SP-394

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

HYDROMETER ANALYSIS

Soil Sample: _____ Test No.: _____

_____ Date: 24/4/21

1043 _____ Tested by: _____

Location: _____ Hydrometer No. 152 H 867452

Boring No. : 77 Sample No. D - 28, 29, 30 Meniscus Correction: _____

Sample Depth : 42, 43.5, 45 M W_s, in g _____

Specific Gravity, G_s _____

$R_r = 2$

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{\frac{Z, in\ cm}{t\ in\ min}}$	D in mm	N
25/4		1/4	48	-3	31						
		1/2	43.5		"						
		1	38		"						
		2	34		"						
		4	29		"						
		8	24		"						
		15	20		"						
		30	17		31						
	10:37	60	14		"						
	11:37	120	11.5		"						
	1:37	240	10		"						
	5:37	480	9.5		"						
26/4	9:31	Am	7.5		31						
27/4	9:22	Am	6.5		32						
28/4	9:23	Am	6.0		32						

SP-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____
Soil Sample _____
Location: _____
Boring No: _____
Sample No. : _____
Sample depth: _____

Container 1043/9020
Wt. of Container + Soil _____
Wt. of Container: _____
Wt. of Soil 100.0 gm
Performed by: _____
Date: 24/4/2024

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				0.6			
200				2.4			
Pan				97.0			
				100			

H

Gray silty clay

3.0

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

SP-394

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____

_____

_____

Location: _____

Boring No. : _____ Sample Depth. _____

Sample No. : _____

Test No.: _____

Date: 24/4/21

Tested by: _____

H-1043

Determination No.			
Bottle No.	7		
Wt. of Bottle + Water + Soil W_1 in g	371.9		
Temperature T in °C	31		
Wt. of Bottle + Water W_2 in g	340.4		
Evaporating Dish No.	13		
Wt. of dish g	148.7		
Wt. of dish + dry soil g	198.4		
Wt. Bottle + Dry Soil in g			
Wt. of Bottle in g	91.9		
Wt. of Soil W_s in g	49.7		
Specific Gravity of Water G_T at T°C			
Specific Gravity of Soil: Gs			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

Gs _____

Sl- 394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample: B.H: 77
Sample: D-28, 29, 30
Depth: 42, 43.5, 45 M

Test No.:
Date: 21/04/2021
Tested by:

Liquid Limit					
No. of Blows	16	20	25	31	35
Container No.	2221	2031	2076	404	114
Wt. Container, gm	9.37	10.66	10.37	7.07	7.03
Wt. Container + Wet Soil	37.08	35.04	36.34	32.00	35.36
Wt. Container + Dry Soil	29.32	28.25	29.20	25.23	27.68
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Plastic Limit					
Container No.	2123	2077	708		
Wt. Container, gm	9.52	9.63	7.20		
Wt. Container + Wet Soil	37.96	40.76	34.06		
Wt. Container + Dry Soil	32.47	34.61	28.76		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Grey silty clay

Shrinkage Limit test:

Dish No. =
Wt. of Dish =
Wt. Dish + Wet Soil =
Wt. Dish + Dry Soil =
Wt. Dry Soil Pat =

Wt. displaced mercury =
Volume of displaced mercury =
Vol. of dish =
Volume of dry soil pat =
Shrinkage Limit =

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

ED

~~CE-394~~
(62)

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

HYDROMETER ANALYSIS

Soil Sample: _____

_____

_____

1287 Location: _____

Boring No. : 79 Sample No. UD-1

Sample Depth : 0.60 – 1.05 M

Specific Gravity, G_s _____

Test No.: _____

Date: _____

Tested by: _____

Hydrometer No. 152 H867452

Meniscus Correction: _____

W_s, in g 50

$R_8 = 2$

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z, in\ cm / t\ in\ min}$	D in mm	N
6/5		1/4	49	-3	29						
		1/2	47.5		"						
		1	46.5		"						
		2	44.5		"						
		4	42		"						
		8	35.5		"						
		15	30.5		29						
		30	24		"						
	10:02	60	14		29.5						
	11:22	120	10.5		"						
	1:22	240	9.5		"						
	5:5	480	8		"						
7/5	9:20		6		30						
8/5	9:17	Am	5		30						
9/5	9:06	Am	4		30						

Department of Civil Engineering, BUET

Sieve Analysis

SL-394 (62)

Container 1287 / 1114

Job No.: _____

Soil Sample _____

Location: _____

Boring No: 79

Sample No.: UD-1

Sample depth: _____

Wt. of Container + Soil _____

Wt. of Container _____

Wt. of Soil 100.0 gm

Performed by: _____

Date: 05/05/21

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100							
200				0.3			
Pan				99.7			
				100.0			

17

Brownish silty clay

0.3

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____ Test No.: _____

Date: 03/05/21

Tested by: _____

Location: _____

Boring No. : 79 Sample Depth. 0.60–1.05 M

Sample No. : UD-1

Determination No.				
Bottle No.		10 ~~HD~~		
Wt. of Bottle + Water + Soil W_1 in g		373.8		
Temperature T in °C		30		
Wt. of Bottle + Water W_2 in	g	342.0		
Evaporating Dish No.		21		
Wt. of dish	g	302.3		
Wt. of dish + dry soil	g	351.7		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	93.6		
Wt. of Soil W_s in	g	49.4		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_S			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

G_S _____

cont No=1287

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

SL-394 (62)

Atterberg Limit Test

Soil Sample
B.H: 79
Sample: UD-1
Depth: 0.60 – 1.05 M

Test No.:
Date: 3/5/21
Tested by:

Brownish silty clay

Liquid Limit					
No. of Blows	15	20	25	30	35
Container No.	2154	2176	2085	2108	2151
Wt. Container, gm	9.18	9.31	10.52	9.85	9.46
Wt. Container + Wet Soil	45.73	43.20	45.66	45.34	43.88
Wt. Container + Dry Soil	34.41	32.94	35.27	34.99	34.06
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Plastic Limit					
Container No.	2087	2101	872		
Wt. Container, gm	11.31	9.43	7.04		
Wt. Container + Wet Soil	42.85	44.31	41.66		
Wt. Container + Dry Soil	35.97	36.68	34.13		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L+H

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

Department of Civil Engineering, BUET

8L-394

Geotechnical Engineering Laboratory

HYDROMETER ANALYSIS

Soil Sample: _____

_____

_____

Location: _____

Boring No. : 80 Sample No. D-22, 23, 24

Sample Depth : 33.0, 34.5, 36 M

Specific Gravity, G_s _____

Test No.: _____

Date: 9/6/21

Tested by: _____

Hydrometer No. 152H 867452

Meniscus Correction: _____

W_s, in g 50.0

1337

RV=2.5

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z, in\ cm / t\ in\ min}$	D in mm	N
10/6		1/4	48	-2.5	29						
		1/2	45.5		11						
		1	41.5		11						
		2	35.5		11						
		4	31		11						
		8	24		11						
		15	19.5		11						
		30	15		11						
	16:28	60	11.5		11						
	11:28	120	8.0		11						
	1:28	240	7.0		29						
	5:28	480	6.5		11						
11/6	9:32 Am		5.5		28						
12/6	9:48 Am		4.5		29						
13/6	8:59 Am		4		29						

SF-394

Soil Mechanics and Foundation Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____
Soil Sample _____
Location: _____
Boring No: 80
Sample No. : D-22, 23, 24
Sample depth: _____

Container: 1337 / 1391
Wt. of Container + Soil _____
Wt. of Container: _____
Wt. of Soil 100.0 gm
Performed by: _____
Date: 08/06/2021

H

Grey Silty clay

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50				0.9			
100				2.2			
200				3.6			
Pan				93.3 / 100			

6.7

D_{10} =
D_{30} =
D_{60} =
C_u =
C_z =
F.M. =

81-394

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____

_____

_____

Location: _____

Boring No. : 80 Sample Depth. _____

Sample No. : D - 22, 23, 24

Test No.: _____

Date: 9/6/21

Tested by: _____

H1337

Determination No.				
Bottle No.		13		
Wt. of Bottle + Water + Soil W_1 in g		396.9		
Temperature T in °C		28		
Wt. of Bottle + Water W_2 in	g	365.2		
Evaporating Dish No.		8		
Wt. of dish	g	165.7		
Wt. of dish + dry soil	g	215.4		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	117.1		
Wt. of Soil W_s in	g	49.7		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_S			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

G_S _____

SURVEY2000
SAMPLE TICKET 1337
Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj

Bore Hole No: 80 Sample type: D-22
Depth: 33.0 m Signature:

Cont No = 1337

...namain.
...gineering Laboratory
...ivil Engineering, BUET

...rg Limit Test

Test No.:
Date: 5/6/21
Tested by:

B.H: 80
Sample: ~~D~~ D-22, 23, 24
Depth: 33, 34.5, 36 m

Grey Clayey Silt

Liquid Limit					
No. of Blows			25		
Container No.	2059	845	2271	405	875
Wt. Container, gm	10.88	7.75	9.05	6.87	7.24
Wt. Container + Wet Soil					
Wt. Container + Dry Soil					
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Plastic Limit					
Container No.	2063	2062	2227		
Wt. Container, gm	9.32	9.14	10.21		
Wt. Container + Wet Soil					
Wt. Container + Dry Soil					
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L+H
D

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

(2)

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

SURVEY2000
SAMPLE TICKET 1146
Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj

L-H

Bore Hole No: 82 **Sample type:** D-25
Depth: 37.5m **Signature:**

1146

vil Engineering, BUET

gineering Laboratory

TER ANALYSIS

Test No.: _____

Date: 23/10/21

Tested by: _____

Hydrometer No. 152H/867452

Location: _____

Boring No. : 82 Sample No. D-25

Sample Depth : 37.5

Specific Gravity, G_s _____

Meniscus Correction: _____

W_s, in g 50

$R_w = 2$

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z, in\ cm}$ / t in min	D in mm	N
23/10		~~1/4~~	49	−3	28						
		~~1/2~~	47		"						
		1	45		"						
		2	40		"						
		4	33		"						
		8	25.5		"						
		15	21.5		"						
		30	17		"						
	10:22	60	13.5		"						
	11:22	120	11		"						
	1:22	240	8.5		"						
	5:22	480	7		"						
24/10	8:51	Am	6		29						
25/10	9:01	Am	5.5		29						
26/10											

