



PROJECT <u>11-1191-0007</u>		RECORD OF DCPT No H2-DC17		1 OF 2	METRIC
G.W.P. <u>156-98-00</u>	LOCATION <u>N 5136315.3; E 274016.6</u>	ORIGINATED BY <u>AC</u>			
DIST <u> </u> HWY <u>17</u>	BOREHOLE TYPE <u>Dynamic Cone Penetration Test</u>	COMPILED BY <u>EC</u>			
DATUM <u>Geodetic</u>	DATE <u>March 22, 2012</u>	CHECKED BY <u>SEMP</u>			

[illegible]

Continued Next Page

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:

[illegible]

Continued Next Page

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

CSUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007		RECORD OF DCPT No H2-DC15		1 OF 2 METRIC	
G.W.P. 156-98-00		LOCATION N 5136300.8; E 273976.8		ORIGINATED BY AC	
DIST HWY 17		BOREHOLE TYPE Dynamic Cone Penetration Test		COMPILED BY EC	
DATUM Geodetic		DATE March 30, 2012		CHECKED BY SEMP	

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT	PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT	UNIT WEIGHT	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE						
239.7 0.0	GROUND SURFACE						<div><div>20406080100</div><div>20406080100</div><div>20406080100</div></div>	<div><div>204060</div><div>204060</div><div>204060</div></div>	<div><div>204060</div><div>204060</div><div>204060</div></div>	<div><div>GR</div><div>SA</div><div>SI</div><div>CL</div></div>
239										
238										
237										
236										
235										
234										
233										
232										
231										
230										
229										
228										
227										
226										
225										

Continued Next Page

+ 3, x 3: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

SUD-WTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007

G.W.P. 156-98-00

DIST

DATUM Geodetic

LOCATION N 5136273.5; E 273970.3

BOREHOLE TYPE Dynamic Cone Penetration Test

DATE April 18, 2012

1 OF 2

METRIC

RECORD OF DCPT No H2-DC14

ORIGINATED BY EHS

COMPILED BY EC

CHECKED BY SEMP

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT		PLASTIC NATURAL LIQUID LIMIT MOISTURE CONTENT			UNIT WEIGHT	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20 40 60 80 100	20 40 60	Wp	W		
239.6 0.0	GROUND SURFACE												
						239							
						238							
						237							
						236							
						235							
						234							
						233							
						232							
						231							
						230							
						229							
						228							
						227							
						226							
						225							

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:

Continued Next Page

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

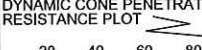
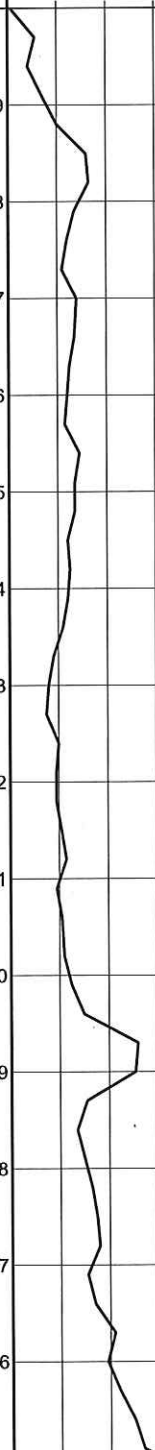


PROJECT 11-1191-0007		RECORD OF DCPT No H2-DC11		1 OF 1 METRIC	
G.W.P. 156-98-00		LOCATION N 5136270.9; E 273900.5		ORIGINATED BY AC	
DIST HWY 17		BOREHOLE TYPE Dynamic Cone Penetration Test		COMPILED BY EC	
DATUM Geodetic		DATE April 10, 2012		CHECKED BY SEMP	

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT		PLASTIC NATURAL LIQUID LIMIT MOISTURE CONTENT			UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			20 40 60 80 100	20 40 60 80 100	W _p W W _L	WATER CONTENT (%)	GR SA SI CL		
239.6 0.0	GROUND SURFACE													
239														
238														
237														
236														
235														
234														
234.0 5.6	END OF DCPT REFUSAL TO FURTHER PENETRATION (HAMMER BOUNCING)													

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT  SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × REMOULDED	PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT W _p W W _L WATER CONTENT (%)	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES						
240.0 0.0	GROUND SURFACE										
											

