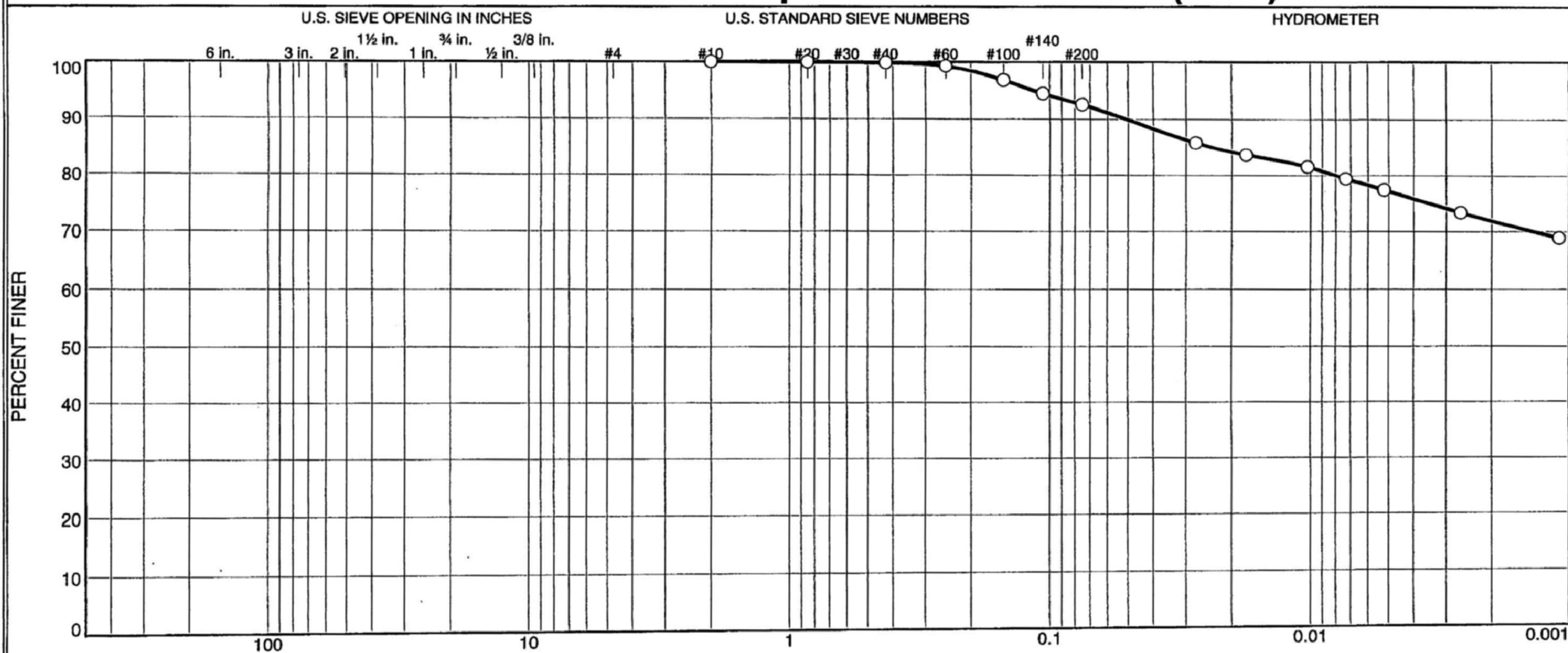


Particle Size Distribution Report / ASTM D- 422-63(2002)e1



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	7.2	15.4	77.2

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2182A	SS-43	398.3-399.8	12/03/07	CH	Light Gray Fat CLAY	29.5	70	25

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-2182A

Depth: 398.3-399.8

Sample Number: SS-43

Material Description: Light Gray Fat CLAY

Date: 12/03/07

Natural Moisture: 29.5

Liquid Limit: 70

Plastic Limit: 25

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
179.25	0.00	0.00	#10	0.00	100.0
49.80	0.00	0.00	#20	0.02	100.0
			#40	0.08	99.8
			#60	0.38	99.2
			#100	1.60	96.8
			#140	2.74	94.5
			#200	3.69	92.6

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 49.8

Hygroscopic moisture correction:

Moist weight and tare = 27.70

Dry weight and tare = 26.95

Tare weight = 15.50

Hygroscopic moisture = 6.6%

Table of composite correction values:

Temp., deg. C: 12.2 27.1

Comp. corr.: -7.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

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

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.8	45.0	40.6	0.0131	46.0	8.8	0.0275	85.9
5.00	21.7	44.0	39.6	0.0132	45.0	8.9	0.0176	83.7
15.00	21.7	43.0	38.6	0.0132	44.0	9.1	0.0102	81.6
30.00	21.7	42.0	37.6	0.0132	43.0	9.2	0.0073	79.4
60.00	21.9	41.0	36.6	0.0131	42.0	9.4	0.0052	77.4
240.00	22.2	39.0	34.7	0.0131	40.0	9.7	0.0026	73.4
1440.00	21.8	37.0	32.6	0.0131	38.0	10.1	0.0011	68.9

MACTEC, Inc.

