

GEOTECHNICAL INVESTIGATIONS

**Highway Construction
km 1707.0 to 1717.4
Alaska Highway #1
Yukon, 2005-2006
Volume 2 of 2**



**Highways and Public Works
Transportation Engineering Branch**

Geotechnical Services

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ORIGINAL - Do Not Remove From File

HIGHWAY CONSTRUCTION

GEOTECHNICAL INVESTIGATION
km 1707.0 to 1717.4
YUKON, 2005-2006

ALASKA HIGHWAY #1

Highway Construction
km 1707.0 to 1717.4
Alaska Highway #1
Yukon, 2005-2006
Volume 2 of 2

This Data Package prepared for project viewing:

February, 2005

Transportation Engineering Branch
Geotechnical Services
461 Range Road
Whitehorse, Yukon

CONTENTS

Volume 1 of 2

INTRODUCTION

Investigation notes, classification methods and legends.

CENTRELINE TESTING km 1707.0 to 1717.4 Alaska Highway

Subsurface Exploration and Test Report Sheets are provided.

The reports for the Centreline testing holes are arranged according to project location, starting at km 1707+000 and increasing to km 1717+400.

Laboratory Testing Result Sheets are provided.

The reports for the centreline holes are arranged according to test hole number, starting at 30090 and increasing to 30176.

2004 TEST HOLES 30090 to 30136
 TEST HOLES 30148 to 30176

*Note: For Centreline subsurface geotechnical information between station 1712+400 and 1713+900 refer to the km 1713.0 LHS Granular Source Section.

CONTENTS (continued)**Volume 2 of 2****GRANULAR SOURCE km 1713.0 LHS ALASKA HIGHWAY Pit ID 115 G-12**

Location plans, photographs, and subsurface exploration and testing report sheets are provided.

Auger Testing

2003	TEST HOLES 2693 to 2716	shown with prefix 651-
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Test Pit Testing

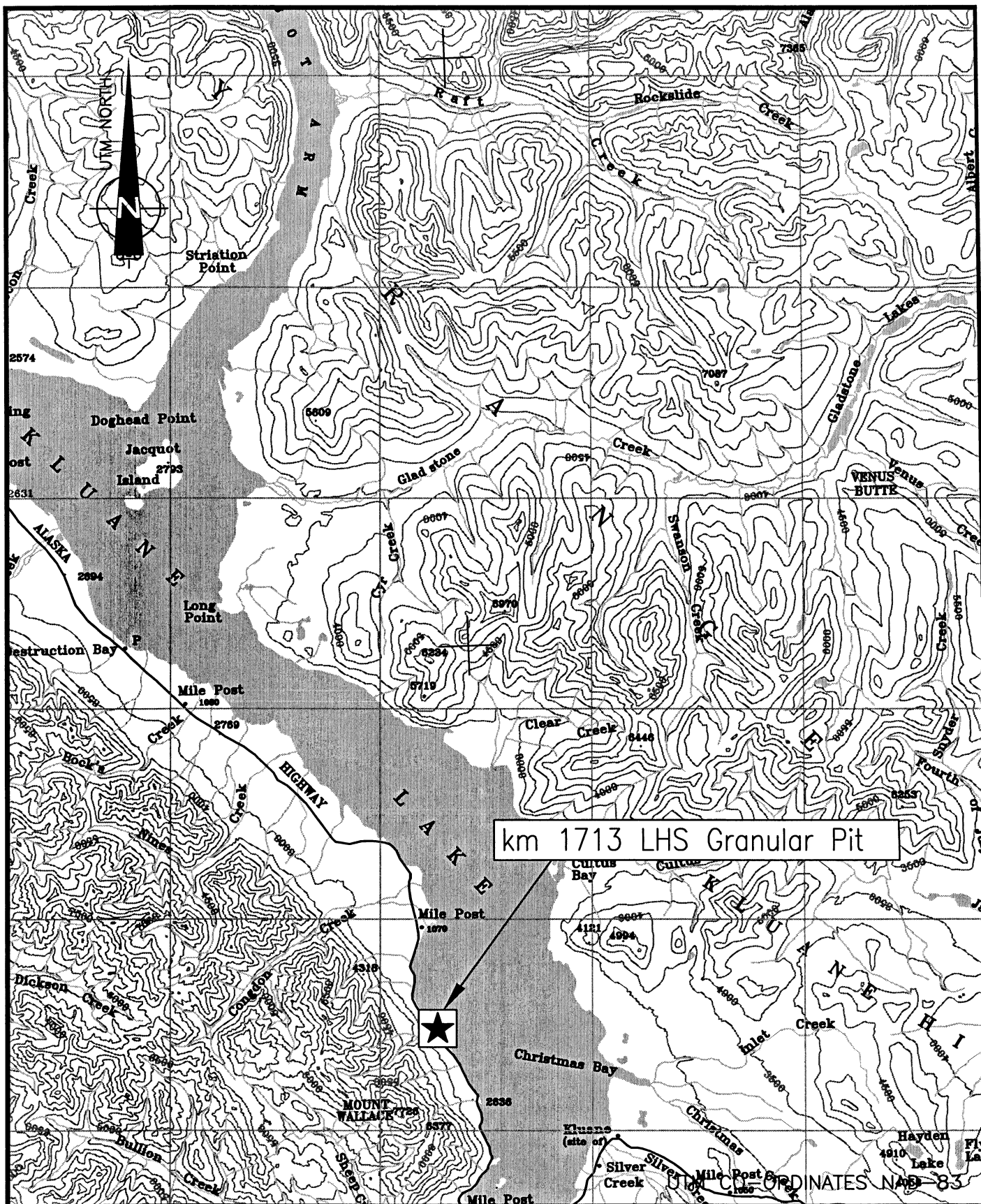
2002	TEST PITS 2569 to 2576	shown with prefix 640-
2003	TEST PITS 2732 to 2744	shown with prefix 654-
2003	TEST PITS 2754 to 2764	shown with prefix 654-
2003	TEST PITS 2853 to 2858	shown with prefix 663-
2004	TEST PITS 30137 to 30147	shown with no prefix

HIGHWAY CONSTRUCTION

GEOTECHNICAL INVESTIGATION
km 1707.0 to 1717.4
YUKON, 2005-2006

ALASKA HIGHWAY #1

GRANULAR SOURCE TESTING
km 1713.0 LHS
ALASKA HIGHWAY



Yukon

Highways and Public Works

Transportation Engineering Branch

KEY PLAN
GRANULAR PIT
km 1713.0 LHS
(Williscroft Creek)
ALASKA HWY. YUKON

pit file: 115 G-12

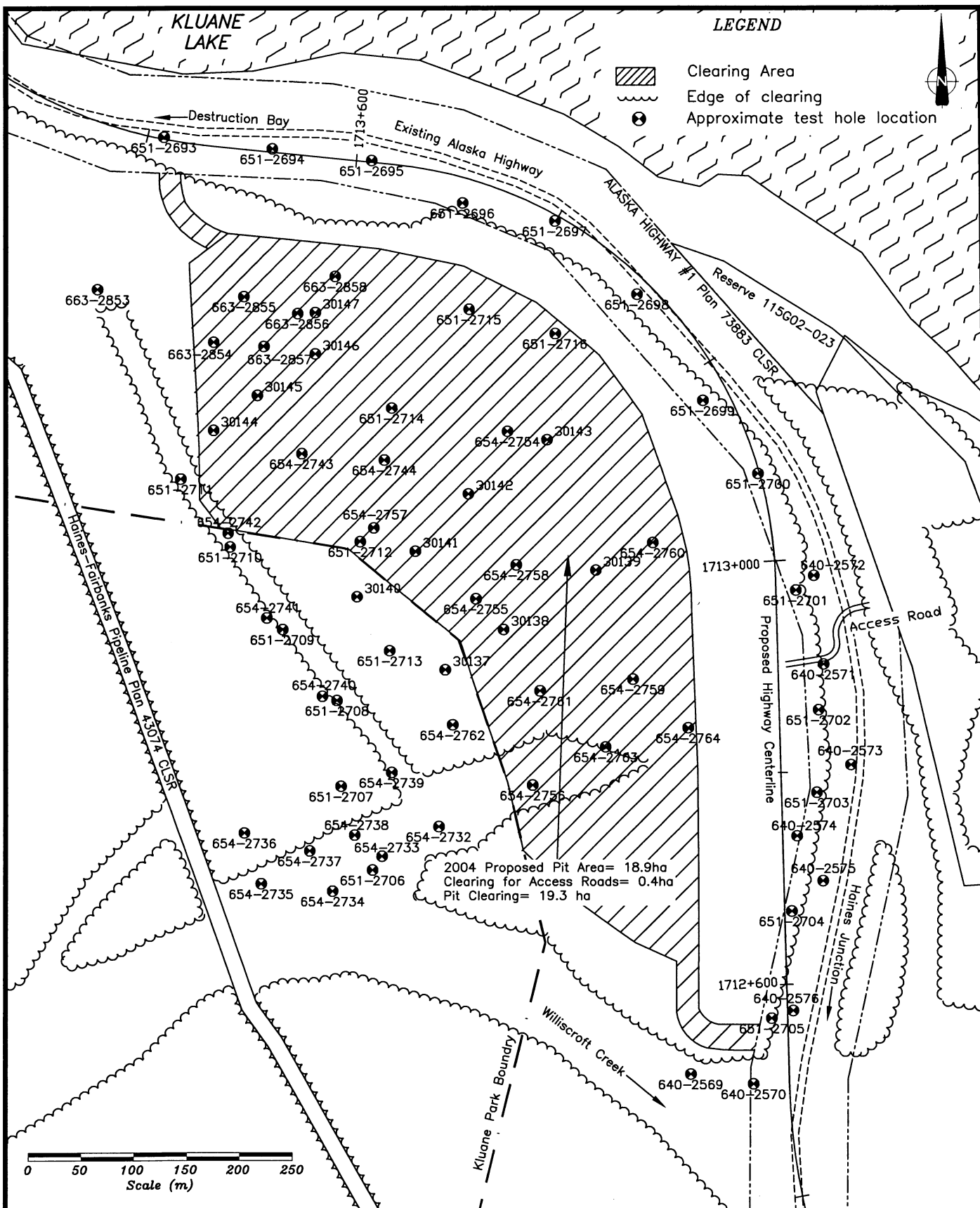
115G/02 ???

drawn: JJM

date: 2005-02-09

scale: 1: 250,000

drwg: 115g-12Ltk



Yukon
 Highways and Public Works

Transportation Engineering Branch

SITE PLAN
PROPOSED GRANULAR PIT
 Km 1713 L.H.S.
 (Williscroft Creek)
 ALASKA HWY. YUKON

pit file: 115 G-12

revision:

drawn: JJM / kp

date: Jan, 2005

scale: 1: 5000

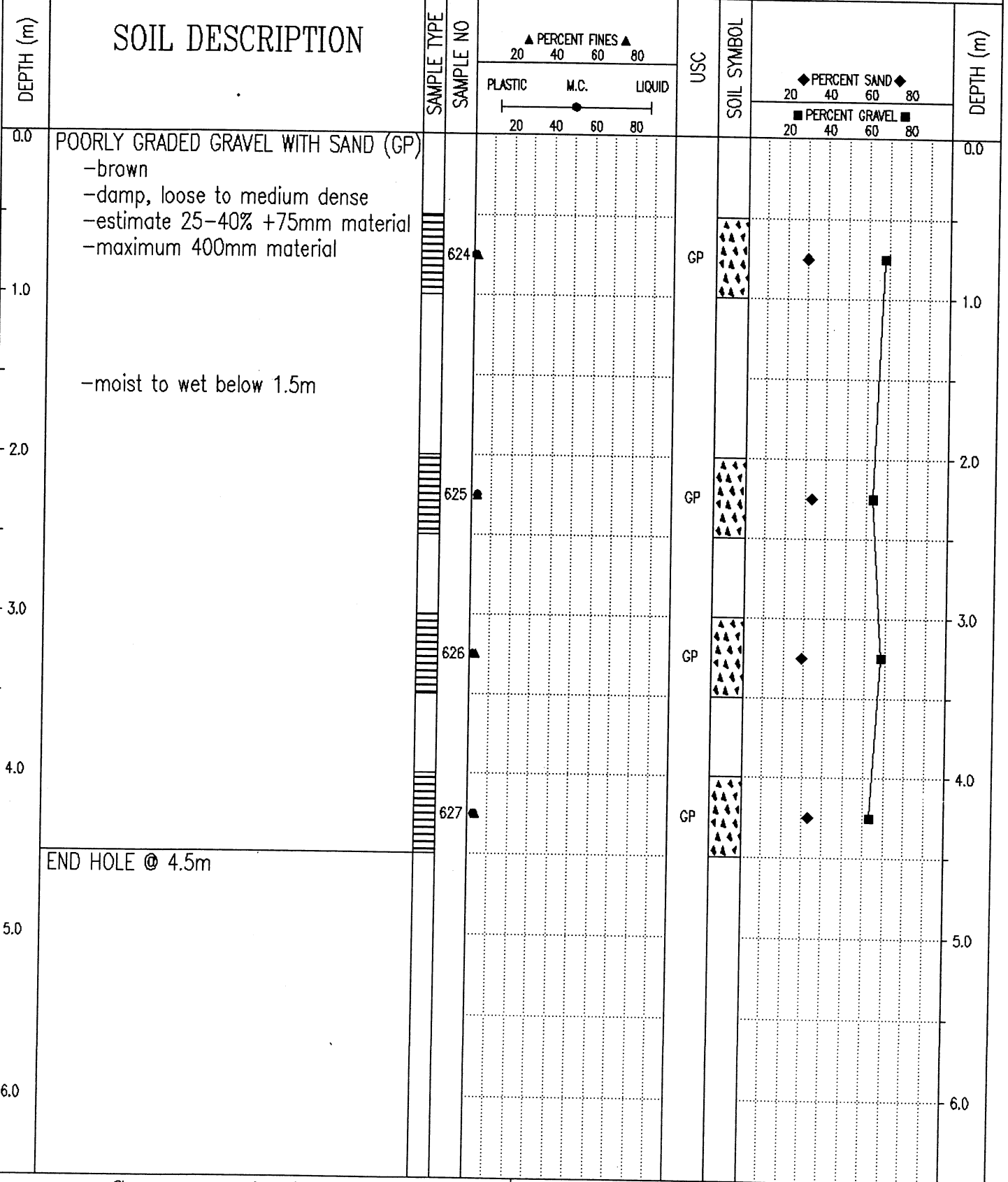
drwg: 011713SP

Km 1713.0 LHS Alaska Highway #1
Pit Ident. 115 G-12
(Williscroft Creek)

September 2002
Book # 640

Test Pit Logs

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEGMENT 11	TEST PIT NO: 640-2569
ENGINEERING CAPITAL		WILLISCROFT CREEK	Project No: 552-202101-0361
KOEHRING 6625 BACKHOE		LOCATION: SEE PLAN	ELEVATION: 0.00 (m)
SAMPLE TYPE	☒ RETURN	☒ S.P.T.	☒ AUGER
		☐ BULK	☐ TUBE
			☐ CORE



Government of Yukon
Transportation Engineering

LOGGED BY: JRP	COMPLETION DEPTH: 4.5 m
REVIEWED BY:	COMPLETE: 02/09/30
Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEGMENT 11		TEST PIT NO: 640-2570	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOEHRING 6625 BACKHOE		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	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp, loose to medium dense											0.0
1.0	-moist to wet below 1.0m		628				GP					1.0
2.0			629				GP					2.0
3.0	-wet below 2.8m -estimate 25-40% +75mm material -maximum 400mm material		630				GP					3.0
4.0			631				GP					4.0
5.0	END HOLE @ 4.5m											5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: JRP	COMPLETION DEPTH: 4.5 m
		REVIEWED BY:	COMPLETE: 02/09/30
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEGMENT 11		TEST PIT NO: 640-2571	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOEHRING 6625 BACKHOE		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	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp, medium dense -estimate 25-30% +75mm material -maximum 300mm material -wood 0.2 to 1.0m (vertical tree)											0.0
1.0			632				GP					1.0
2.0	-organic silt seam @ 2.0m -200mm thick (roots & organic silts)		633				GP					2.0
3.0	-moist below 3.0m		634				GP					3.0
4.0			635				GP					4.0
5.0	END HOLE @ 4.5m											5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: JRP	COMPLETION DEPTH: 4.5 m
		REVIEWED BY:	COMPLETE: 02/09/30
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEGMENT 11		TEST PIT NO: 640-2572	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOEHRING 6625 BACKHOE		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			80	20	40		60	80
0.0	POORLY GRADED GRAVEL WITH SAND TO POORLY GRADED GRAVEL WITH SILT & SAND (GP)-(GP-GM) -brown -damp, loose -estimate 5-15% +75mm material -maximum 200mm material -organic silt/sand seam noted @ 1.2m 300mm thick -moist below 1.5m											0.0		
1.0			636					GP				1.0		
2.0			637					GP				2.0		
3.0			638					GP				3.0		
4.0			639					GP-GM				4.0		
5.0	END HOLE @ 4.5m											5.0		
6.0												6.0		

Government of Yukon Transportation Engineering		LOGGED BY: JRP	COMPLETION DEPTH: 4.5 m
		REVIEWED BY:	COMPLETE: 02/09/30
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEGMENT 11		TEST PIT NO: 640-2573	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOEHRING 6625 BACKHOE		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	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp, loose -estimate 10-20% +75mm material -maximum 150mm material -moist below 0.8m -estimate 15-30% +75mm material -maximum 300mm material											0.0
1.0			640				GP					1.0
2.0			641				GP					2.0
3.0			642				GP					3.0
4.0			643				GP					4.0
4.2	END HOLE @ 4.2											4.2
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: JRP	COMPLETION DEPTH: 4.2 m
		REVIEWED BY:	COMPLETE: 02/09/30
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEGMENT 11		TEST PIT NO: 640-2574	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOEHRING 6625 BACKHOE		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	
0.0	SURFICAL ORGANICS											0.0
	POORLY GRADED GRAVEL WITH SAND (GP)											
	-brown											
	-damp, loose											
	-estimate 15-30% +75mm material											
	-maximum 200mm material											
	-moist, medium dense below 1.2m											
1.0			644				GP					1.0
2.0			645				GP					2.0
3.0			646				GP					3.0
4.0			647				GP					4.0
5.0	END HOLE @ 4.5m											5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: JRP	COMPLETION DEPTH: 4.5 m
		REVIEWED BY:	COMPLETE: 02/09/30
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEGMENT 11		TEST PIT NO: 640-2575	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOEHRING 6625 BACKHOE		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	60			80	20	40			60
0.0	POORLY GRADED GRAVEL WITH SILT & SAND TO POORLY GRADED GRAVEL WITH SAND (GP-GM)-(GP) -brown -damp, loose -estimate 10-20% +75mm material -maximum 200mm material -moist to wet below 1.0m											0.0		
1.0			648				GP-GM					1.0		
2.0			649				GP					2.0		
3.0			650				GP					3.0		
4.0			651				GP					4.0		
5.0	END HOLE @ 4.5m											5.0		
6.0												6.0		

Government of Yukon Transportation Engineering		LOGGED BY: JRP	COMPLETION DEPTH: 4.5 m
		REVIEWED BY:	COMPLETE: 02/09/30
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEGMENT 11		TEST PIT NO: 640-2576	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOEHRING 6625 BACKHOE		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			80	20		40	60	80
0.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp, loose -estimate 10-20% +75mm material -maximum 150mm material										0.0			
1.0			652					GP						
2.0	ORGANIC SILT/SAND -brown -damp, firm -roots noted throughout POORLY TO WELL-GRADED GRAVEL WITH SAND TO POORLY GRADED GRAVEL WITH SILT & SAND (GP)-(GW)-(GP-GM) -brown -damp, loose -estimate 15-25% +75mm material -maximum 250mm material		653					GP						
3.0			654					GW						
4.0			655					GP-GM						
4.5	END HOLE @ 4.5m													

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		REVIEWED BY:	COMPLETE: 02/09/30
		Fig. No:	Page 1 of 1

Km 1713.0 LHS Alaska Highway #1
Pit Ident. 115 G-12
(Williscroft Creek)

September 2002
Book # 640

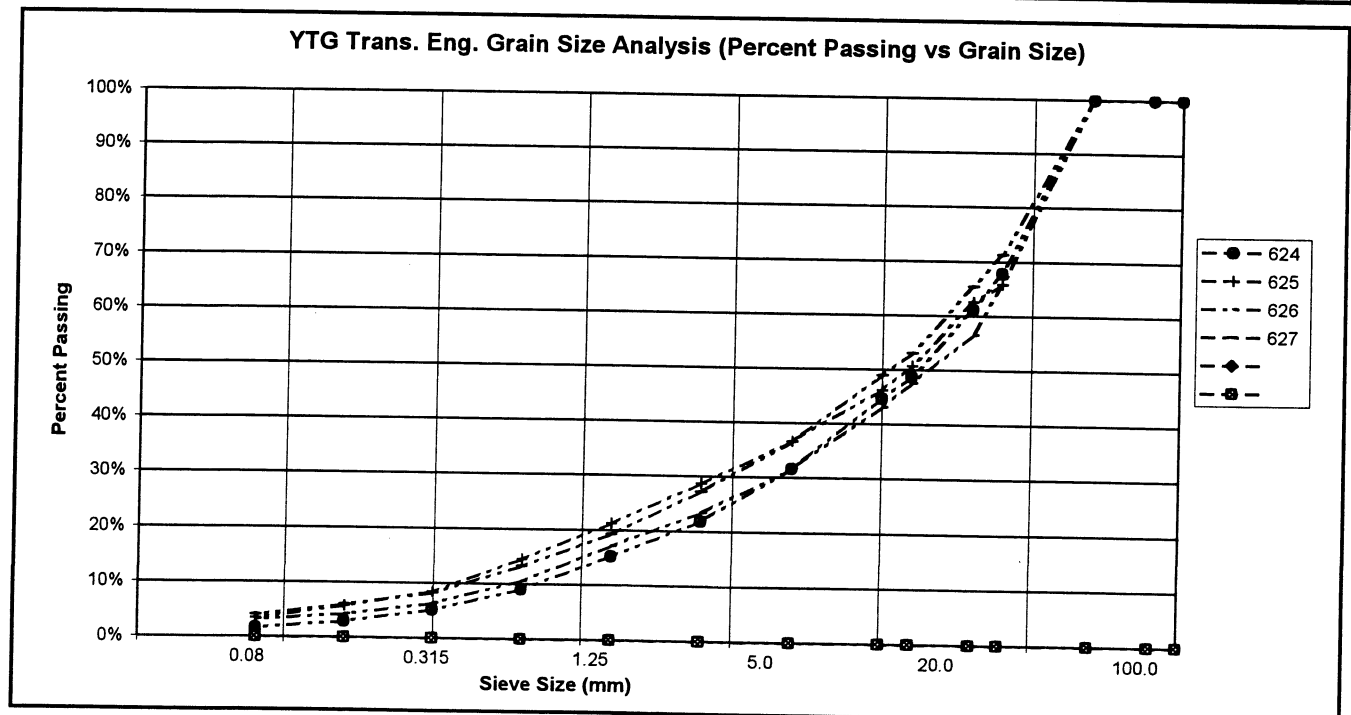
Pit Run Sample Results

PROJECT NUMBER: 552-202101-0361-1
 CLIENT: Engineering Capital
 PROJECT NAME: Shakwak Granular Investigation
 PROJECT LOCATION: Williscroft Creek Km 1715.8 A/H
 DRILL UNIT: Koehring 6625 Backhoe
 HOLE LOCATION: See Plan
 LOGGED BY: JRP R.W.

HOLE No.: 640-2569

DATE COMP: Sept 30 /02

FIELD NO:	624	625	626	627		
LAB NO:	883	884	885	886		
DEPTH:	0.5-1.0	2.0-2.5	3.0-3.5	4.0-4.5		
TYPE:	BULK	AUGER	BULK	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	68%	66%	66%	71%		
20.0	61%	63%	56%	65%		
12.5	49%	51%	48%	53%		
10.0	45%	46%	43%	49%		
5.0	32%	37%	32%	37%		
2.5	22%	29%	23%	27%		
1.25	15%	21%	17%	19%		
0.630	9%	15%	11%	13%		
0.315	5%	8%	6%	8%		
0.160	3%	6%	4%	6%		
0.080	2%	3%	3%	4%		
M.C.(%)	1%	3%	2%	3%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	68	63	68	63		
% SAND:	30	33	29	33		
% FINES:	2	3	3	4		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

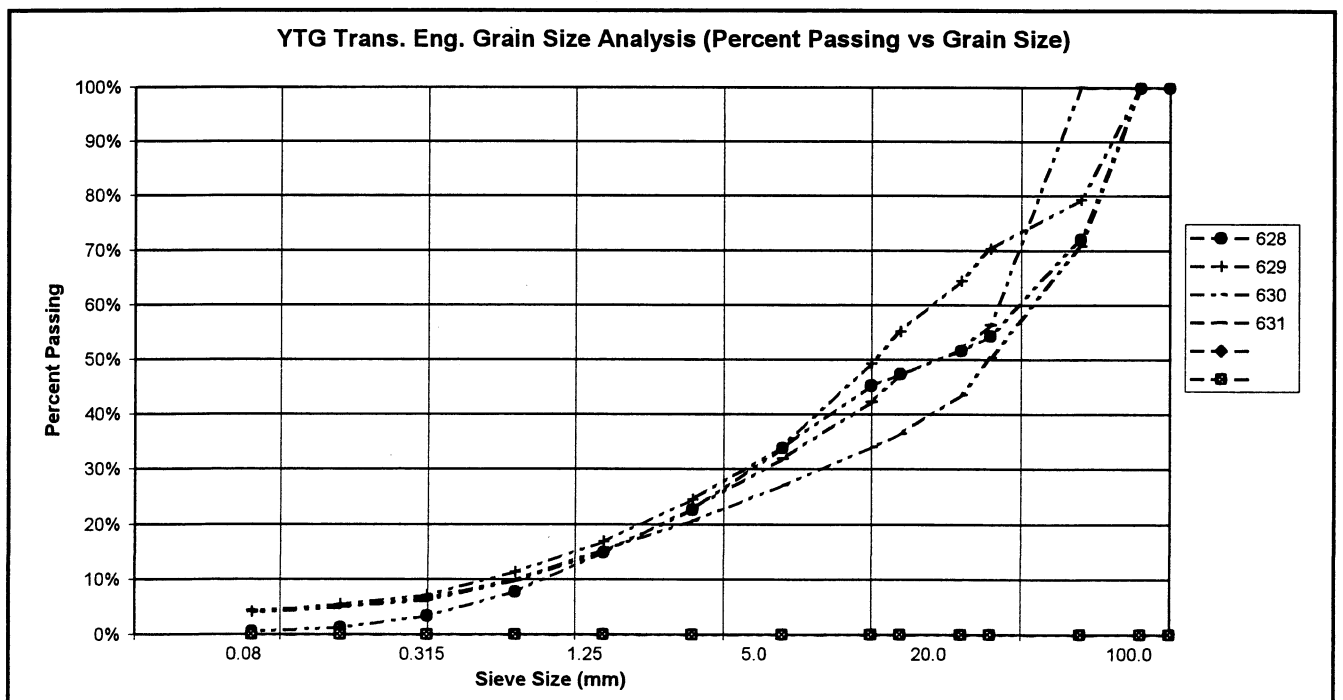


PROJECT NUMBER: 552-202101-0361-1
 CLIENT: Engineering Capital
 PROJECT NAME: Shakwak Granular Investigation
 PROJECT LOCATION: Willisroft Creek Km 1715.8 A/H
 DRILL UNIT: Koehring 6625 Backhoe
 HOLE LOCATION: See Plan
 LOGGED BY: JRP R.W.

HOLE No.: 640-2570

DATE COMP: Sept 30 /02

FIELD NO:	628	629	630	631		
LAB NO:	887	888	889	890		
DEPTH:	0.5-1.0	2.0-2.5	3.0-3.5	4.0-4.5		
TYPE:	BULK	AUGER	BULK	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	72%	79%	71%	100%		
25.0	54%	70%	50%	56%		
20.0	52%	64%	44%	52%		
12.5	47%	55%	37%	47%		
10.0	45%	49%	34%	42%		
5.0	34%	34%	27%	32%		
2.5	23%	25%	21%	23%		
1.25	15%	17%	16%	15%		
0.630	8%	11%	10%	10%		
0.315	3%	7%	7%	6%		
0.160	1%	6%	5%	5%		
0.080	1%	4%	4%	4%		
M.C.(%)	1%	3%	3%	3%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	66	66	73	68		
% SAND:	33	30	23	28		
% FINES:	1	4	4	4		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

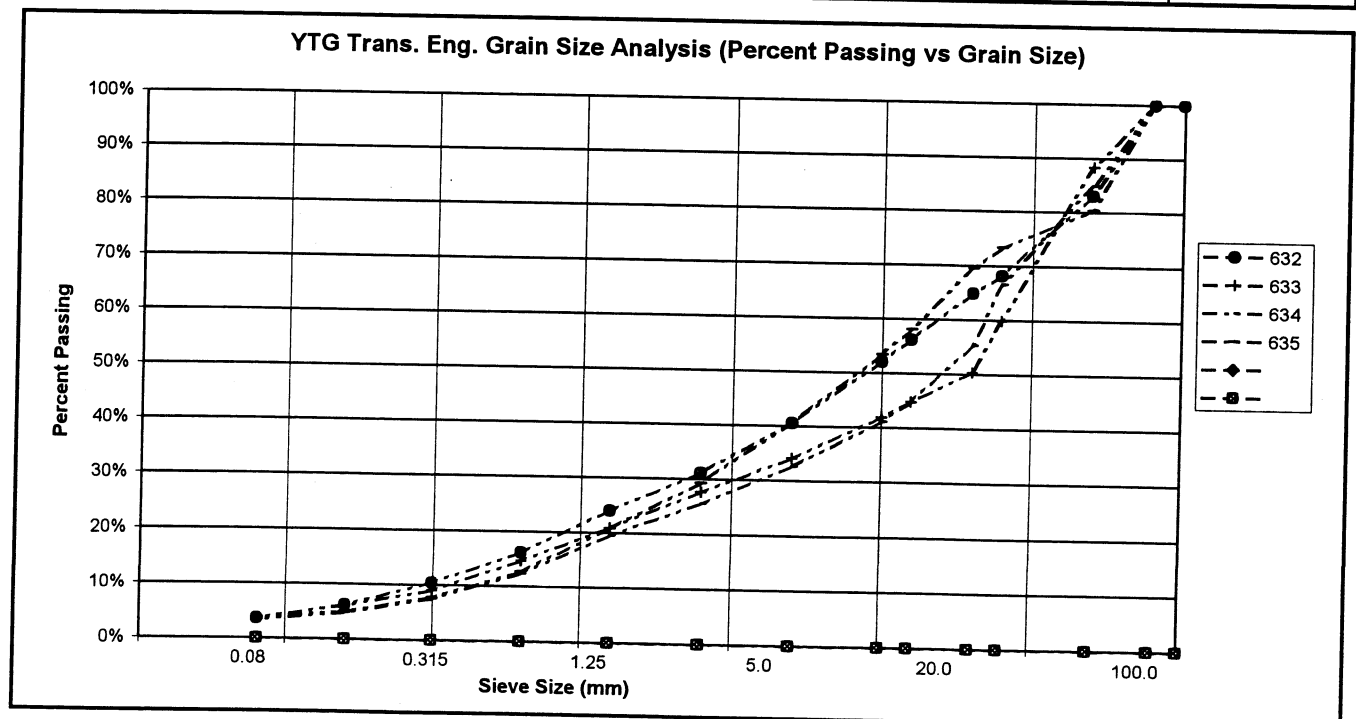


PROJECT NUMBER: 552-202101-0361-1
 CLIENT: Engineering Capital
 PROJECT NAME: Shakwak Granular Investigation
 PROJECT LOCATION: Williscroft Creek Km 1715.8 A/H
 DRILL UNIT: Koehring 6625 Backhoe
 HOLE LOCATION: See Plan
 LOGGED BY: JRP R.W.

HOLE No.: 640-2571

DATE COMP: Sept 30 /02

FIELD NO:	632	633	634	635		
LAB NO:	897	892	893	894		
DEPTH:	0.5-1.1	2.2-2.8	3.0-3.6	4.0-4.5		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	83%	88%	85%	80%		
25.0	68%	60%	67%	73%		
20.0	65%	50%	55%	70%		
12.5	56%	45%	45%	58%		
10.0	52%	42%	41%	53%		
5.0	41%	34%	33%	41%		
2.5	31%	28%	26%	29%		
1.25	24%	21%	20%	21%		
0.630	16%	15%	12%	13%		
0.315	10%	9%	7%	8%		
0.160	6%	6%	5%	5%		
0.080	4%	4%	3%	4%		
M.C.(%)	1%	2%	2%	3%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	59	66	67	59		
% SAND:	37	30	29	37		
% FINES:	4	4	3	4		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		



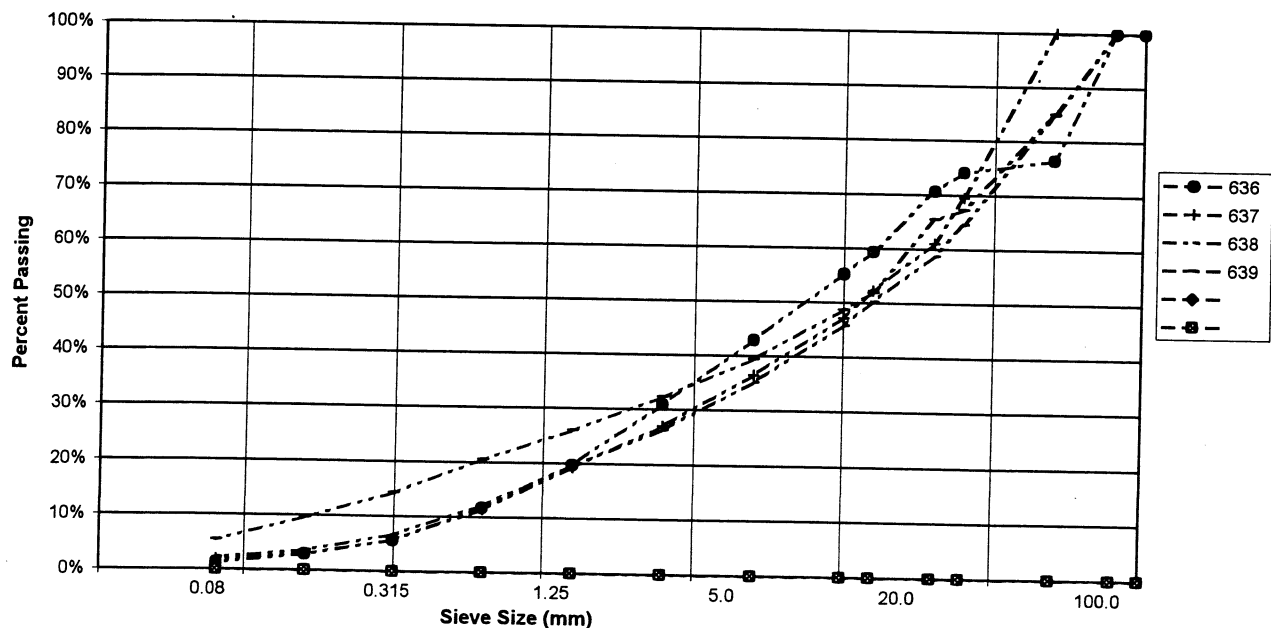
PROJECT NUMBER: 552-202101-0361-1
 CLIENT: Engineering Capital
 PROJECT NAME: Shakwak Granular Investigation
 PROJECT LOCATION: Williscroft Creek Km 1715.8 A/H
 DRILL UNIT: Koehring 6625 Backhoe
 HOLE LOCATION: See Plan
 LOGGED BY: JRP R.W.

HOLE No.: 640-2572

DATE COMP: Sept 30 /02

FIELD NO:	636	637	638	639		
LAB NO:	895	896	897	898		
DEPTH:	0.5-1.0	2.0-2.5	3.0-3.5	4.0-4.5		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	77%	100%	85%	85%		
25.0	74%	69%	65%	67%		
20.0	71%	61%	59%	65%		
12.5	59%	52%	50%	52%		
10.0	55%	47%	46%	49%		
5.0	43%	36%	35%	39%		
2.5	31%	27%	26%	32%		
1.25	20%	19%	20%	26%		
0.630	12%	11%	12%	21%		
0.315	6%	6%	7%	14%		
0.160	3%	3%	4%	10%		
0.080	1%	2%	2%	5%		
M.C.(%)	1%	1%	2%	3%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	57	64	65	61		
% SAND:	42	35	33	34		
% FINES:	1	2	2	5		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	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)



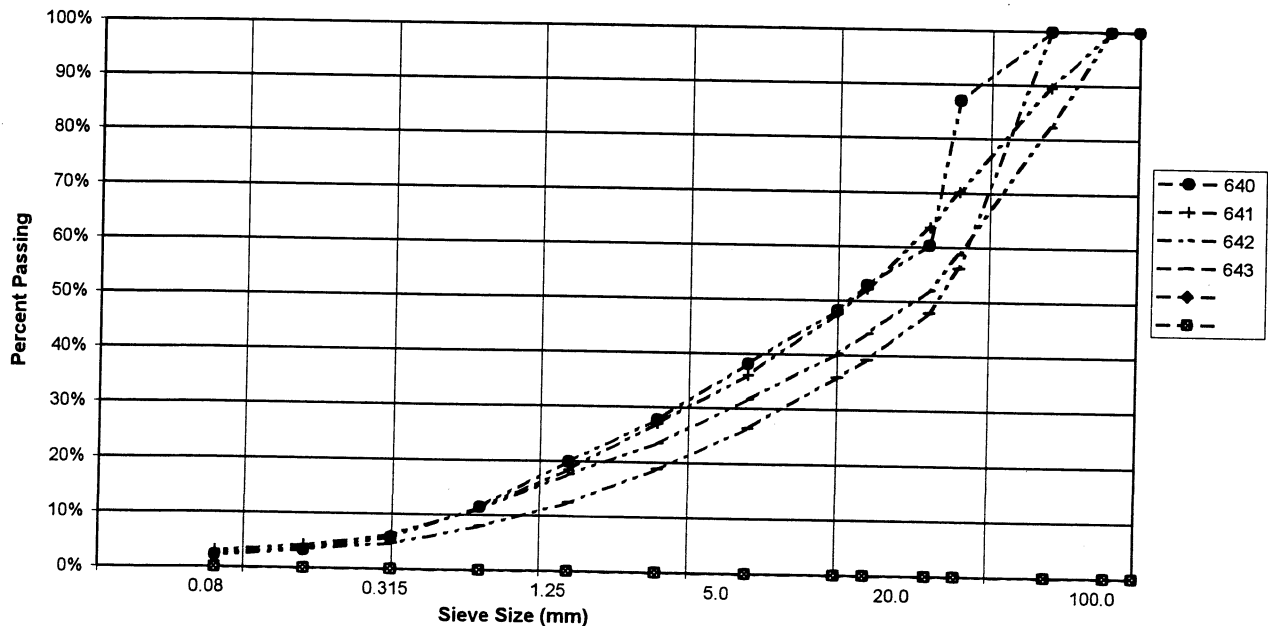
PROJECT NUMBER: 552-202101-0361-1
 CLIENT: Engineering Capital
 PROJECT NAME: Shakwak Granular Investigation
 PROJECT LOCATION: Willisroft Creek Km 1715.8 A/H
 DRILL UNIT: Koehring 6625 Backhoe
 HOLE LOCATION: See Plan
 LOGGED BY: JRP R.W.

HOLE No.: 640-2573

DATE COMP: Sept 30 /02

FIELD NO:	640	641	642	643		
LAB NO:	899	900	901	902		
DEPTH:	0.5-1.0	2.0-2.5	3.0-3.5	3.7-4.2		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	90%	82%	100%		
25.0	87%	70%	59%	56%		
20.0	60%	64%	52%	48%		
12.5	53%	52%	44%	39%		
10.0	48%	48%	40%	36%		
5.0	38%	36%	32%	26%		
2.5	28%	27%	24%	19%		
1.25	20%	18%	18%	12%		
0.630	12%	11%	11%	8%		
0.315	6%	6%	6%	5%		
0.160	3%	4%	4%	4%		
0.080	2%	3%	2%	3%		
M.C.(%)	1%	2%	2%	2%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	62	64	68	74		
% SAND:	36	33	29	24		
% FINES:	2	3	2	3		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

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



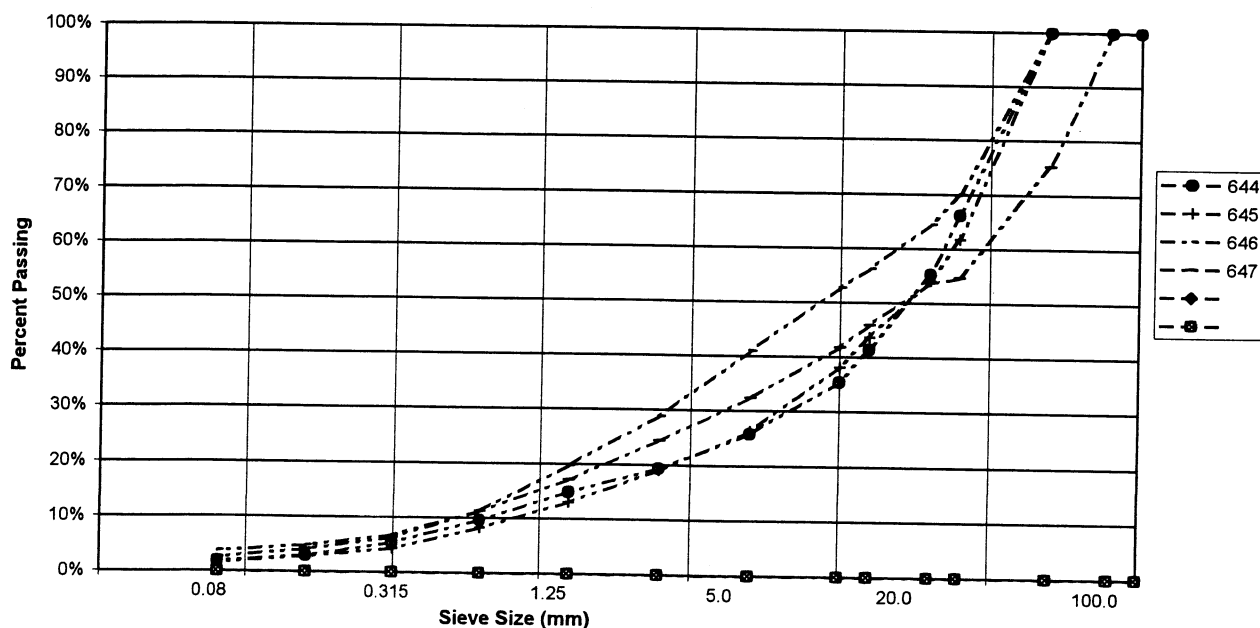
PROJECT NUMBER: 552-202101-0361-1
 CLIENT: Engineering Capital
 PROJECT NAME: Shakwak Granular Investigation
 PROJECT LOCATION: Williscroft Creek Km 1715.8 A/H
 DRILL UNIT: Koehring 6625 Backhoe
 HOLE LOCATION: See Plan
 LOGGED BY: JRP R.W.