C:\Users\civil\Nilabib Shahch\Hydrometer Analysis.doc

(4)

SI-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____
Soil Sample _____
Location: _____
Boring No: B2
Sample No. : D-25
Sample depth: _____

Container: 1146/1026
Wt. of Container + Soil _____
Wt. of Container: _____
Wt. of Soil 100 gm
Performed by: _____
Date: 23/10/21

H

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				0.8			
200				1.2			
Pan				98.0			
				100			

Grey clayey silt

D_{10} =
D_{30} =
D_{60} =
C_u =
C_z =
F.M. =

2.0

Department of Civil Engineering, BUET

S1-394

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____

_____

_____

Location: _____

Boring No. : 82 Sample Depth. _____

Sample No. : D-25

Test No.: _____

Date: 23/10/21

Tested by: _____

H-1146

Determination No.				
Bottle No.		16		
Wt. of Bottle + Water + Soil W_1 in g		381.6		
Temperature T in °C		28		
Wt. of Bottle + Water W_2 in	g	350.0		
Evaporating Dish No.		25		
Wt. of dish	g	283.4		
Wt. of dish + dry soil	g	332.7		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	102.1		
Wt. of Soil W_s in	g	49.3		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_s			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

G_s _____

SI-394

Cont No: 1146

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample _____
BH : 82
Sample : D-25
Depth : 37.5 M

Test No.:
Date: 18/10/21
Tested by:

Liquid Limit					
No. of Blows					
Container No.	721	101	718	607	824
Wt. Container, gm	7.10	7.45	7.23	7.00	7.36
Wt. Container + Wet Soil					
Wt. Container + Dry Soil					
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Grey clayey silt

Plastic Limit					
Container No.	2042	2301	2334		
Wt. Container, gm	10.95	10.22	9.70		
Wt. Container + Wet Soil					
Wt. Container + Dry Soil					
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L+H

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

SL-394

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

HYDROMETER ANALYSIS

Soil Sample: _____

_____

_____

Location: _____

Boring No. : 83 Sample No. UD-1

Sample Depth : 0.60 M – 1.05 M

Specific Gravity, G_s _____

Test No.: _____

Date: _____

Tested by: _____

Hydrometer No. 152 H867452

Meniscus Correction: _____

W_s, in g 50

1141

R-r=2

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z, in\ cm / t\ in\ min}$	D in mm	N
6/5		1/4	48	-3	29						
		1/2	46		"						
		1	44		"						
		2	42		"						
		4	39.5		"						
		8	34.5		"						
		15	29.5		29						
		30	25		"						
	10:26	60	21.5		"						
	11:26	120	17.5		29.5						
	1:26	240	15		"						
	5:5	480	12		"						
7/5	9:21		9		30						
8/5	9:17	Am	7.5		30.						
9/5	9:07	Am	5.5		30						

SL-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____

Soil Sample _____

Location: _____

Boring No: 83

Sample No. : UD-1

Sample depth: _____

Container: 1141/1229

Wt. of Container + Soil _____

Wt. of Container: _____

Wt. of Soil: 100.0 gm

Performed by: _____

Date: 05/05/24

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50				0.2			
100				0.6			
200				0.7			
Pan				98.5			
				100			

H

Gray silty clay

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

1.5

SPG from UC.

SL-394

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____

_____

_____

Location: _____

Test No.: _____

Date: 03/05/2021

Tested by: _____

Boring No. : B3 Sample Depth. 0.60 – 1.05 M

Sample No. : UD – 1

UC 451 T H

Determination No.				
Bottle No.		8		
Wt. of Bottle + Water + Soil W_1 in g		372.0		
Temperature T in °C		30		
Wt. of Bottle + Water W_2 in	g	341.1		
Evaporating Dish No.		6		
Wt. of dish	g	159.8		
Wt. of dish + dry soil	g	208.9		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	92.7		
Wt. of Soil W_s in	g	49.1		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_S			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

G_S _____

cont NO = 1141

SL-394.
(67)

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample
B.H: 83
Sample: UD-1
Depth: 0.60 - 1.05 M

Test No.:
Date: 3/5/21
Tested by:

Liquid Limit					
No. of Blows	15	20	25	29	34
Container No.	864	904	27	114	728
Wt. Container, gm	10.73	6.93	7.31	7.02	7.04
Wt. Container + Wet Soil	46.55	42.41	43.95	40.77	36.89
Wt. Container + Dry Soil	32.50	28.95	30.07	28.21	25.81
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Grey silty clay.

Plastic Limit					
Container No.	14	189	406		
Wt. Container, gm	7.21	7.32	7.07		
Wt. Container + Wet Soil	42.78	39.21	39.23		
Wt. Container + Dry Soil	34.17	31.52	31.46		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L + H

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

(2)

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

(ED)

Remarks:

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

HYDROMETER ANALYSIS

SL-394

Soil Sample: Mithamain

Location:

Boring No. : 83 Sample No. D-2

Sample Depth : 3.0 M

Specific Gravity, G_s

Test No.:

Date:

Tested by:

Hydrometer No. 152H867452

Meniscus Correction:

W_s, in g 50

1339

RR = 2.5

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z_r \text{ in cm} / t \text{ in min}}$	D in mm	N
13/6		¼	47	−2.5	29						
		½	43		4						
		1	34		4						
		2	24.5		4						
		4	17		4						
		8	11		4						
		15	8		4						
		30	6		11						
	10:12	60	5		11						
	11:12	120	3.5		29						
	1:12	240	3.0		11						
	5:12	480	2.5		11						
14/6	8:57	Am	2.5		29						
15/6	9:03	Am	2.5		28.5						
16/6	9:04	Am	1.5		28						

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SL= 394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____

Soil Sample _____

Location: _____

Boring No: 83

Sample No. : D-2

Sample depth: _____

Container: 1339/1351

Wt. of Container + Soil _____

Wt. of Container: _____

Wt. of Soil 100.0 gm

Performed by: _____

Date: 12/6/21

H

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				0.4			
200				3.7			
Pan				95.9			
				100			

Grey Clayey Silt

D_{10} =

4.1

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

81-394

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____ Test No.: _____

Date: 12/6/21

Tested by: _____

1339

Location: _____

Boring No. : 89 Sample Depth. _____

Sample No. : D-2

Determination No.				
Bottle No.		10		
Wt. of Bottle + Water + Soil W_1 in g		373.7		
Temperature T in °C		29		
Wt. of Bottle + Water W_2 in	g	342.2		
Evaporating Dish No.		15		
Wt. of dish	g	312.2		
Wt. of dish + dry soil	g	361.6		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	93.6		
Wt. of Soil W_s in	g	49.4		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_S			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

G_S _____

Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj

Bore Hole No: 83 Sample type: D-2
Depth: 3.00m Signature:

Mithamain

1339

Engineering Laboratory
of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample
B.H: 83
Sample: D-2
Depth: 3.0 M

Test No.:
Date: 6/6/21
Tested by:

Grey Clayey Silt

Liquid Limit					
No. of Blows					
Container No.	2068	403	850	31	2245
Wt. Container, gm	8.71	6.78	6.97	11.44	9.90
Wt. Container + Wet Soil					
Wt. Container + Dry Soil					
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Plastic Limit					
Container No.	9015	2108	2142		
Wt. Container, gm	7.01	9.86	9.43		
Wt. Container + Wet Soil					
Wt. Container + Dry Soil					
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

$\frac{L+H}{D}$

Shrinkage Limit test:

Dish No. =
Wt. of Dish =
Wt. Dish + Wet Soil =
Wt. Dish + Dry Soil =
Wt. Dry Soil Pat =

Wt. displaced mercury =
Volume of displaced mercury =
Vol. of dish =
Volume of dry soil pat =
Shrinkage Limit =

(2)

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughnes s Index

Remarks:

SC-394

Geotechnical Engineering Laboratory

HYDROMETER ANALYSIS

Soil Sample: Mithamain

Test No.:

Date: 6/6/21

Tested by:

1349

Location:

Hydrometer No. 152H 867452

Boring No. : 83 Sample No. D-19, 20, 21

Meniscus Correction:

Sample Depth : 28.5, 30, 31.5 M

W_s, in g 50.0

Specific Gravity, G_s

Rw 2.5

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{\frac{Z_r \text{ in cm}}{t \text{ in min}}}$	D in mm	N
7/6		1/4	48	-2.5	29						
		1/2	46		11						
		1	40.5		4						
		2	34		4						
		4	26		4						
		8	22		4						
		15	19		4						
		30	15.5		4						
	10:36	60	13.5		4						
	11:36	120	11		11						
	1:36	240	9		11						
	5:36	480	7.5		29						
8/6	9:39 Am		6		28						
9/6	9:10	Am	6		28						
10/6	9:07 Am		6		28						

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81-394

Soil Mechanics Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____
Soil Sample: _____
Location: _____
Boring No: 83
Sample No.: D-19, 20, 21
Sample depth: _____

Container: 1349 / 1390
Wt. of Container + Soil: _____
Wt. of Container: _____
Wt. of Soil: 100.0 gm
Performed by: _____
Date: 6/6/21

H

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				0.4			
200				1.5			
Pan				98.1			
				100.0			

