

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

MINISTRY OF COMMUNICATIONS
THE GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

THE STUDY
ON
CONSTRUCTION OF THE BRIDGE OVER THE RIVER RUPSA
IN KHULNA
(Phase 2)

FINAL REPORT
VOLUME II : APPENDIX

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MARCH 2000

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IN KHULNA (PHASE 2)**

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Table-1 Summary of Laboratory Soil Tests on Sample Obtained from Boreholes

Borehole No.	Sample No.	Depth (m)	Moisture Content (%) W _n	Wet Density (kN/m ³) γ _t	Degree of Saturation (%) S _r	Initial Void Ratio e ₀	Specific Gravity	Grading Sand	Analysis Silt	Clay (%)	F.N Atterberg LL	Limits (%) PL	PI	Unconfined Compressive Strength (kPa)	Strain at Failure (%)	Compression Index	Preconsolidation Pressure (kPa)
IVP-1	D-2	3.00-3.45	29														
	D-3	4.50-4.95	32				2.67	14	72	14		32	23	9			
	D-4	6.00-6.45	30				-	64	36	0.32							
	D-20	30.00-30.45															
IVP-2	D-3	3.00-3.45	46														130
	UD-1	5.55-6.00	147/197	11.30	91	4.81	2.22	0	24	76		96	41	55		3.48	
	D-5	7.50-7.95	119														
	D-4	9.00-9.45	38				-	66	34	0.17							
2VP-1	D-29	43.50-43.95	-														
	UD-2	23.55-24.00	32	18.20													
	UD-1	7.05-7.50	52	15.40			2.72	1	64	35		50	26	24			
	DS-6	9.00-9.45	-				-	86	14	0.41							
2VP-2	DS-28	42.00-42.45	-														
	UD-1	4.05-4.50	26	15.00													
	UD-2	8.55-9.00	39			1.09	2.73	1	71	28		44	27	17			
	DS-21	31.50-34.95	49		98		2.65	0	36	64		72	32	40	78	89	12.5
3VP-1	DS-33	49.50-49.95	-	17.10/18.17			2.73	60	29	11							
	DS-4	6.00-6.45	-				2.68	1	67	32		62	27	35			
	DS-22	33.00-33.45	-				2.71	74	21	5							
	DS-4	6.00-6.45	72				2.62	1	59	40		66	36	30			
IBA-1	DS-5	7.50-7.95	32	16.80			2.69	1	74	25		40	23	17			
	DS-9	13.50-13.95	30	17.50			2.70	23	67	10							
	DS-36	54.00-54.45	-				2.72	9	74	17		34	24	10			
	DS-3	4.50-4.95	45														
IBA-2	DS-5	7.50-7.95	72				2.52	1	32	67		97	42	55			
	DS-6	9.00-9.45	34				2.68	22	60	18		33	23	10			
	DS-20	30.00-30.45	32				2.60	1	50	49		81	36	45			
	DS-3	4.50-4.95	63				2.69	54	43	3							
IVA-1	DS-7	10.50-10.95	27				2.70	78	18	4							
	DS-20	30.00-30.45	25				2.70	4	78	18							
	DS-4	6.00-6.45	32				2.71	14	70	16		38	25	13			
	DS-6	9.00-9.45	31				2.70	13	71	16		39	25	14			
IVA-2	DS-16	24.00-24.45	35				2.72	1	67	32		44	26	18			
	DS-23	34.50-34.95	32				2.72	2	73	25		44	25	19			
	D-2	3.00-3.45	107				2.42	1	52	47		131	54	77			
	D-3	4.50-4.95	66				2.70	65	27	8							
D-34	51.00-51.45	20															

Table-2 Summary of Laboratory Soil Tests on Sample Obtained from Boreholes

Borehole No.	Sample No.	Depth (m)	Moisture Content (%) W _n	Wet Density (KN/m ³) γ _t	Degree of Saturation (%) S _r	Initial Void Ratio e ₀	Specific Gravity	Grading Sand	Analysis Silt	Clay (%)	F.N	Atterberg LL	Limits (%) PL	PI	Unconfined Compressive Strength (kPa)	Strain at Failure (%)	Compression Index	Preconsolidation Pressure (kPa)	
1EA-1	D-2	3.00-3.45	29	19.60/18.50	97		2.69	24	45	31	41	23	18	60/40	4.0/17.	-			
	UD-1	4.05-4.45	36/35																
	D-4	6.00-6.45	53																
	D-5	7.50-7.95	53																
	D-6	9.00-9.45	36																
	UD-2	14.55-15.00	35/33																94
UD-3	25.05-25.50	46	16.80	2	68	30	56	28	28										
DS-30	45.00-45.45	43		78	17	5	36	23	13										
DS-40	60.00-60.55	20																	
2BA-1	UD-1	13.00-13.45	30/31	18.70	96	0.856	2.65												
	DS-13	19.50-19.95	25				2.67												
2BA-2	UD-2	28.00-28.45	33	18.80			2.69	27	55	18									
	UD-3	40.00-40.45	23	15.60				72	28	0.30									
	DS-36	54.00-54.45	-																
	DS-7	10.50-10.95	45				2.67												
	DS-35	52.50-52.95	-				2.71	1	48	51									
	DS-2	3.00-3.45	34				2.72	0	67	33									
2VA-1	DS-6	9.00-9.45	44				2.67	0	73	27									
	UD-1	10.00-10.45	44	17.40	98	1.21	2.67	82	15	3									
	DS-30	45.00-45.45	25				2.67	73	22	5									
	DS-40	60.00-60.45	23				2.71	4	76	20									
	DS-5	7.50-7.95	-				2.70	64	31	5									
	DS-23	34.50-34.95	-				2.70												
2VA-2	UD-1	7.00-7.45	72/57	16.20	100	1.180	2.50	0	51	49									
	UD-2	26.50-26.95	34	17.70			2.70	81	16	3									
	DS-29	43.50-43.95	48	17.40			2.71	79	17	4									
	UD-3	50.50-50.95	24																
	DS-39	58.50-58.95	24																
	DS-3	4.50-4.95	65																
3BA-1	UD-2	26.50-26.95	0				2.72	4	83	13									
	UD-2	35.50-35.95	41	19.60			2.73	0	65	35									
3BA-2	DS-3	4.50-4.95	65				2.65	0	69	31									
	DS-36	54.00-54.45	0				2.73	3	52	45									
3VA-1	UD-2	7.50-7.95	36				2.73	0	69	31									
	DS-5	51.00-51.45	37				2.73	3	52	45									
3VA-2	DS-4	6.00-6.45	59				2.65	0	69	31									
	UD-1	26.50-26.95	44	17.10			2.73	3	52	45									

Table-3 Summary of Laboratory Soil Tests on Sample Obtained from Boreholes

Borehole No.	Sample No.	Depth (m)	Moisture Content (%) W _n	Wet Density (KN/m ³) γ _t	Degree of Saturation (%) S _r	Initial Void Ratio e ₀	Specific Gravity	Grading Sand	Analysis Silt	Clay (%)	F.N	Atterberg LL	PL Limits (%)	PI	Unconfined Compressive Strength (kPa)	Strain at Failure (%)	Compression Index	Preconsolidation Pressure (kPa)	
IEB-1	UD-1	2.55-3.00	67/87	14.20	95	2.24	2.46	0	37	63		75	26	49			0.907	120	
	D-3	4.50-4.95	101																
	D-4	6.00-6.45	97																
	D-7	10.50-10.95	68					80	20		0.24								
	D-12	18.00-18.45	-																
IEB-2	UD-1	4.05-4.50	34/36	17.40/18.70	100	0.964	2.71	0	69	31		45	25	20	54/40	20/15.5	0.283	150	
	D-21	31.50-31.95	-				2.71	29	64	7		32	27	5					
	UD-1	2.55-3.00	73/112	16.20/13.50	95	2.92	2.50	1	34	65		103	43	60	36	21.5	16.5	1	(50)
	D-2	3.00-3.45	42																
	D-4	6.00-6.45	32																
IEB-2'	UD-2	8.00-8.45	34	17.60															
	D-6	9.00-9.45	30																
	UD-3	14.55-15.00	33	17.80															
	UD-4	19.00-19.45	38	17.40			2.71	69	24	7		82	33	49	43	40	8.5	16	0.712
	D-29	43.50-43.95	24																
IEB-2''	UD-1	2.55-3.00	70/68	16.30/15.70	99	1.80	2.62	0	32	68									
	D-3	4.50-4.95	28																
	D-5	7.50-7.95	35																
	UD-2	11.55-12.00	36	17.50															
	UD-3	25.05-25.50	29	18.50			2.71	79	17	4									
IEB-3	D-30	45.00-45.45	23																
	UD-1	2.55-3.00	36/37	16.92/18.30	98	1.01	2.70	0	30	70		77	34	43	106	14.00	0.225	120	
	D-3	4.50-4.95	51																
	D-4	6.00-6.45	53																
	D-5	7.50-7.90	50																
IEB-4	D-5	24.00-24.45	-				2.69	43	51	6									
	UD-1	2.55-3.00	51/52	16.70	99	1.37	2.61	0	66	34		78	35	43			0.447	(100)	
	D-3	4.50-4.95	83																
	D-4	6.00-6.45	51																
	D-6	9.00-9.45	31																
IEB-5	UD-1	2.55-3.00	26/32	19.30/18.90	96	0.898	2.73	5	75	20		36	24	12	116	4.50	-	-150	
	D-5	7.50-7.95	57																
	UD-2	8.55-9.00	34/35	17.80/18.50	98	0.981	2.71	7	80	19		36	25	11	66/32	9.0/20	0.152	-250	
	D-15	22.50-22.95	-				2.70	66	31	3									
	D-2	3.00-3.45	87																
IEB-6	UD-1	4.05-4.50	42/39	17.40/18.40	100	1.04	2.71	3	60	37		46	25	21	22	11.00	0.245	(150)	
	D-5	7.50-7.95	31																
	D-14	21.00-21.45	-					68	32	0.21									
	D-14	21.00-21.45	-																