Fractional Components

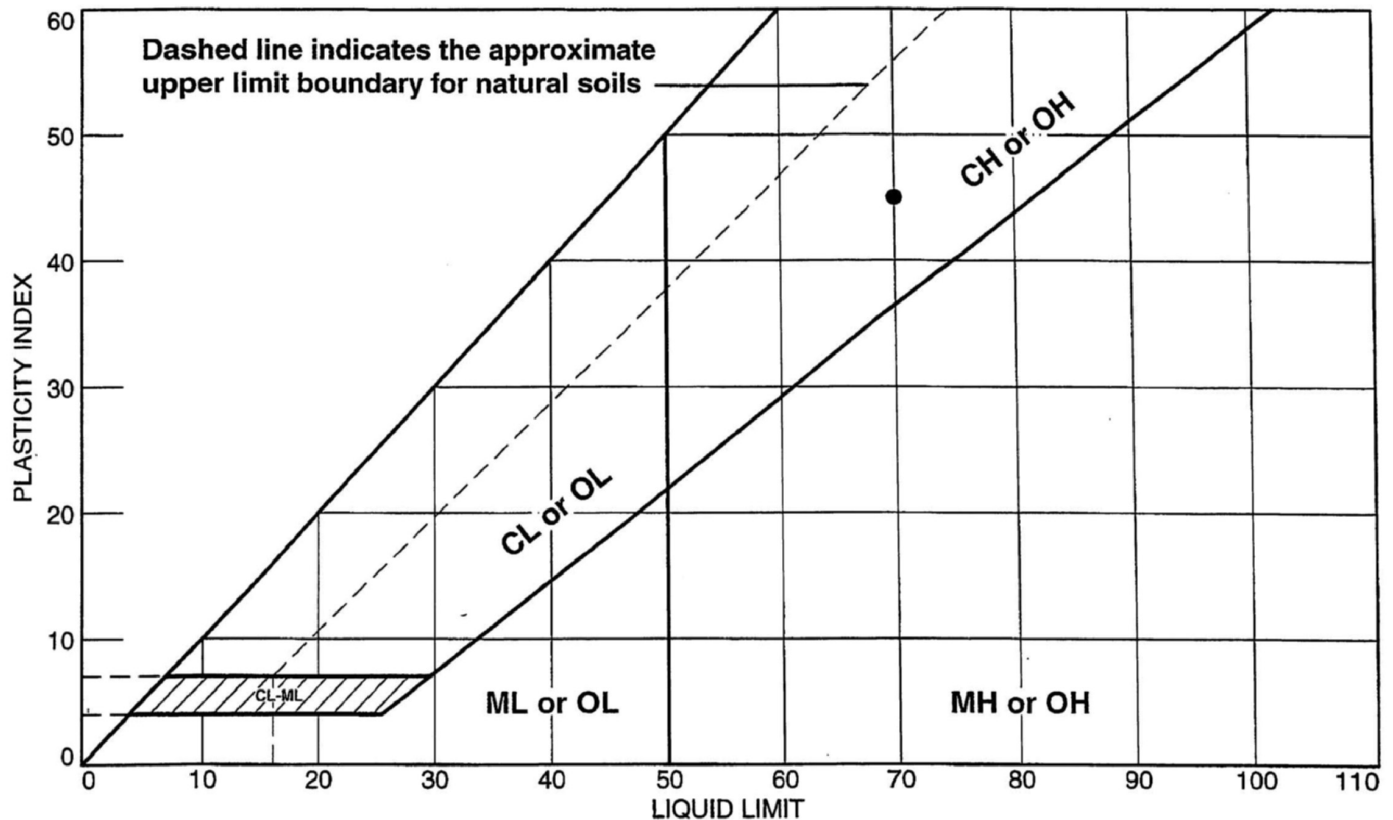
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.2	7.2	7.4	15.4	77.2	92.6

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
						0.0080	0.0236	0.0505	0.1148

Fineness Modulus
0.04

MACTEC, Inc.

