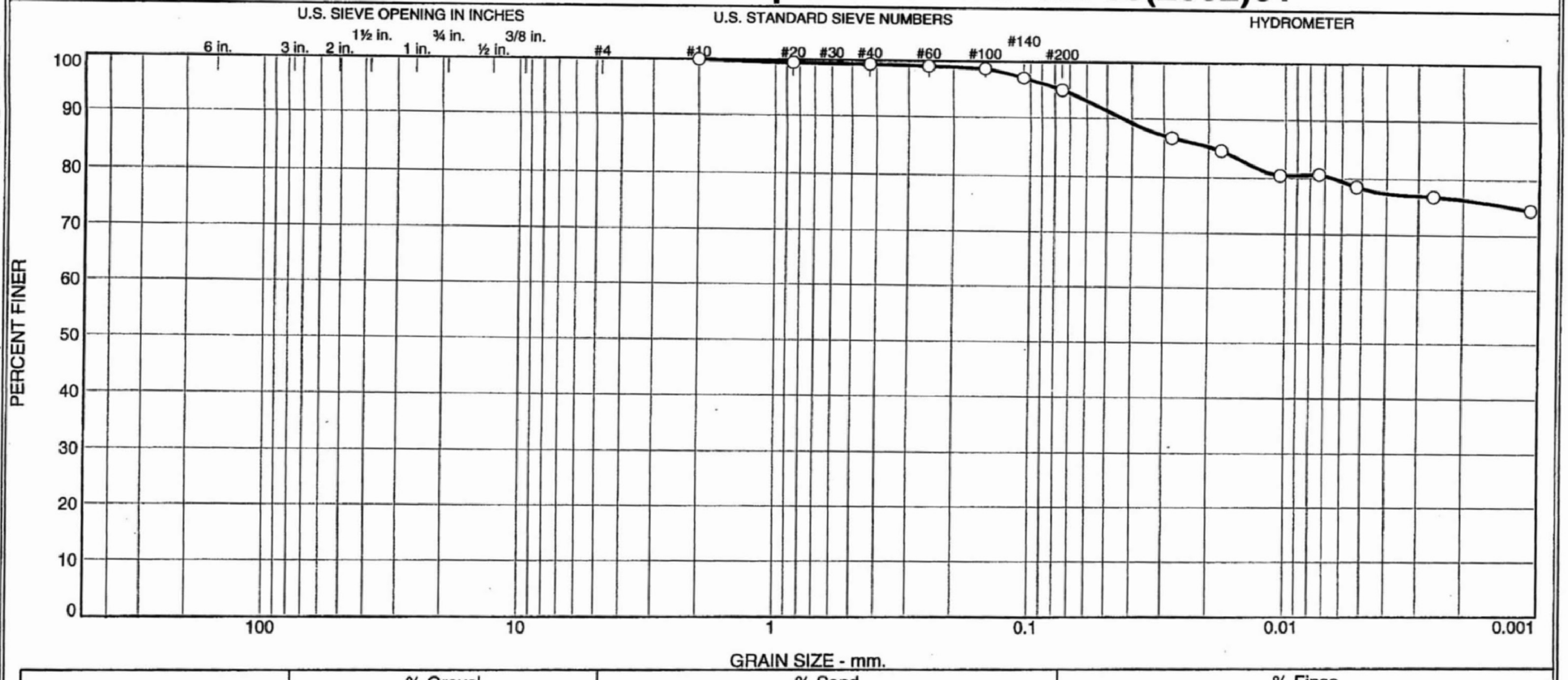
Particle Size Distribution Report / ASTM D-422-63(2002)e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.7	4.5	16.5	78.3

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2160	SS-11	38.5-40.0	11-11-07	CH	Brownish Yellow Fat CLAY	28.3	87	26

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed

Tested By: CS Checked By: LBJ DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/25/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2160
Depth: 38.5-40.0 **Sample Number:** SS-11
Material Description: Brownish Yellow Fat CLAY
Date: 11-11-07 **Natural Moisture:** 28.3
Liquid Limit: 87 **Plastic Limit:** 26 **USCS Class.:** CH
Testing Remarks: Specific Gravity is assumed
Tested by: CS **Checked by:** LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
225.17	0.00	0.00	#10	0.00	100.0
48.01	0.00	0.00	#20	0.24	99.5
			#40	0.34	99.3
			#60	0.44	99.1
			#100	0.63	98.7
			#140	1.43	97.0
			#200	2.49	94.8

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =48.01
Hygroscopic moisture correction:
Moist weight and tare = 30.00
Dry weight and tare = 29.28
Tare weight = 15.40
Hygroscopic moisture = 5.2%
Table of composite correction values:

Temp., deg. C:	12.8	27.3
Comp. corr.:	-7.0	-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	45.0	40.1	0.0134	46.0	8.8	0.0280	86.9
5.00	20.4	44.0	39.1	0.0134	45.0	8.9	0.0179	84.7
15.00	20.5	42.0	37.1	0.0134	43.0	9.2	0.0105	80.4
30.00	20.9	42.0	37.2	0.0133	43.0	9.2	0.0074	80.7
60.00	21.0	41.0	36.3	0.0133	42.0	9.4	0.0053	78.6
240.00	21.9	40.0	35.5	0.0131	41.0	9.6	0.0026	76.9
1440.00	21.6	39.0	34.4	0.0132	40.0	9.7	0.0011	74.6

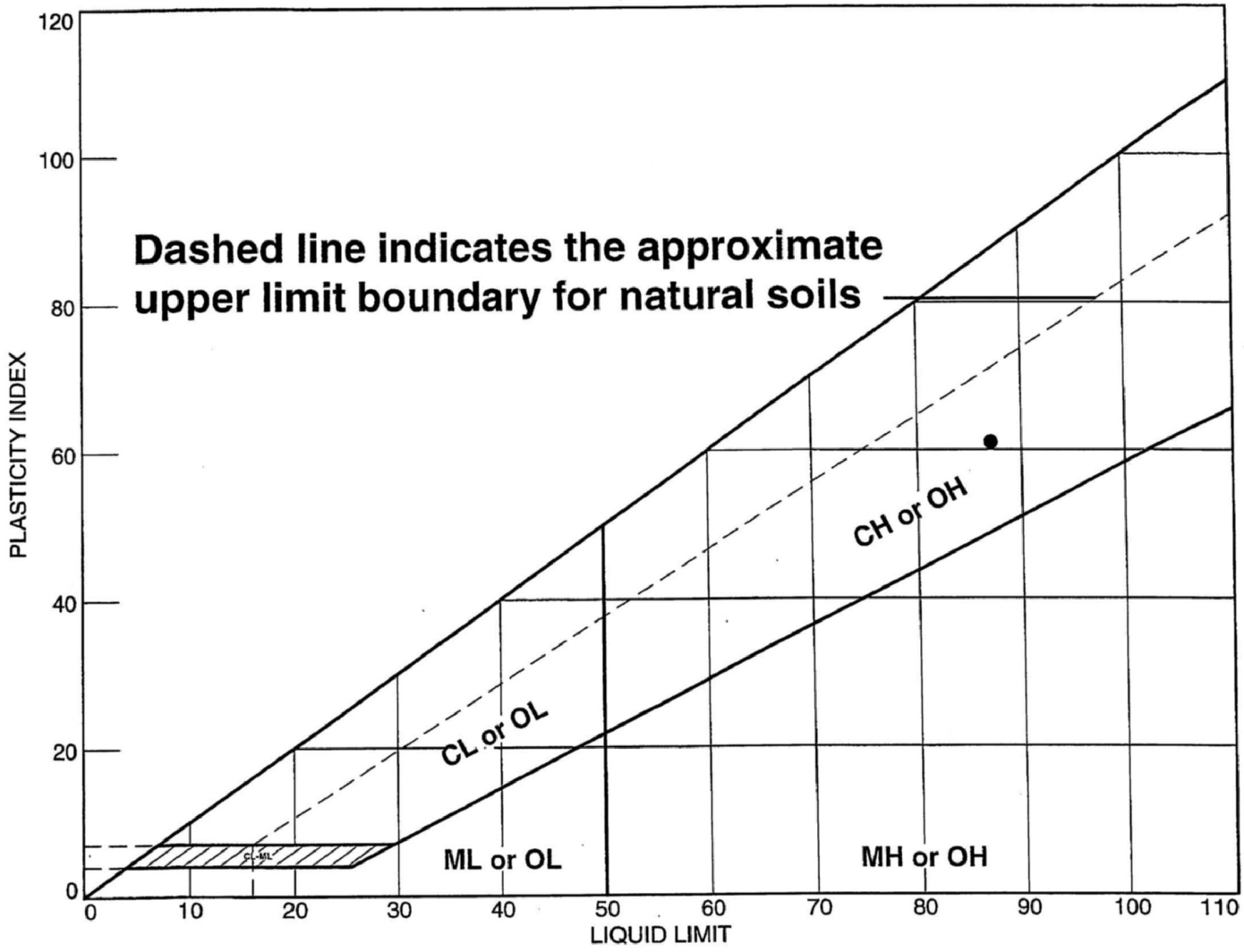
Fractional Components

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	4.5	5.2	16.5	78.3	94.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
						0.0064	0.0186	0.0431	0.0769

Fineness Modulus
0.03

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-2160	SS-11	38.5-40.0	28.3	26	87	61	CH

MACTEC, Inc. **Raleigh, North Carolina**	**Client:** Bechtel **Project:** Exelon Texas COL (Victoria) **Project No.:** 6468071777 **Figure** NA

Tested By: CS **Checked By:** LBJ DSC 1-25-08

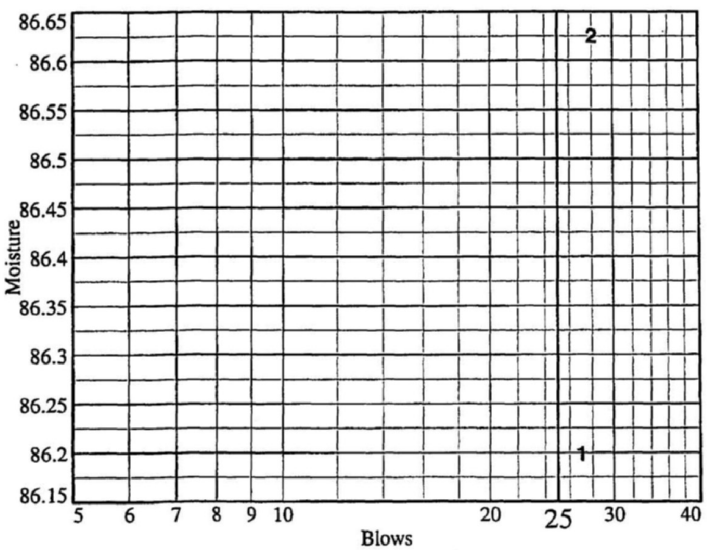
LIQUID AND PLASTIC LIMIT TEST DATA

1/25/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2160
Depth: 38.5-40.0 **Sample Number:** SS-11
Material Description: Brownish Yellow Fat CLAY
USCS: CH **AASHTO:** A-7-6(67)
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	23.71	21.76				
Dry+Tare	19.90	18.91				
Tare	15.48	15.62				
# Blows	27	28				
Moisture	86.2	86.6				



Liquid Limit= 87
Plastic Limit= 26
Plasticity Index= 61
Natural Moisture= 28.3
Liquidity Index= 0.0

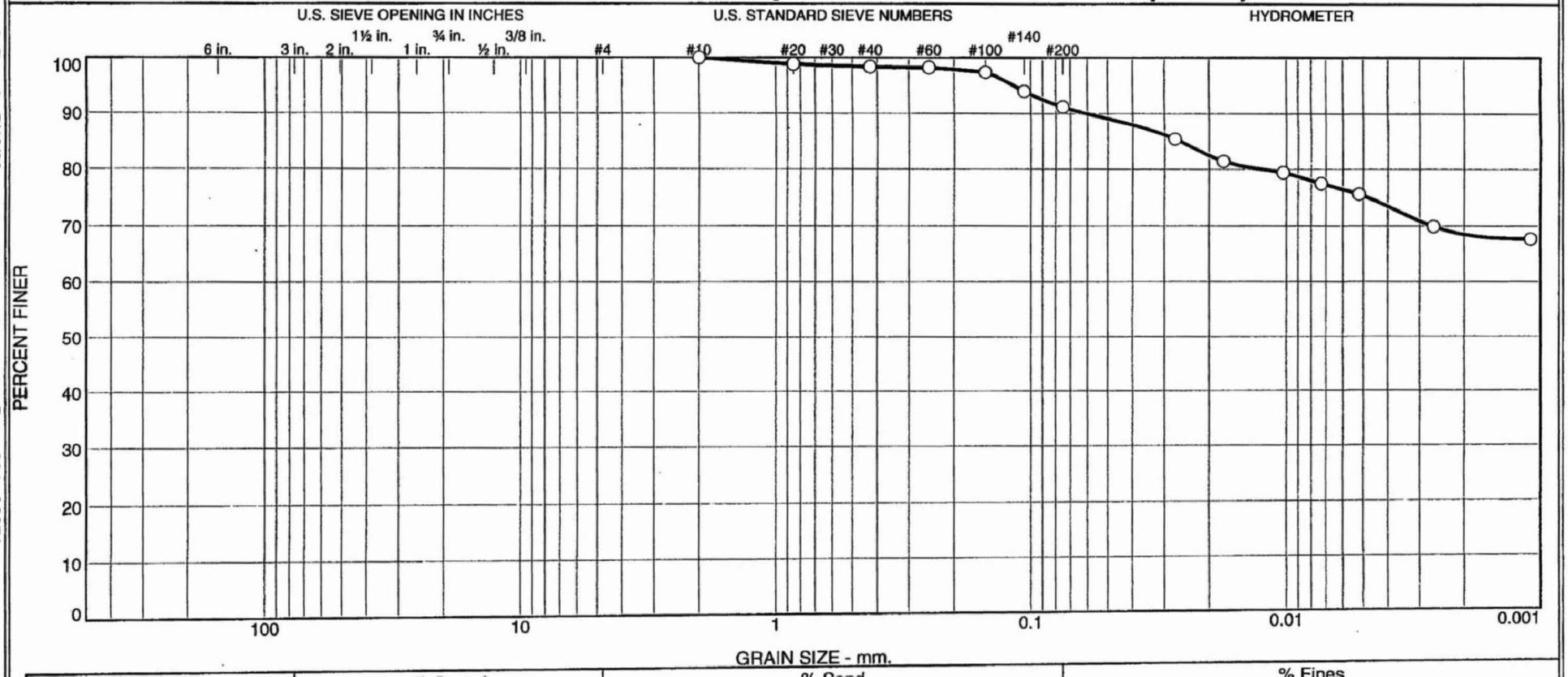
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	17.28	23.55			
Dry+Tare	15.99	21.89			
Tare	11.07	15.5			
Moisture	26.2	26.0			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
171.40	135.05	6.70	28.3

Particle Size Distribution Report / ASTM D-422-63(2002)e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	1.6	7.2	15.8	75.4

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2160	SS-12	43.5-45	11-11-07	CH	Brownish Yellow Fat CLAY	25.8	75	18

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed
Organic content = 5.6% (ASTM D2794-07)

Tested By: CS **Checked By:** LBJ DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2160
Depth: 43.5-45 **Sample Number:** SS-12
Material Description: Brownish Yellow Fat CLAY
Date: 11-11-07 **Natural Moisture:** 25.8
Liquid Limit: 75 **Plastic Limit:** 18 **USCS Class.:** CH
Testing Remarks: Specific Gravity is assumed
Organic content = 5.6% (ASTM D2794-07)
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
243.30	0.00	0.00	#10	0.00	100.0
50.50	0.00	0.00	#20	0.56	98.9
			#40	0.79	98.4
			#60	0.87	98.3
			#100	1.28	97.5
			#140	3.03	94.0
			#200	4.44	91.2

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =50.50
Hygroscopic moisture correction:
Moist weight and tare = 29.20
Dry weight and tare = 28.75
Tare weight = 15.40
Hygroscopic moisture = 3.4%
Table of composite correction values:

Temp., deg. C:	12.8	27.3
Comp. corr.:	-7.0	-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	20.8	47.0	42.2	0.0133	48.0	8.4	0.0273	85.4
5.00	20.8	45.0	40.2	0.0133	46.0	8.8	0.0176	81.4
15.00	20.8	44.0	39.2	0.0133	45.0	8.9	0.0103	79.4
30.00	21.1	43.0	38.3	0.0133	44.0	9.1	0.0073	77.5
60.00	21.4	42.0	37.4	0.0132	43.0	9.2	0.0052	75.7
240.00	22.0	39.0	34.5	0.0131	40.0	9.7	0.0026	69.9
1440.00	21.6	38.0	33.4	0.0132	39.0	9.9	0.0011	67.7

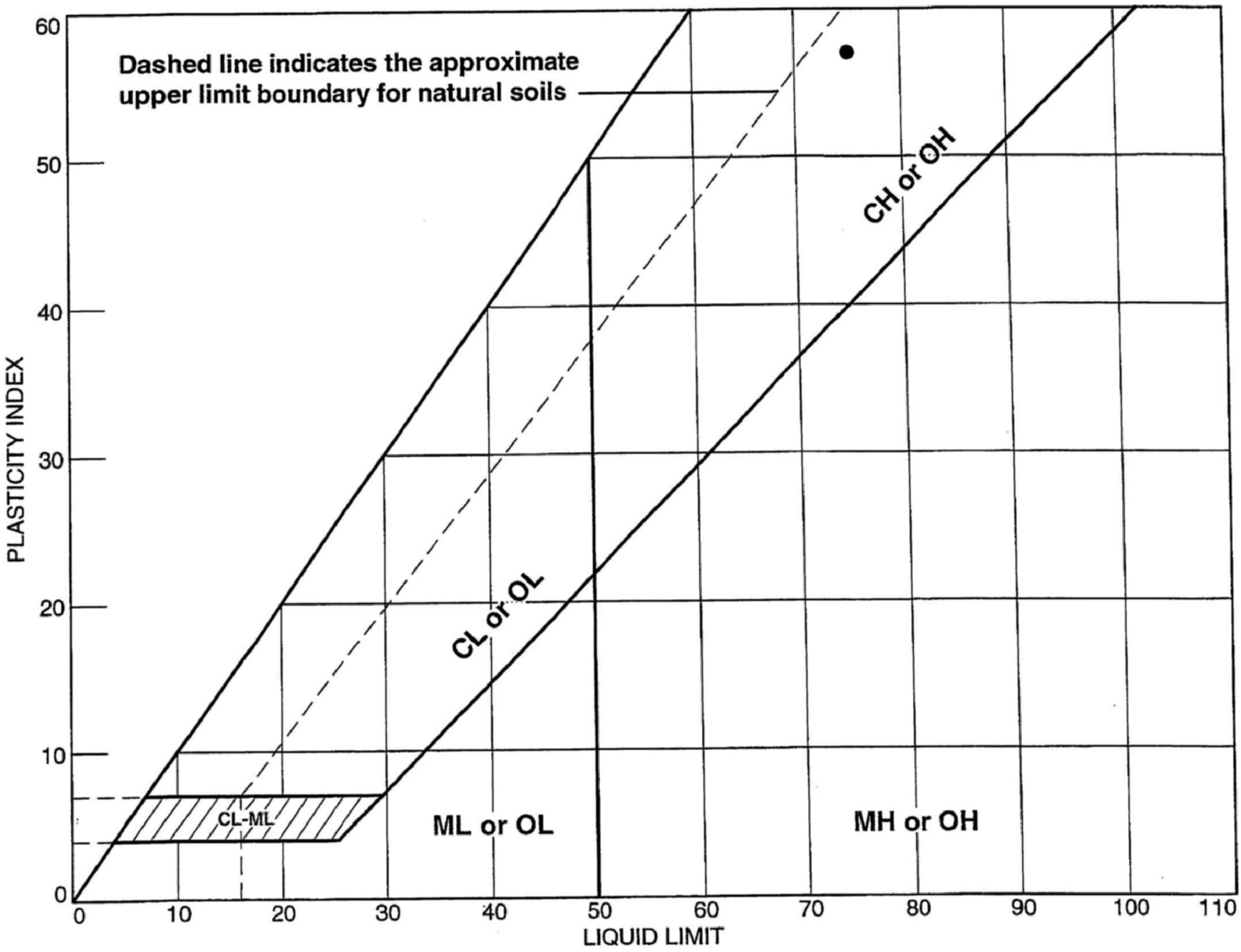
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.6	7.2	8.8	15.8	75.4	91.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
						0.0125	0.0261	0.0602	0.1164

Fineness Modulus
0.06

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-2160	SS-12	43.5-45	25.8	18	75	57	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project No.: 6468071777 **Figure** NA

Tested By: CS **Checked By:** LBJ DSC 1-25-08

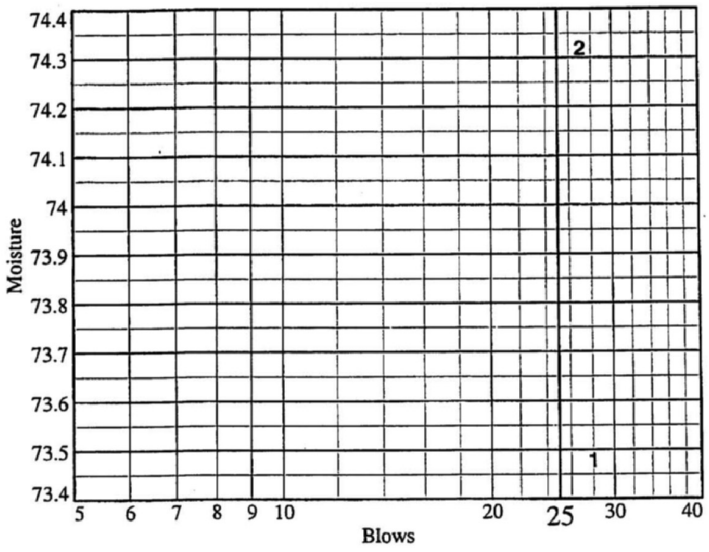
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2160
Depth: 43.5-45
Sample Number: SS-12
Material Description: Brownish Yellow Fat CLAY
USCS: CH
AASHTO: A-7-6(57)
Tested by: CS
Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	22.63	21.31				
Dry+Tare	19.61	18.85				
Tare	15.50	15.54				
# Blows	28	27				
Moisture	73.5	74.3				



Liquid Limit= 75
Plastic Limit= 18
Plasticity Index= 57
Natural Moisture= 25.8
Liquidity Index= 0.1

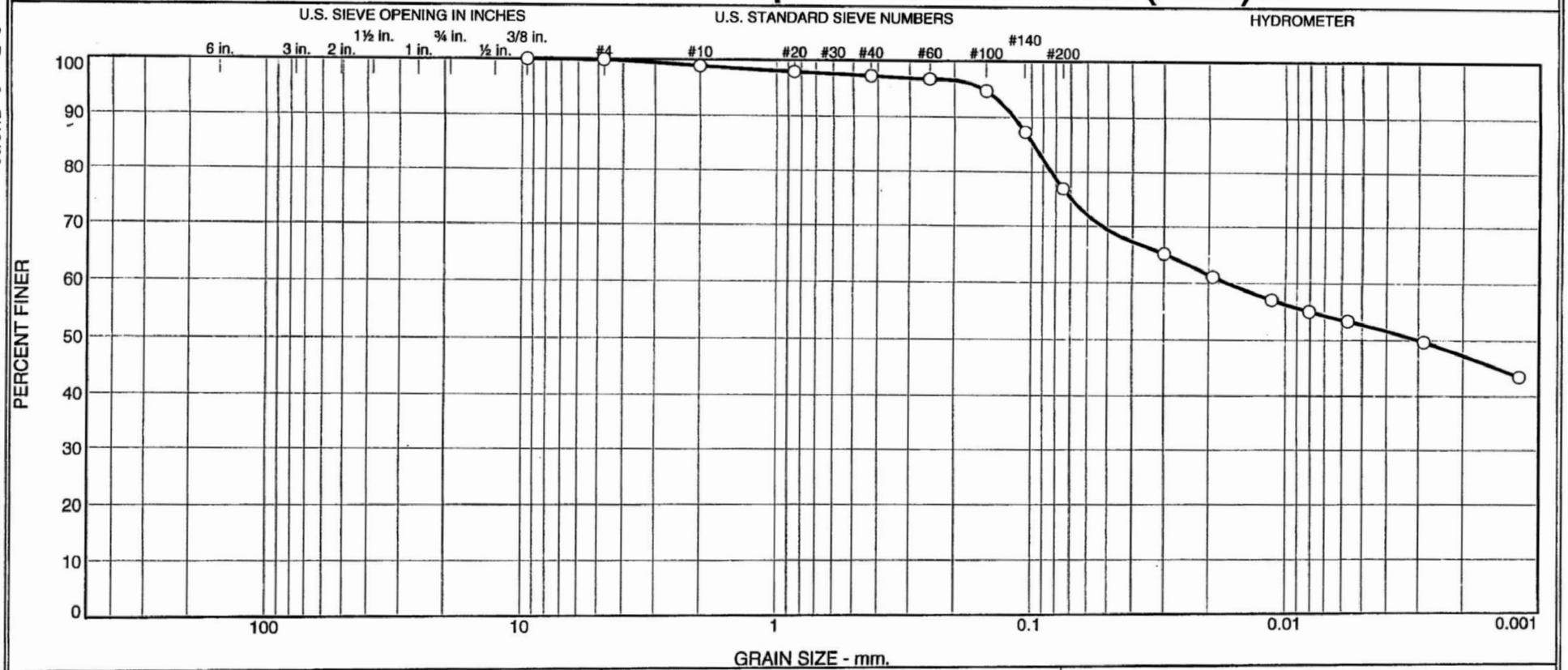
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	24.76	24.08			
Dry+Tare	23.32	22.76			
Tare	15.45	15.46			
Moisture	18.3	18.1			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
176.90	142.26	8.20	25.8

Particle Size Distribution Report / ASTM D-422-63(2002)e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.1	1.0	1.6	20.4	24.1	52.8

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2160	SS-13	48.5-50	11-11-07	CH	Pale Brown Fat CLAY with sand	18.5	51	15

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed

Tested By: CS Checked By: LBJ DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2160
Depth: 48.5-50 **Sample Number:** SS-13
Material Description: Pale Brown Fat CLAY with sand
Date: 11-11-07 **Natural Moisture:** 18.5
Liquid Limit: 51 **Plastic Limit:** 15 **USCS Class.:** CH
Testing Remarks: Specific Gravity is assumed
Tested by: CS **Checked by:** LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
242.47	0.00	0.00	3/8"	0.00	100.0
			#4	0.24	99.9
			#10	2.68	98.9
49.38	0.00	0.00	#20	0.49	97.9
			#40	0.82	97.3
			#60	1.07	96.8
			#100	2.10	94.7
			#140	5.72	87.4
			#200	11.00	76.9

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 98.9
Weight of hydrometer sample =49.38
Hygroscopic moisture correction:
Moist weight and tare = 28.40
Dry weight and tare = 28.08
Tare weight = 15.20
Hygroscopic moisture = 2.5%
Table of composite correction values:

Temp., deg. C:	12.8	27.3
Comp. corr.:	-7.0	-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	37.0	32.1	0.0134	38.0	10.1	0.0300	65.1
5.00	20.5	35.0	30.1	0.0134	36.0	10.4	0.0193	61.1
15.00	20.5	33.0	28.1	0.0134	34.0	10.7	0.0113	57.1
30.00	20.5	32.0	27.1	0.0134	33.0	10.9	0.0080	55.1
60.00	21.2	31.0	26.3	0.0132	32.0	11.0	0.0057	53.4
240.00	21.9	29.0	24.5	0.0131	30.0	11.4	0.0029	49.7
1440.00	21.6	26.0	21.4	0.0132	27.0	11.9	0.0012	43.5

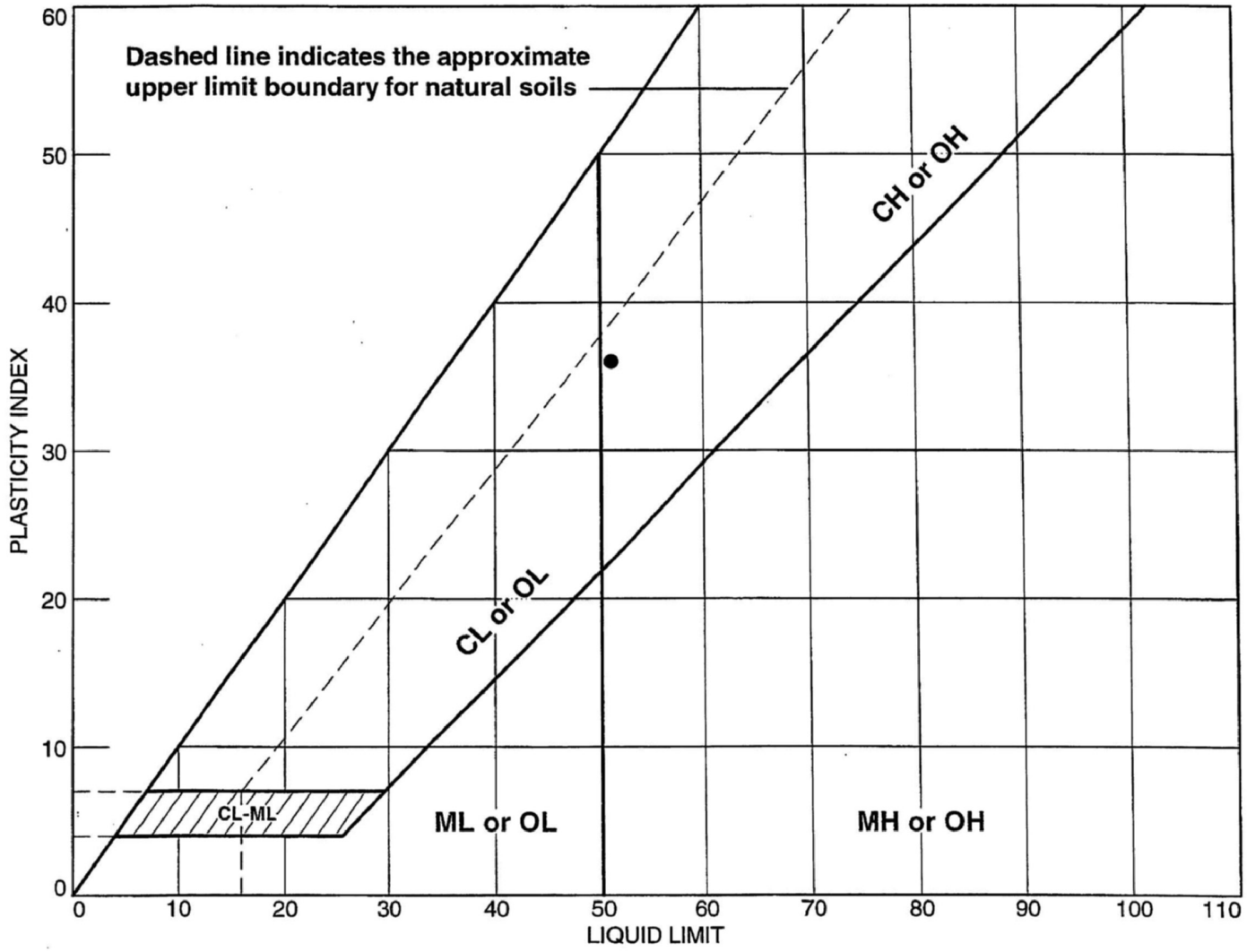
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.1	0.1	1.0	1.6	20.4	23.0	24.1	52.8	76.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0030	0.0168	0.0835	0.0978	0.1167	0.1540