Grey silty clay

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

19

SL-394

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____

_____

_____

Location: _____

Boring No. : 89 Sample Depth. _____

Sample No. : D-19, 20, 21

Test No.: _____

Date: 6/6/21

Tested by: _____

H 1349

Determination No.				
Bottle No.		2		
Wt. of Bottle + Water + Soil W_1 in g		371.6		
Temperature T in °C		29		
Wt. of Bottle + Water W_2 in	g	340.0		
Evaporating Dish No.		22		
Wt. of dish	g	251.9		
Wt. of dish + dry soil	g	301.4		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	91.7		
Wt. of Soil W_s in	g	49.5		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_S			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

G_S _____

SURVEY2000
SAMPLE TICKET 1349
Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj

Bore Hole No: 83 Sample type: D-19
Depth: 28.50m Signature:

cont No=1349

Mithamain

Engineering Laboratory
Civil Engineering, BUET

berg Limit Test

Test No.:
Date: 2/6/21
Tested by:

B.H: 83
Sample: D-19, 20, 21
Depth: 28.5, 30, 31.5 M

Liquid Limit					
No. of Blows	15	19	24	29	35
Container No.	751	9016	888	797	2017
Wt. Container, gm	6.83	10.83	7.02	7.22	9.83
Wt. Container + Wet Soil	44.39	47.73	44.40	46.73	50.05
Wt. Container + Dry Soil	32.43	37.38	34.25	36.28	39.56
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Grey silty clay

Plastic Limit					
Container No.	2056	2126	133		
Wt. Container, gm	10.22	8.64	7.04		
Wt. Container + Wet Soil	51.04	48.11	47.82		
Wt. Container + Dry Soil	42.57	39.96	39.39		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L+H
D

Shrinkage Limit test:

Dish No. =
Wt. of Dish =
Wt. Dish + Wet Soil =
Wt. Dish + Dry Soil =
Wt. Dry Soil Pat =

Wt. displaced mercury =
Volume of displaced mercury =
Vol. of dish =
Volume of dry soil pat =
Shrinkage Limit =

(2)

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

Department of Civil Engineering, BUET

8E 394

Geotechnical Engineering Laboratory

HYDROMETER ANALYSIS

Soil Sample: Muthamain

Test No.: _____

Date: 9/6/21

Tested by: _____

1340

Location: _____ 32,33

Hydrometer No. 152H867452

Boring No.: 83 Sample No. D -~~19 20, 21~~

Meniscus Correction: _____

Sample Depth : ~~22.5, 30, 31.5~~ 48.0 M, 49.5 M

W_s, in g 50.0

Specific Gravity, G_s _____

RV=2.5

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{\frac{Z, in\ cm}{t\ in\ min}}$	D in mm	N
10/6		1/4	45	-2.5	29						
		1/2	40		4						
		1	33.5		4						
		2	28.5		4						
		4	24.5		4						
		8	21		4						
		15	17.5		6						
		30	15		11						
	16:28	60	12.5		11						
	11:28	120	10		11						
	1:28	240	9.0		29						
	5:28	480	8.0		"						
11/6	9:33 Am		7.0		28						
12/6	9:48 Am		6.0		29						
13/6	9:00 Am		5		29						

ED

SL-394

Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____

Soil Sample _____

Location: _____

Boring No: B3

Sample No.: D-~~8, 10, 12~~ 32, 33

Sample depth: 48.0 M, 49.5 M

Container: 1340/1363

Wt. of Container + Soil _____

Wt. of Container: _____

Wt. of Soil 100.0 gm

Performed by: _____

Date: 8/6/21

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50				0.5			
100				2.0			
200				5.4			
Pan				92.1			
				100			

Gray silty clay

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

SL-394

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____ Test No.: _____

Date: 9/6/21

Tested by: _____

H 1340

Location: _____

Boring No. : B3 Sample Depth. 48.0 M, 49.0 M

Sample No. : ~~D-19, 20, 21~~ D-32, 33,

Determination No.				
Bottle No.		2		
Wt. of Bottle + Water + Soil W_1 in g		371.4		
Temperature T in °C		28		
Wt. of Bottle + Water W_2 in	g	340.0		
Evaporating Dish No.		15		
Wt. of dish	g	312.2		
Wt. of dish + dry soil	g	362.0		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	91.7		
Wt. of Soil W_s in	g	49.8		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_S			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

G_S _____

SURVEY2000 1340
SAMPLE TICKET
Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj

Bore Hole No: 83 Sample type: D-32
Depth: 48-00 mt Signature:

Cont No = 1340

Engineering Laboratory
of Civil Engineering, BUET

Atterberg Limit Test

Test No.:
Date: 5/6/21
Tested by:

B.H: 83
Sample: D-32,33
Depth: 48, 49.5 M

Grey silty clay

Liquid Limit					
No, of Blows	15	20	25	30	35
Container No.	2172	40	2331	2256	2073
Wt. Container, gm	9.94	10.83	9.85	8.62	10.41
Wt. Container + Wet Soil	50.52	51.86	49.49	51.08	52.33
Wt. Container + Dry Soil	41.18	42.63	40.80	41.92	43.33
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Plastic Limit					
Container No.	2257	2200	2067		
Wt. Container, gm	9.76	8.48	8.85		
Wt. Container + Wet Soil	54.99	55.34	55.75		
Wt. Container + Dry Soil	47.25	47.36	47.76		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L+H
D

Shrinkage Limit test:

Dish No. =
Wt. of Dish =
Wt. Dish + Wet Soil =
Wt. Dish + Dry Soil =
Wt. Dry Soil Pat =

Wt. displaced mercury =
Volume of displaced mercury =
Vol. of dish =
Volume of dry soil pat =
Shrinkage Limit =

(2)

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

SURVEY2000
SAMPLE TICKET
Project: Elevated Expressway/Road from Mithamain
dar to Kurimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj
Bore Hole No: 84 Sample type: D-20
Depth: 30.00m Signature:

L+H
1051

Civil Engineering, BUET

Engineering Laboratory

IETER ANALYSIS

Test No.: _____
Date: 23/10/2021
Tested by: _____
Hydrometer No. 152#867452
Meniscus Correction: _____
W_s, in g 50

H
1051

Location: _____
Boring No. : 84 Sample No. D-20
Sample Depth : 30.0 M
Specific Gravity, G_s _____

Rr=2

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z_r \text{ in cm} / t \text{ in min}}$	D in mm	N
23/10		¼	48	-3	28						
		½	45.5		"						
		1	42		"						
		2	37		"						
		4	32.5		"						
		8	27		"						
		15	23.5		"						
		30	19		"						
	9:54	60	16		"						
	10:54	120	13.5		"						
	12:54	240	10.5		"						
	4:54	480	10		"						
24/10	8:48	Am	8.5		29						
25/10	8:57	Am	7.5		29						
26/10	9:00	Am	7.0		"						

SI-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____ Container: 1051 / ~~806~~ 637

Soil Sample _____ Wt. of Container + Soil _____

Location: _____ Wt. of Container: _____

Boring No: 84 Wt. of Soil ___100 gm_____

Sample No. : D-20 Performed by: _____

Sample depth: _____ Date: 23/10/21

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				0.3			
200				1.9			
Pan				97.9			
				102			

Grey silty clay

2.2

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

Department of Civil Engineering, BUET

St-394

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____

_____

_____

Location: _____

Boring No. : 84 Sample Depth. _____

Sample No. : D-20

Test No.: _____

Date: 23/10/21

Tested by: _____

H-1051

Determination No.				
Bottle No.		7		
Wt. of Bottle + Water + Soil W_1 in g		372.1		
Temperature T in °C		28		
Wt. of Bottle + Water W_2 in	g	340.5	340.5	
Evaporating Dish No.		21		
Wt. of dish	g	302.3		
Wt. of dish + dry soil	g	351.5		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	91.7		
Wt. of Soil W_s in	g	49.2		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_S			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

G_S _____

SL-394

Conf No: 1051

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample _____
BH : 84
Sample : D-20
Depth : 30.0 M

Test No.:
Date: ~~2021~~ 18/10/21
Tested by:

Liquid Limit					
No. of Blows	15	19	24	29	34
Container No.	2152	2185	2104	2125	2181
Wt. Container, gm	10.16	8.96	9.83	9.70	10.23
Wt. Container + Wet Soil	44.56	37.31	44.85	38.55	40.81
Wt. Container + Dry Soil	35.09	29.44	35.48	30.44	32.79
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Grey Silty Clay

Plastic Limit					
Container No.	825	888	B32		
Wt. Container, gm	7.02	11.18	9.09		
Wt. Container + Wet Soil	45.45	47.74	44.72		
Wt. Container + Dry Soil	38.00	40.66	37.86		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L 17

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

44.23

SURVEY2000 L+H-1063
SAMPLE TICKET
Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj

Bore Hole No: 87
Depth: 43.5
Sample type: D-29
Signature:

Civil Engineering, BUET

Engineering Laboratory

ETER ANALYSIS

Test No.: _____

Date: _____

Tested by: _____

Hydrometer No. 152H8674952

Meniscus Correction: _____

W_s, in g 50 gm

Location: _____

Boring No. : 87 Sample No. D-29, 30

Sample Depth : 43.5, 45 M

Specific Gravity, G_s _____

Rv=0

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z, in\ cm / t\ in\ min}$	D in mm	N
17/8		¼	45	-5	30						
		½	40		29						
		1	35		"						
		2	28		"						
		4	24.5		"						
		8	21.5		"						
		15	18.5		"						
		30	16.5		29						
	10:31	60	13.5		"						
	11:31	120	12		29						
	1835	240	10.5		"						
	5:35	480	9.5		"						
18/8	9:02	Am	8.5		29						
19/8	9:09	Am	8		29						
20/8	9:30	Am	7.5		29						

SL-394

Sieve Analysis

Job No.: _____
Soil Sample _____
Location: _____
Boring No: 87
Sample No.: D-29, 30, 31
Sample depth: _____

Container: 1063/811
Wt. of Container + Soil: _____
Wt. of Container: _____
Wt. of Soil: 100.0 gm
Performed by: _____
Date: 14/08/21

L+H

Grey silty clay

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				4.5			
200				1.3			
Pan				94.2			
				102			