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-2182A	SS-43	398.3-399.8	29.5	25	70	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

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2182A

Depth: 398.3-399.8

Sample Number: SS-43

Material Description: Light Gray Fat CLAY

USCS: CH

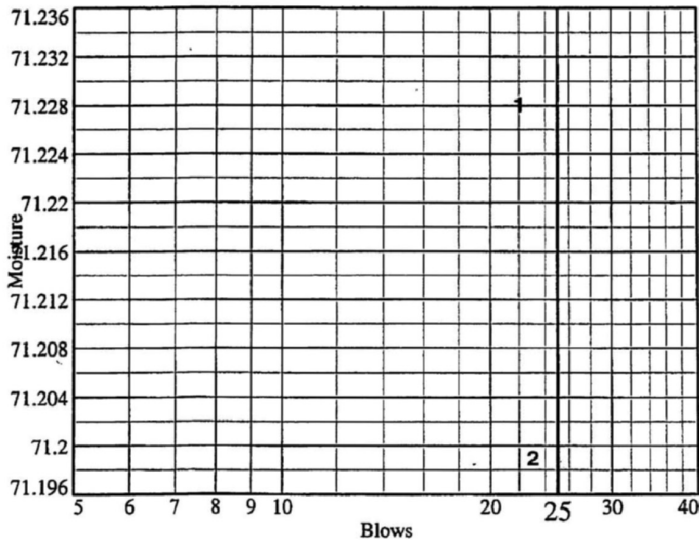
AASHTO: A-7-6(48)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	20.86	29.26				
Dry+Tare	16.80	23.50				
Tare	11.10	15.41				
# Blows	22	23				
Moisture	71.2	71.2				



Liquid Limit= 70
 Plastic Limit= 25
 Plasticity Index= 45
 Natural Moisture= 29.5
 Liquidity Index= 0.1

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	21.96	22.54		
Dry+Tare	20.69	21.12		
Tare	15.57	15.47		
Moisture	24.8	25.1		

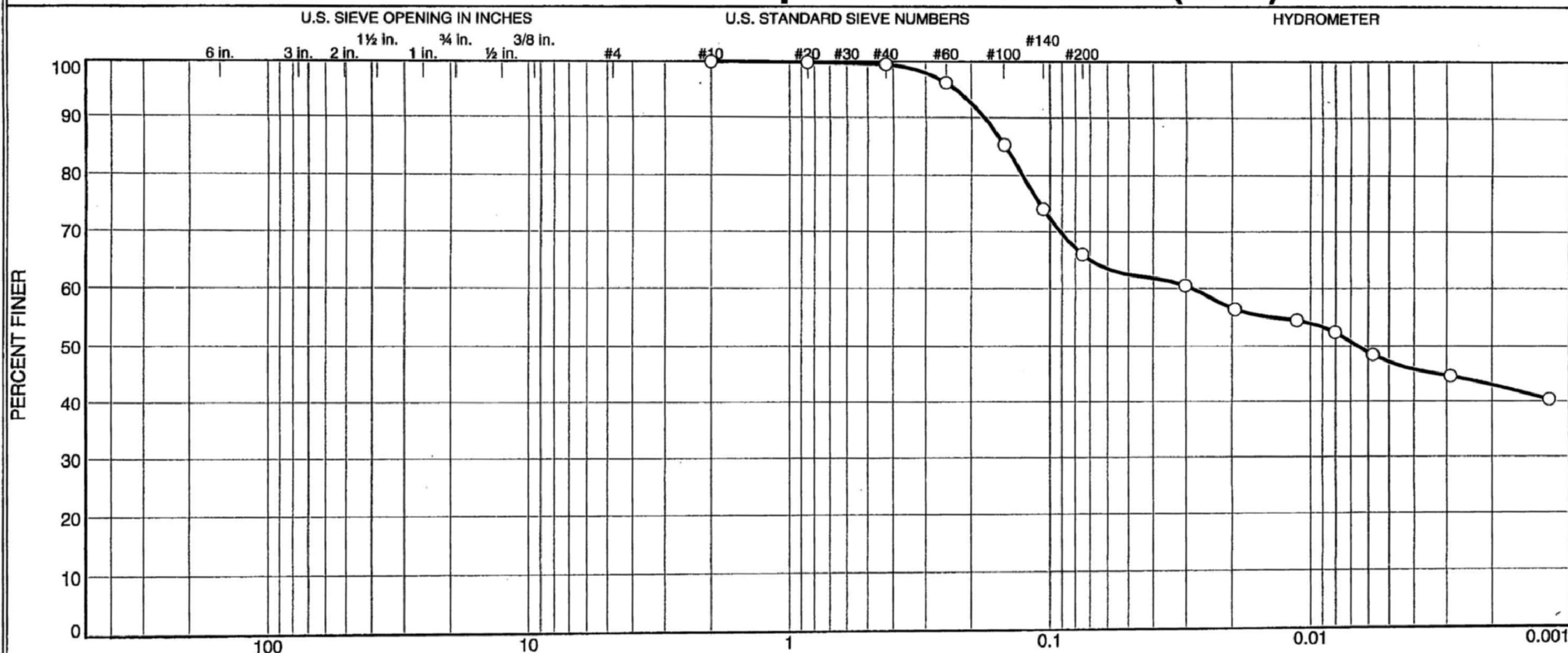
Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
127.60	100.07	6.90	29.5

MACTEC, Inc.