HOLE No.: 640-2574

DATE COMP: Sept 30 /02

FIELD NO:	644	645	646	647		
LAB NO:	903	904	905	906		
DEPTH:	0.5-1.0	2.0-2.5	3.0-3.5	4.0-4.5		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	75%		
25.0	66%	62%	70%	55%		
20.0	55%	54%	64%	54%		
12.5	41%	44%	56%	46%		
10.0	35%	38%	53%	42%		
5.0	26%	26%	41%	32%		
2.5	19%	19%	29%	24%		
1.25	15%	13%	20%	17%		
0.630	10%	8%	11%	11%		
0.315	5%	4%	7%	6%		
0.160	3%	3%	5%	4%		
0.080	2%	2%	4%	3%		
M.C.(%)	1%	1%	2%	1%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	74	74	59	68		
% SAND:	24	25	37	30		
% FINES:	2	2	4	3		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

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

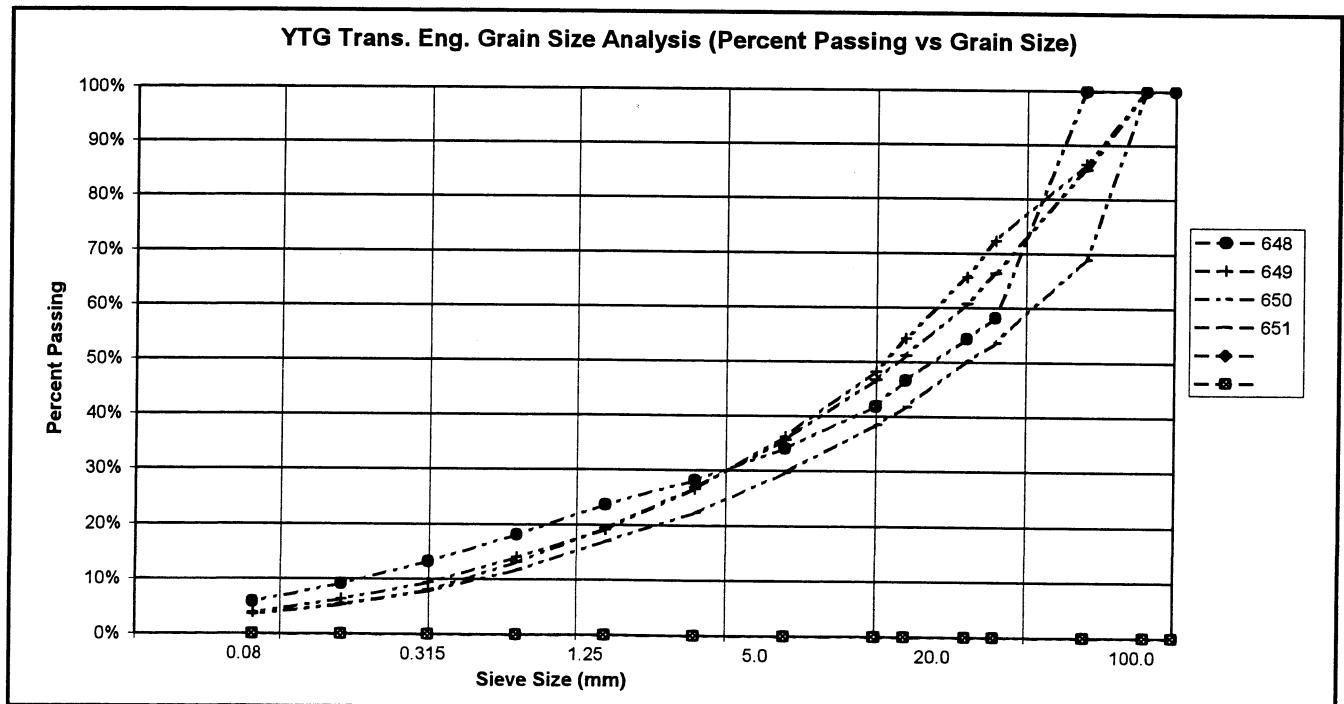


PROJECT NUMBER: 552-202101-0361-1
 CLIENT: Engineering Capital
 PROJECT NAME: Shakwak Granular Investigation
 PROJECT LOCATION: Willisroft Creek Km 1715.8 A/H
 DRILL UNIT: Koehring 6625 Backhoe
 HOLE LOCATION: See Plan
 LOGGED BY: JRP R.W.

HOLE No.: 640-2575

DATE COMP: Sept 30 /02

FIELD NO:	648	649	650	651		
LAB NO:	907	908	909	910		
DEPTH:	0.5-1.1	2.0-2.6	3.0-3.6	4.0-4.5		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	87%	69%	85%		
25.0	58%	72%	54%	66%		
20.0	54%	66%	50%	61%		
12.5	47%	54%	42%	51%		
10.0	42%	48%	38%	47%		
5.0	34%	36%	30%	36%		
2.5	28%	27%	22%	27%		
1.25	24%	19%	17%	19%		
0.630	18%	14%	12%	13%		
0.315	13%	9%	8%	8%		
0.160	9%	6%	5%	5%		
0.080	6%	4%	4%	3%		
M.C.(%)	3%	3%	2%	2%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	66	64	70	64		
% SAND:	28	32	26	32		
% FINES:	6	4	4	3		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

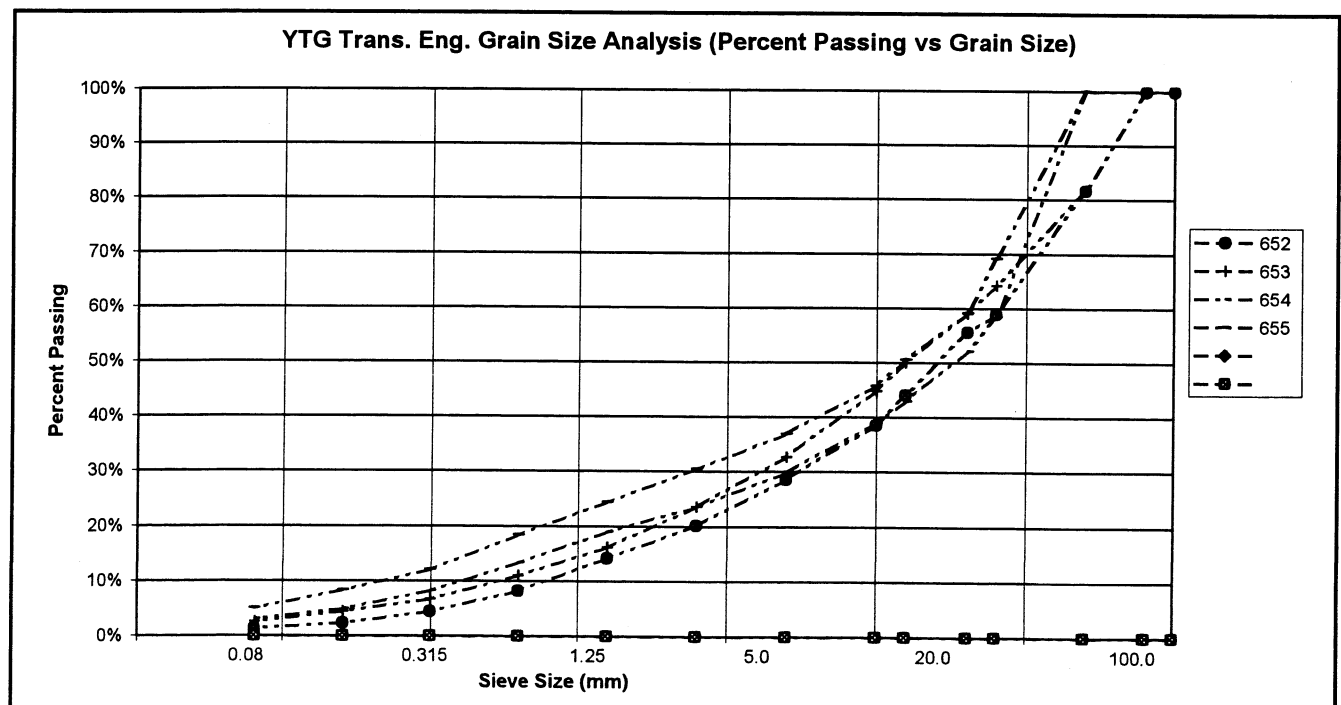


PROJECT NUMBER: 552-202101-0361-1
 CLIENT: Engineering Capital
 PROJECT NAME: Shakwak Granular Investigation
 PROJECT LOCATION: Willisroft Creek Km 1715.8 A/H
 DRILL UNIT: Koehring 6625 Backhoe
 HOLE LOCATION: See Plan
 LOGGED BY: JRP R.W.

HOLE No.: 640-2576

DATE COMP: Sept 30 /02

FIELD NO:	652	653	654	655		
LAB NO:	911	912	913	914		
DEPTH:	0.5-1.0	1.8-2.3	3.0-3.5	4.0-4.5		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	82%	82%	100%	100%		
25.0	59%	64%	58%	69%		
20.0	56%	59%	52%	59%		
12.5	44%	50%	43%	51%		
10.0	39%	45%	39%	46%		
5.0	29%	33%	30%	37%		
2.5	20%	24%	24%	30%		
1.25	14%	16%	19%	24%		
0.630	8%	11%	13%	18%		
0.315	4%	7%	8%	12%		
0.160	2%	4%	5%	8%		
0.080	1%	3%	3%	5%		
M.C.(%)	1%	2%	2%	3%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	71	67	70	63		
% SAND:	27	30	27	32		
% FINES:	1	3	3	5		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	WELL-GRADED GRAVEL WITH SAND (GW)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)		



Km 1713.0 LHS Alaska Highway #1
Pit Ident. 115 G-12
(Williscroft Creek)

September 2003
Book # 651

Auger Hole Logs

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2693	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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	POORLY GRADED GRAVEL WITH SAND TO POORLY GRADED GRAVEL WITH SILT & SAND (GP)-(GP-GM)											0.0
	-brown											
	-damp											
	-rough drilling											
	-grinding starts @ surface											
1.0			154				GP					1.0
2.0	-little smoother 2.0 - 3.0M		155				GP					2.0
3.0	END HOLE @ 3.0m		156				GP-GM					3.0
4.0												4.0
5.0												5.0
6.0												6.0

Government of Yukon		LOGGED BY: GC	COMPLETION DEPTH: 3.0 m
Transportation Engineering		REVIEWED BY:	COMPLETE: 03/09/25
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2694	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -brown -damp -angular -grinding from the surface		157					GP-GM			0.0
1.0											1.0
2.0	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM) -brown -damp -easy drilling		158					SW-SM			2.0
3.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -hard drilling @ 3m		159					GP			3.0
4.0	END HOLE @ 3.0m										4.0
5.0											5.0
6.0											6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 3.0 m
		REVIEWED BY:	COMPLETE: 03/09/25
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2695	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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 WELL TO POORLY GRADED GRAVEL WITH SILT & SAND (GW-GM)-(GP-GM) -brown -damp -grinding from the start -rough drilling											0.0
1.0			160				GW-GM					1.0
2.0	-no sample recovery 1.0 - 2.0m											2.0
3.0	END HOLE @ 3.0m		161				GP-GM					3.0
4.0												4.0
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 3.0 m
		REVIEWED BY:	COMPLETE: 03/09/25
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2696	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -rough drilling 0-1.4m										0.0
1.0			162				GP				1.0
2.0	SILTY GRAVEL WITH SAND (GM) -brown -damp -no sample recovery 1.4m to 2.0m										2.0
3.0	END HOLE @ 3.0m		163				GM				3.0
4.0											4.0
5.0											5.0
6.0											6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 3.0 m
		REVIEWED BY:	COMPLETE: 03/09/25
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2697	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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	POORLY GRADED GRAVEL WITH SAND (GP) -damp to dry -rough drilling											0.0
1.0			164					GP				1.0
2.0	GRAVELLY SAND -brown -damp -easy drilling -lost sample #165		165									2.0
3.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -grinding rough drilling 2.0-3.0m		166					GP				3.0
4.0	END HOLE @ 3.0m											4.0
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 3.0 m
		REVIEWED BY:	COMPLETE: 03/09/25
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2698	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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	POORLY GRADED GRAVEL WITH SAND TO POORLY GRADED GRAVEL WITH SILT & SAND TO POORLY GRADED GRAVEL WITH SAND (GP)-(GP-GM)-(GP) -brown -damp -very rough slow drilling											0.0
1.0			167				GP					1.0
2.0	-damp to dry below 1.5m		168				GP-GM					2.0
3.0	-difficult to get sample from auger - dry - rough END HOLE @ 3.0m		169				GP					3.0
4.0												4.0
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 3.0 m
		REVIEWED BY:	COMPLETE: 03/09/25
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2699	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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						
0.0	POORLY GRADED GRAVEL WITH SAND TO SILTY SAND WITH GRAVEL TO POORLY GRADED GRAVEL WITH SILT & SAND (GP)-(SM)-(GP-GM) -grey -dry to damp -hard grinding form surface to 3.0m											0.0
1.0			170				GP					1.0
2.0												2.0
3.0	-brown below 2.5m -damp below 2.5m -smooth drilling 3.0 to 3.5m		171				SM					3.0
4.0	-rough drilling below 3.5m		172				GP-GM					4.0
5.0	END HOLE @ 4.5m											5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 3.0 m
		REVIEWED BY:	COMPLETE: 03/09/29
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2700	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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	ORGANICS WELL-GRADED SAND WITH GRAVEL TO POORLY GRADED GRAVEL WITH SILT & SAND (SW)-(GP-GM) -brown -damp -grinding from surface -note: some organics churned up with auger -smoother drilling 2.5-3.0m -grinding but not rough below 3.0m			20	40	60	80			20	40	60	80	0.0
1.0			173					SW						1.0
2.0														2.0
3.0														3.0
4.0			174					GP-GM						4.0
5.0	END HOLE @ 4.5m													5.0
6.0														6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.5 m
		REVIEWED BY:	COMPLETE: 03/09/29
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2701	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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)
				M.C.					PERCENT SAND	PERCENT GRAVEL		
				PLASTIC		LIQUID						
0.0	ORGANICS POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -brown -damp -rough drilling 0 to 1.5m										0.0	
1.0	-some organics up with auger below 1.5m -smoother 1.5-2.0m		175				GP-GM				1.0	
2.0	WELL-GRADED GRAVEL WITH SAND (GW) -brown -damp -rough grinding drilling		176				GW				2.0	
3.0	SMOOTH 2.6 TO 3.0m POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -brown -damp										3.0	
4.0	-rough drilling END HOLE @ 4.5m		177				GP-GM				4.0	
5.0											5.0	
6.0											6.0	

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.5 m
		REVIEWED BY:	COMPLETE: 03/09/29
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2702	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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 GRADED GRAVEL WITH SAND (GP) -dry to damp -very rough drilling 0-4.5m											0.0
1.0			178				GP					1.0
2.0												2.0
3.0												3.0
4.0			179				GP					4.0
5.0	END HOLE @ 4.5m											5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.5 m
		REVIEWED BY:	COMPLETE: 03/09/29
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2703	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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	ORGANICS											0.0
	WELL-GRADED GRAVEL WITH SAND (GW)											
	-damp to dry											
	-rough - tight drilling 0 - 3.5m											
1.0			180				GW					1.0
2.0												2.0
3.0												3.0
4.0	SILTY SAND WITH GRAVEL (SM)		181				SM					4.0
	-brown											
	-moist											
	-smooth drilling											
	-rough drilling below 4.0m											
5.0	END HOLE @ 4.5m											5.0
6.0												6.0

Government of Yukon		LOGGED BY: GC	COMPLETION DEPTH: 4.5 m
Transportation Engineering		REVIEWED BY:	COMPLETE: 03/09/29
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2704	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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)
				M.C.								
				PLASTIC		LIQUID						
0.0	ORGANICS POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -rough drilling from surface											0.0
1.0												1.0
2.0	-rough & tight drilling -slow rough tight drilling		182				GP					2.0
3.0												3.0
4.0	-no sample retrieved, had to reverse augers											4.0
5.0	END HOLE @ 4.5m											5.0
6.0												6.0

Government of Yukon		LOGGED BY: GC	COMPLETION DEPTH: 4.5 m
Transportation Engineering		REVIEWED BY:	COMPLETE: 03/09/29
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2705	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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)			
				M.C.					PERCENT SAND				PERCENT GRAVEL		
				PLASTIC		LIQUID			20	40	60		80	20	40
0.0	WELL-GRADED GRAVEL WITH SAND (GW) -extremely rough / big rocks											0.0			
1.0												1.0			
2.0	END HOLE @ 2.0m -refusal		183				GW					2.0			
3.0												3.0			
4.0												4.0			
5.0												5.0			
6.0												6.0			

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 2.0 m
		REVIEWED BY:	COMPLETE: 03/09/29
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2706			
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362			
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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	DEPTH (m)
				20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80			
0.0	ROCKS WITH SAND -extremely rough & tight drilling -no samples						0.0
1.0							1.0
2.0							2.0
3.0	END HOLE @ 2.4m						3.0
4.0							4.0
5.0							5.0
6.0							6.0
Government of Yukon Transportation Engineering				LOGGED BY: GC		COMPLETION DEPTH: 2.4 m	
				REVIEWED BY:		COMPLETE: 03/09/29	
				Fig. No:		Page 1 of 1	

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2707								
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362								
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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	GRAVEL -rough & tight drilling -no samples										0.0	
1.0											1.0	
2.0	END HOLE @ 1.8m -refusal										2.0	
3.0											3.0	
4.0											4.0	
5.0											5.0	
6.0											6.0	

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Transportation Engineering

LOGGED BY: GC	COMPLETION DEPTH: 1.8 m
REVIEWED BY:	COMPLETE: 03/09/29
Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2708	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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.			20	40	60	80	
0.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -dry -grinding starts @ surface		184									0.0
1.0	-refusal @ 1.2m / moved 2m											1.0
2.0	END HOLE @ 1.5m -refusal -3rd refusal @ 1.5m											2.0
3.0												3.0
4.0												4.0
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 1.5 m
		REVIEWED BY:	COMPLETE: 03/09/30
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2709	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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 SILT -brown -dry -grinding starts @ 0.5m							0.0
1.0	SANDY GRAVEL -brown -damp -rough, slow drilling							1.0
2.0								2.0
3.0	-refusal @ 2.2m / moved 3m / rock dust on bit -extreme rough & tight drilling							3.0
4.0								4.0
5.0	END HOLE @ 5.0m -refusal -Note: Last auger was moist							5.0
6.0								6.0

Government of Yukon Transportation Engineering	LOGGED BY: GC	COMPLETION DEPTH: 5.0 m
	REVIEWED BY:	COMPLETE: 03/09/30
	Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2710	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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 SANDY GRAVEL -brown -damp -grinding from .05m -rough & tight drilling							0.0
1.0								1.0
2.0								2.0
3.0	-still grinding but not as rough 3.0-4.0							3.0
4.0								4.0
5.0	END HOLE @ 4.5m Note: Some wet silty sand came up with auger bottom							5.0
6.0								6.0

Government of Yukon Transportation Engineering	LOGGED BY: GC	COMPLETION DEPTH: 4.5 m
	REVIEWED BY:	COMPLETE: 03/09/30
	Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2711			
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362			
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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	ORGANICS & SILT						0.0
▼	SANDY GRAVEL						▼
	-saturated						
	-grinding						
1.0							1.0
2.0							2.0
	-easy drilling but grinding / rough						
	@ 2.0m						
3.0							3.0
4.0	END HOLE @ 3.5m						4.0
5.0							5.0
6.0							6.0

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LOGGED BY: GC	COMPLETION DEPTH: 3.5 m
REVIEWED BY:	COMPLETE: 03/09/30
Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2712	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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	ORGANICS GRAVEL -rough drilling starts @ 0.1m -rough & tight -no samples						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: GC	COMPLETION DEPTH: 3.0 m
	REVIEWED BY:	COMPLETE: 03/09/30
	Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2713				
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362				
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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	ORGANICS & SILT							0.0
	SANDY & GRAVEL -rough & tight drilling							
1.0								1.0
2.0								2.0
3.0	END HOLE @ 2.6m -refusal							3.0
4.0								4.0
5.0								5.0
6.0								6.0
Government of Yukon Transportation Engineering				LOGGED BY: GC		COMPLETION DEPTH: 2.6 m		
				REVIEWED BY:		COMPLETE: 03/09/30		
				Fig. No:		Page 1 of 1		

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2714	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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.			PERCENT SAND	PERCENT GRAVEL	
0.0	SILT & ORGANICS									0.0
	SANDY GRAVEL									
	-brown									
	-damp									
	-grinding starts @ 0.2m									
1.0										1.0
	-very rough & tight									
2.0										2.0
3.0	END HOLE @ 2.8m									3.0
4.0										4.0
5.0										5.0
6.0										6.0

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Fig. No:

COMPLETION DEPTH: 2.8 m

COMPLETE: 03/09/30

Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2715				
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362				
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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	ORGANICS							0.0
	SANDY GRAVEL -brown -damp -ginding							
1.0								1.0
	ORGANIC & SILT -smooth							
	SANDY GRAVEL -rough tight drilling							
2.0								2.0
	END HOLE @ 2.5m -refusal							
3.0								3.0
4.0								4.0
5.0								5.0
6.0								6.0

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REVIEWED BY:
Fig. No:

COMPLETION DEPTH: 2.5 m
COMPLETE: 03/09/30

Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT GRANULAR INVESTIGATION		TEST PIT NO: 651-2716	
ENGINEERING CAPITAL		WILLISCROFT CR FAN		Project No: 552-202101-0362	
D-4 CAT - 6" AUGER		LOCATION: SEE PLAN & 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	ORGANICS							0.0
	SANDY GRAVEL							
	-brown							
1.0	-damp							1.0
	-rough drilling 0.2-7.5m							
	-tight drilling							
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	END HOLE @ 7.5m							8.0
	-refusal							
9.0								9.0
10.0								10.0
11.0								11.0
12.0								12.0

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	REVIEWED BY:	COMPLETE: 03/09/30
	Fig. No:	Page 1 of 1

Km 1713.0 LHS Alaska Highway #1
Pit Ident. 115 G-12
(Williscroft Creek)

September 2003
Book # 651

Auger Sample Results

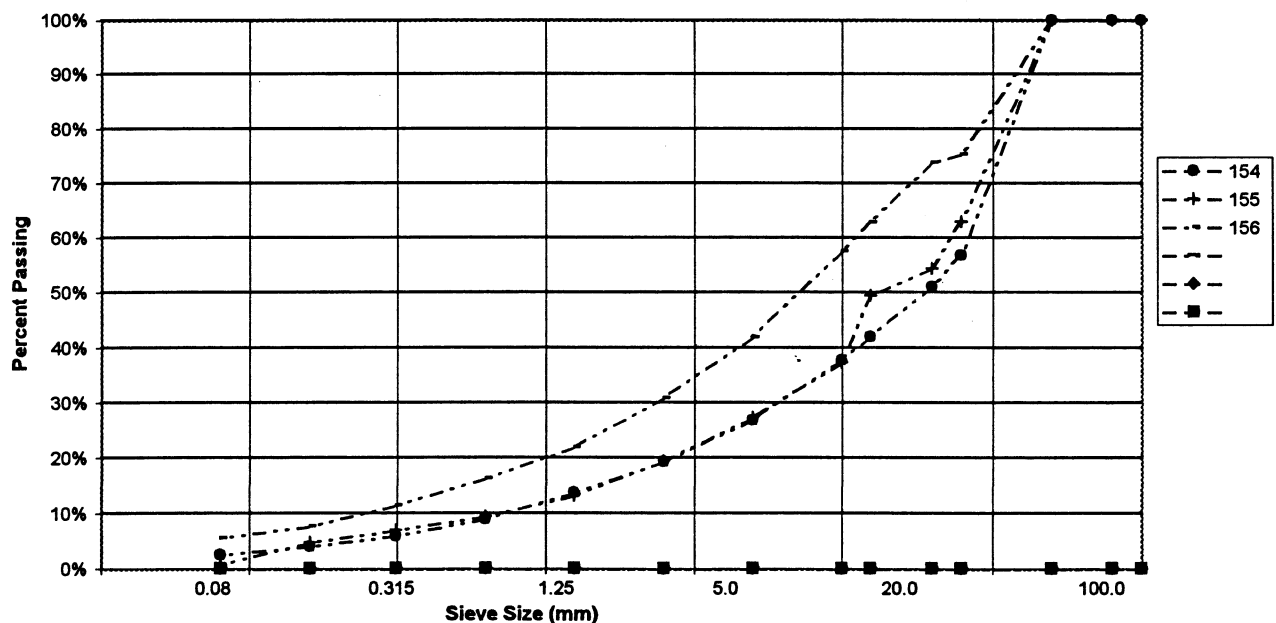
PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Fan
 PROJECT LOCATION: Km 1716.0 A/H 115-G-12
 DRILL UNIT: D-4 CAT 6" Auger
 HOLE LOCATION: See Plan
 LOGGED BY: G.C.

HOLE No.: 651-2693

DATE COMP: 03/09/25

FIELD NO:	154	155	156			
LAB NO:	316	317	318			
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0			
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	57%	63%	75%			
20.0	51%	54%	74%			
12.5	42%	49%	63%			
10.0	38%	37%	58%			
5.0	27%	27%	42%			
2.5	19%	19%	31%			
1.25	14%	13%	22%			
0.630	9%	9%	16%			
0.315	6%	7%	11%			
0.160	4%	5%	8%			
0.080	2%	1%	6%			
M.C.(%)	2%	2%	2%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX:	0.0	0.0	0.0			
% GRAVEL:	73	73	58			
% SAND:	24	27	36			
% FINES:	2	1	6			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	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)

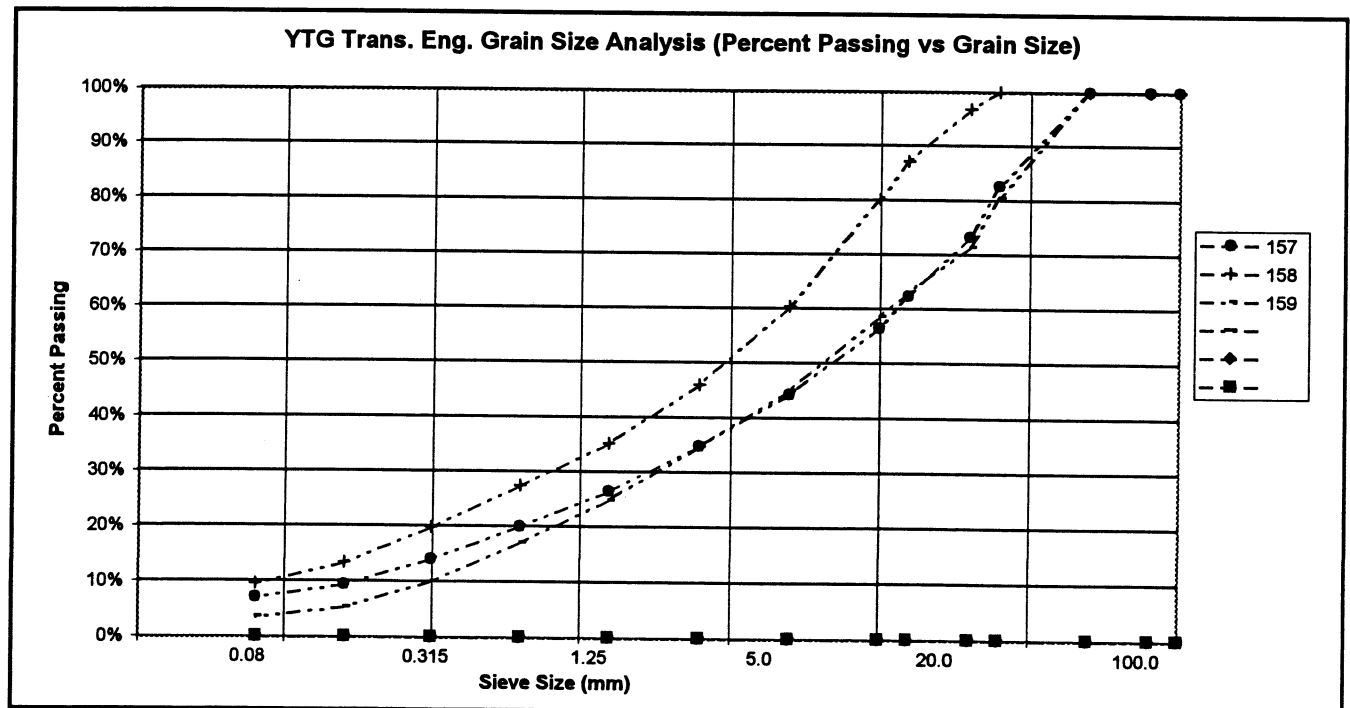


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Fan
 PROJECT LOCATION: Km 1716.0 A/H 115-G-12
 DRILL UNIT: D-4 CAT 6" Auger
 HOLE LOCATION: See Plan
 LOGGED BY: G.C.

HOLE No.: 651-2694

DATE COMP: 03/09/25

FIELD NO:	157	158	159			
LAB NO:	319	320	321			
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0			
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	83%	100%	81%			
20.0	73%	97%	71%			
12.5	62%	87%	63%			
10.0	56%	80%	59%			
5.0	44%	60%	45%			
2.5	35%	46%	35%			
1.25	27%	35%	25%			
0.630	20%	27%	17%			
0.315	14%	20%	10%			
0.160	9%	13%	5%			
0.080	7%	10%	4%			
M.C.(%)	3%	4%	1%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX:	0.0	0.0	0.0			
% GRAVEL:	56	40	55			
% SAND:	37	51	41			
% FINES:	7	10	4			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	POORLY GRADED GRAVEL WITH SAND (GP)			

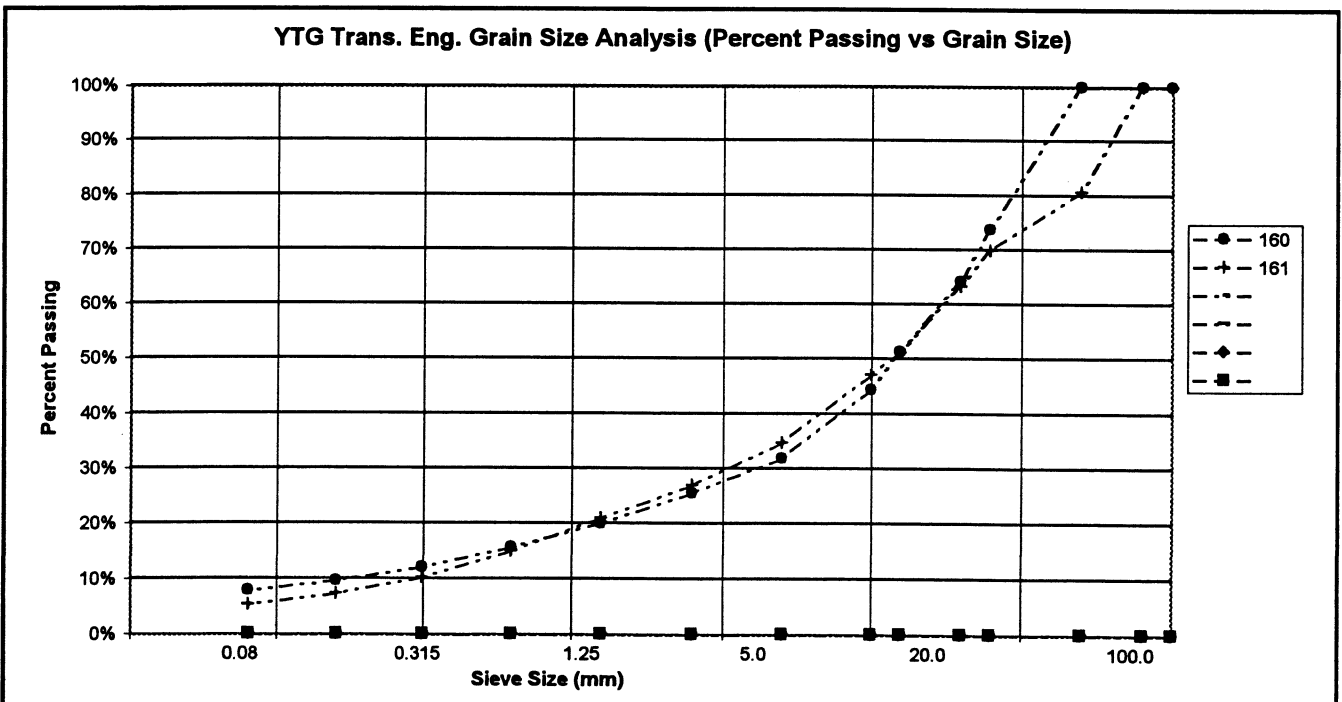


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakhwak
 PROJECT NAME: Williscroft Creek Fan
 PROJECT LOCATION: Km 1716.0 A/H 115-G-12
 DRILL UNIT: D-4 CAT 6" Auger
 HOLE LOCATION: See Plan
 LOGGED BY: G.C.

HOLE No.: 651-2695

DATE COMP: 03/09/25

FIELD NO:	160	161				
LAB NO:	322	323				
DEPTH:	0.5-1.0	2.0-3.0				
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	81%				
25.0	74%	70%				
20.0	64%	63%				
12.5	51%	51%				
10.0	44%	47%				
5.0	32%	35%				
2.5	26%	27%				
1.25	20%	21%				
0.630	16%	15%				
0.315	12%	10%				
0.160	10%	7%				
0.080	8%	5%				
M.C.(%)	3%	2%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX:	0.0	0.0				
% GRAVEL:	68	65				
% SAND:	24	29				
% FINES:	8	5				
CLASSIFICATION	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)				

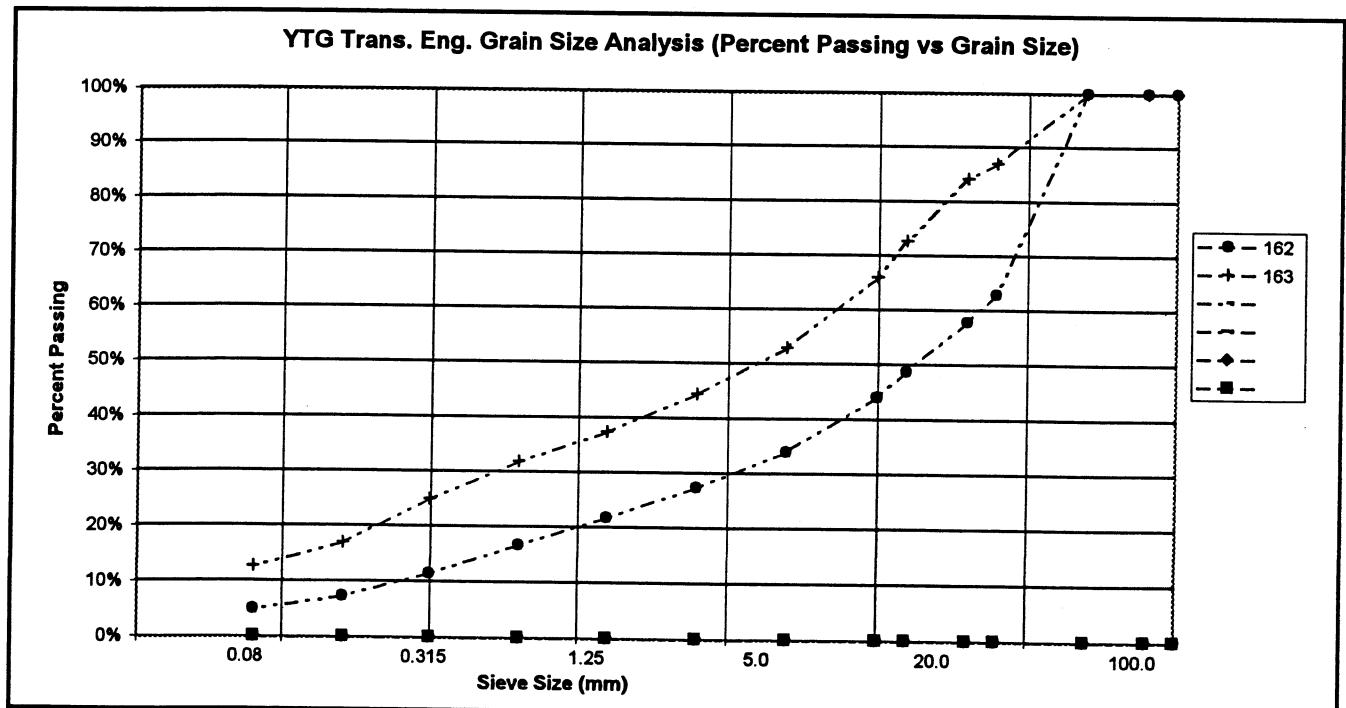


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Fan
 PROJECT LOCATION: Km 1716.0 A/H 115-G-12
 DRILL UNIT: D-4 CAT 6" Auger
 HOLE LOCATION: See Plan
 LOGGED BY: G.C.

HOLE No.: 651-2696

DATE COMP: 03/09/25

FIELD NO:	162	163				
LAB NO:	324	325				
DEPTH:	0.5-1.0	2.5-3.0				
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	63%	87%				
20.0	58%	84%				
12.5	49%	73%				
10.0	44%	66%				
5.0	34%	53%				
2.5	27%	44%				
1.25	22%	37%				
0.630	17%	32%				
0.315	11%	25%				
0.160	7%	17%				
0.080	5%	13%				
M.C.(%)	2%	4%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX:	0.0	0.0				
% GRAVEL:	66	47				
% SAND:	29	40				
% FINES:	5	13				
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	SILTY GRAVEL WITH SAND (GM)				

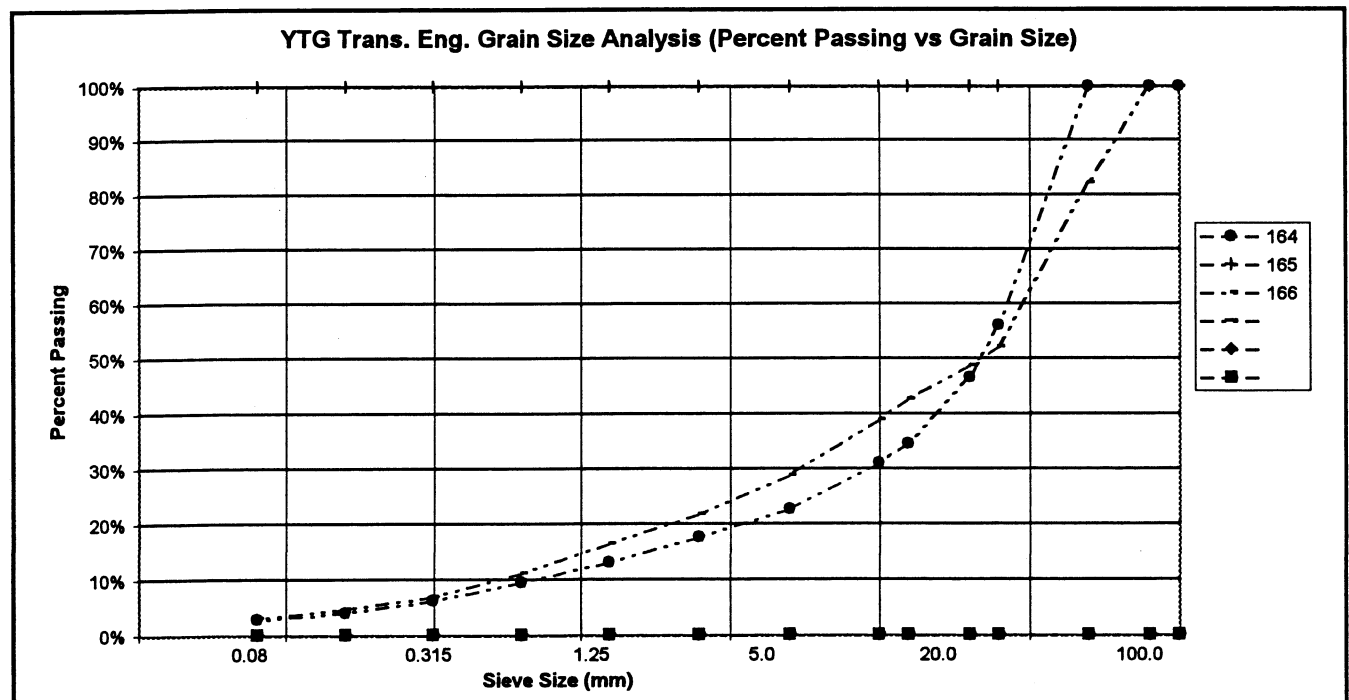


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Fan
 PROJECT LOCATION: Km 1716.0 A/H 115-G-12
 DRILL UNIT: D-4 CAT 6" Auger
 HOLE LOCATION: See Plan
 LOGGED BY: G.C.

HOLE No.: 651-2697

DATE COMP: 03/09/25

FIELD NO:	164	165	166			
LAB NO:	326	Sample lost	328			
DEPTH:	0.5-1.0	1.6-2.0	2.5-3.0			
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	82%			
25.0	56%	100%	52%			
20.0	47%	100%	49%			
12.5	35%	100%	43%			
10.0	31%	100%	39%			
5.0	23%	100%	29%			
2.5	18%	100%	22%			
1.25	13%	100%	16%			
0.630	10%	100%	11%			
0.315	6%	100%	7%			
0.160	4%	100%	5%			
0.080	3%	100%	3%			
M.C.(%)	1%	4%	1%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX:	0.0	0.0	0.0			
% GRAVEL:	77	0	71			
% SAND:	20	0	26			
% FINES:	3	100	3			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	<SILT (ML)	POORLY GRADED GRAVEL WITH SAND (GP)			

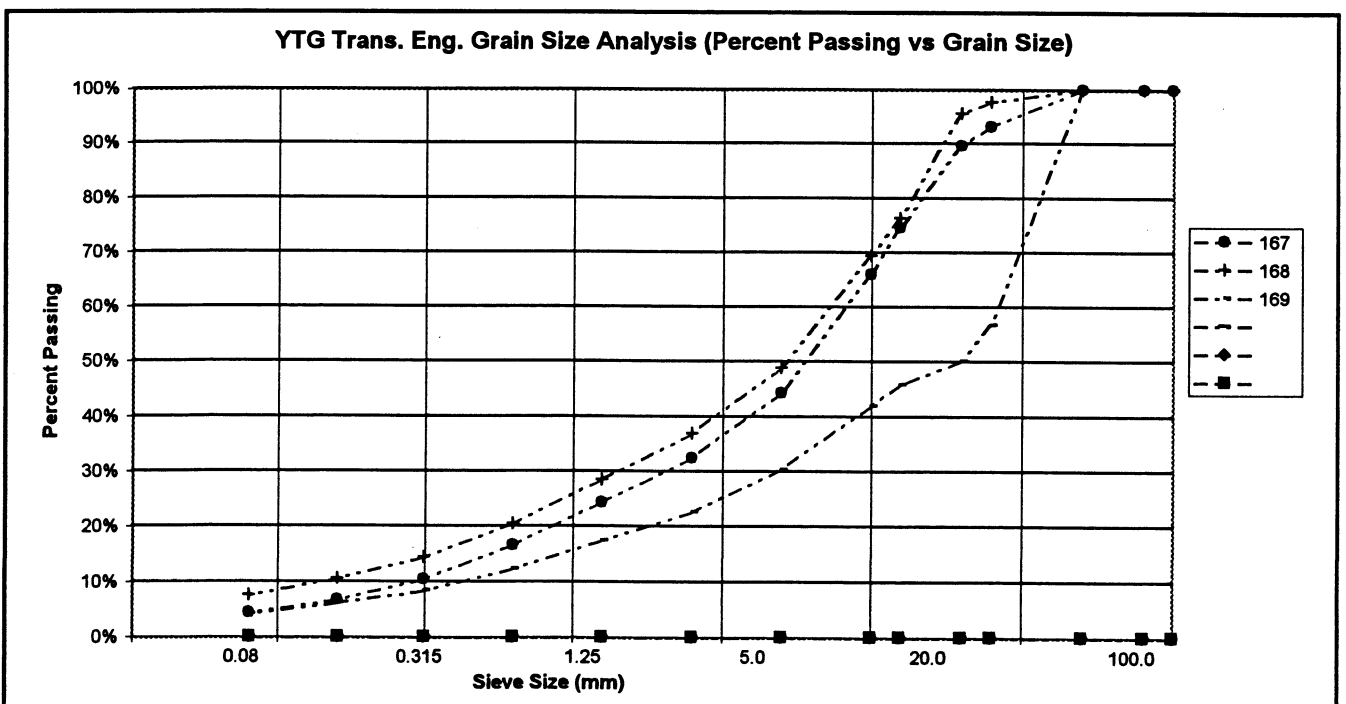


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Fan
 PROJECT LOCATION: Km 1716.0 A/H 115-G-12
 DRILL UNIT: D-4 CAT 6" Auger
 HOLE LOCATION: See Plan
 LOGGED BY: G.C.

HOLE No.: 651-2698

DATE COMP: 03/09/25

FIELD NO:	167	168	169			
LAB NO:	462	463	329			
DEPTH:	0.6-1.0	1.6-2.0	2.6-3.0			
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	93%	98%	57%			
20.0	90%	96%	50%			
12.5	75%	76%	46%			
10.0	66%	69%	42%			
5.0	44%	49%	30%			
2.5	32%	37%	23%			
1.25	24%	28%	17%			
0.630	17%	21%	12%			
0.315	10%	14%	8%			
0.160	7%	11%	6%			
0.080	4%	8%	4%			
M.C.(%)	2%	2%	1%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX:	0.0	0.0	0.0			
% GRAVEL:	56	51	70			
% SAND:	40	41	26			
% FINES:	4	8	4			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SAND (GP)			



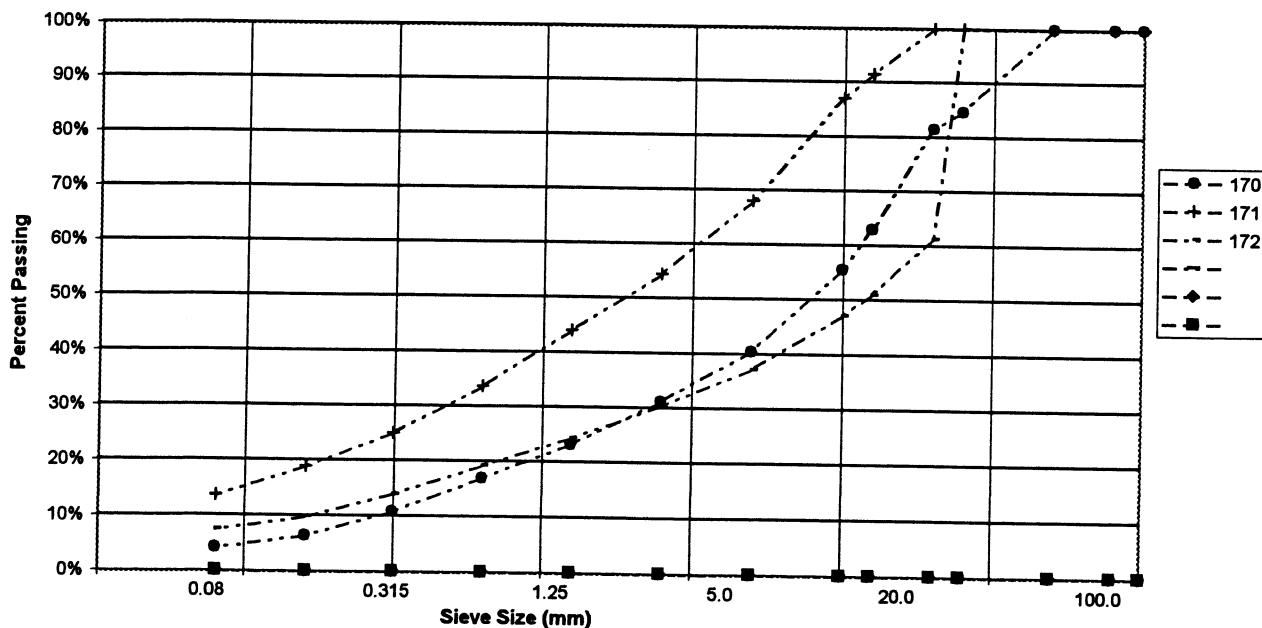
PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Fan
 PROJECT LOCATION: Km 1716.0 A/H 115-G-12
 DRILL UNIT: D-4 CAT 6" Auger
 HOLE LOCATION: See Plan
 LOGGED BY: G.C.

HOLE No.: 651-2699

DATE COMP: 03/09/29

FIELD NO:	170	171	172			
LAB NO:	330	331	332			
DEPTH:	0.6-1.0	2.5-3.0	4.0-4.5			
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	85%	100%	100%			
20.0	81%	100%	61%			
12.5	63%	92%	51%			
10.0	56%	87%	47%			
5.0	40%	68%	37%			
2.5	31%	54%	30%			
1.25	23%	44%	24%			
0.630	17%	34%	19%			
0.315	11%	25%	14%			
0.160	6%	19%	10%			
0.080	4%	14%	7%			
M.C.(%)	1%	5%	3%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX..	0.0	0.0	0.0			
% GRAVEL:	60	32	63			
% SAND:	36	54	30			
% FINES:	4	14	7			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	SILTY SAND WITH GRAVEL (SM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)			

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

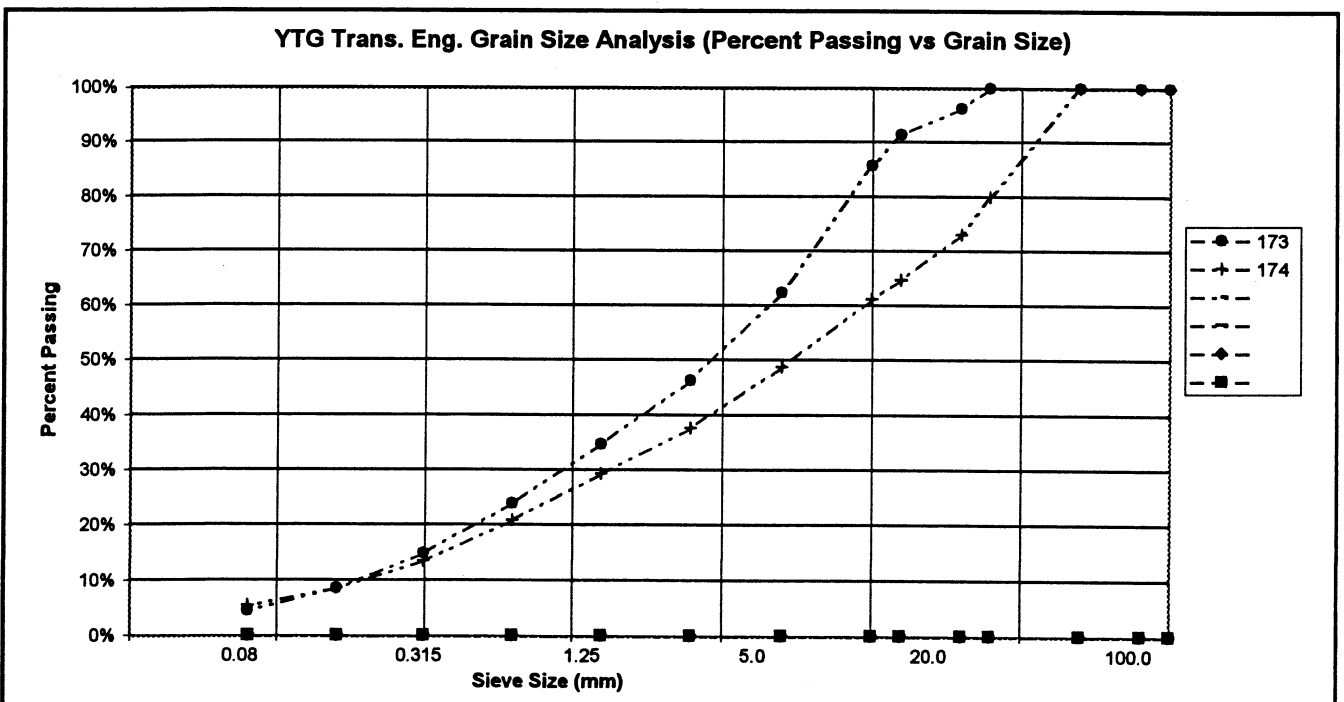


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shaktwak
 PROJECT NAME: Williscroft Creek Fan
 PROJECT LOCATION: Km 1716.0 A/H 115-G-12
 DRILL UNIT: D-4 CAT 6" Auger
 HOLE LOCATION: See Plan
 LOGGED BY: G.C.

HOLE No.: 651-2700

DATE COMP: 03/09/29

FIELD NO:	173	174				
LAB NO:	333	334				
DEPTH:	0.6-1.0	4.0-4.5				
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	80%				
20.0	96%	73%				
12.5	91%	65%				
10.0	86%	61%				
5.0	62%	49%				
2.5	46%	38%				
1.25	35%	29%				
0.630	24%	21%				
0.315	15%	14%				
0.160	9%	9%				
0.080	4%	5%				
M.C.(%)	2%	2%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX:	0.0	0.0				
% GRAVEL:	38	51				
% SAND:	58	43				
% FINES:	4	5				
CLASSIFICATION	WELL-GRADED SAND WITH GRAVEL (SW)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)				

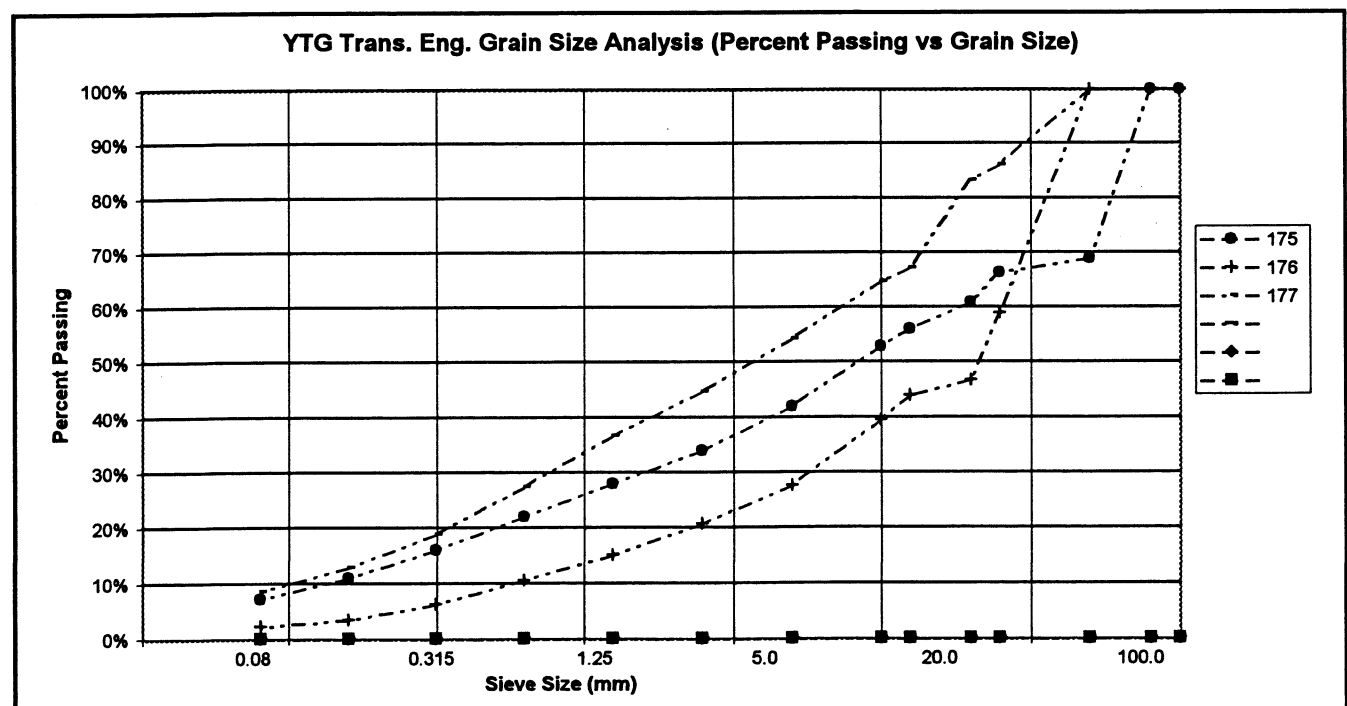


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Fan
 PROJECT LOCATION: Km 1716.0 A/H 115-G-12
 DRILL UNIT: D-4 CAT 6" Auger
 HOLE LOCATION: See Plan
 LOGGED BY: G.C.

HOLE No.: 651-2701

DATE COMP: 03/09/29

FIELD NO:	175	176	177			
LAB NO:	335	336	337			
DEPTH:	1.0-1.5	2.0-2.6	4.0-4.5			
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	69%	100%	100%			
25.0	66%	59%	86%			
20.0	61%	47%	83%			
12.5	56%	44%	67%			
10.0	53%	39%	65%			
5.0	42%	28%	54%			
2.5	34%	21%	45%			
1.25	28%	15%	37%			
0.630	22%	11%	27%			
0.315	16%	6%	19%			
0.160	11%	3%	13%			
0.080	7%	2%	9%			
M.C.(%)	2%	1%	2%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX:	0.0	0.0	0.0			
% GRAVEL:	58	72	46			
% SAND:	35	26	46			
% FINES:	7	2	9			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	WELL-GRADED GRAVEL WITH SAND (GW)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)			

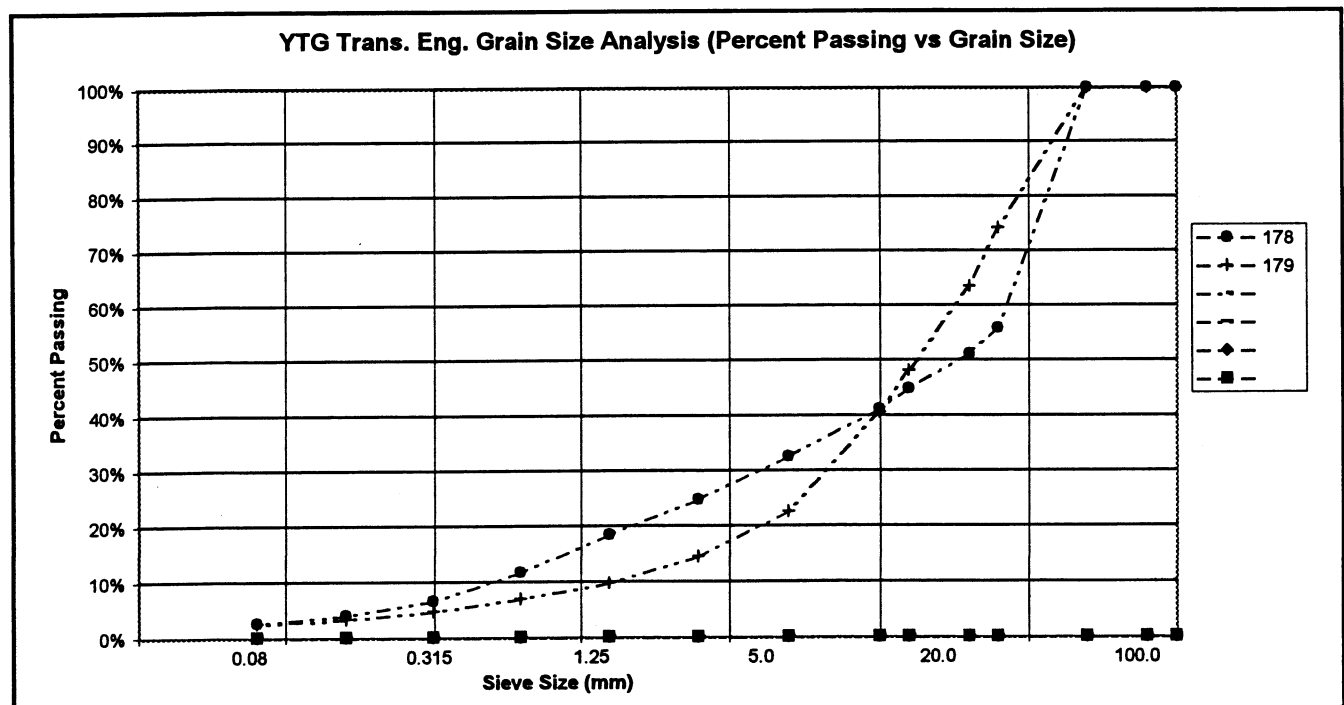


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Fan
 PROJECT LOCATION: Km 1716.0 A/H 115-G-12
 DRILL UNIT: D-4 CAT 6" Auger
 HOLE LOCATION: See Plan
 LOGGED BY: G.C.

HOLE No.: 651-2702

DATE COMP: 03/09/29

FIELD NO:	178	179				
LAB NO:	338	339				
DEPTH:	0.6-1.0	3.0-4.0				
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	56%	74%				
20.0	51%	64%				
12.5	45%	48%				
10.0	41%	41%				
5.0	33%	23%				
2.5	25%	15%				
1.25	18%	10%				
0.630	12%	7%				
0.315	7%	5%				
0.160	4%	3%				
0.080	3%	2%				
M.C.(%)	1%	1%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX:	0.0	0.0				
% GRAVEL:	67	77				
% SAND:	30	20				
% FINES:	3	2				
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)				

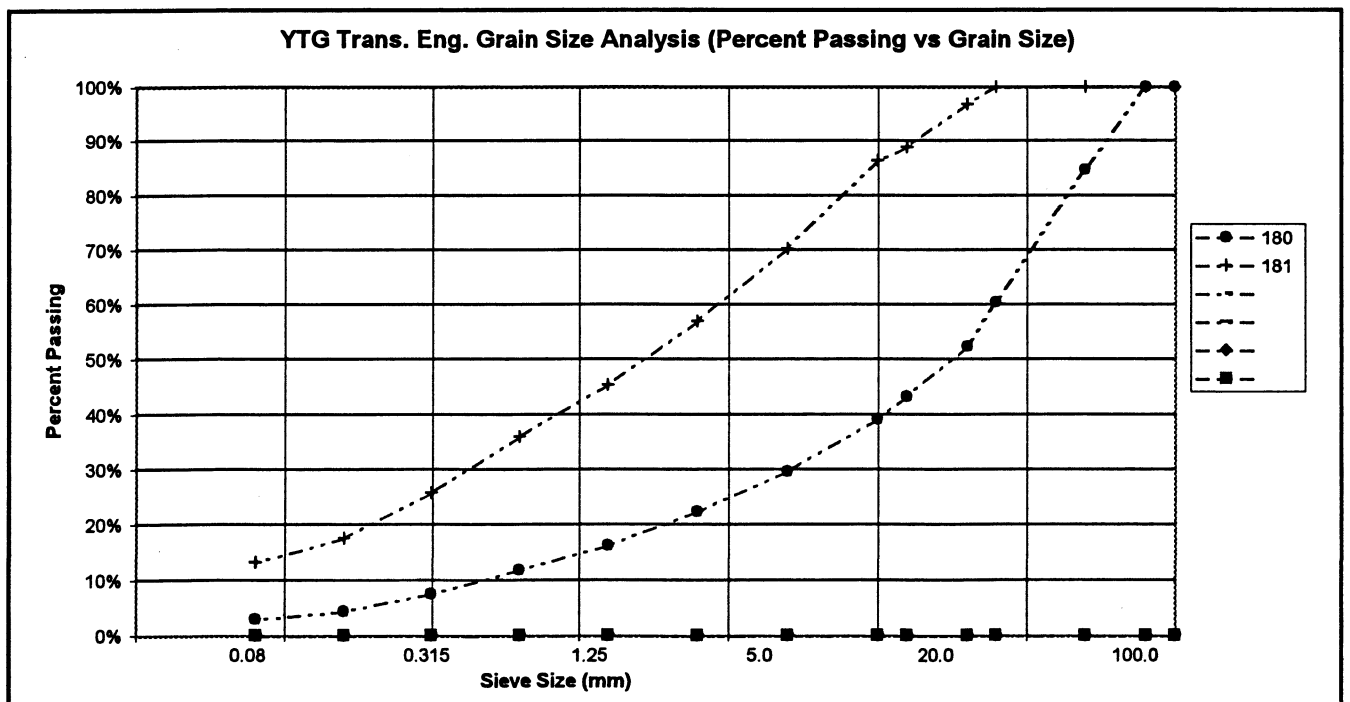


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Fan
 PROJECT LOCATION: Km 1716.0 A/H 115-G-12
 DRILL UNIT: D-4 CAT 6" Auger
 HOLE LOCATION: See Plan
 LOGGED BY: G.C.

HOLE No.: 651-2703

DATE COMP: 03/09/29

FIELD NO:	180	181				
LAB NO:	340	341				
DEPTH:	0.6-1.0	3.6-4.0				
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	85%	100%				
25.0	61%	100%				
20.0	52%	97%				
12.5	43%	89%				
10.0	39%	86%				
5.0	30%	70%				
2.5	22%	57%				
1.25	16%	45%				
0.630	12%	36%				
0.315	8%	26%				
0.160	4%	18%				
0.080	3%	13%				
M.C.(%):	1%	5%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	70	30				
% SAND:	27	57				
% FINES:	3	13				
CLASSIFICATION	WELL-GRADED GRAVEL WITH SAND (GW)	SILTY SAND WITH GRAVEL (SM)				

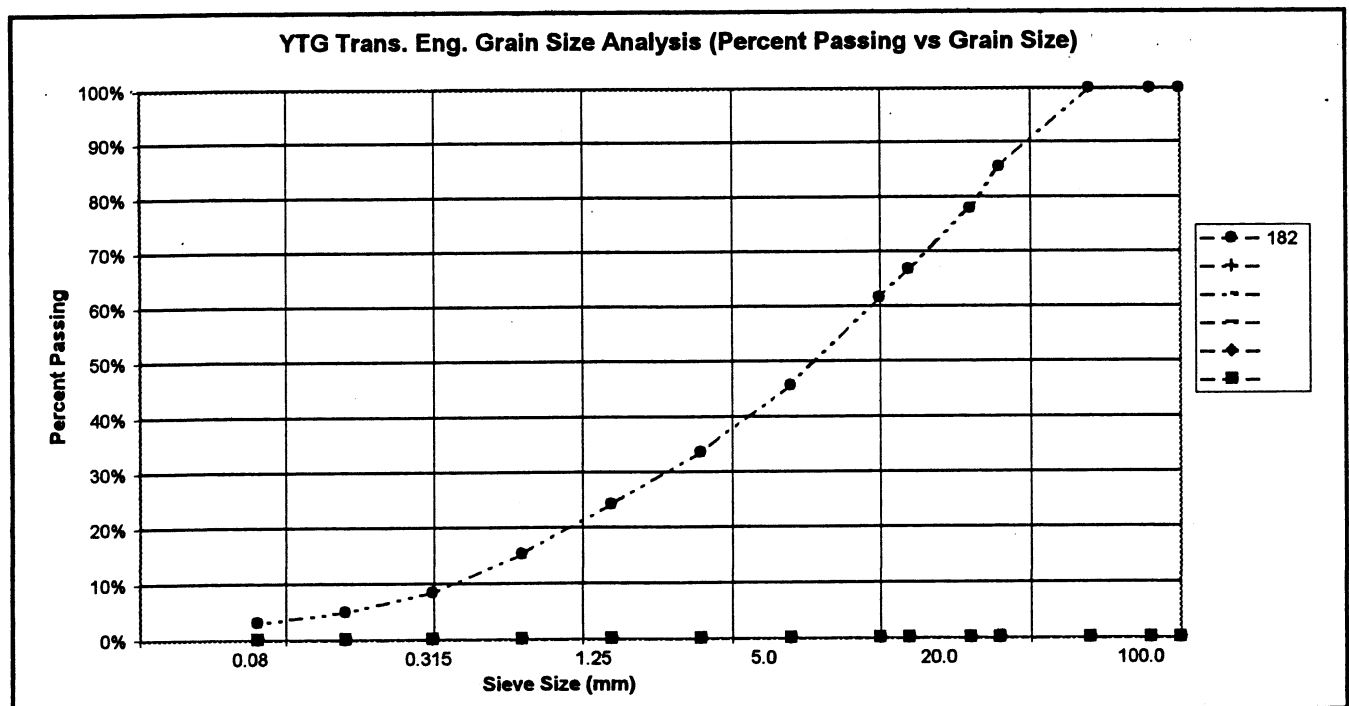


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Fan
 PROJECT LOCATION: Km 1716.0 A/H 115-G-12
 DRILL UNIT: D-4 CAT 6" Auger
 HOLE LOCATION: See Plan
 LOGGED BY: G.C.

HOLE No.: 651-2704

DATE COMP: 03/09/29

FIELD NO:	182				
LAB NO:	342				
DEPTH:	1.0-2.4				
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING				
100.0	100%				
80.0	100%				
50.0	100%				
25.0	86%				
20.0	78%				
12.5	67%				
10.0	62%				
5.0	46%				
2.5	34%				
1.25	24%				
0.630	15%				
0.315	8%				
0.160	5%				
0.080	3%				
M.C.(%)	1%				
LIQUID LIMIT:	0.0				
PLASTIC LIMIT:	0.0				
PLASTIC INDEX:	0.0				
% GRAVEL:	54				
% SAND:	43				
% FINES:	3				
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)				

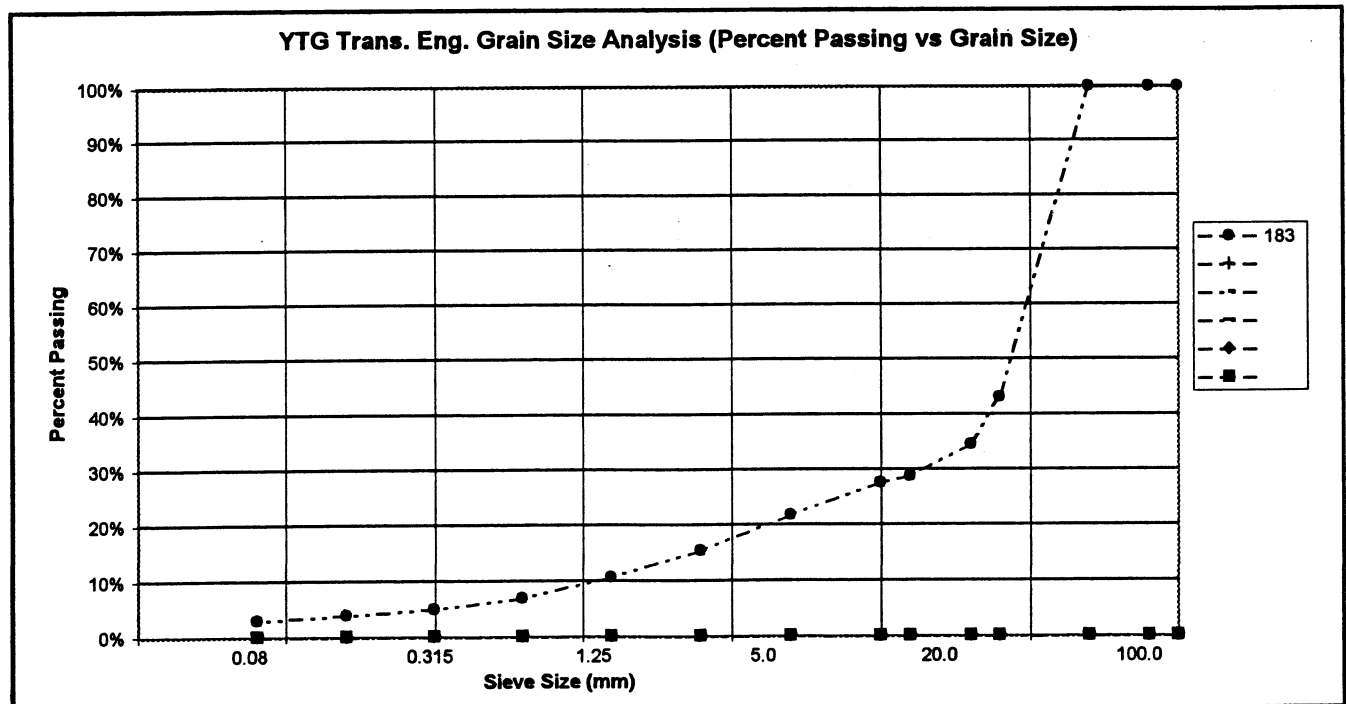


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Fan
 PROJECT LOCATION: Km 1716.0 A/H 115-G-12
 DRILL UNIT: D-4 CAT 6" Auger
 HOLE LOCATION: See Plan
 LOGGED BY: G.C.

HOLE No.: 651-2705

DATE COMP: 03/09/29

FIELD NO:	183				
LAB NO:	343				
DEPTH:	1.5-2.0				
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING				
100.0	100%				
80.0	100%				
50.0	100%				
25.0	43%				
20.0	35%				
12.5	29%				
10.0	28%				
5.0	22%				
2.5	15%				
1.25	11%				
0.630	7%				
0.315	5%				
0.160	4%				
0.080	3%				
M.C.(%):	1%				
LIQUID LIMIT:	0.0				
PLASTIC LIMIT:	0.0				
PLASTIC INDEX.:	0.0				
% GRAVEL:	78				
% SAND:	19				
% FINES:	3				
CLASSIFICATION	WELL-GRADED GRAVEL WITH SAND (GW)				

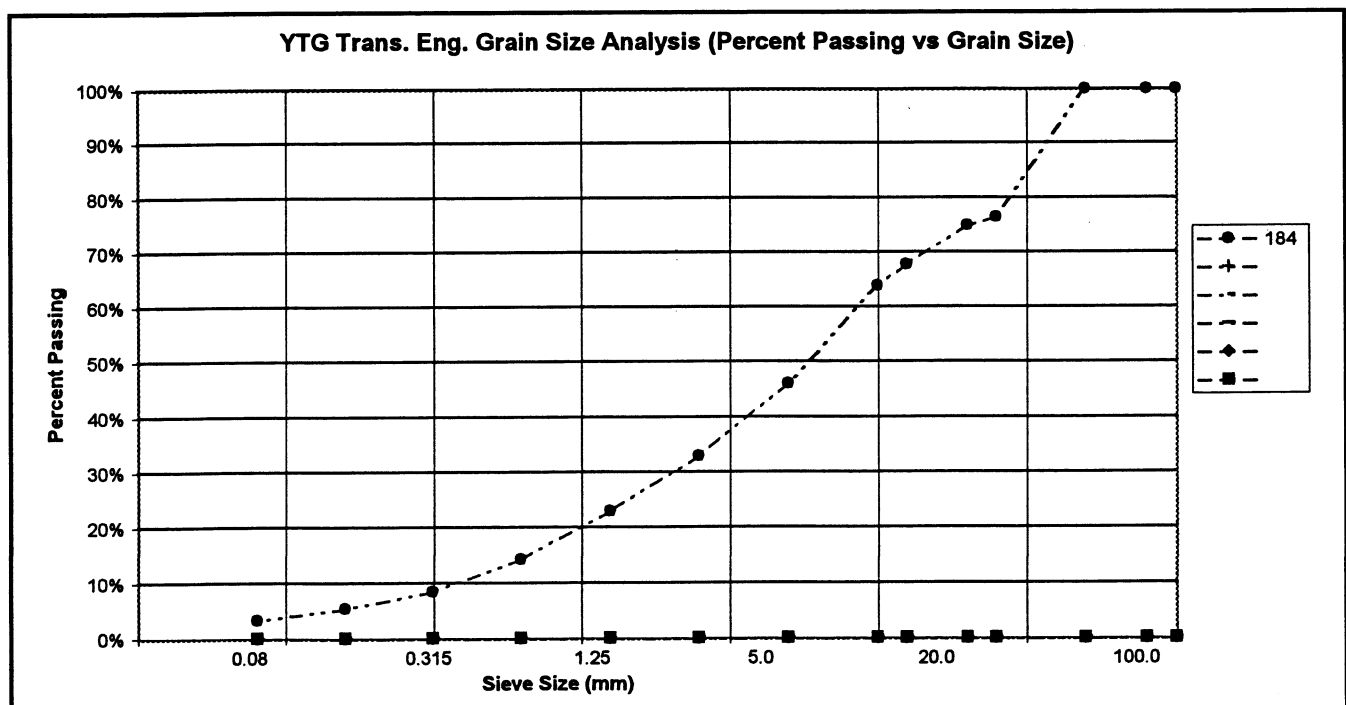


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Fan
 PROJECT LOCATION: Km 1716.0 A/H 115-G-12
 DRILL UNIT: D-4 CAT 6" Auger
 HOLE LOCATION: See Plan
 LOGGED BY: G.C.

HOLE No.: 651-2708

DATE COMP: 03/09/29

FIELD NO:	184					
LAB NO:	344					
DEPTH:	0.6-1.0					
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING					
100.0	100%					
80.0	100%					
50.0	100%					
25.0	76%					
20.0	75%					
12.5	68%					
10.0	64%					
5.0	46%					
2.5	33%					
1.25	23%					
0.630	14%					
0.315	8%					
0.160	5%					
0.080	3%					
M.C.(%)	1%					
LIQUID LIMIT:	0.0					
PLASTIC LIMIT:	0.0					
PLASTIC INDEX:	0.0					
% GRAVEL:	54					
% SAND:	43					
% FINES:	3					
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)					



Km 1713.0 LHS Alaska Highway #1
Pit Ident. 115 G-12
(Williscroft Creek)

October 2003
Book # 654

Test Pit Logs

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2732	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	POORLY GRADED GRAVEL WITH SAND (GP)								0.0		
	-dry										
	-maximum 300mm material										
	-sub-angular										
	-organics / rootlets reaching down to 0.5m										
1.0	-trace of silt below 1.0m - no silt seams								1.0		
	-damp below 1.0m										
	-maximum 250mm material below 1.0m										
2.0	-rough slow digging below 2.0m								2.0		
	-maximum 400mm material below 2.4m										
3.0									3.0		
4.0	END HOLE @ 4.0m								4.0		
	-Note: one 600mm boulder										
5.0									5.0		
6.0									6.0		

Government of Yukon Transportation Engineering	LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
	REVIEWED BY:	COMPLETE: 03/10/09
	Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2733	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	POORLY TO WELL GRADED GRAVEL WITH SAND (GP)-(GW)											0.0
	-brown											
	-damp											
	-maximum 200mm material											
	-sub-angular											
1.0	-maximum 350mm material below 1.0m											1.0
	-slow tough digging											
2.0	-maximum 400mm material below 2.0m											2.0
	-no silt seams											
3.0												3.0
4.0	END HOLE @ 4.0m											4.0
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering	LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
	REVIEWED BY:	COMPLETE: 03/10/09
	Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2734	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -maximum 200mm material -sub-angular											0.0
1.0	-maximum 400mm material below 1.0		258				GP					1.0
2.0			259				GP					2.0
3.0			260				GP					3.0
4.0	END HOLE @ 4.0m		261				GP					4.0
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
		REVIEWED BY:	COMPLETE: 03/10/09
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2735	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	WELL-GRADED SAND WITH GRAVEL (SW) -brown -damp -maximum 100mm material			20	40	60	80			20	40	60	80	0.0
1.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -maximum 250mm material -sub-angular													1.0
2.0			262					SW						
3.0	-maximum 300mm material below 2.8m -excavated trees & a bit of organic @ 3.0m -silt layer 3.0-3.2m		263					GP						
4.0	END HOLE @ 4.0m		264					GP						
			265					GP						
5.0														5.0
6.0														6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
		REVIEWED BY:	COMPLETE: 03/10/09
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2736	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	VEGETATION POORLY GRADED GRAVEL WITH SAND TO POORLY GRADED GRAVEL WITH SILT (GP) - (GP-GM) -brown -damp -maximum 250mm material -sub-angular -roots & organics 1.5-1.6m -rough slow digging below 1.6m -maximum 400mm material below 2.0m											0.0
1.0			266				GP					1.0
2.0			267				GP-GM					2.0
3.0			268				GP					3.0
4.0			269				GP					4.0
4.0	END HOLE @ 4.0m											4.0
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
		REVIEWED BY:	COMPLETE: 03/10/09
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2737	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	
0.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp												0.0
1.0	-layer of 250 to 300mm gravel 1.0-1.3m -maximum 150mm material below 1.3m		266					GP					1.0
2.0	-maximum 75mm material below 2.0m -easy digging below 2.0m		267					GP					2.0
3.0			268					GP					3.0
4.0	END HOLE @ 4.0m		269					GP					4.0
5.0													5.0
6.0													6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
		REVIEWED BY:	COMPLETE: 03/10/09
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2738	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	WELL-GRADED GRAVEL WITH SAND (GW) -brown -damp -maximum 250mm material											0.0
1.0			274				GW					1.0
2.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -maximum 100mm material -easy digging 1.0 to 3.5m		275				GP					2.0
3.0			276				GP					3.0
4.0	-maximum 400mm material below 3.4m -rough below 3.4m -roots @ 3.4m		277				GP					4.0
4.0	END HOLE @ 4.0m											4.0
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
		REVIEWED BY:	COMPLETE: 03/10/09
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2739	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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 ▲ 20 40 60 80	◆ PERCENT GRAVEL ◆ 20 40 60 80	
				PLASTIC 20 40 60 80	M.C. 20 40 60 80	LIQUID 20 40 60 80					
0.0	ORGANIC & SILT										0.0
	POORLY GRADED GRAVEL WITH SAND TO POORLY GRADED GRAVEL WITH SILT & SAND (GP)-(GP-GM) -brown -damp -maximum 250mm material -rough digging - odd 400mm material		278				GP				
1.0											1.0
			279				GP-GM				
2.0											2.0
			280				GP				
3.0	-maximum 300mm material										3.0
			281				GP-GM				
4.0	END HOLE @ 4.0m										4.0
5.0											5.0
6.0											6.0

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		REVIEWED BY:	COMPLETE: 03/10/09
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2740	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	ORGANICS											0.0
	POORLY GRADED GRAVEL WITH SAND TO POORLY GRADED GRAVEL WITH SILT & SAND (GP)-(GP-GM)											
	-brown											
	-damp											
1.0	-maximum 150mm material											1.0
	-maximum 300mm material below 1.0m											
	-sub-angular											
2.0			282					GP				2.0
			283					GP				
3.0			284					GP				3.0
	-maximum 350mm material below 2.5m		285					GP-GM				
4.0	END HOLE @ 4.0M											4.0
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
		REVIEWED BY:	COMPLETE: 03/10/10
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2741	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	ORGANICS -with dry silt											0.0
	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -maximum 200mm material											
1.0			286					GP				1.0
2.0			287					GP				2.0
3.0			288					GP				3.0
4.0			289					GP				4.0
5.0												5.0
6.0												6.0

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		REVIEWED BY:	COMPLETE: 03/10/10
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2742	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	ORGANICS & SILT											0.0
	POORLY GRADED GRAVEL WITH SAND (GP)											
	-brown											
	-damp											
	-maximum 200mm material											
1.0			290				GP					1.0
2.0	-moist below 2.0m		291				GP					2.0
	-maximum 300mm material											
3.0			292				GP					3.0
	-frozen below 3.2m											
	-difficult digging below 3.2m		293				GP					
4.0	END HOLE @ 3.8m											4.0
5.0												5.0
6.0												6.0

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	REVIEWED BY:	COMPLETE: 03/10/10
	Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2743	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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											0.0
	POORLY GRADED GRAVEL WITH SAND (GP)											
	-brown											
	-damp											
	-maximum 200mm material											
	-sub-rounded material											
1.0	-maximum 300mm material below 1.0m											1.0
			294					GP				
2.0	-moist below 2.0m											2.0
	-rough below 2.0m											
			295					GP				
3.0	END HOLE @ 3.0m											3.0
			296					GP				
4.0												4.0
5.0												5.0
6.0												6.0

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		REVIEWED BY:	COMPLETE: 03/10/10
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2744	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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 SAND (GP) -maximum 250mm material -sub-angular										0.0
1.0			297					GP			1.0
2.0			298					GP			2.0
3.0	-moist below 3.0m -rough below 3.0m -maximum 300mm material		299					GP			3.0
3.5	END HOLE @ 3.5m -frozen below 3.5m		300					GP			3.5
4.0											4.0
5.0											5.0
6.0											6.0

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		REVIEWED BY:	COMPLETE: 03/10/10
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2754	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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											0.0
	POORLY GRADED GRAVEL WITH SAND (GP)											
	-brown											
	-damp											
	-maximum 150mm material											
1.0												1.0
	-maximum 250mm material below 1.0m											
	-average digging											
2.0												2.0
3.0												3.0
4.0												4.0
	END HOLE @ 4.0m											
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
		REVIEWED BY:	COMPLETE: 03/10/10
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2755	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	ORGANICS											0.0
	POORLY GRADED GRAVEL WITH SILT & SAND TO POORLY GRADED GRAVEL WITH SAND (GP-GM)-(GP)											
	-brown											
	-damp											
1.0	-maximum 150mm material											1.0
	-easy digging											
			305					GP-GM				
2.0	-maximum 250mm material below 2.0m											2.0
	-tougher digging below 2.0m							GP				
			306									
3.0	-moist below 3.0m											3.0
			307					GP				
	END HOLE @ 3.2M											
	-frozen @ 3.2m											
4.0												4.0
5.0												5.0
6.0												6.0

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		REVIEWED BY:	COMPLETE: 03/10/10
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2756	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	SILTY ORGANIC POORLY GRADED GRAVEL WITH SAND (GP) -damp -maximum 150mm material											0.0
1.0	-brown below 1.0m -maximum 350mm material below 1.0m -odd 450mm material below 1.0m -sub-rounded to sub-angular material -tough digging 1.0m to 4.0m -lost sample #309		308					GP				1.0
2.0			309									2.0
3.0			310					GP				3.0
4.0	END HOLE @ 4.0m		311					GP				4.0
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
		REVIEWED BY:	COMPLETE: 03/10/10
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2757	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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											0.0
	POORLY GRADED GRAVEL WITH SAND (GP)											
	-brown											
	-damp											
	-maximum 300mm material											
	-sub-angular											
	-rough drilling 0 to 4.0m											
1.0			312					GP				1.0
2.0			313					GP				2.0
3.0			314					GP				3.0
4.0			315					GP				4.0
	-moist below 3.0m											
4.0	END HOLE @ 4.0m											4.0
5.0												5.0
6.0												6.0

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		REVIEWED BY:	COMPLETE: 03/10/10
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2758	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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			20	40	60	
0.0	ORGANIC / MOSS											0.0
	POORLY GRADED GRAVEL WITH SAND (GP)											
	-brown											
	-damp											
	-maximum 150mm material											
1.0			316				GP					1.0
2.0			317				GP					2.0
	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)											
	-brown											
	-moist											
	-maximum 250mm material											
	-rough digging											
3.0			318				GP-GM					3.0
	END HOLE @ 3.0m											
	-frozen @ 3.0m											
4.0												4.0
5.0												5.0
6.0												6.0

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Transportation Engineering		REVIEWED BY:	COMPLETE: 03/10/10
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2759	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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			20	40	60	
0.0	ORGANIC POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -maximum 200mm material -average digging											0.0
1.0			319				GP					1.0
2.0	ROOTS & ORGANICS SILT -moist		320				GP					2.0
3.0	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -maximum 100mm material -easy digging		321				GP-GM					3.0
4.0	END HOLE @ 4.0m		322				GP-GM					4.0
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
		REVIEWED BY:	COMPLETE: 03/10/10
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2760	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	
0.0	ORGANICS & SILT -visible gravel on surface										0.0	
	POORLY TO WELL-GRADED GRAVEL WITH SAND (GP)-(GW)											
	-brown											
	-damp											
1.0	-maximum 300mm material		333 ▲				GP				1.0	
	-maximum 250mm material below 1.2m											
	-rough digging below 1.2m											
2.0			334 ▲				GP				2.0	
3.0			335 ▲				GW				3.0	
4.0	END HOLE @ 4.0m		336 ▲				GW				4.0	
5.0											5.0	
6.0											6.0	

Government of Yukon		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
Transportation Engineering		REVIEWED BY:	COMPLETE: 03/10/10
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2761	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	SILT & ORGANICS -visible gravel on surface WELL-GRADED SAND WITH GRAVEL (SW) -brown -damp -maximum 150mm material -easy digging											0.0
1.0			337					SW				1.0
2.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -maximum 300mm material -tougher digging -root & organic seam 2.2m to 2.4m -maximum 200mm material below 2.4m -average digging below 2.4m		338					GP				2.0
3.0			339					GP				3.0
4.0	END HOLE @ 4.0m		340					GP				4.0
5.0												5.0
6.0												6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
		REVIEWED BY:	COMPLETE: 03/10/11
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2762	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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)		
				20	40	60			80	20	40			60	80
				PLASTIC M.C. LIQUID											
0.0	ORGANIC POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -brown -damp -maximum 150mm material		341					GP-GM					0.0		
1.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -maximum 300mm material -sub-angular		342					GP					1.0		
2.0			343					GP					2.0		
3.0			344					GP					3.0		
4.0	END HOLE @ 4.0m												4.0		
5.0													5.0		
6.0													6.0		

Government of Yukon		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
Transportation Engineering		REVIEWED BY:	COMPLETE: 03/10/11
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2763	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	POORLY GRADED GRAVEL WITH SAND (GP) -no organic -visible gravel on surface -brown -damp -maximum 150mm material										0.0
1.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -damp -maximum 300mm material -rough digging 1.0m to 4.0m										1.0
2.0											2.0
3.0	-few cobbles 350 - 400mm below 2.5m										3.0
4.0	-rough slow drilling below 3.5m -sub-rounded below 3.5m										4.0
5.0	END HOLE @ 4.0m										5.0
6.0											6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
		REVIEWED BY:	COMPLETE: 03/10/11
		Fig. No:	Page 1 of 1

Geotechnical Services		Km 1691.7 to 1717.3 Alaska Highway #1		TEST PIT NO: 654-2763D	
Donjek Services Ltd.		UTM ZONE: - N6774951 E632672		PROJECT NO: 8002-318	
CME75 Drill on FN60 Flextrac Nodwell				ELEVATION:	
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		ELEVATION(m)			
									PLASTIC	M.C.		LIQUID	PERCENT SAND	PERCENT GRAVEL
				20	40	60								
0.0	GRAVELLY SAND/SANDY GRAVEL, trace silt -dry, medium dense, brown -boulders noted on surface to 400mm dia.		W59				SW				0.0			
1.0													-1.0	
2.0													-2.0	
3.0	GRAVELLY SAND, some silt -damp to dry, dense, brown -max size gravels augered up: 50mm dia.		W60				GP-GM				-2.0			
4.0													-3.0	
5.0													-4.0	
6.0	End Of Hole @ 6.7m - Refusal -refusal @ 5.2m - move west 1m -refusal @ 4.9m - move west 1m -refusal @ 6.7m - EOH		W61				SM				-4.0			
7.0													-5.0	
8.0													-6.0	
9.0			W62				SM				-6.0			
10.0													-7.0	
11.0													-8.0	
12.0											-9.0			
											-10.0			
											-11.0			
											-12.0			

J. R. Paine & Associates Ltd. Whitehorse, Yukon		LOGGED BY: RW	COMPLETION DEPTH: 6.7 m
		REVIEWED BY: -	COMPLETE: 11/01/04
		Fig. No: 98	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 654-2764	
ENGINEERING CAPITAL		WILLISCROFT CREEK		Project No: 552-202101-0361	
KOMATSU PC- 220 -LC		LOCATION: SEE PLAN & 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	POORLY GRADED GRAVEL WITH SAND (GP)							0.0
	-no organics							
	-visible gravel on surface							
	-damp - dry							
	-maximum 250mm material							
1.0	-brown below 1.0m							1.0
	-damp below 1.0m							
	-rough slow digging below 1.0m							
2.0								2.0
3.0								3.0
4.0	END HOLE @ 4.0m							4.0
5.0								5.0
6.0								6.0

Government of Yukon Transportation Engineering	LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
	REVIEWED BY:	COMPLETE: 03/10/11
	Fig. No:	Page 1 of 1

Km 1713.0 LHS Alaska Highway #1
Pit Ident. 115 G-12
(Williscroft Creek)

October 2003
Book # 654

Pit Run Sample Results

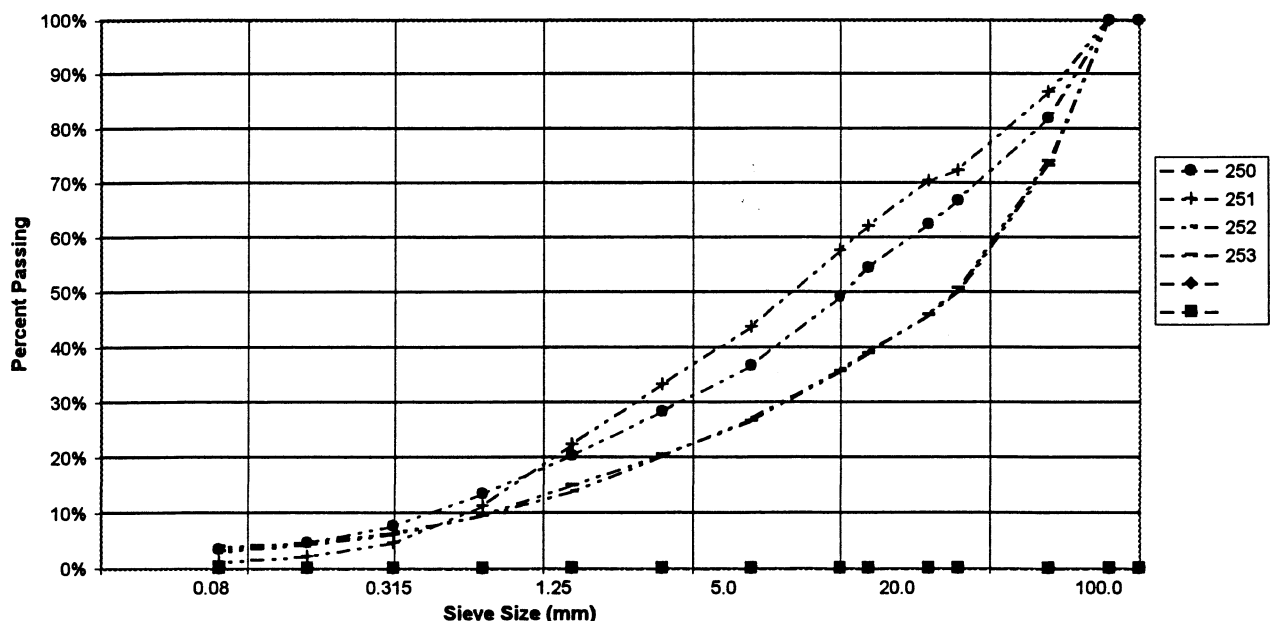
PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Willisroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC-400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2732

DATE COMP: 2003/10/09

FIELD NO:	250	251	252	253		
LAB NO:	464	465	466	467		
DEPTH:	0.6-1.0	1.6-2.0	2.6-3.0	3.6-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	82%	87%	73%	74%		
25.0	67%	72%	50%	51%		
20.0	62%	70%	46%	46%		
12.5	55%	62%	39%	39%		
10.0	49%	58%	36%	36%		
5.0	37%	44%	27%	27%		
2.5	28%	33%	20%	21%		
1.25	20%	22%	14%	15%		
0.630	14%	11%	10%	10%		
0.315	8%	5%	6%	6%		
0.160	5%	2%	5%	4%		
0.080	3%	1%	4%	3%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	63	56	73	73		
% SAND:	33	43	23	24		
% FINES:	3	1	4	3		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

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



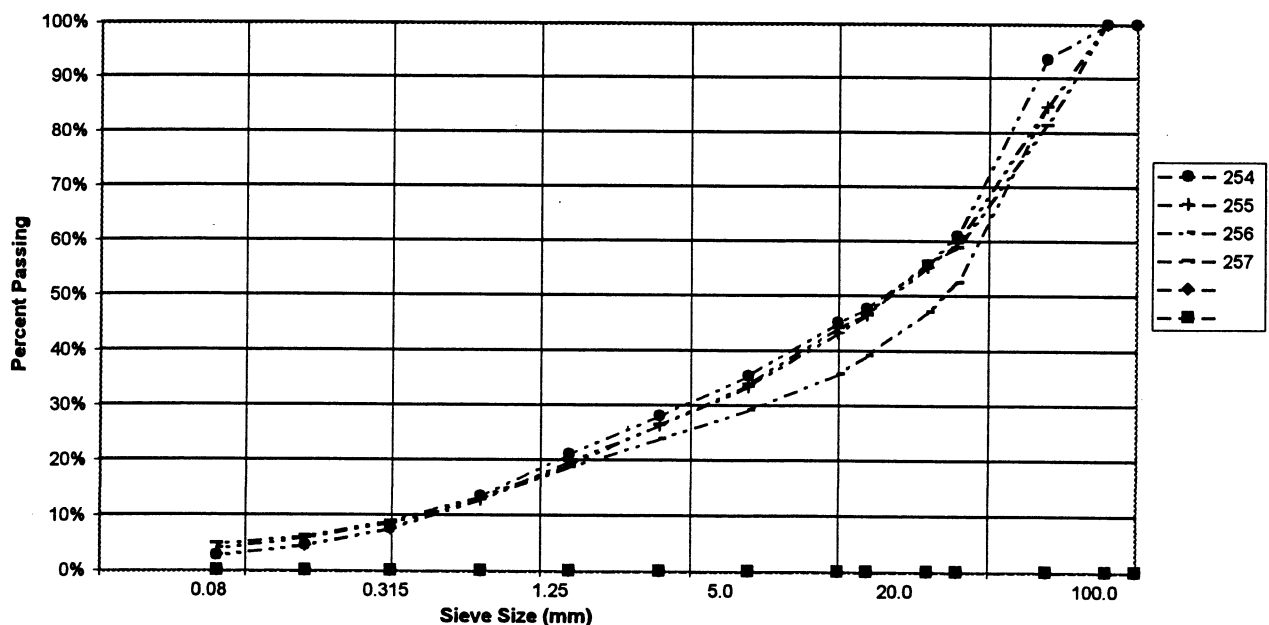
PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Willisroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H 22
 DRILL UNIT: Komatsu PC-400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2733

DATE COMP: 2003/10/09

FIELD NO:	254	255	256	257		
LAB NO:	468	469	470	471		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	94%	85%	85%	81%		
25.0	61%	60%	53%	59%		
20.0	56%	55%	47%	56%		
12.5	48%	47%	39%	47%		
10.0	45%	43%	36%	44%		
5.0	35%	33%	29%	34%		
2.5	28%	26%	24%	27%		
1.25	21%	20%	19%	19%		
0.630	13%	13%	13%	13%		
0.315	8%	7%	9%	9%		
0.160	5%	4%	6%	6%		
0.080	3%	3%	4%	5%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	65	67	71	66		
% SAND:	33	31	25	29		
% FINES:	3	3	4	5		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	WELL-GRADED GRAVEL WITH SAND (GW)	POORLY GRADED GRAVEL WITH SAND (GP)		

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



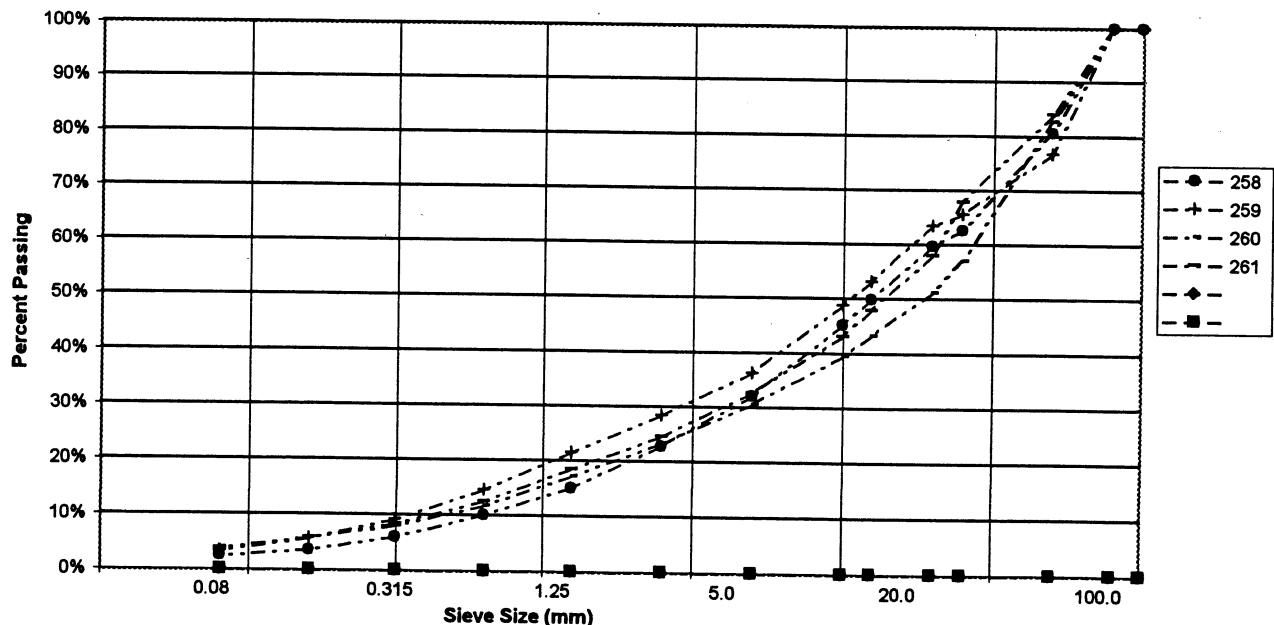
PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2734

DATE COMP: 2003/10/09

FIELD NO:	258	259	260	261		
LAB NO:	472	473	474	475		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
60.0	81%	77%	83%	84%		
25.0	63%	66%	57%	68%		
20.0	60%	64%	51%	58%		
12.5	50%	53%	43%	48%		
10.0	45%	49%	40%	43%		
5.0	32%	36%	31%	33%		
2.5	23%	29%	23%	25%		
1.25	15%	22%	17%	19%		
0.630	10%	15%	12%	13%		
0.315	6%	9%	8%	8%		
0.160	4%	6%	6%	6%		
0.080	2%	3%	4%	4%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	68	64	69	67		
% SAND:	30	33	27	29		
% FINES:	2	3	4	4		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

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

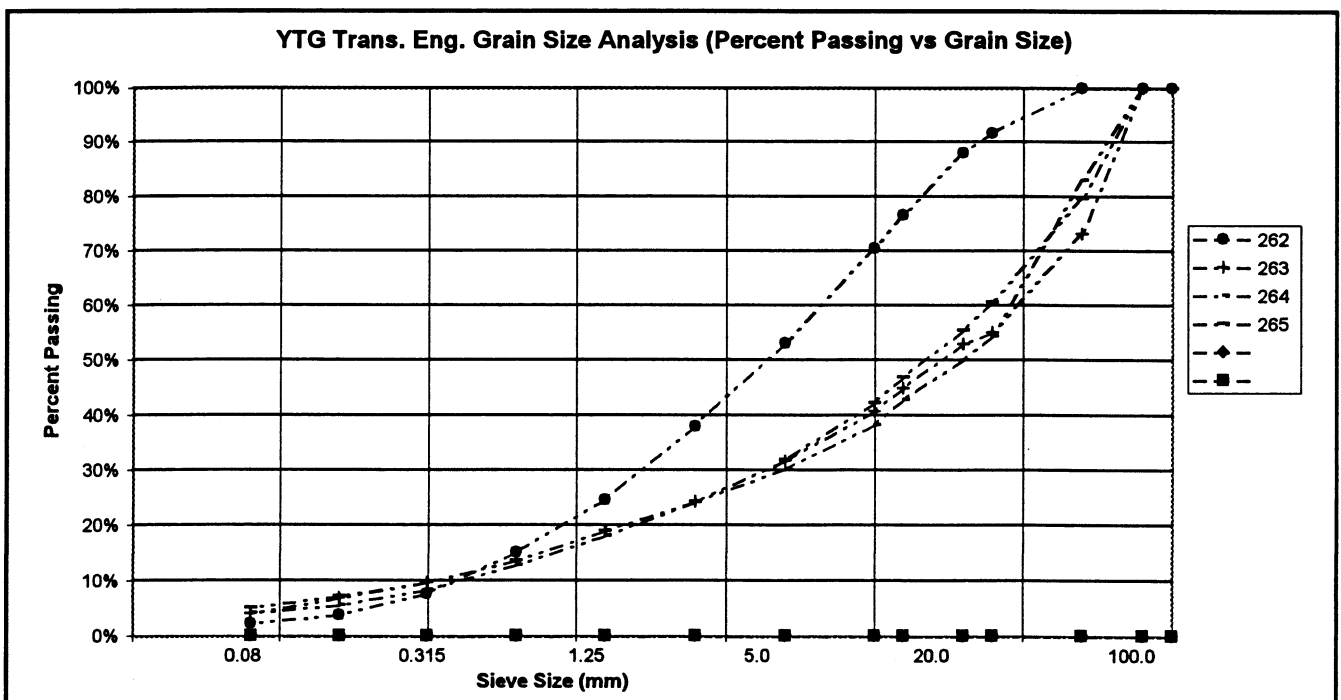


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Willisroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2735

DATE COMP: 2003/10/09

FIELD NO:	262	263	264	265		
LAB NO:	476	477	478	479		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	73%	83%	80%		
25.0	92%	55%	54%	61%		
20.0	88%	53%	50%	55%		
12.5	77%	45%	43%	47%		
10.0	70%	41%	38%	42%		
5.0	53%	32%	30%	32%		
2.5	38%	24%	24%	24%		
1.25	25%	19%	18%	19%		
0.630	15%	14%	13%	14%		
0.315	8%	10%	8%	10%		
0.160	4%	7%	6%	7%		
0.080	2%	4%	4%	5%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	47	68	70	68		
% SAND:	51	28	26	27		
% FINES:	2	4	4	5		
CLASSIFICATION	WELL-GRADED SAND WITH GRAVEL (SW)	POORLY GRADED GRAVELLY SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

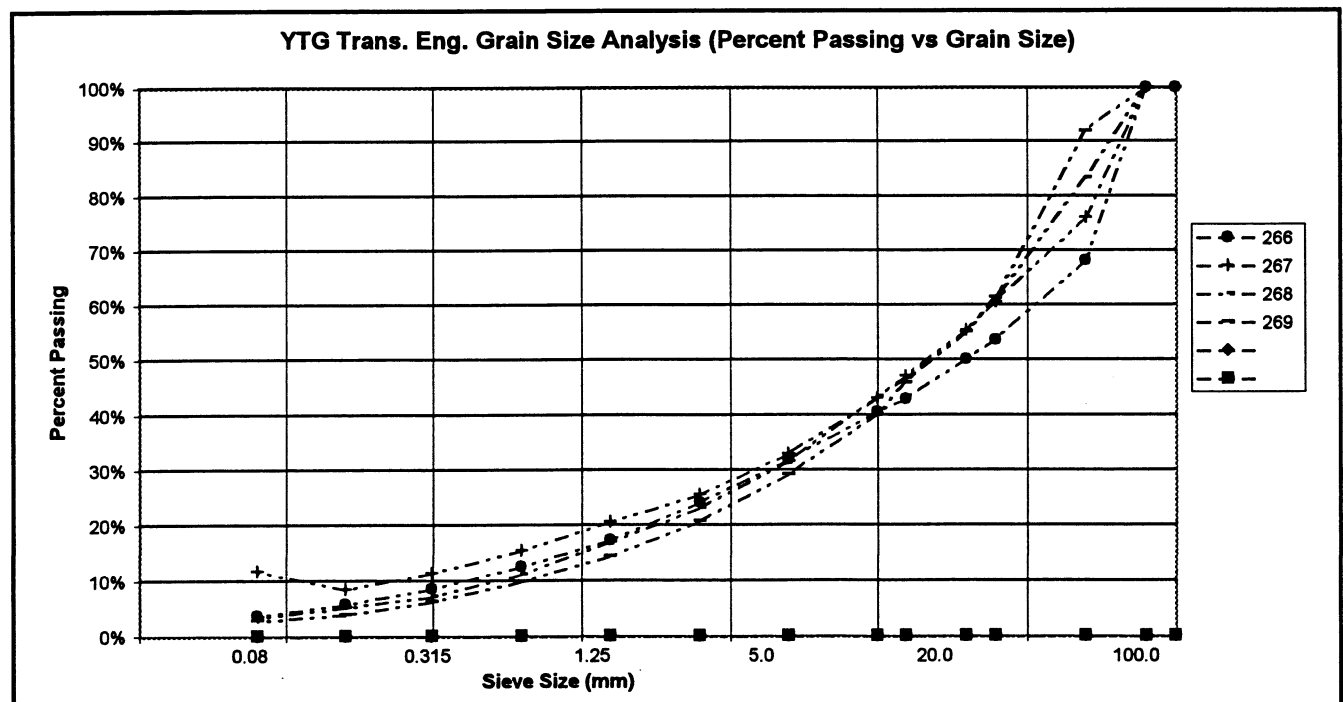


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2736

DATE COMP: 2003/10/09

FIELD NO:	266	267	268	269		
LAB NO:	480	481	482	183		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	68%	76%	83%	92%		
25.0	54%	61%	61%	61%		
20.0	50%	55%	55%	55%		
12.5	43%	47%	47%	46%		
10.0	41%	43%	43%	40%		
5.0	32%	33%	32%	29%		
2.5	24%	26%	23%	21%		
1.25	17%	21%	17%	14%		
0.630	12%	16%	11%	10%		
0.315	9%	11%	7%	6%		
0.160	6%	8%	5%	4%		
0.080	4%	12%	3%	3%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	68	67	68	71		
% SAND:	28	21	28	26		
% FINES:	4	12	3	3		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		



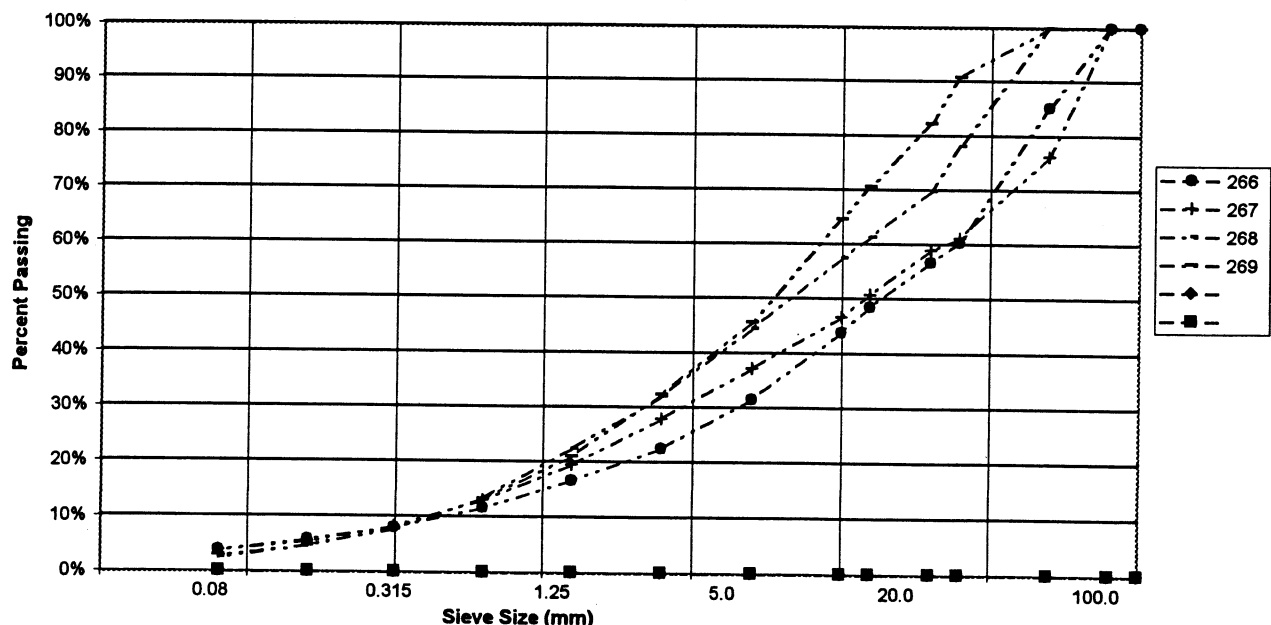
PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2737

DATE COMP: 2003/10/09

FIELD NO:	266	267	268	269		
LAB NO:	484	485	486	487		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	85%	76%	100%	100%		
25.0	60%	61%	78%	91%		
20.0	57%	59%	70%	82%		
12.5	49%	51%	61%	71%		
10.0	44%	47%	57%	65%		
5.0	32%	37%	44%	46%		
2.5	23%	28%	32%	32%		
1.25	17%	19%	22%	21%		
0.630	12%	13%	13%	13%		
0.315	8%	8%	8%	8%		
0.160	6%	5%	5%	5%		
0.080	4%	4%	2%	3%		
M.C.(%):						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	68	63	56	54		
% SAND:	28	33	42	43		
% FINES:	4	4	2	3		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

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

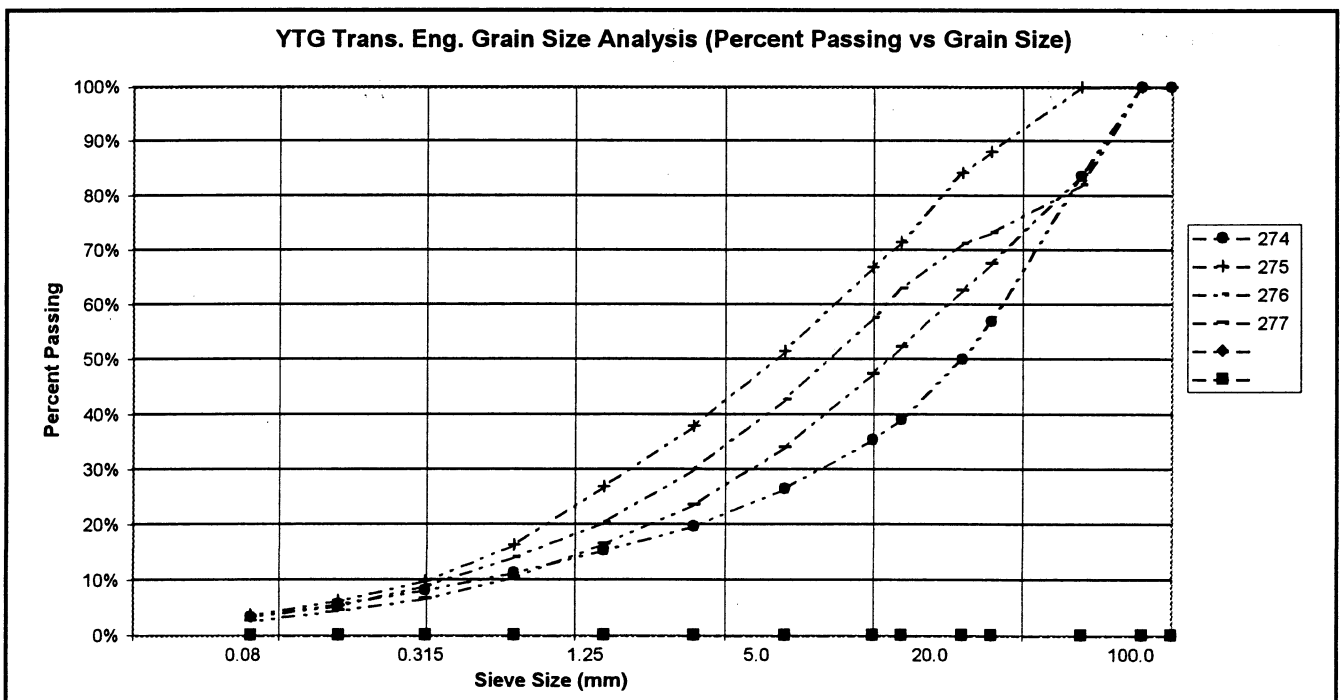


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2738

DATE COMP: 2003/10/09

FIELD NO:	274	275	276	277		
LAB NO:	488	489	490	491		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	84%	100%	82%	84%		
25.0	57%	88%	73%	67%		
20.0	50%	84%	71%	63%		
12.5	39%	71%	63%	52%		
10.0	35%	67%	58%	47%		
5.0	26%	51%	43%	34%		
2.5	20%	38%	30%	24%		
1.25	15%	27%	20%	17%		
0.630	11%	16%	14%	10%		
0.315	8%	10%	9%	7%		
0.160	6%	6%	5%	4%		
0.080	3%	4%	3%	3%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	74	49	57	66		
% SAND:	23	48	39	31		
% FINES:	3	4	3	3		
CLASSIFICATION	WELL-GRADED GRAVEL WITH SAND (GW)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		



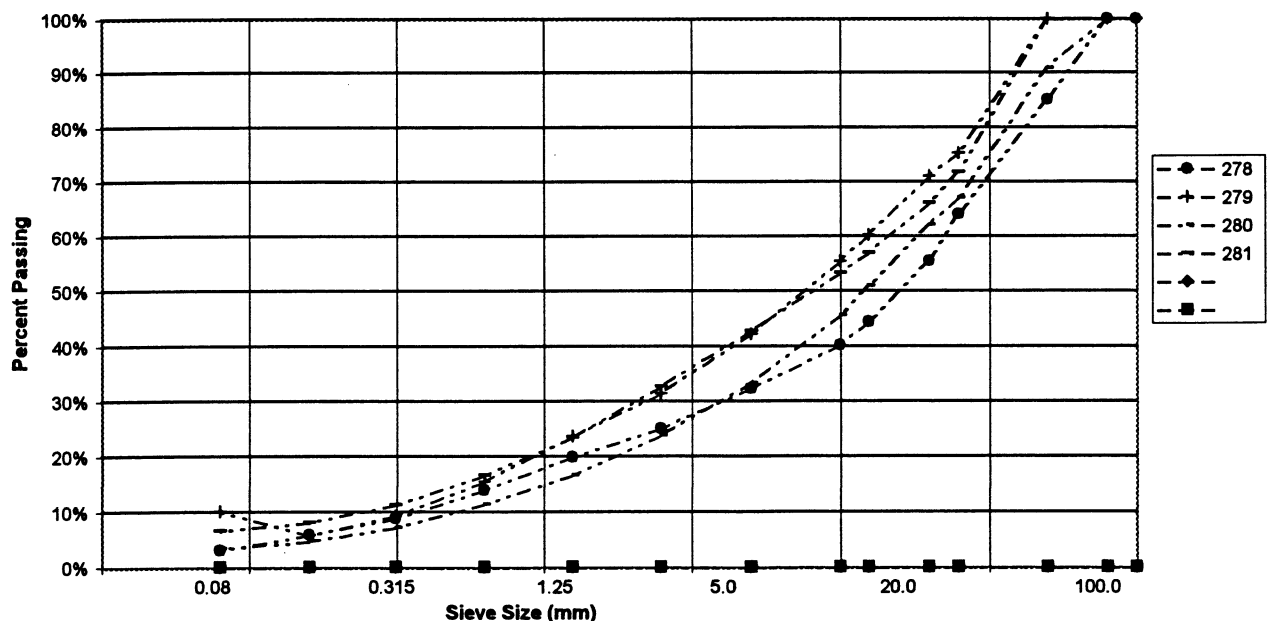
PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2739

DATE COMP: 2003/10/09

FIELD NO:	278	279	280	281		
LAB NO:	492	493	494	495		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	85%	100%	91%	100%		
25.0	64%	75%	67%	72%		
20.0	56%	71%	62%	66%		
12.5	44%	60%	51%	57%		
10.0	40%	55%	46%	53%		
5.0	32%	42%	33%	43%		
2.5	25%	31%	24%	33%		
1.25	20%	24%	17%	23%		
0.630	14%	16%	11%	17%		
0.315	9%	9%	7%	11%		
0.160	6%	6%	5%	8%		
0.080	3%	10%	3%	7%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	68	58	67	57		
% SAND:	29	32	30	36		
% FINES:	3	10	3	7		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	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)

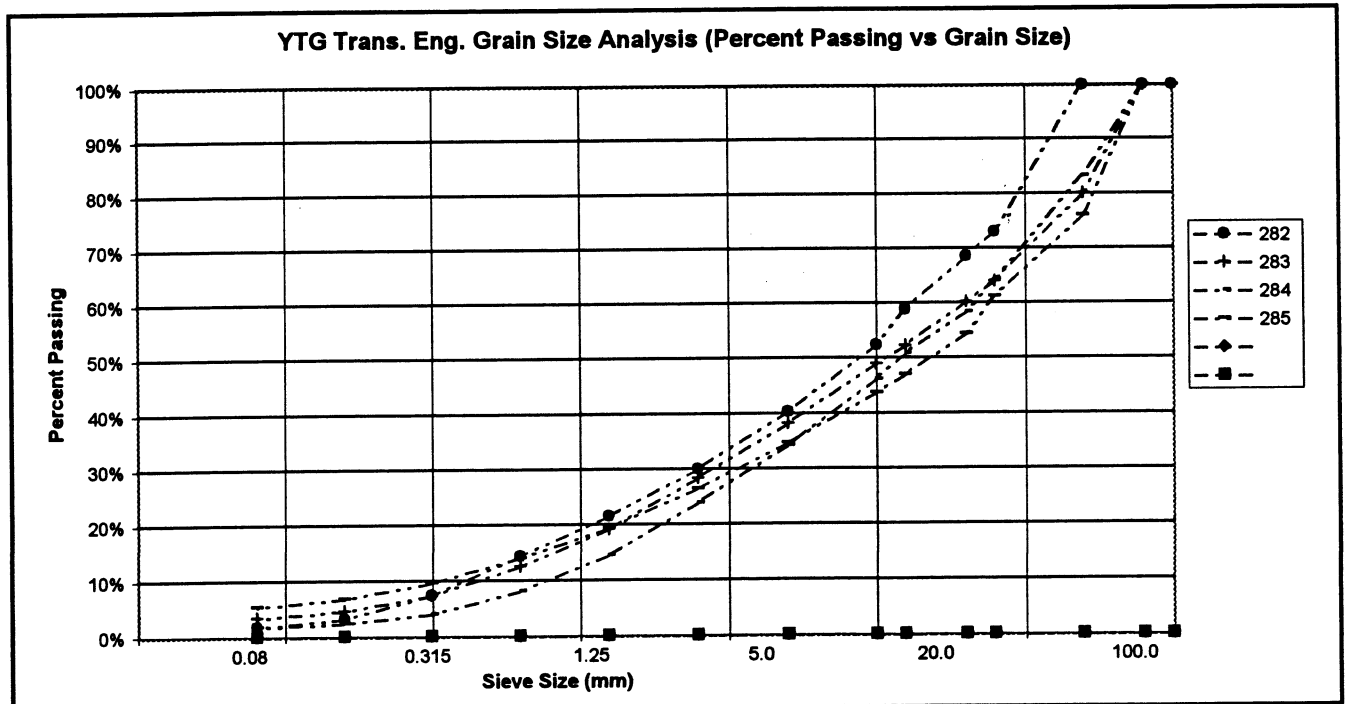


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2740

DATE COMP: 2003/10/09

FIELD NO:	282	283	284	285		
LAB NO:	496	497	498	499		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	80%	83%	76%		
25.0	73%	64%	64%	61%		
20.0	69%	60%	58%	54%		
12.5	59%	52%	51%	47%		
10.0	52%	49%	46%	44%		
5.0	40%	38%	34%	35%		
2.5	30%	28%	24%	27%		
1.25	22%	19%	15%	19%		
0.630	14%	13%	8%	14%		
0.315	7%	7%	4%	10%		
0.160	3%	5%	2%	7%		
0.080	2%	3%	2%	5%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	60	62	66	65		
% SAND:	39	35	33	29		
% FINES:	2	3	2	5		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)		



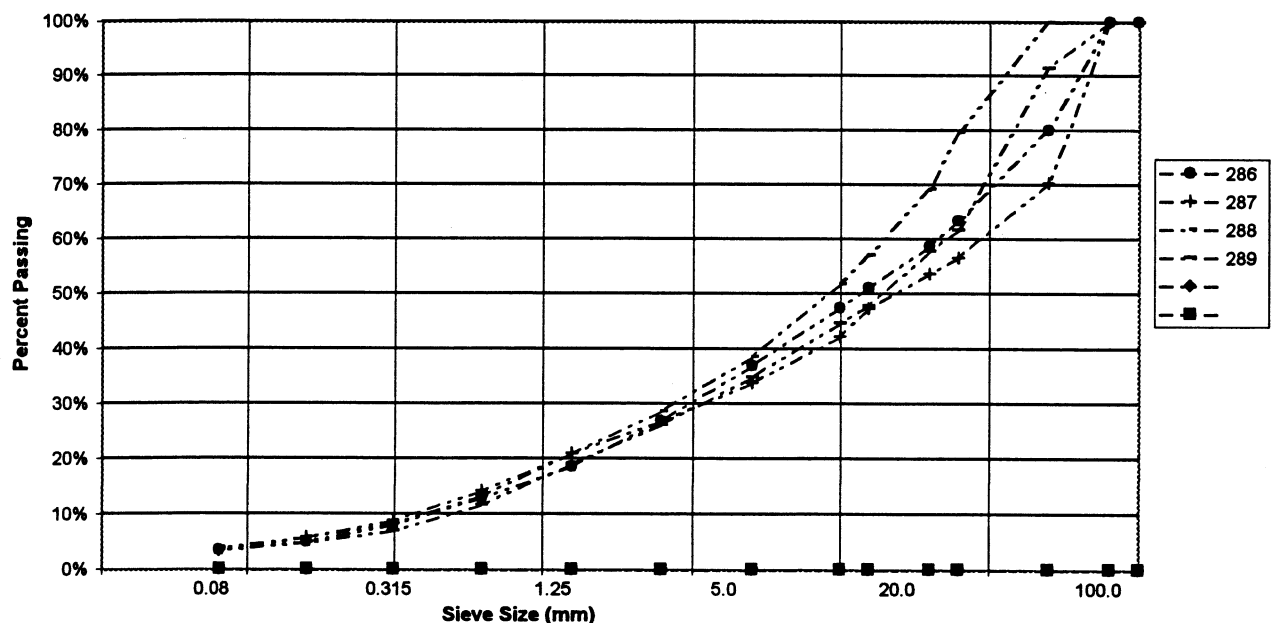
PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Willisroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2741

DATE COMP: 2003/10/09

FIELD NO:	286	287	288	289		
LAB NO:	500	501	502	503		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	80%	70%	100%	92%		
25.0	63%	57%	80%	62%		
20.0	59%	54%	69%	58%		
12.5	51%	47%	57%	48%		
10.0	47%	42%	52%	45%		
5.0	37%	34%	39%	35%		
2.5	27%	27%	29%	26%		
1.25	19%	21%	21%	19%		
0.630	13%	14%	13%	12%		
0.315	8%	9%	8%	7%		
0.160	5%	6%	6%	5%		
0.080	3%	3%	4%	3%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	63	66	61	65		
% SAND:	34	30	35	31		
% FINES:	3	3	4	3		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

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

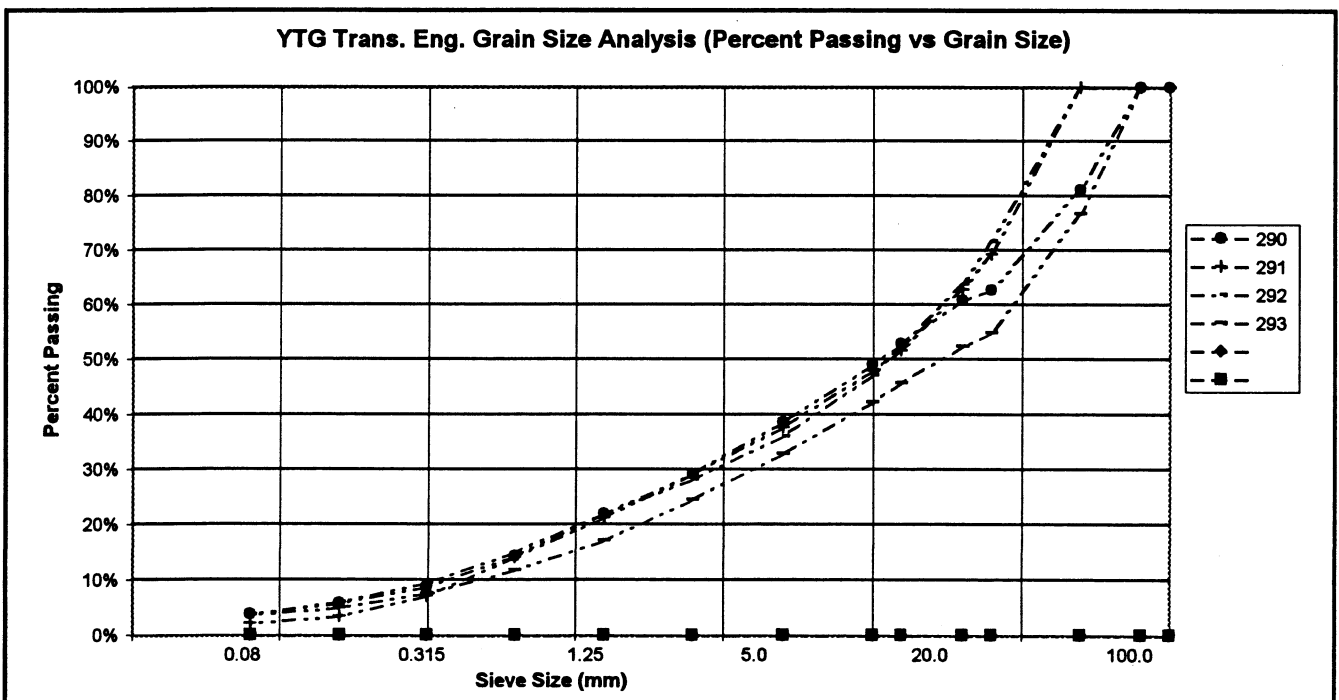


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2742

DATE COMP: 2003/10/10

FIELD NO:	290	291	292	293		
LAB NO:	504	505	506	507		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.2-3.8		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	81%	100%	100%	77%		
25.0	63%	69%	72%	55%		
20.0	61%	63%	64%	52%		
12.5	53%	52%	52%	46%		
10.0	49%	48%	47%	42%		
5.0	39%	38%	36%	33%		
2.5	29%	29%	28%	24%		
1.25	22%	21%	22%	17%		
0.630	14%	14%	15%	12%		
0.315	9%	7%	9%	7%		
0.160	6%	3%	6%	5%		
0.080	4%	2%	4%	4%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	61	62	64	67		
% SAND:	35	36	32	29		
% FINES:	4	2	4	4		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

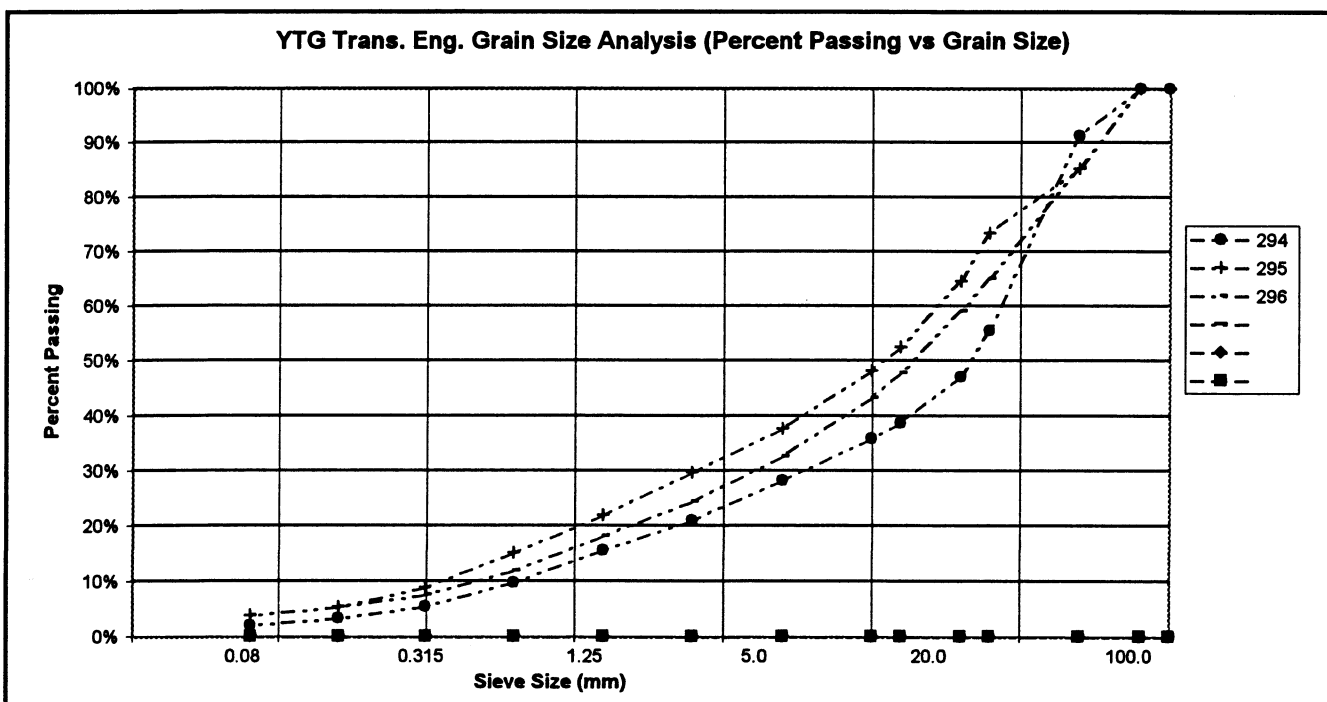


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Willisroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2743

DATE COMP: 2003/10/10

FIELD NO:	294	295	296			
LAB NO:	508	509	510			
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0			
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	91%	85%	85%			
25.0	56%	73%	65%			
20.0	47%	65%	59%			
12.5	39%	53%	48%			
10.0	36%	48%	43%			
5.0	28%	38%	33%			
2.5	21%	30%	24%			
1.25	16%	22%	18%			
0.630	10%	15%	12%			
0.315	5%	9%	7%			
0.160	3%	5%	5%			
0.080	2%	4%	4%			
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX:	0.0	0.0	0.0			
% GRAVEL:	72	62	67			
% SAND:	26	34	29			
% FINES:	2	4	4			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)			



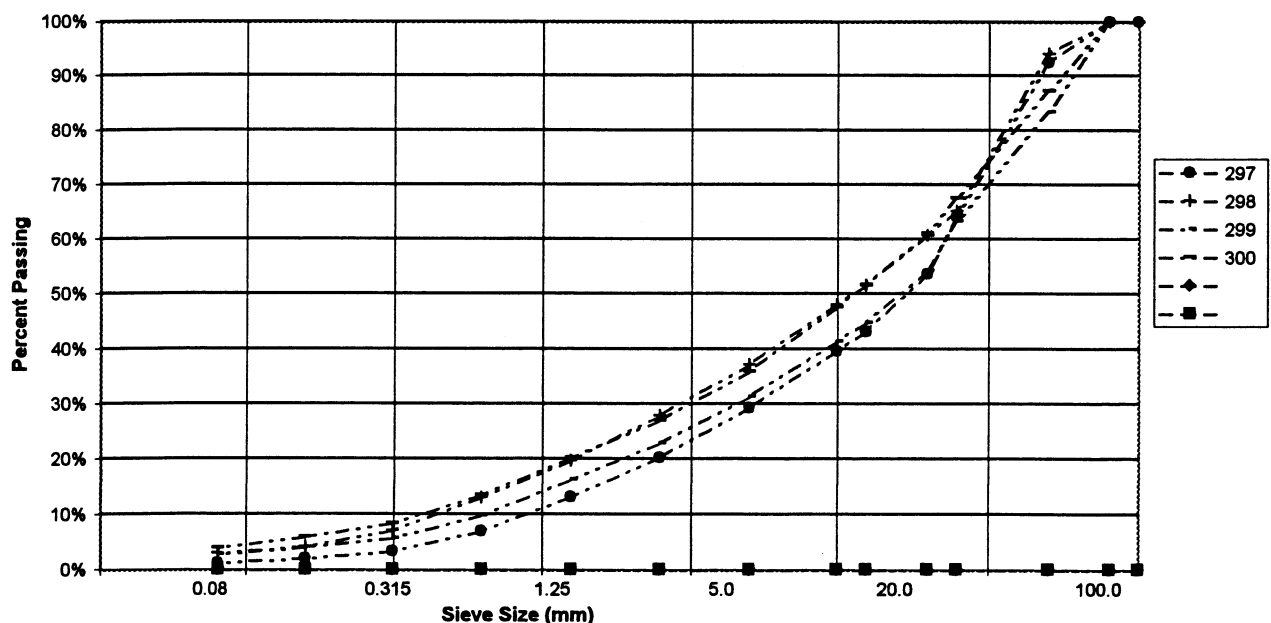
PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Willisroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2744

DATE COMP: 2003/10/10

FIELD NO:	297	298	299	300		
LAB NO:	511	512	513	514		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.0-3.5		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	92%	94%	83%	87%		
25.0	64%	65%	63%	68%		
20.0	54%	61%	54%	61%		
12.5	43%	52%	45%	52%		
10.0	40%	48%	41%	48%		
5.0	29%	37%	31%	36%		
2.5	20%	28%	23%	27%		
1.25	13%	20%	16%	20%		
0.630	7%	13%	10%	13%		
0.315	3%	7%	6%	8%		
0.160	2%	4%	4%	6%		
0.080	1%	3%	3%	4%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	71	63	69	64		
% SAND:	28	34	29	32		
% FINES:	1	3	3	4		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

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

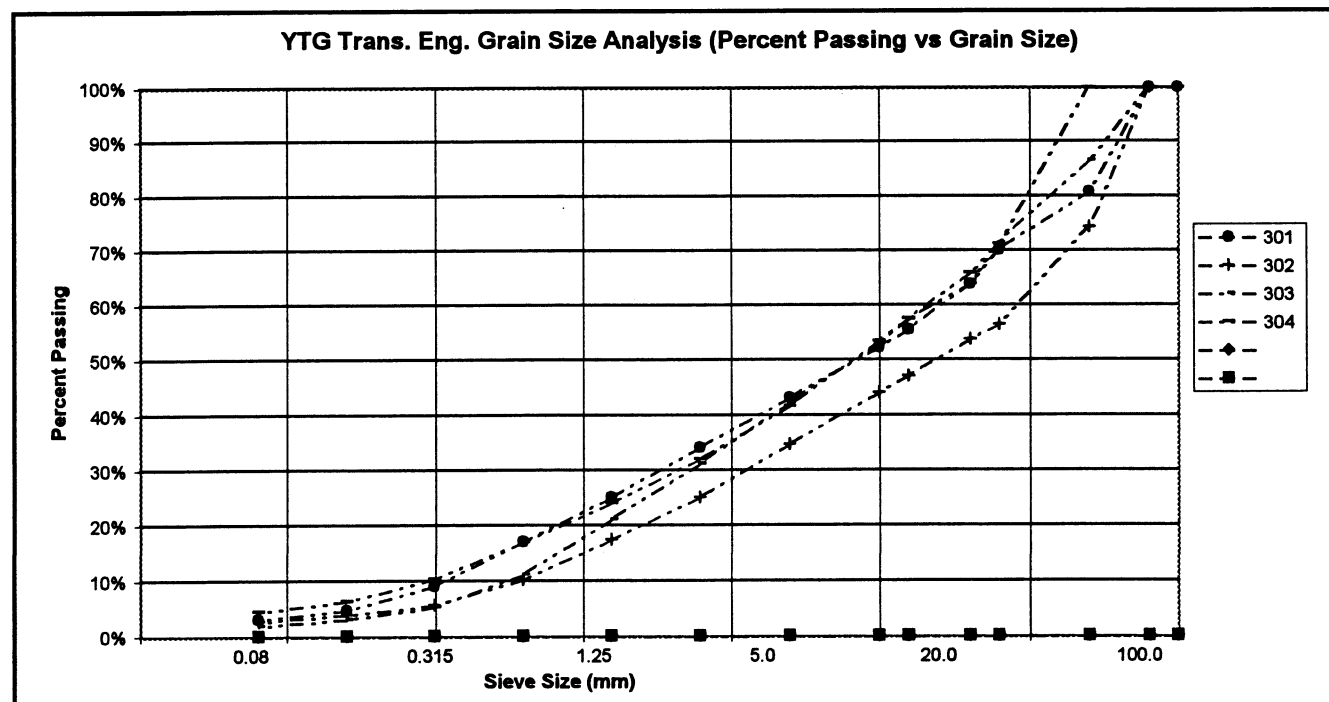


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2754

DATE COMP: 2003/10/10

FIELD NO:	301	302	303	304		
LAB NO:	515	516	517	518		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	81%	74%	86%	100%		
25.0	70%	56%	71%	71%		
20.0	64%	54%	64%	66%		
12.5	56%	47%	57%	58%		
10.0	52%	44%	53%	53%		
5.0	43%	35%	42%	42%		
2.5	34%	25%	31%	32%		
1.25	25%	17%	21%	24%		
0.630	17%	10%	11%	17%		
0.315	9%	6%	5%	10%		
0.160	5%	4%	3%	6%		
0.080	3%	3%	2%	4%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	57	65	58	58		
% SAND:	40	32	40	37		
% FINES:	3	3	2	4		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

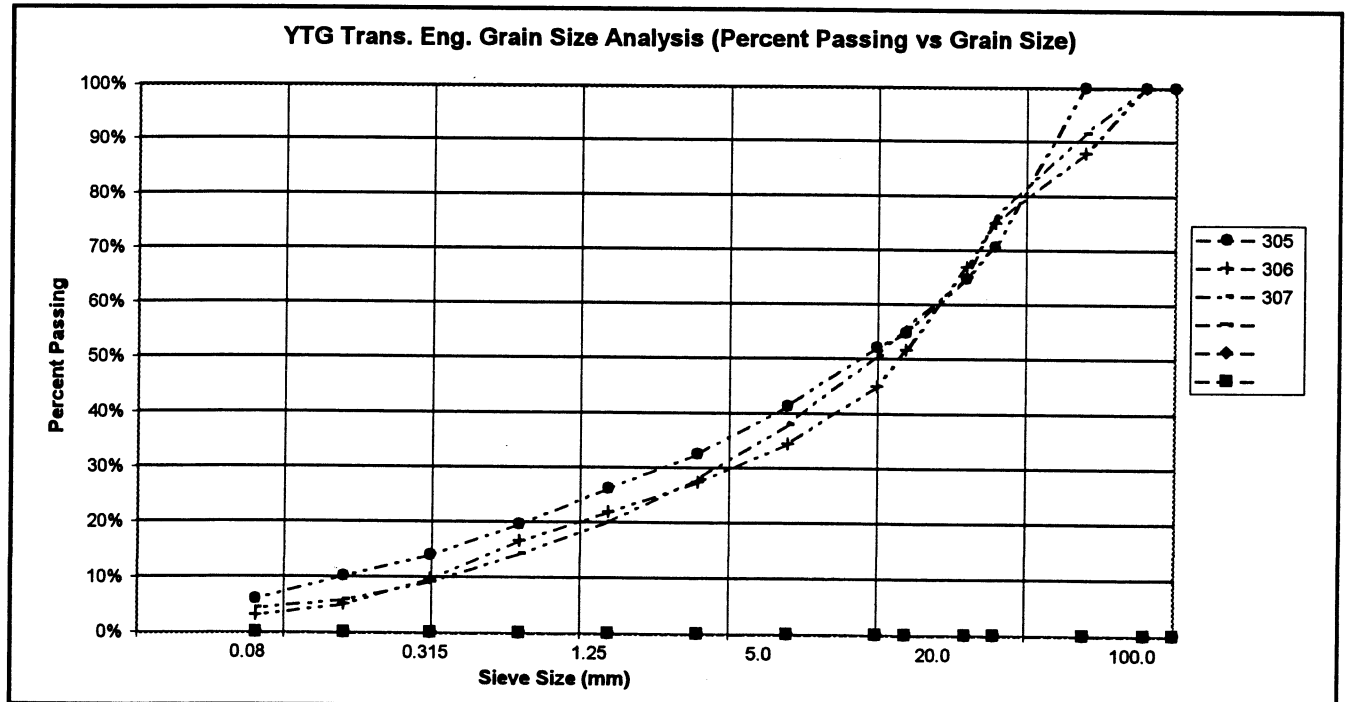


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2755

DATE COMP: 2003/10/10

FIELD NO:	305	306	307			
LAB NO:	519	520	521			
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0			
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	88%	92%			
25.0	71%	75%	76%			
20.0	65%	67%	65%			
12.5	55%	52%	56%			
10.0	52%	45%	51%			
5.0	41%	34%	38%			
2.5	33%	27%	28%			
1.25	26%	22%	20%			
0.630	20%	17%	14%			
0.315	14%	10%	9%			
0.160	10%	5%	6%			
0.080	6%	3%	4%			
M.C.(%):						
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX:	0.0	0.0	0.0			
% GRAVEL:	59	66	62			
% SAND:	35	31	34			
% FINES:	6	3	4			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)			

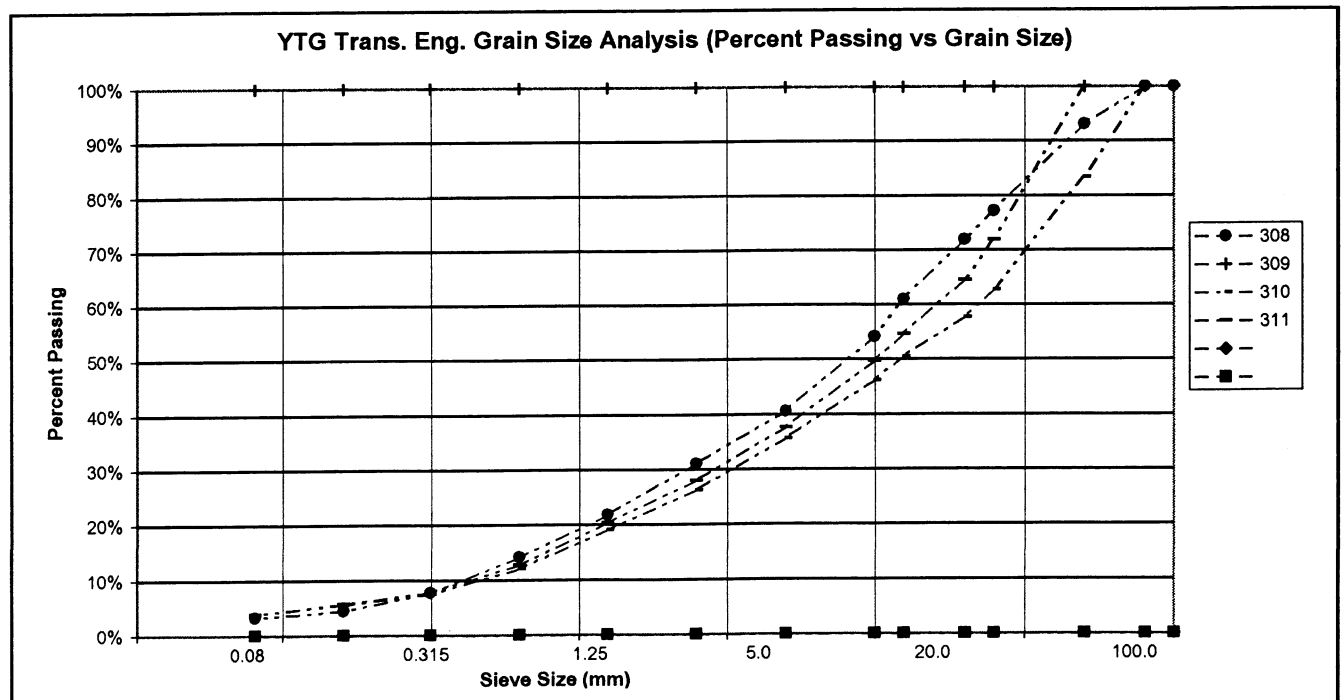


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2756

DATE COMP: 2003/10/10

FIELD NO:	308	309	310	311		
LAB NO:	522	Lost	524	525		
DEPTH:	0.8-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	93%	100%	83%	100%		
25.0	77%	100%	63%	72%		
20.0	72%	100%	58%	64%		
12.5	61%	100%	50%	55%		
10.0	54%	100%	46%	50%		
5.0	41%	100%	36%	38%		
2.5	31%	100%	26%	28%		
1.25	22%	100%	19%	20%		
0.630	14%	100%	12%	13%		
0.315	8%	100%	7%	8%		
0.160	4%	100%	6%	6%		
0.080	3%	100%	4%	4%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	59	0	64	62		
% SAND:	37	0	32	34		
% FINES:	3	100	4	4		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	~~SILT~~	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

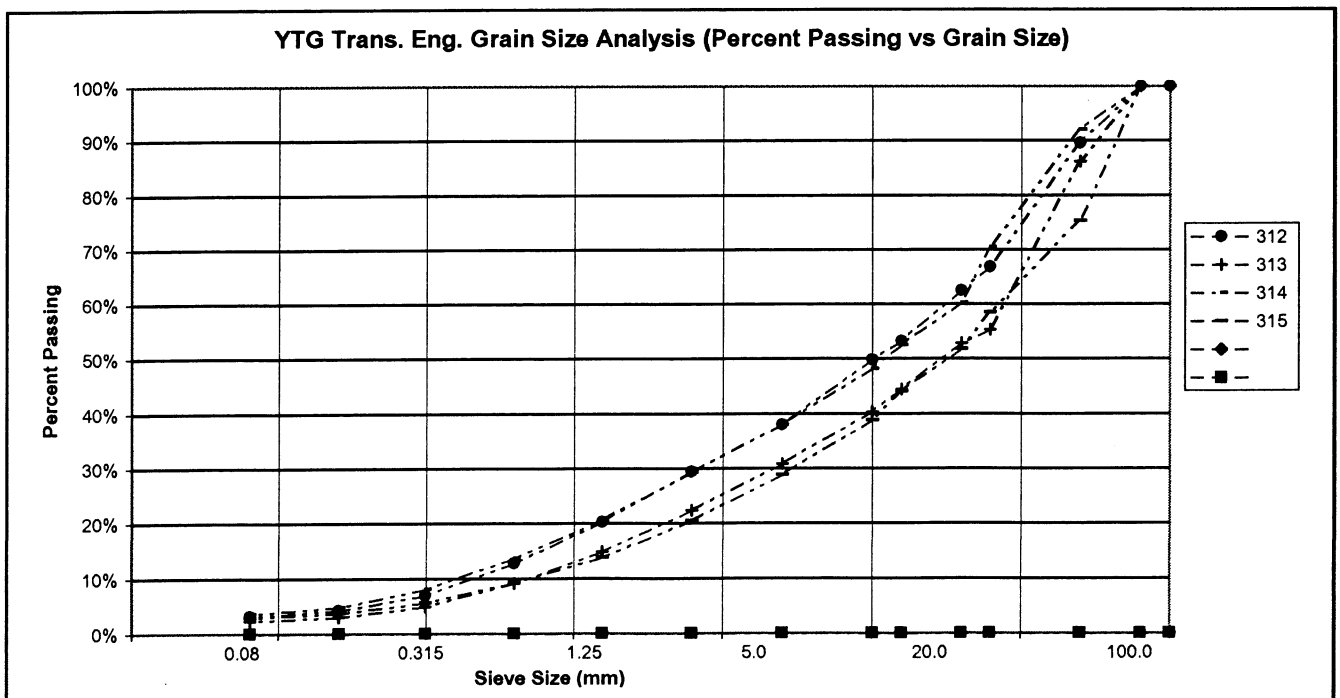


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2757

DATE COMP: 2003/10/10

FIELD NO:	312	313	314	315		
LAB NO:	526	527	528	529		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	90%	86%	92%	75%		
25.0	67%	55%	70%	58%		
20.0	62%	53%	60%	52%		
12.5	53%	44%	53%	44%		
10.0	50%	40%	48%	39%		
5.0	38%	31%	38%	29%		
2.5	29%	22%	29%	21%		
1.25	20%	15%	21%	14%		
0.630	13%	9%	14%	9%		
0.315	7%	5%	8%	6%		
0.160	4%	3%	5%	4%		
0.080	3%	2%	4%	3%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	62	69	62	71		
% SAND:	35	28	34	26		
% FINES:	3	2	4	3		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

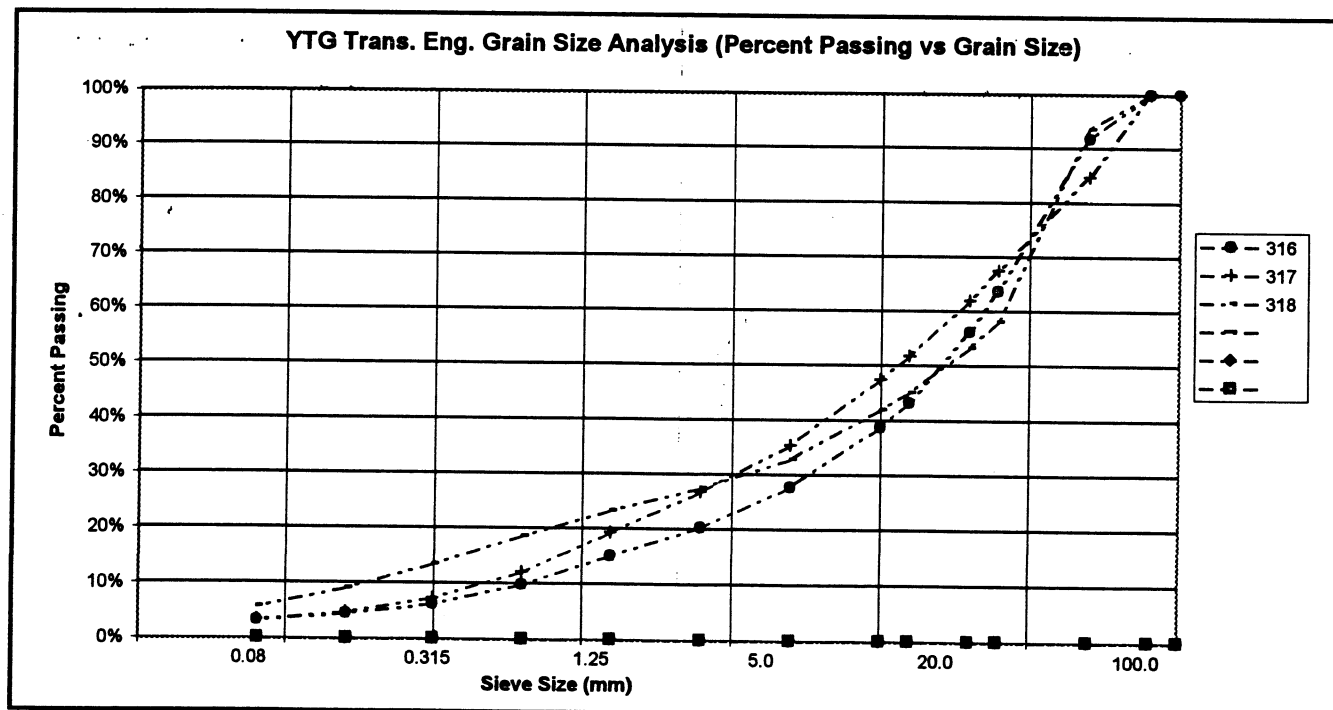


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2758

DATE COMP: 2003/10/10

FIELD NO:	316	317	318			
LAB NO:	530	531	532			
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0			
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	92%	85%	94%			
25.0	64%	68%	58%			
20.0	56%	62%	53%			
12.5	43%	52%	45%			
10.0	39%	48%	42%			
5.0	28%	35%	33%			
2.5	20%	27%	28%			
1.25	15%	19%	23%			
0.630	10%	12%	19%			
0.315	6%	7%	14%			
0.160	4%	5%	9%			
0.080	3%	3%	6%			
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX:	0.0	0.0	0.0			
% GRAVEL:	72	65	67			
% SAND:	25	32	27			
% FINES:	3	3	6			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)			

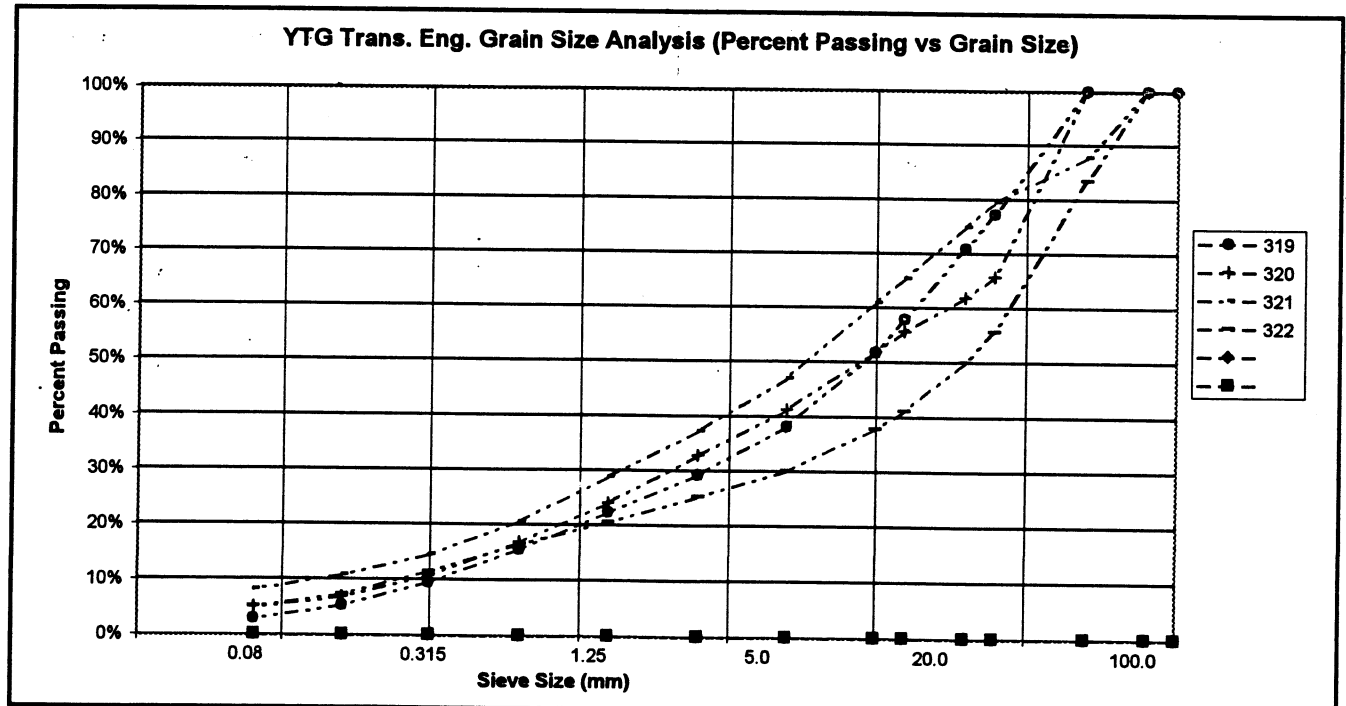


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2759

DATE COMP: 2003/10/10

FIELD NO:	319	320	321	322		
LAB NO:	533	534	535	536		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	88%	83%		
25.0	77%	66%	80%	56%		
20.0	71%	62%	75%	50%		
12.5	58%	56%	65%	41%		
10.0	52%	52%	61%	38%		
5.0	38%	41%	47%	30%		
2.5	29%	33%	37%	25%		
1.25	22%	24%	29%	21%		
0.630	16%	17%	21%	16%		
0.315	10%	11%	15%	12%		
0.160	5%	7%	11%	7%		
0.080	3%	5%	8%	5%		
M.C.(%)						
LIQUID LIMIT	0.0	0.0	0.0	0.0		
PLASTIC LIMIT	0.0	0.0	0.0	0.0		
PLASTIC INDEX	0.0	0.0	0.0	0.0		
% GRAVEL	62	59	53	70		
% SAND	35	36	39	25		
% FINES	3	5	8	5		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)		



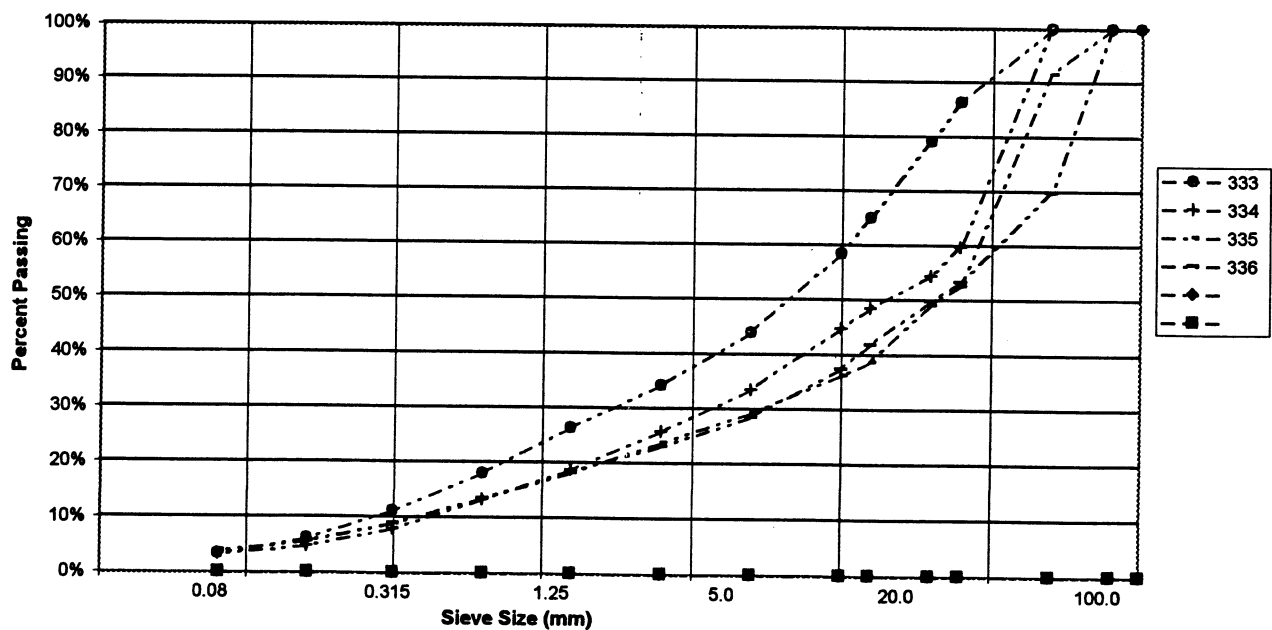
PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2760

DATE COMP: 2003/10/11

FIELD NO:	333	334	335	336		
LAB NO:	537	538	539	540		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	92%	70%		
25.0	86%	60%	53%	53%		
20.0	79%	55%	49%	50%		
12.5	65%	49%	39%	42%		
10.0	58%	45%	36%	37%		
5.0	44%	34%	29%	29%		
2.5	34%	26%	24%	23%		
1.25	26%	19%	18%	18%		
0.630	18%	13%	13%	14%		
0.315	11%	8%	9%	9%		
0.160	6%	5%	6%	6%		
0.080	3%	3%	4%	3%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	56	66	71	71		
% SAND:	41	30	26	25		
% FINES:	3	3	4	3		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED GRAVEL WITH SAND (GW)		

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

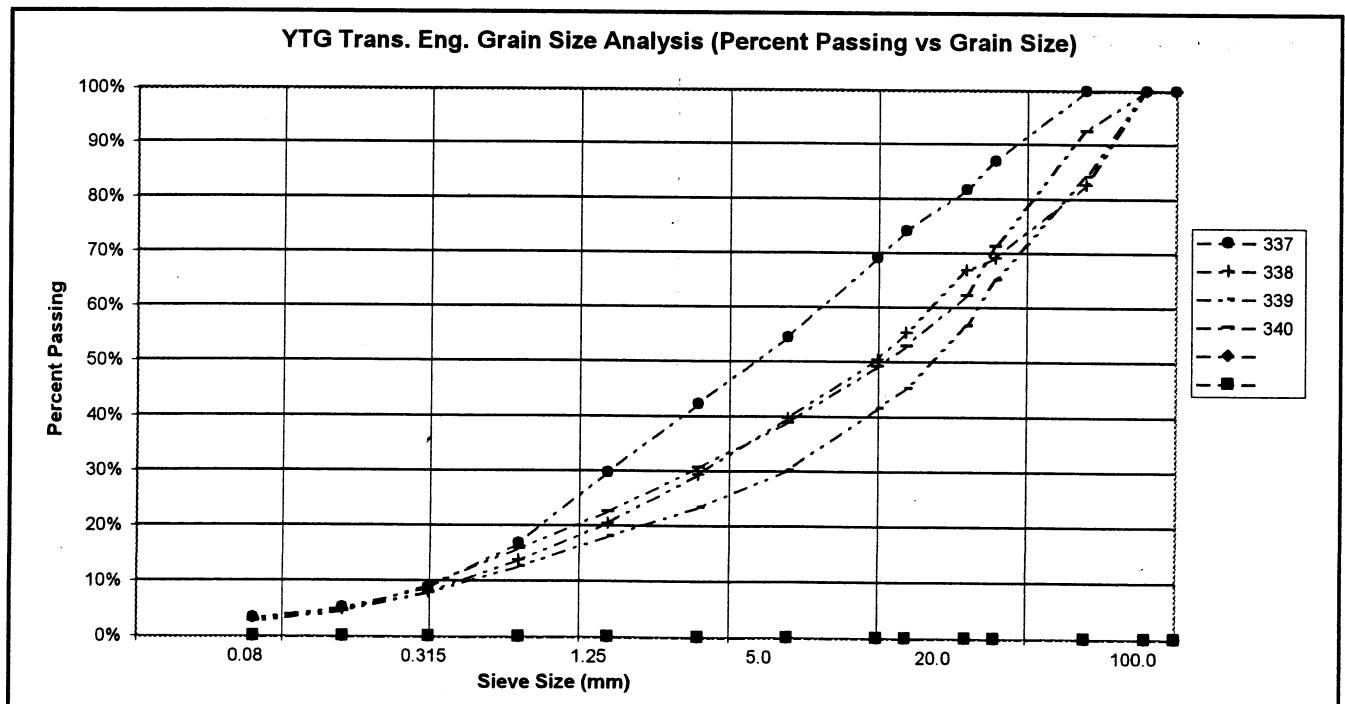


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 2654-2761

DATE COMP: 2003/10/11

FIELD NO:	337	338	339	340		
LAB NO:	541	542	543	544		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	83%	84%	93%		
25.0	87%	69%	65%	71%		
20.0	82%	67%	57%	62%		
12.5	74%	55%	45%	53%		
10.0	69%	50%	42%	49%		
5.0	54%	40%	30%	39%		
2.5	42%	29%	23%	31%		
1.25	30%	21%	18%	23%		
0.630	17%	14%	13%	16%		
0.315	9%	8%	8%	9%		
0.160	5%	5%	5%	4%		
0.080	3%	3%	3%	3%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	46	60	70	61		
% SAND:	51	36	27	36		
% FINES:	3	3	3	3		
CLASSIFICATION	WELL-GRADED SAND WITH GRAVEL (SW)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

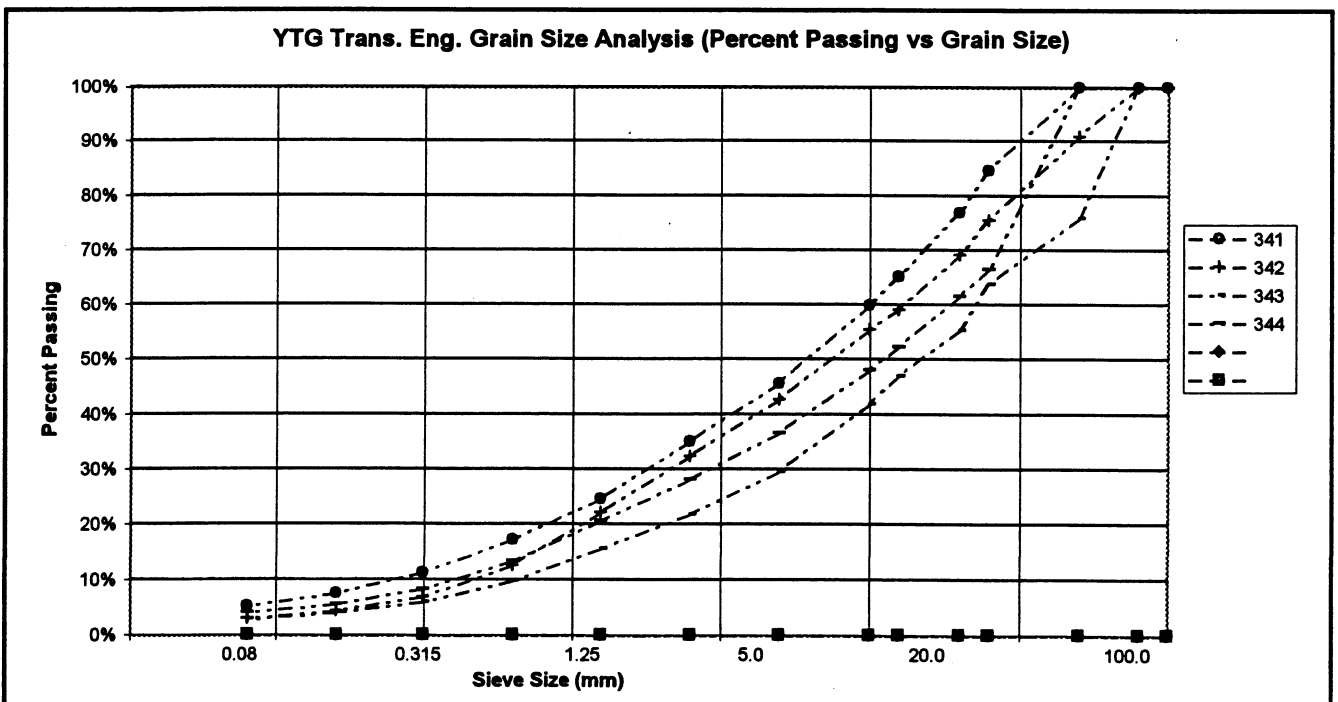


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Willisroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2762

DATE COMP: 2003/10/11

FIELD NO:	341	342	343	344		
LAB NO:	545	546	547	548		
DEPTH:	0.5-1.1	1.5-2.1	2.5-3.1	3.5-4.1		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	91%	76%	100%		
25.0	85%	76%	64%	66%		
20.0	77%	69%	55%	62%		
12.5	65%	59%	47%	52%		
10.0	60%	55%	42%	48%		
5.0	46%	43%	30%	37%		
2.5	35%	32%	22%	28%		
1.25	25%	22%	16%	21%		
0.630	17%	13%	10%	13%		
0.315	11%	7%	6%	8%		
0.160	8%	4%	4%	5%		
0.080	5%	3%	3%	4%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	54	57	70	63		
% SAND:	40	40	27	33		
% FINES:	5	3	3	4		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

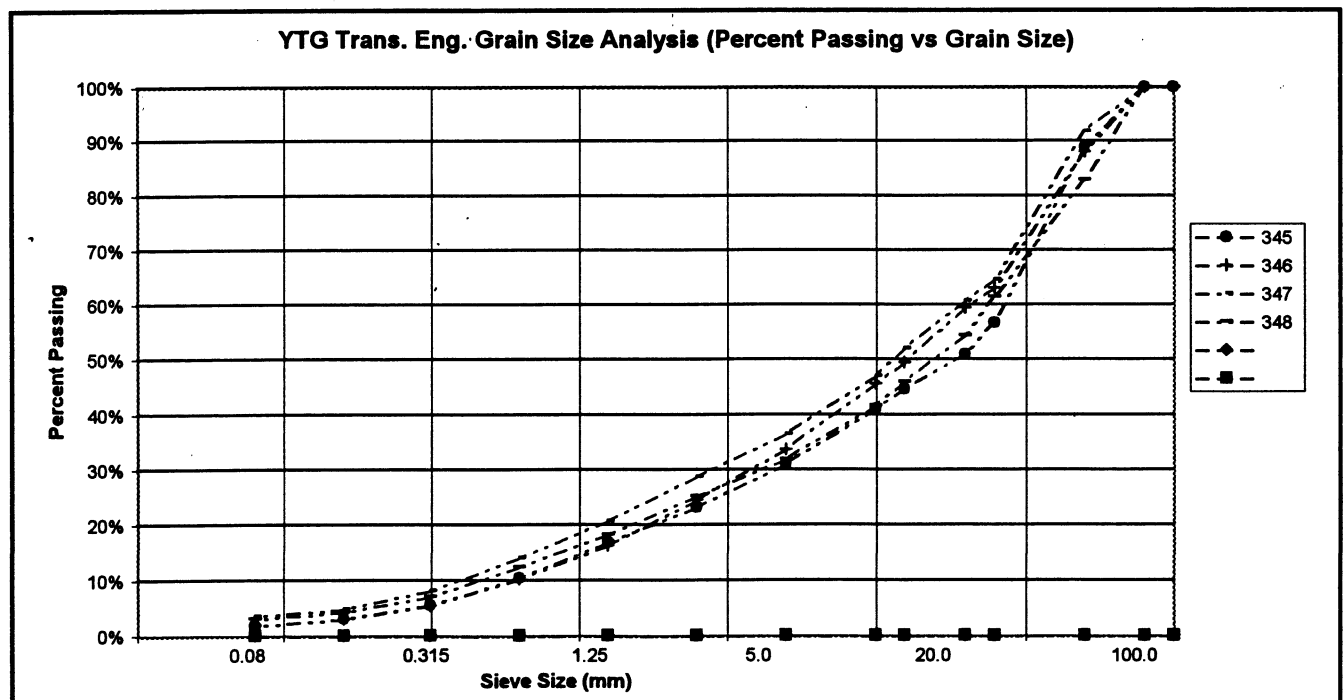


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Willisroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2763

DATE COMP: 2003/10/11

FIELD NO:	345	346	347	348		
LAB NO:	549	550	551	552		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	89%	88%	92%	83%		
25.0	57%	63%	65%	61%		
20.0	51%	59%	61%	54%		
12.5	45%	49%	52%	46%		
10.0	41%	46%	47%	42%		
5.0	31%	34%	36%	32%		
2.5	23%	25%	29%	25%		
1.25	17%	16%	21%	18%		
0.630	10%	10%	14%	12%		
0.315	5%	5%	8%	7%		
0.160	3%	3%	5%	4%		
0.080	2%	2%	4%	3%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	69	68	64	68		
% SAND:	29	32	33	29		
% FINES:	2	2	4	3		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Associate of J. R. Faine & Associates Ltd.



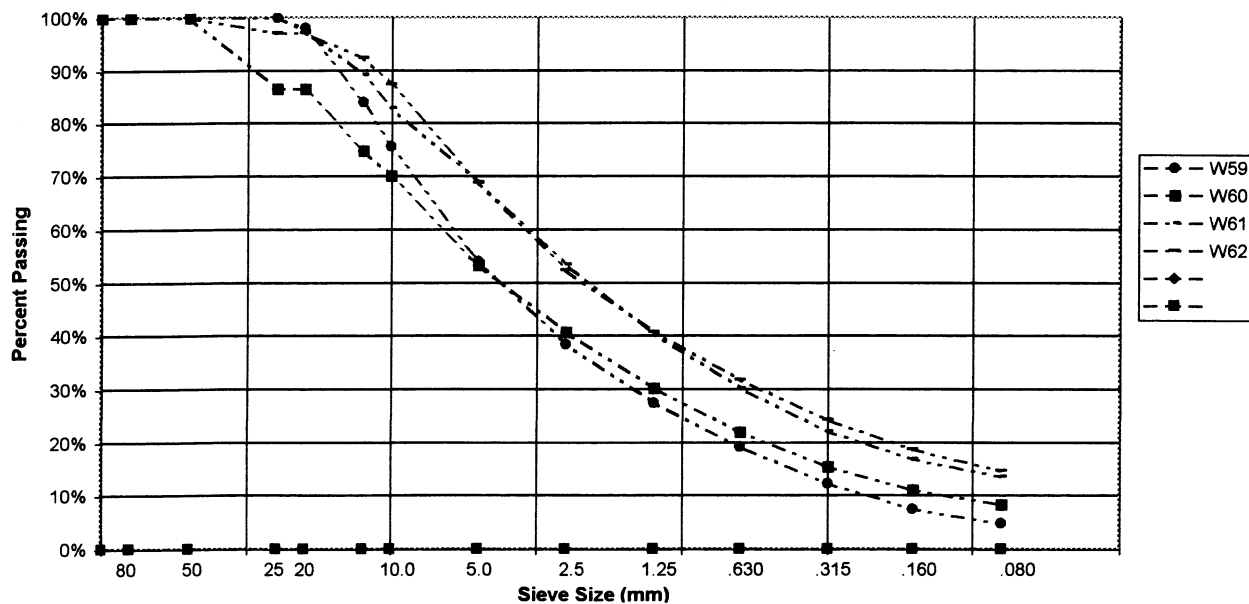
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 632672-6774951
LOGGED BY: RW

HOLE No.: 654-2763Drill

DATE COMP: 11/01/2004

FIELD NO:	W59	W60	W61	W62		
LAB NO:	W59	W60	W61	W62		
DEPTH:	0.5-1.0	1.8-2.4	3.4-4.0	5.2-5.8		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
60.0	100%	100%	100%	100%		
25.0	100%	87%	100%	97%		
20.0	98%	87%	97%	97%		
12.5	84%	75%	89%	92%		
10.0	76%	70%	83%	87%		
5.0	54%	53%	69%	69%		
2.5	38%	41%	53%	52%		
1.25	27%	30%	40%	41%		
0.630	19%	22%	30%	32%		
0.315	12%	15%	22%	24%		
0.160	7%	11%	17%	19%		
0.080	5%	8%	14%	15%		
M.C.(%)	1%	1%	2%	2%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	46	47	31	31		
% SAND:	49	45	55	54		
% FINES:	5	8	14	15		
CLASSIFICATION	WELL-GRADED SAND WITH GRAVEL (SW)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)

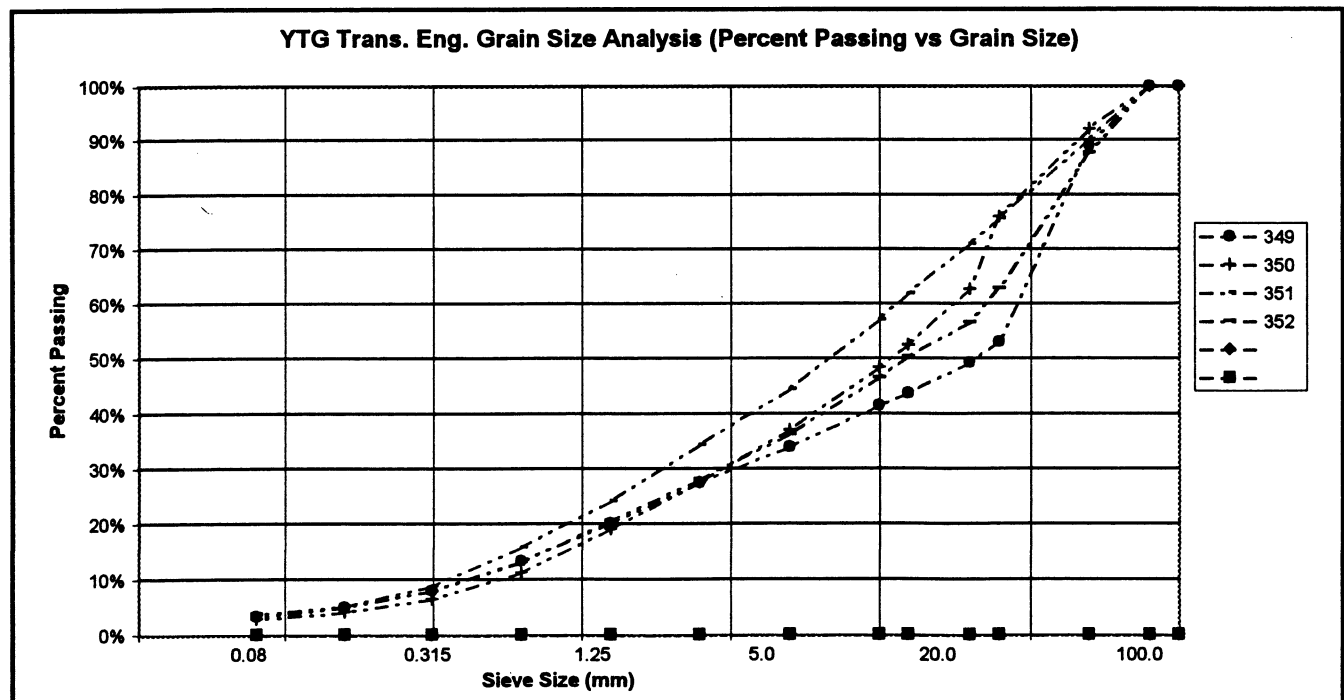


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Willisroft Creek Granular Investigation
 PROJECT LOCATION: Km 1712 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 654-2764

DATE COMP: 2003/10/11

FIELD NO:	349	350	351	352		
LAB NO:	553	554	555	556		
DEPTH:	0.5-1.0	1.5-2.0	2.5-3.0	3.5-4.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	89%	92%	90%	88%		
25.0	53%	76%	76%	63%		
20.0	49%	63%	71%	57%		
12.5	44%	53%	62%	50%		
10.0	42%	48%	57%	47%		
5.0	34%	37%	44%	36%		
2.5	28%	28%	34%	28%		
1.25	20%	19%	24%	21%		
0.630	13%	11%	16%	13%		
0.315	8%	6%	9%	8%		
0.160	5%	4%	5%	5%		
0.080	3%	3%	4%	4%		
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	66	63	56	64		
% SAND:	31	34	41	33		
% FINES:	3	3	4	4		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

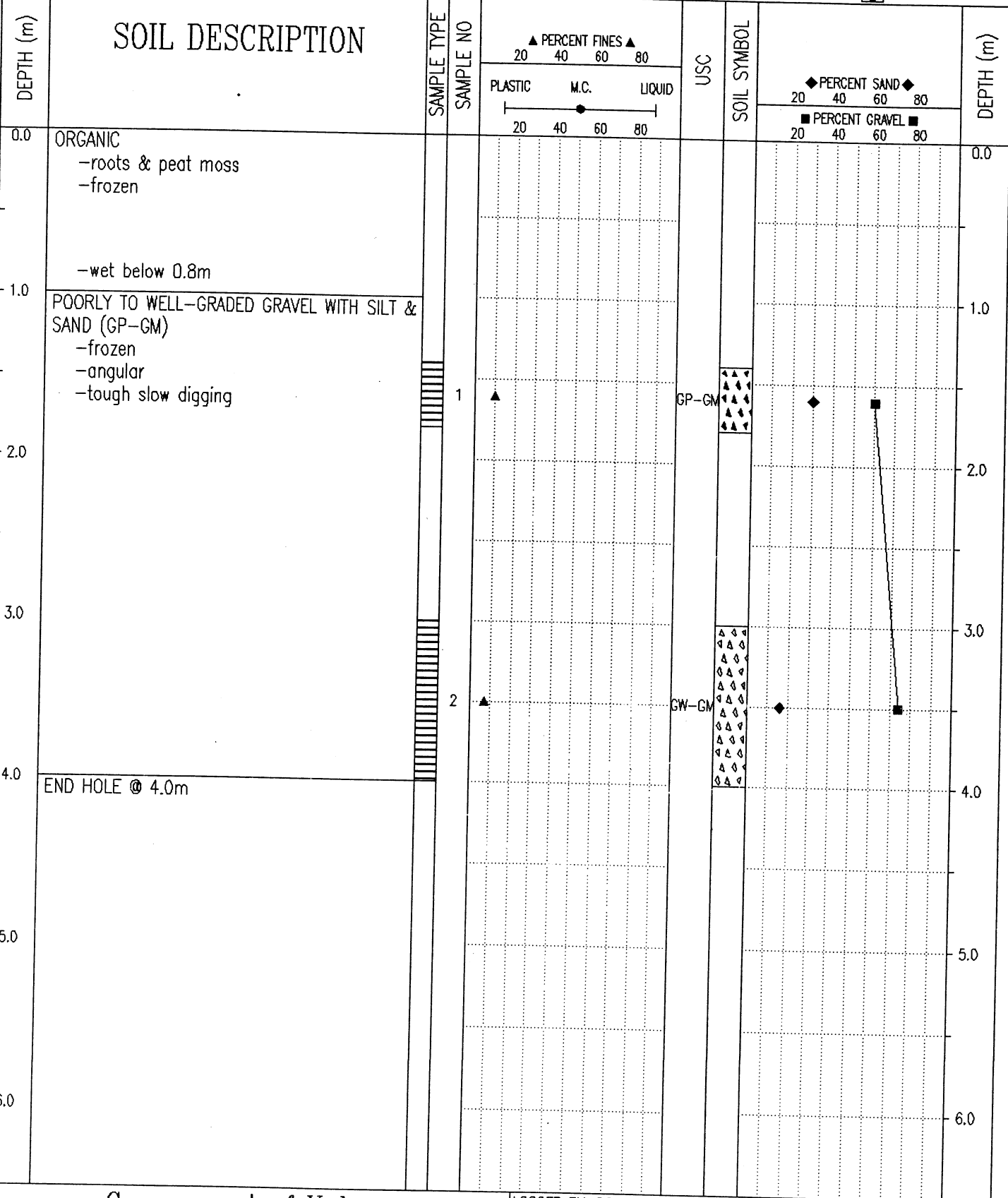


Km 1713.0 LHS Alaska Highway #1
Pit Ident. 115 G-12
(Williscroft Creek)

December 2003
Book # 663

Test Pit Logs

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT	TEST PIT NO: 663-2853
ENGINEERING CAPITAL		KM 1712 A/H LHS	Project No: 552-202101-0362
KOMATSU PC-400 LC		LOCATION: SEE PLAN & GPS	ELEVATION: 0.00 (m)
SAMPLE TYPE	☒ RETURN	☒ S.P.T.	☒ AUGER
		☐ BULK	☐ TUBE
			☐ CORE



Government of Yukon
Transportation Engineering

LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
REVIEWED BY:	COMPLETE: 03/12/16
Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 663-2854	
ENGINEERING CAPITAL		KM 1712 A/H LHS		Project No: 552-202101-0362	
KOMATSU PC-400 LC		LOCATION: SEE PLAN & 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	ORGANICS										0.0
0.0 - 1.0	POORLY TO WELL-GRADED GRAVEL WITH SAND (GP)-(GW) -frozen -angular to sub-angular -maximum 300mm material -permafrost - extreme tough digging		3					GP			1.0
1.0 - 3.0											2.0
3.0 - 4.0			4					GW			3.0
4.0 - 4.0	END HOLE @ 4.0m										4.0
4.0 - 5.0											5.0
5.0 - 6.0											6.0

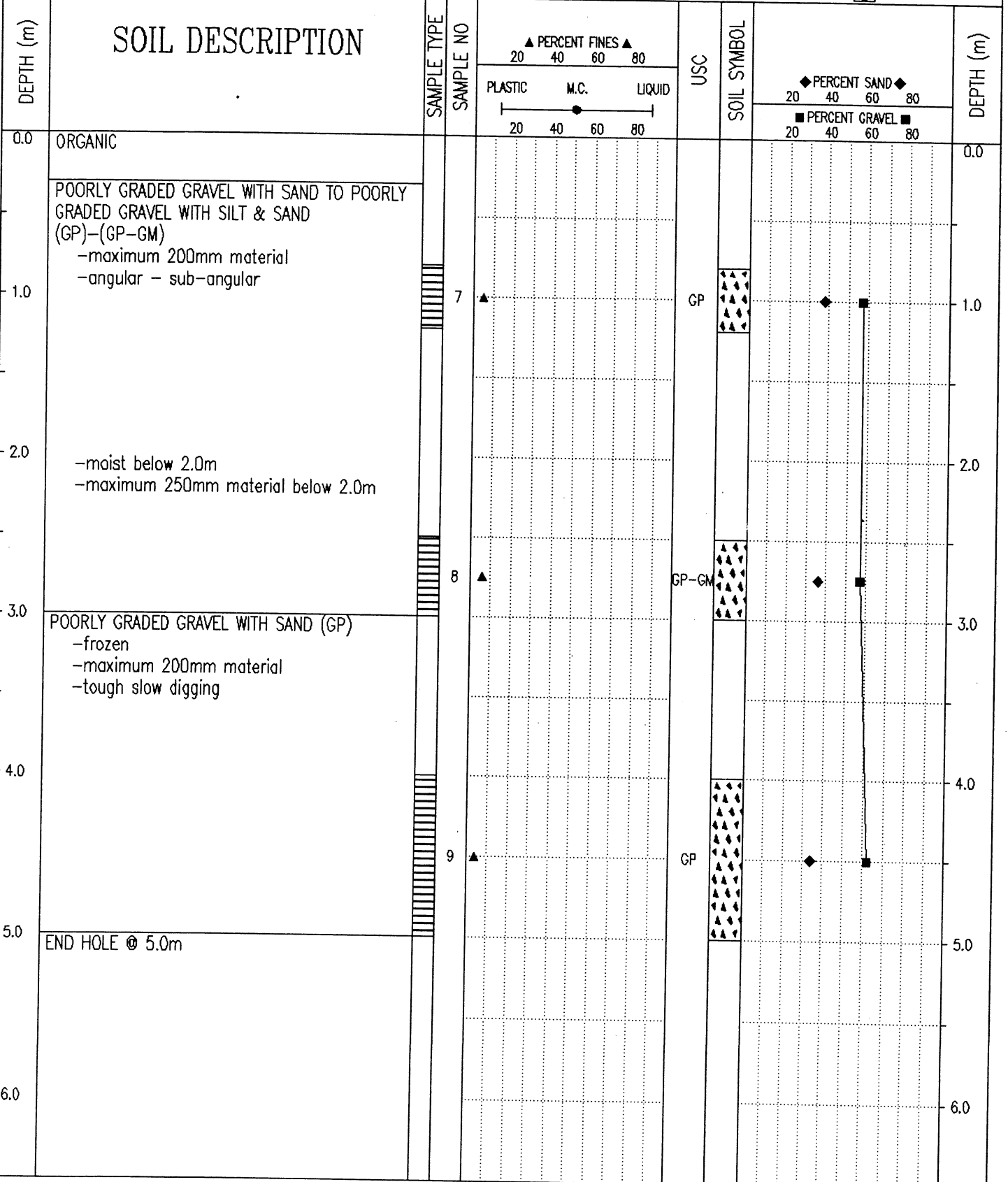
Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
		REVIEWED BY:	COMPLETE: 03/12/16
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 663-2855	
ENGINEERING CAPITAL		KM 1712 A/H LHS		Project No: 552-202101-0362	
KOMATSU PC-400 LC		LOCATION: SEE PLAN & 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 GRADED GRAVEL WITH SAND (GP)							
	-maximum 200mm material							
1.0			5			GP		1.0
	-organic layer 1.6-1.7m							
2.0								2.0
	-frozen below 2.0m							
	-permafrost							
	-tough digging 2.0-2.4m							
3.0			6			GP		3.0
4.0	END HOLE @ 4.0m							4.0
5.0								5.0
6.0								6.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
		REVIEWED BY:	COMPLETE: 03/12/18
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT	TEST PIT NO: 663-2856
ENGINEERING CAPITAL		KM 1712 A/H LHS	Project No: 552-202101-0362
KOMATSU PC-400 LC		LOCATION: SEE PLAN & GPS	ELEVATION: 0.00 (m)
SAMPLE TYPE	☒ RETURN	☒ S.P.T.	☒ AUGER
		☐ BULK	☐ TUBE
			☐ CORE



Government of Yukon
Transportation Engineering

LOGGED BY: GC	COMPLETION DEPTH: 5.0 m
REVIEWED BY:	COMPLETE: 03/12/18
Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 663-2857	
ENGINEERING CAPITAL		KM 1712 A/H LHS		Project No: 552-202101-0362	
KOMATSU PC-400 LC		LOCATION: SEE PLAN & 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	ORGANICS											0.0	
	POORLY GRADED GRAVEL WITH SAND (GP)												
	-brown												
	-damp												
	-maximum 150mm material												
1.0			10					GP				1.0	
2.0	-layer of 250mm material @ 2.0m												
	-slow tough digging below 2.0m												
	-frozen below 2.0m												
	-maximum 250mm material												
2.0			11					GP				2.0	
3.0													
4.0	-silt seams below 3.0m												
	-tough digging below 3.0m												
4.0	END HOLE @ 4.0m		12					GP				4.0	
5.0												5.0	
6.0												6.0	

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 4.0 m
		REVIEWED BY:	COMPLETE: 03/12/18
		Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK PROJECT		TEST PIT NO: 663-2858	
ENGINEERING CAPITAL		KM 1712 A/H LHS		Project No: 552-202101-0362	
KOMATSU PC-400 LC		LOCATION: SEE PLAN & 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	ORGANICS & SILT											0.0
1.0	POORLY GRADED GRAVEL WITH SAND (GP) -trace of silt form surface -maximum 200mm material		13				GP					1.0
2.0												2.0
3.0	-brown below 2.4m -damp below 2.4m -better digging below 2.4m -no silt seams below 2.4m -maximum 250 mm material below 3.0m		14				GP					3.0
4.0												4.0
5.0			15				GP					5.0
6.0												6.0
7.0	END HOLE @ 6.5m											7.0
8.0												8.0
9.0												9.0
10.0												10.0
11.0												11.0
12.0												12.0

Government of Yukon Transportation Engineering		LOGGED BY: GC	COMPLETION DEPTH: 6.5 m
		REVIEWED BY:	COMPLETE: 03/12/18
		Fig. No:	Page 1 of 1

Km 1713.0 LHS Alaska Highway #1
Pit Ident. 115 G-12
(Williscroft Creek)

December 2003
Book # 663

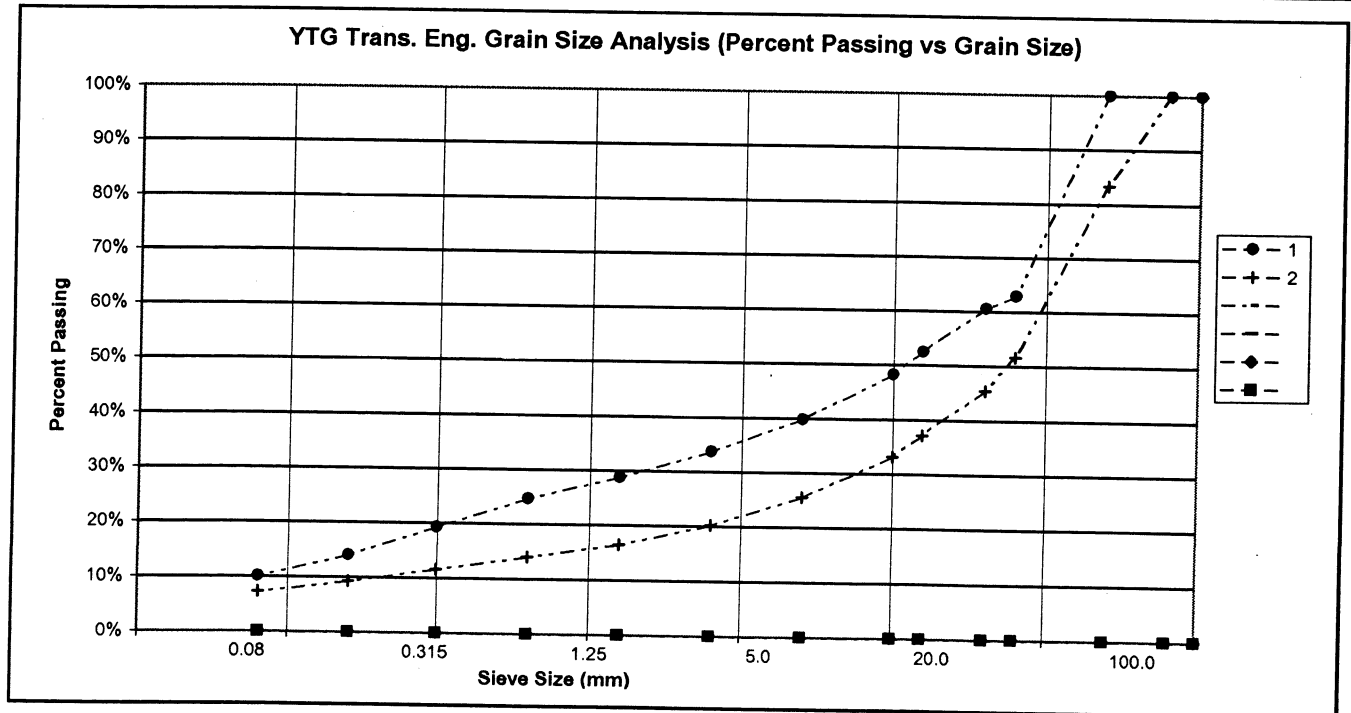
Pit Run Sample Results

PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek
 PROJECT LOCATION: Km 1712.5 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 663-2853

DATE COMP: 03/02/16

FIELD NO:	1	2				
LAB NO:	766	767				
DEPTH:	1.4-1.8	3.0-4.0				
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	83%				
25.0	63%	52%				
20.0	61%	46%				
12.5	52%	37%				
10.0	48%	33%				
5.0	40%	26%				
2.5	34%	20%				
1.25	29%	17%				
0.630	25%	14%				
0.315	19%	12%				
0.160	14%	9%				
0.080	10%	7%				
M.C.(%)						
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX:	0.0	0.0				
% GRAVEL:	60	74				
% SAND:	30	18				
% FINES:	10	7				
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)				

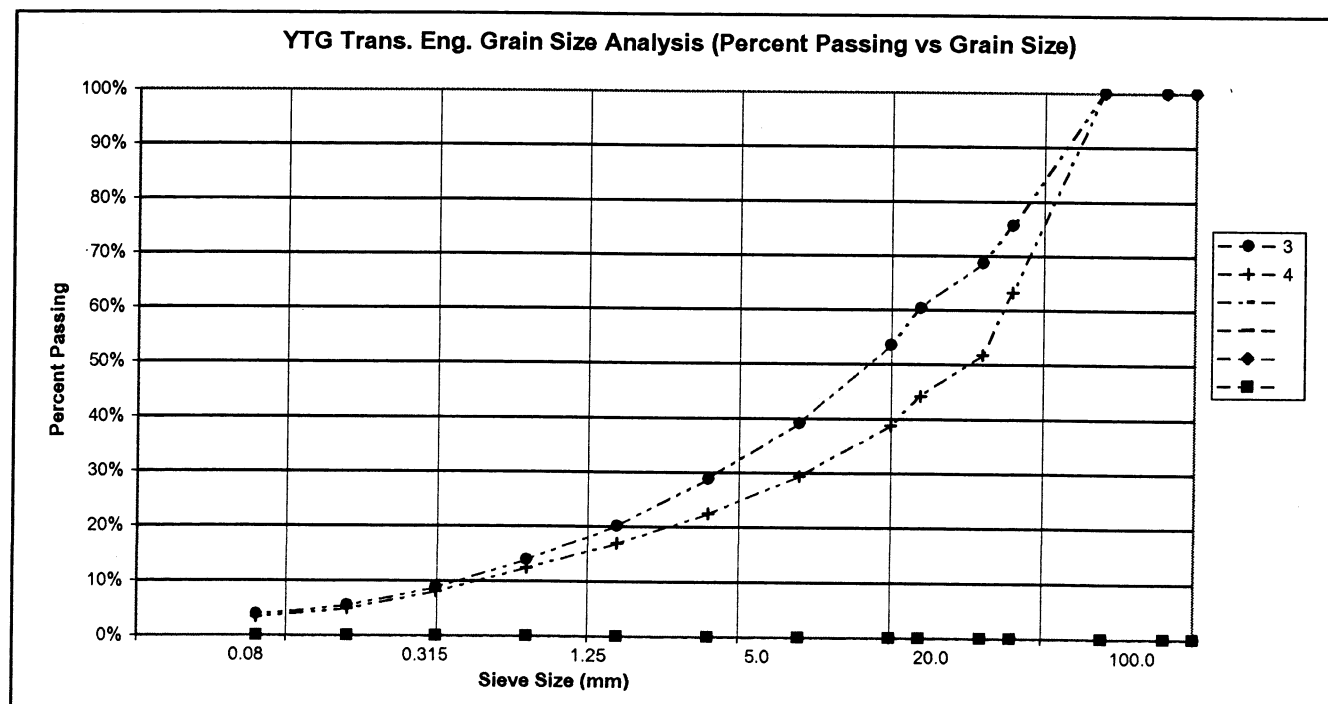


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek
 PROJECT LOCATION: Km 1712.5 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 663-2854

DATE COMP: 03/02/18

FIELD NO:	3	4				
LAB NO:	768	769				
DEPTH:	0.8-1.2	3.0-4.0				
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	76%	63%				
20.0	69%	52%				
12.5	60%	44%				
10.0	54%	39%				
5.0	39%	29%				
2.5	29%	23%				
1.25	20%	17%				
0.630	14%	12%				
0.315	9%	8%				
0.160	6%	5%				
0.080	4%	3%				
M.C.(%)						
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX:	0.0	0.0				
% GRAVEL:	61	71				
% SAND:	35	26				
% FINES:	4	3				
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	WELL-GRADED GRAVEL WITH SAND (GW)				

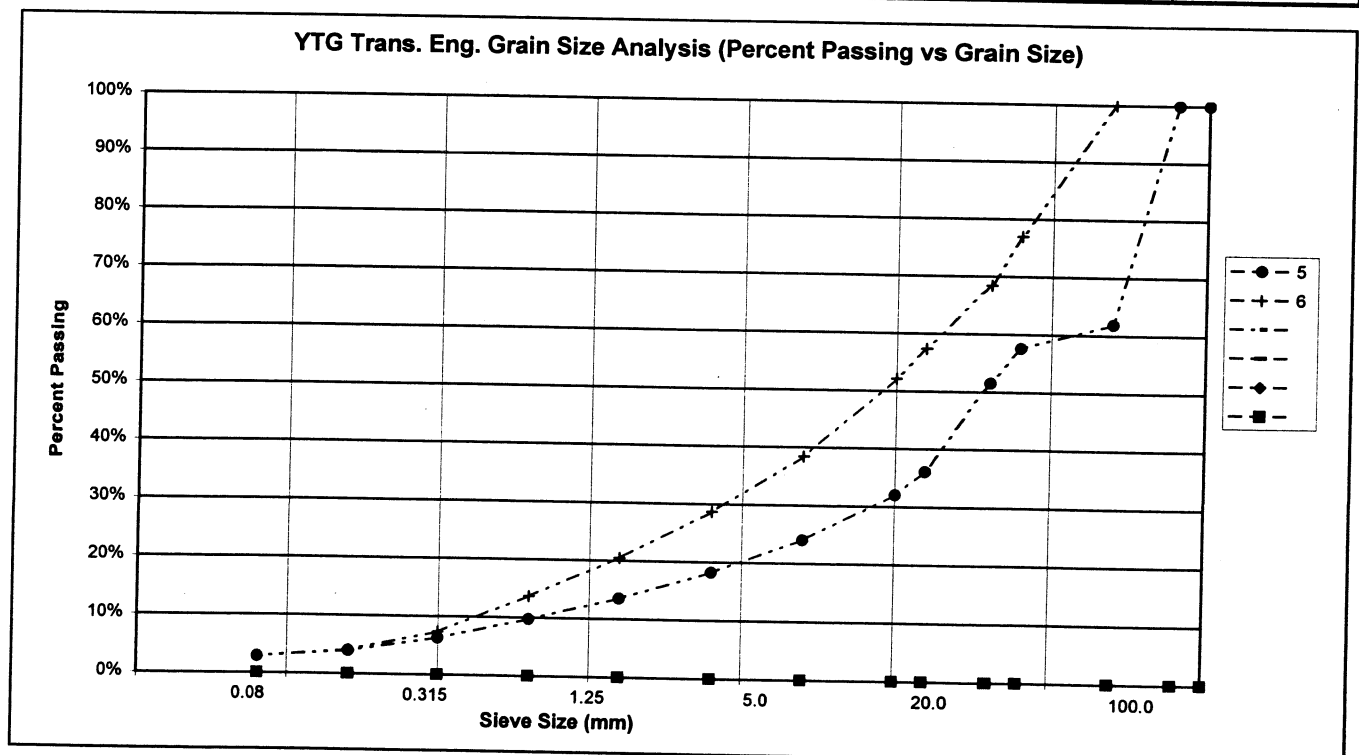


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Willisroft Creek
 PROJECT LOCATION: Km 1712.5 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 663-2855

DATE COMP: 03/02/18

FIELD NO:	5	6				
LAB NO:	770	771				
DEPTH:	0.8-1.2	2.5-3.0				
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	62%	100%				
25.0	58%	77%				
20.0	52%	68%				
12.5	36%	57%				
10.0	32%	52%				
5.0	24%	38%				
2.5	18%	29%				
1.25	14%	21%				
0.630	10%	14%				
0.315	6%	7%				
0.160	4%	4%				
0.080	3%	3%				
M.C.(%)						
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX:	0.0	0.0				
% GRAVEL:	76	62				
% SAND:	21	36				
% FINES:	3	3				
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)				

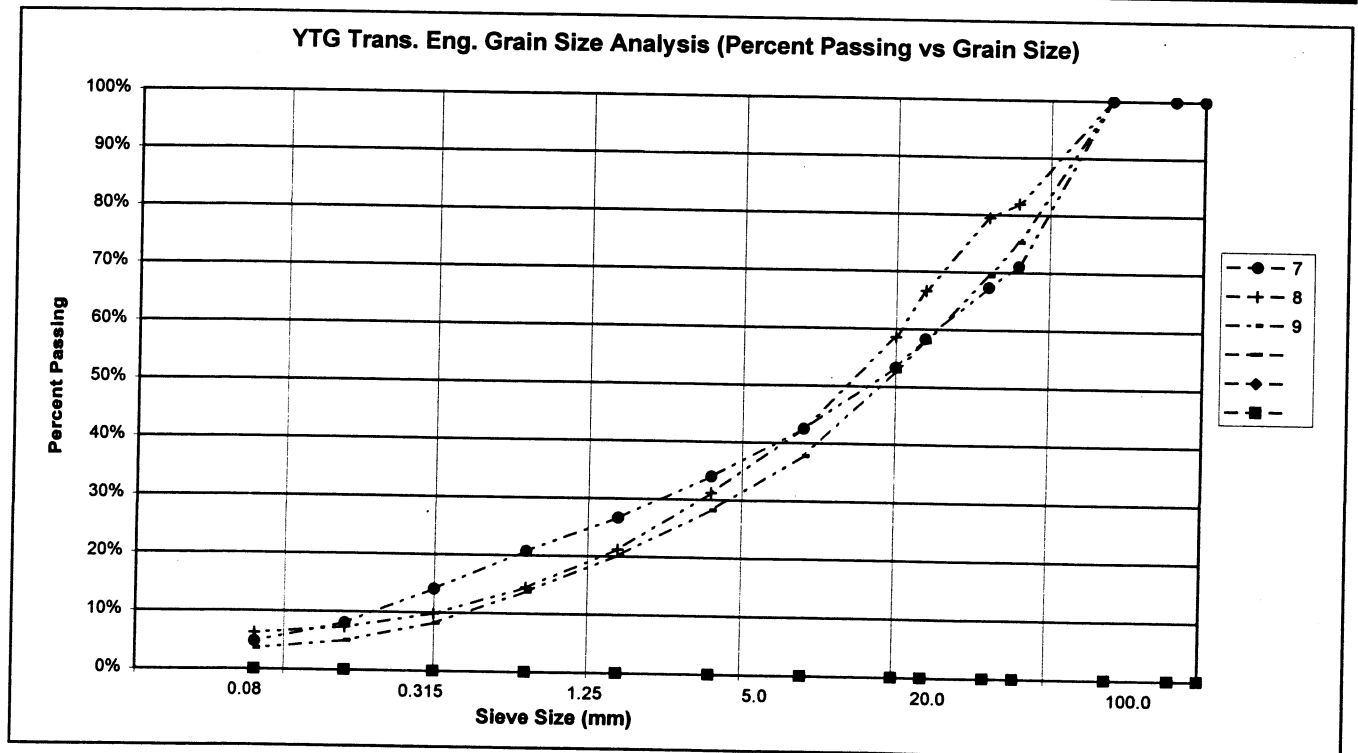


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek
 PROJECT LOCATION: Km 1712.5 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 663-2856

DATE COMP: 03/02/18

FIELD NO:	7	8	9			
LAB NO:	772	773	774			
DEPTH:	0.8-1.2	2.5-3.0	4.0-5.0			
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	71%	82%	75%			
20.0	67%	80%	69%			
12.5	58%	67%	58%			
10.0	53%	59%	53%			
5.0	43%	43%	38%			
2.5	34%	31%	28%			
1.25	27%	21%	20%			
0.630	21%	15%	14%			
0.315	14%	10%	8%			
0.160	8%	7%	5%			
0.080	5%	6%	4%			
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX:	0.0	0.0	0.0			
% GRAVEL:	57	57	62			
% SAND:	38	36	34			
% FINES:	5	6	4			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SAND (GP)			

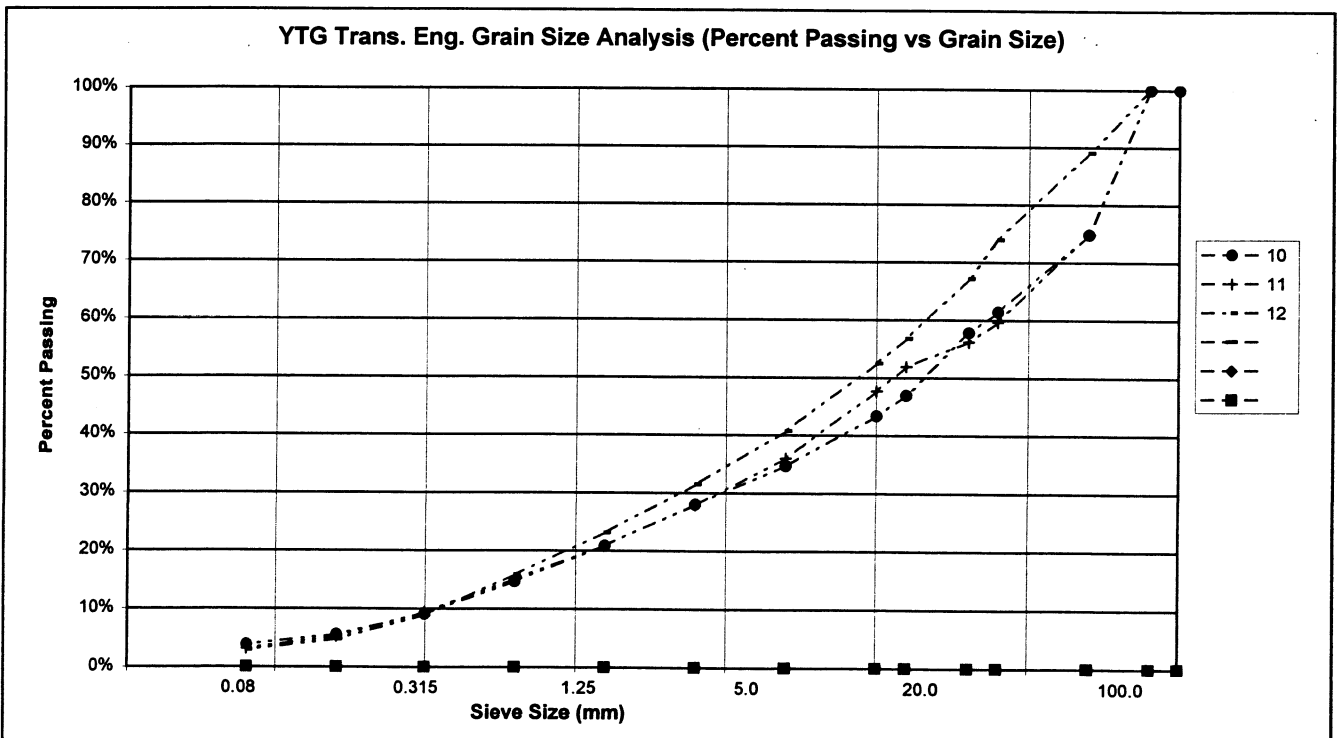


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek
 PROJECT LOCATION: Km 1712.5 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 663-2857

DATE COMP: 03/02/18

FIELD NO:	10	11	12			
LAB NO:	775	776	777			
DEPTH:	0.8-1.2	2.0-2.5	3.6-4.0			
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	75%	75%	89%			
25.0	61%	60%	74%			
20.0	58%	56%	67%			
12.5	47%	52%	57%			
10.0	43%	48%	52%			
5.0	35%	36%	41%			
2.5	28%	28%	31%			
1.25	21%	21%	23%			
0.630	15%	15%	16%			
0.315	9%	9%	9%			
0.160	6%	5%	5%			
0.080	4%	3%	3%			
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX:	0.0	0.0	0.0			
% GRAVEL:	65	64	59			
% SAND:	31	33	38			
% FINES:	4	3	3			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)			

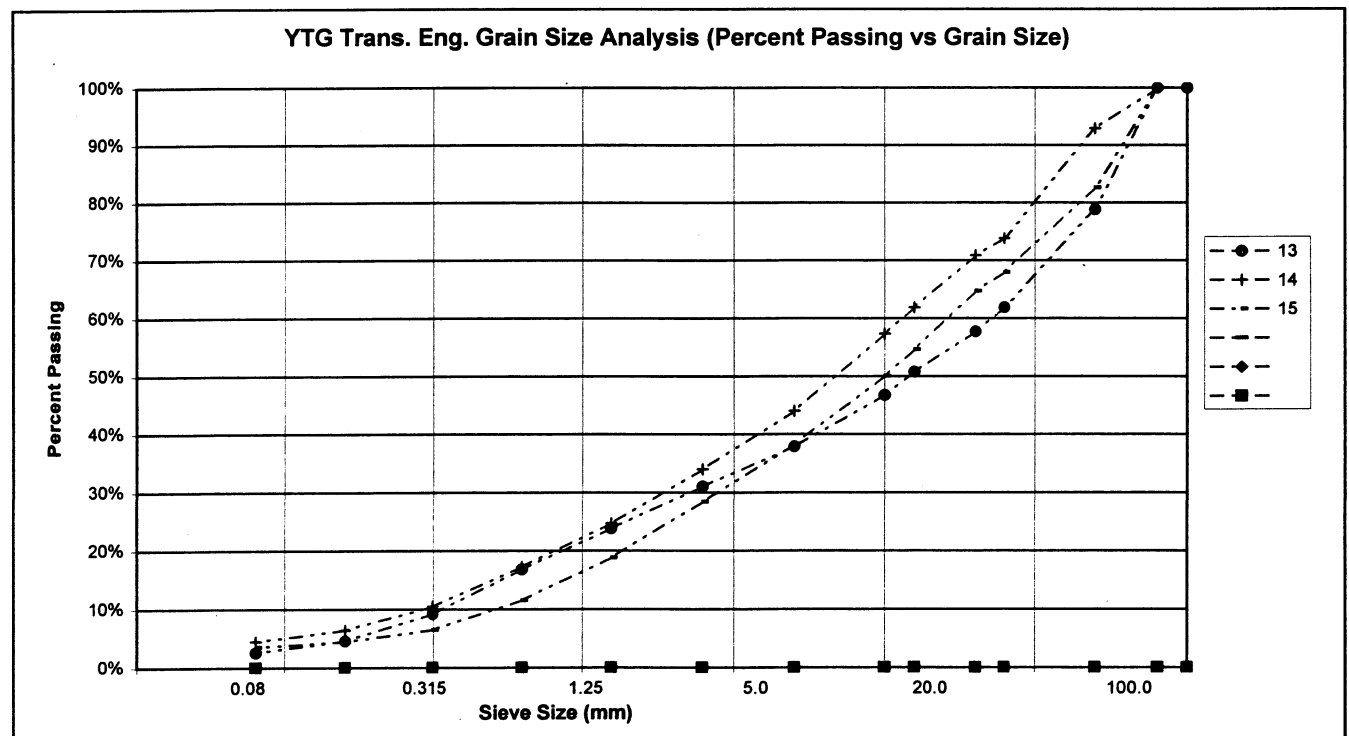


PROJECT NUMBER: 552-202101-0362-1
 CLIENT: Shakwak
 PROJECT NAME: Williscroft Creek
 PROJECT LOCATION: Km 1712.5 A/H
 DRILL UNIT: Komatsu PC- 400-LC
 HOLE LOCATION: See Plan / GPS
 LOGGED BY: G.C.

HOLE No.: 663-2858

DATE COMP: 03/02/18

FIELD NO:	13	14	15			
LAB NO:	778	779	780			
DEPTH:	0.8-1.0	3.0-4.0	5.0-6.0			
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	79%	93%	83%			
25.0	62%	74%	68%			
20.0	58%	71%	65%			
12.5	51%	62%	55%			
10.0	47%	57%	50%			
5.0	38%	44%	38%			
2.5	31%	34%	28%			
1.25	24%	25%	19%			
0.630	17%	17%	12%			
0.315	9%	11%	7%			
0.160	5%	6%	4%			
0.080	3%	5%	4%			
M.C.(%)						
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	62	56	62			
% SAND:	35	39	35			
% FINES:	3	5	4			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)			



Km 1713.0 LHS Alaska Highway #1
Pit Ident. 115 G-12
(Williscroft Creek)

July 2004
Book # N/A

Test Pit Logs for 30137 to 30147

Geotechnical Services		Km 1691.7 to 1717.3 Alaska Highway #1		TEST PIT NO: 30137	
Glacier Drilling		UTM ZONE: - N6775028 E632523		PROJECT NO: 8002-318	
Hitachi EX450 Tracked Hoe				ELEVATION:	
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		ELEVATION(m)
				PLASTIC	M.C.	LIQUID			PERCENT SAND	PERCENT GRAVEL	
0.0	SURFICIAL ORGANICS										0.0
0.3	SANDY GRAVEL -damp, medium dense, brown		W1				GP				
2.0	SANDY GRAVEL, trace silt -Frozen -brown		W2				GW-GM				
3.0			W3				GP-GM				
4.0			W4				GW				
5.0	End Of Hole @ 5.0m										
6.0											-6.0

J. R. Paine & Associates Ltd. Whitehorse, Yukon		LOGGED BY: RW	COMPLETION DEPTH: 5 m
		REVIEWED BY: -	COMPLETE: 07/31/04
		Fig. No: 95	Page 1 of 1

Geotechnical Services		Km 1691.7 to 1717.3 Alaska Highway #1		TEST PIT NO: 30138	
Glacier Drilling		UTM ZONE: - N6775066 E632578		PROJECT NO: 8002-318	
Hitachi 450EX Tracked Hoe				ELEVATION:	
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		ELEVATION(m)
0.0	SURFICIAL ORGANICS								0.0		
	SANDY GRAVEL 0.3m -damp, loose, brown -organics noted to 1.0m depth										
	SANDY GRAVEL 0.7m -damp, medium dense, brown -boulders to 300mm 5-15% by Vol.										
1.0									-1.0		
2.0			W5			GP			-2.0		
3.0			W6			GW			-3.0		
4.0			W7			GP			-4.0		
5.0			W8			GW			-5.0		
5.3	End Of Hole @ 5.3m								-5.3		
6.0									-6.0		

J. R. Paine & Associates Ltd. Whitehorse, Yukon		LOGGED BY: RW	COMPLETION DEPTH: 5.3 m
		REVIEWED BY: -	COMPLETE: 08/01/04
		Fig. No: 94	Page 1 of 1

Geotechnical Services		Km 1691.7 to 1717.3 Alaska Highway #1		TEST PIT NO: 30139	
Glacier Drilling		UTM ZONE: - N6775122 E632665		PROJECT NO: 8002-318	
Hitachi 450EX Tracked Hoe				ELEVATION:	
SAMPLE TYPE ☒ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

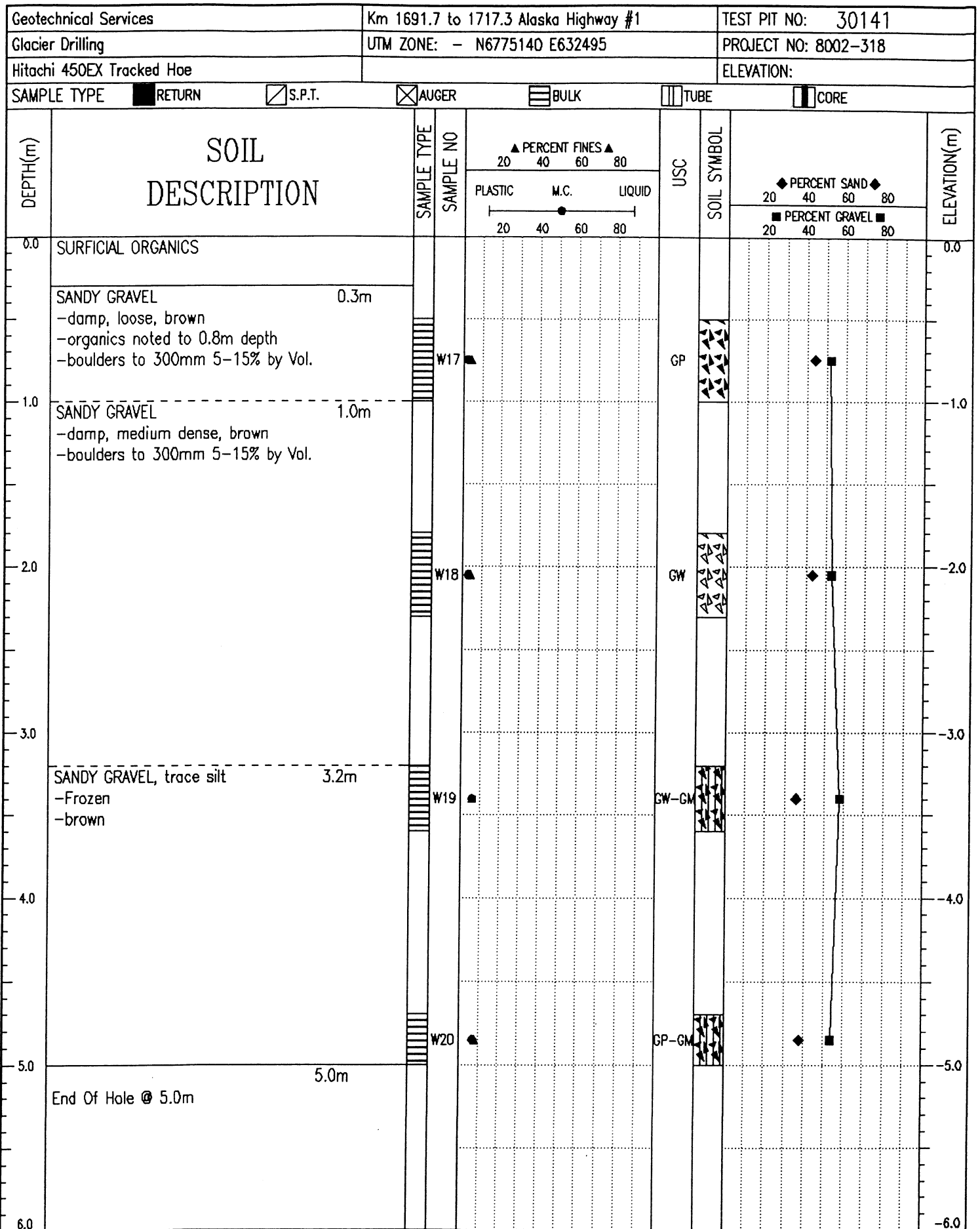
DEPTH(m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80			USC	SOIL SYMBOL	◆ PERCENT SAND ◆ 20 40 60 80 ■ PERCENT GRAVEL ■ 20 40 60 80		ELEVATION(m)
0.0	SURFICIAL ORGANICS								0.0		
	SANDY GRAVEL, possible trace silt 0.3m										
	-damp, loose, brown										
	-organics noted to 1.0m depth										
	-some organics silts noted between 1.0 and 1.5m depth										
	-boulders to 300mm 5-15% by Vol.										
1.0			W9				GW		-1.0		
2.0			W10				GW		-2.0		
3.0									-3.0		
4.0			W11				GW-GM		-4.0		
5.0			W12				GW		-5.0		
5.5	End Of Hole @ 5.5m								-5.5		
6.0									-6.0		

J. R. Paine & Associates Ltd. Whitehorse, Yukon		LOGGED BY: RW	COMPLETION DEPTH: 5.5 m
		REVIEWED BY:	COMPLETE: 08/01/04
		Fig. No: 93	Page 1 of 1

Geotechnical Services		Km 1691.7 to 1717.3 Alaska Highway #1		TEST PIT NO: 30140	
Glacier Drilling		UTM ZONE: - N6775097 E632440		PROJECT NO: 8002-318	
Hitachi 450EX Tracked Hoe				ELEVATION:	
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			ELEVATION(m)
				PLASTIC	M.C.	LIQUID			PERCENT SAND	PERCENT GRAVEL		
0.0	SURFICIAL ORGANICS											0.0
0.3	SANDY GRAVEL -damp, loose, brown -organics noted to 0.8m depth -boulders to 300mm 5-15% by Vol.											
1.0			W13				GW					-1.0
2.0			W14				GP					-2.0
3.0	SANDY GRAVEL -Frozen -brown											-3.0
3.6	AS ABOVE -some visible ice		W15				GW					-3.6
4.0												-4.0
5.0			W16				GW					-5.0
5.1	End Of Hole @ 5.1m											-5.1
6.0												-6.0

J. R. Paine & Associates Ltd. Whitehorse, Yukon		LOGGED BY: RW	COMPLETION DEPTH: 5.1 m
		REVIEWED BY: -	COMPLETE: 08/01/04
		Fig. No: 92	Page 1 of 1



J. R. Paine & Associates Ltd.
Whitehorse, Yukon

LOGGED BY: RW
REVIEWED BY:
Fig. No: 91

COMPLETION DEPTH: 5 m
COMPLETE: 08/01/04

Geotechnical Services		Km 1691.7 to 1717.3 Alaska Highway #1		TEST PIT NO: 30142	
Glacier Drilling		UTM ZONE: - N6775194 E632545		PROJECT NO: 8002-318	
Hitachi 450EX Tracked Hoe				ELEVATION:	
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 ◆			ELEVATION(m)
				PLASTIC M.C. LIQUID					PERCENT GRAVEL ■			
				20 40 60 80	20 40 60 80	20 40 60 80			20 40 60 80	20 40 60 80		
0.0	SURFICAL ORGANICS										0.0	
0.3m	SANDY GRAVEL -damp, loose, brown -organics noted to 0.6m depth -boulders to 300mm 5-15% by Vol.											
0.8m	AS ABOVE -medium dense											
1.0			W21				GW					
2.0												
3.0			W22				GW					
3.2m	SANDY GRAVEL -Frozen -brown											
4.0	SILTY GRAVELLY SAND -Frozen -brown		W23				GP					
4.0m												
5.0	End Of Hole 5.0m		W24				SM					
5.0m												
6.0											-6.0	

J. R. Paine & Associates Ltd.		LOGGED BY: RW	COMPLETION DEPTH: 5 m
Whitehorse, Yukon		REVIEWED BY: -	COMPLETE: 08/01/04
		Fig. No: 90	Page 1 of 1

Geotechnical Services		Km 1691.7 to 1717.3 Alaska Highway #1		TEST PIT NO: 30142D	
Donjek Services Ltd.		UTM ZONE: - N6775193 E632558		PROJECT NO: 8002-318	
CME75 Drill on FN60 Flextrac Nodwell				ELEVATION:	
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			ELEVATION(m)
				PLASTIC	M.C.	LIQUID			PERCENT SAND	PERCENT GRAVEL		
0.0	SANDY GRAVEL, trace silt -dry to damp, medium dense, brown -max size gravels augered up: 50mm dia.											0.0
1.0			W55					GW-GM				-1.0
2.0			W56					GW-GM				-2.0
3.0	SILTY GRAVELLY SAND -damp to moist, dense, brown											-3.0
4.0			W57					SM				-4.0
5.0			W58					SM				-5.0
6.0												-6.0
7.0												-7.0
8.0												-8.0
9.0	End Of Hole @ 8.3m - Refusal -refusal @ 3.7m - move south 1m -refusal @ 8.2m - move south 1m -refusal @ 5.2m - EOH -lost 3 stems & bit downhole on attempt #2											-9.0
10.0												-10.0
11.0												-11.0
12.0												-12.0

J. R. Paine & Associates Ltd. Whitehorse, Yukon		LOGGED BY: RW	COMPLETION DEPTH: 8.2 m
		REVIEWED BY: -	COMPLETE: 11/01/04
		Fig. No: 97	Page 1 of 1

Geotechnical Services		Km 1691.7 to 1717.3 Alaska Highway #1		TEST PIT NO: 30143	
Glacier Drilling		UTM ZONE: - N6775245 E632619		PROJECT NO: 8002-318	
Hitachi 450EX Tracked Hoe				ELEVATION:	
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		ELEVATION(m)		
									20	40		60	80
				PLASTIC	M.C.	LIQUID							
				20	40	60	80		20	40	60	80	
0.0	SURFICIAL ORGANICS												
0.3m	SANDY GRAVEL -damp, loose, brown -organics noted to 0.5m -boulders to 300mm 5-15% by Vol.		W25					GW					
2.0	GRAVELLY SAND, trace silt -Frozen, visible ice crystals to 5mm thickness -brown		W26					SW-SM					
3.3m	SANDY GRAVEL -moist, medium dense, brown		W27					GW					
4.0m	SANDY GRAVEL, trace silt -moist, medium dense, brown												
5.0m	End Of Hole @ 5.0m		W28					GP-GM					

J. R. Paine & Associates Ltd. Whitehorse, Yukon		LOGGED BY: RW	COMPLETION DEPTH: 5 m
		REVIEWED BY: -	COMPLETE: 08/02/04
		Fig. No: 89	Page 1 of 1

Geotechnical Services		Km 1691.7 to 1717.3 Alaska Highway #1		TEST PIT NO: 30144	
Glacier Drilling		UTM ZONE: - N6775254 E632303		PROJECT NO: 8002-318	
Hitachi 450EX Tracked Hoe				ELEVATION:	
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		ELEVATION(m)
				PLASTIC	M.C.	LIQUID			PERCENT SAND	PERCENT GRAVEL	
0.0	SURFICAL ORGANICS										0.0
0.4	SANDY GRAVEL, trace to some silt -damp, loose, brown										
1.4	SANDY GRAVEL, trace silt -saturated, medium dense, brown		W29				GP-GM				
1.8	SANDY GRAVEL/GRAVELLY SAND -Frozen -brown										
3.0			W30				GW				
4.0			W31				GW				
5.0	End Of Hole @ 5.0m		W32				SW				
6.0											-6.0

J. R. Paine & Associates Ltd. Whitehorse, Yukon		LOGGED BY: RW	COMPLETION DEPTH: 5 m
		REVIEWED BY: -	COMPLETE: 08/02/04
		Fig. No: 88	Page 1 of 1

Geotechnical Services		Km 1691.7 to 1717.3 Alaska Highway #1		TEST PIT NO: 30145	
Glacier Drilling		UTM ZONE: - N6775287 E632345		PROJECT NO: 8002-318	
Hitachi 450EX Tracked Hoe				ELEVATION:	
SAMPLE TYPE ☐ RETURN ☒ S.P.T. ☒ AUGER ☐ BULK ☐ TUBE ☐ CORE					

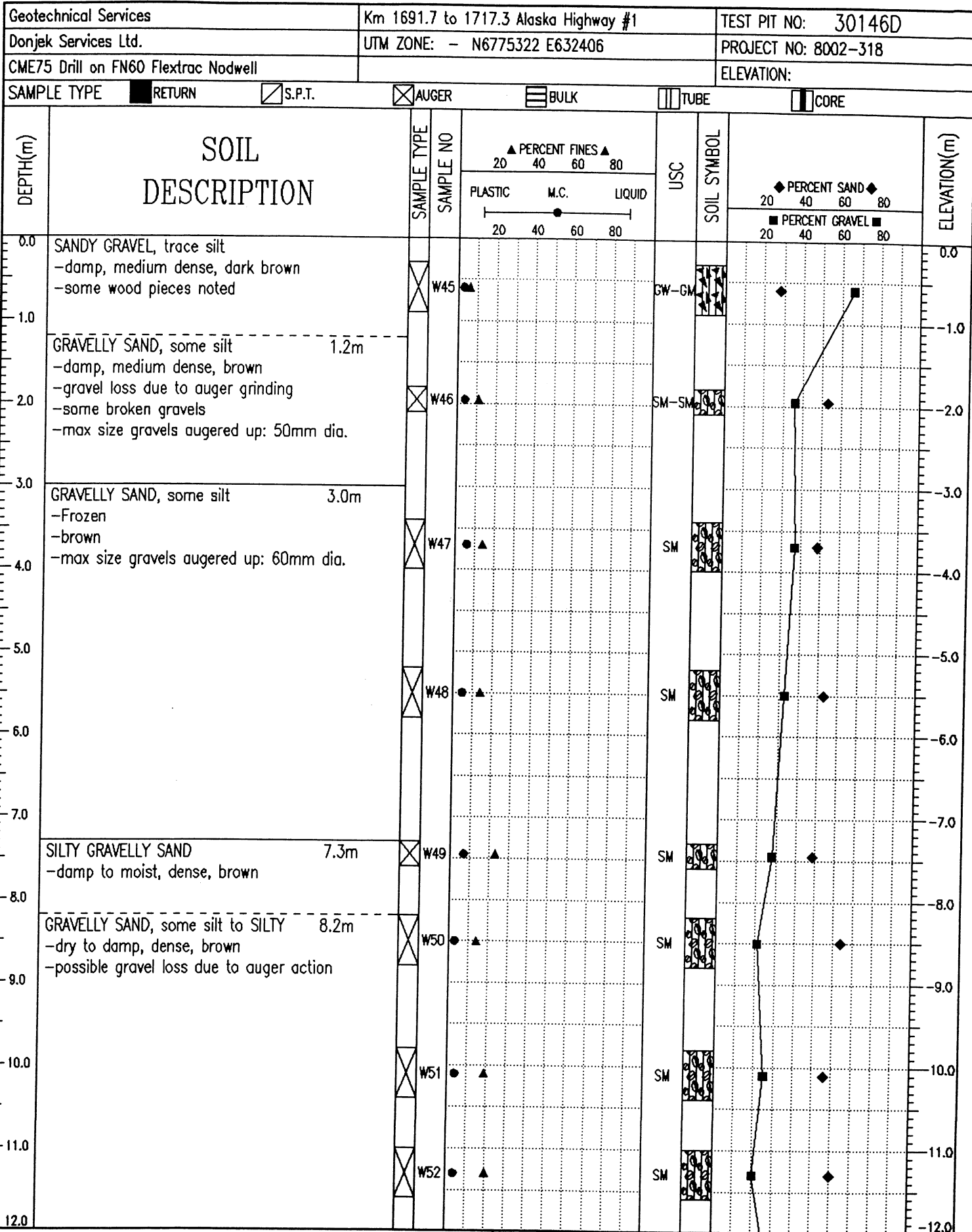
DEPTH(m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND / GRAVEL		ELEVATION(m)
									PERCENT SAND	PERCENT GRAVEL	
				PLASTIC	M.C.	LIQUID					
0.0	SURFICIAL ORGANICS			20	40	60	80				0.0
0.5	GRAVELLY SAND, some silt -damp, loose, brown -organics noted to 0.8m depth										
1.0	SANDY GRAVEL -damp, medium dense, brown -cobbles to 200mm 0-10% by Vol.		W33					GW			-1.0
2.0	SANDY GRAVEL, trace to some silt -Frozen -brown		W34					GP-GM			-2.0
3.0			W35					GM			-3.0
4.0											-4.0
5.0	End Of Hole @ 4.8m		W36					GW-GM			-5.0
6.0											-6.0

J. R. Paine & Associates Ltd. Whitehorse, Yukon		LOGGED BY: RW	COMPLETION DEPTH: 4.8 m
		REVIEWED BY: -	COMPLETE: 08/02/04
		Fig. No: 87	Page 1 of 1

Geotechnical Services		Km 1691.7 to 1717.3 Alaska Highway #1		TEST PIT NO: 30146	
Glacier Drilling		UTM ZONE: - N6775326 E632400		PROJECT NO: 8002-318	
Hitachi 450EX Tracked Hoe				ELEVATION:	
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		ELEVATION(m)
				PLASTIC	M.C.	LIQUID			PERCENT SAND	PERCENT GRAVEL	
0.0	SURFICIAL ORGANICS										0.0
0.4	SANDY GRAVEL -damp, loose, brown -organics noted to 0.8m depth -boulders to 300mm 5-10% by Vol.										
1.0	AS ABOVE -medium dense										
			W37				GW				
			W38				GW				
3.2	SANDY GRAVEL -Frozen -brown -cobbles to 200mm 5-10% by Vol.										
			W39				GW				
			W40				GW				
4.8	End Of Hole @ 4.8m										

J. R. Paine & Associates Ltd. Whitehorse, Yukon		LOGGED BY: RW	COMPLETION DEPTH: 4.8 m
		REVIEWED BY: -	COMPLETE: 08/02/04
		Fig. No: 86	Page 1 of 1



J. R. Paine & Associates Ltd.
Whitehorse, Yukon

LOGGED BY: RW
REVIEWED BY: -
Fig. No: 96

COMPLETION DEPTH: 17.4 m
COMPLETE: 11/01/04

Geotechnical Services		Km 1691.7 to 1717.3 Alaska Highway #1		TEST PIT NO: 30146D	
Donjek Services Ltd.		UTM ZONE: - N6775322 E632406		PROJECT NO: 8002-318	
CME75 Drill on FN60 Flextrac Nodwell				ELEVATION:	
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	ELEVATION(m)
12.0	SILTY GRAVELLY SAND 12.2m -dry to damp, dense, brown -difficult to obtain sample due to reverse auger action on withdrawal	X	W53	● ▲	SM		◆ ■	-12.0
13.0			W54	● ▲			SM	◆ ■
14.0								-14.0
15.0								-15.0
16.0								-16.0
17.0								-17.0
18.0	17.4m End Of Hole @ 17.4m - Augers Binding -no sample beyond 14.6m due to reverse auger from 17.4m to 14.6m							-18.0
19.0								-19.0
20.0								-20.0
21.0								-21.0
22.0								-22.0
23.0								-23.0
24.0								-24.0

J. R. Paine & Associates Ltd. Whitehorse, Yukon		LOGGED BY: RW	COMPLETION DEPTH: 17.4 m
		REVIEWED BY: -	COMPLETE: 11/01/04
		Fig. No: 96	Page 2 of 2

Geotechnical Services		Km 1691.7 to 1717.3 Alaska Highway #1		TEST PIT NO: 30147	
Glacier Drilling		UTM ZONE: - N6775365 E632444		PROJECT NO: 8002-318	
Hitachi 450EX Tracked Hoe				ELEVATION:	
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		ELEVATION(m)
				PLASTIC	M.C.	LIQUID			PERCENT SAND	PERCENT GRAVEL	
0.0	SURFICAL ORGANICS										0.0
0.4	GRAVELLY SAND -damp, loose, brown										
1.0	SANDY GRAVEL -damp, medium dense, brown -boulders to 300mm 0-10% by Vol.										
3.5	SANDY GRAVEL, trace silt -Frozen -brown -boulders to 300mm 0-10% by Vol.										
4.8	End Of Hole @ 4.8m										

J. R. Paine & Associates Ltd. Whitehorse, Yukon		LOGGED BY: RW REVIEWED BY: - Fig. No: 85	
		COMPLETION DEPTH: 4.8 m COMPLETE: 08/02/04	

Km 1713.0 LHS Alaska Highway #1
Pit Ident. 115 G-12
(Williscroft Creek)

July 2004
Book # N/A

Pit Run Sample Results for 30137 to 30147



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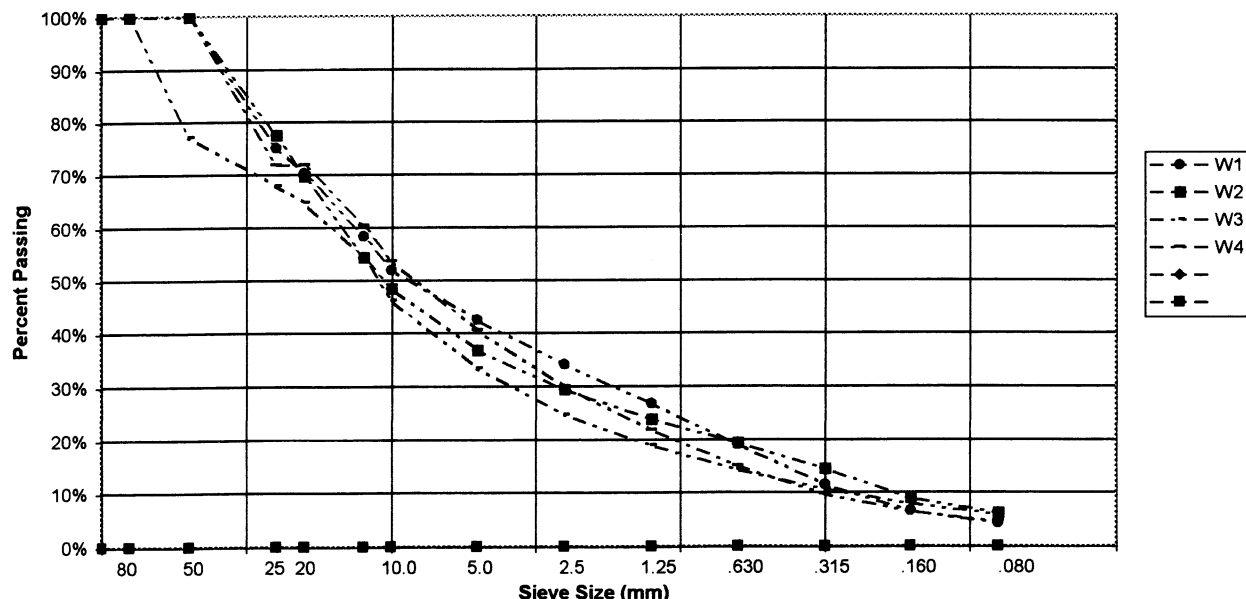
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CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: Hitachi 450EX
HOLE LOCATION: 632523-6775028
LOGGED BY: RW

HOLE No.: 30137

DATE COMP: 07/31/2004

FIELD NO:	W1	W2	W3	W4		
LAB NO:	W1	W2	W3	W4		
DEPTH:	0.3-0.9	2.0-2.4	3.2-3.5	4.2-4.4		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	77%	100%		
25.0	75%	78%	68%	72%		
20.0	70%	70%	65%	72%		
12.5	58%	54%	54%	60%		
10.0	52%	48%	46%	54%		
5.0	43%	37%	33%	41%		
2.5	34%	30%	25%	30%		
1.25	27%	24%	19%	22%		
0.630	19%	19%	14%	15%		
0.315	12%	15%	11%	10%		
0.160	7%	9%	8%	7%		
0.080	4%	6%	6%	5%		
M.C.(%)	3%	5%	5%	7%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	57	63	67	59		
% SAND:	38	31	27	36		
% FINES:	4	6	6	5		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	WELL-GRADED GRAVEL WITH SAND (GW)		

Grain Size Analysis (Percent Passing vs Grain Size)





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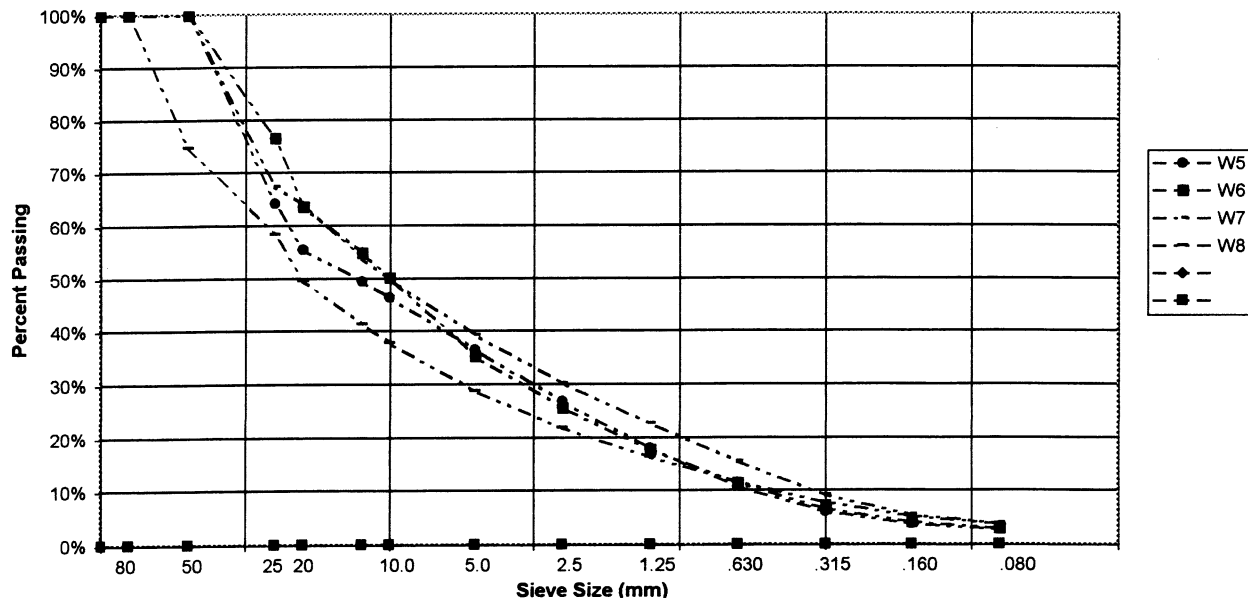
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: Hitachi 450EX
HOLE LOCATION: 632578-6775066
LOGGED BY: RW

HOLE No.: 30138

DATE COMP: 08/01/2004

FIELD NO:	W5	W6	W7	W8		
LAB NO:	W5	W6	W7	W8		
DEPTH:	1.5-2.0	2.5-3.0	3.8-4.2	4.8-5.3		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	75%		
25.0	64%	77%	67%	58%		
20.0	56%	64%	64%	50%		
12.5	49%	55%	54%	41%		
10.0	46%	50%	50%	38%		
5.0	37%	35%	39%	29%		
2.5	27%	26%	30%	22%		
1.25	18%	18%	23%	16%		
0.630	11%	12%	15%	12%		
0.315	6%	7%	9%	8%		
0.160	4%	4%	6%	5%		
0.080	3%	3%	4%	4%		
M.C.(%)	3%	4%	4%	2%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	63	65	61	71		
% SAND:	34	32	35	25		
% FINES:	3	3	4	4		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	WELL-GRADED GRAVEL WITH SAND (GW)	POORLY GRADED GRAVEL WITH SAND (GP)	WELL-GRADED GRAVEL WITH SAND (GW)		

Grain Size Analysis (Percent Passing vs Grain Size)





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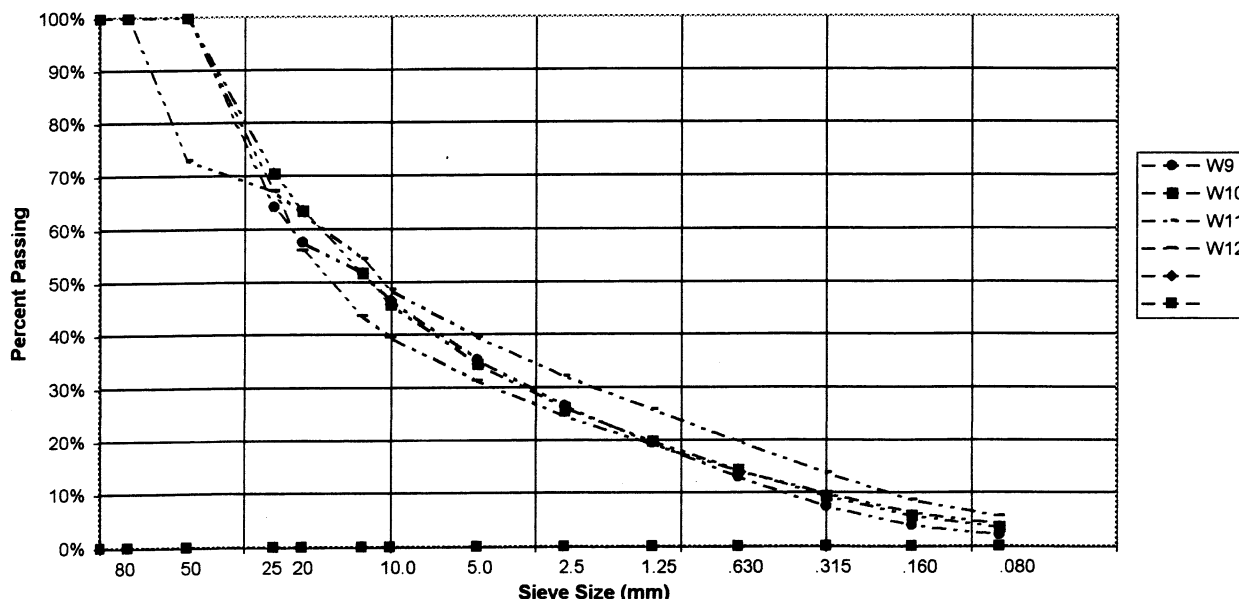
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CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: Hitachi 450EX
HOLE LOCATION: 632665-6775122
LOGGED BY: RW

HOLE No.: 30139

DATE COMP: 08/01/2004

FIELD NO:	W9	W10	W11	W12		
LAB NO:	W9	W10	W11	W12		
DEPTH:	1.0-1.5	2.0-2.5	3.5-4.0	5.0-5.5		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	73%	100%		
25.0	64%	70%	67%	67%		
20.0	58%	64%	63%	56%		
12.5	52%	52%	54%	44%		
10.0	47%	46%	49%	39%		
5.0	35%	34%	40%	31%		
2.5	27%	26%	32%	25%		
1.25	19%	20%	26%	19%		
0.630	13%	14%	20%	14%		
0.315	7%	9%	14%	10%		
0.160	4%	6%	9%	6%		
0.080	2%	4%	6%	4%		
M.C.(%)	1%	2%	4%	2%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	65	66	60	69		
% SAND:	33	31	34	27		
% FINES:	2	4	6	4		
CLASSIFICATION	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	WELL-GRADED GRAVEL WITH SAND (GW)		

Grain Size Analysis (Percent Passing vs Grain Size)





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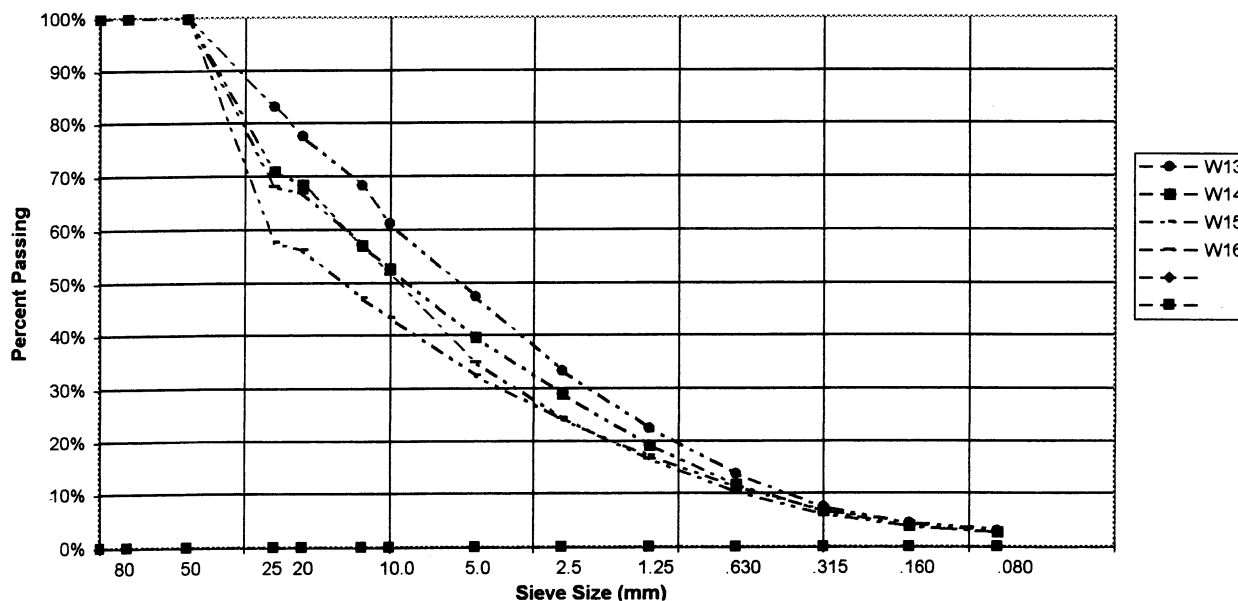
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CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: Hitachi 450EX
HOLE LOCATION: 632440-6775097
LOGGED BY: RW

HOLE No.: 30140

DATE COMP: 08/01/2004

FIELD NO:	W13	W14	W15	W16		
LAB NO:	W13	W14	W15	W16		
DEPTH:	1.0-1.5	2.0-2.5	3.2-3.6	4.8-5.1		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	83%	71%	58%	68%		
20.0	78%	68%	56%	67%		
12.5	68%	57%	47%	57%		
10.0	61%	53%	43%	52%		
5.0	47%	40%	33%	35%		
2.5	33%	29%	24%	24%		
1.25	23%	19%	17%	17%		
0.630	14%	12%	11%	10%		
0.315	7%	7%	7%	6%		
0.160	4%	4%	5%	4%		
0.080	3%	3%	3%	3%		
M.C.(%)	2%	2%	3%	3%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	53	60	67	65		
% SAND:	44	37	29	32		
% FINES:	3	3	3	3		
CLASSIFICATION	WELL-GRADED GRAVEL WITH SAND (GW)	POORLY GRADED GRAVEL WITH SAND (GP)	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED GRAVEL WITH SAND (GW)		

Grain Size Analysis (Percent Passing vs Grain Size)





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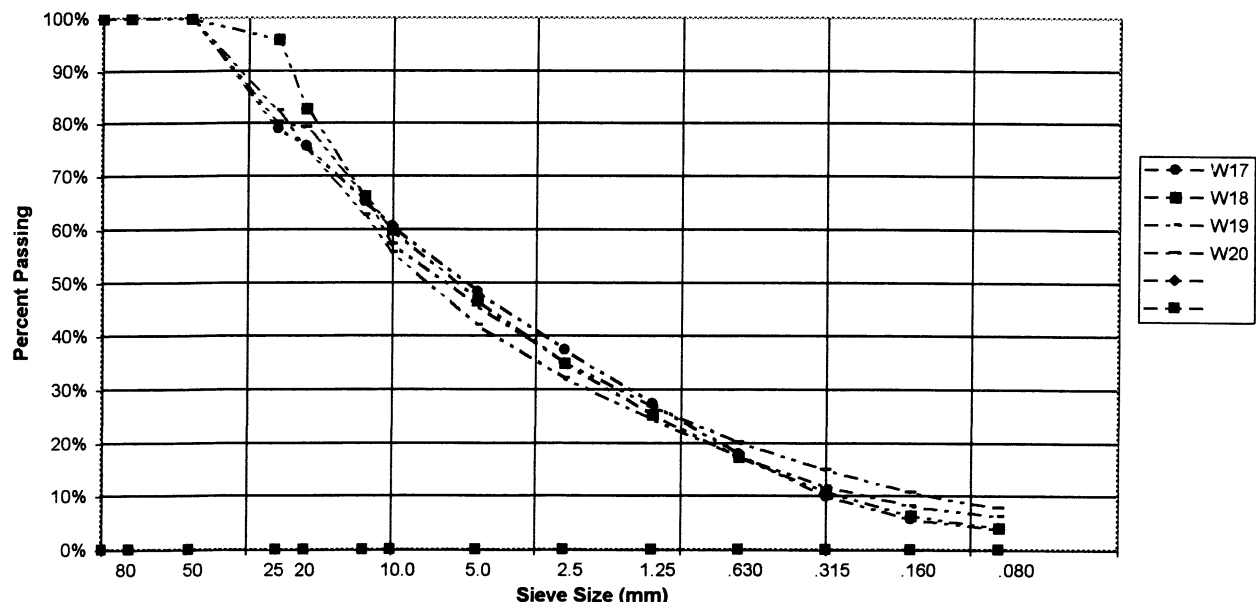
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: Hitachi 450EX
HOLE LOCATION: 632495-6775140
LOGGED BY: RW

HOLE No.: 30141

DATE COMP: 08/01/2004

FIELD NO:	W17	W18	W19	W20		
LAB NO:	W17	W18	W19	W20		
DEPTH:	0.5-1.0	1.8-2.3	3.2-3.6	4.7-5.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	79%	96%	82%	80%		
20.0	76%	83%	75%	79%		
12.5	65%	66%	63%	66%		
10.0	61%	60%	56%	57%		
5.0	48%	47%	42%	46%		
2.5	38%	35%	32%	35%		
1.25	27%	25%	25%	27%		
0.630	18%	17%	18%	20%		
0.315	10%	11%	12%	15%		
0.160	6%	6%	8%	11%		
0.080	4%	4%	6%	8%		
M.C.(%)	2%	3%	6%	7%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	52	53	58	54		
% SAND:	44	43	36	38		
% FINES:	4	4	6	8		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)		

Grain Size Analysis (Percent Passing vs Grain Size)





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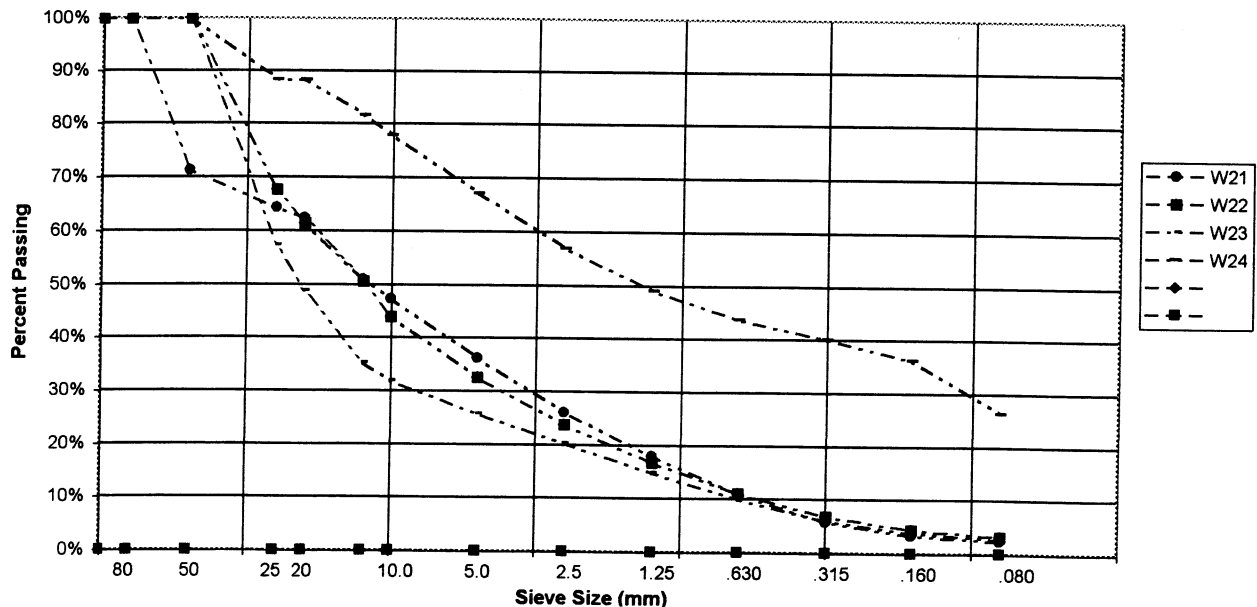
PROJECT NUMBER: 8002-318
 CLIENT: YTG, Transportation & Engineering
 PROJECT NAME: Geotechnical Services
 PROJECT LOCATION: Km 1691.7-1717.3
 DRILL UNIT: Hitachi 450EX
 HOLE LOCATION: 632545-6775194
 LOGGED BY: RW

HOLE No.: 30142

DATE COMP: 08/01/2004

FIELD NO:	W21	W22	W23	W24		
LAB NO:	W21	W22	W23	W24		
DEPTH:	1.0-1.5	2.5-3.0	3.2-3.8	4.6-5.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
60.0	71%	100%	100%	100%		
25.0	64%	68%	57%	88%		
20.0	62%	61%	49%	88%		
12.5	51%	51%	35%	82%		
10.0	47%	44%	32%	78%		
5.0	36%	33%	26%	67%		
2.5	26%	24%	20%	57%		
1.25	18%	17%	15%	49%		
0.630	11%	11%	10%	44%		
0.315	6%	7%	6%	40%		
0.160	3%	4%	4%	36%		
0.080	2%	3%	3%	26%		
M.C.(%)	5%	5%	3%	13%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	64	67	74	33		
% SAND:	34	29	23	41		
% FINES:	2	3	3	26		
CLASSIFICATION	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED GRAVEL WITH SAND (GW)	POORLY GRADED GRAVEL WITH SAND (GP)	SILTY SAND WITH GRAVEL (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)





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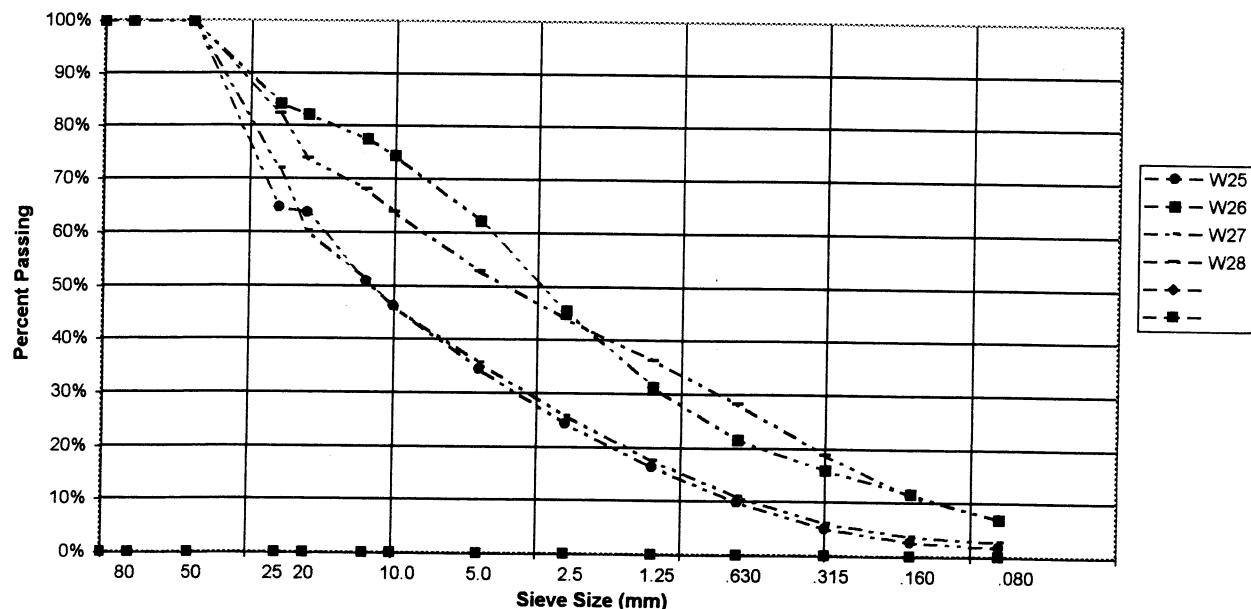
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: Hitachi 450EX
HOLE LOCATION: 632619-6775245
LOGGED BY: RW

HOLE No.: 30143

DATE COMP: 08/01/2004

FIELD NO:	W25	W26	W27	W28		
LAB NO:	W25	W26	W27	W28		
DEPTH:	0.5-1.0	2.2-2.7	3.6-3.9	4.6-5.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	65%	84%	72%	82%		
20.0	64%	82%	60%	74%		
12.5	51%	78%	51%	68%		
10.0	46%	74%	46%	64%		
5.0	35%	62%	36%	53%		
2.5	24%	46%	26%	44%		
1.25	16%	31%	18%	36%		
0.630	10%	22%	11%	28%		
0.315	5%	16%	6%	19%		
0.160	3%	12%	4%	11%		
0.080	2%	7%	3%	7%		
M.C.(%)	2%	7%	3%	4%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	65	38	64	47		
% SAND:	33	55	33	46		
% FINES:	2	7	3	7		
CLASSIFICATION	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	WELL-GRADED GRAVEL WITH SAND (GW)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)		

Grain Size Analysis (Percent Passing vs Grain Size)





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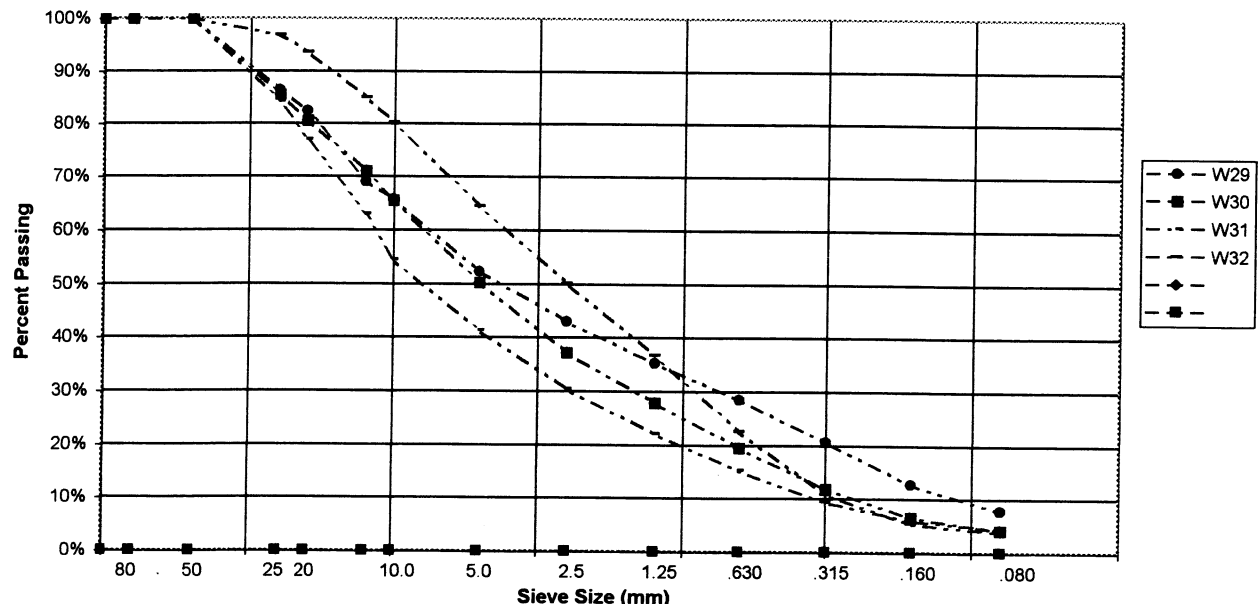
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: Hitachi 450EX
HOLE LOCATION: 632303-6775254
LOGGED BY: RW

HOLE No.: 30144

DATE COMP: 08/02/2004

FIELD NO:	W29	W30	W31	W32		
LAB NO:	W29	W30	W31	W32		
DEPTH:	1.4-1.8	2.5-2.8	3.6-3.9	4.8-5.0		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	86%	86%	84%	97%		
20.0	82%	81%	77%	94%		
12.5	69%	71%	63%	85%		
10.0	66%	66%	55%	80%		
5.0	52%	50%	41%	64%		
2.5	43%	37%	30%	50%		
1.25	35%	28%	22%	37%		
0.630	29%	20%	15%	23%		
0.315	21%	12%	9%	11%		
0.160	13%	7%	6%	5%		
0.080	8%	4%	5%	4%		
M.C.(%)	9%	7%	5%	10%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	48	50	59	36		
% SAND:	45	46	37	61		
% FINES:	8	4	5	4		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED SAND WITH GRAVEL (SW)		

Grain Size Analysis (Percent Passing vs Grain Size)





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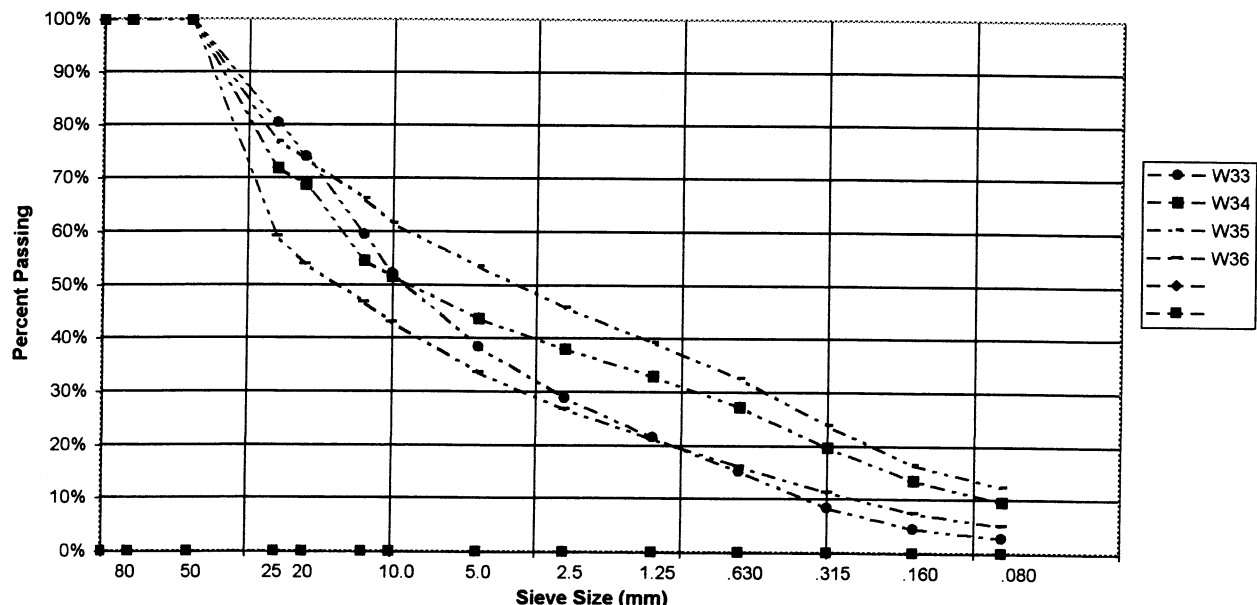
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: Hitachi 450EX
HOLE LOCATION: 632345-6775287
LOGGED BY: RW

HOLE No.: 30145

DATE COMP: 08/02/2004

FIELD NO:	W33	W34	W35	W36		
LAB NO:	W33	W34	W35	W36		
DEPTH:	1.0-1.4	2.0-2.3	3.0-3.3	4.6-4.8		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	81%	72%	77%	59%		
20.0	74%	69%	74%	54%		
12.5	59%	55%	66%	47%		
10.0	52%	52%	62%	43%		
5.0	38%	44%	54%	34%		
2.5	29%	38%	46%	27%		
1.25	22%	33%	39%	21%		
0.630	15%	27%	33%	16%		
0.315	8%	20%	24%	11%		
0.160	5%	14%	17%	8%		
0.080	3%	10%	12%	5%		
M.C.(%)	3%	8%	15%	5%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	62	56	46	66		
% SAND:	36	34	41	28		
% FINES:	3	10	12	5		
CLASSIFICATION	WELL-GRADED GRAVEL WITH SAND (GW)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	SILTY GRAVEL WITH SAND (GM)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)		

Grain Size Analysis (Percent Passing vs Grain Size)





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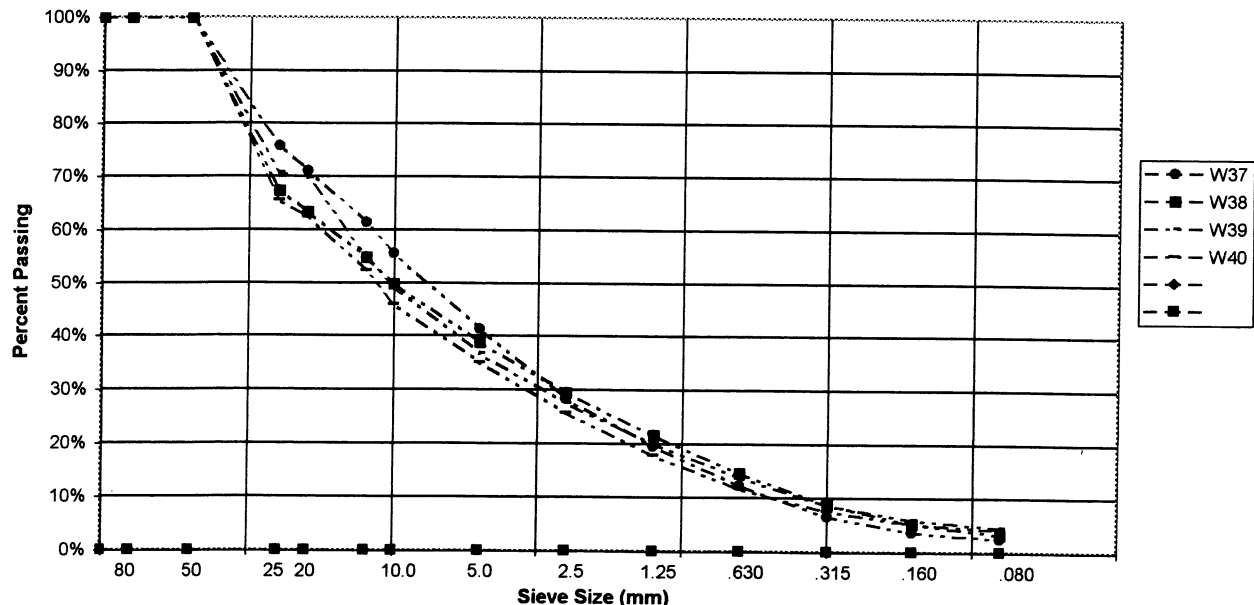
PROJECT NUMBER: 8002-318
 CLIENT: YTG, Transportation & Engineering
 PROJECT NAME: Geotechnical Services
 PROJECT LOCATION: Km 1691.7-1717.3
 DRILL UNIT: Hitachi 450EX
 HOLE LOCATION: 632400-6775326
 LOGGED BY: RW

HOLE No.: 30146

DATE COMP: 08/02/2004

FIELD NO:	W37	W38	W39	W40		
LAB NO:	W37	W38	W39	W40		
DEPTH:	1.0-1.5	2.6-2.9	3.5-3.8	4.5-4.8		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
60.0	100%	100%	100%	100%		
25.0	76%	67%	71%	66%		
20.0	71%	63%	70%	63%		
12.5	61%	55%	55%	52%		
10.0	56%	50%	49%	46%		
5.0	41%	39%	37%	35%		
2.5	28%	30%	28%	26%		
1.25	20%	22%	20%	18%		
0.630	12%	15%	14%	12%		
0.315	7%	9%	9%	8%		
0.160	4%	5%	6%	5%		
0.080	3%	3%	5%	4%		
M.C.(%)	3%	3%	5%	4%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	59	61	63	65		
% SAND:	39	35	32	31		
% FINES:	3	3	5	4		
CLASSIFICATION	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED GRAVEL WITH SAND (GW)		

Grain Size Analysis (Percent Passing vs Grain Size)





HOGGAN ENGINEERING & TESTING (1980) LTD.

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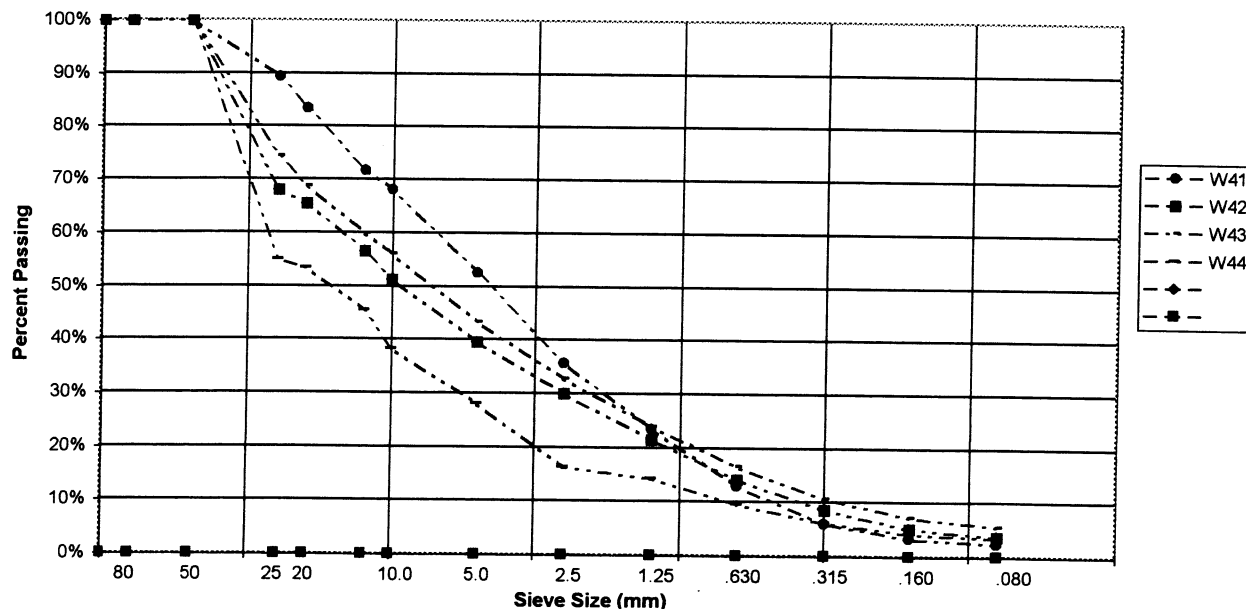
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: Hitachi 450EX
HOLE LOCATION: 632444-6775365
LOGGED BY: RW

HOLE No.: 30147

DATE COMP: 08/02/2004

FIELD NO:	W41	W42	W43	W44		
LAB NO:	W41	W42	W43	W44		
DEPTH:	0.6-1.1	2.3-2.8	3.7-4.1	4.6-4.8		
TYPE:	BULK	BULK	BULK	BULK		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
60.0	100%	100%	100%	100%		
25.0	89%	68%	74%	55%		
20.0	83%	65%	69%	53%		
12.5	72%	57%	60%	45%		
10.0	68%	51%	56%	38%		
5.0	53%	40%	43%	28%		
2.5	36%	30%	33%	16%		
1.25	23%	22%	24%	14%		
0.630	13%	14%	17%	10%		
0.315	6%	9%	11%	6%		
0.160	3%	5%	7%	4%		
0.080	2%	4%	6%	4%		
M.C.(%)	5%	3%	6%	3%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	47	60	57	72		
% SAND:	50	36	38	25		
% FINES:	2	4	6	4		
CLASSIFICATION	WELL-GRADED SAND WITH GRAVEL (SW)	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	WELL-GRADED GRAVEL WITH SAND (GW)		

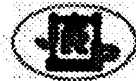
Grain Size Analysis (Percent Passing vs Grain Size)





HOGGAN ENGINEERING & TESTING (1980) LTD.

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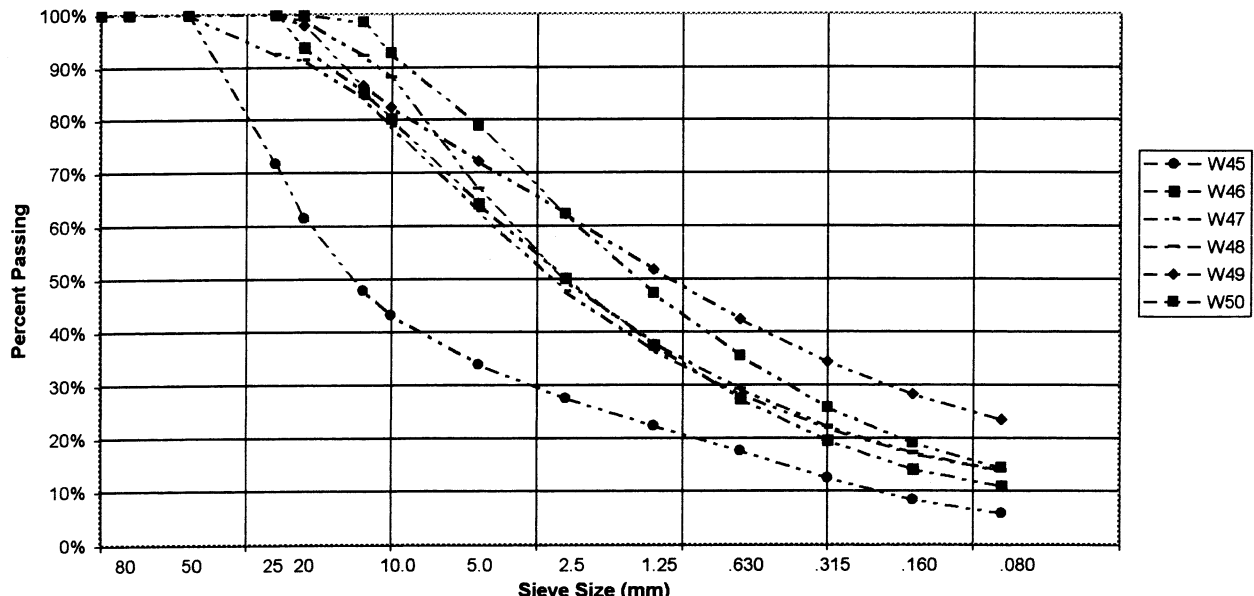
PROJECT NUMBER: 8002-318
 CLIENT: YTG, Transportation & Engineering
 PROJECT NAME: Geotechnical Services
 PROJECT LOCATION: Km 1691.7-1717.3
 DRILL UNIT: CME75
 HOLE LOCATION: 632406-6775322
 LOGGED BY: RW

HOLE No.: 30146Drill

DATE COMP: 11/01/2004

FIELD NO:	W45	W46	W47	W48	W49	W50
LAB NO:	W45	W46	W47	W48	W49	W50
DEPTH:	0.3-0.9	1.8-2.1	3.4-4.0	5.2-5.8	7.3-7.6	8.2-8.8
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	72%	100%	92%	100%	100%	100%
20.0	62%	94%	91%	99%	98%	100%
12.5	48%	85%	84%	92%	87%	99%
10.0	43%	80%	79%	88%	82%	93%
5.0	34%	64%	63%	67%	72%	79%
2.5	28%	50%	48%	50%	62%	62%
1.25	22%	38%	37%	38%	52%	47%
0.630	18%	27%	28%	29%	42%	36%
0.315	13%	20%	22%	22%	34%	26%
0.160	8%	14%	17%	17%	28%	19%
0.080	6%	11%	14%	14%	23%	14%
M.C.(%)	3%	4%	6%	5%	7%	3%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	66	36	37	33	28	21
% SAND:	28	53	49	53	49	64
% FINES:	6	11	14	14	23	14
CLASSIFICATION	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)

Grain Size Analysis (Percent Passing vs Grain Size)





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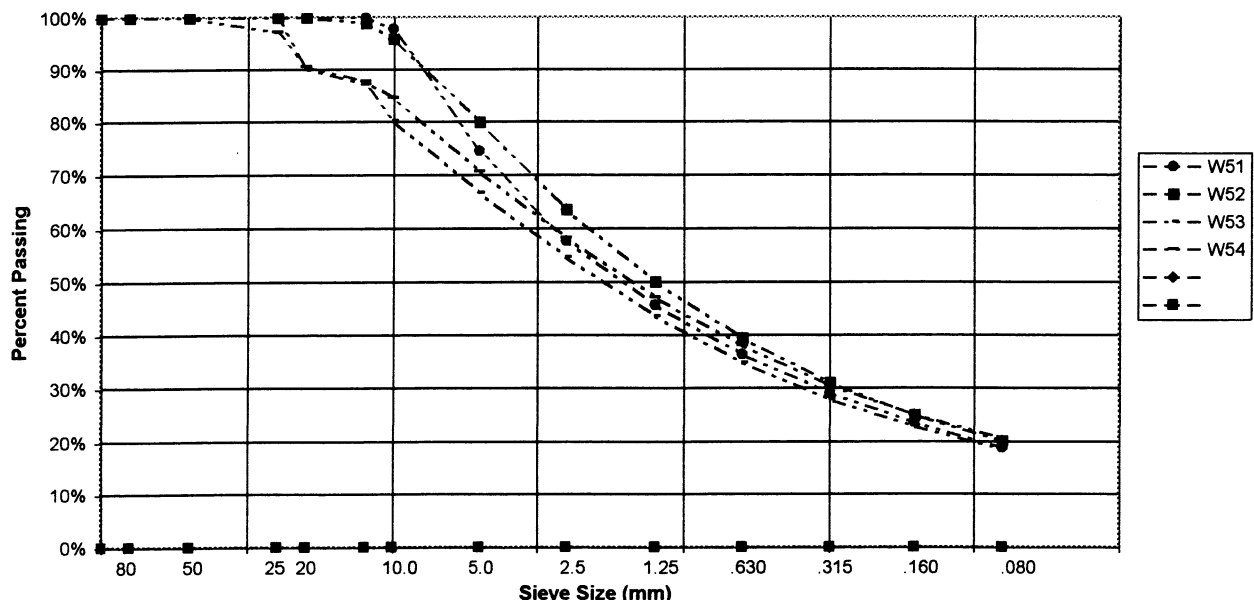
PROJECT NUMBER: 8002-318
 CLIENT: YTG, Transportation & Engineering
 PROJECT NAME: Geotechnical Services
 PROJECT LOCATION: Km 1691.7-1717.3
 DRILL UNIT: CME75
 HOLE LOCATION: 632406-6775322
 LOGGED BY: RW

HOLE No.: 30146Drill B

DATE COMP: 11/01/2004

FIELD NO:	W51	W52	W53	W54		
LAB NO:	W51	W52	W53	W54		
DEPTH:	9.8-10.4	11.0-11.6	12.8-13.4	14.0-14.6		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	100%	100%	100%	97%		
20.0	100%	100%	90%	91%		
12.5	100%	99%	87%	88%		
10.0	98%	96%	80%	85%		
5.0	75%	80%	67%	71%		
2.5	58%	64%	55%	58%		
1.25	46%	50%	44%	47%		
0.630	36%	40%	35%	38%		
0.315	29%	31%	28%	31%		
0.160	24%	25%	23%	25%		
0.080	19%	20%	19%	21%		
M.C.(%)	4%	4%	4%	4%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	25	20	33	29		
% SAND:	56	60	48	50		
% FINES:	19	20	19	21		
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)





HOGGAN ENGINEERING & TESTING (1980) LTD.

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PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 632558-6775193
LOGGED BY: RW

HOLE No.: 30142Drill

DATE COMP: 11/01/2004

FIELD NO:	W55	W56	W57	W58		
LAB NO:	W55	W56	W57	W58		
DEPTH:	0.5-1.0	1.8-2.1	3.4-4.0	4.9-5.5		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	91%	85%	100%	100%		
20.0	83%	72%	98%	100%		
12.5	73%	65%	93%	98%		
10.0	65%	58%	87%	94%		
5.0	48%	44%	70%	81%		
2.5	35%	33%	55%	67%		
1.25	26%	24%	43%	55%		
0.630	18%	17%	34%	45%		
0.315	12%	12%	27%	37%		
0.160	8%	9%	22%	30%		
0.080	6%	6%	18%	25%		
M.C.(%)	2%	2%	7%	7%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX:	0.0	0.0	0.0	0.0		
% GRAVEL:	52	56	30	19		
% SAND:	41	38	52	56		
% FINES:	6	6	18	25		
CLASSIFICATION	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)