D_{10} =

5.8

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____ Test No.: _____

Date: 16/08/21

Tested by: _____

Location: _____

Boring No. : 87 Sample Depth. _____

Sample No. : D-29, 30

Determination No.			
Bottle No.	6		
Wt. of Bottle + Water + Soil W_1 in g	372.9		
Temperature T in °C	29		
Wt. of Bottle + Water W_2 in g	342		
Evaporating Dish No.	16		
Wt. of dish g	310.4		
Wt. of dish + dry soil g	359.5		
Wt. Bottle + Dry Soil in g			
Wt. of Bottle in g	93.6		
Wt. of Soil W_s in g	49.1		
Specific Gravity of Water G_T at T°C			
Specific Gravity of Soil: Gs			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

Gs _____

SP-394

Cont: 1063

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample _____ Test No.:

B.H: 87 Date: 10/08/2024

Sample: D-29, 30, 31 Tested by:

Depth: 43.5, 45.0, 46.5 M

Liquid Limit					
No. of Blows	15	20	24	30	35
Container No.	2068	2045	2065	2030	2056
Wt. Container, gm	8.69	10.36	9.67	10.53	10.19
Wt. Container + Wet Soil	46.13	45.53	45.21	45.29	46.83
Wt. Container + Dry Soil	35.71	35.92	35.60	35.94	37.13
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Grey silty clay

Plastic Limit					
Container No.	2162	2142	2325		
Wt. Container, gm	10.38	9.40	9.37		
Wt. Container + Wet Soil	47.33	48.40	52.17		
Wt. Container + Dry Soil	41.02	41.79	44.84		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L+H

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

ED

SURVEY2000 9020
SAMPLE TICKET
Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj

Bore Hole No: 90 Sample type: D25
Depth: 37-50 m Signature:

Civil Engineering, BUET

gineering Laboratory

TER ANALYSIS

Test No.:
Date: 22/8/21
Tested by:
Hydrometer No. 152H 867452
Meniscus Correction:
W_s, in g 50.0 gm

9020

Location:
Boring No. : 90 Sample No. D-25,26
Sample Depth : 37.5, 39 M
Specific Gravity, G_s

RR = 2

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z, in\ cm / t\ in\ min}$	D in mm	N
23/8		¼	47	-3	29						
		½	44		"						
		1	42		"						
		2	37		"						
		4	31		"						
		8	26		"						
		15	21		"						
		30	17		29						
	10:15	60	14.5		"						
	11:15	120	12		"						
	1:15	240	10		"						
	5:15	480	9		"						
24/8	9:03	Am	7.5		29						
25/8	9:11	Am	7		29						
26/8	9:02	Am	6.5		29						

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ED

SL-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____
Soil Sample: _____
Location: _____
Boring No: 90
Sample No.: D-25,26
Sample depth: _____

Container: 9020/663
Wt. of Container + Soil: _____
Wt. of Container: _____
Wt. of Soil: 100.0 gm
Performed by: _____
Date: 22/08/21

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50				7.9			
100				29.3			
200				2.0			
Pan				60.8			
				100			

H

Grey silty clay (mix with sand)

39.2

D_{10} =
D_{30} =
D_{60} =
C_u =
C_z =
F.M. =

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

SL-394

Soil Sample: _____ Test No.: _____

_____ Date: 22/08/21

_____ Tested by: _____

Location: _____

Boring No. : 90 Sample Depth. _____

Sample No. : D-25,26

H 9020

Determination No.				
Bottle No.		20		
Wt. of Bottle + Water + Soil W_1 in g		373.5		
Temperature T in °C		29		
Wt. of Bottle + Water W_2 in	g	342.0		
Evaporating Dish No.		11		
Wt. of dish	g	141.3		
Wt. of dish + dry soil	g	191.3		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	294.0		
Wt. of Soil W_s in	g	50.0		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	Gs			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

Gs _____

Cont:9020

SP-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample _____
B.H: 90
Sample: D-24, 25, 26
Depth: 36.0, 37.5, 39.0 M

Test No.:
Date: 14/08/2024
Tested by:

Liquid Limit					
No. of Blows	16	20	26	30	35
Container No.	217	2044	2025	2170	2324
Wt. Container, gm	7.09	9.45	9.60	10.55	10.47
Wt. Container + Wet Soil	45.15	38.56	40.33	43.26	38.80
Wt. Container + Dry Soil	36.66	32.14	33.70	36.34	32.78
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Grey silty clay (mix with sand)

Plastic Limit					
Container No.	2013	2144	2111		
Wt. Container, gm	8.77	10.02	9.56		
Wt. Container + Wet Soil	57.90	60.37	57.10		
Wt. Container + Dry Soil	50.13	52.38	49.62		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L+H

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

Department of Civil Engineering, BUET

8L-394

Geotechnical Engineering Laboratory

HYDROMETER ANALYSIS

1171

Soil Sample: _____

_____

_____

Location: _____

Boring No. : 91 Sample No. UD-3

Sample Depth : 36.56 - 37.05 M

Specific Gravity, G_s _____

Test No.: _____

Date: 22/5/21

Tested by: _____

Hydrometer No. 152H 867452

Meniscus Correction: _____

W_s, in g 50.0

RR2

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z, in cm	$\sqrt{Z, in\ cm / t\ in\ min}$	D in mm	N
23/5		¼	47	-4	31						
		½	45		〃						
		1	39		〃						
		2	35.5		〃						
		4	30.5		〃						
		8	26		〃						
		15	21.5		〃						
		30	18		〃						
	10:24	60	14.5		〃						
	11:24	120	12.5		〃						
	1:24	240	10		〃						
	5:24	480	9		31.5						
24/5	9:02 Am		6.5		30						
25/5	9:08 Am		5.5		30.5						
26/5	9:10 Am		5.5		30						

Soil Mechanics Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

bl-394

Job No.: _____
Soil Sample _____
Location: _____
Boring No: 91
Sample No.: UD-3
Sample depth: _____

Container 1171/8925
Wt. of Container + Soil _____
Wt. of Container _____
Wt. of Soil 100.0 gm
Performed by _____
Date: 22/05/21

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				0.5			
200				1.9			
Pan				97.6			
				100			

H:

Grey silty Clay

2.4

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

Cont No = 1171

SL-394.

(44)

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample _____
B.H: 91
Sample: UD-3
Depth: 36.56 - 37.05 M

Test No.:
Date: 18/5/21
Tested by:

Liquid Limit					
No. of Blows	15	20	25	29	34
Container No.	2272	2169	2188	2154	2315
Wt. Container, gm	10.08	9.70	9.59	9.18	8.85
Wt. Container + Wet Soil	42.67	44.98	43.91	42.15	39.56
Wt. Container + Dry Soil	31.90	33.82	33.19	31.93	30.35
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Grey silty clay

Plastic Limit					
Container No.	2215	2065	2115		
Wt. Container, gm	9.16	9.65	9.68		
Wt. Container + Wet Soil	33.75	35.32	37.79		
Wt. Container + Dry Soil	28.49	29.91	31.88		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L + H

Shrinkage Limit test:

Dish No. =
Wt. of Dish =
Wt. Dish + Wet Soil =
Wt. Dish + Dry Soil =
Wt. Dry Soil Pat =

Wt. displaced mercury =
Volume of displaced mercury =
Vol. of dish =
Volume of dry soil pat =
Shrinkage Limit =

(21)

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

(61)

Remarks:

SURVEY2000
SAMPLE TICKET L+H-689

Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj

Bore Hole No: 91 Sample type: D-29
Depth: 43.5m Signature: Amin

43.0m Signature: Aminur

689

Civil Engineering, BUET

ineering Laboratory

TER ANALYSIS

Test No.: _____

Date: _____

Tested by: _____

Hydrometer No. 152H867452

Meniscus Correction: _____

W_s, in g 50 gm

Location: _____

Boring No. : 91 Sample No. D-29, 30, 31

Sample Depth : 43.5, 45, 46.5 M

Specific Gravity, G_s _____

RR = 2

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z, in\ cm / t\ in\ min}$	D in mm	N
26/8		¼	47	-3	29						
		½	43		"						
		1	37		"						
		2	32		"						
		4	28		"						
		8	25		"						
		15	22		"						
		30	20		29						
	10:28	60	17		"						
	11:28	120	15		"						
	1:28	240	13		29						
	5:28	480	11		"						
27/8	9:49	hr	10		"						
28/8	9:02	A—	9		29						
29/8	8:59	A—	8.5		29						

8L-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____

Soil Sample _____

Location: _____

Boring No: 91

Sample No.: D-29, 30, 31

Sample depth: _____

Container: 689 / 1052

Wt. of Container + Soil _____

Wt. of Container: _____

Wt. of Soil 100.0 gm

Performed by: _____

Date: 26/08/21

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50				1.3			
100				11.3			
200				6.5			
Pan				80.9			
				100.0			

Grey Silty Clay

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____

Test No.: _____

Date: 24/08/21

Tested by: _____

Location: _____

Boring No. : 91 Sample Depth. _____

Sample No. : D-29, 30, 31

Determination No.				
Bottle No.		6		
Wt. of Bottle + Water + Soil W_1 in g		373.0		
Temperature T in °C		29		
Wt. of Bottle + Water W_2 in	g	342		
Evaporating Dish No.		20		
Wt. of dish	g	279.7		
Wt. of dish + dry soil	g	329.1		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	93.6		
Wt. of Soil W_s in	g	49.4		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	Gs			

Remarks $\frac{G_T W_s}{W_s - W_1 + W_2}$

Gs _____

SP-394

Cont: 689

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample _____
B.H : 91
Sample : D-29, 30, 31
Depth : 43.5, 45.0, 46.5 m

Test No.:
Date: 14/08/2021
Tested by:

Liquid Limit					
No. of Blows	15	19	24	30	35
Container No.	2271	2257	2201	2164	214
Wt. Container, gm	9.06	9.79	9.81	11.12	7.33
Wt. Container + Wet Soil	46.68	46.84	43.57	49.00	38.84
Wt. Container + Dry Soil	35.58	36.05	33.94	38.25	30.09
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Grey silty clay