Boring B-2251

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	0.5	33.5	18.9	47.1

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2251	SS-1	0-1.5'	12-03-07	CL	Black Sandy Lean CLAY	19.8	47	13

Client Bechtel		MACTEC, Inc.	○ Specific Gravity = 2.701 (ASTM D854-06) Organic content = 5.4% (ASTM D 2974-07)
Project Exelon Texas COL (Victoria)			
Project No. 6468071777	Figure NA	Raleigh, North Carolina	

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2251

Depth: 0-1.5'

Sample Number: SS-1

Material Description: Black Sandy Lean CLAY

Date: 12-03-07

Natural Moisture: 19.8

Liquid Limit: 47

Plastic Limit: 13

USCS Class.: CL

Testing Remarks: Specific Gravity = 2.701 (ASTM D854-06)

Organic content = 5.4% (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
199.03	0.00	0.00	#10	0.00	100.0
49.72	0.00	0.00	#20	0.06	99.9
			#40	0.24	99.5
			#60	1.86	96.3
			#100	7.28	85.4
			#140	12.88	74.1
			#200	16.90	66.0

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 49.72

Hygroscopic moisture correction:

Moist weight and tare = 27.40

Dry weight and tare = 27.00

Tare weight = 15.42

Hygroscopic moisture = 3.5%

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 = 2.701

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	21.6	34.0	29.4	0.0132	35.0	10.6	0.0303	60.5
5.00	21.6	32.0	27.4	0.0132	33.0	10.9	0.0194	56.4
15.00	21.9	31.0	26.5	0.0131	32.0	11.0	0.0113	54.5
30.00	21.8	30.0	25.5	0.0131	31.0	11.2	0.0080	52.4
60.00	22.0	28.0	23.5	0.0131	29.0	11.5	0.0058	48.4
240.00	22.5	26.0	21.7	0.0130	27.0	11.9	0.0029	44.6
1440.00	22.3	24.0	19.6	0.0131	25.0	12.2	0.0012	40.4

MACTEC, Inc.

Fractional Components

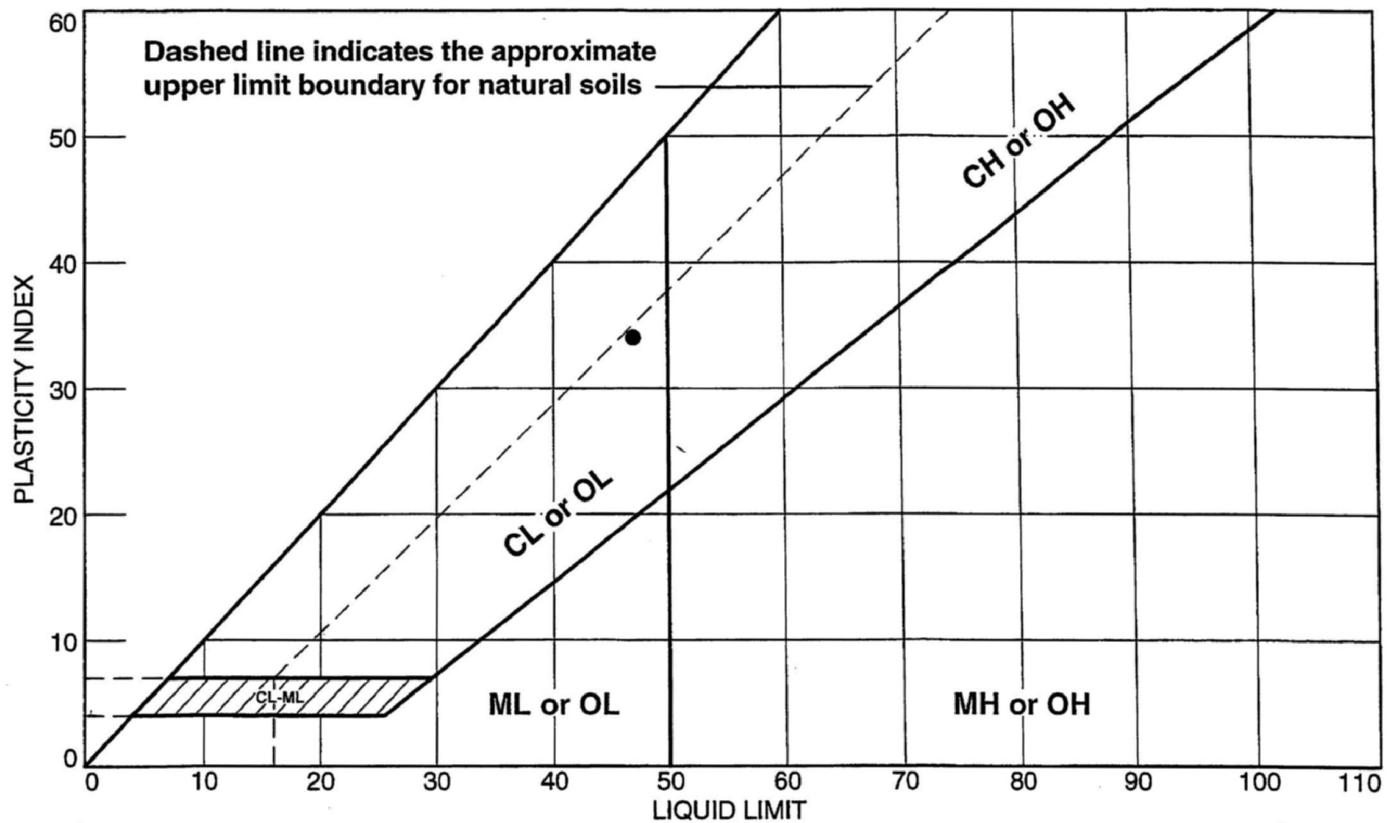
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.5	33.5	34.0	18.9	47.1	66.0