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-2160	SS-13	48.5-50	18.5	15	51	36	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project No.: 6468071777 **Figure** NA

Tested By: CS **Checked By:** LBJ DSC 1-25-08

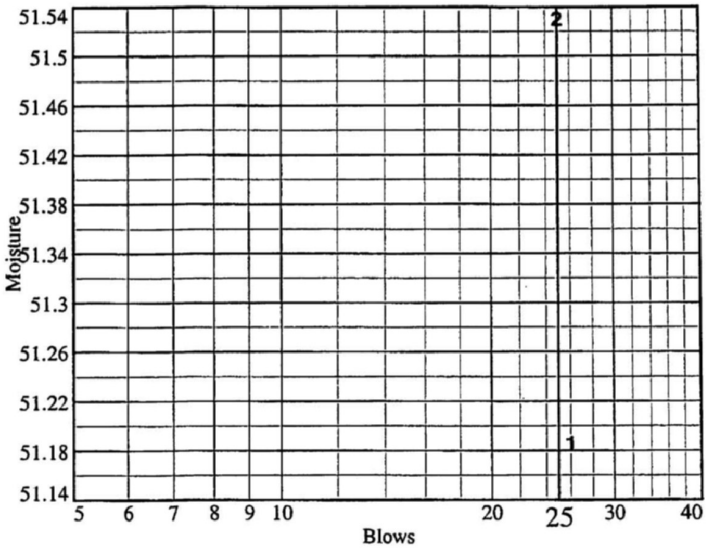
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2160
Depth: 48.5-50 **Sample Number:** SS-13
Material Description: Pale Brown Fat CLAY with sand
USCS: CH **AASHTO:** A-7-6(27)
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	23.12	24.45				
Dry+Tare	20.53	21.42				
Tare	15.47	15.54				
# Blows	26	25				
Moisture	51.2	51.5				



Liquid Limit= 51
Plastic Limit= 15
Plasticity Index= 36
Natural Moisture= 18.5
Liquidity Index= 0.1

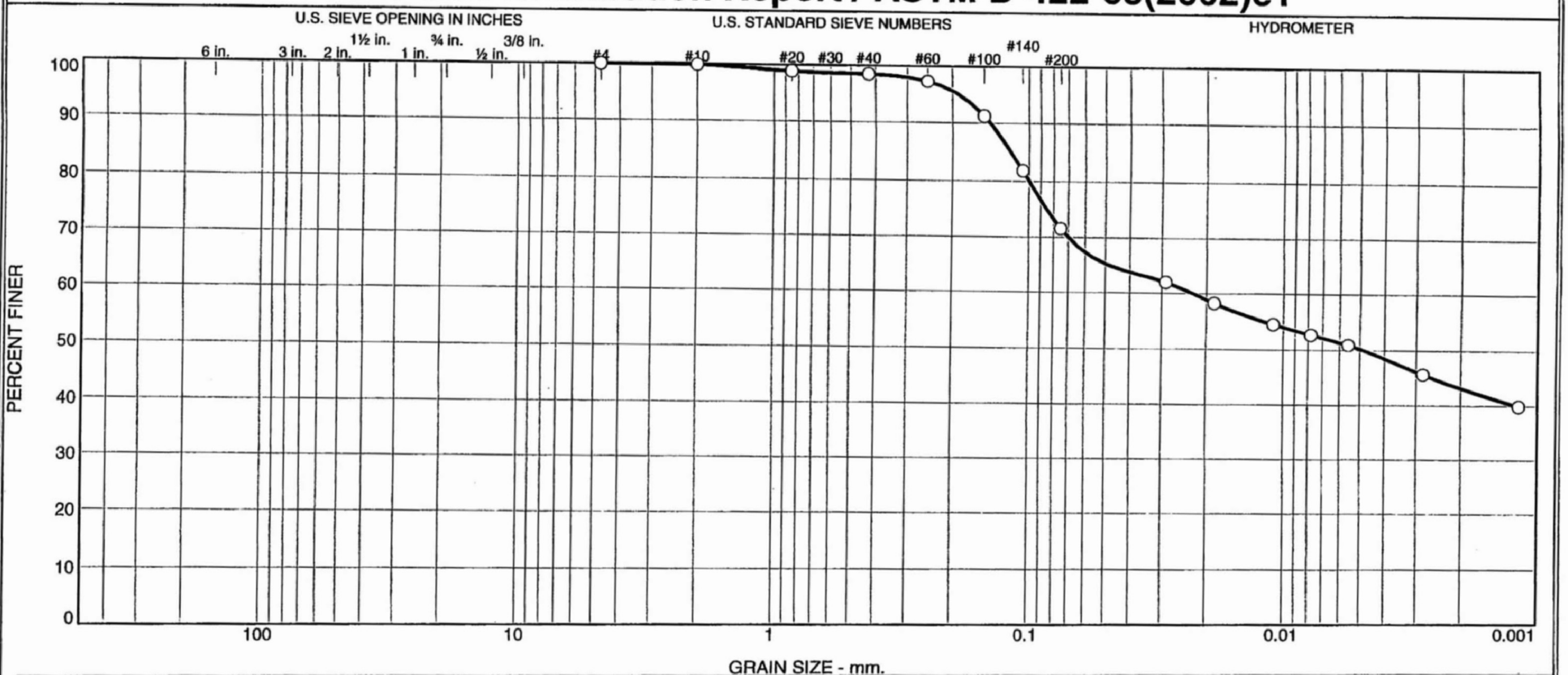
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	23.47	25.00			
Dry+Tare	22.44	23.78			
Tare	15.47	15.55			
Moisture	14.8	14.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
177.30	151.00	9.10	18.5

Particle Size Distribution Report / ASTM D-422-63(2002)e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	1.5	26.9	21.4	50.2

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2160	SS-14	53.5-55	11-11-07	CH	Pale Brown Fat CLAY with sand	16.9	51	16

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.717 (ASTM D850-06)
Organic content = 5.0% (ASTM2794-07)

Tested By: CS **Checked By:** LBJ DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2160
Depth: 53.5-55 **Sample Number:** SS-14
Material Description: Pale Brown Fat CLAY with sand
Date: 11-11-07 **Natural Moisture:** 16.9
Liquid Limit: 51 **Plastic Limit:** 16 **USCS Class.:** CH
Testing Remarks: Specific Gravity = 2.717 (ASTM D850-06)
Organic content = 5.0% (ASTM2794-07)
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
238.75	0.00	0.00	#4	0.00	100.0
			#10	0.07	100.0
54.25	0.00	0.00	#20	0.57	98.9
			#40	0.78	98.5
			#60	1.44	97.3
			#100	4.75	91.2
			#140	9.81	81.9
			#200	15.40	71.6

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =54.25
Hygroscopic moisture correction:
Moist weight and tare = 26.27
Dry weight and tare = 26.10
Tare weight = 15.78
Hygroscopic moisture = 1.6%
Table of composite correction values:

Temp., deg. C:	12.8	27.3
Comp. corr.:	-7.0	-3.0

Meniscus correction only = 1.0
Specific gravity of solids = 2.717
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	22.2	38.0	33.6	0.0130	39.0	9.9	0.0290	62.0
5.00	22.1	36.0	31.6	0.0130	37.0	10.2	0.0186	58.3
15.00	22.1	34.0	29.6	0.0130	35.0	10.6	0.0109	54.6
30.00	22.1	33.0	28.6	0.0130	34.0	10.7	0.0078	52.7
60.00	22.2	32.0	27.6	0.0130	33.0	10.9	0.0055	50.9
240.00	22.6	29.0	24.7	0.0130	30.0	11.4	0.0028	45.6
1440.00	22.3	26.0	21.6	0.0130	27.0	11.9	0.0012	39.9