Plastic Limit					
Container No.	9016	200	508		
Wt. Container, gm	10.85	7.33	7.76		
Wt. Container + Wet Soil	55.73	49.20	50.78		
Wt. Container + Dry Soil	47.76	41.42	43.51		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L + H

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

ED

SURVEY2000
SAMPLE TICKET
Project: Elevated Expressway/Road from M. Chamain Sadar to Karimganj Upazilla
Client: BBA
L+H
Location: Mithamain, Kishoreganj
1056
Bore Hole No: 92
Depth: 43.5m
Sample type: D-29
Signature: Aminur

Civil Engineering, BUET

Engineering Laboratory

ETER ANALYSIS

Test No.: _____

Date: 17/10/21

Tested by: _____

Hydrometer No. 152H 867452

Meniscus Correction: _____

W_s, in g 50.0 gm

1056

Location: _____

Boring No. : 92 Sample No. D-29

Sample Depth : 43.5 M

Specific Gravity, G_s _____

RV22

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z, in\ cm / t\ in\ min}$	D in mm	N
18/10		¼	46	-3	29						
		½	43		〃						
		1	38		〃						
		2	33		〃						
		4	29.5		〃						
		8	25.5		〃						
		15	22.5		〃						
		30	19.5		〃						
	10:07	60	17		〃						
	11:07	120	14.5		〃						
	1:07	240	12.5		〃						
	5:07	480	11		29						
19/10	9:02	4or	10		29						
20/10	8:25	A~	9		29						
21/10	8:08	A~	8.5		29						

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Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____ Container: 1056 / 1026

Soil Sample _____ Wt. of Container + Soil _____

Location: _____ Wt. of Container: _____

Boring No: 92 Wt. of Soil ___100 gm_____

Sample No. : D-29 Performed by: _____

Sample depth: _____ Date: 17/10/21

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				0.6			
200				3.2			
Pan				96.2			
				100.0			

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____ Test No.: _____

Date: 17/10/21

Tested by: _____

Location: _____

Boring No. : 92 Sample Depth. _____

Sample No. : D-29

Determination No.				
Bottle No.		10		
Wt. of Bottle + Water + Soil W_1 in g		373.6		
Temperature T in °C		29		
Wt. of Bottle + Water W_2 in	g	342.2		
Evaporating Dish No.		5		
Wt. of dish	g	171.6		
Wt. of dish + dry soil	g	221.3		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	93.6		
Wt. of Soil W_s in	g	49.7		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	Gs			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

Gs _____

Sl-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

cont-1056

Atterberg Limit Test

Soil Sample _____
BH : 92
Sample : D-29
Depth : 43.5 M

Test No.:
Date: 12/10/2021
Tested by:

Liquid Limit					
No. of Blows	16	20	24	29	34
Container No.	143	842	189	186	846
Wt. Container, gm	7.28	10.67	7.32	6.99	6.86
Wt. Container + Wet Soil	45.44	47.78	40.18	39.71	40.29
Wt. Container + Dry Soil	34.76	37.56	31.15	30.93	31.32
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Gravelly silty clay

Plastic Limit					
Container No.	713	219	8		
Wt. Container, gm	7.12	7.93	7.67		
Wt. Container + Wet Soil	40.55	40.54	40.53		
Wt. Container + Dry Soil	34.81	35.00	34.86		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L+H

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

SURVEY2000

SAMPLE TICKET

Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla

Client: BBA

Location: Mithamain, Kishoreganj

Bore Hole No: 94 Sample type: D-31

Depth: 46.5 m Signature:

...vil Engineering, BUET

...gineering Laboratory

...TER ANALYSIS

Test No.: _____

Date: 21/08/2021

Tested by: _____

Hydrometer No. 152H867452

Meniscus Correction: _____

W_s, in g 50

Location: _____

Boring No. : 94 Sample No. D-31, 32, 33

Sample Depth : 46.5, 48, 49.5 M

Specific Gravity, G_s _____

Rr=2

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{\frac{Z_r \text{ in cm}}{t \text{ in min}}}$	D in mm	N
22/8		1/4	47	-3	29						
		1/2	44		29						
		1	40.5		〃						
		2	37		〃						
		4	34		〃						
		8	31		〃						
		15	27.5		29						
		30	25		〃						
	10:00	60	21		〃						
	11:00	120	18.5		〃						
	1:00	240	15		29						
	5:00	480	12		〃						
23/8	8:58	Ans	11		29						
24/8	9:06	Ans	10		29						
25/8	9:15	Ans	9		29						

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ED

Sp-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____
Soil Sample _____
Location: _____
Boring No: 94
Sample No.: D-31, 32, 33
Sample depth: _____

Container: 622/1045
Wt. of Container + Soil _____
Wt. of Container: _____
Wt. of Soil 100.0 gm
Performed by: _____
Date: 21/08/21

H

Gray silty clay

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				1.1			
200				1.9			
Pan				97			
				100			

D_{10} =
D_{30} =
D_{60} =
C_u =
C_z =
F.M. =

3.0

S-394

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____

_____

_____

Location: _____

Boring No. : 94 Sample Depth. 1

Sample No. : D-31, 32, 33

Test No.: _____

Date: 21/08/21

Tested by: _____

H = 62'

Determination No.				
Bottle No.		13		
Wt. of Bottle + Water + Soil W_1 in g		396.4		
Temperature T in °C		29		
Wt. of Bottle + Water W_2 in	g	365.2		
Evaporating Dish No.		19		
Wt. of dish	g	285.5		
Wt. of dish + dry soil	g	334.6		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	117.1		
Wt. of Soil W_s in	g	49.1		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	Gs			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

Gs _____

Cont: 622

SP-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample _____
B.H: 94
Sample: D-31, 32, 33
Depth: 46.5, 48.0, 49.5

Test No.:
Date: 12/08/2021
Tested by:

Grey silty clay

Liquid Limit					
No. of Blows	15	19	25	29	35
Container No.	2272	9018	2008	2145	2142
Wt. Container, gm	10.08	6.97	8.73	9.40	9.43
Wt. Container + Wet Soil	44.36	43.00	38.82	48.02	41.27
Wt. Container + Dry Soil	33.58	31.87	29.67	36.40	31.80
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Plastic Limit					
Container No.	2098	2200	40		
Wt. Container, gm	9.87	8.49	10.83		
Wt. Container + Wet Soil	52.48	52.14	51.28		
Wt. Container + Dry Soil	44.45	43.90	43.66		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Shrinkage Limit test:

L+H

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

SURVEY2000 1197
SAMPLE TICKET
Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj

Bore Hole No: 95 Sample type: D-31
Depth: 46.5 M Signature:

Civil Engineering, BUET

Engineering Laboratory

TER ANALYSIS

Test No.: _____
Date: 12/10/2021
Tested by: _____
Hydrometer No. 152 H 867452
Meniscus Correction: _____
W_s, in g 50

1197

Boring No. : 95 Sample No. D-31
Sample Depth : 46.5 M
Specific Gravity, G_s _____

Rx=2

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{\frac{Z_r \text{ in cm}}{t \text{ in min}}}$	D in mm	N
13/10		¼	44	-3	29						
		½	41								
		1	36								
		2	31								
		4	28								
		8	24								
		15	20.5								
		30	17.5								
	10:22	60	15.5								
	11:22	120	12.5								
	1:22	240	11.0		30						
	5:22	480	10.0		4						
14/10	9:19 Am		8		29						
15/10	9:12 Am		6.0		30						
16/10	9:00 Am		5.5		30						

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EP

St-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____ Container: 1197 / 1104

Soil Sample _____ Wt. of Container + Soil _____

Location: _____ Wt. of Container: _____

H

Boring No: 95 Wt. of Soil ___100 gm_____

Sample No. : D-31 Performed by: _____

Sample depth: 46.5 M Date: 12/10/21

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				0.4			
200				2.1			
Pan				97.5			
				100			

Grey silty clay

2.5

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

SF-394

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____

_____

_____

Location: _____

Boring No. : 95 Sample Depth. _____

Sample No. : D-31

Test No.: _____

Date: 12/10/21

Tested by: _____

L-1197

H

Determination No.				
Bottle No.		7		
Wt. of Bottle + Water + Soil W_1 in g		371.8		
Temperature T in °C		30		
Wt. of Bottle + Water W_2 in	g	340.4		
Evaporating Dish No.		23		
Wt. of dish	g	323.7		
Wt. of dish + dry soil	g	373.2		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	91.9		
Wt. of Soil W_s in	g	49.5		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_S			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

Gs _____

Cont NO = ~~1020~~ 1197

SI-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample _____
BH : 95
Sample : D-31
Depth : 46.5 M

Test No.:
Date: 11/10/2021
Tested by:

Liquid Limit					
No. of Blows	15	21	27	31	35
Container No.	742	2120	2018	802	66
Wt. Container, gm	10.92	9.77	10.23	7.60	7.63
Wt. Container + Wet Soil	36.65	33.96	33.17	30.72	30.73
Wt. Container + Dry Soil	29.14	27.10	26.77	24.32	24.40
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Grey silty clay

Plastic Limit					
Container No.	16	875	2219		
Wt. Container, gm	7.28	7.24	10.43		
Wt. Container + Wet Soil	37.87	38.24	40.44		
Wt. Container + Dry Soil	32.40	32.73	35.00		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L-H

