

GRAIN SIZE DISTRIBUTION TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: Boring B-2304A

Depth: 63.5-65.0

Sample Number: SS-16

Material Description: Light Gray Sandy Lean CLAY

Date: 1-17-08

Natural Moisture: 18.0

Liquid Limit: 45

Plastic Limit: 18

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
254.87	0.00	0.00	3/8"	0.00	100.0
			#4	0.11	100.0
			#10	4.37	98.3
53.29	0.00	0.00	#20	3.99	90.9
			#40	6.45	86.4
			#60	10.65	78.6
			#100	20.18	61.1
			#140	24.09	53.9
			#200	25.22	51.8

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 98.3

Weight of hydrometer sample = 53.29

Hygroscopic moisture correction:

Moist weight and tare = 27.85

Dry weight and tare = 27.56

Tare weight = 15.37

Hygroscopic moisture = 2.4%

Table of composite correction values:

Temp., deg. C: 13.0 29.8

Comp. corr.: -8.0 -2.0

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	21.6	32.0	27.1	0.0132	33.0	10.9	0.0307	50.5
5.00	21.6	31.0	26.1	0.0132	32.0	11.0	0.0196	48.7
15.00	21.6	30.0	25.1	0.0132	31.0	11.2	0.0114	46.8
30.00	21.6	29.0	24.1	0.0132	30.0	11.4	0.0081	44.9
60.00	21.6	28.0	23.1	0.0132	29.0	11.5	0.0058	43.1
240.00	21.9	26.5	21.7	0.0131	27.5	11.8	0.0029	40.5
1440.00	22.2	25.0	20.3	0.0131	26.0	12.0	0.0012	37.9

MACTEC, Inc.

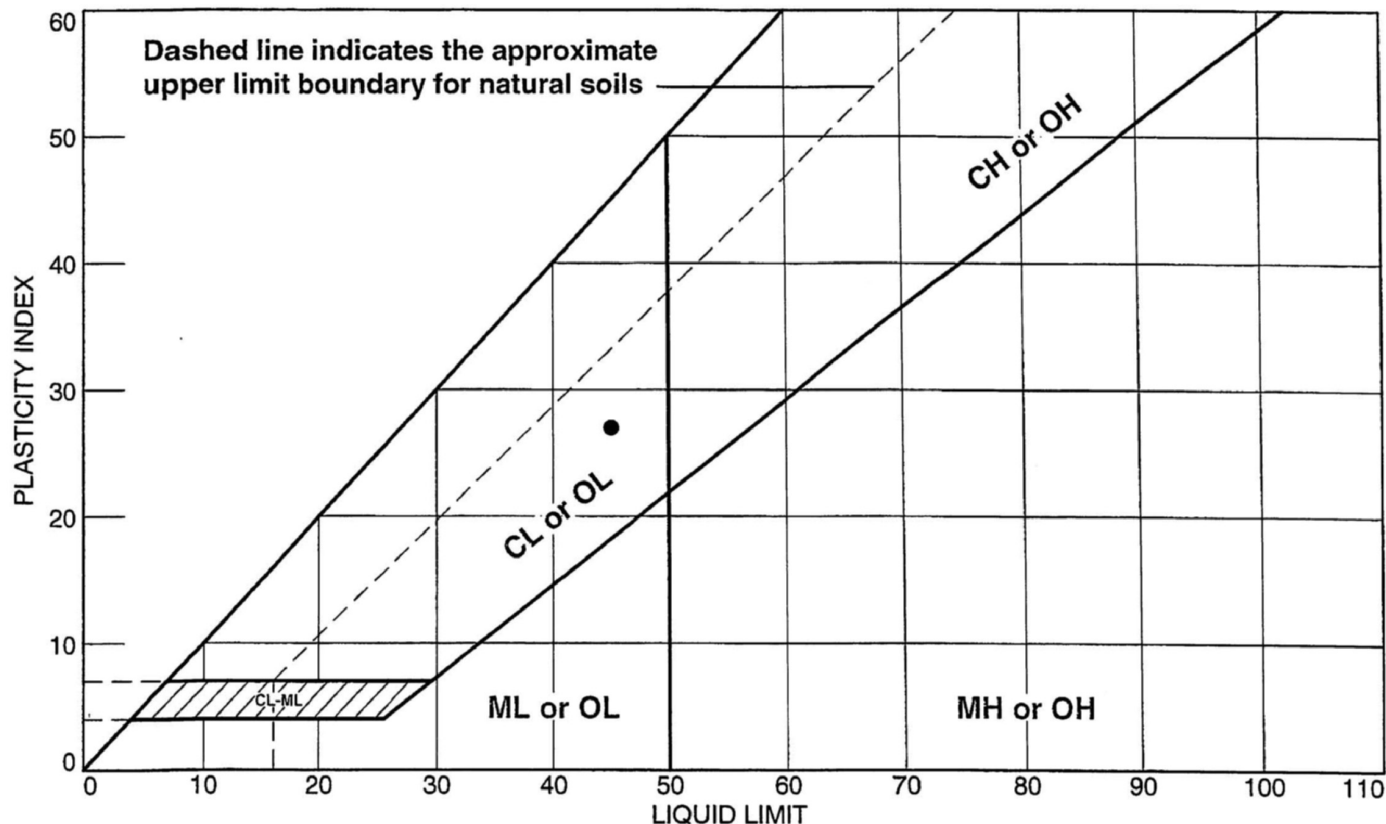
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	1.7	11.9	34.6	48.2	9.4	42.4	51.8

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0266	0.1446	0.2635	0.3595	0.7495	1.3298

Fineness Modulus
0.75

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-2304A	SS-16	63.5-65.0	18.0	18	45	27	CL

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: LBJ

DSC 4-2-08

LIQUID AND PLASTIC LIMIT TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: Boring B-2304A

Depth: 63.5-65.0

Sample Number: SS-16

Material Description: Light Gray Sandy Lean CLAY

USCS: CL

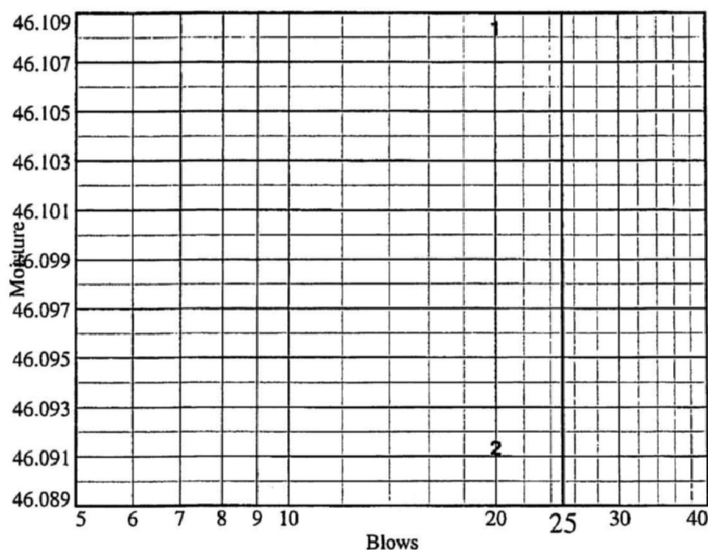
AASHTO: A-7-6(10)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	30.46	30.15				
Dry+Tare	25.78	25.61				
Tare	15.63	15.76				
# Blows	20	20				
Moisture	46.1	46.1				



Liquid Limit= 45
 Plastic Limit= 18
 Plasticity Index= 27
 Natural Moisture= 18.0
 Liquidity Index= 0.0

