

LIQUID AND PLASTIC LIMIT TEST DATA

4/9/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 80.4-81.9'

Sample Number: SS-19

Material Description: Light Gray Clayey SAND

USCS: SC

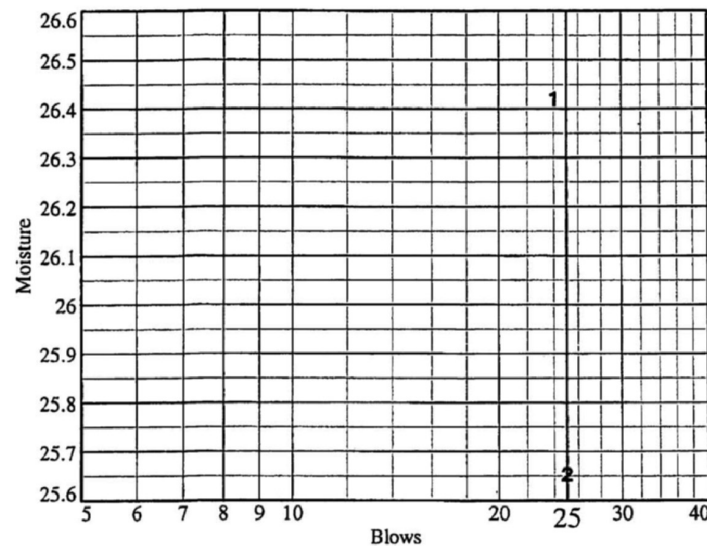
AASHTO: A-6(2)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	33.30	29.90				
Dry+Tare	29.58	26.96				
Tare	15.50	15.50				
# Blows	24	25				
Moisture	26.4	25.7				



Liquid Limit= 26
 Plastic Limit= 14
 Plasticity Index= 12
 Natural Moisture= 17.4
 Liquidity Index= 0.3

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	23.96	24.02		
Dry+Tare	22.98	22.96		
Tare	15.70	15.41		
Moisture	13.5	14.0		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
136.80	117.55	6.80	17.4

MACTEC, Inc.

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: 11/16/07

SAMPLE IDENTIFICATION: B-2269 SS-19

(A) Mass of oven-dried soil, grams:	75.00
(B) Mass of pycnometer filled with water at test temperature (T), grams:	656.60
(C) Mass of pycnometer, water and soil, grams:	704.06
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	23.1
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.723
(F) Correction factor:	0.99931
(G x F) SPECIFIC GRAVITY @ 20°C:	2.721

MATERIAL TESTED:

☒

- # 4

☐

- # 10

PREPARATION METHOD:

☒

DRY

☐

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100%

Clayey SAND (SC)

EQUIPMENT USED

SCALES : 3.1.19

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNO METER : P-6

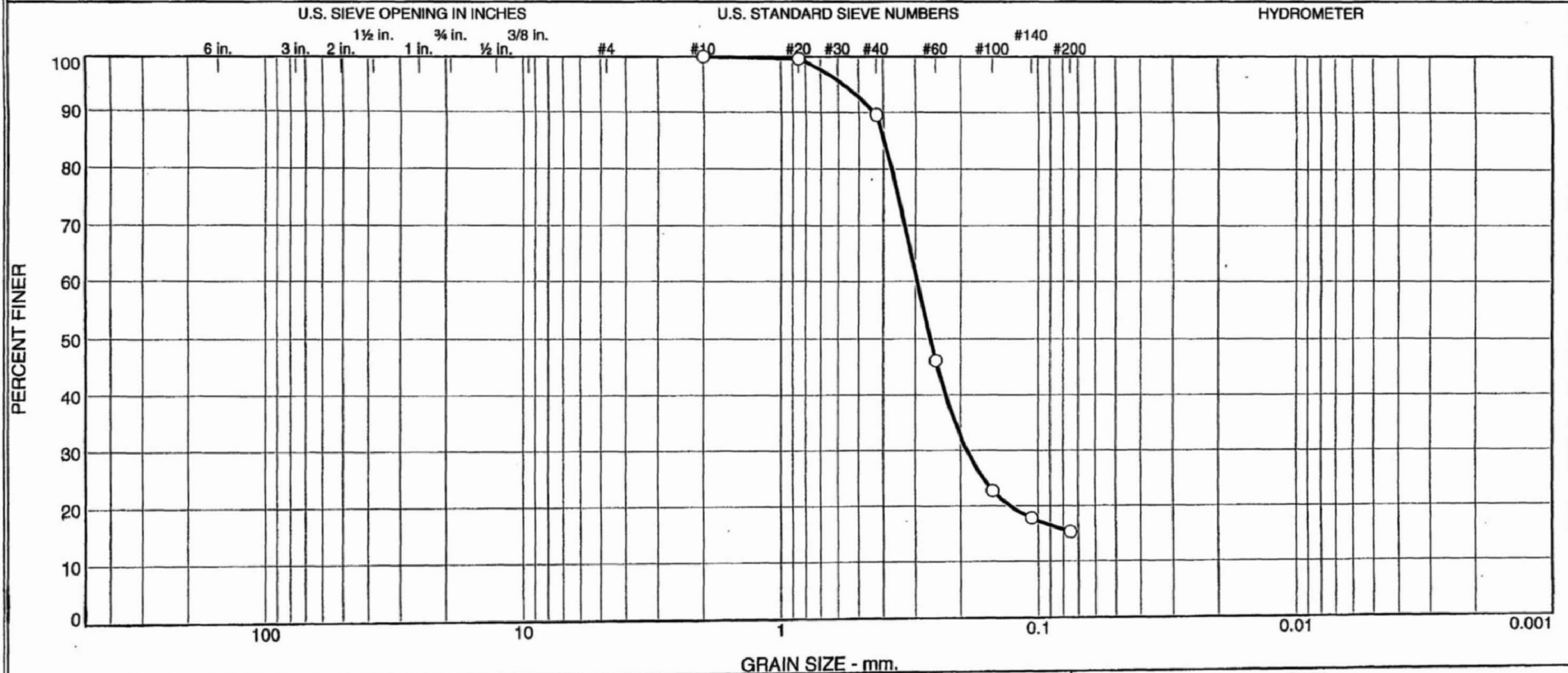
TESTED BY: CS

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

REVIEWED BY: Brian Johnson

DSC 1-25-08

Particle Size Distribution Report / ASTM D-6913-04e1



GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 85.4-86.9'

Sample Number: SS-20

Material Description: Light Gray Clayey SAND (Visual)

Date: 11/9/07

Natural Moisture: ND

Liquid Limit: ND

Plastic Limit: ND

USCS Class.: SC

Testing Remarks: SIEVE ANALYSIS ONLY

ND= Not determined

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
305.37	0.00	0.00	#10	0.00	100.0
103.77	0.00	0.00	#20	0.41	99.6
			#40	10.81	89.6
			#60	55.90	46.1
			#100	80.14	22.8
			#140	85.30	17.8
			#200	87.90	15.3

Fractional Components

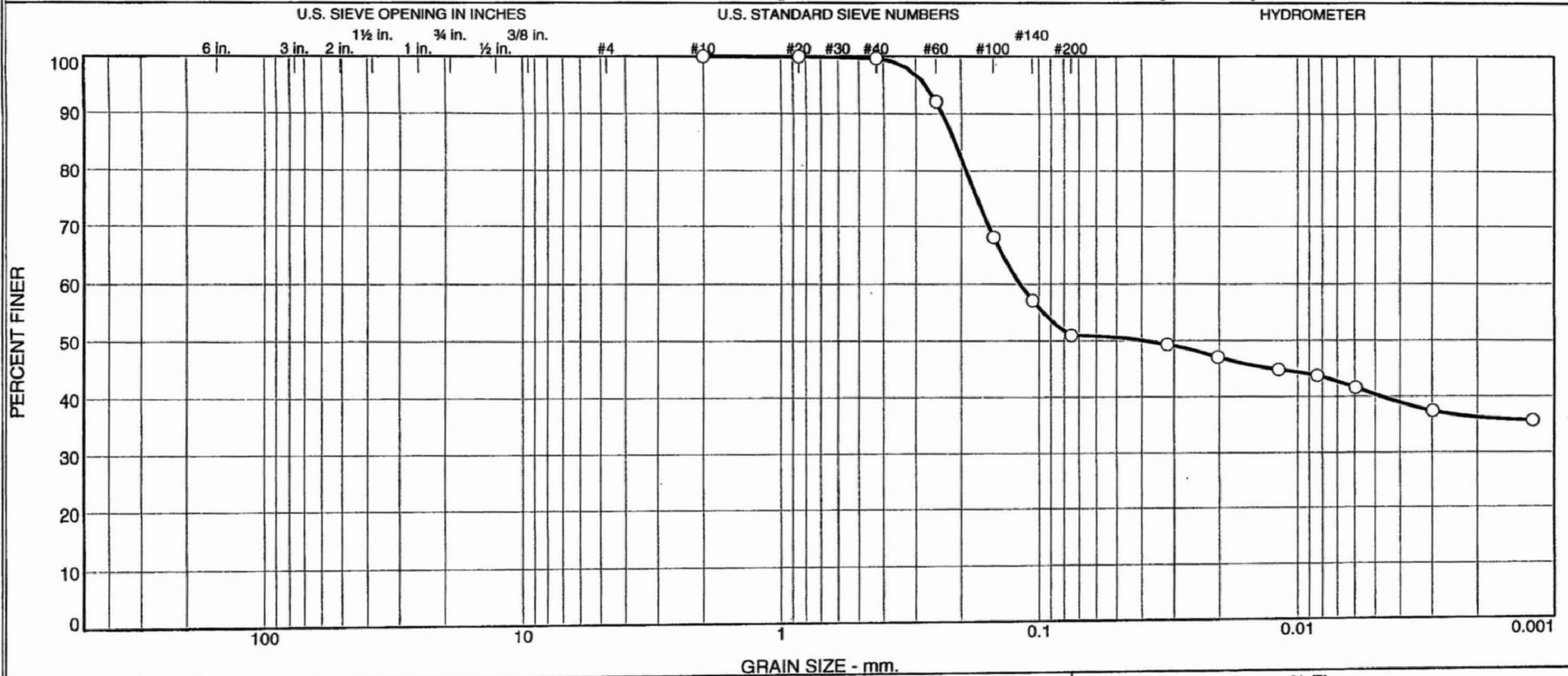
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	10.4	74.3	84.7			15.3

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
		0.1290	0.1887	0.2627	0.2951	0.3709	0.3962	0.4337	0.5742

Fineness Modulus
1.20

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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	0.3	48.7	10.6	40.4

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2269	SS-21	90.4-91.9'	11/9/07	CL	Light Gray Sandy Lean CLAY	28.2	36	16

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777

Figure NA

MACTEC, Inc.
Raleigh, North Carolina

○ Specific gravity is assumed.
Organic content = 1.1% (ASTM D 2974-07)

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 90.4-91.9'

Sample Number: SS-21

Material Description: Light Gray Sandy Lean CLAY

Date: 11/9/07

Natural Moisture: 28.2

Liquid Limit: 36

Plastic Limit: 16

USCS Class.: CL

Testing Remarks: Specific gravity is assumed.

Organic content = 1.1% (ASTM D 2974-07)

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
235.60	0.00	0.00	#10	0.00	100.0
48.10	0.00	0.00	#20	0.03	99.9
			#40	0.16	99.7
			#60	3.80	92.1
			#100	15.35	68.1
			#140	20.58	57.2
			#200	23.58	51.0

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 48.1

Hygroscopic moisture correction:

Moist weight and tare = 27.20

Dry weight and tare = 26.28

Tare weight = 15.50

Hygroscopic moisture = 8.5%

Table of composite correction values:

Temp., deg. C: 10.5 29.5

Comp. corr.: -8.0 -3.5

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

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

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	R _m	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	27.5	22.1	0.0132	28.5	11.6	0.0318	49.3
5.00	21.4	26.5	21.1	0.0132	27.5	11.8	0.0203	47.0
15.00	21.4	25.5	20.1	0.0132	26.5	11.9	0.0118	44.8
30.00	21.5	25.0	19.6	0.0132	26.0	12.0	0.0084	43.7
60.00	21.6	24.0	18.6	0.0132	25.0	12.2	0.0059	41.6
240.00	22.3	22.0	16.8	0.0131	23.0	12.5	0.0030	37.5
1440.00	23.3	21.0	16.0	0.0129	22.0	12.7	0.0012	35.8

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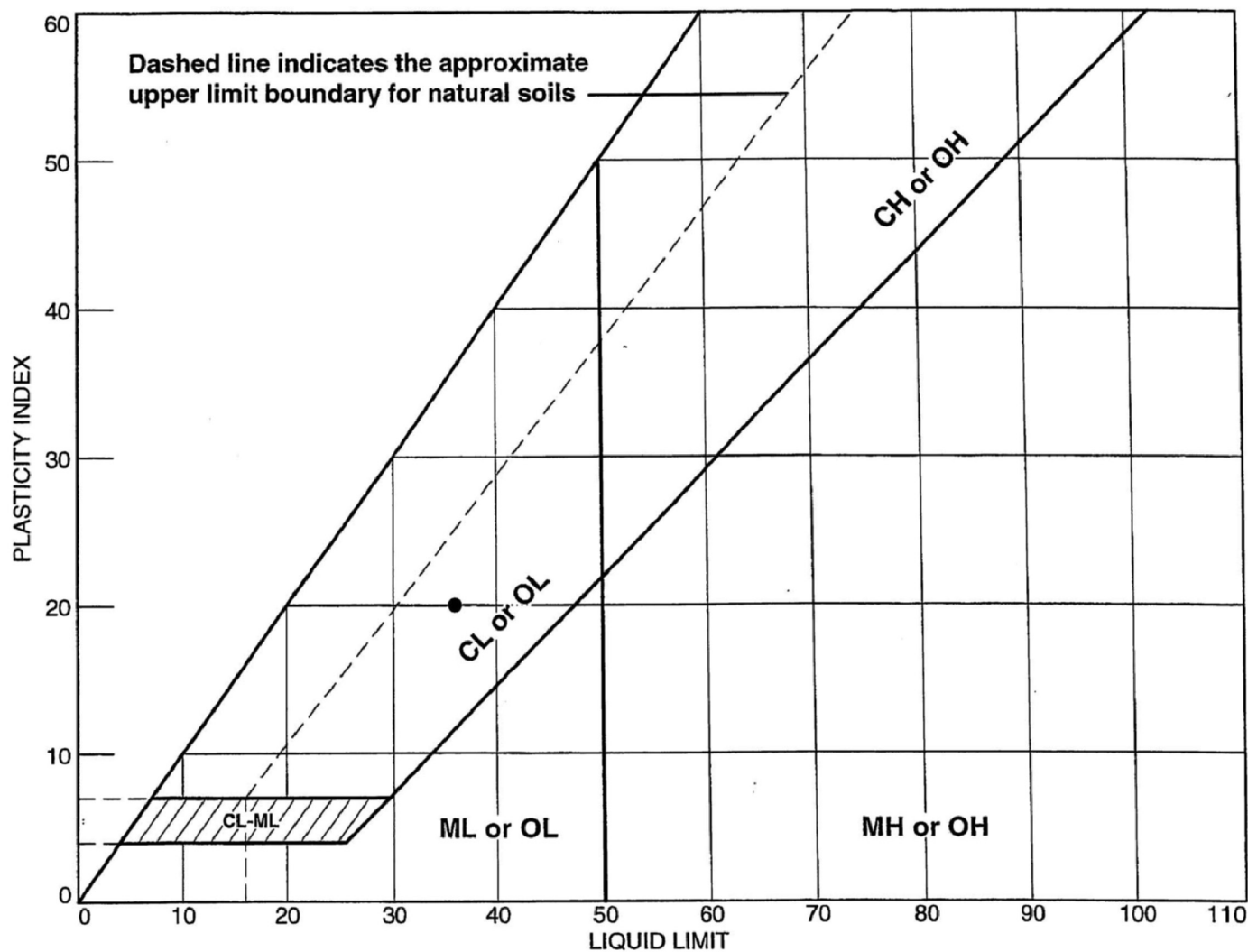
Fractural Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.3	48.7	49.0	10.6	40.4	51.0

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0393	0.1183	0.1915	0.2116	0.2365	0.2755

Fineness Modulus
0.35

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-2269	SS-21	90.4-91.9'	28.2	16	36	20	CL

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-2269

Depth: 90.4-91.9'

Sample Number: SS-21

Material Description: Light Gray Sandy Lean CLAY

USCS: CL

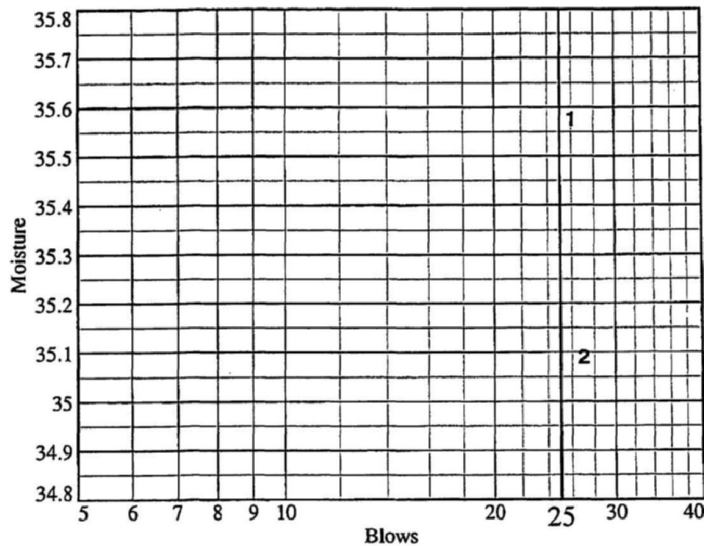
AASHTO: A-6(6)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	29.60	32.60				
Dry+Tare	25.90	28.21				
Tare	15.50	15.70				
# Blows	26	27				
Moisture	35.6	35.1				



Liquid Limit= 36
 Plastic Limit= 16
 Plasticity Index= 20
 Natural Moisture= 28.2
 Liquidity Index= 0.6

Plastic Limit Data

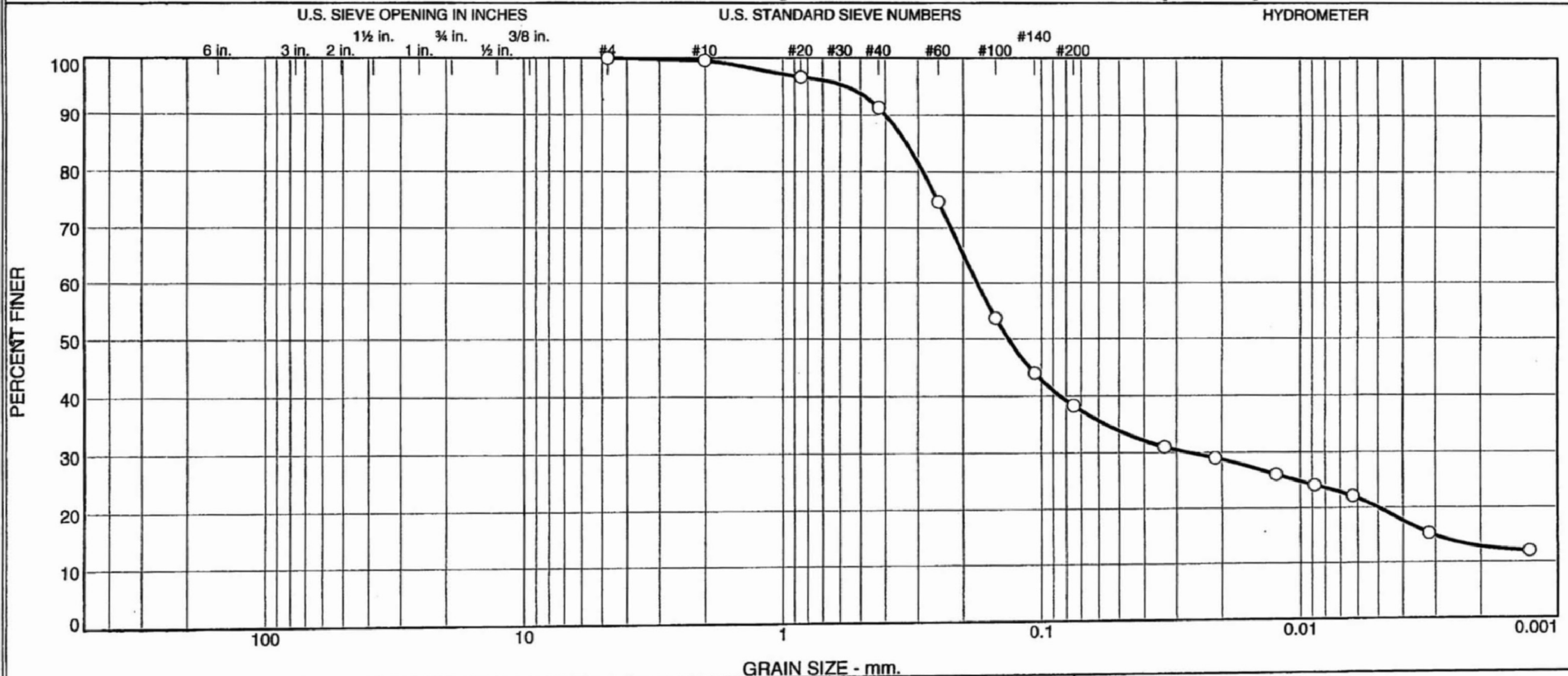
Run No.	1	2	3	4
Wet+Tare	22.11	25.49		
Dry+Tare	21.20	24.10		
Tare	15.51	15.31		
Moisture	16.0	15.8		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
144.40	114.63	9.10	28.2

MACTEC, Inc.

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	0.4	8.3	53.0	18.2	20.1

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2269	SS-22	95.4-96.9'	11/9/07	SC-SM	Light Gray and Brownish Yellow Silty, Clayey SAND	20.1	20	13

Client Bechtel		MACTEC, Inc. Raleigh, North Carolina	○ Specific gravity is assumed.
Project Exelon Texas COL (Victoria)			
Project No. 6468071777	Figure NA		

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 95.4-96.9'

Sample Number: SS-22

Material Description: Light Gray and Brownish Yellow Silty, Clayey SAND

Date: 11/9/07

Natural Moisture: 20.1

Liquid Limit: 20

Plastic Limit: 13

USCS Class.: SC-SM

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
312.50	0.00	0.00	#4	0.00	100.0
			#10	1.34	99.6
49.50	0.00	0.00	#20	1.45	96.7
			#40	4.12	91.3
			#60	12.36	74.7
			#100	22.81	53.7
			#140	27.62	44.0
			#200	30.44	38.3

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.6

Weight of hydrometer sample = 49.5

Hygroscopic moisture correction:

Moist weight and tare = 27.93

Dry weight and tare = 27.89

Tare weight = 15.36

Hygroscopic moisture = 0.3%

Table of composite correction values:

Temp., deg. C: 10.5 29.5

Comp. corr.: -8.0 -3.5

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

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

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.3	21.0	15.6	0.0132	22.0	12.7	0.0333	31.0
5.00	21.3	20.0	14.6	0.0132	21.0	12.9	0.0212	29.1
15.00	21.4	18.5	13.1	0.0132	19.5	13.1	0.0123	26.1
30.00	21.4	17.5	12.1	0.0132	18.5	13.3	0.0088	24.1
60.00	21.4	16.5	11.1	0.0132	17.5	13.4	0.0062	22.1
240.00	21.9	13.0	7.7	0.0131	14.0	14.0	0.0032	15.4
1440.00	23.3	11.0	6.0	0.0129	12.0	14.3	0.0013	12.0

MACTEC, Inc.

Fractional Components

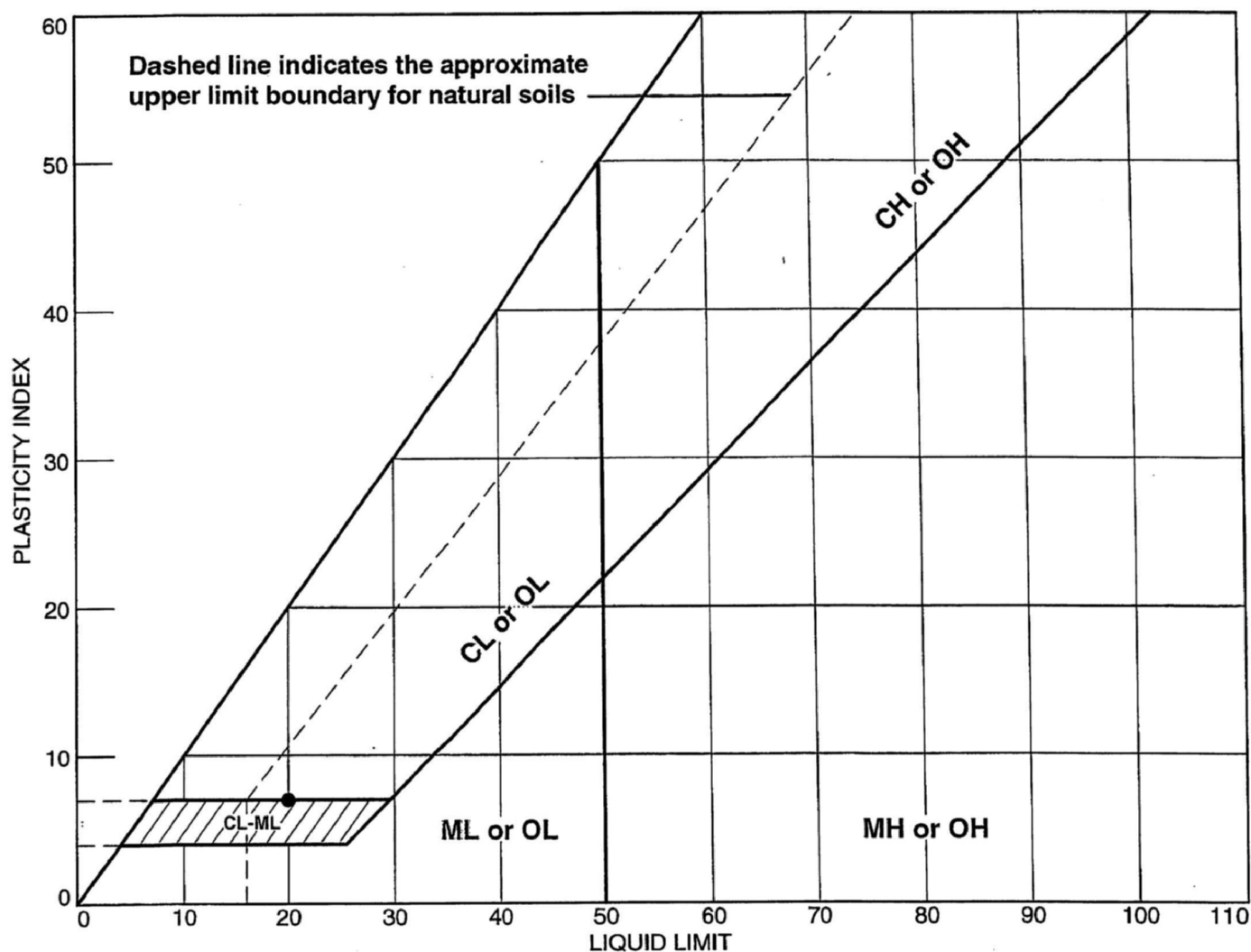
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.4	8.3	53.0	61.7	18.2	20.1	38.3

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
	0.0030	0.0050	0.0265	0.1340	0.1767	0.2867	0.3322	0.3999	0.5659

Fineness Modulus
0.72

MACTEC, 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-2269	SS-22	95.4-96.9'	20.1	13	20	7	SC-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

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 95.4-96.9'

Sample Number: SS-22

Material Description: Light Gray and Brownish Yellow Silty, Clayey SAND

USCS: SC-SM

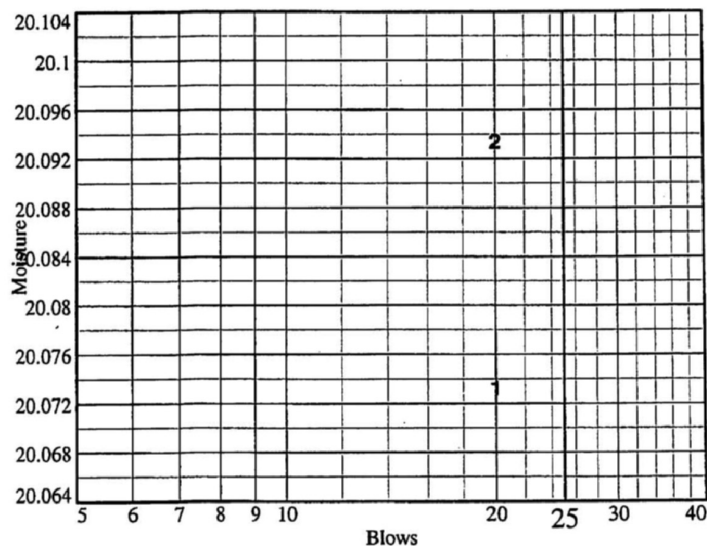
AASHTO: A-4(0)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	31.84	35.98				
Dry+Tare	29.10	32.54				
Tare	15.45	15.42				
# Blows	20	20				
Moisture	20.1	20.1				



Liquid Limit= 20
 Plastic Limit= 13
 Plasticity Index= 7
 Natural Moisture= 20.1
 Liquidity Index= 1.0

Plastic Limit Data

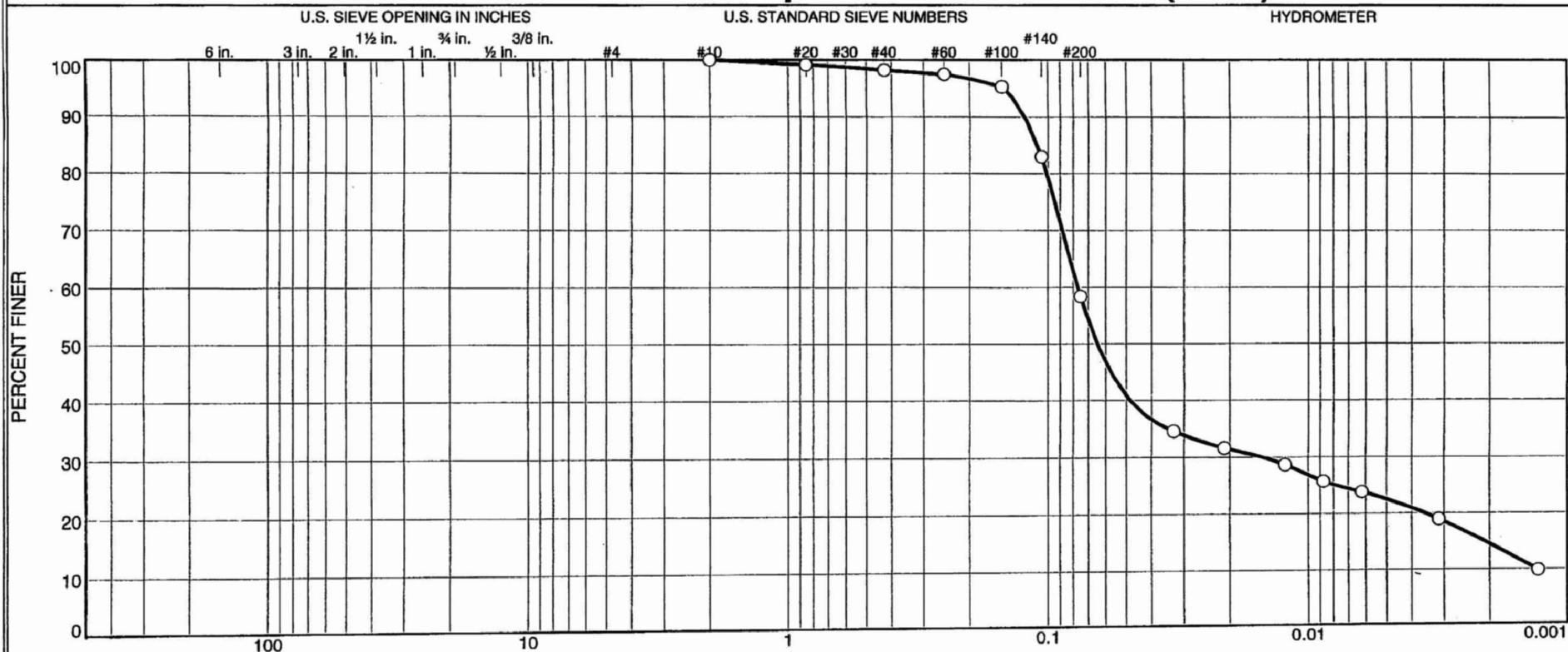
Run No.	1	2	3	4
Wet+Tare	26.26	26.95		
Dry+Tare	25.03	25.69		
Tare	15.58	15.50		
Moisture	13.0	12.4		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
175.30	147.10	6.80	20.1

MACTEC, Inc.

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



GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 100.4-101.9'

Sample Number: SS-23

Material Description: Light Gray Sandy Silty CLAY

Date: 11/9/07

Natural Moisture: 16.5

Liquid Limit: 22

Plastic Limit: 17

USCS Class.: CL-ML

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
321.60	0.00	0.00	#10	0.00	100.0
50.85	0.00	0.00	#20	0.44	99.1
			#40	0.93	98.2
			#60	1.30	97.4
			#100	2.43	95.2
			#140	8.65	83.0
			#200	21.13	58.4

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 50.85

Hygroscopic moisture correction:

Moist weight and tare = 32.93

Dry weight and tare = 32.77

Tare weight = 21.06

Hygroscopic moisture = 1.4%

Table of composite correction values:

Temp., deg. C: 10.5 29.5

Comp. corr.: -8.0 -3.5

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

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

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	23.0	17.6	0.0132	24.0	12.4	0.0328	34.7
5.00	21.4	21.5	16.1	0.0132	22.5	12.6	0.0210	31.7
15.00	21.4	20.0	14.6	0.0132	21.0	12.9	0.0122	28.7
30.00	21.4	18.5	13.1	0.0132	19.5	13.1	0.0087	25.8
60.00	21.4	17.5	12.1	0.0132	18.5	13.3	0.0062	23.8
240.00	21.6	15.0	9.6	0.0132	16.0	13.7	0.0031	19.0
1440.00	23.1	10.0	5.0	0.0129	11.0	14.5	0.0013	9.8

MACTEC, Inc.

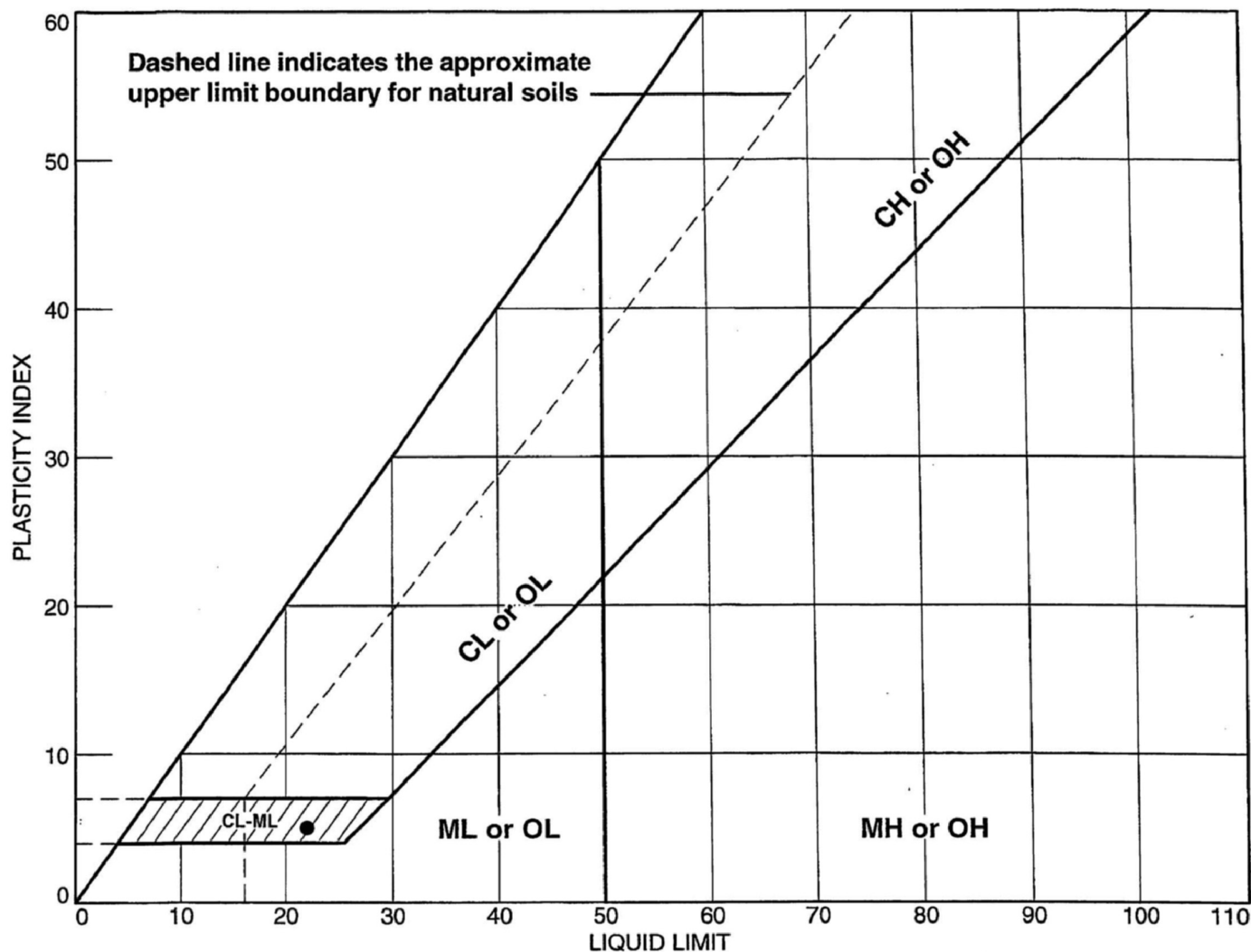
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.8	39.8	41.6	35.9	22.5	58.4

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
0.0013	0.0021	0.0035	0.0148	0.0646	0.0768	0.1011	0.1099	0.1228	0.1481

Fineness Modulus	C _u	C _c
0.09	58.19	2.16

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-2269	SS-23	100.4-101.9'	16.5	17	22	5	CL-ML

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-2269

Depth: 100.4-101.9'

Sample Number: SS-23

Material Description: Light Gray Sandy Silty CLAY

USCS: CL-ML

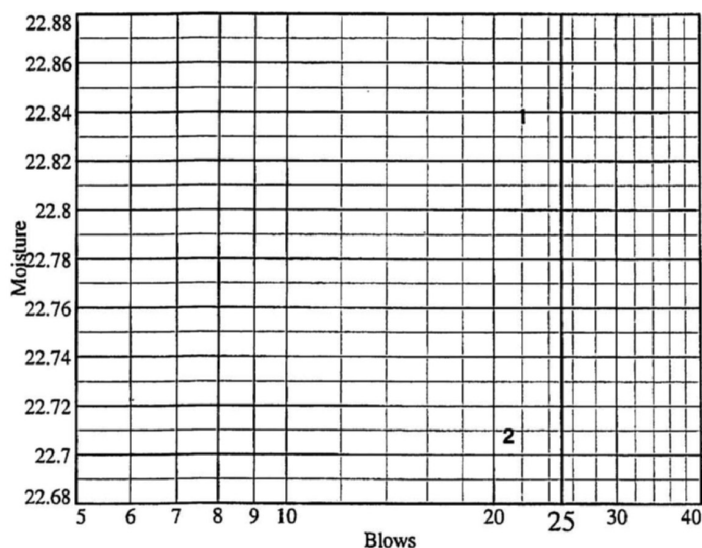
AASHTO: A-4(0)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	30.58	30.03				
Dry+Tare	27.78	27.33				
Tare	15.52	15.44				
# Blows	22	21				
Moisture	22.8	22.7				



Liquid Limit= 22
 Plastic Limit= 17
 Plasticity Index= 5
 Natural Moisture= 16.5
 Liquidity Index= -0.1

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	26.07	27.22		
Dry+Tare	24.58	25.56		
Tare	15.56	15.49		
Moisture	16.5	16.5		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
157.50	136.59	9.50	16.5

MACTEC, Inc.

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: 11/19/07

SAMPLE IDENTIFICATION: B-2269 SS-24

(A) Mass of oven-dried soil, grams:	75.00
(B) Mass of pycnometer filled with water at test temperature (T), grams:	656.55
(C) Mass of pycnometer, water and soil, grams:	703.50
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	23.5
(G) Specific Gravity at observed temperature: $A / [B - (C - A)]$	2.674
(F) <i>Correction factor:</i>	0.99921
(G x F) SPECIFIC GRAVITY @ 20°C:	2.671

MATERIAL TESTED:

☒ X
- # 4

☐
- # 10

PREPARATION METHOD:

☒ X
DRY

☐
WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100%

Well Graded SAND (SW) - field classification

EQUIPMENT USED

SCALES : 3.1.19

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNO METER : P-6

TESTED BY: CS

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

REVIEWED BY: Brian Johnson

DSC 1-25-08

HYDROMETER



○

O

○ Specific gravity is assumed.

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 120.4-121.9'

Sample Number: SS-25

Material Description: Light Gray Fat CLAY

Date: 11/9/07

Natural Moisture: 33.1

Liquid Limit: 62

Plastic Limit: 19

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
192.94	0.00	0.00	#10	0.00	100.0
49.10	0.00	0.00	#20	0.54	98.9
			#40	0.76	98.5
			#60	0.98	98.0
			#100	2.24	95.4
			#140	4.47	90.9
			#200	5.72	88.4

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 49.1

Hygroscopic moisture correction:

Moist weight and tare = 36.55

Dry weight and tare = 35.88

Tare weight = 24.79

Hygroscopic moisture = 6.0%

Table of composite correction values:

Temp., deg. C: 10.5 29.5

Comp. corr.: -8.0 -3.5

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

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

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	44.0	38.6	0.0132	45.0	8.9	0.0279	82.4
5.00	21.4	43.0	37.6	0.0132	44.0	9.1	0.0178	80.3
15.00	21.4	41.5	36.1	0.0132	42.5	9.3	0.0104	77.1
30.00	21.5	40.0	34.6	0.0132	41.0	9.6	0.0075	73.9
60.00	21.5	37.5	32.1	0.0132	38.5	10.0	0.0054	68.6
240.00	22.1	33.5	28.2	0.0131	34.5	10.6	0.0028	60.3
1440.00	23.4	31.5	26.6	0.0129	32.5	11.0	0.0011	56.7

MACTEC, Inc.

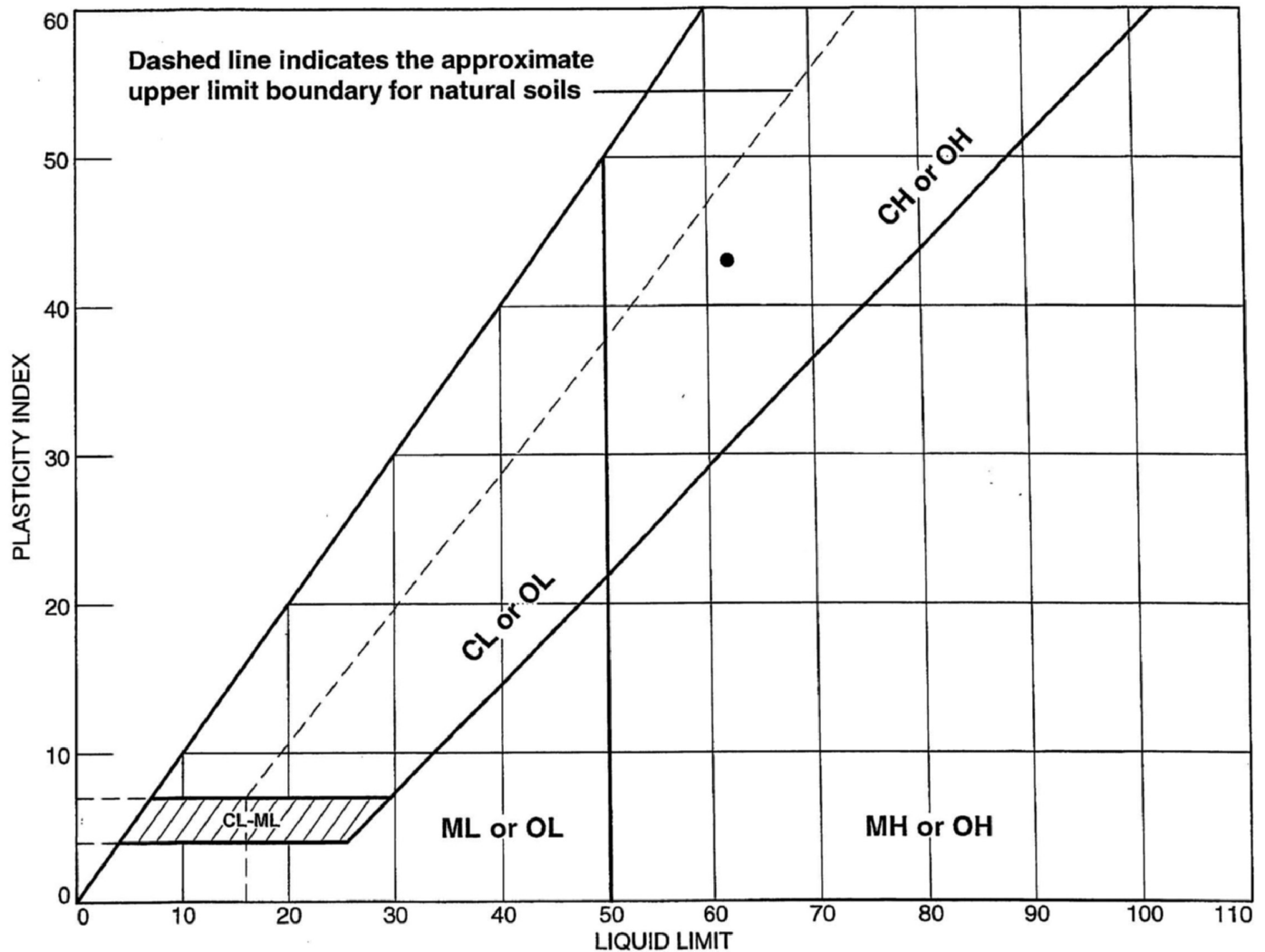
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.5	10.1	11.6	21.0	67.4	88.4

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
					0.0026	0.0169	0.0436	0.0966	0.1445

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-2269	SS-25	120.4-121.9'	33.1	19	62	43	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-2269

Depth: 120.4-121.9'

Sample Number: SS-25

Material Description: Light Gray Fat CLAY

USCS: CH

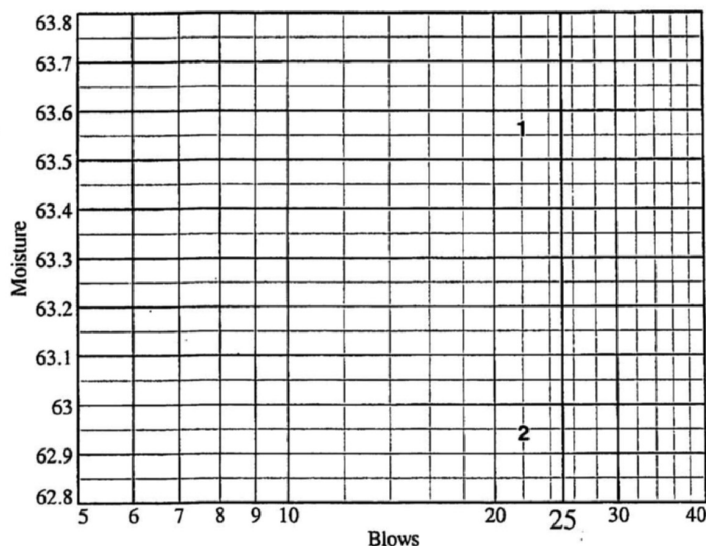
AASHTO: A-7-6(41)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.80	27.90				
Dry+Tare	23.02	23.11				
Tare	15.50	15.50				
# Blows	22	22				
Moisture	63.6	62.9				



Liquid Limit= 62
 Plastic Limit= 19
 Plasticity Index= 43
 Natural Moisture= 33.1
 Liquidity Index= 0.3

Plastic Limit Data

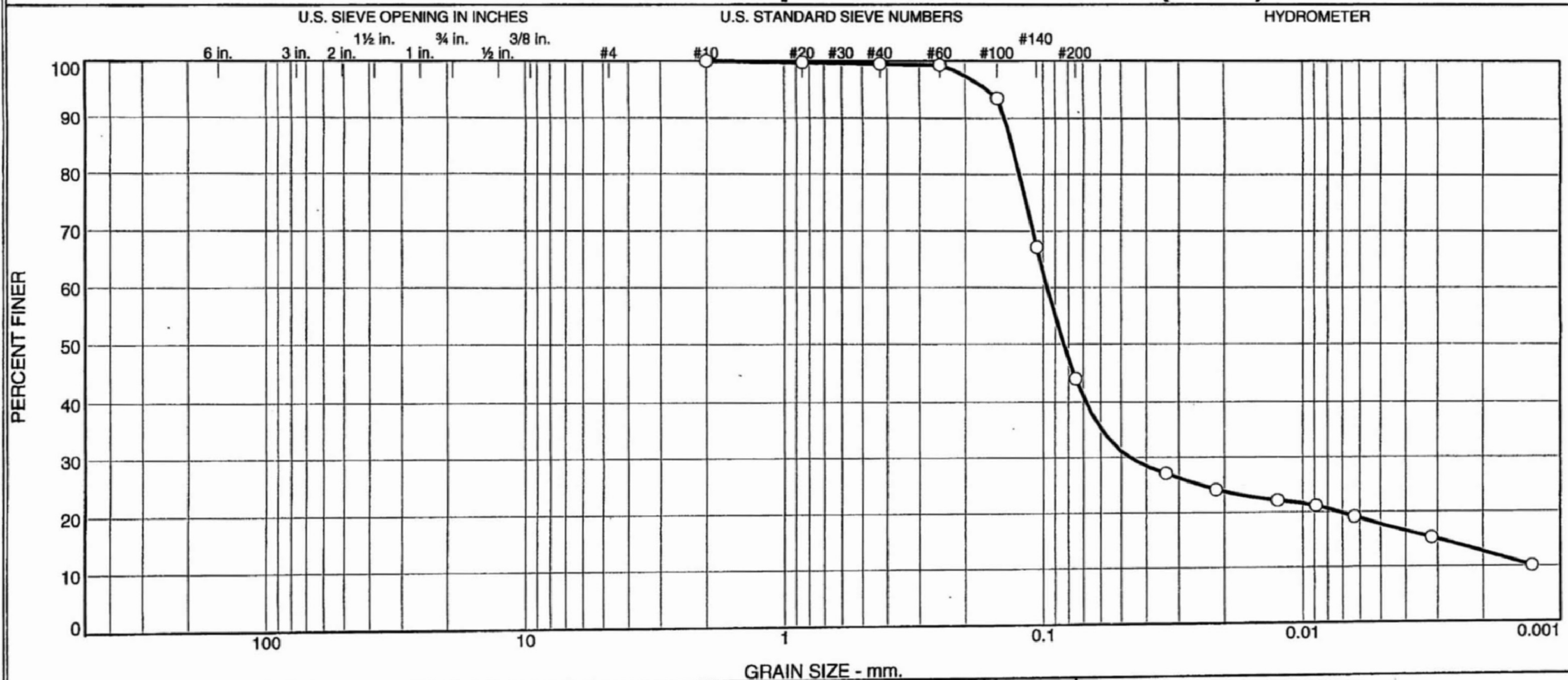
Run No.	1	2	3	4
Wet+Tare	23.47	24.85		
Dry+Tare	22.20	23.40		
Tare	15.42	15.53		
Moisture	18.7	18.4		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
103.80	80.25	9.20	33.1

MACTEC, Inc.

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



GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 130.4-131.9'

Sample Number: SS-26

Material Description: Pale Yellow Silty, Clayey SAND

Date: 11/9/07

Natural Moisture: 21.6

Liquid Limit: 19

Plastic Limit: 14

USCS Class.: SC-SM

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
324.29	0.00	0.00	#10	0.00	100.0
50.34	0.00	0.00	#20	0.14	99.7
			#40	0.27	99.5
			#60	0.37	99.3
			#100	3.30	93.4
			#140	16.50	67.2
			#200	28.16	44.1

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 50.34

Hygroscopic moisture correction:

Moist weight and tare = 33.83

Dry weight and tare = 33.63

Tare weight = 21.16

Hygroscopic moisture = 1.6%

Table of composite correction values:

Temp., deg. C: 10.5 29.5

Comp. corr.: -8.0 -3.5

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

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

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.5	19.0	13.6	0.0132	20.0	13.0	0.0337	27.2
5.00	21.4	17.5	12.1	0.0132	18.5	13.3	0.0215	24.1
15.00	21.5	16.5	11.1	0.0132	17.5	13.4	0.0125	22.2
30.00	21.5	16.0	10.6	0.0132	17.0	13.5	0.0089	21.2
60.00	21.5	15.0	9.6	0.0132	16.0	13.7	0.0063	19.2
240.00	22.0	13.0	7.7	0.0131	14.0	14.0	0.0032	15.4
1440.00	23.5	10.0	5.1	0.0129	11.0	14.5	0.0013	10.1

MACTEC, Inc.

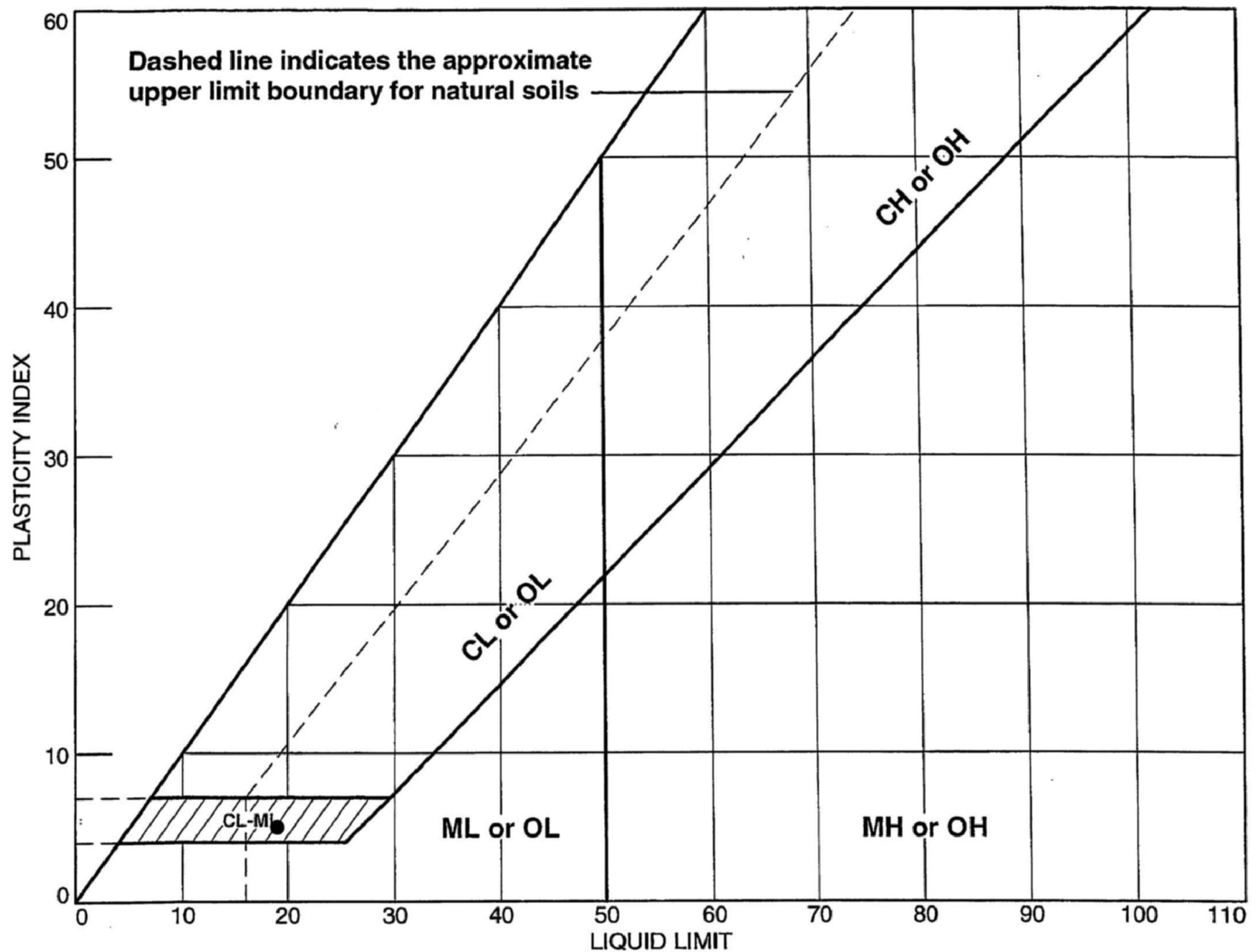
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.5	55.4	55.9	26.3	17.8	44.1

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
	0.0029	0.0072	0.0461	0.0834	0.0966	0.1235	0.1316	0.1413	0.1656

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-2269	SS-26	130.4-131.9'	21.6	14	19	5	SC-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

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 130.4-131.9'

Sample Number: SS-26

Material Description: Pale Yellow Silty, Clayey SAND

USCS: SC-SM

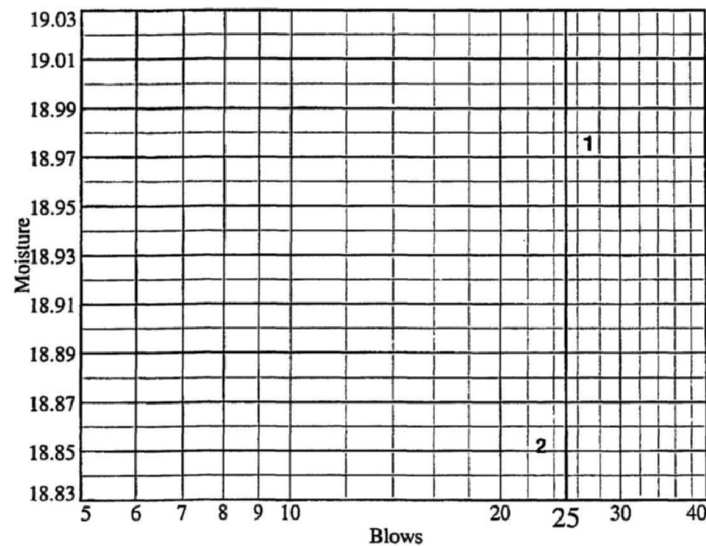
AASHTO: A-4(0)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	31.40	33.20				
Dry+Tare	28.88	30.44				
Tare	15.60	15.80				
# Blows	27	23				
Moisture	19.0	18.9				



Liquid Limit= 19
 Plastic Limit= 14
 Plasticity Index= 5
 Natural Moisture= 21.6
 Liquidity Index= 1.5

Plastic Limit Data

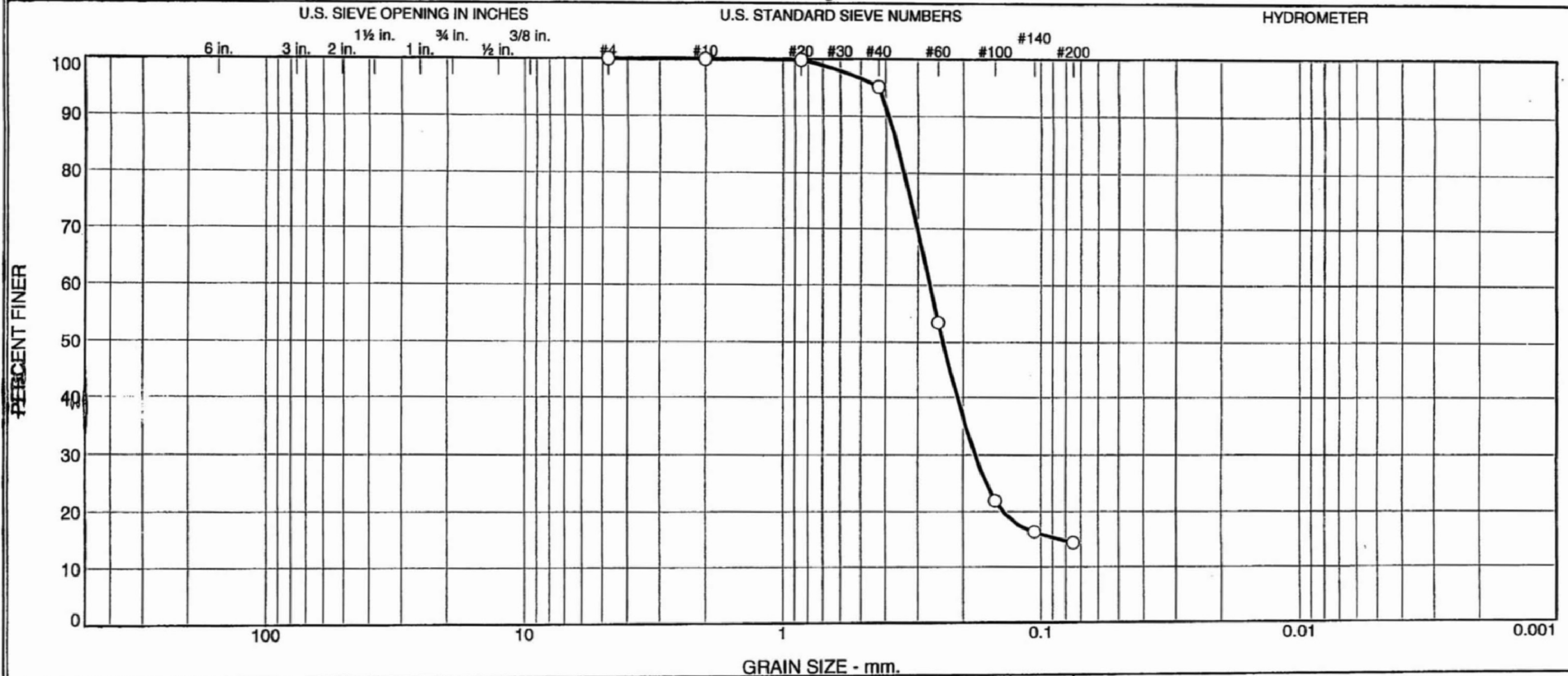
Run No.	1	2	3	4
Wet+Tare	23.70	26.22		
Dry+Tare	22.71	24.81		
Tare	15.60	15.30		
Moisture	13.9	14.8		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
145.90	121.66	9.20	21.6

MACTEC, Inc.

Particle Size Distribution Report / ASTM D 6913-04e1



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.8	80.8	14.4	

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2269	SS-27	140.4-141.9'	11/9/07	SC	Light Gray Clayey SAND (Visual)	ND	ND	ND

Client Bechtel
Project Exelon Texas COL (Victoria)

Project No. 6468071777

Figure NA

MACTEC, Inc.
Raleigh, North Carolina

○ SIEVE ANALYSIS ONLY
ND = Not determined.

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-2269

Depth: 140.4-141.9'

Sample Number: SS-27

Material Description: Light Gray Clayey SAND (Visual)

Date: 11/9/07

Natural Moisture: ND

Liquid Limit: ND

Plastic Limit: ND

USCS Class.: SC

Testing Remarks: SIEVE ANALYSIS ONLY

ND = Not determined.

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
232.10	0.00	0.00	#4	0.00	100.0
			#10	0.07	100.0
101.76	0.00	0.00	#20	0.10	99.9
			#40	4.86	95.2
			#60	47.30	53.5
			#100	79.37	22.0
			#140	85.09	16.4
			#200	87.09	14.4

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	4.8	80.8	85.6			14.4

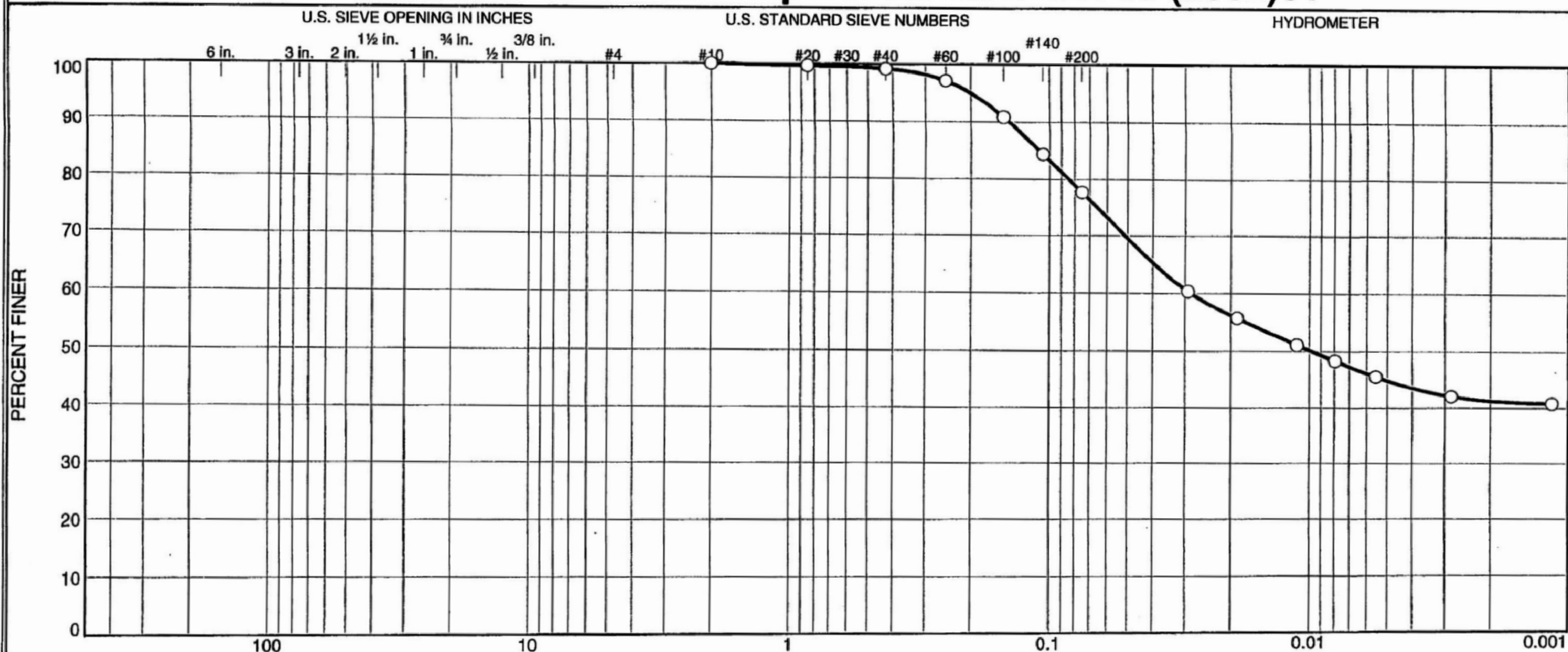
D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
	0.0841	0.1397	0.1797	0.2397	0.2695	0.3391	0.3615	0.3882	0.4233

Fineness Modulus

1.11

MACTEC, Inc.

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



GRAIN SIZE DISTRIBUTION TEST DATA

1/25/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 150.4-151.9'

Sample Number: SS-28

Material Description: Light Gray Fat CLAY with sand

Date: 11/9/07

Natural Moisture: 23.1

Liquid Limit: 55

Plastic Limit: 17

USCS Class.: CH

Testing Remarks: Specific gravity = 2.721 (ASTM D 854-06).

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
230.13	0.00	0.00	#10	0.00	100.0
53.30	0.00	0.00	#20	0.17	99.7
			#40	0.44	99.2
			#60	1.53	97.1
			#100	4.87	90.9
			#140	8.28	84.5
			#200	11.87	77.7

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 53.3

Hygroscopic moisture correction:

Moist weight and tare = 27.52

Dry weight and tare = 27.47

Tare weight = 15.49

Hygroscopic moisture = 0.4%

Table of composite correction values:

Temp., deg. C: 10.5 29.5

Comp. corr.: -8.0 -3.5

Meniscus correction only = 1.0

Specific gravity of solids = 2.721

Hydrometer type = 152H

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

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.3	38.0	32.6	0.0131	39.0	9.9	0.0293	60.4
5.00	21.3	35.5	30.1	0.0131	36.5	10.3	0.0189	55.7
15.00	21.3	33.0	27.6	0.0131	34.0	10.7	0.0111	51.1
30.00	21.4	31.5	26.1	0.0131	32.5	11.0	0.0079	48.4
63.00	21.4	30.0	24.6	0.0131	31.0	11.2	0.0055	45.6
245.00	21.9	28.0	22.7	0.0131	29.0	11.5	0.0028	42.1
1440.00	23.2	27.0	22.0	0.0128	28.0	11.7	0.0012	40.8

MACTEC, Inc.

Fractional Components

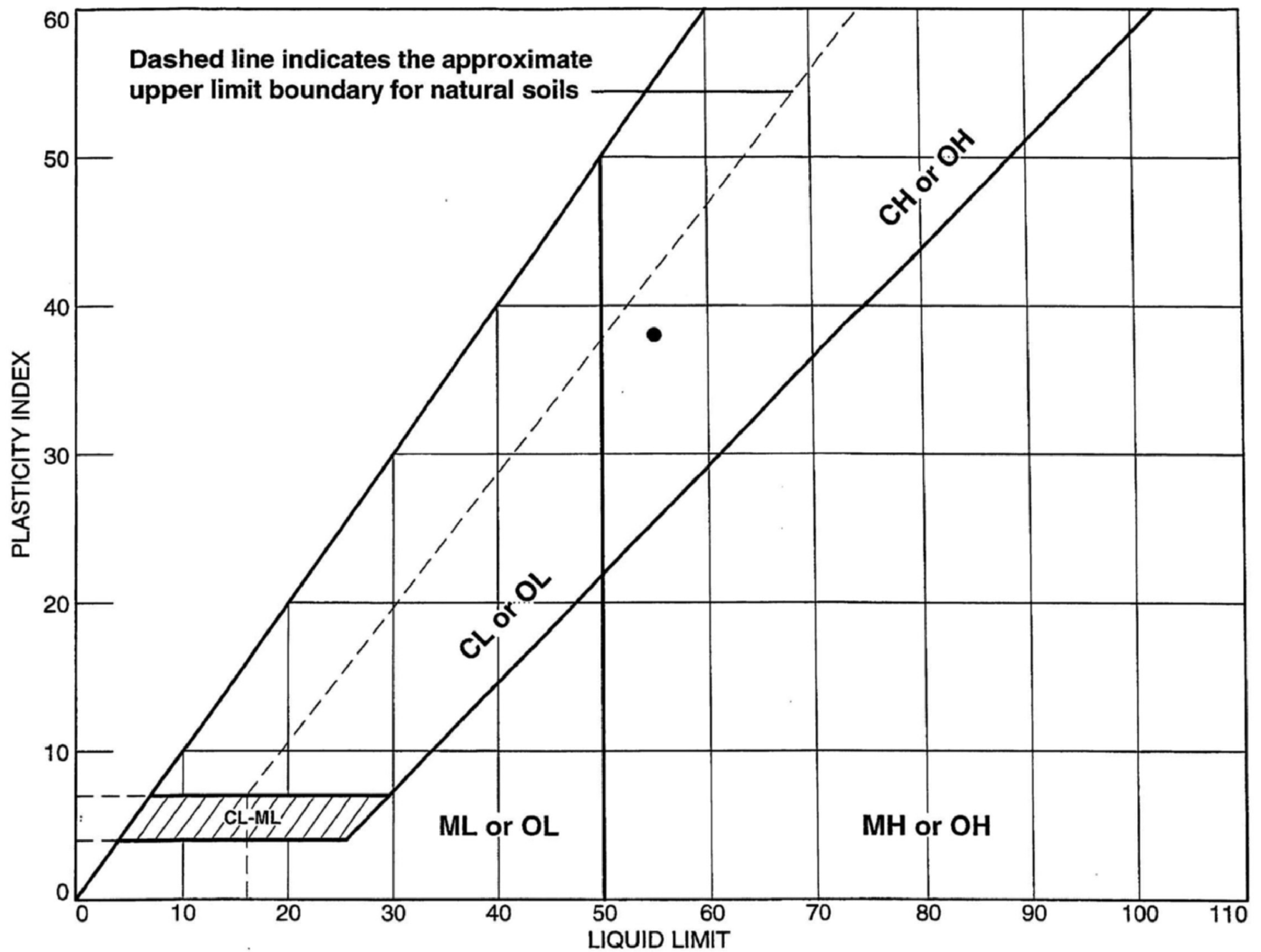
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.8	21.5	22.3	32.8	44.9	77.7

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0097	0.0284	0.0842	0.1090	0.1426	0.2007

Fineness Modulus
0.12

MACTEC, 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-2269	SS-28	150.4-151.9'	23.1	17	55	38	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