Table-4 Summary of Laboratory Soil Tests on Sample Obtained from Boreholes

Borehole No.	Sample No.	Depth (m)	Moisture Content (%) W _n	Wet Density (KN/m ³) γ _t	Degree of Saturation (%) S _r	Initial Void Ratio e ₀	Specific Gravity	Grading Sand	Analysis Silt	(%) Clay	F.N	Atterberg LL	Limits (%) PL	Unconfined Compressive Strength (kPa)	Strain at Failure (%)	Compression Index	Preconsolidation Pressure (kPa)
1EB-7	D-2	3.00-3.45	44	19.00/18.90	100	0.946	2.71	0	72	28		40	25 15	115	11.00	0.267	(240)
	UD-1	4.05-4.50	42/35														
	D-4	6.00-6.45	30														
	D-8	12.00-12.45	33														
2EB-1	UD-2	12.55-13.00	36	17.90			2.70	74	24	2							
	UD-3	25.05-25.50	35														
	D-19	28.50-28.95	-														
	UD-4	33.55-39.00	26														
2EB-2	UD-1	2.55-3.00	43	17.80													
	UD-1	2.55-3.00	75														
	UD-2	5.55-6.00	38														
	DS-15	22.50-22.95	-														
2EB-3	DS-16	24.00-24.45	30	17.70			2.70	88	11	1							
	UD-1	2.55-3.00	37														
2EB-4	UD-1	2.55-3.00	19	18.50				80	20	0.33							
	DS-13	19.50-19.95	-														
3EB-1	DS-14	21.00-21.45	-	16.30				70	30	0.06							
	UD-1	4.05-4.50	53														
IMP-3	D-7	10.50-10.95	23	17.20			2.70	86	10	4							
	UD-1	17.55-18.00	40														
	D-13	19.50-19.95	47														
	D-15	22.50-22.95	32														
IMP-6	D-23	34.50-34.95	26	17.70			2.74	5	71	24		36	25 11				
	D-34	51.00-51.45	27														
	D-44	66.00-66.45	21														
	D-58	87.50-87.45	22														
	D-3	4.50-4.95	23														
	D-5	7.50-7.95	236														
	UD-1	10.55-11.00	37														
	UD-2	19.55-20.00	39														
D-12	18.00-18.45	44															
D-23	34.50-34.95	32															
D-28	42.00-42.45	33															
D-33	49.50-49.95	40															
D-47	70.50-70.95	24															

Table-5 Summary of Laboratory Soil Tests on Sample Obtained from Boreholes

Borehole No.	Sample No.	Depth (m)	Moisture Content (%) W _n	Wet Density (KN/m ³) γ _t	Degree of Saturation (%) S _r	Initial Void Ratio e ₀	Specific Gravity	Grading Sand	Analysis Silt	Clay (%)	F.N	Atterberg LL	Limits (%) PL	PI	Unconfined Compressive Strength (kPa)	Strain at Failure (%)	Compression Index	Preconsolidation Pressure (kPa)	
1RC	D-5	7.50-7.95	29				2.71	83	14	3									
	UD-1	14.55-15.00	41	16.90															
	UD-2	19.05-19.50	43	17.50			2.72	3	60	37		46	29	17					
	D-13	19.50-19.95	38				2.74	7	75	18		35	24	10					
	D-26	39.00-39.45	33				2.74	15	57	28		38	23	16					
	D-32	48.00-48.45	33																
	D-39	58.50-58.95	26				2.75	30	60	10									

Table-6 Summary of Chemical and Loss of Ignition Tests on Soil with Organic Matter

Borehole No.	Sampling Depth (m)	pH	Chloride (%)	Total Sulphate as SO ₄ (%)	Water soluble sulphate as SO ₄ (%)	Loss of Ignition (%)
IVA1	3 to 3.45	5.8	0.07	0.18	-	6.23
IA1	3 to 3.45	5.5	0.09	0.16	-	8.28
IEB1	2.55 to 3.0	6.8	-	0.090	0.058	8.66
	4.5 to 4.95	-	0.07	-	-	-
IEB2'	1.5 to 1.95	5.7	0.07	0.17	-	10.3
IVP2	5.4 to 6.0	5.8	-	0.126	0.079	10.82
3BA1	7.0 to 7.45	6.5	-	0.101	0.063	0.075

Table-7 Summary of Material Tests on Bulk Soi Samples

Sampling Location	No.	Grading Analysis (%)			Atterberg limits (%)			Compaction Test (2.5kg)		Compaction Test (4.5kg)		pH	Clouide (%)	CBR*
		Sand	Silt	Clay	LL	PL	PI	Wopt (%)	Pdmax (KN/m ²)	Wopt (%)	Pdmax (KN/m ²)			
Near BH1/BA2 River bank	1	-	-	-	44	26	18	19	16.90	15	18.20	-	-	3.8
	2	2	80	18	38	22	16	18	16.90	15	18.20	8.2	0.048	11
	3	2	80	18	36	22	14	19	16.90	15	18.20	-	-	9.6
Near BH/EBA Paddy	1	-	-	-	63	23	40	18	16.30	16	17.80	-	-	1.9
	2	0	63	37	48	24	24	19	16.70	14	18.40	6.7	0.014	4.2
	3	0	62	38	48	23	25	21	16.50	15	18.10	-	-	2.1
148m from Bh/BA/ River bed	1	90	10	10	-	-	-	21	15.30	17	16.10	-	-	19

* CBR at 95% Pdmax determined by 4.5kg rummer method
 LL : Liquid limit, PL : Plastic limit, PI : Plasticity Index
 Wopt : Optimum water content, Pdmax : Maximum dry density

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Rappa in Khyber Type of Drilling Wash Boring

Hole Number B1-1E81 (PAGE 1 of 1)

Date 25/7/59

Water Table Q-275 m.

Elevation FWQ+2467 (STA 0+056) m. Driller _____

Remarks
 O : Disturbed Soil Sample
 UO : Undisturbed Soil Sample taken by Shelby tube

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test									
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value					
												15cm	15cm	15cm	10	20	30	40	50	
1					Silty Clay			Plastic. With decomposed organic matter throughout. Traces of roots at 0-1.												
2					Brown	Soft			1.55	O-1	3	1	1	2						
3									1.00	UO-1										
4					Grey	Very Soft			1.15	O-2	2	1	0	2						
5									4.85	O-3	2	0	0	2						
6					Grey	Very Soft			6.15	O-4	2	0	0	2						
7	-4.53	7.00	7.00						6.45											
8					Clayey Silt	Light Grey	Very Soft to Soft	Traces of fine sand and mica throughout. With decomposed organic matter at 0-8 and 0-7. Low plastic below 10m.	7.65	O-5	3	0	1	2						
9					Clayey Silt	Light Grey	Very Soft to Soft		9.15	O-6	2	1	1	1						
10									9.45											
11					Clayey Silt	Light Grey	Very Soft to Soft		10.65	O-7	3	1	1	2						
12									12.15	O-8	5	2	2	3						
13					Clayey Silt	Light Grey	Medium		13.65	O-9	3	0	1	2						
14									13.95											
15					Clayey Silt	Light Grey	Very Soft to Soft		15.15	O-10	2	0	1	1						
16	-13.53	16.00	8.00						15.45											
17					Silty Sand	Light Grey	Medium	Sand is fine grained. Traces of mica throughout.	16.65	O-11	29	7	11	18						
18					Silty Sand	Light Grey	Medium		18.15	O-12	37	12	16	21						
19									18.45											
20					Silty Sand	Light Grey	Medium		19.65	O-13	35	12	15	20						
21									19.95											
22					Silty Sand	Light Grey	Medium		21.15	O-14	37	11	15	22						
23									21.45											
24					Silty Sand	Light Grey	Cense		22.65	O-15	39	11	16	23						
25	-21.98	24.45	8.45						24.15	O-16	46	9	20	26						
26					-END OF DRILLING-															
27																				
28																				
29																				
30																				
31																				

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Rupa in Kuluha Type of Drilling Rotary

Hole Number BH-1082 (PAGE 1 of 2)

Date 5/8/99 - 7/8/99

Water Table Q-035 m.