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0066	0.0283	0.1271	0.1483	0.1778	0.2286

Fineness Modulus
0.17

MACTEC, Inc.

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-2251	SS-1	0-1.5'	19.8	13	47	34	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-2251

Depth: 0-1.5'

Sample Number: SS-1

Material Description: Black Sandy Lean CLAY

USCS: CL

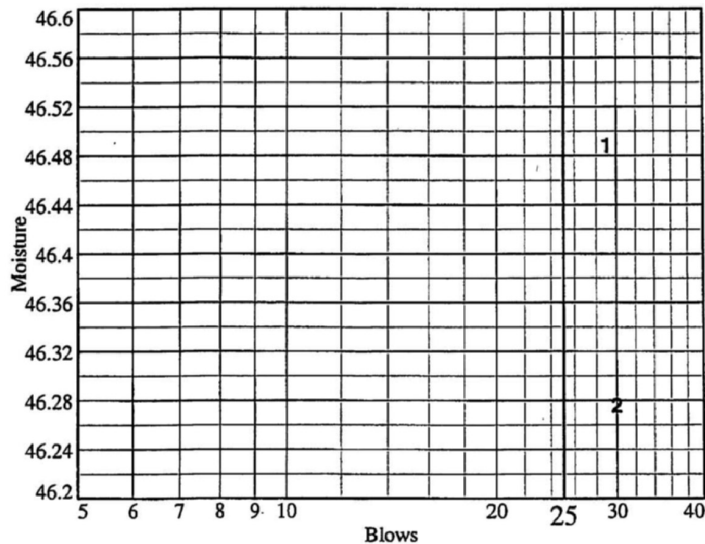
AASHTO: A-7-6(20)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.61	29.25				
Dry+Tare	23.77	24.90				
Tare	15.51	15.50				
# Blows	29	30				
Moisture	46.5	46.3				



Liquid Limit= 47
 Plastic Limit= 13
 Plasticity Index= 34
 Natural Moisture= 19.8
 Liquidity Index= 0.2

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	23.42	24.29		
Dry+Tare	22.51	23.28		
Tare	15.51	15.49		
Moisture	13.0	13.0		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
138.53	116.98	8.25	19.8

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: 1/2/08

SAMPLE IDENTIFICATION: B-2251 SS-1

(A) Mass of oven-dried soil, grams:	47.36
(B) Mass of pycnometer filled with water at test temperature (T), grams:	656.74
(C) Mass of pycnometer, water and soil, grams:	686.57
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	21.9
(G) Specific Gravity at observed temperature:	$A / [A + (B - C)]$ 2.702
(F) <i>Correction factor:</i>	0.99959
(G x F)	SPECIFIC GRAVITY @ 20°C: 2.701

MATERIAL TESTED:

☒

- # 4

☐

- # 10

PREPARATION METHOD:

☒

DRY

☐

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100%

Sandy Lean CLAY (CL)

EQUIPMENT USED

SCALES : 3.1.99

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNO METER : P-6

TESTED BY: CS

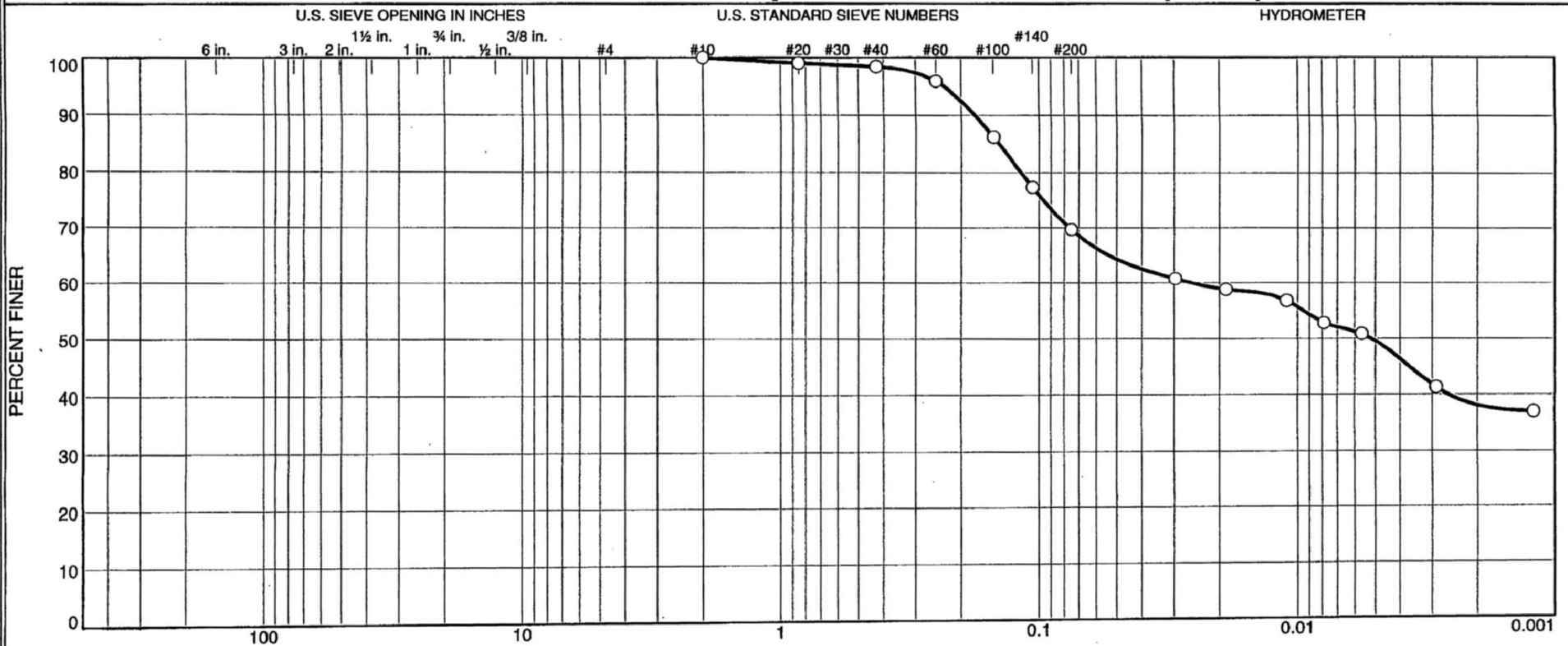
\\Test Reports\\Soils\\SPECIFIC GRAVITY(ref).xls

REVIEWED BY:

Brian Johnson

DSC 1-25-08

Particle Size Distribution Report / ASTM D- 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-2251

Depth: 3.5-5'

Sample Number: SS-2

Material Description: Dark Gray Sandy Lean CLAY

Date: 12-03-07

Natural Moisture: 17.5

Liquid Limit: 41

Plastic Limit: 13

USCS Class.: CL

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
214.29	0.00	0.00	#10	0.00	100.0
51.25	0.00	0.00	#20	0.51	99.0
			#40	0.84	98.4
			#60	2.17	95.8
			#100	7.02	86.3
			#140	11.59	77.4
			#200	15.54	69.7

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 51.25

Hygroscopic moisture correction:

Moist weight and tare = 27.85

Dry weight and tare = 27.57

Tare weight = 15.64

Hygroscopic moisture = 2.3%

Table of composite correction values:

Temp., deg. C: 12.3 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: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.7	35.0	30.8	0.0130	36.0	10.4	0.0296	60.8
5.00	22.7	34.0	29.8	0.0130	35.0	10.6	0.0189	58.8
15.00	22.7	33.0	28.8	0.0130	34.0	10.7	0.0110	56.8
30.00	22.7	31.0	26.8	0.0130	32.0	11.0	0.0079	52.9
60.00	22.6	30.0	25.7	0.0130	31.0	11.2	0.0056	50.8
240.00	23.1	25.0	20.9	0.0129	26.0	12.0	0.0029	41.2
1440.00	22.6	23.0	18.7	0.0130	24.0	12.4	0.0012	37.0

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	0.0	1.6	28.7	30.3	20.1	49.6	69.7

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0052	0.0256	0.1173	0.1423	0.1764	0.2349

Fineness Modulus
0.18

Figure 2: Plasticity Chart (U.S. Customary Units)

The chart plots Plasticity Index (PI) on the vertical axis (0 to 60) against Liquid Limit (LL) on the horizontal axis (0 to 110). The regions are defined as follows:

- CL or OL**: High plasticity, low liquid limit (above the lower boundary line and below the upper boundary line for LL < 25).
- CH or OH**: High plasticity, high liquid limit (above the upper boundary line).
- ML or OL**: Low plasticity, low liquid limit (below the lower boundary line and below the upper boundary line for LL < 25).
- MH or OH**: Low plasticity, high liquid limit (below the lower boundary line and above the upper boundary line for LL > 25).

A dashed line indicates the approximate upper limit boundary for natural soils. A point is plotted at LL = 42 and PI = 28, which falls within the CL or OL region.

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

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-2251

Depth: 3.5-5'

Sample Number: SS-2

Material Description: Dark Gray Sandy Lean CLAY

USCS: CL

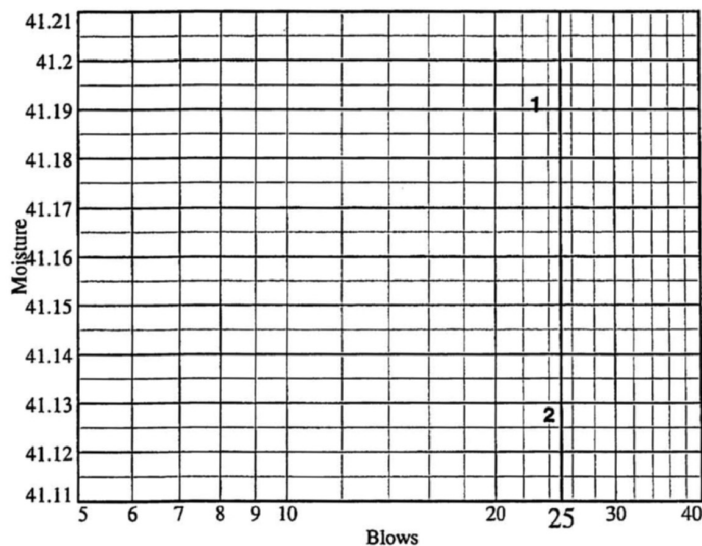
AASHTO: A-7-6(17)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.09	24.16				
Dry+Tare	23.77	21.68				
Tare	15.71	15.65				
# Blows	23	24				
Moisture	41.2	41.1				



Liquid Limit= 41
 Plastic Limit= 13
 Plasticity Index= 28
 Natural Moisture= 17.5
 Liquidity Index= 0.2

Plastic Limit Data

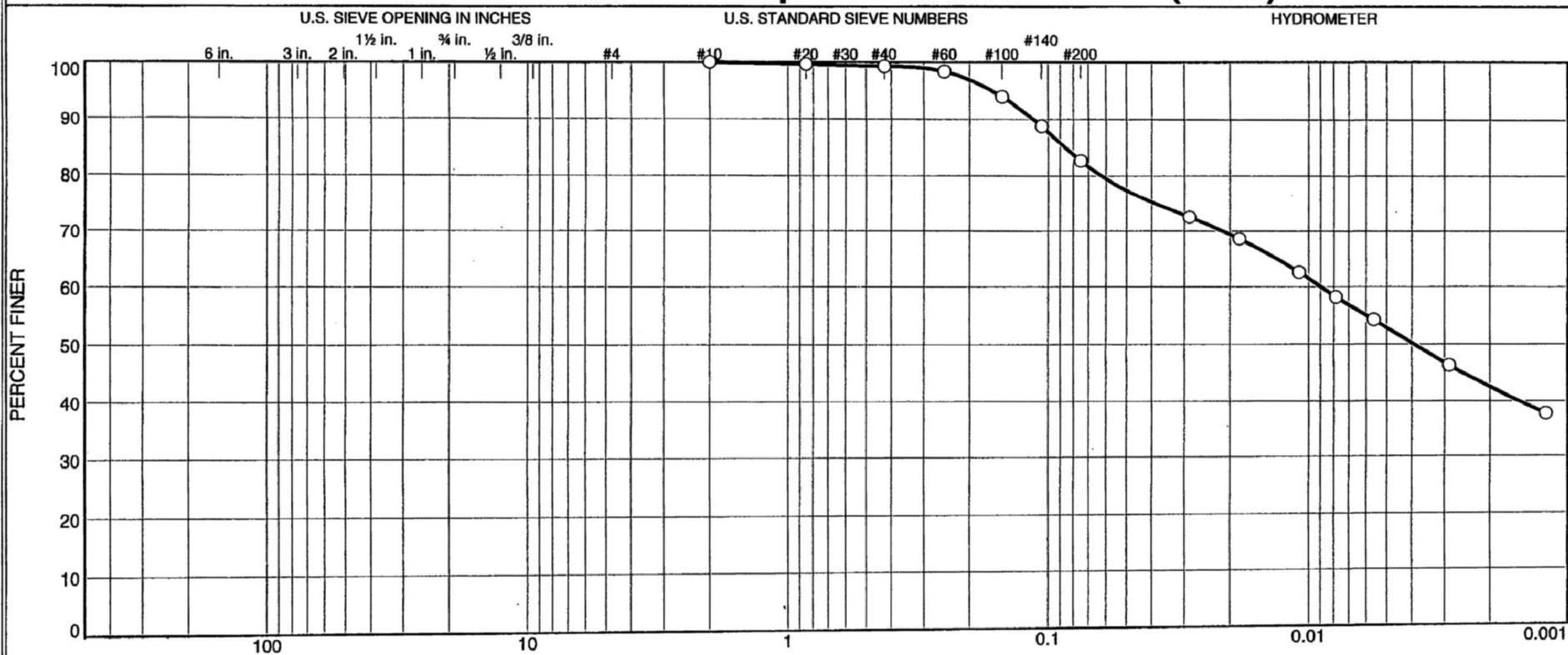
Run No.	1	2	3	4
Wet+Tare	21.57	21.59		
Dry+Tare	20.87	20.91		
Tare	15.49	15.51		
Moisture	13.0	12.6		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
119.00	102.27	6.71	17.5

MACTEC, Inc.

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



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	16.6	29.8	52.9

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2251	SS-3	6-7.5'	12-13-07	CL	Greenish Gray Lean CLAY with sand.	16.4	37	17

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777

Figure N/A

MACTEC, Inc.
Raleigh, North Carolina

○ Specific Gravity is assumed.
Organic Content = 3.3% (ASTM 2794-07)

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-2251

Depth: 6-7.5'

Sample Number: SS-3

Material Description: Greenish Gray Lean CLAY with sand.

Date: 12-13-07

Natural Moisture: 16.4

Liquid Limit: 37

Plastic Limit: 17

USCS Class.: CL

Testing Remarks: Specific Gravity is assumed.

Organic Content = 3.3% (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
204.50	0.00	0.00	#10	0.00	100.0
49.64	0.00	0.00	#20	0.19	99.6
			#40	0.37	99.3
			#60	0.80	98.4
			#100	2.98	94.0
			#140	5.54	88.8
			#200	8.58	82.7

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 49.64

Hygroscopic moisture correction:

Moist weight and tare = 28.93

Dry weight and tare = 28.61

Tare weight = 15.32

Hygroscopic moisture = 2.4%

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: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.1	40.0	35.6	0.0131	41.0	9.6	0.0287	72.6
5.00	22.3	38.0	33.6	0.0131	39.0	9.9	0.0184	68.6
15.00	22.4	35.0	30.6	0.0131	36.0	10.4	0.0109	62.5
30.00	22.1	33.0	28.6	0.0131	34.0	10.7	0.0078	58.3
60.00	22.3	31.0	26.6	0.0131	32.0	11.0	0.0056	54.3
240.00	22.6	27.0	22.7	0.0130	28.0	11.7	0.0029	46.3
1440.00	21.9	23.0	18.5	0.0131	24.0	12.4	0.0012	37.8

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	0.7	16.6	17.3	29.8	52.9	82.7

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0039	0.0090	0.0623	0.0856	0.1136	0.1633

Fineness Modulus
0.08

MACTEC, Inc.