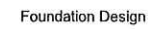
Continued Next Page

+ 3, × 3: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:

Continued Next Page

+ 3, × 3: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

Continued Next Page

+ 3, X 3: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



PROJECT 11-1191-0007

G.W.P. 156-98-00

DIST

DATUM Geodetic

LOCATION N 5136360.0; E 274026.6

BOREHOLE TYPE Dynamic Cone Penetration Test

DATE March 13, 2012

1 OF 2

METRIC

ORIGINATED BY EHS

COMPILED BY EC

CHECKED BY SEMP

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT		PLASTIC NATURAL LIQUID LIMIT MOISTURE CONTENT LIMIT			UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa		WATER CONTENT (%)				
239.9 0.0	GROUND SURFACE						○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × REMOULDED	20 40 60 80 100	20 40 60	W _P W W _L	kN/m ³	GR SA SI CL		

SUP-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:

Continued Next Page

+ 3, × 3: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



PROJECT 11-1191-0007		RECORD OF DCPT No H2-DC6		1 OF 2 METRIC	
G.W.P. 156-98-00		LOCATION N 5136329.7; E 274011.2		ORIGINATED BY AC	
DIST HWY 17		BOREHOLE TYPE Dynamic Cone Penetration Test		COMPILED BY EC	
DATUM Geodetic		DATE March 22, 2012		CHECKED BY SEMP	

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × REMOULDED	PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT w _p w w _L WATER CONTENT (%)	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE						
239.8 0.0	GROUND SURFACE									
						239				
						238				
						237				
						236				
						235				
						234				
						233				
						232				
						231				
						230				
						229				
						228				
						227				
						226				
						225				

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/02/14 DATA INPUT:

Continued Next Page

+ 3, × 3: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

Continued Next Page

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

Continued Next Page

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



PROJECT 11-1191-0007		RECORD OF DCPT No H2-DC3		1 OF 2 METRIC	
G.W.P. 156-98-00		LOCATION N 5136322.4; E 273930.8		ORIGINATED BY AC	
DIST _____ HWY 17		BOREHOLE TYPE Dynamic Cone Penetration Test		COMPILED BY EC	
DATUM Geodetic		DATE April 3, 2012		CHECKED BY SEMP	

SOIL PROFILE				SAMPLES		GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT		PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa							WATER CONTENT (%)
								○ UNCONFINED	+ FIELD VANE						
239.8 0.0	GROUND SURFACE							20 40 60 80 100	20 40 60					GR SA SI CL	

Continued Next Page

+ 3, × 3: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007

RECORD OF DCPT No H2-DC1

1 OF 1 METRIC

G.W.P. 156-98-00

LOCATION N 5136305.5; E 273887.0

ORIGINATED BY AC

DIST HWY 17

BOREHOLE TYPE Dynamic Cone Penetration Test

COMPILED BY EC

DATUM Geodetic

DATE April 10, 2012

CHECKED BY SEMP

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × REMOULDED	PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE								
239.6 0.0	GROUND SURFACE											
237.4 2.2	END OF DCPT REFUSAL TO FURTHER PENETRATION (HAMMER BOUNCING)											

+ 3, × 3: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007

RECORD OF BOREHOLE No H2-59

1 OF 1 METRIC

G.W.P. 156-98-00

LOCATION N 5136299.2; E 274118.9

ORIGINATED BY GM

DIST HWY 17

BOREHOLE TYPE Portable Equipment, NW Casing, Wash Boring

COMPILED BY EC

DATUM Geodetic

DATE May 16, 2012

CHECKED BY SEMP

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT		PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)					
ELEV DEPTH	DESCRIPTION	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × REMOULDED	20						40	60	80	100	20
239.7	GROUND SURFACE																	
0.0	PEAT (Fibrous) Very soft Black Wet	1	SS	2														
238.5		2	SS	2														
1.2	SILTY CLAY, varved Soft Grey Wet	3	SS	2														
		4	SS	WH														
		5	SS	WH														
234.8		6	SS	5														
4.9	SILT, some sand, trace clay, trace gravel Loose Grey Wet	7	SS	4														
232.5		8	SS	8														
7.2	SAND, trace to some silt Loose to very dense Grey to brown Wet	9	SS	10														
		10	SS	18														
	Approximately 0.3 m of heave encountered at 11.3 m depth.																	
227.0		11	SS	90/0.2														
12.7	END OF BOREHOLE SPOON REFUSAL (HAMMER BOUNCING) Note: 1. Water level at a depth of 0.3 m below ground surface (Elev. 239.4 m) upon completion of drilling.																	