Elevation PM011285 (STA 1+797) m.

Driller _____

Remarks
 D - Disturbed Soil Sample
 UD - Undisturbed Soil Sample taken by Shelby Tube

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test									
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value					
												15cm	15cm	15cm	10	20	30	40	50	
1					Clayey Sil	Grey	Very Soft	Low Plastic. With organic matter.												
2									1.65	D-18	0	0	0	0	SELF PENETRATION BY HAMMER					
3	-1.12	3.00	3.00		Silty Clay	Light Grey	Very Soft	Low Plastic. Little organic matter. Traces of mica.	2.55	UD-18										
4	-2.12	4.00	1.00		Silt	Light Grey	Very Soft	With seams of fine sand. Little clay. Traces of mica.	3.15	D-28	0	0	0	0	SELF PENETRATION BY HAMMER					
5									4.65	D-38	0	0	0	0	SELF PENETRATION BY HAMMER					
6									6.15	D-48	1	0	0	1						
7	-5.11	7.00	3.00		Sand	Light Grey	Very Loose	With seams of silt and slightly clayey. Traces of decomposed organic matter and mica.	6.45											
8	-6.11	8.50	1.50		Silt	Light Grey	Very Soft	With seams of fine sand and little clay. Traces of mica.	7.85	D-58	2	1	1	1						
9									9.15	D-68	1	0	0	1						
10	-8.11	10.00	1.50		Silty Clay	Light Grey	Very Soft	Slightly fine sand. Traces of mica.	9.45											
11									10.85	D-78	0	0	0	0	SELF PENETRATION BY HAMMER					
12									11.55	UD-28										
13	-11.11	13.00	3.00		Silt	Light Grey		With seams of fine sand. Little clay. Trace of decomposed organic matter and mica throughout.	12.15	D-88	1	0	0	1						
14									13.65	D-98	3	1	1	2						
15							Soft		15.15	D-108	4	2	2	2						
16									16.65	D-118	6	2	2	4						
17									18.15	D-128	5	3	3	2						
18	-12.11	18.00	6.00				Medium		18.45											
19					Sand	Light Grey	Medium	With seams of silt. Slightly clayey. Traces of mica.	19.65	D-138	13	4	5	8						
20									21.15	D-148	11	4	4	7						
21									22.65	D-158	13	6	6	7						
22	-20.11	22.00	3.00		Silt	Light Grey	Stiff	With seams of fine sand. Little clay and trace of mica throughout.	22.95											
23									24.15	D-168	17	6	8	9						
24							Very Stiff		25.05	UD-38										
25									25.50	D-178	13	4	5	8						
26									26.65											
27									27.15	D-188	11	3	5	6						
28	-26.11	28.00	6.00				Stiff		27.45											
29					Clayey Sil	Light Grey	Stiff	With seams of sand and trace of mica throughout.	28.65	D-198	10	4	5	5						
30									28.95											
31									30.15	D-208	11	4	6	5						
									30.45											

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Rupsa in Khulna

Type of Drilling Wash Boring

Hole Number BH-1EB2 (PAGE 1 of 2)

Date 27/1/99

Water Table Q-080 m.

Elevation PWD:1.695 (STA 1+81) m.

Driller _____

Remarks

D : Disturbed Soil Sample
 UD : Undisturbed Soil Sample taken by Shelby tube

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test									
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value					
												15cm	15cm	15cm	10	20	30	40	50	
1				x	Silty Clay	Brownish Grey to Grey	Very Soft	Medium Plastic.												
2				x					1.65	0-1	2	0	1	1						
3				x					1.95											
4				x					3.15	0-2	1	0	0	1						
5				x					4.05	UD-1										
6	-3.00	5.50	5.50	x					4.50											
7				x					4.65	0-3	2	0	1	1						
8				x	Clayey Sil	Grey	Very Soft to Soft	Trace of fine sand up to 1.3m. With seams of fine sand (dominated).	4.95											
9				x					6.15	0-4	1	0	0	1						
10				x					6.45											
11				x					7.65	0-5	3	1	1	2						
12				x					7.95											
13				x					9.15	0-6	2	0	1	1						
14				x					9.45											
15	-12.81	14.50	8.00	x					10.65	0-7	2	0	1	1						
16				x	Sandy Sil	Grey	Loose	Traces of sil.	10.95											
17				x					12.15	0-8	2	0	1	1						
18	-14.31	16.00	1.50	x	Clayey Sil	Grey	Medium	With seams of fine sand (dominated).	12.45											
19				x					13.65	0-9	4	1	2	2						
20				x					13.95											
21				x	Silty Sand	Grey	Loose	Traces of sil.	15.15	0-10	6	1	3	3						
22				x					15.45											
23				x	Clayey Sil	Grey	Medium	With seams of fine sand (dominated).	16.65	0-11	5	2	2	3						
24	-15.81	17.50	1.50	x					16.95											
25				x	Silty Sand	Grey	Medium	Sand is fine grained. Traces of mica throughout.	18.15	0-12	11	5	4	7						
26				x					18.45											
27				x					19.65	0-13	11	5	5	6						
28				x					19.95											
29				x					21.15	0-14	17	8	8	9						
30				x					21.45											
31				x					22.65	0-15	20	9	9	11						
32	-21.61	23.50	6.00	x					22.95											
33				x	Clayey Sil	Grey	Medium	Traces of mica throughout. Trace of fine sand up to 26m. Low plastic and with decomposed organic matter at 0-18.	24.15	0-16	5	2	3	2						
34				x					24.45											
35				x					25.65	0-17	6	2	3	3						
36				x					25.95											
37				x					27.15	0-18	5	2	3	2						
38	-26.31	28.00	4.50	x					27.45											
39				x	Silty Sand	Grey	Medium	Sand is fine grained. Traces of mica.	28.65	0-19	14	3	5	9						
40				x					28.95											
41	-27.81	29.50	1.50	x					30.15	0-20	6	4	2	4						
42				x	Clayey Sil	Grey	Medium	Traces of fine sand and mica.	30.45											
43	-29.31	31.00	1.50	x																

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Puga in Kuluha Type of Drilling Wash Boring

Hole Number 84-1482 (PAGE 2 of 2)

Date 27/7/99

Water Table CL-050 m.

Elevation PWD+1.695 (STA 1+811) m. Driller _____

Remarks
D : Disturbed Soil Sample

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test									
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value					
												15cm	15cm	15cm	10	20	30	40	50	
31	-29.34	31.00	1.50		Clay Silty	Grey	Medium	Traces of fine sand and mica.	30.15 32.45	0-20.8	6	4	2	4						
32					Silty Sand	Grey	Medium	Sand is fine grained. Very silty. Traces of mica.	31.65 31.55	0-21.8	16	7	7	9						
33									31.15 31.45	0-22.8	18	7	8	10						
34	-31.78	31.45	2.45					-END OF DRILLING-												
35																				
36																				
37																				
38																				
39																				
40																				
41																				
42																				
43																				
44																				
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58																				
59																				
60																				
61																				

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Rupsa in Khulna

Type of Drilling Wash Boring

Hole Number 81-1284 (PAGE 1 of 1)

Date 2/8/89

Water Table α-210 m.

Elevation FWO+2.504 (STA 5+287) m.

Driller _____

Remarks

D : Disturbed Soil Sample
 U0 : Undisturbed Soil Sample taken by Shelby Tube

1/2

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Standard Penetration Test						
									Sampling Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			
												15cm	15cm	15cm	
									N - Value						
									10	20	30	40	50		
1				x	Silty Clay	Brown	Very Soft	High Plastic. With decomposed organic matter below 4m.							
2				x	Silty Clay	Brown	Very Soft		1.65	0-1	2	0	1	1	
3				x					2.55	U0-1					
4				v	Silty Clay	Grey	Very Soft		3.15	0-2	1	0	0	1	
5				x					4.65	0-3	1	0	0	1	
6				v	Silty Clay	Grey	Very Soft		6.15	0-4	2	0	1	1	
7				x					7.65	0-5	2	0	1	1	
8				x	Clayey Silt	Grey	Very Soft	Low Plastic. Mixed with fine sand.	7.95						
9	-5.00	8.50	8.50	x					9.15	0-6	2	0	0	2	
10				x	Silty Sand	Grey	Loose	Sand is fine grained. Traces of mica.	9.45						
11	-7.50	10.00	1.50	x					10.65	0-7	10	1	5	5	
12				x	Silty Clay	Grey	Medium	Mixed with fine sand. Trace of mica.	12.15	0-8	8	1	3	5	
13	-10.50	13.00	3.00	x					13.65	0-9	4	0	1	3	
14				x	Silty Sand	Grey	Loose	Sand is fine grained. Mixed with clay at 0-10. Trace of mica throughout. With seams of clay at 0-12 and 0-13. With decomposed organic matter at 0-15.	13.95						
15	-12.00	14.50	1.50	x					15.15	0-10	8	2	3	5	
16				x	Silty Sand	Grey	Loose		16.65	0-11	11	3	5	6	
17				x					18.15	0-12	16	4	5	11	
18				x	Silty Sand	Grey	Loose		18.45						
19				x					19.65	0-13	19	5	9	10	
20				x	Silty Sand	Grey	Loose		21.15	0-14	18	6	8	10	
21				x					22.65	0-15	17	5	8	9	
22				x	Silty Clay	Grey	Stiff	High plastic.	22.95						
23	-21.00	23.50	1.00	v					24.15	0-16	12	4	5	7	
24				x	-END OF DRILLING-				24.45						
25	-21.95	24.45	0.95	x											
26															
27															
28															
29															
30															
31															

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Rupsa in Dhaka

Type of Drilling Rotary

Remarks

D : Disturbed Soil Sample

Hole Number BH-1W1 (PAGE 1 of 2)

Date 17/1/59 - 23/5/59

Water Table 0.00 m.

Elevation FM0+2.266 (STA 5+764) m.

Driller _____

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test						
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value		
												10	20	30	40	50	
1				X	Grey Sil	Grey	Very Soft	Rich decomposed organic matter. Trace of sand throughout.									
2				X					1.65	0-16	0	0	0	0			
3				X					1.95	0-7	2	0	1	1			
4				X					3.15	0-7	2	0	1	1			
5	-3.23	5.50	5.50	X					4.65	0-3	0	0	0	0			
6				X	Sand	Light Grey	Loose	Sand is fine grained. With seams of silt. Trace of clay and mica.	4.95	0-4	8	1	3	5			
7				X					6.15	0-4	8	1	3	5			
8				X					7.65	0-5	8	1	4	4			
9				X					7.95	0-5	8	1	4	4			
10				X					9.15	0-6	8	1	2	6			
11	-7.73	10.00	1.50	X	Silty Sand	Light Grey	Medium	Sand is fine grained. Trace of mica.	9.45	0-6	8	1	2	6			
12				X			Loose		10.65	0-7	12	4	5	7			
13				X					10.95	0-7	12	4	5	7			
14	-10.73	13.00	3.00	X	Sand	Light Grey	Medium	Sand is fine grained. With seams of silt. Trace of clay and mica.	12.15	0-8	7	4	3	4			
15				X					12.45	0-8	7	4	3	4			
16				X					13.65	0-9	10	2	4	6			
17	-13.73	16.00	3.00	X	Silty Sand	Light Grey	Medium	Sand is fine grained. Trace of mica and decomposed organic matter.	13.95	0-9	10	2	4	6			
18				X					15.15	0-10	11	3	4	7			
19				X					15.45	0-10	11	3	4	7			
20				X					16.65	0-11	21	8	13	8			
21	-16.73	19.00	3.00	X	Sand	Light Grey	Medium	Sand is fine grained. Trace of mica throughout. With seams of silt and trace of clay above 72m. Little silt and trace of organic matter at 0-15. With seams of silt at 0-16.	16.95	0-11	21	8	13	8			
22				X					18.15	0-12	15	4	5	10			
23				X					18.45	0-12	15	4	5	10			
24				X					19.65	0-13	18	4	6	13			
25	-22.73	25.00	6.00	X	Sand	Light Grey	Dense	Sand is fine grained. Little silt and trace of mica throughout.	19.95	0-13	18	4	6	13			
26				X					21.15	0-14	19	9	10	9			
27				X					21.45	0-14	19	9	10	9			
28				X					22.65	0-15	20	11	9	11			
29				X					22.95	0-15	20	11	9	11			
30				X					24.15	0-16	25	8	10	15			
31	-27.73	25.00	6.00	X	Sand	Light Grey	Dense	Sand is fine grained. Little silt and trace of mica throughout.	24.45	0-16	25	8	10	15			
				X					25.65	0-17	34	9	13	21			
				X					25.95	0-17	34	9	13	21			
				X					27.15	0-18	48	16	20	28			
				X					27.45	0-18	48	16	20	28			
				X			Very Dense		28.65	0-19	58	18	28	30			58 BLOWS/30cm
				X					28.95	0-19	58	18	28	30			58 BLOWS/30cm
				X					30.15	0-20	50	16	22	28			50 BLOWS/30cm
				X					30.45	0-20	50	16	22	28			50 BLOWS/30cm

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Rupsa in Khudna Type of Drilling Rotary

Remarks
0 : Disturbed Soil Sample

Hole Number 81-18A1 (PAGE 2 of 2)

Date 27/9/99 - 29/9/99

Water Table 0.00 m.

Elevation PWD+2266 (STA 5+764) m.

Driller _____

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test								
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value				
												15cm	15cm	15cm	10	20	30	40	50
31				x x x x	Sand	Light Grey	Very Dense	Sand is fine grained. Little silt and trace of mica throughout.	30.15 30.45	0-20 S	50	16	22	28	50	60	45/30cm		
32				x x x x					31.65 31.95	0-21 S	52	18	23	29	52	60	45/30cm		
33				x x x x			Dense		33.15 33.45	0-22 S	47	14	20	27					
34				x x x x					34.65 34.95	0-23 S	62	24	28	34	62	60	45/30cm		
35				x x x x					36.15 36.45	0-24 S	65	24	29	36	65	60	45/30cm		
36				x x x x					37.65 37.95	0-25 S	67	19	28	39	67	60	45/30cm		
37				x x x x					39.15 39.45	0-26 S	66	24	28	38	66	60	45/30cm		
38				x x x x					40.65 40.95	0-27 S	72	24	32	40	72	60	45/30cm		
39				x x x x					42.15 42.45	0-28 S	62	18	28	34	62	60	45/30cm		
40				x x x x					43.65 43.95	0-29 S	65	20	29	36	65	60	45/30cm		
41				x x x x			Very Dense		45.15 45.38	0-30 S	83/23	30	45	35/6	83	60	45/23cm		
42				x x x x					46.65 46.95	0-31 S	70	23	32	38	70	60	45/30cm		
43				x x x x					48.15 48.45	0-32 S	69	22	25	44	69	60	45/30cm		
44				x x x x					49.65 49.95	0-33 S	73	23	26	47	73	60	45/30cm		
45				x x x x					51.15 51.45	0-34 S	99	37	42	57	99	60	45/30cm		
46	-43.73	46.00	21.00	x x x x	Sand	Light Grey	Very Dense	Sand is fine grained. Trace of mica throughout. With seams of silt and trace of clay at 0-31, 33 and 34.	52.65 52.95	0-35 S	96	30	38	58	96	60	45/30cm		
47				x x x x					54.15 54.45	0-36 S	79	34	37	42	79	60	45/30cm		
48				x x x x					55.65 55.95	0-37 S	82	36	40	42	82	60	45/30cm		
49				x x x x					57.15 57.45	0-38 S	84	31	40	44	84	60	45/30cm		
50				x x x x					58.65 58.95	0-39 S	74	28	34	40	74	60	45/30cm		
51				x x x x					60.15 60.45	0-40 S	60	30	38	42	60	60	45/30cm		
52	-49.73	52.00	6.00	x x x x	Sand	Light Grey	Very Dense	Sand is fine grained. Little silt and trace of mica throughout.											
53				x x x x															
54				x x x x															
55				x x x x															
56				x x x x															
57				x x x x															
58				x x x x															
59				x x x x															
60				x x x x															
61	-58.18	60.45	8.45	x x x x															

-END OF DRILLING-

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Rupsa in Khudra

Type of Drilling Rotary

Hole Number BR-11X1 (PAGE 1 of 2)

Date 11/8/99 - 12/8/99

Water Table Q-275 m

Elevation PWD+2033 (STA 51922) m

Driller _____

Remarks
D: Disturbed Soil Sample

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test									
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value					
												15cm	15cm	15cm	10	20	30	40	50	
1					Clayey Silt	Light Brown to Light Grey	Very Soft	Plastic. With decomposed organic matter throughout. Trace of mica.												
2									1.65	D-1	1	0	0	1						
3									3.15	D-2	0	0	0	0	SELF PENETRATION BY HAMMER					
4									4.65	D-3	0	0	0	0	SELF PENETRATION BY HAMMER					
5	-14.7	5.50	1.50			Light Grey			4.95	D-3	0	0	0	0	SELF PENETRATION BY HAMMER					
6					Silty Sand	Light Grey	Very Loose	Sand is fine grained. Trace of mica throughout. Trace of organic matter of D-4 and D-5. With seams of clayey silt of D-6 and D-7.	6.15	D-4	4	1	2	2						
7									6.45	D-4	4	1	2	2						
8									7.65	D-5	5	5	3	2						
9									7.95	D-5	5	5	3	2						
10									9.15	D-6	6	0	3	5						
11									9.45	D-6	6	0	3	5						
12							Loose		10.65	D-7	7	1	3	4						
13									10.95	D-7	7	1	3	4						
14									12.15	D-8	9	3	4	5						
15	-12.47	14.50	3.00				Medium		12.45	D-8	9	3	4	5						
16					Sand	Light Grey	Medium	Sand is fine grained. With little silt. Trace of mica.	13.65	D-9	12	3	5	7						
17									13.95	D-9	12	3	5	7						
18									15.15	D-10	21	7	10	11						
19									15.45	D-10	21	7	10	11						
20									16.65	D-11	24	8	12	12						
21	-18.47	20.50	3.00						16.95	D-11	24	8	12	12						
22					Silty Sand	Light Grey	Medium	Sand is fine grained. Trace of mica.	18.15	D-12	28	8	10	18						
23									18.45	D-12	28	8	10	18						
24									18.65	D-12	28	8	10	18						
25									18.95	D-12	32	9	14	18						
26	-19.57	22.00	1.50				Dense		19.65	D-13	32	9	14	18						
27					Silty Sand	Light Grey	Medium	Sand is fine grained. Trace of mica.	21.15	D-14	28	7	10	18						
28									21.45	D-14	28	7	10	18						
29					Sand	Light Grey	Dense	Sand is fine grained. With little silt and trace of mica throughout of the layer.	22.65	D-15	46	12	18	28						
30									22.95	D-15	46	12	18	28						
31									24.15	D-16	46	13	18	28						
									24.45	D-16	46	13	18	28						
									25.65	D-17	66	18	28	38						66 BLOW/30cm
									25.95	D-17	66	18	28	38						66 BLOW/30cm
									27.15	D-18	66	20	28	38						66 BLOW/30cm
									27.45	D-18	66	20	28	38						66 BLOW/30cm
									28.65	D-19	74	20	24	50						74 BLOW/30cm
							Very Dense		28.95	D-19	74	20	24	50						74 BLOW/30cm
									30.15	D-20	84	18	26	58						84 BLOW/30cm
									30.45	D-20	84	18	26	58						84 BLOW/30cm

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over The River Rajsa in Khana Type of Drilling Rotary

Hole Number B1-1VA1 (PAGE 2 of 2)

Date 11/2/99 - 12/8/99

Water Table 0.225 m.

Elevation PN0+2.033 (STA 5+902) m. Driller _____

Remarks
0: Disturbed Soil Sample

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test										
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value						
												15cm	15cm	15cm	10	20	30	40	50		
31				x x x x	Sand	Light Grey	Very Dense	Sand is fine grained with 6% silt and trace of mica throughout the layer. Trace of organic matter at D-21 and D-22. With occasional seams of clayey silt between 31 and 37m.	30.15 30.45	D-20/S	64	18	26	58		84 Blows/30cm					
32				v v v v					31.65 31.95	D-21/S	63	18	25	38		83 Blows/30cm					
33				x x x x					33.15 33.45	D-22/S	62	15	24	38		82 Blows/30cm					
34				x x x x					34.65 34.95	D-23/S	42	16	19	23							
35				x x x x			Dense		36.15 36.45	D-24/S	42	16	19	23							
36				x x x x					37.65 37.95	D-25/S	55	13	23	32		55 Blows/30cm					
37				x x x x					39.15 39.45	D-26/S	53	14	21	32		53 Blows/30cm					
38				x x x x					40.65 40.95	D-27/S	65	15	26	38		66 Blows/30cm					
39				x x x x					42.15 42.45	D-28/S	65	18	25	40		65 Blows/30cm					
40				x x x x					43.65 43.95	D-29/S	62	18	24	38		62 Blows/30cm					
41				x x x x				45.15 45.45	D-30/S	74	20	32	42		74 Blows/30cm						
42				x x x x				46.65 46.95	D-31/S	56	16	22	34		56 Blows/30cm						
43				x x x x			Very Dense	48.15 48.45	D-32/S	57	19	25	32		57 Blows/30cm						
44	-45.42	48.45	26.45																		
45							-END OF DRILLING-														
46																					
47																					
48																					
49																					
50																					
51																					
52																					
53																					
54																					
55																					
56																					
57																					
58																					
59																					
60																					
61																					

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Rupse in Khulna Type of Drilling Rotary

Hole Number BH-1VP1 (PAGE 2 of 2)

Date 6/8/99 - 1/8/99

Water Table Q-0.40 m.

Elevation P40+2156 (STA 6+076) m. Driller _____

Remarks
0 : Disturbed Soil Sample

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test									
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value					
												15cm	15cm	15cm	10	20	30	40	50	
31				x x x x x	Silty Sand	Light Grey	Very Dense	Sand is fine grained. Very silty and non plastic. Trace of mica throughout.	30.15	0-20	71	20	33	38	71					
32				x x x x x					31.65	0-21	73	25	33	40	73					
33				x x x x x					33.15	0-22	55	16	20	35	55					
34				x x x x x					34.65	0-23	51	16	21	30	51					
35				x x x x x					34.95						NO RECOVERY					
36				x x x x x					36.15	0-24	62	20	22	40	62					
37				x x x x x					37.65											
38				x x x x x					37.95	0-25	52	18	21	31	52					
39				x x x x x					39.15	0-26	59	25	29	30	59					
40				x x x x x					40.65	0-27	67	21	29	38	67					
41				x x x x x				42.15	0-28	76	22	33	43	76						
42				x x x x x				43.65	0-29	67	23	29	38	67						
43				x x x x x				44.15												
44				x x x x x				45.15	0-30	65	25	30	35	65						
45				x x x x x				45.65	0-31	69	24	30	39	69						
46				x x x x x				46.15												
47	-45.34	47.50	18.00	x x x x x				48.15	0-32	50	11	20	30	50						
48				x x x x x	Sandy Silt	Light Grey	Very Dense	Non plastic. Sand is fine grained. Trace of mica.	48.45											
49				x x x x x					49.65	0-33	52	12	21	31	52					
50	-47.79	49.95	2.45	x x x x x				49.95												
51					-END OF DRILLING-															
52																				
53																				
54																				
55																				
56																				
57																				
58																				
59																				
60																				
61																				

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Rupsa in Khulna

Type of Drilling Rotary

Remarks
 0 : Disturbed Soil Sample

Hole Number B1-1841 (PAGE 1 of 3)

Date 27/7/99 - 27/7/99

Water Table Q-169 m.

Elevation PN0+3976 (STA 6+261) m.

Driller _____

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test									
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value					
												15cm	15cm	15cm	10	20	30	40	50	
1					Clayey Sil	Light Brown	Medium	Oxidized zone. With fine sand. Trace of roots and snail.												
2	1.48	2.50	2.50						1.65	0-1S	5	0	1	4						
3					Clayey Sil	Light Brown to Grey	Medium	Oxidized zone. Plastic. trace of snail.	3.15	0-2S	5	0	1	4						
4	-0.02	4.00	1.50						3.45											
5					Clayey Sil	Grey	Very Soft	Medium plastic to plastic. Trace of fine sand.	4.65	0-3S	0	0	0	0						
6									4.95											
7									6.15	0-4S	0	0	0	0						
8									6.45											
9	-1.52	6.50	1.50						7.65	0-5S	0	0	0	0						
10					Silty Sand	Grey	Loose	Sand is fine grained. Trace of mica throughout of the layer. With seams of clayey sil of 0-7 and 0-10. Very silty of 0-9	7.95											
11									9.15	0-6S	6	4	3	3						
12									9.45											
13									10.65	0-7S	11	5	5	6						
14									10.95											
15									12.15	0-8S	10	3	5	5						
16	-12.02	16.00	7.50						12.45											
17					Silty Sand	Light Grey	Medium	Sand is fine grained. Non plastic. Trace of mica throughout.	13.65	0-9S	14	3	6	8						
18									13.95											
19									15.15	0-10S	17	4	5	12						
20									15.45											
21	-16.52	20.50	1.50		Silty Sand	Light Grey	Medium	Sand is fine grained. Non plastic. Trace of mica throughout.	16.65	0-11S	16	7	7	9						
22									16.95											
23									18.15	0-12S	21	6	8	13						
24	-18.02	22.00	1.50		Silty Sand	Light Grey	Medium	Interbedded with sandy clayey sil. Silty sand is predominant.	18.45											
25									19.65	0-13S	20	5	6	14						
26									19.95											
27	-19.52	23.50	1.50		Sandy Sil	Light Grey	Very Stiff	Sand is fine grained. Trace of mica.	21.15	0-14S	21	10	10	11						
28									21.45											
29									22.65	0-15S	20	8	9	11						
30									22.95											
31	-25.52	29.50	6.00		Silty Sand	Light Grey	Dense	Sand is fine grained. Trace of mica throughout. Trace of organic matter below 22m.	24.15	0-16S	40	9	16	24						
									24.45											
									25.65	0-17S	40	8	14	26						
									25.95											
									27.15	0-18S	36	9	14	22						
									27.45											
									28.65	0-19S	45	12	20	25						
									28.95											
									30.15	0-20S	61	21	27	34						
									30.45											

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Rappa in Khulna

Type of Drilling Rotary

Remarks

0: Disturbed Soil Sample

Hole Number BH-18A1 (PAGE 2 of 3)

Date 23/1/99 - 27/1/99

Water Table Q-1.60 m.

Elevation PMO+3.976 (STA 6+26) m.

Driller _____

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test										
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value						
												15cm	15cm	15cm	10	20	30	40	50		
31					Silty Sand	Light Grey	Very Dense	Sand is fine grained. Trace of mica.	31.15 31.45	0-20	61	21	27	34	61	BLows/30cm					
32	-28.52	32.50	1.00						31.65 31.95	0-21	59	20	22	37	59	BLows/30cm					
33					Sand	Light Grey	Very Dense	Material is same as above layer but less silt fraction.	33.15 33.45	0-22	61	22	25	36	61	BLows/30cm					
34									34.65 34.95	0-23	74	17	34	40	74	BLows/30cm					
35	-31.52	35.50	1.00						36.15 36.45	0-24	41	18	19	22							
36					Silty Sand	Light Grey	Dense	Sand is fine grained. Trace of mica throughout of the layer. With a section of plastic clayey silt section at 0-24. Less silt content of bottom.	37.65 37.95	0-25	40	13	18	22							
37									39.15 39.45	0-26	53	19	23	30	53	BLows/30cm					
38									40.65 40.95	0-27	55	16	26	29	55	BLows/30cm					
39									42.15 42.45	0-28	53	16	21	32	53	BLows/30cm					
40							Very Dense		43.65 43.95	0-29	54	11	21	33	54	BLows/30cm					
41					Sandy Silt	Grey	Very Dense	Sand is fine grained. Trace of mica throughout. Trace of mica.	45.15 45.45	0-30	52	12	21	31	52	BLows/30cm					
42									46.65 46.95	0-31	38	9	15	23							
43	-39.02	41.00	7.50		Sandy Silt	Light Grey	Hard	Non plastic. Little clay at top. Sand is fine grained. Trace of mica throughout. Trace of clay at bottom.	48.15 48.45	0-32	37	8	17	20							
44									49.65 49.95	0-33	22	7	7	15							
45					Sandy Silt	Light Grey	Dense	Sand is fine grained. Trace of clay and mica. Trace of roots at 0-36.	51.15 51.45	0-34	44	7	18	26							
46	-42.02	45.00	1.00						52.65 52.95	0-35	42	9	16	26							
47									54.15 54.45	0-36	46	11	20	26							
48									55.65 55.95	0-37	60	16	23	37	60	BLows/30cm					
49									57.15 57.45	0-38	125	29	47	78	125	BLows/30cm					
50									58.65 58.95	0-39	67	21	27	43	67	BLows/30cm					
51									60.15 60.45	0-40	87	26	35	52	87	BLows/30cm					
52	-51.02	55.00	4.50		Sand	Light Grey	Very Dense	Sand is fine grained. Very silty at 0-37. Little silt below 37m. Trace of mica throughout of the layer. With seams of clayey silt at 0-43.													
53																					
54																					
55																					
56																					
57																					
58																					
59																					
60																					
61	-57.02	61.00	6.00																		

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Rupsa in Khulna Type of Drilling Rotary

Hole Number BH-1WP3 (PAGE 1 of 3)

Date 18/10/99 - 30/10/99

Water Table α- m.

Elevation PWD-5.398 (SIA 64110) m. Driller _____

Remarks

0 : Disturbed Soil Sample
 00 : Undisturbed Soil Sample taken by Shelby Tube

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test								
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value				
												15cm	15cm	15cm	10	20	30	40	50
1					Silty Sand	Light Grey	Loose	Sand is fine grained. Trace of mica throughout.	1.65	0-1	10	2	4	6					
2									1.95										
3									3.15	0-2	8	4	4	4					
4									1.45										
5									4.65	0-3	8	4	4	4					
6	-10.90	5.50	5.50						4.95										
6					Sand	Brownish Light Grey To Light Grey	Medium	Sand is fine grained. Little silt and trace of mica throughout.	6.15	0-4	13	7	6	7					
7									8.45										
8									7.65	0-5	15	8	7	8					
9									7.95										
10									9.15	0-6	11	4	5	6					
11									9.45										
12	-16.90	11.50	6.00						10.65	0-7	11	5	5	6					
13					Silty Sand	Light Grey	Medium	Sand is fine grained. Trace of mica throughout. With little decomposed organic matter at 0-9.	12.15	0-8	20	12	10	10					
14									12.45										
15	-19.90	11.50	3.00						13.65	0-9	15	7	8	7					
16									13.95										
17					Sandy Silt	Light Grey	Medium	Sand is fine grained. Little clay. trace of mica.	15.15	0-10	8	4	4	4					
18	-22.90	17.50	3.00						15.45										
19									16.65	0-11	6	4	4	2					
20									16.95										
21					Silty Clay	Light Grey	Stiff	Trace of organic matter throughout. Little fine sand at 0-16.	17.55	0-12	12	4	6	6					
22									18.00										
23									18.45	0-13	11	6	5	6					
24									19.65										
25	-30.40	25.00	7.50						19.95	0-14	12	6	6	6					
26									21.15										
27									21.45	0-15	13	5	7	6					
28									22.65										
29									22.95	0-16	14	6	8	6					
30	-31.90	26.50	1.50						24.15	0-17	18	6	8	10					
31					Silt	Light Grey	Very Stiff	Trace of clay. With seams of fine sand.	25.65										
									25.95	0-18	16	6	8	10					
					Sand	Light Grey	Very Dense	Sand is fine grained. trace of mica throughout. With seams of silt and trace of clay at top. Slightly silt below 28m.	27.15	0-19	56	10	16	40					
									27.45										
									28.65	0-20	41	11	20	21					
							Dense		28.95										
									30.15										
	-36.40	31.00	4.50						30.45										

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Pussa in Orissa

Type of Drilling Rotary

Hole Number BT-1403 (PAGE 2 of 3)

Date 18/10/99 - 30/10/99

Water Table 2- m. Elevation PW-5398 (STA 6+110) m.

Driller _____

Remarks
0: Disturbed Soil Sample

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test									
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value					
												15cm	15cm	15cm	10	20	30	40	50	
31	-36.42	31.00	1.50	x	Sand	Light Grey	Dense	Sand is fine grained. Trace of mica throughout. With seams of silt and trace of clay at top. Slightly silty below 28m.	30.15	0-20	38	9	17	21						
					Silty Sand	Light Grey	Dense		Sand is fine grained. Trace of mica throughout.	31.65	0-21	40	12	16	24					
33				x					33.15	0-22	38	11	18	20						
34				x					34.65	0-23	32	8	12	20						
35				x					36.15	0-24	38	18	19	19						
36				x					37.65	0-25	39	18	20	19						
37				x					39.15	0-26	42	17	21	21						
38	-43.90	38.50	1.50	x	Sand	Light Grey	Dense	Sand is fine grained. With seams of silt and trace of mica throughout.	39.15	0-26	42	17	21	21						
39				x					40.65	0-27	44	16	22	22						
40				x					42.15	0-28	56	23	27	29	56	BLOWS/30cm				
41				x					43.65	0-29	59	22	28	31	59	BLOWS/30cm				
42				x					45.15	0-30	64	22	31	33	64	BLOWS/30cm				
43				x					46.65	0-31	67	23	31	36	67	BLOWS/30cm				
44	-52.90	47.50	1.00	x	Silt	Light Grey	Hard	With seams of fine sand & little clay and trace of mica.	48.15	0-32	45	16	21	25						
45				x					49.65	0-33	52	22	20	32	52	BLOWS/30cm				
46	-55.90	50.50	1.00	x	Silty Clay	Light Grey	Stiff	With seams of fine sand. Trace of mica.	51.15	0-34	14	4	8	8						
47				x	Silt	Light Grey	Hard		With seams of fine sand. Trace of mica.	52.65	0-35	43	10	19	24					
48	-58.90	53.50	1.50	x	Silty Sand	Light Grey	Very Dense	Sand is fine grained. Trace of mica throughout.	54.15	0-36	78	25	33	45	78	BLOWS/30cm				
49				x					55.65	0-37	117	43	55	62	117	BLOWS/30cm				
50				x					57.15	0-38	118	26	42	76	118	BLOWS/30cm				
51				x					58.65	0-39	107	23	39	68	107	BLOWS/30cm				
52				x					60.15	0-40	77	23	30	47	77	BLOWS/30cm				

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Rugsu in Kh-jing

Type of Drilling Rotary

Hole Number BH-14P3 (PAGE 3 of 3)

Date 10/19/99 - 10/10/99

Water Table α- m.

Elevation PW-5.389 (STA 6+110) m.

Driller _____

Remarks
 0 : Disturbed Soil Sample

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test										
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value						
												15cm	15cm	15cm	10	20	30	40	50		
61				x	Silty Sand	Light Grey	Very Dense	Sand is fine grained. Trace of mica throughout.	60.15 60.45	0-43	77	23	30	47	77	80.05/30cm					
62				x					61.65 61.95	0-41	82	24	32	50	82	80.45/30cm					
63				x					63.15 63.45	0-42	73	21	26	47	73	80.45/30cm					
64	-69.40	61.00	19.50	x					64.65 64.95	0-43	41	12	18	23							
65	-70.90	65.50	1.50	x	Sand	Light Grey	Dense	Sand is medium grained. With seams of silt. Trace of mica.	64.65 64.95	0-43	41	12	18	23							
66				x	Silty Sand	Light Grey	Very Dense	Sand is fine grained. Trace of mica throughout.	65.15 66.45	0-44	77	20	29	48	77	80.45/30cm					
67				x					67.65 67.95	0-45	112	40	46	66	112	80.45/30cm					
68				x					68.15 68.45	0-45	110	32	50	60	110	80.45/30cm					
69				x					70.65 70.95	0-47	105	32	45	60	105	80.45/30cm					
70				x					72.15 72.45	0-43	84	28	38	46	84	80.45/30cm					
71				x					73.65 73.95	0-49	84	30	38	46	84	80.45/30cm					
72				x					75.15 75.45	0-50	117	34	50	67	117	80.45/30cm					
73				x					75.65 76.95	0-51	100	40	46	54	100	80.45/30cm					
74				x					78.15 78.30	0-52	110/75	44	140		110	80.45/30cm					
75				x					79.65 79.80	0-52	130/75	44	130		130	80.45/30cm					
76				x					81.15 81.30	0-54	136/73	41	70	66/8	136	80.45/23cm					
77				x					82.65 82.80	0-55	95/73	38	55	40/8	95	80.45/23cm					
78				x					84.15 84.30	0-58	95/73	39	58	38/8	95	80.45/23cm					
79				x					85.65 85.80	0-57	114/75	42	114		114	80.45/15cm					
80				x					87.15 87.30	0-58	143/73	43	90	53/8	143	80.45/23cm					
81				x					88.65 88.80	0-59	107/73	38	65	42/8	107	80.45/23cm					
82				x					90.15 90.30	0-50	103/73	42	62	41/8	103	80.45/23cm					
83				x																	
84				x																	
85				x																	
86				x																	
87				x																	
88				x																	
89				x																	
90				x																	
91	-95.78	90.38	24.88	x																	
END OF DRILLING																					

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Ruzza in Khuba Type of Drilling Rotary

Hole Number BI-1RC (PAGE 1 of 4)

Date 16/11/99 - 24/11/99

Water Table a- m.

Elevation FW-7.978 (SIA 6+560) m. Driller _____

Remarks

0 : Disturbed Soil Sample
UD : Undisturbed Soil Sample taken by Shelby Tube

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test								
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value				
												15cm	15cm	15cm	10	20	30	40	50
1					Silty Sand	Light Grey	Loose	Sand is fine grained. Trace of decomposed organic matter and mica.	1.65	0-1	7	4	3	4					
2	-10.43	2.50	2.50		Silty Sand	Light Grey	Very Loose	Sand is medium grained. Trace of decomposed organic matter and mica.	1.95	0-2	4	2	2	2					
3					Sand	Light Grey	Loose	Sand is fine to medium grained. With silt seams and little organic matter.	3.15	0-7	7	5	3	4					
4	-11.93	4.00	1.50		Sand	Light Grey	Medium	Sand is fine grained. With silt seams. Slightly clay. Trace of mica.	3.45	0-4	11	3	5	6					
5					Sand	Light Grey	Loose	Material is same as above layer. With little organic matter.	4.65	0-3	9	4	4	5					
6	-13.48	5.50	1.50		Silty Sand	Light Grey	Loose	Sand is fine grained. With decomposed organic matter. Slightly clay.	6.15	0-6	14	5	6	8					
7					Sand	Light Grey	Loose	Material is same as above layer. With little organic matter.	6.45	0-5	10	4	4	6					
8					Sand	Light Grey	Loose	Material is same as above layer. With little organic matter.	7.65	0-6	14	5	6	8					
9					Sand	Light Grey	Loose	Material is same as above layer. With little organic matter.	8.15	0-7	9	4	4	5					
10	-17.58	10.00	4.50		Silty Sand	Light Grey	Loose	Sand is fine grained. With decomposed organic matter. Slightly clay.	9.15	0-5	5	1	2	3					
11					Silty Sand	Light Grey	Loose	Material is same as above layer. With little organic matter.	10.65	0-5	4	0	2	2					
12	-19.13	11.15	1.15		Silty Sand	Light Grey	Loose	Sand is fine grained. With decomposed organic matter. Slightly clay.	10.95	0-10	5	2	2	3					
13					Silty Clay	Light Grey	Medium	Little fine sand. Trace of decomposed organic matter.	12.15	UD-1									
14	-20.98	13.00	1.85		Silty Clay	Light Grey	Medium to stiff	Trace of sand and decomposed organic matter.	12.45	0-11	8	4	4	4					
15					Silty Clay	Light Grey	Stiff	Little decomposed organic matter. Trace of sand and mica.	14.55	0-12	8	4	4	4					
16	-23.98	16.00	3.00		Silty Clay	Light Grey	Stiff	Little decomposed organic matter. Trace of sand and mica.	14.55	UD-2									
17					Silty Clay	Light Grey	Medium	Material is same as above layer.	15.15	0-13	11	4	5	6					
18					Silty Clay	Light Grey	Medium	Material is same as above layer.	15.45	0-14	12	4	6	6					
19	-26.98	19.00	3.00		Silty Clay	Light Grey	Medium	Material is same as above layer.	18.65	0-15	8	2	4	4					
20					Sand	Light Grey	Dense	Sand is fine grained. With seams of silt. Slightly clay and trace of mica.	18.65	0-16	8	2	4	4					
21					Sand	Light Grey	Dense	Sand is fine grained. With seams of silt. Slightly clay and trace of mica.	21.15	0-17	40	11	19	21					
22	-29.98	22.00	3.00		Sand	Light Grey	Dense	Sand is fine grained. With seams of silt. Slightly clay and trace of mica.	21.45	0-18	43	14	20	23					
23					Sand	Light Grey	Dense	Sand is fine grained. With seams of silt. Slightly clay and trace of mica.	22.85	0-19	53	14	24	29					
24					Sand	Light Grey	Dense	Sand is fine grained. With seams of silt. Slightly clay and trace of mica.	24.15	0-20	61	14	27	34					
25	-32.98	25.00	3.00		Sand	Light Grey	Dense	Sand is fine grained. With seams of silt. Slightly clay and trace of mica.	24.45										
26					Sand	Light Grey	Dense	Sand is fine grained. With seams of silt. Slightly clay and trace of mica.	25.85										
27					Sand	Light Grey	Dense	Sand is fine grained. With seams of silt. Slightly clay and trace of mica.	25.95										
28					Sand	Light Grey	Dense	Sand is fine grained. With seams of silt. Slightly clay and trace of mica.	27.15										
29					Sand	Light Grey	Dense	Sand is fine grained. With seams of silt. Slightly clay and trace of mica.	27.45										
30	-37.48	29.50	4.50		Sand	Light Grey	Dense	Sand is fine grained. With seams of silt. Slightly clay and trace of mica.	28.65										
31					Sand	Light Grey	Dense	Sand is fine grained. With seams of silt. Slightly clay and trace of mica.	28.95										

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Rupsa in Khusha

Type of Drilling Rotary

Hole Number BH-19C (PAGE 2 of 4)

Date 16/11/99 - 21/11/99

Water Table 0- m.

Elevation PWD-7.978 (STA 6+560) m.

Driller _____

Remarks

D : Disturbed Soil Sample

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test									
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value					
												15cm	15cm	15cm	10	20	30	40	50	
31					Silty Sand	Light Grey	Very Dense	Sand is fine grained. trace of mica throughout.	30.15	D-20	61	14	27	34	61	80	95	30cm		
32									31.65	D-21	68	21	30	38	68	80	95	30cm		
33									31.15	D-22	74	20	32	42	74	80	95	30cm		
34	-41.98	31.00	4.50						34.65	D-23	28	11	12	16						
35					Silty Clay	Light Grey	Very Stiff	With seams of fine sand. trace of mica.	34.65	D-23	28	11	12	16						
36	-41.48	35.50	1.50		Silt	Light Grey	Hard	With seams of fine sand. Little clay. trace of mica throughout.	36.15	D-24	34	11	16	18						
37									36.15	D-24	34	11	16	18						
38									37.65	D-25	33	8	12	21						
39									37.65	D-25	33	8	12	21						
40									39.15	D-26	40	12	18	22						
41									39.15	D-26	40	12	18	22						
42	-43.48	41.50	5.00		Sand	Light Grey	Very Dense	Sand is fine grained. With seams of silt. Slightly clay. trace of organic matter and mica.	40.65	D-27	49	18	21	28						
43									42.15	D-28	76	24	34	42	76	80	95	30cm		
44									42.15	D-28	76	24	34	42	76	80	95	30cm		
45	-52.48	44.50	3.00		Silt	Light Grey	Hard	With seams of fine sand. Little clay. trace of organic matter and mica.	43.65	D-29	79	28	34	45	79	80	95	30cm		
46									43.65	D-29	79	28	34	45	79	80	95	30cm		
47	-54.98	47.00	2.50						45.15	D-30	34	10	14	20						
48					Silty Clay	Light Grey	Very Stiff	Little fine sand. trace of decomposed organic matter.	45.15	D-30	34	10	14	20						
49									45.65	D-31	30	8	13	17						
50									45.65	D-31	30	8	13	17						
51	-58.48	50.50	3.50		Silty Sand	Brownish Light Grey	Very Dense	Sand is fine grained. trace of mica throughout.	48.15	D-32	21	6	9	12						
52									48.15	D-32	21	6	9	12						
53									49.65	D-33	28	9	12	16						
54									49.65	D-33	28	9	12	16						
55									51.15	D-34	111	33	41	70	111	80	95	30cm		
56	-64.48	56.50	6.00						51.15	D-34	111	33	41	70	111	80	95	30cm		
57									52.65	D-35	137	34	60	77	137	80	95	30cm		
58									52.65	D-35	137	34	60	77	137	80	95	30cm		
59									54.15	D-36	135	30	55	80	135	80	95	30cm		
60	-67.48	59.50	3.00						54.15	D-36	135	30	55	80	135	80	95	30cm		
61									55.65	D-37	165	49	84	101	165	80	95	30cm		
									55.65	D-37	165	49	84	101	165	80	95	30cm		
									57.15	D-38	135/15	51	135		135	80	95	15cm		
									57.15	D-38	135/15	51	135		135	80	95	15cm		
									58.65	D-39	63	16	23	45	63	80	95	30cm		
									58.65	D-39	63	16	23	45	63	80	95	30cm		
									60.15	D-40	100/15	38	100		100	80	95	15cm		
									60.15	D-40	100/15	38	100		100	80	95	15cm		

FIG DRILLING LOG

Remarks

0 : Disturbed Soil Sample

Project No. _____

Project The Study on Construction of Bridge over the River Rupsa in India

Type of Drilling Rotary

Hole Number BH-12C (PAGE 3 of 4)

Date 16/11/99 - 24/11/99

Water Table Q- m.

Elevation PW-7.978 (STA 6+560) m.

Driller _____

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test							
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value			
									15cm	15cm	15cm	10	20	30	40	50		
61				x	Silty Sand	Light Grey	Very Dense	Sand is fine grained. Trace of mica throughout of the layer.	60.15 60.30	0-40	100/15	38	100		100	BLOWS/15cm		
62				x					61.65 61.80	0-41	160/15	49	160		160	BLOWS/15cm		
63				x					63.15 63.23	0-42	88/8	90	88/8		88	BLOWS/8cm		
64				x					64.65 64.73	0-43	112/8	115	112/8		112	BLOWS/8cm		
65				x					66.15 66.45	0-44	120	31	46	74	120	BLOWS/30cm		
66				x					67.65 67.73	0-45	86/8	72	86/8		86	BLOWS/8cm		
67				x					69.15 69.45	0-46	103	30	43	69	103	BLOWS/30cm		
68				x					70.65 70.95	0-47	112	34	44	68	112	BLOWS/30cm		
69				x					72.15 72.45	0-48	111	31	47	64	111	BLOWS/30cm		
70				x					73.65 73.95	0-49	116	32	47	69	116	BLOWS/30cm		
71				x					75.15 75.45	0-50	128	36	52	76	128	BLOWS/30cm		
72				x					76.65 76.95	0-51	117	33	49	68	117	BLOWS/30cm		
73				x					78.15 78.38	0-52	123/23	30	59	64/8	123	BLOWS/23cm		
74				x					79.65 79.80	0-53	92/15	34	92		92	BLOWS/15cm		
75				x					81.15 81.30	0-54	115/15	46	115		115	BLOWS/15cm		
76				x					82.65 82.80	0-55	123/15	50	123		123	BLOWS/15cm		
77				x					84.15 84.30	0-56	128/15	49	128		128	BLOWS/15cm		
78				x					85.65 85.73	0-57	110/8	108	110		110	BLOWS/8cm		
79				x					87.15 87.23	0-58	86/8	94	86/8		86	BLOWS/8cm		
80				x					88.65 88.73	0-59	88/8	68	88/8		88	BLOWS/8cm		
81				x					90.15 90.23	0-60	82/8	76	82/8		82	BLOWS/8cm		

FIG DRILLING LOG

Project No. _____

Project The Study on Construction of Bridge over the River Rupsa in Khulna

Type of Drilling Rotary

Remarks

O : Disturbed Soil Sample
 UO : Undisturbed Soil Sample taken by Shelby Tube

Hole Number BR-1MF6 (PAGE 1 of 3)

Date 31/10/99 - 01/11/99 & 24/11/99 - 26/11/99

Water Table 2.220 m.

Elevation PA0-6858 (SIA 6+710) m.

Driller _____

Scale in m	Elevation in m	Depth in m	Thickness in m	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Sampling		Standard Penetration Test									
									Depth in m	Sample No.	N-Value Blows/30cm	Blows Per Each 15 cm			N - Value					
												15cm	15cm	15cm	10	20	30	40	50	
1					Silty Sand	Light Grey	Very Loose	Sand is fine grained. Non plastic. Trace of mica.												
2	-9.40	2.50	2.50		Sand	Light Grey	Medium	Sand is fine grained. Slightly silty. Trace of mica.	1.65 1.95	0-18	4	2	2	2						
3					Sand	Light Grey	Medium	Sand is fine grained. Slightly silty. Trace of mica.	3.15 3.45	0-28	10	4	4	6						
4																				
5	-12.40	5.50	3.00		Silty Sand	Light Grey	Medium	Sand is fine grained. Trace of mica.	4.65 4.95	0-38	9	4	4	5						
6					Silty Sand	Light Grey	Medium	Sand is fine grained. Trace of mica.	6.15 6.45	0-48	10	3	4	6						
7	-13.90	7.00	1.50		Organic Clay	Black	Medium	Plastic.												
8	-15.40	8.50	1.50		Silty Clay	Grey	Soft	Plastic. With seams of fine sand. Trace of mica.	7.65 7.95	0-58	7	4	3	4						
9					Silty Clay	Light Grey	Stiff	With slightly silty fine sand. Trace of mica.	9.15 9.45	0-68	5	4	3	2						
10	-16.90	10.00	1.50		Silty Clay	Light Grey	Stiff	With slightly silty fine sand. Trace of mica.	10.00 10.45 10.65 10.95	UO-1 0-78	10	4	4	6						
11	-18.40	11.50	1.50		Silty Clay	Light Grey	Soft	Plastic. Trace of decomposed organic matter and fine sand.	12.15 12.45	0-88	4	2	2	2						
12					Silty Clay	Light Grey	Stiff	Plastic. With slightly silty fine sand. Trace of mica.	13.65 13.95	0-98	9	2	4	5						
13	-19.90	13.00	1.50		Silty Clay	Light Grey	Stiff	Plastic. Trace of decomposed organic matter throughout.	15.15 15.45	0-108	9	7	5	4						
14	-21.40	14.50	1.50		Silty Clay	Light Grey	Stiff	Plastic. Trace of decomposed organic matter throughout.	16.65 16.95	0-118	11	4	5	6						
15																				
16																				
17																				
18																				
19																				
20	-26.90	20.00	3.50		Silty Sand	Light Grey	Medium	Sand is fine grained. Non plastic. With seams of clayey silt and trace of mica.	18.15 18.45	0-128	9	2	4	5						
21																				
22																				
23	-30.40	23.50	3.50		Silty Clay	Light Grey	Stiff	Plastic. Trace of fine sand and decomposed organic matter.	19.65 19.95	0-138	8	4	4	4						
24																				
25																				
26	-33.40	26.50	1.00		Clayey Silt	Light Grey	Very Stiff	Slightly plastic. With seams of fine sand.	20.40 21.15 21.45	UO-2 0-148	15	4	7	8						
27																				
28	-34.90	28.00	1.50		Silty Sand	Light Grey	Medium	Sand is fine grained. Slightly plastic. Trace of clay and mica.	22.65 22.95	0-158	20	7	9	11						
29																				
30																				
31	-37.90	31.00	3.00						24.15 24.45	0-168	11	4	5	6						
									25.65 25.95	0-178	12	4	6	6						
									27.15 27.45	0-188	19	5	8	11						
									28.65 28.95	0-198	23	7	11	12						
									30.15 30.45	0-208	30	10	13	17						