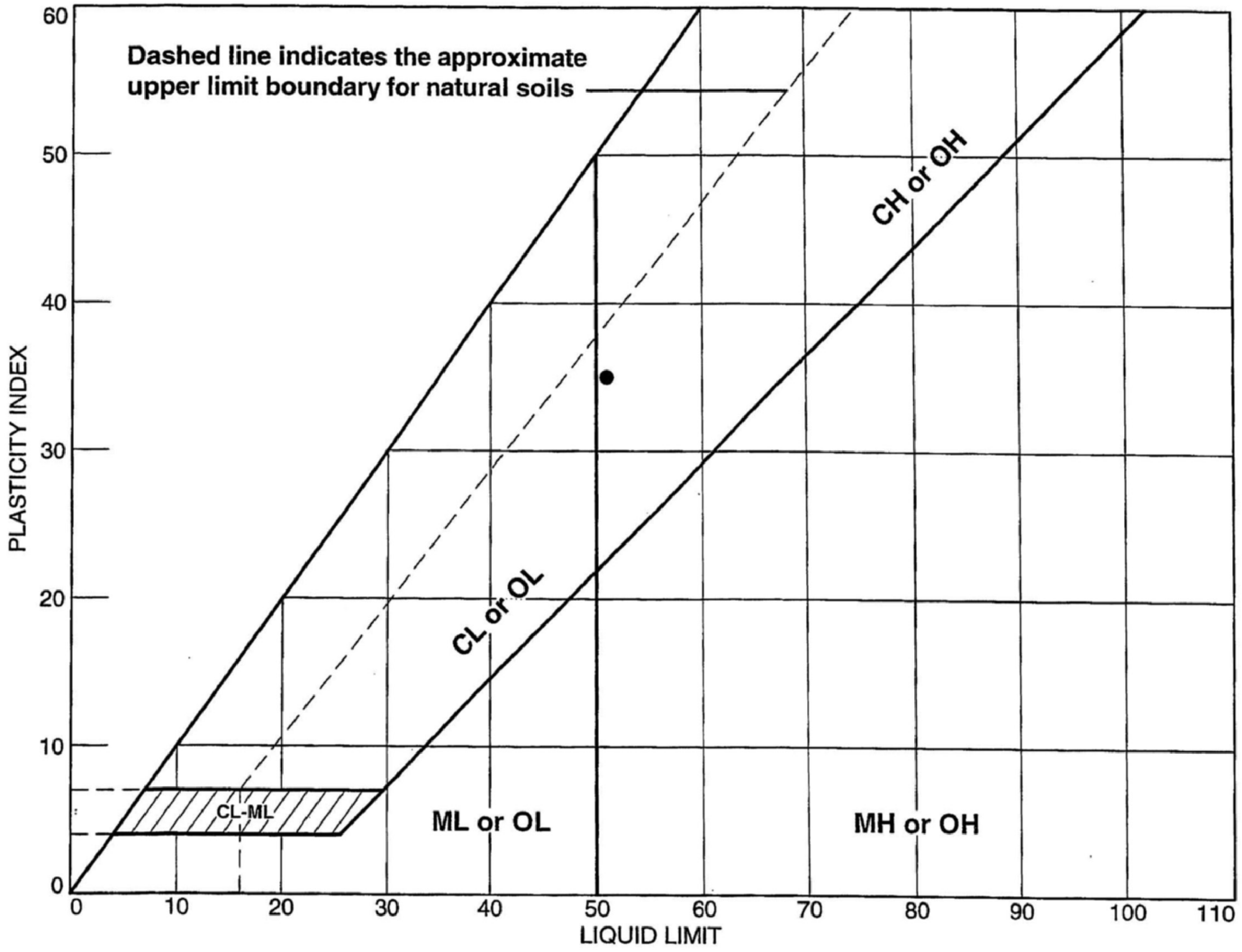
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.5	26.9	28.4	21.4	50.2	71.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0048	0.0227	0.0998	0.1175	0.1419	0.1894

Fineness Modulus
0.13

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-2160	SS-14	53.5-55	16.9	16	51	35	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project No.: 6468071777
Figure NA

Tested By: CS **Checked By:** LBJ DSC 1-25-08

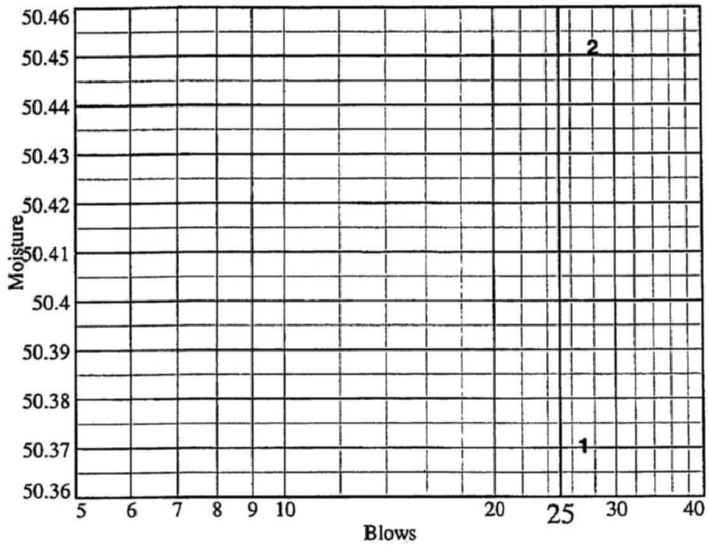
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2160
Depth: 53.5-55 **Sample Number:** SS-14
Material Description: Pale Brown Fat CLAY with sand
USCS: CH **AASHTO:** A-7-6(24)
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.70	25.92				
Dry+Tare	22.30	22.57				
Tare	15.55	15.93				
# Blows	27	28				
Moisture	50.4	50.5				



Liquid Limit= 51
Plastic Limit= 16
Plasticity Index= 35
Natural Moisture= 16.9
Liquidity Index= 0.0

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.58	22.24			
Dry+Tare	21.66	21.32			
Tare	15.70	15.45			
Moisture	15.4	15.7			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
177.50	152.86	6.80	16.9

MACTEC ENGINEERING AND CONSULTING, INC.
RALEIGH, NORTH CAROLINA

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

PROJECT NAME:EXELON COL PROJECT (VICTORIA)

PROJECT NUMBER: 6468071777

DATE: 1/17/08

SAMPLE IDENTIFICATION: B-2160 SS-14

(A) Mass of oven-dried soil, grams:		50.07
(B) Mass of pycnometer filled with water at test temperature (T), grams:		656.71
(C) Mass of pycnometer, water and soil, grams:		688.36
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		22.1
(G) Specific Gravity at observed temperature:	A / [B- (C - A)]	2.718
(F)	***Correction factor:***	0.99954
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.717

MATERIAL TESTED: [X] **- # 4** [ ] **- # 10**

PREPARATION METHOD: [X] **DRY** [ ] **WET (dispersed)**

REMARKS: Estimated % Passing # 4 : 100%

Fat CLAY with sand (CH)

EQUIPMENT USED

SCALES : 3.1.19

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNOMETER : P-5

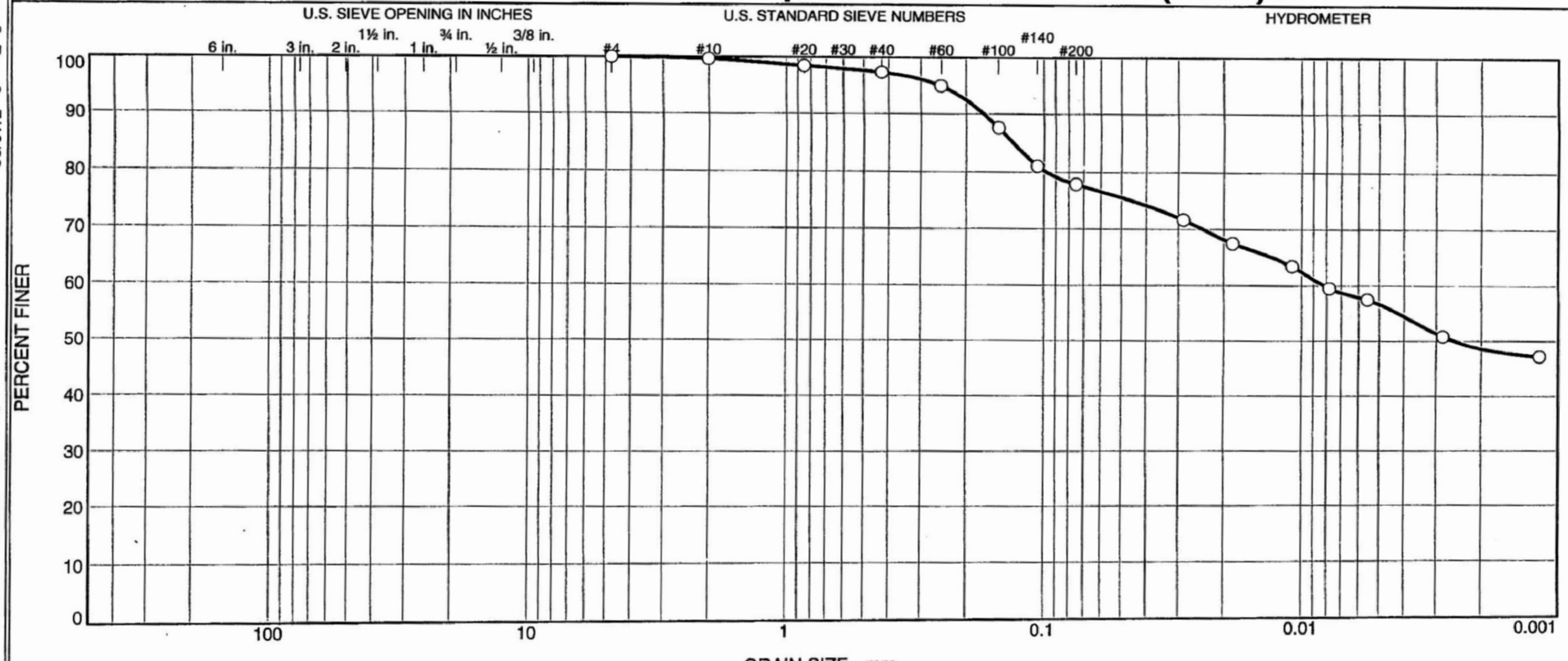
TESTED BY: CS

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

REVIEWED BY: Brian Johnson

DSC 1-25-08

Particle Size Distribution Report / ASTM D-422-63(2002)e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.3	2.4	19.4	21.2	56.7

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2160	SS-15	58.5-60	11-11-07	CH	Pale Brown Fat CLAY with sand	16.0	55	15

Client Bechtel
Project Exelon Texas COL (Victoria)
Project No. 6468071777 Figure NA

MACTEC, Inc.
Raleigh, North Carolina

○ Specific Gravity is assumed

Tested By: CS Checked By: LBJ DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/25/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2160
Depth: 58.5-60 **Sample Number:** SS-15
Material Description: Pale Brown Fat CLAY with sand
Date: 11-11-07 **Natural Moisture:** 16.0
Liquid Limit: 55 **Plastic Limit:** 15 **USCS Class.:** CH
Testing Remarks: Specific Gravity is assumed
Tested by: CS **Checked by:** LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
256.06	0.00	0.00	#4	0.00	100.0
			#10	0.80	99.7
50.45	0.00	0.00	#20	0.62	98.5
			#40	1.21	97.3
			#60	2.45	94.8
			#100	6.07	87.7
			#140	9.44	81.0
			#200	11.03	77.9

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.7
Weight of hydrometer sample =50.45
Hygroscopic moisture correction:
Moist weight and tare = 28.20
Dry weight and tare = 27.80
Tare weight = 15.60
Hygroscopic moisture = 3.3%
Table of composite correction values:

Temp., deg. C:	12.8	27.3
Comp. corr.:	-7.0	-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	40.0	35.5	0.0131	41.0	9.6	0.0287	71.7
5.00	21.8	38.0	33.5	0.0131	39.0	9.9	0.0185	67.6
15.00	21.8	36.0	31.5	0.0131	37.0	10.2	0.0109	63.5
30.00	21.9	34.0	29.5	0.0131	35.0	10.6	0.0078	59.6
60.00	21.9	33.0	28.5	0.0131	34.0	10.7	0.0056	57.5
240.00	22.5	29.5	25.2	0.0130	30.5	11.3	0.0028	50.8
1440.00	21.4	28.0	23.4	0.0132	29.0	11.5	0.0012	47.2

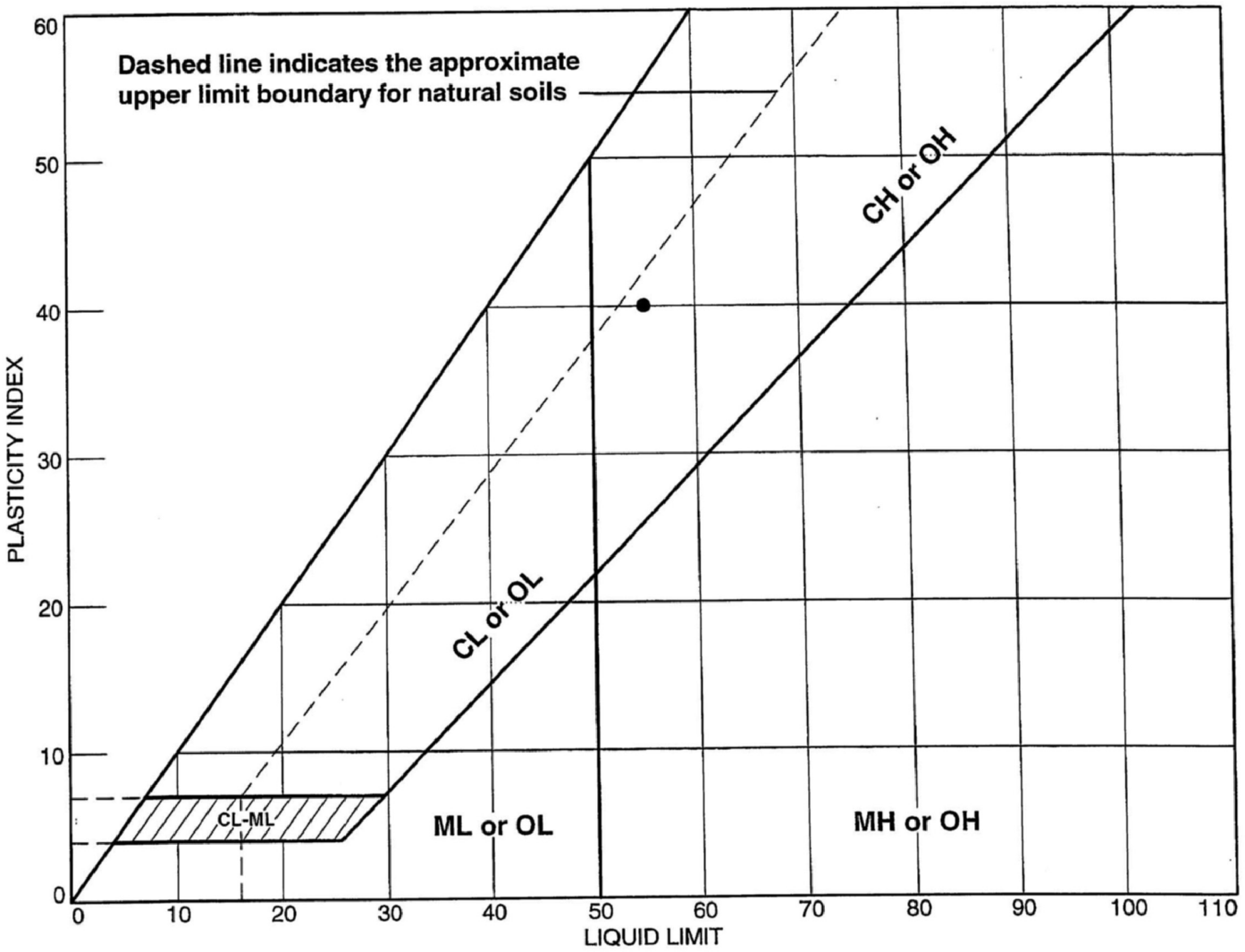
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.3	2.4	19.4	22.1	21.2	56.7	77.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0026	0.0081	0.0979	0.1314	0.1704	0.2546

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-2160	SS-15	58.5-60	16.0	15	55	40	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project No.: 6468071777

Figure NA

Tested By: CS **Checked By:** LBJ DSC 1-25-08

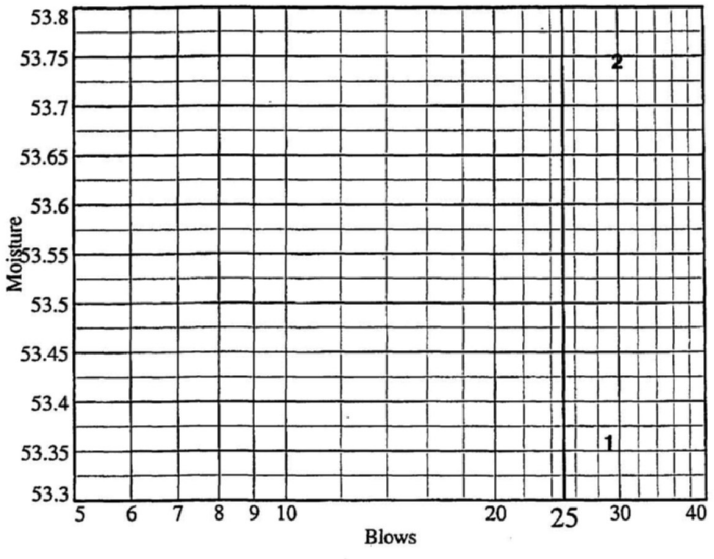
LIQUID AND PLASTIC LIMIT TEST DATA

1/25/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2160
Depth: 58.5-60 **Sample Number:** SS-15
Material Description: Pale Brown Fat CLAY with sand
USCS: CH **AASHTO:** A-7-6(31)
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	23.47	23.70				
Dry+Tare	20.69	20.83				
Tare	15.48	15.49				
# Blows	29	30				
Moisture	53.4	53.7				



Liquid Limit= 55
Plastic Limit= 15
Plasticity Index= 40
Natural Moisture= 16.0
Liquidity Index= 0.0

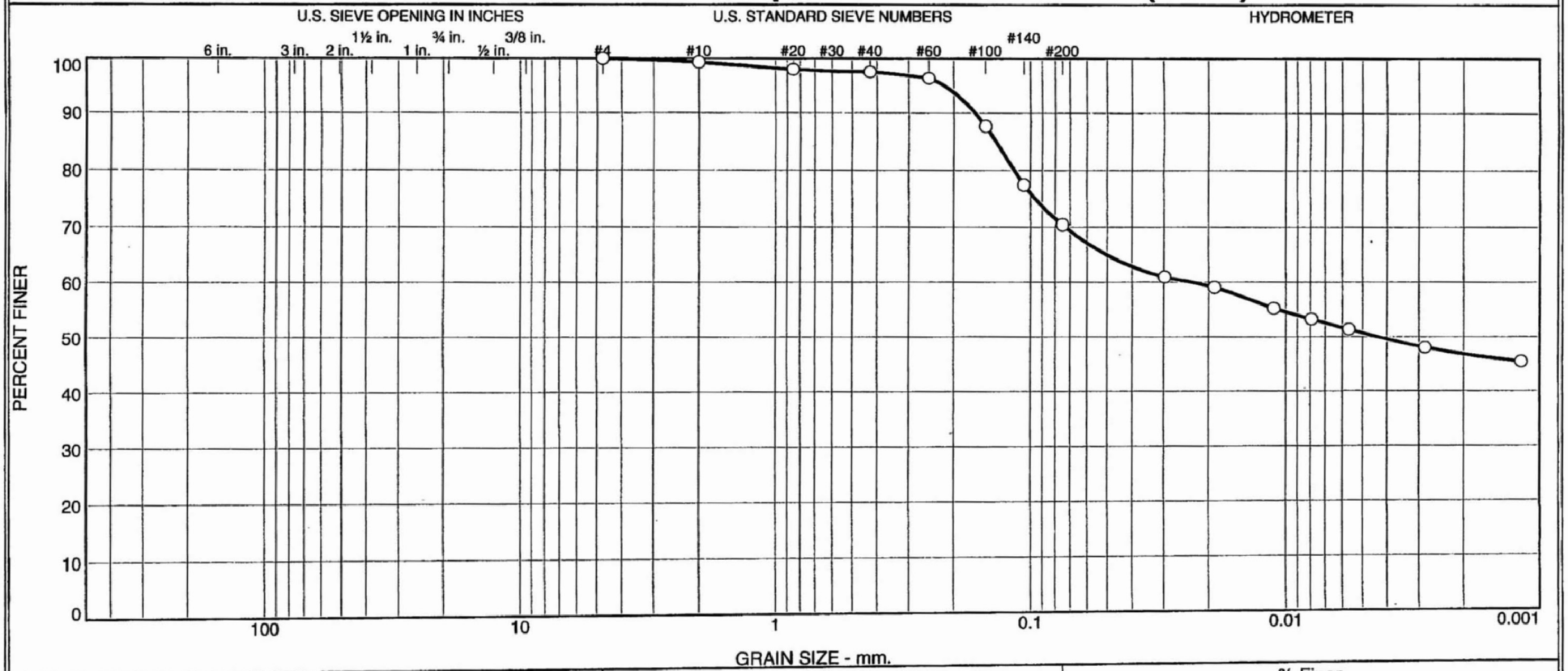
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.24	22.69			
Dry+Tare	21.35	21.74			
Tare	15.47	15.44			
Moisture	15.1	15.1			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
160.78	139.55	6.60	16.0

Particle Size Distribution Report / ASTM D-422-63(2002)e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.7	1.8	27.1	19.7	50.7

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2160	SS-16	63.5-65	11-11-07	CH	Pale Brown Sandy Fat CLAY	22.7	62	17

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed
Organiic content = 3.5% (ASTM 2794-07)

Tested By: CS Checked By: LBJ DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/25/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2160
Depth: 63.5-65 **Sample Number:** SS-16
Material Description: Pale Brown Sandy Fat CLAY
Date: 11-11-07 **Natural Moisture:** 22.7
Liquid Limit: 62 **Plastic Limit:** 17 **USCS Class.:** CH
Testing Remarks: Specific Gravity is assumed
Organiic content = 3.5% (ASTM 2794-07)
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
243.39	0.00	0.00	#4	0.00	100.0
			#10	1.59	99.3
50.96	0.00	0.00	#20	0.68	98.0
			#40	0.93	97.5
			#60	1.54	96.3
			#100	5.96	87.7
			#140	11.22	77.5
			#200	14.84	70.4

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.3
Weight of hydrometer sample =50.96
Hygroscopic moisture correction:
Moist weight and tare = 29.10
Dry weight and tare = 29.01
Tare weight = 15.40
Hygroscopic moisture = 0.7%
Table of composite correction values:

Temp., deg. C:	12.8	27.3
Comp. corr.:	-7.0	-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	36.0	31.4	0.0132	37.0	10.2	0.0298	61.0
5.00	21.7	35.0	30.5	0.0132	36.0	10.4	0.0190	59.1
15.00	21.8	33.0	28.5	0.0131	34.0	10.7	0.0111	55.3
30.00	21.7	32.0	27.5	0.0132	33.0	10.9	0.0079	53.3
60.00	21.8	31.0	26.5	0.0131	32.0	11.0	0.0056	51.4
240.00	22.6	29.0	24.7	0.0130	30.0	11.4	0.0028	47.9
1440.00	21.4	28.0	23.4	0.0132	29.0	11.5	0.0012	45.4

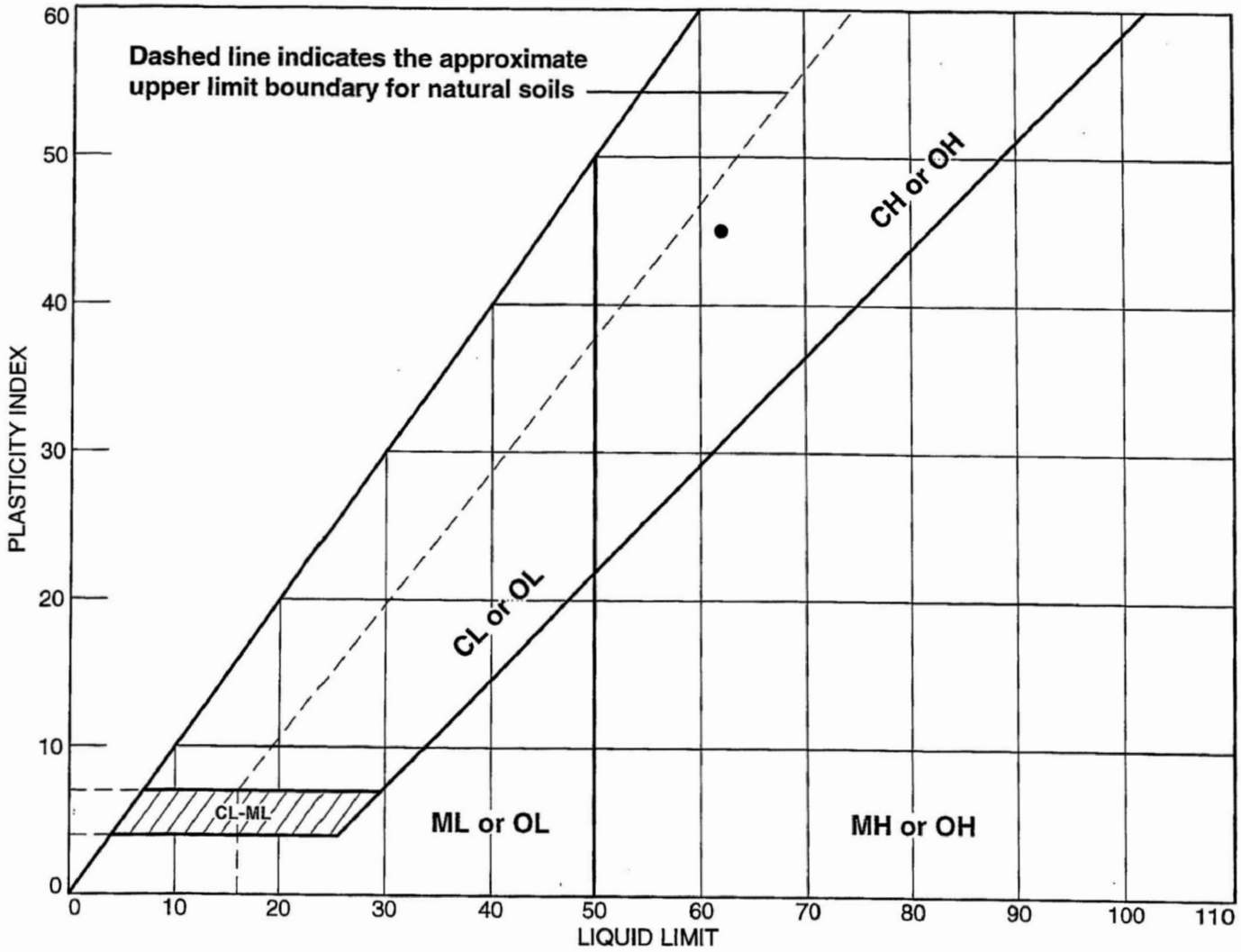
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.7	1.8	27.1	29.6	19.7	50.7	70.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0044	0.0233	0.1159	0.1365	0.1642	0.2182

Fineness Modulus
0.20

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-2160	SS-16	63.5-65	22.7	17	62	45	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project No.: 6468071777
Figure NA

Tested By: CS **Checked By:** LBJ DSC 1-25-08

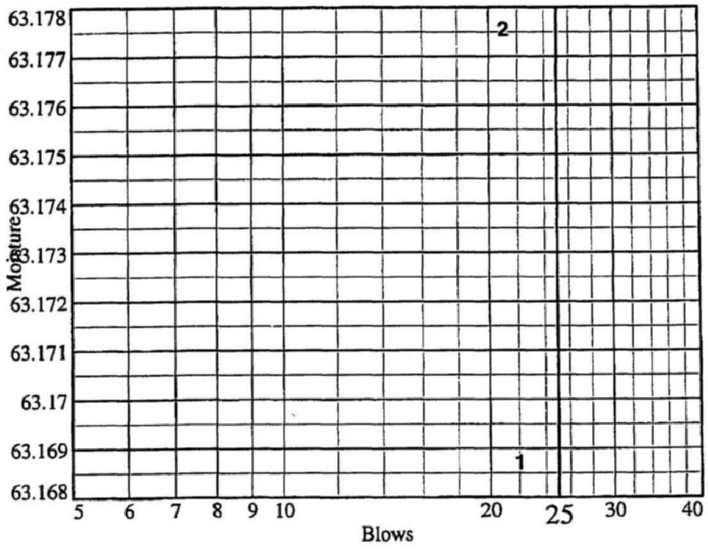
LIQUID AND PLASTIC LIMIT TEST DATA

1/25/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2160
Depth: 63.5-65
Sample Number: SS-16
Material Description: Pale Brown Sandy Fat CLAY
USCS: CH
AASHTO: A-7-6(30)
Tested by: CS
Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	23.43	24.17				
Dry+Tare	20.36	20.79				
Tare	15.50	15.44				
# Blows	22	21				
Moisture	63.2	63.2				



Liquid Limit= 62
Plastic Limit= 17
Plasticity Index= 45
Natural Moisture= 22.7
Liquidity Index= 0.1

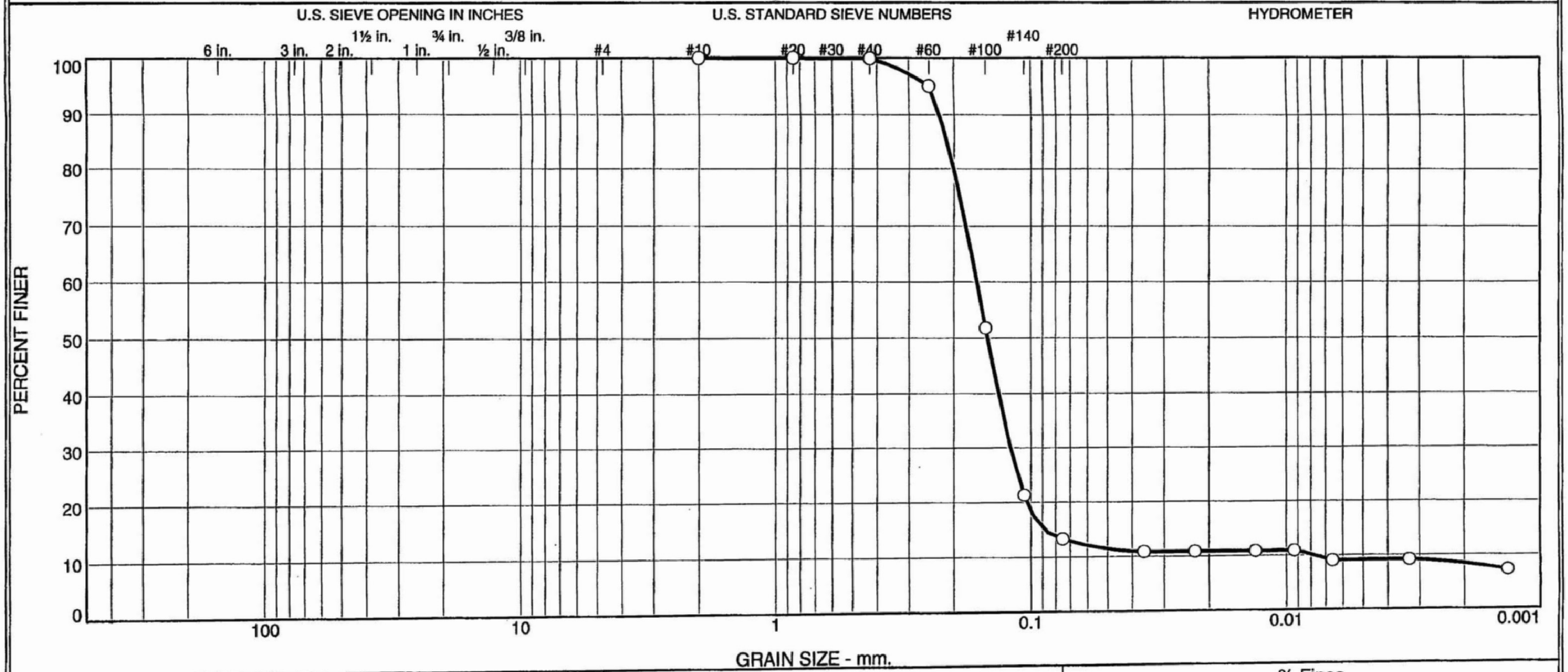
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.20	21.84			
Dry+Tare	20.38	20.93			
Tare	15.54	15.59			
Moisture	16.9	17.0			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
168.00	138.69	9.40	22.7

Particle Size Distribution Report / ASTM D-422-63(2002)e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.1	86.6	4.2	9.1

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2160	SS-17	68.5-70	11-11-07	SM	Pale Brown Silty SAND	21.5	NV	NP

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.656 (ASTM D854-06)

Tested By: CS **Checked By:** LBJ DSC 1-26-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/25/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2160
Depth: 68.5-70 **Sample Number:** SS-17
Material Description: Pale Brown Silty SAND
Date: 11-11-07 **Natural Moisture:** 21.5
Liquid Limit: NV **Plastic Limit:** NP **USCS Class.:** SM
Testing Remarks: Specific Gravity = 2.656 (ASTM D854-06)
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
229.02	0.00	0.00	#10	0.00	100.0
49.58	0.00	0.00	#20	0.01	100.0
			#40	0.04	99.9
			#60	2.48	95.0
			#100	23.87	51.9
			#140	39.00	21.3
			#200	42.97	13.3

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =49.58
Hygroscopic moisture correction:
Moist weight and tare = 28.47
Dry weight and tare = 28.40
Tare weight = 15.40
Hygroscopic moisture = 0.5%
Table of composite correction values:

Temp., deg. C:	12.8	27.3
Comp. corr.:	-7.0	-3.0

Meniscus correction only = 1.0
Specific gravity of solids = 2.656
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	5.4	0.0134	11.0	14.5	0.0360	10.9
5.00	21.4	10.0	5.4	0.0134	11.0	14.5	0.0228	10.9
15.00	21.4	10.0	5.4	0.0134	11.0	14.5	0.0132	10.9
30.00	21.5	10.0	5.4	0.0134	11.0	14.5	0.0093	10.9
60.00	21.8	9.0	4.5	0.0133	10.0	14.7	0.0066	9.1
240.00	22.0	9.0	4.5	0.0133	10.0	14.7	0.0033	9.2
1440.00	22.1	8.0	3.6	0.0133	9.0	14.8	0.0013	7.2

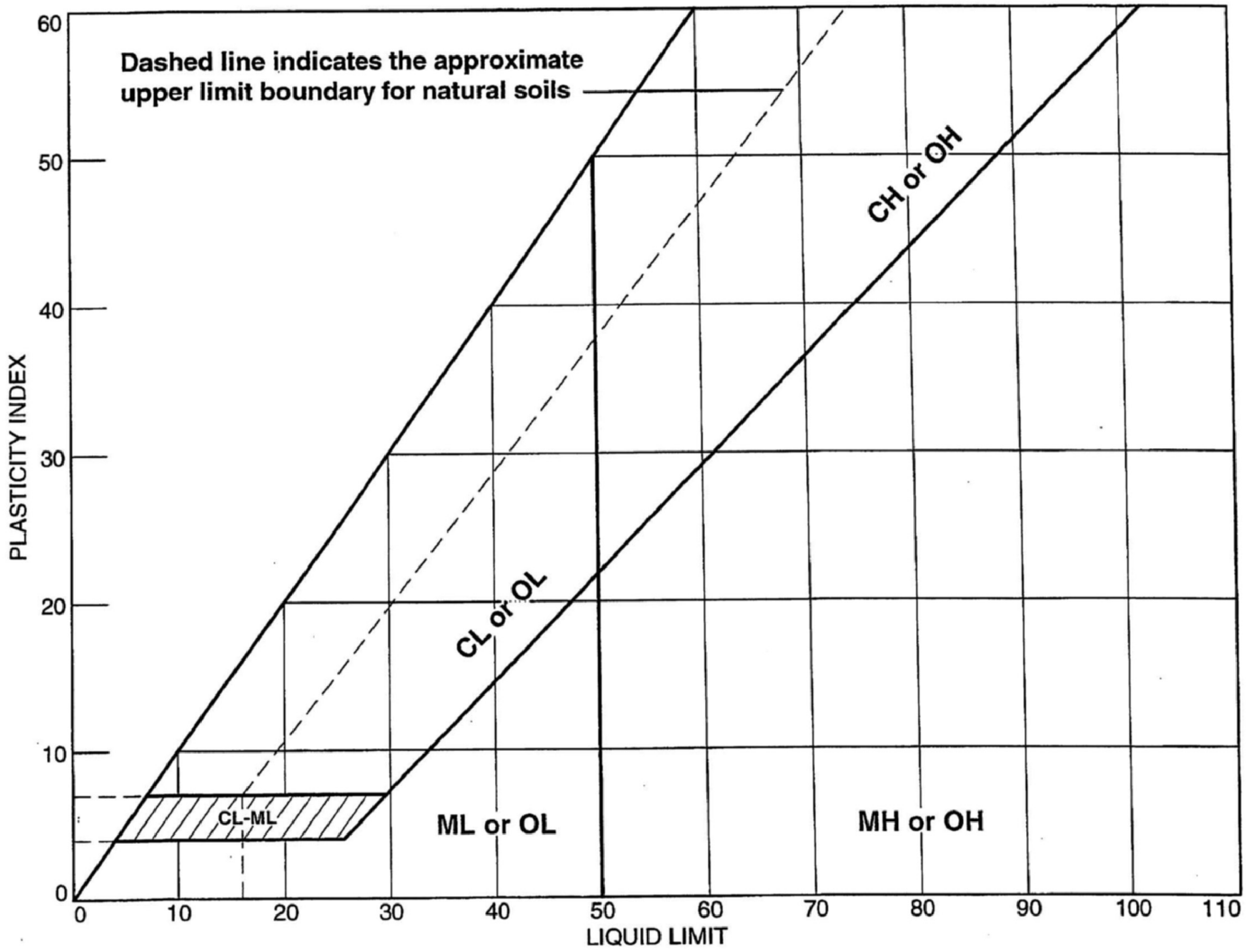
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.1	86.6	86.7	4.2	9.1	13.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0077	0.0883	0.1033	0.1198	0.1473	0.1623	0.2002	0.2130	0.2286	0.2500

Fineness Modulus	C_u	C_c
0.51	20.96	11.42

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-2160	SS-17	68.5-70	21.5	NP	NV	NP	SM

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project No.: 6468071777 **Figure** NA

Tested By: CS **Checked By:** LBJ DSC 1-25-08

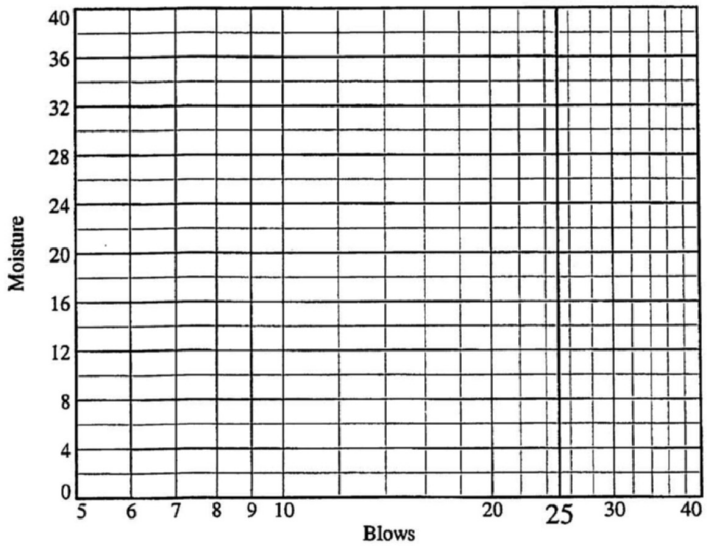
LIQUID AND PLASTIC LIMIT TEST DATA

1/25/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2160
Depth: 68.5-70
Sample Number: SS-17
Material Description: Pale Brown SAND
USCS: SM
AASHTO: A-2-4(0)
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= 21.5

Plastic Limit Data

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

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
138.00	115.23	9.30	21.5