

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 9.0-10.5'

Sample Number: SS-4

Material Description: Light Gray mottled Brownish Yellow Fat CLAY with sand

Date: 2/24/09

Natural Moisture: 21.9

Liquid Limit: 60

Plastic Limit: 23

USCS Class.: CH

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
231.20	0.00	0.00	#10	0.00	100.0
52.26	0.00	0.00	#20	0.13	99.8
			#40	0.20	99.6
			#60	0.29	99.4
			#100	0.77	98.5
			#140	2.38	95.4
			#200	9.64	81.6

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 52.26

Hygroscopic moisture correction:

Moist weight and tare = 24.03

Dry weight and tare = 23.72

Tare weight = 11.13

Hygroscopic moisture = 2.5%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.8	39.0	33.5	0.0133	40.0	9.7	0.0294	64.9
5.00	20.8	38.0	32.5	0.0133	39.0	9.9	0.0187	63.0
15.00	20.8	36.0	30.5	0.0133	37.0	10.2	0.0110	59.1
30.00	20.8	34.5	29.0	0.0133	35.5	10.5	0.0079	56.2
60.00	20.9	32.0	26.5	0.0133	33.0	10.9	0.0057	51.4
250.00	20.9	28.0	22.5	0.0133	29.0	11.5	0.0029	43.6
1440.00	20.6	25.0	19.4	0.0133	26.0	12.0	0.0012	37.6

Fractional Components

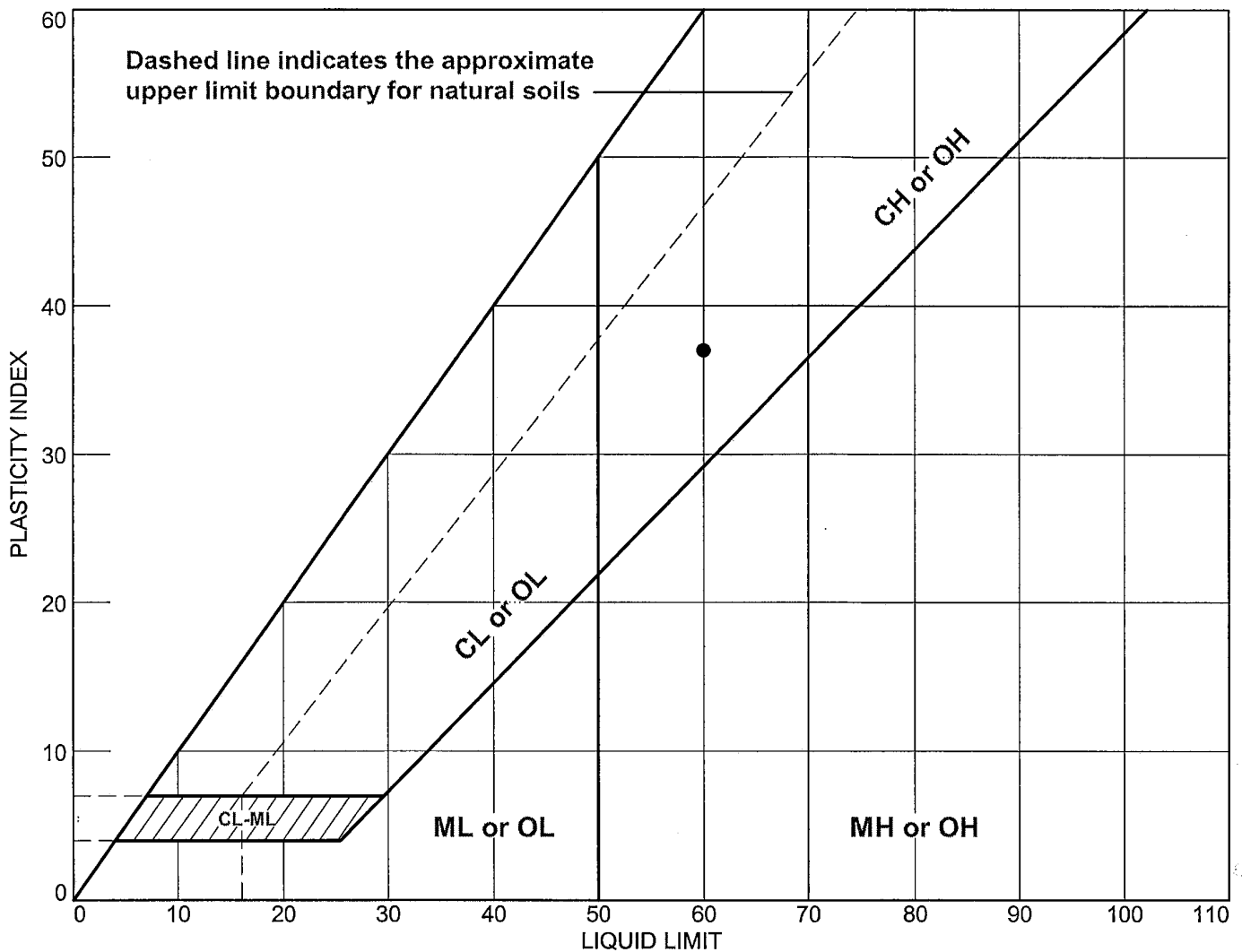
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.4	18.0	18.4	32.0	49.6	81.6

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0051	0.0124	0.0721	0.0812	0.0910	0.1043

Fineness
Modulus

0.02

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-4	9.0-10.5'	21.9	23	60	37	CH

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 9.0-10.5'

Sample Number: SS-4

Material Description: Light Gray mottled Brownish Yellow Fat CLAY with sand

USCS: CH

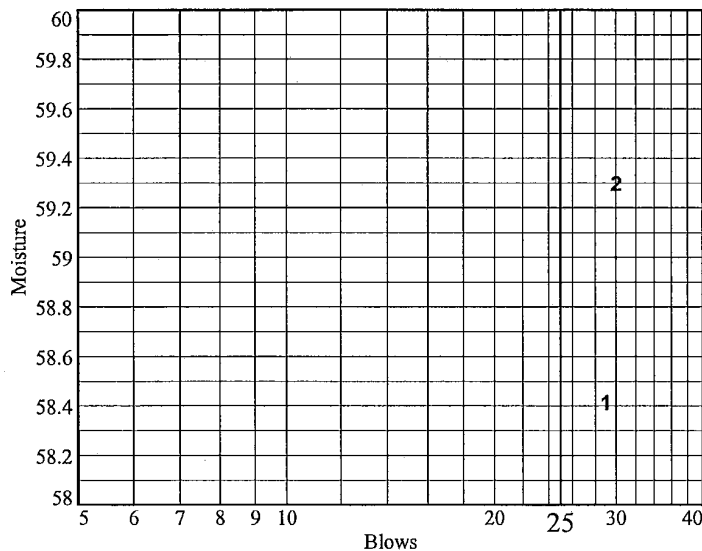
AASHTO: A-7-6(32)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.83	24.08				
Dry+Tare	21.36	20.86				
Tare	15.42	15.43				
# Blows	29	30				
Moisture	58.4	59.3				



Liquid Limit= 60
 Plastic Limit= 23
 Plasticity Index= 37
 Natural Moisture= 21.9
 Liquidity Index= 0.0

Plastic Limit Data

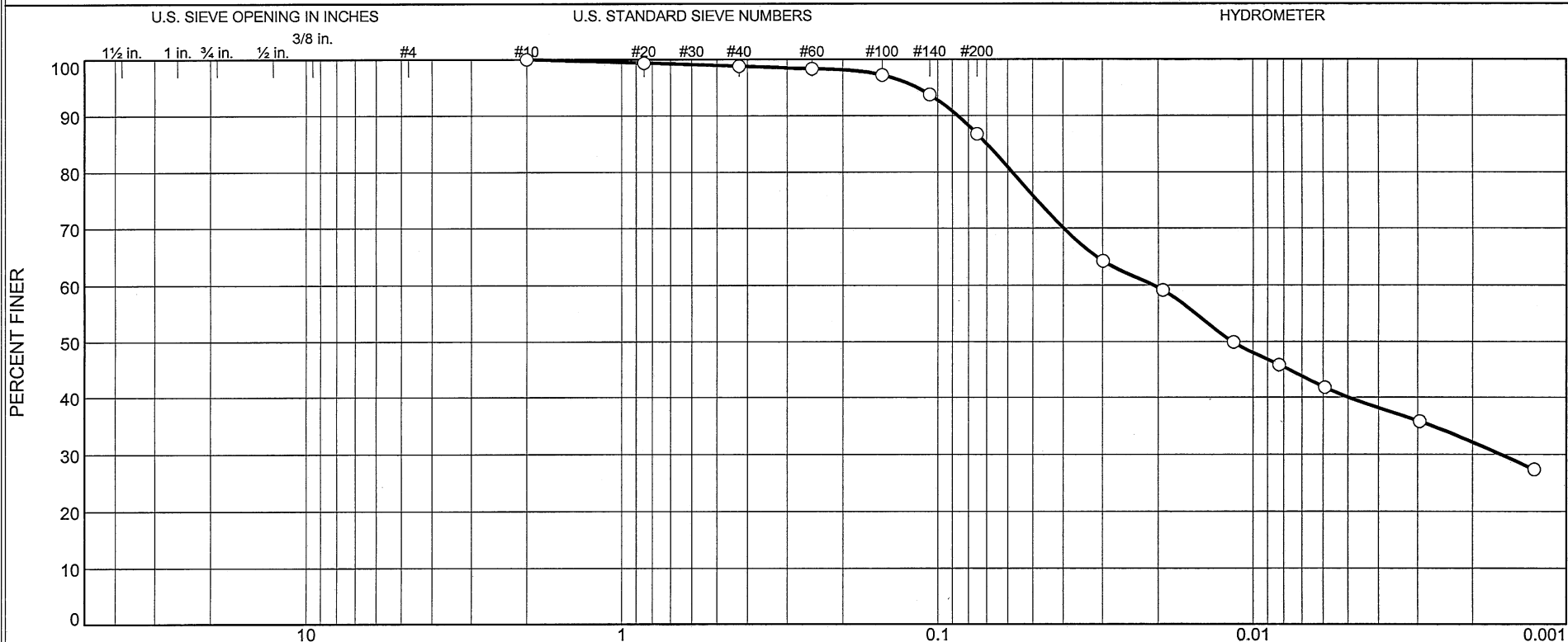
Run No.	1	2	3	4	
Wet+Tare	22.54	22.73			
Dry+Tare	21.23	21.36			
Tare	15.53	15.55			
Moisture	23.0	23.6			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
99.02	82.46	6.84	21.9

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel			% Sand			% Fines	
Coarse	Fine		Coarse	Medium	Fine	Silt	Clay
0.0	0.0		0.0	1.2	12.1	46.7	40.0

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-5	11.4-12.9'	2/24/09	CL	Light Yellowish Brown Lean CLAY	19.8	28	12

Client Bechtel			MACTEC Engineering and Consulting, Inc.	Raleigh, North Carolina	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental					
Investigation, including UHS					
Project No. 6468071777	Figure	NA			

Raleigh, North Carolina

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 11.4-12.9'

Sample Number: SS-5

Material Description: Light Yellowish Brown Lean CLAY

Date: 2/24/09

Natural Moisture: 19.8

Liquid Limit: 28

Plastic Limit: 12

USCS Class.: CL

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
269.74	0.00	0.00	#10	0.00	100.0
49.23	0.00	0.00	#20	0.32	99.3
			#40	0.60	98.8
			#60	0.84	98.3
			#100	1.38	97.2
			#140	3.09	93.7
			#200	6.53	86.7

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 49.23

Hygroscopic moisture correction:

Moist weight and tare = 29.54

Dry weight and tare = 29.32

Tare weight = 15.78

Hygroscopic moisture = 1.6%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.7	37.0	31.4	0.0133	38.0	10.1	0.0299	64.2
5.00	20.7	34.5	28.9	0.0133	35.5	10.5	0.0193	59.1
15.00	20.7	30.0	24.4	0.0133	31.0	11.2	0.0115	49.9
30.00	20.8	28.0	22.5	0.0133	29.0	11.5	0.0083	45.9
60.00	20.8	26.0	20.5	0.0133	27.0	11.9	0.0059	41.8
250.00	20.9	23.0	17.5	0.0133	24.0	12.4	0.0030	35.7
1440.00	20.6	19.0	13.4	0.0133	20.0	13.0	0.0013	27.4

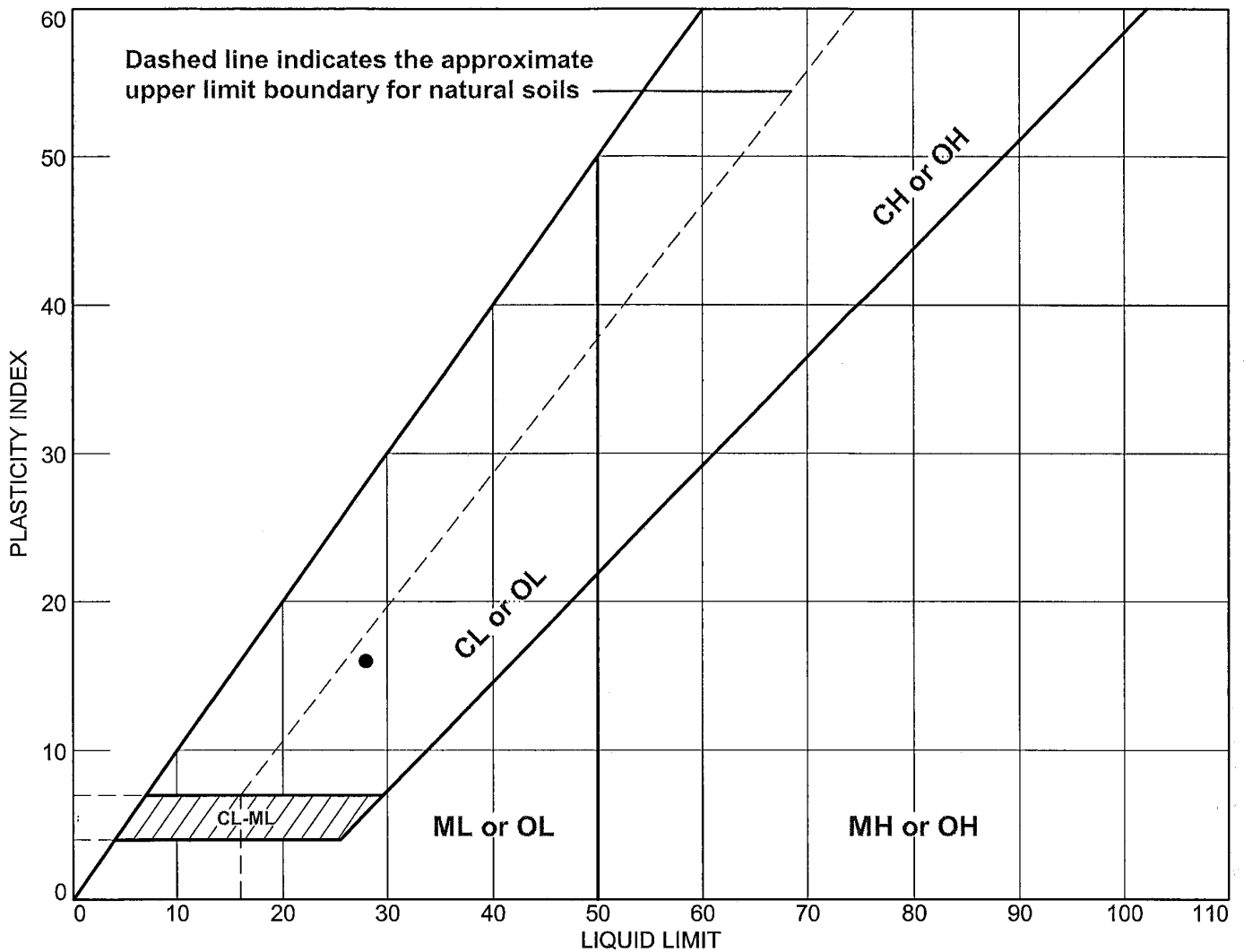
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.2	12.1	13.3	46.7	40.0	86.7

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
			0.0016	0.0116	0.0207	0.0581	0.0700	0.0865	0.1164

Fineness Modulus
0.06

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-5	11.4-12.9'	19.8	12	28	16	CL

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 11.4-12.9'

Sample Number: SS-5

Material Description: Light Yellowish Brown Lean CLAY

USCS: CL

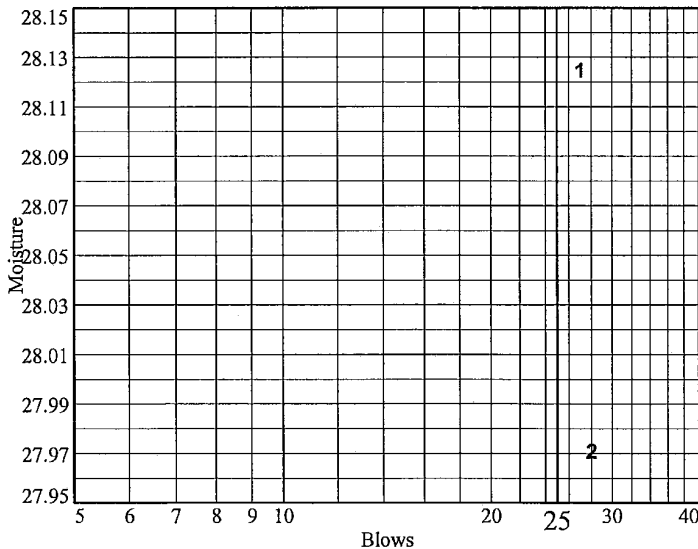
AASHTO: A-6(12)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.38	26.39				
Dry+Tare	24.77	24.06				
Tare	15.49	15.73				
# Blows	27	28				
Moisture	28.1	28.0				



Liquid Limit= 28
 Plastic Limit= 12
 Plasticity Index= 16
 Natural Moisture= 19.8
 Liquidity Index= 0.5

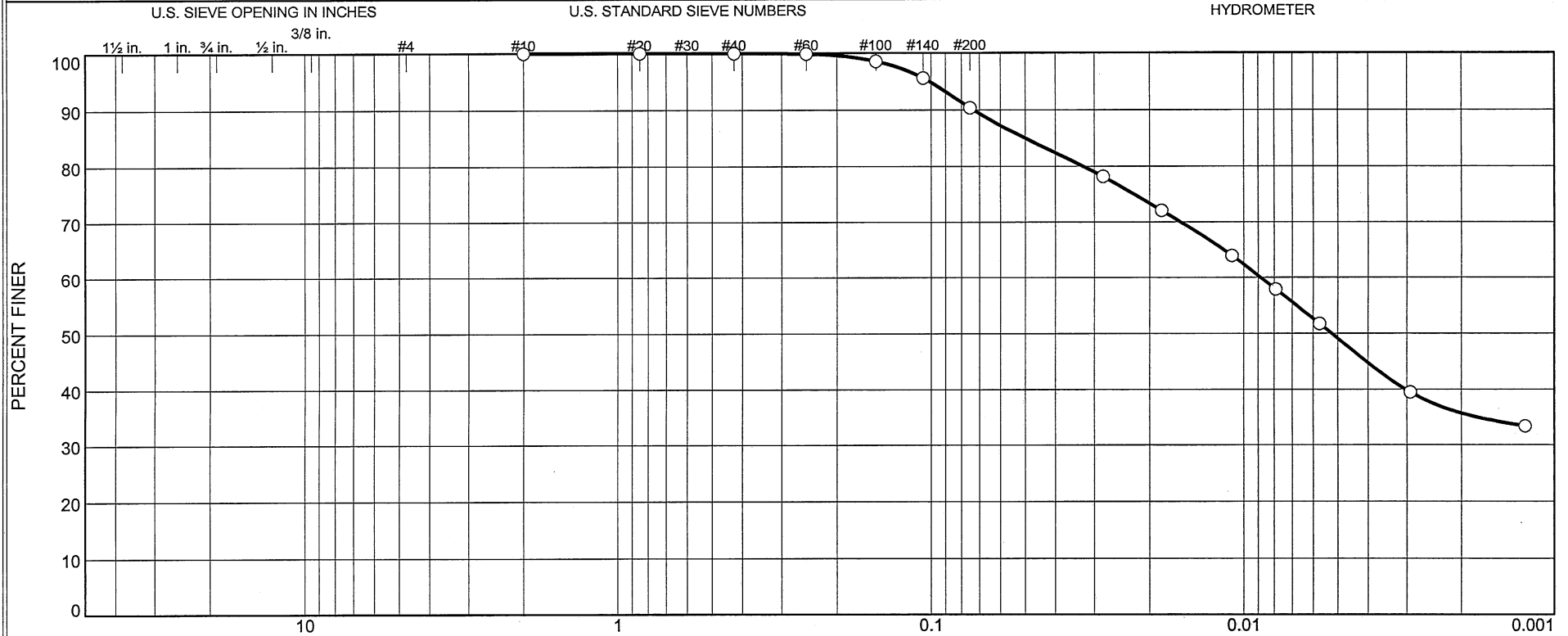
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.63	21.94			
Dry+Tare	20.95	21.27			
Tare	15.28	15.67			
Moisture	12.0	12.0			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
106.09	89.68	6.87	19.8

Particle Size Distribution Report ASTM D 422-63(2007)



GRAIN SIZE - mm.

% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	9.5	41.3	49.1

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-6	13.8-15.3'	2/24/09	CL	Light yellowish Brown Lean CLAY	15.3	38	14

Client Bechtel		MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		
		Raleigh, North Carolina	

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 13.8-15.3'

Sample Number: SS-6

Material Description: Light yellowish Brown Lean CLAY

Date: 2/24/09

Natural Moisture: 15.3

Liquid Limit: 38

Plastic Limit: 14

USCS Class.: CL

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
239.03	0.00	0.00	#10	0.00	100.0
49.57	0.00	0.00	#20	0.01	100.0
			#40	0.03	99.9
			#60	0.08	99.8
			#100	0.73	98.5
			#140	2.17	95.6
			#200	4.76	90.4

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 49.57

Hygroscopic moisture correction:

Moist weight and tare = 28.69

Dry weight and tare = 28.44

Tare weight = 15.27

Hygroscopic moisture = 1.9%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.7	44.0	38.4	0.0133	45.0	8.9	0.0281	78.1
5.00	20.7	41.0	35.4	0.0133	42.0	9.4	0.0183	72.0
15.00	20.7	37.0	31.4	0.0133	38.0	10.1	0.0109	63.9
30.00	20.7	34.0	28.4	0.0133	35.0	10.6	0.0079	57.8
60.00	20.7	31.0	25.4	0.0133	32.0	11.0	0.0057	51.7
250.00	20.7	25.0	19.4	0.0133	26.0	12.0	0.0029	39.5
1440.00	20.6	22.0	16.4	0.0133	23.0	12.5	0.0012	33.4

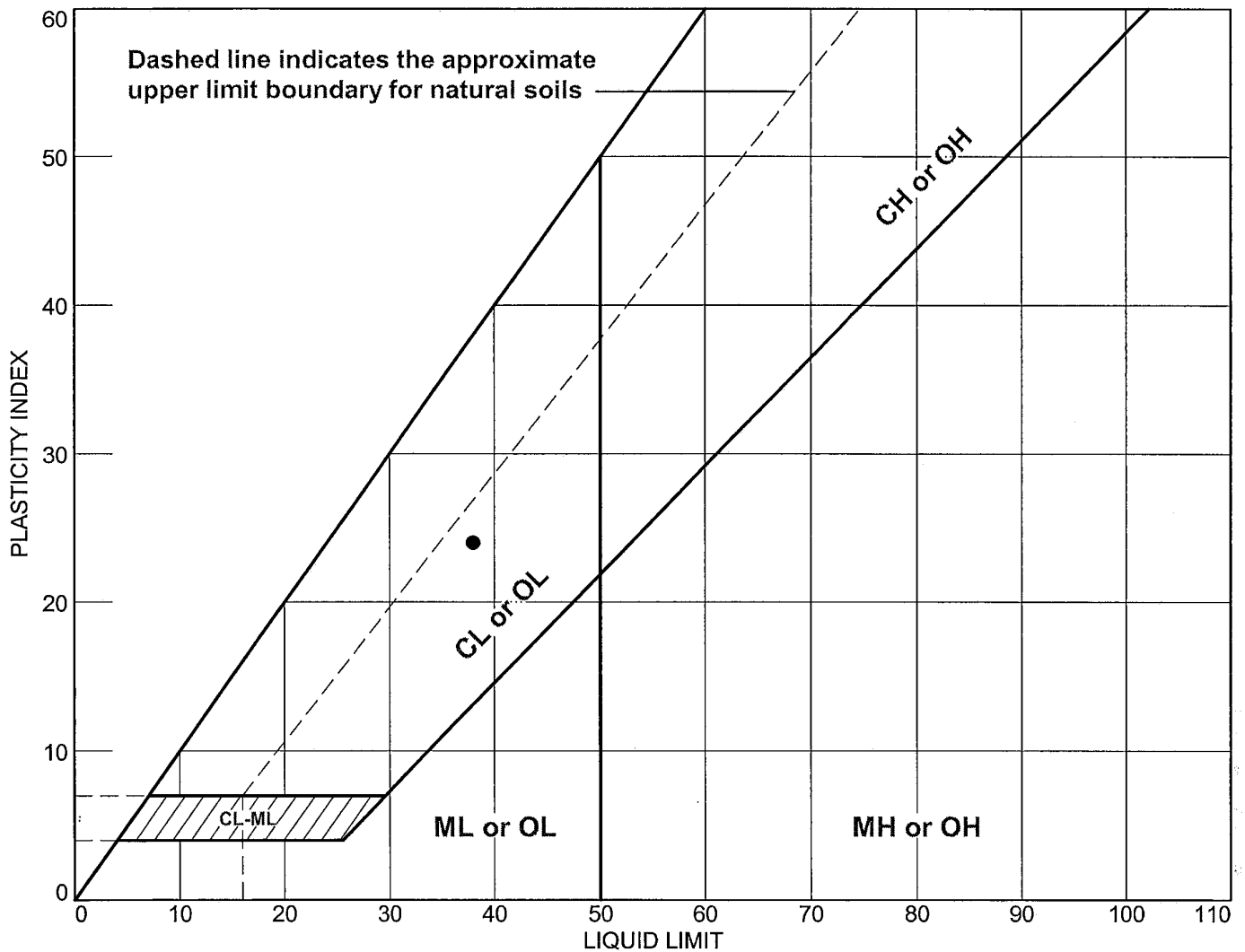
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.1	9.5	9.6	41.3	49.1	90.4

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0052	0.0089	0.0326	0.0501	0.0731	0.1011

Fineness Modulus
0.02

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-6	13.8-15.3'	15.3	14	38	24	CL

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 13.8-15.3'

Sample Number: SS-6

Material Description: Light yellowish Brown Lean CLAY

USCS: CL

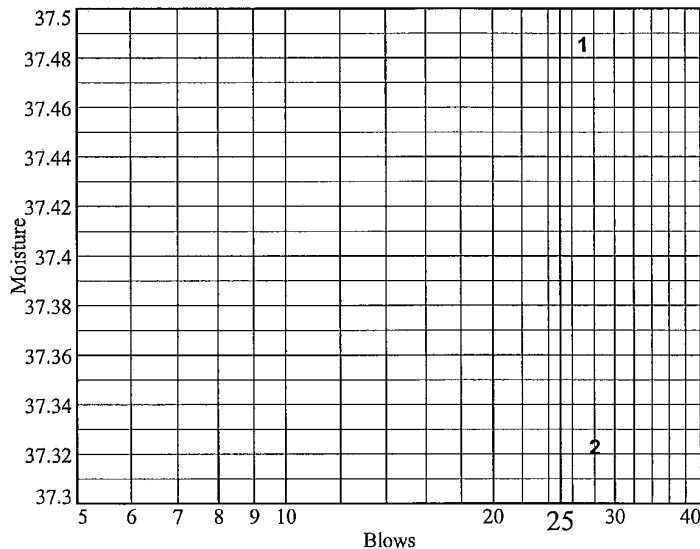
AASHTO: A-6(21)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	23.21	26.34				
Dry+Tare	19.93	23.44				
Tare	11.18	15.67				
# Blows	27	28				
Moisture	37.5	37.3				



Liquid Limit= 38
 Plastic Limit= 14
 Plasticity Index= 24
 Natural Moisture= 15.3
 Liquidity Index= 0.1

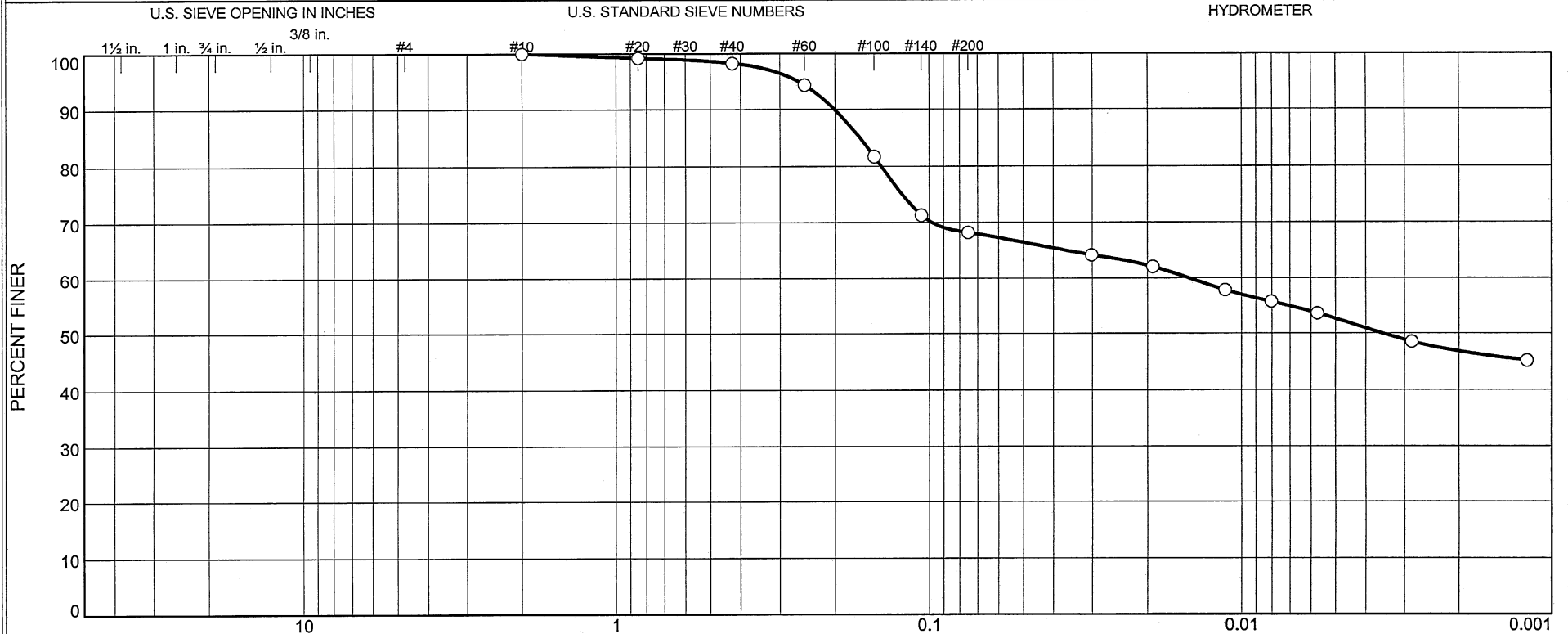
Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	21.64	22.12		
Dry+Tare	20.89	21.28		
Tare	15.55	15.36		
Moisture	14.0	14.2		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
102.18	89.84	9.22	15.3

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.8	30.0	15.6	52.6

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-7	18.8-20.3'	2/23/09	CL	Brownish Yellow Sandy Lean CLAY	18.3	45	17

Client Bechtel		MACTEC Engineering and Consulting, Inc. Raleigh, North Carolina	☐ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		

Tested By: CS Checked By: BS DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 18.8-20.3'

Sample Number: SS-7

Material Description: Brownish Yellow Sandy Lean CLAY

Date: 2/23/09

Natural Moisture: 18.3

Liquid Limit: 45

Plastic Limit: 17

USCS Class.: CL

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
199.46	0.00	0.00	#10	0.00	100.0
48.50	0.00	0.00	#20	0.40	99.2
			#40	0.86	98.2
			#60	2.77	94.3
			#100	8.90	81.6
			#140	13.93	71.3
			#200	15.44	68.2

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 48.49

Hygroscopic moisture correction:

Moist weight and tare = 30.41

Dry weight and tare = 29.93

Tare weight = 15.52

Hygroscopic moisture = 3.3%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.7	36.0	30.4	0.0133	37.0	10.2	0.0301	64.1
5.00	20.7	35.0	29.4	0.0133	36.0	10.4	0.0192	62.0
15.00	20.7	33.0	27.4	0.0133	34.0	10.7	0.0113	57.8
30.00	20.7	32.0	26.4	0.0133	33.0	10.9	0.0080	55.7
60.00	20.7	31.0	25.4	0.0133	32.0	11.0	0.0057	53.6
250.00	20.9	28.5	23.0	0.0133	29.5	11.5	0.0028	48.5
1440.00	20.6	27.0	21.4	0.0133	28.0	11.7	0.0012	45.1

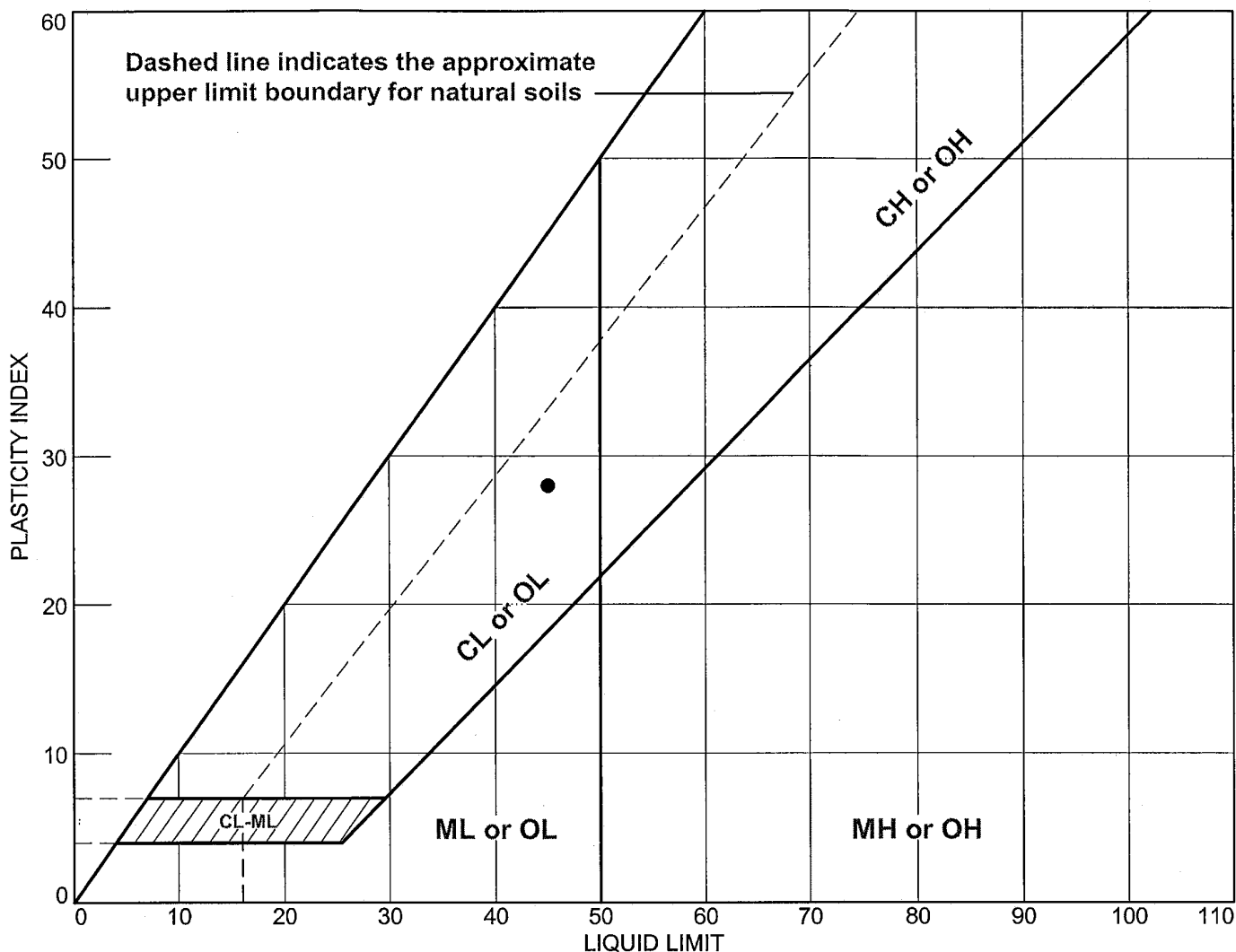
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.8	30.0	31.8	15.6	52.6	68.2

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0036	0.0147	0.1427	0.1670	0.2012	0.2627

Fineness Modulus
0.24

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-3270A	SS-7	18.8-20.3'	18.3	17	45	28	CL

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 18.8-20.3'

Sample Number: SS-7

Material Description: Brownish Yellow Sandy Lean CLAY

USCS: CL

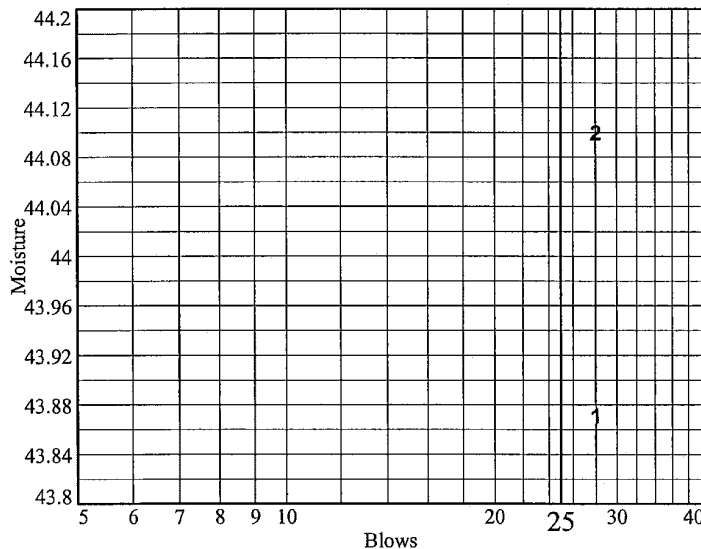
AASHTO: A-7-6(17)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.77	25.24				
Dry+Tare	22.62	22.25				
Tare	15.44	15.47				
# Blows	28	28				
Moisture	43.9	44.1				



Liquid Limit= 45
 Plastic Limit= 17
 Plasticity Index= 28
 Natural Moisture= 18.3
 Liquidity Index= 0.0

Plastic Limit Data

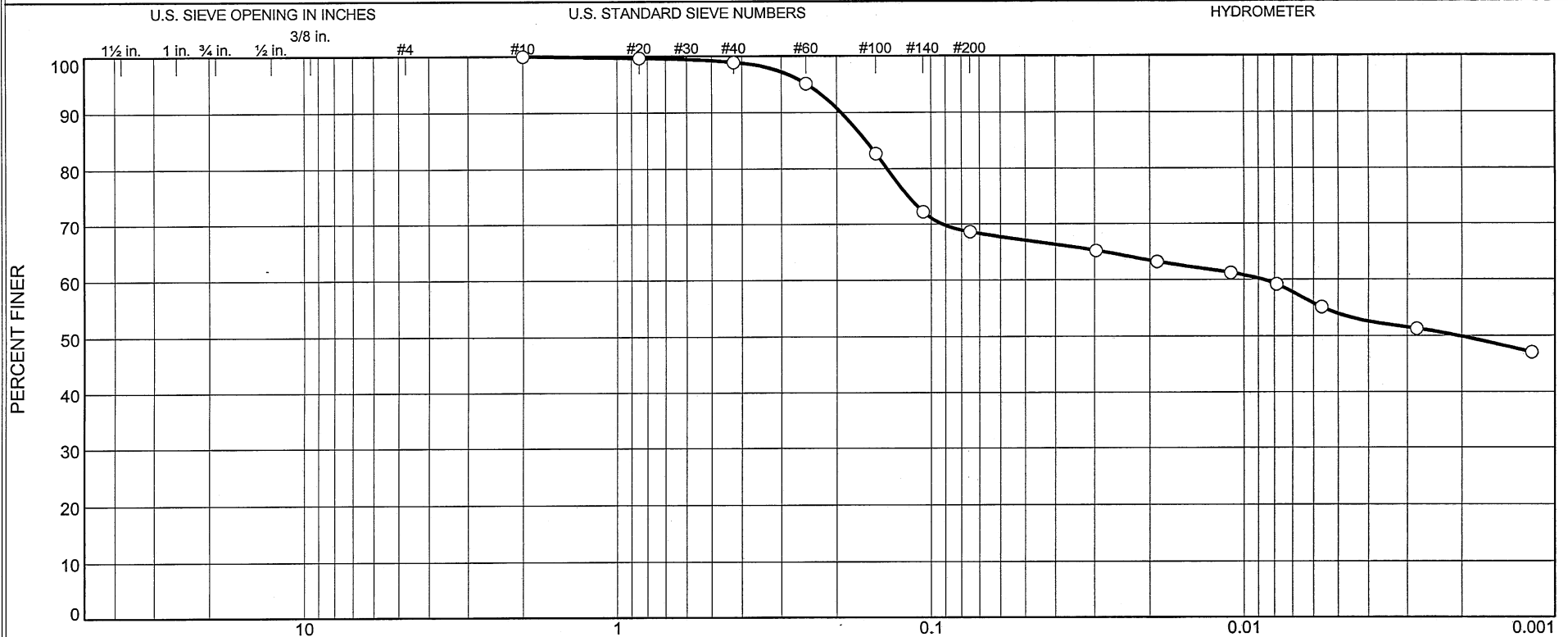
Run No.	1	2	3	4	
Wet+Tare	22.09	21.73			
Dry+Tare	21.13	20.79			
Tare	15.50	15.49			
Moisture	17.1	17.7			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
131.41	112.10	6.80	18.3

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.1	30.3	14.6	54.0

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-8	23.7-25.2'	2/23/09	CL	Brownish Yellow mottled Light Gray Sandy Lean CLAY	18.3	45	20

Client Bechtel			MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental				
Investigation, including UHS				
Project No. 6468071777	Figure	NA		

Tested By: CS Checked By: BS DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 23.7-25.2'

Sample Number: SS-8

Material Description: Brownish Yellow mottled Light Gray Sandy Lean CLAY

Date: 2/23/09

Natural Moisture: 18.3

Liquid Limit: 45

Plastic Limit: 20

USCS Class.: CL

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
244.89	0.00	0.00	#10	0.00	100.0
50.68	0.00	0.00	#20	0.18	99.6
			#40	0.57	98.9
			#60	2.46	95.1
			#100	8.80	82.6
			#140	14.10	72.2
			#200	15.92	68.6

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 50.67

Hygroscopic moisture correction:

Moist weight and tare = 28.67

Dry weight and tare = 28.28

Tare weight = 15.42

Hygroscopic moisture = 3.0%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.6	38.0	32.4	0.0133	39.0	9.9	0.0297	65.2
5.00	20.6	37.0	31.4	0.0133	38.0	10.1	0.0189	63.2
15.00	20.6	36.0	30.4	0.0133	37.0	10.2	0.0110	61.2
30.00	20.6	35.0	29.4	0.0133	36.0	10.4	0.0079	59.1
60.00	20.6	33.0	27.4	0.0133	34.0	10.7	0.0056	55.1
250.00	20.9	31.0	25.5	0.0133	32.0	11.0	0.0028	51.3
1440.00	20.6	29.0	23.4	0.0133	30.0	11.4	0.0012	47.1

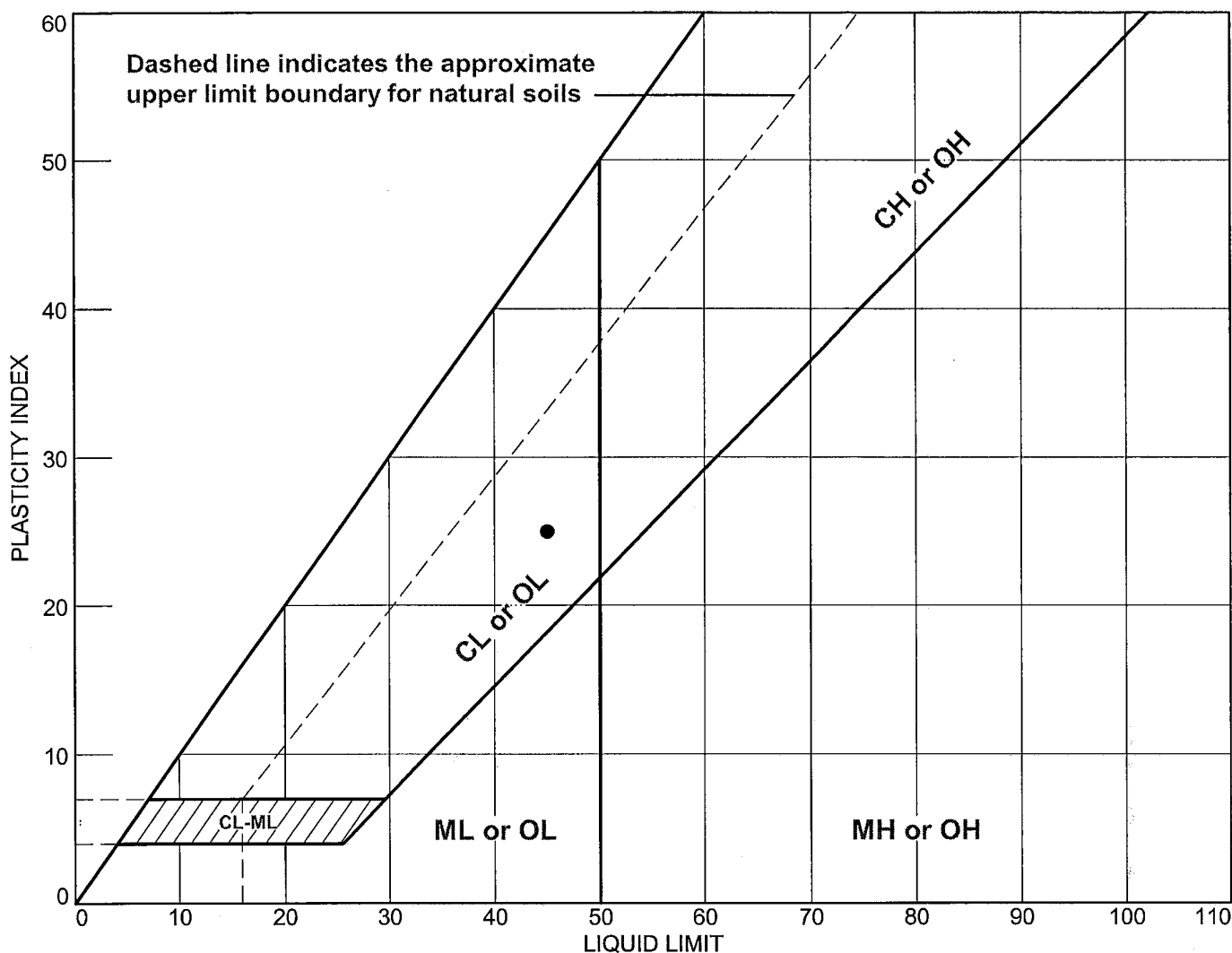
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.1	30.3	31.4	14.6	54.0	68.6

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0021	0.0087	0.1385	0.1617	0.1936	0.2476

Fineness Modulus
0.21

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-8	23.7-25.2'	18.3	20	45	25	CL

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 23.7-25.2'

Sample Number: SS-8

Material Description: Brownish Yellow mottled Light Gray Sandy Lean CLAY

USCS: CL

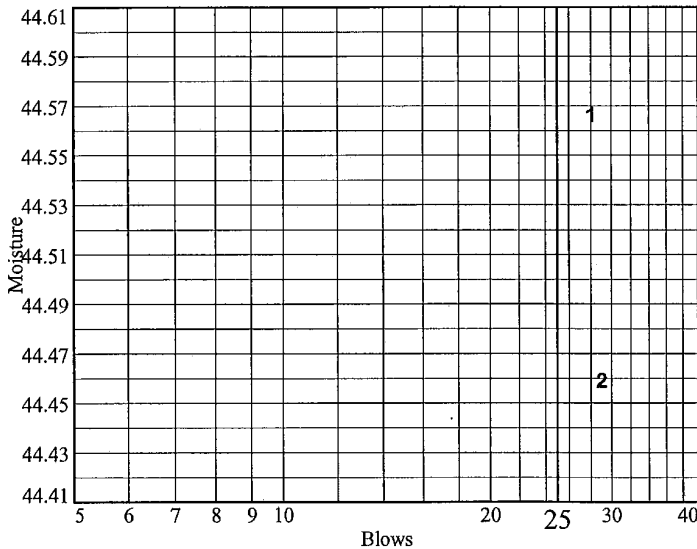
AASHTO: A-7-6(16)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.99	25.95				
Dry+Tare	22.75	22.66				
Tare	15.48	15.26				
# Blows	28	29				
Moisture	44.6	44.5				



Liquid Limit= 45
 Plastic Limit= 20
 Plasticity Index= 25
 Natural Moisture= 18.3
 Liquidity Index= -0.1

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.03	22.50			
Dry+Tare	20.96	21.36			
Tare	15.50	15.72			
Moisture	19.6	20.2			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
111.96	95.71	6.78	18.3

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	6.8	46.6	46.4

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-9	28.8-30.3	2/23/09	CH	Light Gray mottled Brownish Yellow Fat CLAY	25.9	71	27

Client Bechtel		MACTEC Engineering and Consulting, Inc.	Raleigh, North Carolina	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental				
Investigation, including UHS				
Project No. 6468071777	Figure NA			

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/4/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 28.8-30.3

Sample Number: SS-9

Material Description: Light Gray mottled Brownish Yellow Fat CLAY

Date: 2/23/09

Natural Moisture: 25.9

Liquid Limit: 71

Plastic Limit: 27

USCS Class.: CH

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
183.19	0.00	0.00	#10	0.00	100.0
46.90	0.00	0.00	#20	0.02	100.0
			#40	0.08	99.8
			#60	0.12	99.7
			#100	0.55	98.8
			#140	1.65	96.5
			#200	3.26	93.0

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 46.90

Hygroscopic moisture correction:

Moist weight and tare = 30.44

Dry weight and tare = 29.83

Tare weight = 15.66

Hygroscopic moisture = 4.3%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.6	31.5	25.9	0.0133	32.5	11.0	0.0312	57.0
5.00	20.6	30.0	24.4	0.0133	31.0	11.2	0.0200	53.7
15.00	20.6	29.0	23.4	0.0133	30.0	11.4	0.0116	51.5
30.00	20.6	28.0	22.4	0.0133	29.0	11.5	0.0083	49.3
60.00	20.7	27.0	21.4	0.0133	28.0	11.7	0.0059	47.2
250.00	20.7	26.0	20.4	0.0133	27.0	11.9	0.0029	45.0
1440.00	20.6	25.0	19.4	0.0133	26.0	12.0	0.0012	42.7

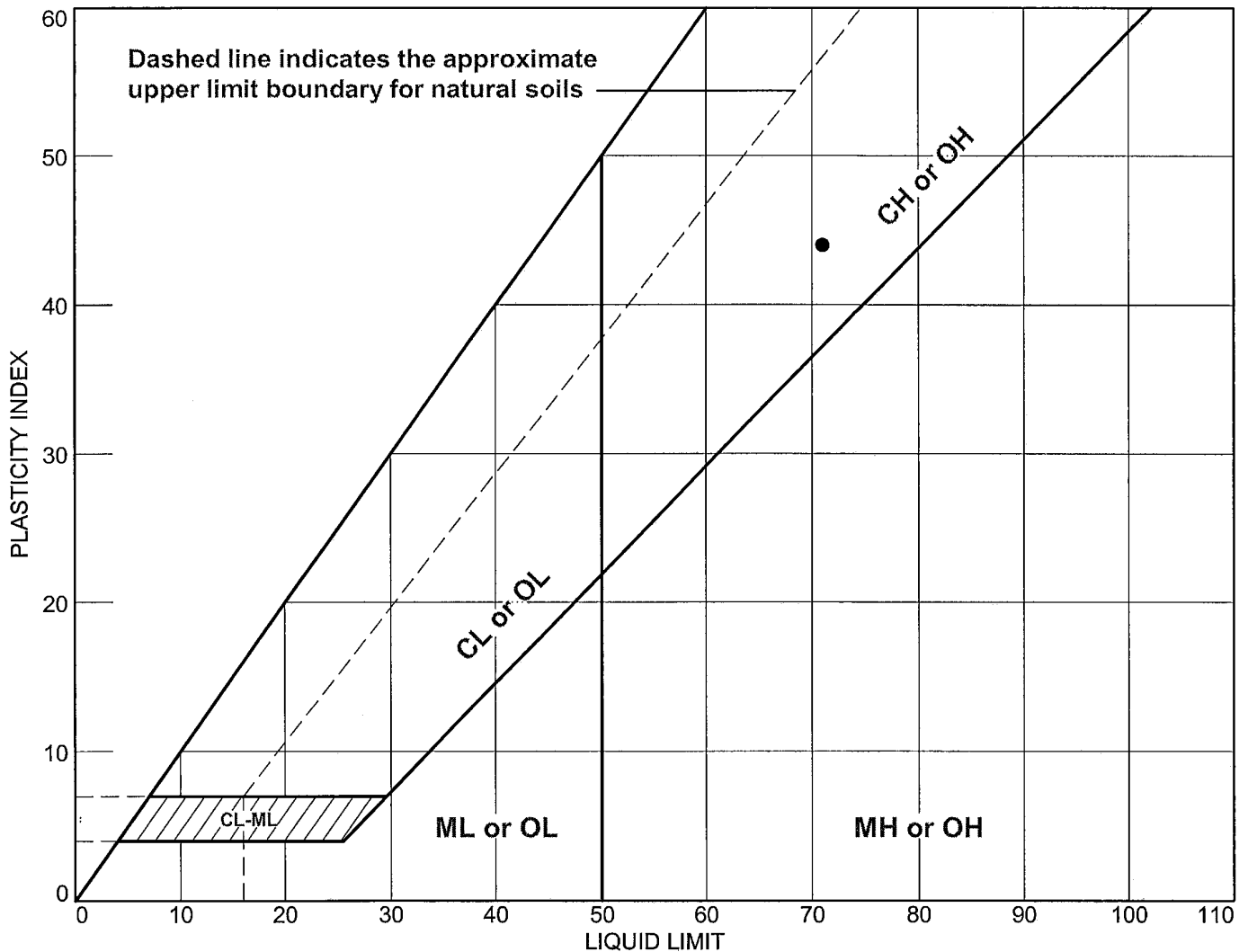
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.2	6.8	7.0	46.6	46.4	93.0

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0092	0.0346	0.0534	0.0594	0.0675	0.0844

Fineness Modulus
0.02

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-9	28.8-30.3	25.9	27	71	44	CH

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/4/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 28.8-30.3

Sample Number: SS-9

Material Description: Light Gray mottled Brownish Yellow Fat CLAY

USCS: CH

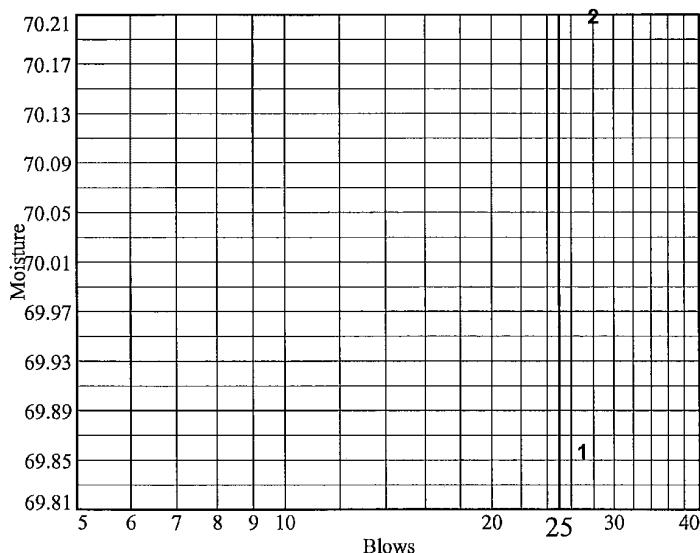
AASHTO: A-7-6(47)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	23.78	20.90				
Dry+Tare	20.35	16.87				
Tare	15.44	11.13				
# Blows	27	28				
Moisture	69.9	70.2				



Liquid Limit= 71
 Plastic Limit= 27
 Plasticity Index= 44
 Natural Moisture= 25.9
 Liquidity Index= 0.0

Plastic Limit Data

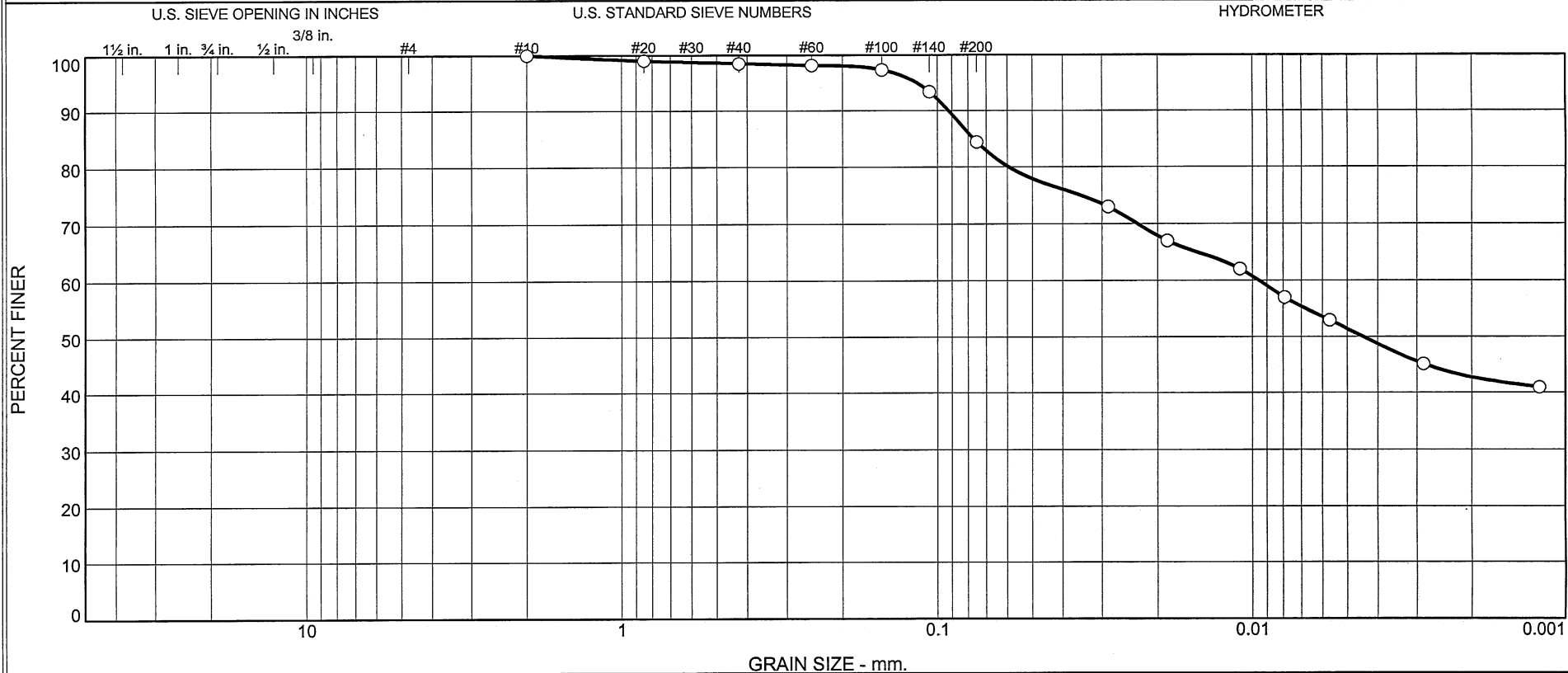
Run No.	1	2	3	4
Wet+Tare	21.76	21.79		
Dry+Tare	20.42	20.45		
Tare	15.56	15.54		
Moisture	27.6	27.3		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
128.59	103.54	6.80	25.9

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.5	14.1	33.0	51.4

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-10	33.7-35.2'	2/23/09	CH	Brownish Yellow mottled Light Gray Fat CLAY with sand	16.2	50	21

Client Bechtel		MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA	Raleigh, North Carolina	

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 33.7-35.2'

Sample Number: SS-10

Material Description: Brownish Yellow mottled Light Gray Fat CLAY with sand

Date: 2/23/09

Natural Moisture: 16.2

Liquid Limit: 50

Plastic Limit: 21

USCS Class.: CH

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
243.08	0.00	0.00	#10	0.00	100.0
50.63	0.00	0.00	#20	0.50	99.0
			#40	0.76	98.5
			#60	0.93	98.2
			#100	1.36	97.3
			#140	3.34	93.4
			#200	7.91	84.4

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 50.62

Hygroscopic moisture correction:

Moist weight and tare = 30.59

Dry weight and tare = 30.21

Tare weight = 15.70

Hygroscopic moisture = 2.6%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.6	42.0	36.4	0.0133	43.0	9.2	0.0287	73.0
5.00	20.6	39.0	33.4	0.0133	40.0	9.7	0.0186	67.0
15.00	20.7	36.5	30.9	0.0133	37.5	10.1	0.0110	62.0
30.00	20.7	34.0	28.4	0.0133	35.0	10.6	0.0079	57.0
60.00	20.6	32.0	26.4	0.0133	33.0	10.9	0.0057	52.9
250.00	20.9	28.0	22.5	0.0133	29.0	11.5	0.0029	45.1
1440.00	20.6	26.0	20.4	0.0133	27.0	11.9	0.0012	40.9

MACTEC Engineering and Consulting, Inc.

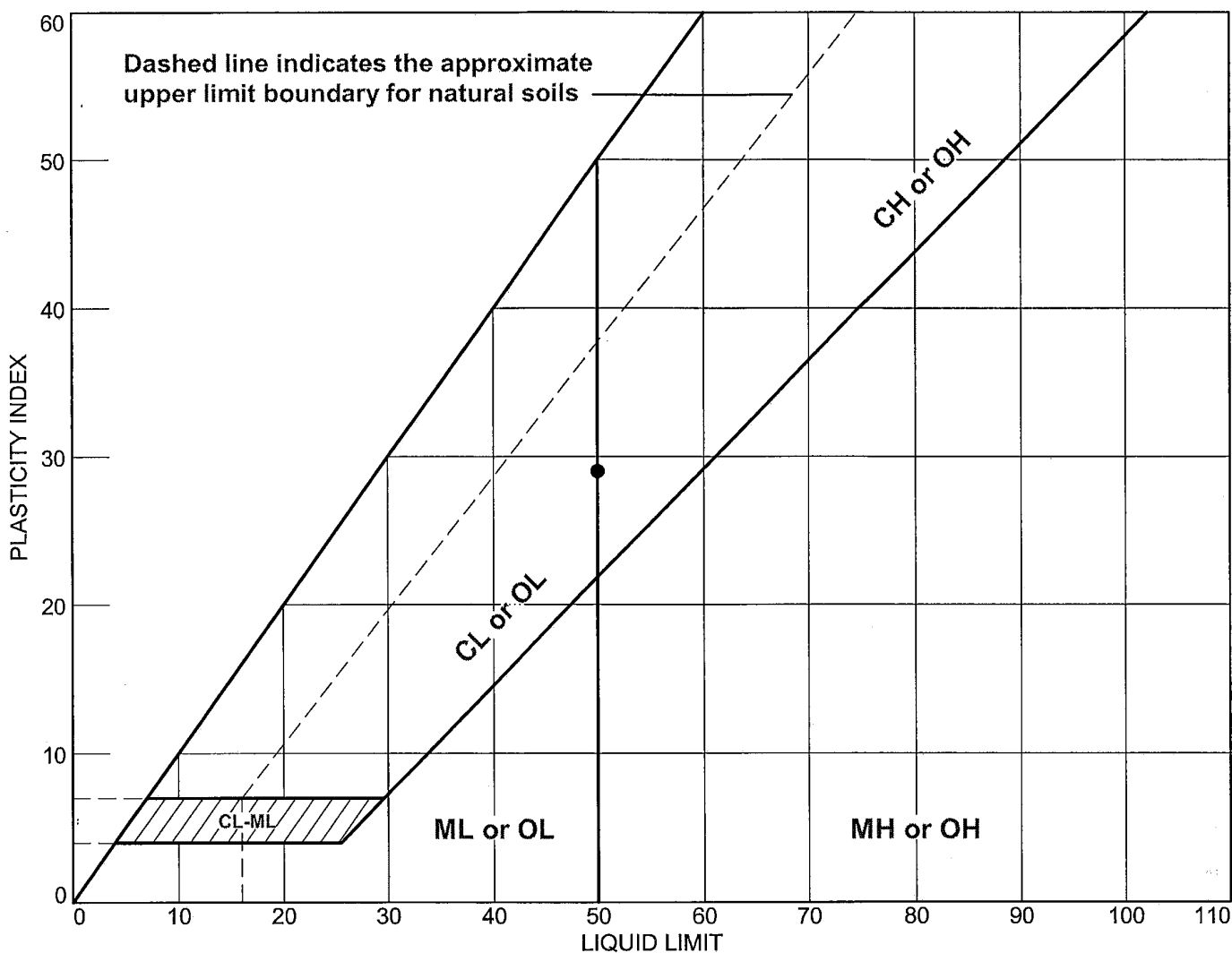
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.5	14.1	15.6	33.0	51.4	84.4

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0045	0.0095	0.0595	0.0769	0.0923	0.1160

Fineness Modulus
0.06

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-10	33.7-35.2'	16.2	21	50	29	CH

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 33.7-35.2'

Sample Number: SS-10

Material Description: Brownish Yellow mottled Light Gray Fat CLAY with sand

USCS: CH

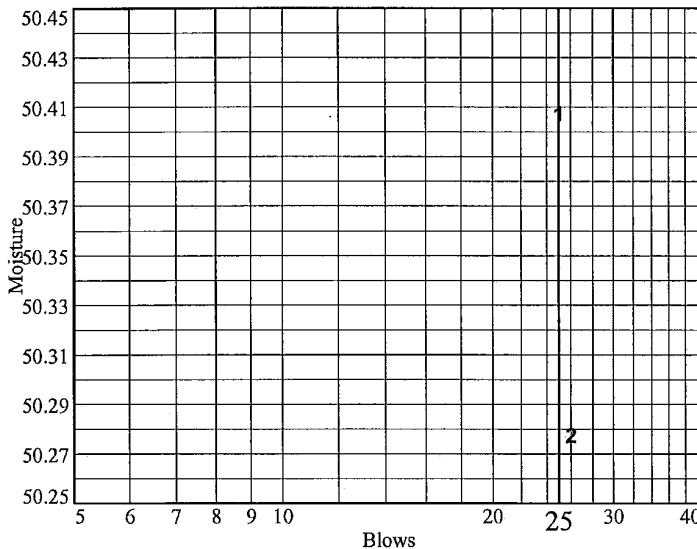
AASHTO: A-7-6(25)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	26.48	26.31				
Dry+Tare	22.77	22.69				
Tare	15.41	15.49				
# Blows	25	26				
Moisture	50.4	50.3				



Liquid Limit= 50
 Plastic Limit= 21
 Plasticity Index= 29
 Natural Moisture= 16.2
 Liquidity Index= -0.2

Plastic Limit Data

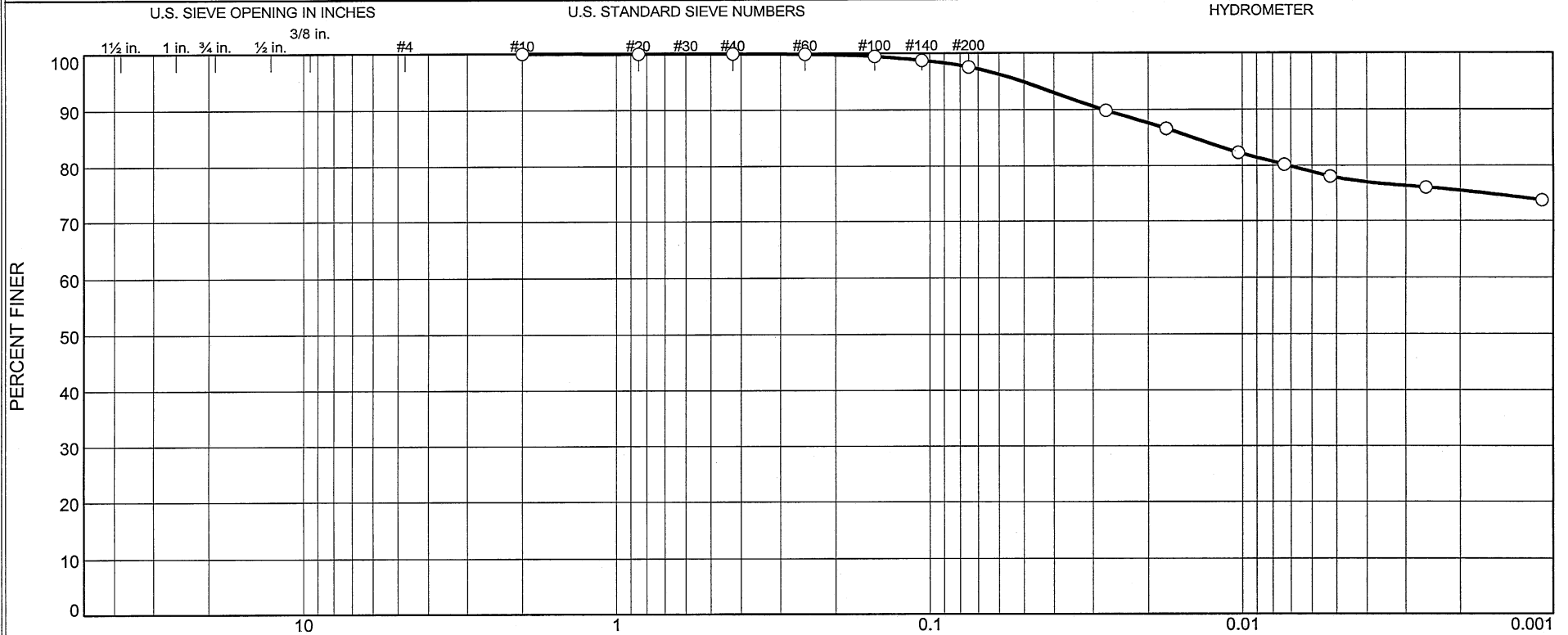
Run No.	1	2	3	4	
Wet+Tare	21.96	22.06			
Dry+Tare	20.86	20.89			
Tare	15.47	15.44			
Moisture	20.4	21.5			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
115.18	100.04	6.83	16.2

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



GRAIN SIZE - mm.

% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.4	19.7	77.8

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-11	38.8-40.3'	2/23/09	CH	Brownish Yellow mottled Light Gray Fat CLAY	32.2	94	36

Client Bechtel		MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		
		Raleigh, North Carolina	

Tested By: CS Checked By: BS DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 38.8-40.3'

Sample Number: SS-11

Material Description: Brownish Yellow mottled Light Gray Fat CLAY

Date: 2/23/09

Natural Moisture: 32.2

Liquid Limit: 94

Plastic Limit: 36

USCS Class.: CH

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
174.98	0.00	0.00	#10	0.00	100.0
48.50	0.00	0.00	#20	0.03	99.9
			#40	0.04	99.9
			#60	0.08	99.8
			#100	0.28	99.4
			#140	0.64	98.7
			#200	1.20	97.5

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 48.50

Hygroscopic moisture correction:

Moist weight and tare = 28.24

Dry weight and tare = 27.61

Tare weight = 15.31

Hygroscopic moisture = 5.1%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.6	47.5	41.9	0.0133	48.5	8.3	0.0272	89.8
5.00	20.6	46.0	40.4	0.0133	47.0	8.6	0.0175	86.6
15.00	20.6	44.0	38.4	0.0133	45.0	8.9	0.0103	82.3
30.00	20.6	43.0	37.4	0.0133	44.0	9.1	0.0073	80.2
60.00	20.6	42.0	36.4	0.0133	43.0	9.2	0.0052	78.0
250.00	20.8	41.0	35.5	0.0133	42.0	9.4	0.0026	76.0
1440.00	20.5	40.0	34.4	0.0134	41.0	9.6	0.0011	73.7

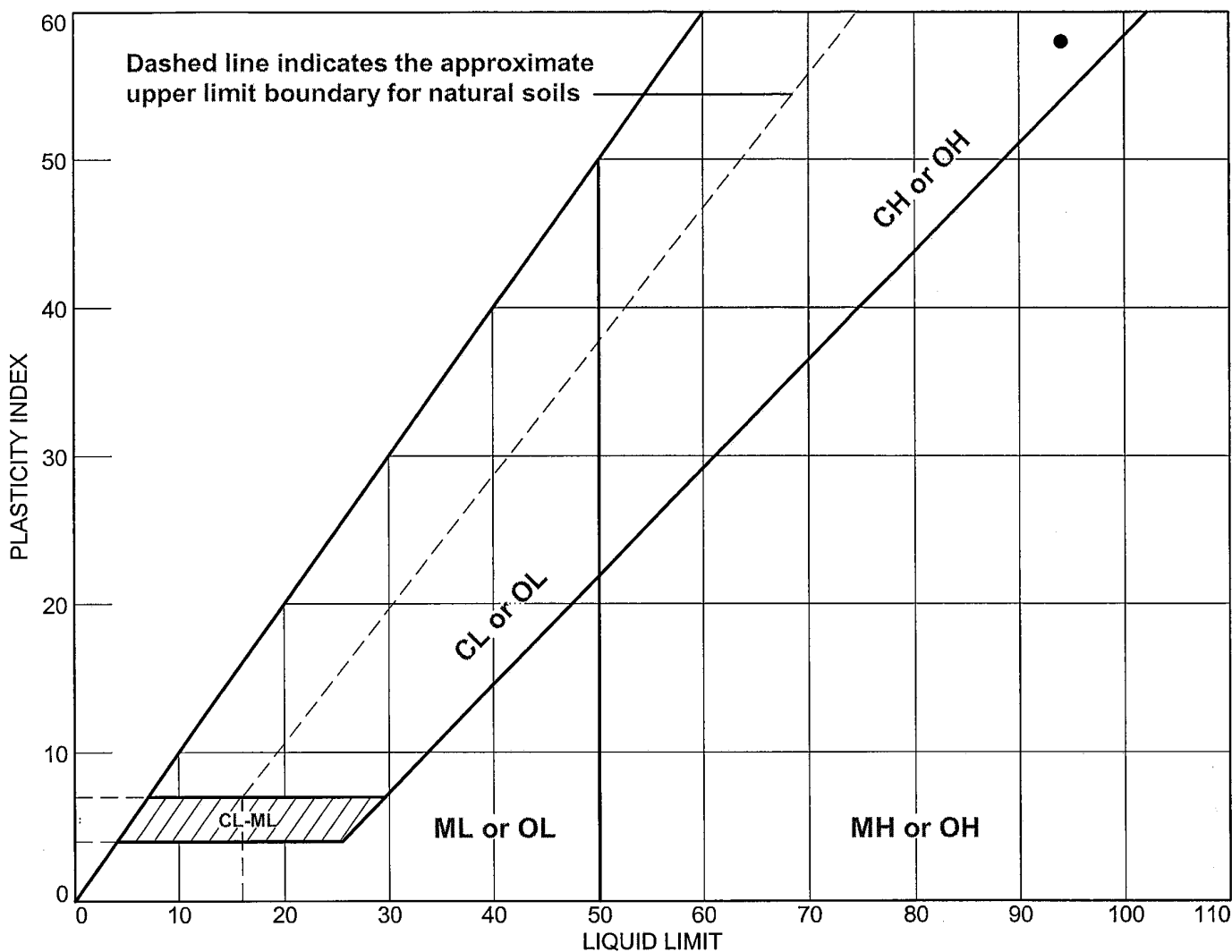
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.1	2.4	2.5	19.7	77.8	97.5

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
						0.0071	0.0144	0.0279	0.0509

Fineness Modulus
0.01

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-11	38.8-40.3'	32.2	36	94	58	CH

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 38.8-40.3'

Sample Number: SS-11

Material Description: Brownish Yellow mottled Light Gray Fat CLAY

USCS: CH

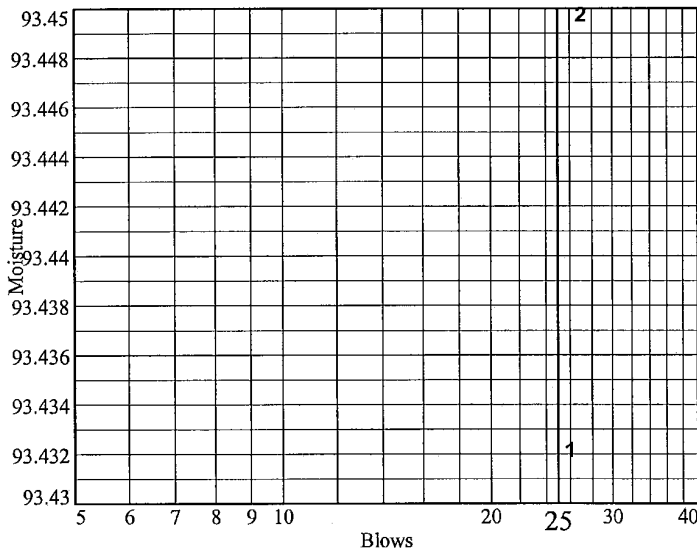
AASHTO: A-7-5(69)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.60	24.28				
Dry+Tare	20.19	20.00				
Tare	15.47	15.42				
# Blows	26	27				
Moisture	93.4	93.4				



Liquid Limit= 94
 Plastic Limit= 36
 Plasticity Index= 58
 Natural Moisture= 32.2
 Liquidity Index= -0.1

Plastic Limit Data

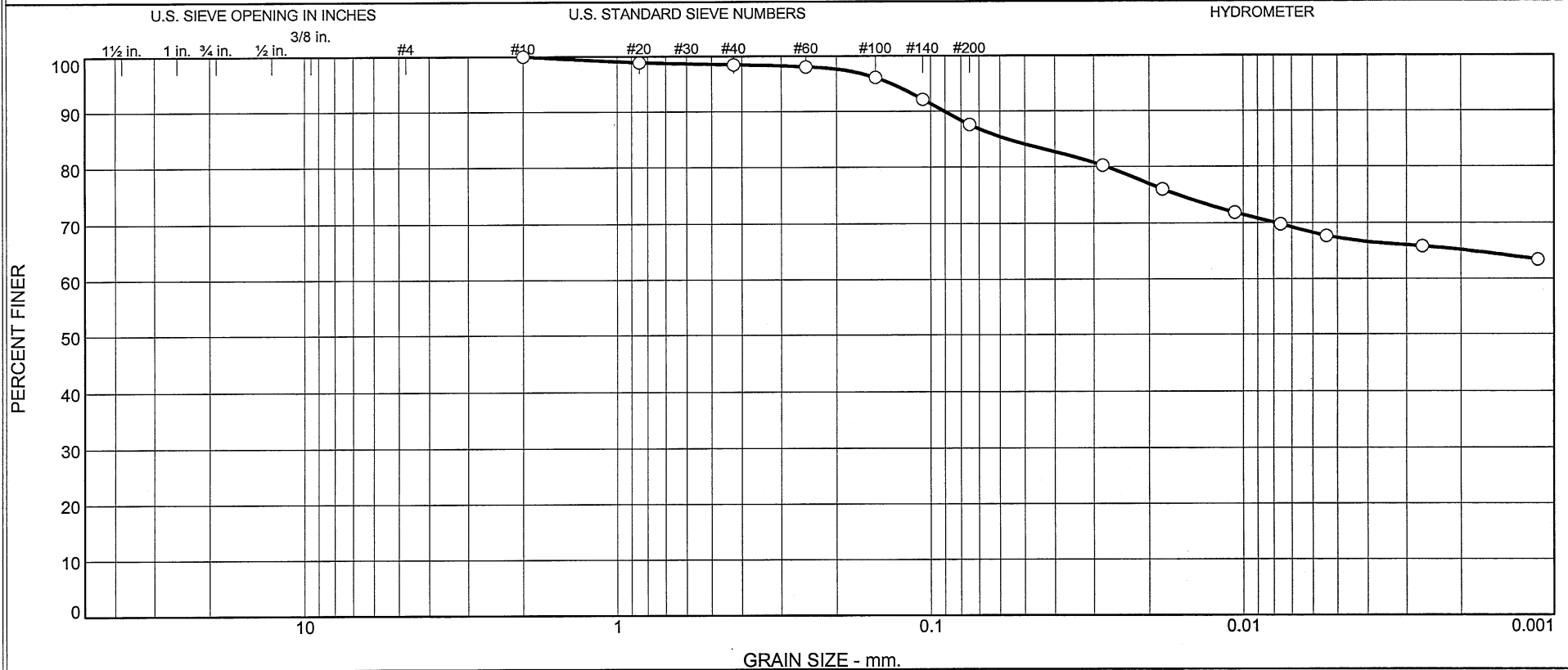
Run No.	1	2	3	4	
Wet+Tare	21.45	21.68			
Dry+Tare	19.86	20.05			
Tare	15.43	15.42			
Moisture	35.9	35.2			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
103.46	79.96	7.01	32.2

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.5	10.9	20.3	67.3

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-12	43.9-45.4'	2/23/09	CH	Brownish Yellow mottled Light Gray Fat CLAY	23.3	64	26

Client Bechtel		MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		
		Raleigh, North Carolina	

Tested By: CS Checked By: BS DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 43.9-45.4'

Sample Number: SS-12

Material Description: Brownish Yellow mottled Light Gray Fat CLAY

Date: 2/23/09

Natural Moisture: 23.3

Liquid Limit: 64

Plastic Limit: 26

USCS Class.: CH

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
260.49	0.00	0.00	#10	0.00	100.0
49.24	0.00	0.00	#20	0.55	98.9
			#40	0.76	98.5
			#60	0.97	98.0
			#100	1.92	96.1
			#140	3.86	92.2
			#200	6.11	87.6

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 49.24

Hygroscopic moisture correction:

Moist weight and tare = 23.36

Dry weight and tare = 22.90

Tare weight = 11.11

Hygroscopic moisture = 3.9%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.7	44.0	38.4	0.0133	45.0	8.9	0.0281	80.2
5.00	20.7	42.0	36.4	0.0133	43.0	9.2	0.0181	76.0
15.00	20.7	40.0	34.4	0.0133	41.0	9.6	0.0106	71.9
30.00	20.7	39.0	33.4	0.0133	40.0	9.7	0.0076	69.8
60.00	20.7	38.0	32.4	0.0133	39.0	9.9	0.0054	67.7
250.00	21.0	37.0	31.5	0.0133	38.0	10.1	0.0027	65.8
1440.00	20.5	36.0	30.4	0.0134	37.0	10.2	0.0011	63.4

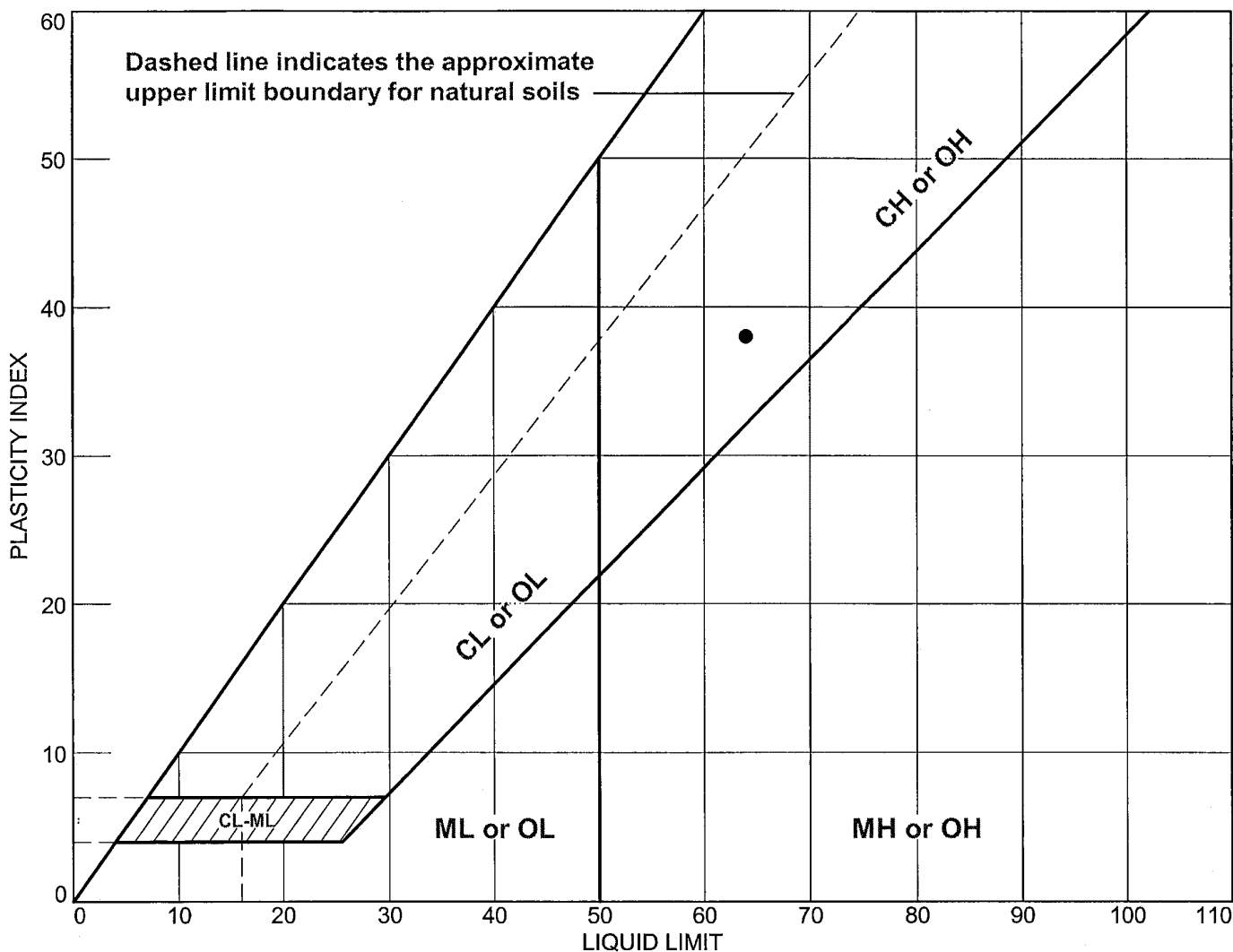
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.5	10.9	12.4	20.3	67.3	87.6

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
						0.0274	0.0570	0.0905	0.1335

Fineness Modulus
0.08

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-12	43.9-45.4'	23.3	26	64	38	CH

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 43.9-45.4'

Sample Number: SS-12

Material Description: Brownish Yellow mottled Light Gray Fat CLAY

USCS: CH

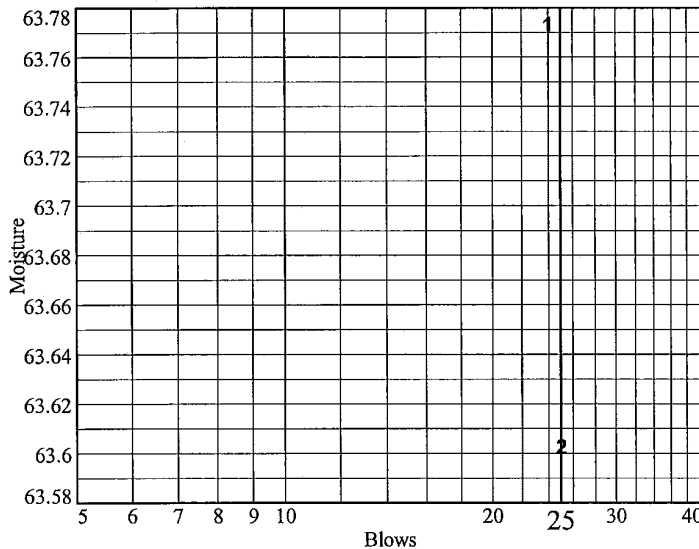
AASHTO: A-7-6(37)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.22	24.33				
Dry+Tare	20.84	20.87				
Tare	15.54	15.43				
# Blows	24	25				
Moisture	63.8	63.6				



Liquid Limit= 64
 Plastic Limit= 26
 Plasticity Index= 38
 Natural Moisture= 23.3
 Liquidity Index= -0.1

Plastic Limit Data

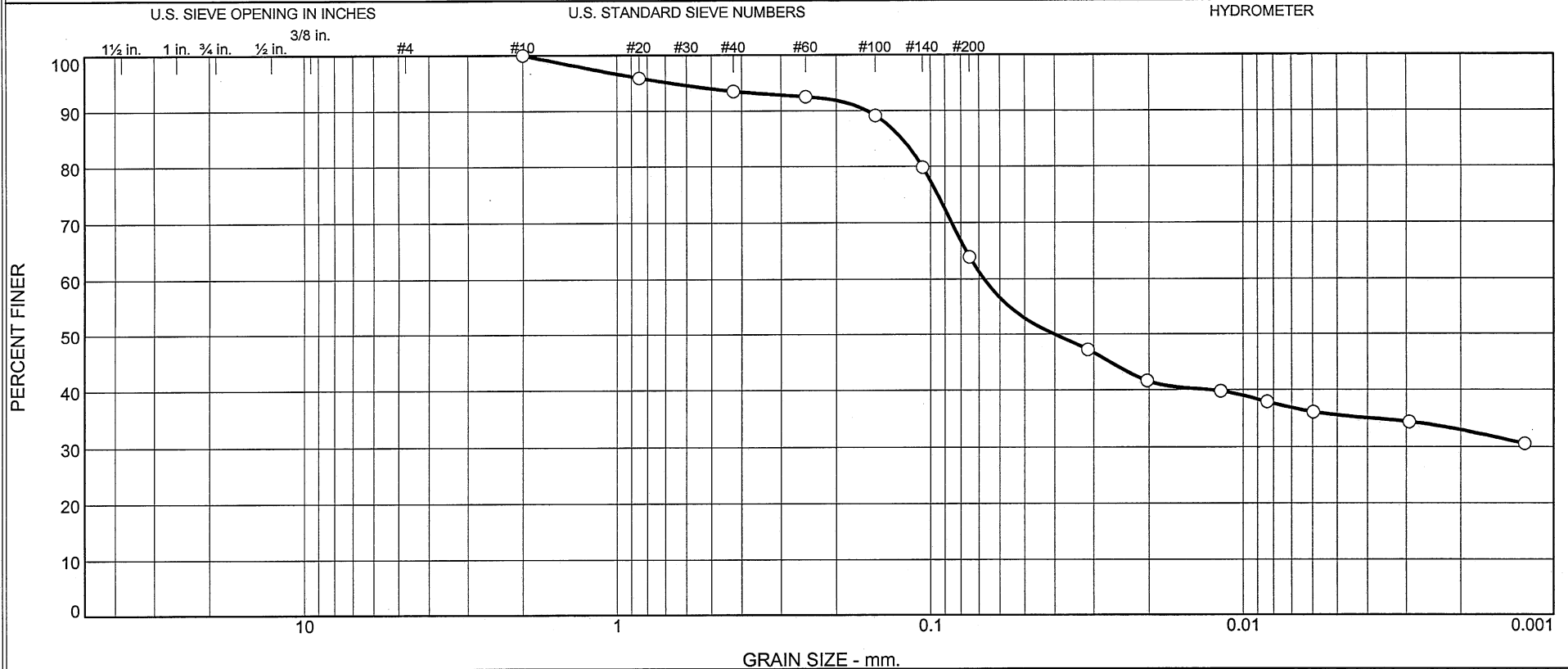
Run No.	1	2	3	4	
Wet+Tare	21.65	22.00			
Dry+Tare	20.35	20.69			
Tare	15.51	15.67			
Moisture	26.9	26.1			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
105.36	86.74	6.90	23.3

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	6.5	29.6	28.4	35.5

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-13	48.8-50.3'	2/25/09	CL	Light Gray Sandy Lean CLAY	17.3	34	19

Client Bechtel		MACTEC Engineering and Consulting, Inc. Raleigh, North Carolina	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 48.8-50.3'

Sample Number: SS-13

Material Description: Light Gray Sandy Lean CLAY

Date: 2/25/09

Natural Moisture: 17.3

Liquid Limit: 34

Plastic Limit: 19

USCS Class.: CL

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
240.10	0.00	0.00	#10	0.00	100.0
53.96	0.00	0.00	#20	2.21	95.9
			#40	3.50	93.5
			#60	4.04	92.5
			#100	5.87	89.1
			#140	10.91	79.8
			#200	19.48	63.9

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 53.96

Hygroscopic moisture correction:

Moist weight and tare = 27.74

Dry weight and tare = 27.59

Tare weight = 15.53

Hygroscopic moisture = 1.2%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.7	31.0	25.4	0.0133	32.0	11.0	0.0313	47.2
5.00	20.7	28.0	22.4	0.0133	29.0	11.5	0.0202	41.6
15.00	20.7	27.0	21.4	0.0133	28.0	11.7	0.0118	39.8
30.00	20.7	26.0	20.4	0.0133	27.0	11.9	0.0084	37.9
60.00	20.8	25.0	19.5	0.0133	26.0	12.0	0.0060	36.1
250.00	21.0	24.0	18.5	0.0133	25.0	12.2	0.0029	34.4
1440.00	20.8	22.0	16.5	0.0133	23.0	12.5	0.0012	30.6

MACTEC Engineering and Consulting, Inc.

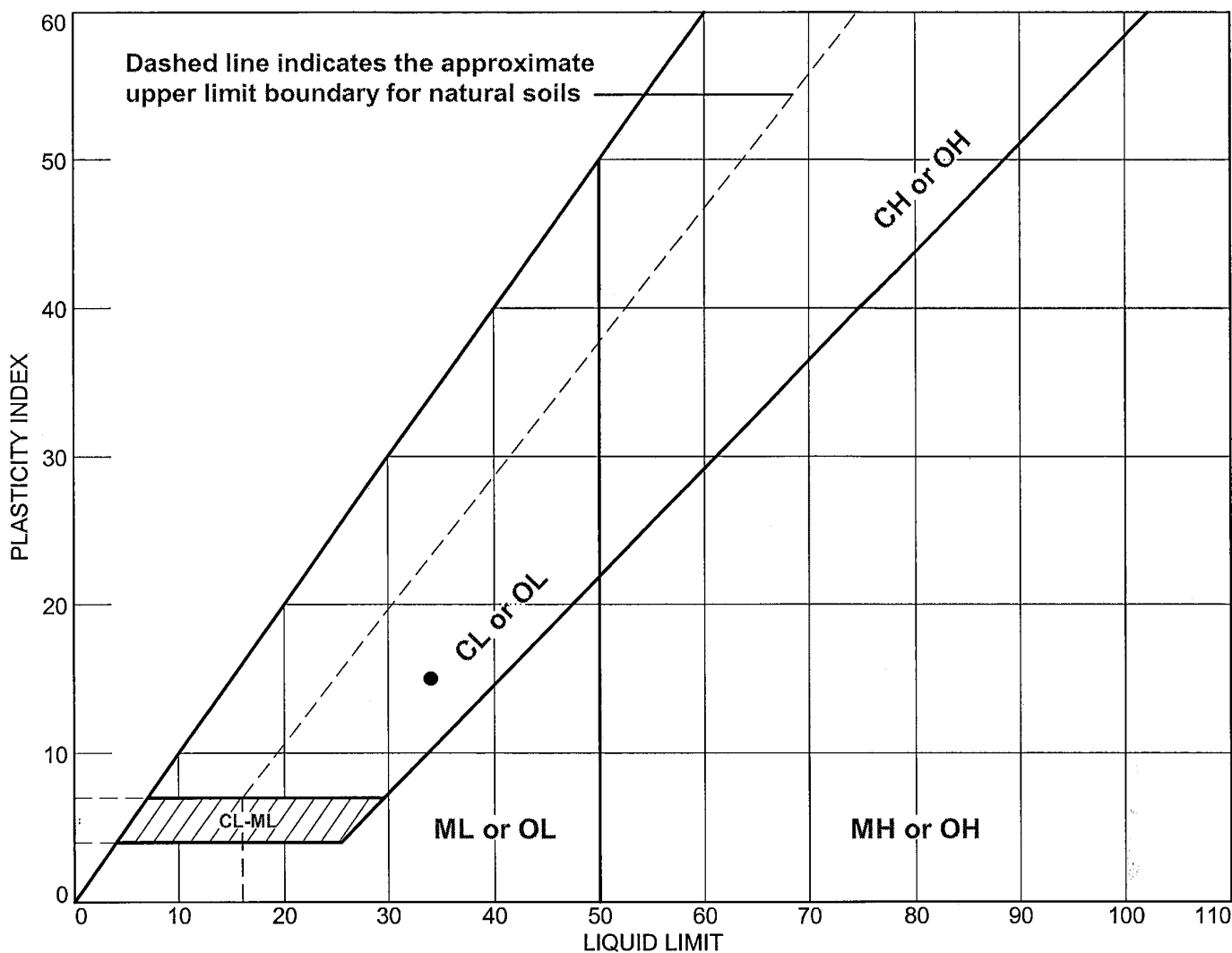
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	6.5	29.6	36.1	28.4	35.5	63.9

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0401	0.0675	0.1066	0.1237	0.1597	0.6806

Fineness Modulus
0.26

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-13	48.8-50.3'	17.3	19	34	15	CL

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 48.8-50.3'

Sample Number: SS-13

Material Description: Light Gray Sandy Lean CLAY

USCS: CL

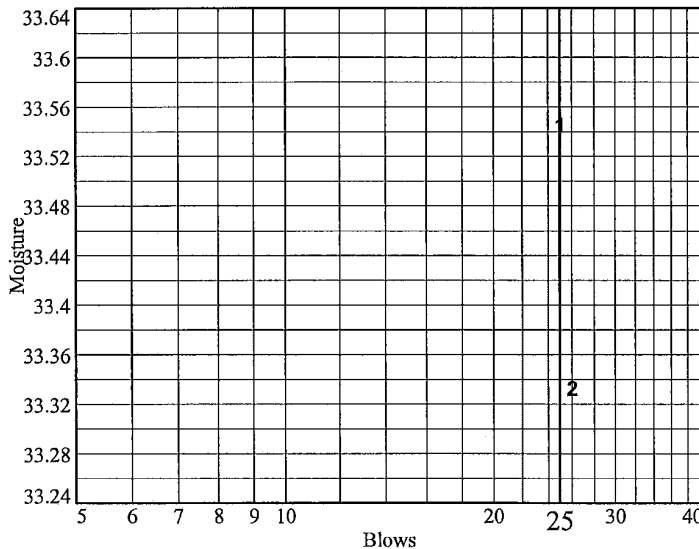
AASHTO: A-6(7)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.83	25.34				
Dry+Tare	23.20	22.88				
Tare	15.36	15.50				
# Blows	25	26				
Moisture	33.5	33.3				



Liquid Limit= 34
 Plastic Limit= 19
 Plasticity Index= 15
 Natural Moisture= 17.3
 Liquidity Index= -0.1

Plastic Limit Data

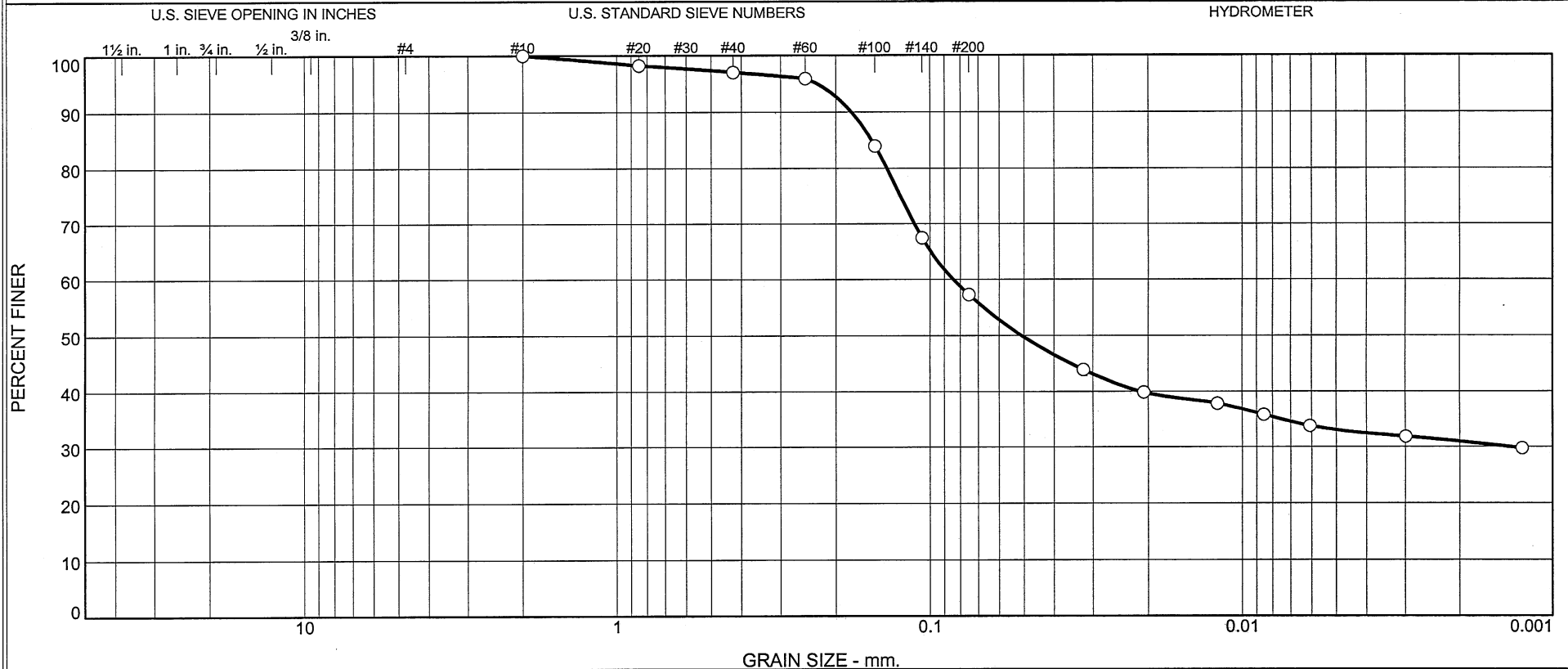
Run No.	1	2	3	4	
Wet+Tare	22.08	22.07			
Dry+Tare	21.05	21.03			
Tare	15.60	15.48			
Moisture	18.9	18.7			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
123.38	106.21	6.91	17.3

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	3.0	39.8	24.2	33.0

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-14	53.8-55.3'	2/25/09	CL	Light Gray Sandy Lean CLAY	19.4	30	20

Client Bechtel		MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		
		Raleigh, North Carolina	

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 53.8-55.3'

Sample Number: SS-14

Material Description: Light Gray Sandy Lean CLAY

Date: 2/25/09

Natural Moisture: 19.4

Liquid Limit: 30

Plastic Limit: 20

USCS Class.: CL

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
215.08	0.00	0.00	#10	0.00	100.0
49.27	0.00	0.00	#20	0.89	98.2
			#40	1.47	97.0
			#60	2.02	95.9
			#100	7.92	83.9
			#140	16.05	67.4
			#200	21.08	57.2

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 49.27

Hygroscopic moisture correction:

Moist weight and tare = 29.94

Dry weight and tare = 29.68

Tare weight = 15.67

Hygroscopic moisture = 1.9%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.9	27.0	21.5	0.0133	28.0	11.7	0.0322	44.0
5.00	20.9	25.0	19.5	0.0133	26.0	12.0	0.0206	39.9
15.00	20.9	24.0	18.5	0.0133	25.0	12.2	0.0120	37.8
30.00	21.0	23.0	17.5	0.0133	24.0	12.4	0.0085	35.8
60.00	21.0	22.0	16.5	0.0133	23.0	12.5	0.0061	33.8
250.00	21.1	21.0	15.6	0.0133	22.0	12.7	0.0030	31.8
1440.00	21.0	20.0	14.5	0.0133	21.0	12.9	0.0013	29.7

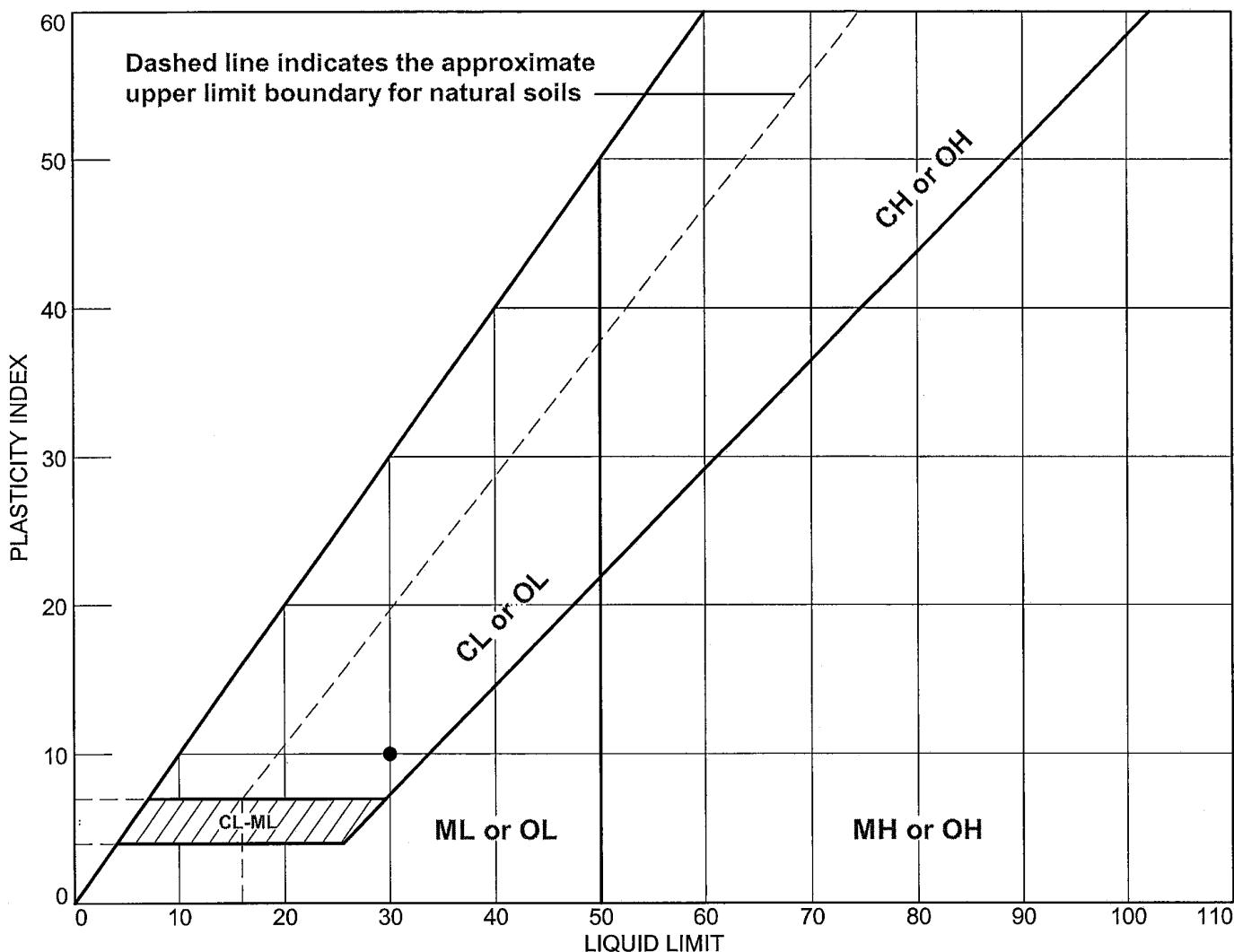
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	3.0	39.8	42.8	24.2	33.0	57.2

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
			0.0014	0.0508	0.0845	0.1377	0.1540	0.1784	0.2295

Fineness Modulus
0.23

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-3270A	SS-14	53.8-55.3'	19.4	20	30	10	CL

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 53.8-55.3'

Sample Number: SS-14

Material Description: Light Gray Sandy Lean CLAY

USCS: CL

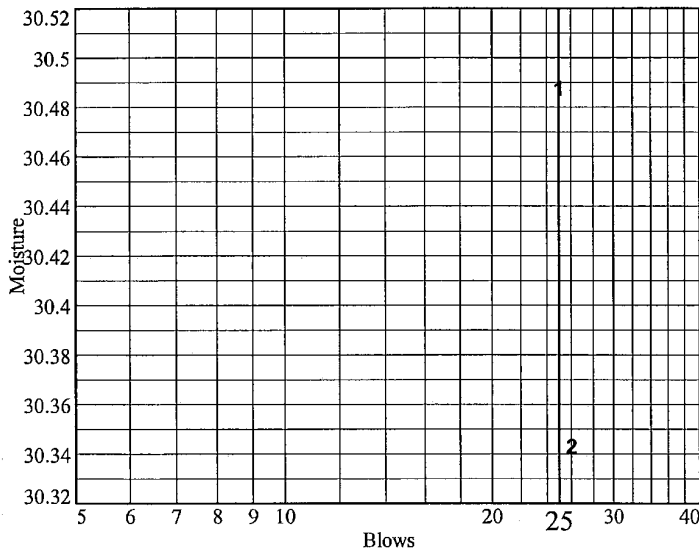
AASHTO: A-4(3)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.08	27.33				
Dry+Tare	24.33	24.59				
Tare	15.31	15.56				
# Blows	25	26				
Moisture	30.5	30.3				



Liquid Limit= 30
 Plastic Limit= 20
 Plasticity Index= 10
 Natural Moisture= 19.4
 Liquidity Index= -0.1

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.64	22.72			
Dry+Tare	21.48	21.49			
Tare	15.60	15.44			
Moisture	19.7	20.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
110.54	93.72	6.81	19.4

MACTEC Engineering and Consulting, Inc.

HYDROMETER



DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 58.9-60.4'

Sample Number: SS-15

Material Description: Light Yellowish Brown Silty, Clayey SAND

Date: 2/23/09

Natural Moisture: 21.1

Liquid Limit: 20

Plastic Limit: 15

USCS Class.: SC-SM

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
305.54	0.00	0.00	#10	0.00	100.0
53.84	0.00	0.00	#20	0.01	100.0
			#40	0.02	100.0
			#60	0.69	98.7
			#100	11.84	78.0
			#140	25.72	52.2
			#200	34.37	36.2

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 53.85

Hygroscopic moisture correction:

Moist weight and tare = 22.57

Dry weight and tare = 22.45

Tare weight = 11.20

Hygroscopic moisture = 1.1%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.8	20.0	14.5	0.0133	21.0	12.9	0.0337	26.9
5.00	20.8	19.0	13.5	0.0133	20.0	13.0	0.0215	25.0
15.00	20.8	18.0	12.5	0.0133	19.0	13.2	0.0125	23.1
30.00	20.8	17.0	11.5	0.0133	18.0	13.3	0.0089	21.3
60.00	20.9	17.0	11.5	0.0133	18.0	13.3	0.0063	21.3
250.00	20.9	16.0	10.5	0.0133	17.0	13.5	0.0031	19.5
1440.00	20.6	16.0	10.4	0.0133	17.0	13.5	0.0013	19.3

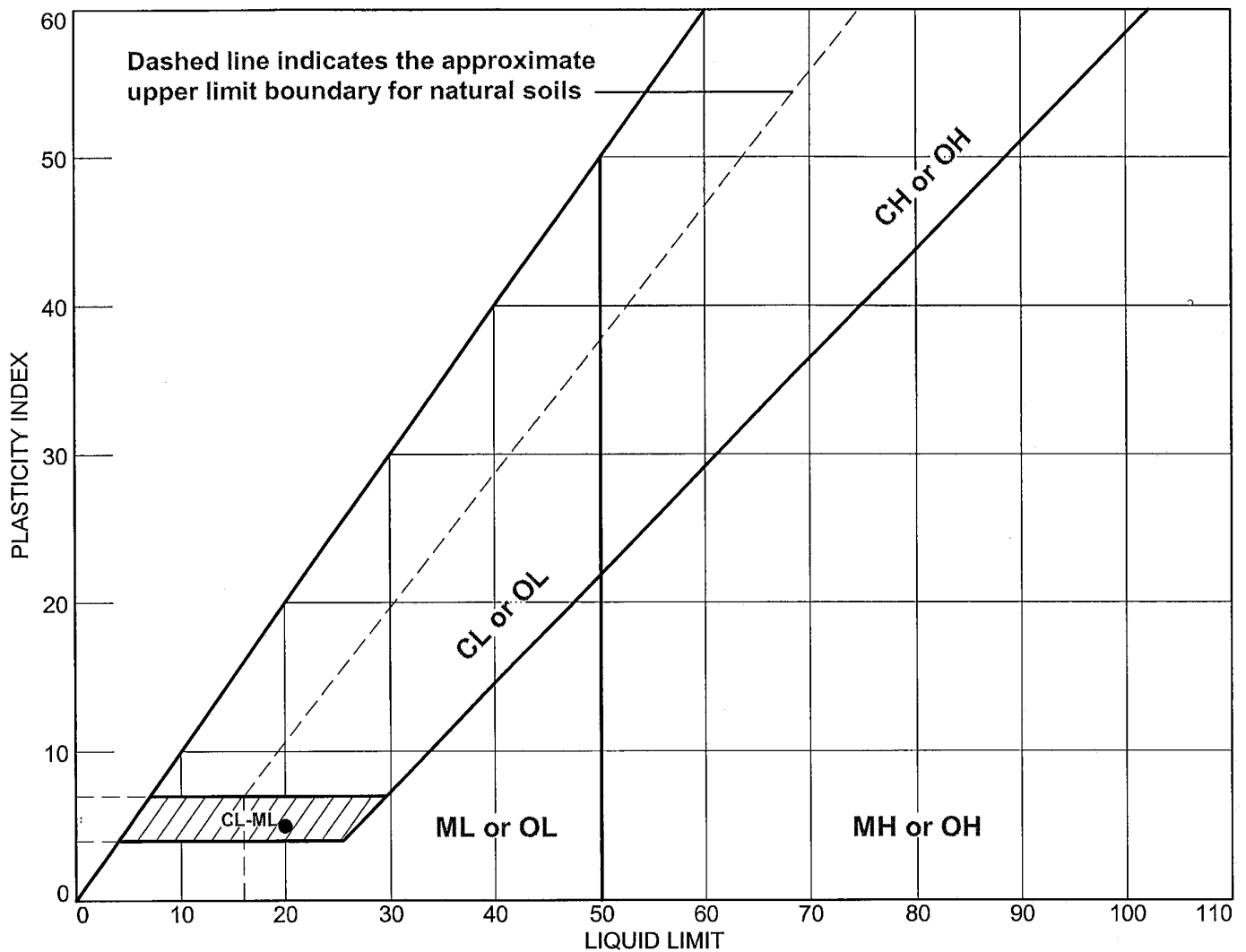
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.0	63.8	63.8	15.6	20.6	36.2

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
		0.0040	0.0559	0.1024	0.1181	0.1546	0.1681	0.1860	0.2128

Fineness Modulus
0.23

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-3270A	SS-15	58.9-60.4'	21.1	15	20	5	SC-SM

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 58.9-60.4'

Sample Number: SS-15

Material Description: Light Yellowish Brown Silty, Clayey SAND

USCS: SC-SM

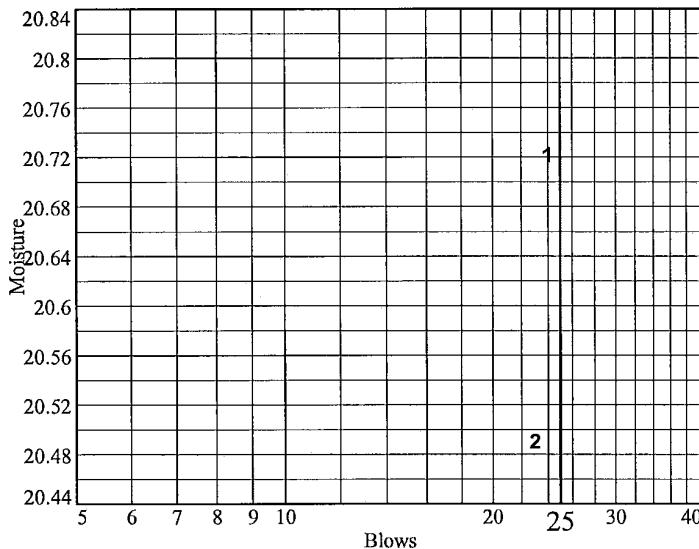
AASHTO: A-4(0)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	28.36	26.96				
Dry+Tare	26.18	25.04				
Tare	15.66	15.67				
# Blows	24	23				
Moisture	20.7	20.5				



Liquid Limit= 20
 Plastic Limit= 15
 Plasticity Index= 5
 Natural Moisture= 21.1
 Liquidity Index= 1.2

Plastic Limit Data

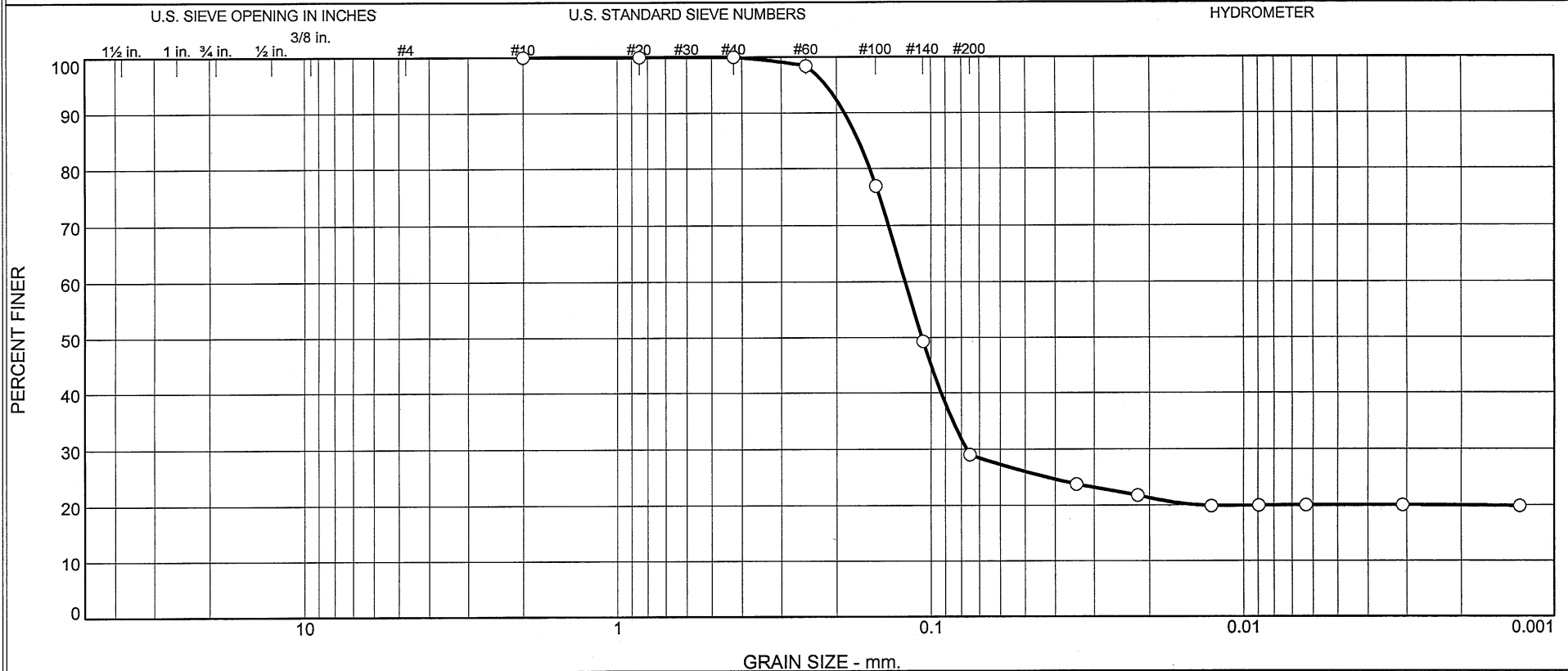
Run No.	1	2	3	4
Wet+Tare	22.96	23.66		
Dry+Tare	21.97	22.65		
Tare	15.54	15.66		
Moisture	15.4	14.4		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
151.95	126.69	6.77	21.1

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	71.0	9.0	20.0

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-16	63.9-65.4'	2/23/09	SC-SM	Light Gray Silty, Clayey SAND	23.1	19	15

Client Bechtel			MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental				
Investigation, including UHS				
Project No. 6468071777	Figure	NA		
			Raleigh, North Carolina	

Tested By: CS Checked By: BS DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 63.9-65.4'

Sample Number: SS-16

Material Description: Light Gray Silty, Clayey SAND

Date: 2/23/09

Natural Moisture: 23.1

Liquid Limit: 19

Plastic Limit: 15

USCS Class.: SC-SM

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
273.09	0.00	0.00	#10	0.00	100.0
52.43	0.00	0.00	#20	0.01	100.0
			#40	0.02	100.0
			#60	0.83	98.4
			#100	12.13	76.9
			#140	26.59	49.3
			#200	37.22	29.0

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 52.44

Hygroscopic moisture correction:

Moist weight and tare = 28.85

Dry weight and tare = 28.71

Tare weight = 15.48

Hygroscopic moisture = 1.1%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.8	18.0	12.5	0.0133	19.0	13.2	0.0342	23.8
5.00	20.7	17.0	11.4	0.0133	18.0	13.3	0.0218	21.8
15.00	20.7	16.0	10.4	0.0133	17.0	13.5	0.0126	19.9
30.00	20.8	16.0	10.5	0.0133	17.0	13.5	0.0089	20.0
60.00	20.9	16.0	10.5	0.0133	17.0	13.5	0.0063	20.0
250.00	20.9	16.0	10.5	0.0133	17.0	13.5	0.0031	20.0
1440.00	20.6	16.0	10.4	0.0133	17.0	13.5	0.0013	19.8

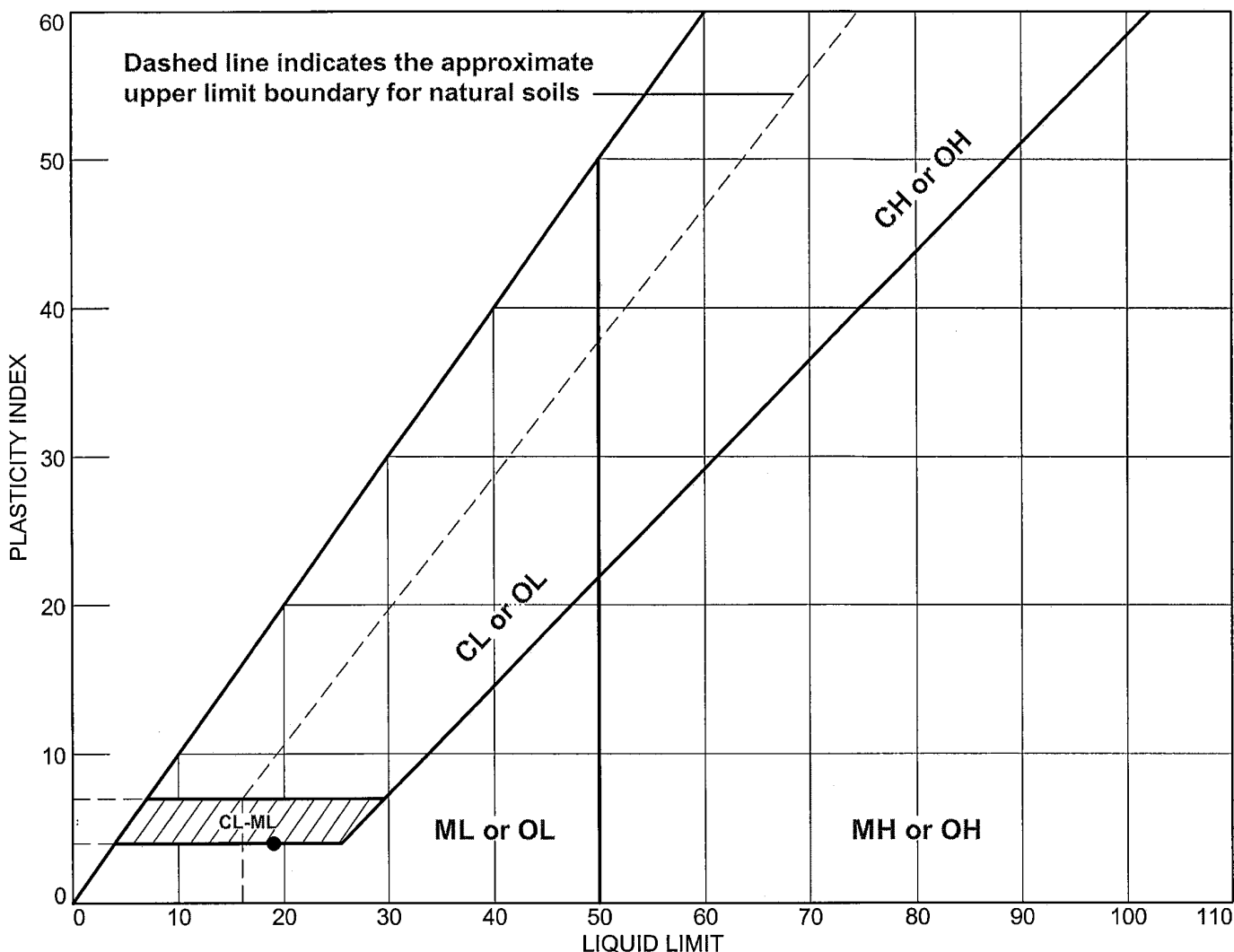
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.0	71.0	71.0	9.0	20.0	29.0

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
		0.0137	0.0769	0.1070	0.1211	0.1571	0.1708	0.1890	0.2163

Fineness Modulus
0.24

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-3270A	SS-16	63.9-65.4'	23.1	15	19	4	SC-SM

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 63.9-65.4'

Sample Number: SS-16

Material Description: Light Gray Silty, Clayey SAND

USCS: SC-SM

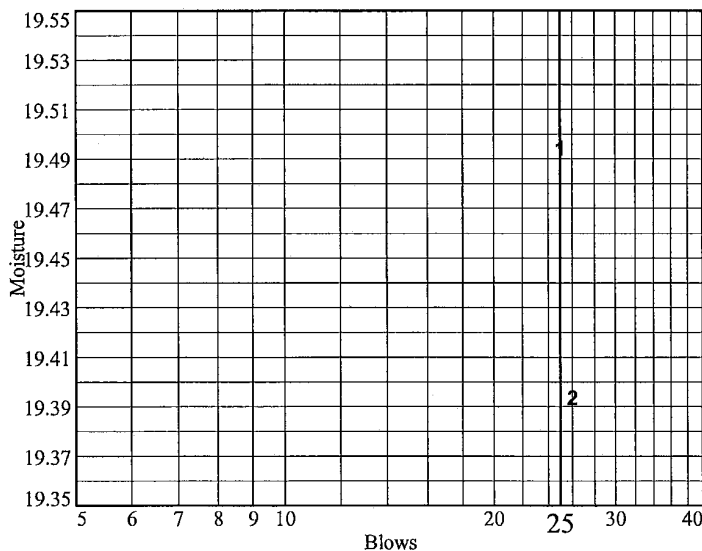
AASHTO: A-2-4(0)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.46	25.41				
Dry+Tare	23.84	23.81				
Tare	15.53	15.56				
# Blows	25	26				
Moisture	19.5	19.4				



Liquid Limit= 19
 Plastic Limit= 15
 Plasticity Index= 4
 Natural Moisture= 23.1
 Liquidity Index= 2.0

Plastic Limit Data

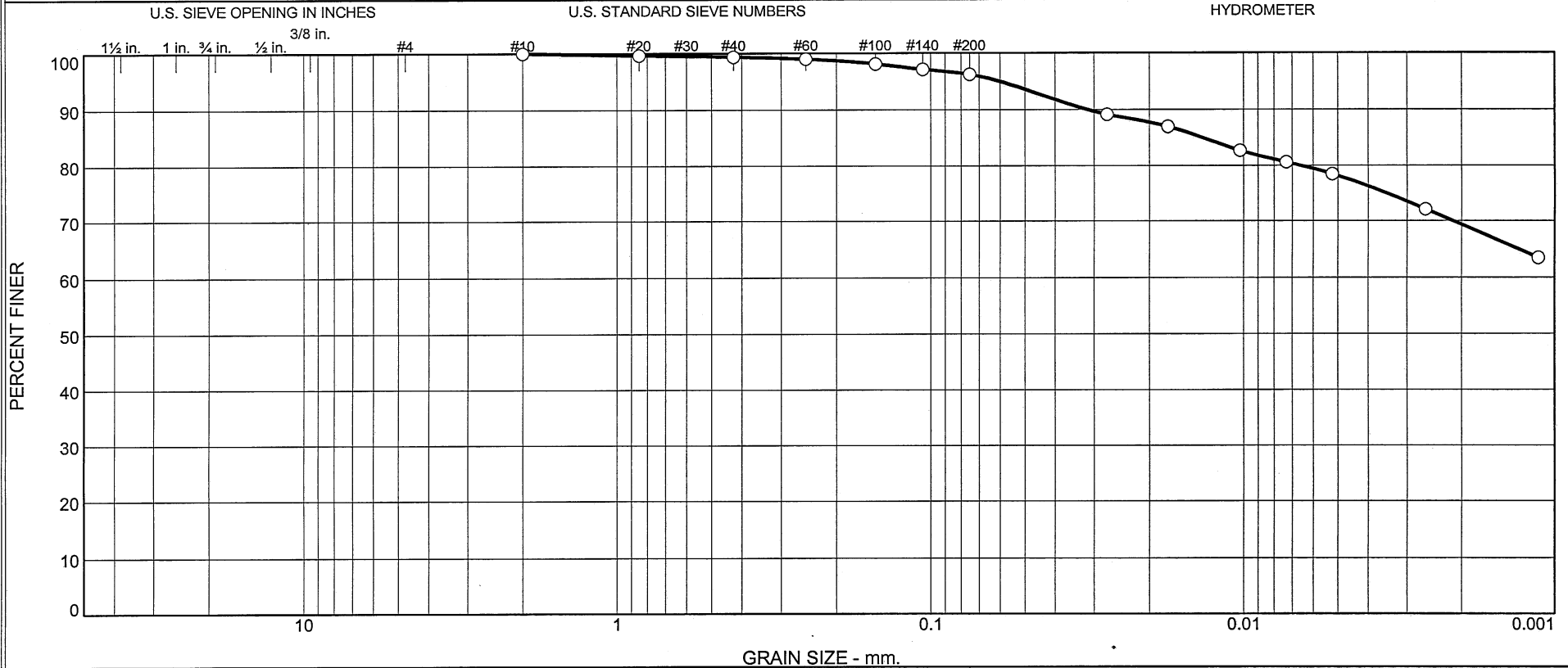
Run No.	1	2	3	4	
Wet+Tare	21.88	21.79			
Dry+Tare	21.07	21.00			
Tare	15.50	15.58			
Moisture	14.5	14.6			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
129.35	106.34	6.81	23.1

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	3.1	18.1	78.1

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-17	68.9-70.4'	2/25/09	CH	Olive Brown mottled Light Gray Fat CLAY	35.8	82	23

Client Bechtel		MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		
		Raleigh, North Carolina	

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 68.9-70.4'

Sample Number: SS-17

Material Description: Olive Brown mottled Light Gray Fat CLAY

Date: 2/25/09

Natural Moisture: 35.8

Liquid Limit: 82

Plastic Limit: 23

USCS Class.: CH

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
161.54	0.00	0.00	#10	0.00	100.0
49.05	0.00	0.00	#20	0.18	99.6
			#40	0.32	99.3
			#60	0.52	98.9
			#100	0.95	98.1
			#140	1.42	97.1
			#200	1.87	96.2

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 49.05

Hygroscopic moisture correction:

Moist weight and tare = 24.00

Dry weight and tare = 23.21

Tare weight = 11.10

Hygroscopic moisture = 6.5%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.9	47.0	41.5	0.0133	48.0	8.4	0.0273	89.1
5.00	20.9	46.0	40.5	0.0133	47.0	8.6	0.0174	87.0
15.00	20.9	44.0	38.5	0.0133	45.0	8.9	0.0102	82.7
30.00	21.0	43.0	37.5	0.0133	44.0	9.1	0.0073	80.6
60.00	21.0	42.0	36.5	0.0133	43.0	9.2	0.0052	78.5
250.00	21.1	39.0	33.6	0.0133	40.0	9.7	0.0026	72.1
1440.00	21.0	35.0	29.5	0.0133	36.0	10.4	0.0011	63.4

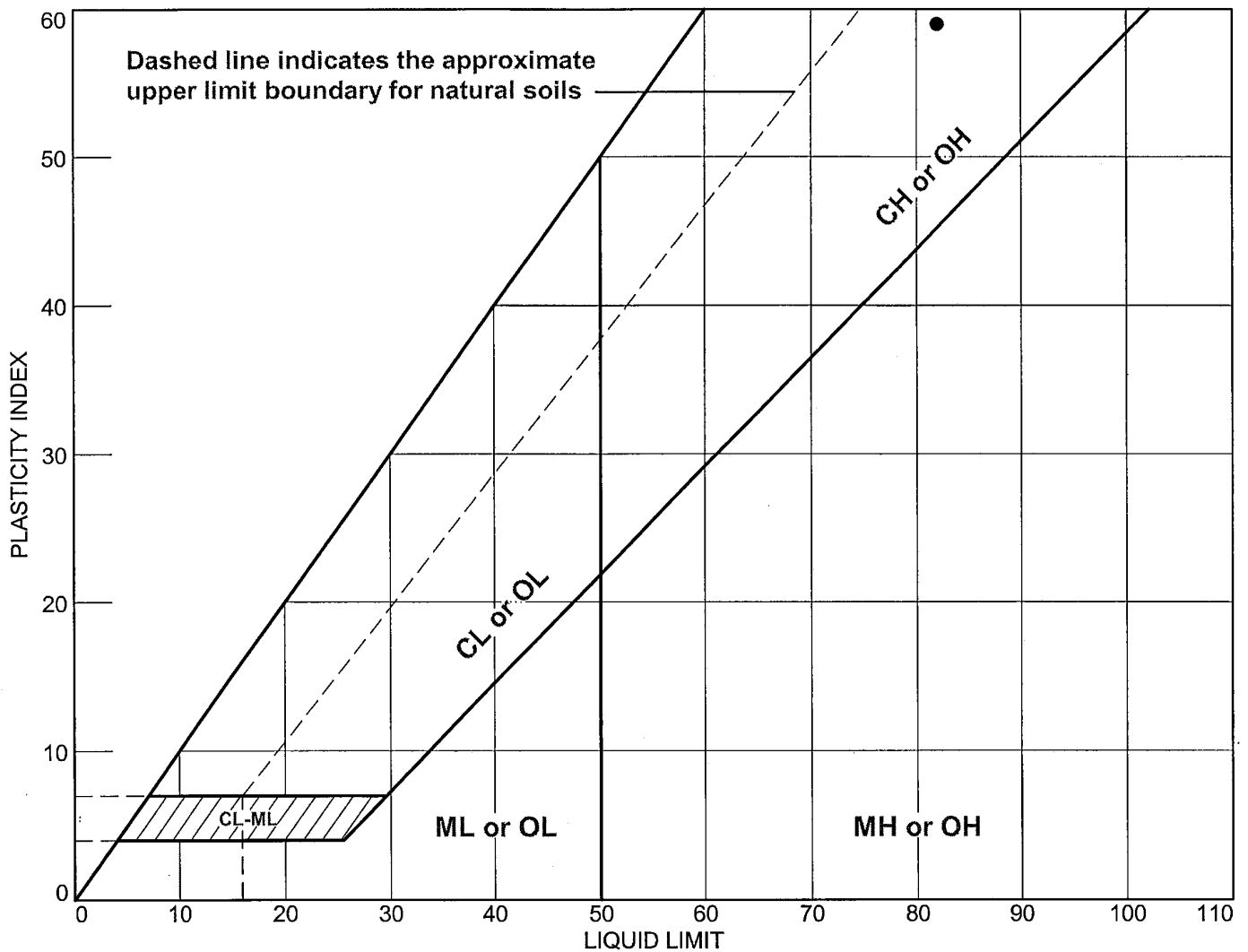
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.7	3.1	3.8	18.1	78.1	96.2

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
						0.0066	0.0135	0.0314	0.0603

Fineness Modulus
0.04

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-3270A	SS-17	68.9-70.4'	35.8	23	82	59	CH

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 68.9-70.4'

Sample Number: SS-17

Material Description: Olive Brown mottled Light Gray Fat CLAY

USCS: CH

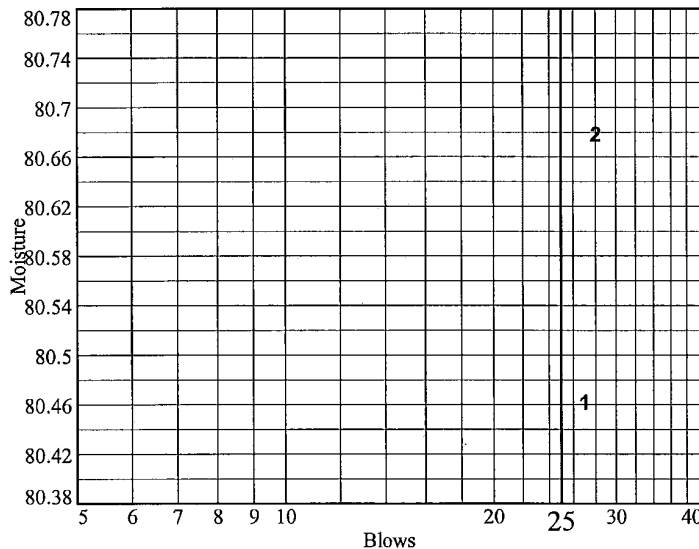
AASHTO: A-7-6(65)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	22.49	18.08				
Dry+Tare	19.36	14.99				
Tare	15.47	11.16				
# Blows	27	28				
Moisture	80.5	80.7				



Liquid Limit= 82
 Plastic Limit= 23
 Plasticity Index= 59
 Natural Moisture= 35.8
 Liquidity Index= 0.2

Plastic Limit Data

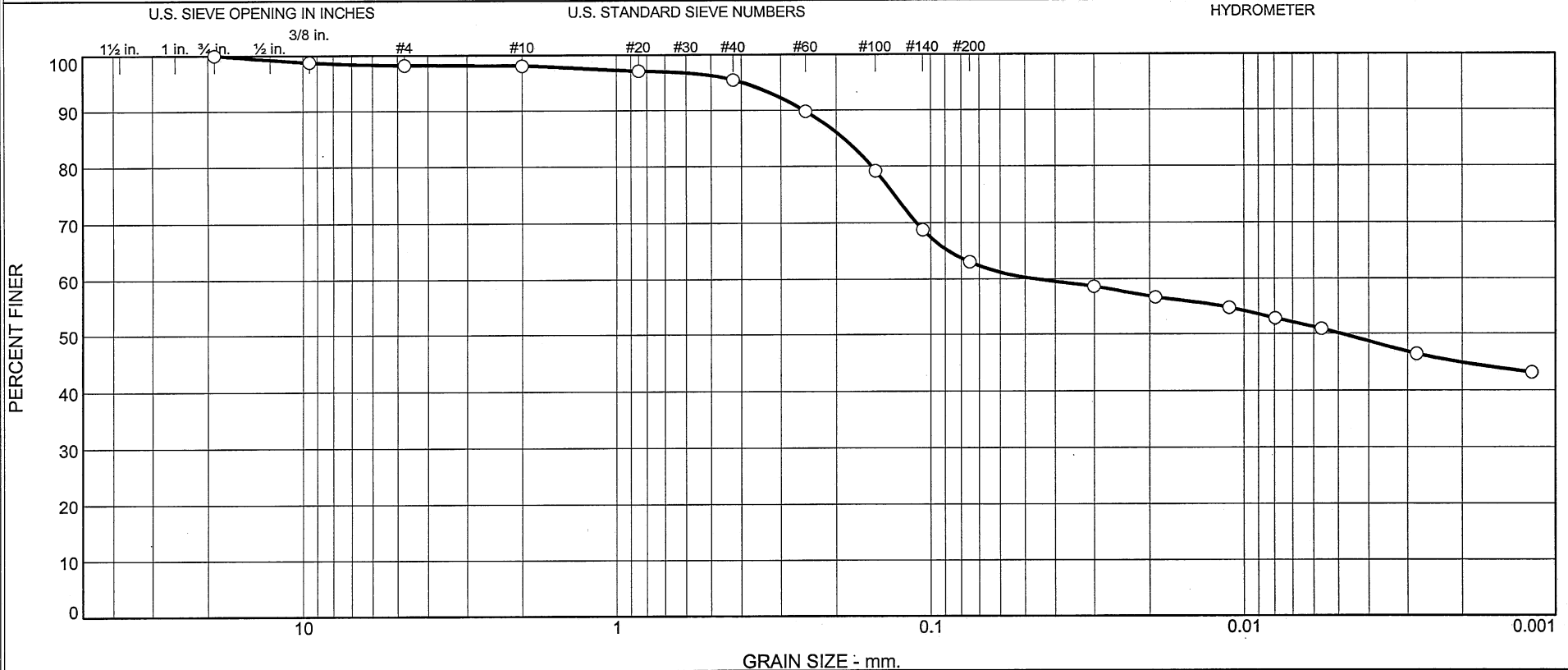
Run No.	1	2	3	4	
Wet+Tare	21.73	21.56			
Dry+Tare	20.56	20.40			
Tare	15.50	15.46			
Moisture	23.1	23.5			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
89.99	68.03	6.71	35.8

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 73.9-75.4'

Sample Number: SS-18

Material Description: Light Yellowish Brown Sandy Lean CLAY

Date: 2/23/09

Natural Moisture: 16.3

Liquid Limit: 41

Plastic Limit: 20

USCS Class.: CL

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
237.48	0.00	0.00	3/4	0.00	100.0
			3/8"	2.96	98.8
			#4	4.22	98.2
			#10	4.54	98.1
51.27	0.00	0.00	#20	0.51	97.1
			#40	1.37	95.5
			#60	4.34	89.8
			#100	9.90	79.1
			#140	15.34	68.7
			#200	18.32	63.0

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 98.1

Weight of hydrometer sample = 51.27

Hygroscopic moisture correction:

Moist weight and tare = 19.33

Dry weight and tare = 19.13

Tare weight = 5.68

Hygroscopic moisture = 1.5%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.9	36.0	30.5	0.0133	37.0	10.2	0.0301	58.6
5.00	20.9	35.0	29.5	0.0133	36.0	10.4	0.0192	56.6
15.00	20.9	34.0	28.5	0.0133	35.0	10.6	0.0112	54.7
30.00	20.9	33.0	27.5	0.0133	34.0	10.7	0.0079	52.8
60.00	20.9	32.0	26.5	0.0133	33.0	10.9	0.0057	50.9
250.00	21.5	29.5	24.2	0.0132	30.5	11.3	0.0028	46.4
1440.00	20.8	28.0	22.5	0.0133	29.0	11.5	0.0012	43.1

MACTEC Engineering and Consulting, Inc.

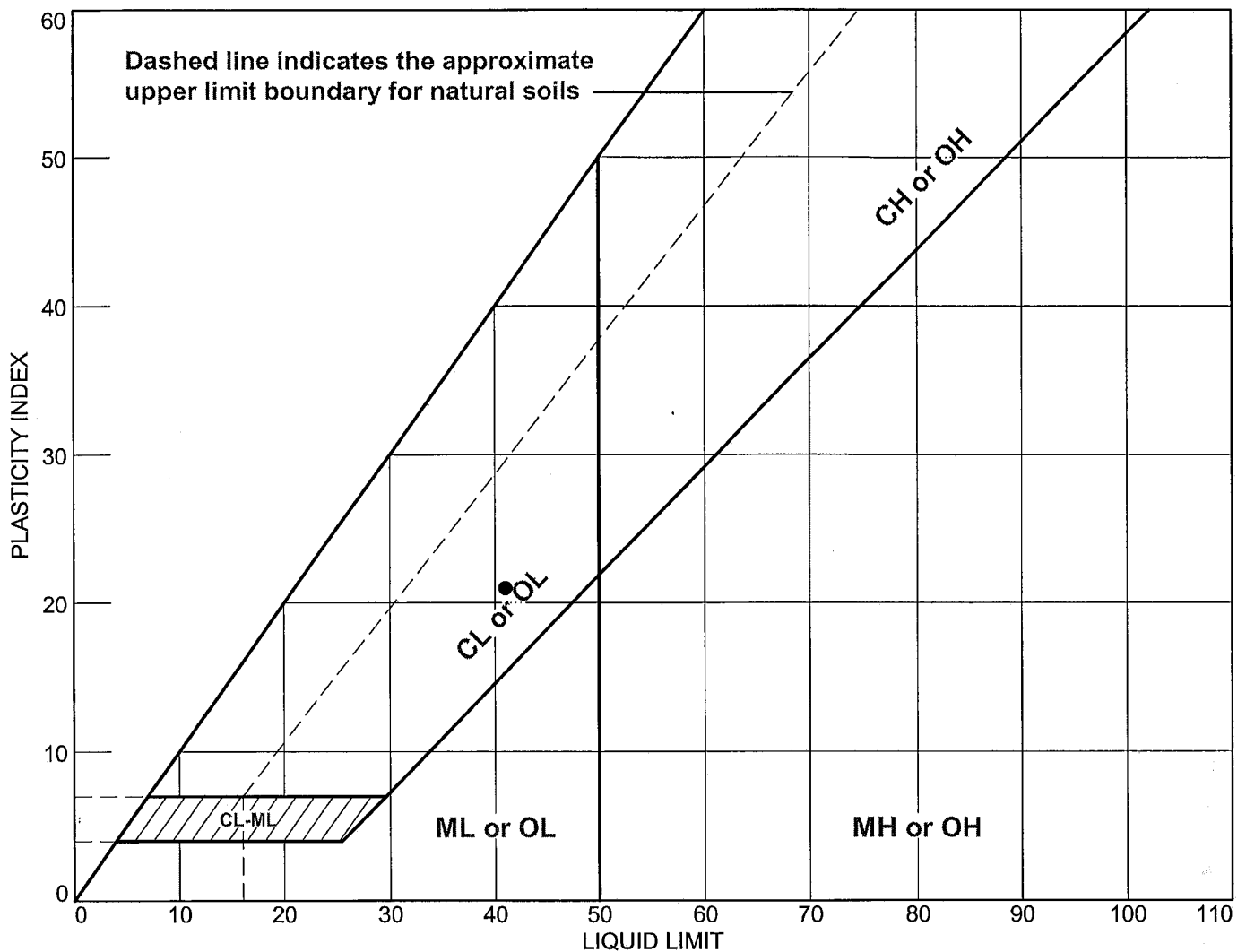
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.8	1.8	0.1	2.6	32.5	35.2	12.9	50.1	63.0

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0049	0.0470	0.1546	0.1902	0.2537	0.3970

Fineness Modulus
0.39

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-18	73.9-75.4'	16.3	20	41	21	CL

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 73.9-75.4'

Sample Number: SS-18

Material Description: Light Yellowish Brown Sandy Lean CLAY

USCS: CL

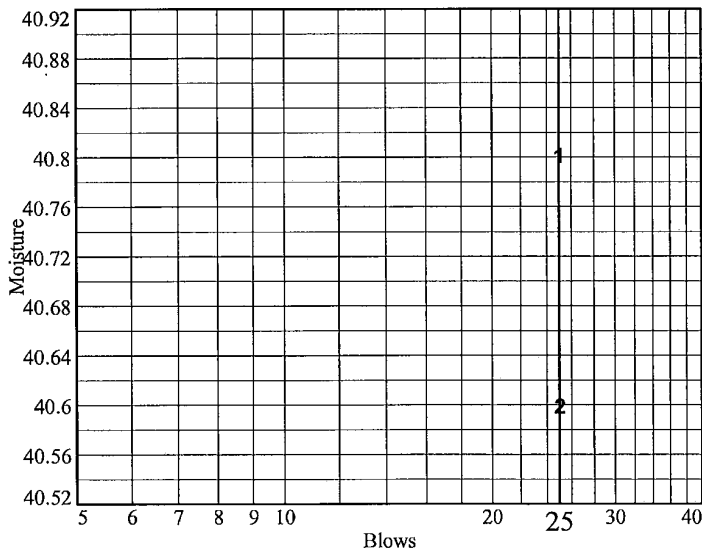
AASHTO: A-7-6(11)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.56	25.80				
Dry+Tare	24.10	22.82				
Tare	15.62	15.48				
# Blows	25	25				
Moisture	40.8	40.6				



Liquid Limit= 41
 Plastic Limit= 20
 Plasticity Index= 21
 Natural Moisture= 16.3
 Liquidity Index= -0.2

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.76	22.01			
Dry+Tare	20.79	20.96			
Tare	15.75	15.65			
Moisture	19.2	19.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
116.65	101.24	6.79	16.3

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.2	0.3	2.1	40.7	18.0	38.7

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-19	78.9-80.4'	2/24/09	CL	Light Gray Sandy Lean CLAY	18.4	41	20

Client Bechtel			MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental				
Investigation, including UHS				
Project No. 6468071777	Figure	NA		
			Raleigh, North Carolina	

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 78.9-80.4'

Sample Number: SS-19

Material Description: Light Gray Sandy Lean CLAY

Date: 2/24/09

Natural Moisture: 18.4

Liquid Limit: 41

Plastic Limit: 20

USCS Class.: CL

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
275.54	0.00	0.00	3/8"	0.00	100.0
			#4	0.61	99.8
			#10	1.31	99.5
54.67	0.00	0.00	#20	0.30	99.0
			#40	1.14	97.4
			#60	4.42	91.5
			#100	9.94	81.4
			#140	17.87	67.0
			#200	23.52	56.7

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.5

Weight of hydrometer sample = 54.67

Hygroscopic moisture correction:

Moist weight and tare = 18.65

Dry weight and tare = 18.47

Tare weight = 5.78

Hygroscopic moisture = 1.4%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.9	32.0	26.5	0.0133	33.0	10.9	0.0310	48.4
5.00	20.9	30.5	25.0	0.0133	31.5	11.1	0.0198	45.6
15.00	20.9	29.0	23.5	0.0133	30.0	11.4	0.0116	42.9
30.00	20.9	28.0	22.5	0.0133	29.0	11.5	0.0082	41.1
60.00	20.9	27.0	21.5	0.0133	28.0	11.7	0.0059	39.3
250.00	20.9	26.0	20.5	0.0133	27.0	11.9	0.0029	37.4
1440.00	20.4	24.0	18.4	0.0134	25.0	12.2	0.0012	33.5

MACTEC Engineering and Consulting, Inc.

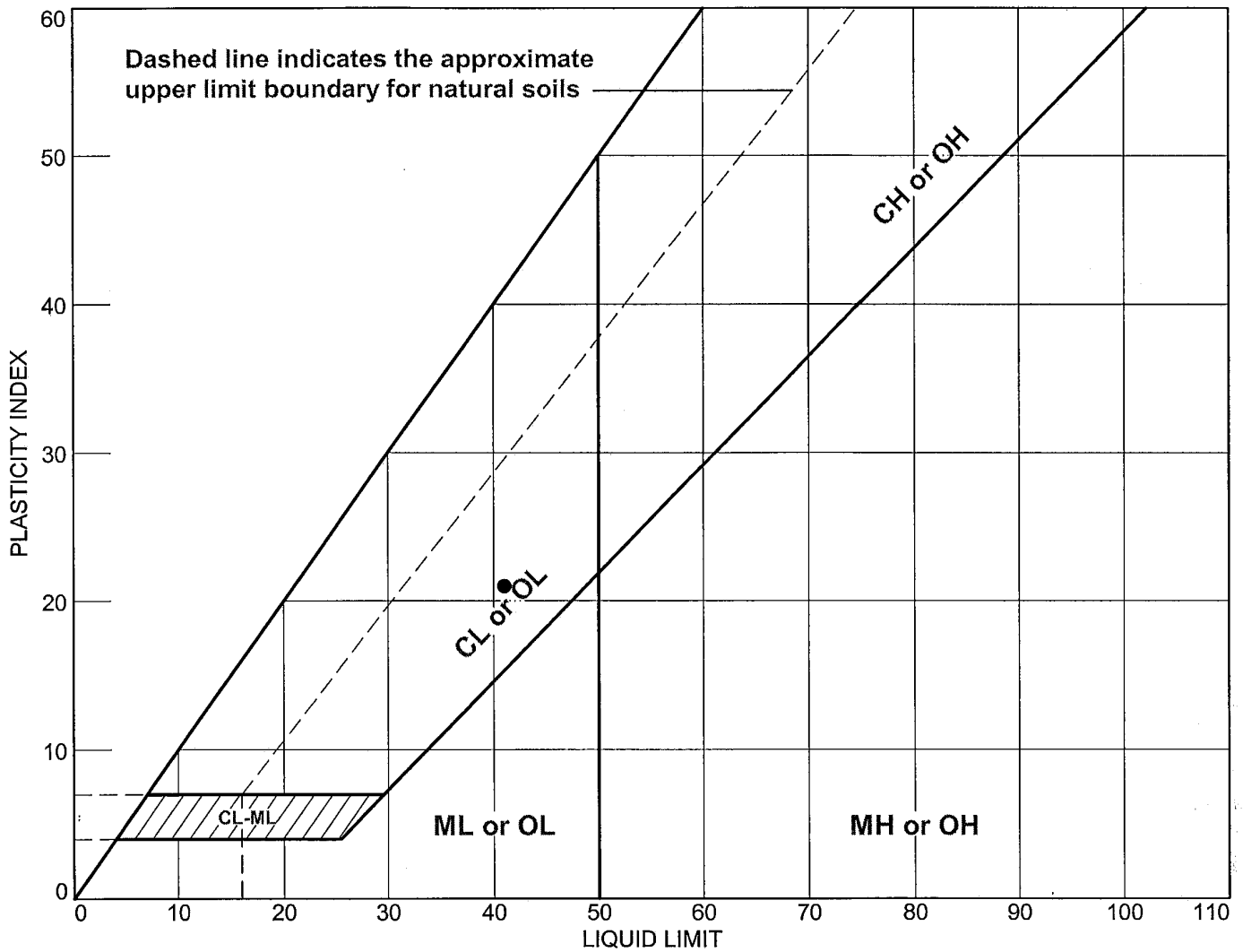
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.2	0.2	0.3	2.1	40.7	43.1	18.0	38.7	56.7

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0426	0.0859	0.1442	0.1691	0.2228	0.3312

Fineness Modulus
0.28

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-19	78.9-80.4'	18.4	20	41	21	CL

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 78.9-80.4'

Sample Number: SS-19

Material Description: Light Gray Sandy Lean CLAY

USCS: CL

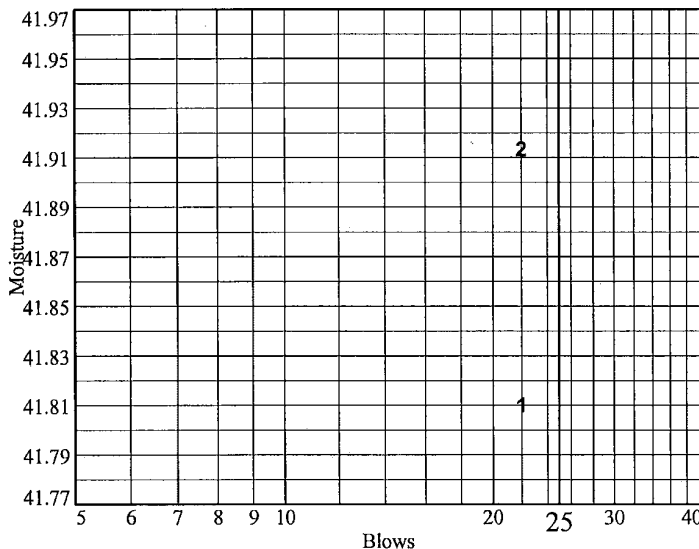
AASHTO: A-7-6(9)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.51	21.69				
Dry+Tare	22.60	18.58				
Tare	15.64	11.16				
# Blows	22	22				
Moisture	41.8	41.9				



Liquid Limit= 41
 Plastic Limit= 20
 Plasticity Index= 21
 Natural Moisture= 18.4
 Liquidity Index= -0.1

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	22.66	22.36		
Dry+Tare	21.46	21.25		
Tare	15.68	15.64		
Moisture	20.8	19.8		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
115.31	98.44	6.79	18.4

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	5.5	63.2	6.9	24.4

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-20	84.2-85.7'	2/24/09	SC	Light Gray Clayey SAND	19.2	25	15

Client Bechtel			MACTEC Engineering and Consulting, Inc. Raleigh, North Carolina	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental				
Investigation, including UHS				
Project No. 6468071777	Figure	NA		

Tested By: CS Checked By: BS DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 84.2-85.7'

Sample Number: SS-20

Material Description: Light Gray Clayey SAND

Date: 2/24/09

Natural Moisture: 19.2

Liquid Limit: 25

Plastic Limit: 15

USCS Class.: SC

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
277.61	0.00	0.00	#10	0.00	100.0
59.15	0.00	0.00	#20	0.80	98.6
			#40	3.27	94.5
			#60	10.33	82.5
			#100	24.93	57.9
			#140	35.80	39.5
			#200	40.64	31.3

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 59.15

Hygroscopic moisture correction:

Moist weight and tare = 18.10

Dry weight and tare = 18.04

Tare weight = 5.74

Hygroscopic moisture = 0.5%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.9	24.0	18.5	0.0133	25.0	12.2	0.0328	31.1
5.00	20.9	23.0	17.5	0.0133	24.0	12.4	0.0209	29.4
15.00	20.9	22.5	17.0	0.0133	23.5	12.4	0.0121	28.6
30.00	20.9	21.0	15.5	0.0133	22.0	12.7	0.0086	26.0
60.00	20.9	20.0	14.5	0.0133	21.0	12.9	0.0062	24.4
250.00	20.9	20.0	14.5	0.0133	21.0	12.9	0.0030	24.4
1440.00	20.8	19.0	13.5	0.0133	20.0	13.0	0.0013	22.6

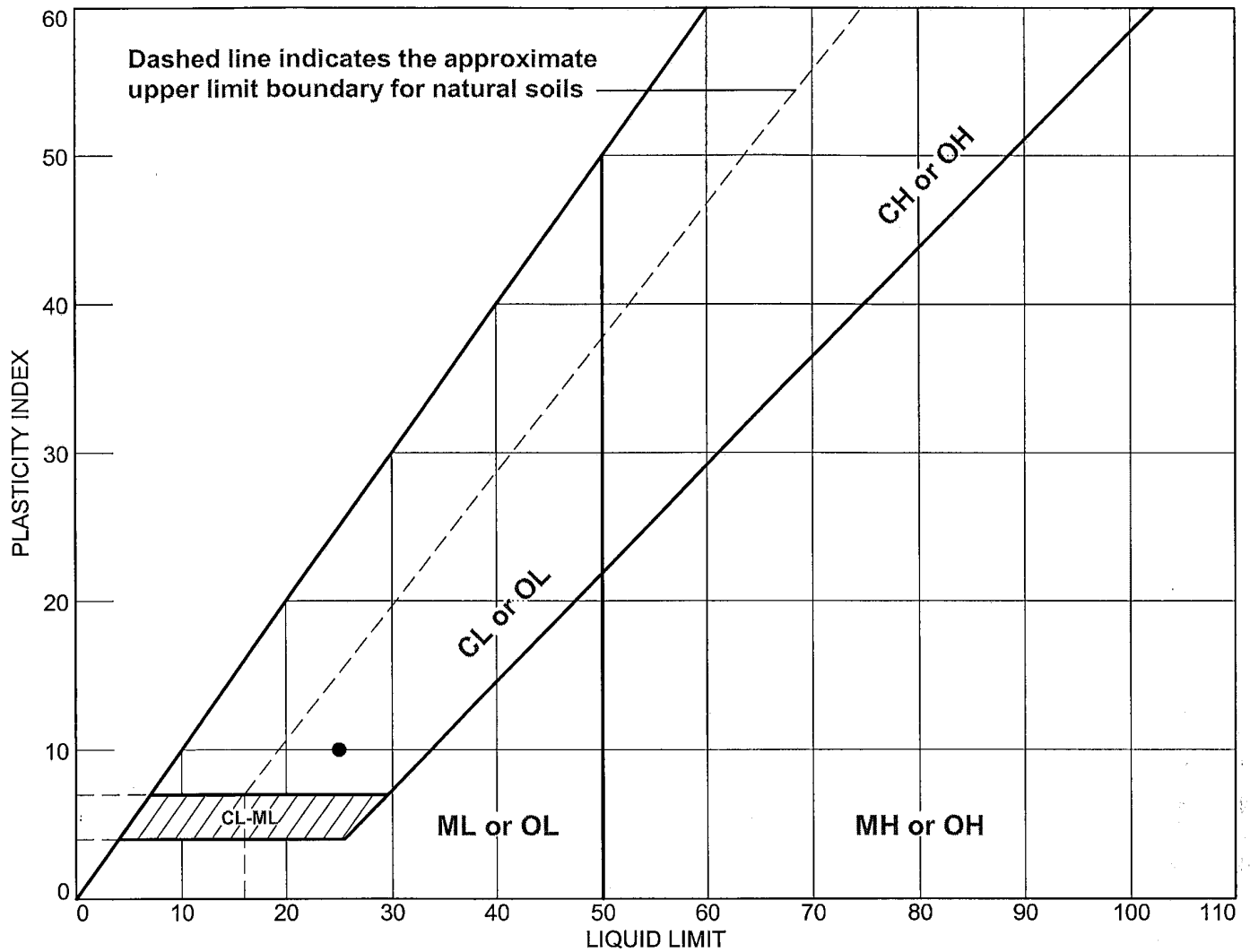
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	5.5	63.2	68.7	6.9	24.4	31.3

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
			0.0244	0.1309	0.1558	0.2338	0.2690	0.3250	0.4445

Fineness Modulus
0.57

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-20	84.2-85.7'	19.2	15	25	10	SC

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 84.2-85.7'

Sample Number: SS-20

Material Description: Light Gray Clayey SAND

USCS: SC

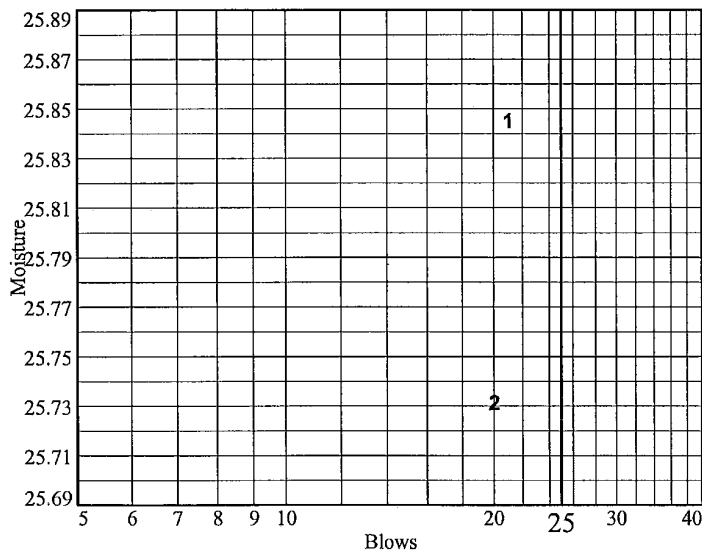
AASHTO: A-2-4(0)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.93	25.77				
Dry+Tare	23.79	23.66				
Tare	15.51	15.46				
# Blows	21	20				
Moisture	25.8	25.7				



Liquid Limit= 25
 Plastic Limit= 15
 Plasticity Index= 10
 Natural Moisture= 19.2
 Liquidity Index= 0.4

Plastic Limit Data

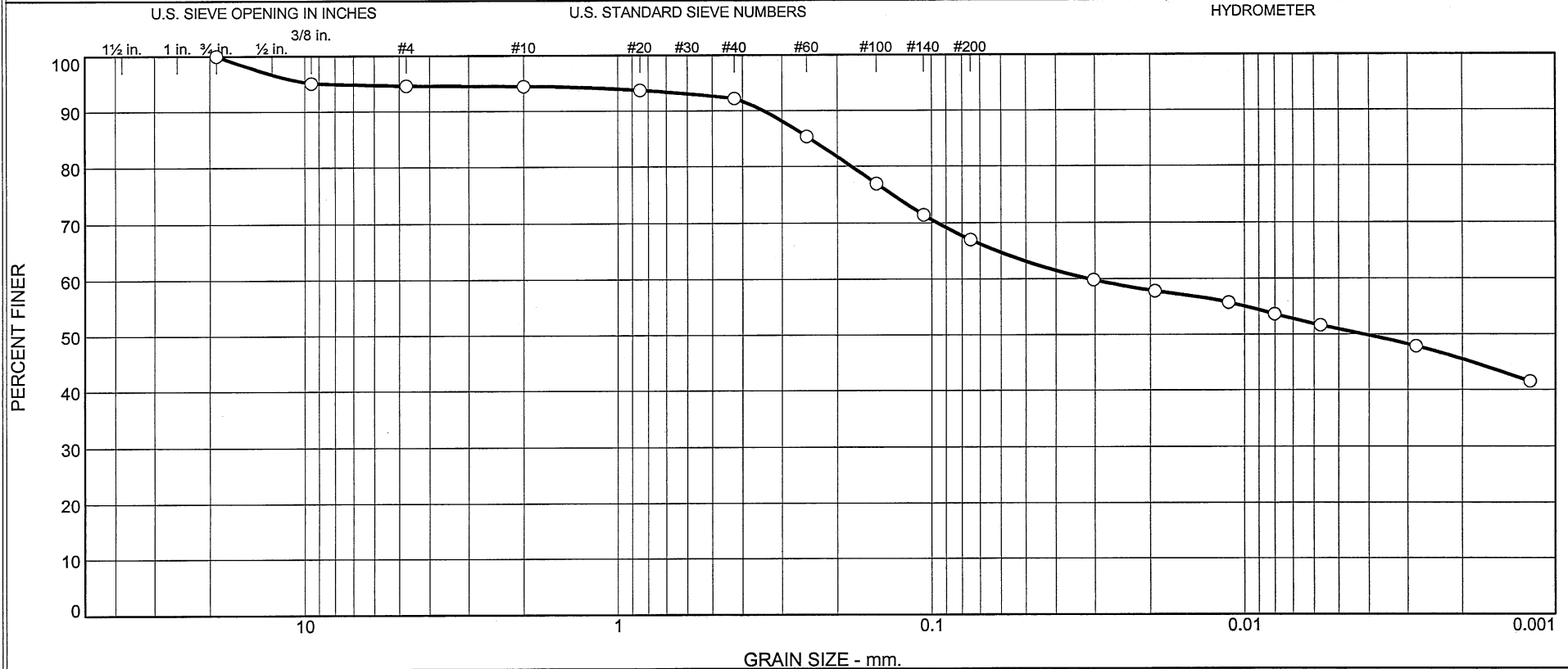
Run No.	1	2	3	4
Wet+Tare	21.92	22.27		
Dry+Tare	21.10	21.39		
Tare	15.50	15.53		
Moisture	14.6	15.0		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
116.87	99.16	6.85	19.2

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 89.2-90.7'

Sample Number: SS-21

Material Description: Light Gray Sandy Fat CLAY

Date: 2/24/09

Natural Moisture: 19.0

Liquid Limit: 59

Plastic Limit: 22

USCS Class.: CH

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
209.72	0.00	0.00	3/4	0.00	100.0
			3/8"	10.28	95.1
			#4	11.30	94.6
			#10	11.57	94.5
49.14	0.00	0.00	#20	0.39	93.7
			#40	1.16	92.3
			#60	4.78	85.3
			#100	9.14	76.9
			#140	12.00	71.4
			#200	14.31	67.0

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 94.5

Weight of hydrometer sample = 49.14

Hygroscopic moisture correction:

Moist weight and tare = 16.47

Dry weight and tare = 15.80

Tare weight = 5.65

Hygroscopic moisture = 6.6%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.9	35.0	29.5	0.0133	36.0	10.4	0.0303	59.8
5.00	20.9	34.0	28.5	0.0133	35.0	10.6	0.0193	57.8
15.00	20.9	33.0	27.5	0.0133	34.0	10.7	0.0112	55.7
30.00	20.8	32.0	26.5	0.0133	33.0	10.9	0.0080	53.7
60.00	20.8	31.0	25.5	0.0133	32.0	11.0	0.0057	51.6
250.00	21.3	29.0	23.6	0.0132	30.0	11.4	0.0028	47.9
1440.00	20.8	26.0	20.5	0.0133	27.0	11.9	0.0012	41.5

MACTEC Engineering and Consulting, Inc.

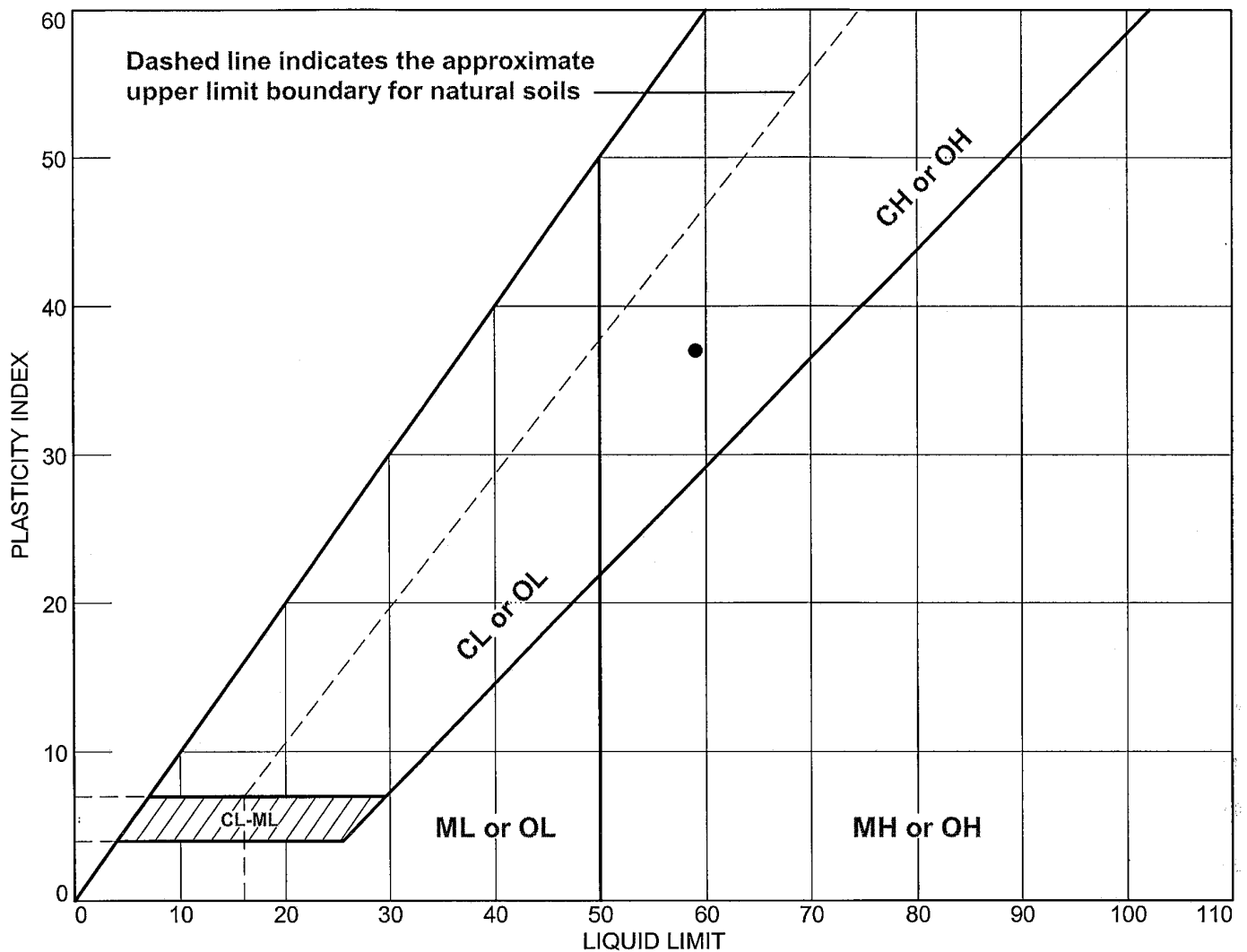
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	5.4	5.4	0.1	2.2	25.3	27.6	16.1	50.9	67.0

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0042	0.0315	0.1808	0.2455	0.3435	8.5464

Fineness Modulus
0.64

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-21	89.2-90.7'	19.0	22	59	37	CH

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 89.2-90.7'

Sample Number: SS-21

Material Description: Light Gray Sandy Fat CLAY

USCS: CH

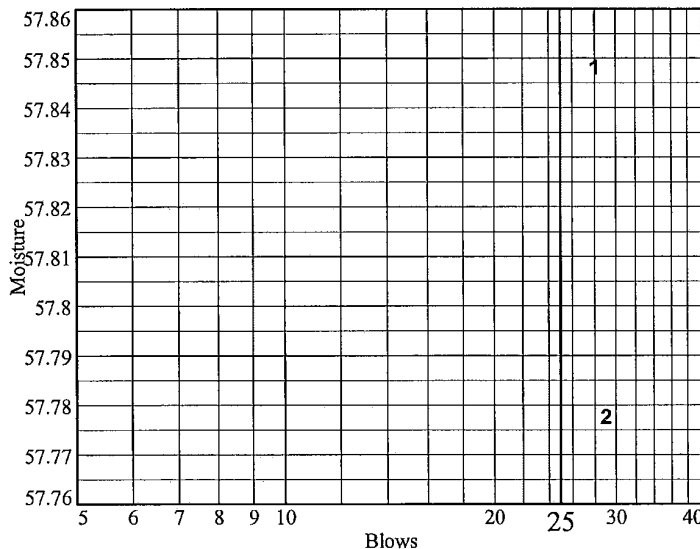
AASHTO: A-7-6(23)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.38	25.22				
Dry+Tare	21.10	21.58				
Tare	15.43	15.28				
# Blows	28	29				
Moisture	57.8	57.8				



Liquid Limit= 59
 Plastic Limit= 22
 Plasticity Index= 37
 Natural Moisture= 19.0
 Liquidity Index= -0.1

Plastic Limit Data

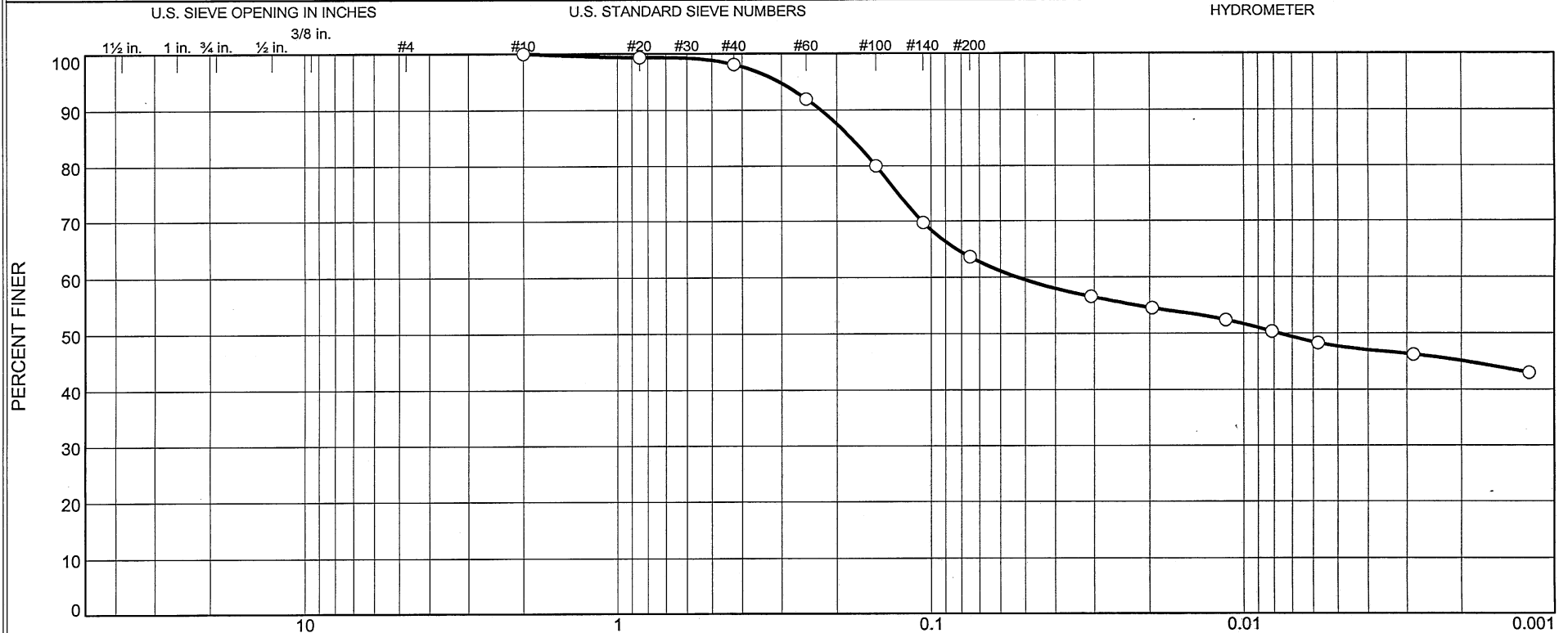
Run No.	1	2	3	4	
Wet+Tare	21.71	21.50			
Dry+Tare	20.56	20.43			
Tare	15.34	15.41			
Moisture	22.0	21.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
114.06	96.90	6.79	19.0

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.9	34.5	15.9	47.7

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-22	94.3-95.8'	2/24/09	CL	Light Gray Sandy Lean CLAY	19.2	48	13

Client Bechtel		MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		
		Raleigh, North Carolina	

Tested By: CS Checked By: BS DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 94.3-95.8'

Sample Number: SS-22

Material Description: Light Gray Sandy Lean CLAY

Date: 2/24/09

Natural Moisture: 19.2

Liquid Limit: 48

Plastic Limit: 13

USCS Class.: CL

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
241.18	0.00	0.00	#10	0.00	100.0
51.38	0.00	0.00	#20	0.35	99.3
			#40	0.99	98.1
			#60	4.12	92.0
			#100	10.29	80.0
			#140	15.57	69.7
			#200	18.72	63.6

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 51.38

Hygroscopic moisture correction:

Moist weight and tare = 17.91

Dry weight and tare = 17.13

Tare weight = 5.59

Hygroscopic moisture = 6.8%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.0	33.0	27.5	0.0133	34.0	10.7	0.0307	56.6
5.00	21.0	32.0	26.5	0.0133	33.0	10.9	0.0196	54.5
15.00	20.9	31.0	25.5	0.0133	32.0	11.0	0.0114	52.4
30.00	20.9	30.0	24.5	0.0133	31.0	11.2	0.0081	50.3
60.00	20.9	29.0	23.5	0.0133	30.0	11.4	0.0058	48.3
250.00	20.9	28.0	22.5	0.0133	29.0	11.5	0.0029	46.2
1440.00	20.7	26.5	20.9	0.0133	27.5	11.8	0.0012	43.0

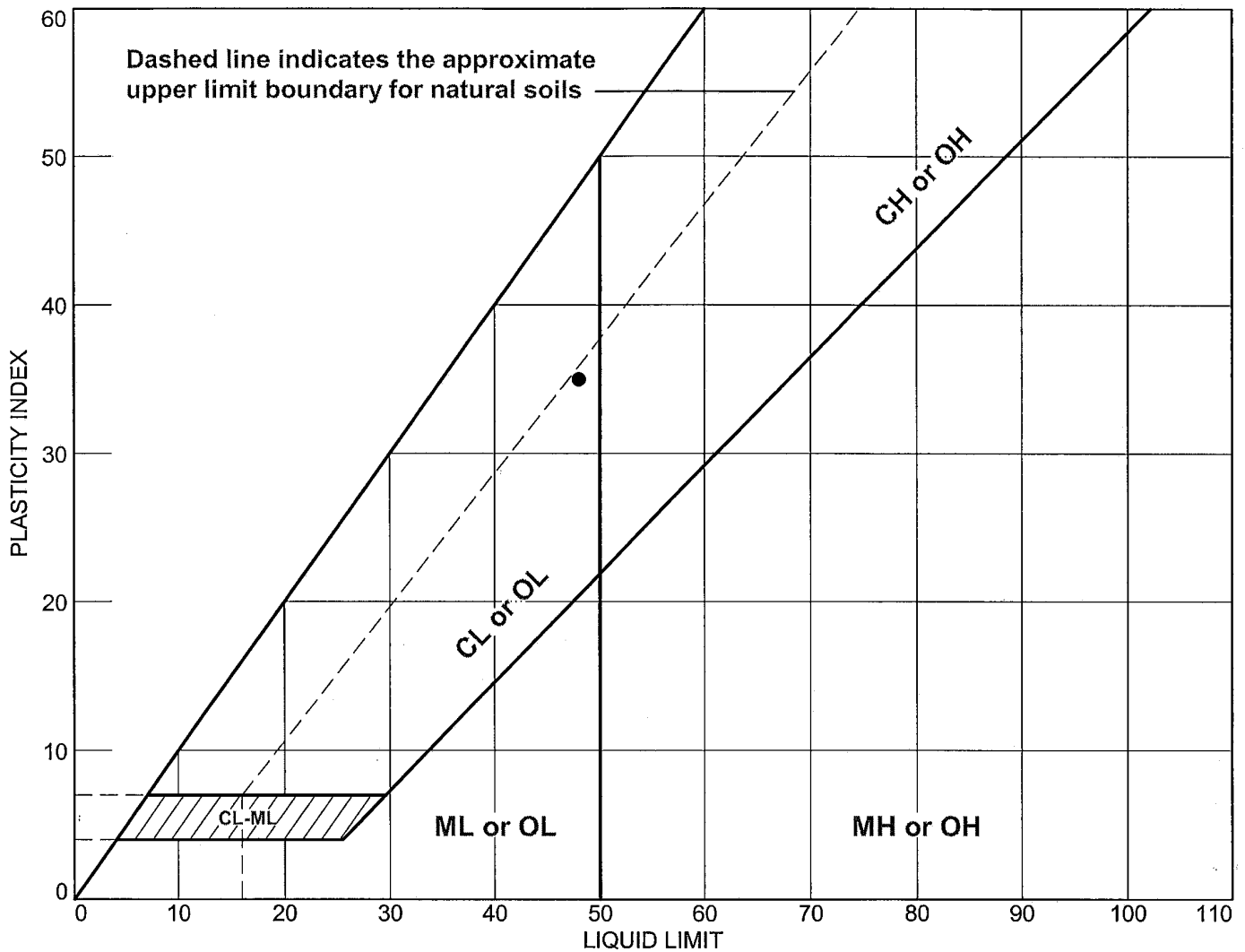
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.9	34.5	36.4	15.9	47.7	63.6

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0077	0.0532	0.1501	0.1801	0.2248	0.3055

Fineness Modulus
0.27

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-22	94.3-95.8'	19.2	13	48	35	CL

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 94.3-95.8'

Sample Number: SS-22

Material Description: Light Gray Sandy Lean CLAY

USCS: CL

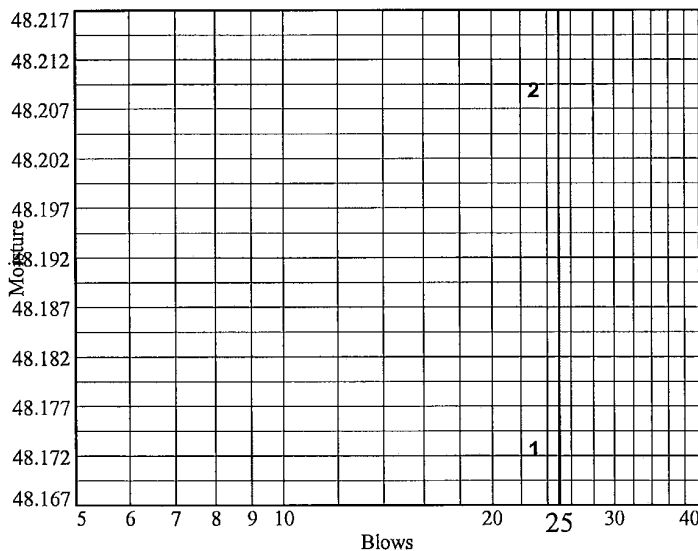
AASHTO: A-7-6(19)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.19	25.43				
Dry+Tare	21.29	22.20				
Tare	15.27	15.50				
# Blows	23	23				
Moisture	48.2	48.2				



Liquid Limit= 48
 Plastic Limit= 13
 Plasticity Index= 35
 Natural Moisture= 19.2
 Liquidity Index= 0.2

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	17.31	22.54		
Dry+Tare	16.61	21.75		
Tare	11.17	15.65		
Moisture	12.9	13.0		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
116.55	98.86	6.78	19.2

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	2.1	17.6	26.0	54.3

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-23	99.2-100.7'	2/24/09	CH	Light Gray mottled Yellowish Brown Fat CLAY with sand	19.0	53	19

Client Bechtel		MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		
		Raleigh, North Carolina	

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/4/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 99.2-100.7'

Sample Number: SS-23

Material Description: Light Gray mottled Yellowish Brown Fat CLAY with sand

Date: 2/24/09

Natural Moisture: 19.0

Liquid Limit: 53

Plastic Limit: 19

USCS Class.: CH

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
252.96	0.00	0.00	#10	0.00	100.0
53.13	0.00	0.00	#20	0.05	99.9
			#40	1.10	97.9
			#60	3.51	93.4
			#100	5.55	89.6
			#140	7.53	85.8
			#200	10.45	80.3

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 53.13

Hygroscopic moisture correction:

Moist weight and tare = 19.21

Dry weight and tare = 18.66

Tare weight = 5.72

Hygroscopic moisture = 4.3%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.0	41.0	35.5	0.0133	42.0	9.4	0.0288	68.9
5.00	21.0	39.0	33.5	0.0133	40.0	9.7	0.0185	65.1
15.00	21.0	37.0	31.5	0.0133	38.0	10.1	0.0109	61.2
30.00	20.9	35.0	29.5	0.0133	36.0	10.4	0.0078	57.2
60.00	20.9	34.0	28.5	0.0133	35.0	10.6	0.0056	55.3
250.00	20.9	29.5	24.0	0.0133	30.5	11.3	0.0028	46.6
1440.00	20.8	26.0	20.5	0.0133	27.0	11.9	0.0012	39.7

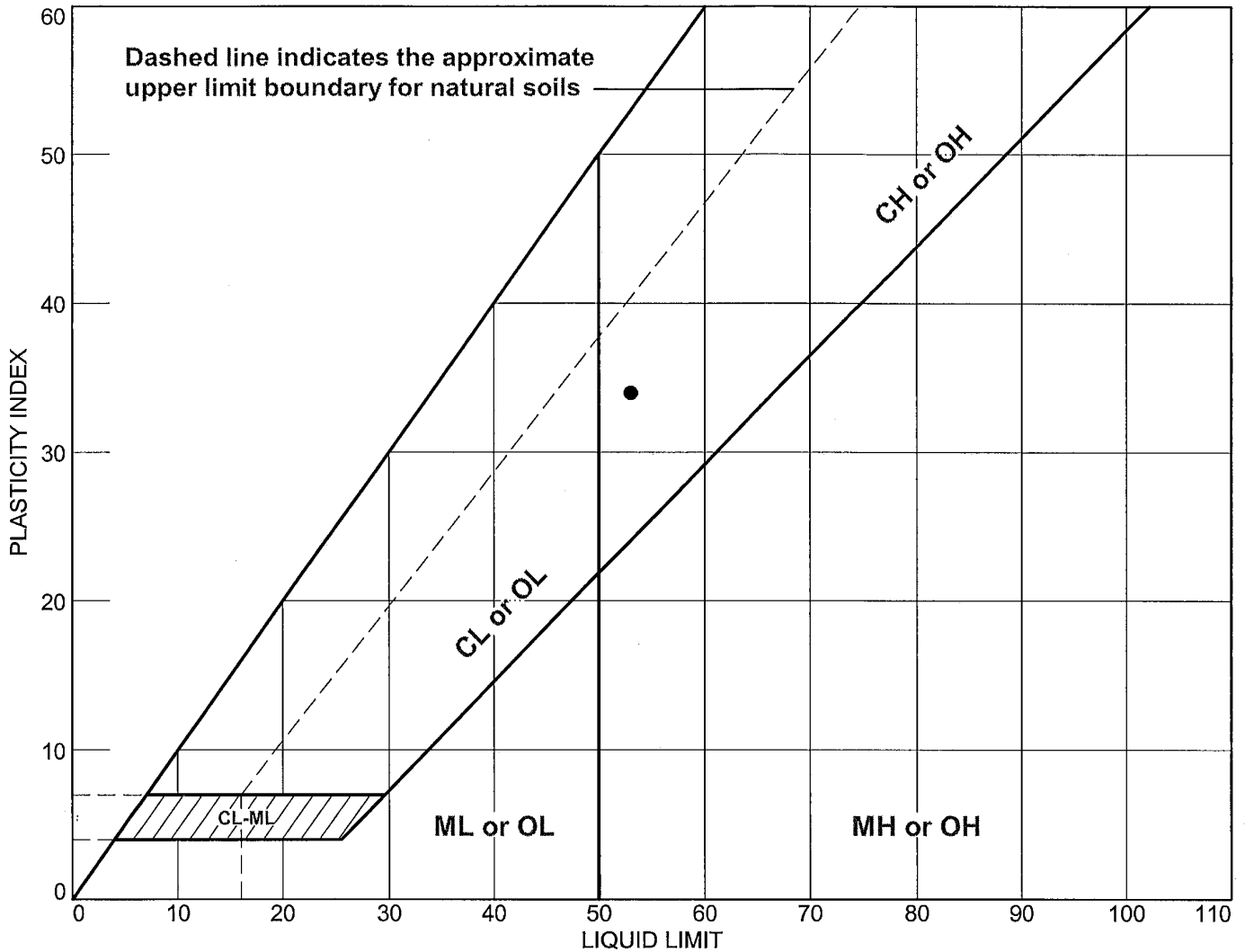
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	2.1	17.6	19.7	26.0	54.3	80.3

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0036	0.0099	0.0734	0.1001	0.1585	0.2997

Fineness Modulus
0.16

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-23	99.2-100.7'	19.0	19	53	34	CH

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/4/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 99.2-100.7'

Sample Number: SS-23

Material Description: Light Gray mottled Yellowish Brown Fat CLAY with sand

USCS: CH

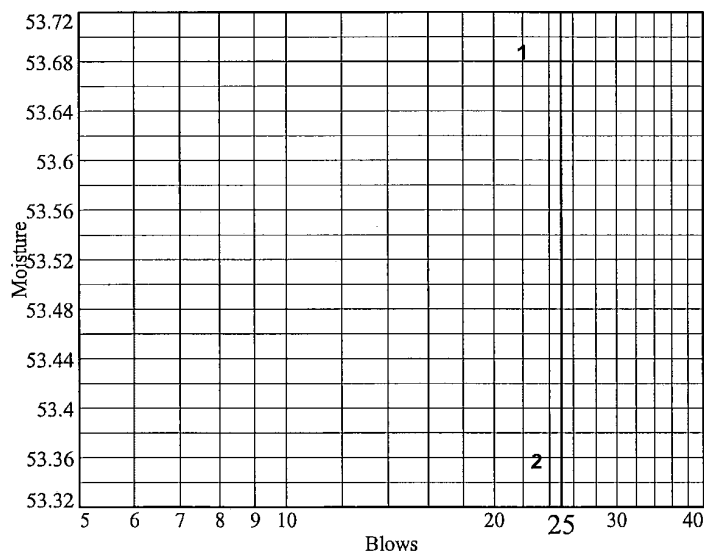
AASHTO: A-7-6(28)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.62	24.01				
Dry+Tare	21.49	21.07				
Tare	15.66	15.56				
# Blows	22	23				
Moisture	53.7	53.4				



Liquid Limit= 53
 Plastic Limit= 19
 Plasticity Index= 34
 Natural Moisture= 19.0
 Liquidity Index= 0.0

Plastic Limit Data

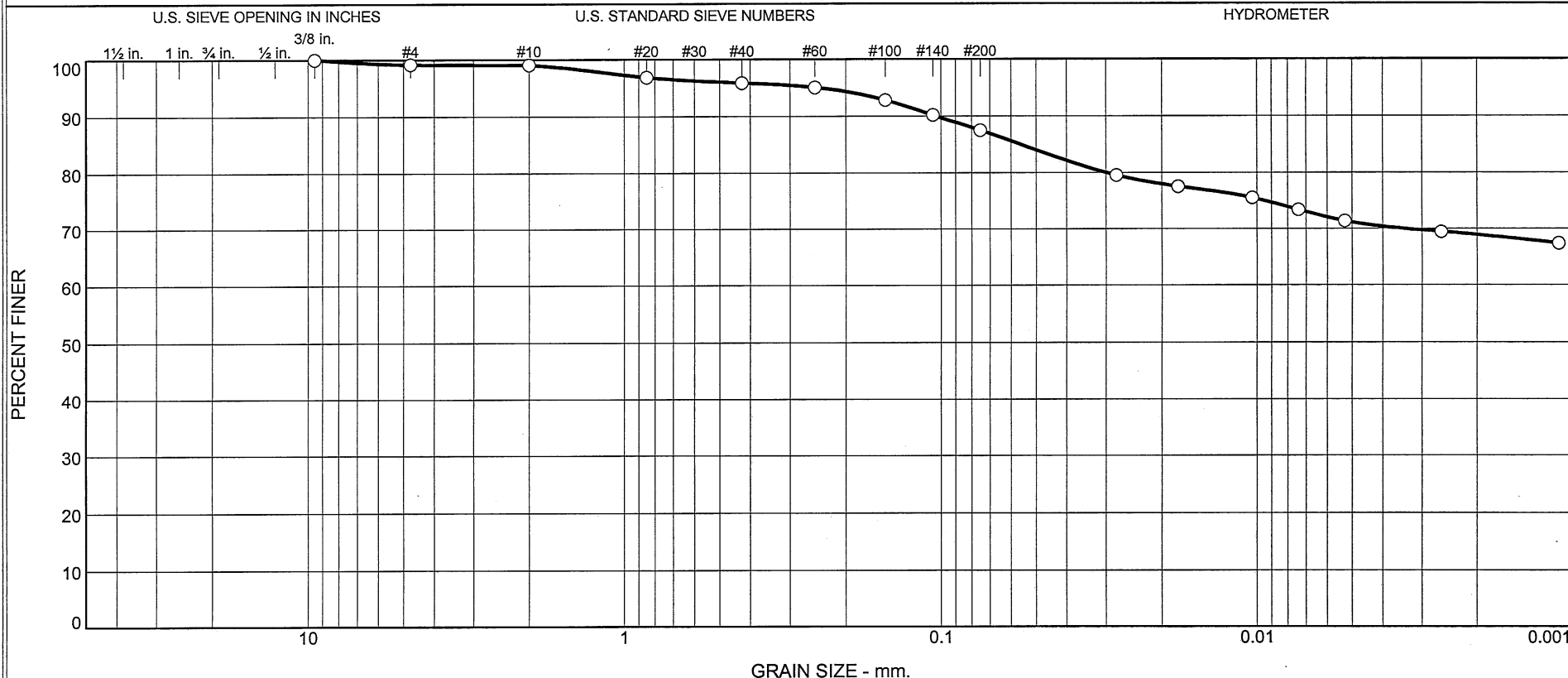
Run No.	1	2	3	4
Wet+Tare	22.06	22.64		
Dry+Tare	21.01	21.50		
Tare	15.51	15.55		
Moisture	19.1	19.2		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
111.39	94.71	6.87	19.0

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.9	0.1	3.1	8.4	16.4	71.1

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-25	119.3-120.8'	2/24/09	CH	Light Gray Fat CLAY	30.7	81	22

Client Bechtel		MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		
		Raleigh, North Carolina	

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 119.3-120.8'

Sample Number: SS-25

Material Description: Light Gray Fat CLAY

Date: 2/24/09

Natural Moisture: 30.7

Liquid Limit: 81

Plastic Limit: 22

USCS Class.: CH

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
153.91	0.00	0.00	3/8"	0.00	100.0
			#4	1.34	99.1
			#10	1.49	99.0
52.05	0.00	0.00	#20	1.14	96.9
			#40	1.65	95.9
			#60	2.08	95.1
			#100	3.24	92.9
			#140	4.65	90.2
			#200	6.06	87.5

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.0

Weight of hydrometer sample = 52.05

Hygroscopic moisture correction:

Moist weight and tare = 19.66

Dry weight and tare = 18.75

Tare weight = 5.62

Hygroscopic moisture = 6.9%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.0	45.0	39.5	0.0133	46.0	8.8	0.0278	79.5
5.00	21.0	44.0	38.5	0.0133	45.0	8.9	0.0177	77.5
15.00	21.0	43.0	37.5	0.0133	44.0	9.1	0.0103	75.5
30.00	20.8	42.0	36.5	0.0133	43.0	9.2	0.0074	73.4
60.00	20.8	41.0	35.5	0.0133	42.0	9.4	0.0053	71.4
250.00	20.9	40.0	34.5	0.0133	41.0	9.6	0.0026	69.4
1440.00	20.8	39.0	33.5	0.0133	40.0	9.7	0.0011	67.3

MACTEC Engineering and Consulting, Inc.

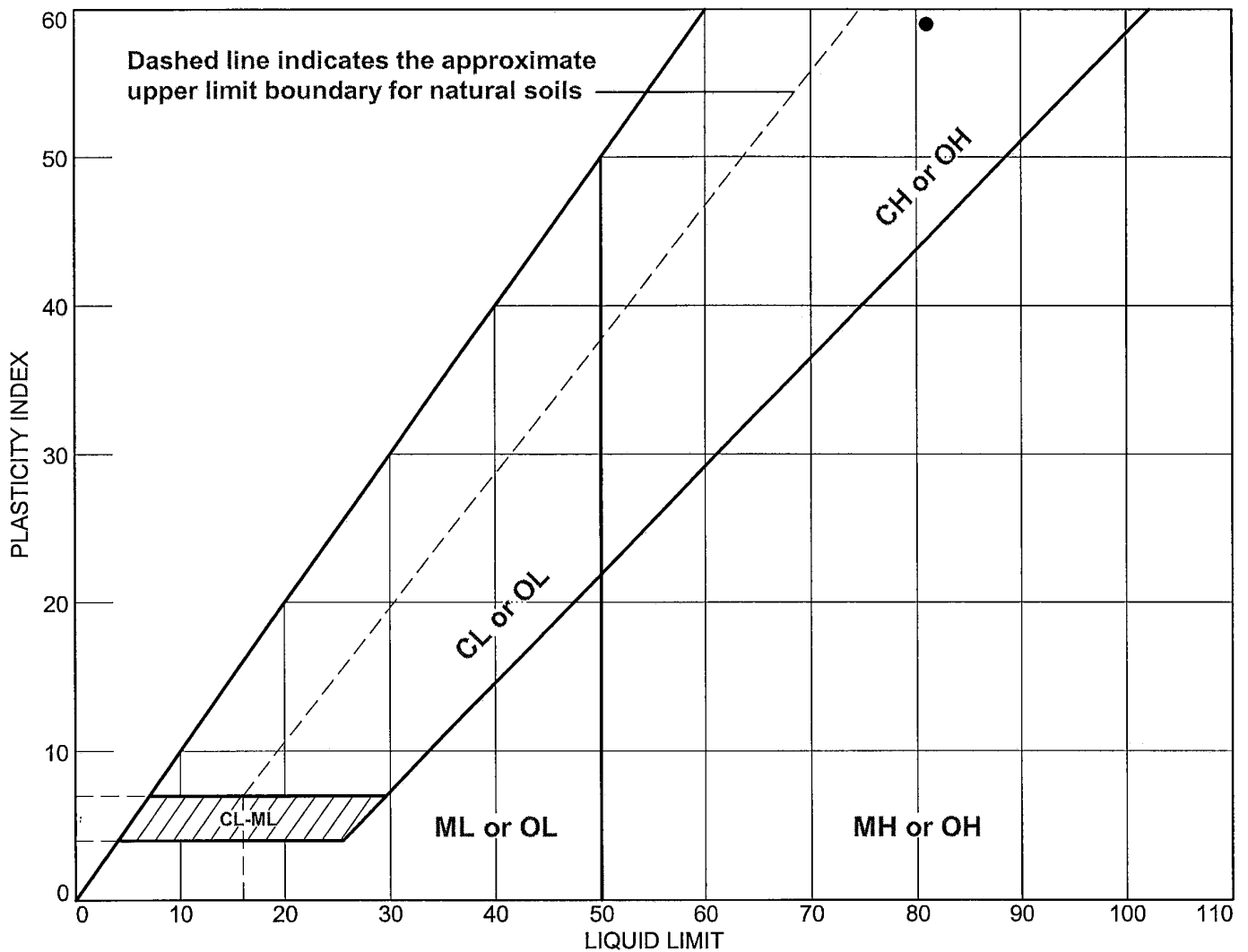
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.9	0.9	0.1	3.1	8.4	11.6	16.4	71.1	87.5

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
						0.0299	0.0558	0.1036	0.2429

Fineness Modulus
0.19

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-25	119.3-120.8'	30.7	22	81	59	CH

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 119.3-120.8'

Sample Number: SS-25

Material Description: Light Gray Fat CLAY

USCS: CH

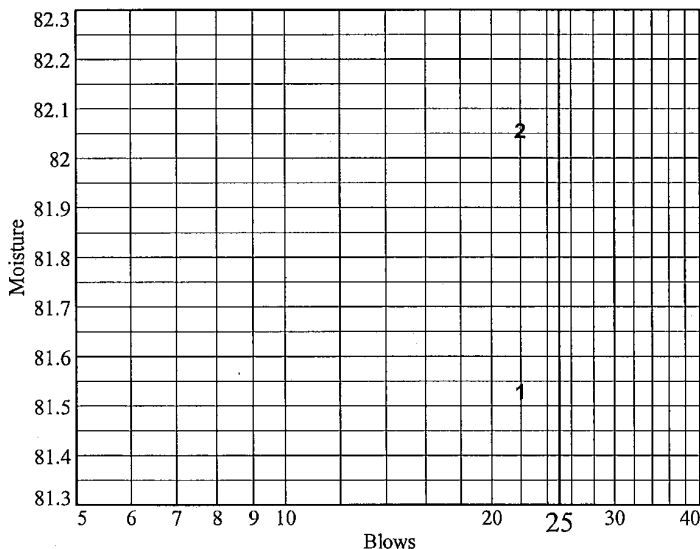
AASHTO: A-7-6(57)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.29	24.53				
Dry+Tare	20.92	20.46				
Tare	15.56	15.50				
# Blows	22	22				
Moisture	81.5	82.1				



Liquid Limit= 81
 Plastic Limit= 22
 Plasticity Index= 59
 Natural Moisture= 30.7
 Liquidity Index= 0.1

Plastic Limit Data

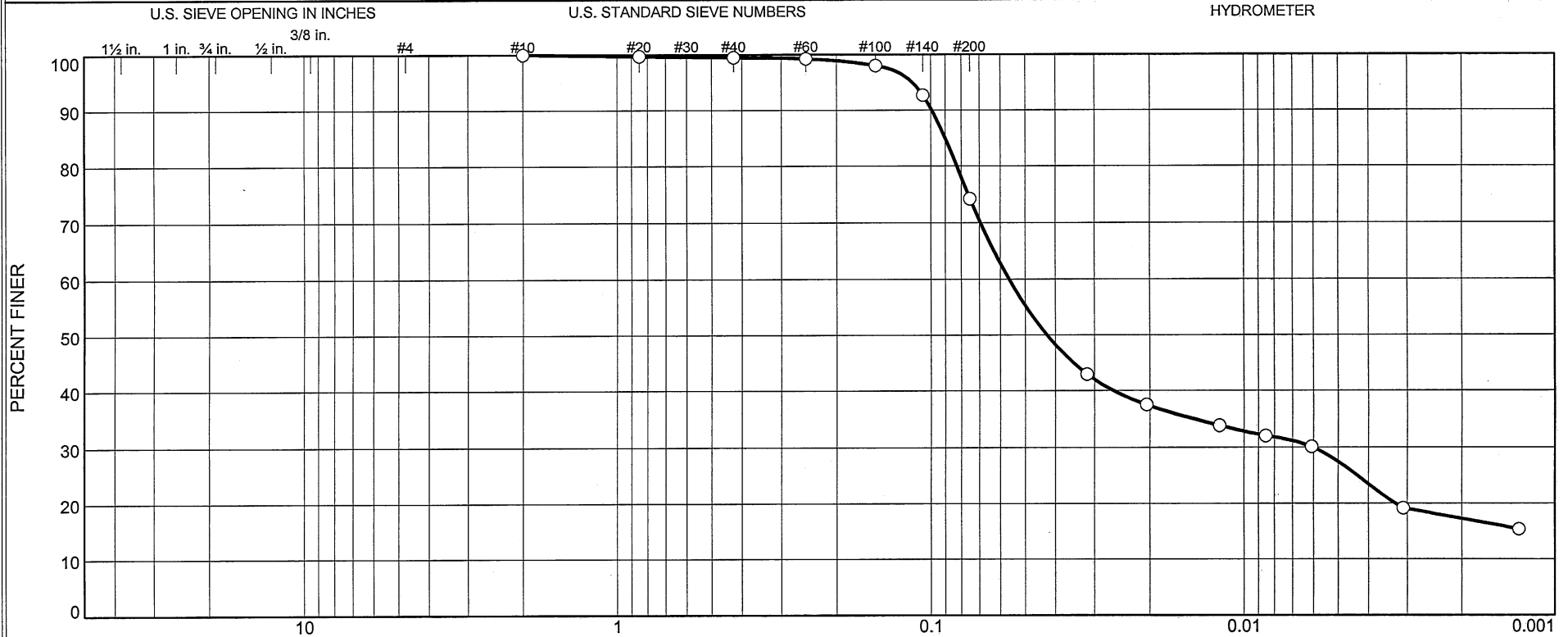
Run No.	1	2	3	4	
Wet+Tare	21.60	22.31			
Dry+Tare	20.52	21.07			
Tare	15.48	15.57			
Moisture	21.4	22.5			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
113.13	88.15	6.78	30.7

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 129.2-130.7'

Sample Number: SS-26

Material Description: Light Gray Lean CLAY with sand

Date: 2/24/09

Natural Moisture: 17.5

Liquid Limit: 25

Plastic Limit: 14

USCS Class.: CL

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
228.32	0.00	0.00	#10	0.00	100.0
54.46	0.00	0.00	#20	0.17	99.7
			#40	0.29	99.5
			#60	0.42	99.2
			#100	1.08	98.0
			#140	3.97	92.7
			#200	14.06	74.2

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 54.46

Hygroscopic moisture correction:

Moist weight and tare = 17.75

Dry weight and tare = 17.68

Tare weight = 5.62

Hygroscopic moisture = 0.6%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.0	29.0	23.5	0.0133	30.0	11.4	0.0317	43.0
5.00	21.0	26.0	20.5	0.0133	27.0	11.9	0.0205	37.5
15.00	21.0	24.0	18.5	0.0133	25.0	12.2	0.0120	33.8
30.00	21.0	23.0	17.5	0.0133	24.0	12.4	0.0085	32.0
60.00	20.8	22.0	16.5	0.0133	23.0	12.5	0.0061	30.1
250.00	20.9	16.0	10.5	0.0133	17.0	13.5	0.0031	19.2
1440.00	20.7	14.0	8.4	0.0133	15.0	13.8	0.0013	15.4

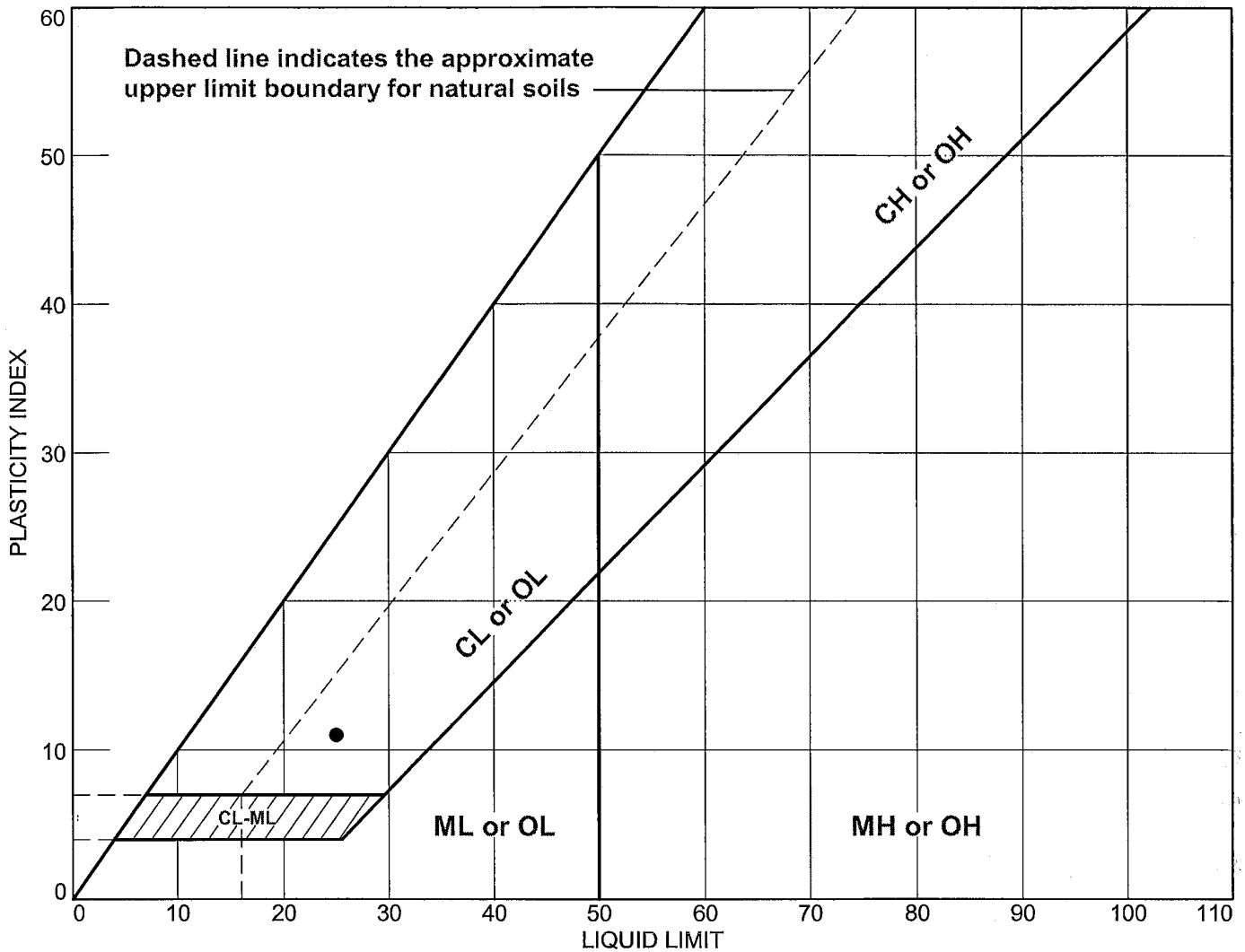
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.5	25.3	25.8	46.8	27.4	74.2

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
		0.0033	0.0060	0.0426	0.0563	0.0828	0.0902	0.0993	0.1144

Fineness Modulus
0.03

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-26	129.2-130.7'	17.5	14	25	11	CL

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 129.2-130.7'

Sample Number: SS-26

Material Description: Light Gray Lean CLAY with sand

USCS: CL

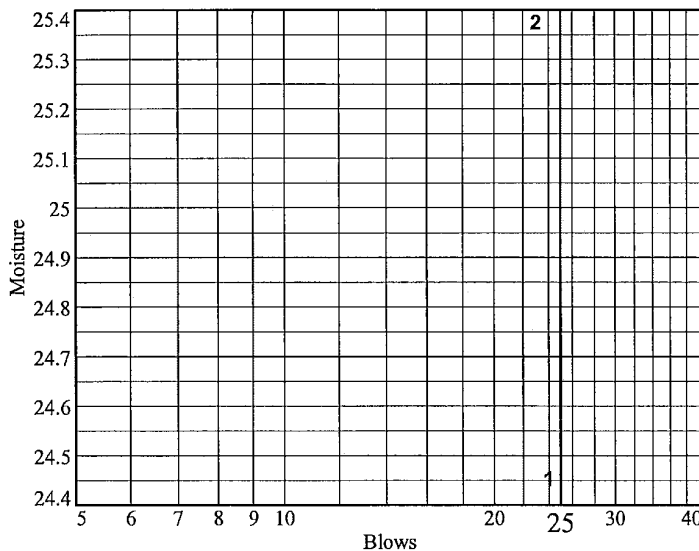
AASHTO: A-6(5)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	21.46	26.25				
Dry+Tare	19.44	24.06				
Tare	11.18	15.43				
# Blows	24	23				
Moisture	24.5	25.4				



Liquid Limit= 25
 Plastic Limit= 14
 Plasticity Index= 11
 Natural Moisture= 17.5
 Liquidity Index= 0.3

Plastic Limit Data

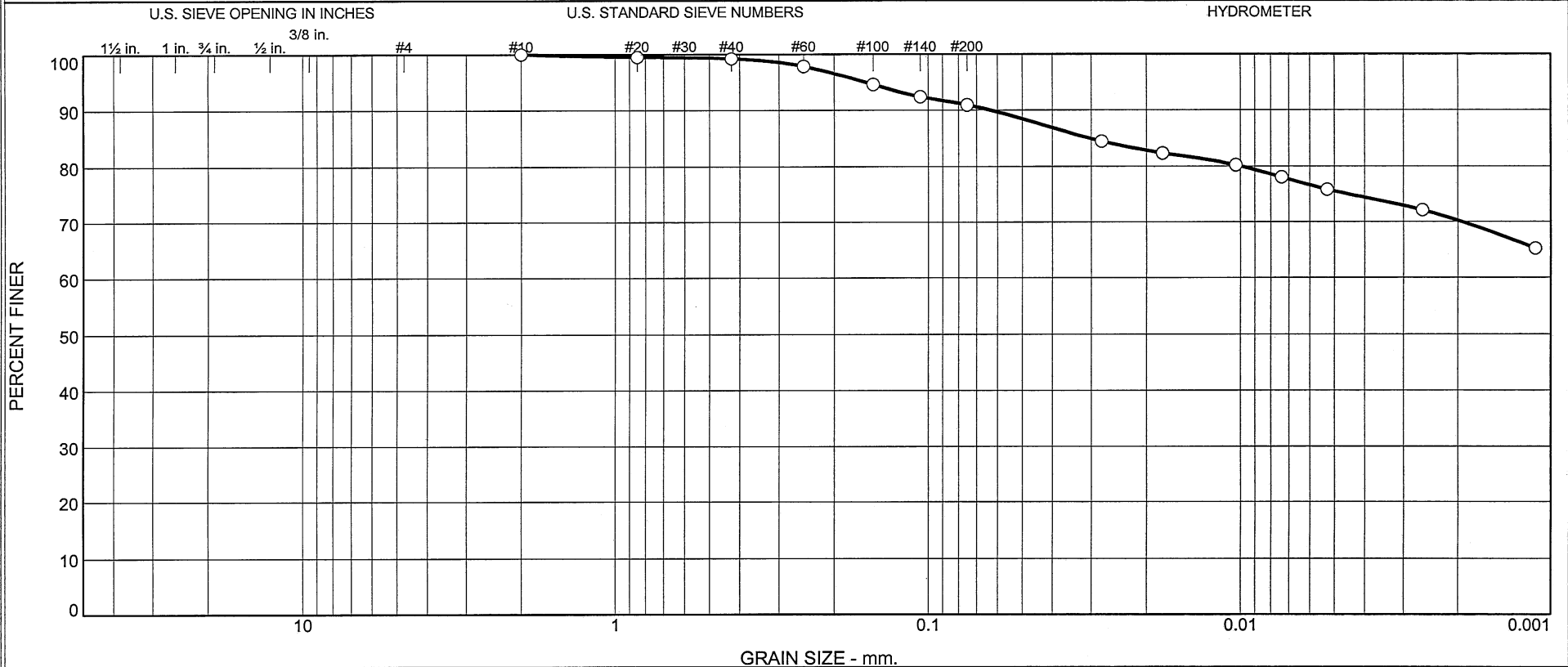
Run No.	1	2	3	4	
Wet+Tare	22.75	22.08			
Dry+Tare	21.89	21.27			
Tare	15.66	15.45			
Moisture	13.8	13.9			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
120.31	103.33	6.57	17.5

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.8	8.3	15.4	75.5

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-28	149.3-150.8	2/25/09	CH	Yellowish Brown mottled Light Gray Fat CLAY	31.8	87	28

Client Bechtel		MACTEC Engineering and Consulting, Inc.	Raleigh, North Carolina	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental				
Investigation, including UHS				
Project No. 6468071777	Figure NA			

Tested By: CS Checked By: BS DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 149.3-150.8

Sample Number: SS-28

Material Description: Yellowish Brown mottled Light Gray Fat CLAY

Date: 2/25/09

Natural Moisture: 31.8

Liquid Limit: 87

Plastic Limit: 28

USCS Class.: CH

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
165.99	0.00	0.00	#10	0.00	100.0
48.58	0.00	0.00	#20	0.25	99.5
			#40	0.40	99.2
			#60	1.08	97.8
			#100	2.66	94.5
			#140	3.72	92.3
			#200	4.43	90.9

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 48.58

Hygroscopic moisture correction:

Moist weight and tare = 17.67

Dry weight and tare = 17.09

Tare weight = 5.61

Hygroscopic moisture = 5.1%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.9	45.0	39.5	0.0133	46.0	8.8	0.0278	84.5
5.00	20.9	44.0	38.5	0.0133	45.0	8.9	0.0178	82.3
15.00	20.9	43.0	37.5	0.0133	44.0	9.1	0.0103	80.2
30.00	20.9	42.0	36.5	0.0133	43.0	9.2	0.0074	78.1
60.00	20.8	41.0	35.5	0.0133	42.0	9.4	0.0053	75.9
250.00	21.6	39.0	33.7	0.0132	40.0	9.7	0.0026	72.1
1440.00	20.8	36.0	30.5	0.0133	37.0	10.2	0.0011	65.2

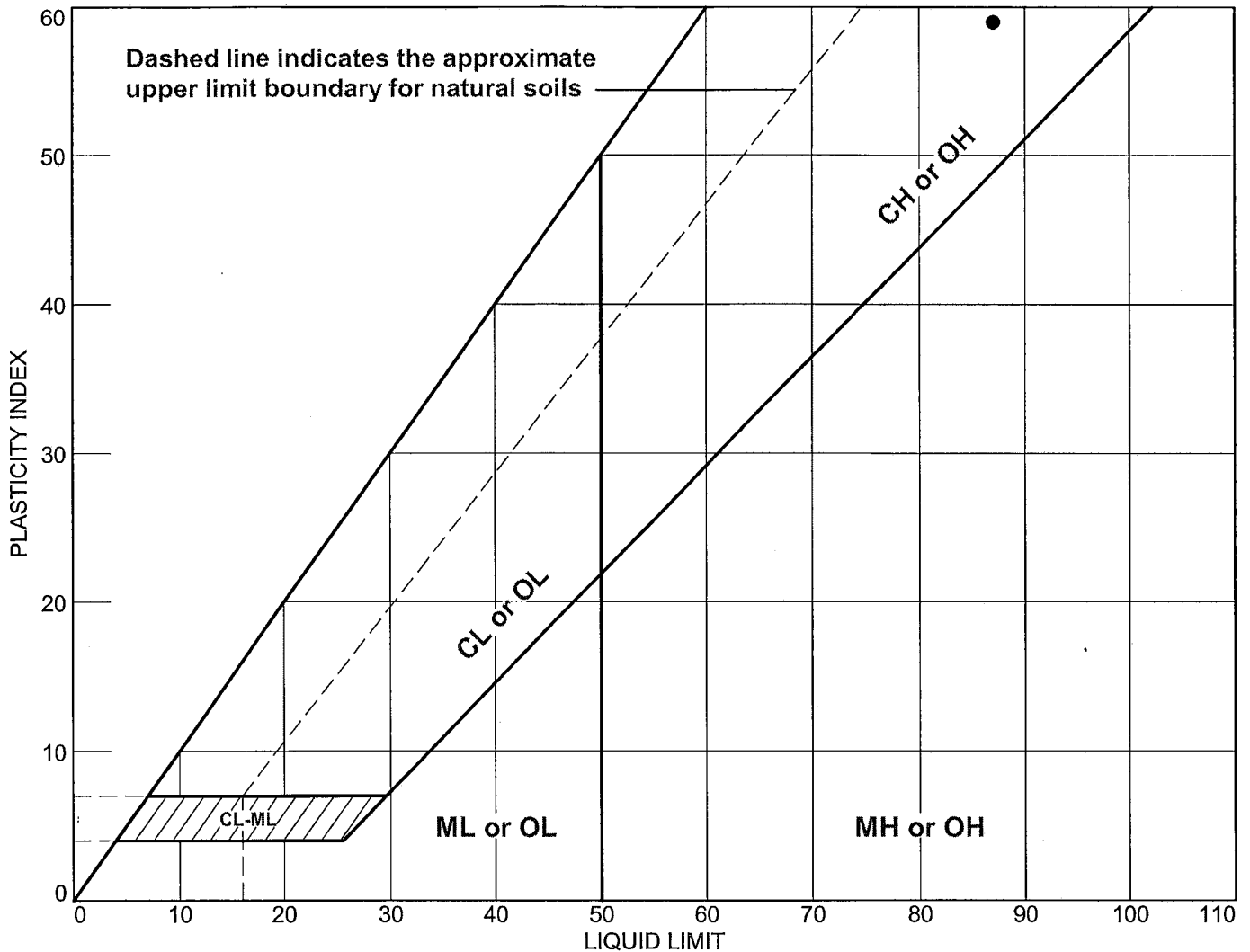
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.8	8.3	9.1	15.4	75.5	90.9

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
						0.0100	0.0303	0.0634	0.1605

Fineness Modulus
0.08

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-28	149.3-150.8	31.8	28	87	59	CH

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 149.3-150.8

Sample Number: SS-28

Material Description: Yellowish Brown mottled Light Gray Fat CLAY

USCS: CH

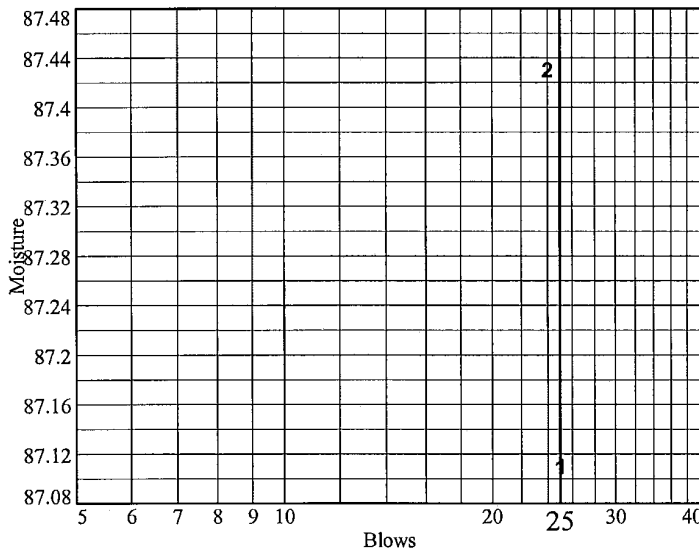
AASHTO: A-7-6(62)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.48	25.68				
Dry+Tare	20.29	20.95				
Tare	15.48	15.54				
# Blows	25	24				
Moisture	87.1	87.4				



Liquid Limit= 87
 Plastic Limit= 28
 Plasticity Index= 59
 Natural Moisture= 31.8
 Liquidity Index= 0.1

Plastic Limit Data

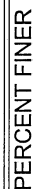
Run No.	1	2	3	4	
Wet+Tare	21.47	17.51			
Dry+Tare	20.17	16.13			
Tare	15.45	11.17			
Moisture	27.5	27.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
114.80	88.70	6.72	31.8

MACTEC Engineering and Consulting, Inc.

HYDROMETER



Client Bechtel		MACTEC Engineering and Consulting, Inc. Raleigh, North Carolina	○ Specific Gravity is assumed NV = No Value NP = Non - Plastic
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 159.3-160.8'

Sample Number: SS-29

Material Description: Light Gray mottled Light Yellowish Brown Silty SAND

Date: 2/25/09

Natural Moisture: 19.3

Liquid Limit: NV

Plastic Limit: NP

USCS Class.: SM

Testing Remarks: Specific Gravity is assumed

NV = No Value

NP = Non - Plastic

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
261.00	0.00	0.00	#4	0.00	100.0
			#10	0.13	100.0
52.19	0.00	0.00	#20	1.69	96.7
			#40	8.49	83.7
			#60	19.32	63.0
			#100	35.06	32.8
			#140	41.54	20.4
			#200	44.14	15.4

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 52.19

Hygroscopic moisture correction:

Moist weight and tare = 18.88

Dry weight and tare = 18.86

Tare weight = 5.67

Hygroscopic moisture = 0.2%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.9	13.0	7.5	0.0133	14.0	14.0	0.0352	14.2
5.00	20.9	13.0	7.5	0.0133	14.0	14.0	0.0222	14.2
15.00	20.9	13.0	7.5	0.0133	14.0	14.0	0.0128	14.2
30.00	20.9	12.0	6.5	0.0133	13.0	14.2	0.0091	12.3
60.00	20.9	12.0	6.5	0.0133	13.0	14.2	0.0065	12.3
250.00	21.2	12.0	6.6	0.0132	13.0	14.2	0.0032	12.5
1440.00	20.6	12.0	6.4	0.0133	13.0	14.2	0.0013	12.2

MACTEC Engineering and Consulting, Inc.

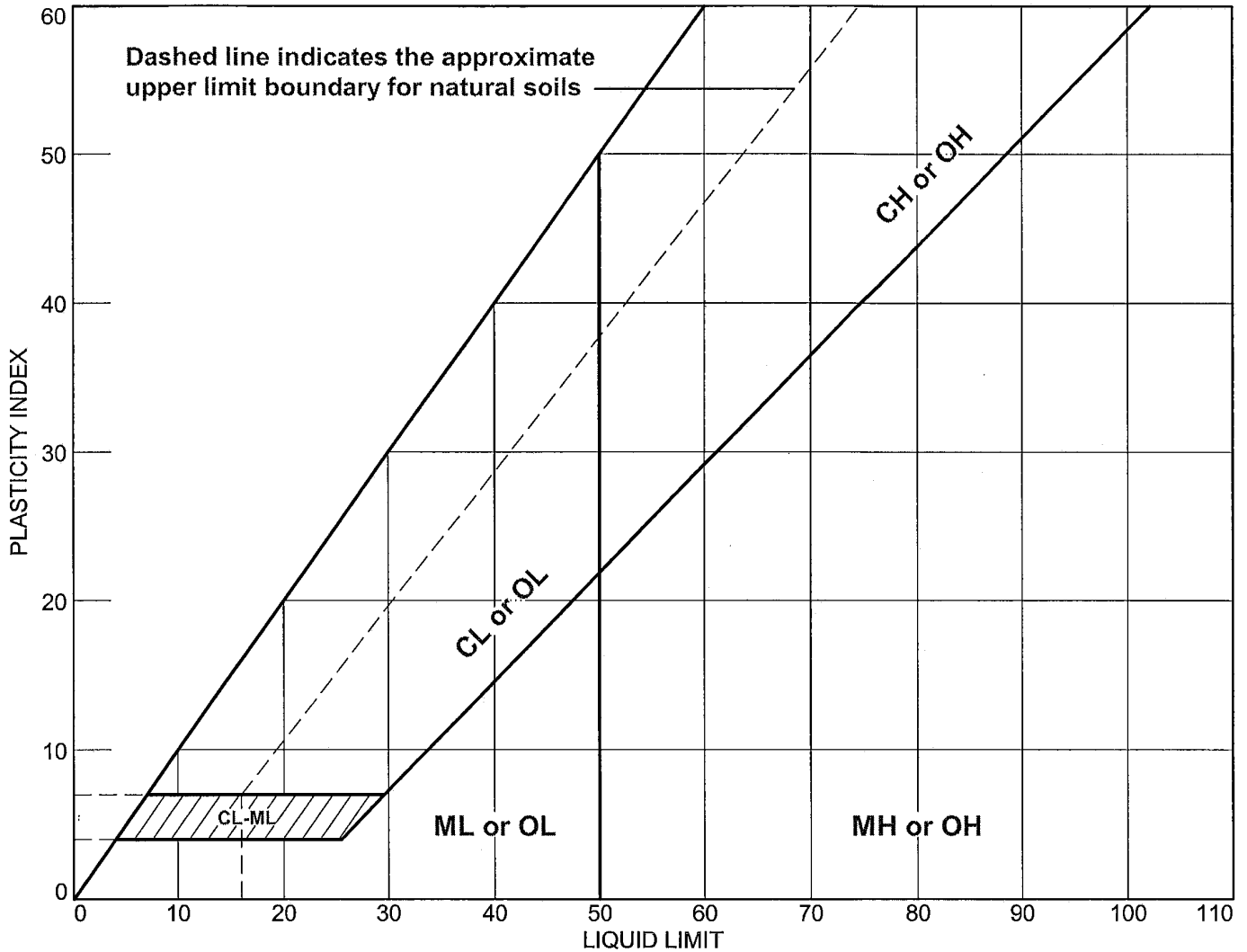
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	16.3	68.3	84.6	3.0	12.4	15.4

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
	0.0627	0.1042	0.1413	0.2013	0.2372	0.3754	0.4460	0.5511	0.7369

Fineness Modulus
1.05

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-3270A	SS-29	159.3-160.8'	19.3	NP	NV	NP	SM

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 159.3-160.8'

Sample Number: SS-29

Material Description: Light Gray mottled Light Yellowish Brown Silty SAND

USCS: SM

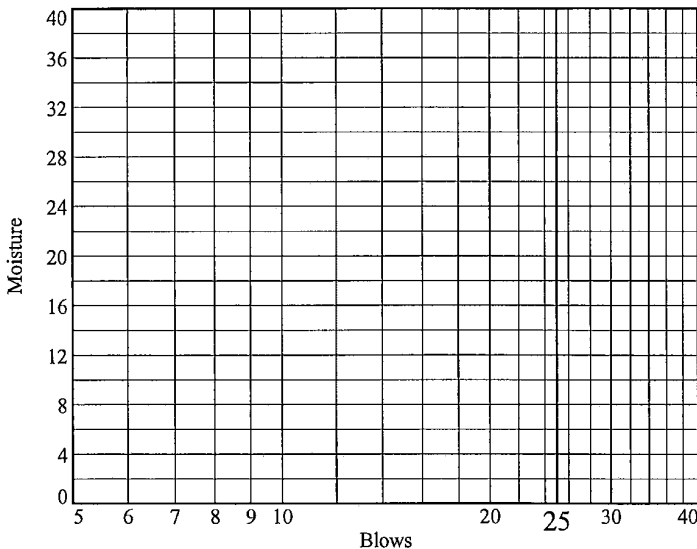
AASHTO: A-2-4(0)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare						
Dry+Tare						
Tare						
# Blows						
Moisture						



Liquid Limit= NV
 Plastic Limit= NP
 Plasticity Index= NP
 Natural Moisture= 19.3

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare					
Dry+Tare					
Tare					
Moisture					

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
119.62	101.33	6.79	19.3

MACTEC Engineering and Consulting, Inc.

Client Bechtel		MACTEC Engineering and Consulting, Inc. Raleigh, North Carolina	☐ Specific Gravity is assumed NV = No Value NP = Non-Plastic
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/4/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 179.3-180.8

Sample Number: SS-31

Material Description: Light Yellowish Brown Silty SAND

Date: 2/25/09

Natural Moisture: 19.7

Liquid Limit: NV

Plastic Limit: NP

USCS Class.: SM

Testing Remarks: Specific Gravity is assumed

NV = No Value

NP = Non-Plastic

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
274.77	0.00	0.00	#4	0.00	100.0
			#10	1.59	99.4
52.98	0.00	0.00	#20	1.37	96.9
			#40	9.16	82.2
			#60	29.51	44.0
			#100	42.25	20.1
			#140	45.19	14.6
			#200	46.52	12.1

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.4

Weight of hydrometer sample = 52.98

Hygroscopic moisture correction:

Moist weight and tare = 18.19

Dry weight and tare = 18.15

Tare weight = 5.77

Hygroscopic moisture = 0.3%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.8	12.0	6.5	0.0133	13.0	14.2	0.0354	12.0
5.00	20.8	12.0	6.5	0.0133	13.0	14.2	0.0224	12.0
15.00	20.8	12.0	6.5	0.0133	13.0	14.2	0.0129	12.0
30.00	20.8	12.0	6.5	0.0133	13.0	14.2	0.0091	12.0
60.00	20.8	12.0	6.5	0.0133	13.0	14.2	0.0065	12.0
250.00	21.2	12.0	6.6	0.0132	13.0	14.2	0.0032	12.3
1440.00	20.7	11.0	5.4	0.0133	12.0	14.3	0.0013	10.1

MACTEC Engineering and Consulting, Inc.

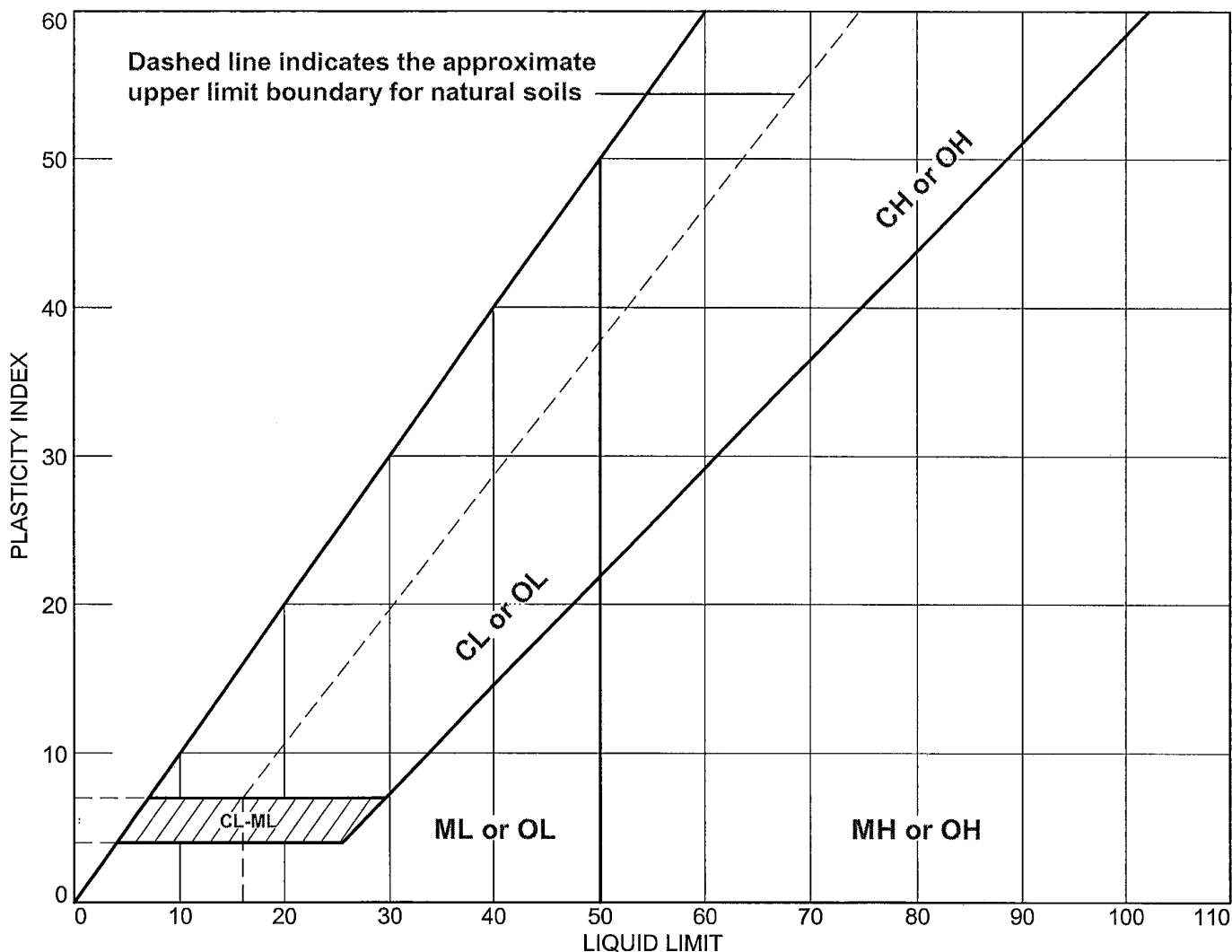
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.6	17.2	70.1	87.9		12.1	12.1

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
	0.1101	0.1492	0.1964	0.2716	0.3092	0.4087	0.4489	0.5102	0.6481

Fineness Modulus
1.31

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-3270A	SS-31	179.3-180.8	19.7	NP	NV	NP	SM

MACTEC Engineering and Consulting, Inc.		Client: Bechtel	
Raleigh, North Carolina		Project: Exelon Texas COL Project - Supplemental Investigation, including UHS	
		Project No.: 6468071777	Figure NA

Tested By: CS Checked By: BS DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/4/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 179.3-180.8

Sample Number: SS-31

Material Description: Light Yellowish Brown Silty SAND

USCS: SM

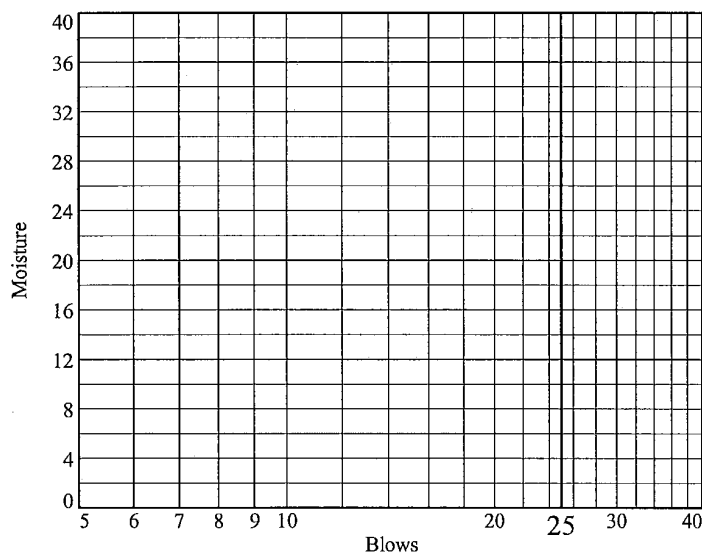
AASHTO: A-2-4(0)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare						
Dry+Tare						
Tare						
# Blows						
Moisture						



Liquid Limit= NV
 Plastic Limit= NP
 Plasticity Index= NP
 Natural Moisture= 19.7

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare				
Dry+Tare				
Tare				
Moisture				

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
123.25	104.10	6.85	19.7

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.2	0.2	2.7	78.4	5.5	13.0

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-33	199.2-200.7'	3/3/09	SM	Pale Yellow Silty SAND	19.9	NV	NP

Client Bechtel		MACTEC Engineering and Consulting, Inc.	Raleigh, North Carolina	○ Specific Gravity is assumed NV = No Value NP = Non-Plastic
Project Exelon Texas COL Project - Supplemental				
Investigation, including UHS				
Project No. 6468071777	Figure NA			

Tested By: CS Checked By: BS DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 199.2-200.7'

Sample Number: SS-33

Material Description: Pale Yellow Silty SAND

Date: 3/3/09

Natural Moisture: 19.9

Liquid Limit: NV

Plastic Limit: NP

USCS Class.: SM

Testing Remarks: Specific Gravity is assumed

NV = No Value

NP = Non-Plastic

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
255.89	0.00	0.00	3/8"	0.00	100.0
			#4	0.49	99.8
			#10	0.91	99.6
55.03	0.00	0.00	#20	0.37	99.0
			#40	1.51	96.9
			#60	10.45	80.7
			#100	36.51	33.5
			#140	42.57	22.6
			#200	44.83	18.5

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.6

Weight of hydrometer sample = 55.03

Hygroscopic moisture correction:

Moist weight and tare = 18.34

Dry weight and tare = 18.31

Tare weight = 5.81

Hygroscopic moisture = 0.2%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.8	14.0	8.5	0.0133	15.0	13.8	0.0350	15.2
5.00	20.8	14.0	8.5	0.0133	15.0	13.8	0.0221	15.2
15.00	20.8	13.0	7.5	0.0133	14.0	14.0	0.0129	13.4
30.00	20.8	13.0	7.5	0.0133	14.0	14.0	0.0091	13.4
60.00	20.8	13.0	7.5	0.0133	14.0	14.0	0.0064	13.4
250.00	21.3	12.0	6.6	0.0132	13.0	14.2	0.0031	11.9
1440.00	20.7	12.0	6.4	0.0133	13.0	14.2	0.0013	11.6

MACTEC Engineering and Consulting, Inc.

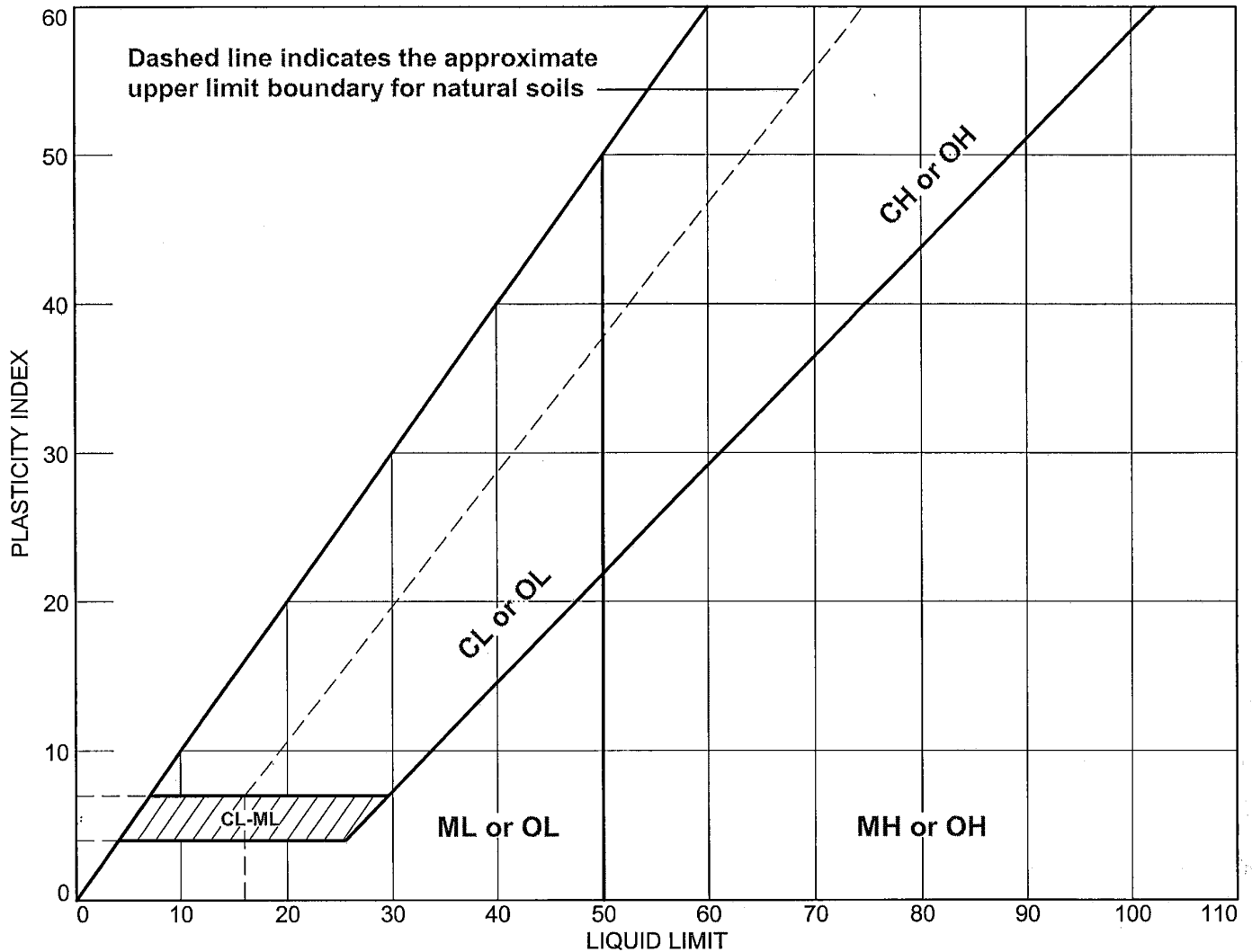
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.2	0.2	0.2	2.7	78.4	81.3	5.5	13.0	18.5

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
	0.0204	0.0868	0.1409	0.1817	0.2003	0.2476	0.2664	0.2942	0.3527

Fineness Modulus
0.78

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-3270A	SS-33	199.2-200.7'	19.9	NP	NV	NP	SM

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 199.2-200.7'

Sample Number: SS-33

Material Description: Pale Yellow Silty SAND

USCS: SM

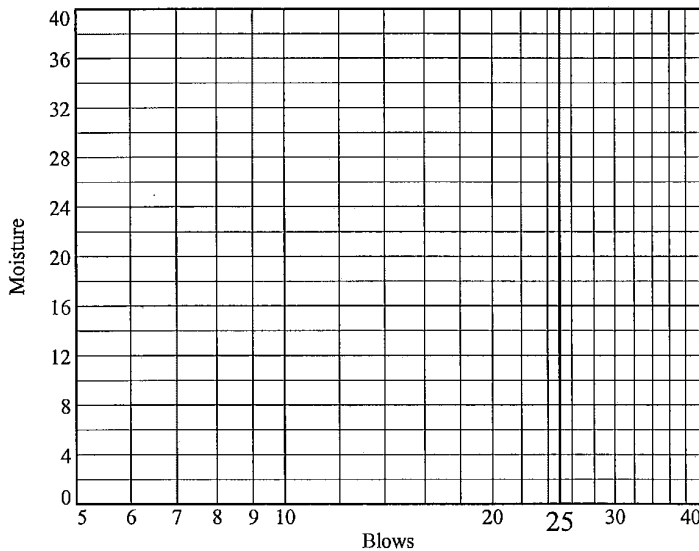
AASHTO: A-2-4(0)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare						
Dry+Tare						
Tare						
# Blows						
Moisture						



Liquid Limit= NV
 Plastic Limit= NP
 Plasticity Index= NP
 Natural Moisture= 19.9

Plastic Limit Data

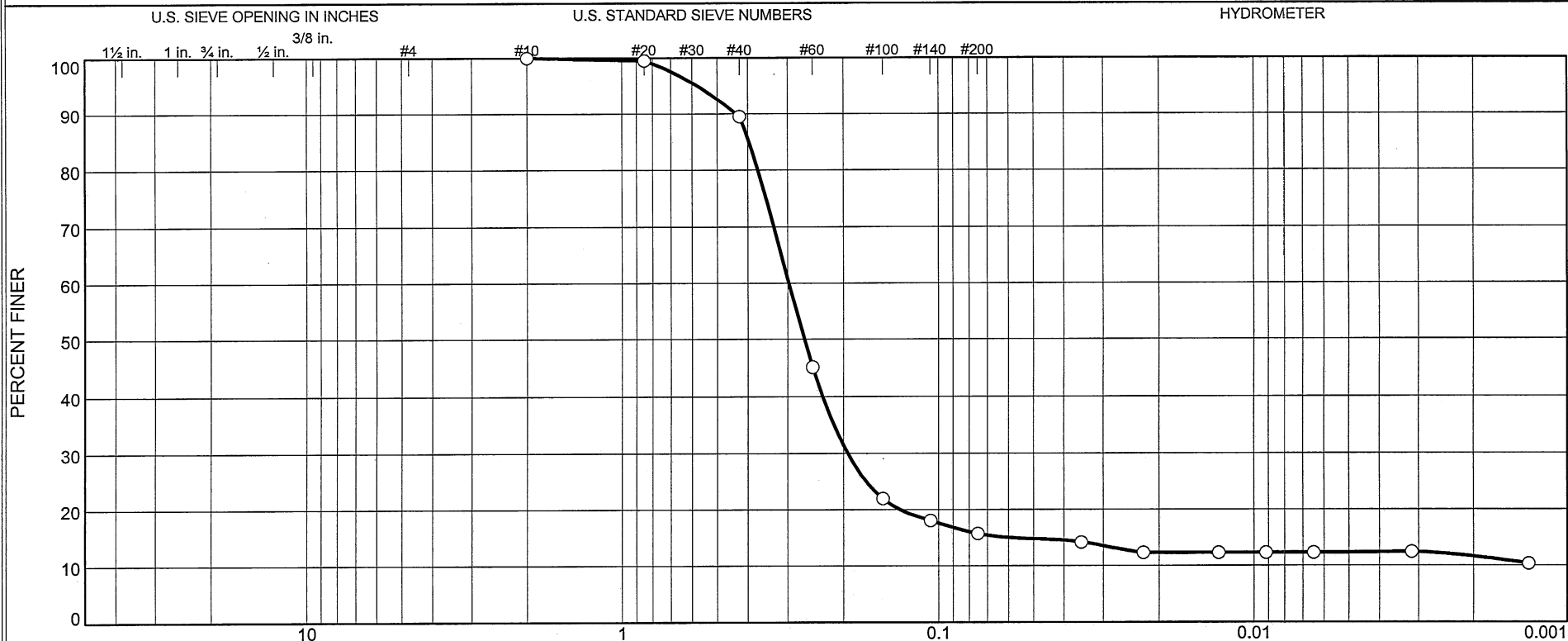
Run No.	1	2	3	4
Wet+Tare				
Dry+Tare				
Tare				
Moisture				

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
126.03	106.26	6.80	19.9

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	10.5	73.8	3.4	12.3

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-35	219.2-220.7'	3/3/09	SC-SM	Light Gray Silty, Clayey SAND	18.7	17	12

Client <u>Bechtel</u>		MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project <u>Exelon Texas COL Project - Supplemental</u>			
<u>Investigation, including UHS</u>			
Project No. <u>6468071777</u>	Figure <u>NA</u>	Raleigh, North Carolina	

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 219.2-220.7'

Sample Number: SS-35

Material Description: Light Gray Silty, Clayey SAND

Date: 3/3/09

Natural Moisture: 18.7

Liquid Limit: 17

Plastic Limit: 12

USCS Class.: SC-SM

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
277.84	0.00	0.00	#10	0.00	100.0
52.52	0.00	0.00	#20	0.28	99.5
			#40	5.52	89.5
			#60	28.83	45.1
			#100	40.99	22.0
			#140	43.03	18.1
			#200	44.27	15.7

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 52.52

Hygroscopic moisture correction:

Moist weight and tare = 17.37

Dry weight and tare = 17.29

Tare weight = 5.76

Hygroscopic moisture = 0.7%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.8	13.0	7.5	0.0133	14.0	14.0	0.0352	14.2
5.00	20.8	12.0	6.5	0.0133	13.0	14.2	0.0224	12.3
15.00	20.8	12.0	6.5	0.0133	13.0	14.2	0.0129	12.3
30.00	20.8	12.0	6.5	0.0133	13.0	14.2	0.0091	12.3
60.00	20.8	12.0	6.5	0.0133	13.0	14.2	0.0065	12.3
250.00	21.1	12.0	6.6	0.0133	13.0	14.2	0.0032	12.4
1440.00	20.7	11.0	5.4	0.0133	12.0	14.3	0.0013	10.3

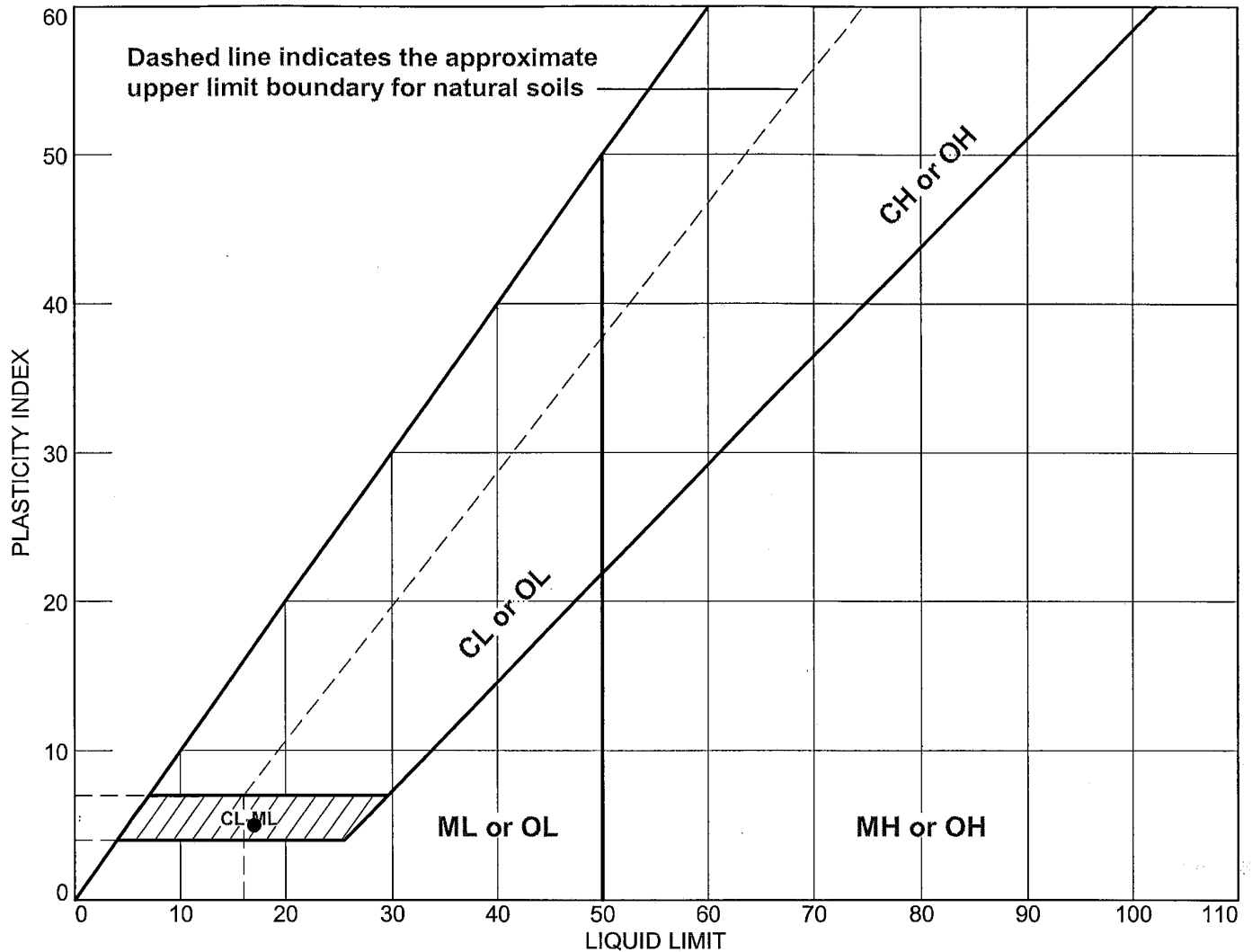
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	10.5	73.8	84.3	3.4	12.3	15.7

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
	0.0604	0.1324	0.1940	0.2657	0.2975	0.3722	0.3972	0.4358	0.5792

Fineness Modulus
1.22

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-3270A	SS-35	219.2-220.7'	18.7	12	17	5	SC-SM

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 219.2-220.7'

Sample Number: SS-35

Material Description: Light Gray Silty, Clayey SAND

USCS: SC-SM

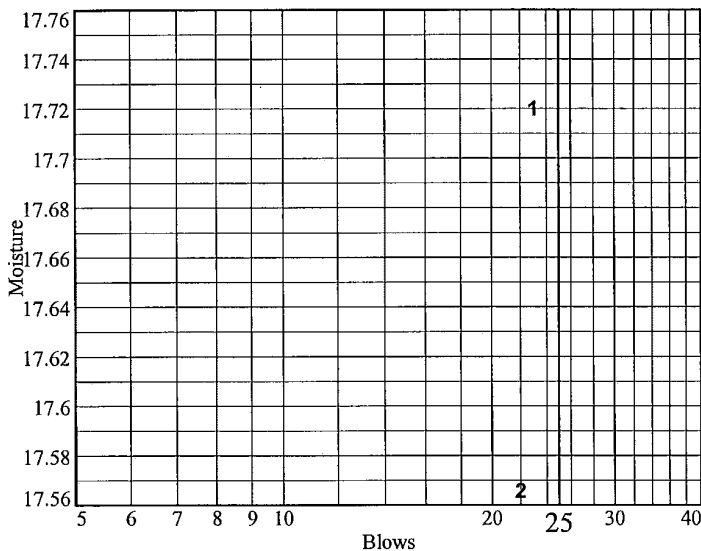
AASHTO: A-2-4(0)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.86	26.66				
Dry+Tare	26.01	25.00				
Tare	15.57	15.55				
# Blows	23	22				
Moisture	17.7	17.6				



Liquid Limit= 17
 Plastic Limit= 12
 Plasticity Index= 5
 Natural Moisture= 18.7
 Liquidity Index= 1.3

Plastic Limit Data

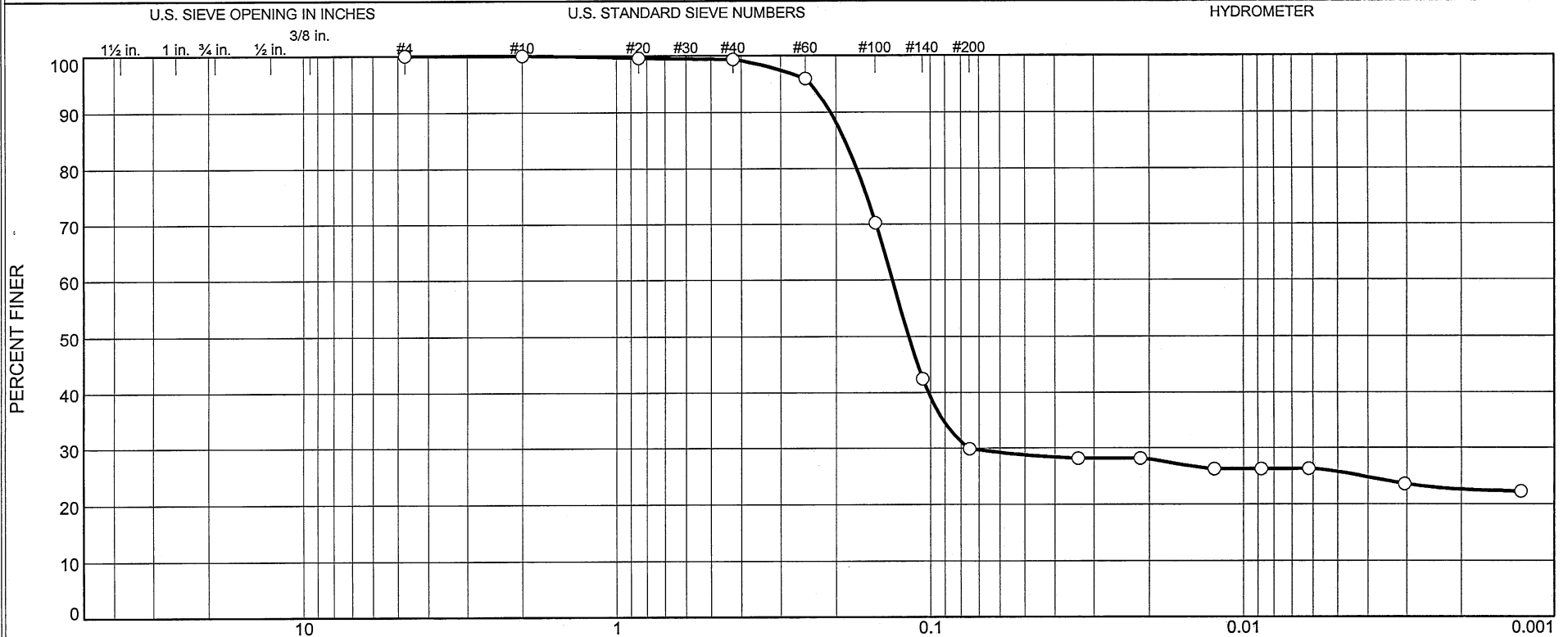
Run No.	1	2	3	4
Wet+Tare	22.55	22.32		
Dry+Tare	21.79	21.60		
Tare	15.49	15.51		
Moisture	12.1	11.8		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
115.15	98.42	9.17	18.7

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



GRAIN SIZE - mm.

% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	69.4	4.2	25.7

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-37	239.2-240.7	3/3/09	SC-SM	Light Gray Silty, Clayey SAND	22.2	22	15

Client Bechtel		MACTEC Engineering and Consulting, Inc. Raleigh, North Carolina	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 239.2-240.7

Sample Number: SS-37

Material Description: Light Gray Silty, Clayey SAND

Date: 3/3/09

Natural Moisture: 22.2

Liquid Limit: 22

Plastic Limit: 15

USCS Class.: SC-SM

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
227.82	0.00	0.00	#4	0.00	100.0
			#10	0.05	100.0
50.99	0.00	0.00	#20	0.22	99.5
			#40	0.34	99.3
			#60	2.06	95.9
			#100	15.16	70.3
			#140	29.32	42.5
			#200	35.76	29.9

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 50.99

Hygroscopic moisture correction:

Moist weight and tare = 18.39

Dry weight and tare = 18.35

Tare weight = 5.75

Hygroscopic moisture = 0.3%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.8	20.0	14.5	0.0133	21.0	12.9	0.0337	28.1
5.00	20.8	20.0	14.5	0.0133	21.0	12.9	0.0213	28.1
15.00	20.8	19.0	13.5	0.0133	20.0	13.0	0.0124	26.2
30.00	20.8	19.0	13.5	0.0133	20.0	13.0	0.0088	26.2
60.00	20.9	19.0	13.5	0.0133	20.0	13.0	0.0062	26.3
250.00	21.3	17.5	12.1	0.0132	18.5	13.3	0.0030	23.6
1440.00	20.7	17.0	11.4	0.0133	18.0	13.3	0.0013	22.3

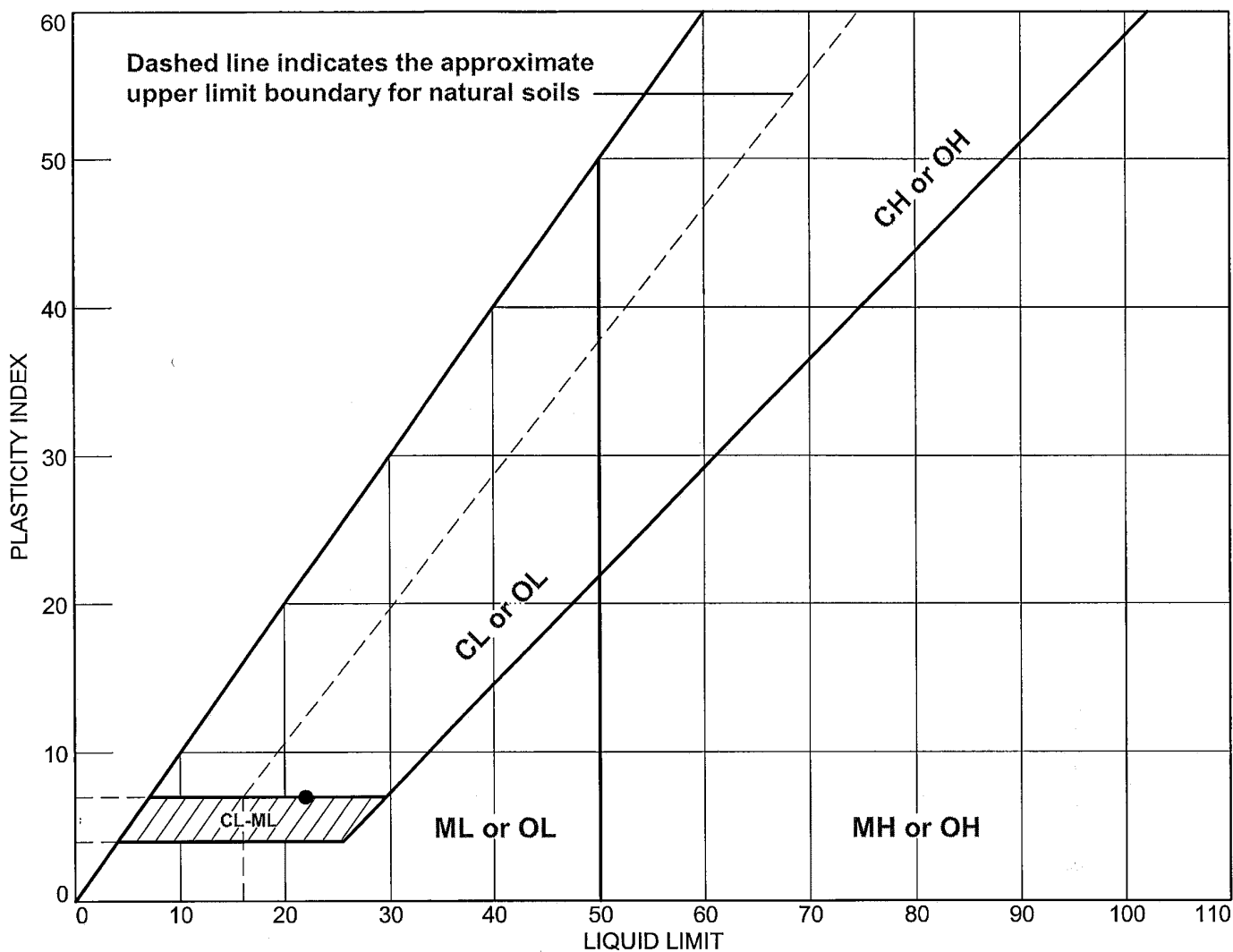
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.7	69.4	70.1	4.2	25.7	29.9

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
			0.0756	0.1176	0.1326	0.1722	0.1877	0.2085	0.2409

Fineness Modulus
0.33

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-37	239.2-240.7	22.2	15	22	7	SC-SM

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 239.2-240.7

Sample Number: SS-37

Material Description: Light Gray Silty, Clayey SAND

USCS: SC-SM

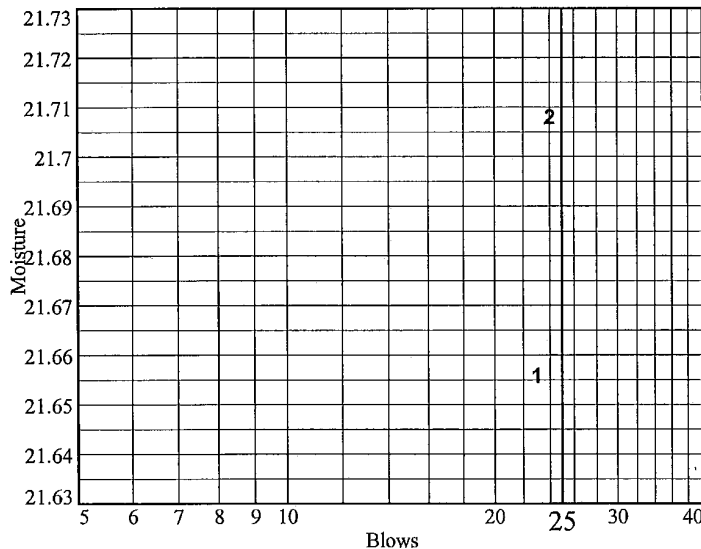
AASHTO: A-2-4(0)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	28.84	29.19				
Dry+Tare	26.46	26.75				
Tare	15.47	15.51				
# Blows	23	24				
Moisture	21.7	21.7				



Liquid Limit= 22
 Plastic Limit= 15
 Plasticity Index= 7
 Natural Moisture= 22.2
 Liquidity Index= 1.0

Plastic Limit Data

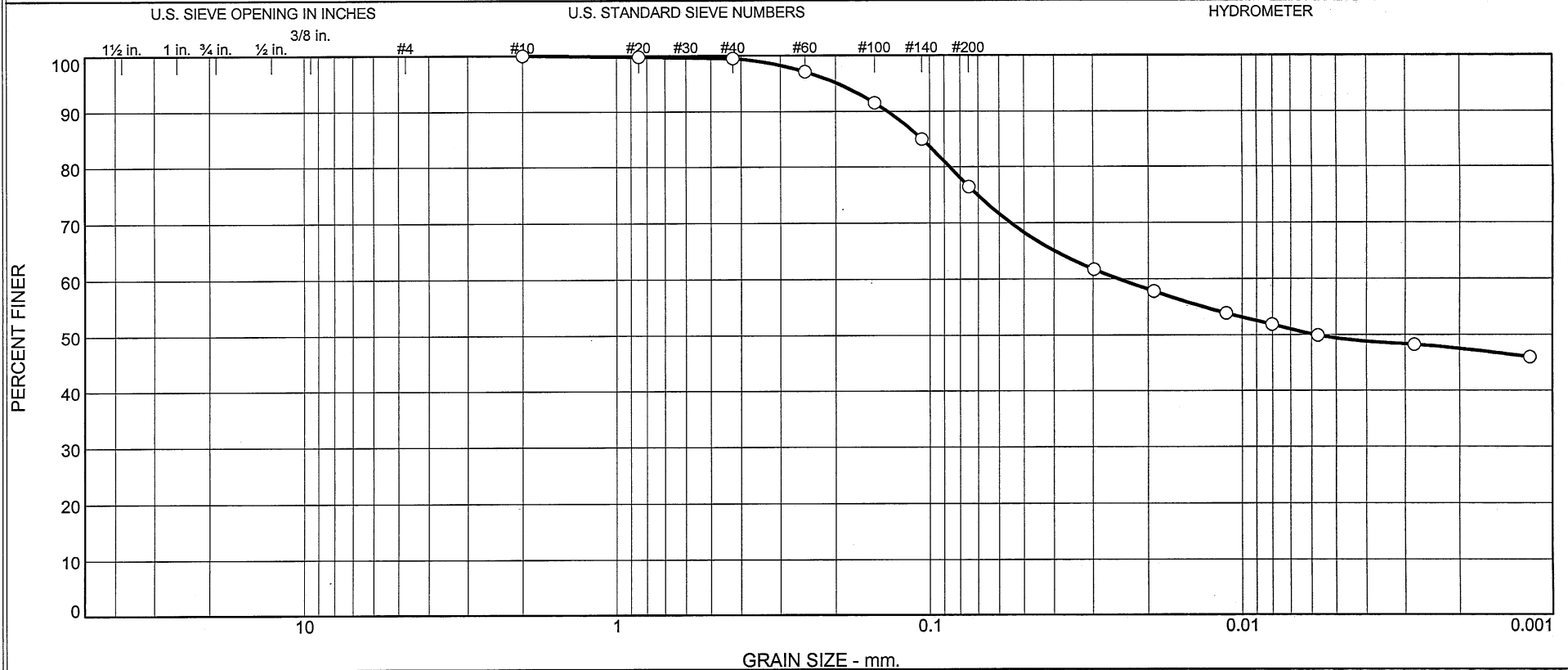
Run No.	1	2	3	4	
Wet+Tare	22.32	17.43			
Dry+Tare	21.45	16.60			
Tare	15.73	11.11			
Moisture	15.2	15.1			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
118.65	98.31	6.80	22.2

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	23.1	27.0	49.4

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-38	249.2-250.7'	3/3/09	CH	Light Gray Fat CLAY with sand	21.2	53	21

Client Bechtel			MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental				
Investigation, including UHS				
Project No. 6468071777	Figure	NA		
			Raleigh, North Carolina	

Tested By: CS

Checked By: LBJ

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 249.2-250.7'

Sample Number: SS-38

Material Description: Light Gray Fat CLAY with sand

Date: 3/3/09

Natural Moisture: 21.2

Liquid Limit: 53

Plastic Limit: 21

USCS Class.: CH

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
222.55	0.00	0.00	#10	0.00	100.0
51.80	0.00	0.00	#20	0.13	99.7
			#40	0.28	99.5
			#60	1.51	97.1
			#100	4.39	91.5
			#140	7.78	85.0
			#200	12.23	76.4

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 51.80

Hygroscopic moisture correction:

Moist weight and tare = 17.91

Dry weight and tare = 17.60

Tare weight = 5.73

Hygroscopic moisture = 2.6%

Table of composite correction values:

Temp., deg. C: 12.5 29.3

Comp. corr.: -8.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.9	37.0	31.5	0.0133	38.0	10.1	0.0298	61.7
5.00	20.9	35.0	29.5	0.0133	36.0	10.4	0.0192	57.8
15.00	20.9	33.0	27.5	0.0133	34.0	10.7	0.0112	53.9
30.00	20.8	32.0	26.5	0.0133	33.0	10.9	0.0080	51.9
60.00	20.8	31.0	25.5	0.0133	32.0	11.0	0.0057	49.9
250.00	21.3	30.0	24.6	0.0132	31.0	11.2	0.0028	48.2
1440.00	20.8	29.0	23.5	0.0133	30.0	11.4	0.0012	46.0

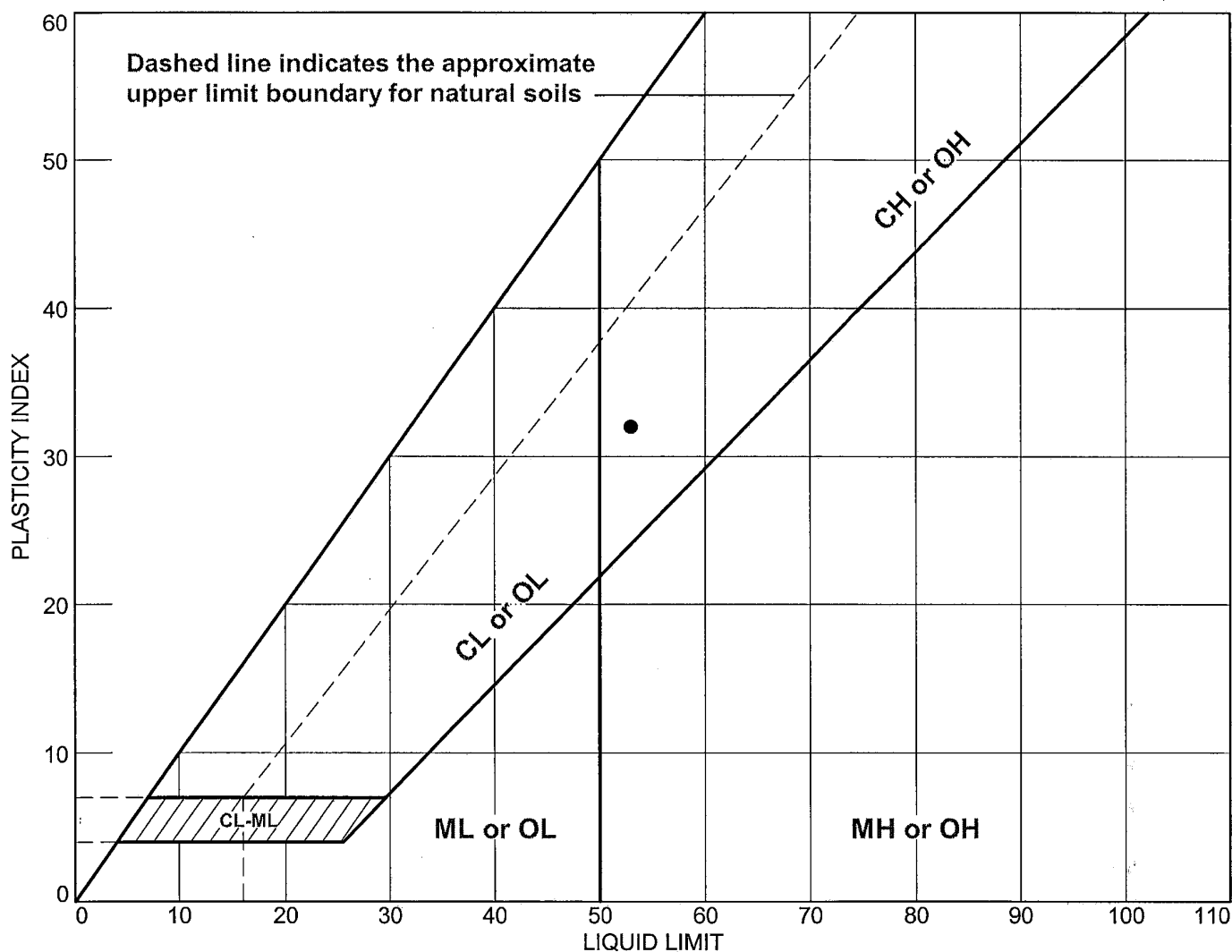
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.5	23.1	23.6	27.0	49.4	76.4

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0058	0.0249	0.0867	0.1061	0.1364	0.1972

Fineness Modulus
0.11

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-38	249.2-250.7'	21.2	21	53	32	CH

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: LBJ

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 249.2-250.7'

Sample Number: SS-38

Material Description: Light Gray Fat CLAY with sand

USCS: CH

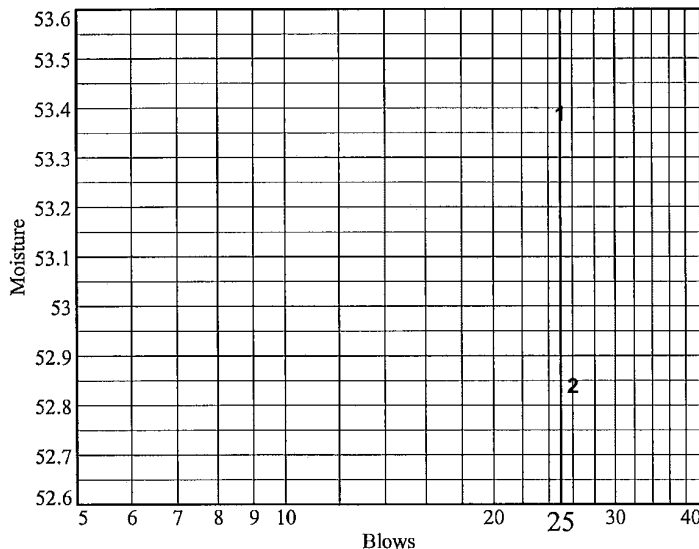
AASHTO: A-7-6(24)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	26.43	23.58				
Dry+Tare	22.65	20.79				
Tare	15.57	15.51				
# Blows	25	26				
Moisture	53.4	52.8				



Liquid Limit= 53
 Plastic Limit= 21
 Plasticity Index= 32
 Natural Moisture= 21.2
 Liquidity Index= 0.0

Plastic Limit Data

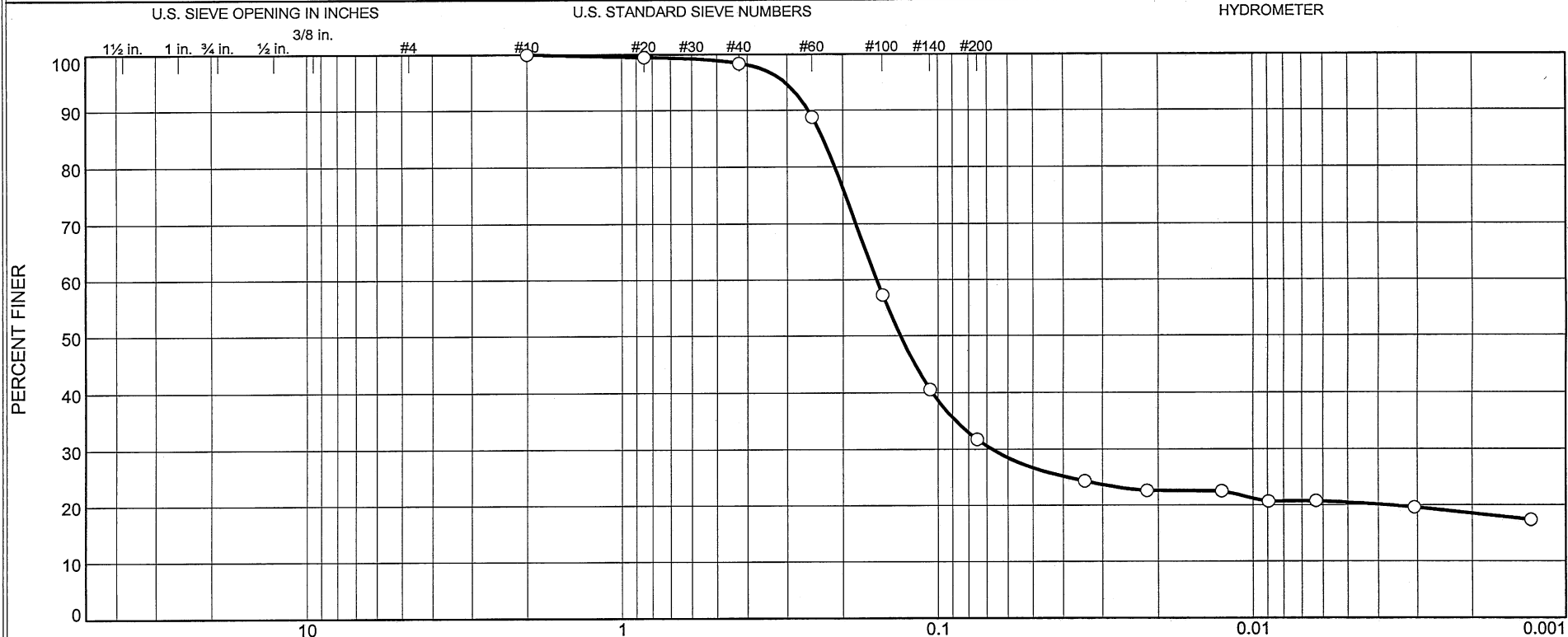
Run No.	1	2	3	4
Wet+Tare	21.99	23.84		
Dry+Tare	20.86	22.35		
Tare	15.51	15.49		
Moisture	21.1	21.7		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
118.09	98.68	6.99	21.2

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.6	66.7	11.3	20.4

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-39	259.2-260.7'	3/4/09	SC	Light Gray Clayey SAND	20.0	25	11

Client Bechtel			MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental				
Investigation, including UHS				
Project No. 6468071777	Figure	NA		
			Raleigh, North Carolina	

Tested By: CS Checked By: BS DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 259.2-260.7'

Sample Number: SS-39

Material Description: Light Gray Clayey SAND

Date: 3/4/09

Natural Moisture: 20.0

Liquid Limit: 25

Plastic Limit: 11

USCS Class.: SC

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
282.85	0.00	0.00	#10	0.00	100.0
54.02	0.00	0.00	#20	0.29	99.5
			#40	0.88	98.4
			#60	6.09	88.7
			#100	23.11	57.2
			#140	32.10	40.6
			#200	36.87	31.7

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 54.02

Hygroscopic moisture correction:

Moist weight and tare = 18.60

Dry weight and tare = 18.57

Tare weight = 5.77

Hygroscopic moisture = 0.2%

Table of composite correction values:

Temp., deg. C: 10.6 28.4

Comp. corr.: -9.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.3	19.0	13.3	0.0134	20.0	13.0	0.0342	24.3
5.00	20.5	18.0	12.3	0.0134	19.0	13.2	0.0217	22.6
15.00	20.3	18.0	12.3	0.0134	19.0	13.2	0.0126	22.5
30.00	20.3	17.0	11.3	0.0134	18.0	13.3	0.0089	20.7
60.00	20.4	17.0	11.3	0.0134	18.0	13.3	0.0063	20.7
250.00	21.5	16.0	10.7	0.0132	17.0	13.5	0.0031	19.6
1440.00	20.9	15.0	9.5	0.0133	16.0	13.7	0.0013	17.4

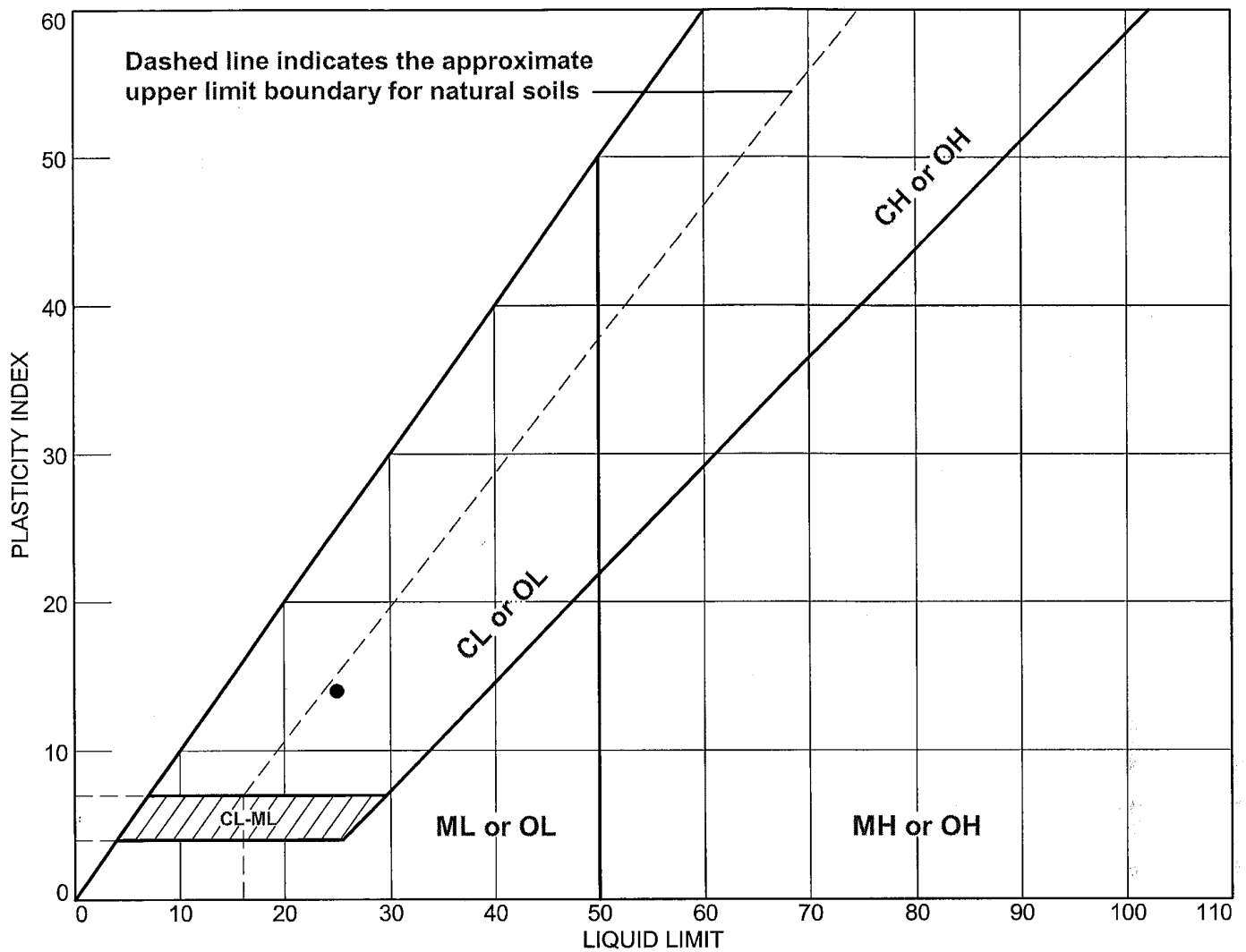
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.6	66.7	68.3	11.3	20.4	31.7

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
		0.0038	0.0673	0.1318	0.1568	0.2125	0.2317	0.2577	0.3047

Fineness Modulus
0.49

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-39	259.2-260.7'	20.0	11	25	14	SC

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 259.2-260.7'

Sample Number: SS-39

Material Description: Light Gray Clayey SAND

USCS: SC

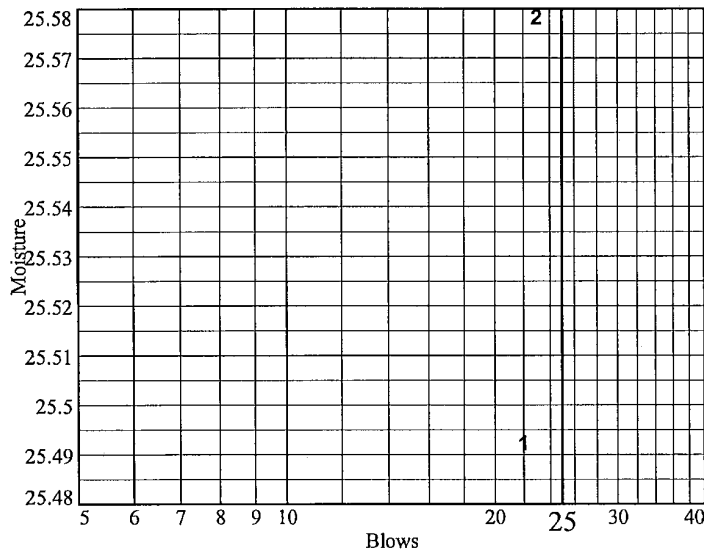
AASHTO: A-2-6(1)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	26.25	25.19				
Dry+Tare	24.05	23.20				
Tare	15.42	15.42				
# Blows	22	23				
Moisture	25.5	25.6				



Liquid Limit=	25
Plastic Limit=	11
Plasticity Index=	14
Natural Moisture=	20.0
Liquidity Index=	0.6

Plastic Limit Data

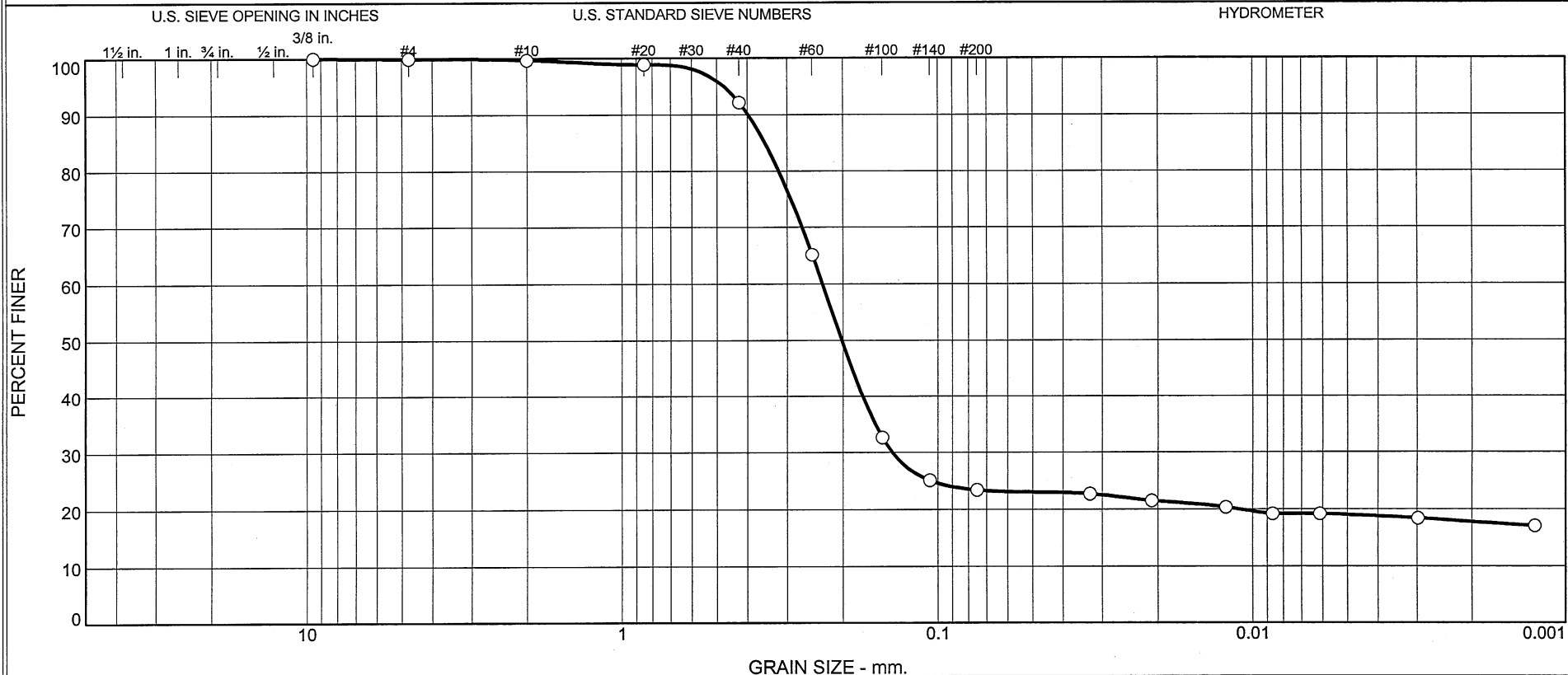
Run No.	1	2	3	4	
Wet+Tare	17.82	22.28			
Dry+Tare	17.15	21.60			
Tare	11.16	15.50			
Moisture	11.2	11.1			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
119.98	101.12	6.92	20.0

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.1	0.2	7.5	68.8	4.4	19.0

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-40	269.2-270.7	3/4/09	SC	Light Gray Clayey SAND	20.1	23	11

Client Bechtel			MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental				
Investigation, including UHS				
Project No. 6468071777	Figure	NA		
			Raleigh, North Carolina	

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 269.2-270.7

Sample Number: SS-40

Material Description: Light Gray Clayey SAND

Date: 3/4/09

Natural Moisture: 20.1

Liquid Limit: 23

Plastic Limit: 11

USCS Class.: SC

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
227.97	0.00	0.00	3/8"	0.00	100.0
			#4	0.23	99.9
			#10	0.73	99.7
91.80	0.00	0.00	#20	0.75	98.9
			#40	6.93	92.2
			#60	31.87	65.1
			#100	61.78	32.6
			#140	68.69	25.1
			#200	70.25	23.4

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.7

Weight of hydrometer sample = 91.80

Hygroscopic moisture correction:

Moist weight and tare = 19.56

Dry weight and tare = 18.35

Tare weight = 5.67

Hygroscopic moisture = 9.5%

Table of composite correction values:

Temp., deg. C: 10.6 28.4

Comp. corr.: -9.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.4	25.0	19.3	0.0134	26.0	12.0	0.0328	22.7
5.00	20.4	24.0	18.3	0.0134	25.0	12.2	0.0209	21.5
15.00	20.4	23.0	17.3	0.0134	24.0	12.4	0.0121	20.4
30.00	20.4	22.0	16.3	0.0134	23.0	12.5	0.0086	19.2
60.00	20.4	22.0	16.3	0.0134	23.0	12.5	0.0061	19.2
250.00	21.4	21.0	15.6	0.0132	22.0	12.7	0.0030	18.4
1440.00	20.9	20.0	14.5	0.0133	21.0	12.9	0.0013	17.0

MACTEC Engineering and Consulting, Inc.

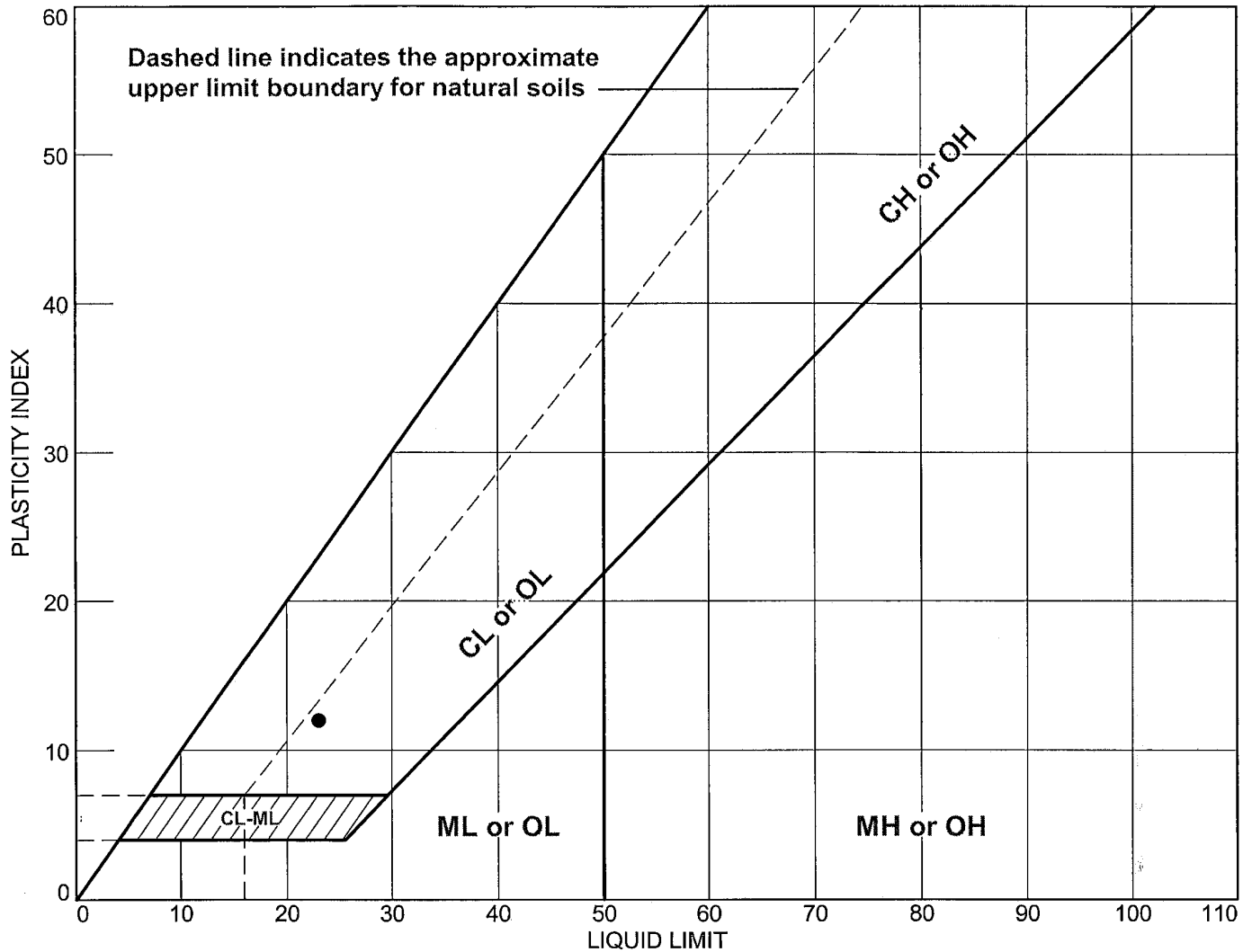
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.1	0.1	0.2	7.5	68.8	76.5	4.4	19.0	23.4

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
		0.0111	0.1396	0.2019	0.2324	0.3191	0.3528	0.3983	0.4751

Fineness Modulus
0.94

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-40	269.2-270.7	20.1	11	23	12	SC

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 269.2-270.7

Sample Number: SS-40

Material Description: Light Gray Clayey SAND

USCS: SC

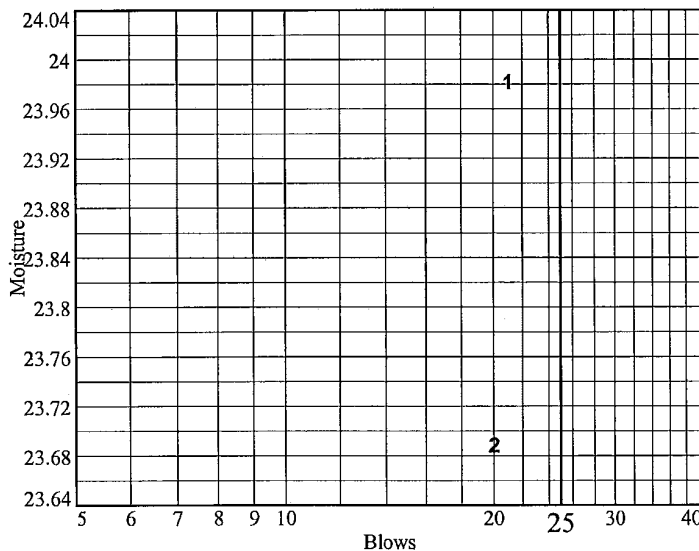
AASHTO: A-2-6(0)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	29.52	24.29				
Dry+Tare	26.81	21.76				
Tare	15.51	11.08				
# Blows	21	20				
Moisture	24.0	23.7				



Liquid Limit= 23
 Plastic Limit= 11
 Plasticity Index= 12
 Natural Moisture= 20.1
 Liquidity Index= 0.8

Plastic Limit Data

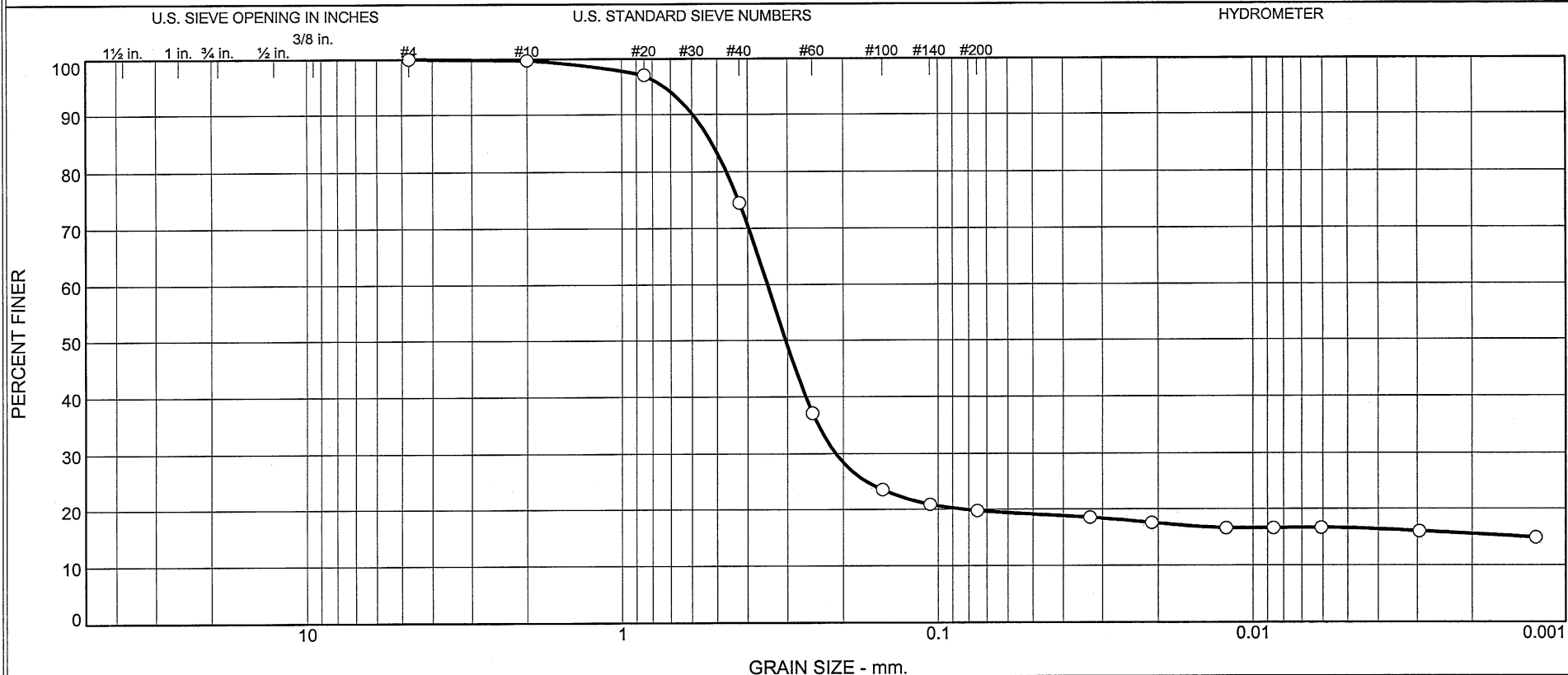
Run No.	1	2	3	4	
Wet+Tare	21.82	23.15			
Dry+Tare	21.17	22.40			
Tare	15.48	15.41			
Moisture	11.4	10.7			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
114.48	96.47	6.82	20.1

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	25.3	54.7	3.3	16.5

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-41	279.3-280.8'	3/4/09	SC	Light Gray Clayey SAND	16.4	27	13

Client Bechtel		MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		
		Raleigh, North Carolina	

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 279.3-280.8'

Sample Number: SS-41

Material Description: Light Gray Clayey SAND

Date: 3/4/09

Natural Moisture: 16.4

Liquid Limit: 27

Plastic Limit: 13

USCS Class.: SC

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
275.62	0.00	0.00	#4	0.00	100.0
			#10	0.68	99.8
103.41	0.00	0.00	#20	2.82	97.0
			#40	26.19	74.5
			#60	64.90	37.1
			#100	78.95	23.6
			#140	81.72	20.9
			#200	82.91	19.8

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.8

Weight of hydrometer sample = 103.41

Hygroscopic moisture correction:

Moist weight and tare = 19.38

Dry weight and tare = 19.29

Tare weight = 5.80

Hygroscopic moisture = 0.7%

Table of composite correction values:

Temp., deg. C: 10.6 28.4

Comp. corr.: -9.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.3	25.0	19.3	0.0134	26.0	12.0	0.0328	18.5
5.00	20.3	24.0	18.3	0.0134	25.0	12.2	0.0209	17.5
15.00	20.3	23.0	17.3	0.0134	24.0	12.4	0.0122	16.6
30.00	20.3	23.0	17.3	0.0134	24.0	12.4	0.0086	16.6
60.00	20.4	23.0	17.3	0.0134	24.0	12.4	0.0061	16.6
250.00	21.4	22.0	16.6	0.0132	23.0	12.5	0.0030	16.0
1440.00	20.9	21.0	15.5	0.0133	22.0	12.7	0.0012	14.9

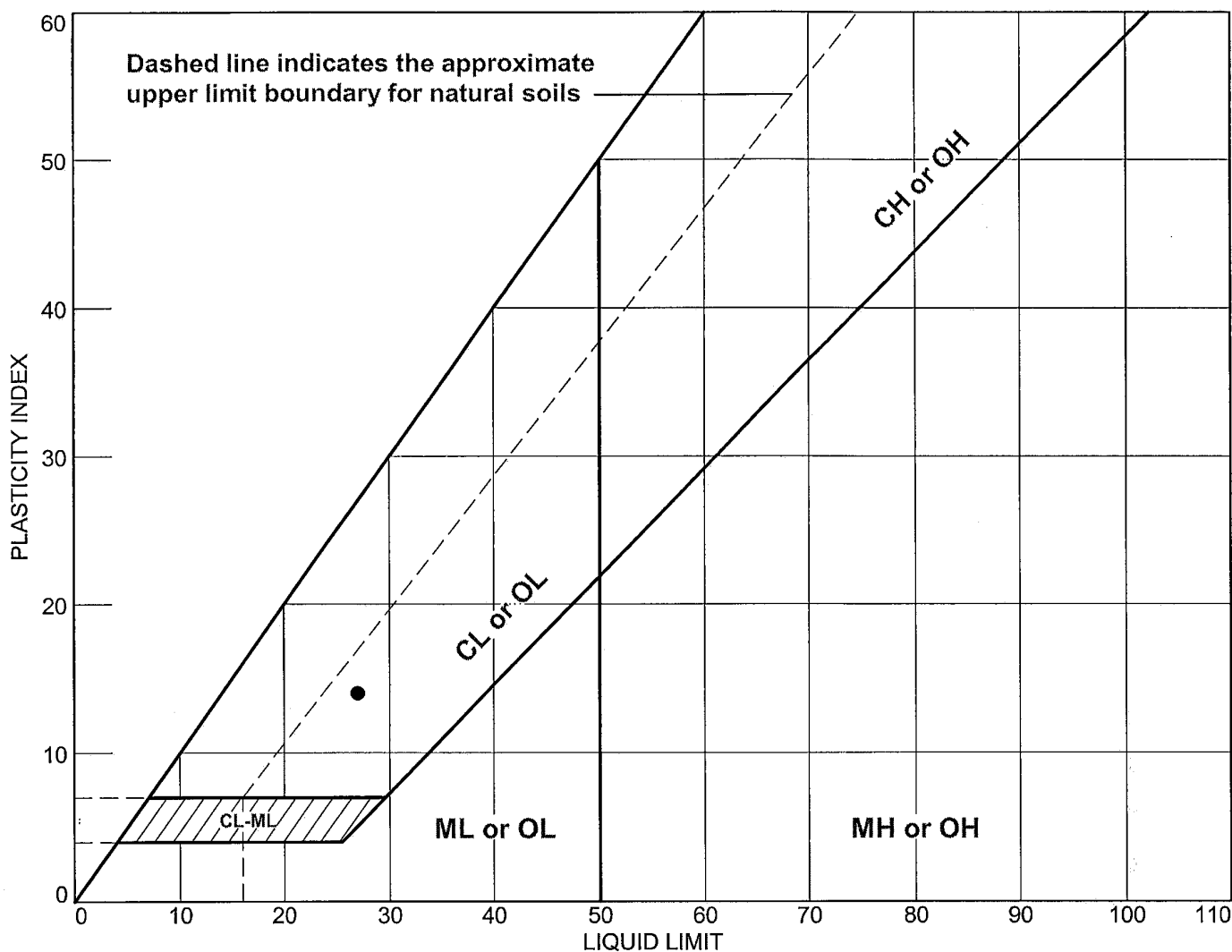
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.2	25.3	54.7	80.2	3.3	16.5	19.8

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
	0.0014	0.0825	0.2111	0.3042	0.3470	0.4676	0.5198	0.5969	0.7380

Fineness Modulus
1.39

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-41	279.3-280.8'	16.4	13	27	14	SC

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 279.3-280.8'

Sample Number: SS-41

Material Description: Light Gray Clayey SAND

USCS: SC

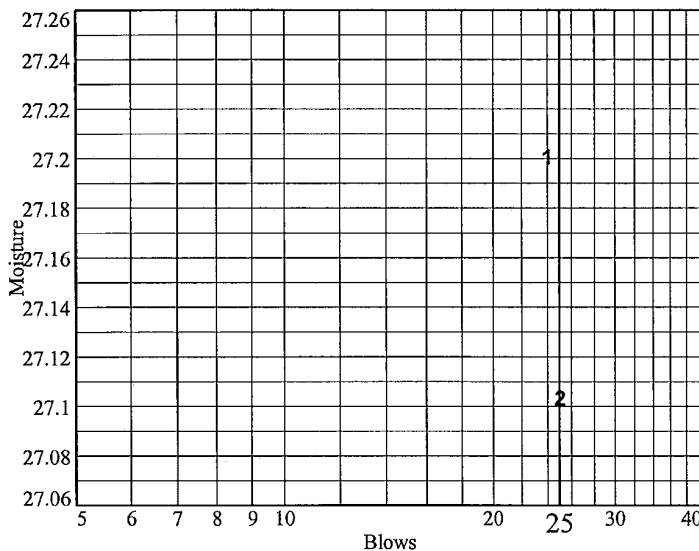
AASHTO: A-2-6(0)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	26.72	29.81				
Dry+Tare	24.31	26.75				
Tare	15.45	15.46				
# Blows	24	25				
Moisture	27.2	27.1				



Liquid Limit= 27
 Plastic Limit= 13
 Plasticity Index= 14
 Natural Moisture= 16.4
 Liquidity Index= 0.2

Plastic Limit Data

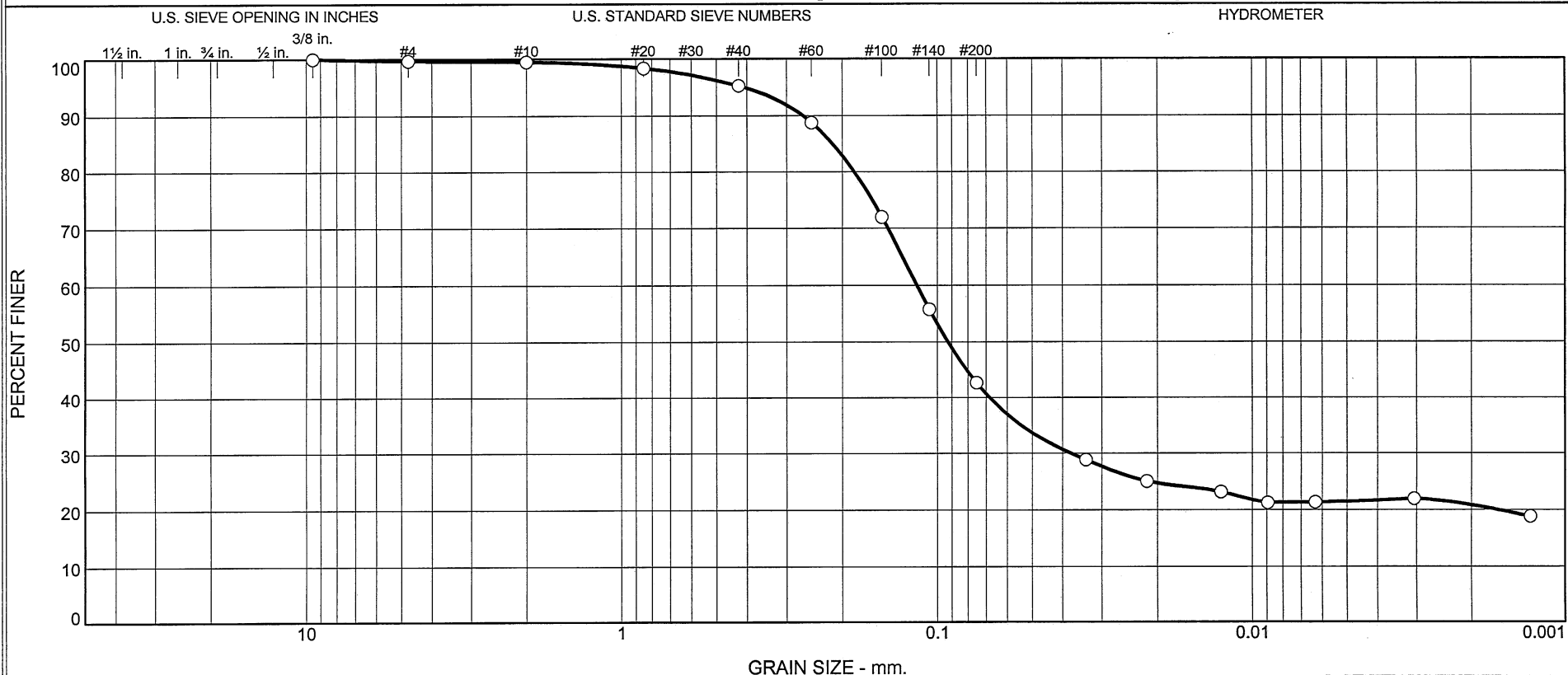
Run No.	1	2	3	4
Wet+Tare	22.02	17.66		
Dry+Tare	21.30	16.94		
Tare	15.69	11.09		
Moisture	12.8	12.3		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
121.58	105.46	6.94	16.4

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.3	0.2	4.2	52.6	21.2	21.5

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-42	289.3-290.8'	3/4/09	SC	Light Gray Clayey SAND	23.0	28	11

Client Bechtel		MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		
		Raleigh, North Carolina	

Tested By: CS Checked By: BS DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 289.3-290.8'

Sample Number: SS-42

Material Description: Light Gray Clayey SAND

Date: 3/4/09

Natural Moisture: 23.0

Liquid Limit: 28

Plastic Limit: 11

USCS Class.: SC

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
274.29	0.00	0.00	3/8"	0.00	100.0
			#4	0.92	99.7
			#10	1.47	99.5
52.20	0.00	0.00	#20	0.58	98.4
			#40	2.21	95.3
			#60	5.62	88.8
			#100	14.45	71.9
			#140	22.96	55.7
			#200	29.81	42.7

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.5

Weight of hydrometer sample = 52.20

Hygroscopic moisture correction:

Moist weight and tare = 18.20

Dry weight and tare = 18.17

Tare weight = 5.71

Hygroscopic moisture = 0.2%

Table of composite correction values:

Temp., deg. C: 10.6 28.4

Comp. corr.: -9.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.3	21.0	15.3	0.0134	22.0	12.7	0.0337	28.8
5.00	20.3	19.0	13.3	0.0134	20.0	13.0	0.0216	25.1
15.00	20.3	18.0	12.3	0.0134	19.0	13.2	0.0126	23.2
30.00	20.3	17.0	11.3	0.0134	18.0	13.3	0.0089	21.3
60.00	20.4	17.0	11.3	0.0134	18.0	13.3	0.0063	21.4
250.00	21.4	17.0	11.6	0.0132	18.0	13.3	0.0031	22.0
1440.00	20.9	15.5	10.0	0.0133	16.5	13.6	0.0013	18.8

MACTEC Engineering and Consulting, Inc.

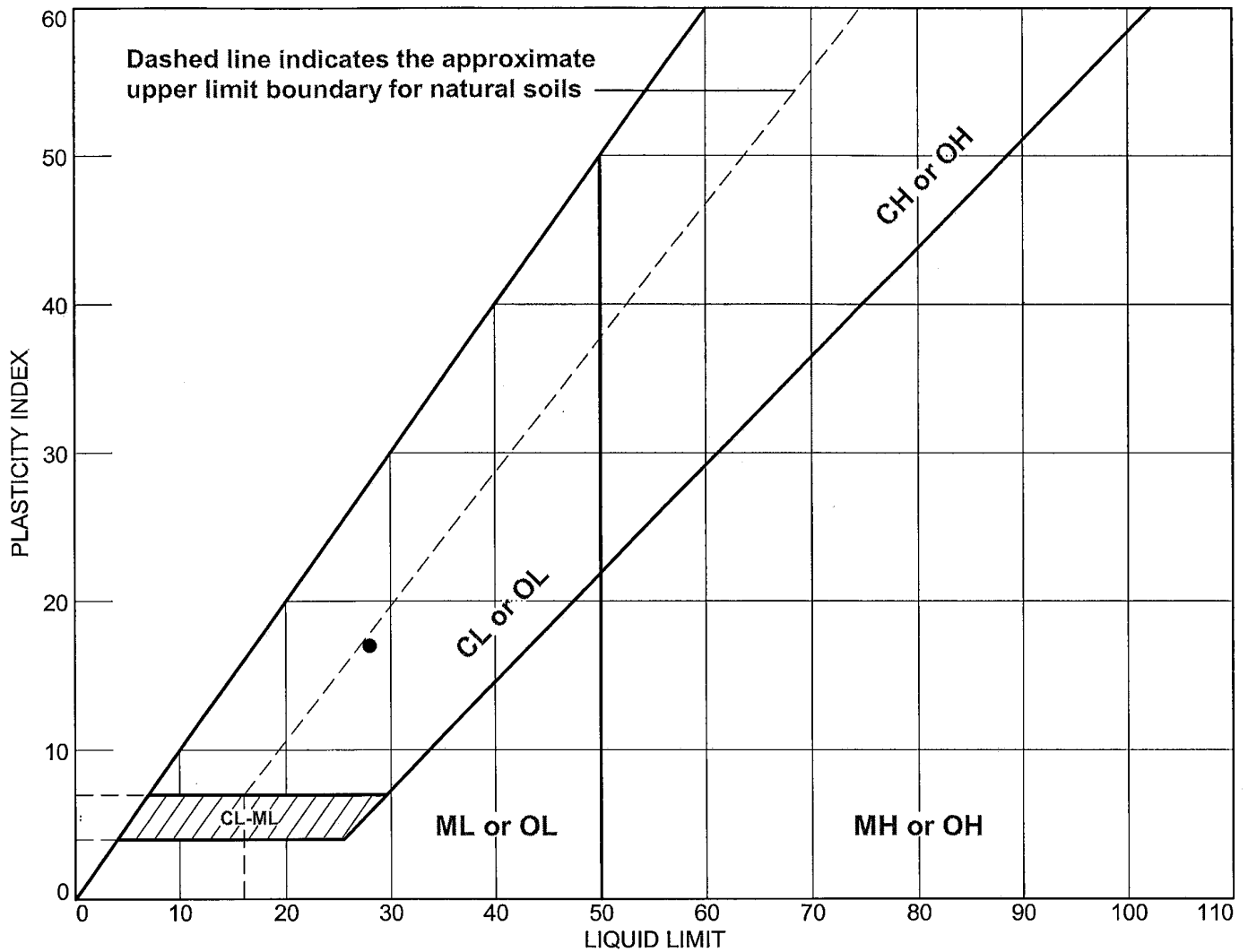
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.3	0.3	0.2	4.2	52.6	57.0	21.2	21.5	42.7

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
		0.0016	0.0376	0.0926	0.1163	0.1838	0.2149	0.2662	0.4096

Fineness Modulus
0.41

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3270A	SS-42	289.3-290.8'	23.0	11	28	17	SC

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 289.3-290.8'

Sample Number: SS-42

Material Description: Light Gray Clayey SAND

USCS: SC

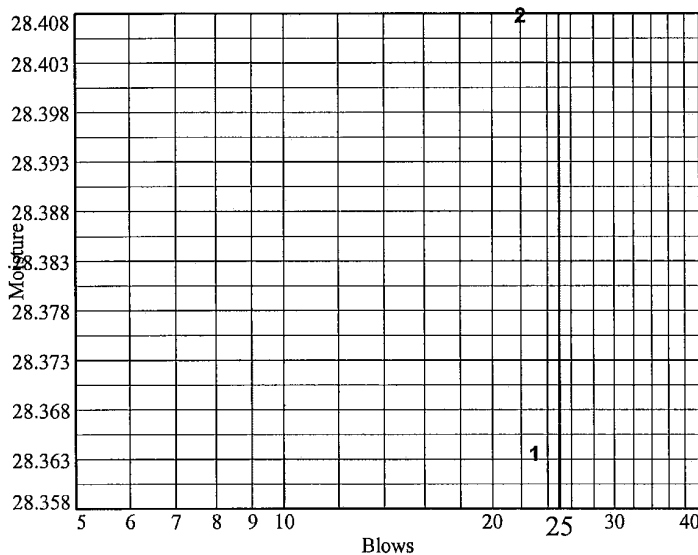
AASHTO: A-6(3)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	26.06	27.80				
Dry+Tare	23.72	25.07				
Tare	15.47	15.46				
# Blows	23	22				
Moisture	28.4	28.4				



Liquid Limit= 28
 Plastic Limit= 11
 Plasticity Index= 17
 Natural Moisture= 23.0
 Liquidity Index= 0.7

Plastic Limit Data

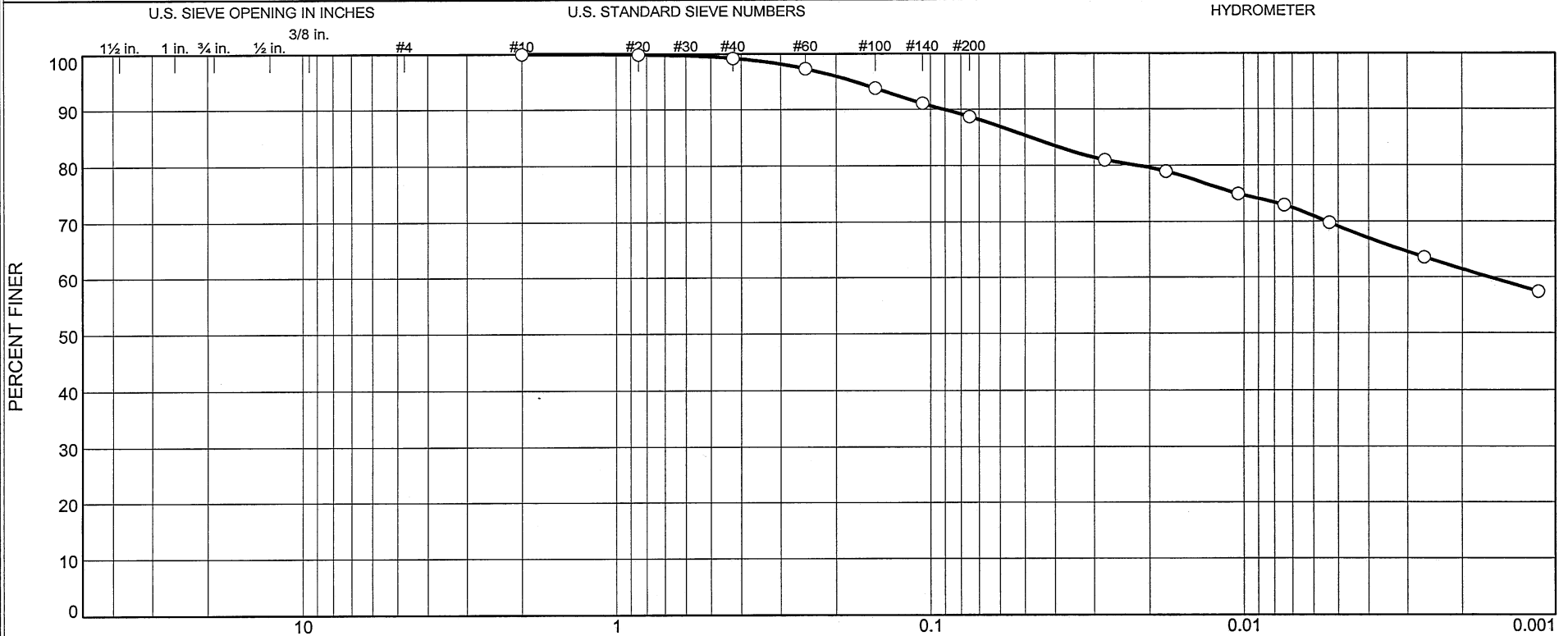
Run No.	1	2	3	4
Wet+Tare	18.19	22.34		
Dry+Tare	17.48	21.65		
Tare	11.35	15.43		
Moisture	11.6	11.1		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
115.24	94.97	6.74	23.0

MACTEC Engineering and Consulting, Inc.

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.8	10.5	19.6	69.1

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3270A	SS-43	299.3-300.8'	3/4/09	CH	Light Gray Fat CLAY	25.8	74	25

Client Bechtel		MACTEC Engineering and Consulting, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		
		Raleigh, North Carolina	

Tested By: CS

Checked By: BS

DSC 5-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 299.3-300.8'

Sample Number: SS-43

Material Description: Light Gray Fat CLAY

Date: 3/4/09

Natural Moisture: 25.8

Liquid Limit: 74

Plastic Limit: 25

USCS Class.: CH

Testing Remarks: Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
194.33	0.00	0.00	#10	0.00	100.0
50.23	0.00	0.00	#20	0.05	99.9
			#40	0.40	99.2
			#60	1.34	97.3
			#100	3.10	93.8
			#140	4.49	91.1
			#200	5.69	88.7

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 50.23

Hygroscopic moisture correction:

Moist weight and tare = 18.94

Dry weight and tare = 18.68

Tare weight = 5.66

Hygroscopic moisture = 2.0%

Table of composite correction values:

Temp., deg. C: 10.6 28.4

Comp. corr.: -9.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.4	46.0	40.3	0.0134	47.0	8.6	0.0277	80.9
5.00	20.4	45.0	39.3	0.0134	46.0	8.8	0.0177	78.9
15.00	20.4	43.0	37.3	0.0134	44.0	9.1	0.0104	74.9
30.00	20.4	42.0	36.3	0.0134	43.0	9.2	0.0074	72.9
60.00	20.2	40.5	34.7	0.0134	41.5	9.5	0.0053	69.8
250.00	21.4	37.0	31.6	0.0132	38.0	10.1	0.0027	63.5
1440.00	21.1	34.0	28.5	0.0133	35.0	10.6	0.0011	57.3

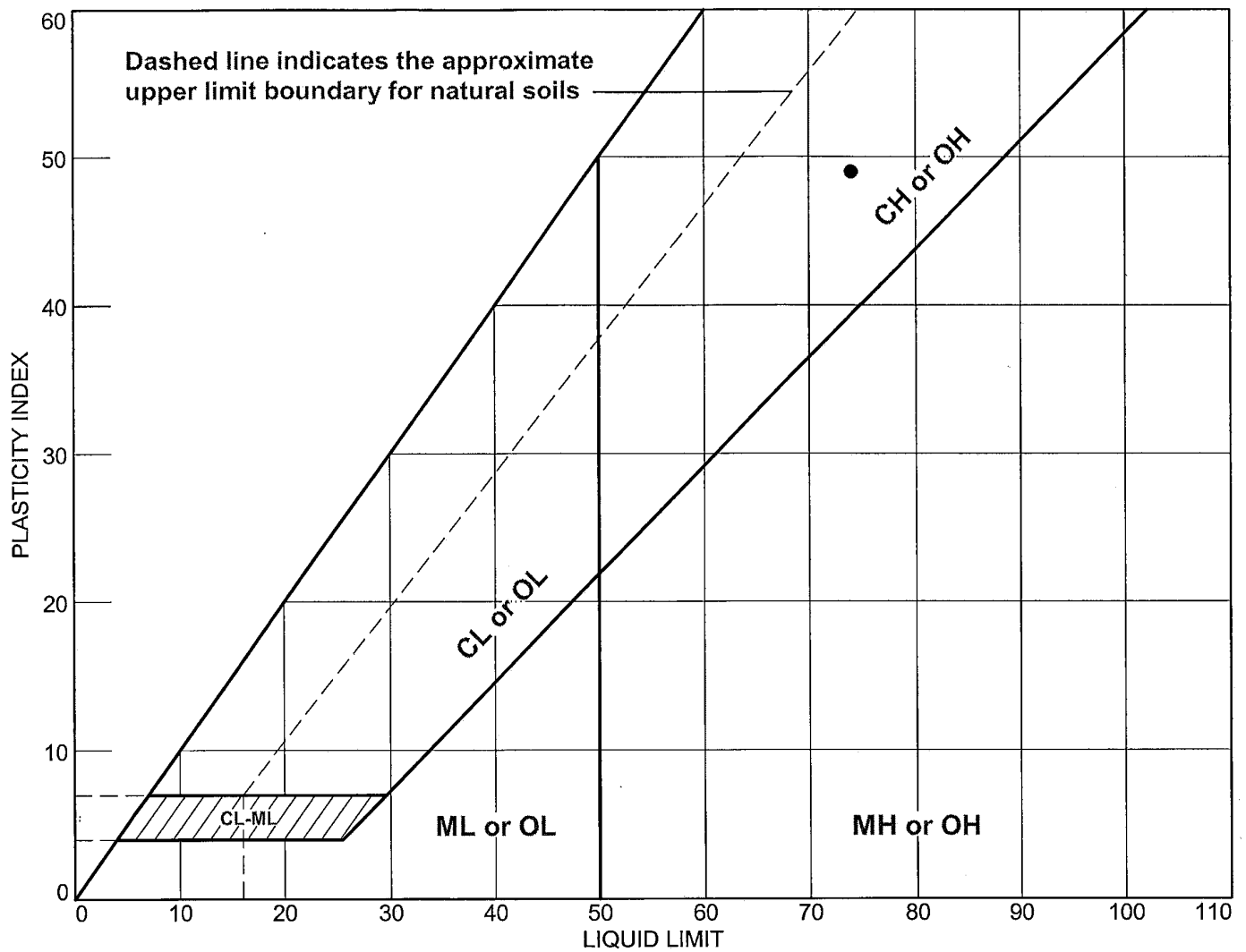
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.8	10.5	11.3	19.6	69.1	88.7

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
					0.0017	0.0223	0.0482	0.0909	0.1744

Fineness Modulus
0.08

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-3270A	SS-43	299.3-300.8'	25.8	25	74	49	CH

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 5-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3270A

Depth: 299.3-300.8'

Sample Number: SS-43

Material Description: Light Gray Fat CLAY

USCS: CH

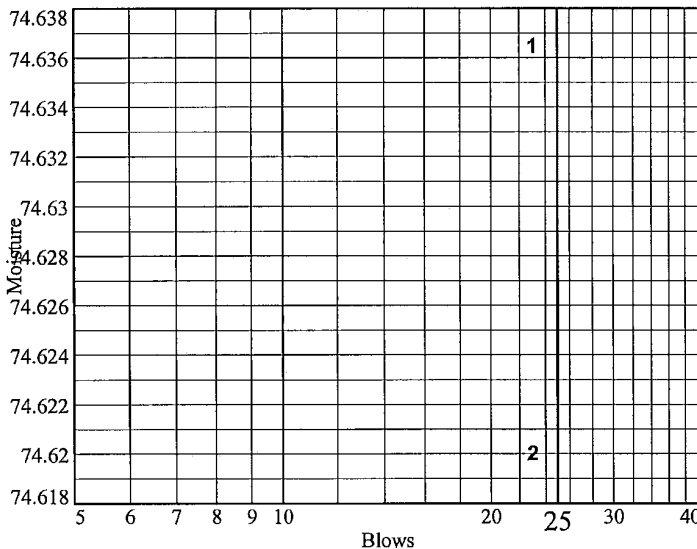
AASHTO: A-7-6(49)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	26.24	26.98				
Dry+Tare	21.62	22.07				
Tare	15.43	15.49				
# Blows	23	23				
Moisture	74.6	74.6				



Liquid Limit= 74
 Plastic Limit= 25
 Plasticity Index= 49
 Natural Moisture= 25.8
 Liquidity Index= 0.0

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.61	22.25			
Dry+Tare	20.39	20.89			
Tare	15.48	15.47			
Moisture	24.8	25.1			

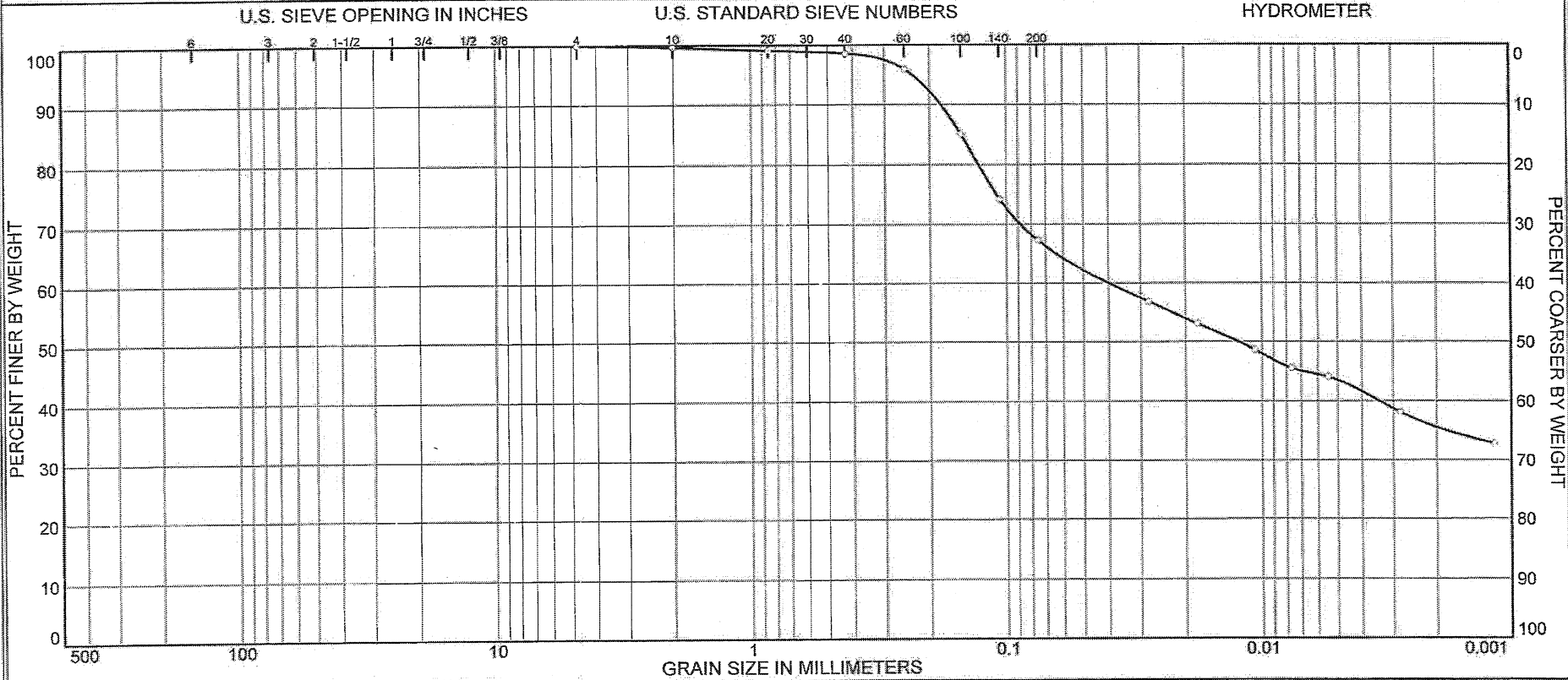
Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
114.85	92.71	7.01	25.8

MACTEC Engineering and Consulting, Inc.

Soil Index Test Results – Undisturbed Samples

Particle Size Distribution Report (ASTM D422-63 (2007))



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.3	1.1	31.3	23.7	43.6

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-3101UD	UD-1	8.0-10.0 ft	2/18/09	CL	Light Gray Sandy Lean CLAY	16.1	38	16

Client <u>Bechtel</u>	MACTEC ENGINEERING AND CONSULTING, INC.	Tested By: EH Reviewed By: JW Specific Gravity = 2.71 (ASTM D854-06) JW 5/5/09
Project <u>Exelon Texas COL Project Supplemental Investigation</u>		
Project No. <u>6468-07-1777</u> Lab No. <u>9568</u>		

JSC
5-5-09

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL Project Supplemental Investigation
Project Number: 6468-07-1777

Sample Data

Source: B-3101UD
Sample No.: UD-1
Elev. or Depth: 8.0-10.0 ft Sample Length(in./cm.): 9568
Location: B-3101UD
Description: Light Gray Sandy Lean CLAY
Date: 2/18/09 Natural Moisture: 16.1
Liquid Limit: 38 Plastic Limit: 16 USCS Class.: CL
Testing Remarks: Tested By: EH Reviewed By: JW

Specific Gravity = 2.71 (ASTM D854-06)

Mechanical Analysis Data

 Initial
Dry sample and tare= 65.73
Tare = 0.00
Dry sample weight = 65.73
Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	0.20	99.7
# 20	0.60	99.1
# 40	0.94	98.6
# 60	2.69	95.9
# 100	9.89	85.0
# 140	16.93	74.2
# 200	21.52	67.3

Hydrometer Analysis Data

Separation sieve is #200
Percent -#200 based upon complete sample= 67.3
Weight of hydrometer sample: 44.21
Calculated biased weight= 65.69
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only=
Specific gravity of solids= 2.71
Specific gravity correction factor= 0.987
Hydrometer type: 152H

Effective depth $L = 16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	23.3	42.5	37.8	0.0129	42.5	9.3	0.0278	56.9
5.00	23.3	40.0	35.3	0.0129	40.0	9.7	0.0180	53.1
15.00	23.3	37.0	32.3	0.0129	37.0	10.2	0.0106	48.6
30.00	23.3	35.0	30.3	0.0129	35.0	10.6	0.0076	45.6

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
60.00	23.3	34.0	29.3	0.0129	34.0	10.7	0.0054	44.1
240.00	23.3	30.0	25.3	0.0129	30.0	11.4	0.0028	38.1
1440.00	23.3	26.5	21.8	0.0129	26.5	11.9	0.0012	32.8

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

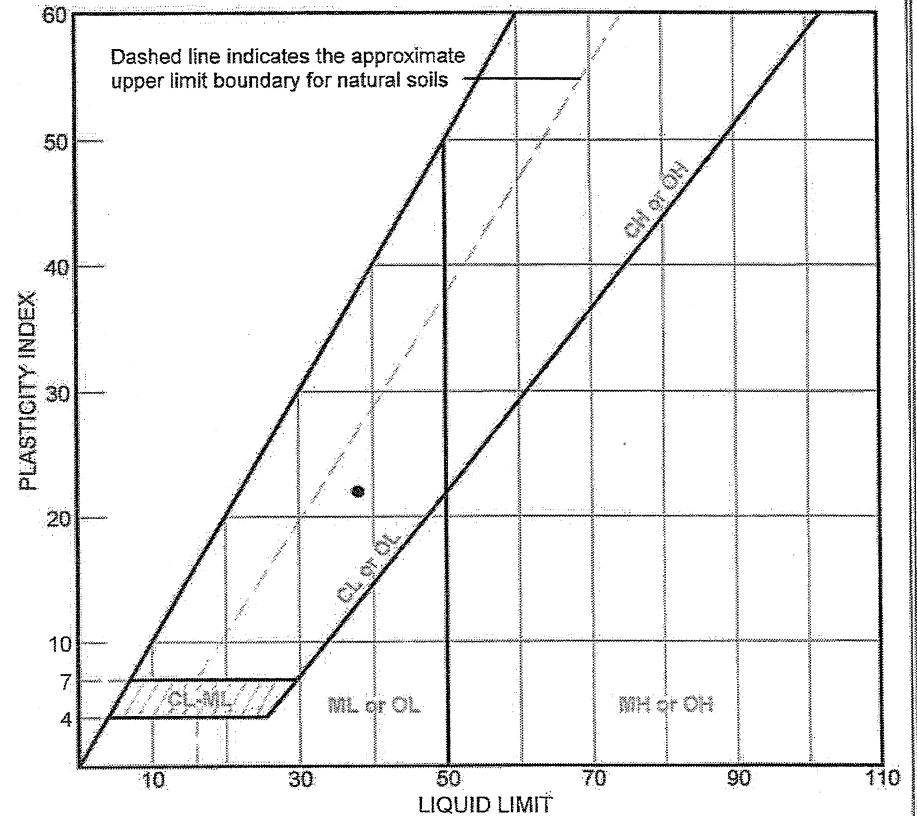
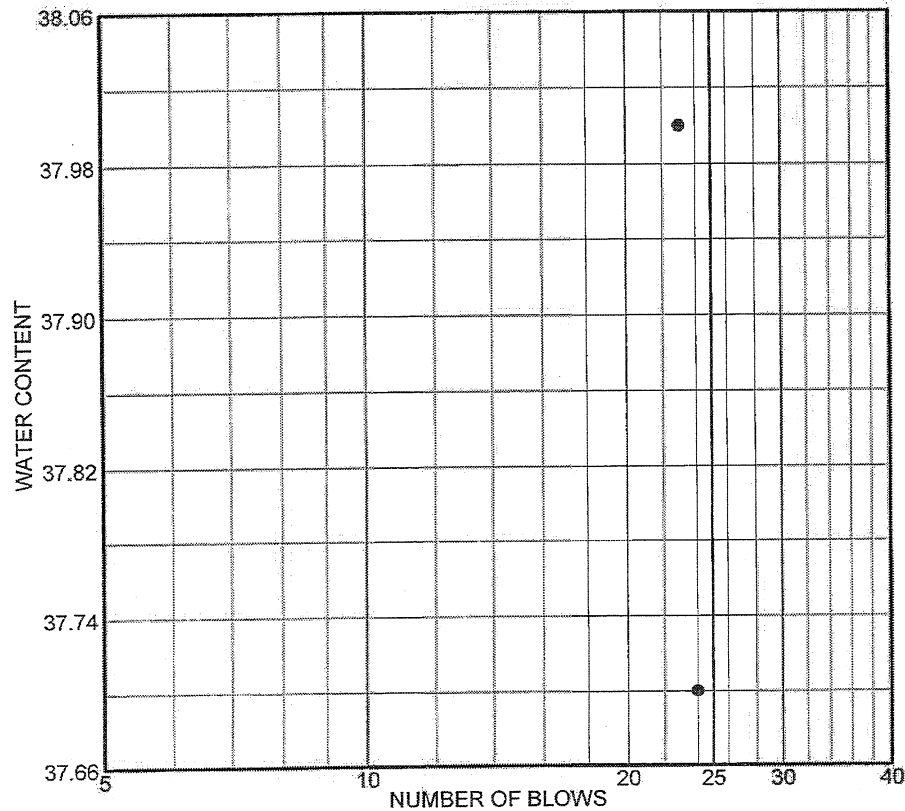
% COBBLES = % GRAVEL =

% SAND = 32.7 (% coarse = 0.3 % medium = 1.1 % fine = 31.3)

% SILT = 23.7 % CLAY = 43.6

D₈₅= 0.15 D₆₀= 0.04 D₅₀= 0.01

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PI
B-3101UD	UD-1	8.0-10.0 ft	2/18/09	CL	Light Gray Sandy Lean CLAY	16.1	38	22

Client Bechtel
 Project Exelon Texas COL Project Supplemental Investigation
 Project No. 6468-07-1777 Lab No. 9568

**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

• Tested By: EH Reviewed By: JW

JW 5/5/09

DSC
 5-5-09

MACTEC ENGINEERING AND CONSULTING, INC.

REPORT OF THE STANDARD TEST METHOD FOR SPECIFIC GRAVITY OF SOILS Performed in General Accordance with ASTM D 854-06 (Method B)

PROJECT NAME: EXELON TEXAS COL PROJECT SUPPLEMENTAL INVESTIGATION

PROJECT NUMBER: 6468-07-1777

DATE: 4/21/09

SAMPLE IDENTIFICATION: B-3101UD, UD-1 @ 8.0-10.0 Ft.

(A) Mass of oven-dried soil, grams:	36.49
(B) Mass of pycnometer filled with water at test temperature (T), grams:	363.66
(C) Mass of pycnometer, water and soil, grams:	386.72
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	24.7
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.717
(F) Correction factor:	0.99892
(G x F) SPECIFIC GRAVITY @ 20°C:	2.714

MATERIAL TESTED:

☒ X

- # 4

☐ - # 10

PREPARATION METHOD:

☒ X

DRY

☐ WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100 %

Lean CLAY (CL)

Sandy

DSC
5-5-09

EQUIPMENT USED

SCALES : 418

OVEN : 144

THERMOMETER : 2759

PYCNOMETER : 2184

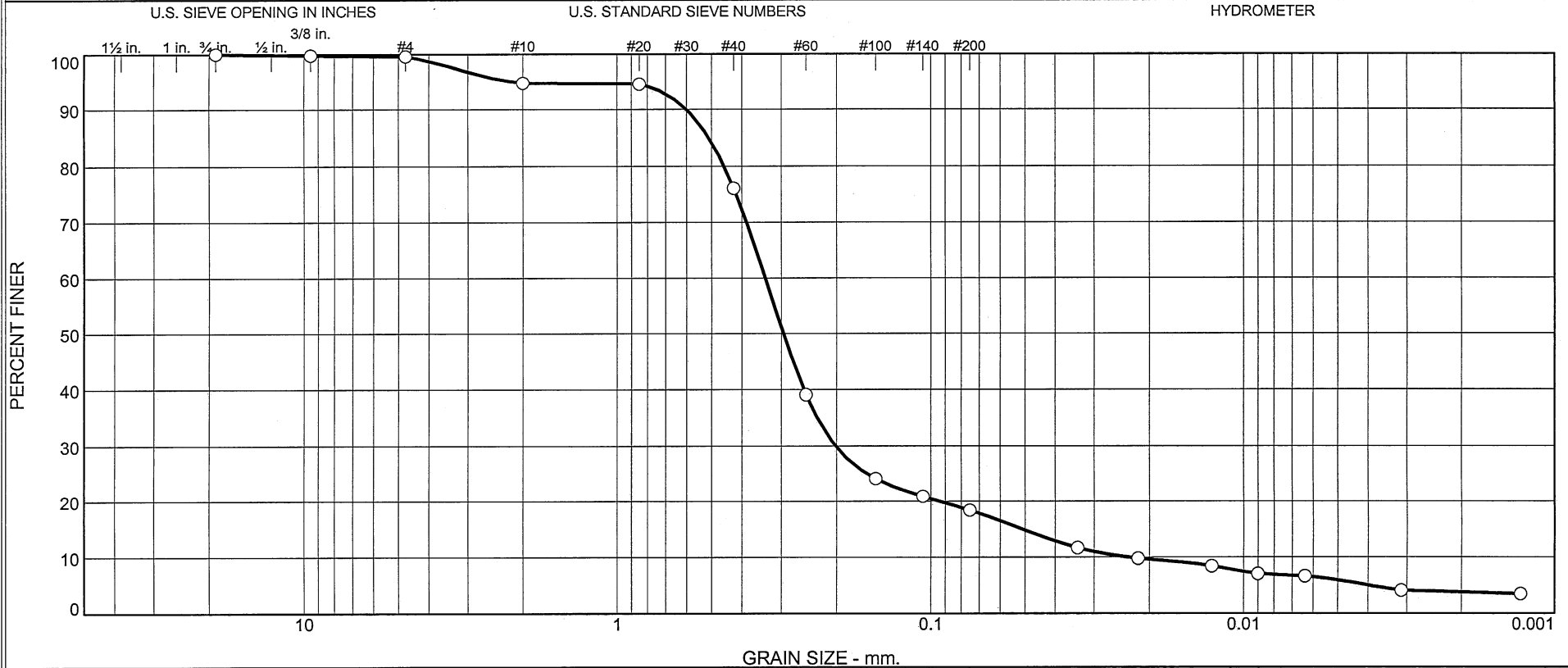
TESTED BY: EH

\\Test Reports\\Soils\\SPECIFIC GRAVITY(ref).xls

REVIEWED BY: J. Wang

JW 5/5/09
DSC
5-5-09

Particle Size Distribution Report ASTM D 422-63(2007)



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.4	4.9	18.7	57.6	12.5	5.9

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-3101UD	UD6	100-102.5'	2/19/09	SM	Very Pale Brown Silty SAND	ND	17	16

Client Betchel		MACTEC Engineering and Consulting, Inc.	Raleigh, North Carolina	○ ND = Not Determined Specific gravity is assumed
Project Exelon Texas COL Project - Supplemental				
Investigation, including UHS				
Project No. 6468071777	Figure NA			

Tested By: CS Checked By: BS DSC 8-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

7/20/2009

Client: Betchel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3101UD

Depth: 100-102.5'

Sample Number: UD6

Material Description: Very Pale Brown Silty SAND

Date: 2/19/09

Natural Moisture: ND

Liquid Limit: 17

Plastic Limit: 16

USCS Class.: SM

Testing Remarks: ND = Not Determined

Specific gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
647.86	0.00	0.00	3/4"	0.00	100.0
			3/8"	1.48	99.8
			#4	2.88	99.6
100.95	0.00	0.00	#10	4.92	94.7
			#20	5.08	94.5
			#40	23.84	76.0
			#60	61.32	39.1
			#100	76.49	24.1
			#140	79.76	20.9
			#200	82.30	18.4

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 94.7

Weight of hydrometer sample = 100.95

Hygroscopic moisture correction:

Moist weight and tare = 28.05

Dry weight and tare = 28.01

Tare weight = 15.42

Hygroscopic moisture = 0.3%

Table of composite correction values:

Temp., deg. C: 12.5 29.6

Comp. corr.: -8.0 -4.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.1	18.5	12.5	0.0133	19.5	13.1	0.0339	11.6
5.00	21.1	16.5	10.5	0.0133	17.5	13.4	0.0217	9.8
15.00	21.3	15.0	9.1	0.0132	16.0	13.7	0.0126	8.4
30.00	21.5	13.5	7.6	0.0132	14.5	13.9	0.0090	7.1
60.00	21.5	13.0	7.1	0.0132	14.0	14.0	0.0064	6.6
250.00	22.9	10.0	4.4	0.0130	11.0	14.5	0.0031	4.1
1440.00	24.3	9.0	3.8	0.0128	10.0	14.7	0.0013	3.5

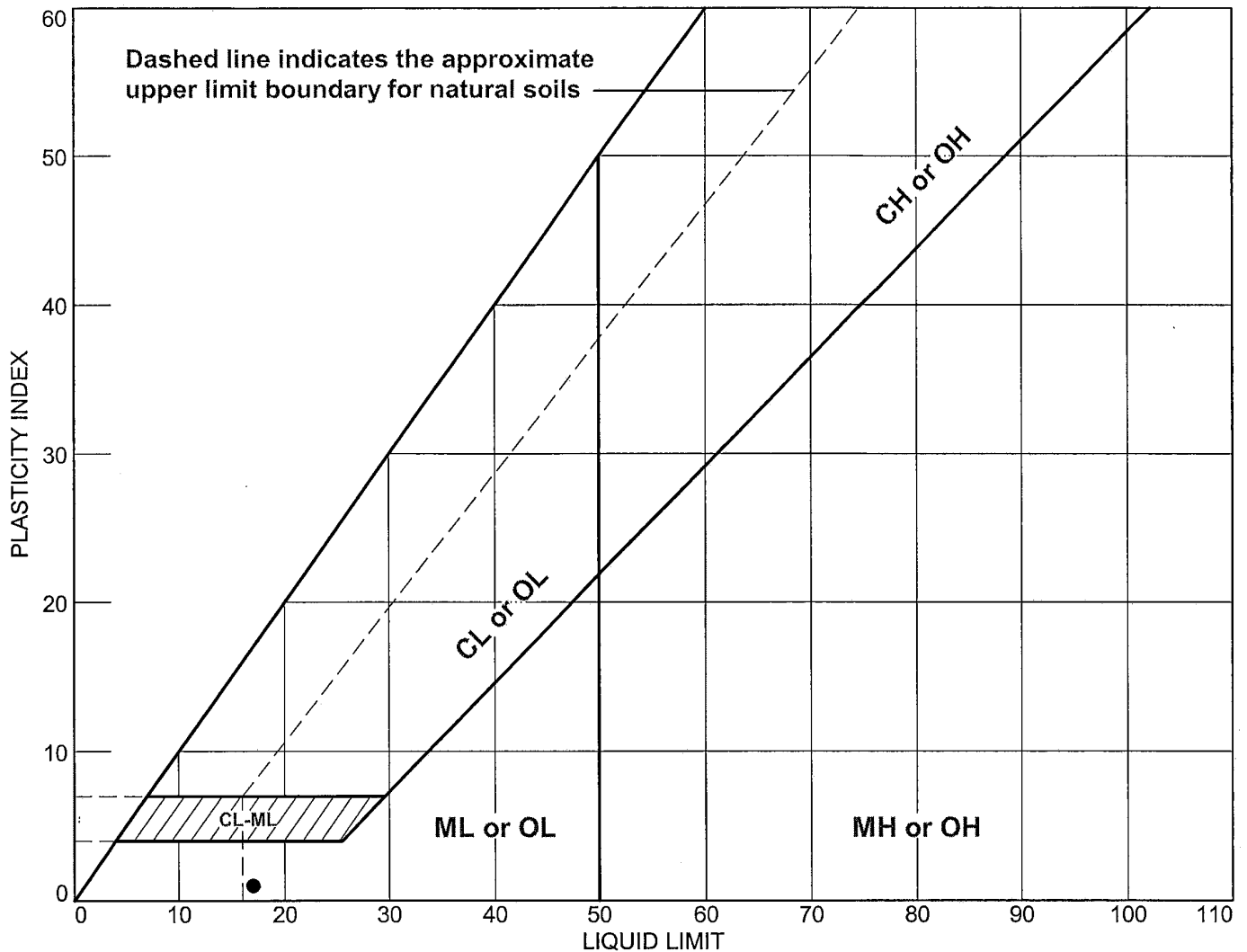
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.4	0.4	4.9	18.7	57.6	81.2	12.5	5.9	18.4

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
0.0235	0.0512	0.0934	0.2016	0.2955	0.3377	0.4566	0.5110	0.6011	2.2071

Fineness Modulus	C _u	C _c
1.46	14.36	5.12

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-3101UD	UD6	100-102.5'	ND	16	17	1	SM

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Betchel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: BS

DSC 8-4-09

LIQUID AND PLASTIC LIMIT TEST DATA

7/20/2009

Client: Betchel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3101UD

Depth: 100-102.5'

Sample Number: UD6

Material Description: Very Pale Brown Silty SAND

USCS: SM

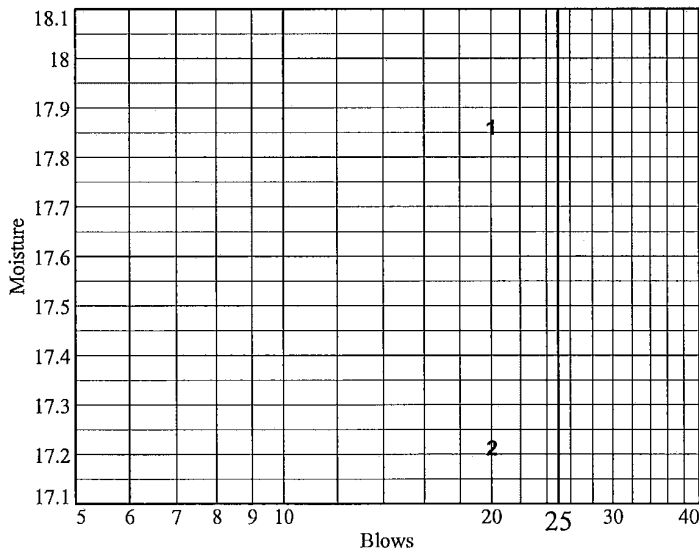
AASHTO: A-2-4(0)

Tested by: CS

Checked by: BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	36.37	33.31				
Dry+Tare	33.23	30.69				
Tare	15.65	15.47				
# Blows	20	20				
Moisture	17.9	17.2				



Liquid Limit= 17
 Plastic Limit= 16
 Plasticity Index= 1
 Natural Moisture= ND

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	25.63	35.36			
Dry+Tare	23.69	32.68			
Tare	11.16	15.53			
Moisture	15.5	15.6			

Client Bechtel		MACTEC ENGINEERING AND CONSULTING, INC.	☒ Tested By: EH Reviewed By: JW Specific Gravity = 2.72 (ASTM D854-06)
Project Exelon Texas COL Project Supplemental Investigation			
Project No. 6468-07-1777	Lab No. 9569		<i>JW 5/5/09</i>

DSC
5-5-09

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL Project Supplemental Investigation
Project Number: 6468-07-1777

Sample Data

Source: B-3101UD
Sample No.: UD-7
Elev. or Depth: 115.0-117.5 ft Sample Length(in./cm.): 9569
Location: B-3101UD
Description: Light Gray mottled Light Yellowish Brown Fat CLAY with Sand
Date: 2/19/09 Natural Moisture: 17.6
Liquid Limit: 50 Plastic Limit: 18 USCS Class.: CH
Testing Remarks: Tested By: EH Reviewed By: JW

Specific Gravity = 2.72 (ASTM D854-06)

Mechanical Analysis Data

Initial
Dry sample and tare= 63.21
Tare = 0.00
Dry sample weight = 63.21
Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	1.24	98.0
# 20	2.02	96.8
# 40	2.38	96.2
# 60	3.34	94.7
# 100	7.29	88.5
# 140	12.56	80.1
# 200	16.38	74.1

Hydrometer Analysis Data

Separation sieve is #200
Percent -#200 based upon complete sample= 74.1
Weight of hydrometer sample: 46.83
Calculated biased weight= 63.20
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only=
Specific gravity of solids= 2.72
Specific gravity correction factor= 0.985
Hydrometer type: 152H
Effective depth $L = 16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	23.3	45.0	40.3	0.0128	45.0	8.9	0.0271	62.9
5.00	23.3	42.0	37.3	0.0128	42.0	9.4	0.0176	58.2
15.00	23.3	40.0	35.3	0.0128	40.0	9.7	0.0103	55.1
30.00	23.3	38.0	33.3	0.0128	38.0	10.1	0.0074	52.0

Elapsed time, min	Temp, Actual deg C reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer	
60.00	23.3	37.0	32.3	0.0128	37.0	10.2	0.0053	50.4
250.00	23.3	35.5	30.8	0.0128	35.5	10.5	0.0026	48.1
1440.00	23.3	34.0	29.3	0.0128	34.0	10.7	0.0011	45.7

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

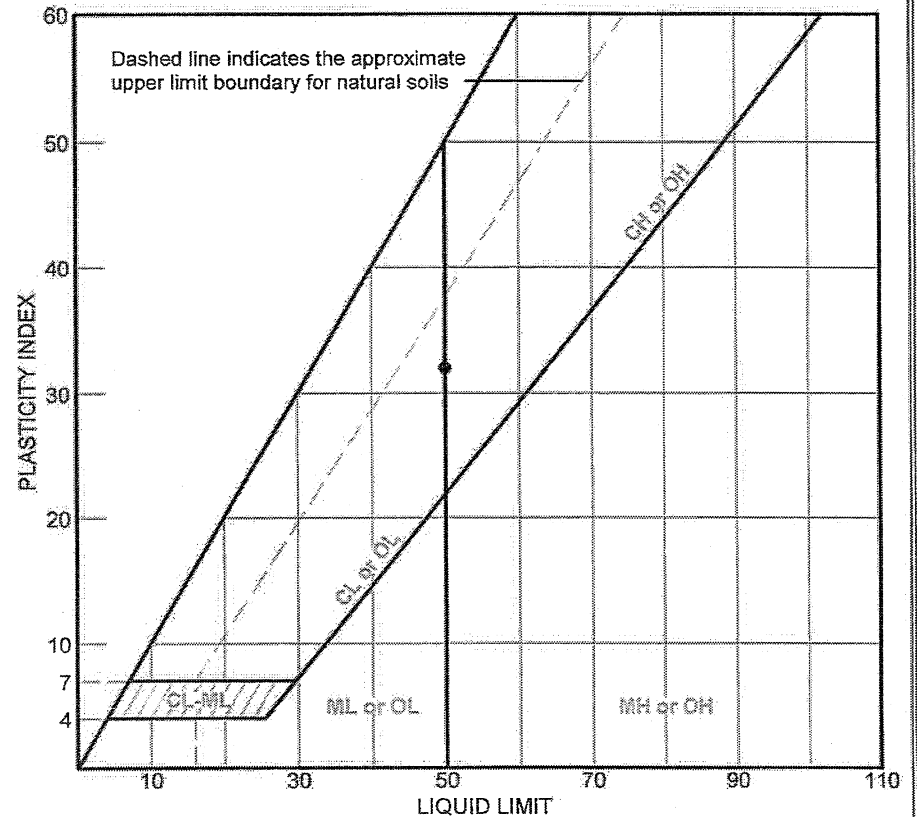
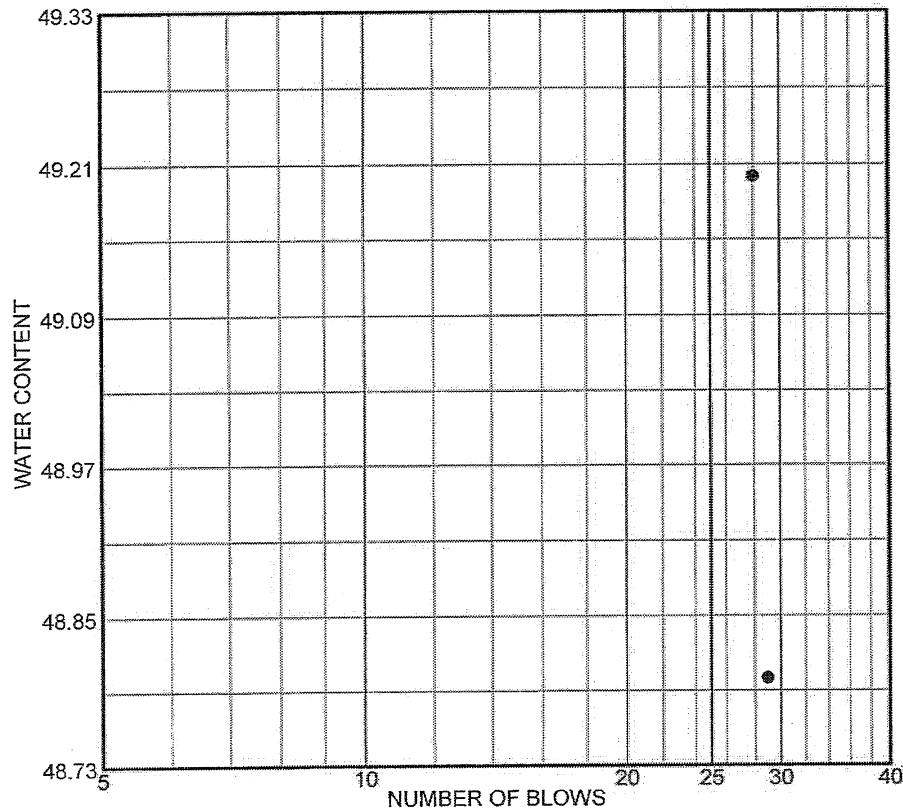
% COBBLES = % GRAVEL =

% SAND = 25.9 (% coarse = 2.0 % medium = 1.8 % fine = 22.1)

% SILT = 23.9 % CLAY = 50.2

D₈₅= 0.13 D₆₀= 0.02 D₅₀= 0.00

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PI
B-3101UD	UD-7	115.0-117.5 ft	2/19/09	CH	Light Gray mottled Light Yellowish Brown Fat CLAY with Sand	17.6	50	32

Client Bechtel
 Project Exelon Texas COL Project Supplemental Investigation
 Project No. 6468-07-1777 Lab No. 9569

**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

• Tested By: EH Reviewed By: JW

SW 5/15/09

DSC
 5-5-09

MACTEC ENGINEERING AND CONSULTING, INC.

REPORT OF THE STANDARD TEST METHOD FOR SPECIFIC GRAVITY OF SOILS Performed in General Accordance with ASTM D 854-06 (Method B)

PROJECT NAME: EXELON TEXAS COL PROJECT SUPPLEMENTAL INVESTIGATION

PROJECT NUMBER: 6468-07-1777

DATE: 4/21/09

SAMPLE IDENTIFICATION: B-3101UD, UD-7 @ 115.0-117.5 Ft.

(A) Mass of oven-dried soil, grams:	36.61
(B) Mass of pycnometer filled with water at test temperature (T), grams:	348.18
(C) Mass of pycnometer, water and soil, grams:	371.32
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	24.7
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.718
(F) Correction factor:	0.99892
(G x F) SPECIFIC GRAVITY @ 20°C:	2.715

MATERIAL TESTED:

☒

- # 4

☐ - # 10

PREPARATION METHOD:

☒

DRY

☐ WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100 %

Fat CLAY with Sand (CH)

EQUIPMENT USED

SCALES : 418

OVEN : 144

THERMOMETER : 2759

PYCNO METER : 1956

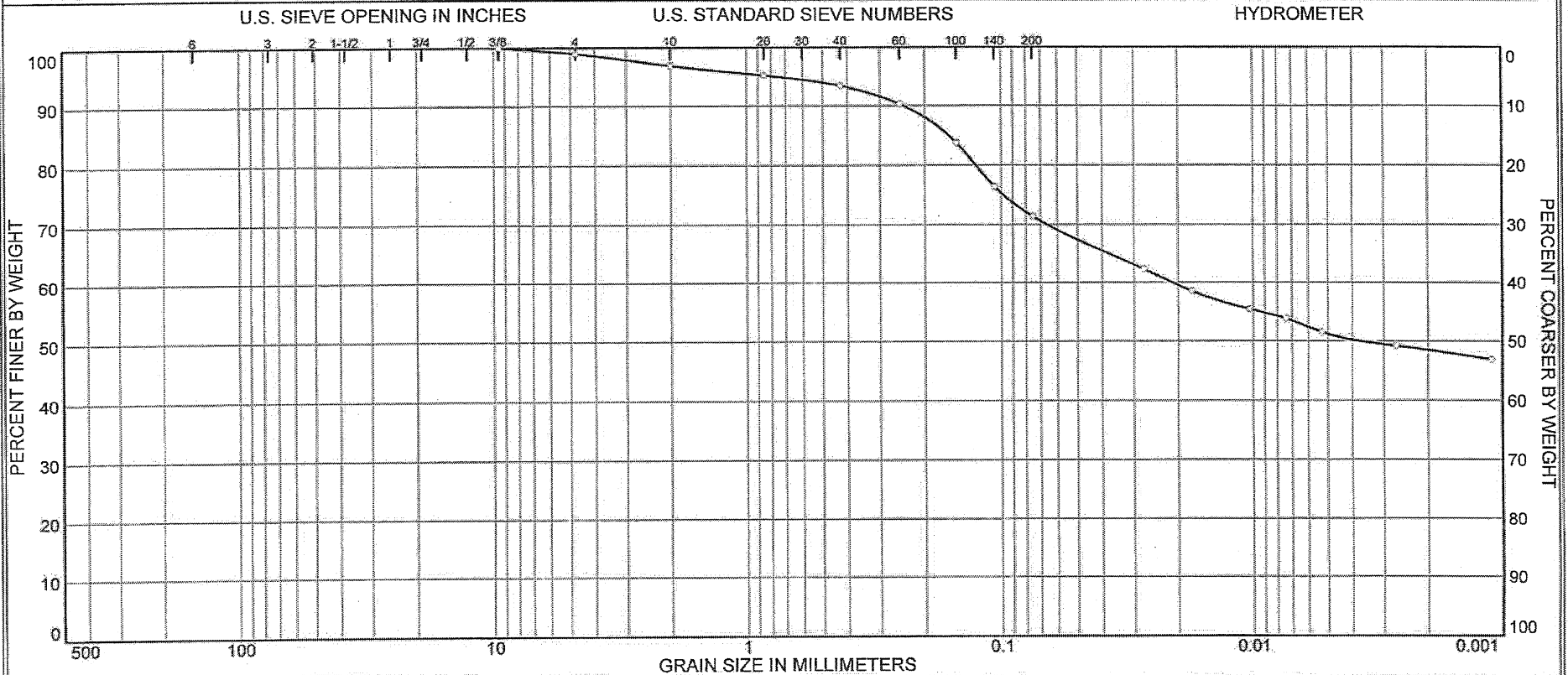
TESTED BY: EH

\\Test Reports\\Soils\\SPECIFIC GRAVITY(ref).xls

REVIEWED BY: J. Wang

DSC
5-5-09

Particle Size Distribution Report (ASTM D422-63 (2007))



Client: Bechtel
Project: Exelon Texas COL Project Supplemental Investigation
Project Number: 6468-07-1777

Source: B-3101UD
Sample No.: UD-8
Elev. or Depth: 120.0-122.0 ft Sample Length(in./cm.): 9570
Location: B-3101UD
Description: Light Gray Fat CLAY with Sand
Date: 4/21/09 Natural Moisture: 27.9
Liquid Limit: 60 Plastic Limit: 19 USCS Class.: CH
Testing Remarks: Tested By: EH Reviewed By: JW

Mechanical Analysis Data

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.66	99.0
# 10	1.96	96.9
# 20	3.04	95.2
# 40	4.23	93.4
# 60	6.21	90.3
# 100	10.44	83.7
# 140	15.10	76.4
# 200	18.27	71.4

Separation sieve is #200
Percent -#200 based upon complete sample= 71.4
Weight of hydrometer sample: 45.7
Calculated biased weight= 64.01
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only=
Specific gravity of solids= 2.70
Specific gravity correction factor= 0.989
Hydrometer type: 152H

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	23.3	45.0	40.3	0.0129	45.0	8.9	0.0273	62.3
5.00	23.3	42.5	37.8	0.0129	42.5	9.3	0.0176	58.5
15.00	23.3	40.5	35.8	0.0129	40.5	9.7	0.0104	55.4

Elapsed time, min	Temp, Actual deg C reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
30.00	23.3 39.5	34.8	0.0129	39.5	9.8	0.0074	53.8
60.00	23.3 38.0	33.3	0.0129	38.0	10.1	0.0053	51.5
240.00	23.3 36.5	31.8	0.0129	36.5	10.3	0.0027	49.2
1440.00	23.3 35.0	30.3	0.0129	35.0	10.6	0.0011	46.9

Fractional Components

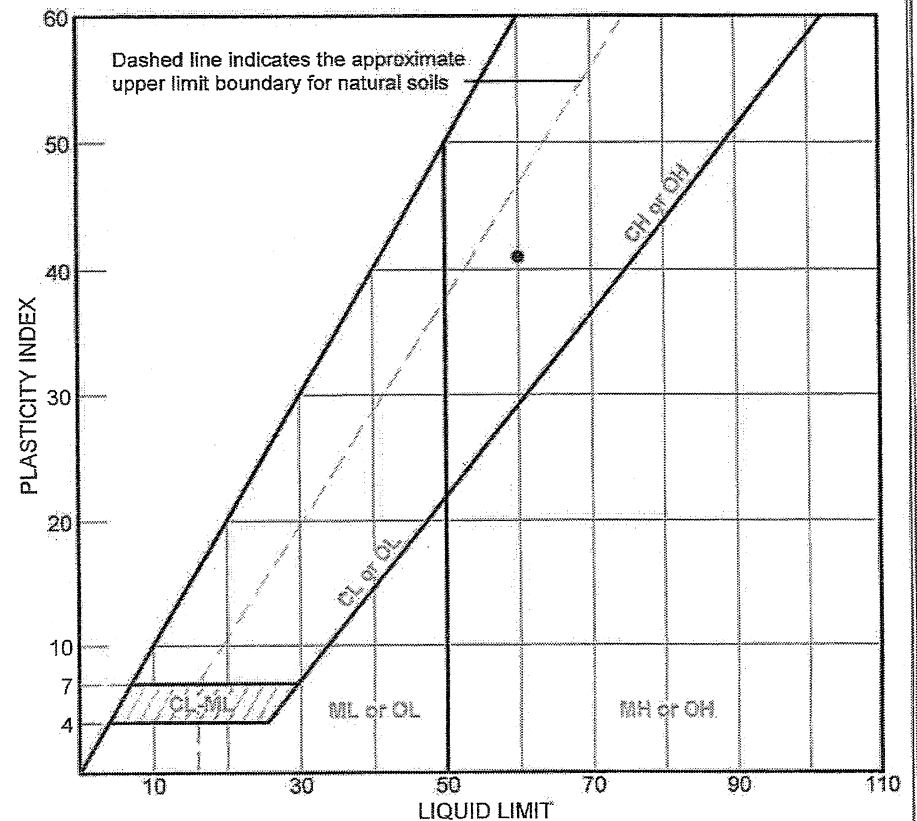
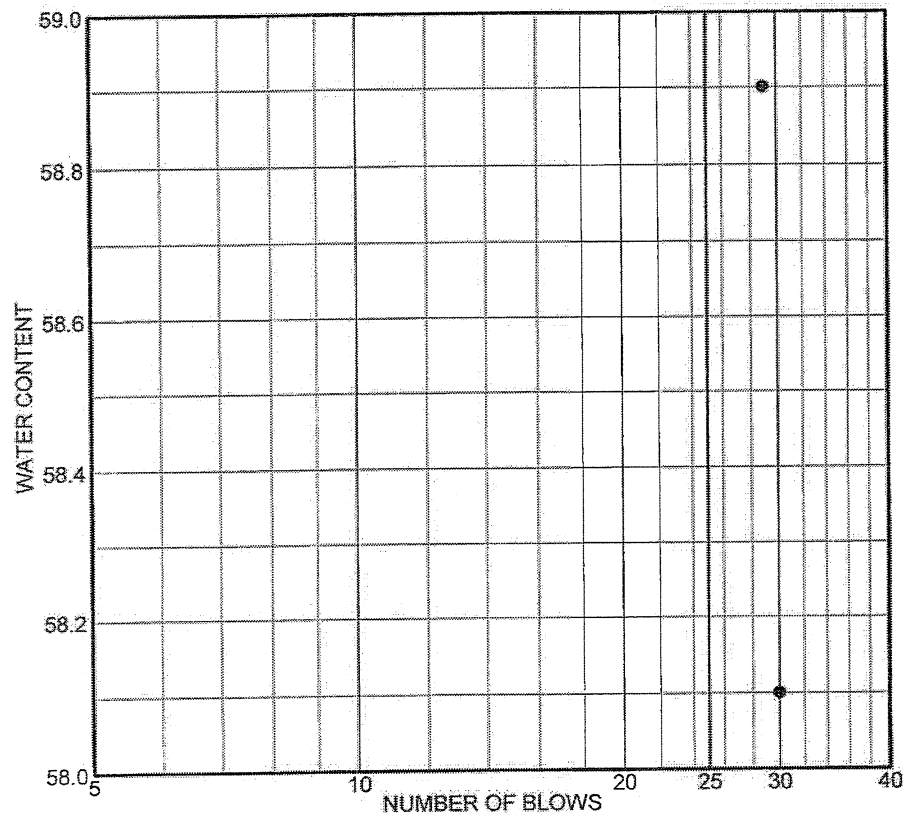
Gravel/Sand based on #4

Sand/Fines based on #200

% COBBLES =	% GRAVEL = 1.0	(% coarse =	% fine = 1.0)
% SAND = 27.6	(% coarse = 2.1	% medium = 3.5	% fine = 22.0)
% SILT = 20.2	% CLAY = 51.2		

D₈₅= 0.16 D₆₀= 0.02 D₅₀= 0.00

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PI
B-3101UD	UD-8	120.0-122.0 ft	4/21/09	CH	Light Gray Fat CLAY with Sand	27.9	60	41

Client Bechtel
 Project Exelon Texas COL Project Supplemental Investigation
 Project No. 6468-07-1777 Lab No. 9570

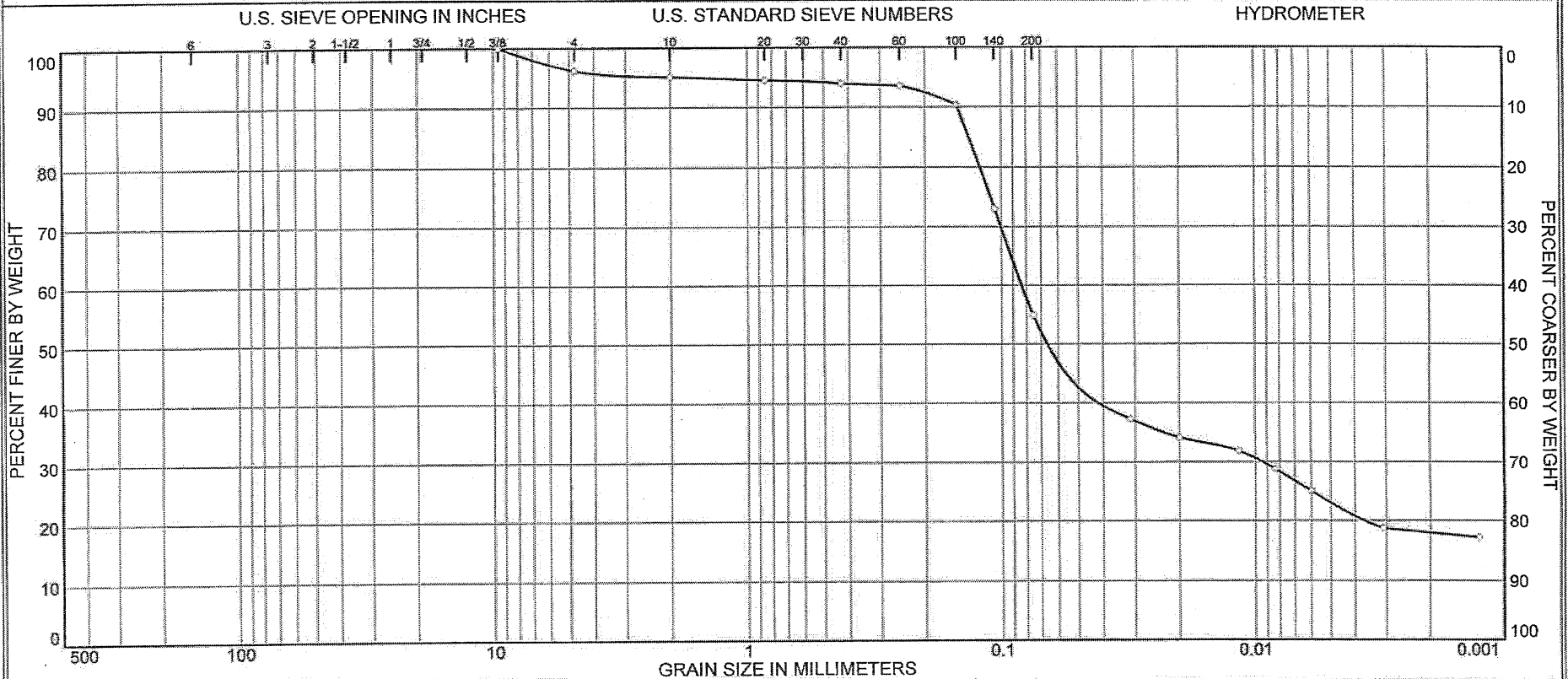
**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

• Tested By: EH Reviewed By: JW

JW 5/5/09

DSC
 5-5-09

Particle Size Distribution Report (ASTM D422-63 (2007))



GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL Project Supplemental Investigation
Project Number: 6468-07-1777

Sample Data

Source: B-3101UD
Sample No.: UD-10
Elev. or Depth: 126.0-128.5 ft Sample Length(in./cm.): 9571
Location: B-3101UD
Description: Light Gray Sandy Lean CLAY
Date: 2/20/09 Natural Moisture: 13.9
Liquid Limit: 25 Plastic Limit: 15 USCS Class.: CL
Testing Remarks: Tested by: EH Reviewed By: JW

Specific Gravity is assumed.

Mechanical Analysis Data

	Initial	
Dry sample and tare=	64.43	
Tare =	0.00	
Dry sample weight =	64.43	
Tare for cumulative weight retained=	.00	
Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	2.48	96.2
# 10	3.15	95.1
# 20	3.56	94.5
# 40	3.93	93.9
# 60	4.18	93.5
# 100	6.20	90.4
# 140	17.41	73.0
# 200	29.04	54.9

Hydrometer Analysis Data

Separation sieve is #200
Percent -#200 based upon complete sample= 54.9
Weight of hydrometer sample: 35.39
Calculated biased weight= 64.46
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only=
Specific gravity of solids= 2.7
Specific gravity correction factor= 0.989
Hydrometer type: 152H

Effective depth $L = 16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	23.1	29.0	24.3	0.0129	29.0	11.5	0.0311	37.3
5.00	23.1	27.0	22.3	0.0129	27.0	11.9	0.0199	34.2
15.00	23.1	25.5	20.8	0.0129	25.5	12.1	0.0116	31.9

Elapsed time, min	Temp, Actual deg C reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
30.00	23.1 23.5	18.8	0.0129	23.5	12.4	0.0083	28.8
60.00	23.1 21.0	16.3	0.0129	21.0	12.9	0.0060	25.0
240.00	22.8 17.0	12.2	0.0130	17.0	13.5	0.0031	18.7
1440.00	22.8 16.0	11.2	0.0130	16.0	13.7	0.0013	17.2

Fractional Components

Gravel/Sand based on #4

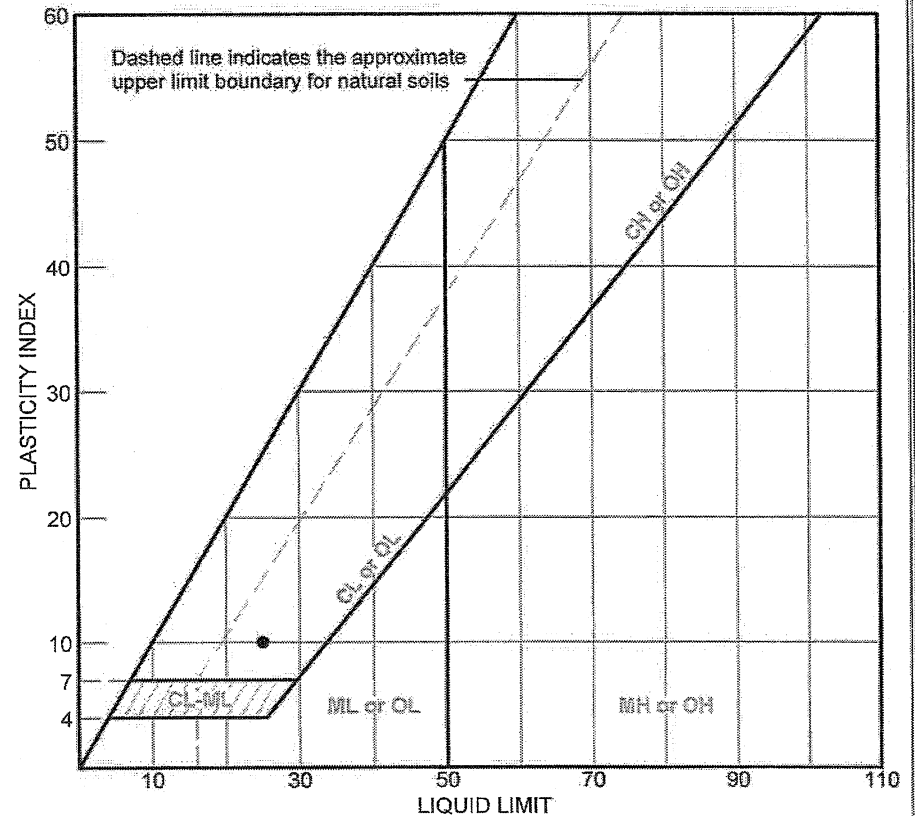
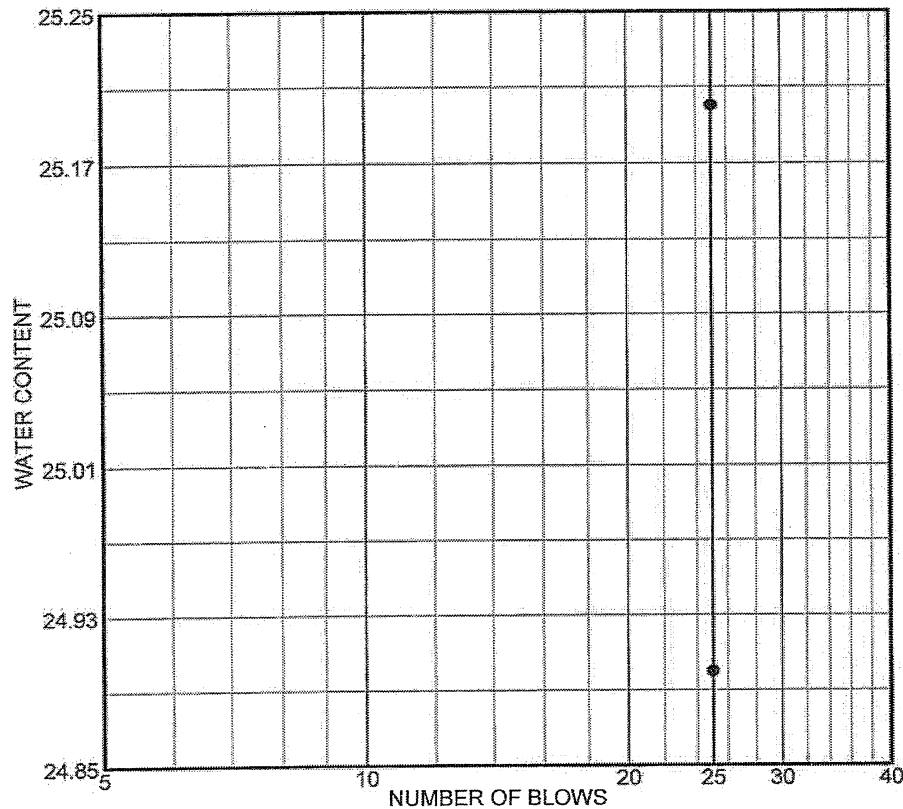
Sand/Fines based on #200

% COBBLES = % GRAVEL = 3.8 (% coarse = % fine = 3.8)
 % SAND = 41.3 (% coarse = 1.1 % medium = 1.2 % fine = 39.0)
 % SILT = 31.9 % CLAY = 23.0

D₈₅= 0.13 D₆₀= 0.08 D₅₀= 0.07

D₃₀= 0.01

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PI
B-3101UD	UD-10	126.0-128.5 ft	2/20/09	CL	Light Gray Sandy Lean CLAY	13.9	25	10

Client **Bechtel**
 Project **Exelon Texas COL Project Supplemental Investigation**
 Project No. **6468-07-1777** Lab No. **9571**

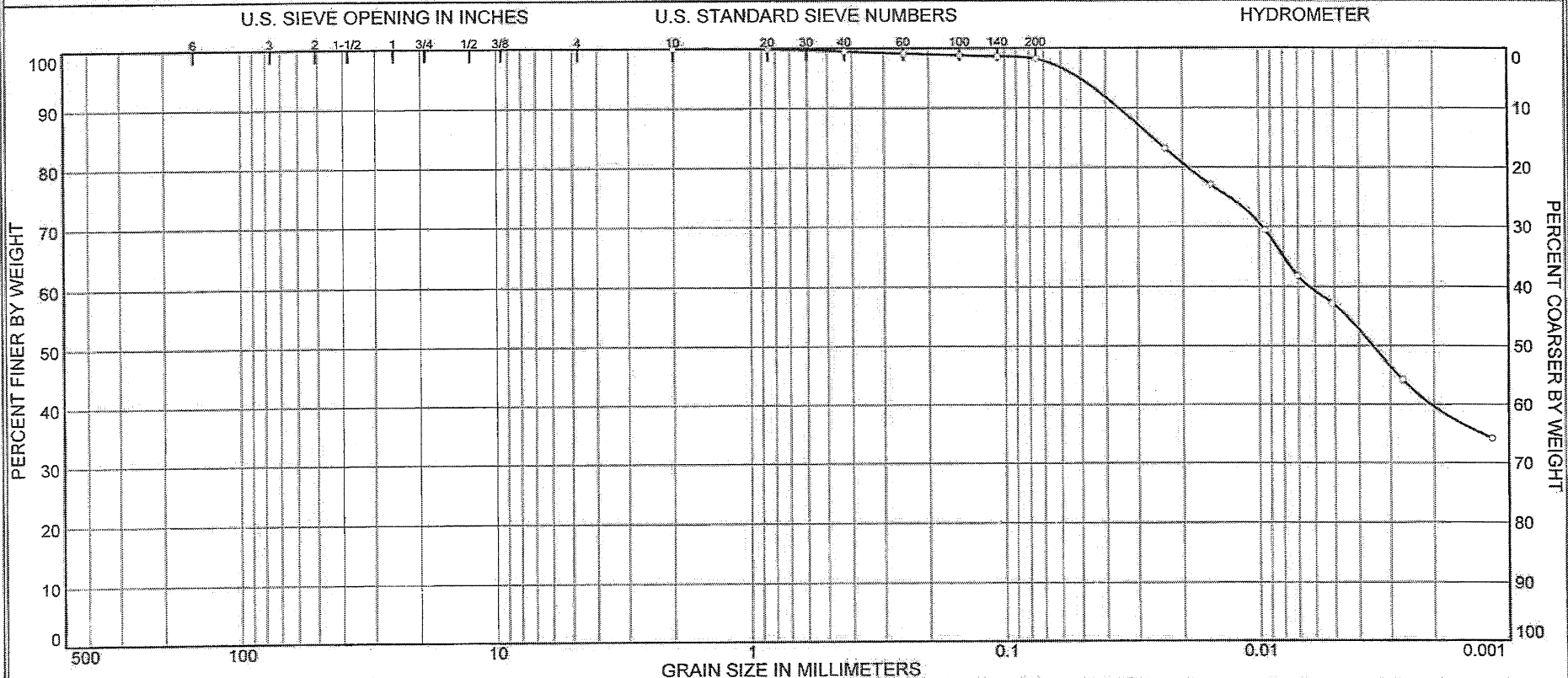
**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

• Tested By: EH Reviewed By: JW

SW 5/5/09

*DSC
 5-5-09*

Particle Size Distribution Report (ASTM D422-63 (2007))



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.5	1.3	41.3	56.9

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-3101UD	UD-13	159.0-161.5	2/21/09	CL	Very Pale Brown Lean CLAY	18.5	45	18
		ft						

Client Bechtel
 Project Exelon Texas COL Project Supplemental Investigation
 Project No. 6468-07-1777

**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

Tested By: EH Reviewed By: JW
 Specific Gravity = 2.71 (ASTM D854-06)

Lab No. 9572

JW 5/5/09

DSC
 5-5-09

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL Project Supplemental Investigation
Project Number: 6468-07-1777

Sample Data

Source: B-3101UD
Sample No.: UD-13
Elev. or Depth: 159.0-161.5 ft Sample Length(in./cm.): 9572
Location: B-3101UD
Description: Very Pale Brown Lean CLAY
Date: 2/21/09 Natural Moisture: 18.5
Liquid Limit: 45 Plastic Limit: 18 USCS Class.: CL
Testing Remarks: Tested By: EH Reviewed By: JW

Specific Gravity = 2.71 (ASTM D854-06)

Mechanical Analysis Data

Initial
Dry sample and tare= 64.50
Tare = 0.00
Dry sample weight = 64.50
Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 20	0.08	99.9
# 40	0.33	99.5
# 60	0.57	99.1
# 100	0.77	98.8
# 140	0.91	98.6
# 200	1.19	98.2

Hydrometer Analysis Data

Separation sieve is #200
Percent -#200 based upon complete sample= 98.2
Weight of hydrometer sample: 63.31
Calculated biased weight= 64.47
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only=
Specific gravity of solids= 2.71
Specific gravity correction factor= 0.987
Hydrometer type: 152H
Effective depth $L = 16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	23.3	59.0	54.3	0.0129	59.0	6.6	0.0234	83.2
5.00	23.3	55.0	50.3	0.0129	55.0	7.3	0.0155	77.1
15.00	23.3	50.0	45.3	0.0129	50.0	8.1	0.0095	69.4
30.00	23.3	45.0	40.3	0.0129	45.0	8.9	0.0070	61.8
60.00	23.3	42.0	37.3	0.0129	42.0	9.4	0.0051	57.2

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
250.00	23.3	33.5	28.8	0.0129	33.5	10.8	0.0027	44.2
1440.00	23.3	27.0	22.3	0.0129	27.0	11.9	0.0012	34.2

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

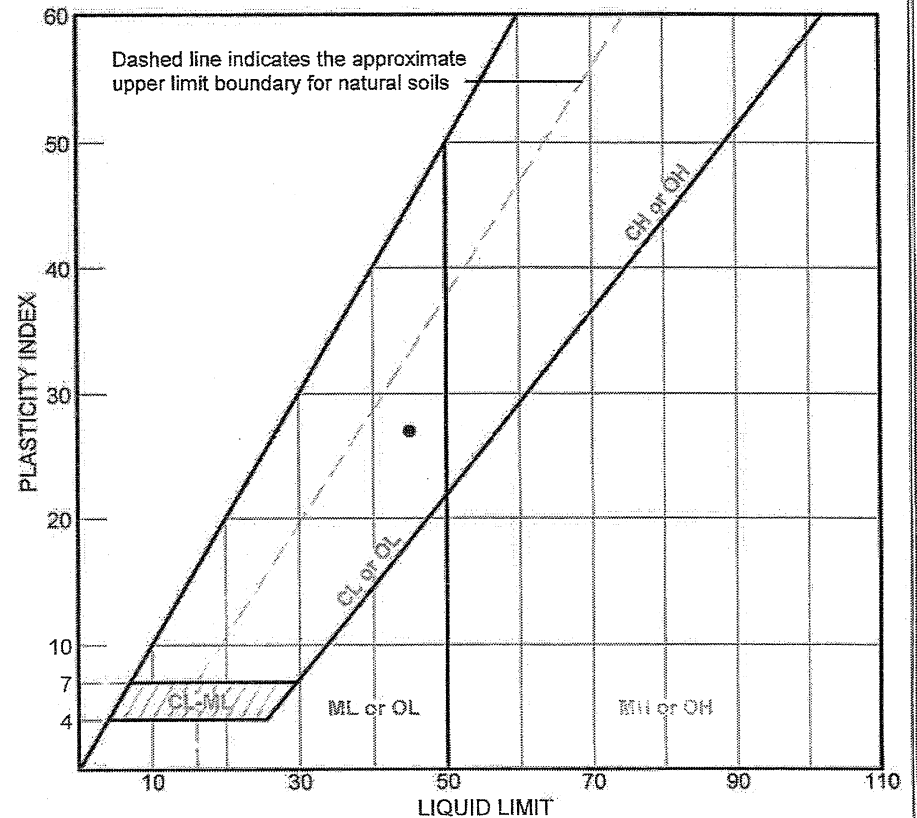
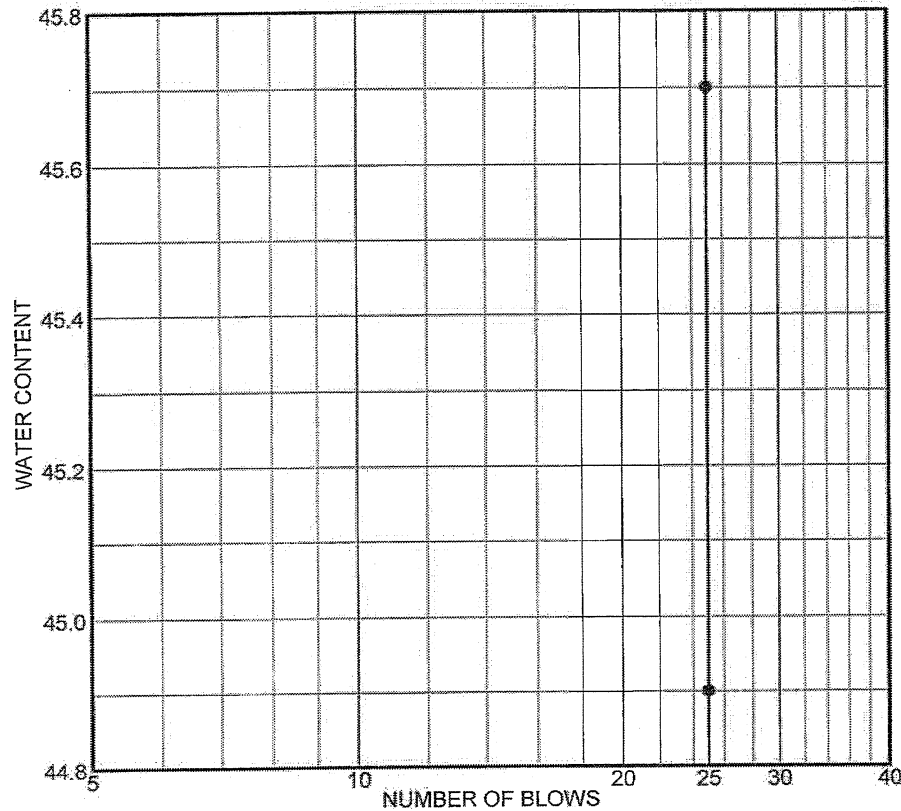
% COBBLES = % GRAVEL =

% SAND = 1.8 (% coarse = % medium = 0.5 % fine = 1.3)

% SILT = 41.3 % CLAY = 56.9

D₈₅= 0.03 D₆₀= 0.01 D₅₀= 0.00

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PI
B-3101UD	UD-13	159.0-161.5 ft	2/21/09	CL	Very Pale Brown Lean CLAY	18.5	45	27

Client: Bechtel
 Project: Exelon Texas COL Project Supplemental Investigation
 Project No. 6468-07-1777 Lab No. 9572

**MACTEC ENGINEERING
AND
CONSULTING, INC.**

• Tested By: EH Reviewed By: JW

JW 5/5/09

DSC
5-5-09

MACTEC ENGINEERING AND CONSULTING, INC.

REPORT OF THE STANDARD TEST METHOD FOR SPECIFIC GRAVITY OF SOILS Performed in General Accordance with ASTM D 854-06 (Method B)

PROJECT NAME: EXELON TEXAS COL PROJECT SUPPLEMENTAL INVESTIGATION

PROJECT NUMBER: 6468-07-1777

DATE: 4/21/09

SAMPLE IDENTIFICATION: B-3101UD, UD-13 @ 159.0-161.5 Ft.

(A) Mass of oven-dried soil, grams:	36.55
(B) Mass of pycnometer filled with water at test temperature (T), grams:	339.24
(C) Mass of pycnometer, water and soil, grams:	362.32
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	24.2
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.713
(F) Correction factor:	0.99904
(G x F) SPECIFIC GRAVITY @ 20°C:	2.711

MATERIAL TESTED:

☒ X

- # 4

☐ - # 10

PREPARATION METHOD:

☒ X

DRY

☐ WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100 %

Lean CLAY (CL)

EQUIPMENT USED

SCALES : 418

OVEN : 144

THERMOMETER : 2759

PYCNOMETER : 2053

TESTED BY: EH

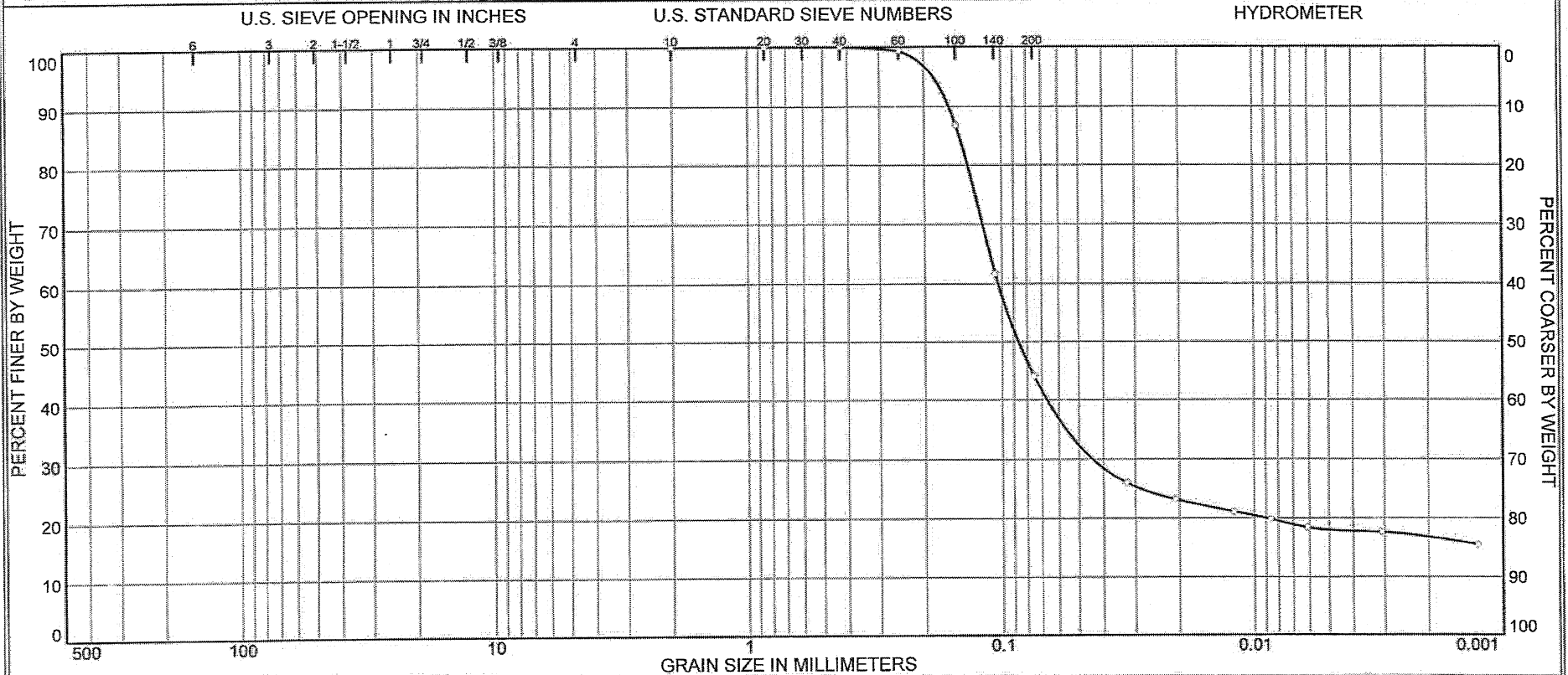
\\Test Reports\\Soils\\SPECIFIC GRAVITY(ref).xls

REVIEWED BY: J. Wang

See 5/5/09

DSC
5-5-09

Particle Size Distribution Report (ASTM D422-63 (2007))



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.0	55.9	26.1	18.0

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-3101UD	UD-14	209.0-211.5 ft	2/21/09	SC-SM	Pale Yellow Silty, Clayey SAND	13.3	23	18

Client Bechtel

Project Exelon Texas COL Project Supplemental Investigation

Project No. 6468-07-1777

Lab No. 9573

**MACTEC ENGINEERING
AND
CONSULTING, INC.**

Tested By: EH Reviewed By: JW

Specific Gravity is assumed.

JW 5/5/09

DSC
5-5-09

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL Project Supplemental Investigation
Project Number: 6468-07-1777

Sample Data

Source: B-3101UD
Sample No.: UD-14
Elev. or Depth: 209.0-211.5 ft Sample Length(in./cm.): 9573
Location: B-3101UD
Description: Pale Yellow Silty, Clayey SAND
Date: 2/21/09 Natural Moisture: 13.3
Liquid Limit: 23 Plastic Limit: 18 USCS Class.: SC-SM
Testing Remarks: Tested By: EH Reviewed By: JW

Specific Gravity is assumed.

Mechanical Analysis Data

Initial
Dry sample and tare= 71.60
Tare = 0.00
Dry sample weight = 71.60
Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 20	0.00	100.0
# 40	0.02	100.0
# 60	0.44	99.4
# 100	9.44	86.8
# 140	27.42	61.7
# 200	40.06	44.1

Hydrometer Analysis Data

Separation sieve is #200
Percent -#200 based upon complete sample= 44.1
Weight of hydrometer sample: 31.54
Calculated biased weight= 71.52
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only=
Specific gravity of solids= 2.70
Specific gravity correction factor= 0.989
Hydrometer type: 152H
Effective depth $L = 16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	23.1	23.5	18.8	0.0129	23.5	12.4	0.0323	26.0
5.00	23.1	21.5	16.8	0.0129	21.5	12.8	0.0207	23.2
15.00	23.1	20.0	15.3	0.0129	20.0	13.0	0.0121	21.1
30.00	23.1	19.0	14.3	0.0129	19.0	13.2	0.0086	19.8
60.00	23.1	18.0	13.3	0.0129	18.0	13.3	0.0061	18.4

Elapsed time, min	Temp, Actual deg C reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
240.00	22.8 17.5	12.7	0.0130	17.5	13.4	0.0031	17.6
1440.00	22.8 16.0	11.2	0.0130	16.0	13.7	0.0013	15.5

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

% COBBLES = % GRAVEL =

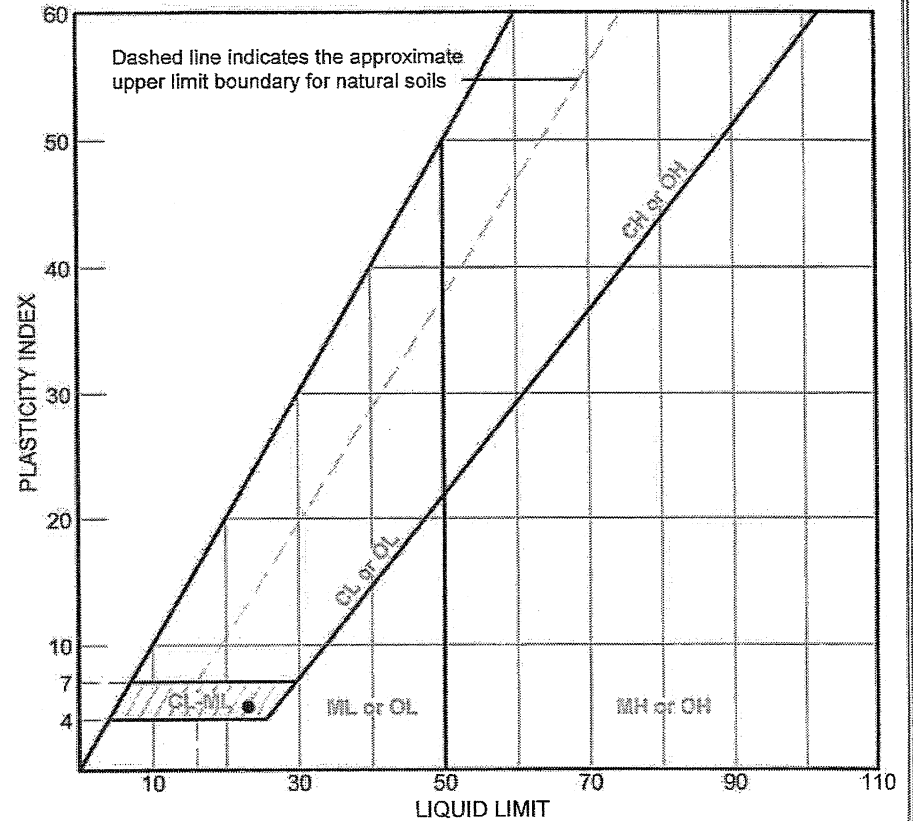
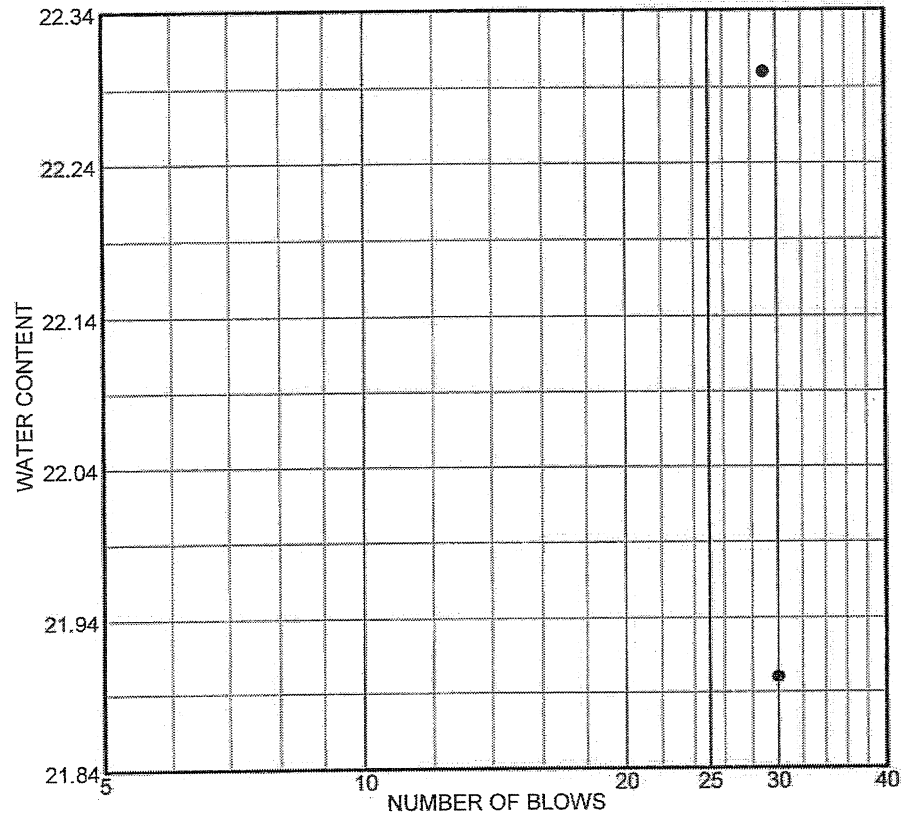
% SAND = 55.9 (% coarse = % medium = 0.0 % fine = 55.9)

% SILT = 26.1 % CLAY = 18.0

D85= 0.15 D60= 0.10 D50= 0.09

D30= 0.04

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PI
B-3101UD	UD-14	209.0-211.5 ft	2/21/09	SC-SM	Pale Yellow Silty, Clayey SAND	13.3	23	5

Client Bechtel
 Project Exelon Texas COL Project Supplemental Investigation
 Project No. 6468-07-1777 Lab No. 9573

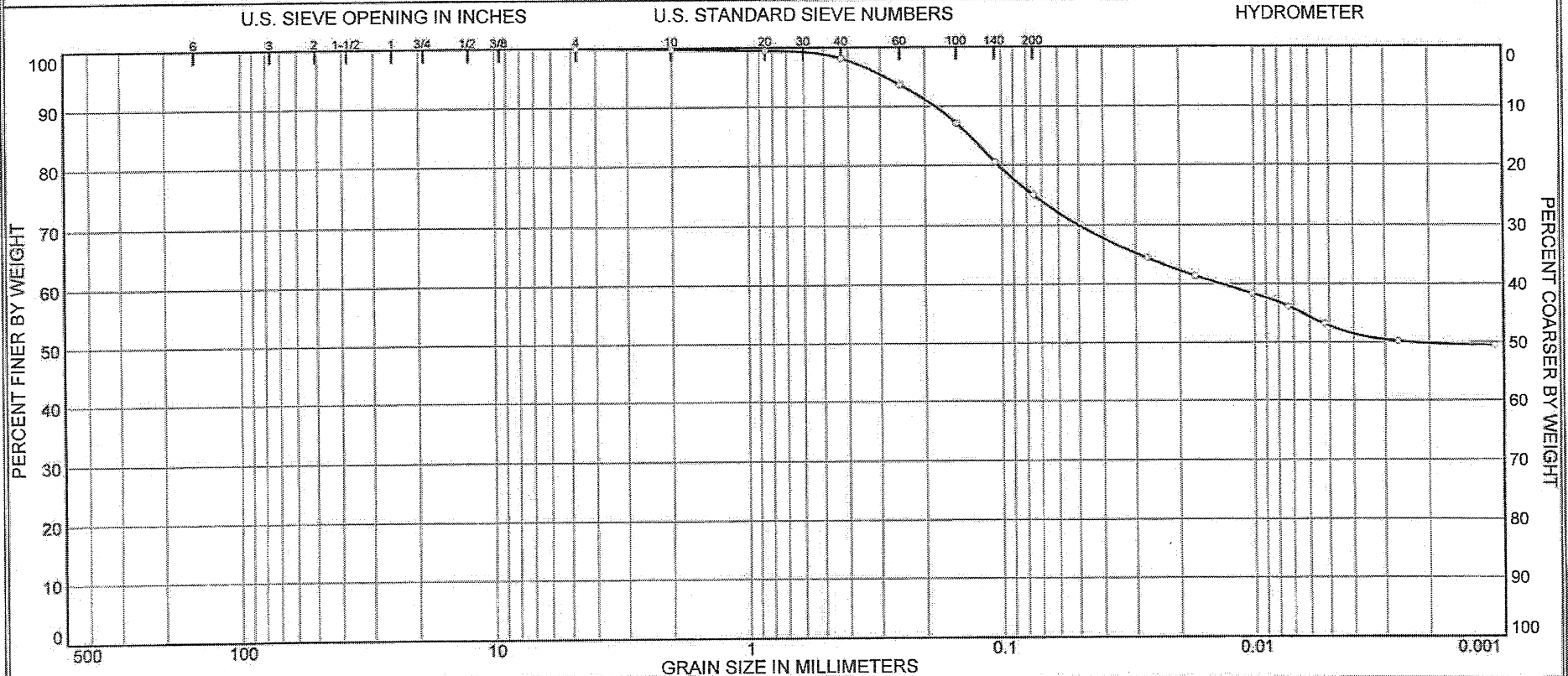
**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

• Tested By: EH Reviewed By: JW

JW 5/5/09

DSC
 5-5-09

Particle Size Distribution Report (ASTM D422-63 (2007))



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.2	1.6	23.2	22.2	52.8

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-3101UD	UD-15	229.0-231.5 ft	4/24/09	CH	Light Gray mottled Brownish Yellow Fat CLAY with Sand	20.7	58	21

Client Bechtel
 Project Exelon Texas COL Project Supplemental Investigation
 Project No. 6468-07-1777 Lab No. 9574

**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

Tested By :EH Reviewed By: JW
 Specific Gravity = 2.68 (ASTM D854-06)

JW 5/5/09

DSC
 5-5-09

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL Project Supplemental Investigation
Project Number: 6468-07-1777

Sample Data

Source: B-3101UD
Sample No.: UD-15
Elev. or Depth: 229.0-231.5 ft Sample Length(in./cm.): 9574
Location: B-3101UD
Description: Light Gray mottled Brownish Yellow Fat CLAY with Sand
Date: 4/24/09 Natural Moisture: 20.7
Liquid Limit: 58 Plastic Limit: 21 USCS Class.: CH
Testing Remarks: Tested By :EH Reviewed By: JW

Specific Gravity = 2.68 (ASTM D854-06)

Mechanical Analysis Data

Initial
Dry sample and tare= 65.94
Tare = 0.00
Dry sample weight = 65.94
Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	0.14	99.8
# 20	0.34	99.5
# 40	1.21	98.2
# 60	4.15	93.7
# 100	8.48	87.1
# 140	12.86	80.5
# 200	16.49	75.0

Hydrometer Analysis Data

Separation sieve is #200
Percent -#200 based upon complete sample= 75.0
Weight of hydrometer sample: 49.45
Calculated biased weight= 65.93
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only=
Specific gravity of solids= 2.68
Specific gravity correction factor= 0.993
Hydrometer type: 152H
Effective depth $L = 16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	23.1	47.5	42.8	0.0130	47.5	8.5	0.0268	64.4
5.00	23.1	45.5	40.8	0.0130	45.5	8.8	0.0173	61.4
15.00	23.1	43.5	38.8	0.0130	43.5	9.2	0.0102	58.4
30.00	23.1	42.0	37.3	0.0130	42.0	9.4	0.0073	56.2

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
60.00	23.1	40.0	35.3	0.0130	40.0	9.7	0.0052	53.2
240.00	23.3	38.0	33.3	0.0130	38.0	10.1	0.0027	50.2
1440.00	23.3	37.5	32.8	0.0130	37.5	10.1	0.0011	49.5

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

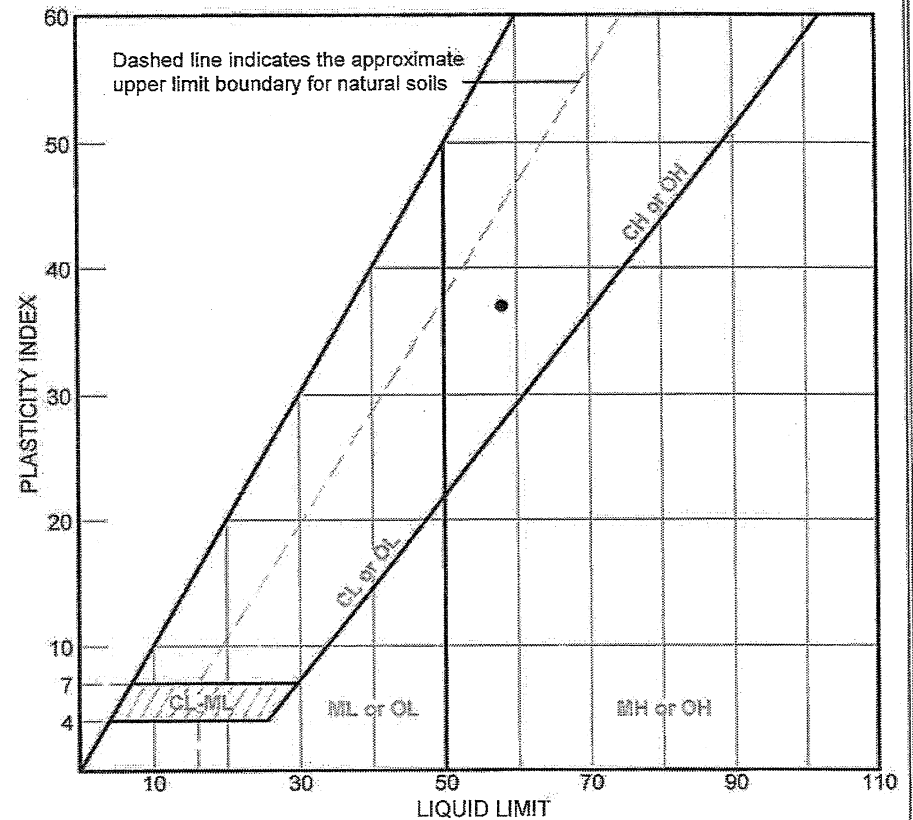
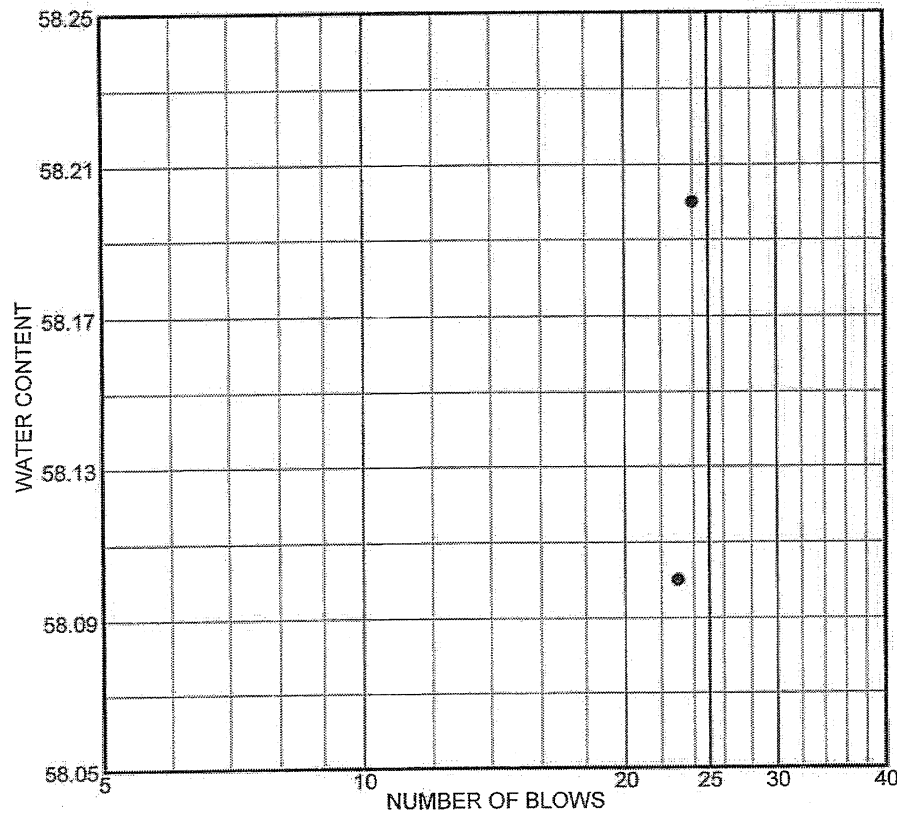
% COBBLES = % GRAVEL =

% SAND = 25.0 (% coarse = 0.2 % medium = 1.6 % fine = 23.2)

% SILT = 22.2 % CLAY = 52.8

D₈₅= 0.13 D₆₀= 0.01 D₅₀= 0.00

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PI
B-3101UD	UD-15	229.0-231.5 ft	4/24/09	CH	Light Gray mottled Brownish Yellow Fat CLAY with Sand	20.7	58	37

Client Bechtel
 Project Exelon Texas COL Project Supplemental Investigation
 Project No. 6468-07-1777 Lab No. 9574

**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

• Tested By: L EH Reviewed By: JW

JW 5/5/09

DSC
 5-5-09

MACTEC ENGINEERING AND CONSULTING, INC.

REPORT OF THE STANDARD TEST METHOD FOR SPECIFIC GRAVITY OF SOILS Performed in General Accordance with ASTM D 854-06 (Method B)

PROJECT NAME: EXELON TEXAS COL PROJECT SUPPLEMENTAL INVESTIGATION

PROJECT NUMBER: 6468-07-1777

DATE: 4/24/09

SAMPLE IDENTIFICATION: B-3101UD, UD-15 @ 229.0-231.5 Ft.

(A) Mass of oven-dried soil, grams:	36.49
(B) Mass of pycnometer filled with water at test temperature (T), grams:	346.70
(C) Mass of pycnometer, water and soil, grams:	369.61
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	24.2
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.687
(F) Correction factor:	0.99904
(G x F) SPECIFIC GRAVITY @ 20°C:	2.684

MATERIAL TESTED:

☒

- # 4

☐ - # 10

PREPARATION METHOD:

☒

DRY

☐

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100 %

Fat CLAY with Sand (CH)

EQUIPMENT USED

SCALES : 418

OVEN : 144

THERMOMETER : 2759

PYCNOMETER : 2197

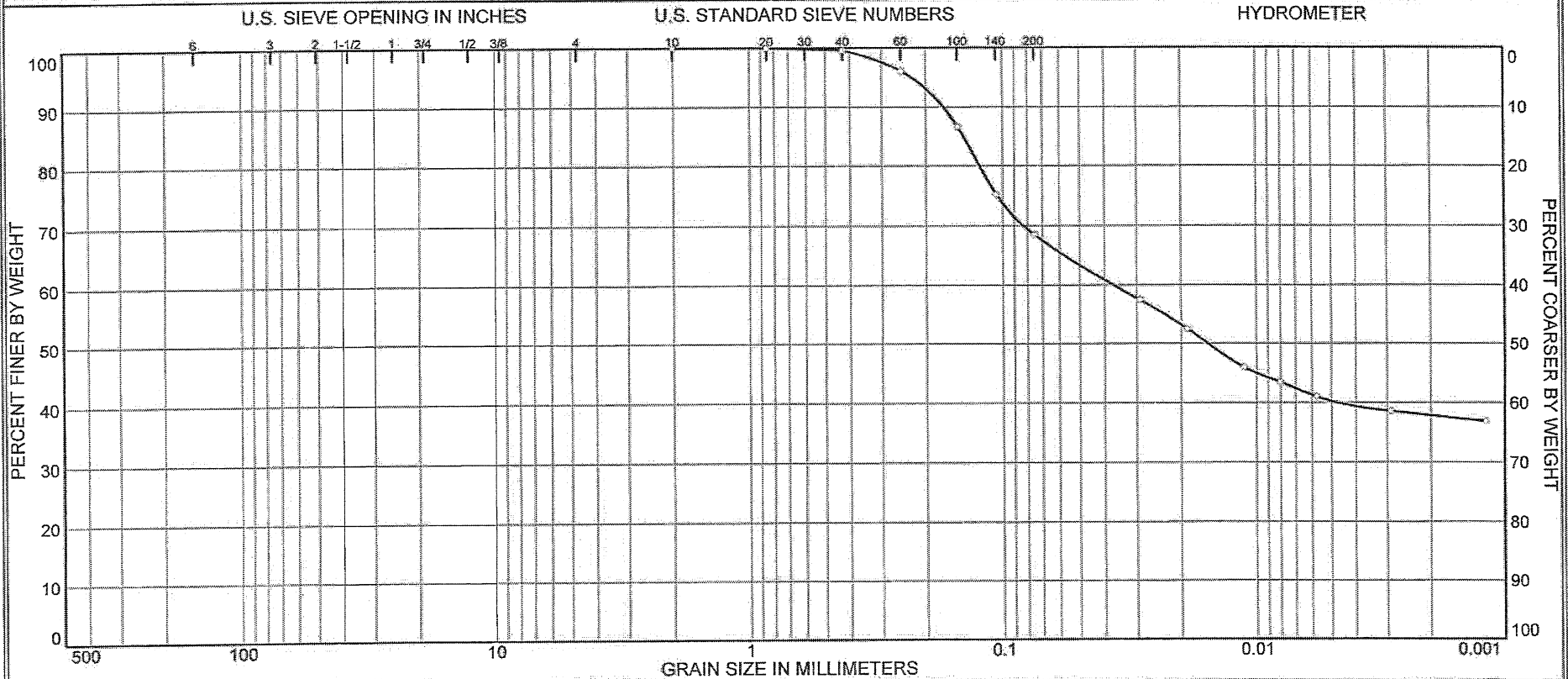
TESTED BY: EH

\\Test Reports\\Soils\\SPECIFIC GRAVITY(ref).xls

REVIEWED BY: J. Wang

SW 5/5/09
DSC
5-5-09

Particle Size Distribution Report (ASTM D422-63 (2007))



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.4	31.1	28.3	40.2

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-3101UD	UD-16	279.0-281.0 ft	4/24/09 2/23/09	CL DSC 3-5-09	Light Gray mottled Brownish Yellow Sandy Lean CLAY	20.9	48	19

Client Bechtel

Project Exelon Texas COL Project Supplemental Investigation

Project No. 6468-07-1777

Lab No. 9575

**MACTEC ENGINEERING
AND
CONSULTING, INC.**

Tested By: EH Reviewed By: JW

Specific Gravity = 2.65 (ASTM D854-06)

JW 5/5/09

DSC
5-5-09

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
 Project: Exelon Texas COL Project Supplemental Investigation
 Project Number: 6468-07-1777

Sample Data

Source: B-3101UD
 Sample No.: UD-16
 Elev. or Depth: 279.0-281.0 ft Sample Length(in./cm.): 9575
 Location: B-3101UD
 Description: Light Gray mottled Brownish Yellow Sandy Lean CLAY
 Date: ~~4/24/09~~ 2/23/09 ^{psc} Natural Moisture: 20.9
 Liquid Limit: 48 ⁵⁻⁵⁻⁰⁹ Plastic Limit: 19 USCS Class.: CL
 Testing Remarks: Tested By: EH Reviewed By: JW

Specific Gravity = 2.65 (ASTM D854-06)

Mechanical Analysis Data

Initial
 Dry sample and tare= 60.58
 Tare = 0.00
 Dry sample weight = 60.58
 Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 20	0.00	100.0
# 40	0.26	99.6
# 60	2.35	96.1
# 100	8.10	86.6
# 140	15.01	75.2
# 200	19.11	68.5

Hydrometer Analysis Data

Separation sieve is #200
 Percent -#200 based upon complete sample= 68.5
 Weight of hydrometer sample: 41.47
 Calculated biased weight= 60.54
 Automatic temperature correction
 Composite correction at 20 deg C = -5.4

Meniscus correction only=
 Specific gravity of solids= 2.65
 Specific gravity correction factor= 1.000
 Hydrometer type: 152H
 Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	23.1	39.5	34.8	0.0131	39.5	9.8	0.0291	57.5
5.00	23.1	36.5	31.8	0.0131	36.5	10.3	0.0189	52.5
15.00	23.1	32.5	27.8	0.0131	32.5	11.0	0.0112	45.9
30.00	23.1	31.0	26.3	0.0131	31.0	11.2	0.0080	43.4
60.00	23.1	29.5	24.8	0.0131	29.5	11.5	0.0057	41.0

Elapsed time, min	Temp, Actual deg C reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
240.00	23.3 28.0	23.3	0.0131	28.0	11.7	0.0029	38.6
1440.00	23.3 27.0	22.3	0.0131	27.0	11.9	0.0012	36.9

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

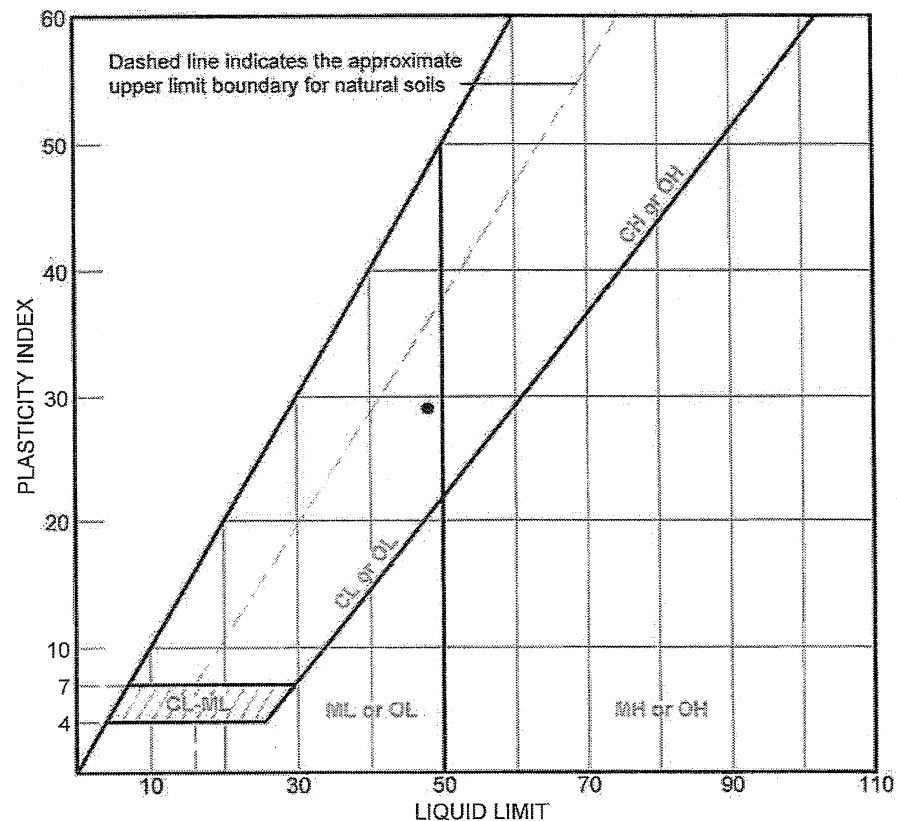
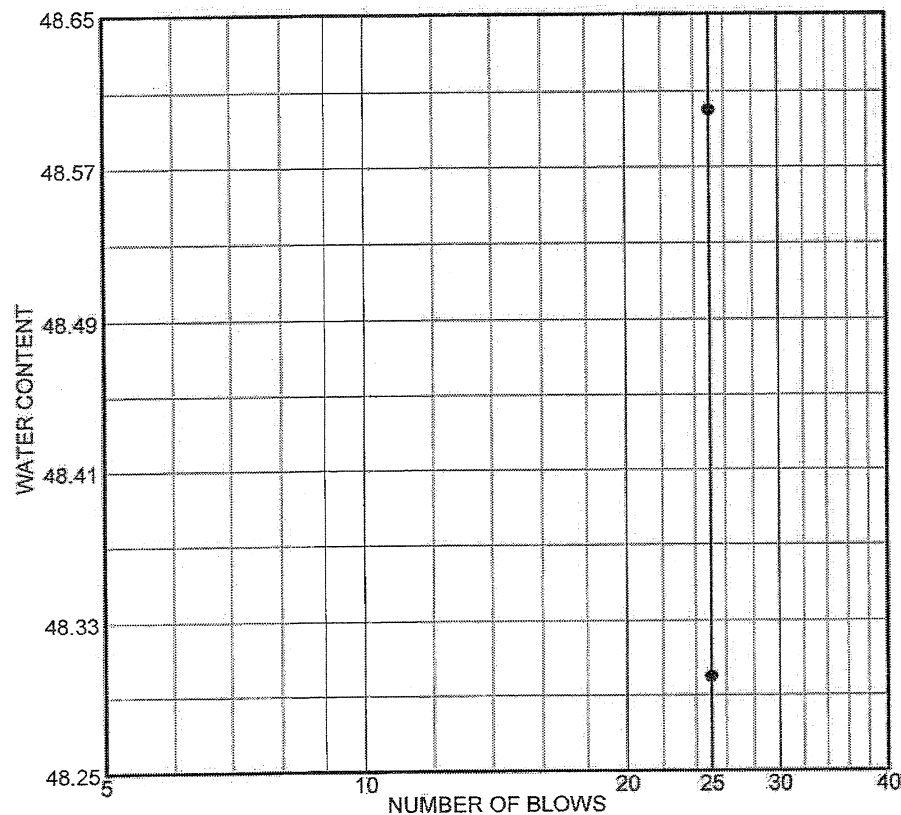
% COBBLES = % GRAVEL =

% SAND = 31.5 (% coarse = % medium = 0.4 % fine = 31.1)

% SILT = 28.3 % CLAY = 40.2

D₈₅= 0.14 D₆₀= 0.04 D₅₀= 0.02

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PI
B-3101UD	UD-16	279.0-281.0 ft	4/24/09 2/23/09	CL	Light Gray mottled Brownish Yellow Sandy Lean CLAY	20.9	48	29
			DSC					
			5-5-09					

Client Bechtel
 Project Exelon Texas COL Project Supplemental Investigation
 Project No. 6468-07-1777 Lab No. 9575

**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

• Tested By: EH Reviewed By: JW

JW 5/5/09

DSC
 5-5-09

MACTEC ENGINEERING AND CONSULTING, INC.

REPORT OF THE STANDARD TEST METHOD FOR SPECIFIC GRAVITY OF SOILS Performed in General Accordance with ASTM D 854-06 (Method B)

PROJECT NAME: EXELON TEXAS COL PROJECT SUPPLEMENTAL INVESTIGATION

PROJECT NUMBER: 6468-07-1777

DATE: 4/24/09

SAMPLE IDENTIFICATION: B-3101UD, UD-16 @ 279.0-281.0 Ft.

(A) Mass of oven-dried soil, grams:	36.13
(B) Mass of pycnometer filled with water at test temperature (T), grams:	341.14
(C) Mass of pycnometer, water and soil, grams:	363.67
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	23.9
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.657
(F) Correction factor:	0.99912
(G x F) SPECIFIC GRAVITY @ 20°C:	2.654

MATERIAL TESTED:

☒ X

- # 4

☐

- # 10

PREPARATION METHOD:

☒ X

DRY

☐

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100 %

Sandy Lean CLAY (CL)

EQUIPMENT USED

SCALES : 418

OVEN : 144

THERMOMETER : 2759

PYCNO METER : 2055

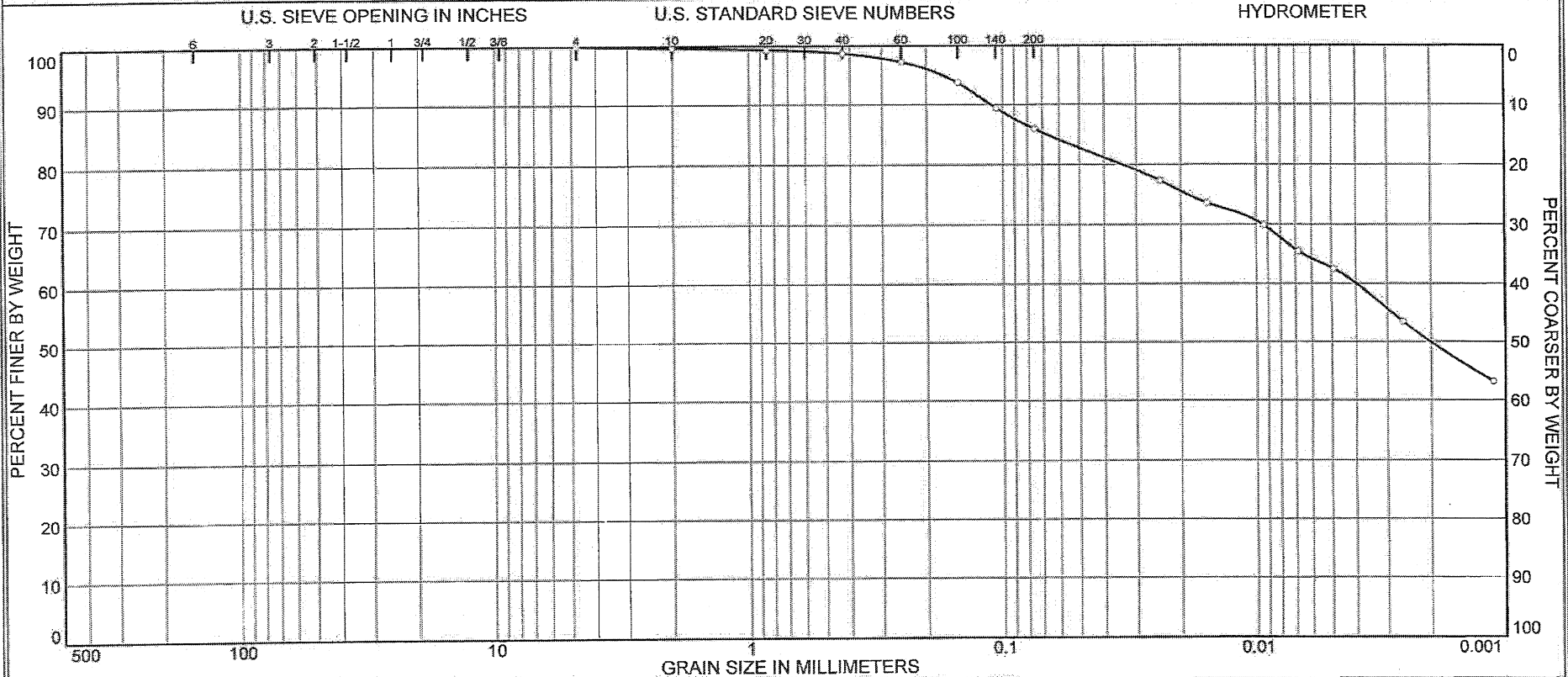
TESTED BY: EH

\\Test Reports\\Soils\\SPECIFIC GRAVITY(ref).xls

REVIEWED BY: J. Wang

SW 5/5/09
DSC
5-5-09

Particle Size Distribution Report (ASTM D422-63 (2007))



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.3	0.9	12.9	23.2	62.7

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-3101UD	UD-17	289.0-291.5 ft	2/23/09	CL	Light Gray mottled Brownish Yellow Lean CLAY	20.3	47	24

Client Bechtel
 Project Exelon Texas COL Project Supplemental Investigation
 Project No. 6468-07-1777 Lab No. 9576

**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

Tested By: EH Reviewed By: JW
 Specific Gravity is assumed.

JW 5/5/09

*DSC
 5-5-09*

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL Project Supplemental Investigation
Project Number: 6468-07-1777

Sample Data

Source: B-3101UD
Sample No.: UD-17
Elev. or Depth: 289.0-291.5 ft Sample Length(in./cm.): 9576
Location: B-3101UD
Description: Light Gray mottled Brownish Yellow Lean CLAY
Date: 2/23/09 Natural Moisture: 20.3
Liquid Limit: 47 Plastic Limit: 24 USCS Class.: CL
Testing Remarks: Tested By: EH Reviewed By: JW

Specific Gravity is assumed.

Mechanical Analysis Data

Sieve	Cumul. Wt. retained	Percent finer
Initial		
Dry sample and tare=	66.87	
Tare =	0.00	
Dry sample weight =	66.87	
Tare for cumulative weight retained= .00		
# 4	0.00	100.0
# 10	0.19	99.7
# 20	0.37	99.4
# 40	0.78	98.8
# 60	1.80	97.3
# 100	4.21	93.7
# 140	7.10	89.4
# 200	9.40	85.9

Hydrometer Analysis Data

Separation sieve is #200
Percent -#200 based upon complete sample= 85.9
Weight of hydrometer sample: 57.47
Calculated biased weight= 66.90
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only=
Specific gravity of solids= 2.7
Specific gravity correction factor= 0.989
Hydrometer type: 152H
Effective depth $L = 16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	23.1	57.0	52.3	0.0129	57.0	6.9	0.0241	77.3
5.00	23.1	54.5	49.8	0.0129	54.5	7.4	0.0157	73.6
15.00	23.1	52.0	47.3	0.0129	52.0	7.8	0.0093	69.9
30.00	23.1	49.0	44.3	0.0129	49.0	8.3	0.0068	65.5

Elapsed time, min	Temp, Actual deg C reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
60.00	23.1 47.0	42.3	0.0129	47.0	8.6	0.0049	62.5
240.00	22.8 41.0	36.2	0.0130	41.0	9.6	0.0026	53.5
1440.00	22.8 34.0	29.2	0.0130	34.0	10.7	0.0011	43.2

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

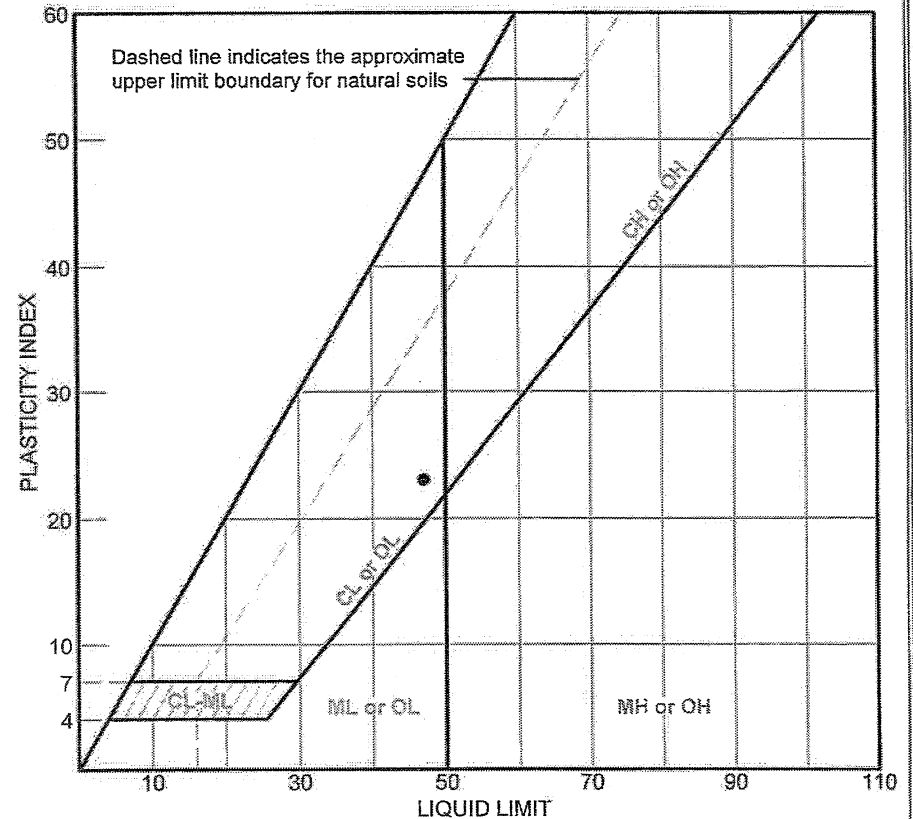
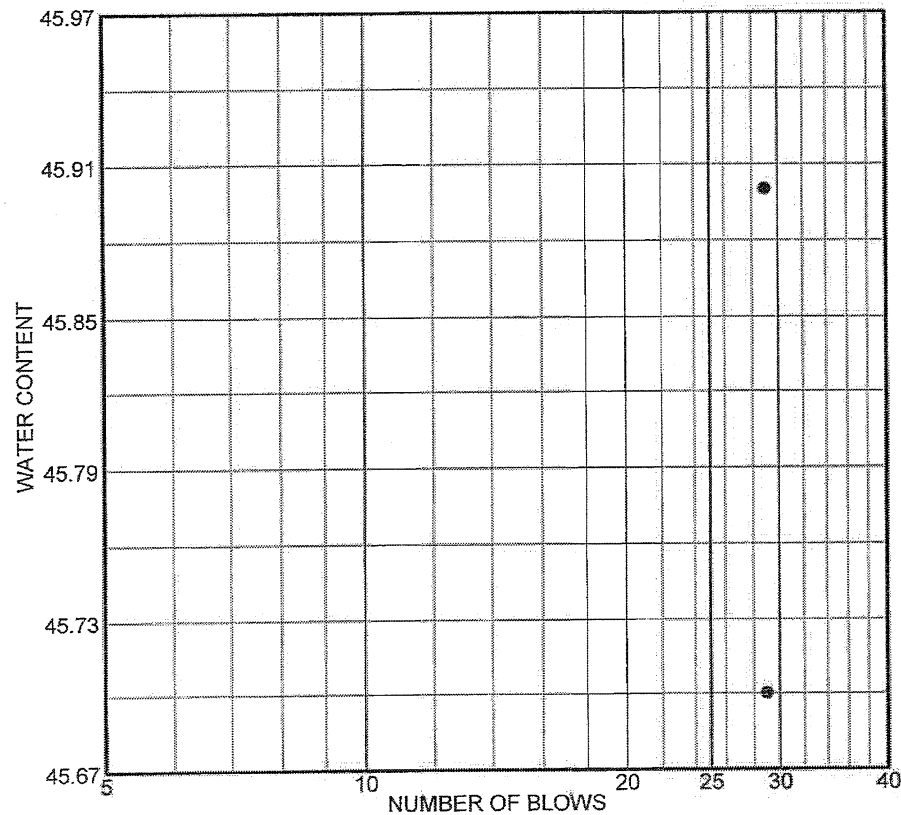
% COBBLES = % GRAVEL =

% SAND = 14.1 (% coarse = 0.3 % medium = 0.9 % fine = 12.9)

% SILT = 23.2 % CLAY = 62.7

D85= 0.07 D60= 0.00 D50= 0.00

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PI
B-3101UD	UD-17	289.0-291.5 ft	2/23/09	CL	Light Gray mottled Brownish Yellow Lean CLAY	20.3	47	23

Client Bechtel
 Project Exelon Texas COL Project Supplemental Investigation
 Project No. 6468-07-1777 Lab No. 9576

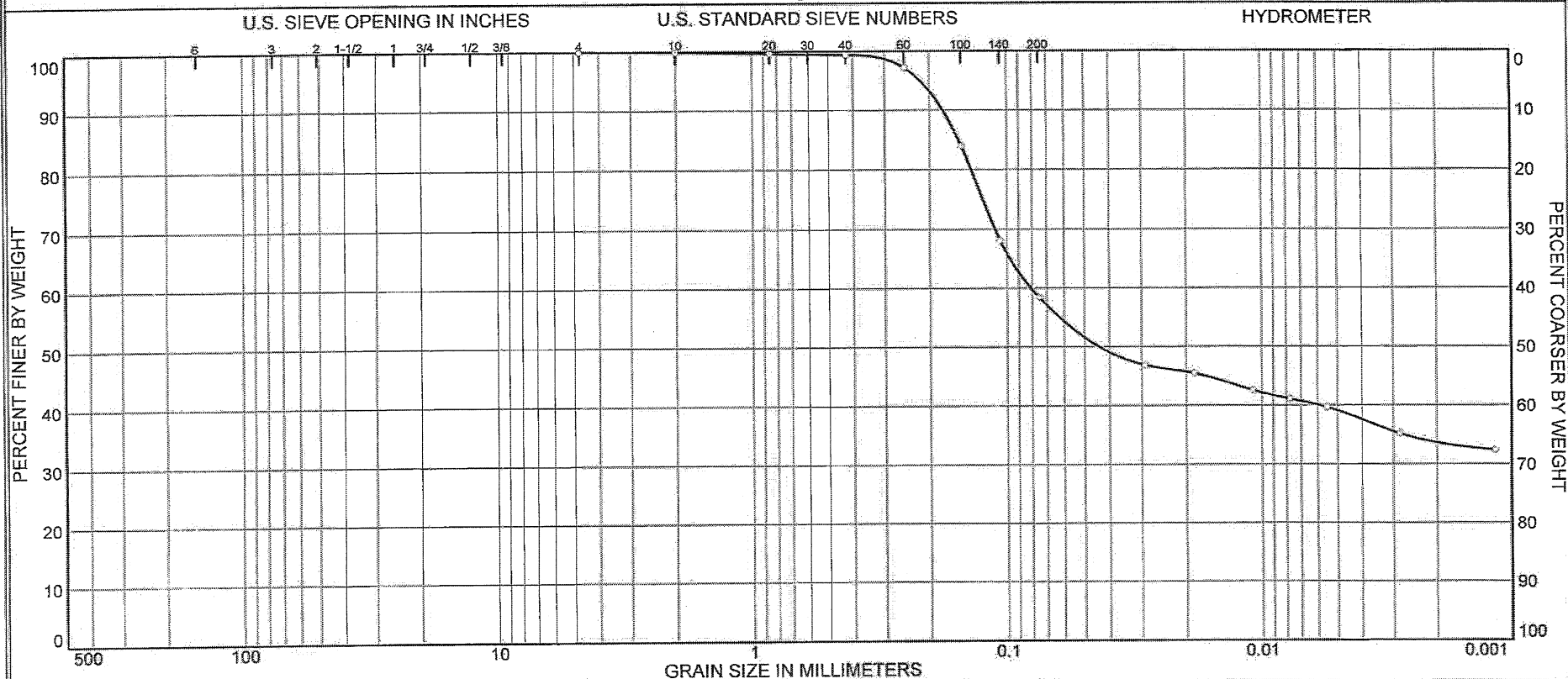
**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

• Tested By: EH Reviewed By: JW

Sw 5/5/09

DSC
 5-5-09

Particle Size Distribution Report (ASTM D422-63 (2007))



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.1	0.5	41.0	19.3	39.1

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-3234UD	UD-2	35.0-36.6 ft	1/28/09	CL	Very Pale Brown Sandy Lean CLAY	12.6	36	15

Client Bechtel
 Project Exelon Texas COL Project Supplemental Investigation
 Project No. 6468-07-1777 Lab No. 9561

**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

Tested By: EH Reviewed By: JW
 Specific Gravity = 2.72 (ASTM D854-06)

JW 5/5/09

DSC
 5-5-09

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL Project Supplemental Investigation
Project Number: 6468-07-1777

Sample Data

Source: B-3234UD
Sample No.: UD-2
Elev. or Depth: 35.0-36.6 ft Sample Length(in./cm.): 9561
Location: B-3234UD
Description: Very Pale Brown Sandy Lean CLAY
Date: 1/28/09 Natural Moisture: 12.6
Liquid Limit: 36 Plastic Limit: 15 USCS Class.: CL
Testing Remarks: Tested By: EH Reviewed By: JW

Specific Gravity = 2.72 (ASTM D854-06)

Mechanical Analysis Data

Initial
Dry sample and tare= 67.93
Tare = 0.00
Dry sample weight = 67.93
Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	0.06	99.9
# 20	0.26	99.6
# 40	0.42	99.4
# 60	1.91	97.2
# 100	10.96	83.9
# 140	21.64	68.1
# 200	28.26	58.4

Hydrometer Analysis Data

Separation sieve is #200
Percent -#200 based upon complete sample= 58.4
Weight of hydrometer sample: 39.67
Calculated biased weight= 67.93
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only=
Specific gravity of solids= 2.72
Specific gravity correction factor= 0.985
Hydrometer type: 152H
Effective depth $L = 16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	23.3	37.0	32.3	0.0128	37.0	10.2	0.0290	46.9
5.00	23.3	36.0	31.3	0.0128	36.0	10.4	0.0185	45.5
15.00	23.3	34.0	29.3	0.0128	34.0	10.7	0.0109	42.6
30.00	23.3	33.0	28.3	0.0128	33.0	10.9	0.0077	41.1

Elapsed time, min	Temp, Actual deg C reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
60.00	23.3 32.0	27.3	0.0128	32.0	11.0	0.0055	39.7
240.00	23.1 29.0	24.3	0.0129	29.0	11.5	0.0028	35.2
1440.00	23.3 27.0	22.3	0.0128	27.0	11.9	0.0012	32.4

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

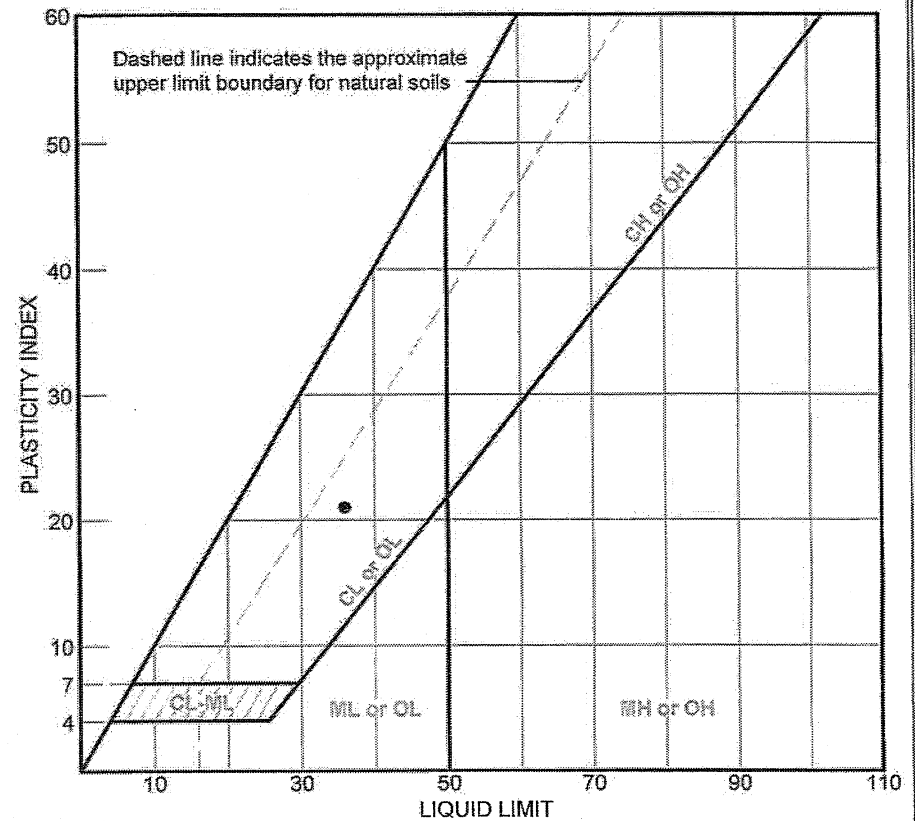
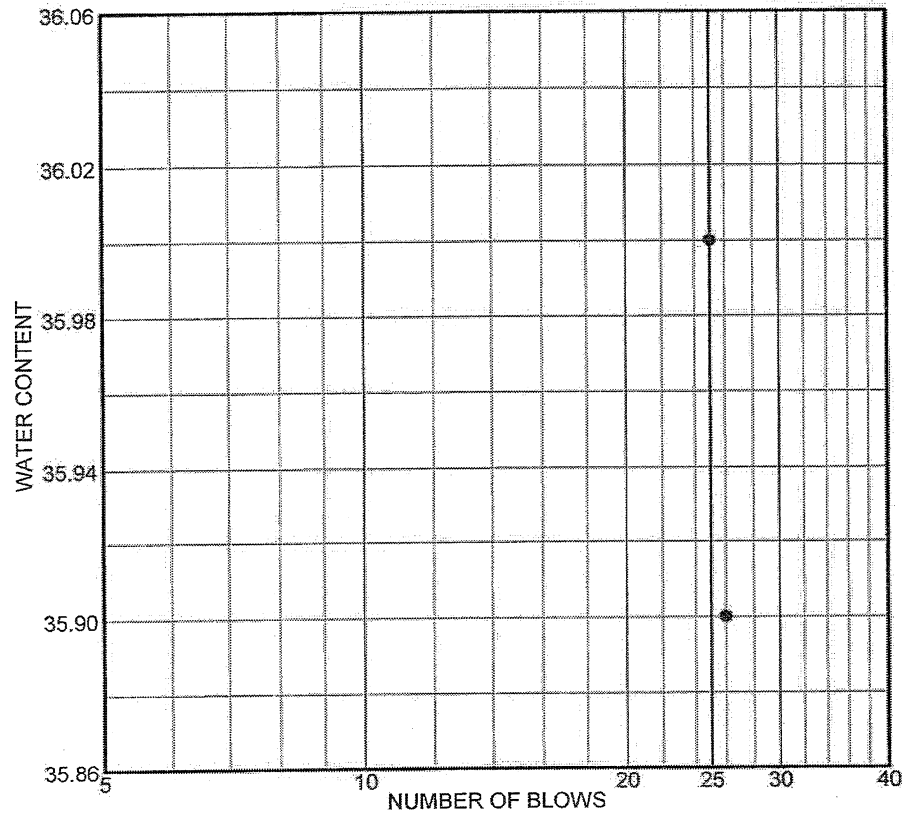
% COBBLES = % GRAVEL =

% SAND = 41.6 (% coarse = 0.1 % medium = 0.5 % fine = 41.0)

% SILT = 19.3 % CLAY = 39.1

D₈₅= 0.15 D₆₀= 0.08 D₅₀= 0.04

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PI
B-3234UD	UD-2	35.0-36.6 ft	1/28/09	CL	Very Pale Brown Sandy Lean CLAY	12.6	36	21

Client Bechtel
 Project Exelon Texas COL Project Supplemental Investigation
 Project No. 6468-07-1777 Lab No. 9561

**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

• Tested By: EH Reviewed By: JW

SW 5/5/09

DSC
 5-5-09

MACTEC ENGINEERING AND CONSULTING, INC.

REPORT OF THE STANDARD TEST METHOD FOR SPECIFIC GRAVITY OF SOILS Performed in General Accordance with ASTM D 854-06 (Method B)

PROJECT NAME: EXELON TEXAS COL PROJECT SUPPLEMENTAL INVESTIGATION

PROJECT NUMBER: 6468-07-1777

DATE: 4/8/09

SAMPLE IDENTIFICATION: B-3234UD, UD-2 @ 35.0-36.6 Ft.

(A) Mass of oven-dried soil, grams:	36.42
(B) Mass of pycnometer filled with water at test temperature (T), grams:	348.21
(C) Mass of pycnometer, water and soil, grams:	371.24
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	24.2
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.720
(F) Correction factor:	0.99904
(G x F) SPECIFIC GRAVITY @ 20°C:	2.717

MATERIAL TESTED:

☒

- # 4

☐ - # 10

PREPARATION METHOD:

☒

DRY

☐

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100 %

Sandy Lean CLAY (CL)

EQUIPMENT USED

SCALES : 418

OVEN : 144

THERMOMETER : 2759

PYCNOMETER : 1956

TESTED BY: EH

\\Test Reports\\Soils\\SPECIFIC GRAVITY(ref).xls

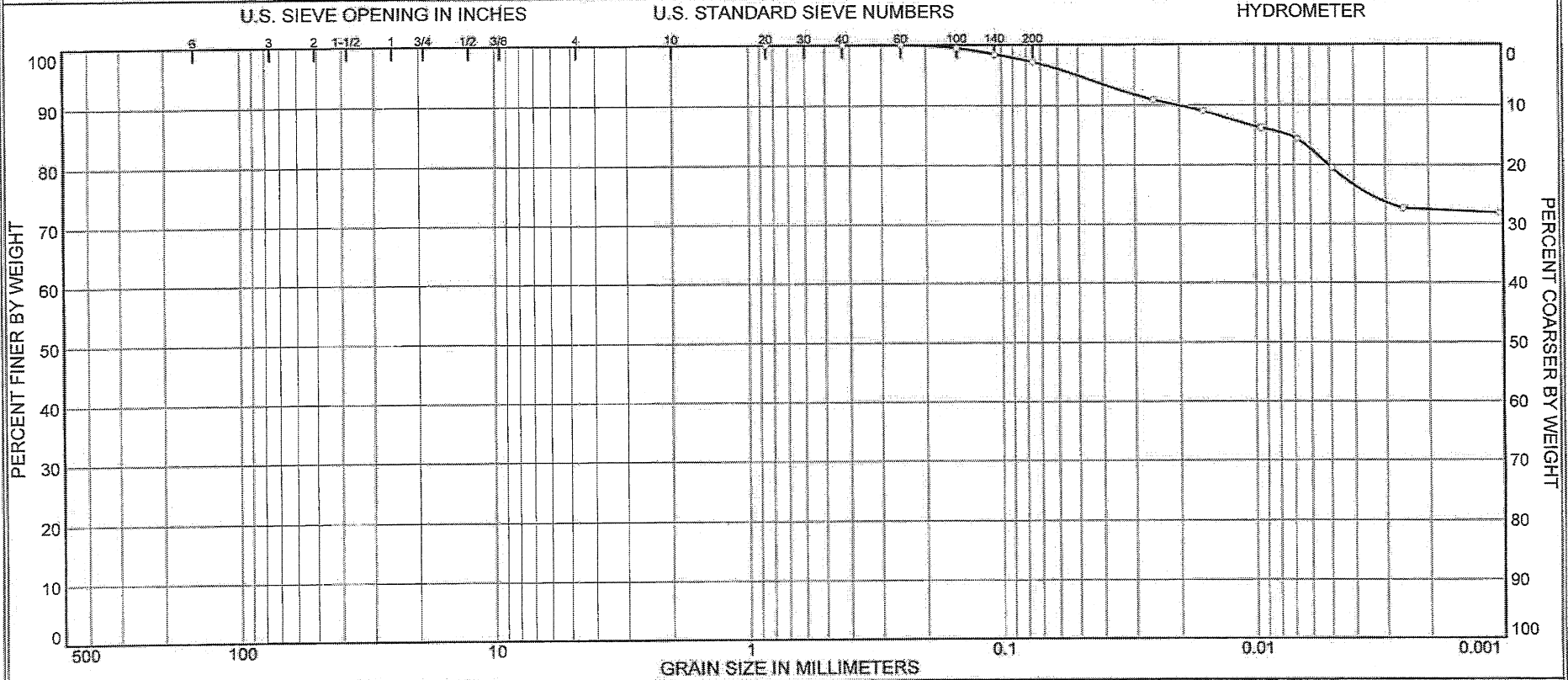
REVIEWED BY: J. Wang

JW 5/5/09

DSC

5-5-09

Particle Size Distribution Report (ASTM D422-63 (2007))



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.0	2.8	17.4	79.8

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-3234UD	UD-4	53.8-55.4 ft	1/28/09	CH	Light Gray mottled Brownish Yellow Fat CLAY	28.8	78	26

Client Bechtel
Project Exelon Texas COL Project Supplemental Investigation
Project No. 6468-07-1777 Lab No. 9562

**MACTEC ENGINEERING
AND
CONSULTING, INC.**

Tested By: EH Reviewed By: JW
Specific Gravity = 2.71 (ASTM D854-06)

JW 5/5/09

DSC
5-5-09

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL Project Supplemental Investigation
Project Number: 6468-07-1777

Sample Data

Source: B-3234UD
Sample No.: UD-4
Elev. or Depth: 53.8-55.4 ft Sample Length(in./cm.): 9562
Location: B-3234UD
Description: Light Gray mottled Brownish Yellow Fat CLAY
Date: 1/28/09 Natural Moisture: 28.8
Liquid Limit: 78 Plastic Limit: 26 USCS Class.: CH
Testing Remarks: Tested By: EH Reviewed By: JW

Specific Gravity = 2.71 (ASTM D854-06)

Mechanical Analysis Data

Initial
Dry sample and tare= 51.93
Tare = 0.00
Dry sample weight = 51.93
Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 20	0.00	100.0
# 40	0.01	100.0
# 60	0.01	100.0
# 100	0.27	99.5
# 140	0.80	98.5
# 200	1.43	97.2

Hydrometer Analysis Data

Separation sieve is #200
Percent -#200 based upon complete sample= 97.2
Weight of hydrometer sample: 50.5
Calculated biased weight= 51.95
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only=
Specific gravity of solids= 2.71
Specific gravity correction factor= 0.987
Hydrometer type: 152H
Effective depth $L = 16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	23.3	52.5	47.8	0.0129	52.5	7.7	0.0252	90.9
5.00	23.3	51.5	46.8	0.0129	51.5	7.8	0.0161	89.0
15.00	23.3	50.0	45.3	0.0129	50.0	8.1	0.0095	86.2
30.00	23.3	49.0	44.3	0.0129	49.0	8.3	0.0068	84.3
60.00	23.3	46.5	41.8	0.0129	46.5	8.7	0.0049	79.5
240.00	23.1	43.0	38.3	0.0129	43.0	9.2	0.0025	72.7

Elapsed time, min	Temp, Actual deg C reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1440.00	23.3 42.5	37.8	0.0129	42.5	9.3	0.0010	71.9

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

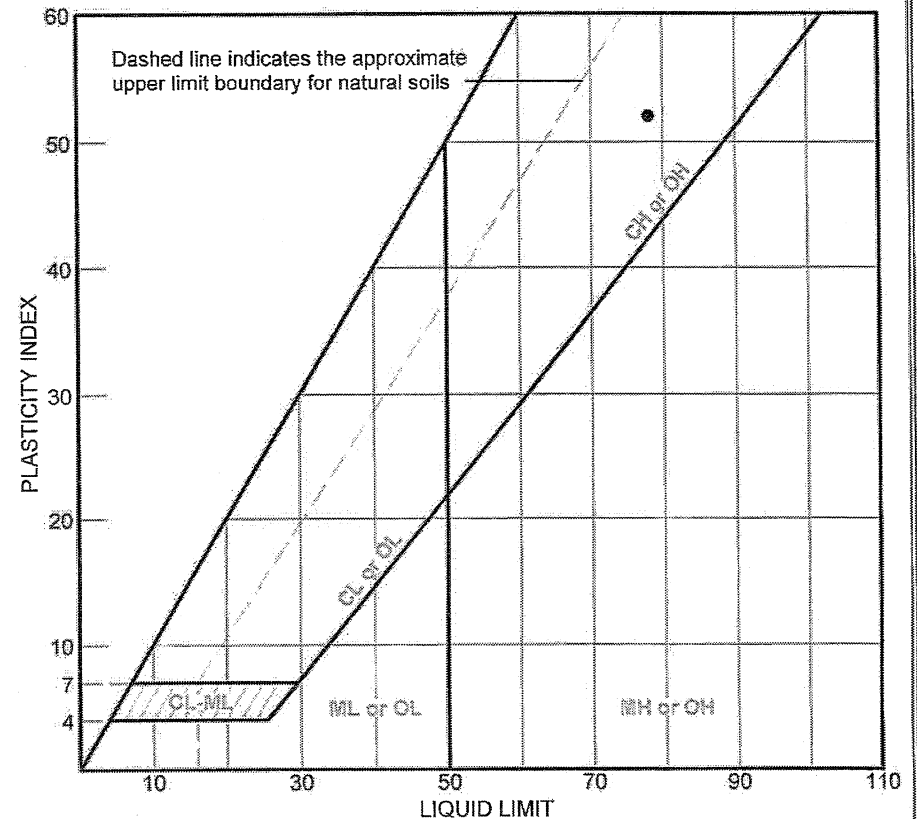
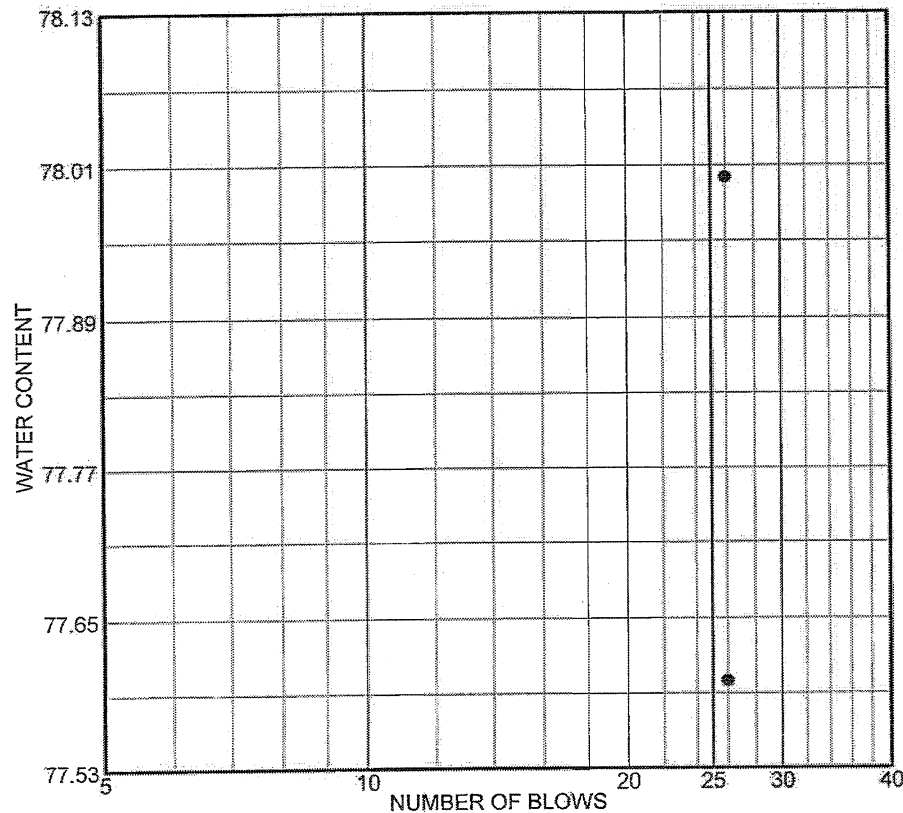
% COBBLES = % GRAVEL =

% SAND = 2.8 (% coarse = % medium = % fine = 2.8)

% SILT = 17.4 % CLAY = 79.8

D₈₅ = 0.01

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PI
B-3234UD	UD-4	53.8-55.4 ft	1/28/09	CH	Light Gray mottled Brownish Yellow Fat CLAY	28.8	78	52

Client **Bechtel**
 Project **Exelon Texas COL Project Supplemental Investigation**
 Project No. **6468-07-1777** Lab No. **9562**

**MACTEC ENGINEERING
AND
CONSULTING, INC.**

• Tested By: EH Reviewed By: JW

JW 5/5/09

DSC
5-5-09

MACTEC ENGINEERING AND CONSULTING, INC.

REPORT OF THE STANDARD TEST METHOD FOR SPECIFIC GRAVITY OF SOILS Performed in General Accordance with ASTM D 854-06 (Method B)

PROJECT NAME: EXELON TEXAS COL PROJECT SUPPLEMENTAL INVESTIGATION

PROJECT NUMBER: 6468-07-1777

DATE: 4/8/09

SAMPLE IDENTIFICATION: B-3234UD, UD-4 @ 53.8-55, 4 Ft.

(A) Mass of oven-dried soil, grams:	36.80
(B) Mass of pycnometer filled with water at test temperature (T), grams:	339.24
(C) Mass of pycnometer, water and soil, grams:	362.45
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	24.2
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.708
(F) Correction factor:	0.99904
(G x F) SPECIFIC GRAVITY @ 20°C:	2.705

MATERIAL TESTED:

☒

- # 4

☐ - # 10

PREPARATION METHOD:

☒

DRY

☐

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100 %

Fat CLAY (CH)

EQUIPMENT USED

SCALES : 418

OVEN : 144

THERMOMETER : 2759

PYCNOMETER : 2053

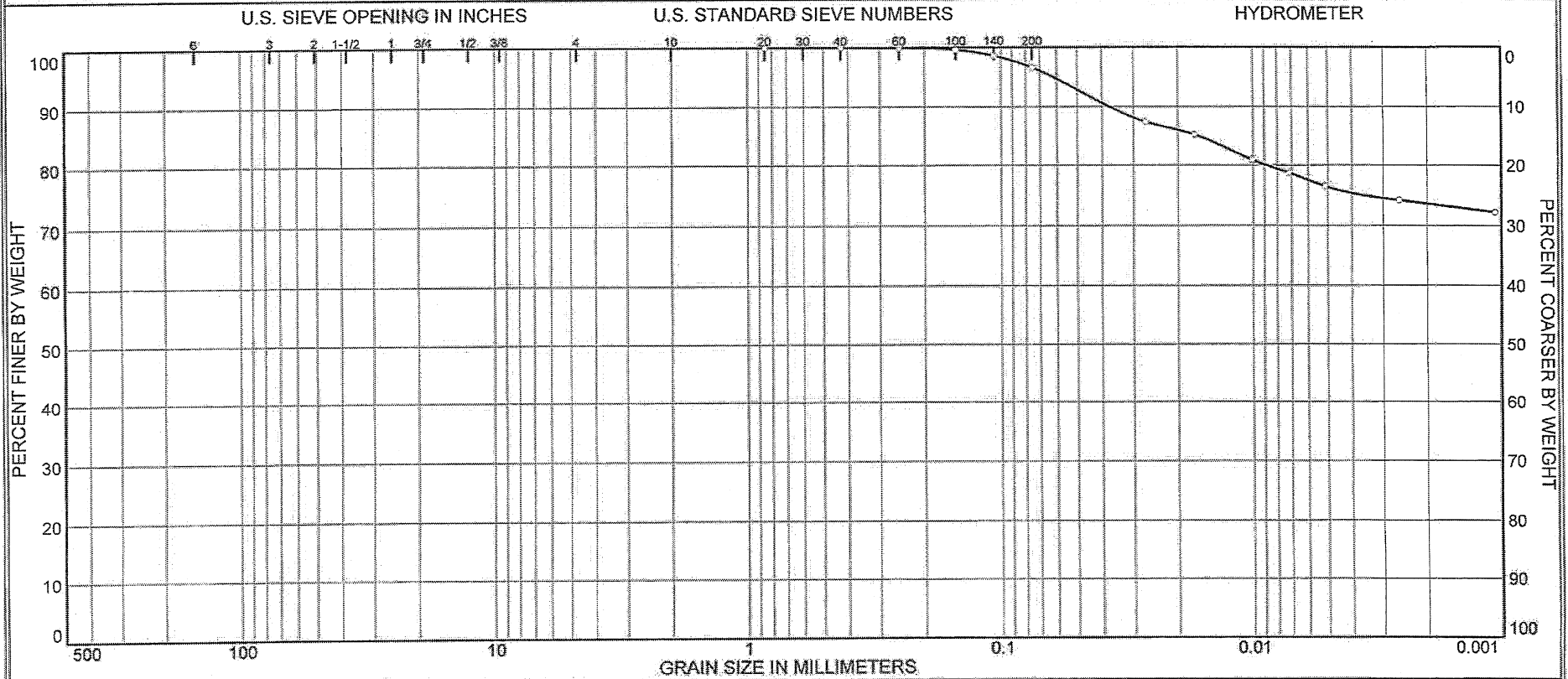
TESTED BY: EH

\\Test Reports\\Soils\\SPECIFIC GRAVITY(ref).xls

REVIEWED BY: J. Wang

JW 5/5/09
DSC
5-5-09

Particle Size Distribution Report (ASTM D422-63 (2007))



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.0	3.4	20.2	76.4

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-3234UD	UD-5	70.0-71.6 ft	2/3/09	CH	Light Gray mottled Brownish Yellow Fat CLAY	32.5	79	31

Client Bechtel

Project Exelon Texas COL Project Supplemental Investigation

Project No. 6468-07-1777

Lab No. 9563

**MACTEC ENGINEERING
AND
CONSULTING, INC.**

Tested By: EH Reviewed By: JW

Specific Gravity = 2.76 (ASTM D854-06)

JW 5/5/09

DSC
5-5-09

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL Project Supplemental Investigation
Project Number: 6468-07-1777

Sample Data

Source: B-3234UD
Sample No.: UD-5
Elev. or Depth: 70.0-71.6 ft **Sample Length(in./cm.):** 9563
Location: B-3234UD
Description: Light Gray mottled Brownish Yellow Fat CLAY
Date: 2/3/09 **Natural Moisture:** 32.5
Liquid Limit: 79 **Plastic Limit:** 31 **USCS Class.:** CH
Testing Remarks: Tested By: EH Reviewed By: JW

Specific Gravity = 2.76 (ASTM D854-06)

Mechanical Analysis Data

Initial
Dry sample and tare= 45.07
Tare = 0.00
Dry sample weight = 45.07
Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 20	0.00	100.0
# 40	0.02	100.0
# 60	0.04	99.9
# 100	0.16	99.6
# 140	0.62	98.6
# 200	1.52	96.6

Hydrometer Analysis Data

Separation sieve is #200
Percent -#200 based upon complete sample= 96.6
Weight of hydrometer sample: 43.55
Calculated biased weight= 45.08
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only=
Specific gravity of solids= 2.76
Specific gravity correction factor= 0.976
Hydrometer type: 152H
Effective depth $L = 16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	23.3	45.0	40.3	0.0127	45.0	8.9	0.0268	87.4
5.00	23.3	44.0	39.3	0.0127	44.0	9.1	0.0171	85.2
15.00	23.3	42.0	37.3	0.0127	42.0	9.4	0.0100	80.9
30.00	23.3	41.0	36.3	0.0127	41.0	9.6	0.0072	78.7
60.00	23.3	40.0	35.3	0.0127	40.0	9.7	0.0051	76.5
240.00	23.1	39.0	34.3	0.0127	39.0	9.9	0.0026	74.2

Elapsed time, min	Temp, Actual deg C reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1440.00	23.3 38.0	33.3	0.0127	38.0	10.1	0.0011	72.2

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

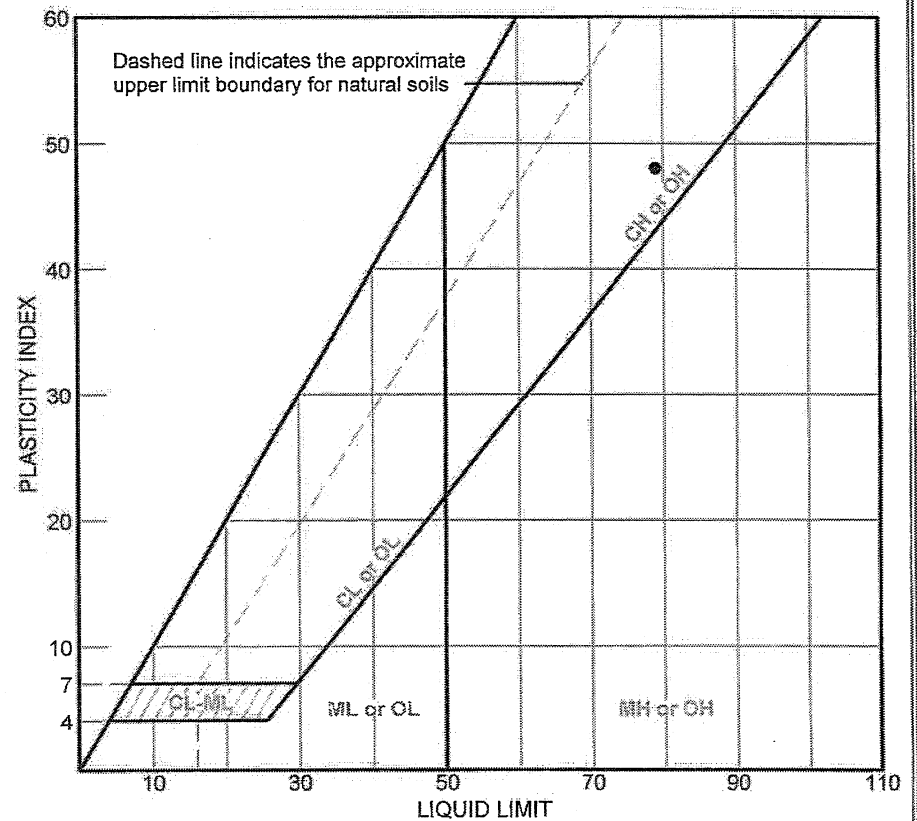
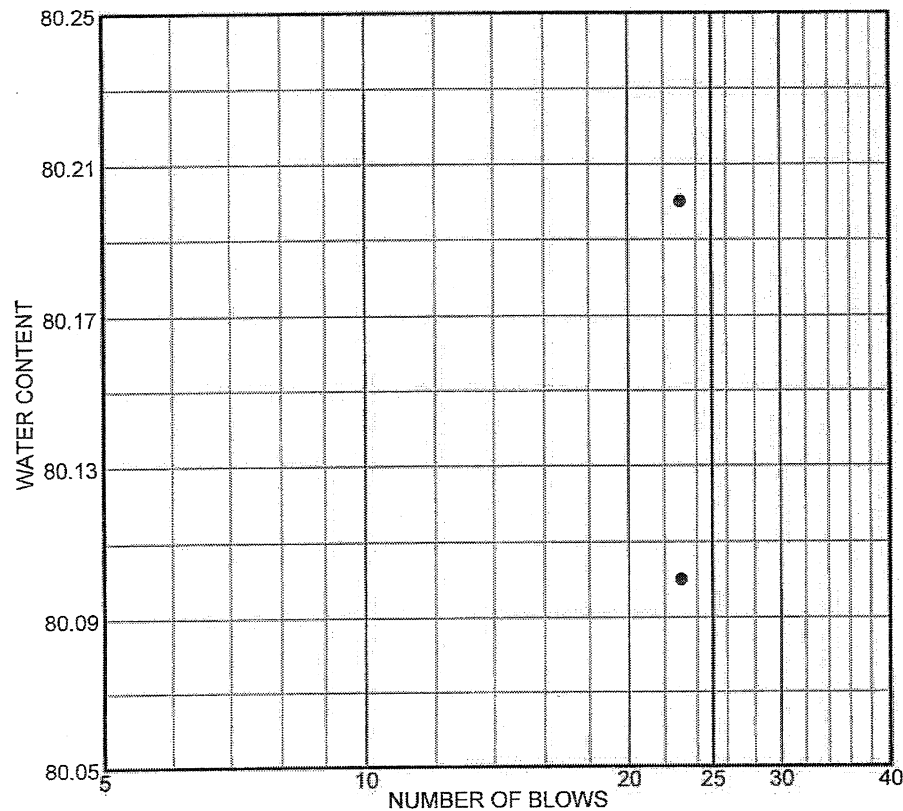
% COBBLES = % GRAVEL =

% SAND = 3.4 (% coarse = % medium = % fine = 3.4)

% SILT = 20.2 % CLAY = 76.4

D₈₅ = 0.02

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PI
B-3234UD	UD-5	70.0-71.6 ft	2/3/09	CH	Light Gray mottled Brownish Yellow Fat CLAY	32.5	79	48

Client **Bechtel**

Project **Exelon Texas COL Project Supplemental Investigation**

Project No. **6468-07-1777**

Lab No. **9563**

**MACTEC ENGINEERING
AND
CONSULTING, INC.**

• Tested By: EH Reviewed By: JW

JW 5/5/09

DSC
5-5-09

MACTEC ENGINEERING AND CONSULTING, INC.

REPORT OF THE STANDARD TEST METHOD FOR SPECIFIC GRAVITY OF SOILS Performed in General Accordance with ASTM D 854-06 (Method B)

PROJECT NAME: EXELON TEXAS COL PROJECT SUPPLEMENTAL INVESTIGATION

PROJECT NUMBER: 6468-07-1777

DATE: 4/8/09

SAMPLE IDENTIFICATION: B-3234UD, UD-5 @ 70.0-71.6 Ft.

(A) Mass of oven-dried soil, grams:	36.66
(B) Mass of pycnometer filled with water at test temperature (T), grams:	346.71
(C) Mass of pycnometer, water and soil, grams:	370.08
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	24.7
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.758
(F) <i>Correction factor:</i>	0.99892
(G x F) SPECIFIC GRAVITY @ 20°C:	2.755

MATERIAL TESTED:

☒ X

- # 4

☐ - # 10

PREPARATION METHOD:

☒ X

DRY

☐ WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100 %

Fat CLAY (CH)

EQUIPMENT USED

SCALES : 418

OVEN : 144

THERMOMETER : 2759

PYCNO METER : 1954

TESTED BY: EH

\\Test Reports\\Soils\\SPECIFIC GRAVITY(ref).xls

REVIEWED BY: J. Wang

SW
5/5/09
DSC
5-5-09

Client Bechtel		MACTEC Engineering and Consulting, Inc. Raleigh, North Carolina	○ ND = Not Determined NP = Non Plastic Specific Gravity is assumed
Project Exelon Texas COL Project - Supplemental			
Investigation, including UHS			
Project No. 6468071777	Figure NA		

DSC 8-4-09

GRAIN SIZE DISTRIBUTION TEST DATA

7/20/2009

Client: Bechtel

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Project Number: 6468071777

Location: Boring B-3234UD

Depth: 105-107.5'

Sample Number: UD7

Material Description: Very Pale Brown Poorly graded SAND with Silt

Date: 2/3/09

Natural Moisture: ND

Liquid Limit: 14

Plastic Limit: NP

USCS Class.: SP-SM

Testing Remarks: ND = Not Determined

NP = Non Plastic

Specific Gravity is assumed

Tested by: CS

Checked by: BS

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
643.80	0.00	0.00	#4	0.00	100.0
			#10	0.17	100.0
105.00	0.00	0.00	#20	0.16	99.8
			#40	1.73	98.3
			#60	24.85	76.3
			#100	87.12	17.0
			#140	93.52	10.9
			#200	94.96	9.6

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 105.00

Hygroscopic moisture correction:

Moist weight and tare = 29.15

Dry weight and tare = 29.01

Tare weight = 15.52

Hygroscopic moisture = 1.0%

Table of composite correction values:

Temp., deg. C: 12.5 29.6

Comp. corr.: -8.0 -4.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.0	12.0	6.0	0.0133	13.0	14.2	0.0353	5.7
5.00	21.0	11.0	5.0	0.0133	12.0	14.3	0.0225	4.7
15.00	21.3	10.0	4.1	0.0132	11.0	14.5	0.0130	3.9
30.00	21.3	9.0	3.1	0.0132	10.0	14.7	0.0092	2.9
60.00	21.4	9.0	3.1	0.0132	10.0	14.7	0.0065	2.9
250.00	22.7	7.0	1.4	0.0130	8.0	15.0	0.0032	1.3
1440.00	24.2	6.0	0.7	0.0128	7.0	15.1	0.0013	0.7

MACTEC Engineering and Consulting, Inc.

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.7	88.7	90.4	7.1	2.5	9.6

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
0.0833	0.1372	0.1561	0.1725	0.2018	0.2176	0.2600	0.2769	0.3009	0.3431

Fineness Modulus	C _u	C _c
0.94	2.61	1.64