+ 3, × 3: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007		RECORD OF BOREHOLE No H2-58		1 OF 2 METRIC	
G.W.P. 156-98-00		LOCATION N 5136285.3; E 274110.8		ORIGINATED BY GM	
DIST _____ HWY 17		BOREHOLE TYPE Portable Equipment, NW Casing, Wash Boring		COMPILED BY EC	
DATUM Geodetic		DATE May 14 and 15, 2012		CHECKED BY SEMP	

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT		PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			20 40 60 80 100						
								SHEAR STRENGTH kPa						
								○ UNCONFINED	+ FIELD VANE					
							● QUICK TRIAXIAL	× REMOULDED	WATER CONTENT (%)					
							20 40 60 80 100	20 40 60 80 100						
239.6	GROUND SURFACE													
0.0	PEAT (Fibrous to Amorphous) Very soft Black Wet		1	SS	WH									
			2	SS	2									
			3	SS	WH									
237.4														
2.2	SILTY CLAY, varved Soft to firm Grey Wet		4	SS	2									0 1 26 73
			5	SS	2									
			6	SS	WH									
			7	SS	WH									
233.2			8	SS	1									
6.4	Sandy SILT, trace clay Very loose Grey Wet													
	Between 0.2 m and 1.5 m of heave encountered below 8.2 m depth.		9	SS	4									0 27 71 2
230.9														
8.7	SAND, some silt, trace to some gravel, trace clay Loose to compact Grey to brown Wet		10	SS	6									
			11	SS	5									6 80 12 2
			12	SS	5									
			13	SS	12									
224.8														
14.8														

Continued Next Page

+ 3, × 3: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007		RECORD OF BOREHOLE No H2-57		1 OF 2 METRIC	
G.W.P. 156-98-00		LOCATION N 5136269.9; E 274103.0		ORIGINATED BY GM	
DIST HWY 17		BOREHOLE TYPE Portable Equipment, NW Casing, Wash Boring		COMPILED BY EC	
DATUM Geodetic		DATE May 11, 2012		CHECKED BY SEMP	

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × REMOULDED	PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES								
239.6	GROUND SURFACE												
0.0	PEAT (Fibrous) Very soft Black Wet		1	SS	WH								
			2	SS	WH								
			3	SS	1								
237.4	CLAY to SILTY CLAY, varved Firm Grey Wet		4	SS	2								
2.2			5	SS	4								
			6	SS	10								
			7	SS	2								
			8	SS	WH								
232.4	SILT, trace to some clay, trace sand Loose Grey Wet		9	SS	8								
7.2													
230.9	SAND, some silt, trace to some clay, trace gravel Very loose to compact Grey Wet		10	SS	1								
8.7													
			11	SS	7								
			12	SS	13								
			13	SS	16								
			14	SS	50/0.1								
225.0	Approximately 0.6 m of heave encountered at 12.8 m depth.												
14.6													

Continued Next Page

+ 3, × 3: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007		RECORD OF BOREHOLE No H2-54		2 OF 2 METRIC	
G.W.P. 156-98-00		LOCATION N 5136266.7; E 274064.2		ORIGINATED BY EHS	
DIST HWY 17		BOREHOLE TYPE Portable Equipment, NW Casing, Wash Boring		COMPILED BY EC	
DATUM Geodetic		DATE September 10, 2012		CHECKED BY SEMP	

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT			UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)			
	— CONTINUED FROM PREVIOUS PAGE —						20 40 60 80 100					W _p W W _L				GR SA SI CL
223.8			14	SS	13		224									
15.8	END OF BOREHOLE															
	Note: 1. Water level at a depth of 0.4 m below ground surface (Elev. 239.2 m) upon completion of drilling. Water level measured in casing at a height of 0.8 m above ground surface (Elev. 240.4 m) prior to backfilling with grout and cement mixture.															

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007

RECORD OF BOREHOLE No H2-53

2 OF 2 METRIC

G.W.P. 156-98-00

LOCATION N 5136251.8; E 274056.3

ORIGINATED BY EHS

DIST HWY 17

BOREHOLE TYPE Portable Equipment, NW Casing, Wash Boring

COMPILED BY EC

DATUM Geodetic

DATE September 11, 2012

CHECKED BY SEMP

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × REMOULDED	PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	*N* VALUES								
-- CONTINUED FROM PREVIOUS PAGE --													
221.7	SILT, trace to some clay, trace to some sand Very loose to compact Grey Wet		14	SS	11		224						0 15 80 5
							223						
			15	SS	10								
							222						
221.7													
17.8	SAND, trace to some silt, trace clay Compact Grey Wet		16	SS	14		221						
220.6													
18.9	END OF BOREHOLE Note: 1. Water level at a depth of 0.3 m below ground surface (Elev. 239.2 m) upon completion of drilling.												

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007		RECORD OF BOREHOLE No H2-52		2 OF 2 METRIC	
G.W.P. 156-98-00		LOCATION N 5136257.6; E 274040.9		ORIGINATED BY EHS	
DIST HWY 17		BOREHOLE TYPE Portable Equipment, NW Casing, Wash Boring		COMPILED BY EC	
DATUM Geodetic		DATE September 12, 2012		CHECKED BY SEMP	

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC NATURAL LIQUID LIMIT MOISTURE CONTENT			UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)				
	--- CONTINUED FROM PREVIOUS PAGE ---						20	40	60	80	100	20	40	60			
	SILT, trace to some clay, trace sand Very loose to loose Grey Wet		14	SS	6											NP	0 1 91 8
			15	SS	3												
221.7																	
17.8	SAND and SILT, trace clay Loose to compact Grey Wet		16	SS	4												
			17	SS	6												0 66 31 3
217.7			18	SS	12												
21.9	SAND and GRAVEL, trace silt Grey Wet END OF BOREHOLE Note: 1. Water level at a depth of 0.3 m below ground surface (Elev. 239.2 m) upon completion of drilling.																

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007		RECORD OF BOREHOLE No H2-51		2 OF 2 METRIC							
G.W.P. 156-98-00		LOCATION N 5136264.2; E 274024.9		ORIGINATED BY EHS							
DIST HWY 17		BOREHOLE TYPE Portable Equipment, NW Casing, Wash Boring		COMPILED BY EC							
DATUM Geodetic		DATE September 13, 2012		CHECKED BY SEMP							
SOIL PROFILE		SAMPLES		GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × REMOULDED	PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER								
	--- CONTINUED FROM PREVIOUS PAGE ---										
	SILT, trace to some clay, trace to some sand, trace gravel Loose Grey Wet		14	SS	5	224					
						223					
			15	SS	5	222					
						221					
			16	SS	10	221		o			1 12 83 4
220.2						220					
19.3	Silty SAND Loose Grey Wet		17	SS	9	219					
						218					
217.6			18	SS	6	218					
21.9	END OF BOREHOLE Note: 1. Water level at a depth of 0.4 m below ground surface (Elev. 239.1 m) upon completion of drilling.										

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



+ 3, × 3: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



PROJECT 11-1191-0007		RECORD OF BOREHOLE No H2-49		2 OF 2 METRIC	
G.W.P. 156-98-00		LOCATION N 5136234.2; E 274009.3		ORIGINATED BY ID	
DIST HWY 17		BOREHOLE TYPE Portable Equipment, NW Casing, Wash Boring		COMPILED BY EC	
DATUM Geodetic		DATE September 6 and 7, 2012		CHECKED BY SEMP	

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa								
	— CONTINUED FROM PREVIOUS PAGE —															
	SILT, trace to some clay, trace sand Very loose to loose Grey Wet		14	SS	6		224								NP	0 1 90 9
							223									
			15	SS	6		222									
							221									
			16	SS	10		220									
							219									
			17	SS	9		218									
							217									
218.7							216									
20.9	SAND and SILT, trace clay Loose to compact Grey Wet		18	SS	8		215									
							214									
			19	SS	10		213									0 38 61 1
							212									
			20	SS	12		211									
214.6							210									
25.0	END OF BOREHOLE						209									
	Note: 1. Water level at a depth of 0.6 m below ground surface (Elev. 239.0 m) upon completion of drilling.						208									

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007

RECORD OF BOREHOLE No H2-48

2 OF 2 METRIC

G.W.P. 156-98-00

LOCATION N 5136239.8; E 273994.0

ORIGINATED BY SA

DIST HWY 17

BOREHOLE TYPE Portable Equipment, NW Casing, Wash Boring

COMPILED BY EC

DATUM Geodetic

DATE August 29 and 30, 2012

CHECKED BY SEMP

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC NATURAL LIQUID LIMIT MOISTURE CONTENT			UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)			
						20 40 60 80 100					20 40 60					
						○ UNCONFINED + FIELD VANE										
						● QUICK TRIAXIAL × REMOULDED										
	-- CONTINUED FROM PREVIOUS PAGE --															
	SILT, trace to some clay, trace sand Loose Grey Wet		14	SS	10											
			15	SS	9											
221.7																
17.8	SAND and SILT, trace clay Loose Grey Wet		16	SS	6										0 30 69 1	
219.3			17	SS	7/0.2											
20.2	END OF BOREHOLE SPOON REFUSAL (HAMMER BOUNCING) Note: 1. Water level at a depth of 0.8 m below ground surface (Elev. 238.7 m) upon completion of drilling.															



PROJECT 11-1191-0007		RECORD OF BOREHOLE No H2-47		2 OF 2 METRIC					
G.W.P. 156-98-00		LOCATION N 5136245.4; E 273978.6		ORIGINATED BY SA					
DIST HWY 17		BOREHOLE TYPE Portable Equipment, NW Casing, Wash Boring		COMPILED BY EC					
DATUM Geodetic		DATE August 30 and 31, 2012		CHECKED BY SEMP					
SOIL PROFILE		SAMPLES			DYNAMIC CONE PENETRATION RESISTANCE PLOT	PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT	UNIT WEIGHT	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE					"N" VALUES
	--- CONTINUED FROM PREVIOUS PAGE ---								
223.2	SILT, trace clay, trace sand Loose to compact Grey Wet		14	SS	11				
16.3	END OF BOREHOLE REFUSAL TO FURTHER CASING ADVANCEMENT (HAMMER BOUNCING) Note: 1. Water level at a depth of 0.9 m below ground surface (Elev. 238.6 m) upon completion of drilling.								

SUD-MTO 001 11-1191-0007.GPJ GAL-MSS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007		RECORD OF BOREHOLE No H2-46		1 OF 1 METRIC	
G.W.P. 156-98-00		LOCATION N 5136230.7; E 273970.8		ORIGINATED BY SA	
DIST HWY 17		BOREHOLE TYPE Portable Equipment, NW Casing, Wash Boring		COMPILED BY EC	
DATUM Geodetic		DATE August 29, 2012		CHECKED BY SEMP	

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT		PLASTIC NATURAL LIQUID LIMIT MOISTURE CONTENT			UNIT WEIGHT	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	NUMBER	TYPE	"N" VALUES			20 40 60 80 100	20 40 60	Wp W Wl	20 40 60	GR SA SI CL		
239.5	GROUND SURFACE												
0.0	PEAT (Fibrous to amorphous) Very soft Black Wet	1	SS	1									
		2	SS	WH									
		3	SS	2									
		4	SS	1									
		5	SS	WH									
235.8	SILTY CLAY, varved Firm Grey Wet	6	SS	3									
3.7		7	SS	1									
		8	SS	WH									
232.2	CLAYEY SILT, trace gravel Firm Grey Wet	9	SS	5									
7.3													
230.8	Silty SAND, trace gravel Compact Grey Wet	10	SS	6/0.2									
8.7													
230.0	END OF BOREHOLE SPOON REFUSAL (HAMMER BOUNCING)												
9.5	Note: 1. Water level at a depth of 0.3 m below ground surface (Elev. 239.2 m) upon completion of drilling.												

SUD-MTO 001 11-1191-0007.GPJ GAL-MSS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007		RECORD OF BOREHOLE No H2-44		1 OF 1 METRIC	
G.W.P. 156-98-00		LOCATION N 5136221.5; E 273947.3		ORIGINATED BY SA	
DIST _____ HWY 17		BOREHOLE TYPE Portable Equipment, NW Casing, Wash Boring		COMPILED BY EC	
DATUM Geodetic		DATE August 27, 2012		CHECKED BY SEMP	

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT			UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)			
							20 40 60 80 100					W _p W W _L				
							○ UNCONFINED + FIELD VANE									
							● QUICK TRIAXIAL x REMOULDED									
							20 40 60 80 100					20 40 60				
239.6	GROUND SURFACE															
0.0	PEAT (Fibrous) Very soft Black Wet		1	SS	1											
			2	SS	1											
			3	SS	WH											
			4	SS	WH											
236.2	CLAYEY SILT to SILT, trace sand		5	SS	WH											
3.4	Firm Grey Wet															
			6	SS	9											
			7	SS	5											
232.4	SAND and GRAVEL															
7.2	Compact Grey Wet															
231.3	END OF BOREHOLE SPOON REFUSAL (HAMMER BOUNCING)		8	SS	15											
8.3	Note: 1. Water level at a depth of 0.1 m below ground surface (Elev. 239.5 m) upon completion of drilling.															

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007		RECORD OF BOREHOLE No H2-43		1 OF 2 METRIC	
G.W.P. 156-98-00		LOCATION N 5136346.2; E 274123.4		ORIGINATED BY EHS	
DIST _____ HWY 17		BOREHOLE TYPE 108 mm I.D. Continuous Flight Hollow Stem Augers		COMPILED BY EC	
DATUM Geodetic		DATE March 14, 2012		CHECKED BY SEMP	

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × REMOULDED	PLASTIC LIMIT W _p NATURAL MOISTURE CONTENT W LIQUID LIMIT W _L WATER CONTENT (%)	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE						
242.1	GROUND SURFACE									
0.0	ORGANICS									
0.1	CLAYEY SILT, trace sand Stiff Brown Frozen to moist		1	SS	12					
			2	SS	14					
240.6										
1.5	SILT, trace to some clay, trace sand Compact Brown Wet		3	SS	19					0 1 91 8
239.8										
2.3	SAND and SILT to SAND, trace to some gravel, trace to some clay Loose to compact Brown to grey Wet		4	SS	23				NP	9 42 41 8
			5	SS	6					
			6	SS	6					
			7	SS	10					
			8	SS	6					
	Augers grinding at 7.0 m depth.									
	0.6 m of heave encountered at 7.6 m.		9	SS	20					
233.9										
8.2	END OF BOREHOLE									

Continued Next Page

+ 3, x 3: Numbers refer to Sensitivity
○ 3% STRAIN AT FAILURE

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT:



PROJECT 11-1191-0007		RECORD OF BOREHOLE No H2-41		1 OF 1 METRIC	
G.W.P. 156-98-00		LOCATION N 5136336.3; E 274102.1		ORIGINATED BY EHS	
DIST HWY 17		BOREHOLE TYPE 108 mm I.D. Continuous Flight Hollow Stem Augers		COMPILED BY EC	
DATUM Geodetic		DATE March 16, 2012		CHECKED BY SEMP	

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT		PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa	WATER CONTENT (%)					
239.8	GROUND SURFACE													
0.0	PEAT (Fibrous) Black Frozen		1	SS	-									
239.3														
0.5	CLAY, trace sand Soft Grey to brown Wet		2	SS	4									
			3	SS	5									
237.2														
2.6	CLAYEY SILT, varved Soft Grey to brown Wet		4	SS	WH									
235.7														
4.1	Silty SAND, trace clay Very loose to loose Grey Wet		5	SS	WH									
	Between 0.2 m and 1.0 m of heave encountered below depth of 5.8 m.		6	SS	6									
			7	SS	4									
231.0	Augers grinding at 8.8 m depth.													
8.8	SAND to Gravelly SAND, trace to some silt Compact to dense Grey Wet		8	SS	23									
			9	SS	31									
			10	SS	25									
227.3	END OF BOREHOLE													
12.5	Note: 1. Water level at a depth of 0.2 m below ground surface (Elev. 239.6 m) upon completion of drilling.													

+ 3, x 3: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

SUD-MTO 001 11-1191-0007.GPJ GAL-MISS.GDT 17/03/14 DATA INPUT: