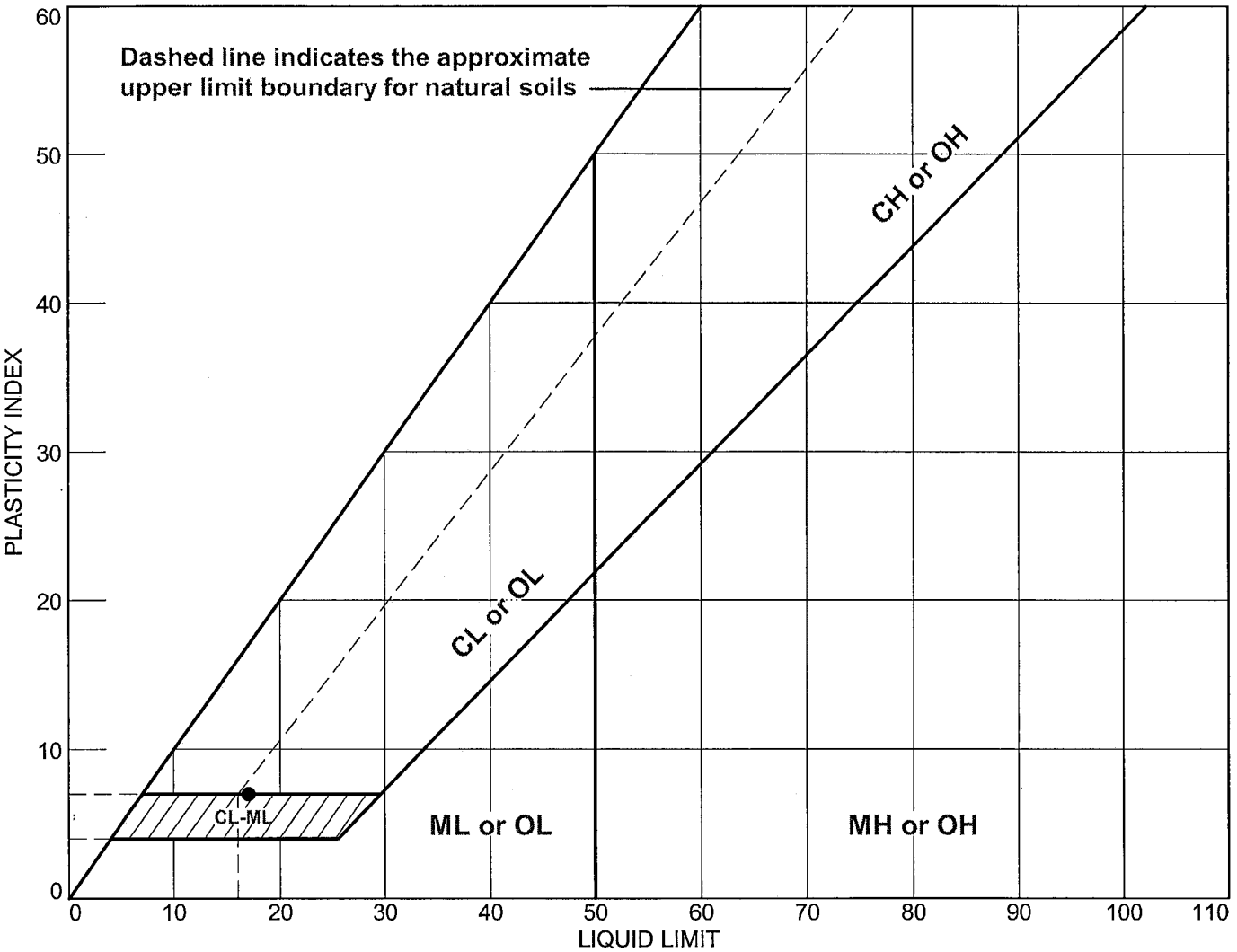
LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-3170A	SS-20	84.0-85.5'	12.3	10	17	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

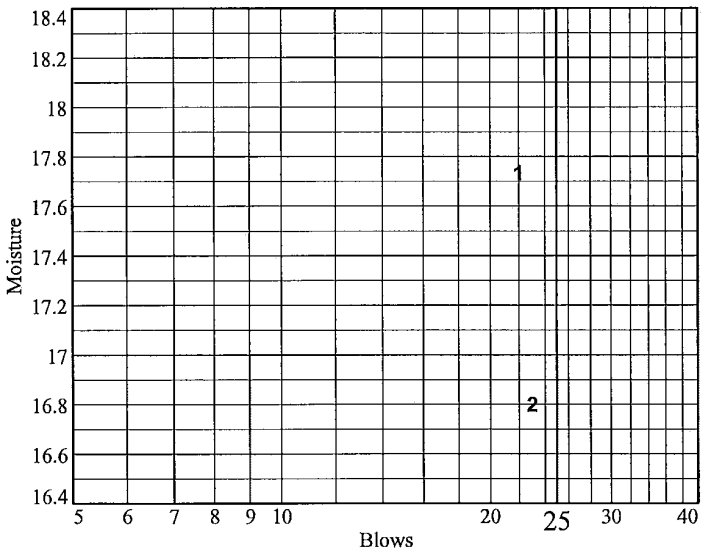
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 84.0-85.5'
Sample Number: SS-20
Material Description: Very Pale Brown 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	26.53	29.97				
Dry+Tare	24.21	27.92				
Tare	11.13	15.72				
# Blows	22	23				
Moisture	17.7	16.8				



Liquid Limit= 17
Plastic Limit= 10
Plasticity Index= 7
Natural Moisture= 12.3
Liquidity Index= 0.3

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	27.62	27.52			
Dry+Tare	26.53	26.46			
Tare	15.65	15.53			
Moisture	10.0	9.7			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
88.70	79.72	6.76	12.3

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

	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.5	7.7	16.8	12.5	62.5

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-21	89.0-90.5'	2/25/09	CH	Very Pale Brown mottled Yellow Fat CLAY with sand	22.1	64	15

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed

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

GRAIN SIZE DISTRIBUTION TEST DATA

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 89.0-90.5' **Sample Number:** SS-21
Material Description: Very Pale Brown mottled Yellow Fat CLAY with sand
Date: 2/25/09 **Natural Moisture:** 22.1
Liquid Limit: 64 **Plastic Limit:** 15 **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
270.16	0.00	0.00	#4	0.00	100.0
			#10	1.36	99.5
49.24	0.00	0.00	#20	0.37	98.7
			#40	3.79	91.8
			#60	6.61	86.1
			#100	10.44	78.4
			#140	11.28	76.7
			#200	12.10	75.0

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.5
Weight of hydrometer sample =49.24
Hygroscopic moisture correction:
Moist weight and tare = 17.28
Dry weight and tare = 16.91
Tare weight = 5.81
Hygroscopic moisture = 3.3%
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.9	41.0	35.5	0.0133	42.0	9.4	0.0288	73.2
5.00	20.9	39.0	33.5	0.0133	40.0	9.7	0.0186	69.1
15.00	20.9	38.0	32.5	0.0133	39.0	9.9	0.0108	67.0
30.00	20.8	37.0	31.4	0.0133	38.0	10.1	0.0077	64.9
60.00	20.8	36.0	30.4	0.0133	37.0	10.2	0.0055	62.8
250.00	21.1	35.0	29.5	0.0133	36.0	10.4	0.0027	61.0
1440.00	20.9	33.0	27.5	0.0133	34.0	10.7	0.0011	56.7

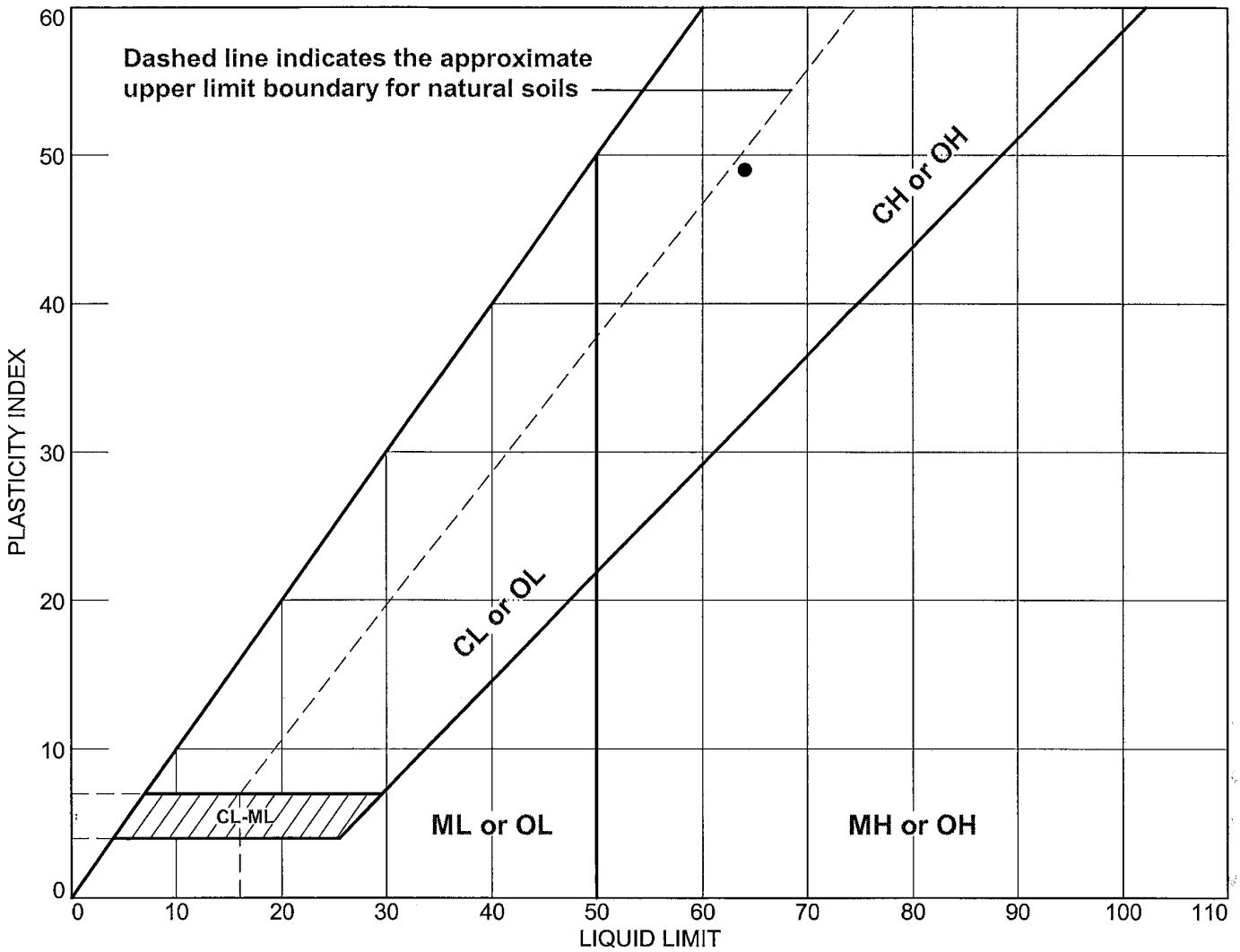
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.5	7.7	16.8	25.0	12.5	62.5	75.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
					0.0021	0.1712	0.2322	0.3509	0.5675

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-3170A	SS-21	89.0-90.5'	22.1	15	64	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

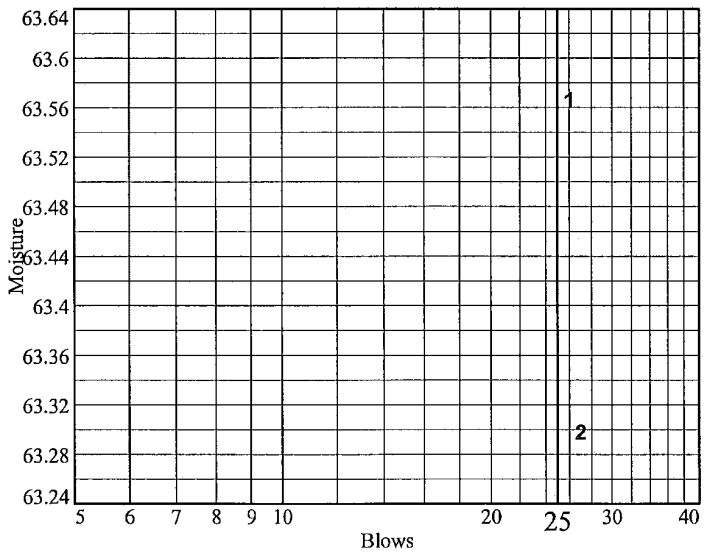
LIQUID AND PLASTIC LIMIT TEST DATA

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 89.0-90.5' **Sample Number:** SS-21
Material Description: Very Pale Brown mottled Yellow Fat CLAY with sand
USCS: CH **AASHTO:** A-7-6(36)
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	28.36	26.47				
Dry+Tare	23.37	22.21				
Tare	15.52	15.48				
# Blows	26	27				
Moisture	63.6	63.3				



Liquid Limit= 64
Plastic Limit= 15
Plasticity Index= 49
Natural Moisture= 22.1
Liquidity Index= 0.1

Plastic Limit Data

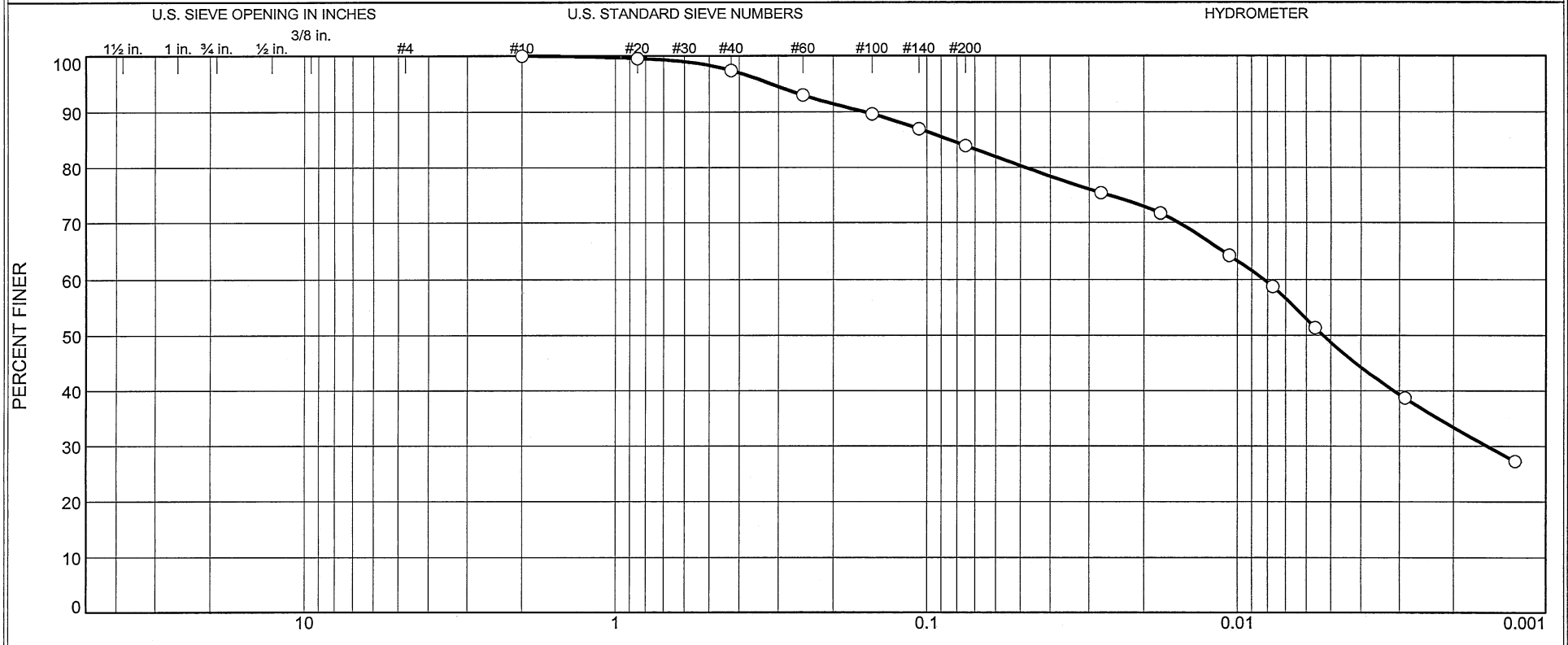
Run No.	1	2	3	4	
Wet+Tare	22.08	22.70			
Dry+Tare	21.21	21.75			
Tare	15.31	15.64			
Moisture	14.7	15.5			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
69.01	57.74	6.73	22.1

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	2.6	13.4	35.3	48.7

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-22	94.0-95.5'	2/25/09	CL	Very Pale Brown mottled Yellow Lean CLAY with sand	14.1	48	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

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 94.0-95.5' **Sample Number:** SS-22
Material Description: Very Pale Brown mottled Yellow Lean CLAY with sand
Date: 2/25/09 **Natural Moisture:** 14.1
Liquid Limit: 48 **Plastic Limit:** 15 **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
270.36	0.00	0.00	#10	0.00	100.0
53.98	0.00	0.00	#20	0.25	99.5
			#40	1.41	97.4
			#60	3.77	93.0
			#100	5.60	89.6
			#140	7.03	87.0
			#200	8.66	84.0

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =53.78
Hygroscopic moisture correction:
Moist weight and tare = 21.89
Dry weight and tare = 21.88
Tare weight = 11.43
Hygroscopic moisture = 0.1%
Table of composite correction values:

Temp., deg. C:	10.6	28.4
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.1	46.0	40.9	0.0133	47.0	8.6	0.0275	75.4
5.00	21.1	44.0	38.9	0.0133	45.0	8.9	0.0177	71.7
15.00	20.9	40.0	34.9	0.0133	41.0	9.6	0.0106	64.2
30.00	20.9	37.0	31.9	0.0133	38.0	10.1	0.0077	58.7
60.00	20.9	33.0	27.9	0.0133	34.0	10.7	0.0056	51.3
250.00	21.4	26.0	21.0	0.0132	27.0	11.9	0.0029	38.7
1440.00	20.6	20.0	14.8	0.0133	21.0	12.9	0.0013	27.3

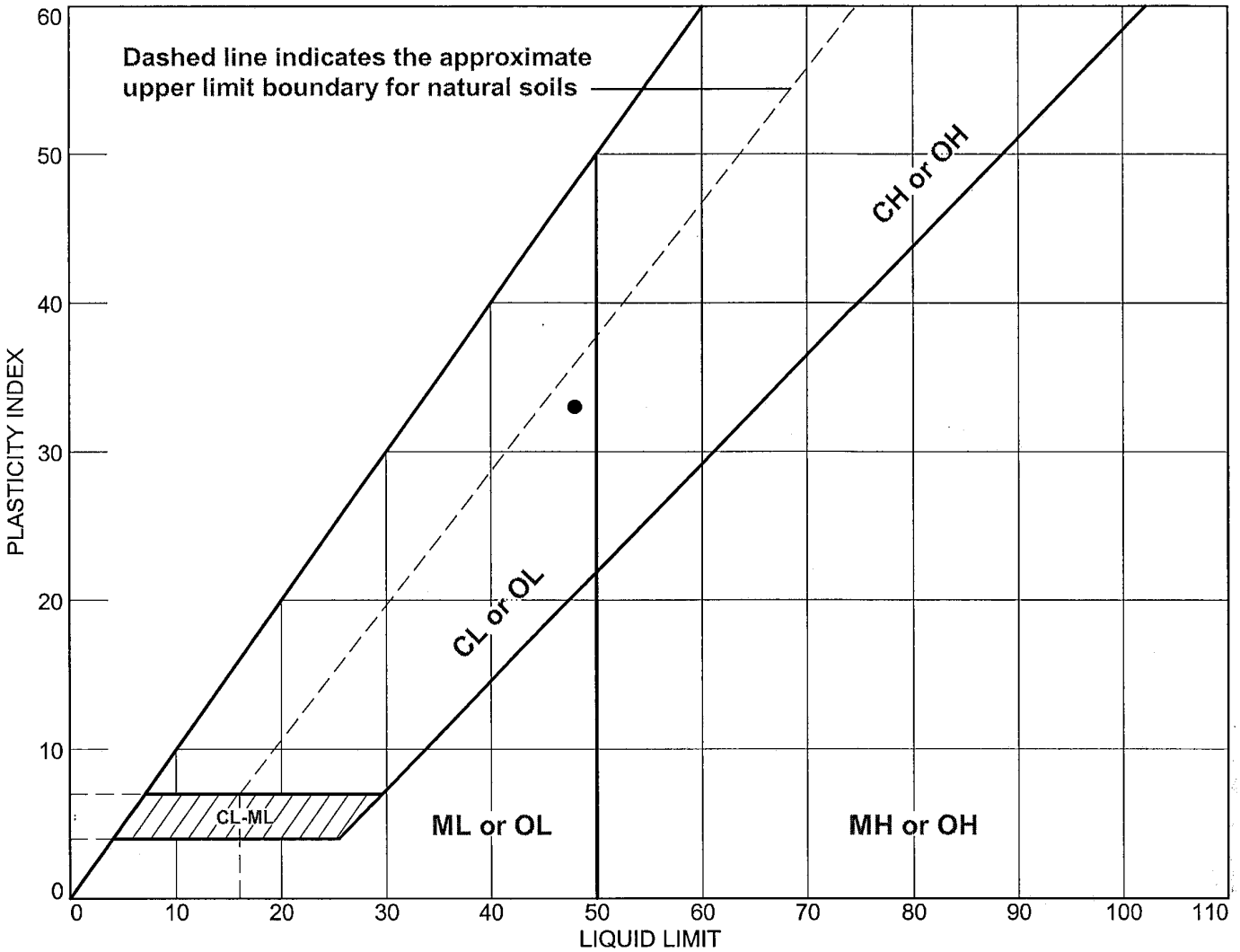
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	2.6	13.4	16.0	35.3	48.7	84.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0016	0.0053	0.0082	0.0483	0.0843	0.1587	0.3157

Fineness Modulus
0.17

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-3170A	SS-22	94.0-95.5'	14.1	15	48	33	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

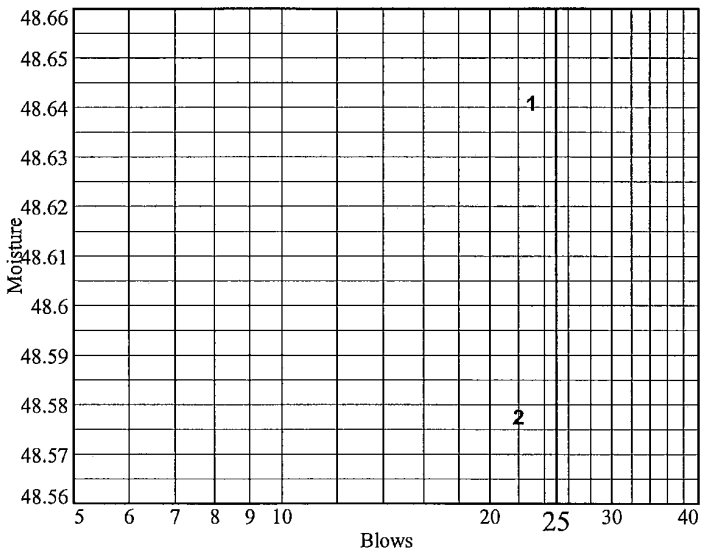
LIQUID AND PLASTIC LIMIT TEST DATA

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 94.0-95.5' **Sample Number:** SS-22
Material Description: Very Pale Brown mottled Yellow Lean CLAY with sand
USCS: CL **AASHTO:** A-7-6(28)
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	26.13	24.70				
Dry+Tare	22.73	20.26				
Tare	15.74	11.12				
# Blows	23	22				
Moisture	48.6	48.6				



Liquid Limit= 48
Plastic Limit= 15
Plasticity Index= 33
Natural Moisture= 14.1
Liquidity Index= 0.0

Plastic Limit Data

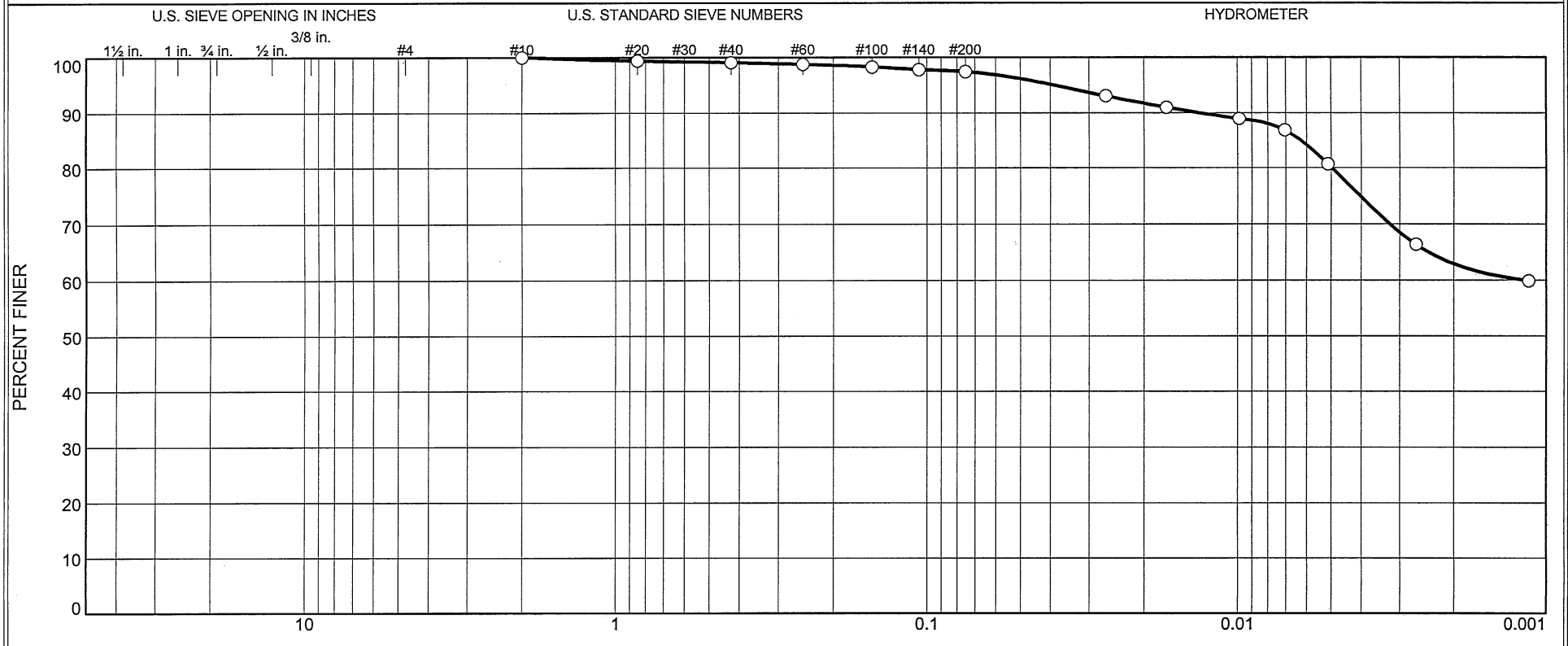
Run No.	1	2	3	4	
Wet+Tare	22.01	22.69			
Dry+Tare	21.16	21.76			
Tare	15.60	15.50			
Moisture	15.3	14.9			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
82.83	73.41	6.71	14.1

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	0.9	1.7	17.4	80.0

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-24	109-110.5'	3/3/09	CH	Very Pale Brown mottled Yellow Fat CLAY	20.8	70	20

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed

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

GRAIN SIZE DISTRIBUTION TEST DATA

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 109-110.5' **Sample Number:** SS-24
Material Description: Very Pale Brown mottled Yellow Fat CLAY
Date: 3/3/09 **Natural Moisture:** 20.8
Liquid Limit: 70 **Plastic Limit:** 20 **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
251.51	0.00	0.00	#10	0.00	100.0
49.45	0.00	0.00	#20	0.31	99.4
			#40	0.46	99.1
			#60	0.63	98.7
			#100	0.85	98.3
			#140	1.10	97.8
			#200	1.28	97.4

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =49.45
Hygroscopic moisture correction:
Moist weight and tare = 17.73
Dry weight and tare = 17.31
Tare weight = 5.83
Hygroscopic moisture = 3.7%
Table of composite correction values:

Temp., deg. C:	10.6	28.4
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.9	50.0	44.9	0.0133	51.0	7.9	0.0265	93.1
5.00	20.9	49.0	43.9	0.0133	50.0	8.1	0.0169	91.0
15.00	20.9	48.0	42.9	0.0133	49.0	8.3	0.0099	88.9
30.00	20.9	47.0	41.9	0.0133	48.0	8.4	0.0070	86.8
60.00	20.9	44.0	38.9	0.0133	45.0	8.9	0.0051	80.6
250.00	21.3	37.0	32.0	0.0132	38.0	10.1	0.0027	66.3
1440.00	20.8	34.0	28.9	0.0133	35.0	10.6	0.0011	59.8

MACTEC Engineering and Consulting, Inc.

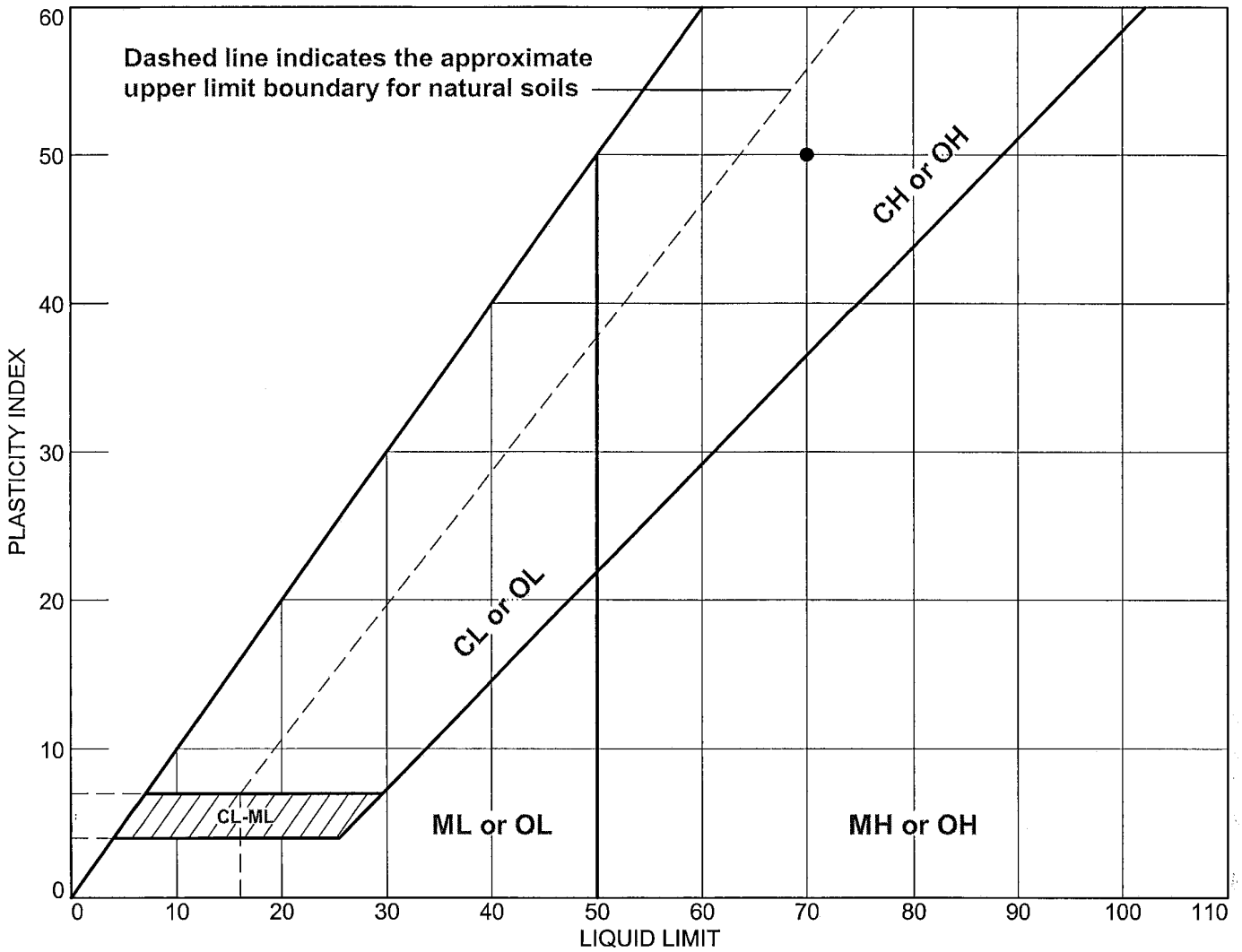
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.9	1.7	2.6	17.4	80.0	97.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
					0.0012	0.0050	0.0063	0.0133	0.0388

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-3170A	SS-24	109-110.5'	20.8	20	70	50	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

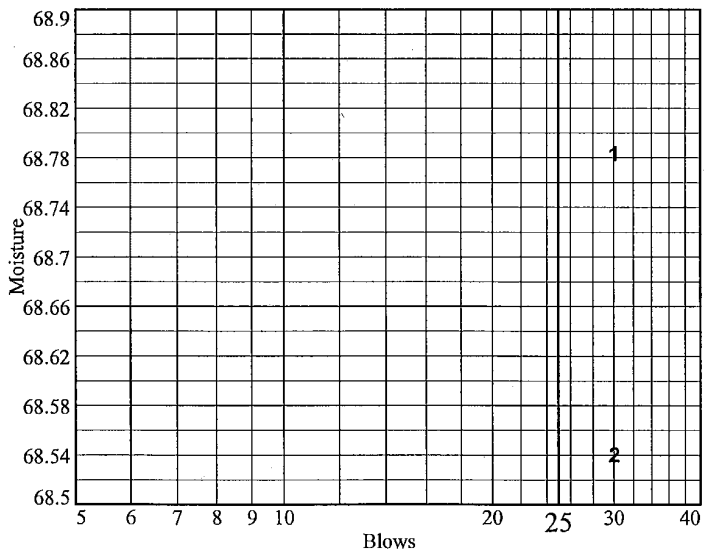
LIQUID AND PLASTIC LIMIT TEST DATA

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 109-110.5' **Sample Number:** SS-24
Material Description: Very Pale Brown mottled Yellow Fat CLAY
USCS: CH **AASHTO:** A-7-6(54)
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.92	26.69				
Dry+Tare	22.83	22.18				
Tare	15.43	15.60				
# Blows	30	30				
Moisture	68.8	68.5				



Liquid Limit= 70
Plastic Limit= 20
Plasticity Index= 50
Natural Moisture= 20.8
Liquidity Index= 0.0

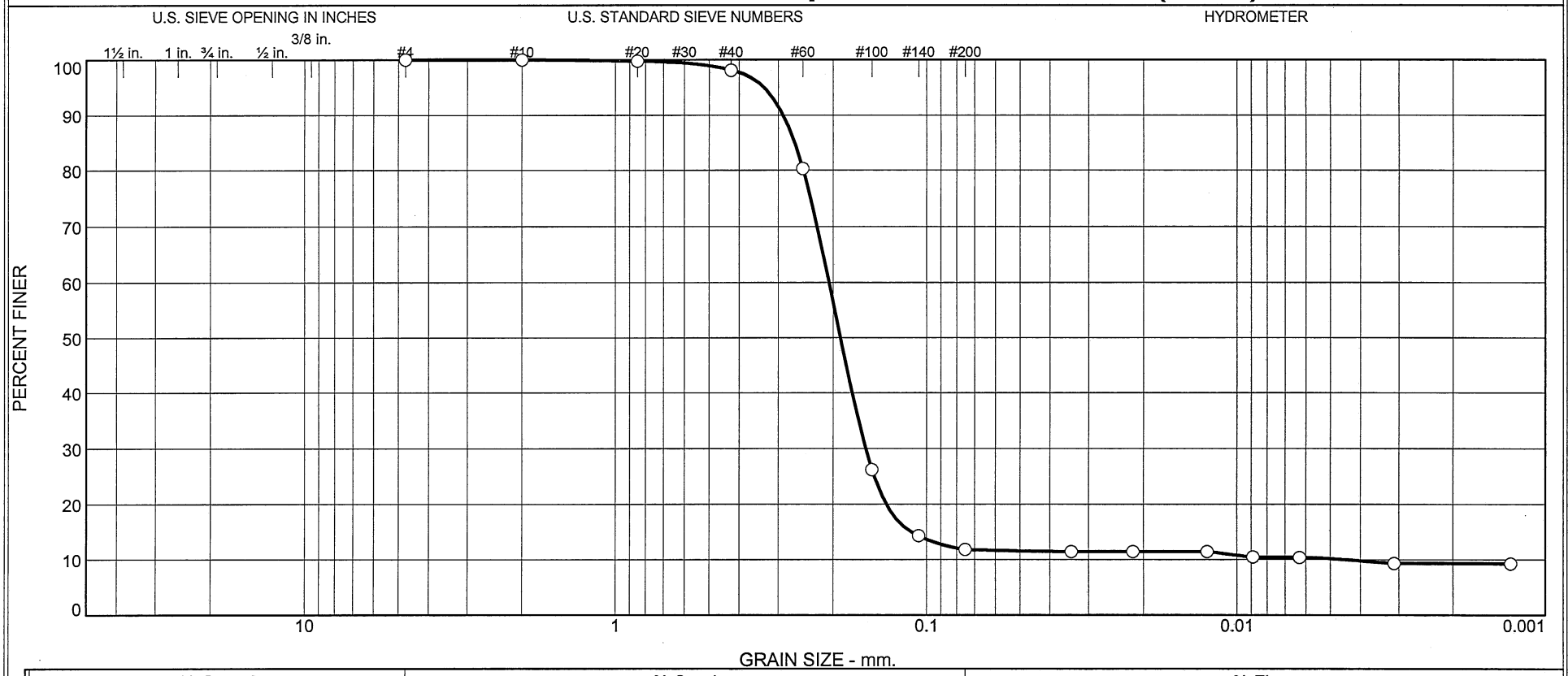
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.92	22.60			
Dry+Tare	20.86	21.47			
Tare	15.64	15.61			
Moisture	20.3	19.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
116.14	97.76	9.42	20.8

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	86.3	1.6	10.2

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-25	119.0-120.5'	3/3/09	SP-SM	Very Pale Brown Poorly graded SAND with silt	23.6	NV	NP

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed
NV = No Value
NP = Non Plastic

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

GRAIN SIZE DISTRIBUTION TEST DATA

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 119.0-120.5' **Sample Number:** SS-25
Material Description: Very Pale Brown Poorly graded SAND with silt
Date: 3/3/09 **Natural Moisture:** 23.6
Liquid Limit: NV **Plastic Limit:** NP **USCS Class.:** SP-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
301.00	0.00	0.00	#4	0.00	100.0
			#10	0.03	100.0
100.95	0.00	0.00	#20	0.26	99.7
			#40	1.87	98.1
			#60	19.90	80.3
			#100	74.48	26.2
			#140	86.49	14.3
			#200	89.04	11.8

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =100.95
Hygroscopic moisture correction:
Moist weight and tare = 24.75
Dry weight and tare = 24.71
Tare weight = 6.70
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	17.0	11.6	0.0132	18.0	13.3	0.0341	11.4
5.00	21.4	17.0	11.6	0.0132	18.0	13.3	0.0216	11.4
15.00	21.4	17.0	11.6	0.0132	18.0	13.3	0.0125	11.4
30.00	21.4	16.0	10.6	0.0132	17.0	13.5	0.0089	10.4
60.00	21.2	16.0	10.6	0.0132	17.0	13.5	0.0063	10.4
250.00	20.9	15.0	9.5	0.0133	16.0	13.7	0.0031	9.3
1440.00	20.8	15.0	9.4	0.0133	16.0	13.7	0.0013	9.3

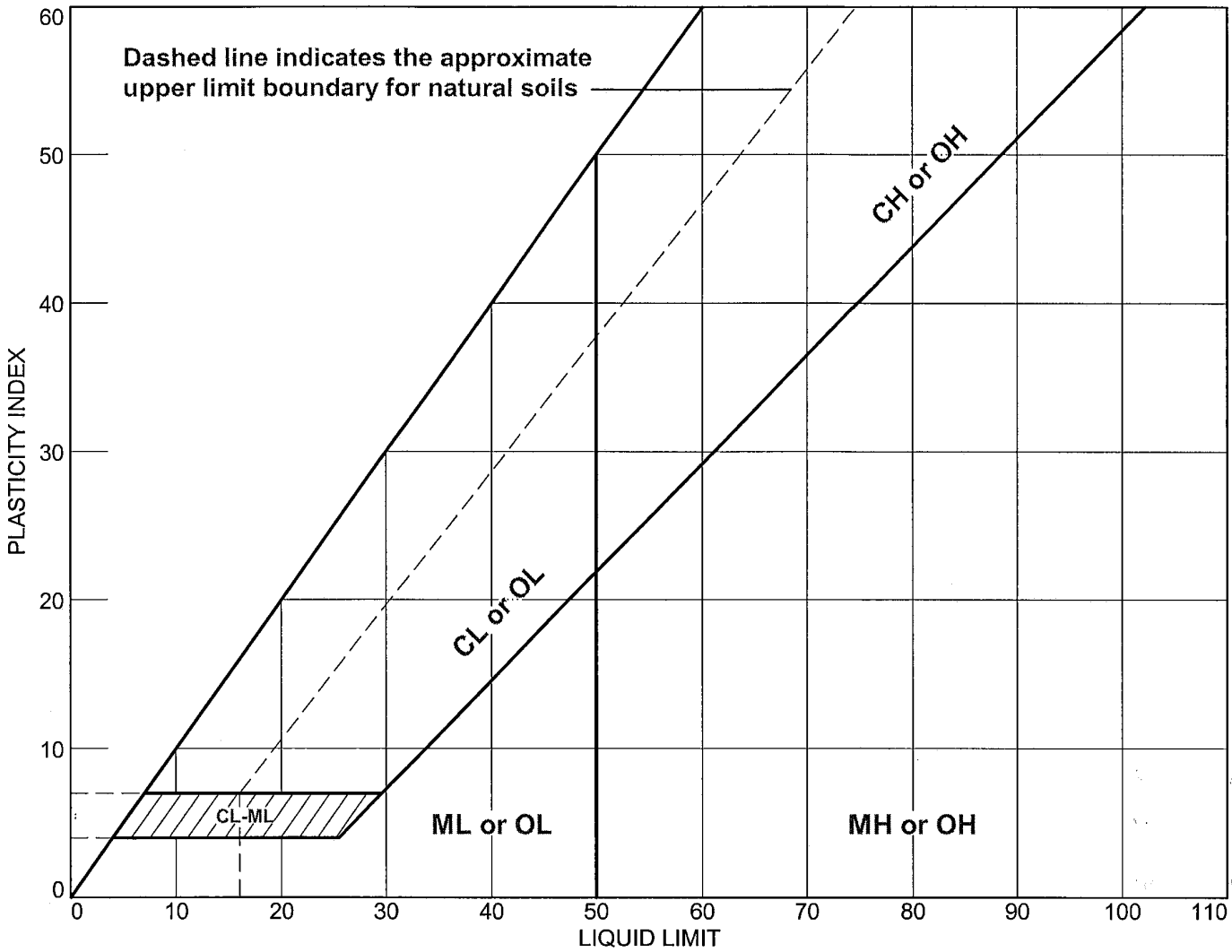
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.9	86.3	88.2	1.6	10.2	11.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0045	0.1117	0.1348	0.1571	0.1896	0.2062	0.2492	0.2658	0.2895	0.3324

Fineness Modulus	C_u	C_c
0.83	45.44	26.39

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-3170A	SS-25	119.0-120.5'	23.6	NP	NV	NP	SP-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

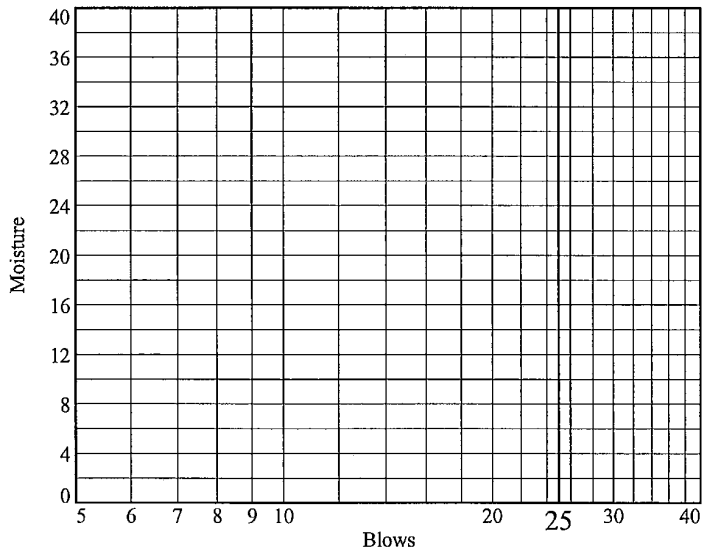
LIQUID AND PLASTIC LIMIT TEST DATA

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 119.0-120.5' **Sample Number:** SS-25
Material Description: Very Pale Brown Poorly graded SAND with silt
USCS: SP-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= 23.6

Plastic Limit Data

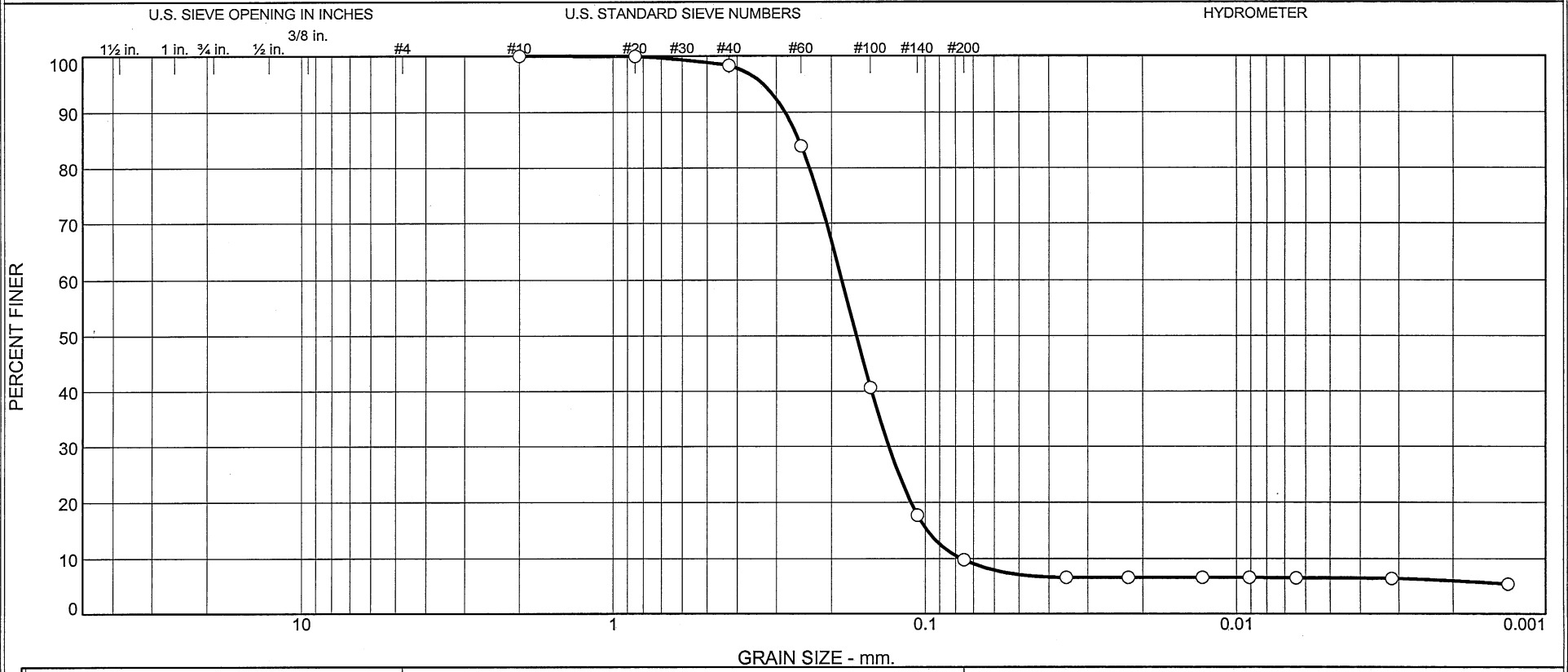
Run No.	1	2	3	4	
Wet+Tare					
Dry+Tare					
Tare					
Moisture					

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
82.10	67.71	6.70	23.6

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	1.7	88.5	3.3	6.5

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-26	129.0-130.4'	3/3/09	SP-SM	Light Gray Poorly graded SAND with silt	22.1	18	NP

Client Bechtel
Project Exelon Texas COL Project - Supplemental Investigation, including UHS
Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina

○ Specific Gravity is assumed
NP = Non Plastic

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

GRAIN SIZE DISTRIBUTION TEST DATA

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 129.0-130.4' **Sample Number:** SS-26
Material Description: Light Gray Poorly graded SAND with silt
Date: 3/3/09 **Natural Moisture:** 22.1
Liquid Limit: 18 **Plastic Limit:** NP **USCS Class.:** SP-SM
Testing Remarks: Specific Gravity is assumed
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
293.95	0.00	0.00	#10	0.00	100.0
99.89	0.00	0.00	#20	0.08	99.9
			#40	1.70	98.3
			#60	16.03	84.0
			#100	59.28	40.7
			#140	82.19	17.7
			#200	90.13	9.8

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =99.89
Hygroscopic moisture correction:
Moist weight and tare = 17.77
Dry weight and tare = 17.76
Tare weight = 5.72
Hygroscopic moisture = 0.1%
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	12.0	6.6	0.0132	13.0	14.2	0.0352	6.6
5.00	21.4	12.0	6.6	0.0132	13.0	14.2	0.0222	6.6
15.00	21.4	12.0	6.6	0.0132	13.0	14.2	0.0128	6.6
30.00	21.4	12.0	6.6	0.0132	13.0	14.2	0.0091	6.6
60.00	21.2	12.0	6.6	0.0132	13.0	14.2	0.0064	6.5
250.00	20.9	12.0	6.5	0.0133	13.0	14.2	0.0032	6.4
1440.00	20.9	11.0	5.5	0.0133	12.0	14.3	0.0013	5.4

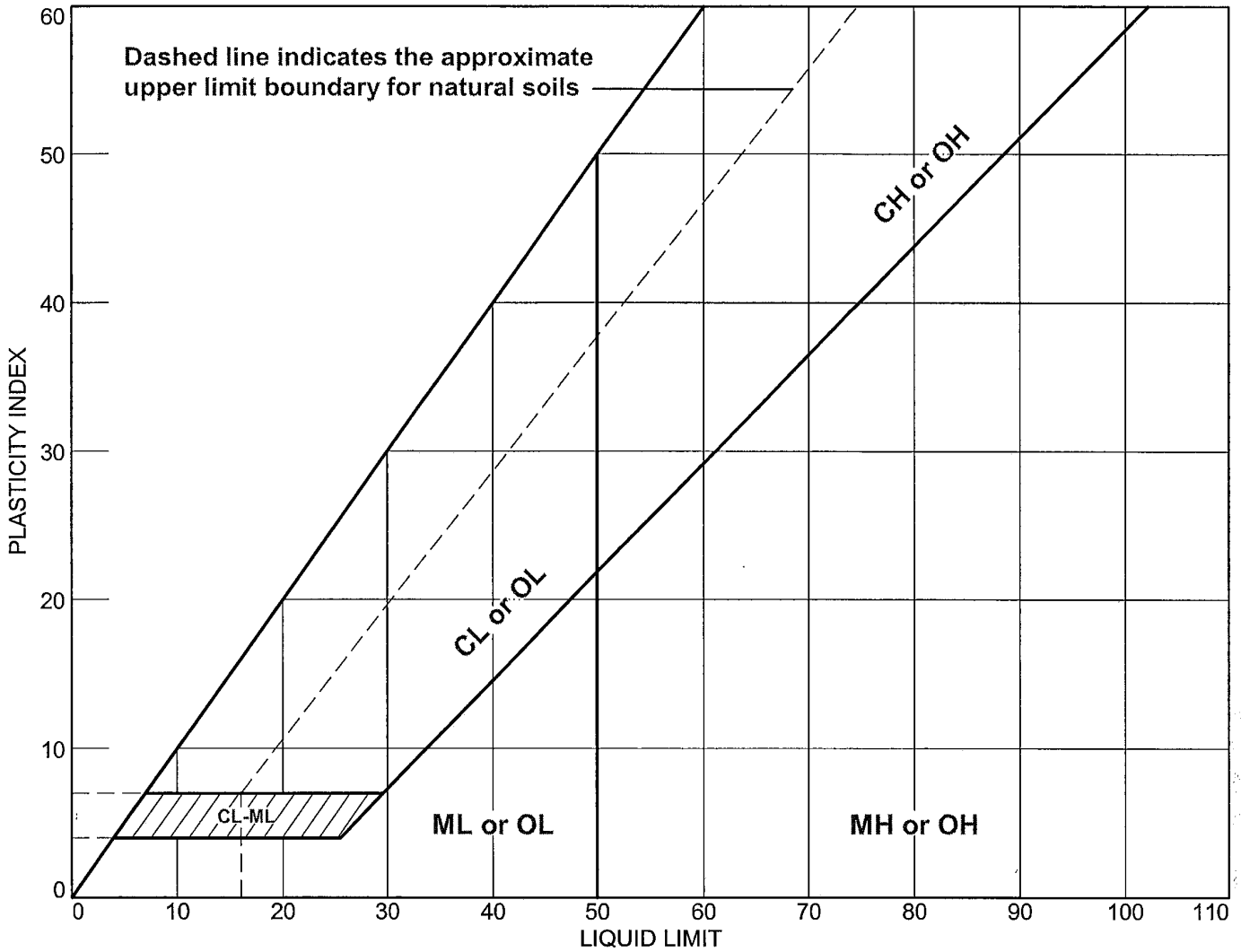
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.7	88.5	90.2	3.3	6.5	9.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0765	0.0985	0.1113	0.1310	0.1666	0.1857	0.2355	0.2544	0.2814	0.3302

Fineness Modulus	C_u	C_c
0.68	2.43	1.21

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-3170A	SS-26	129.0-130.4'	22.1	NP	18	NP	SP-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

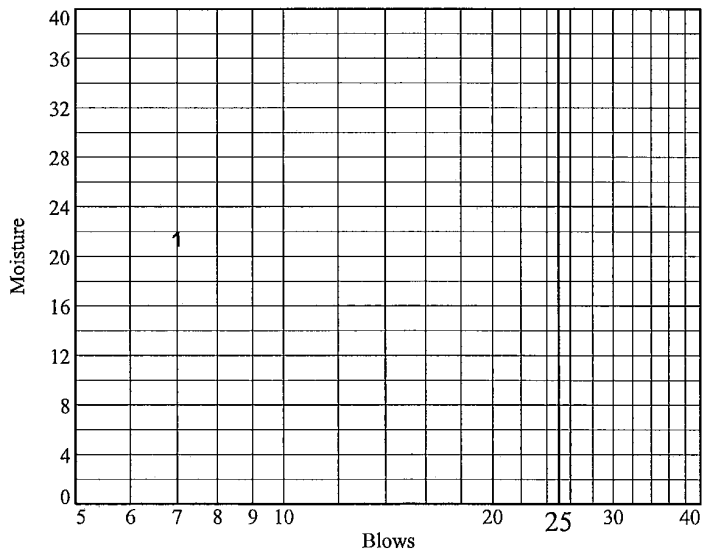
LIQUID AND PLASTIC LIMIT TEST DATA

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 129.0-130.4' **Sample Number:** SS-26
Material Description: Light Gray Poorly graded SAND with silt
USCS: SP-SM **AASHTO:** A-3
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	29.39					
Dry+Tare	26.94					
Tare	15.51					
# Blows	7					
Moisture	21.4					



Liquid Limit= 18
Plastic Limit= NP
Plasticity Index= NP
Natural Moisture= 22.1

Plastic Limit Data

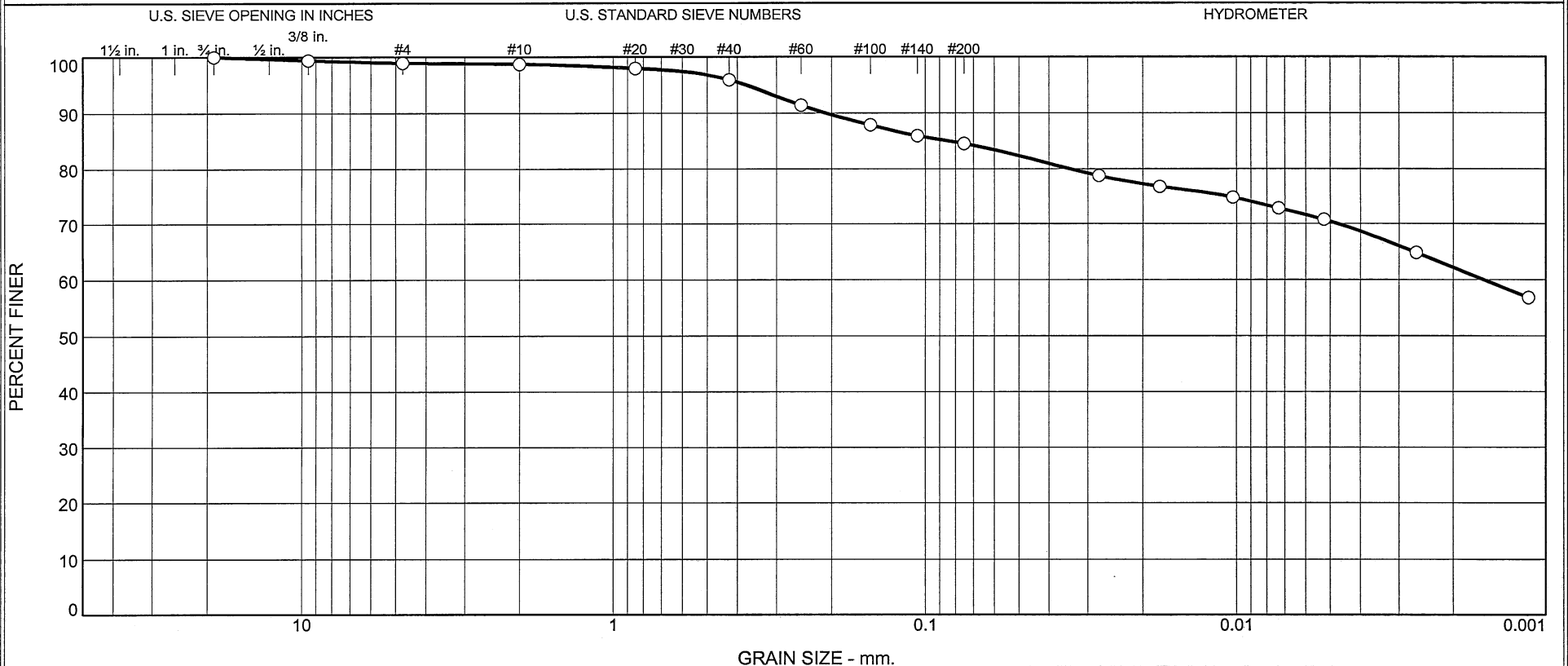
Run No.	1	2	3	4	
Wet+Tare					
Dry+Tare					
Tare					
Moisture					

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
128.46	106.42	6.89	22.1

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	1.1	0.2	2.8	11.4	14.1	70.4

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-27	139.0-140.5'	3/3/09	CH	Yellow mottled Light Gray Fat CLAY with sand	15.3	52	17

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed

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

GRAIN SIZE DISTRIBUTION TEST DATA

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 139.0-140.5' **Sample Number:** SS-27
Material Description: Yellow mottled Light Gray Fat CLAY with sand
Date: 3/3/09 **Natural Moisture:** 15.3
Liquid Limit: 52 **Plastic Limit:** 17 **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
255.37	0.00	0.00	3/4"	0.00	100.0
			3/8"	1.58	99.4
			#4	2.81	98.9
			#10	3.35	98.7
52.42	0.00	0.00	#20	0.40	97.9
			#40	1.49	95.9
			#60	3.88	91.4
			#100	5.76	87.8
			#140	6.80	85.9
			#200	7.53	84.5

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 98.7
Weight of hydrometer sample =52.42
Hygroscopic moisture correction:
Moist weight and tare = 24.78
Dry weight and tare = 24.14
Tare weight = 12.70
Hygroscopic moisture = 5.6%
Table of composite correction values:

Temp., deg. C:	10.6	28.4
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	45.0	40.0	0.0132	46.0	8.8	0.0276	78.7
5.00	21.4	44.0	39.0	0.0132	45.0	8.9	0.0176	76.7
15.00	21.4	43.0	38.0	0.0132	44.0	9.1	0.0103	74.8
30.00	21.4	42.0	37.0	0.0132	43.0	9.2	0.0073	72.8
60.00	21.2	41.0	36.0	0.0132	42.0	9.4	0.0052	70.7
250.00	21.1	38.0	32.9	0.0133	39.0	9.9	0.0026	64.8
1440.00	20.9	34.0	28.9	0.0133	35.0	10.6	0.0011	56.8

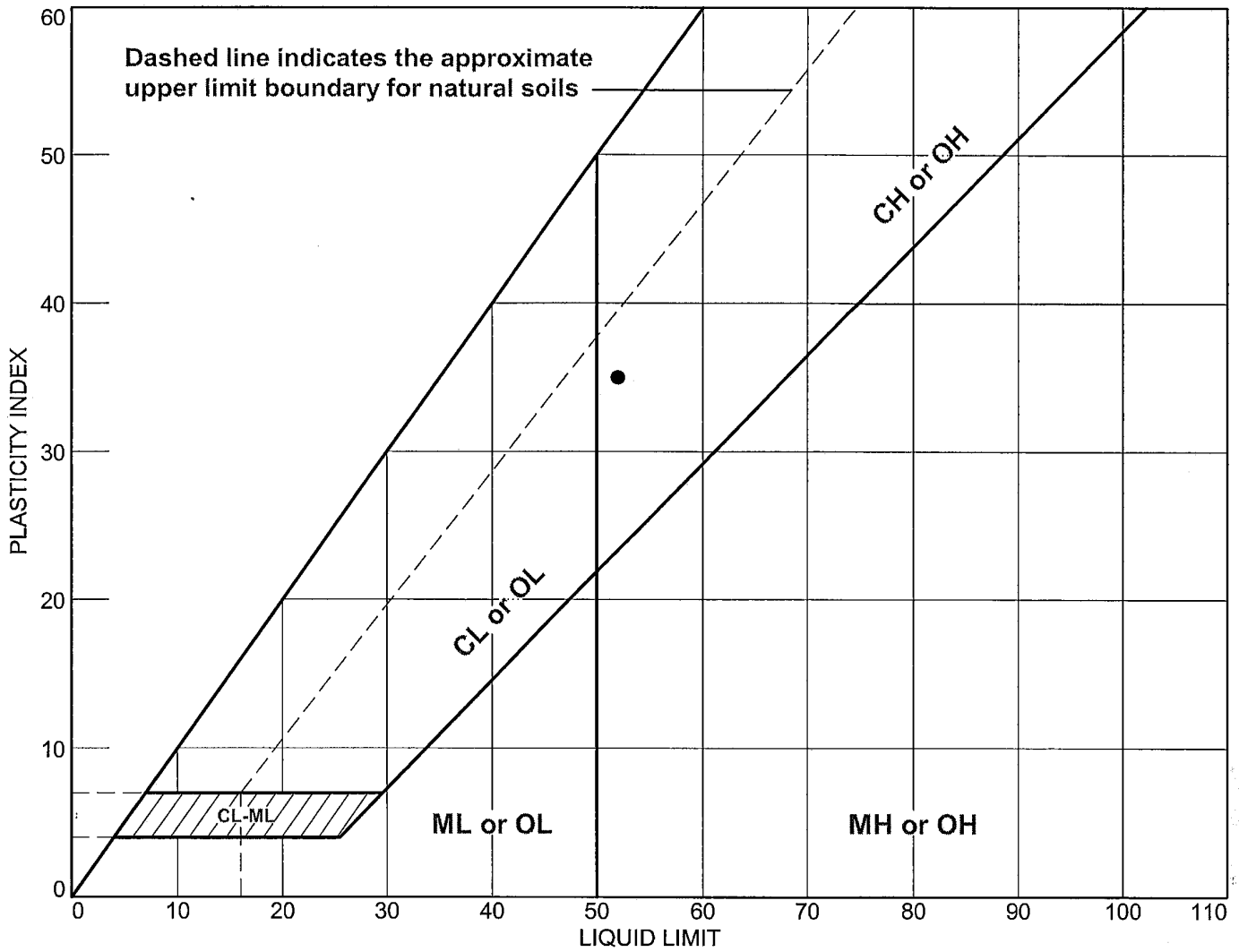
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.1	1.1	0.2	2.8	11.4	14.4	14.1	70.4	84.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
					0.0016	0.0345	0.0849	0.2089	0.3767

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-3170A	SS-27	139.0-140.5'	15.3	17	52	35	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

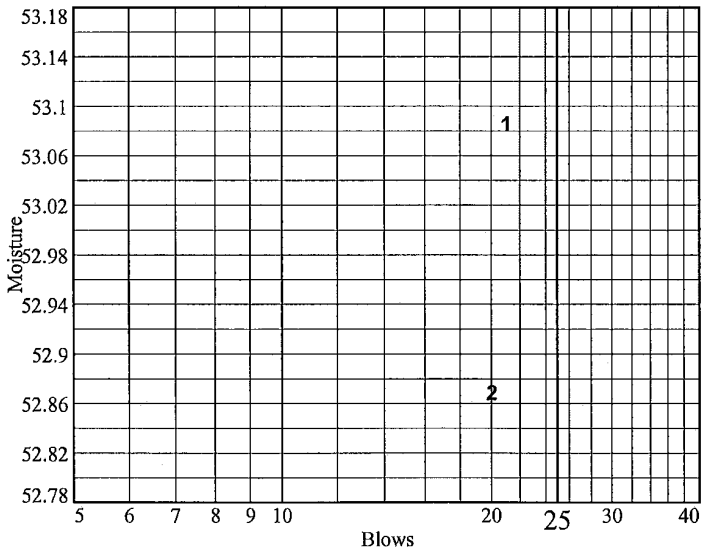
LIQUID AND PLASTIC LIMIT TEST DATA

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 139.0-140.5' **Sample Number:** SS-27
Material Description: Yellow mottled Light Gray Fat CLAY with sand
USCS: CH **AASHTO:** A-7-6(30)
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.38	28.07				
Dry+Tare	21.94	23.74				
Tare	15.46	15.55				
# Blows	21	20				
Moisture	53.1	52.9				



Liquid Limit= 52
Plastic Limit= 17
Plasticity Index= 35
Natural Moisture= 15.3
Liquidity Index= 0.0

Plastic Limit Data

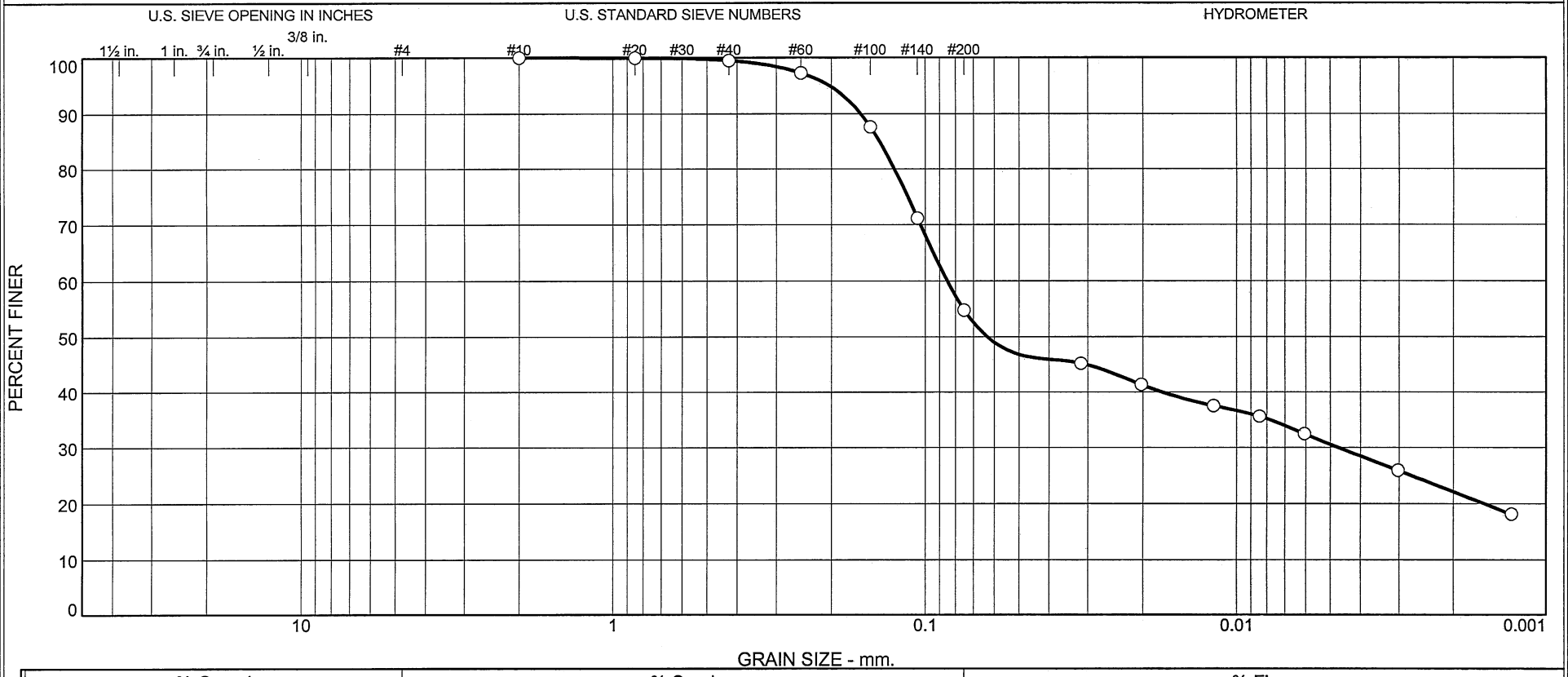
Run No.	1	2	3	4	
Wet+Tare	18.10	23.03			
Dry+Tare	17.06	21.95			
Tare	11.15	15.51			
Moisture	17.6	16.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
94.09	82.59	7.37	15.3

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	0.5	44.7	24.3	30.5

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-28	149.0-150.5	3/3/09	CL	Light Gray Sandy Lean CLAY	13.5	22	12

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed

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-3170A
Depth: 149.0-150.5 **Sample Number:** SS-28
Material Description: Light Gray Sandy Lean CLAY
Date: 3/3/09 **Natural Moisture:** 13.5
Liquid Limit: 22 **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
328.97	0.00	0.00	#10	0.00	100.0
52.29	0.00	0.00	#20	0.04	99.9
			#40	0.28	99.5
			#60	1.43	97.3
			#100	6.48	87.6
			#140	15.10	71.1
			#200	23.66	54.8

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =52.29
Hygroscopic moisture correction:
Moist weight and tare = 25.87
Dry weight and tare = 25.69
Tare weight = 11.23
Hygroscopic moisture = 1.2%
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.3	29.0	23.6	0.0132	30.0	11.4	0.0315	45.2
5.00	21.3	27.0	21.6	0.0132	28.0	11.7	0.0202	41.4
15.00	21.3	25.0	19.6	0.0132	26.0	12.0	0.0118	37.5
30.00	21.3	24.0	18.6	0.0132	25.0	12.2	0.0084	35.6
60.00	20.8	22.5	16.9	0.0133	23.5	12.4	0.0061	32.4
250.00	21.1	19.0	13.5	0.0133	20.0	13.0	0.0030	25.9
1440.00	20.9	15.0	9.5	0.0133	16.0	13.7	0.0013	18.1

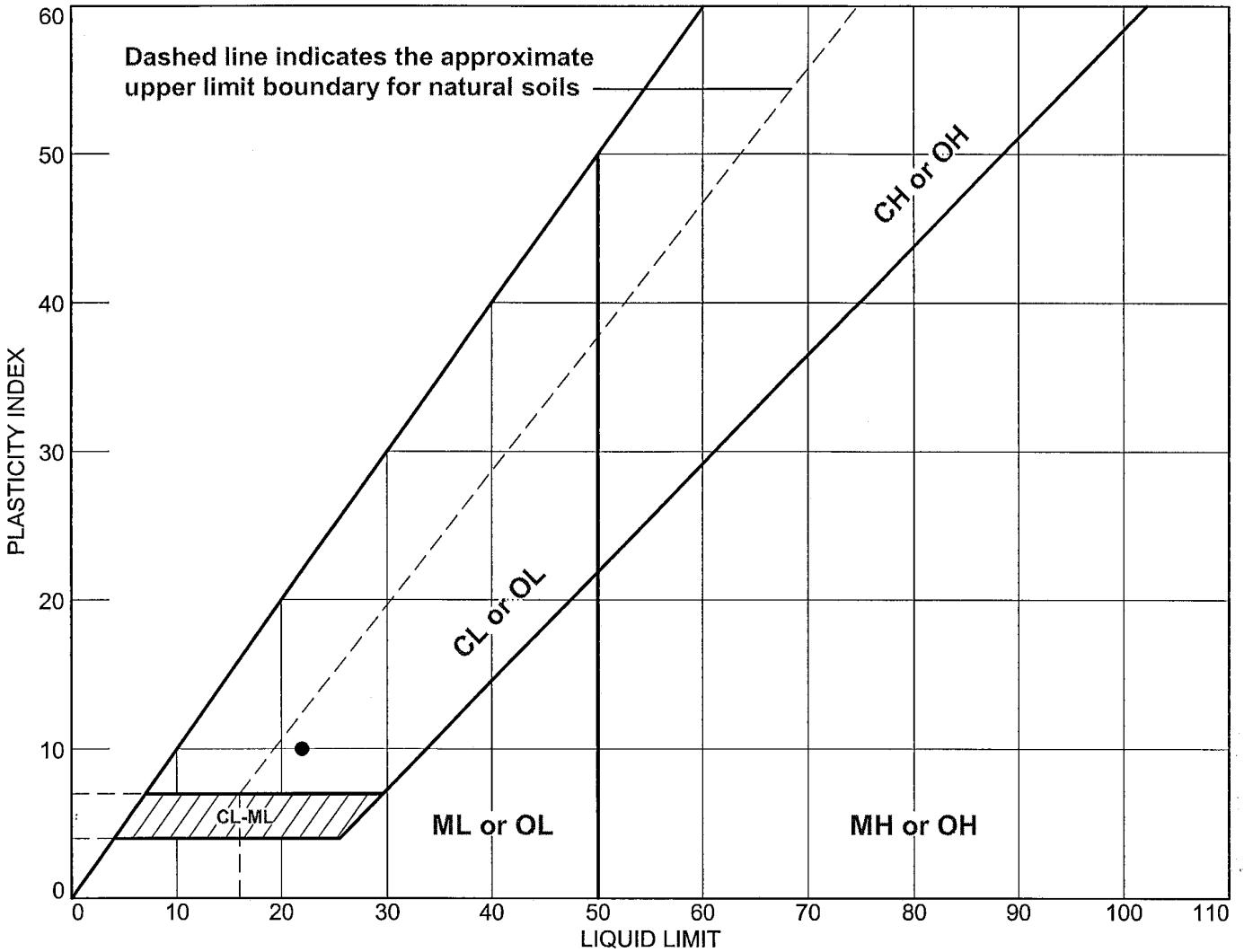
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.5	44.7	45.2	24.3	30.5	54.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0016	0.0047	0.0633	0.0851	0.1259	0.1404	0.1612	0.2026

Fineness Modulus
0.14

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-3170A	SS-28	149.0-150.5	13.5	12	22	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

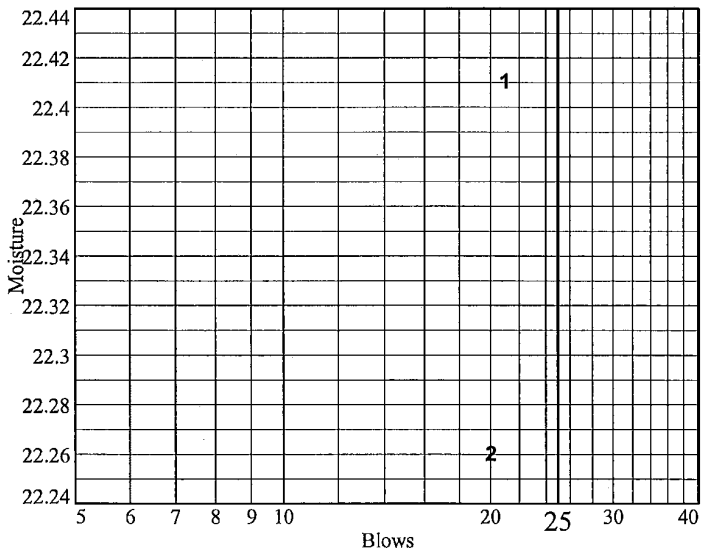
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 149.0-150.5 **Sample Number:** SS-28
Material Description: Light Gray Sandy Lean CLAY
USCS: CL **AASHTO:** A-4(2)
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	26.49	29.66				
Dry+Tare	23.72	27.08				
Tare	11.36	15.49				
# Blows	21	20				
Moisture	22.4	22.3				



Liquid Limit= 22
Plastic Limit= 12
Plasticity Index= 10
Natural Moisture= 13.5
Liquidity Index= 0.2

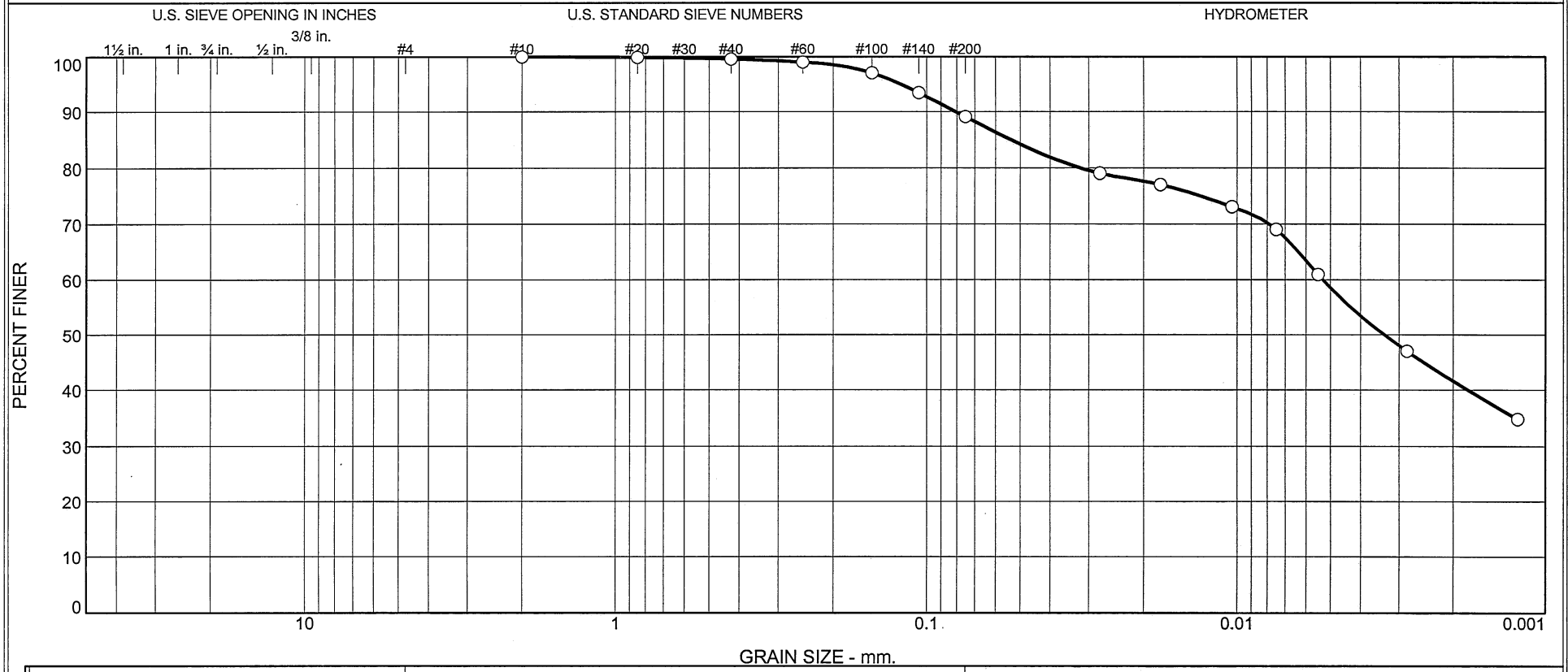
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	24.17	23.88			
Dry+Tare	23.21	22.97			
Tare	15.42	15.47			
Moisture	12.3	12.1			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
90.87	80.88	6.84	13.5

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	0.4	10.5	30.6	58.5

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-29	159.0-160.5'	3/3/09	CH	Very Pale Brown mottled Yellow Fat CLAY	16.9	52	24

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

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 159.0-160.5' **Sample Number:** SS-29
Material Description: Very Pale Brown mottled Yellow Fat CLAY
Date: 3/3/09 **Natural Moisture:** 16.9
Liquid Limit: 52 **Plastic Limit:** 24 **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
262.13	0.00	0.00	#10	0.00	100.0
51.28	0.00	0.00	#20	0.06	99.9
			#40	0.22	99.6
			#60	0.52	99.0
			#100	1.52	97.0
			#140	3.39	93.4
			#200	5.61	89.1

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =51.28
Hygroscopic moisture correction:
Moist weight and tare = 19.18
Dry weight and tare = 18.74
Tare weight = 5.83
Hygroscopic moisture = 3.4%
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	45.0	39.6	0.0132	46.0	8.8	0.0276	79.0
5.00	21.4	44.0	38.6	0.0132	45.0	8.9	0.0176	77.1
15.00	21.4	42.0	36.6	0.0132	43.0	9.2	0.0104	73.1
30.00	21.3	40.0	34.6	0.0132	41.0	9.6	0.0075	69.0
60.00	21.1	36.0	30.5	0.0133	37.0	10.2	0.0055	60.9
250.00	21.2	29.0	23.6	0.0132	30.0	11.4	0.0028	47.0
1440.00	20.9	23.0	17.5	0.0133	24.0	12.4	0.0012	34.8

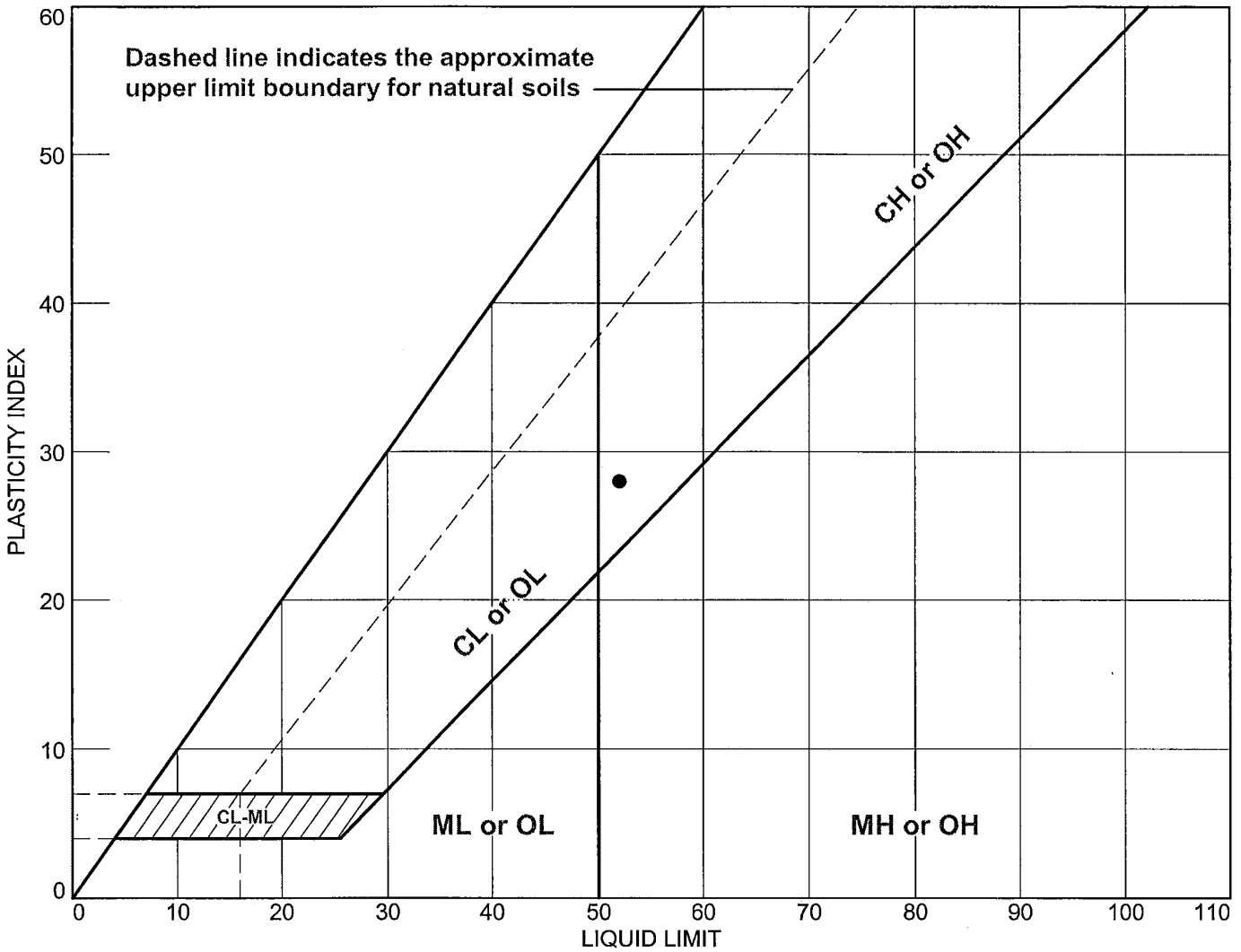
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.4	10.5	10.9	30.6	58.5	89.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0034	0.0053	0.0321	0.0537	0.0808	0.1215

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-3170A	SS-29	159.0-160.5'	16.9	24	52	28	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

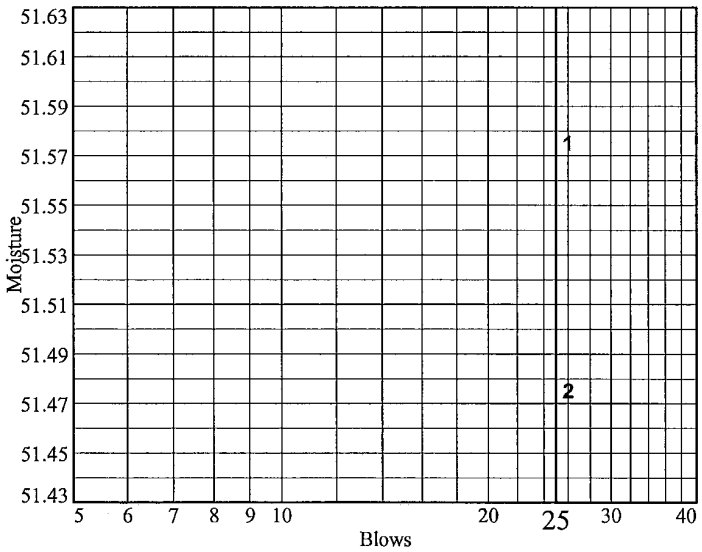
LIQUID AND PLASTIC LIMIT TEST DATA

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 159.0-160.5' **Sample Number:** SS-29
Material Description: Very Pale Brown mottled Yellow Fat CLAY
USCS: CH **AASHTO:** A-7-6(27)
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	28.45	29.34				
Dry+Tare	24.03	24.63				
Tare	15.46	15.48				
# Blows	26	26				
Moisture	51.6	51.5				



Liquid Limit= 52
Plastic Limit= 24
Plasticity Index= 28
Natural Moisture= 16.9
Liquidity Index= -0.3

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.73	21.85			
Dry+Tare	20.53	20.63			
Tare	15.54	15.60			
Moisture	24.0	24.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
93.49	80.95	6.86	16.9

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	0.3	0.3	14.9	69.2	10.6	4.7

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-31	179.0-180.5'	3/3/09	SM	Very Pale Brown Silty SAND	16.3	NV	NP

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed
NV = No Value
NP = Non-Plastic

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-3170A
Depth: 179.0-180.5' **Sample Number:** SS-31
Material Description: Very Pale Brown Silty SAND
Date: 3/3/09 **Natural Moisture:** 16.3
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
263.76	0.00	0.00	3/8"	0.00	100.0
			#4	0.90	99.7
			#10	1.58	99.4
99.32	0.00	0.00	#20	0.77	98.6
			#40	14.89	84.5
			#60	46.93	52.4
			#100	71.00	28.3
			#140	81.22	18.1
			#200	84.02	15.3

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.4
Weight of hydrometer sample =99.32
Hygroscopic moisture correction:
Moist weight and tare = 19.16
Dry weight and tare = 19.09
Tare weight = 5.73
Hygroscopic moisture = 0.5%
Table of composite correction values:

Temp., deg. C:	10.6	28.4
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.0	14.0	8.9	0.0133	15.0	13.8	0.0349	8.9
5.00	20.9	12.0	6.9	0.0133	13.0	14.2	0.0224	6.9
15.00	20.9	11.0	5.9	0.0133	12.0	14.3	0.0130	5.9
30.00	20.9	10.0	4.9	0.0133	11.0	14.5	0.0092	4.9
60.00	20.9	10.0	4.9	0.0133	11.0	14.5	0.0065	4.9
250.00	21.1	9.5	4.4	0.0133	10.5	14.6	0.0032	4.4
1440.00	20.7	9.0	3.8	0.0133	10.0	14.7	0.0013	3.8

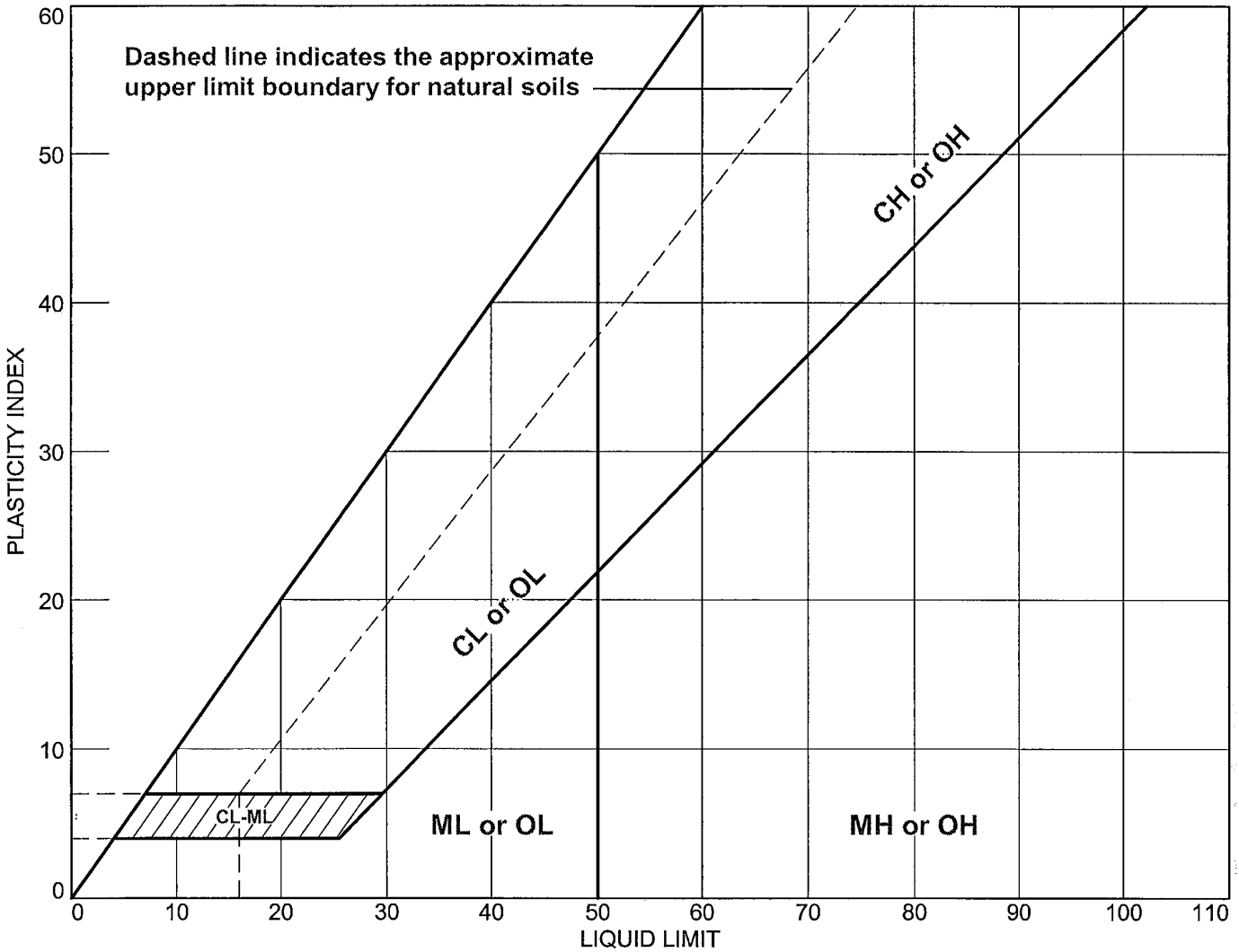
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.3	0.3	0.3	14.9	69.2	84.4	10.6	4.7	15.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0401	0.0710	0.1158	0.1566	0.2398	0.2823	0.3892	0.4296	0.4880	0.5941

Fineness Modulus	C_u	C_c
1.14	7.04	2.17

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-3170A	SS-31	179.0-180.5'	16.3	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

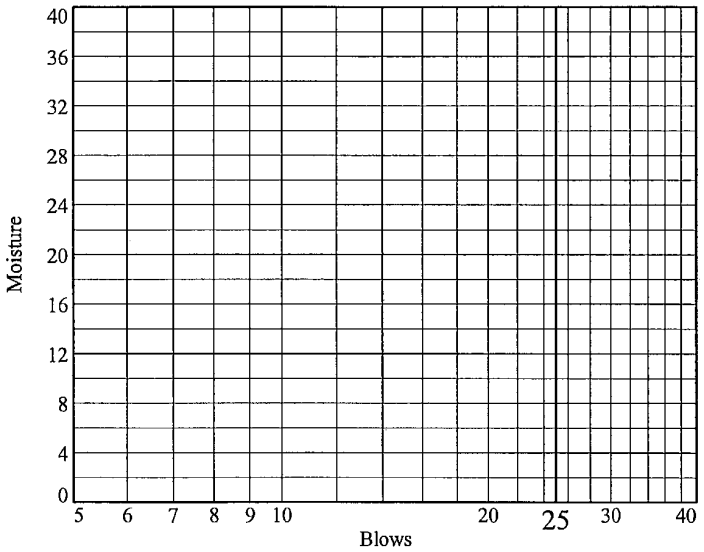
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 179.0-180.5'
Sample Number: SS-31
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						
Dry+Tare						
Tare						
# Blows						
Moisture						



Liquid Limit= NV
Plastic Limit= NP
Plasticity Index= NP
Natural Moisture= 16.3

Plastic Limit Data

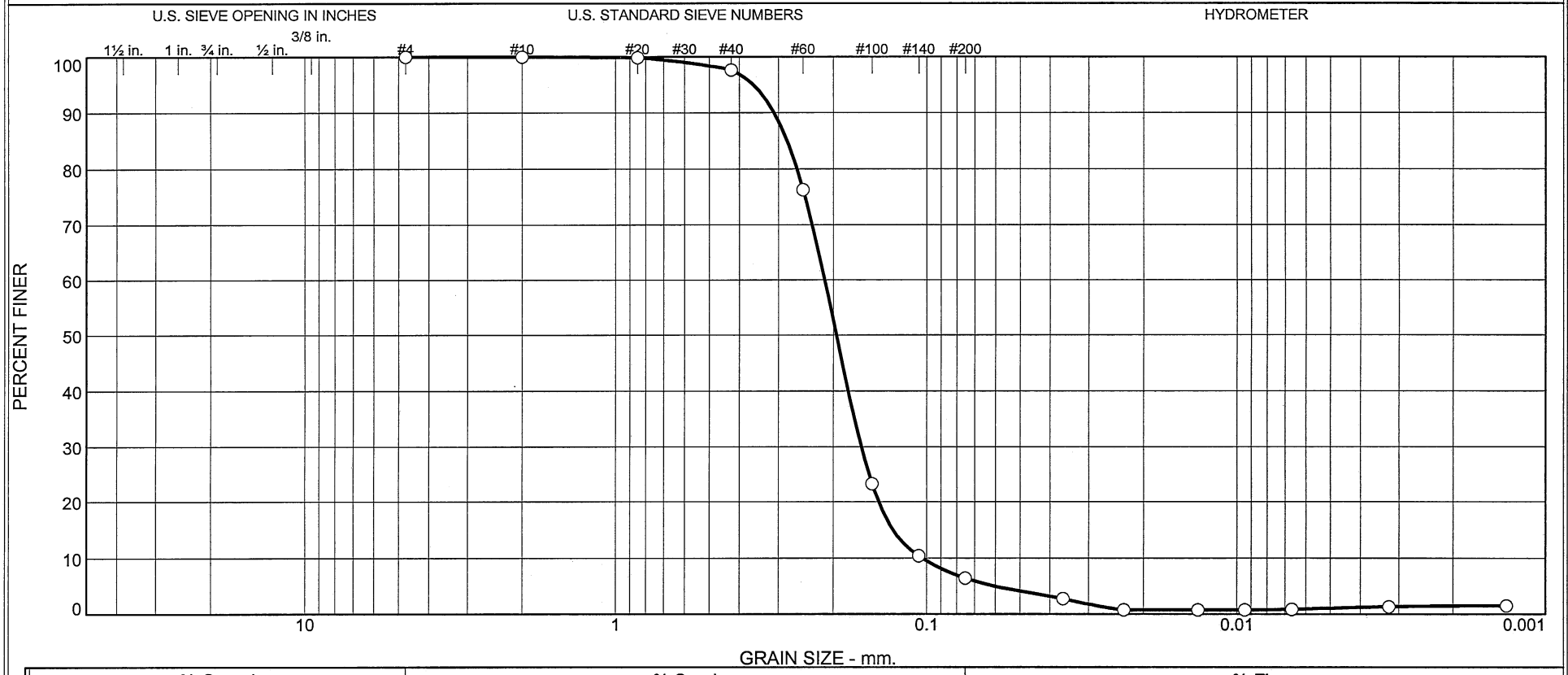
Run No.	1	2	3	4	
Wet+Tare					
Dry+Tare					
Tare					
Moisture					

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
106.15	92.20	6.69	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	0.0	0.0	2.4	91.1	5.4	1.1

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-32	189.0-190.5'	3/4/09	SP-SM	Very Pale Brown Poorly graded SAND with Silt	20.7	NV	NP

Client Bechtel	**MACTEC Engineering and Consulting, Inc.**	○ Specific Gravity is assumed NV = No Value NP = Non-Plastic
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

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 189.0-190.5' **Sample Number:** SS-32
Material Description: Very Pale Brown Poorly graded SAND with Silt
Date: 3/4/09 **Natural Moisture:** 20.7
Liquid Limit: NV **Plastic Limit:** NP **USCS Class.:** SP-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
248.73	0.00	0.00	#4	0.00	100.0
			#10	0.04	100.0
50.03	0.00	0.00	#20	0.07	99.8
			#40	1.18	97.6
			#60	11.87	76.3
			#100	38.41	23.2
			#140	44.81	10.4
			#200	46.80	6.5

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =50.03
Hygroscopic moisture correction:
Moist weight and tare = 29.68
Dry weight and tare = 29.40
Tare weight = 15.43
Hygroscopic moisture = 2.0%
Table of composite correction values:

Temp., deg. C:	10.6	29.3
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.1	7.0	1.4	0.0133	8.0	15.0	0.0363	2.8
5.00	21.1	6.0	0.4	0.0133	7.0	15.1	0.0231	0.7
15.00	21.1	6.0	0.4	0.0133	7.0	15.1	0.0133	0.7
30.00	21.1	6.0	0.4	0.0133	7.0	15.1	0.0094	0.7
60.00	21.3	6.0	0.4	0.0132	7.0	15.1	0.0066	0.9
250.00	22.0	6.0	0.7	0.0131	7.0	15.1	0.0032	1.3
1440.00	22.3	6.0	0.8	0.0131	7.0	15.1	0.0013	1.5

MACTEC Engineering and Consulting, Inc.

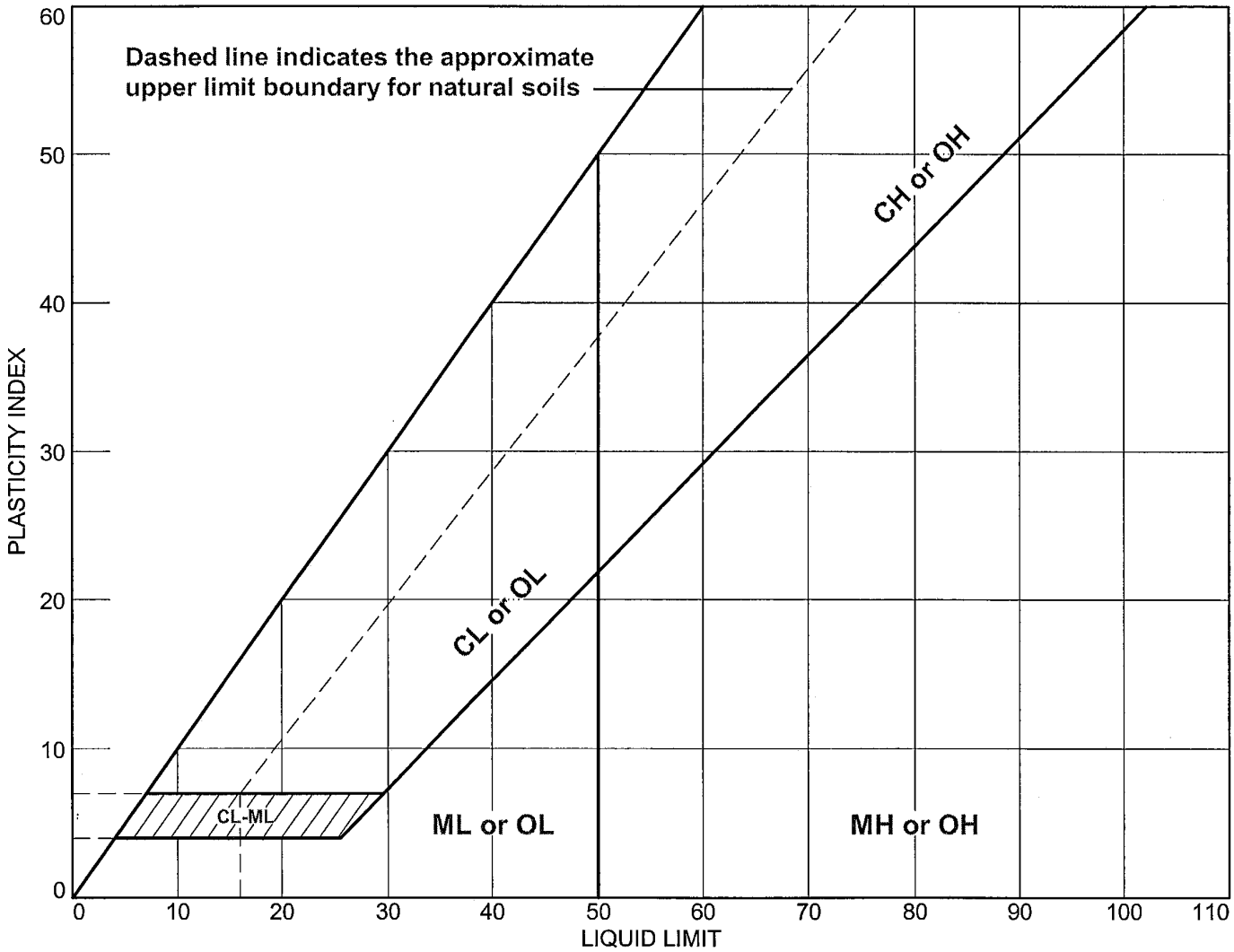
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	2.4	91.1	93.5	5.4	1.1	6.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1031	0.1286	0.1429	0.1625	0.1956	0.2133	0.2617	0.2815	0.3101	0.3621

Fineness Modulus	C_u	C_c
0.89	2.07	1.20

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-3170A	SS-32	189.0-190.5'	20.7	NP	NV	NP	SP-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

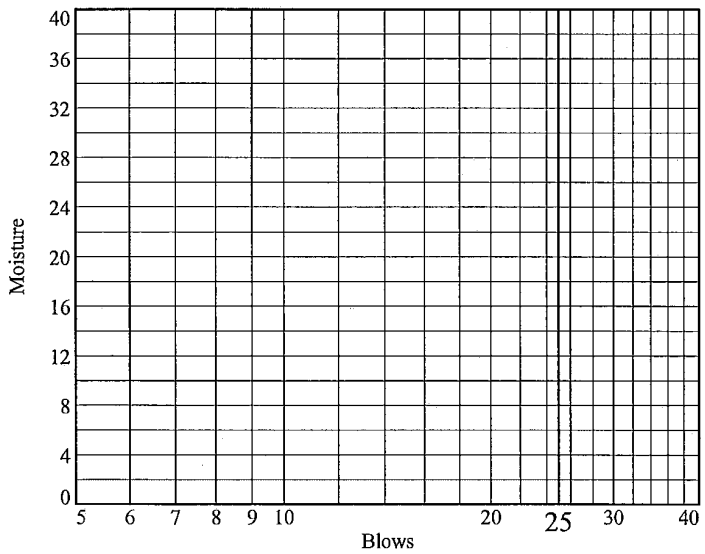
LIQUID AND PLASTIC LIMIT TEST DATA

4/29/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 189.0-190.5' **Sample Number:** SS-32
Material Description: Very Pale Brown Poorly graded SAND with Silt
USCS: SP-SM **AASHTO:** A-3
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= 20.7

Plastic Limit Data

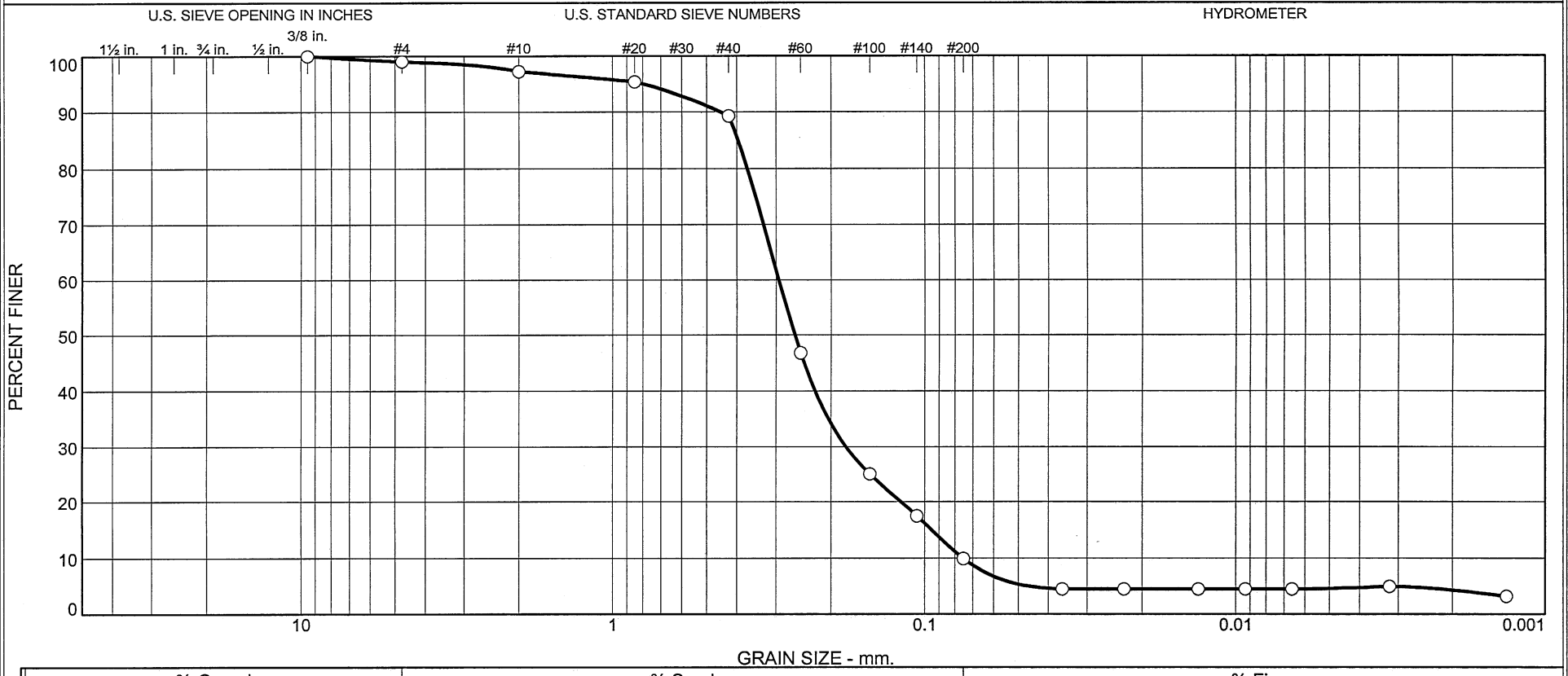
Run No.	1	2	3	4	
Wet+Tare					
Dry+Tare					
Tare					
Moisture					

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
109.42	95.71	29.57	20.7

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	1.0	1.8	7.9	79.4	5.3	4.6

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-33	199.0-199.5'	3/4/09	SP-SM	Very Pale Brown Poorly graded SAND with Silt	15.4	NV	NP

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed
NV = No Value
NP = Non-Plastic

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-3170A
Depth: 199.0-199.5' **Sample Number:** SS-33
Material Description: Very Pale Brown Poorly graded SAND with Silt
Date: 3/4/09 **Natural Moisture:** 15.4
Liquid Limit: NV **Plastic Limit:** NP **USCS Class.:** SP-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
173.60	0.00	0.00	3/8"	0.00	100.0
			#4	1.76	99.0
			#10	4.86	97.2
51.30	0.00	0.00	#20	0.99	95.3
			#40	4.18	89.3
			#60	26.62	46.8
			#100	38.11	25.0
			#140	42.08	17.5
			#200	46.07	9.9

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 97.2
Weight of hydrometer sample =51.30
Hygroscopic moisture correction:
Moist weight and tare = 29.14
Dry weight and tare = 29.04
Tare weight = 15.70
Hygroscopic moisture = 0.7%
Table of composite correction values:

Temp., deg. C:	10.6	29.3
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.1	8.0	2.4	0.0133	9.0	14.8	0.0361	4.5
5.00	21.1	8.0	2.4	0.0133	9.0	14.8	0.0228	4.5
15.00	21.1	8.0	2.4	0.0133	9.0	14.8	0.0132	4.5
30.00	21.1	8.0	2.4	0.0133	9.0	14.8	0.0093	4.5
60.00	21.1	8.0	2.4	0.0133	9.0	14.8	0.0066	4.5
250.00	21.9	8.0	2.6	0.0131	9.0	14.8	0.0032	5.0
1440.00	22.1	7.0	1.7	0.0131	8.0	15.0	0.0013	3.2

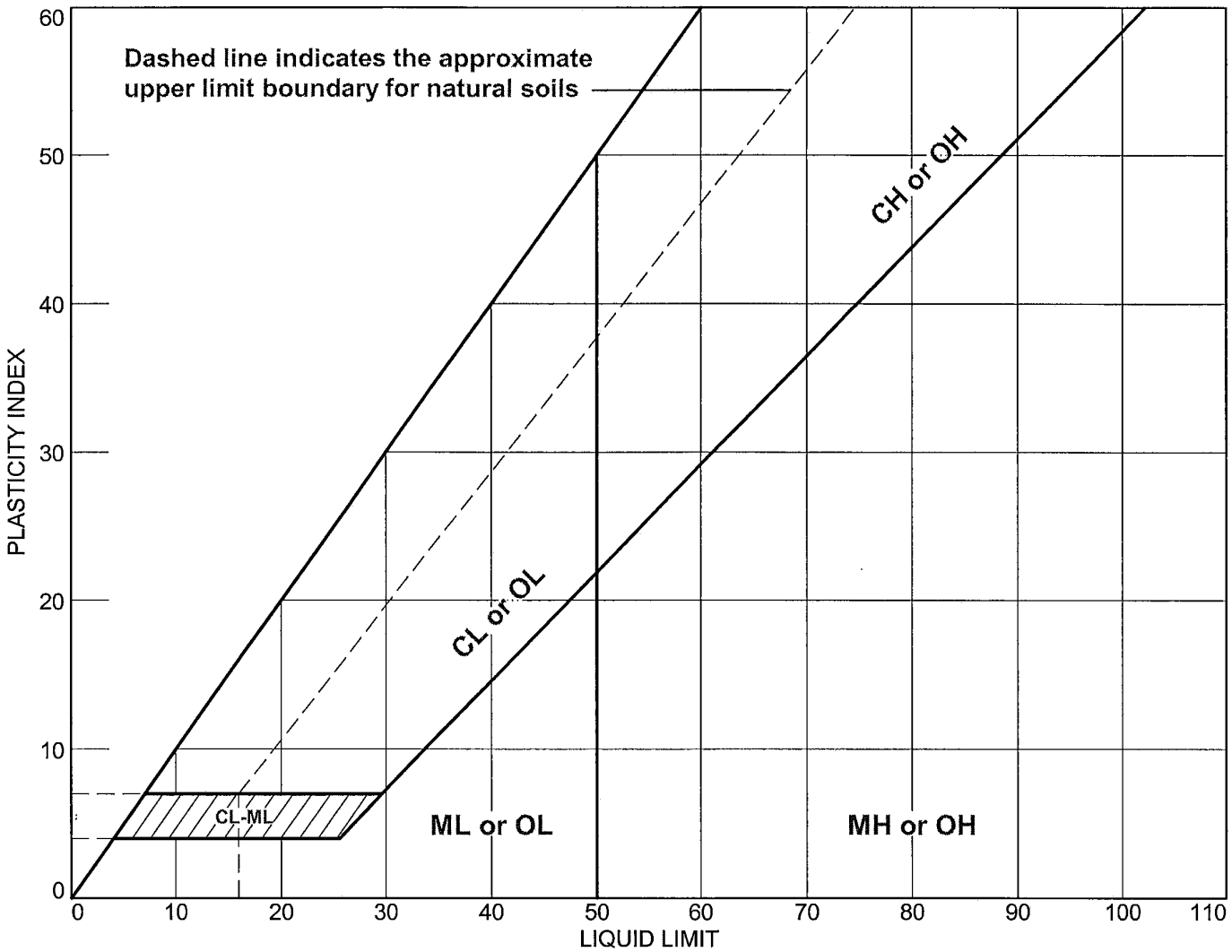
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.0	1.0	1.8	7.9	79.4	89.1	5.3	4.6	9.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0754	0.0951	0.1194	0.1792	0.2610	0.2941	0.3707	0.3967	0.4528	0.8054

Fineness Modulus	C_u	C_c
1.28	3.90	1.45

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-3170A	SS-33	199.0-199.5'	15.4	NP	NV	NP	SP-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

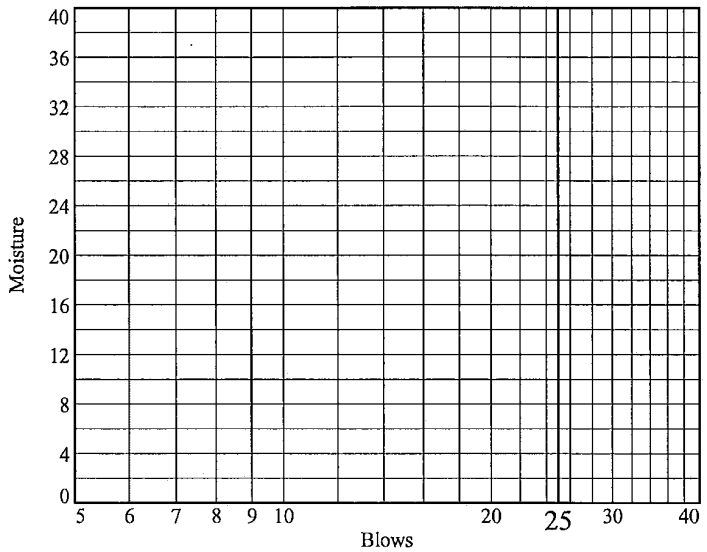
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 199.0-199.5' **Sample Number:** SS-33
Material Description: Very Pale Brown Poorly graded SAND with Silt
USCS: SP-SM **AASHTO:** A-3
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= 15.4

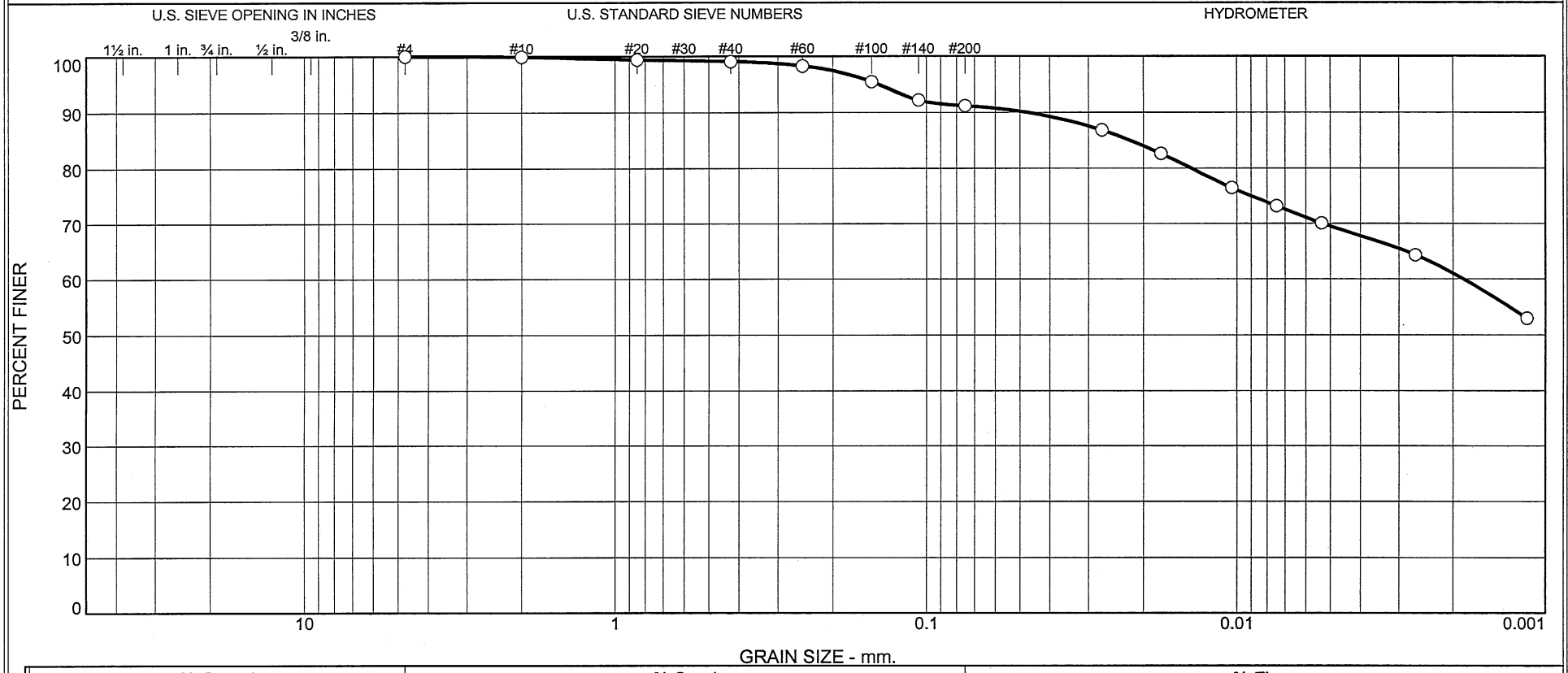
Plastic Limit Data

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

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
43.47	38.59	6.89	15.4

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



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.1	0.8	7.9	21.7	69.5

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-36	229.0-230.5'	3/4/09	CH	Very Pale Brown mottled Yellow Fat CLAY	25.7	64	24

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed

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-3170A
Depth: 229.0-230.5' **Sample Number:** SS-36
Material Description: Very Pale Brown mottled Yellow Fat CLAY
Date: 3/4/09 **Natural Moisture:** 25.7
Liquid Limit: 64 **Plastic Limit:** 24 **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
216.38	0.00	0.00	#4	0.00	100.0
			#10	0.28	99.9
48.15	0.00	0.00	#20	0.24	99.4
			#40	0.39	99.1
			#60	0.77	98.3
			#100	2.13	95.5
			#140	3.68	92.2
			#200	4.18	91.2

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.9
Weight of hydrometer sample =48.15
Hygroscopic moisture correction:
Moist weight and tare = 24.04
Dry weight and tare = 23.76
Tare weight = 11.21
Hygroscopic moisture = 2.2%
Table of composite correction values:

Temp., deg. C:	10.6	29.3
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.2	47.0	41.4	0.0132	48.0	8.4	0.0272	86.8
5.00	21.2	45.0	39.4	0.0132	46.0	8.8	0.0175	82.6
15.00	21.4	42.0	36.5	0.0132	43.0	9.2	0.0104	76.5
30.00	21.2	40.5	34.9	0.0132	41.5	9.5	0.0074	73.2
60.00	21.2	39.0	33.4	0.0132	40.0	9.7	0.0053	70.0
250.00	22.0	36.0	30.7	0.0131	37.0	10.2	0.0027	64.3
1440.00	22.3	30.5	25.3	0.0131	31.5	11.1	0.0011	53.0

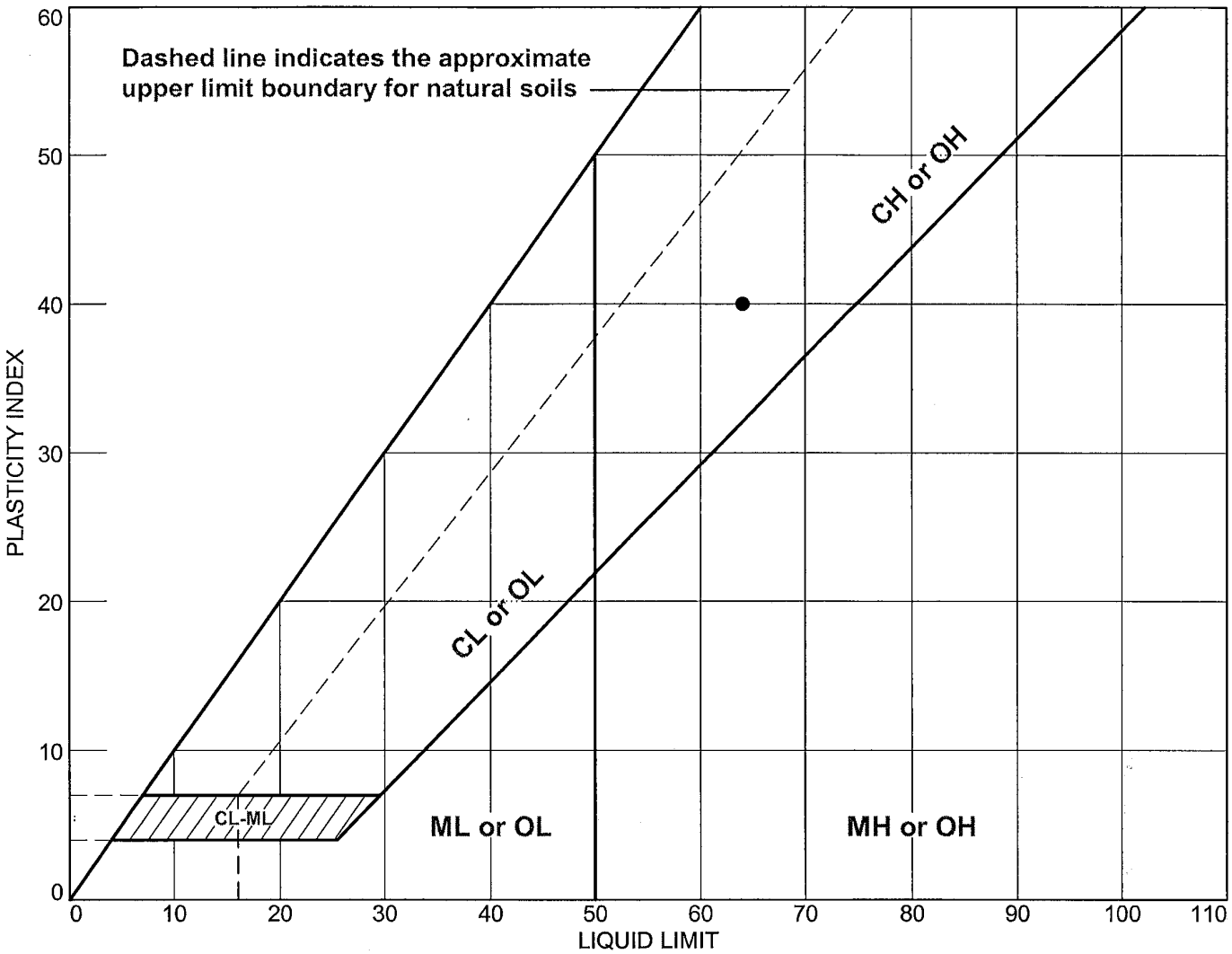
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.1	0.8	7.9	8.8	21.7	69.5	91.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
					0.0019	0.0140	0.0220	0.0475	0.1430

Fineness Modulus
0.07

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-3170A	SS-36	229.0-230.5'	25.7	24	64	40	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

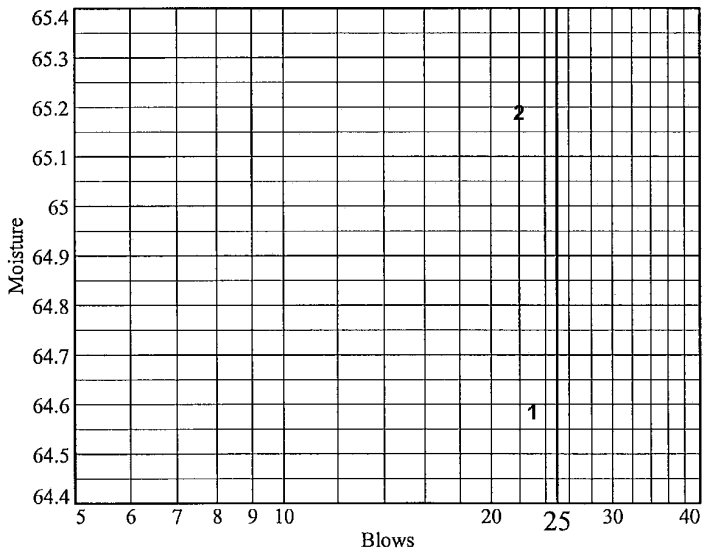
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 229.0-230.5' **Sample Number:** SS-36
Material Description: Very Pale Brown mottled Yellow Fat CLAY
USCS: CH **AASHTO:** A-7-6(41)
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	26.91	28.48				
Dry+Tare	22.46	23.33				
Tare	15.57	15.43				
# Blows	23	22				
Moisture	64.6	65.2				



Liquid Limit= 64
Plastic Limit= 24
Plasticity Index= 40
Natural Moisture= 25.7
Liquidity Index= 0.0

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.83	17.50			
Dry+Tare	20.66	16.26			
Tare	15.68	11.14			
Moisture	23.5	24.2			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
84.98	68.99	6.70	25.7

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	25.8	28.2	45.5

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-40	269.0-270.5'	3/5/09	CH	Very Pale Brown mottled Yellow Fat CLAY with sand	19.4	57	20

Client Bechtel
Project Exelon Texas COL Project - Supplemental Investigation, including UHS
Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina

○ Specific Gravity is assumed

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-3170A
Depth: 269.0-270.5' **Sample Number:** SS-40
Material Description: Very Pale Brown mottled Yellow Fat CLAY with sand
Date: 3/5/09 **Natural Moisture:** 19.4
Liquid Limit: 57 **Plastic Limit:** 20 **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
279.89	0.00	0.00	#4	0.00	100.0
			#10	0.06	100.0
55.30	0.00	0.00	#20	0.11	99.8
			#40	0.27	99.5
			#60	1.34	97.6
			#100	7.15	87.1
			#140	11.89	78.5
			#200	14.52	73.7

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =55.30
Hygroscopic moisture correction:
Moist weight and tare = 27.91
Dry weight and tare = 27.70
Tare weight = 15.49
Hygroscopic moisture = 1.7%
Table of composite correction values:

Temp., deg. C:	10.6	29.3
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	41.0	35.5	0.0132	42.0	9.4	0.0287	64.5
5.00	21.9	38.0	32.6	0.0131	39.0	9.9	0.0185	59.3
15.00	21.9	35.0	29.6	0.0131	36.0	10.4	0.0109	53.9
30.00	21.6	33.0	27.5	0.0132	34.0	10.7	0.0079	50.1
60.00	21.6	31.0	25.5	0.0132	32.0	11.0	0.0057	46.4
250.00	22.0	29.0	23.7	0.0131	30.0	11.4	0.0028	43.0
1440.00	22.3	26.5	21.3	0.0131	27.5	11.8	0.0012	38.7

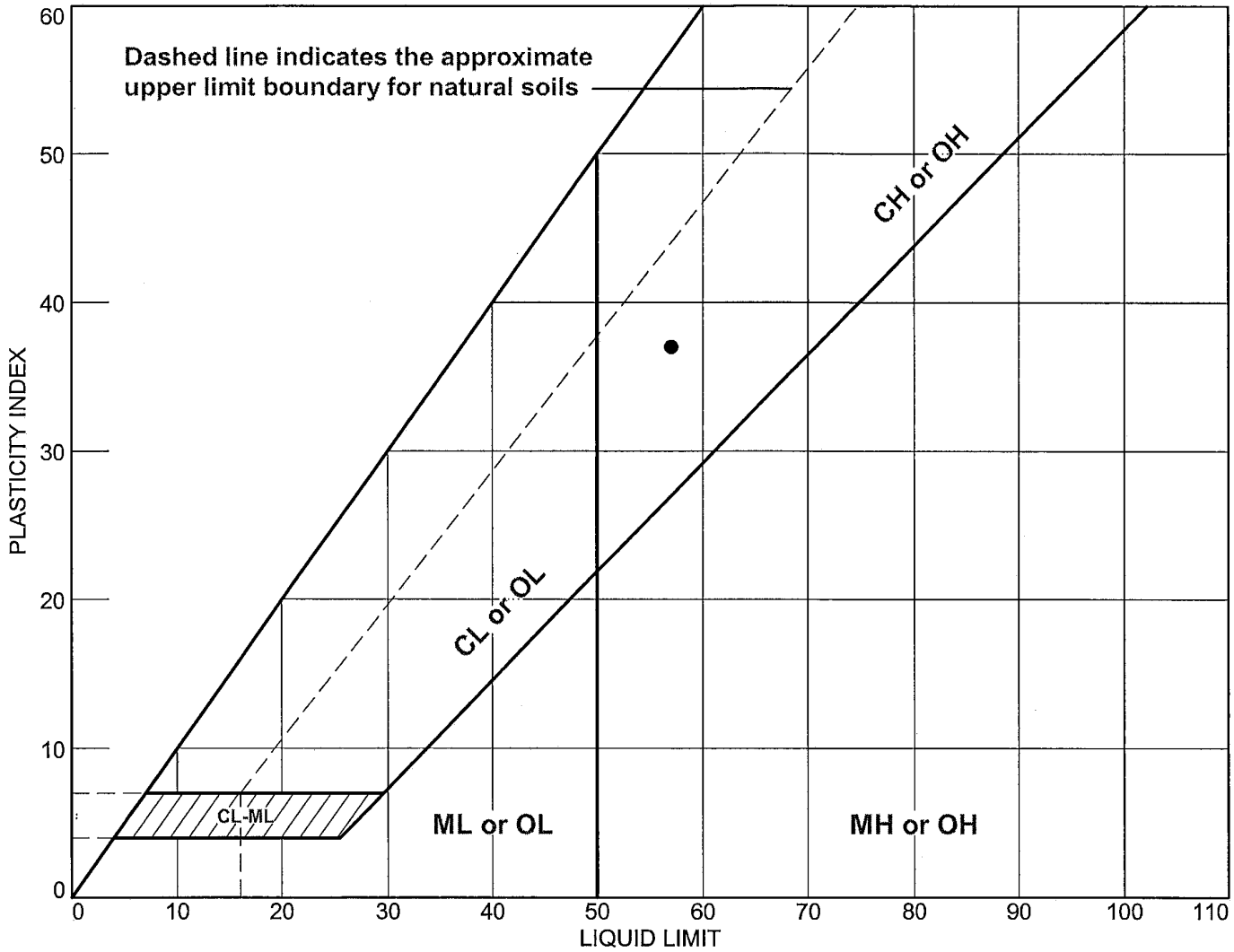
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.5	25.8	26.3	28.2	45.5	73.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0078	0.0196	0.1138	0.1388	0.1683	0.2115

Fineness Modulus
0.15

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-3170A	SS-40	269.0-270.5'	19.4	20	57	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

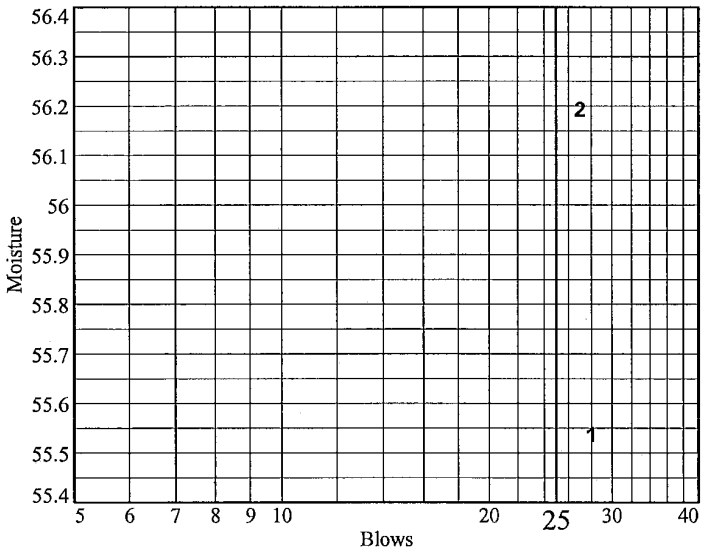
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 269.0-270.5' **Sample Number:** SS-40
Material Description: Very Pale Brown mottled Yellow Fat CLAY with sand
USCS: CH **AASHTO:** A-7-6(27)
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.65	25.31				
Dry+Tare	22.04	20.23				
Tare	15.54	11.19				
# Blows	28	27				
Moisture	55.5	56.2				



Liquid Limit= 57
Plastic Limit= 20
Plasticity Index= 37
Natural Moisture= 19.4
Liquidity Index= 0.0

Plastic Limit Data

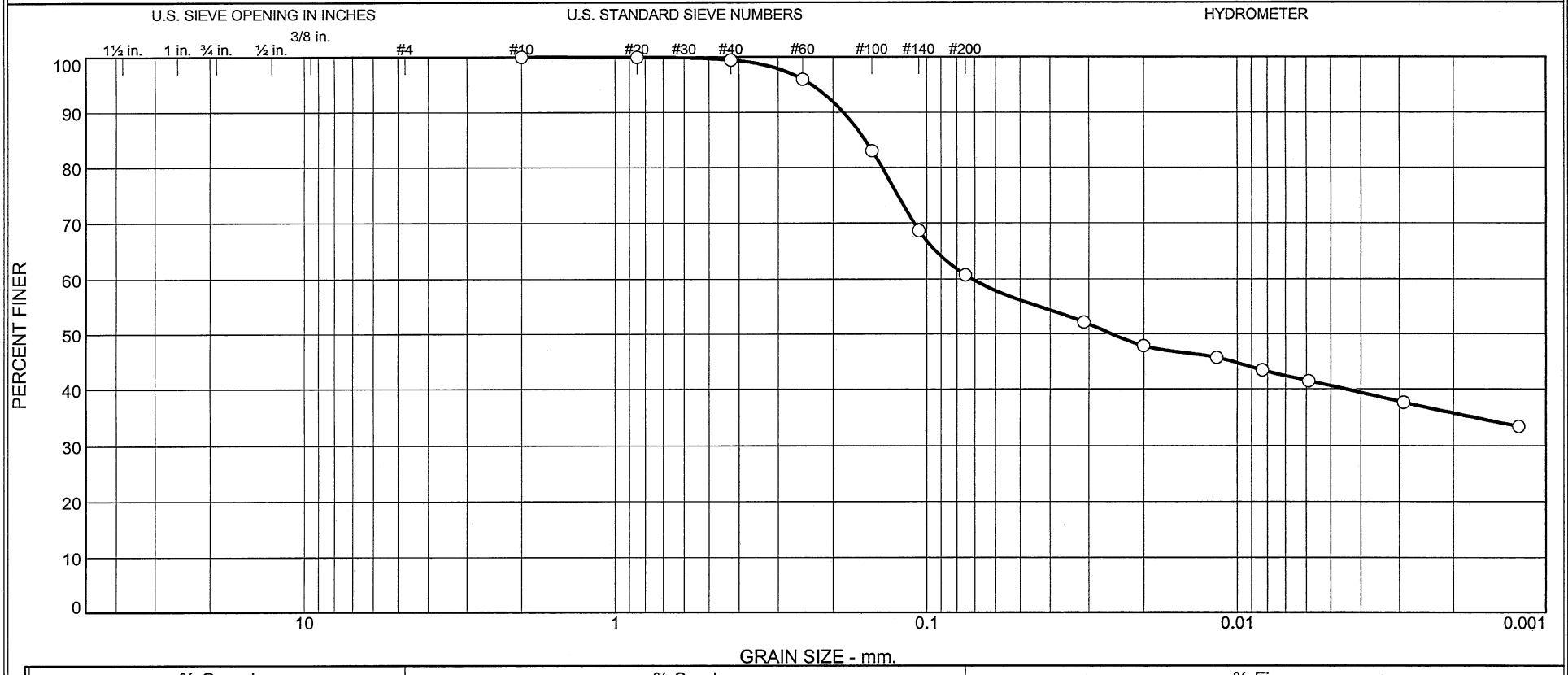
Run No.	1	2	3	4	
Wet+Tare	21.94	22.32			
Dry+Tare	20.86	21.23			
Tare	15.50	15.77			
Moisture	20.1	20.0			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
120.02	101.63	7.03	19.4

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	0.6	38.7	20.1	40.6

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-41A	279.0-279.9'	3/5/09	CL	Light Gray Sandy Lean CLAY	19.2	43	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-3170A
Depth: 279.0-279.9' **Sample Number:** SS-41A
Material Description: Light Gray Sandy Lean CLAY
Date: 3/5/09 **Natural Moisture:** 19.2
Liquid Limit: 43 **Plastic Limit:** 15 **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
164.56	0.00	0.00	#10	0.00	100.0
47.45	0.00	0.00	#20	0.04	99.9
			#40	0.28	99.4
			#60	1.91	96.0
			#100	8.07	83.0
			#140	14.87	68.7
			#200	18.63	60.7

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =47.45
Hygroscopic moisture correction:
Moist weight and tare = 29.30
Dry weight and tare = 29.06
Tare weight = 15.51
Hygroscopic moisture = 1.8%
Table of composite correction values:

Temp., deg. C:	10.6	29.3
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.8	30.0	24.6	0.0131	31.0	11.2	0.0311	52.2
5.00	21.6	28.0	22.5	0.0132	29.0	11.5	0.0200	47.8
15.00	21.6	27.0	21.5	0.0132	28.0	11.7	0.0116	45.7
30.00	21.4	26.0	20.5	0.0132	27.0	11.9	0.0083	43.4
60.00	21.7	25.0	19.6	0.0132	26.0	12.0	0.0059	41.5
250.00	22.3	23.0	17.8	0.0131	24.0	12.4	0.0029	37.7
1440.00	22.3	21.0	15.8	0.0131	22.0	12.7	0.0012	33.4

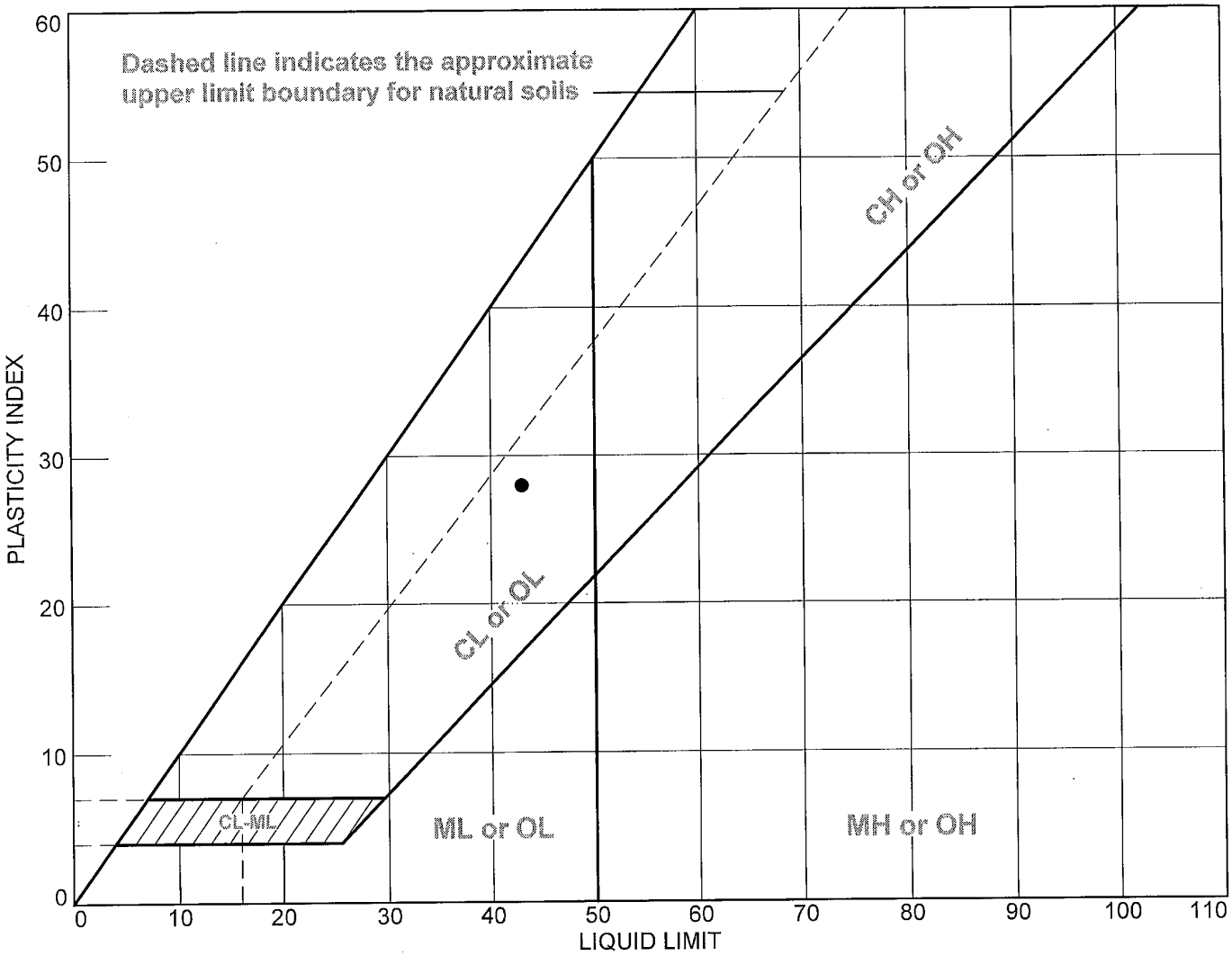
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.6	38.7	39.3	20.1	40.6	60.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0254	0.0712	0.1395	0.1582	0.1855	0.2342

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-3170A	SS-41A	279.0-279.9'	19.2	15	43	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

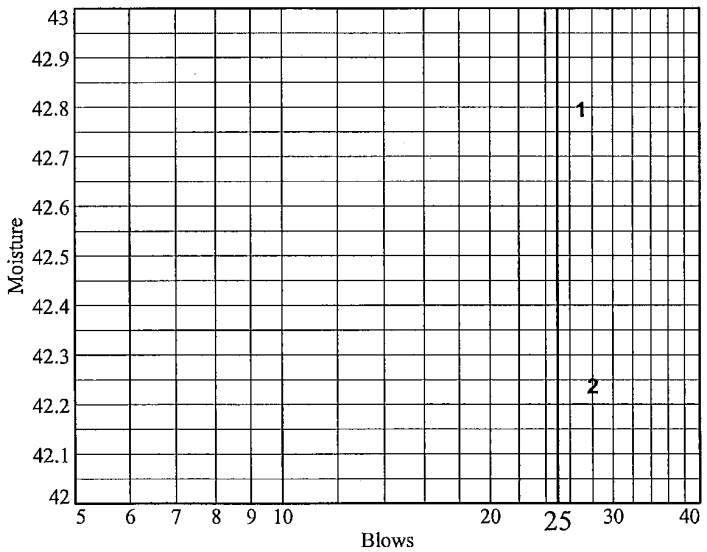
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 279.0-279.9' **Sample Number:** SS-41A
Material Description: Light Gray Sandy Lean CLAY
USCS: CL **AASHTO:** A-7-6(14)
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	29.00	27.28				
Dry+Tare	24.96	23.77				
Tare	15.52	15.46				
# Blows	27	28				
Moisture	42.8	42.2				



Liquid Limit= 43
Plastic Limit= 15
Plasticity Index= 28
Natural Moisture= 19.2
Liquidity Index= 0.1

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	23.69	26.32			
Dry+Tare	22.63	24.86			
Tare	15.59	15.45			
Moisture	15.1	15.5			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
54.66	46.94	6.66	19.2

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	11.6	23.3	64.4

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-42	289.0-290.5'	3/5/09	CH	Light Gray Fat CLAY	19.7	51	15

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed

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-3170A
Depth: 289.0-290.5' **Sample Number:** SS-42
Material Description: Light Gray Fat CLAY
Date: 3/5/09 **Natural Moisture:** 19.7
Liquid Limit: 51 **Plastic Limit:** 15 **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
299.34	0.00	0.00	#4	0.00	100.0
			#10	0.04	100.0
51.88	0.00	0.00	#20	0.11	99.8
			#40	0.37	99.3
			#60	1.14	97.8
			#100	3.02	94.2
			#140	5.20	90.0
			#200	6.36	87.7

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =51.88
Hygroscopic moisture correction:
Moist weight and tare = 28.74
Dry weight and tare = 28.51
Tare weight = 15.65
Hygroscopic moisture = 1.8%
Table of composite correction values:

Temp., deg. C:	10.6	29.3
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.6	48.0	42.5	0.0132	49.0	8.3	0.0268	82.5
5.00	21.6	46.0	40.5	0.0132	47.0	8.6	0.0173	78.6
15.00	21.5	43.0	37.5	0.0132	44.0	9.1	0.0103	72.7
30.00	21.6	41.0	35.5	0.0132	42.0	9.4	0.0074	68.9
60.00	21.8	39.0	33.6	0.0131	40.0	9.7	0.0053	65.2
250.00	22.3	34.0	28.8	0.0131	35.0	10.6	0.0027	55.8
1440.00	22.5	29.0	23.8	0.0130	30.0	11.4	0.0012	46.2

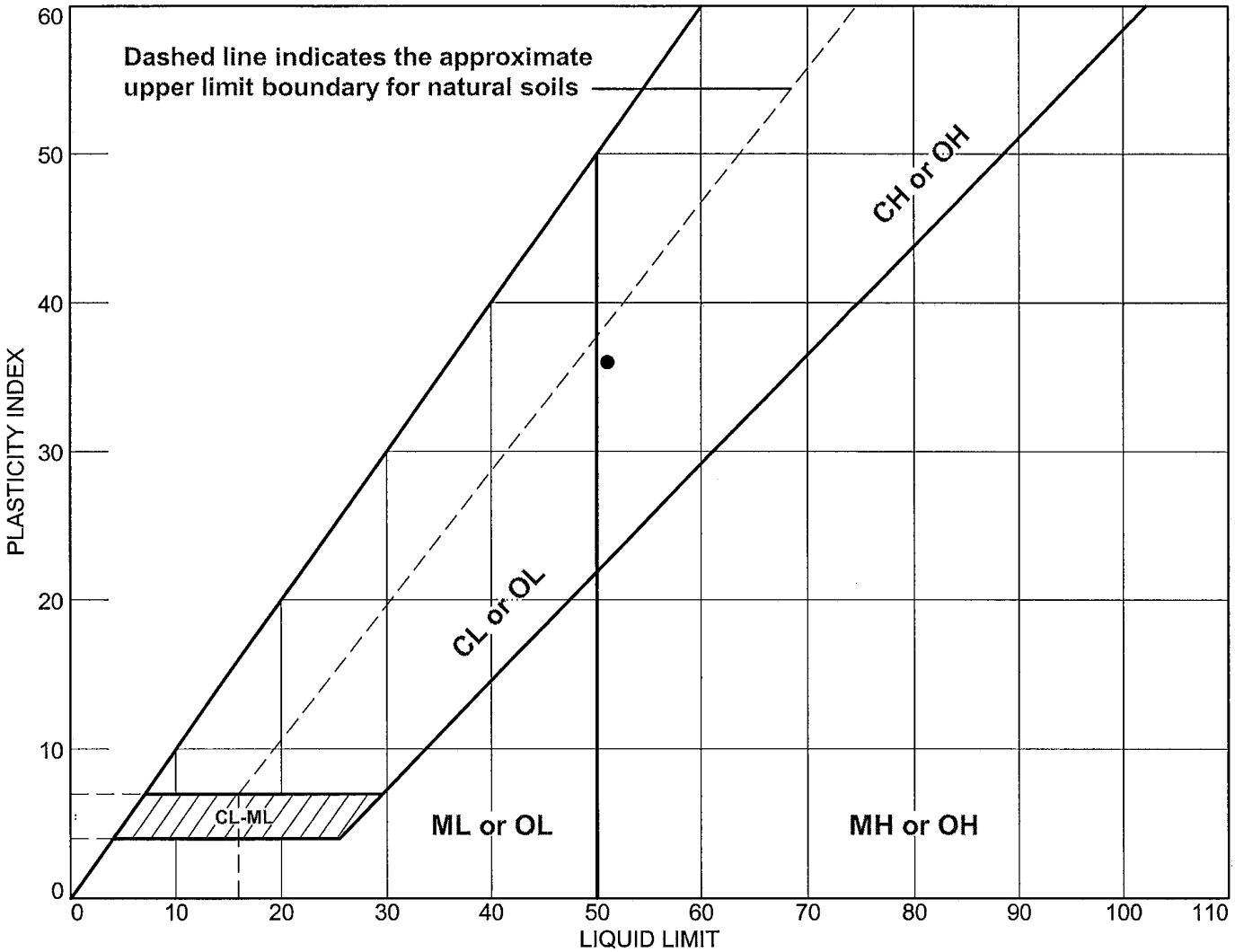
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.7	11.6	12.3	23.3	64.4	87.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0017	0.0036	0.0199	0.0406	0.1064	0.1624

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-3170A	SS-42	289.0-290.5'	19.7	15	51	36	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

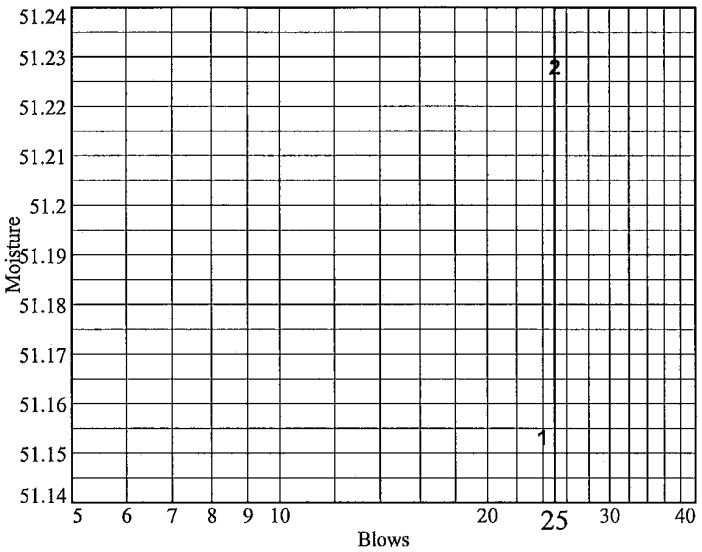
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 289.0-290.5' **Sample Number:** SS-42
Material Description: Light Gray Fat CLAY
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	22.30	24.29				
Dry+Tare	18.53	19.91				
Tare	11.16	11.36				
# Blows	24	25				
Moisture	51.2	51.2				



Liquid Limit= 51
Plastic Limit= 15
Plasticity Index= 36
Natural Moisture= 19.7
Liquidity Index= 0.1

Plastic Limit Data

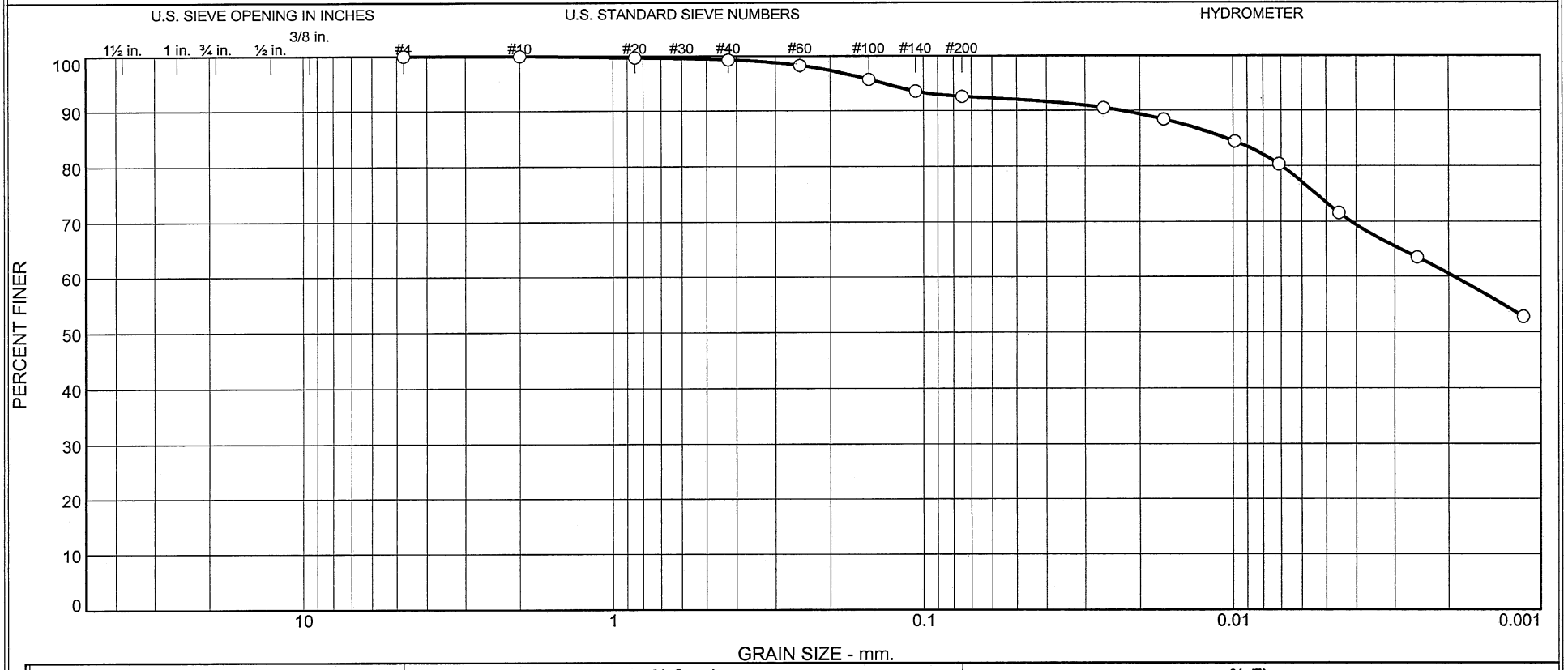
Run No.	1	2	3	4	
Wet+Tare	21.94	23.82			
Dry+Tare	21.04	22.77			
Tare	15.27	15.65			
Moisture	15.6	14.7			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
76.19	65.02	8.23	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	0.0	0.0	0.7	6.7	19.2	73.4

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3170A	SS-43	299.0-300.5'	3/6/09	CH	Very Pale Brown mottled Yellow Fat CLAY	23.6	56	26

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed

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-3170A
Depth: 299.0-300.5' **Sample Number:** SS-43
Material Description: Very Pale Brown mottled Yellow Fat CLAY
Date: 3/6/09 **Natural Moisture:** 23.6
Liquid Limit: 56 **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
252.91	0.00	0.00	#4	0.00	100.0
			#10	0.02	100.0
49.74	0.00	0.00	#20	0.14	99.7
			#40	0.34	99.3
			#60	0.87	98.2
			#100	2.13	95.7
			#140	3.21	93.5
			#200	3.68	92.6

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =49.73
Hygroscopic moisture correction:
Moist weight and tare = 30.05
Dry weight and tare = 29.82
Tare weight = 15.62
Hygroscopic moisture = 1.6%
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.8	50.0	44.8	0.0131	51.0	7.9	0.0262	90.5
5.00	21.7	49.0	43.7	0.0132	50.0	8.1	0.0168	88.4
15.00	21.7	47.0	41.7	0.0132	48.0	8.4	0.0099	84.3
30.00	21.7	45.0	39.7	0.0132	46.0	8.8	0.0071	80.3
81.00	20.7	41.0	35.4	0.0133	42.0	9.4	0.0045	71.5
271.00	22.2	36.5	31.4	0.0131	37.5	10.1	0.0025	63.5
1440.00	22.7	31.0	26.1	0.0130	32.0	11.0	0.0011	52.7

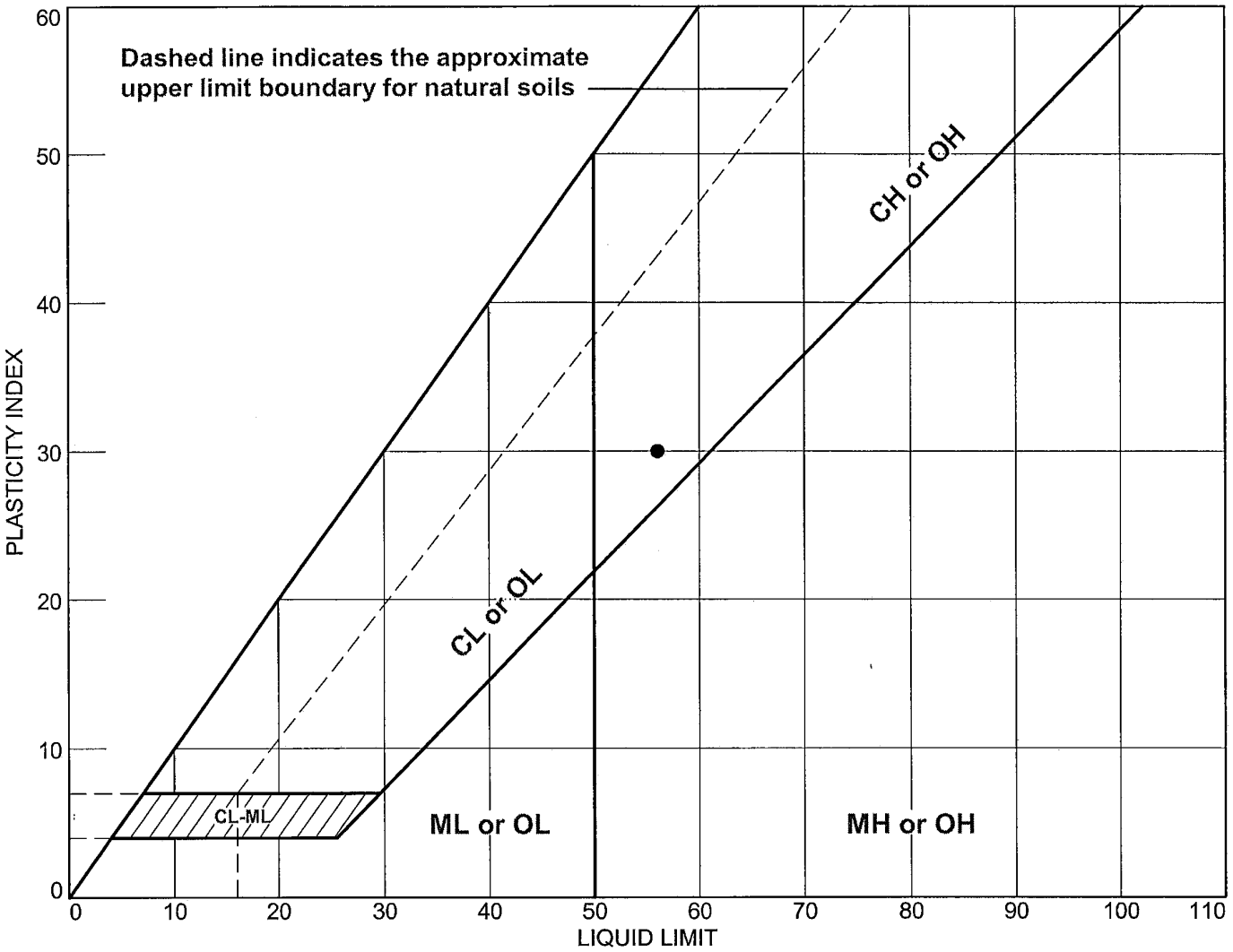
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.7	6.7	7.4	19.2	73.4	92.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
					0.0019	0.0070	0.0106	0.0231	0.1349

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-3170A	SS-43	299.0-300.5'	23.6	26	56	30	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

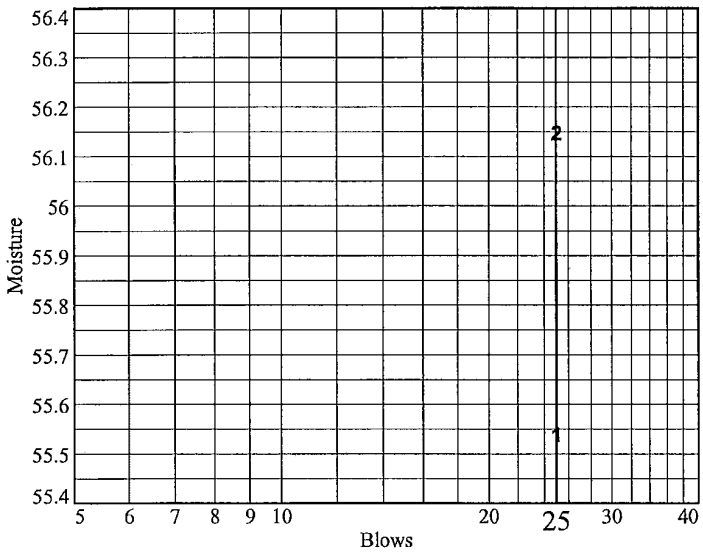
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3170A
Depth: 299.0-300.5' **Sample Number:** SS-43
Material Description: Very Pale Brown mottled Yellow Fat CLAY
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	26.59	28.97				
Dry+Tare	22.63	24.13				
Tare	15.50	15.51				
# Blows	25	25				
Moisture	55.5	56.1				



Liquid Limit= 56
Plastic Limit= 26
Plasticity Index= 30
Natural Moisture= 23.6
Liquidity Index= -0.1

Plastic Limit Data

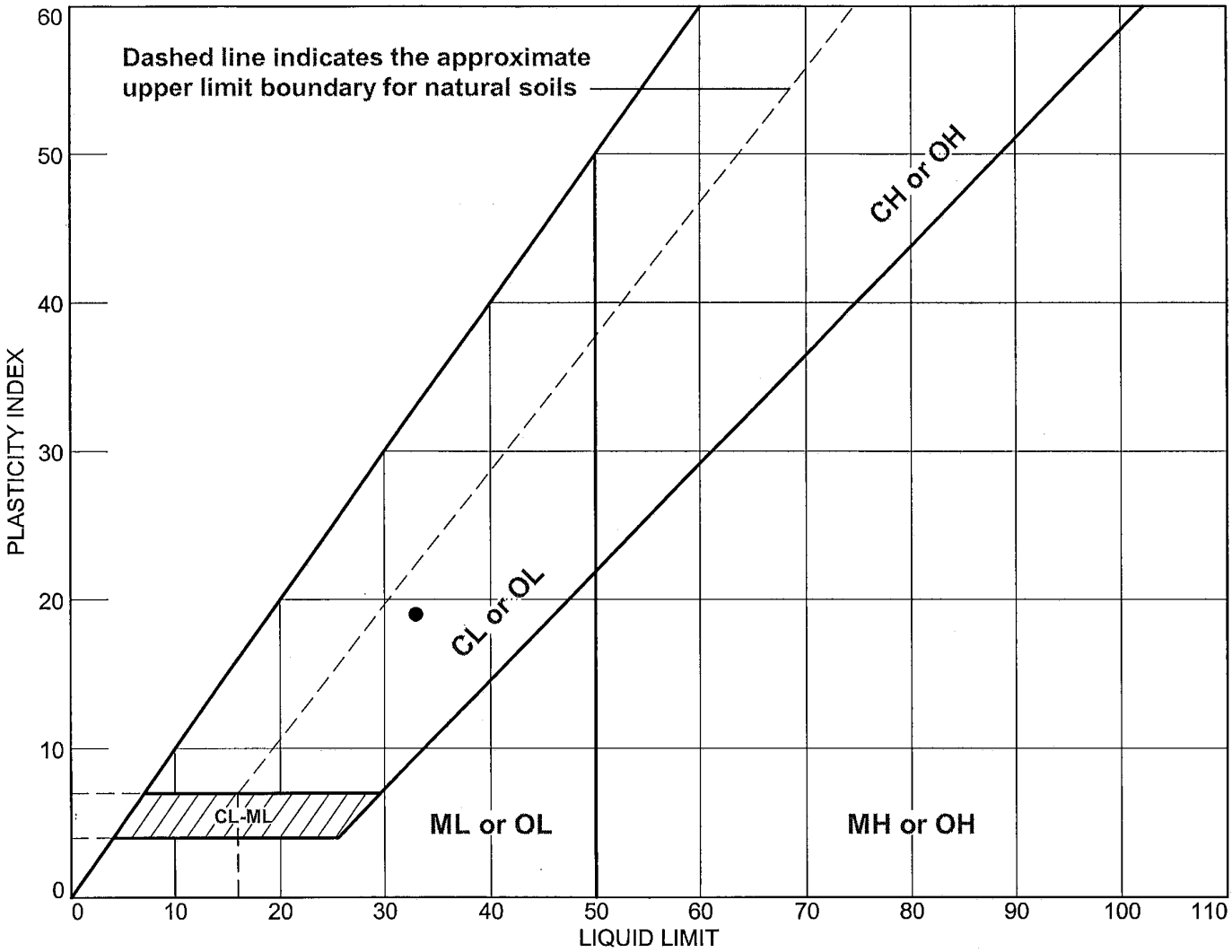
Run No.	1	2	3	4	
Wet+Tare	27.13	27.96			
Dry+Tare	24.69	25.39			
Tare	15.49	15.51			
Moisture	26.5	26.0			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
86.86	72.09	9.47	23.6

MACTEC Engineering and Consulting, Inc.

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-3223	SS-1	0.0-1.5'	9.0	14	33	19	CL (Visual)

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

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

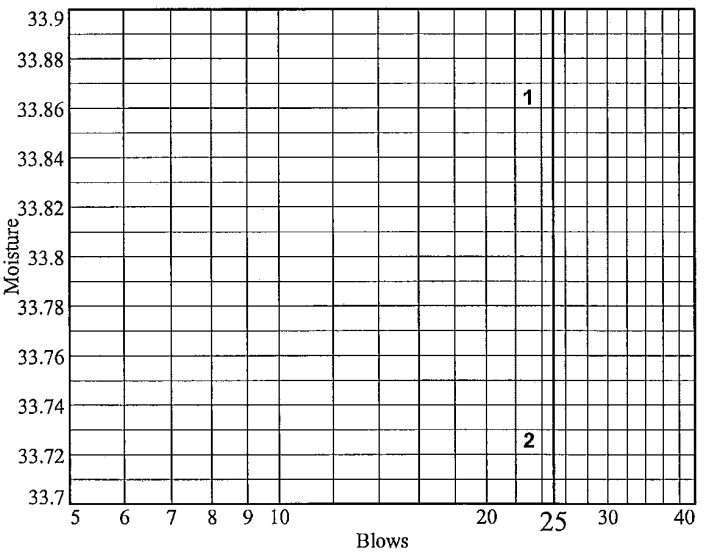
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 0.0-1.5' **Sample Number:** SS-1
Material Description: Gray and Yellow Sandy Lean CLAY (Visual)
USCS: CL (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	21.51	24.62				
Dry+Tare	18.96	22.33				
Tare	11.43	15.54				
# Blows	23	23				
Moisture	33.9	33.7				



Liquid Limit= 33
Plastic Limit= 14
Plasticity Index= 19
Natural Moisture= 9.0
Liquidity Index= -0.3

Plastic Limit Data

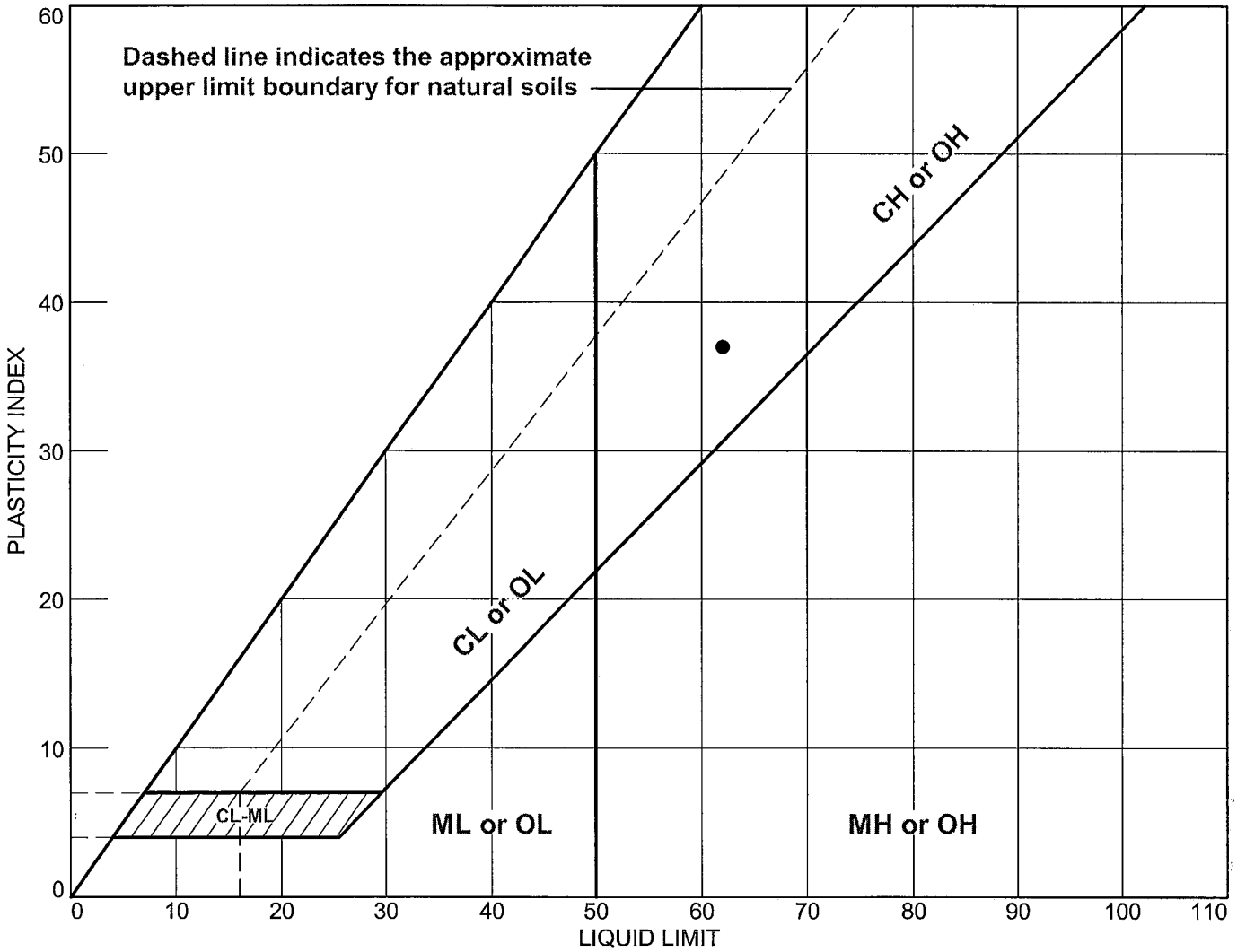
Run No.	1	2	3	4	
Wet+Tare	22.65	24.29			
Dry+Tare	21.75	23.17			
Tare	15.50	15.46			
Moisture	14.4	14.5			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
76.54	70.76	6.77	9.0

MACTEC Engineering and Consulting, Inc.

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-3223	SS-3	5.8-7.3'	14.4	25	62	37	CH (Visual)

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

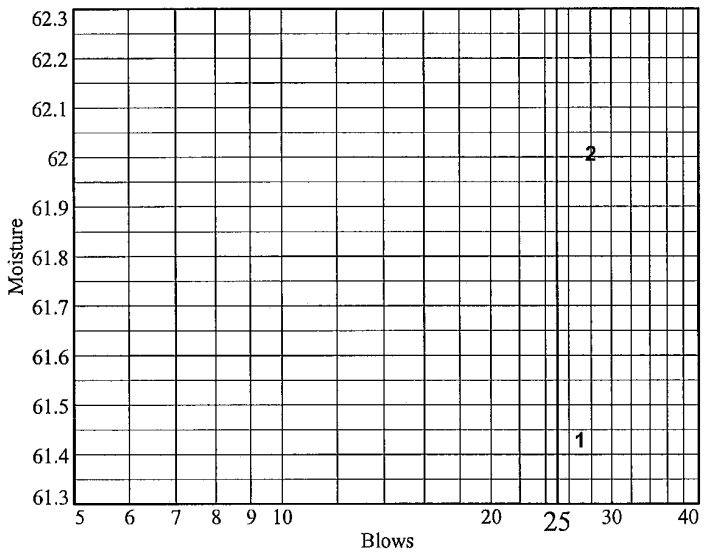
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 5.8-7.3' **Sample Number:** SS-3
Material Description: Gray Fat CLAY with Sand (Visual)
USCS: CH (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	36.13	38.63				
Dry+Tare	28.23	29.80				
Tare	15.37	15.56				
# Blows	27	28				
Moisture	61.4	62.0				



Liquid Limit= 62
Plastic Limit= 25
Plasticity Index= 37
Natural Moisture= 14.4
Liquidity Index= -0.3

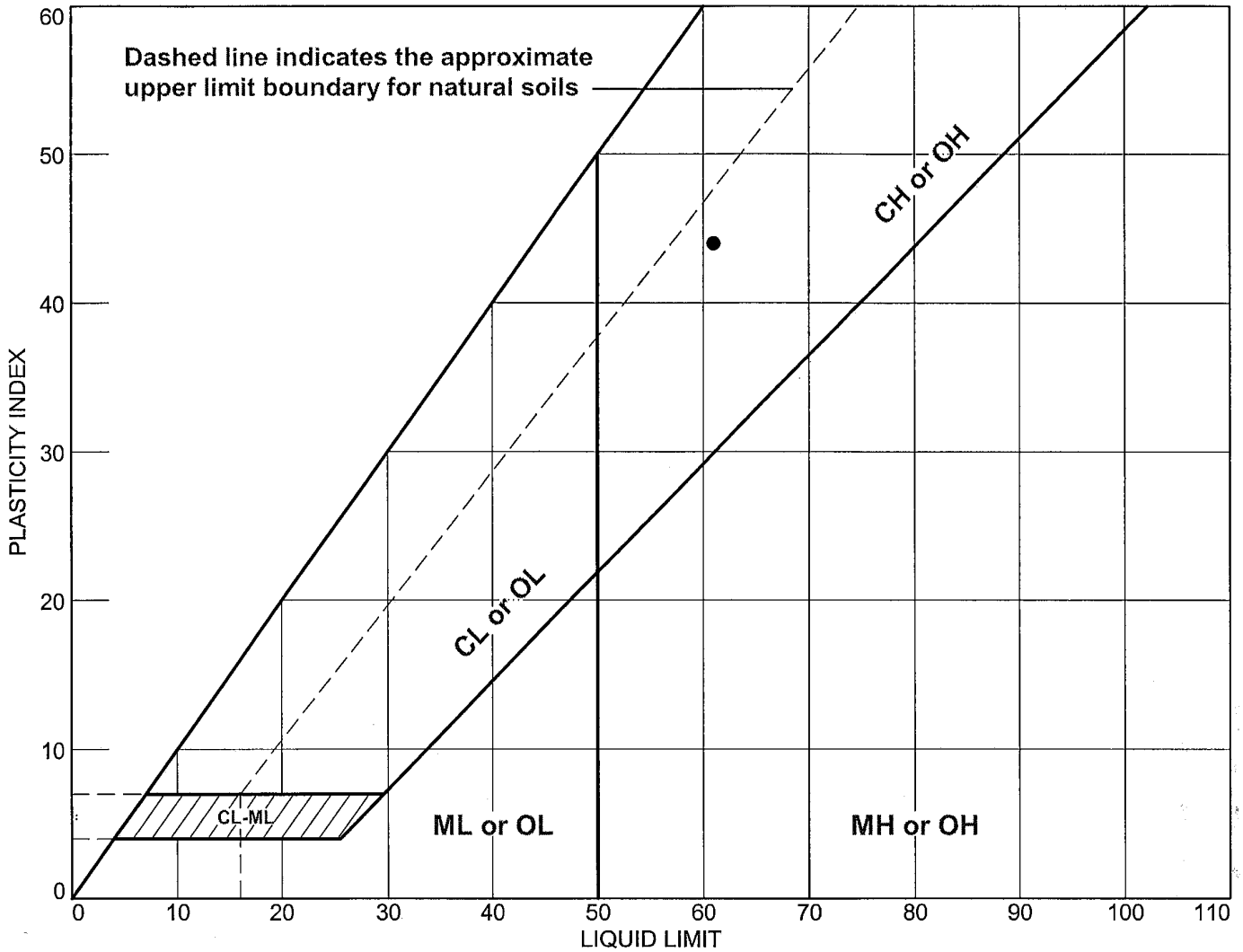
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	23.69	24.13			
Dry+Tare	22.00	22.41			
Tare	15.35	15.60			
Moisture	25.4	25.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
124.39	109.64	6.89	14.4

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-3223	SS-5	11.8-13.3'	20.8	17	61	44	CH (Visual)

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

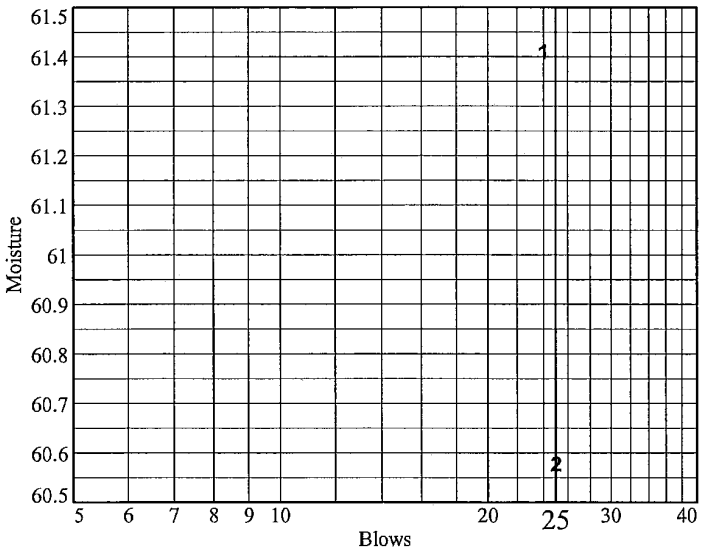
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 11.8-13.3' **Sample Number:** SS-5
Material Description: Pale Brown Mottled with Light Gray Fat CLAY (Visual)
USCS: CH (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	18.96	22.70				
Dry+Tare	16.00	19.98				
Tare	11.18	15.49				
# Blows	24	25				
Moisture	61.4	60.6				



Liquid Limit= 61
Plastic Limit= 17
Plasticity Index= 44
Natural Moisture= 20.8
Liquidity Index= 0.1

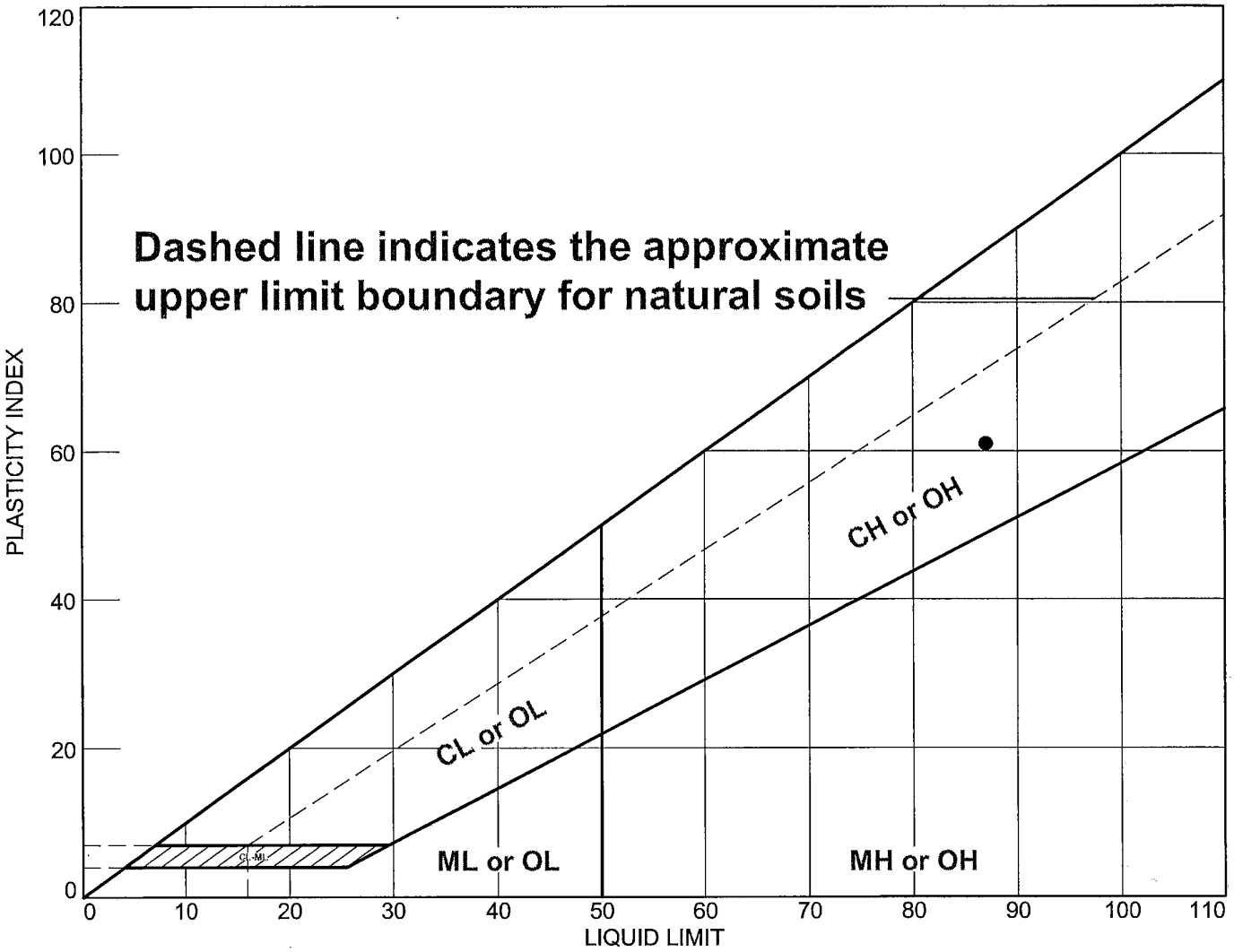
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	23.70	20.79			
Dry+Tare	22.56	19.41			
Tare	15.63	11.20			
Moisture	16.5	16.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
94.03	79.44	9.19	20.8

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-3223	SS-7	18.9-20.4'	29.8	26	87	61	CH (Visual)

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

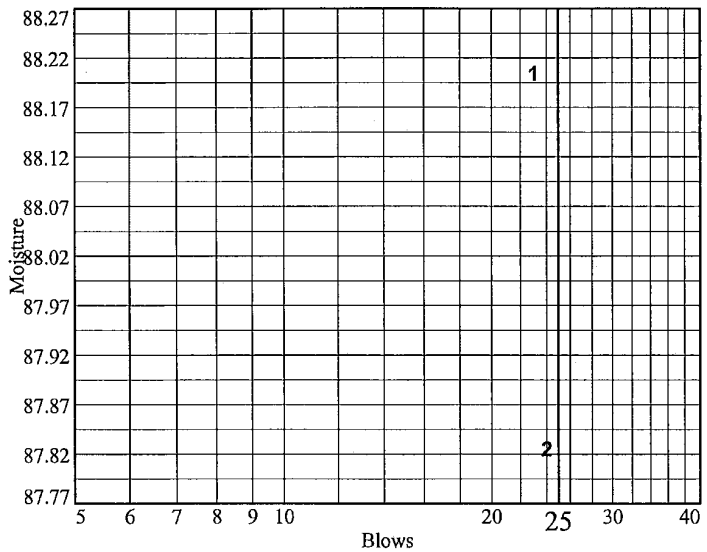
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 18.9-20.4' **Sample Number:** SS-7
Material Description: Light Yellowish Brown with Black Mottles Fat CLAY (Visual)
USCS: CH (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	22.82	21.93				
Dry+Tare	19.38	18.90				
Tare	15.48	15.45				
# Blows	23	24				
Moisture	88.2	87.8				



Liquid Limit= 87
Plastic Limit= 26
Plasticity Index= 61
Natural Moisture= 29.8
Liquidity Index= 0.1

Plastic Limit Data

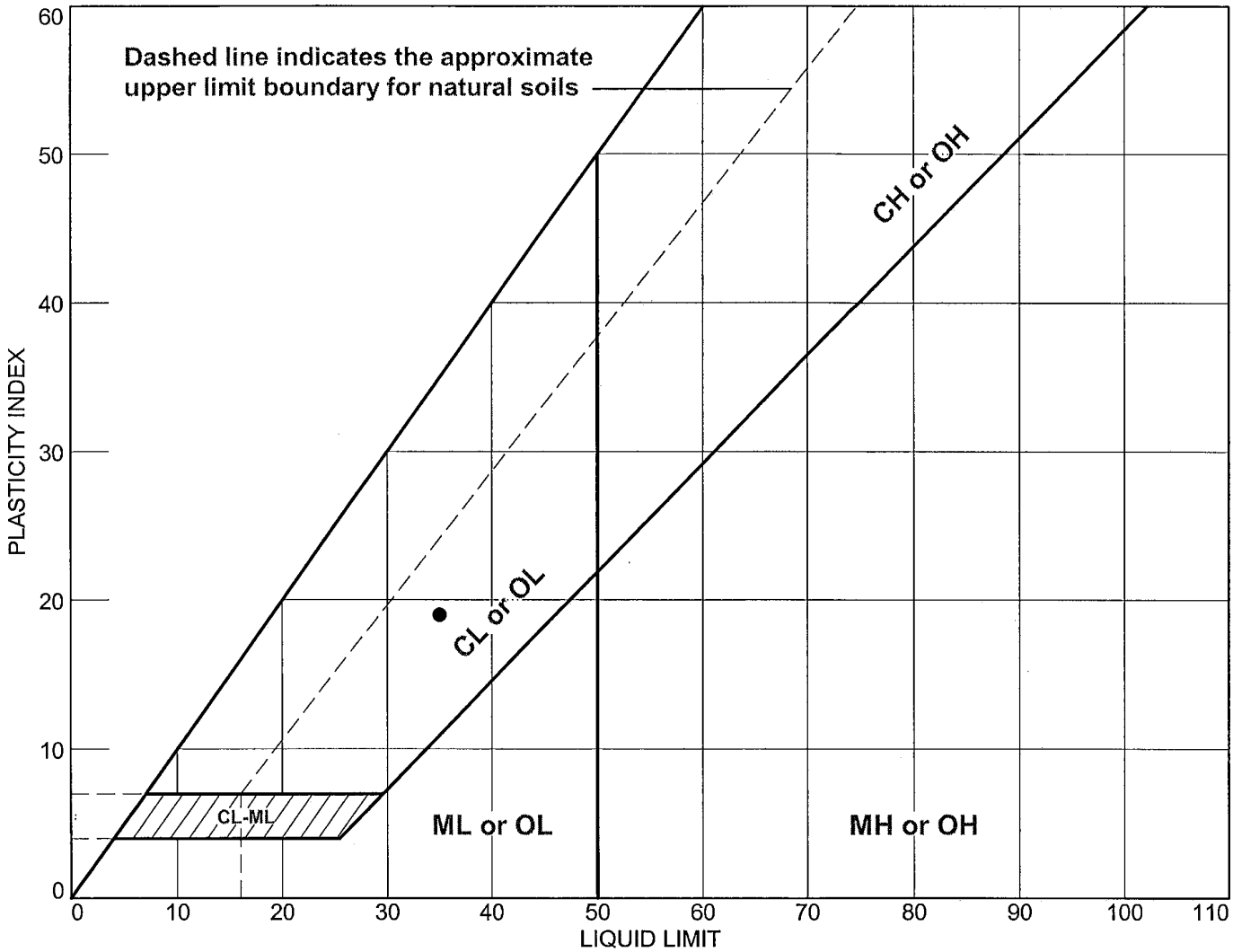
Run No.	1	2	3	4	
Wet+Tare	22.30	22.78			
Dry+Tare	20.87	21.30			
Tare	15.42	15.49			
Moisture	26.2	25.5			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
113.50	89.01	6.85	29.8

MACTEC Engineering and Consulting, Inc.

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-3223	SS-9	28.4-29.9'	16.0	16	35	19	CL (Visual)

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

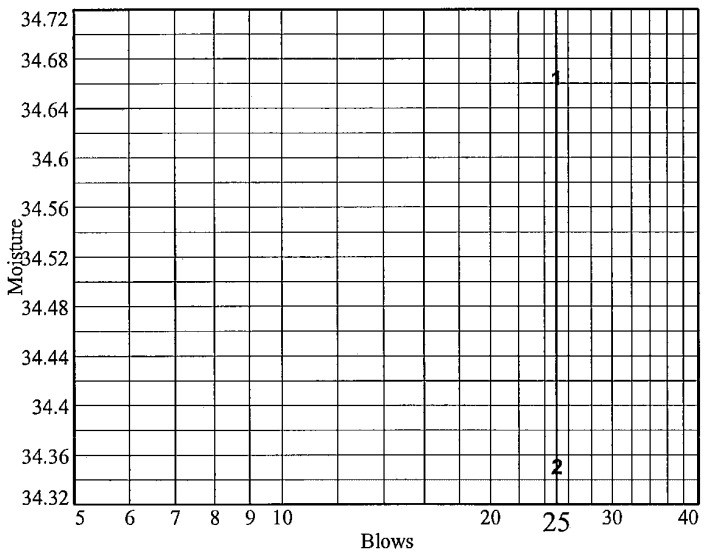
LIQUID AND PLASTIC LIMIT TEST DATA

5/4/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 28.4-29.9' **Sample Number:** SS-9
Material Description: Light Gray with Staining Yellow Sandy Lean CLAY (Visual)
USCS: CL (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.93	24.38				
Dry+Tare	22.50	22.13				
Tare	15.49	15.58				
# Blows	25	25				
Moisture	34.7	34.4				



Liquid Limit= 35
Plastic Limit= 16
Plasticity Index= 19
Natural Moisture= 16.0
Liquidity Index= 0.0

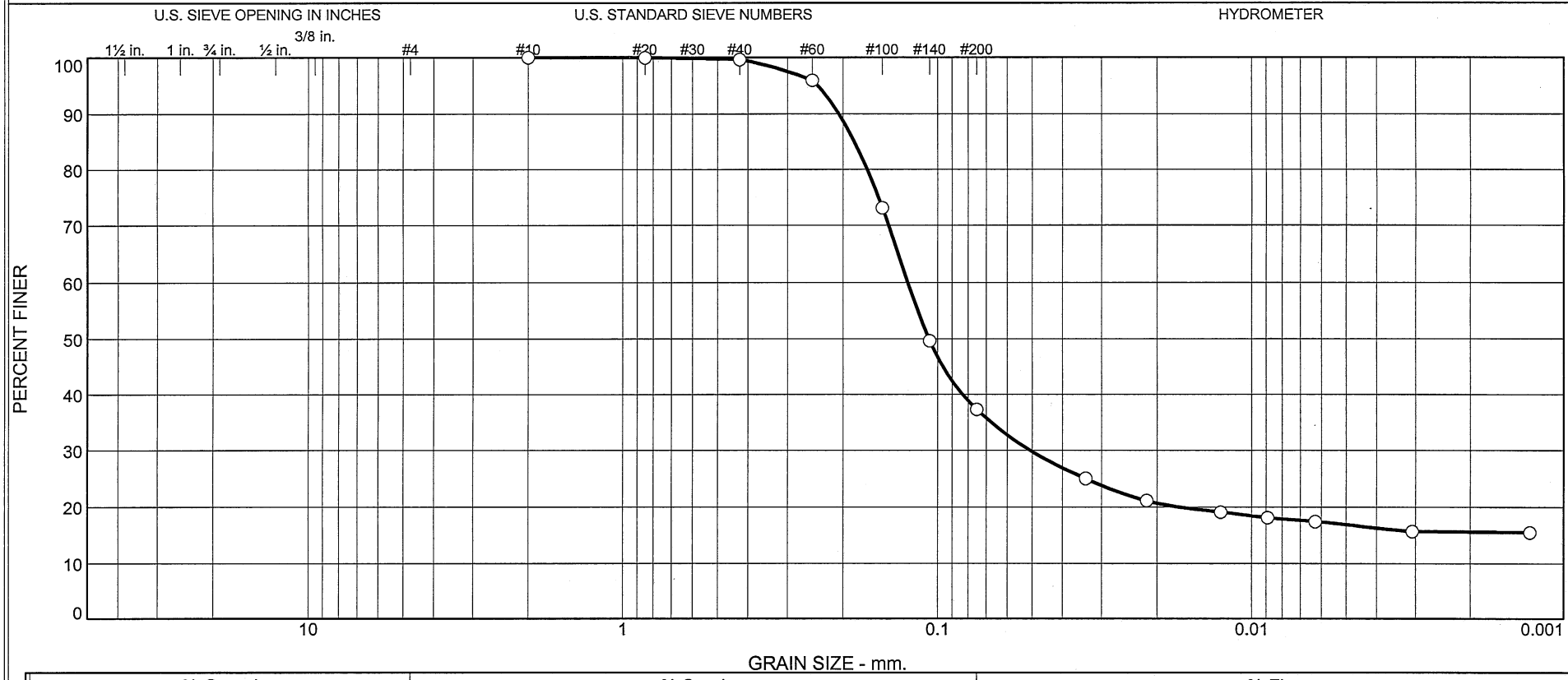
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.60	22.36			
Dry+Tare	20.79	21.42			
Tare	15.47	15.64			
Moisture	15.2	16.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
111.45	97.00	6.77	16.0

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	0.4	62.3	20.4	16.9

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-10	33.5-35.0'	1/8/09	SC	Light Gray Clayey SAND	15.4	21	12

Client Bechtel

Project Exelon Texas COL Project - Supplemental

Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Organic Content = 0.3% as Per ASTM D2974-07a
Specific Gravity is assumed

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-3223
Depth: 33.5-35.0' **Sample Number:** SS-10
Material Description: Light Gray Clayey SAND
Date: 1/8/09 **Natural Moisture:** 15.4
Liquid Limit: 21 **Plastic Limit:** 12 **USCS Class.:** SC
Testing Remarks: Organic Content = 0.3% as Per ASTM D2974-07a
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
255.49	0.00	0.00	#10	0.00	100
50.52	0.00	0.00	#20	0.02	100
			#40	0.19	100
			#60	2.05	96
			#100	13.62	73
			#140	25.46	50
			#200	31.66	37

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100
Weight of hydrometer sample =50.52
Hygroscopic moisture correction:
Moist weight and tare = 33.75
Dry weight and tare = 33.69
Tare weight = 20.15
Hygroscopic moisture = 0.4%
Table of composite correction values:

Temp., deg. C:	12.9	29.5
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.9	18.0	12.7	0.0131	19.0	13.2	0.0337	25
5.00	22.0	16.0	10.7	0.0131	17.0	13.5	0.0216	21
15.00	21.9	15.0	9.7	0.0131	16.0	13.7	0.0125	19
30.00	21.9	14.5	9.2	0.0131	15.5	13.8	0.0089	18
60.00	22.4	14.0	8.9	0.0131	15.0	13.8	0.0063	17
250.00	22.8	13.0	8.0	0.0130	14.0	14.0	0.0031	16
1440.00	22.5	13.0	7.9	0.0130	14.0	14.0	0.0013	16

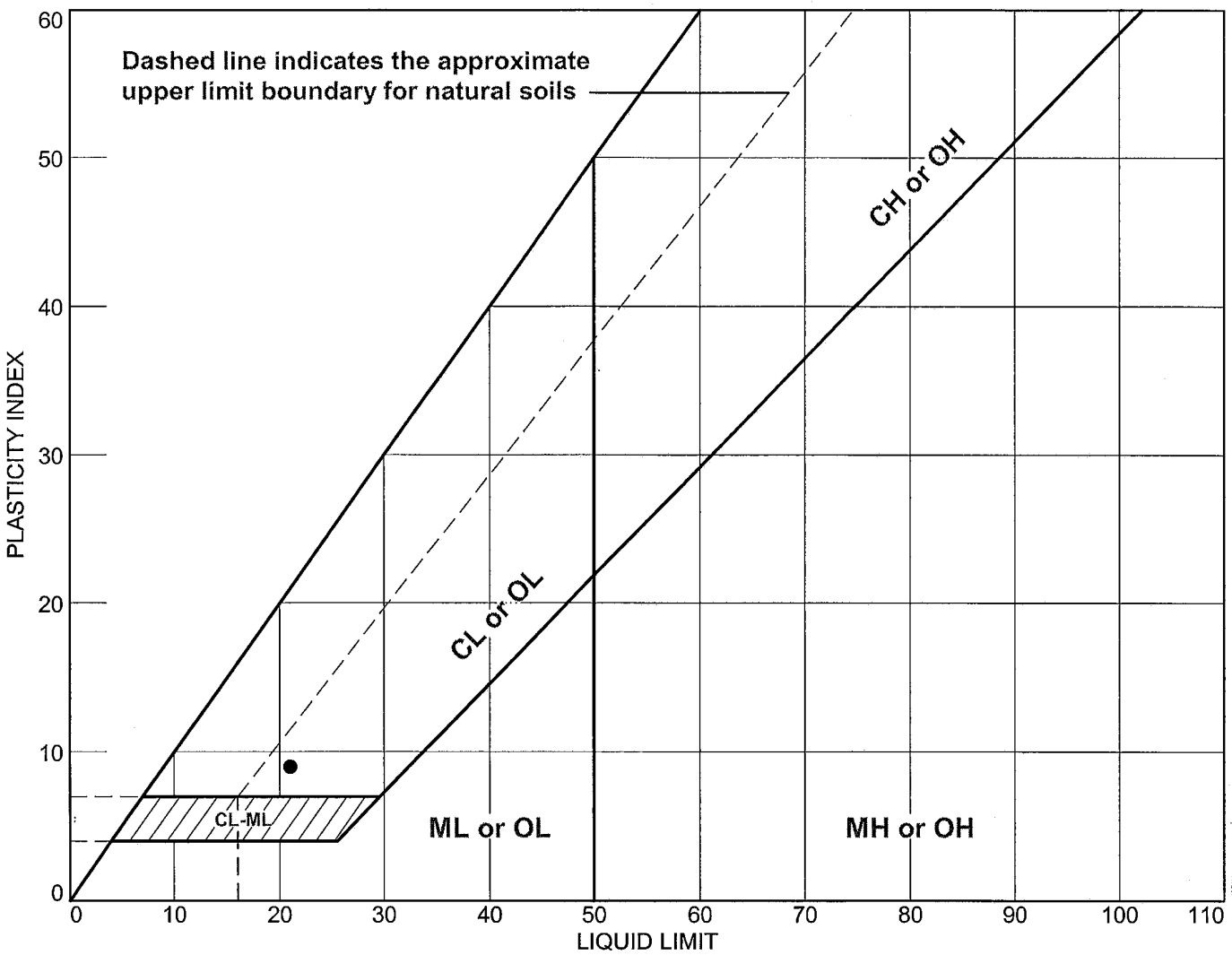
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	0	0	0	0	63	63	20	17	37

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0170	0.0508	0.1068	0.1247	0.1678	0.1844	0.2064	0.2405

Fineness Modulus
0.30

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-3223	SS-10	33.5-35.0'	15.4	12	21	9	SC

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

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

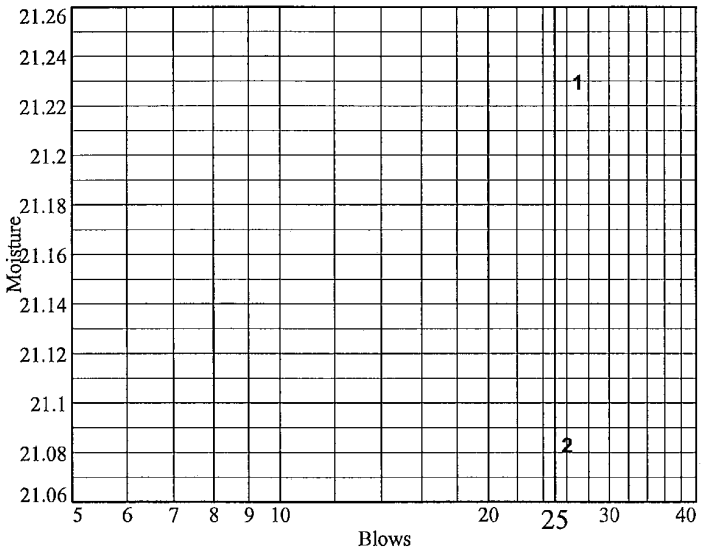
LIQUID AND PLASTIC LIMIT TEST DATA

5/4/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 33.5-35.0' **Sample Number:** SS-10
Material Description: Light Gray Clayey SAND
USCS: SC **AASHTO:** A-4(0)
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	26.15	27.99				
Dry+Tare	24.32	25.81				
Tare	15.70	15.47				
# Blows	27	26				
Moisture	21.2	21.1				



Liquid Limit= 21
Plastic Limit= 12
Plasticity Index= 9
Natural Moisture= 15.4
Liquidity Index= 0.4

Plastic Limit Data

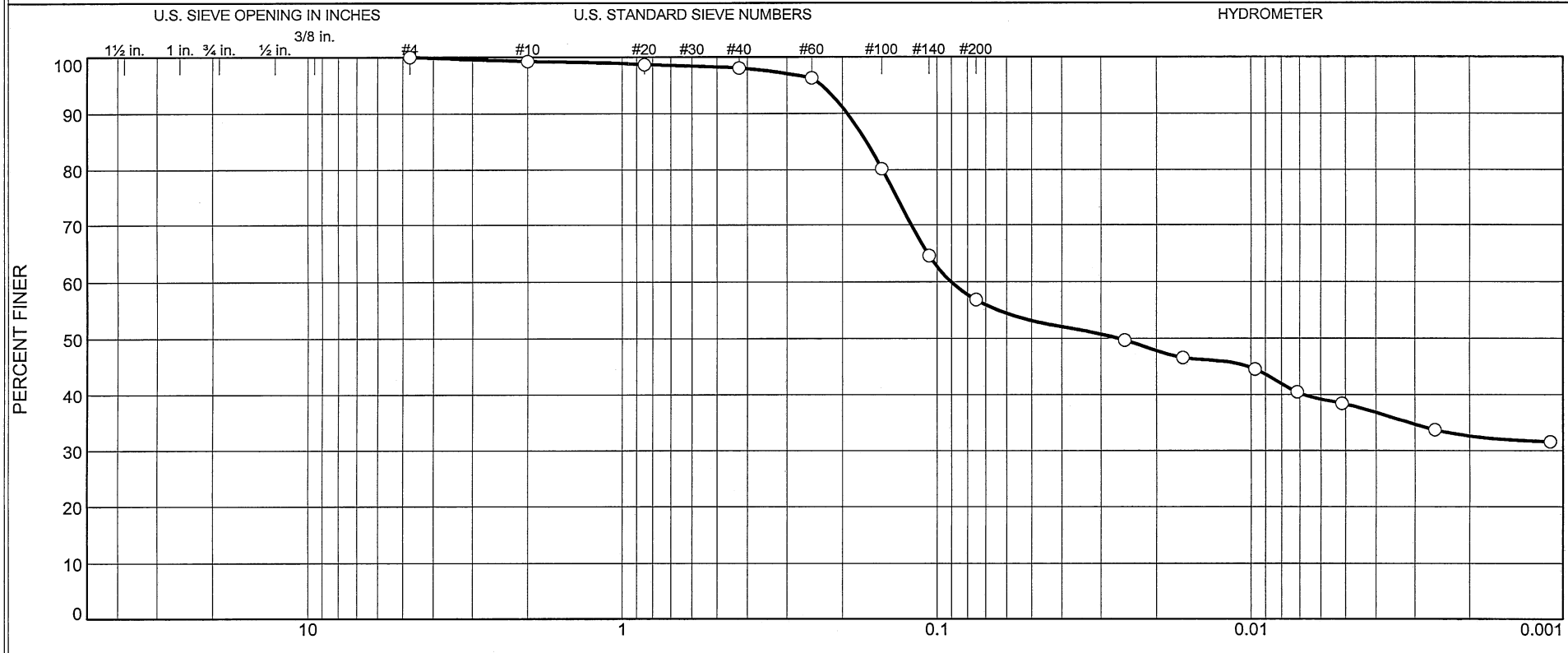
Run No.	1	2	3	4	
Wet+Tare	21.77	22.06			
Dry+Tare	21.08	21.33			
Tare	15.42	15.50			
Moisture	12.2	12.5			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
205.06	178.49	6.40	15.4

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	0.7	1.3	41.2	18.5	38.3

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-12	43.3-44.8'	1/8/09	CL	Light Gray with Staining Brownish Yellow Sandy Lean CLAY	15.0	36	16

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed
ND = Not Determined

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-3223
Depth: 43.3-44.8' **Sample Number:** SS-12
Material Description: Light Gray with Staining Brownish Yellow Sandy Lean CLAY
Date: 1/8/09 **Natural Moisture:** 15.0
Liquid Limit: 36 **Plastic Limit:** 16 **USCS Class.:** CL
Testing Remarks: Specific Gravity is assumed
ND = Not Determined
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
234.16	0.00	0.00	#4	0.00	100.0
			#10	1.74	99.3
98.46	0.00	0.00	#20	0.60	98.7
			#40	1.20	98.0
			#60	2.99	96.2
			#100	18.99	80.1
			#140	34.44	64.5
			#200	42.08	56.8

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.3
Weight of hydrometer sample =98.46
Hygroscopic moisture correction:
Moist weight and tare = 29.44
Dry weight and tare = 29.12
Tare weight = 15.51
Hygroscopic moisture = 2.4%
Table of composite correction values:

Temp., deg. C:	12.3	29.5
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.5	54.0	48.7	0.0132	55.0	7.3	0.0252	49.7
5.00	21.5	51.0	45.7	0.0132	52.0	7.8	0.0164	46.6
15.00	21.5	49.0	43.7	0.0132	50.0	8.1	0.0097	44.6
30.00	21.5	45.0	39.7	0.0132	46.0	8.8	0.0071	40.5
60.00	21.5	43.0	37.7	0.0132	44.0	9.1	0.0051	38.4
250.00	22.8	38.0	33.1	0.0130	39.0	9.9	0.0026	33.7
1440.00	22.5	36.0	31.0	0.0130	37.0	10.2	0.0011	31.6

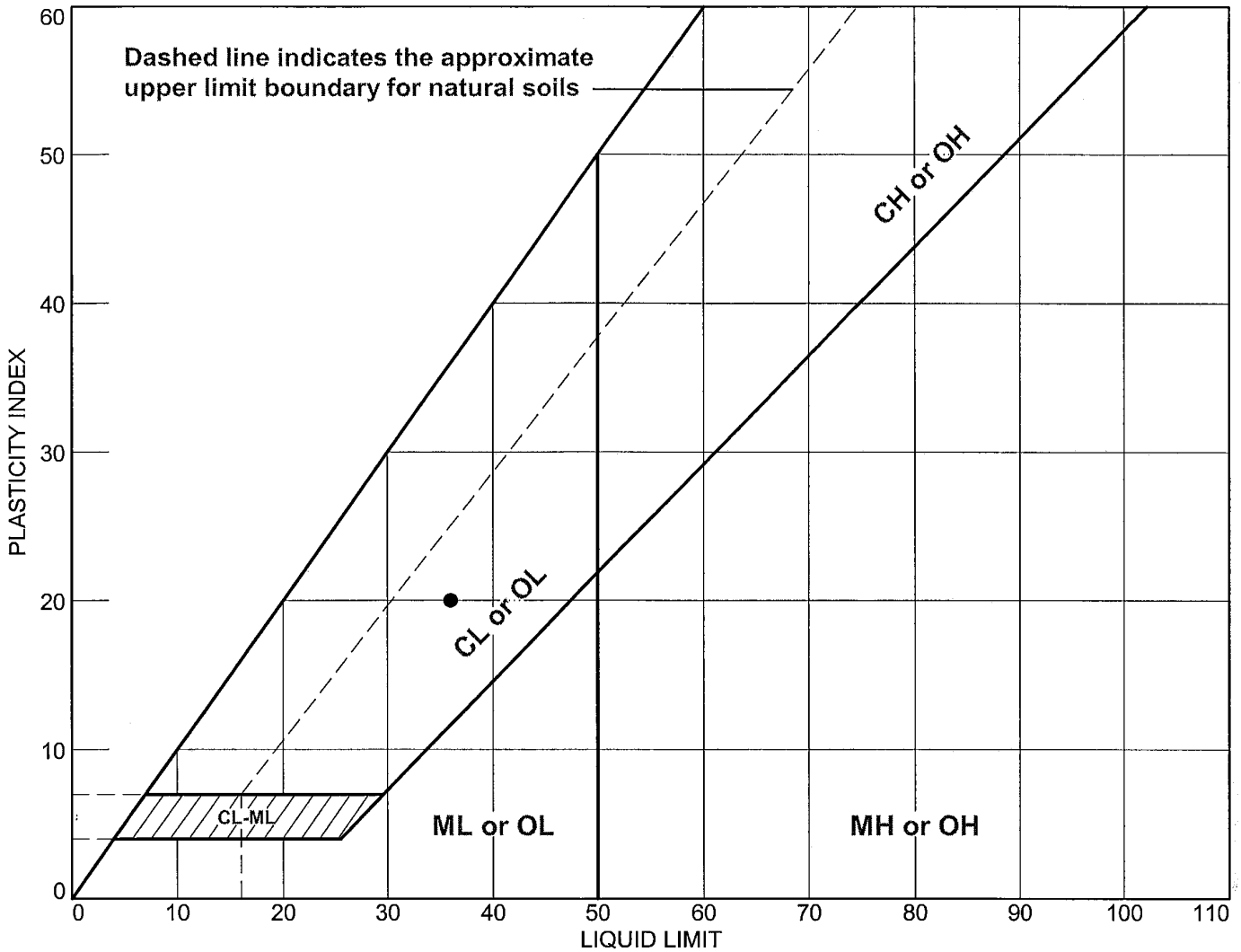
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.7	1.3	41.2	43.2	18.5	38.3	56.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0264	0.0903	0.1496	0.1681	0.1930	0.2332

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-3223	SS-12	43.3-44.8'	15.0	16	36	20	CL

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

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

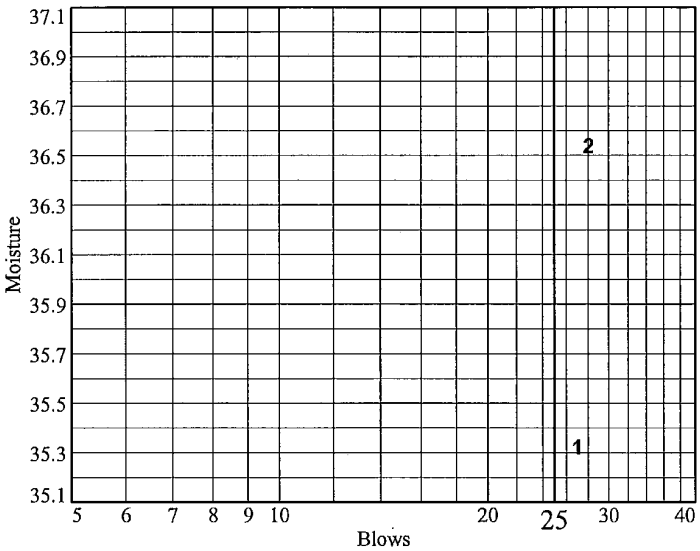
LIQUID AND PLASTIC LIMIT TEST DATA

5/4/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 43.3-44.8' **Sample Number:** SS-12
Material Description: Light Gray with Staining Brownish Yellow Sandy Lean CLAY
USCS: CL **AASHTO:** A-6(8)
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.44	20.51				
Dry+Tare	22.84	18.08				
Tare	15.48	11.43				
# Blows	27	28				
Moisture	35.3	36.5				



Liquid Limit= 36
Plastic Limit= 16
Plasticity Index= 20
Natural Moisture= 15.0
Liquidity Index= 0.0

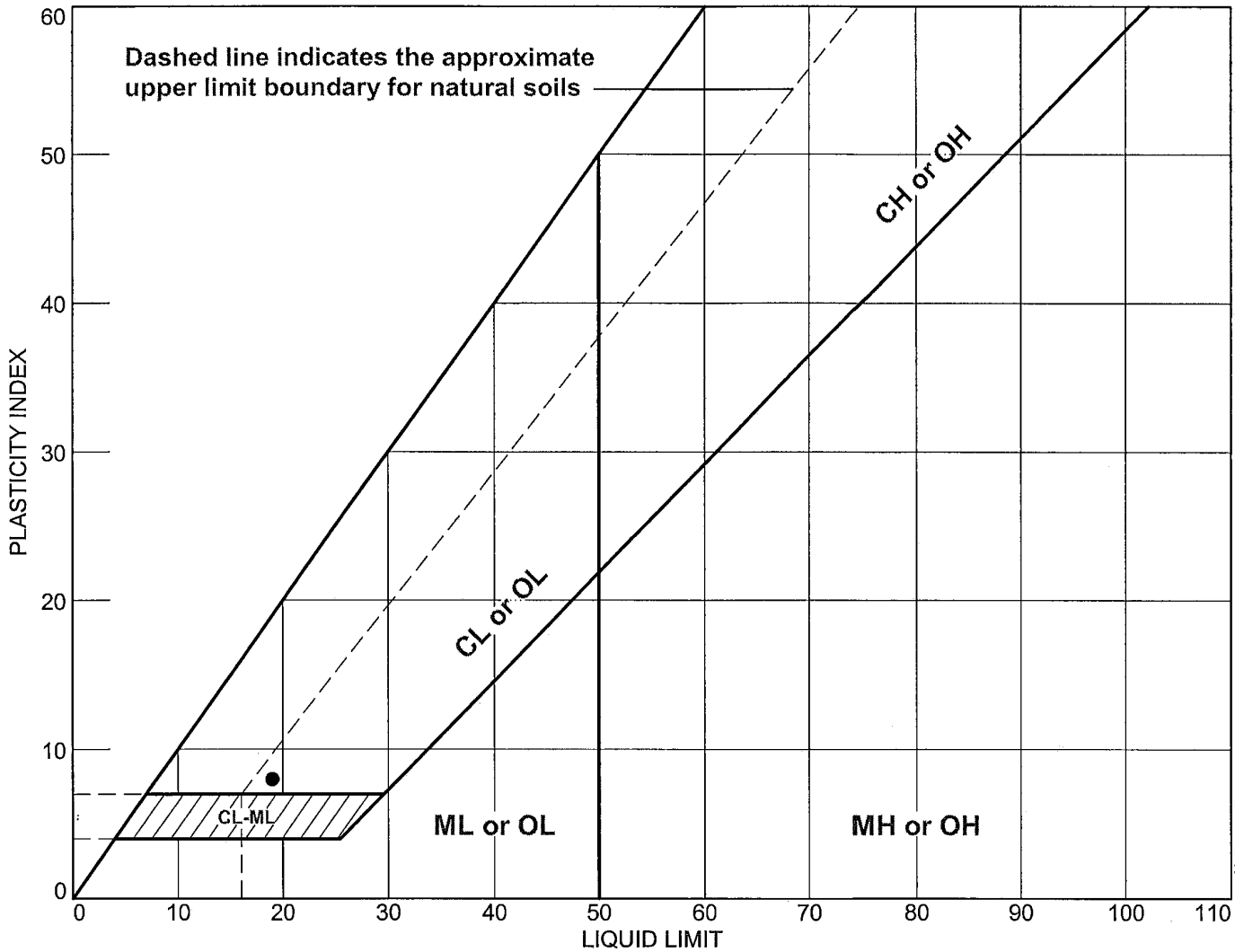
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.72	21.49			
Dry+Tare	20.86	20.63			
Tare	15.49	15.43			
Moisture	16.0	16.5			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
86.86	76.40	6.66	15.0

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-3223	SS-13B	49.4-49.9'	17.1	11	19	8	SC (Visual)

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

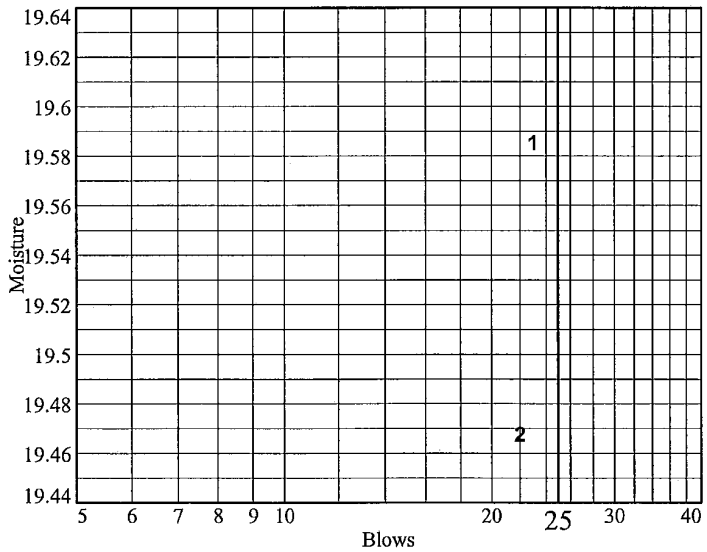
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 49.4-49.9' **Sample Number:** SS-13B
Material Description: Brownish Yellow and White Clayey SAND (Visual)
USCS: SC (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	28.43	25.33				
Dry+Tare	26.35	23.72				
Tare	15.73	15.45				
# Blows	23	22				
Moisture	19.6	19.5				



Liquid Limit= 19
Plastic Limit= 11
Plasticity Index= 8
Natural Moisture= 17.1
Liquidity Index= 0.8

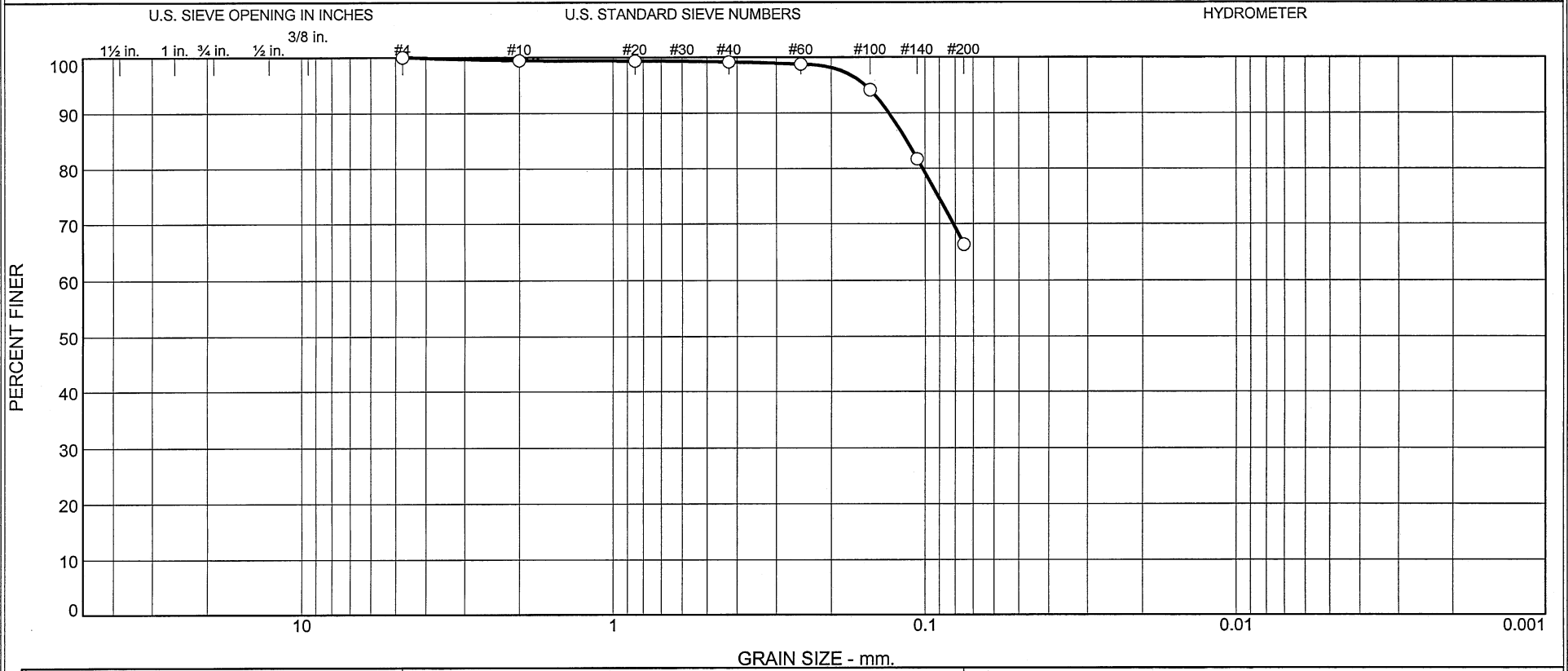
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.13	22.56			
Dry+Tare	21.46	21.86			
Tare	15.51	15.50			
Moisture	11.3	11.0			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
74.14	64.66	9.22	17.1

Particle Size Distribution Report ASTM D 6913-04e2



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	1	0	33	66	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-14	53.4-54.9'	1/8/09	CH	Pale Yellow mottled with Brownish Yellow Sandy Fat CLAY	14.8	53	26

Client Bechtel
Project Exelon Texas COL Project - Supplemental Investigation, including UHS
Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.
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-3223
Depth: 53.4-54.9' **Sample Number:** SS-14
Material Description: Pale Yellow mottled with Brownish Yellow Sandy Fat CLAY
Date: 1/8/09 **Natural Moisture:** 14.8
Liquid Limit: 53 **Plastic Limit:** 26 **USCS Class.:** CH
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
286.00	0.00	0.00	#4	0.00	100
			#10	1.59	99
100.65	0.00	0.00	#20	0.10	99
			#40	0.32	99
			#60	0.74	99
			#100	5.37	94
			#140	17.97	82
			#200	33.53	66

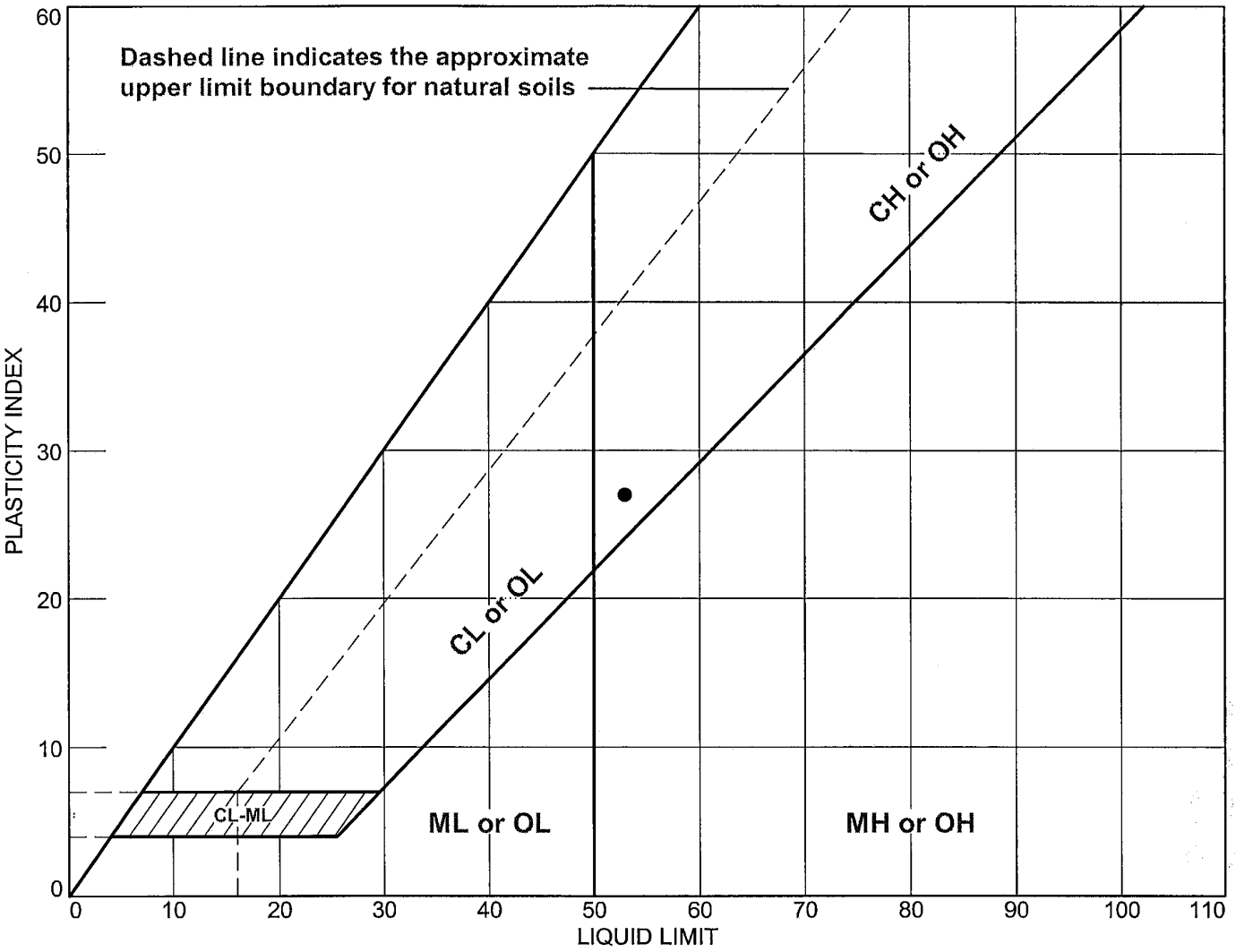
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	0	0	1	0	33	34			66

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
						0.1019	0.1147	0.1307	0.1558

Fineness Modulus
0.09

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-3223	SS-14	53.4-54.9'	14.8	26	53	27	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

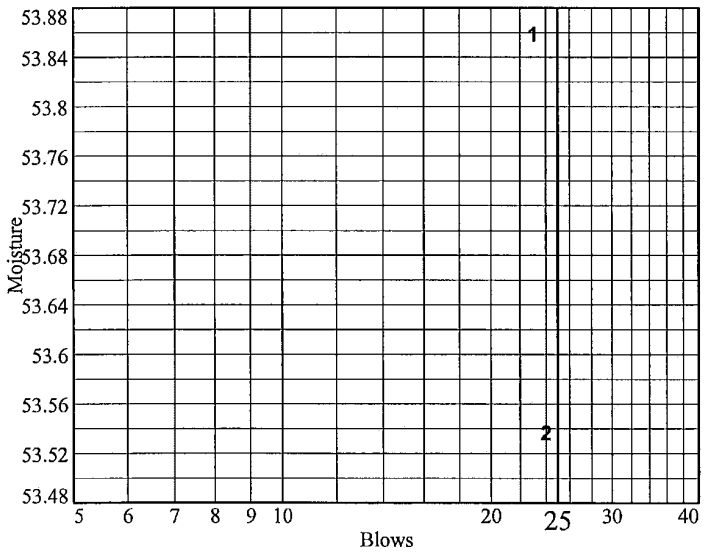
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 53.4-54.9' **Sample Number:** SS-14
Material Description: Pale Yellow mottled with Brownish Yellow Sandy Fat CLAY
USCS: CH **AASHTO:** A-7-6(17)
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.64	19.39				
Dry+Tare	21.43	16.59				
Tare	15.47	11.36				
# Blows	23	24				
Moisture	53.9	53.5				



Liquid Limit= 53
Plastic Limit= 26
Plasticity Index= 27
Natural Moisture= 14.8
Liquidity Index= -0.4

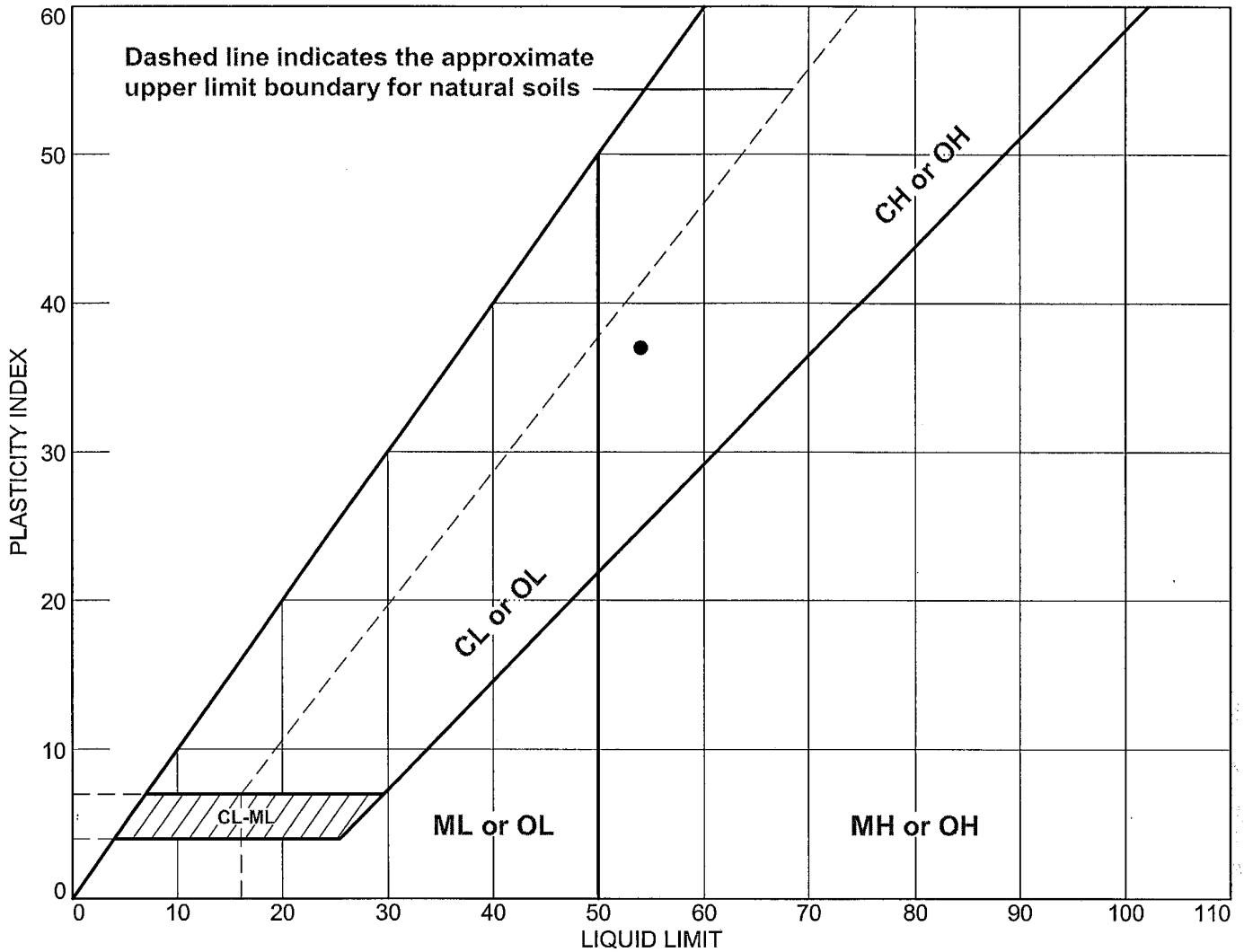
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.54	22.46			
Dry+Tare	20.28	21.03			
Tare	15.44	15.56			
Moisture	26.0	26.1			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
89.92	79.24	6.96	14.8

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-3223	SS-16	63.5-65.0'	19.7	17	54	37	CH (Visual)

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

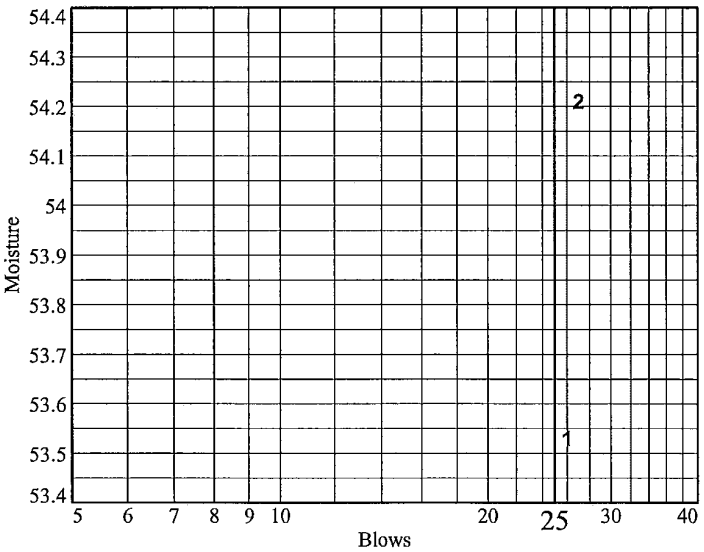
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 63.5-65.0' **Sample Number:** SS-16
Material Description: Light brownish Gray with Yellowish Brown mottling Fat CLAY with sand (Visual)
USCS: CH (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	23.67	22.77				
Dry+Tare	20.79	20.26				
Tare	15.41	15.63				
# Blows	26	27				
Moisture	53.5	54.2				



Liquid Limit= 54
Plastic Limit= 17
Plasticity Index= 37
Natural Moisture= 19.7
Liquidity Index= 0.1

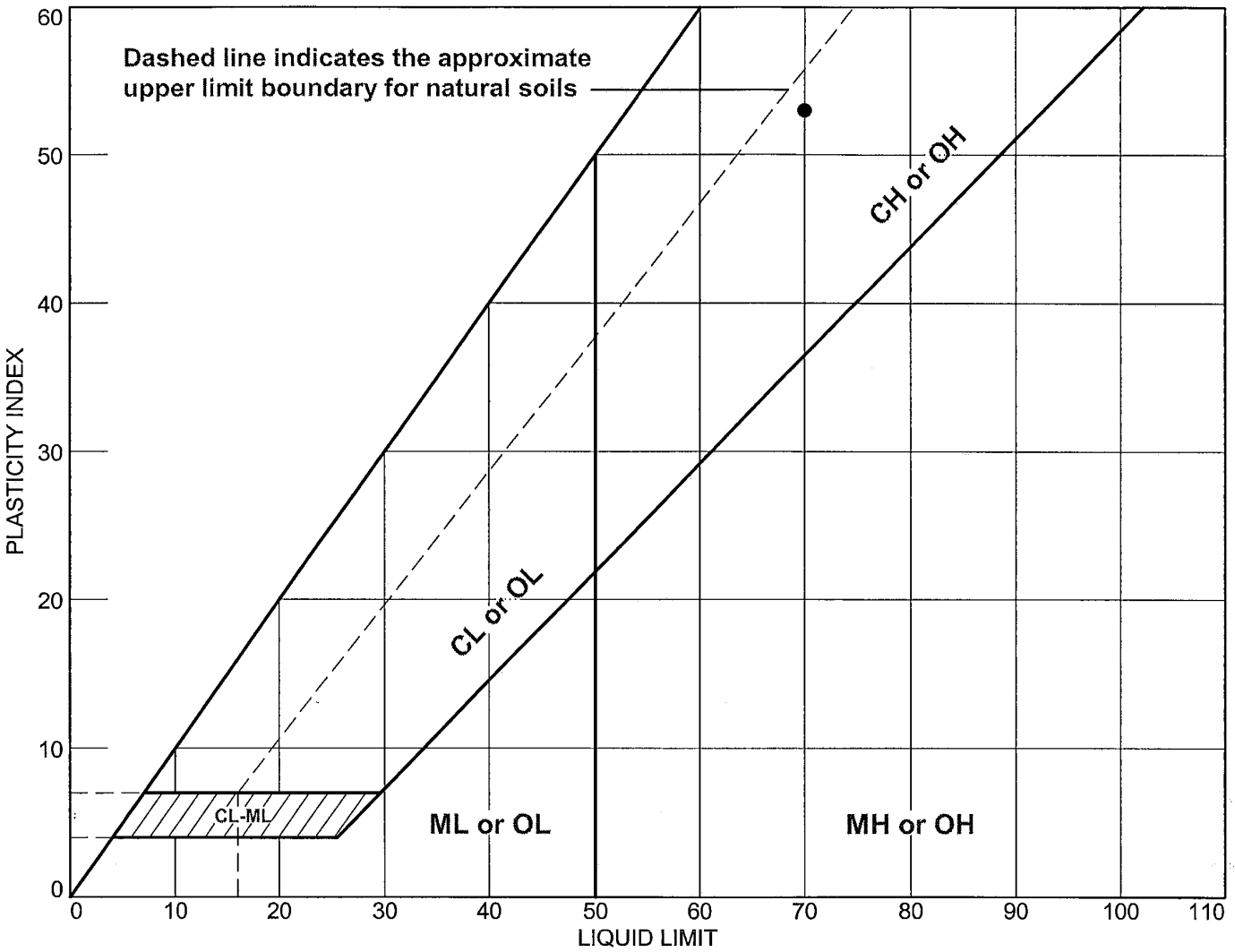
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.41	26.28			
Dry+Tare	21.36	24.73			
Tare	15.51	15.56			
Moisture	17.9	16.9			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
133.76	112.90	7.16	19.7

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-3223	SS-18	73.5-75.0'	24.1	17	70	53	CH (Visual)

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

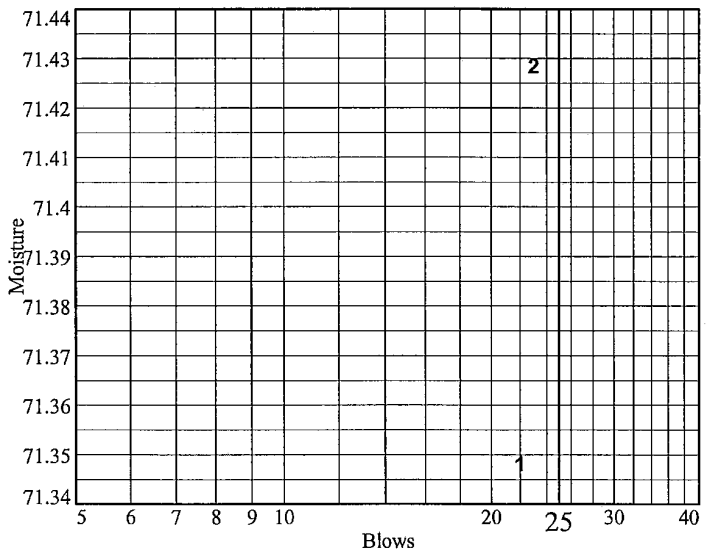
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 73.5-75.0' **Sample Number:** SS-18
Material Description: Light Gray with Yellowish Brown mottled with Black Fat CLAY (Visual)
USCS: CH (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.63	22.92				
Dry+Tare	20.82	19.82				
Tare	15.48	15.48				
# Blows	22	23				
Moisture	71.3	71.4				



Liquid Limit= 70
Plastic Limit= 17
Plasticity Index= 53
Natural Moisture= 24.1
Liquidity Index= 0.1

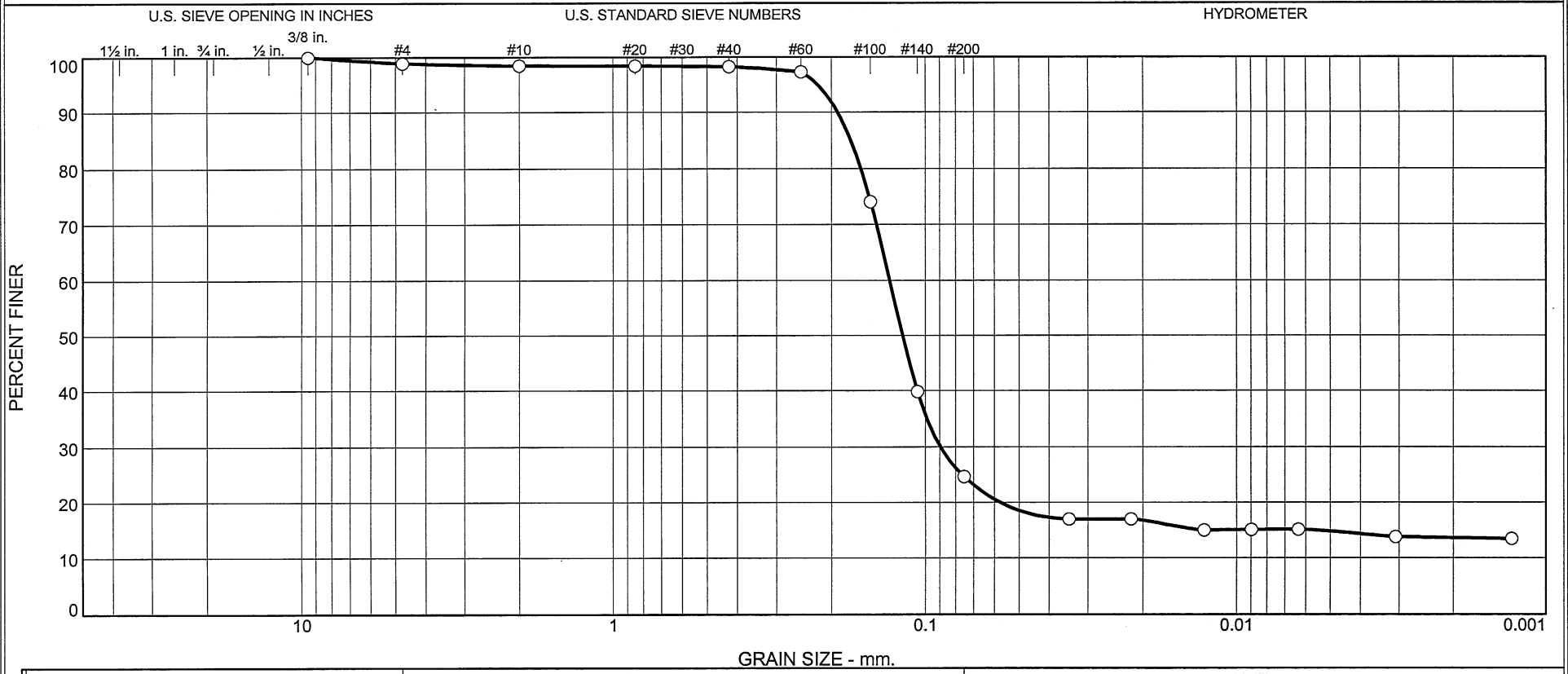
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.27	18.02			
Dry+Tare	21.28	17.00			
Tare	15.56	11.11			
Moisture	17.3	17.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
127.42	103.98	6.83	24.1

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



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	1.1	0.5	0.2	73.5	10.0	14.7

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-20	83.5-85.0'	1/9/09	SC	Light Gray stained with Brownish Yellow Clayey SAND	21.6	23	12

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed

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

GRAIN SIZE DISTRIBUTION TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 83.5-85.0' **Sample Number:** SS-20
Material Description: Light Gray stained with Brownish Yellow Clayey SAND
Date: 1/9/09 **Natural Moisture:** 21.6
Liquid Limit: 23 **Plastic Limit:** 12 **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
277.77	0.00	0.00	3/8"	0.00	100.0
			#4	3.10	98.9
			#10	4.35	98.4
51.12	0.00	0.00	#20	0.02	98.4
			#40	0.10	98.2
			#60	0.60	97.3
			#100	12.65	74.1
			#140	30.43	39.8
			#200	38.30	24.7

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 98.4
Weight of hydrometer sample =51.12
Hygroscopic moisture correction:
Moist weight and tare = 27.44
Dry weight and tare = 27.33
Tare weight = 15.65
Hygroscopic moisture = 0.9%
Table of composite correction values:

Temp., deg. C:	12.3	29.5
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.0	14.0	8.8	0.0131	15.0	13.8	0.0345	17.0
5.00	22.0	14.0	8.8	0.0131	15.0	13.8	0.0218	17.0
15.00	21.8	13.0	7.8	0.0131	14.0	14.0	0.0127	14.9
30.00	22.0	13.0	7.8	0.0131	14.0	14.0	0.0090	15.0
60.00	22.1	13.0	7.8	0.0131	14.0	14.0	0.0063	15.1
250.00	23.1	12.0	7.1	0.0129	13.0	14.2	0.0031	13.7
1440.00	22.5	12.0	7.0	0.0130	13.0	14.2	0.0013	13.4

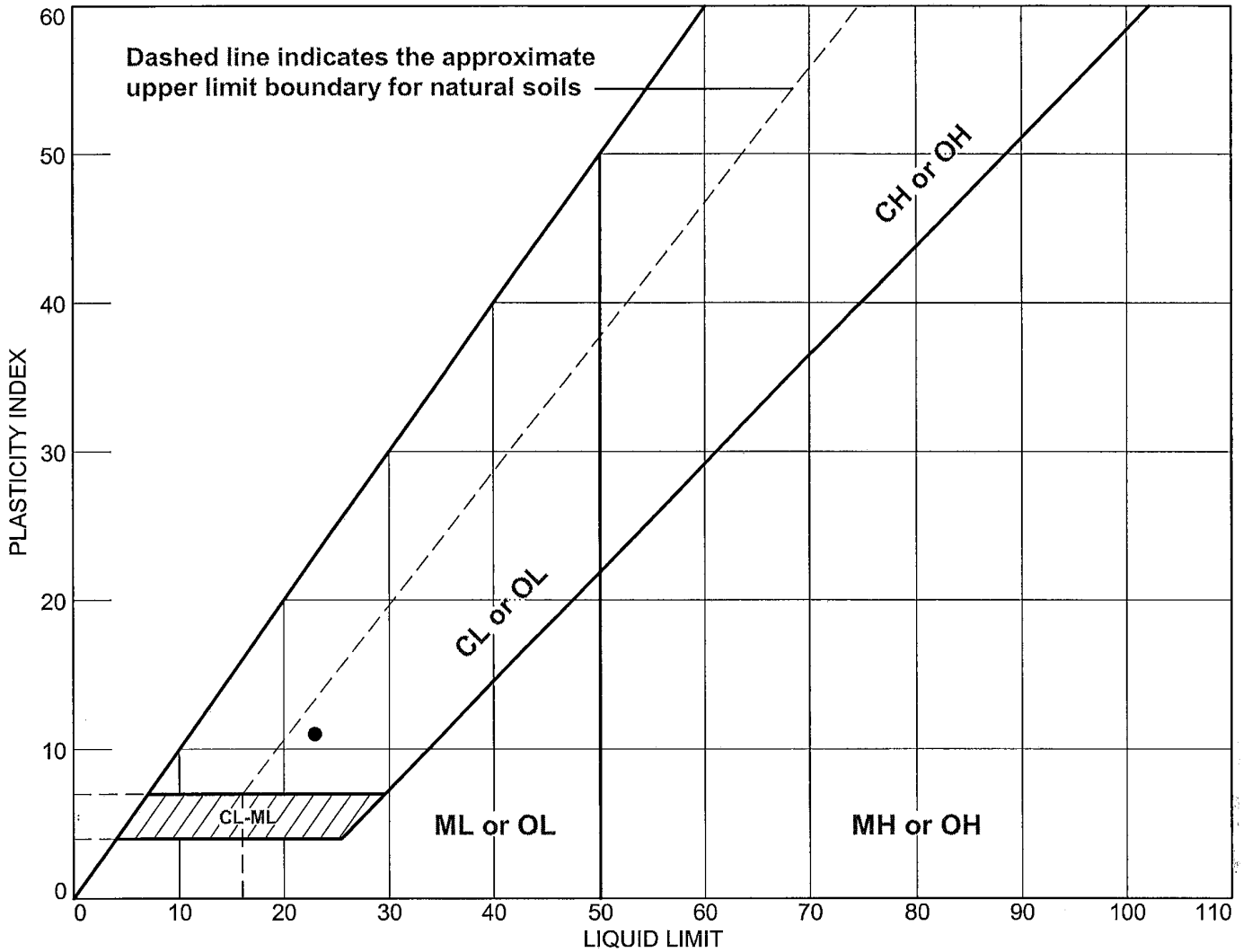
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.1	1.1	0.5	0.2	73.5	74.2	10.0	14.7	24.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0058	0.0574	0.0895	0.1185	0.1303	0.1613	0.1738	0.1914	0.2218

Fineness Modulus
0.34

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-3223	SS-20	83.5-85.0'	21.6	12	23	11	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

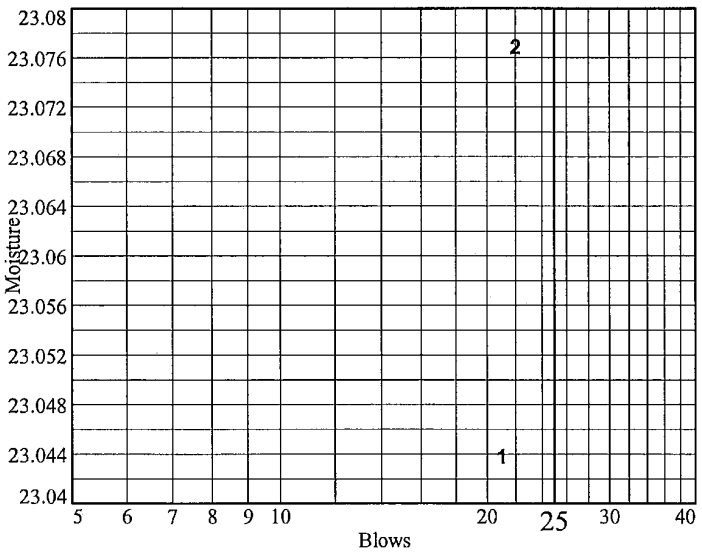
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 83.5-85.0' **Sample Number:** SS-20
Material Description: Light Gray stained with Brownish Yellow 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	29.79	29.07				
Dry+Tare	27.11	26.52				
Tare	15.48	15.47				
# Blows	21	22				
Moisture	23.0	23.1				



Liquid Limit= 23
Plastic Limit= 12
Plasticity Index= 11
Natural Moisture= 21.6
Liquidity Index= 0.9

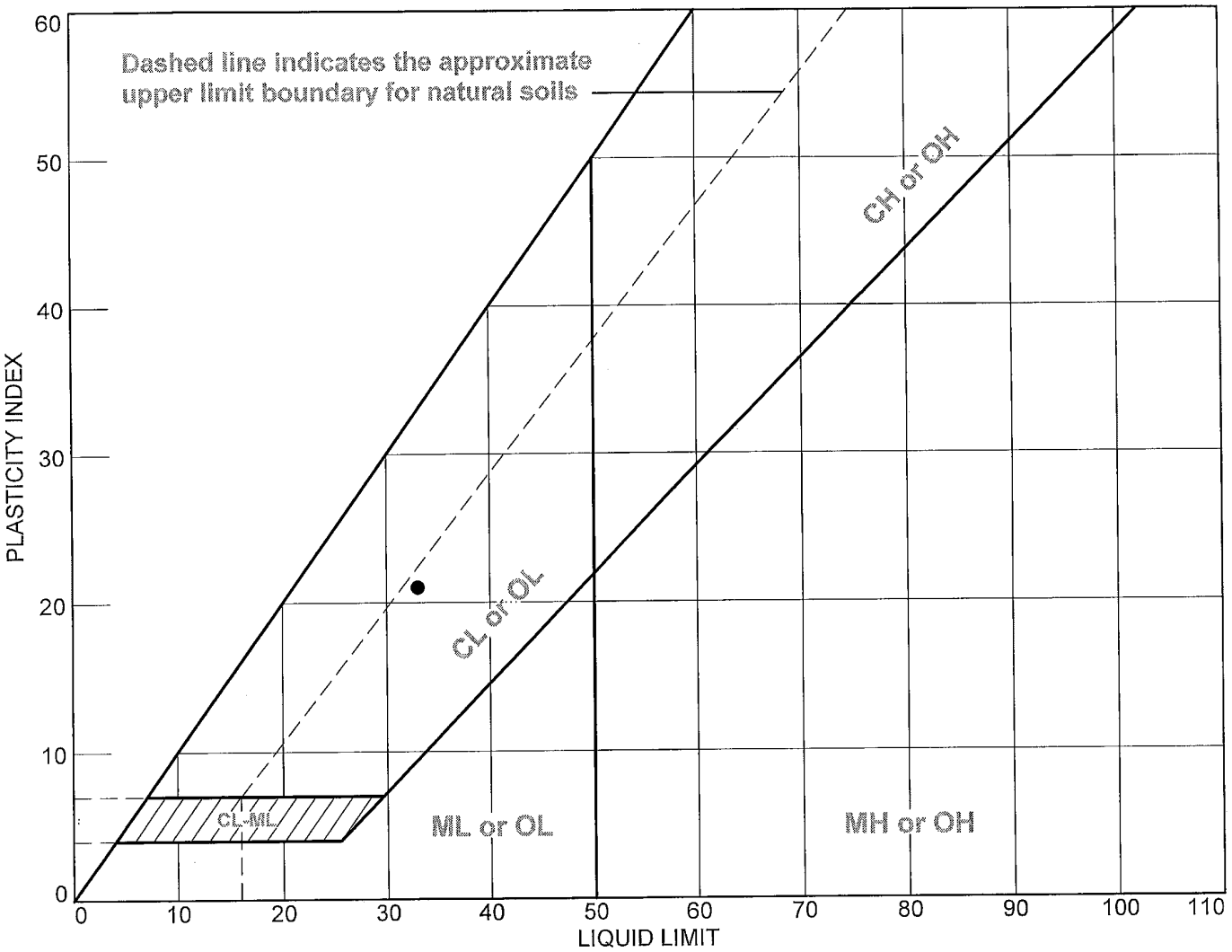
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.84	21.79			
Dry+Tare	21.19	21.13			
Tare	15.58	15.49			
Moisture	11.6	11.7			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
76.36	64.03	6.90	21.6

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-3223	SS-21	88.5-90.0'	16.3	12	33	21	CL (Visual)

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

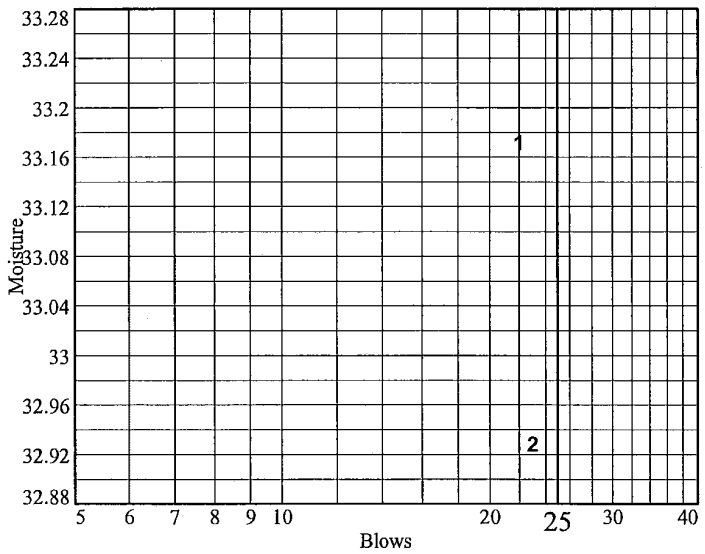
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 88.5-90.0' **Sample Number:** SS-21
Material Description: Light Gray with Brownish Yellow Sandy Lean CLAY (Visual)
USCS: CL (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	23.91	23.09				
Dry+Tare	21.85	21.19				
Tare	15.64	15.42				
# Blows	22	23				
Moisture	33.2	32.9				



Liquid Limit= 33
Plastic Limit= 12
Plasticity Index= 21
Natural Moisture= 16.3
Liquidity Index= 0.2

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.55	22.21			
Dry+Tare	20.86	21.49			
Tare	15.47	15.47			
Moisture	12.8	12.0			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
92.47	80.46	6.86	16.3

Particle Size Distribution Report ASTM D 6913-04e2

	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	16	48	36	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-22	93.5-95.0'	1/9/09	SM (Visual)	Pale Yellow and Yellowish Brown Silty SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Sieve Analysis Only
ND = Not Determined

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

GRAIN SIZE DISTRIBUTION TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 93.5-95.0' **Sample Number:** SS-22
Material Description: Pale Yellow and Yellowish Brown Silty SAND (Visual)
Date: 1/9/09 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SM (Visual)
Testing Remarks: Sieve Analysis Only
ND = Not Determined
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
263.89	0.00	0.00	3/8"	0.00	100
			#4	0.20	100
			#10	0.43	100
99.55	0.00	0.00	#20	1.18	99
			#40	15.91	84
			#60	48.34	51
			#100	58.76	41
			#140	61.55	38
			#200	63.26	36

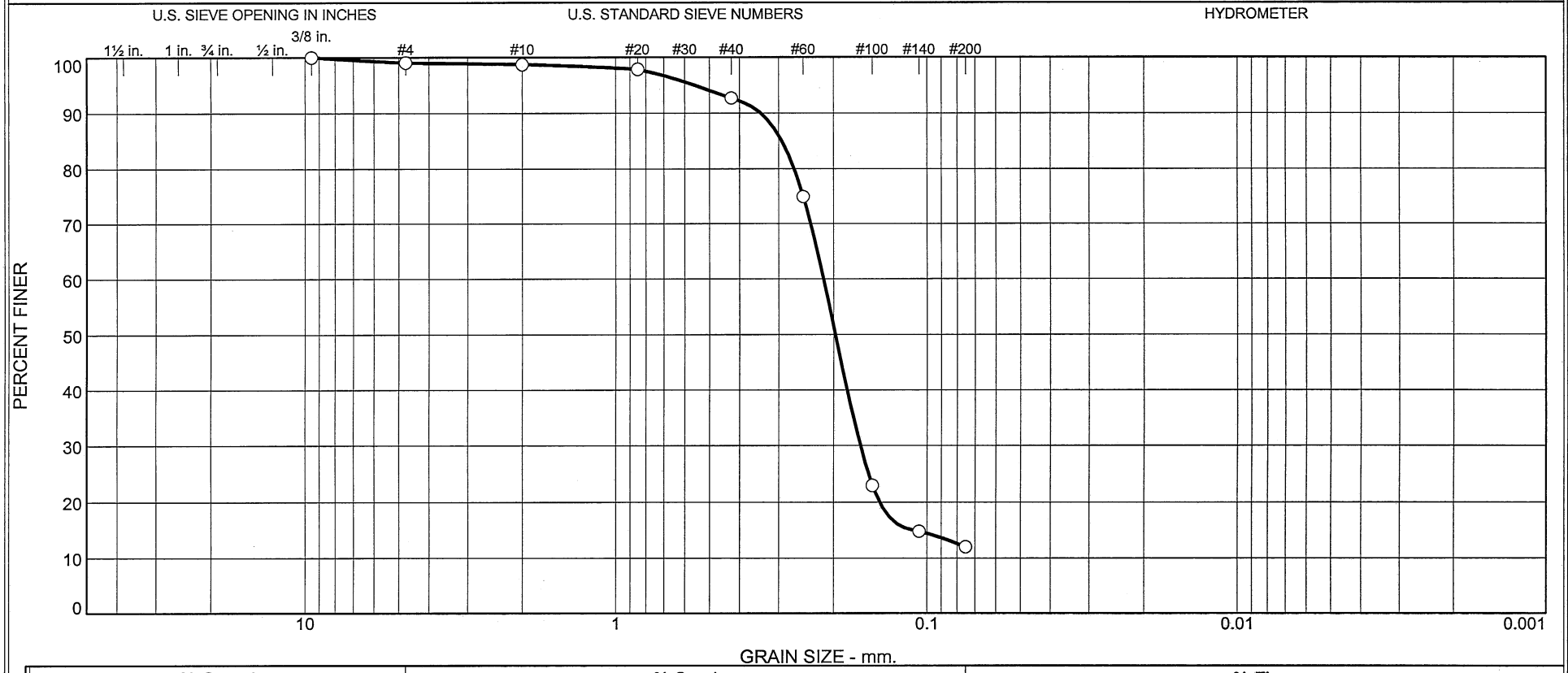
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	0	0	0	16	48	64			36

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.2423	0.2921	0.3966	0.4345	0.4890	0.5879

Fineness Modulus
1.03

Particle Size Distribution Report ASTM D 6913-04e2



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	1	0	6	81	12	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-24	108.5-110.0'	1/9/09	SP-SM	Light Gray with Black Poorly Graded SAND with silt (Visual)	ND	ND	ND
					(Visual)				

Client Bechtel	**MACTEC Engineering and Consulting, Inc.**	○ Sieve Analysis Only ND = Not Determined
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

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 108.5-110.0' **Sample Number:** SS-24
Material Description: Light Gray with Black Poorly Graded SAND with silt (Visual)
Date: 1/9/09 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SP-SM (Visual)
Testing Remarks: Sieve Analysis Only
ND = Not Determined
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
249.45	0.00	0.00	3/8"	0.00	100
			#4	2.41	99
			#10	3.13	99
99.86	0.00	0.00	#20	0.89	98
			#40	6.10	93
			#60	24.11	75
			#100	76.63	23
			#140	84.92	15
			#200	87.73	12

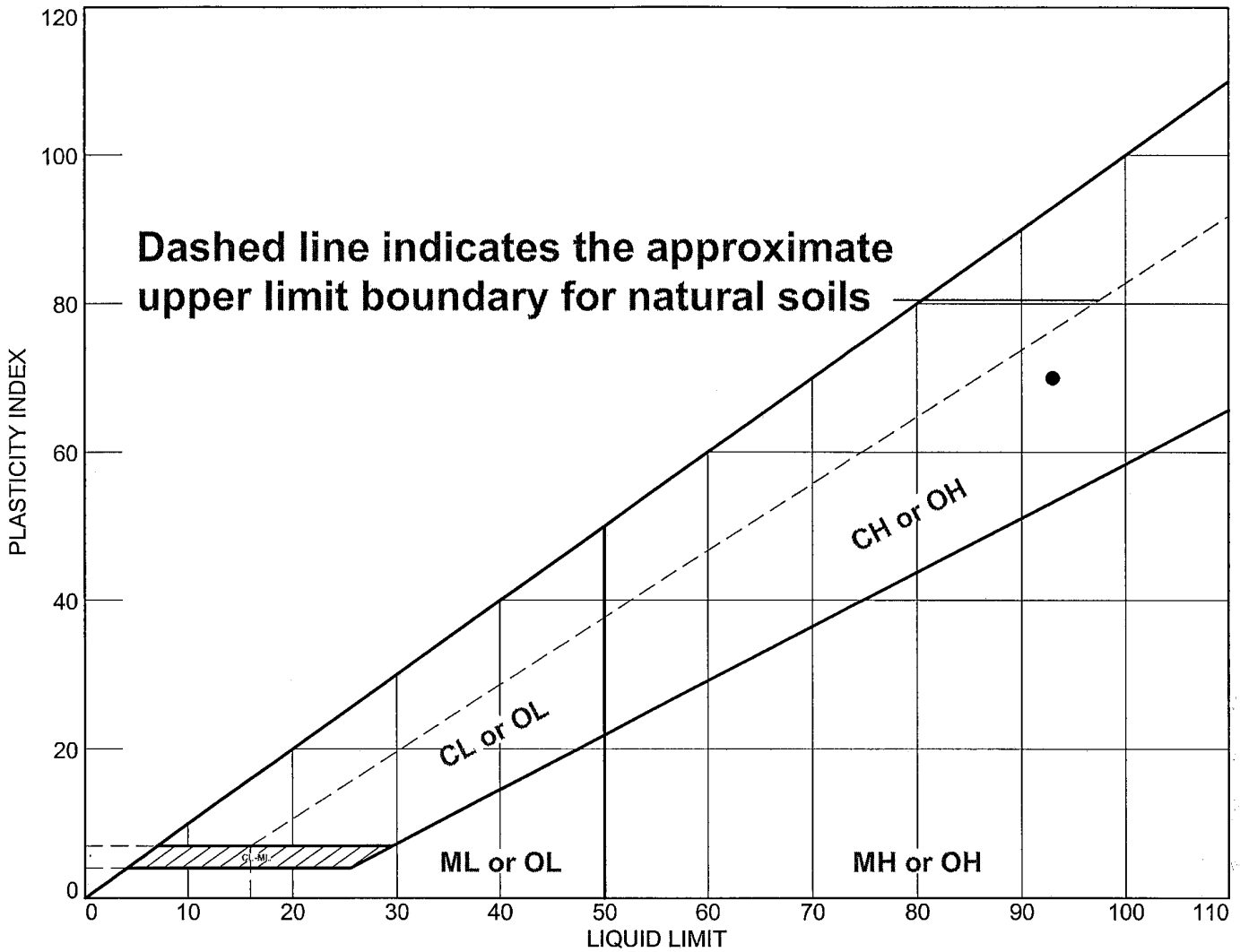
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	1	1	0	6	81	87			12

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.1107	0.1421	0.1640	0.1976	0.2155	0.2677	0.2931	0.3427	0.5553

Fineness Modulus
0.99

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-3223	SS-25	118.7-120.2'	35.0	23	93	70	CH (Visual)

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

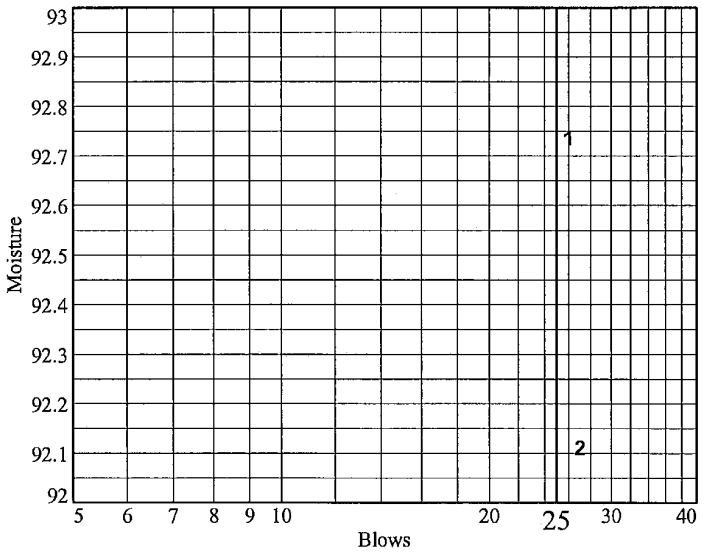
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 118.7-120.2' **Sample Number:** SS-25
Material Description: Light Gray with Light Yellowish Brown mottled with Black Fat CLAY (Visual)
USCS: CH (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	22.57	22.10				
Dry+Tare	19.25	18.83				
Tare	15.67	15.28				
# Blows	26	27				
Moisture	92.7	92.1				



Liquid Limit= 93
Plastic Limit= 23
Plasticity Index= 70
Natural Moisture= 35.0
Liquidity Index= 0.2

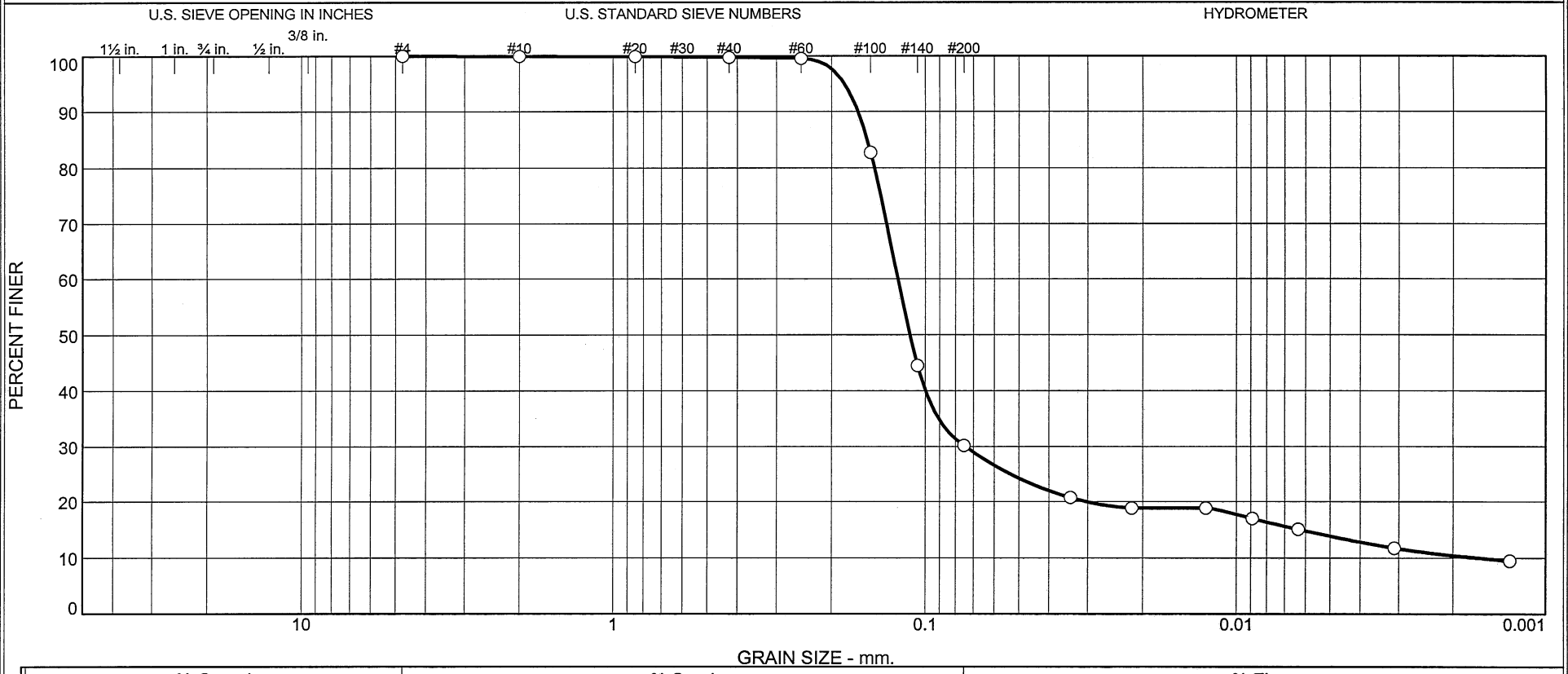
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	23.52	23.43			
Dry+Tare	22.03	21.99			
Tare	15.42	15.78			
Moisture	22.5	23.2			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
93.95	71.42	7.06	35.0

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



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.1	0.2	69.5	16.4	13.8

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-26	128.5-130.0'	1/9/09	SC (Visual)	Light Gray Clayey SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ ND = Not Determined
Specific Gravity is assumed
Sieve and Hydrometer Analysis Only

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

GRAIN SIZE DISTRIBUTION TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 128.5-130.0' **Sample Number:** SS-26
Material Description: Light Gray Clayey SAND (Visual)
Date: 1/9/09 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SC (Visual)
Testing Remarks: ND = Not Determined
Specific Gravity is assumed
Sieve and Hydrometer Analysis Only
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
296.30	0.00	0.00	#4	0.00	100.0
			#10	0.19	99.9
51.13	0.00	0.00	#20	0.03	99.9
			#40	0.11	99.7
			#60	0.21	99.5
			#100	8.79	82.8
			#140	28.36	44.5
			#200	35.69	30.2

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.9
Weight of hydrometer sample =51.13
Hygroscopic moisture correction:
Moist weight and tare = 32.22
Dry weight and tare = 32.19
Tare weight = 20.12
Hygroscopic moisture = 0.2%
Table of composite correction values:

Temp., deg. C:	12.9	29.5
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.9	16.0	10.7	0.0131	17.0	13.5	0.0341	20.8
5.00	22.0	15.0	9.7	0.0131	16.0	13.7	0.0217	18.9
15.00	22.0	15.0	9.7	0.0131	16.0	13.7	0.0125	18.9
30.00	22.1	14.0	8.8	0.0131	15.0	13.8	0.0089	17.0
60.00	22.1	13.0	7.8	0.0131	14.0	14.0	0.0063	15.1
250.00	23.0	11.0	6.0	0.0130	12.0	14.3	0.0031	11.7
1440.00	22.5	10.0	4.9	0.0130	11.0	14.5	0.0013	9.5

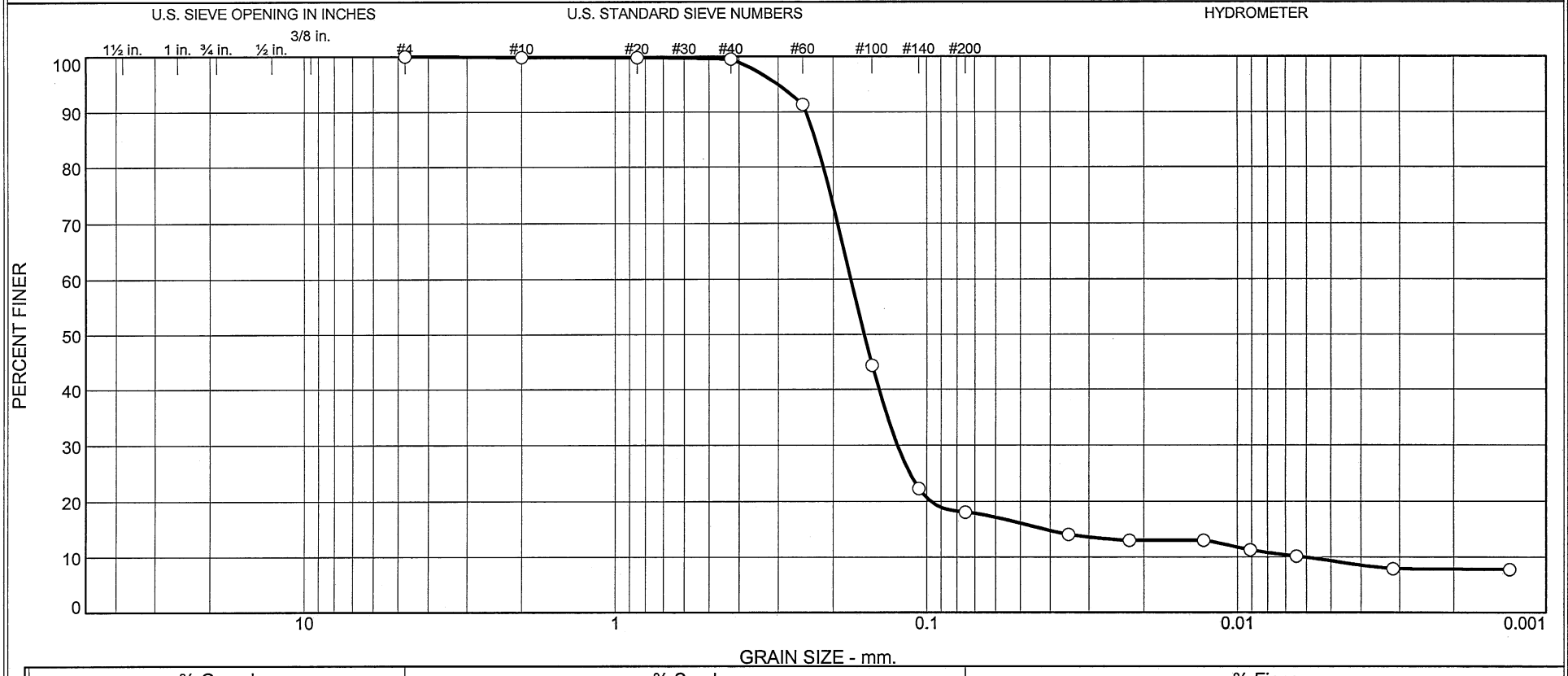
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.1	0.2	69.5	69.8	16.4	13.8	30.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0017	0.0063	0.0303	0.0742	0.1123	0.1226	0.1458	0.1539	0.1648	0.1822

Fineness Modulus	C_u	C_c
0.18	72.86	26.71

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	0.3	81.4	8.8	9.3

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-27	138.5-140.0'	1/9/09	SM (Visual)	Light Gray Silty SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ ND = Not Determined
Specific Gravity is assumed
Sieve and Hydrometer Analysis Only

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

GRAIN SIZE DISTRIBUTION TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 138.5-140.0' **Sample Number:** SS-27
Material Description: Light Gray Silty SAND (Visual)
Date: 1/9/09 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SM (Visual)
Testing Remarks: ND = Not Determined
Specific Gravity is assumed
Sieve and Hydrometer Analysis Only
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
283.04	0.00	0.00	#4	0.00	100.0
			#10	0.44	99.8
50.78	0.00	0.00	#20	0.02	99.8
			#40	0.17	99.5
			#60	4.31	91.4
			#100	28.21	44.4
			#140	39.44	22.3
			#200	41.56	18.1

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.8
Weight of hydrometer sample =50.78
Hygroscopic moisture correction:
Moist weight and tare = 27.13
Dry weight and tare = 27.10
Tare weight = 15.73
Hygroscopic moisture = 0.3%
Table of composite correction values:

Temp., deg. C:	12.3	29.5
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.7	12.5	7.2	0.0132	13.5	14.1	0.0349	14.1
5.00	21.5	12.0	6.7	0.0132	13.0	14.2	0.0222	13.0
15.00	21.5	12.0	6.7	0.0132	13.0	14.2	0.0128	13.0
30.00	21.9	11.0	5.8	0.0131	12.0	14.3	0.0091	11.3
60.00	21.6	10.5	5.2	0.0132	11.5	14.4	0.0065	10.1
250.00	22.7	9.0	4.0	0.0130	10.0	14.7	0.0031	7.8
1440.00	22.5	9.0	4.0	0.0130	10.0	14.7	0.0013	7.7

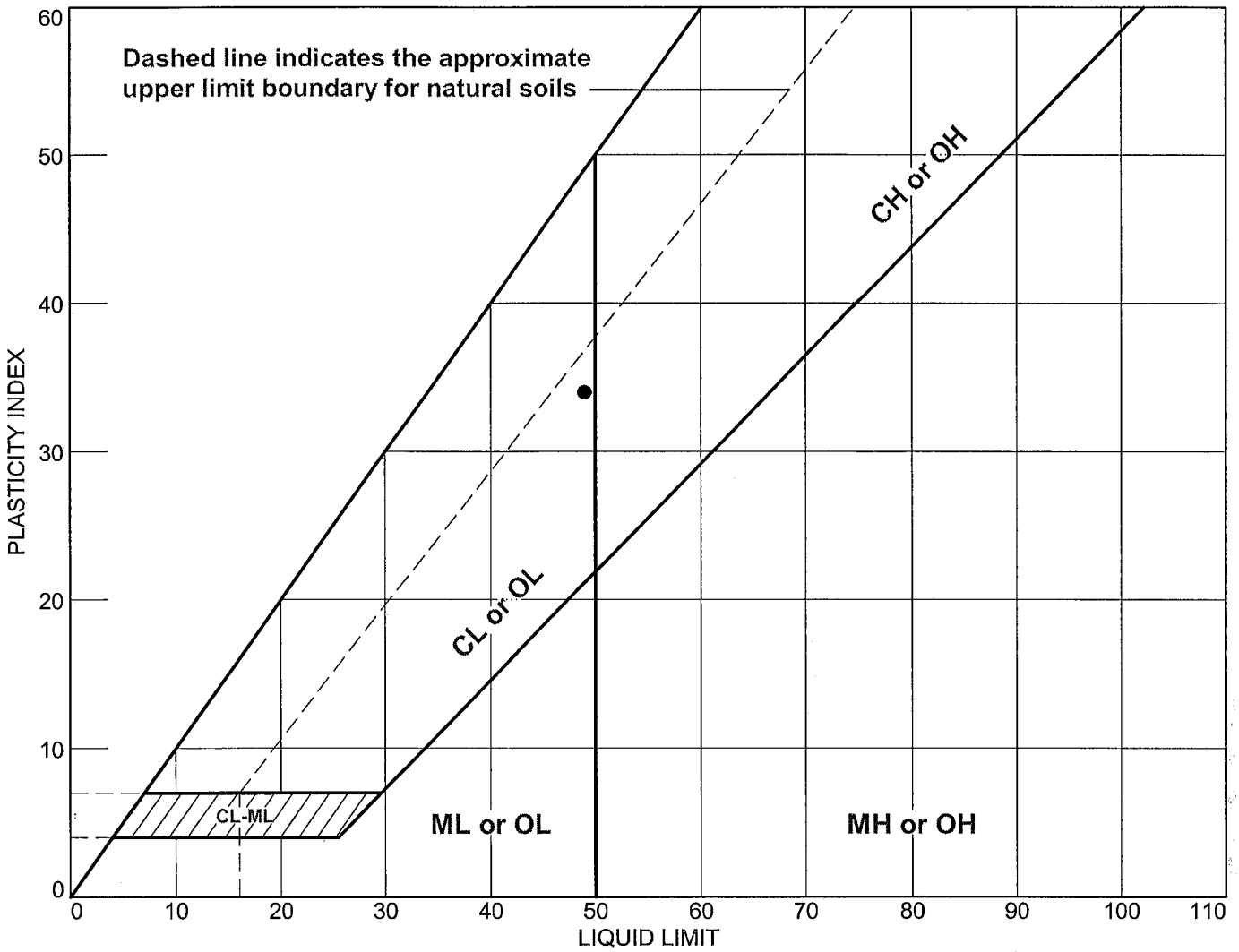
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.2	0.3	81.4	81.9	8.8	9.3	18.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0062	0.0413	0.0969	0.1244	0.1592	0.1758	0.2153	0.2283	0.2446	0.3010

Fineness Modulus	C_u	C_c
0.61	28.51	14.27

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-3223	SS-28	148.3-149.8'	18.7	15	49	34	CL (Visual)

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

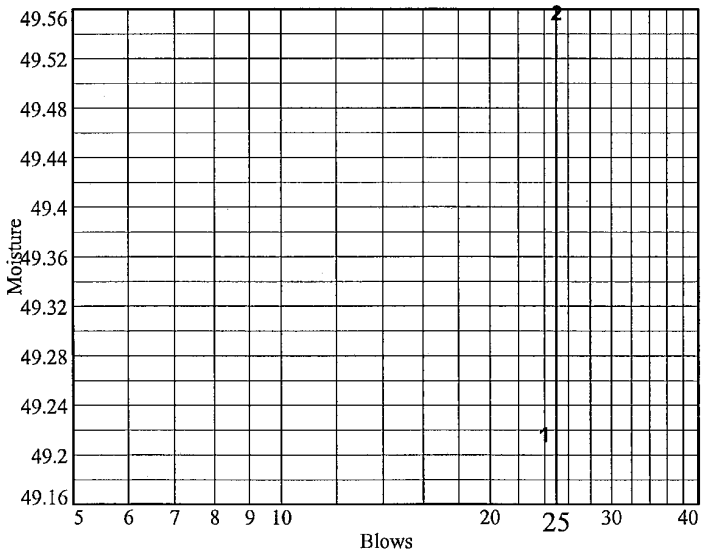
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 148.3-149.8' **Sample Number:** SS-28
Material Description: Light Gray with Yellow Lean CLAY with sand (Visual)
USCS: CL (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	22.33	22.31				
Dry+Tare	20.13	20.07				
Tare	15.66	15.55				
# Blows	24	25				
Moisture	49.2	49.6				



Liquid Limit= 49
Plastic Limit= 15
Plasticity Index= 34
Natural Moisture= 18.7
Liquidity Index= 0.1

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	19.19	18.08			
Dry+Tare	18.14	17.19			
Tare	11.05	11.18			
Moisture	14.8	14.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
96.36	82.24	6.89	18.7

Particle Size Distribution Report ASTM D 6913-04e2

	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	21	35	44	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-29	158.5-160.0	1/11/09	SC	Light Gray Clayey SAND	19.2	32	16

Client Bechtel	**MACTEC Engineering and Consulting, Inc.**	
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

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 158.5-160.0 **Sample Number:** SS-29
Material Description: Light Gray Clayey SAND
Date: 1/11/09 **Natural Moisture:** 19.2
Liquid Limit: 32 **Plastic Limit:** 16 **USCS Class.:** SC
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
253.43	0.00	0.00	#4	0.00	100
			#10	0.39	100
99.26	0.00	0.00	#20	3.62	96
			#40	21.21	79
			#60	37.12	63
			#100	46.75	53
			#140	51.70	48
			#200	55.68	44

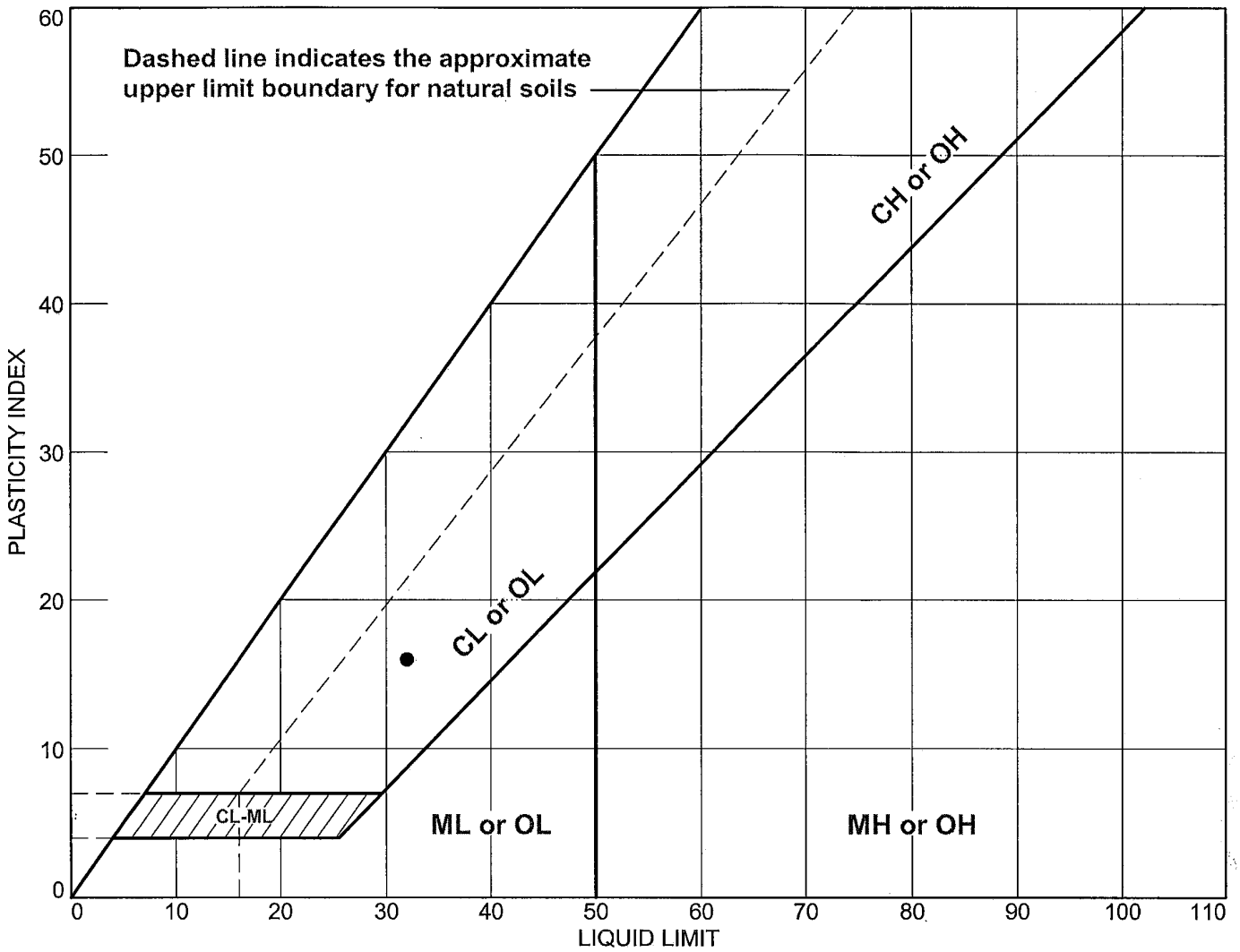
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	0	0	0	21	35	56			44

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.1242	0.2245	0.4455	0.5249	0.6299	0.7911

Fineness Modulus
0.93

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-3223	SS-29	158.5-160.0	19.2	16	32	16	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

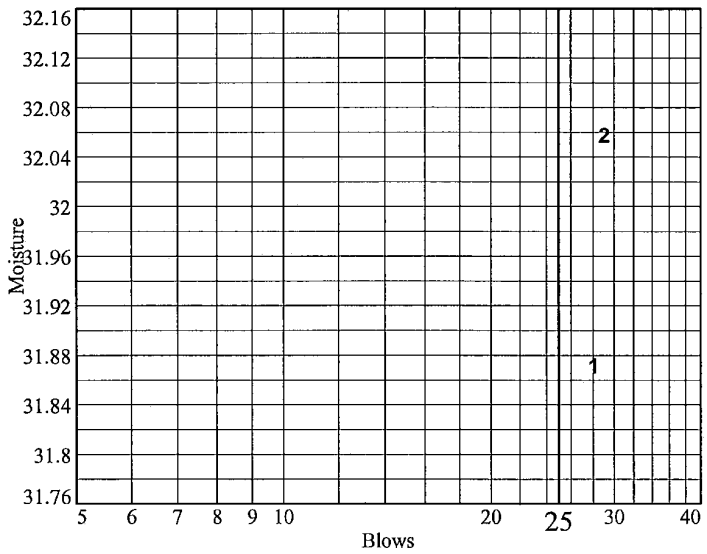
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 158.5-160.0 **Sample Number:** SS-29
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	22.25	25.91				
Dry+Tare	19.56	23.48				
Tare	11.12	15.90				
# Blows	28	29				
Moisture	31.9	32.1				



Liquid Limit= 32
Plastic Limit= 16
Plasticity Index= 16
Natural Moisture= 19.2
Liquidity Index= 0.2

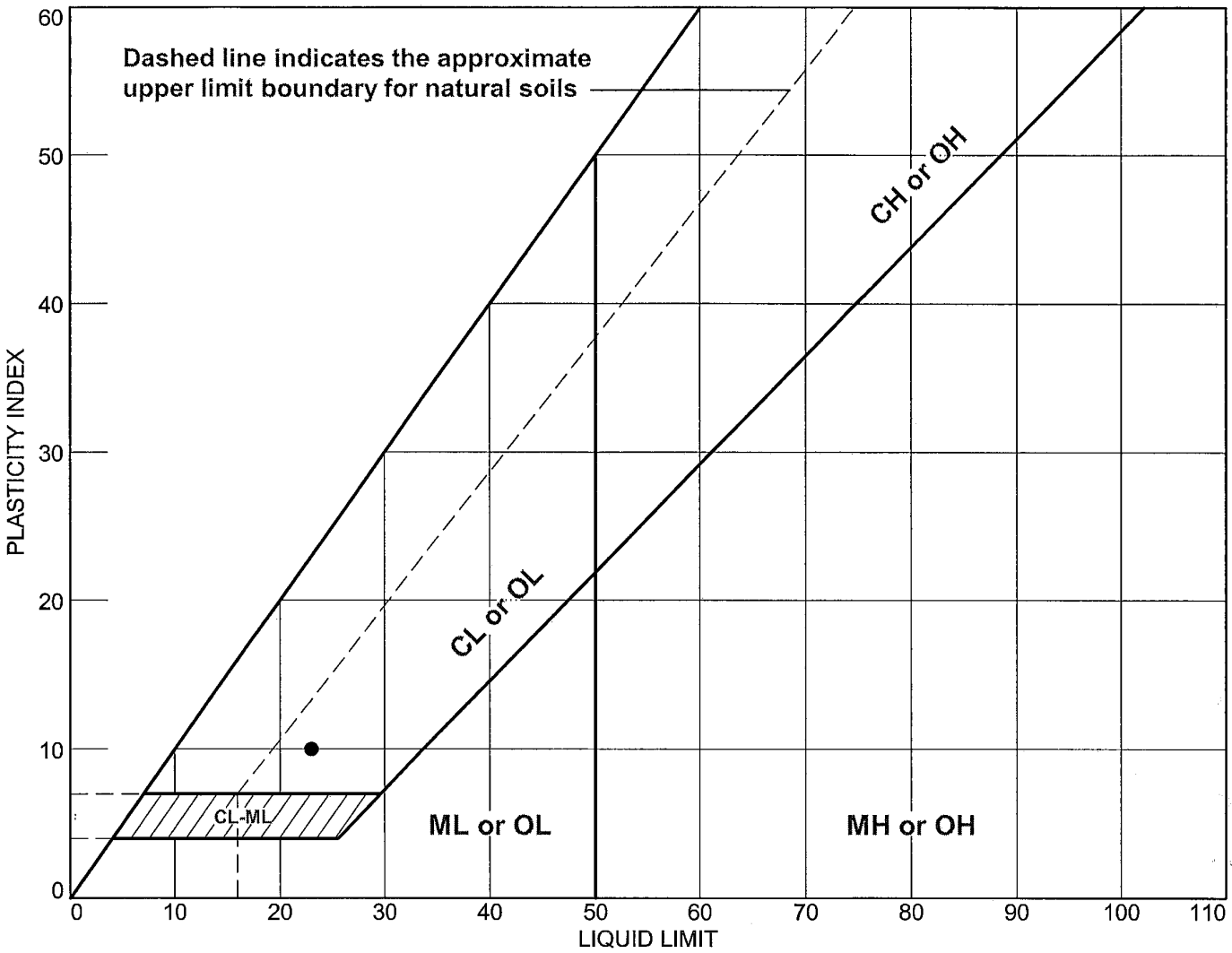
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.01	22.63			
Dry+Tare	21.09	21.62			
Tare	15.49	15.43			
Moisture	16.4	16.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
122.81	104.11	6.89	19.2

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-3223	SS-30B	169.2-169.5'	24.0	13	23	10	SC (Visual)

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

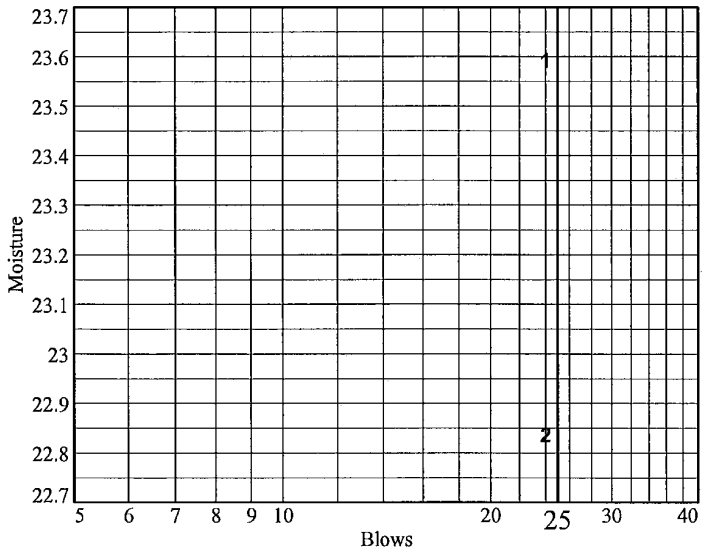
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 169.2-169.5' **Sample Number:** SS-30B
Material Description: Light Gray and Yellow Clayey SAND (Visual)
USCS: SC (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	29.13	30.16				
Dry+Tare	26.53	27.44				
Tare	15.51	15.53				
# Blows	24	24				
Moisture	23.6	22.8				



Liquid Limit= 23
Plastic Limit= 13
Plasticity Index= 10
Natural Moisture= 24.0
Liquidity Index= 1.1

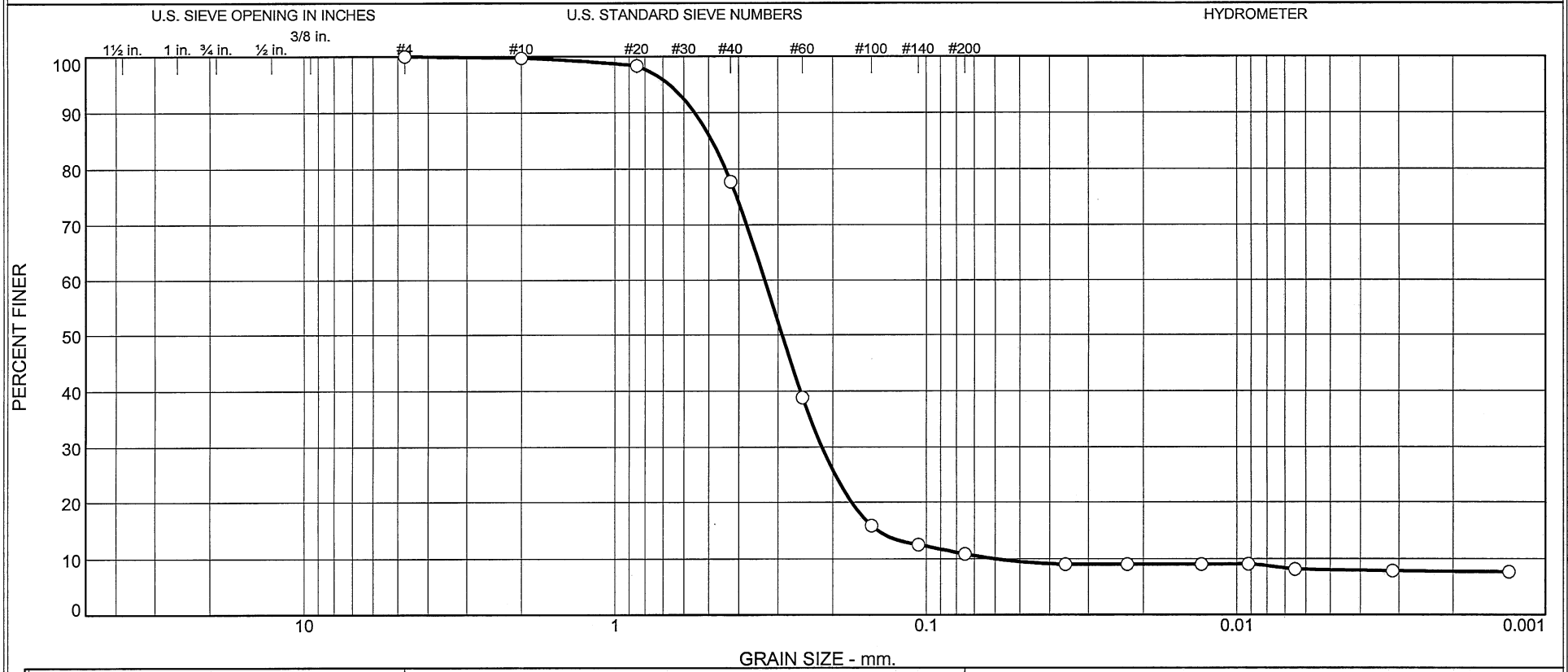
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	27.36	28.63			
Dry+Tare	26.03	27.12			
Tare	15.49	15.51			
Moisture	12.6	13.0			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
55.61	46.18	6.96	24.0

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



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.3	22.0	66.9	2.8	8.0

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-31	178.5-180.0'	1/10/09	SP-SC (Visual)	Light Gray with Yellowish Brown and Black Poorly Graded SAND with clay (Visual)	23.8	ND	ND

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ ND = Not Determined
Specific Gravity is assumed
Sieve and Hydrometer Analysis Only

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-3223
Depth: 178.5-180.0' **Sample Number:** SS-31
Material Description: Light Gray with Yellowish Brown and Black Poorly Graded SAND with clay (Visual)
Date: 1/10/09 **Natural Moisture:** 23.8
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SP-SC (Visual)
Testing Remarks: ND = Not Determined
Specific Gravity is assumed
Sieve and Hydrometer Analysis Only
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
354.00	0.00	0.00	#4	0.00	100.0
			#10	1.00	99.7
51.04	0.00	0.00	#20	0.72	98.3
			#40	11.26	77.7
			#60	31.16	38.8
			#100	42.95	15.8
			#140	44.66	12.5
			#200	45.50	10.8

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.7
Weight of hydrometer sample =51.04
Hygroscopic moisture correction:
Moist weight and tare = 27.61
Dry weight and tare = 27.58
Tare weight = 15.35
Hygroscopic moisture = 0.2%
Table of composite correction values:

Temp., deg. C:	12.3	29.5
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	10.0	4.6	0.0132	11.0	14.5	0.0356	9.0
5.00	21.4	10.0	4.6	0.0132	11.0	14.5	0.0225	9.0
15.00	21.4	10.0	4.6	0.0132	11.0	14.5	0.0130	9.0
30.00	21.5	10.0	4.7	0.0132	11.0	14.5	0.0092	9.1
60.00	21.6	9.5	4.2	0.0132	10.5	14.6	0.0065	8.1
250.00	22.8	9.0	4.1	0.0130	10.0	14.7	0.0031	7.8
1440.00	22.5	9.0	4.0	0.0130	10.0	14.7	0.0013	7.7

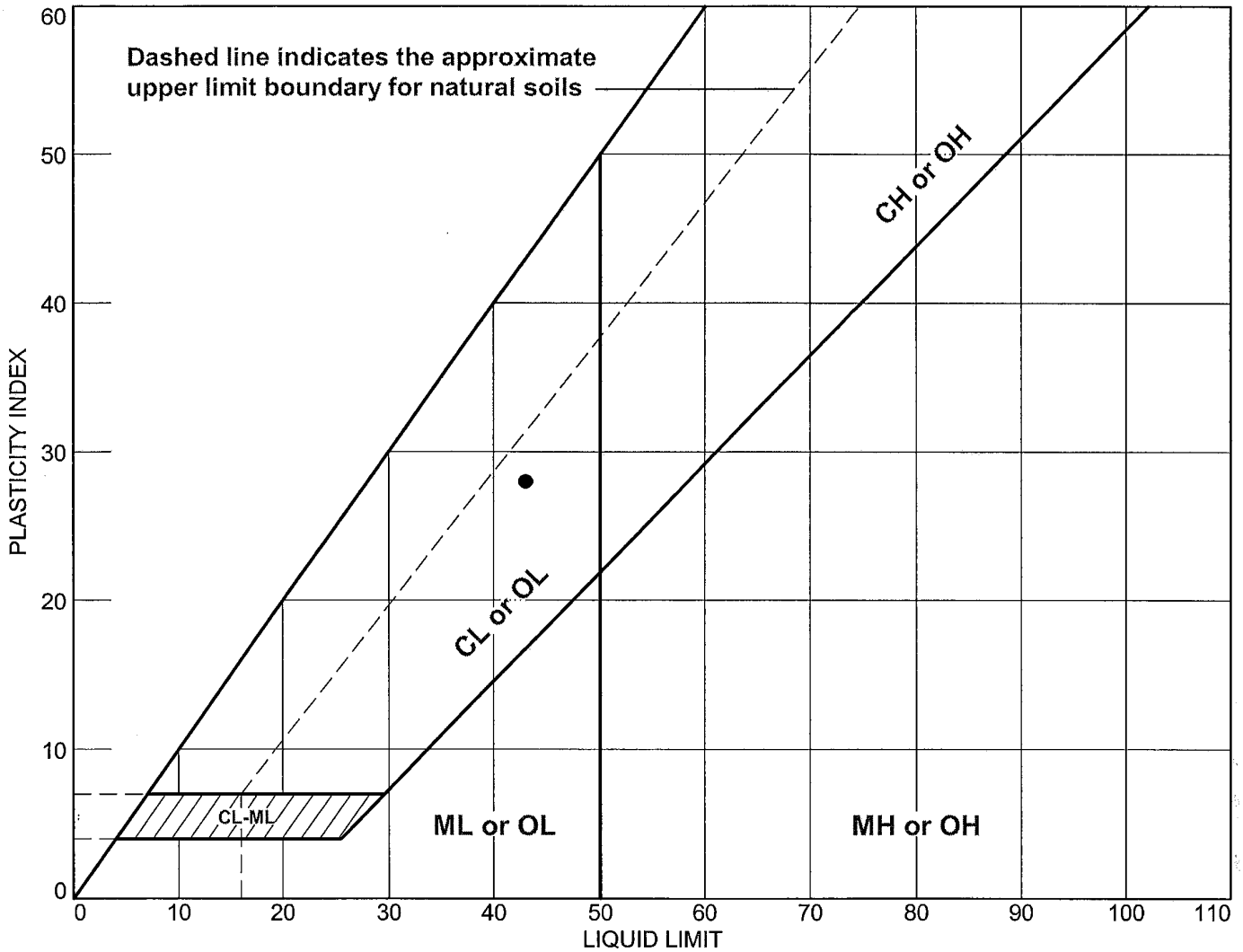
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.3	22.0	66.9	89.2	2.8	8.0	10.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0605	0.1437	0.1741	0.2168	0.2910	0.3310	0.4421	0.4883	0.5548	0.6711

Fineness Modulus	C_u	C_c
1.41	5.47	2.35

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-3223	SS-33B	198.7-200.0'	19.7	15	43	28	CL(Visual)

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

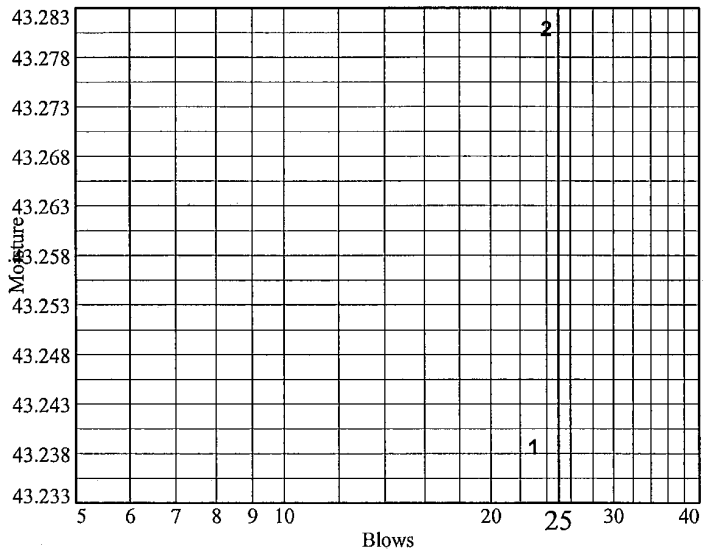
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 198.7-200.0' **Sample Number:** SS-33B
Material Description: Light Gray with Yellow and Dark Gray Lean CLAY with sand (Visual)
USCS: CL(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.10	23.70				
Dry+Tare	21.51	21.22				
Tare	15.52	15.49				
# Blows	23	24				
Moisture	43.2	43.3				



Liquid Limit= 43
Plastic Limit= 15
Plasticity Index= 28
Natural Moisture= 19.7
Liquidity Index= 0.2

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.55	22.10			
Dry+Tare	21.64	21.23			
Tare	15.49	15.50			
Moisture	14.8	15.2			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
110.74	93.62	6.85	19.7

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

	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.7	0.1	3.7	27.8	43.8	23.9

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-35	218.5-220.0'	1/11/09	CL	Light Gray and White with Yellow Sandy Lean CLAY	29.0	30	16

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed

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

GRAIN SIZE DISTRIBUTION TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 218.5-220.0' **Sample Number:** SS-35
Material Description: Light Gray and White with Yellow Sandy Lean CLAY
Date: 1/11/09 **Natural Moisture:** 29.0
Liquid Limit: 30 **Plastic Limit:** 16 **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
395.38	0.00	0.00	3/4	0.00	100.0
			3/8"	2.78	99.3
			#4	2.89	99.3
			#10	3.02	99.2
50.27	0.00	0.00	#20	0.65	98.0
			#40	1.91	95.5
			#60	3.70	91.9
			#100	7.59	84.3
			#140	11.65	76.2
			#200	15.97	67.7

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.2
Weight of hydrometer sample =50.27
Hygroscopic moisture correction:
Moist weight and tare = 22.76
Dry weight and tare = 22.58
Tare weight = 11.07
Hygroscopic moisture = 1.6%
Table of composite correction values:

Temp., deg. C:	12.3	29.5
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	34.0	28.6	0.0132	35.0	10.6	0.0304	56.8
5.00	21.4	33.0	27.6	0.0132	34.0	10.7	0.0193	54.8
15.00	21.4	28.0	22.6	0.0132	29.0	11.5	0.0116	44.9
30.00	21.9	24.0	18.8	0.0131	25.0	12.2	0.0084	37.3
60.00	22.3	19.0	13.9	0.0131	20.0	13.0	0.0061	27.6
250.00	22.5	16.0	11.0	0.0130	17.0	13.5	0.0030	21.7
1440.00	22.5	15.0	10.0	0.0130	16.0	13.7	0.0013	19.8

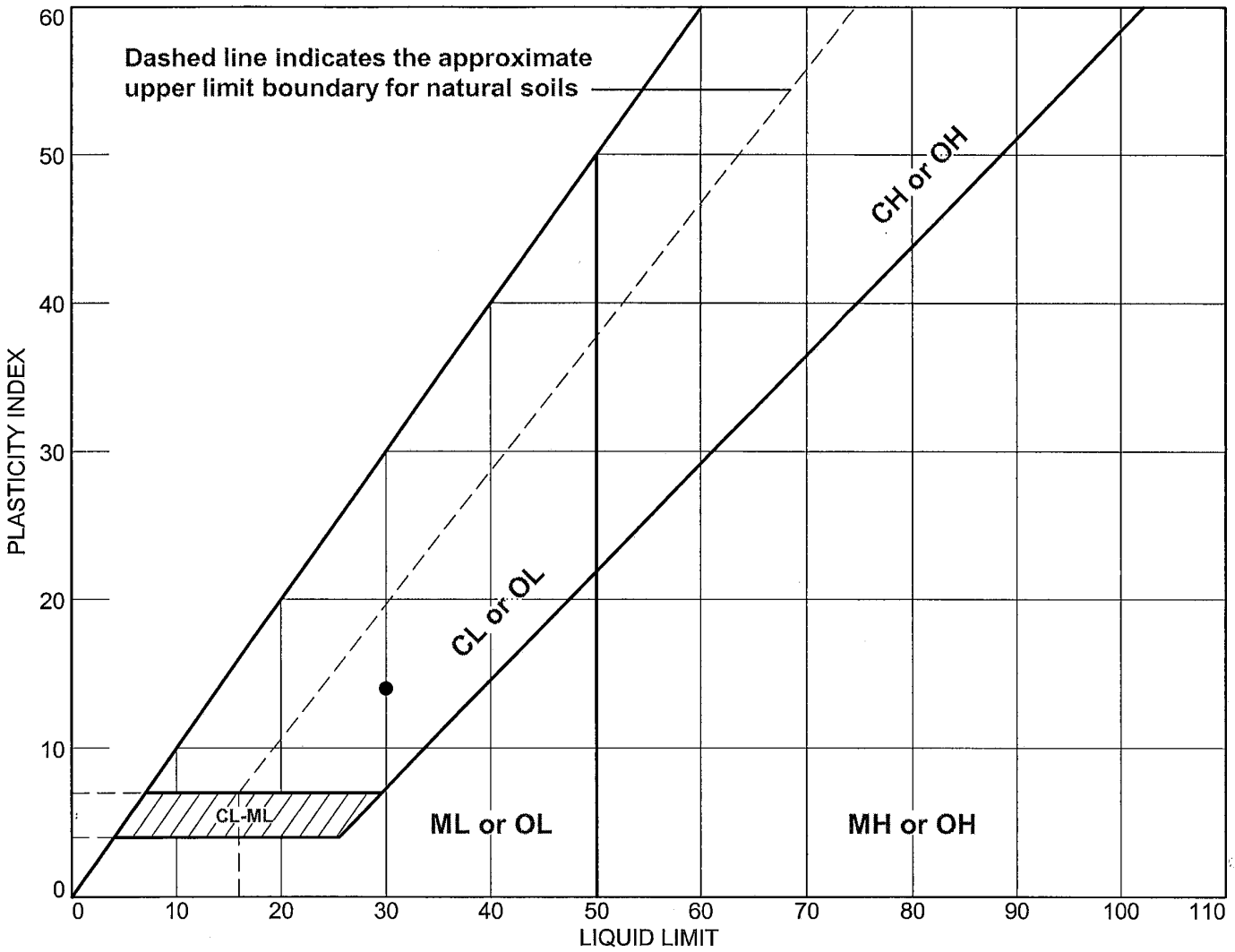
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.7	0.7	0.1	3.7	27.8	31.6	43.8	23.9	67.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0014	0.0066	0.0146	0.0474	0.1236	0.1558	0.2118	0.3853

Fineness Modulus
0.29

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-3223	SS-35	218.5-220.0'	29.0	16	30	14	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

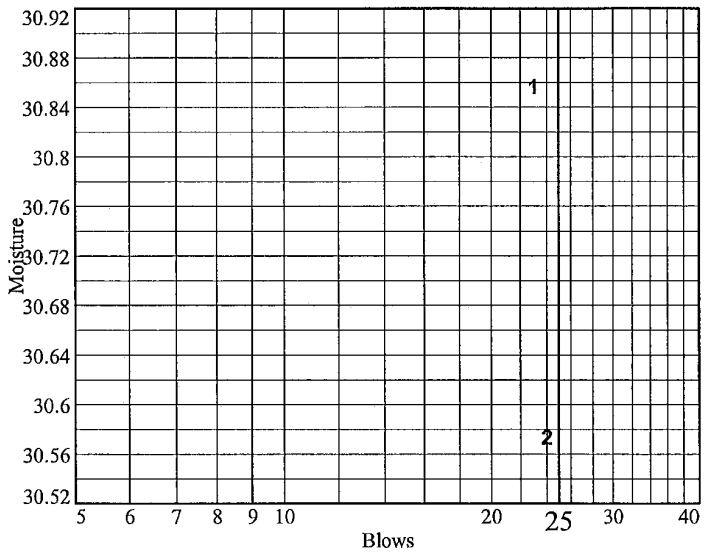
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 218.5-220.0' **Sample Number:** SS-35
Material Description: Light Gray and White with Yellow 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	27.01	25.27				
Dry+Tare	24.31	22.98				
Tare	15.56	15.49				
# Blows	23	24				
Moisture	30.9	30.6				



Liquid Limit= 30
Plastic Limit= 16
Plasticity Index= 14
Natural Moisture= 29.0
Liquidity Index= 0.9

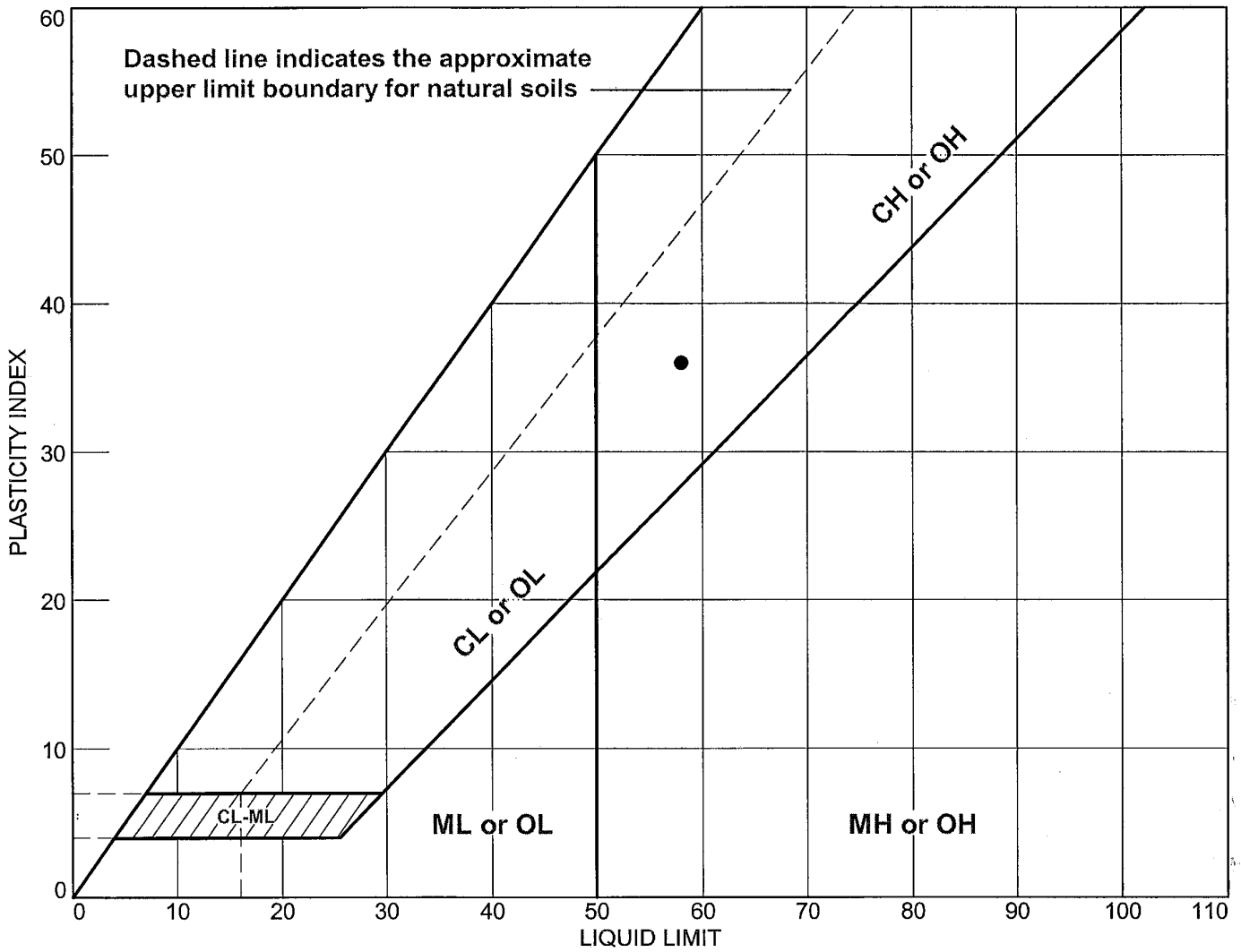
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.71	22.04			
Dry+Tare	20.86	21.14			
Tare	15.61	15.60			
Moisture	16.2	16.2			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
92.04	72.84	6.68	29.0

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-3223	SS-37	238.6-240.1'	25.6	22	58	36	CH (Visual)

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

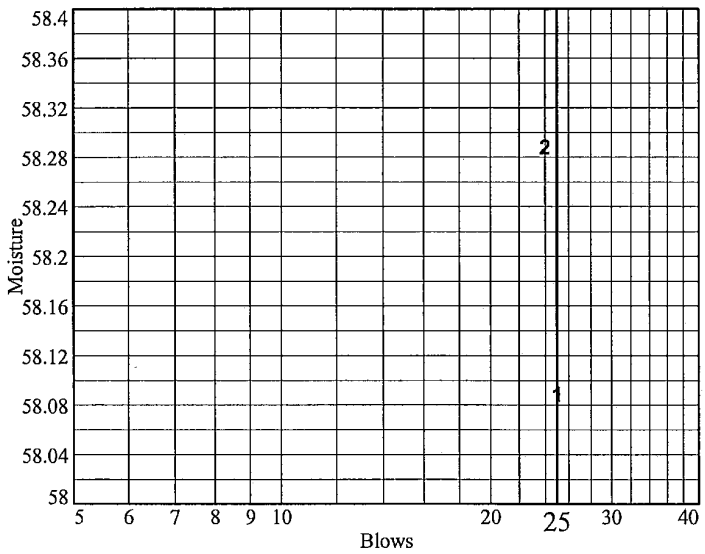
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 238.6-240.1' **Sample Number:** SS-37
Material Description: Light Gray with Brownish Yellow Fat CLAY (Visual)
USCS: CH (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.77	24.40				
Dry+Tare	22.00	21.13				
Tare	15.51	15.52				
# Blows	25	24				
Moisture	58.1	58.3				



Liquid Limit= 58
Plastic Limit= 22
Plasticity Index= 36
Natural Moisture= 25.6
Liquidity Index= 0.1

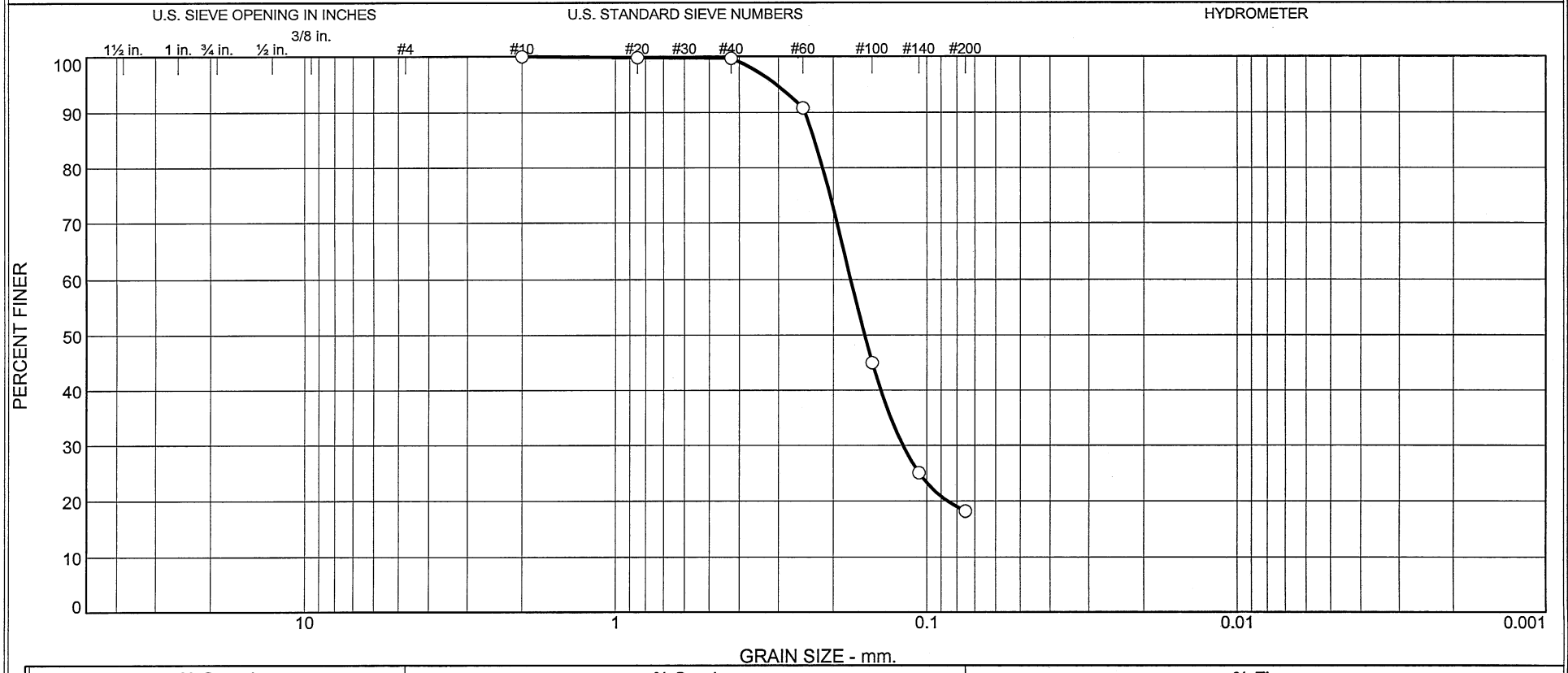
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.70	22.05			
Dry+Tare	20.60	20.86			
Tare	15.46	15.43			
Moisture	21.4	21.9			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
90.60	74.04	9.45	25.6

Particle Size Distribution Report ASTM D 6913-04e2



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	82	18	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-39	258.4-259.8	1/11/09	SC (Visual)	Light Gray Clayey SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ ND = Not Determined
Sieve Analysis Only

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

GRAIN SIZE DISTRIBUTION TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 258.4-259.8 **Sample Number:** SS-39
Material Description: Light Gray Clayey SAND (Visual)
Date: 1/11/09 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SC (Visual)
Testing Remarks: ND = Not Determined
Sieve Analysis Only
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
261.24	0.00	0.00	#10	0.00	100
101.24	0.00	0.00	#20	0.22	100
			#40	0.36	100
			#60	9.30	91
			#100	55.67	45
			#140	75.94	25
			#200	82.81	18

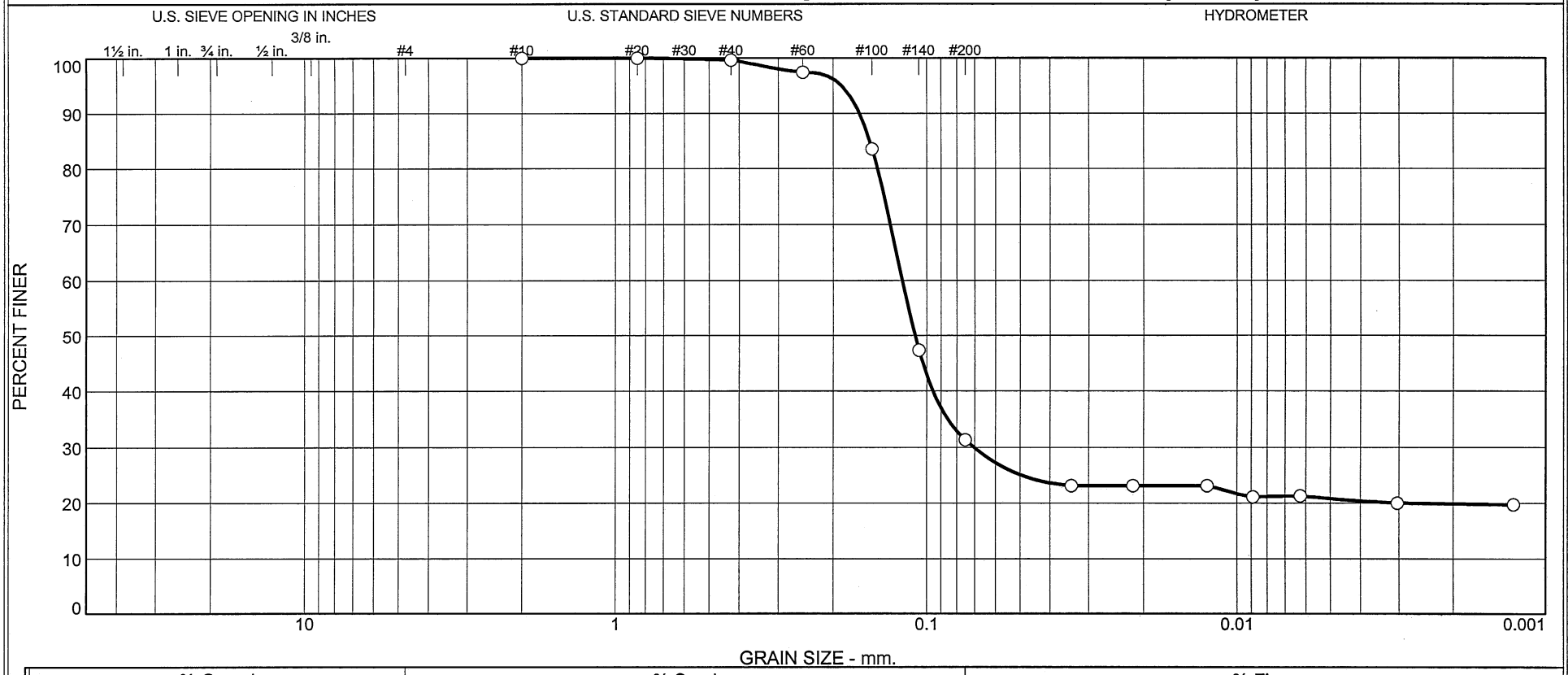
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	0	0	0	0	82	82			18

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0857	0.1196	0.1588	0.1762	0.2167	0.2300	0.2467	0.3048

Fineness Modulus
0.61

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	0.4	68.2	10.6	20.8

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-40	268.5-270.0'	1/12/09	SC	Light Gray with Olive Yellow Clayey SAND	21.2	30	16

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

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 268.5-270.0' **Sample Number:** SS-40
Material Description: Light Gray with Olive Yellow Clayey SAND
Date: 1/12/09 **Natural Moisture:** 21.2
Liquid Limit: 30 **Plastic Limit:** 16 **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
300.09	0.00	0.00	#10	0.00	100.0
50.53	0.00	0.00	#20	0.00	100.0
			#40	0.19	99.6
			#60	1.30	97.4
			#100	8.33	83.5
			#140	26.64	47.3
			#200	34.68	31.4

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =50.53
Hygroscopic moisture correction:
Moist weight and tare = 28.29
Dry weight and tare = 28.10
Tare weight = 15.48
Hygroscopic moisture = 1.5%
Table of composite correction values:

Temp., deg. C:	12.3	29.5
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	17.0	11.6	0.0132	18.0	13.3	0.0341	23.1
5.00	21.4	17.0	11.6	0.0132	18.0	13.3	0.0216	23.1
15.00	21.4	17.0	11.6	0.0132	18.0	13.3	0.0125	23.1
30.00	21.4	16.0	10.6	0.0132	17.0	13.5	0.0089	21.1
60.00	21.7	16.0	10.7	0.0132	17.0	13.5	0.0062	21.3
250.00	22.9	15.0	10.1	0.0130	16.0	13.7	0.0030	20.0
1440.00	22.4	15.0	9.9	0.0131	16.0	13.7	0.0013	19.7

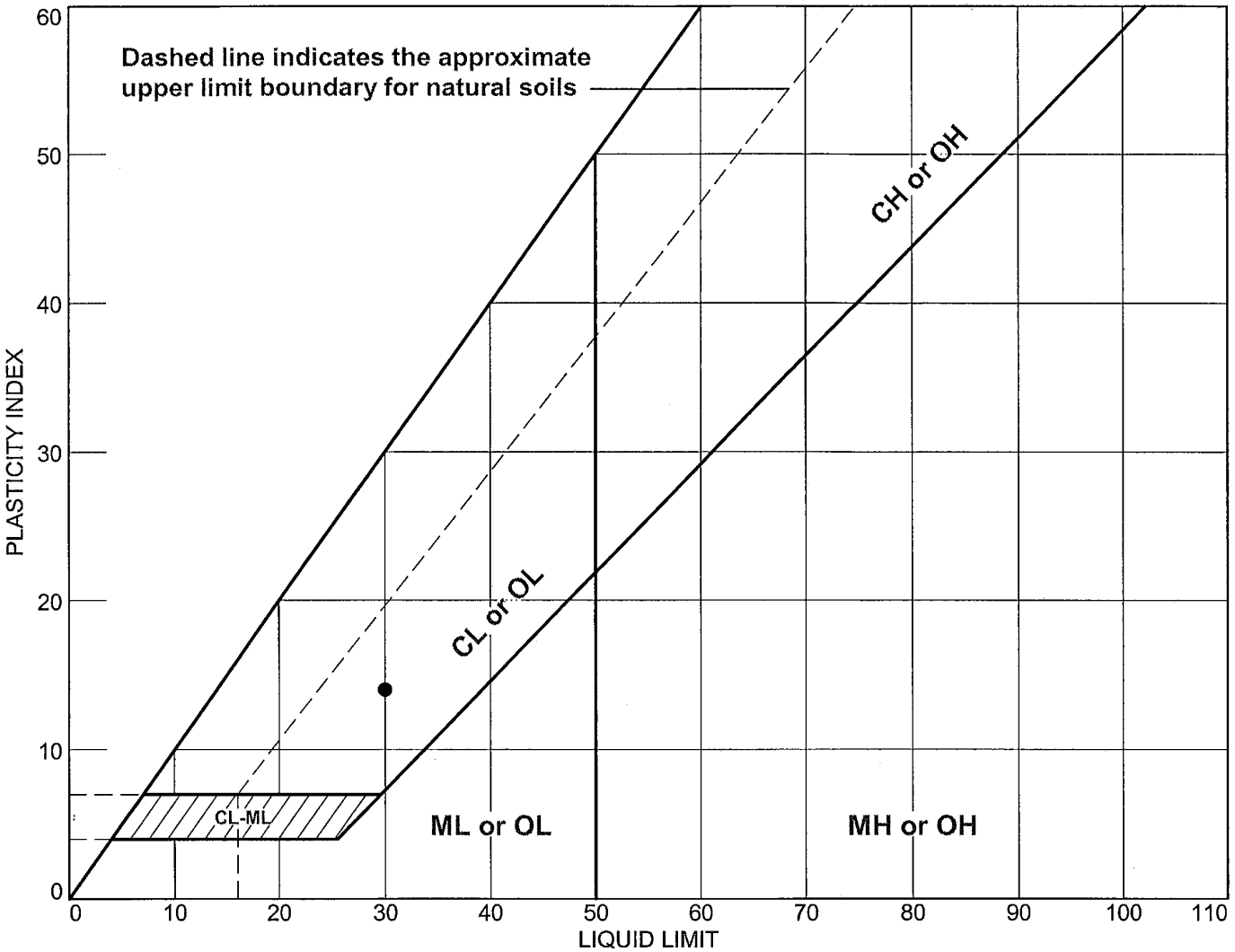
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.4	68.2	68.6	10.6	20.8	31.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0028	0.0703	0.1092	0.1201	0.1443	0.1528	0.1649	0.1875

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-3223	SS-40	268.5-270.0'	21.2	16	30	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** N/A

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

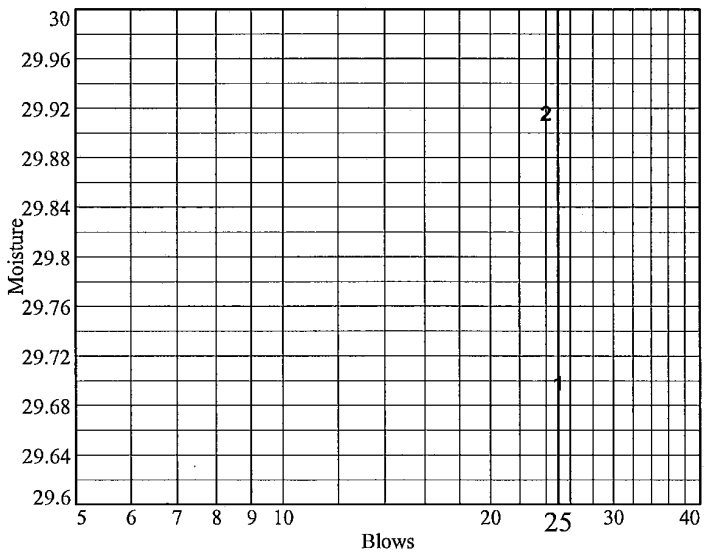
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 268.5-270.0' **Sample Number:** SS-40
Material Description: Light Gray with Olive Yellow 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	22.34	23.52				
Dry+Tare	19.78	20.66				
Tare	11.16	11.10				
# Blows	25	24				
Moisture	29.7	29.9				



Liquid Limit= 30
Plastic Limit= 16
Plasticity Index= 14
Natural Moisture= 21.2
Liquidity Index= 0.4

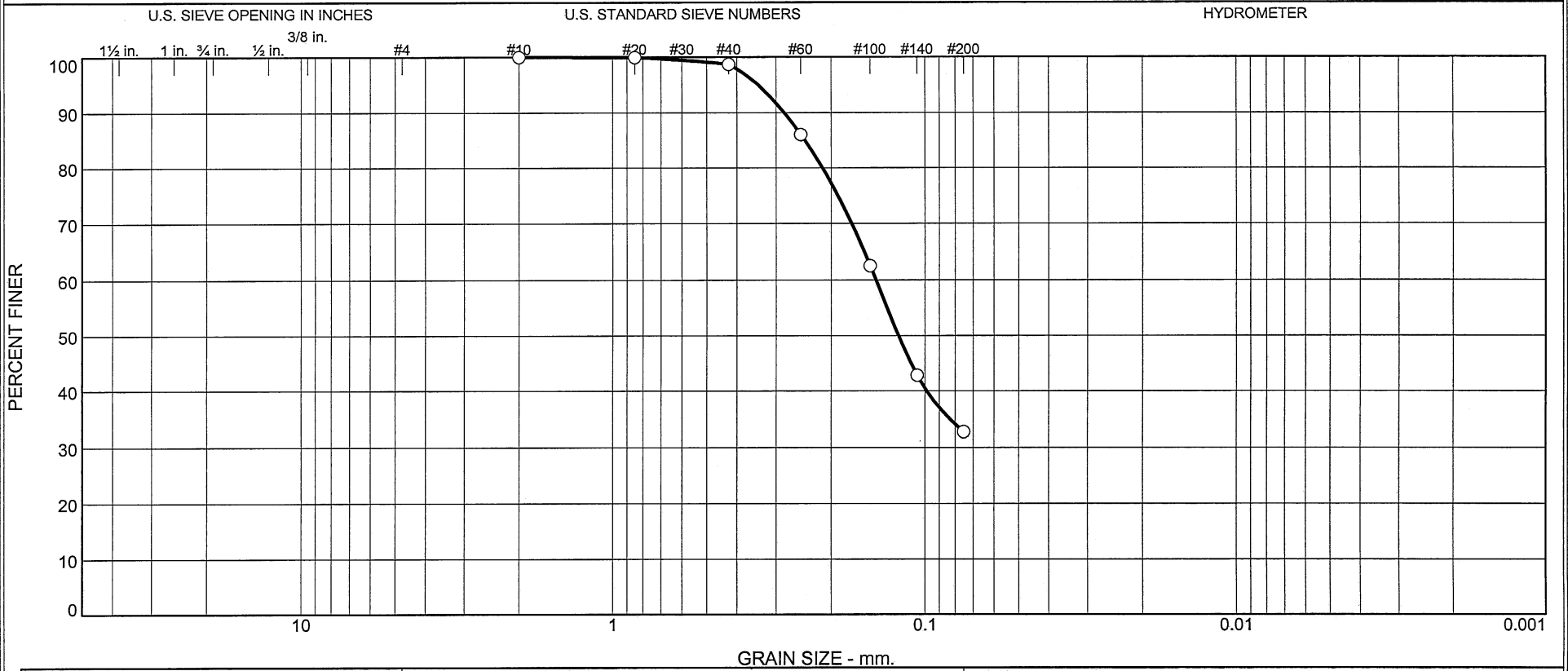
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.97	22.12			
Dry+Tare	21.04	21.23			
Tare	15.32	15.45			
Moisture	16.3	15.4			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
113.75	95.03	6.84	21.2

Particle Size Distribution Report ASTM D 6913-04e2



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	1	66	33	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-41	278.5-280.0	1/12/09	SC (Visual)	Light Gray with Yellow Clayey SAND (Visual)	20.1	ND	ND

Client Bechtel
Project Exelon Texas COL Project - Supplemental Investigation, including UHS
Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina

○ ND = Not Determined
Sieve Analysis Only

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-3223
Depth: 278.5-280.0 **Sample Number:** SS-41
Material Description: Light Gray with Yellow Clayey SAND (Visual)
Date: 1/12/09 **Natural Moisture:** 20.1
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SC (Visual)
Testing Remarks: ND = Not Determined
Sieve Analysis Only
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
242.75	0.00	0.00	#10	0.00	100
102.47	0.00	0.00	#20	0.08	100
			#40	1.36	99
			#60	14.34	86
			#100	38.45	62
			#140	58.60	43
			#200	68.88	33

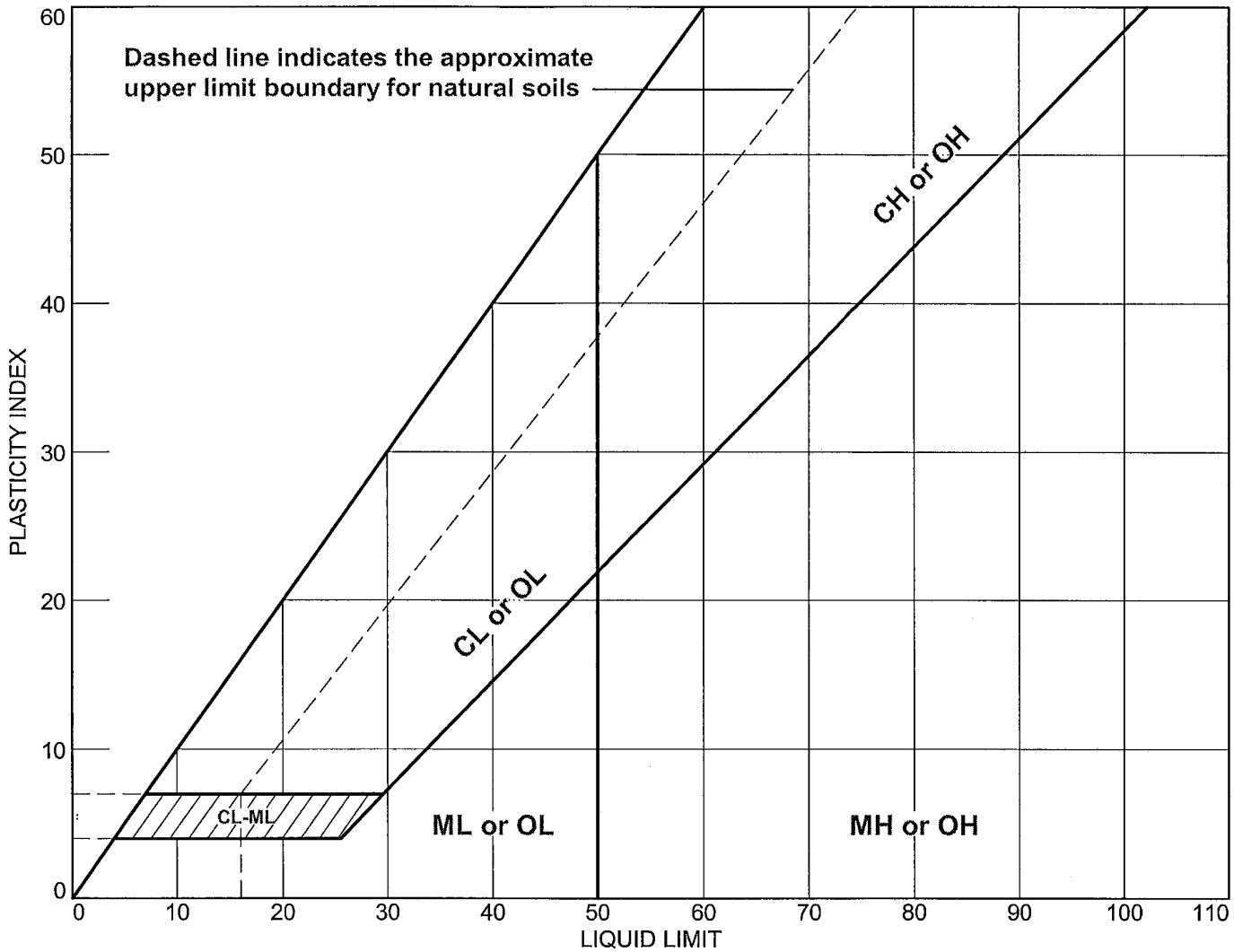
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	0	0	0	1	66	67			33

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.1218	0.1439	0.2136	0.2430	0.2826	0.3425

Fineness Modulus
0.46

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-3223	SS-42	288.5-290.0'	19.6	NP	NV	NP	SM (Visual)

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

Tested By: CS **Checked By:** LBJ DSC 5-4-09

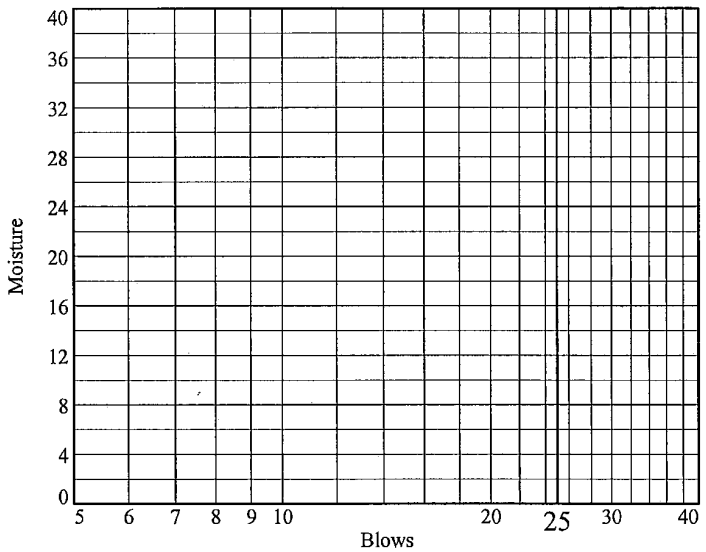
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 288.5-290.0' **Sample Number:** SS-42
Material Description: White with Black Silty SAND (Visual)
NP = Non Plastic
NV = No Value
USCS: SM (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** LBJ

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= 19.6

Plastic Limit Data

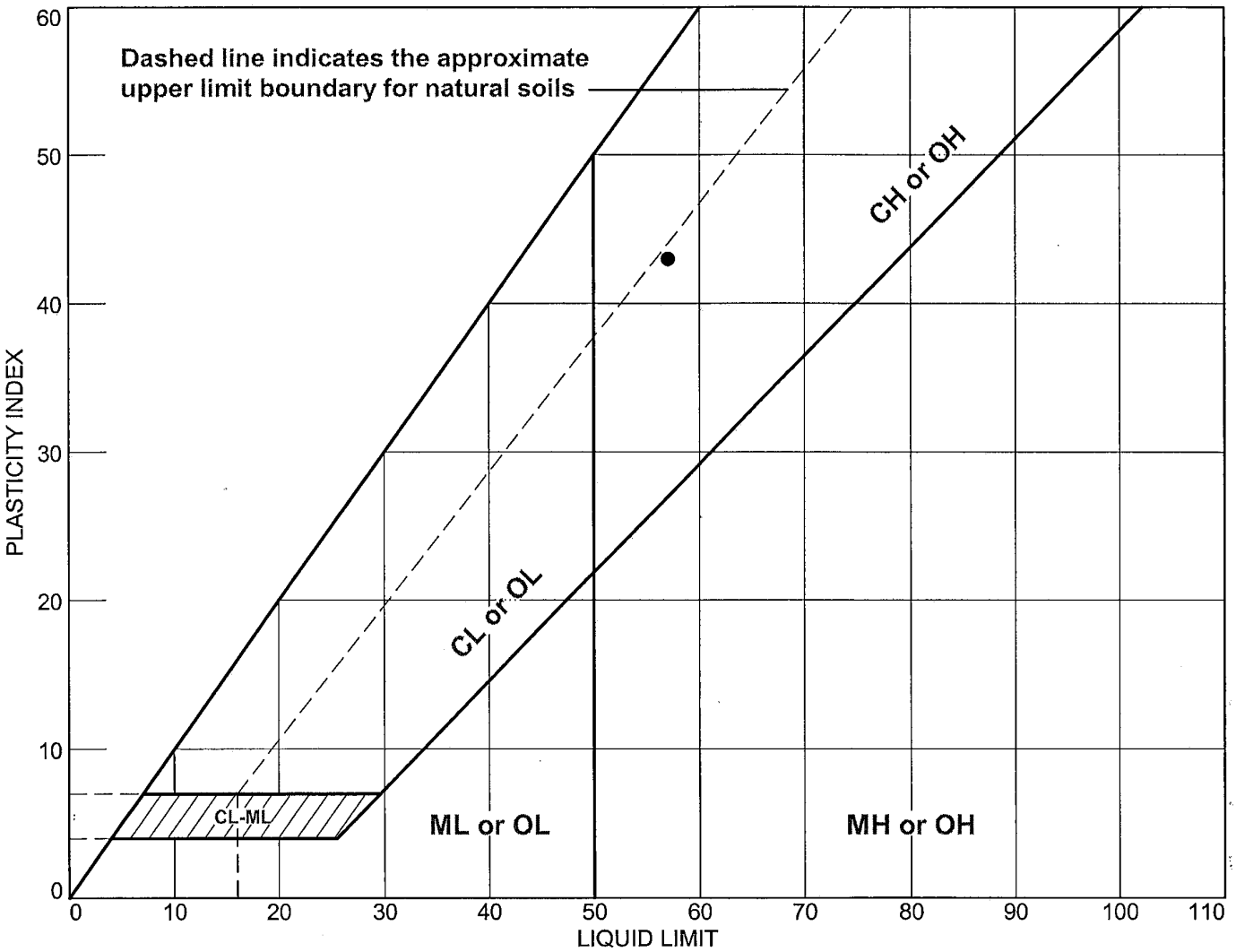
Run No.	1	2	3	4	
Wet+Tare					
Dry+Tare					
Tare					
Moisture					

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
92.39	78.36	6.86	19.6

MACTEC Engineering and Consulting, Inc.

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-3223	SS-44	308.5-310.0'	23.8	14	57	43	CH (Visual)

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

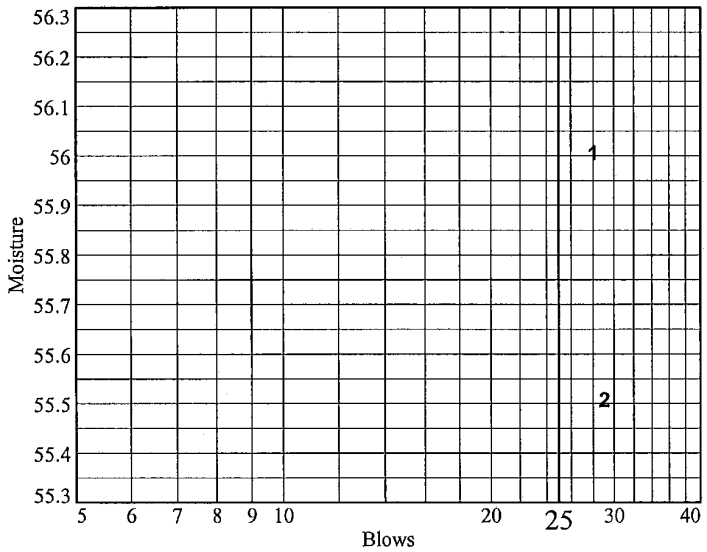
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 308.5-310.0' **Sample Number:** SS-44
Material Description: Pale Yellow with Brownish Yellow and Black Fat CLAY (Visual)
USCS: CH (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.17	22.97				
Dry+Tare	21.00	20.30				
Tare	15.34	15.49				
# Blows	28	29				
Moisture	56.0	55.5				



Liquid Limit= 57
Plastic Limit= 14
Plasticity Index= 43
Natural Moisture= 23.8
Liquidity Index= 0.2

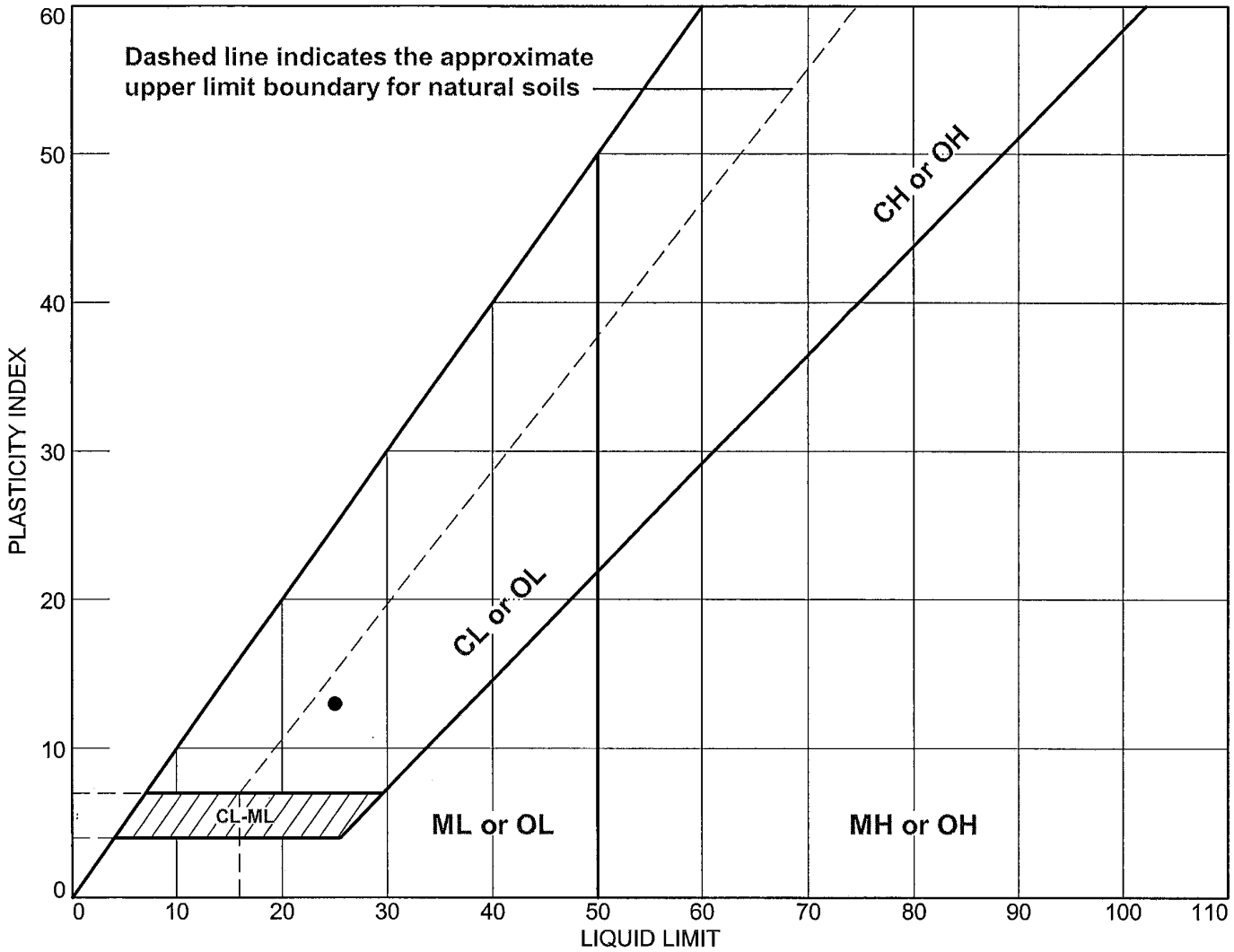
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.02	22.26			
Dry+Tare	21.25	21.45			
Tare	15.51	15.57			
Moisture	13.4	13.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
82.17	67.71	6.86	23.8

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-3223	SS-46	328.5-330.0'	15.0	12	25	13	CL (Visual)

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

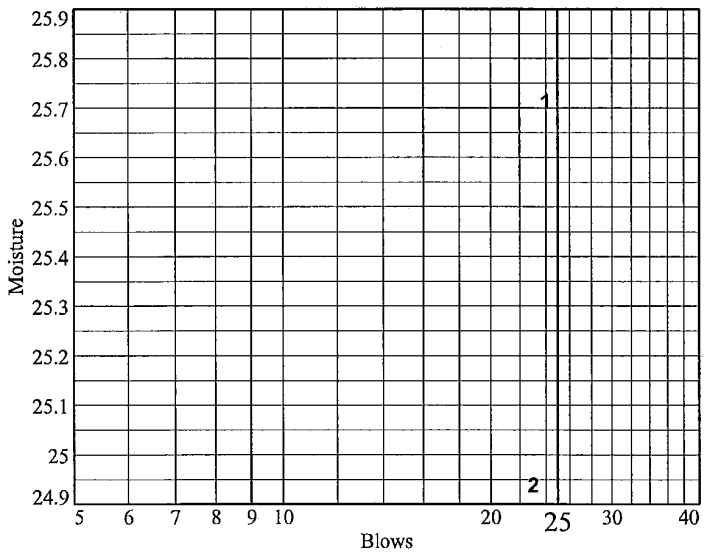
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 328.5-330.0' **Sample Number:** SS-46
Material Description: Light Gray with Brownish Yellow Lean CLAY (Visual)
USCS: CL (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	26.07	25.88				
Dry+Tare	23.91	23.80				
Tare	15.51	15.46				
# Blows	24	23				
Moisture	25.7	24.9				



Liquid Limit= 25
Plastic Limit= 12
Plasticity Index= 13
Natural Moisture= 15.0
Liquidity Index= 0.2

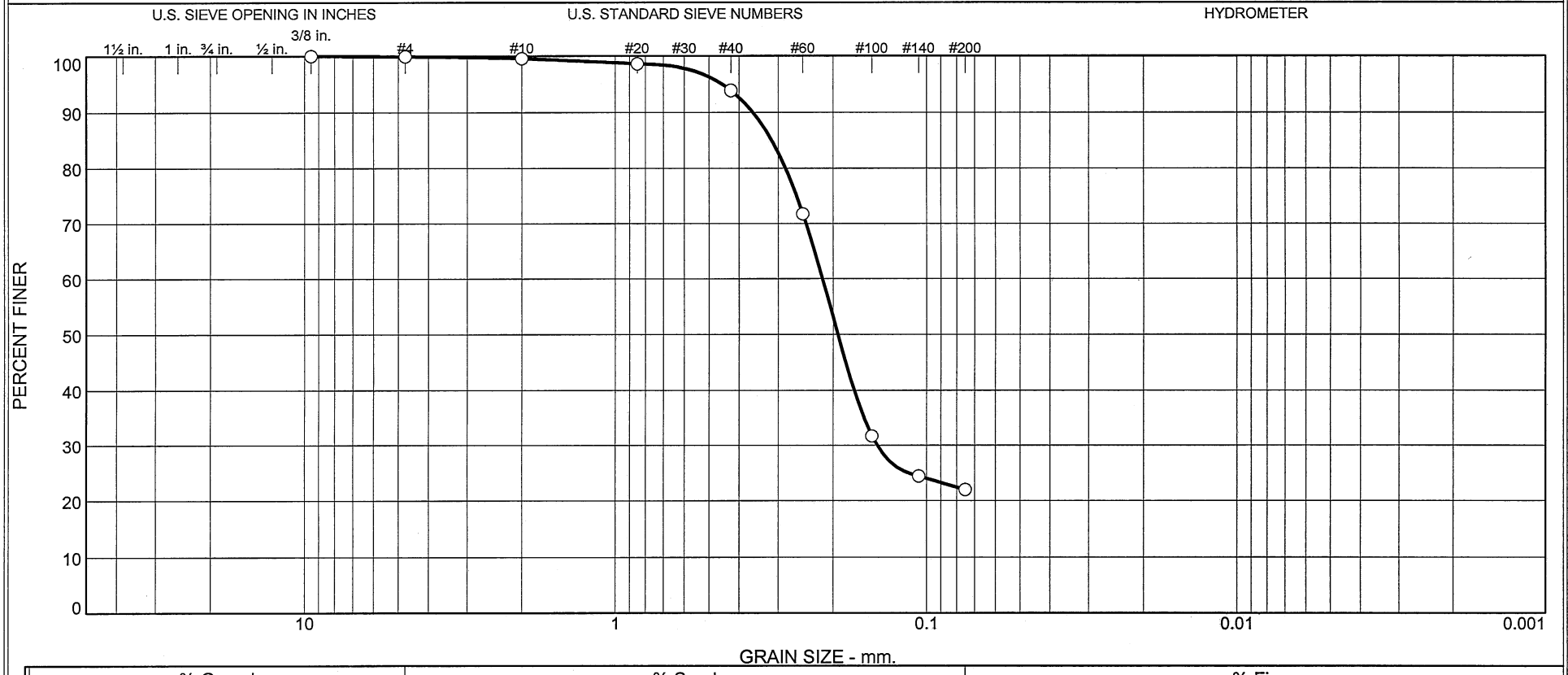
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.01	21.64			
Dry+Tare	21.30	20.96			
Tare	15.54	15.49			
Moisture	12.3	12.4			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
110.94	97.41	6.91	15.0

Particle Size Distribution Report ASTM D 6913-04e2



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	6	72	22	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-47	338.5-339.5'	1/13/09	SM (Visual)	Pale Yellow with Black and Yellowish Brown Silty SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ ND = Not Determined
Sieve Analysis Only

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

GRAIN SIZE DISTRIBUTION TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 338.5-339.5' **Sample Number:** SS-47
Material Description: Pale Yellow with Black and Yellowish Brown Silty SAND (Visual)
Date: 1/13/09 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SM (Visual)
Testing Remarks: ND = Not Determined
Sieve Analysis Only
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
315.04	0.00	0.00	3/8"	0.00	100
			#4	0.37	100
			#10	1.51	100
100.09	0.00	0.00	#20	0.93	99
			#40	5.69	94
			#60	27.93	72
			#100	68.22	32
			#140	75.56	24
			#200	78.01	22

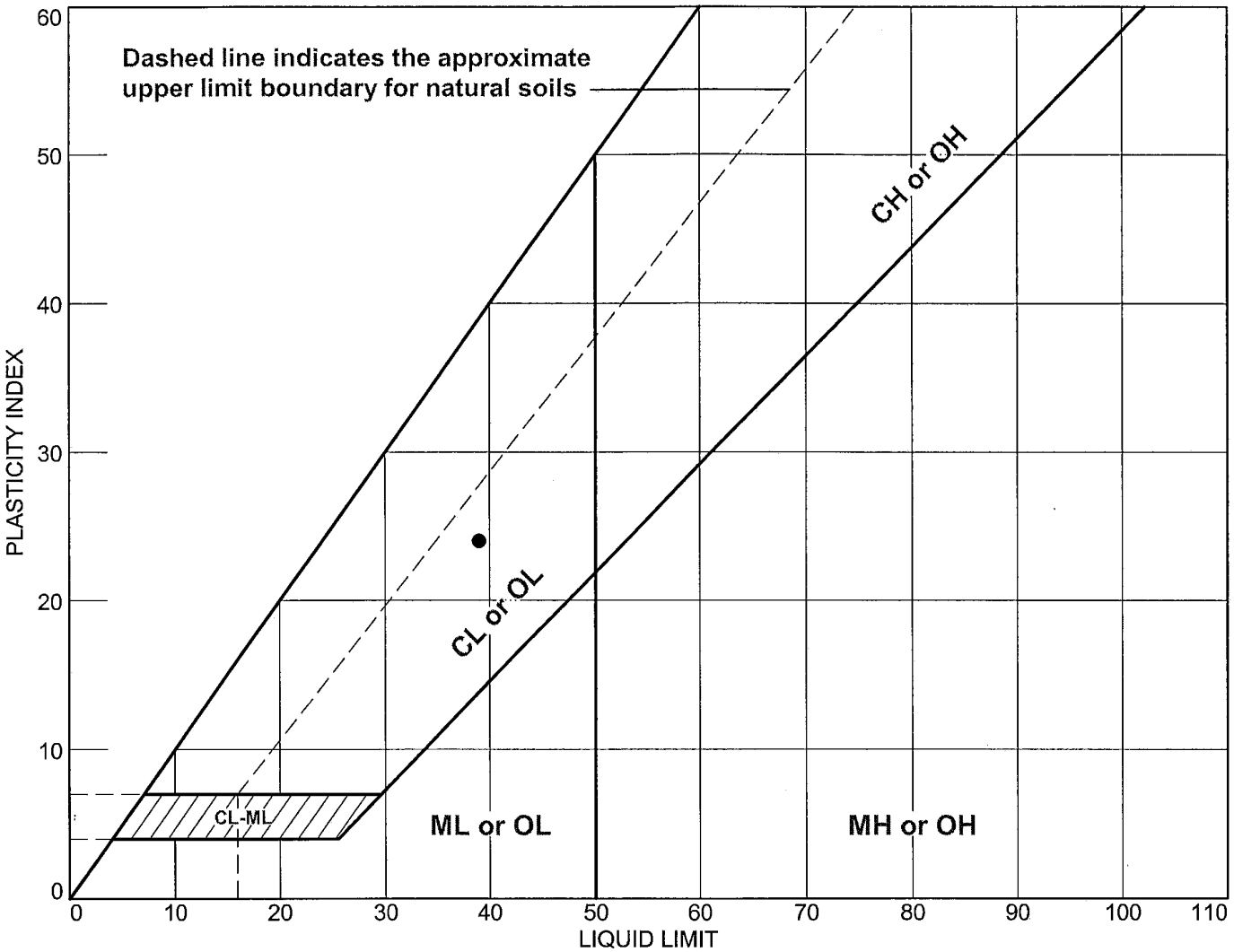
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	0	0	0	6	72	78			22

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.1445	0.1932	0.2165	0.2844	0.3149	0.3616	0.4541

Fineness Modulus
0.89

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-3223	SS-48	348.3-349.8'	20.2	15	39	24	CL (Visual)

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

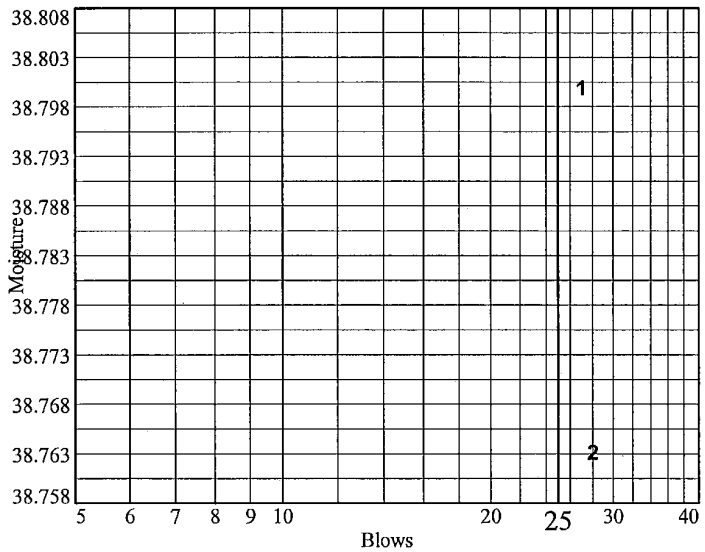
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 348.3-349.8' **Sample Number:** SS-48
Material Description: Light Gray with Brownish Yellow Lean CLAY (Visual)
USCS: CL (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.94	20.33				
Dry+Tare	23.03	17.76				
Tare	15.53	11.13				
# Blows	27	28				
Moisture	38.8	38.8				



Liquid Limit= 39
Plastic Limit= 15
Plasticity Index= 24
Natural Moisture= 20.2
Liquidity Index= 0.2

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.67	22.21			
Dry+Tare	20.86	21.36			
Tare	15.47	15.62			
Moisture	15.0	14.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
97.12	81.95	6.86	20.2

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	0.1	63.6	15.0	21.3

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3223	SS-50	368.4-369.9'	1/14/09	SC	Light Gray Clayey SAND	18.7	20	11

Client Bechtel
Project Exelon Texas COL Project - Supplemental Investigation, including UHS
Project No. 6468071777 Figure N/A

MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina

○ Specific Gravity is assumed

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

GRAIN SIZE DISTRIBUTION TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 368.4-369.9' **Sample Number:** SS-50
Material Description: Light Gray Clayey SAND
Date: 1/14/09 **Natural Moisture:** 18.7
Liquid Limit: 20 **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
216.43	0.00	0.00	#10	0.00	100.0
48.64	0.00	0.00	#20	0.01	100.0
			#40	0.07	99.9
			#60	2.32	95.2
			#100	11.91	75.5
			#140	25.72	47.1
			#200	30.99	36.3

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =48.64
Hygroscopic moisture correction:
Moist weight and tare = 28.47
Dry weight and tare = 28.38
Tare weight = 15.46
Hygroscopic moisture = 0.7%
Table of composite correction values:

Temp., deg. C:	12.3	29.5
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.5	18.0	12.7	0.0132	19.0	13.2	0.0339	25.9
5.00	21.5	17.0	11.7	0.0132	18.0	13.3	0.0216	23.9
15.00	21.5	16.0	10.7	0.0132	17.0	13.5	0.0125	21.9
30.00	21.5	16.0	10.7	0.0132	17.0	13.5	0.0089	21.9
60.00	21.5	16.0	10.7	0.0132	17.0	13.5	0.0063	21.9
250.00	22.3	14.5	9.4	0.0131	15.5	13.8	0.0031	19.3
1440.00	22.6	13.0	8.0	0.0130	14.0	14.0	0.0013	16.4

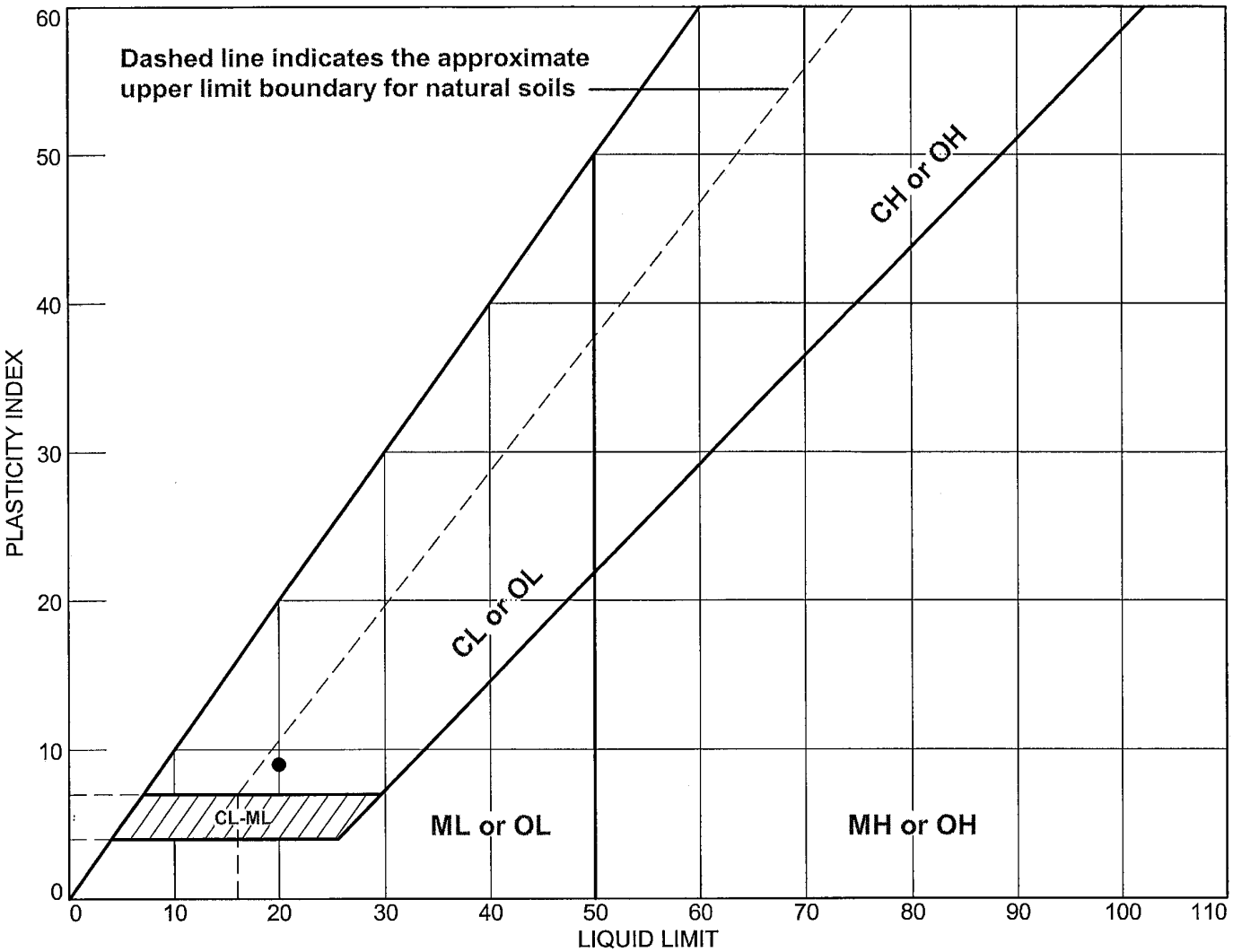
Fractional Components

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	63.6	63.7	15.0	21.3	36.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0036	0.0494	0.1106	0.1250	0.1601	0.1753	0.1988	0.2465

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-3223	SS-50	368.4-369.9'	18.7	11	20	9	SC

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

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

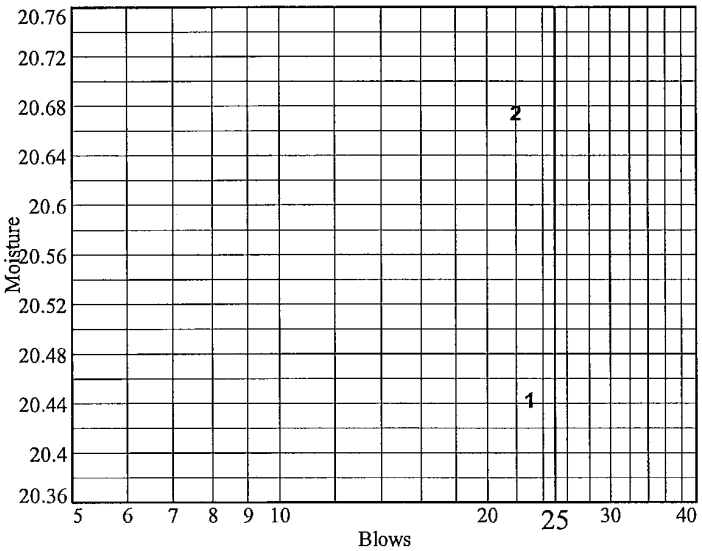
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 368.4-369.9' **Sample Number:** SS-50
Material Description: Light Gray Clayey SAND
USCS: SC **AASHTO:** A-4(0)
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.40	29.50				
Dry+Tare	25.37	27.11				
Tare	15.44	15.55				
# Blows	23	22				
Moisture	20.4	20.7				



Liquid Limit= 20
Plastic Limit= 11
Plasticity Index= 9
Natural Moisture= 18.7
Liquidity Index= 0.9

Plastic Limit Data

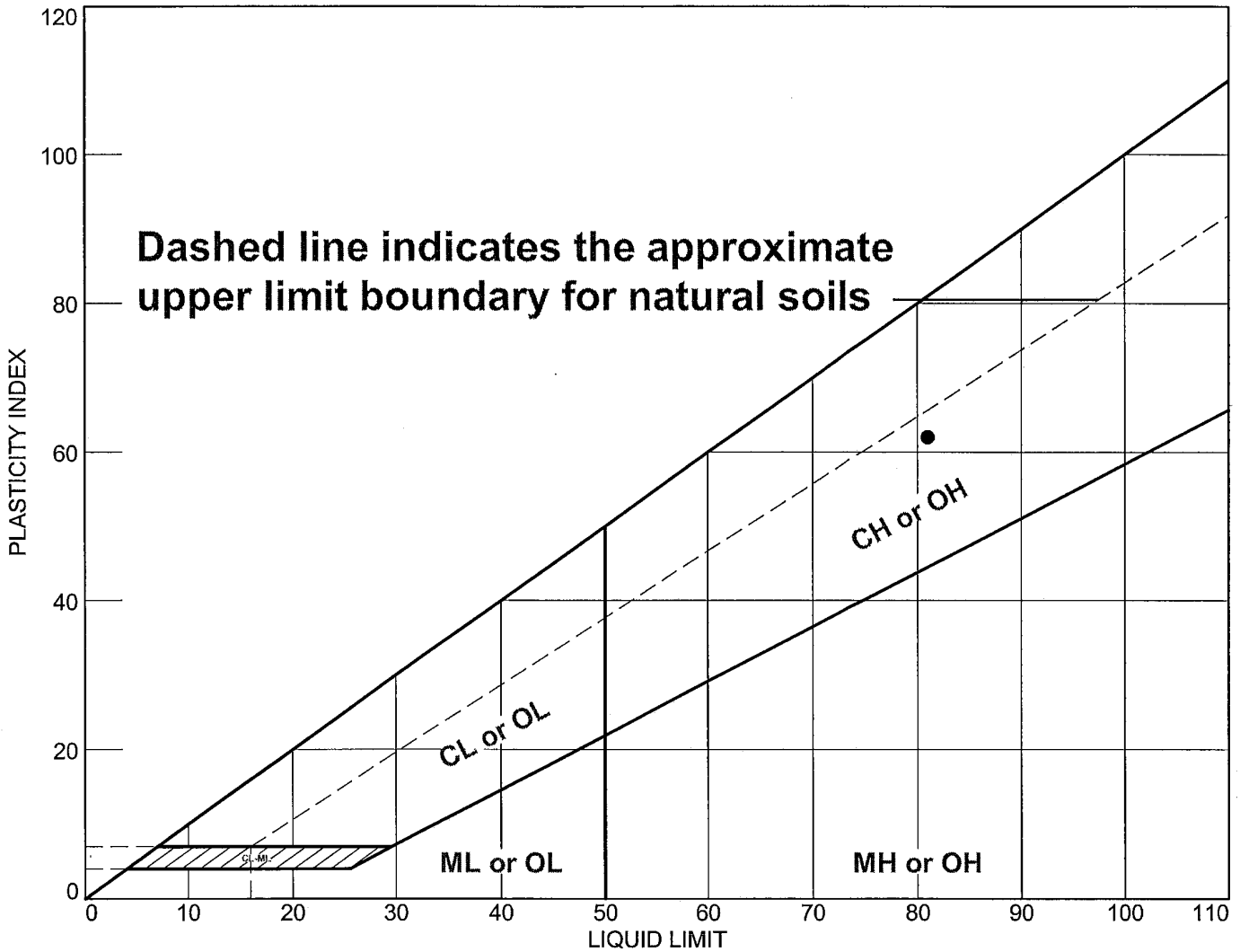
Run No.	1	2	3	4	
Wet+Tare	22.33	22.44			
Dry+Tare	21.67	21.77			
Tare	15.60	15.64			
Moisture	10.9	10.9			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
83.09	71.09	6.78	18.7

MACTEC Engineering and Consulting, Inc.

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-3223	SS-52	388.5-390.0'	33.9	19	81	62	CH (Visual)

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

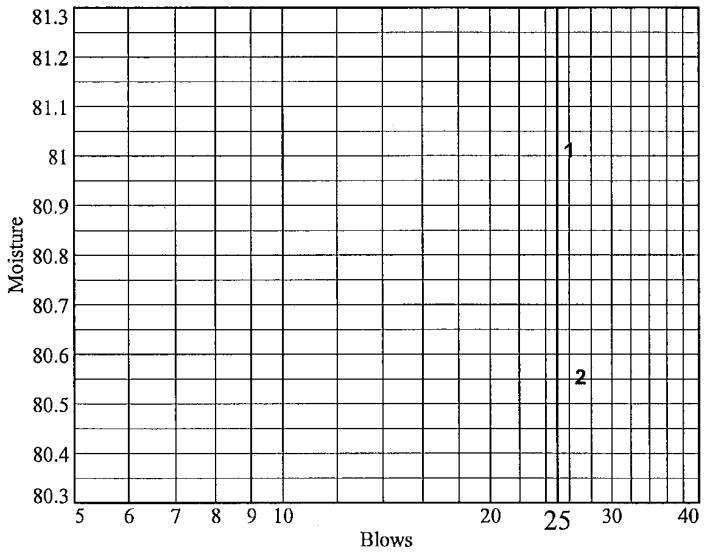
LIQUID AND PLASTIC LIMIT TEST DATA

4/30/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3223
Depth: 388.5-390.0' **Sample Number:** SS-52
Material Description: Pale Yellow and Light Gray Fat CLAY (Visual)
USCS: CH (Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.00	23.46				
Dry+Tare	20.16	19.98				
Tare	15.42	15.66				
# Blows	26	27				
Moisture	81.0	80.6				



Liquid Limit= 81
Plastic Limit= 19
Plasticity Index= 62
Natural Moisture= 33.9
Liquidity Index= 0.2

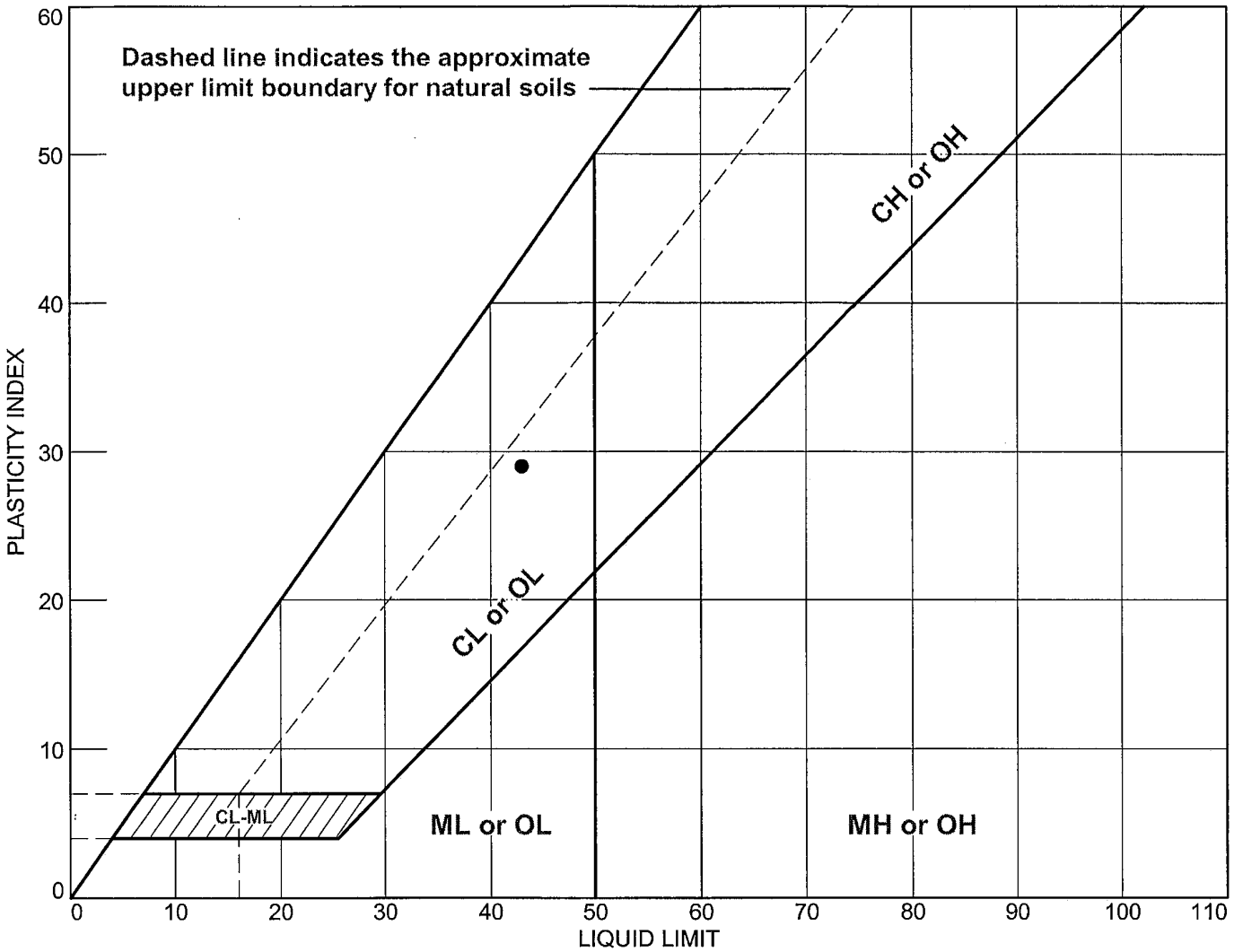
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.93	22.05			
Dry+Tare	21.77	21.00			
Tare	15.56	15.56			
Moisture	18.7	19.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
86.64	67.08	9.34	33.9

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-3229	SS-1	0.0-1.5'	16.2	14	43	29	CL(Visual)

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

Tested By: CS **Checked By:** LBJ DSC 5-4-09

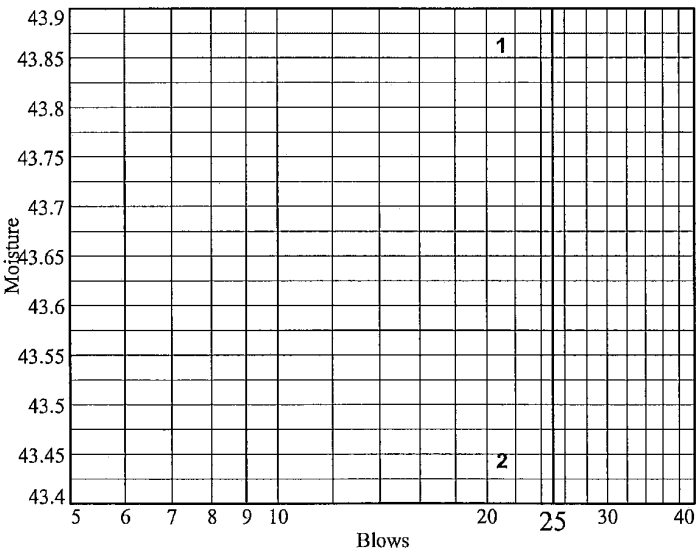
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3229
Depth: 0.0-1.5' **Sample Number:** SS-1
Material Description: Very Dark Grayish Brown Lean CLAY with sand(Visual)
USCS: CL(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	28.96	32.16				
Dry+Tare	24.85	27.19				
Tare	15.48	15.75				
# Blows	21	21				
Moisture	43.9	43.4				



Liquid Limit= 43
Plastic Limit= 14
Plasticity Index= 29
Natural Moisture= 16.2
Liquidity Index= 0.1

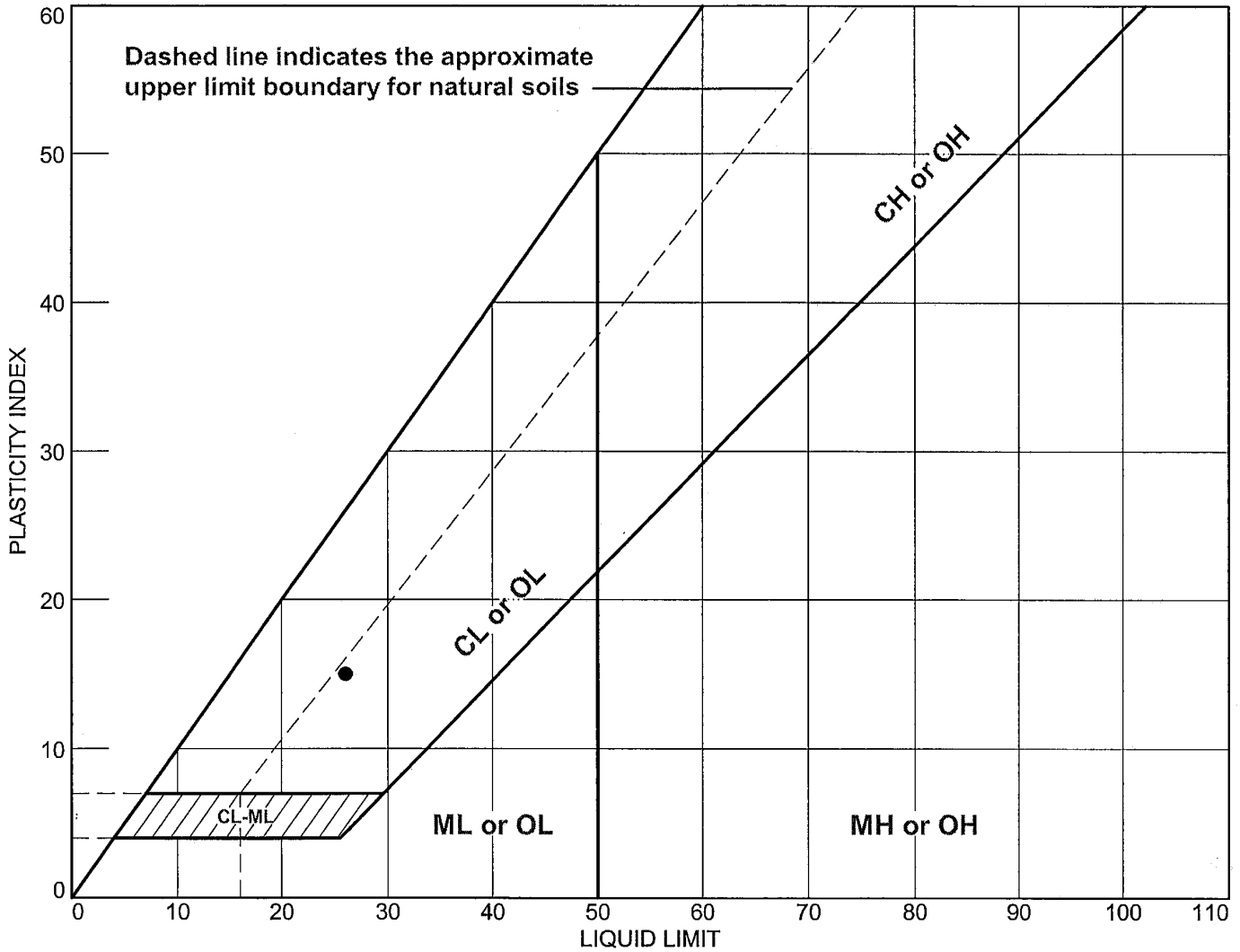
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.42	22.03			
Dry+Tare	20.65	21.24			
Tare	15.36	15.53			
Moisture	14.6	13.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
34.48	30.62	6.78	16.2

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-3229	SS-2	3.5-5.0'	18.6	11	26	15	CL(Visual)

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

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

Project No.: 6468071777 **Figure** N/A

Tested By: CS **Checked By:** LBJ DSC 5-4-09

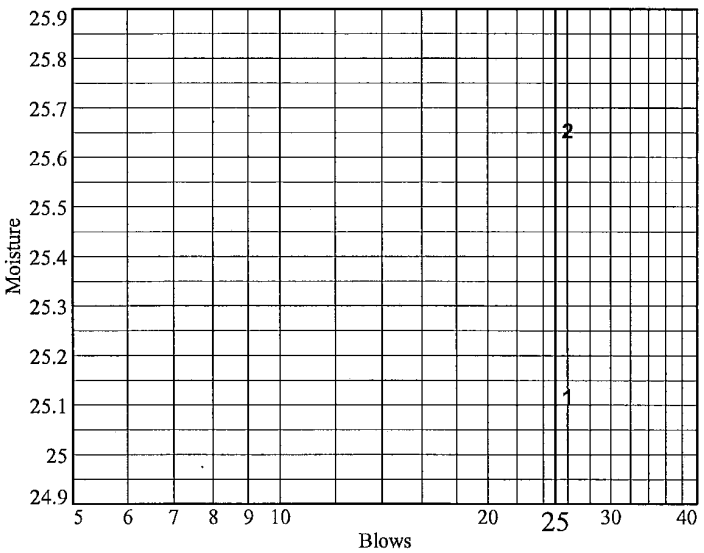
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3229
Depth: 3.5-5.0' **Sample Number:** SS-2
Material Description: Light Gray Lean CLAY with sand (Visual)
USCS: CL(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	21.79	31.48				
Dry+Tare	19.66	28.25				
Tare	11.18	15.66				
# Blows	26	26				
Moisture	25.1	25.7				



Liquid Limit= 26
Plastic Limit= 11
Plasticity Index= 15
Natural Moisture= 18.6
Liquidity Index= 0.5

Plastic Limit Data

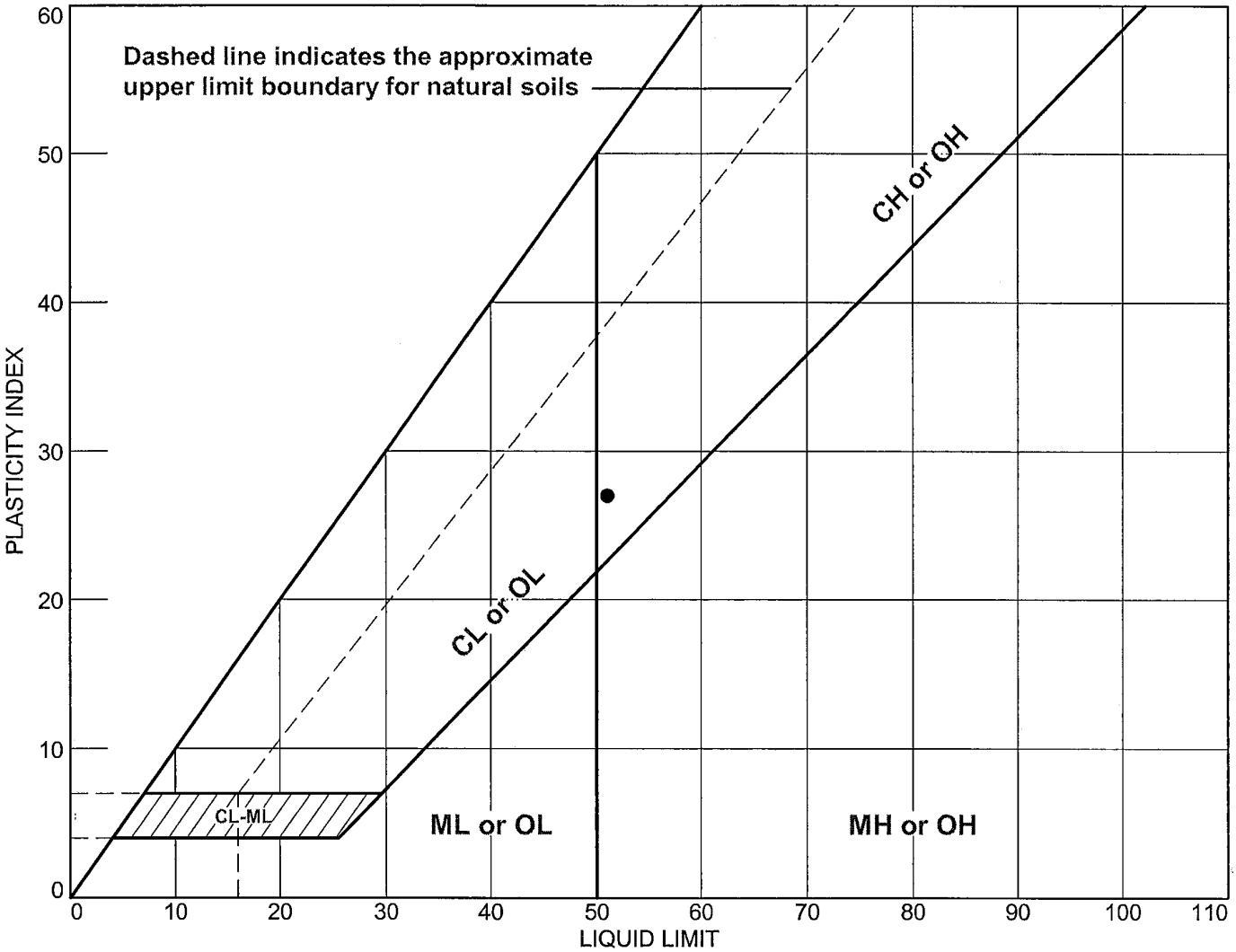
Run No.	1	2	3	4	
Wet+Tare	17.80	23.34			
Dry+Tare	17.17	22.57			
Tare	11.13	15.50			
Moisture	10.4	10.9			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
63.47	54.59	6.93	18.6

MACTEC Engineering and Consulting, Inc.

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-3229	SS-4	8.5-10.0'	19.3	24	51	27	CH(Visual)

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

Tested By: CS **Checked By:** LBJ DSC 5-4-09

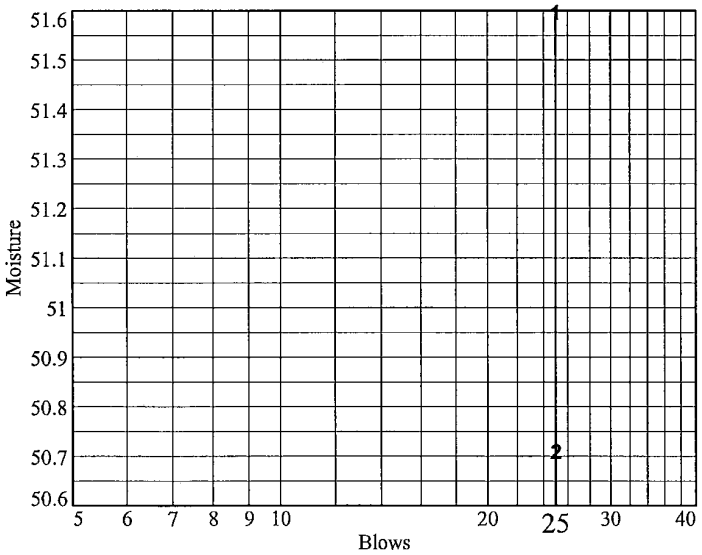
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3229
Depth: 8.5-10.0' **Sample Number:** SS-4
Material Description: Very Pale Brown Fat CLAY with sand (Visual)
USCS: CH(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.83	23.94				
Dry+Tare	23.63	19.66				
Tare	15.49	11.22				
# Blows	25	25				
Moisture	51.6	50.7				



Liquid Limit= 51
Plastic Limit= 24
Plasticity Index= 27
Natural Moisture= 19.3
Liquidity Index= -0.2

Plastic Limit Data

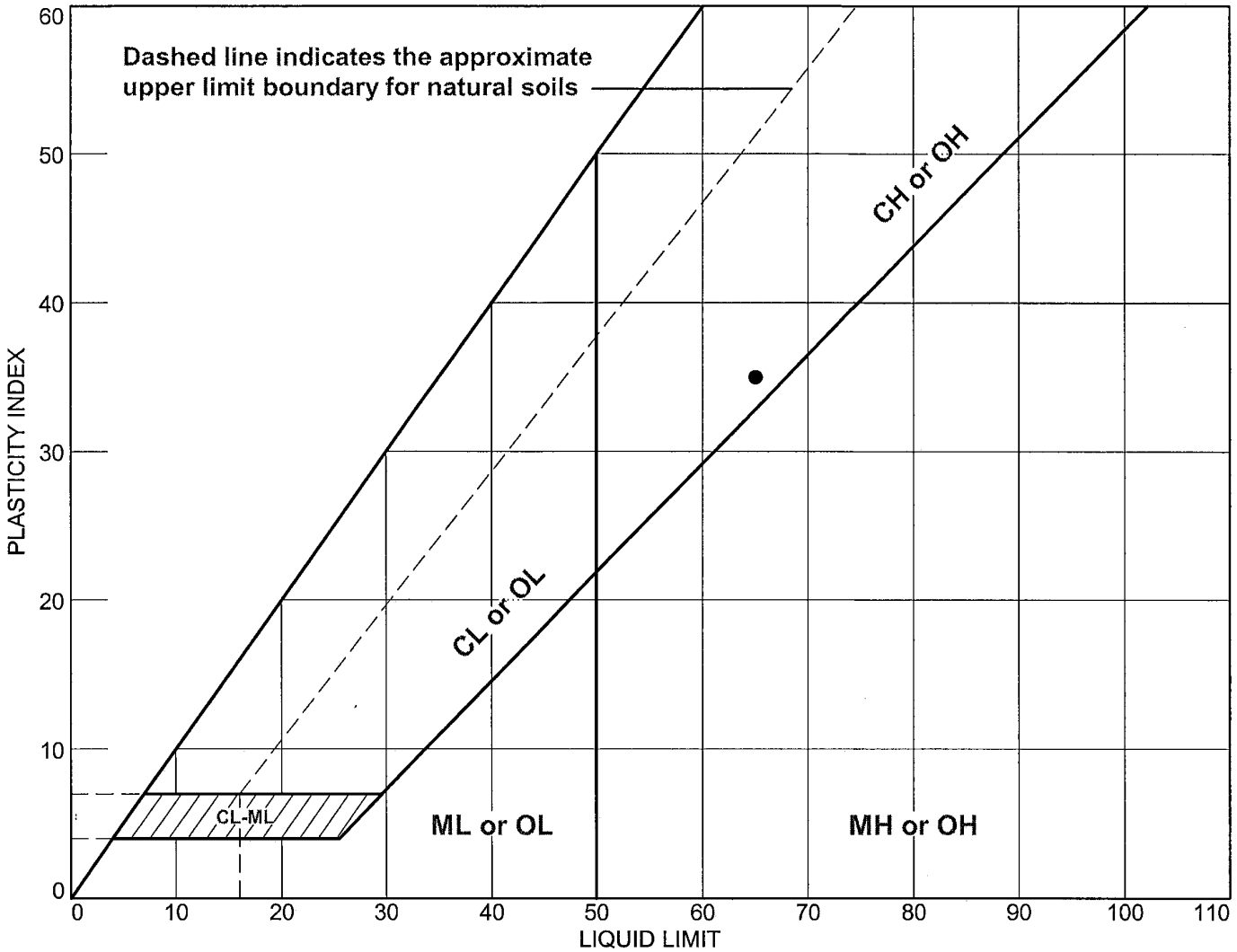
Run No.	1	2	3	4	
Wet+Tare	21.79	21.70			
Dry+Tare	20.56	20.48			
Tare	15.49	15.48			
Moisture	24.3	24.4			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
84.11	71.59	6.78	19.3

MACTEC Engineering and Consulting, Inc.

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-3229	SS-6	13.5-15.0'	21.6	30	65	35	CH(Visual)

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

Tested By: CS **Checked By:** LBJ DSC 5-4-09

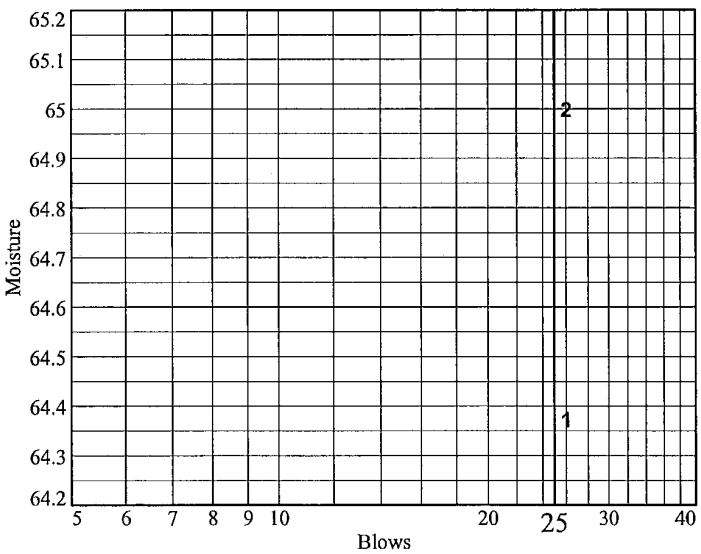
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3229
Depth: 13.5-15.0' **Sample Number:** SS-6
Material Description: Mottled Very Pale Brown and Reddish Yellow Fat CLAY with sand (Visual)
USCS: CH(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.90	25.99				
Dry+Tare	23.22	21.83				
Tare	15.95	15.43				
# Blows	26	26				
Moisture	64.4	65.0				



Liquid Limit= 65
Plastic Limit= 30
Plasticity Index= 35
Natural Moisture= 21.6
Liquidity Index= -0.2

Plastic Limit Data

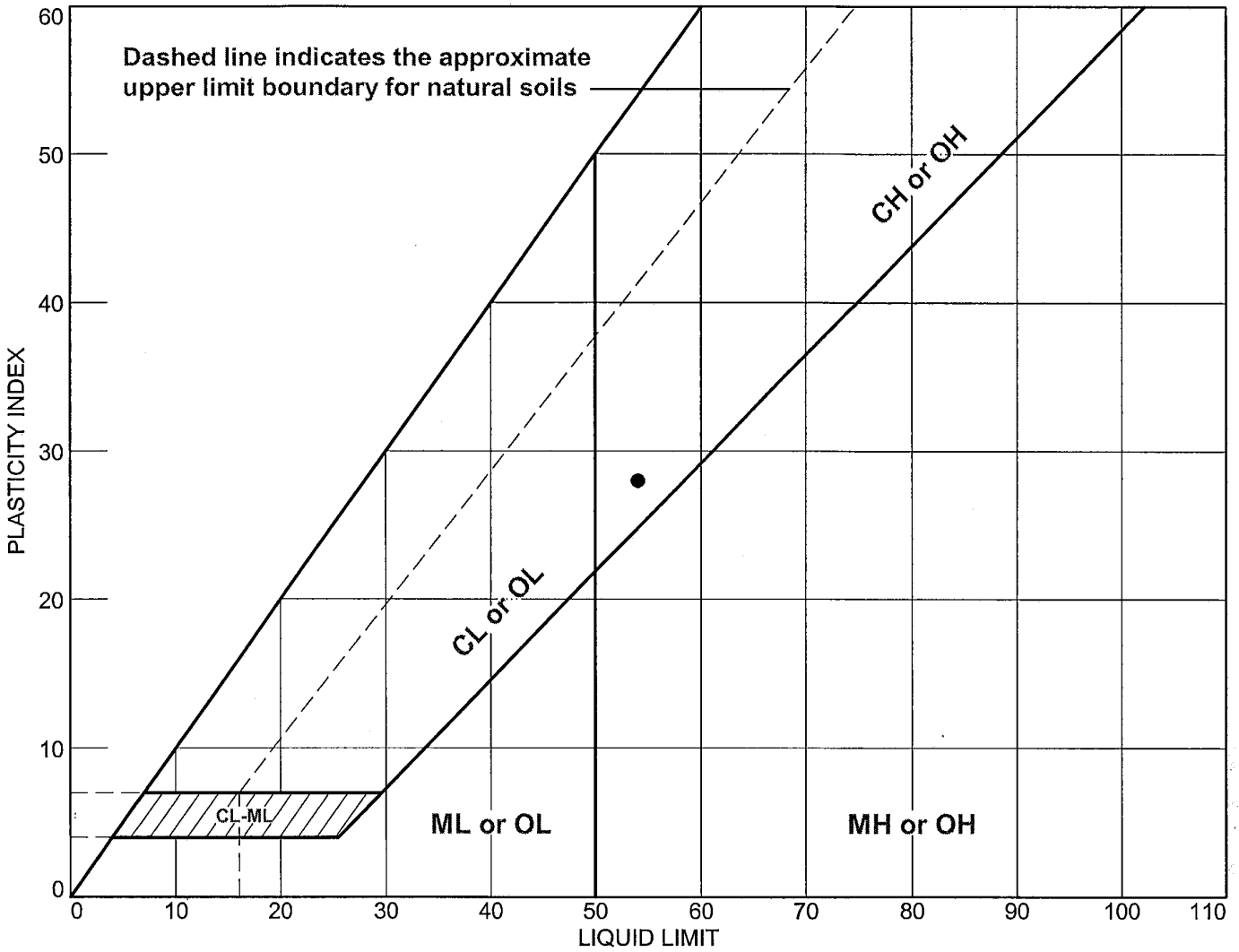
Run No.	1	2	3	4	
Wet+Tare	17.28	21.67			
Dry+Tare	16.04	20.23			
Tare	11.81	15.41			
Moisture	29.3	29.9			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
84.47	70.72	7.02	21.6

MACTEC Engineering and Consulting, Inc.

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-3229	SS-8	23.5-25.0'	19.4	26	54	28	CH(Visual)

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

Tested By: CS **Checked By:** LBJ DSC 5-4-09

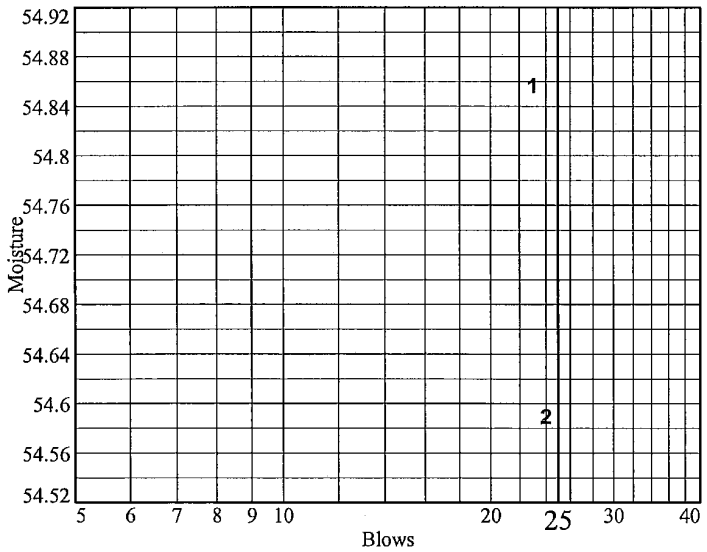
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3229
Depth: 23.5-25.0' **Sample Number:** SS-8
Material Description: Very Pale Brown Fat CLAY with sand (Visual)
USCS: CH(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	23.63	24.96				
Dry+Tare	20.75	21.63				
Tare	15.50	15.53				
# Blows	23	24				
Moisture	54.9	54.6				



Liquid Limit= 54
Plastic Limit= 26
Plasticity Index= 28
Natural Moisture= 19.4
Liquidity Index= -0.2

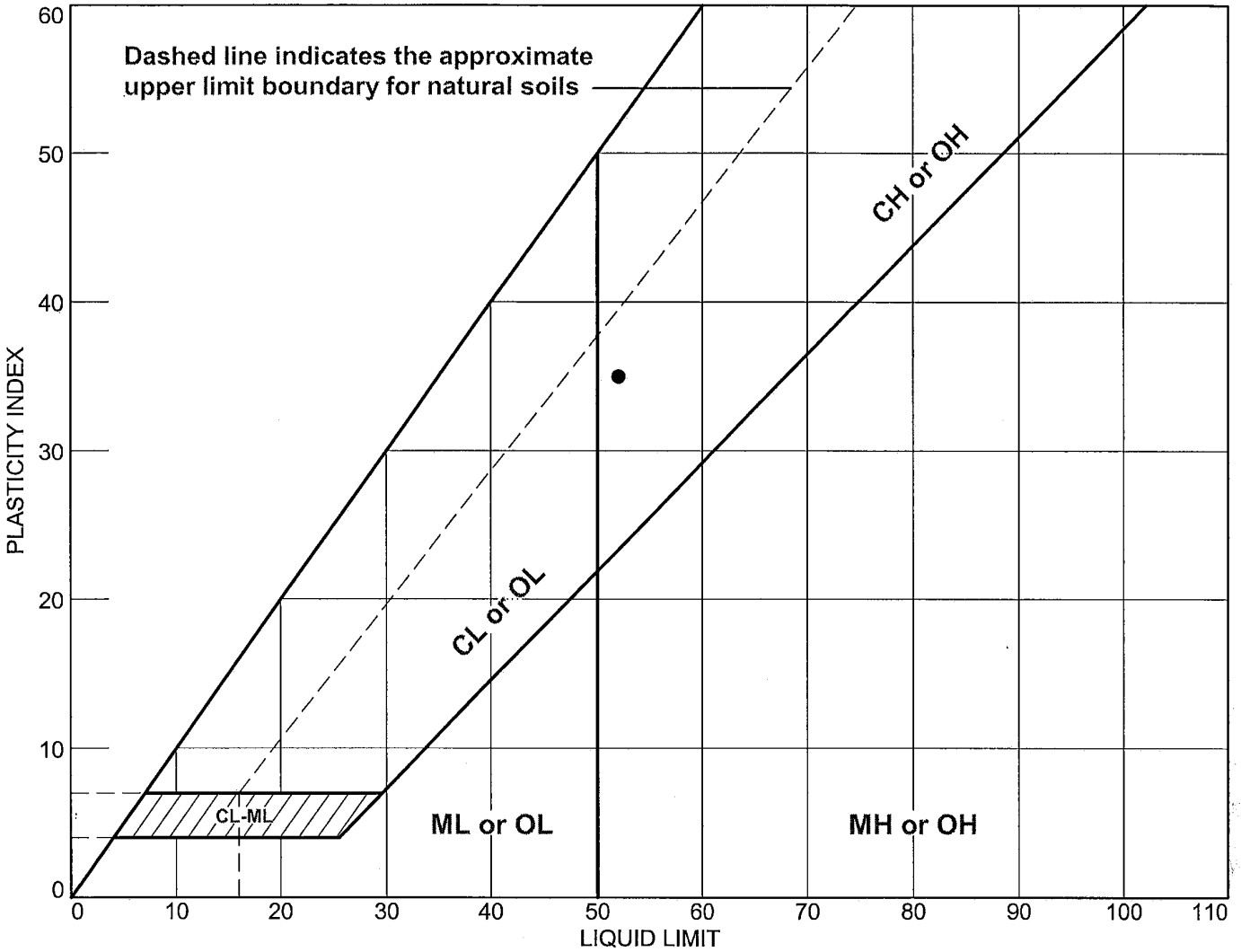
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.10	23.63			
Dry+Tare	19.82	21.13			
Tare	11.12	11.63			
Moisture	26.2	26.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
141.44	119.56	6.84	19.4

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-3229	SS-10	33.5-35.0'	24.6	17	52	35	CH(Visual)

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

Tested By: CS **Checked By:** LBJ DSC 5-4-09

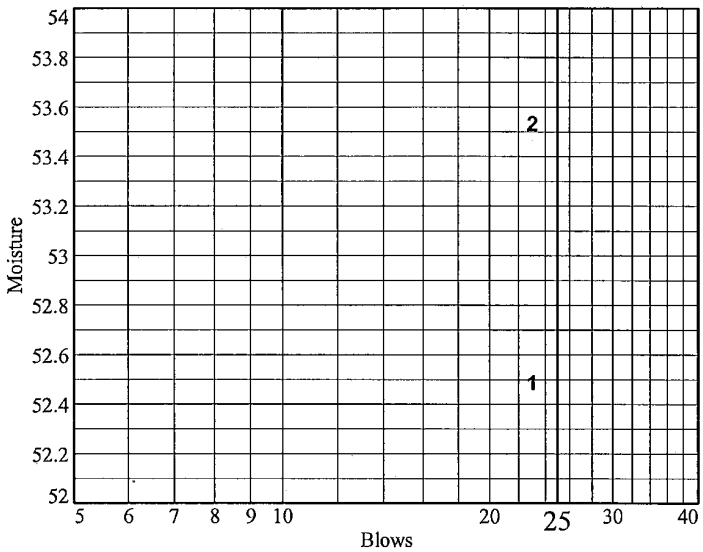
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3229
Depth: 33.5-35.0' **Sample Number:** SS-10
Material Description: Mottled Pale Brown and Reddish Yellow Fat CLAY with sand (Visual)
USCS: CH(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	36.63	29.36				
Dry+Tare	29.36	23.00				
Tare	15.51	11.12				
# Blows	23	23				
Moisture	52.5	53.5				



Liquid Limit= 52
Plastic Limit= 17
Plasticity Index= 35
Natural Moisture= 24.6
Liquidity Index= 0.2

Plastic Limit Data

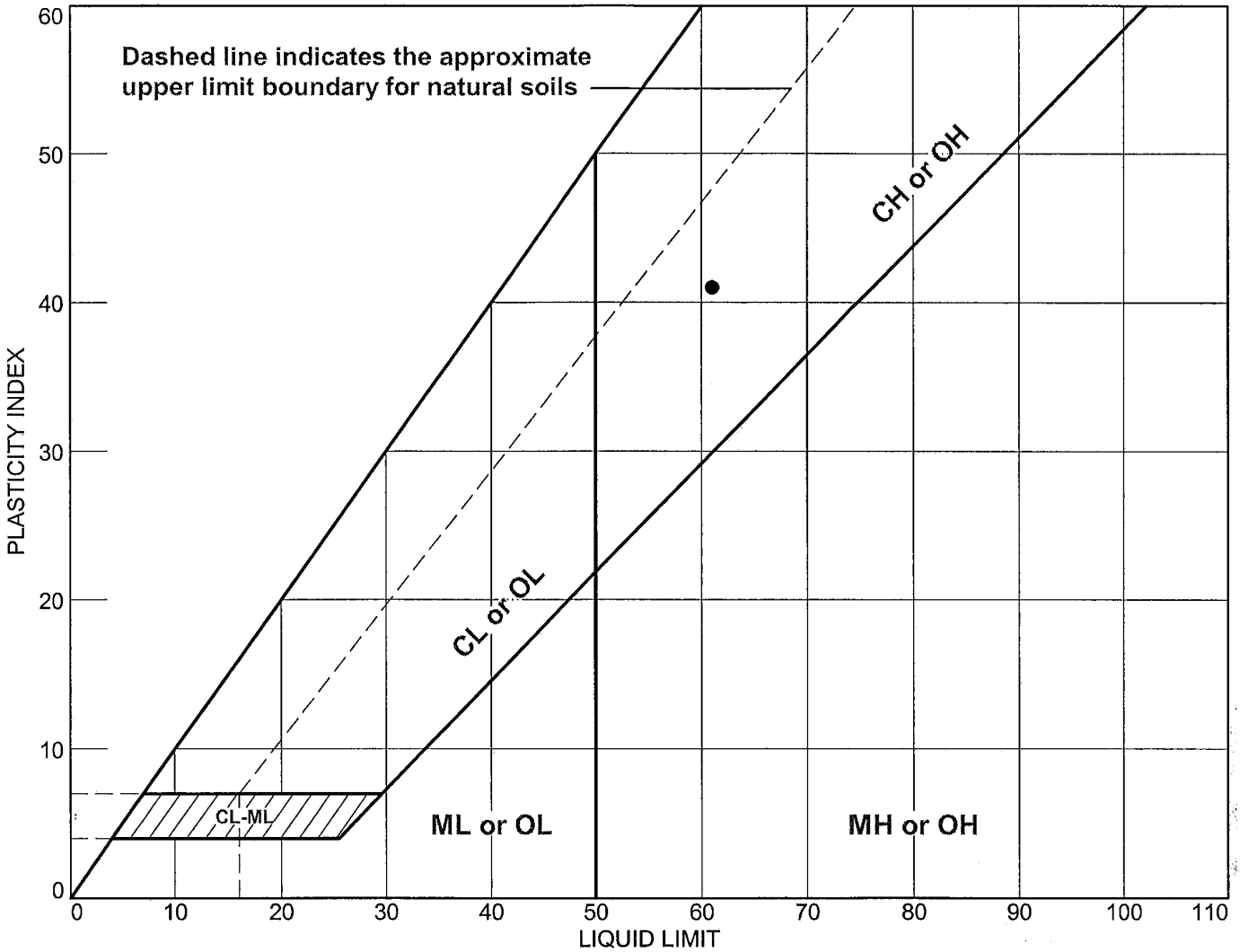
Run No.	1	2	3	4	
Wet+Tare	33.32	32.26			
Dry+Tare	30.00	29.23			
Tare	11.23	11.45			
Moisture	17.7	17.0			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
42.36	35.36	6.95	24.6

MACTEC Engineering and Consulting, Inc.

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-3229	SS-12	43.5-45.0'	22.7	20	61	41	CH(Visual)

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

Tested By: CS **Checked By:** LBJ DSC 5-4-09

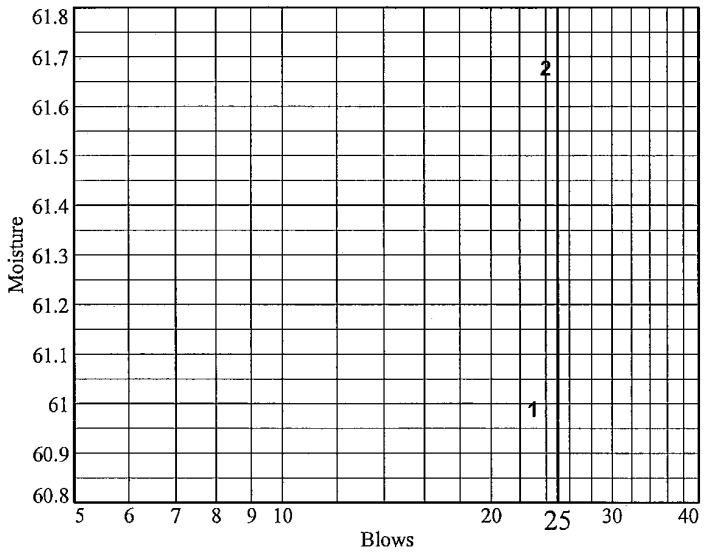
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3229
Depth: 43.5-45.0' **Sample Number:** SS-12
Material Description: Mottled Pale Brown and Reddish Yellow Fat CLAY (Visual)
USCS: CH(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	36.76	37.69				
Dry+Tare	28.63	27.55				
Tare	15.30	11.11				
# Blows	23	24				
Moisture	61.0	61.7				



Liquid Limit= 61
Plastic Limit= 20
Plasticity Index= 41
Natural Moisture= 22.7
Liquidity Index= 0.1

Plastic Limit Data

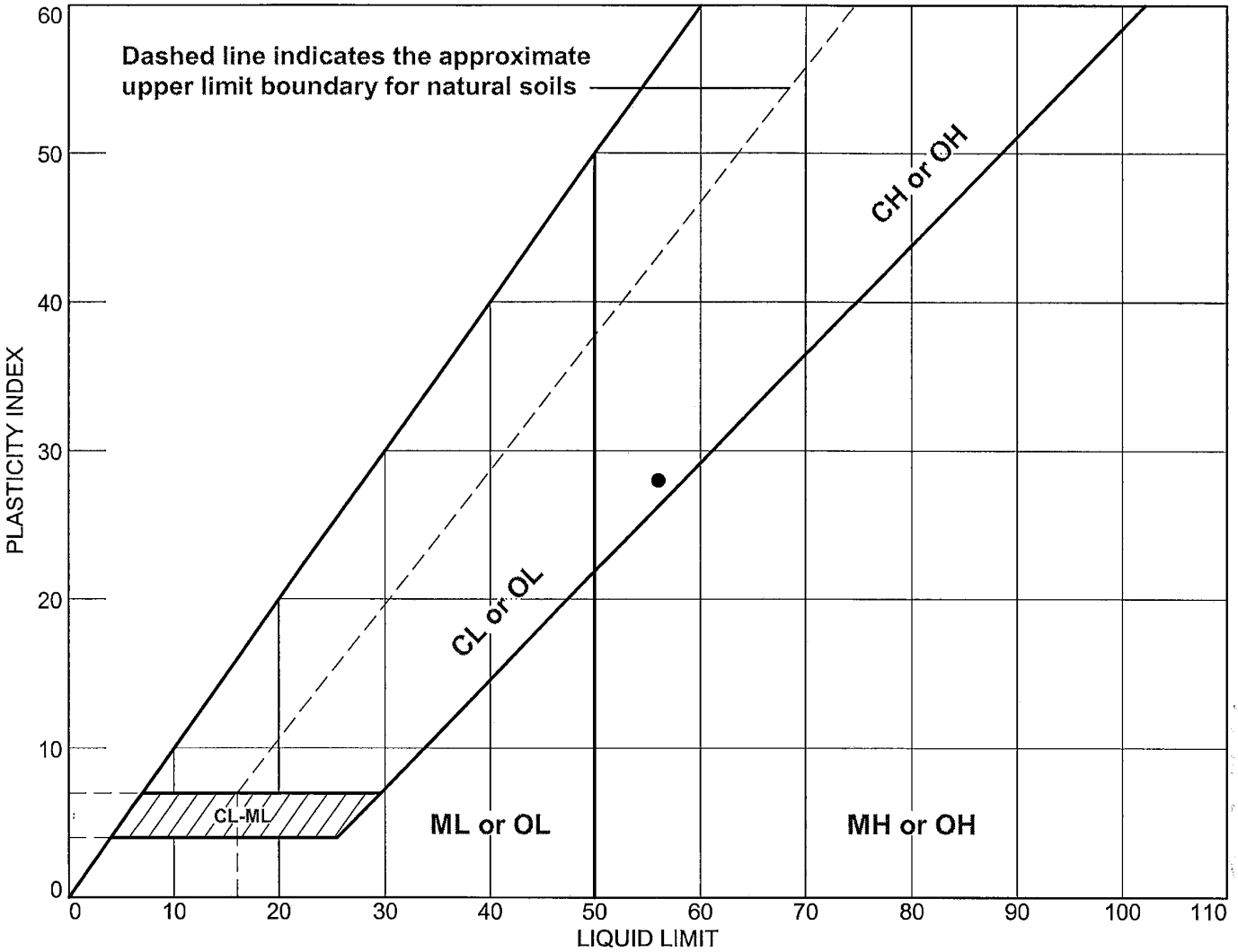
Run No.	1	2	3	4	
Wet+Tare	26.93	29.30			
Dry+Tare	25.02	27.00			
Tare	15.64	15.55			
Moisture	20.4	20.1			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
78.63	65.36	6.95	22.7

MACTEC Engineering and Consulting, Inc.

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-3229	SS-14	53.5-55.0'	22.0	28	56	28	CH(Visual)

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

Tested By: CS **Checked By:** LBJ DSC 5-4-09

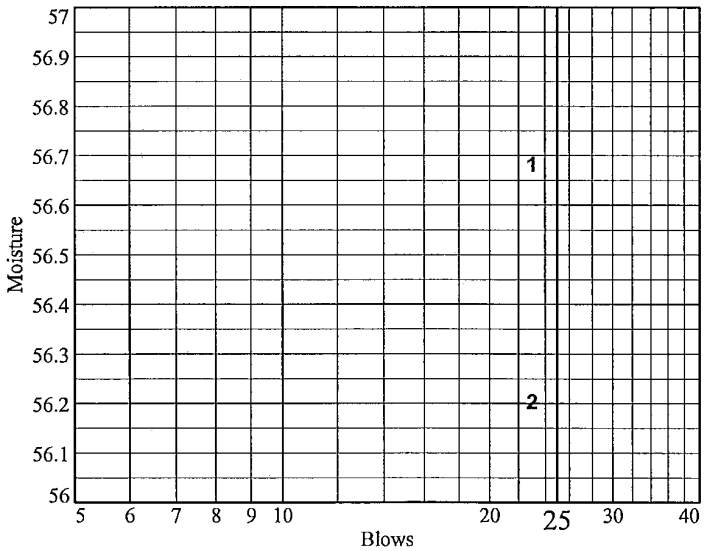
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3229
Depth: 53.5-55.0' **Sample Number:** SS-14
Material Description: Mottled Pale Brown and Reddish Yellow Fat CLAY (Visual)
USCS: CH(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	36.12	30.63				
Dry+Tare	27.13	23.61				
Tare	11.27	11.12				
# Blows	23	23				
Moisture	56.7	56.2				



Liquid Limit= 56
Plastic Limit= 28
Plasticity Index= 28
Natural Moisture= 22.0
Liquidity Index= -0.2

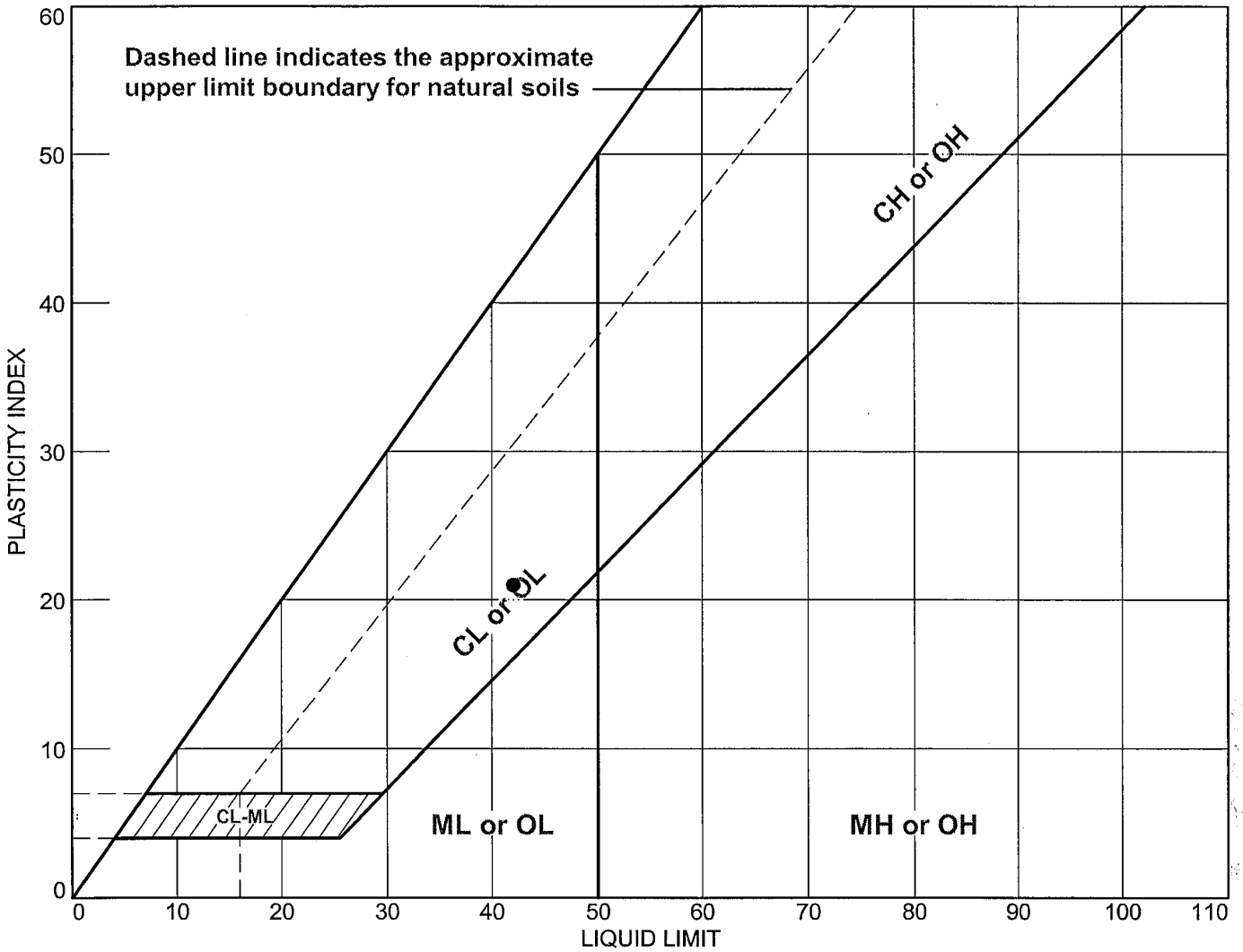
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.36	29.36			
Dry+Tare	19.93	26.39			
Tare	11.20	15.47			
Moisture	27.8	27.2			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
97.43	81.07	6.79	22.0

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-3229	SS-15	58.5-60.0	16.7	21	42	21	CL(Visual)

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

Tested By: CS **Checked By:** LBJ DSC 5-4-09

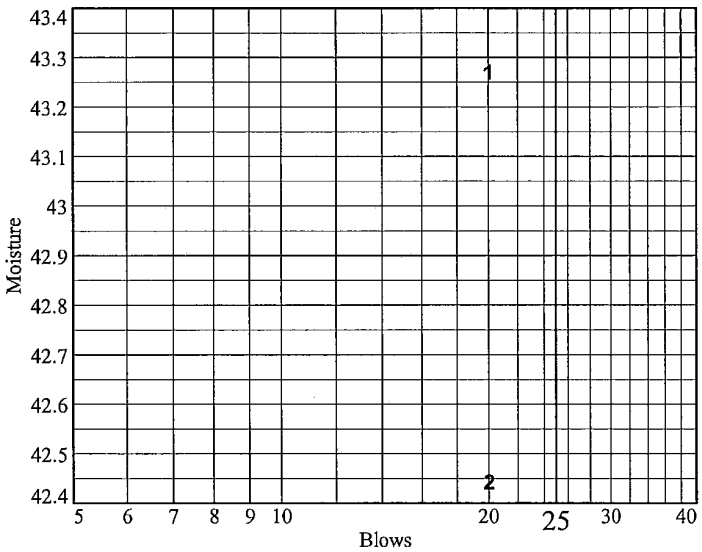
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3229
Depth: 58.5-60.0 **Sample Number:** SS-15
Material Description: Light Gray Sandy Lean CLAY (Visual)
USCS: CL(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.85	26.62				
Dry+Tare	24.12	23.39				
Tare	15.50	15.78				
# Blows	20	20				
Moisture	43.3	42.4				



Liquid Limit= 42
Plastic Limit= 21
Plasticity Index= 21
Natural Moisture= 16.7
Liquidity Index= -0.2

Plastic Limit Data

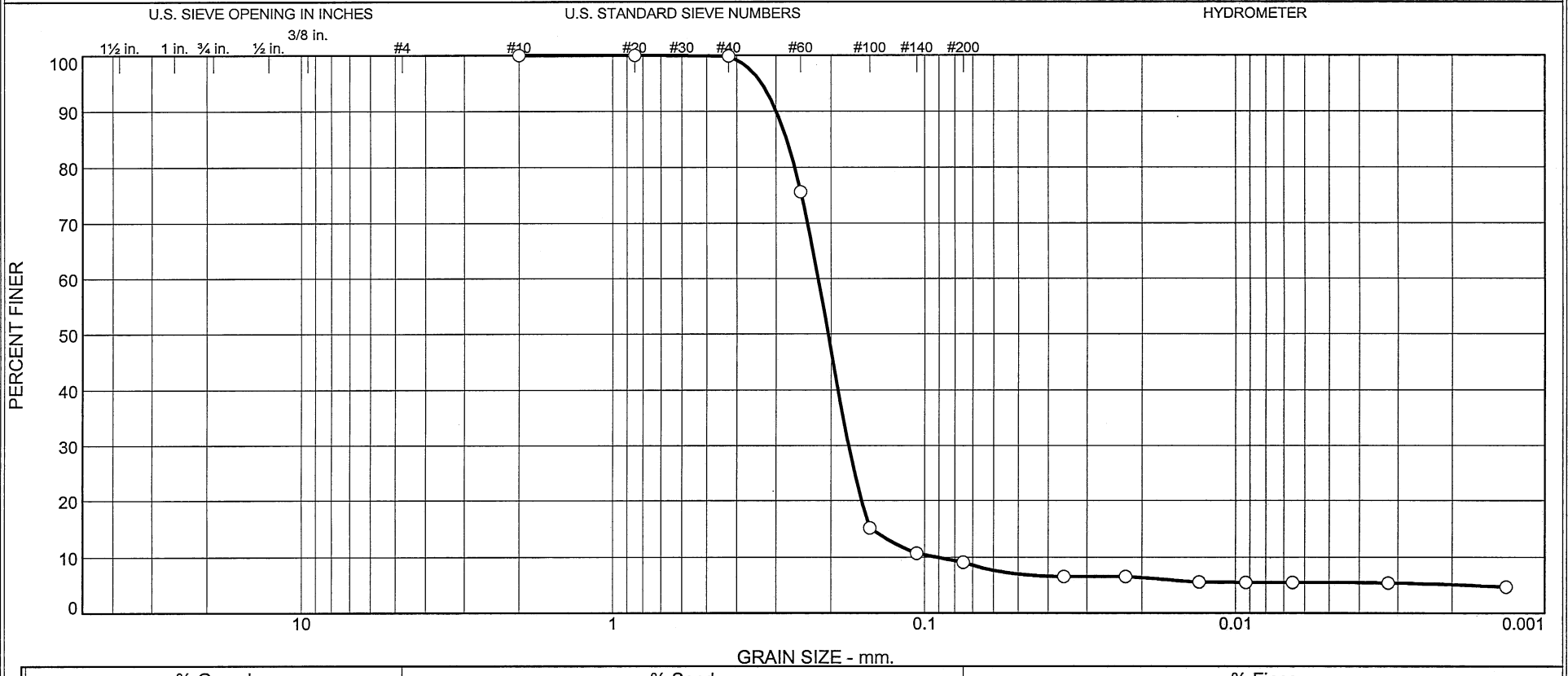
Run No.	1	2	3	4	
Wet+Tare	21.36	22.19			
Dry+Tare	20.28	21.01			
Tare	15.27	15.47			
Moisture	21.6	21.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
126.09	109.39	9.21	16.7

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	0.0	0.0	0.2	90.7	3.6	5.5

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3229	SS-17	68.5-70.0'	1/8/09	SP-SM(Visual)	Very Pale Brown Poorly graded SAND with Silt (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL Project - Supplemental

Investigation, including UHS

Project No. 6468071777 Figure N/A

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ ND = Not Determined
Specific Gravity is assumed
Sieve and Hydrometer Analysis Only

Tested By: CS **Checked By:** LBJ DJC 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-3229
Depth: 68.5-70.0' **Sample Number:** SS-17
Material Description: Very Pale Brown Poorly graded SAND with Silt (Visual)
Date: 1/8/09 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SP-SM(Visual)
Testing Remarks: ND = Not Determined
Specific Gravity is assumed
Sieve and Hydrometer Analysis Only
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
246.15	0.00	0.00	#10	0.00	100.0
101.09	0.00	0.00	#20	0.00	100.0
			#40	0.18	99.8
			#60	24.66	75.6
			#100	85.74	15.2
			#140	90.26	10.7
			#200	91.89	9.1

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =101.09
Hygroscopic moisture correction:
Moist weight and tare = 28.07
Dry weight and tare = 28.05
Tare weight = 15.78
Hygroscopic moisture = 0.2%
Table of composite correction values:

Temp., deg. C:	11.0	28.7
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.4	12.0	6.7	0.0134	13.0	14.2	0.0356	6.5
5.00	20.4	12.0	6.7	0.0134	13.0	14.2	0.0225	6.5
15.00	20.4	11.0	5.7	0.0134	12.0	14.3	0.0131	5.5
30.00	20.2	11.0	5.6	0.0134	12.0	14.3	0.0093	5.5
60.00	20.2	11.0	5.6	0.0134	12.0	14.3	0.0066	5.5
250.00	19.8	11.0	5.5	0.0135	12.0	14.3	0.0032	5.4
1440.00	20.8	10.0	4.8	0.0133	11.0	14.5	0.0013	4.7

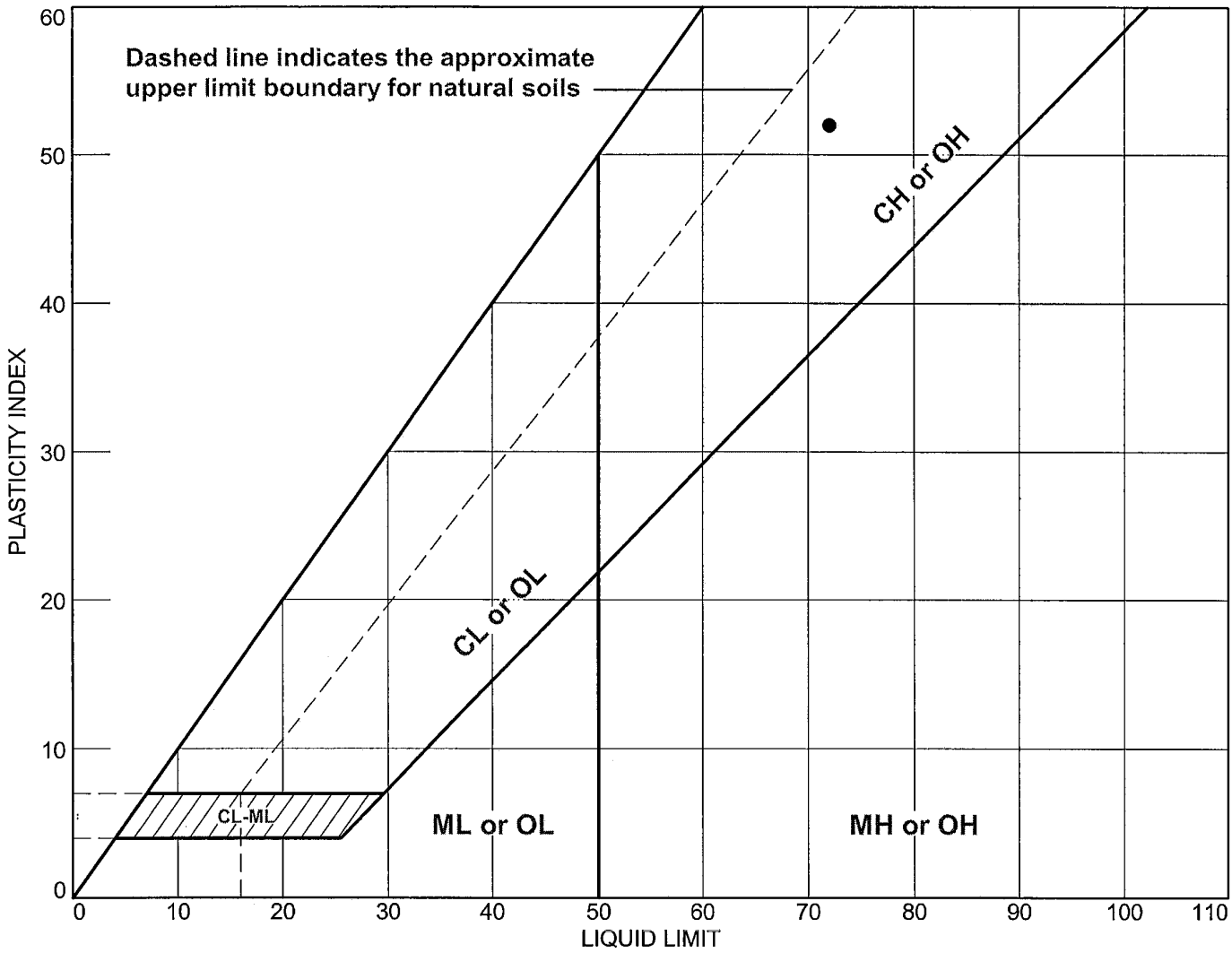
Fractional Components

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	90.7	90.9	3.6	5.5	9.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0916	0.1484	0.1596	0.1754	0.2043	0.2199	0.2614	0.2775	0.2994	0.3342

Fineness Modulus	C_u	C_c
0.95	2.40	1.53

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-3229	SS-18	73.5-75.0'	24.4	20	72	52	CH(Visual)

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

Tested By: CS **Checked By:** LBJ DSC 5-4-09

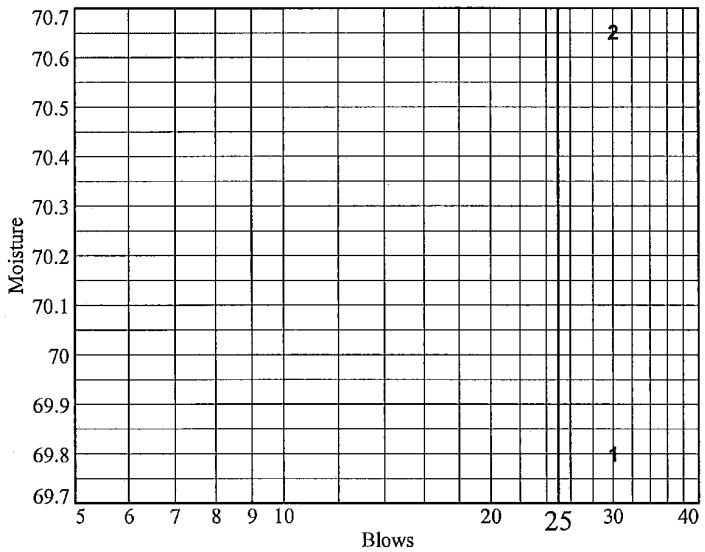
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3229
Depth: 73.5-75.0' **Sample Number:** SS-18
Material Description: Mottled Pale Brown and Reddish Yellow Fat CLAY (Visual)
USCS: CH(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	29.94	28.09				
Dry+Tare	24.00	22.89				
Tare	15.49	15.53				
# Blows	30	30				
Moisture	69.8	70.7				



Liquid Limit= 72
Plastic Limit= 20
Plasticity Index= 52
Natural Moisture= 24.4
Liquidity Index= 0.1

Plastic Limit Data

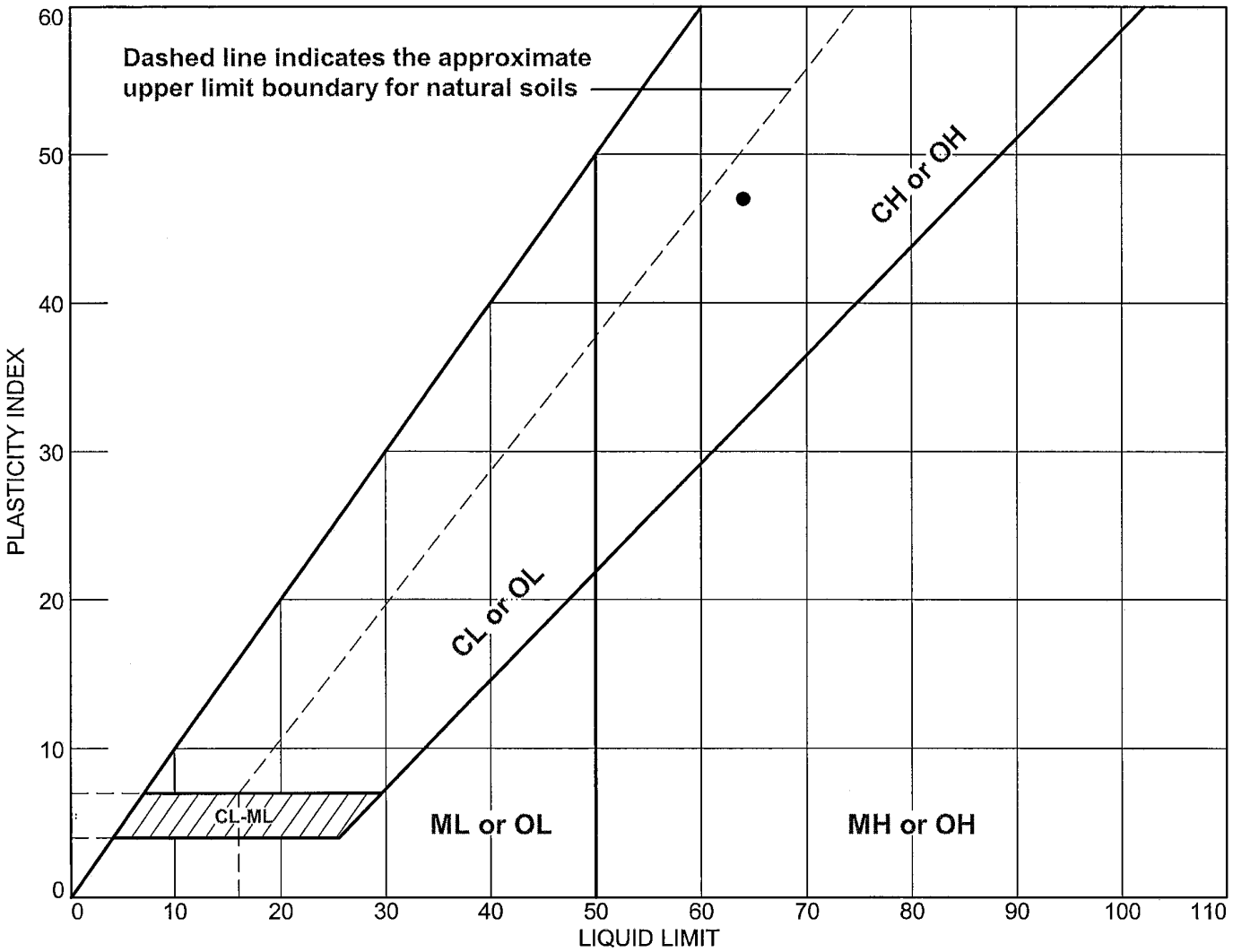
Run No.	1	2	3	4	
Wet+Tare	21.88	17.88			
Dry+Tare	20.78	16.76			
Tare	15.42	11.18			
Moisture	20.5	20.1			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
142.63	116.02	6.91	24.4

MACTEC Engineering and Consulting, Inc.

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-3229	SS-20	83.5-85.0	24.0	17	64	47	CH(Visual)

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

Tested By: CS **Checked By:** LBJ DSC 5-4-09

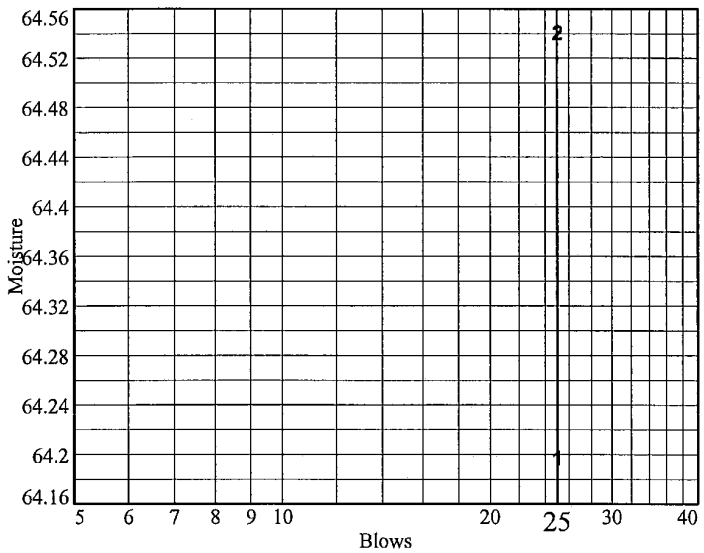
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3229
Depth: 83.5-85.0 **Sample Number:** SS-20
Material Description: Mottled Pale Brown and Reddish Yellow Fat CLAY (Visual)
USCS: CH(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.93	26.01				
Dry+Tare	23.25	21.86				
Tare	15.96	15.43				
# Blows	25	25				
Moisture	64.2	64.5				



Liquid Limit= 64
Plastic Limit= 17
Plasticity Index= 47
Natural Moisture= 24.0
Liquidity Index= 0.1

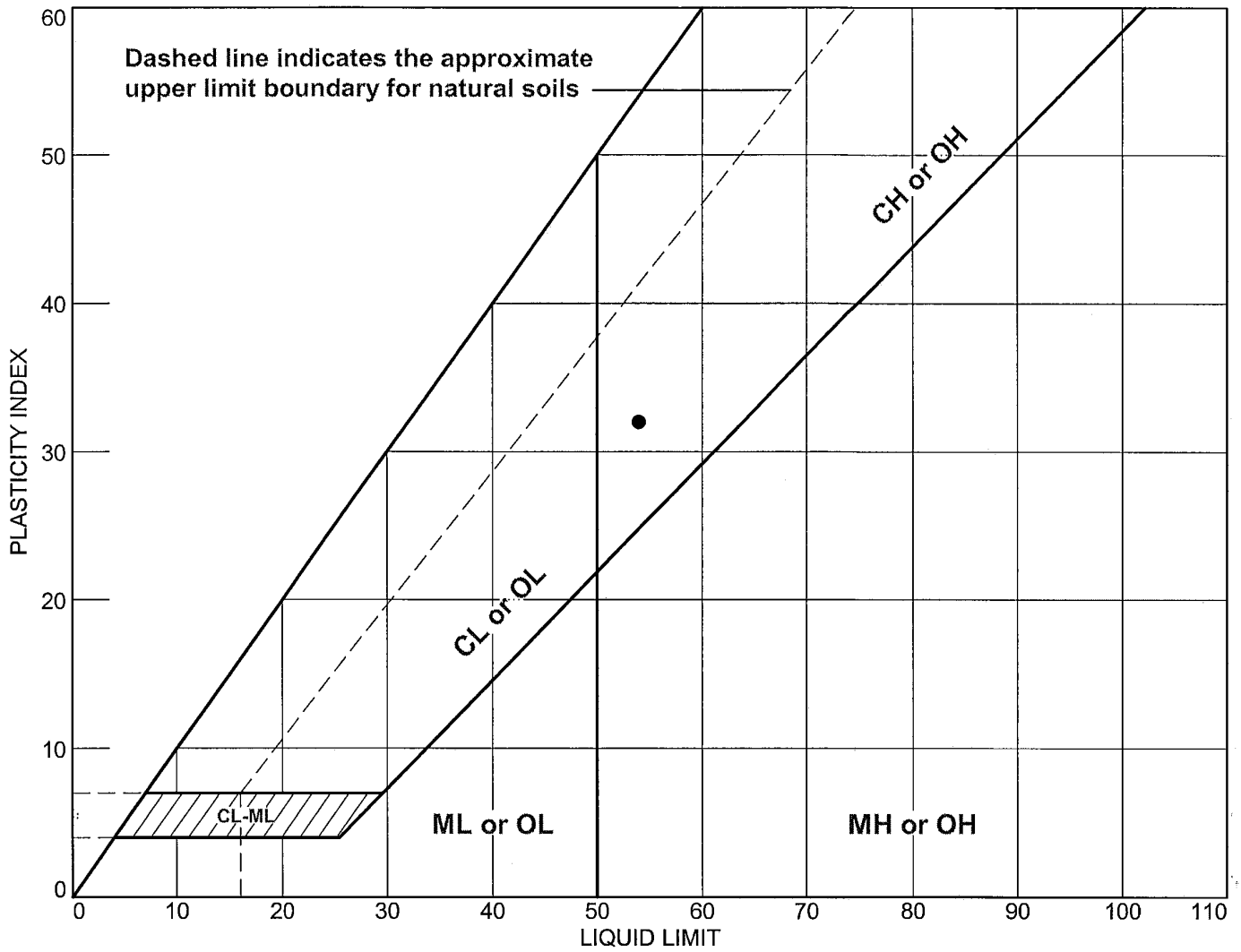
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.92	22.91			
Dry+Tare	21.86	21.83			
Tare	15.48	15.52			
Moisture	16.6	17.1			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
116.14	94.99	6.87	24.0

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-3229	SS-22A	93.5-94.6'	18.8	22	54	32	SC(Visual)

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

Tested By: CS **Checked By:** LBJ DSC 5-4-09

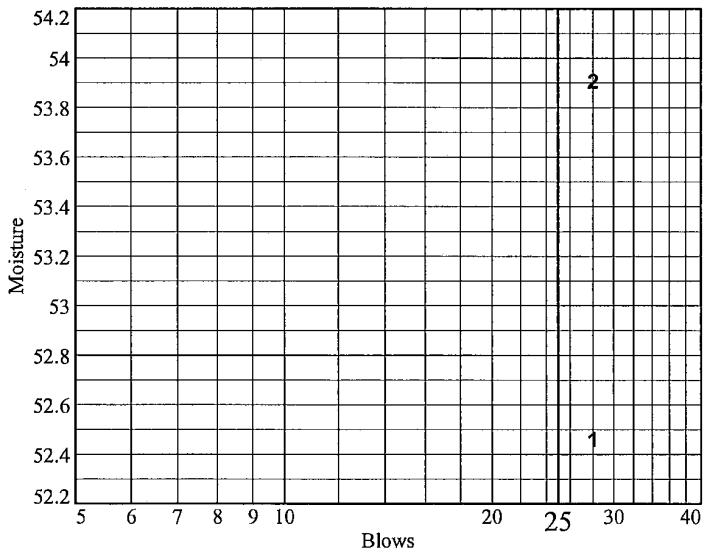
LIQUID AND PLASTIC LIMIT TEST DATA

5/4/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3229
Depth: 93.5-94.6' **Sample Number:** SS-22A
Material Description: Light Gray Clayey SAND (Visual)
USCS: SC(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	29.74	30.70				
Dry+Tare	24.84	25.46				
Tare	15.50	15.74				
# Blows	28	28				
Moisture	52.5	53.9				



Liquid Limit= 54
Plastic Limit= 22
Plasticity Index= 32
Natural Moisture= 18.8
Liquidity Index= -0.1

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	36.23	39.63			
Dry+Tare	32.53	35.36			
Tare	15.59	15.51			
Moisture	21.8	21.5			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
93.76	79.98	6.75	18.8

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	51.1	33.9	8.5	6.5

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3229	SS-23	98.5-100.0'	1/9/09	SM(Visual)	Yellow Silty SAND (Visual)	15.3	ND	ND

Client Bechtel	**MACTEC Engineering and Consulting, Inc.**	○ ND = Not Determined Organic Content = 0.3% as per ASTM D2974-07 Specific Gravity is assumed Sieve and Hydrometer Analysis Only
Project Exelon Texas COL Project - Supplemental		
Investigation, including UHS		
Project No. 6468071777 Figure N/A	**Raleigh, North Carolina**	

Tested By: CS **Checked By:** LBJ 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-3229
Depth: 98.5-100.0' **Sample Number:** SS-23
Material Description: Yellow Silty SAND (Visual)
Date: 1/9/09 **Natural Moisture:** 15.3
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SM(Visual)
Testing Remarks: ND = Not Determined
Organic Content = 0.3% as per ASTM D2974-07
Specific Gravity is assumed
Sieve and Hydrometer Analysis Only
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
218.92	0.00	0.00	#10	0.00	100.0
100.42	0.00	0.00	#20	13.84	86.2
			#40	51.29	48.9
			#60	71.09	29.2
			#100	79.21	21.1
			#140	83.01	17.3
			#200	85.35	15.0

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample = 100.41
Hygroscopic moisture correction:
Moist weight and tare = 34.35
Dry weight and tare = 34.30
Tare weight = 20.59
Hygroscopic moisture = 0.4%
Table of composite correction values:

Temp., deg. C:	11.0	28.7
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.3	13.0	7.6	0.0134	14.0	14.0	0.0354	7.5
5.00	20.3	12.5	7.1	0.0134	13.5	14.1	0.0225	7.0
15.00	20.4	12.0	6.7	0.0134	13.0	14.2	0.0130	6.6
30.00	20.4	12.0	6.7	0.0134	13.0	14.2	0.0092	6.6
60.00	20.4	12.0	6.7	0.0134	13.0	14.2	0.0065	6.6
250.00	20.6	11.5	6.2	0.0133	12.5	14.2	0.0032	6.1
1440.00	20.8	11.0	5.8	0.0133	12.0	14.3	0.0013	5.7

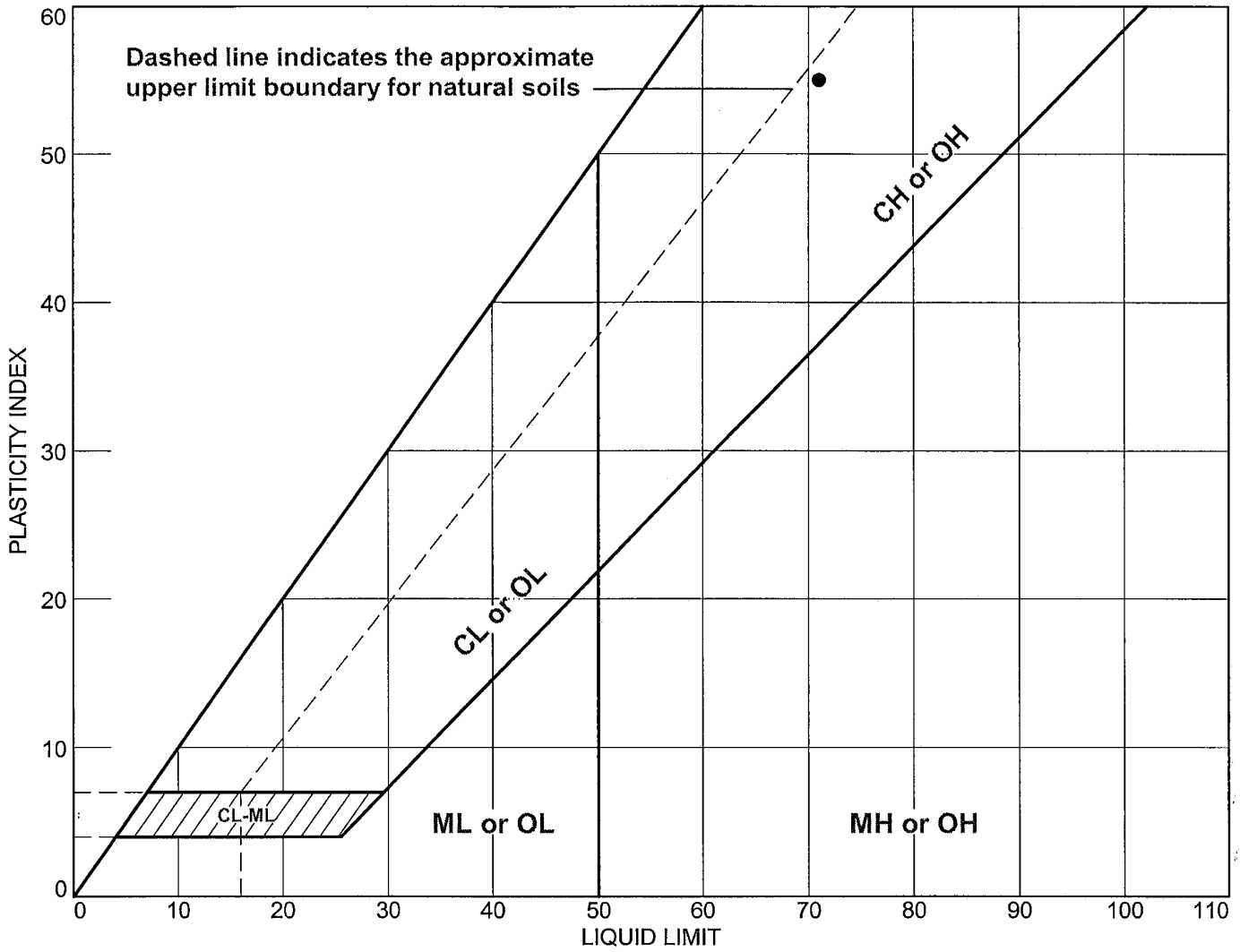
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	51.1	33.9	85.0	8.5	6.5	15.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0472	0.0749	0.1367	0.2582	0.4340	0.5195	0.7416	0.8255	0.9438	1.1501

Fineness Modulus	C_u	C_c
1.81	11.01	2.72

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-3229	SS-24	108.5-110.0	25.9	16	71	55	CH(Visual)

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

Tested By: CS **Checked By:** LBJ DSC 5-4-09

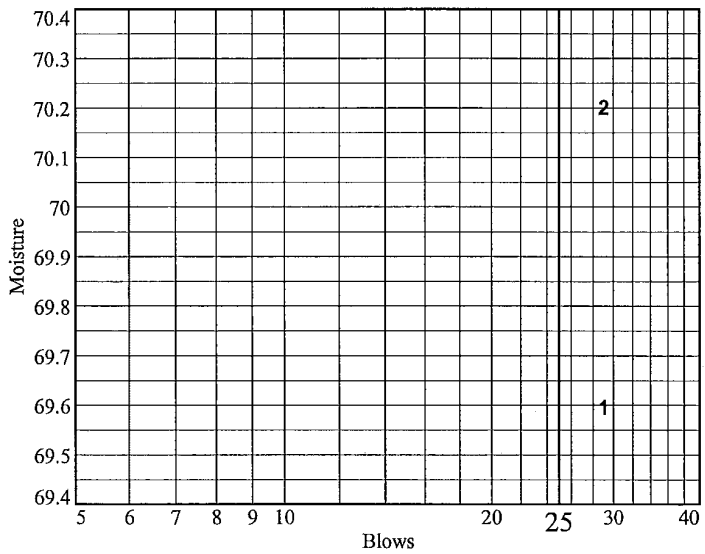
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3229
Depth: 108.5-110.0 **Sample Number:** SS-24
Material Description: Mottled Light Gray and Reddish Yellow Fat CLAY (Visual)
USCS: CH(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.01	25.69				
Dry+Tare	22.34	21.52				
Tare	15.63	15.58				
# Blows	29	29				
Moisture	69.6	70.2				



Liquid Limit= 71
Plastic Limit= 16
Plasticity Index= 55
Natural Moisture= 25.9
Liquidity Index= 0.2

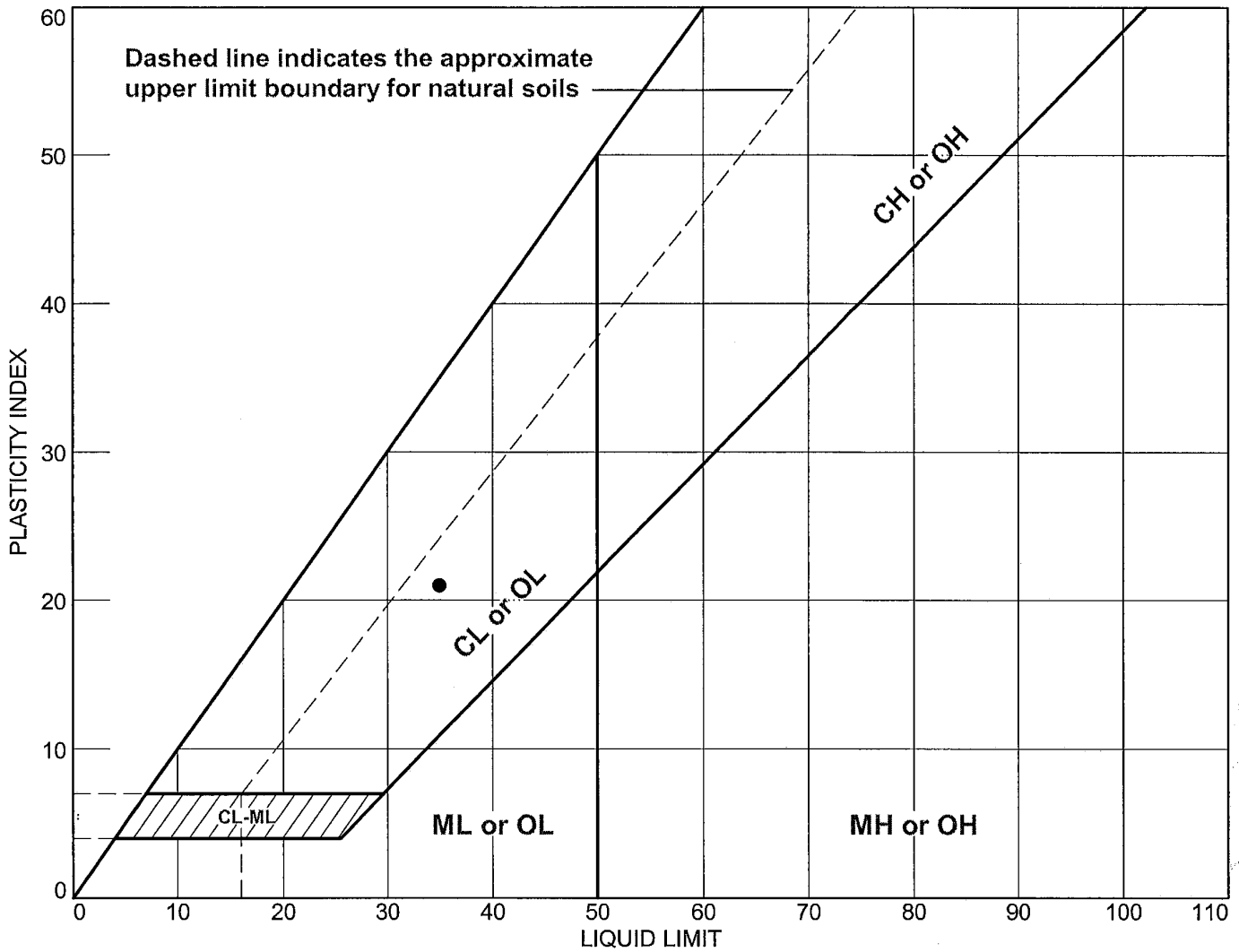
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	16.54	22.66			
Dry+Tare	15.86	21.66			
Tare	11.42	15.54			
Moisture	15.3	16.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
89.02	72.14	6.91	25.9

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-3229	SS-26	128.5-130.0'	19.7	14	35	21	CL(Visual)

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

Client: Bechtel

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

Project No.: 6468071777 **Figure** N/A

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

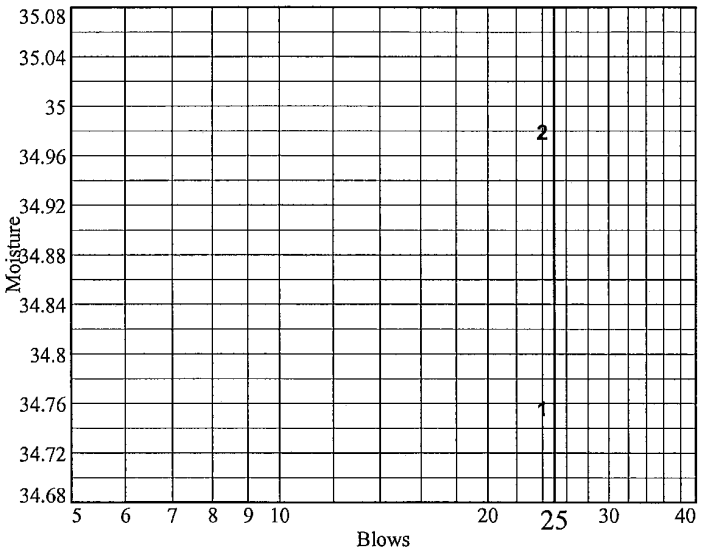
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3229
Depth: 128.5-130.0' **Sample Number:** SS-26
Material Description: Mottled Light Gray and Reddish Yellow Lean CLAY with sand (Visual)
USCS: CL(Visual) **AASHTO:** ND
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	28.70	25.61				
Dry+Tare	25.28	23.06				
Tare	15.44	15.77				
# Blows	24	24				
Moisture	34.8	35.0				



Liquid Limit= 35
Plastic Limit= 14
Plasticity Index= 21
Natural Moisture= 19.7
Liquidity Index= 0.3

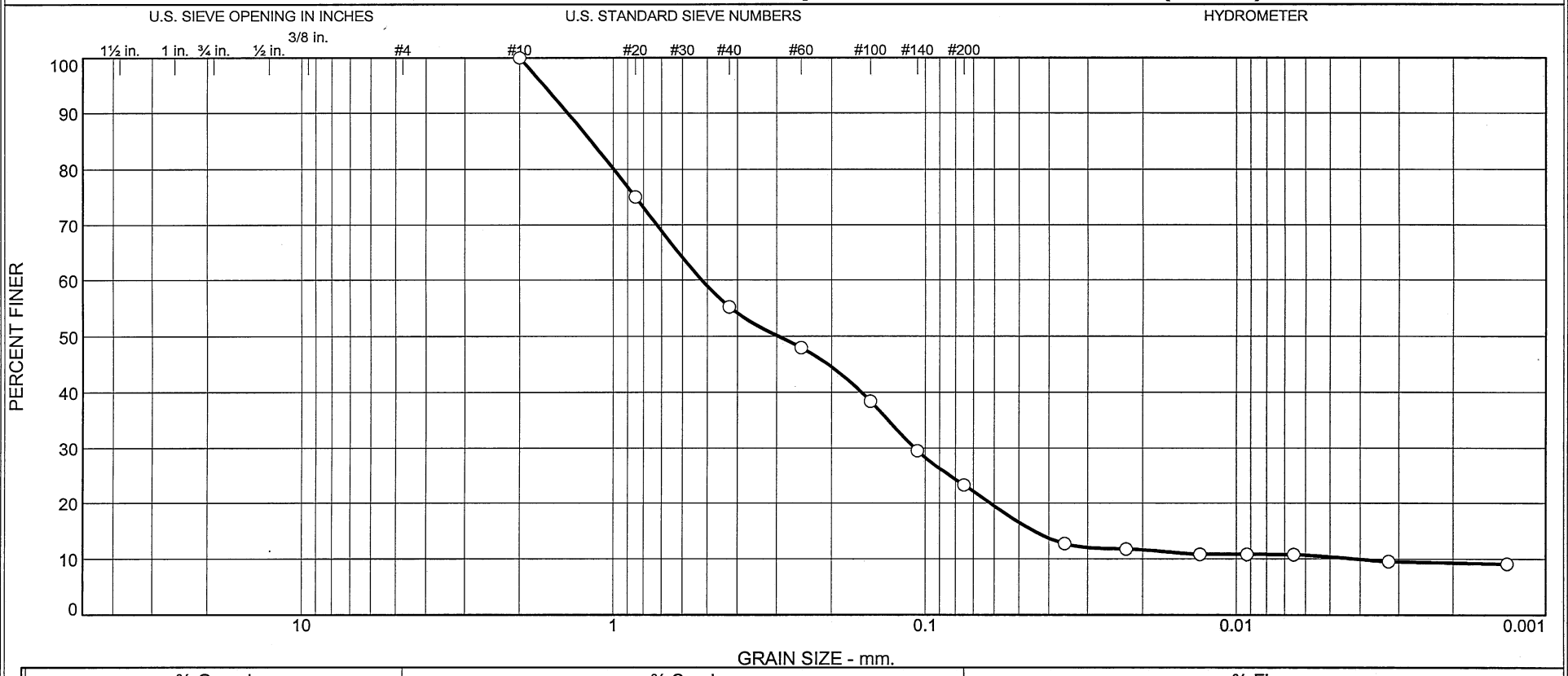
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	24.74	26.98			
Dry+Tare	23.63	25.13			
Tare	15.53	11.36			
Moisture	13.7	13.4			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
105.01	88.89	7.06	19.7

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	44.8	31.9	13.0	10.3

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3229	SS-27	138.5-140.0'	1/9/09	SM(Visual)	Yellow Silty SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure N/A

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ ND = Not Determined
Specific Gravity is assumed
Sieve and Hydrometer Analysis Only

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-3229
Depth: 138.5-140.0' **Sample Number:** SS-27
Material Description: Yellow Silty SAND (Visual)
Date: 1/9/09 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SM(Visual)
Testing Remarks: ND = Not Determined
Specific Gravity is assumed
Sieve and Hydrometer Analysis Only
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
251.24	0.00	0.00	#10	0.00	100.0
52.13	0.00	0.00	#20	13.00	75.1
			#40	23.36	55.2
			#60	27.13	48.0
			#100	32.12	38.4
			#140	36.75	29.5
			#200	40.00	23.3

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =52.13
Hygroscopic moisture correction:
Moist weight and tare = 28.09
Dry weight and tare = 28.03
Tare weight = 15.60
Hygroscopic moisture = 0.5%
Table of composite correction values:

Temp., deg. C:	11.0	28.7
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.4	12.0	6.7	0.0134	13.0	14.2	0.0356	12.7
5.00	20.4	11.5	6.2	0.0134	12.5	14.2	0.0226	11.7
15.00	20.4	11.0	5.7	0.0134	12.0	14.3	0.0131	10.8
30.00	20.4	11.0	5.7	0.0134	12.0	14.3	0.0092	10.8
60.00	20.3	11.0	5.6	0.0134	12.0	14.3	0.0065	10.7
250.00	19.8	10.5	5.0	0.0135	11.5	14.4	0.0032	9.5
1440.00	20.8	10.0	4.8	0.0133	11.0	14.5	0.0013	9.1

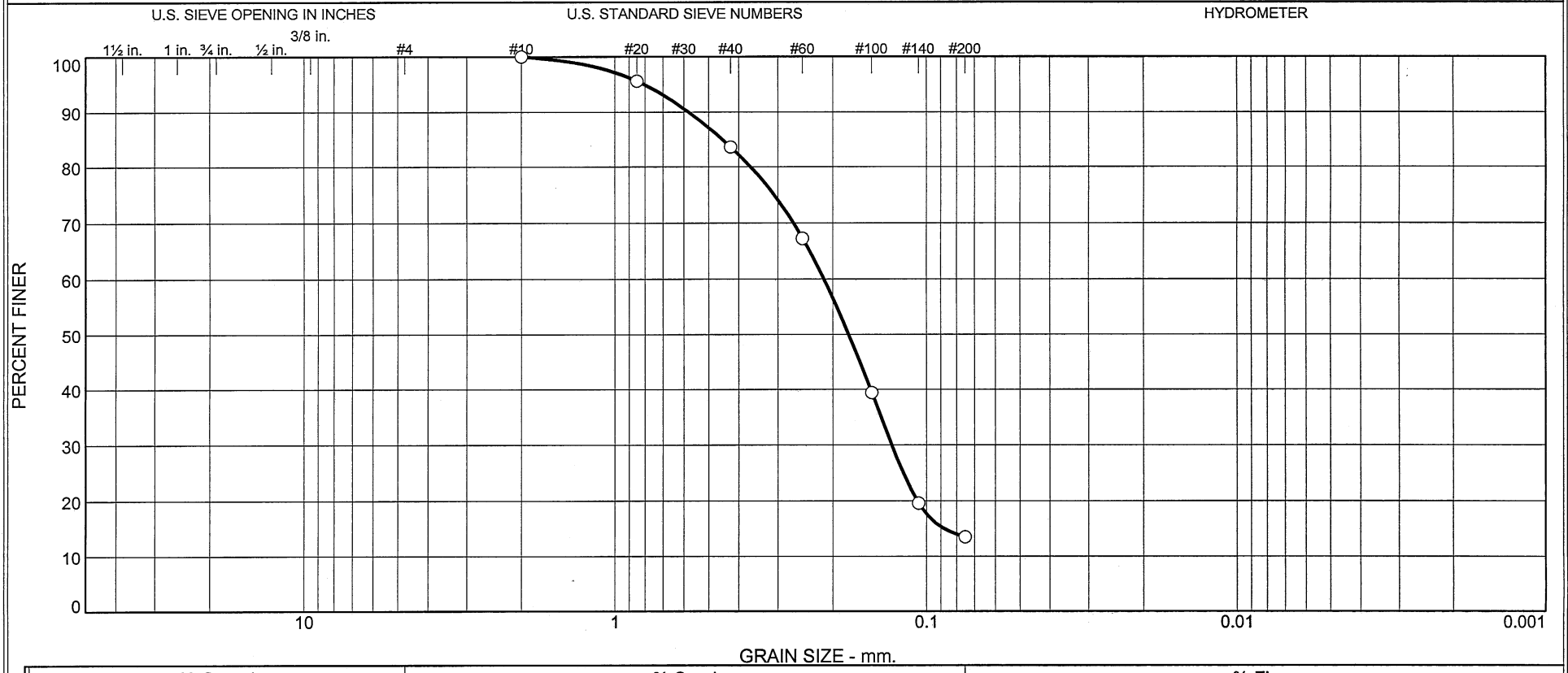
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	44.8	31.9	76.7	13.0	10.3	23.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0042	0.0448	0.0618	0.1083	0.2959	0.5213	0.9967	1.1786	1.4012	1.6723

Fineness Modulus	C_u	C_c
1.62	123.38	5.33

Particle Size Distribution Report ASTM D 6913-04e2



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	16	70	14	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3229	SS-28	148.5-148.9'	1/09/09	SM(Visual)	Pale Yellow Silty SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL Project - Supplemental

Investigation, including UHS

Project No. 6468071777 Figure N/A

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ ND = Not Determined
Sieve Analysis Only

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-3229
Depth: 148.5-148.9' **Sample Number:** SS-28
Material Description: Pale Yellow Silty SAND (Visual)
Date: 1/09/09 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SM(Visual)
Testing Remarks: ND = Not Determined
Sieve Analysis Only
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
245.10	0.00	0.00	#10	0.00	100
95.01	0.00	0.00	#20	4.16	96
			#40	15.63	84
			#60	31.10	67
			#100	57.56	39
			#140	76.39	20
			#200	82.13	14

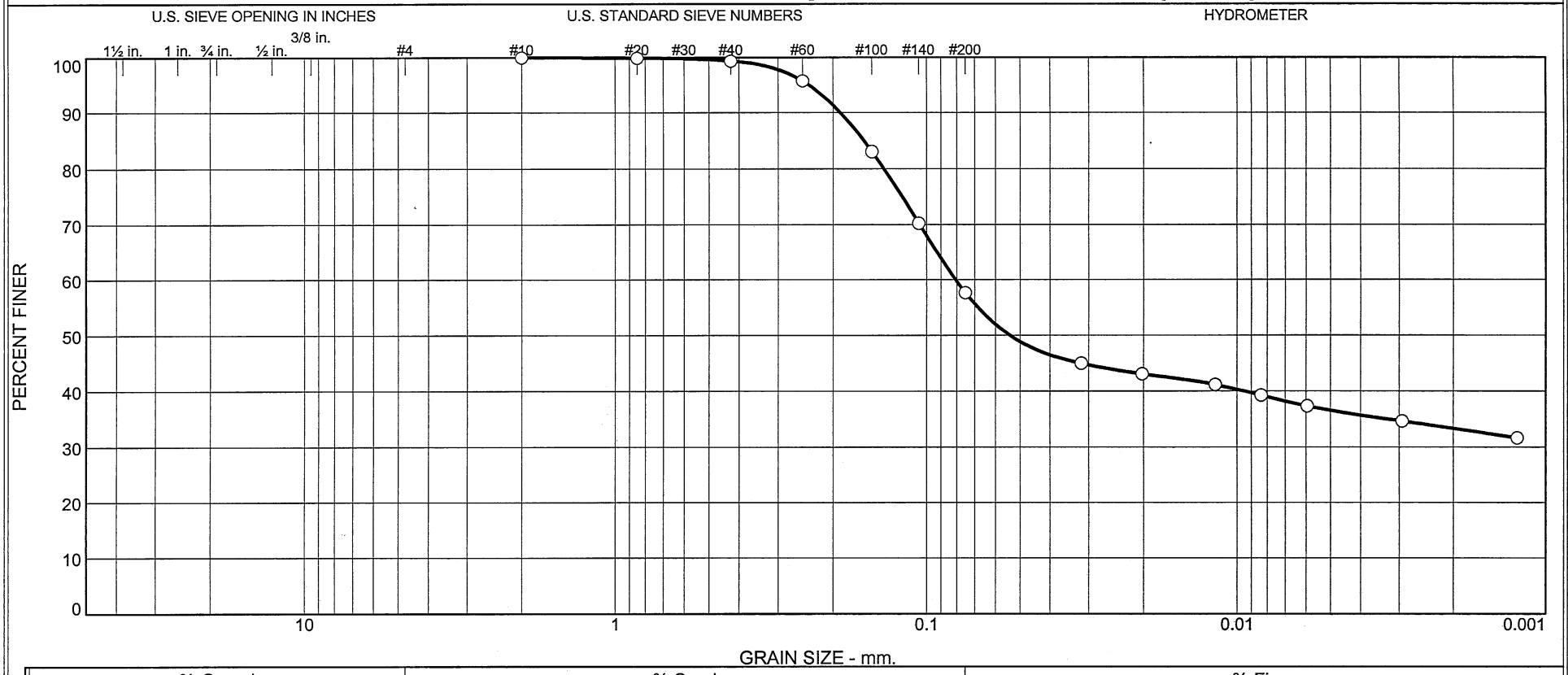
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	0	0	0	16	70	86			14

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0876	0.1071	0.1295	0.1782	0.2139	0.3674	0.4532	0.5803	0.8055

Fineness Modulus
0.98

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	41.7	21.1	36.5

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3270A	SS-1	0.0-1.5'	2/23/09	CL	Dark Gray Sandy Lean CLAY	19.9	33	15

Client Bechtel

Project Exelon Texas COL Project - Supplemental

Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed
Organic content = 2.0% Per ASTM D2974-07a

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: 0.0-1.5' **Sample Number:** SS-1
Material Description: Dark Gray Sandy Lean CLAY
Date: 2/23/09 **Natural Moisture:** 19.9
Liquid Limit: 33 **Plastic Limit:** 15 **USCS Class.:** CL
Testing Remarks: Specific Gravity is assumed
Organic content = 2.0% Per ASTM D2974-07a
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
212.37	0.00	0.00	#10	0.00	100.0
52.62	0.00	0.00	#20	0.05	99.9
			#40	0.35	99.3
			#60	2.25	95.7
			#100	8.95	83.0
			#140	15.67	70.2
			#200	22.32	57.6

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =52.61
Hygroscopic moisture correction:
Moist weight and tare = 28.41
Dry weight and tare = 28.19
Tare weight = 15.41
Hygroscopic moisture = 1.7%
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 **x Rm**

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	45.0
5.00	21.0	28.0	22.5	0.0133	29.0	11.5	0.0202	43.1
15.00	21.0	27.0	21.5	0.0133	28.0	11.7	0.0117	41.2
30.00	21.0	26.0	20.5	0.0133	27.0	11.9	0.0084	39.3
60.00	21.0	25.0	19.5	0.0133	26.0	12.0	0.0059	37.3
250.00	21.3	23.5	18.1	0.0132	24.5	12.3	0.0029	34.6
1441.00	21.0	22.0	16.5	0.0133	23.0	12.5	0.0012	31.6

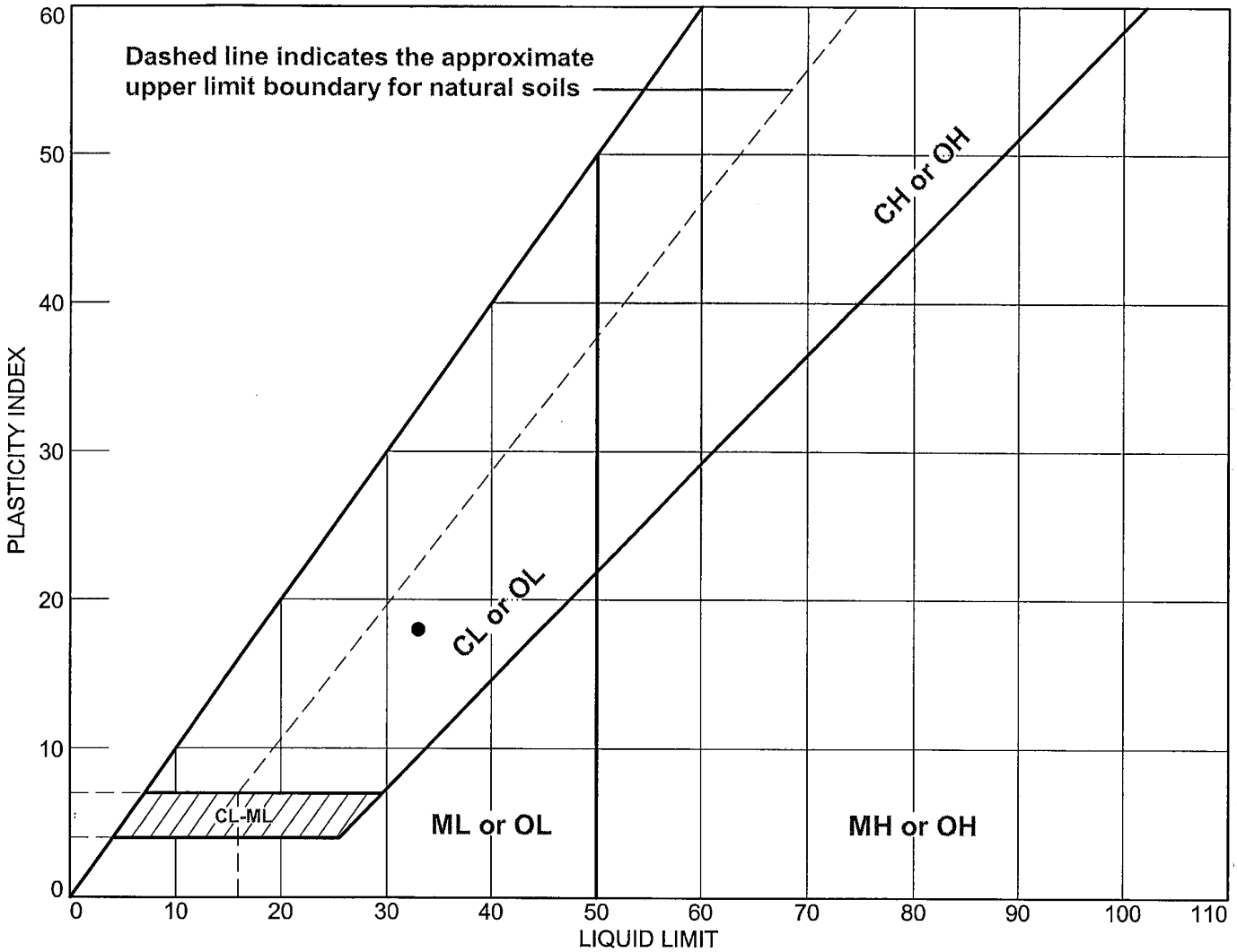
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.7	41.7	42.4	21.1	36.5	57.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0539	0.0808	0.1375	0.1596	0.1897	0.2390

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-1	0.0-1.5'	19.9	15	33	18	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

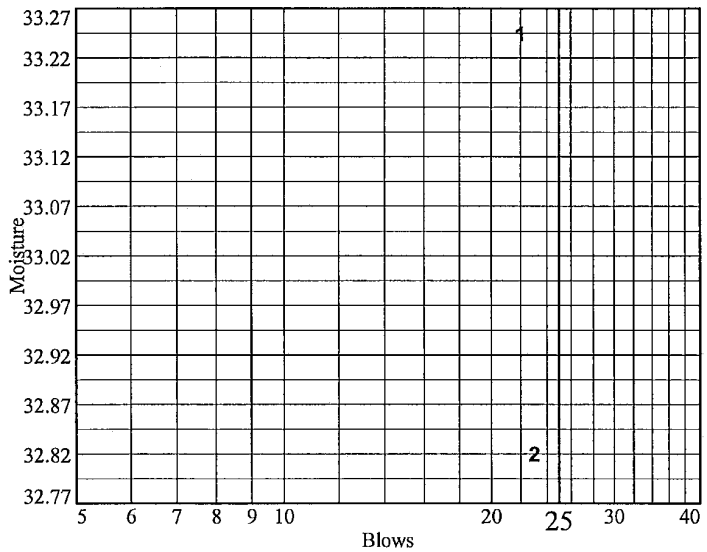
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3270A
Depth: 0.0-1.5' **Sample Number:** SS-1
Material Description: Dark 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	25.57	25.99				
Dry+Tare	23.06	23.43				
Tare	15.51	15.63				
# Blows	22	23				
Moisture	33.2	32.8				



Liquid Limit= 33
Plastic Limit= 15
Plasticity Index= 18
Natural Moisture= 19.9
Liquidity Index= 0.3

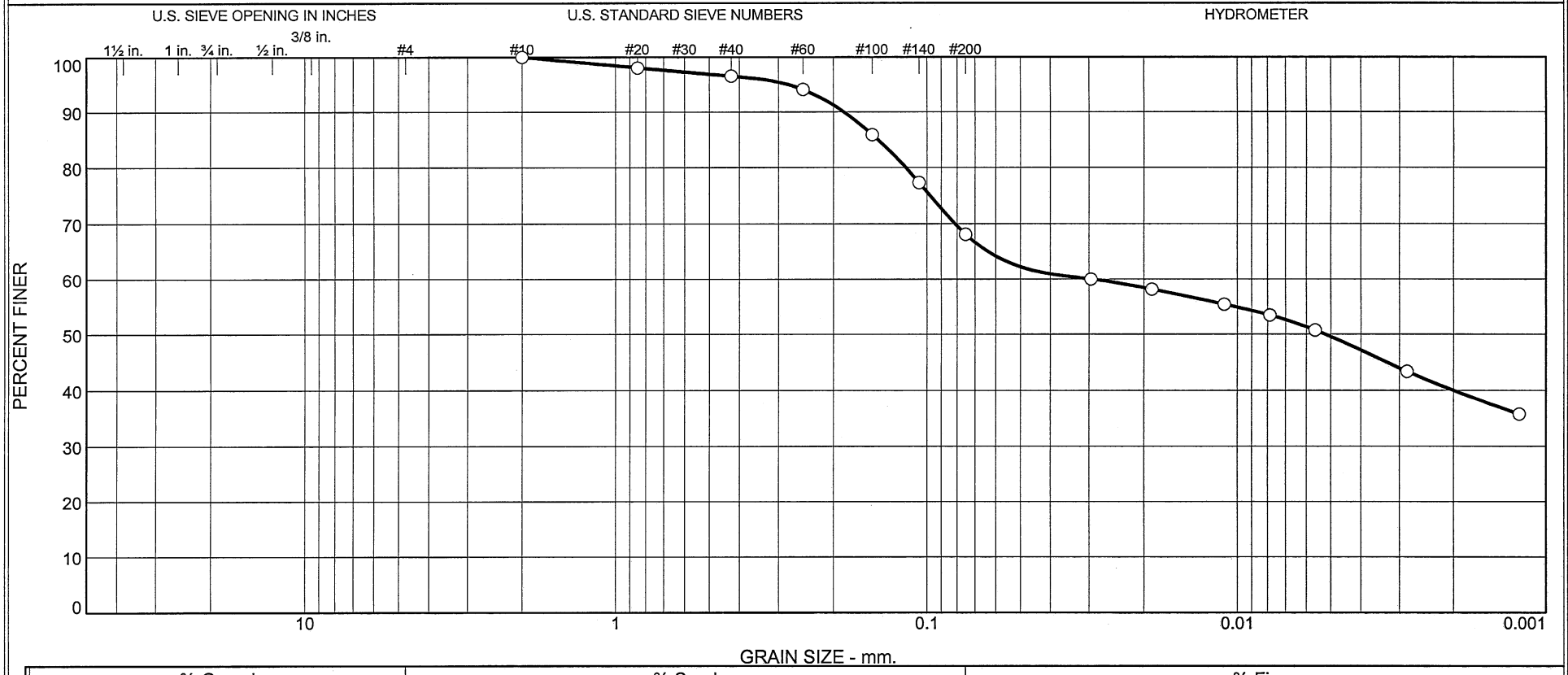
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.63	22.10			
Dry+Tare	20.83	21.30			
Tare	15.47	15.72			
Moisture	14.9	14.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
131.54	110.82	6.90	19.9

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	3.5	28.4	18.5	49.6

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3270A	SS-2	3.9-5.4'	2/23/09	CL	Light Yellowish Brown Sandy Lean CLAY	28.0	40	20

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed
Oganic content = 1.0% Per ASTM D2974-07a

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: 3.9-5.4' **Sample Number:** SS-2
Material Description: Light Yellowish Brown Sandy Lean CLAY
Date: 2/23/09 **Natural Moisture:** 28.0
Liquid Limit: 40 **Plastic Limit:** 20 **USCS Class.:** CL
Testing Remarks: Specific Gravity is assumed
Oganic content = 1.0% Per ASTM D2974-07a
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
273.21	0.00	0.00	#10	0.00	100.0
54.64	0.00	0.00	#20	1.08	98.0
			#40	1.90	96.5
			#60	3.23	94.1
			#100	7.72	85.9
			#140	12.40	77.3
			#200	17.43	68.1

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =54.64
Hygroscopic moisture correction:
Moist weight and tare = 23.75
Dry weight and tare = 23.52
Tare weight = 11.21
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.0	38.0	32.5	0.0133	39.0	9.9	0.0295	60.0
5.00	21.0	37.0	31.5	0.0133	38.0	10.1	0.0188	58.1
15.00	21.0	35.5	30.0	0.0133	36.5	10.3	0.0110	55.4
30.00	20.8	34.5	29.0	0.0133	35.5	10.5	0.0079	53.4
60.00	20.9	33.0	27.5	0.0133	34.0	10.7	0.0056	50.7
250.00	21.0	29.0	23.5	0.0133	30.0	11.4	0.0028	43.4
1440.00	20.5	25.0	19.4	0.0134	26.0	12.0	0.0012	35.7

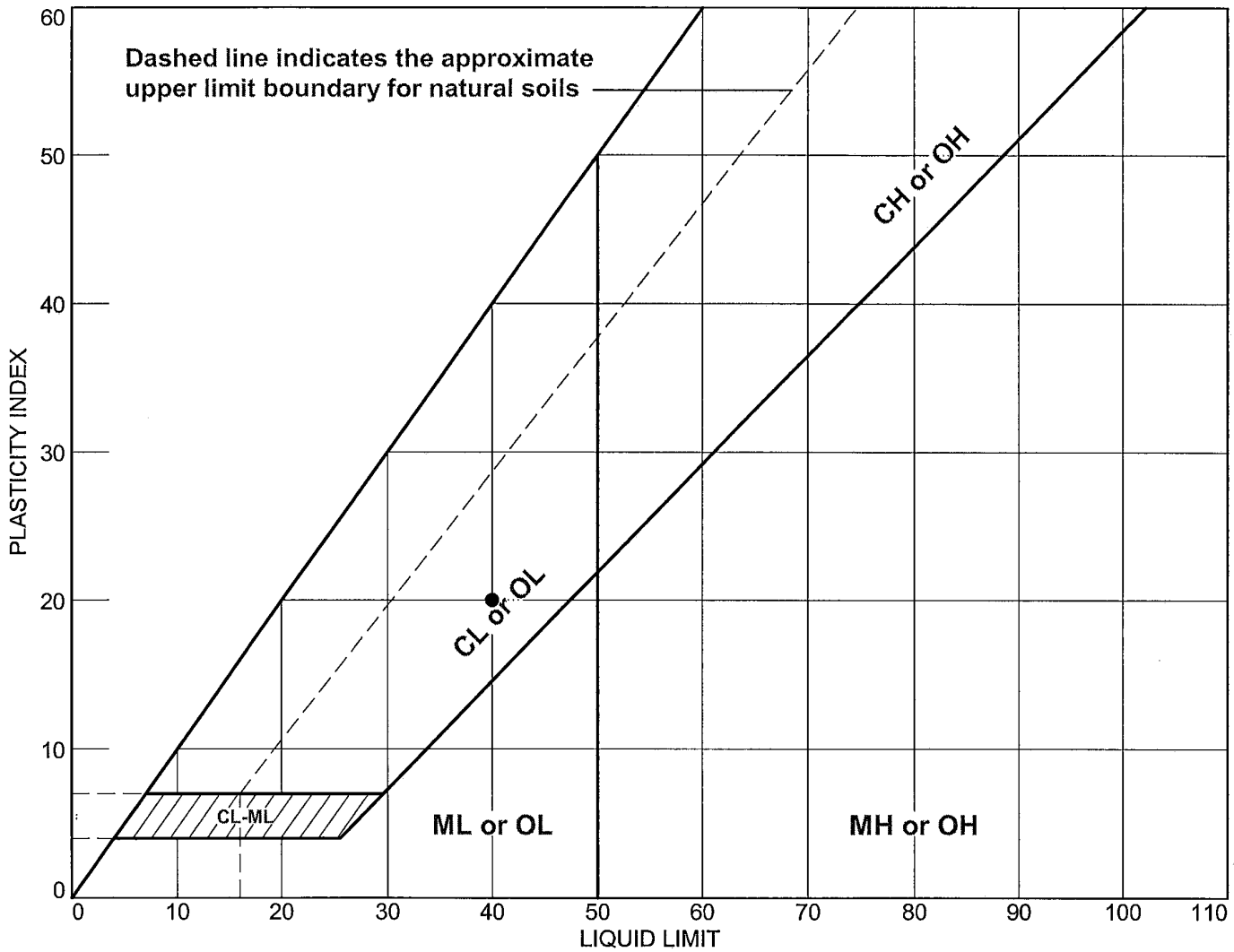
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	3.5	28.4	31.9	18.5	49.6	68.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0052	0.0298	0.1172	0.1442	0.1852	0.2796

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-2	3.9-5.4'	28.0	20	40	20	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

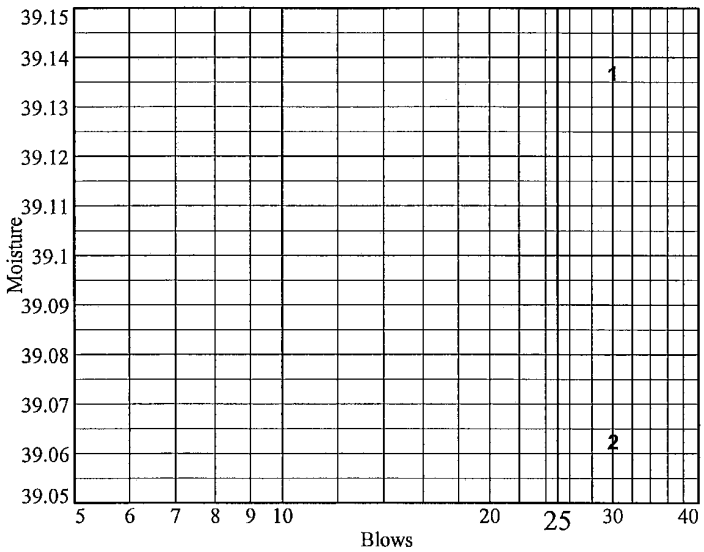
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3270A
Depth: 3.9-5.4' **Sample Number:** SS-2
Material Description: Light Yellowish Brown Sandy 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	20.62	25.28				
Dry+Tare	17.99	22.53				
Tare	11.27	15.49				
# Blows	30	30				
Moisture	39.1	39.1				



Liquid Limit= 40
Plastic Limit= 20
Plasticity Index= 20
Natural Moisture= 28.0
Liquidity Index= 0.4

Plastic Limit Data

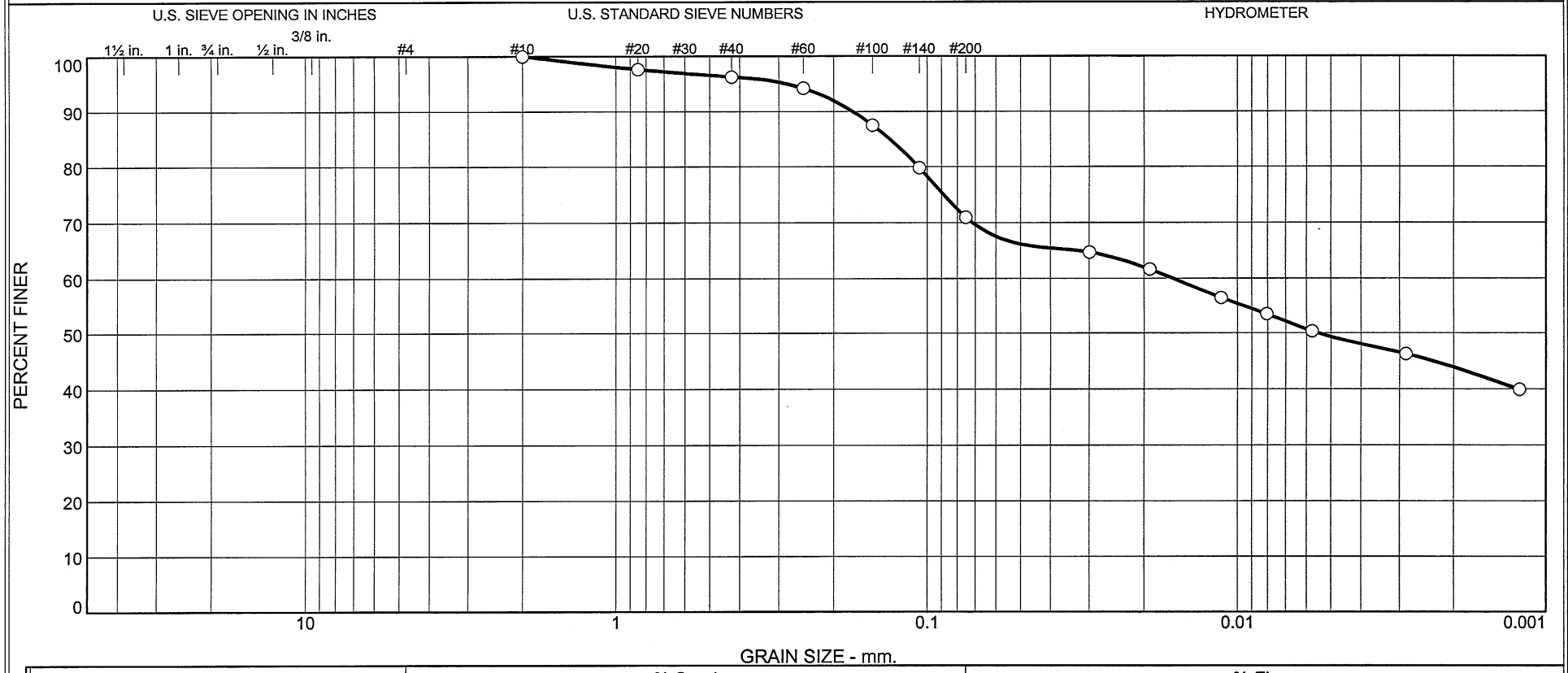
Run No.	1	2	3	4	
Wet+Tare	21.95	21.72			
Dry+Tare	20.87	20.66			
Tare	15.44	15.28			
Moisture	19.9	19.7			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
134.20	106.34	6.84	28.0

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	3.7	25.3	21.7	49.3

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3270A	SS-3	6.3-7.8'	2/23/09	CL	Light Yellowish Brown Lean CLAY with sand	18.3	39	15

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed
Organic Content = 1% Per ASTM D2974-07a

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: 6.3-7.8' **Sample Number:** SS-3
Material Description: Light Yellowish Brown Lean CLAY with sand
Date: 2/23/09 **Natural Moisture:** 18.3
Liquid Limit: 39 **Plastic Limit:** 15 **USCS Class.:** CL
Testing Remarks: Specific Gravity is assumed
Organic Content = 1% Per ASTM D2974-07a
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
206.42	0.00	0.00	#10	0.00	100.0
50.09	0.00	0.00	#20	1.18	97.6
			#40	1.87	96.3
			#60	2.88	94.3
			#100	6.27	87.5
			#140	10.14	79.8
			#200	14.55	71.0

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =49.36
Hygroscopic moisture correction:
Moist weight and tare = 29.99
Dry weight and tare = 29.61
Tare weight = 15.49
Hygroscopic moisture = 2.7%
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 **x Rm**

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	64.7
5.00	20.7	35.5	29.9	0.0133	36.5	10.3	0.0191	61.6
15.00	20.7	33.0	27.4	0.0133	34.0	10.7	0.0113	56.5
30.00	20.8	31.5	26.0	0.0133	32.5	11.0	0.0080	53.4
60.00	20.8	30.0	24.5	0.0133	31.0	11.2	0.0058	50.3
250.00	20.8	28.0	22.5	0.0133	29.0	11.5	0.0029	46.2
1440.00	20.6	25.0	19.4	0.0133	26.0	12.0	0.0012	39.9

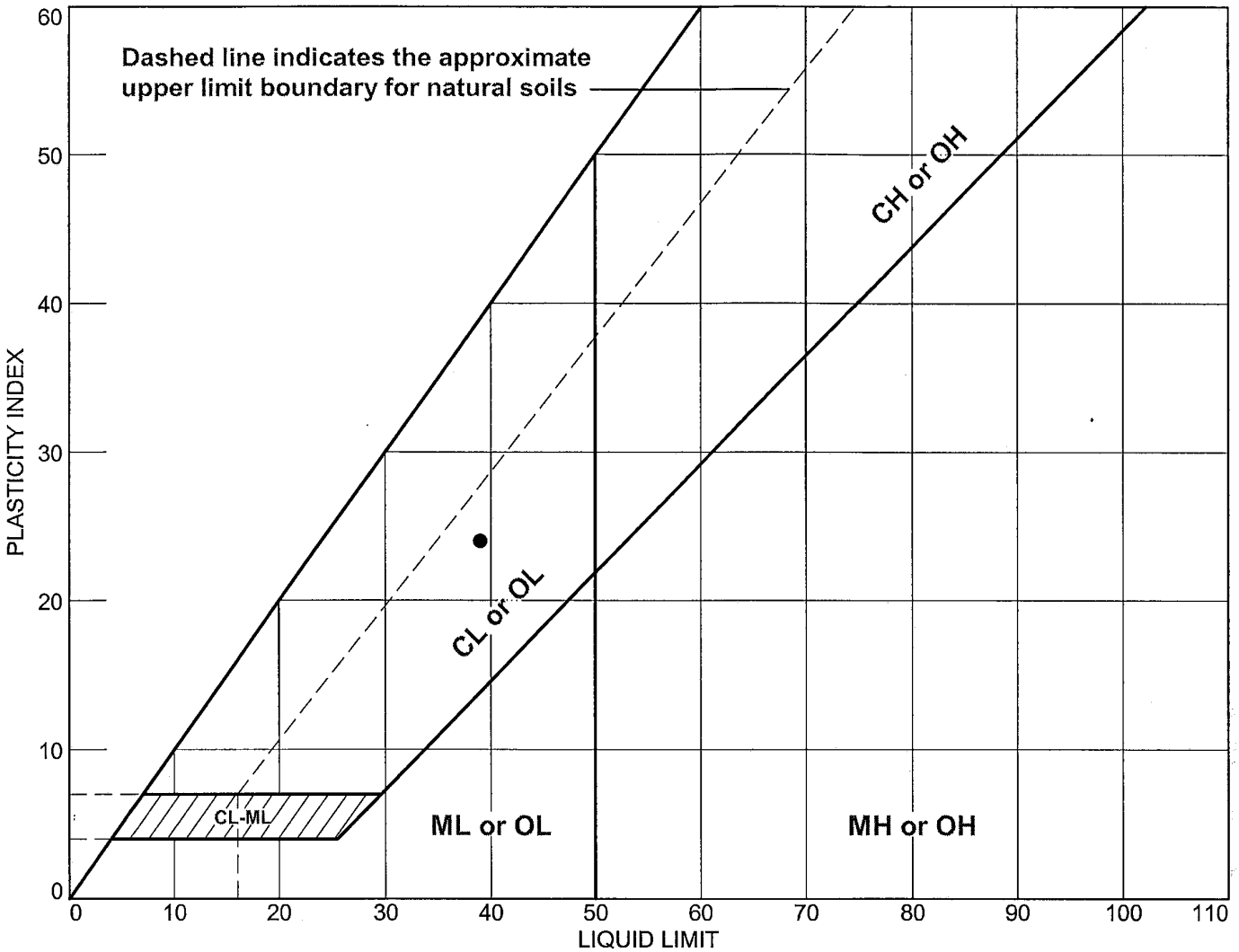
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	3.7	25.3	29.0	21.7	49.3	71.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0055	0.0162	0.1070	0.1324	0.1738	0.2803

Fineness Modulus
0.22

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-3	6.3-7.8'	18.3	15	39	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

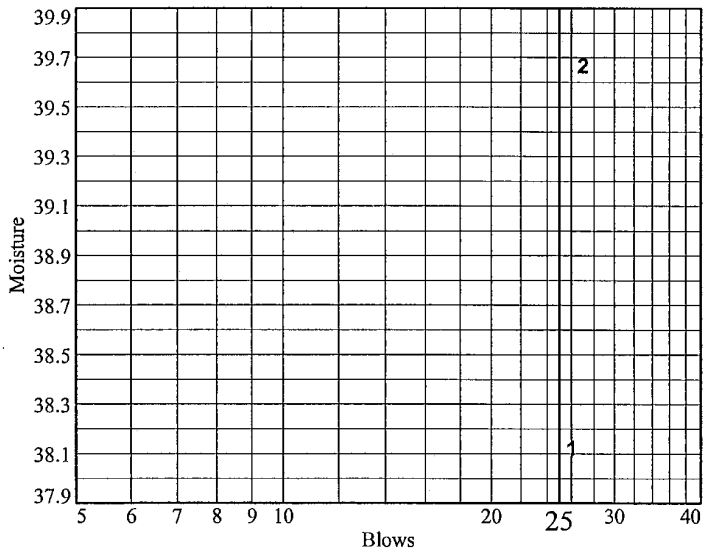
LIQUID AND PLASTIC LIMIT TEST DATA

5/1/2009

Client: Bechtel
Project: Exelon Texas COL Project - Supplemental Investigation, including UHS
Project Number: 6468071777
Location: Boring B-3270A
Depth: 6.3-7.8' **Sample Number:** SS-3
Material Description: Light Yellowish Brown Lean CLAY with sand
USCS: CL **AASHTO:** A-6(15)
Tested by: CS **Checked by:** BS

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	26.60	24.83				
Dry+Tare	23.55	22.18				
Tare	15.55	15.50				
# Blows	26	27				
Moisture	38.1	39.7				



Liquid Limit= 39
Plastic Limit= 15
Plasticity Index= 24
Natural Moisture= 18.3
Liquidity Index= 0.1

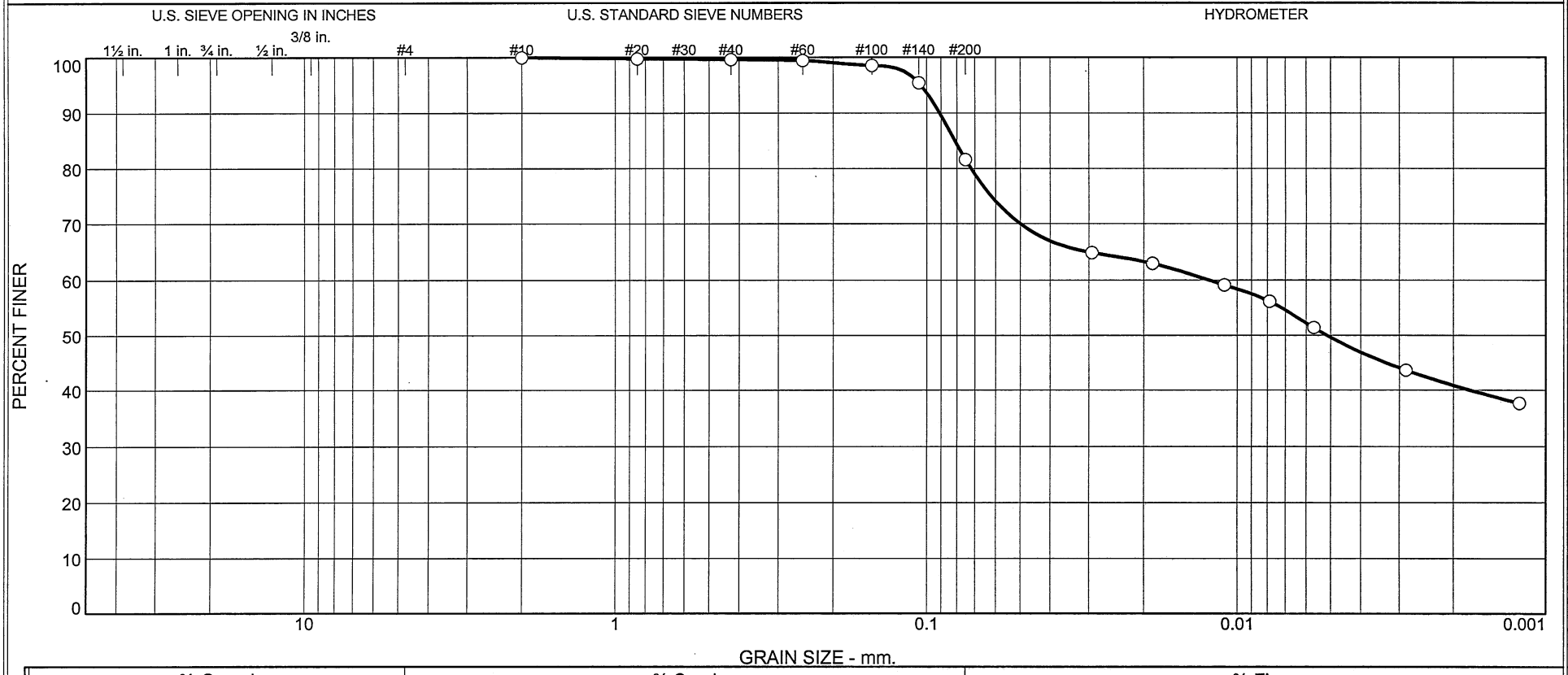
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.76	22.96			
Dry+Tare	20.95	22.04			
Tare	15.44	15.63			
Moisture	14.7	14.4			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
141.46	120.59	6.79	18.3

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	0.4	18.0	32.0	49.6

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-3270A	SS-4	9.0-10.5'	2/24/09	CH	Light Gray mottled Brownish Yellow Fat CLAY with sand	21.9	60	23

Client Bechtel

Project Exelon Texas COL Project - Supplemental Investigation, including UHS

Project No. 6468071777 Figure NA

MACTEC Engineering and Consulting, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed

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