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

Department of Civil Engineering, BUET

SL-394 **Geotechnical Engineering Laboratory**

HYDROMETER ANALYSIS

Soil Sample: _____ Test No.: _____

_____ Date: 22/5/21

_____ Tested by: _____

1290

Location: _____ Hydrometer No. 152H 867452

Boring No. : 96 Sample No. UD-2 Meniscus Correction: _____

Sample Depth : 8.10 – 8.55 M W_s, in g 50.0 gm

Specific Gravity, G_s _____

RR-21

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z, in\ cm}$ / t in min	D in mm	N
23/5		1/4	46	-4	31						
		1/2	42		11						
		1	35.5		11						
		2	28		11						
		4	23		11						
		8	17.5		11						
		15	14		11						
		30	11		11						
	10:12	60	8.5		11						
	11:12	120	6.5		11						
	1:12	240	5.5		11						
	5:12	480	4		31.5						
24/5	9:00 Am		3.5		31						
25/5	9:06 Am		3.0		30.5						
26/5	9:08 Am		3.0		30						

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SL-394

Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____

Soil Sample _____

Location: _____

Boring No: 96

Sample No.: UD-2

Sample depth: 8.10 – 8.55 M

Container 1290/1009

Wt. of Container + Soil _____

Wt. of Container: _____

Wt. of Soil 100.0 gm

Performed by: _____

Date: 22/05/21

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50				0.8			
100				4.4			
200				5.4			
Pan				89.4			
				100			

H

Grey silty clay

10.6

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____ Test No.: _____

Date: 22/05/21

Tested by: _____

Location: _____

Boring No. : 96 Sample Depth. 8.10 - 8.55 M

Sample No. : UD-2

Determination No.				
Bottle No.		10		
Wt. of Bottle + Water + Soil W_1 in g		373.0		
Temperature T in °C		31		
Wt. of Bottle + Water W_2 in	g	342		
Evaporating Dish No.		22		
Wt. of dish	g	251.6		
Wt. of dish + dry soil	g	301.4		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	93.6		
Wt. of Soil W_s in	g	49.8		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_S			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

G_S _____

cont VO = 1290

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

SL-394.

(44)

Atterberg Limit Test

Soil Sample _____
B.H : 96
Sample : UD-2
Depth : 8.10 - 8.55 M

Test No.:
Date: 20/5/21
Tested by:

Liquid Limit					
No. of Blows	15	19	25	29	34
Container No.	2053	2044	2023	2176	2031
Wt. Container, gm	10.16	9.46	10.10	9.32	10.64
Wt. Container + Wet Soil	44.23	41.43	42.57	38.74	41.22
Wt. Container + Dry Soil	34.09	32.17	33.17	30.34	32.67
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Grey silty clay

Plastic Limit					
Container No.	2267	2227	2303		
Wt. Container, gm	10.66	10.22	10.51		
Wt. Container + Wet Soil	44.65	44.30	44.97		
Wt. Container + Dry Soil	37.16	36.76	37.36		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L+H

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

SAMPLE TICKET

Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla

Client: BBA

Location: Mithamain, Kishoreganj

1301

Bore Hole No: 96 Sample type: D3

Depth: 4.5, 6.0, 7.5 Signature:

...l Engineering Laboratory

...OMETER ANALYSIS

Test No.: 1301

Date: 22/8/21

Tested by:

Hydrometer No. 152H867452

Location:

Boring No. : 96 Sample No. D-3, 4, 5

Sample Depth : 4.5, 6.0, 7.5 M

Specific Gravity, G_s

Meniscus Correction:

W_s, in g 50.0 gm

RR = 2

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z_r in cm	$\sqrt{Z_r \text{ in cm}}$ / t in min	D in mm	N
23/8		¼	43	-3	29						
		½	38		29						
		1	32		4						
		2	26		4						
		4	19		4						
		8	15		11						
		15	11		11						
		30	9		29						
	10:23	60	7.5		11						
	11:23	120	6		11						
	1:23	240	5		4						
	5:23	480	4.5		11						
24/8	9:04	Am	4		29						
25/8	9:12	Am	3.5		29						
26/8	9:03	Am	3		29						

ED

51-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____
Soil Sample: _____
Location: _____
Boring No: 96
Sample No.: D-3, 4, 5
Sample depth: _____

Container: 1301/1052
Wt. of Container + Soil: _____
Wt. of Container: _____
Wt. of Soil: 100.0 gm
Performed by: _____
Date: 22/08/21

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100					3.3		
200					5.2		
Pan					91.5		
					100		

D_{10} =
D_{30} =
D_{60} =
C_u =
C_z =
F.M. =

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

SL-394

Soil Sample: _____

_____

_____

Location: _____

Boring No. : 96 Sample Depth. _____

Sample No. : D-3, 4, 5

Test No.: _____

Date: 22/08/21

Tested by: _____

H
1301

Determination No.				
Bottle No.		2		
Wt. of Bottle + Water + Soil W_1 in g		371.6		
Temperature T in °C		29		
Wt. of Bottle + Water W_2 in	g	340.0		
Evaporating Dish No.		10		
Wt. of dish	g	163.3		
Wt. of dish + dry soil	g	213.2		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	91.7		
Wt. of Soil W_s in	g	49.9		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	Gs			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

Gs _____

Cont: 1301

S.394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample _____
B.H: 96
Sample: D-3, 4, 5
Depth: 4.5, 6.0, 7.5 M

Test No.:
Date: 12/08/2021
Tested by:

Grey silty clay

Liquid Limit					
No. of Blows	15	20	25	30	35
Container No.	902	837	751	403	869
Wt. Container, gm	7.50	7.06	6.87	6.78	11.21
Wt. Container + Wet Soil	42.24	44.16	42.96	41.10	46.34
Wt. Container + Dry Soil	32.51	33.89	32.98	31.85	37.02
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L + H

Plastic Limit					
Container No.	2325	2031	2162		
Wt. Container, gm	9.37	10.64	10.40		
Wt. Container + Wet Soil	54.15	52.71	48.78		
Wt. Container + Dry Soil	45.03	44.10	40.96		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Shrinkage Limit test:

Dish No. =
Wt. of Dish =
Wt. Dish + Wet Soil =
Wt. Dish + Dry Soil =
Wt. Dry Soil Pat =

Wt. displaced mercury =
Volume of displaced mercury =
Vol. of dish =
Volume of dry soil pat =
Shrinkage Limit =

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

SURVEY2000 L+H – 784
SAMPLE TICKET
Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj

Bore Hole No: 96 Sample type: D23
Depth: 34.5 M Signature:

Civil Engineering, BUET

ngineering Laboratory

ETER ANALYSIS

Test No.: _____
Date: 22/8/21
Tested by: _____
Hydrometer No. 152H 867452
Meniscus Correction: _____
W_s, in g 50.0 gm

784

Location: _____
Boring No. : 96 Sample No. D-23, 24, 25
Sample Depth : 34.5, 36, 37.5
Specific Gravity, G_s _____

R8-2

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z, in\ cm / t\ in\ min}$	D in mm	N
23/8		1/4	47	-3	29						
		1/2	45		"						
		1	41		"						
		2	34		"						
		4	26		"						
		8	21		"						
		15	15.5		"						
		30	12		29						
	10:03	60	10		"						
	11:03	120	7.5		"						
	1:03	240	6.5		"						
	5:03	480	5.5		"						
24/8	9:02	Am	4.5		29						
25/8	9:10	Am	3.5		29						
26/8	9:01	Am	3		29						

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SL-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____
Soil Sample: _____
Location: _____
Boring No: 96
Sample No.: D-23, 24, 25
Sample depth: 34.5, 36, 37.5

Container: 784/1099
Wt. of Container + Soil: _____
Wt. of Container: _____
Wt. of Soil: 100.0 gm
Performed by: _____
Date: 22/08/21

H

Grey Clayey Silt

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				1.1			
200				0.9			
Pan				98			
				100			

D_{10} =
D_{30} =
D_{60} =
C_u =
C_z =
F.M. =

2.0

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

SL-394

Soil Sample: _____

_____

_____

Location: _____

Boring No. : 96 Sample Depth. ____

Sample No. : D-23, 24, 25

Test No.: _____

Date: 22/08/21

Tested by: _____

Determination No.			
Bottle No.	14		
Wt. of Bottle + Water + Soil W_1 in g	373.8		
Temperature T in °C	29		
Wt. of Bottle + Water W_2 in g	342.0		
Evaporating Dish No.	8		
Wt. of dish g	165.7		
Wt. of dish + dry soil g	215.7		
Wt. Bottle + Dry Soil in g			
Wt. of Bottle in g	94.0		
Wt. of Soil W_s in g	50.0		
Specific Gravity of Water G_T at T°C			
Specific Gravity of Soil: Gs			

17

784

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

Gs _____

SP-394

Cont: 784

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample: D.H 96
Sample : D-23, 24, 25
Depth : 34.5, 36.0, 37.5 M

Test No.:
Date: 14/08/2021
Tested by:

Liquid Limit					
No. of Blows	15	19	23	27	30
Container No.	2172	2130	2069	2063	2053
Wt. Container, gm	10.01	9.64	11.98	9.32	10.15
Wt. Container + Wet Soil	45.46	46.30	48.95	43.75	42.21
Wt. Container + Dry Soil	35.34	36.04	38.58	34.21	33.52
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Grey

Clayey silt

Plastic Limit					
Container No.	748	867	133		
Wt. Container, gm	7.29	7.24	7.02		
Wt. Container + Wet Soil	51.62	48.19	52.47		
Wt. Container + Dry Soil	42.33	39.59	42.85		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L+H

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

Department of Civil Engineering, BUET

SL-304

Geotechnical Engineering Laboratory

HYDROMETER ANALYSIS

Soil Sample: Mithamain

Test No.:

Date: 6/6/21

Tested by:

Location:

Hydrometer No. 152H 867452

1344

Boring No. : 98 Sample No. D-32, 33, 34

Meniscus Correction:

Sample Depth : 48.0, 49.5, 51.0

W_s, in g 50.0

Specific Gravity, G_s

R 22.5

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z_r \text{ in cm}}{t \text{ in min}}$	D in mm	N
7/6		¼	46	−2.5	29						
		½	42		11						
		1	37.5		11						
		2	32.5		11						
		4	29.5		11						
		8	24		11						
		15	22.5		11						
		30	20		11						
	10:32	60	17.0		11						
	11:32	120	14.5		11						
	1:32	240	13		11						
	5:32	480	11.5		29						
8/6	9:38	Am	10		28						
9/6	9:10	Am	9.5		28						
10/6	9:06	Am	9.0		28						

SL-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____
Soil Sample _____
Location: _____
Boring No: 98
Sample No. : D-32, 33, 34
Sample depth: 48.0, 49.5, 51

Container: 1344/1389
Wt. of Container + Soil _____
Wt. of Container: _____
Wt. of Soil 100.0 gm
Performed by: _____
Date: 6/6/21

H

Grey silty clay

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				0.2			
200				3.0			
Pan				96.8			
				100.0			

D_{10} =

3.2

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

SL-394

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____ Test No.: _____

Date: 6/6/21

1344

Tested by: _____

Location: _____

Boring No. : 98 Sample Depth. _____

Sample No. : D-32, 33, 34

Determination No.				
Bottle No.		8		
Wt. of Bottle + Water + Soil W_1 in g		372.3		
Temperature T in °C		29		
Wt. of Bottle + Water W_2 in	g	341.2		
Evaporating Dish No.		21		
Wt. of dish	g	302.3		
Wt. of dish + dry soil	g	351.5		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	92.7		
Wt. of Soil W_s in	g	49.2		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_S			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

G_S _____

SURVEY2000 1344
SAMPLE TICKET
Project Elevated Expressway/Road from Mithamain
Sadar to Karimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj

Bore Hole No: 98 Sample type: D-32
Depth: 48.0m Signature: Aminur

Cont: 1344

ithamain.
Engineering Laboratory
Civil Engineering, BUET

berg Limit Test

Test No.:
Date: 03/06/2021
Tested by:

B.H: 98
Sample: D-32, 33, 34
Depth: 48.0, 49.5, 51 M.

Gray silty clay

Liquid Limit					
No. of Blows	15	20	25	31	35
Container No.	2098	2291	2215	2013	150
Wt. Container, gm	9.78	9.42	9.17	8.78	7.23
Wt. Container + Wet Soil	49.70	42.32	46.32	44.25	44.05
Wt. Container + Dry Soil	38.34	33.17	.28	34.75	34.34
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Plastic Limit					
Container No.	902	36	4		
Wt. Container, gm	7.49	7.65	7.01		
Wt. Container + Wet Soil	44.12	44.59	43.20		
Wt. Container + Dry Soil	38.07	38.48	37.15		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L x H / D

Shrinkage Limit test:

Dish No. =
Wt. of Dish =
Wt. Dish + Wet Soil =
Wt. Dish + Dry Soil =
Wt. Dry Soil Pat =

Wt. displaced mercury =
Volume of displaced mercury =
Vol. of dish =
Volume of dry soil pat =
Shrinkage Limit =

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

SURVEY2000 1241
SAMPLE TICKET
Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj

Bore Hole No: 99
Depth: 39.0m

Sample type: D-26
Signature:

vil Engineering, BUET

gineering Laboratory

TER ANALYSIS

Test No.: _____
Date: 21/08/2021
Tested by: _____
Hydrometer No. 152H867452
Meniscus Correction: _____
W_s, in g 50

Location: _____
Boring No. : 99 Sample No. D-26, 27, 28
Sample Depth : 39, 40.5, 42.0
Specific Gravity, G_s _____

Rr = 2

Date	Time	Elapsed Time in min	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z, in\ cm}$ / t in min	D in mm	N
22/8		¼	46	-3	29						
		½	42		29						
		1	37		"						
		2	32		"						
		4	26		"						
		8	22.5		"						
		15	19		"						
		30	15.5		29						
	9:48	60	13.5		"						
	10:48	120	11.5		"						
	12:48	240	9		29						
	4:48	480	7.5		"						
23/8	8:57	Ans	6.5		29						
24/8	9:05	Ans	6.5		29						
25/8	9:14	Ans	6		29						

C:\Users\civil\Nilabib Shahchil\Hydrometer Analysis.doc

ED

Sf-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____
Soil Sample _____
Location: _____
Boring No: 99
Sample No.: D-26,27,28
Sample depth: _____

Container: 1241/1180
Wt. of Container + Soil: _____
Wt. of Container: _____
Wt. of Soil: 100.0 gm
Performed by: _____
Date: 21/08/21

H

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50				11.7			
100				25.2			
200				7.6			
Pan				55.5			
				100			

Grey silty clay (mix sand)

D_{10} =
D_{30} =
D_{60} =
C_u =
C_z =
F.M. =

445

GI-394

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____

_____

_____

Location: _____

Boring No. : 99 Sample Depth. _____

Sample No. : D-26, 27, 28

Test No.: _____

Date: 21/08/21

Tested by: _____

H=1241

Determination No.				
Bottle No.		17		
Wt. of Bottle + Water + Soil W_1 in g		393.9		
Temperature T in °C		29		
Wt. of Bottle + Water W_2 in	g	362.4		
Evaporating Dish No.		25		
Wt. of dish	g	283.3		
Wt. of dish + dry soil	g	333.1		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	114.3		
Wt. of Soil W_s in	g	49.8		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_S			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

G_S _____

Cont: 1241

SI-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample: B.H# 99
Sample: D-26, 27, 28
Depth: 39.0, 40.5, 42.0 M

Test No.:
Date: 16/08/2021
Tested by:

Liquid Limit					
No. of Blows	15	19	23	28	33
Container No.	2004	2239	2087	2045	2056
Wt. Container, gm	9.31	10.23	11.30	10.38	10.21
Wt. Container + Wet Soil	44.77	43.67	46.91	40.80	42.78
Wt. Container + Dry Soil	36.99	36.53	39.41	34.40	36.11
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Grey silty clay (mix sand)

Plastic Limit					
Container No.	180	44	758		
Wt. Container, gm	7.79	7.42	7.82		
Wt. Container + Wet Soil	47.60	47.27	48.18		
Wt. Container + Dry Soil	41.51	41.27	41.96		
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L+17

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SL-394

HYDROMETER ANALYSIS

Soil Sample: Mithamain

Location:

1297 Boring No. : 100 Sample No. UD-2

Sample Depth : 6.60 – 7.05 M

Specific Gravity, G_s

Test No.:

Date: 19/6/21

Tested by:

Hydrometer No. 152H867452

Meniscus Correction:

W_s, in g 50.0 gm

$R_r = 1$

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z, in\ cm / t\ in\ min}$	D in mm	N
20/6		¼	42	-4	28						
		½	36		27						
		1	28		〃						
		2	21.5		〃						
		4	16.5		〃						
		8	14.5		〃						
		15	11.0		〃						
		30	8.5		〃						
	10:40	60	7.5		27						
	11:40	120	6		28						
	1:40	240	5.0		〃						
	5:40	480	4		〃						
21/6	9:06	Am	3.5		27						
22/6	9:24	Am	3.0		11.						
23/6	9:18	Am	3.0		28						

SL-394

Department of Civil Engineering, BUET

Sieve analysis

Job No.: _____

Soil Sample _____

Location: _____

Boring No: 100

Sample No.: UD-2

Sample depth: 6.60 – 7.05 M

Container 1297/1269

Wt. of Container, + Soil: _____

Wt. of Container: _____

Wt. of Soil 100.0 gm

Performed by: _____

Date: 19/06/21

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				1.1			
200				5.8			
Pan				93.1			
				100			

H

Grey Clayey silt

6.9

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

52-394

Soil Sample: _____ Test No.: _____

_____ Date: 20/06/21

_____ Tested by: _____

Location: _____

Boring No. : 100 Sample Depth. _____

Sample No. : OD-2

Determination No.				
Bottle No.		20		
Wt. of Bottle + Water + Soil W_1 in g		373.6		
Temperature T in °C		27		
Wt. of Bottle + Water W_2 in	g	342.1		
Evaporating Dish No.		20		
Wt. of dish	g	279.7		
Wt. of dish + dry soil	g	329.3		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	94.0		
Wt. of Soil W_s in	g	49.6		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_S			

H. 1297

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

G_S _____

Mithamain

Can-1297

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

SL-394

Atterberg Limit Test

Soil Sample _____
B.H: 100
Sample: UD-2
Depth: 6.60-7.05 M

Test No.:
Date:
Tested by:

Liquid Limit					
No. of Blows					
Container No.	2172	2204	2034	2073	2258
Wt. Container, gm	9.92	10.70	9.41	10.30	10.84
Wt. Container + Wet Soil					
Wt. Container + Dry Soil					
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L+H

Grey Clayey Silt

Plastic Limit					
Container No.	2171	2135	2081		
Wt. Container, gm	9.95	9.17	9.63		
Wt. Container + Wet Soil					
Wt. Container + Dry Soil					
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Shrinkage Limit test:

Dish No. =
Wt. of Dish =
Wt. Dish + Wet Soil =
Wt. Dish + Dry Soil =
Wt. Dry Soil Pat =

Wt. displaced mercury =
Volume of displaced mercury =
Vol. of dish =
Volume of dry soil pat =
Shrinkage Limit =

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

Department of Civil Engineering, BUET

SL-394

Geotechnical Engineering Laboratory

HYDROMETER ANALYSIS

Soil Sample: Mithamain

Location:

Boring No. : 101 Sample No. UD-3

Sample Depth : 8.10-8.55 M

Specific Gravity, G_s

Test No.:

Date: 19/6/21

Tested by:

Hydrometer No. 152H867452

Meniscus Correction:

W_s, in g 50.0gm

1300

RR=1

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z_r in cm	$\sqrt{Z_r \text{ in cm} / t \text{ in min}}$	D in mm	N
20/6		¼	44	-4	28						
		½	39		27						
		1	30		〃						
		2	22		〃						
		4	14.5		〃						
		8	10		〃						
		15	8		〃						
		30	7		〃						
	10:28	60	5.5		27						
	11:28	120	4.5		28						
	1:28	240	3.5		〃						
	5:28	480	3		〃						
21/6	9:03	Am	3		27						
22/6	9:22	Am	2.5		〃						
23/6	9:15	Am	2		28						

Soil Mechanics Laboratory
Department of Civil Engineering, BUET

SL-394

Sieve Analysis

Job No.: _____ Container: 1300/1177

Soil Sample _____ Wt. of Container + Soil _____

Location: _____ Wt. of Container _____

Boring No: 101 Wt. of Soil 100.0 gm

Sample No.: UD-3 Performed by: _____

Sample depth: 8.10-8.55 M Date: _____

H

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				1.5			
200				1.9			
Pan				96.6			
				100			

Brownish Clayey Silt

3.4

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

Department of Civil Engineering, BUET

Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____ Test No.: _____

Date: 20/06/21

Tested by: _____

Location: _____

Boring No. : 100 Sample Depth. _____

Sample No. : UD-3

Determination No.				
Bottle No.		17		
Wt. of Bottle + Water + Soil W_1 in g		393.8		
Temperature T in °C		27		
Wt. of Bottle + Water W_2 in	g	362.5		
Evaporating Dish No.		10		
Wt. of dish	g	163.62		
Wt. of dish + dry soil	g	212.8		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	114.3		
Wt. of Soil W_s in	g	49.6		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_S			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

G_S _____

SL-397

Mithamain

Can-1300

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Atterberg Limit Test

Soil Sample _____
B.H : 101
Sample : UD-3
Depth : 8.10-8.55 M

Test No.:
Date:
Tested by:

Liquid Limit					
No. of Blows					
Container No.	2172	2204	2034	2073	2258
Wt. Container, gm	9.92	10.70	9.41	10.30	10.84
Wt. Container + Wet Soil			0.91		
Wt. Container + Dry Soil					
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Brownish Clayey Silt

Plastic Limit					
Container No.	2171	2135	2081		
Wt. Container, gm	9.95	9.17	9.63		
Wt. Container + Wet Soil					
Wt. Container + Dry Soil					
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

N.P.

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughnes s Index

Remarks:

L+H-140

SURVEY2000
SAMPLE TICKET
Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj

Bore Hole No: 101
Depth: 4-5 om
Sample type: D-3
Signature:

ivil Engineering, BUET

gineering Laboratory

TER ANALYSIS

1400

Location: _____

Boring No. : 101 Sample No. D-3,4,5

Sample Depth : 4.5, 6.0, 7.5

Specific Gravity, G_s _____

Test No.: _____

Date: 26/08/21

Tested by: _____

Hydrometer No. 152H867452

Meniscus Correction: _____

W_s, in g 50 gm

RR=2

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z_r in cm	$\sqrt{Z_r \text{ in cm}}$ / t in min	D in mm	N
26/8		¼	42	-3	29						
		½	34		"						
		1	27		"						
		2	22		"						
		4	15		"						
		8	12		"						
		15	8.5		"						
		30	6.5		29						
	10:08	60	5.5		"						
	11:08	120	4.5		"						
	1:08	240	3.0		"						
	5:08	480	2.5		"						
27/8	9:45	AM	2		"						
28/8	9:00	AM	1.5		29						
29/8	8:57	AM	1.5		29						

ED

SL-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____ Container: 1400/1180

Soil Sample _____ Wt. of Container + Soil _____

Location: _____ Wt. of Container: _____

Boring No: 101 Wt. of Soil 100.0 gm

Sample No.: D-3, 4, 5 Performed by: _____

Sample depth: _____ Date: 24/8/21

H

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50							
100				2.1			
200				12.7			
Pan				85.2			
				100.0			

Grey Sandy Silt

1418

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

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Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

BL-394

Soil Sample: _____ Test No.: _____

Date: 24/08/21

Tested by: _____

Location: _____

Boring No. : 101 Sample Depth. _____

Sample No. : D-3, 4, 5

H
1400

Determination No.			
Bottle No.	4		
Wt. of Bottle + Water + Soil W_1 in g	397.4		
Temperature T in °C	29		
Wt. of Bottle + Water W_2 in g	~~397.4~~	365.9	
Evaporating Dish No.	16		
Wt. of dish g	310.3		
Wt. of dish + dry soil g	360.2		
Wt. Bottle + Dry Soil in g			
Wt. of Bottle in g	117.8		
Wt. of Soil W_s in g	49.9		
Specific Gravity of Water G_T at T°C			
Specific Gravity of Soil: Gs			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

Gs _____

cont 40 = 1400

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

SL-394

Atterberg Limit Test

Soil Sample _____
B.H: 101
Sample: D-3, 4, 5
Depth: 4.5, 6.0, 7.5 m

Test No.:
Date: 14/8/21
Tested by:

Grey Sandy silt

Liquid Limit					
No. of Blows					
Container No.	2192	2347	2315	2183	007
Wt. Container, gm	9.69	9.74	8.87	10.20	7.22
Wt. Container + Wet Soil					
Wt. Container + Dry Soil					
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Plastic Limit					
Container No.	2154	2195	850		
Wt. Container, gm	9.19	10.31	6.99		
Wt. Container + Wet Soil					
Wt. Container + Dry Soil					
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L + H

Shrinkage Limit test:

Dish No. =
Wt. of Dish =
Wt. Dish + Wet Soil =
Wt. Dish + Dry Soil =
Wt. Dry Soil Pat =

Wt. displaced mercury =
Volume of displaced mercury =
Vol. of dish =
Volume of dry soil pat =
Shrinkage Limit =

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks:

SURVEY2000 733
SAMPLE TICKET
Project: Elevated Expressway/Road from Mithamain Sadar to Karimganj Upazilla
Client: BBA
Location: Mithamain, Kishoreganj

Bore Hole No: 101 Sample type: D-14
Depth: 21.0m Signature:

733

Civil Engineering, BUET

ngineering Laboratory

ETER ANALYSIS

Test No.: _____

Date: _____

Tested by: _____

Hydrometer No. 152H867452

Meniscus Correction: _____

W_s, in g 50 gm

Location: _____

Boring No. : 101 Sample No. D-14

Sample Depth : 21.0 M

Specific Gravity, G_s _____

RR=2

Date	Time	Elapsed Time in min.	R = 1000(r-1)	R_w = 1000(r_w-1)	Temp. in °C	R-R_w	N in %	Z in cm	$\sqrt{Z, in\ cm / t\ in\ min}$	D in mm	N
26/8		¼	44	-3	29						
		½	36		"						
		1	27		"						
		2	22		"						
		4	16		"						
		8	10.5		"						
		15	7.5		"						
		30	5		29						
	10:20	60	4		"						
	11:20	120	3		"						
	1:20	240	2		"						
	5:20	480	1.5		"						
27/8	9:48	Am	1.5		"						
28/8	9:01	Am	1.5		29						
29/8	8:58	Am	1.5		29						

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(D)

81-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Sieve Analysis

Job No.: _____ Container: 733 / 1207

Soil Sample _____ Wt. of Container + Soil _____

Location: _____ Wt. of Container: _____

Boring No: 101 Wt. of Soil 100.0 gm

H Sample No.: D-14 Performed by: _____

Sample depth: _____ Date: 24/8/21

Sieve No.	Sieve opening (mm)	Wt. of sieve (gm)	Wt. of sieve+soil (gm)	Wt. of soil retained (gm)	% of soil retained	Cumulative % retained	% Finer
4							
8							
16							
30							
50				0.2			
100				8.9			
200				18.6			
Pan				72.3			
				100.0			

Gravelly Sandy Silt

27.7

D_{10} =

D_{30} =

D_{60} =

C_u =

C_z =

F.M. =

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Geotechnical Engineering Laboratory

SPECIFIC GRAVITY TEST

Soil Sample: _____ Test No.: _____

Date: 24/08/24

Tested by: _____

Location: _____

Boring No. : 101 Sample Depth. _____

Sample No. : D-14

Determination No.				
Bottle No.		12		
Wt. of Bottle + Water + Soil W_1 in g		375.7		
Temperature T in °C		29		
Wt. of Bottle + Water W_2 in	g	344		
Evaporating Dish No.		6		
Wt. of dish	g	159.7		
Wt. of dish + dry soil	g	209.5		
Wt. Bottle + Dry Soil in	g			
Wt. of Bottle in	g	96		
Wt. of Soil W_s in	g	49.8		
Specific Gravity of Water G_T at T°C				
Specific Gravity of Soil:	G_S			

Remarks $\frac{G_T W_S}{W_s - W_1 + W_2}$

G_S _____

Cont No- 733

SL-394

Geotechnical Engineering Laboratory
Department of Civil Engineering, BUET

Afterberg Limit Test

Soil Sample _____
B.H: 101
Sample: D-14
Depth: 21.0 M

Test No.:
Date: 14/8/21
Tested by:

Grey sandy silt

Liquid Limit					
No. of Blows					
Container No.	2192	2347	2315	2183	007
Wt. Container, gm	9.69	9.74	8.87	10.20	7.22
Wt. Container + Wet Soil					
Wt. Container + Dry Soil					
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

L+H

Plastic Limit					
Container No.	2154	2195	850		
Wt. Container, gm	9.19	10.31	6.99		
Wt. Container + Wet Soil					
Wt. Container + Dry Soil					
Wt. Water, W_w in gm					
Wt. Dry sol, W_s in gm					
Water content, W, in %					

Shrinkage Limit test:

Dish No.	=	Wt. displaced mercury	=
Wt. of Dish	=	Volume of displaced mercury	=
Wt. Dish + Wet Soil	=	Vol. of dish	=
Wt. Dish + Dry Soil	=	Volume of dry soil pat	=
Wt. Dry Soil Pat	=	Shrinkage Limit	=

Result Summary:

Plastic Limit	Natural Water Content	Liquid Limit	Shrinkage Limit	B. Value	Plasticity Index	Flow Index	Toughness Index

Remarks: