 5 mins after drilling							10.0
11.0								11.0
12.0								12.0
13.0								13.0
14.0								14.0
15.0								15.0
16.0								16.0
Government of Yukon Transportation Engineering				LOGGED BY: G.C. REVIEWED BY: Fig. No:		COMPLETION DEPTH: 10.4 m COMPLETE: 00/09/03 Page 1 of 1		

SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-877				
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363				
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)				
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲	USC	SOIL SYMBOL	◆ PERCENT SAND ◆	DEPTH (m)
				20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80			20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	
0.0								0.0
1.0								1.0
2.0	ROCK @ 1.5m -12.5mm rock chips							2.0
3.0								3.0
4.0								4.0
5.0								5.0
6.0								6.0
7.0	-brown dust & rock chips 6.1 to 7.3m -white dust below 7.3							7.0
8.0								8.0
9.0	-brown seam @ 8.2m							9.0
10.0								10.0
11.0	END HOLE @ 10.4m Note: Hole was dry after drilling							11.0
12.0								12.0
13.0								13.0
14.0								14.0
15.0								15.0
16.0								16.0
Government of Yukon Transportation Engineering				LOGGED BY: G.C.		COMPLETION DEPTH: 10.4 m		
				REVIEWED BY:		COMPLETE: 00/09/03		
				Fig. No:		Page 1 of 1		

SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-878					
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363					
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)					
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE									
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲	USC	SOIL SYMBOL	◆ PERCENT SAND ◆	DEPTH (m)	
				20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80			20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80		
0.0	ROCK - harder drilling than testhole #879 - slower drilling - coarse rock chips 12.5mm							0.0	
1.0								1.0	
2.0									2.0
3.0									3.0
4.0									4.0
5.0									5.0
6.0									6.0
7.0									7.0
8.0									8.0
9.0									9.0
10.0	END HOLE @ 10.4m Note: Water in hole 3 days after drilling.							10.0	
11.0								11.0	
12.0								12.0	
13.0								13.0	
14.0								14.0	
15.0								15.0	
16.0								16.0	
Government of Yukon Transportation Engineering				LOGGED BY: G.C. REVIEWED BY: Fig. No:		COMPLETION DEPTH: 10.4 m COMPLETE: 00/08/31 Page 1 of 1			

SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-879	
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363	
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)
0.0								0.0
1.0								1.0
2.0								2.0
3.0	-boulder @ 2.74m							3.0
4.0								4.0
5.0	ROCK @4.3m							5.0
6.0	-white							6.0
7.0	-drillers comment - rock was easy drilling							7.0
8.0								8.0
9.0								9.0
10.0								10.0
11.0	END HOLE @ 10.1m							11.0
12.0								12.0
13.0								13.0
14.0								14.0
15.0								15.0
16.0								16.0

Government of Yukon Transportation Engineering	LOGGED BY: G.C.	COMPLETION DEPTH: 10.1 m
	REVIEWED BY:	COMPLETE: 00/08/31
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SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-880				
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363				
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)				
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)
0.0	SILT WITH SUB-ROUNDED GRAVEL							0.0
1.0								1.0
2.0								2.0
3.0								3.0
4.0								4.0
5.0								5.0
6.0								6.0
7.0								7.0
8.0								8.0
9.0	ROCK @ 8.5m -large rock chips -hard slow drilling -driller comment - granite -grey to white							9.0
10.0								10.0
11.0								11.0
12.0								12.0
13.0								13.0
14.0	END HOLE @ 14.0m							14.0
15.0								15.0
16.0								16.0
Government of Yukon Transportation Engineering				LOGGED BY: G.C. REVIEWED BY: Fig. No:		COMPLETION DEPTH: 14.0 m COMPLETE: 00/09/03 Page 1 of 1		

SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-881	
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363	
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND / GRAVEL			DEPTH (m)
				20	40	60			20	40	60	
0.0												0.0
1.0												1.0
2.0												2.0
3.0												3.0
4.0												4.0
5.0	BOULDER @ 4.6m -white - brown -(1500 pounds down press - soft rock)											5.0
6.0												6.0
7.0												7.0
8.0	WEATHERED ROCK -possibly wet -looked like wet coloured silt with rock chips											8.0
9.0												9.0
10.0												10.0
11.0												11.0
12.0	END HOLE @ 12.2m Note: Steel stuck - 45min to remove -Air rushing from hole for a couple minutes after removing steel.											12.0
13.0												13.0
14.0												14.0
15.0												15.0
16.0												16.0

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		REVIEWED BY:	COMPLETE: 00/09/03
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SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-882	
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363	
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)
0.0							0.0	
1.0							1.0	
2.0	-water @ 1.5m - second length of steel						2.0	
3.0							3.0	
4.0							4.0	
5.0	ROCK @ 4.6m						5.0	
6.0							6.0	
7.0							7.0	
8.0	-drillers comment was (very hard rock)						8.0	
9.0							9.0	
10.0							10.0	
11.0	END HOLE @ 10.4m						11.0	
12.0							12.0	
13.0							13.0	
14.0							14.0	
15.0							15.0	
16.0							16.0	

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SUBSURFACE EXPLORATION & TEST REPORT		SHAKWAK SEG 09		TEST HOLE NO: 576-883	
ENGINEERING CAPITAL		KM 1674 RHS		Project No: 092-202101-0363	
AIR ROTARY		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)	
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80	USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80	DEPTH (m)
0.0	ROCK @ .05m							0.0
1.0								1.0
2.0								2.0
3.0								3.0
4.0								4.0
5.0								5.0
6.0								6.0
7.0	END HOLE @ 6.7m -no water in hole							7.0
8.0								8.0
9.0								9.0
10.0								10.0
11.0								11.0
12.0								12.0
13.0								13.0
14.0								14.0
15.0								15.0
16.0								16.0

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		REVIEWED BY:	COMPLETE: 00/09/03
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