Plastic Limit Data

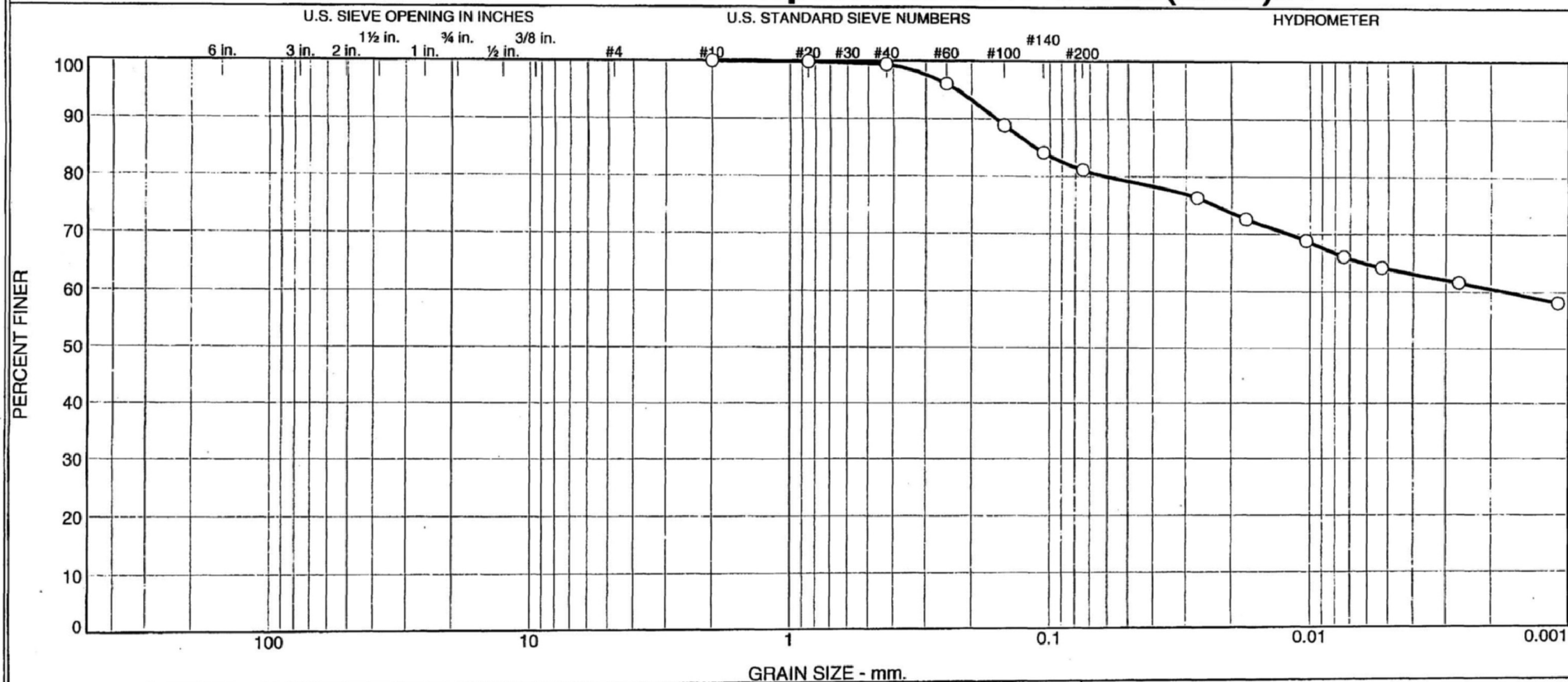
Run No.	1	2	3	4
Wet+Tare	22.59	22.45		
Dry+Tare	21.47	21.43		
Tare	15.46	15.52		
Moisture	18.6	17.3		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
87.05	75.18	9.36	18.0

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	0.0	0.6	18.3	17.1	64.0

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2304A	SS-17	68.5-70	1-17-08	CH	Light Gray Fat CLAY with sand	19.8	56	22

Client Bechtel

Project Exelon Texas COL (Victoria Reservoir)

Project No. 6468071777

Figure *NA*

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed

Tested By: CS

Checked By: LBJ

DSC 4-2-08

GRAIN SIZE DISTRIBUTION TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: Boring B-2304A

Depth: 68.5-70

Sample Number: SS-17

Material Description: Light Gray Fat CLAY with sand

Date: 1-17-08

Natural Moisture: 19.8

Liquid Limit: 56

Plastic Limit: 22

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
218.71	0.00	0.00	#10	0.00	100.0
54.49	0.00	0.00	#20	0.07	99.9
			#40	0.33	99.4
			#60	2.16	96.0
			#100	6.01	89.0
			#140	8.60	84.2
			#200	10.29	81.1

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 54.49

Hygroscopic moisture correction:

Moist weight and tare = 27.49

Dry weight and tare = 27.22

Tare weight = 15.41

Hygroscopic moisture = 2.3%

Table of composite correction values:

Temp., deg. C: 13.0 29.8

Comp. corr.: -8.0 -2.0

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	21.7	46.0	41.1	0.0132	47.0	8.6	0.0273	76.3
5.00	21.7	44.0	39.1	0.0132	45.0	8.9	0.0176	72.6
15.00	21.7	42.0	37.1	0.0132	43.0	9.2	0.0103	68.9
30.00	21.7	40.5	35.6	0.0132	41.5	9.5	0.0074	66.1
60.00	21.7	39.5	34.6	0.0132	40.5	9.7	0.0053	64.2
240.00	22.0	38.0	33.2	0.0131	39.0	9.9	0.0027	61.7
1440.00	22.3	36.0	31.3	0.0131	37.0	10.2	0.0011	58.1

MACTEC, Inc.

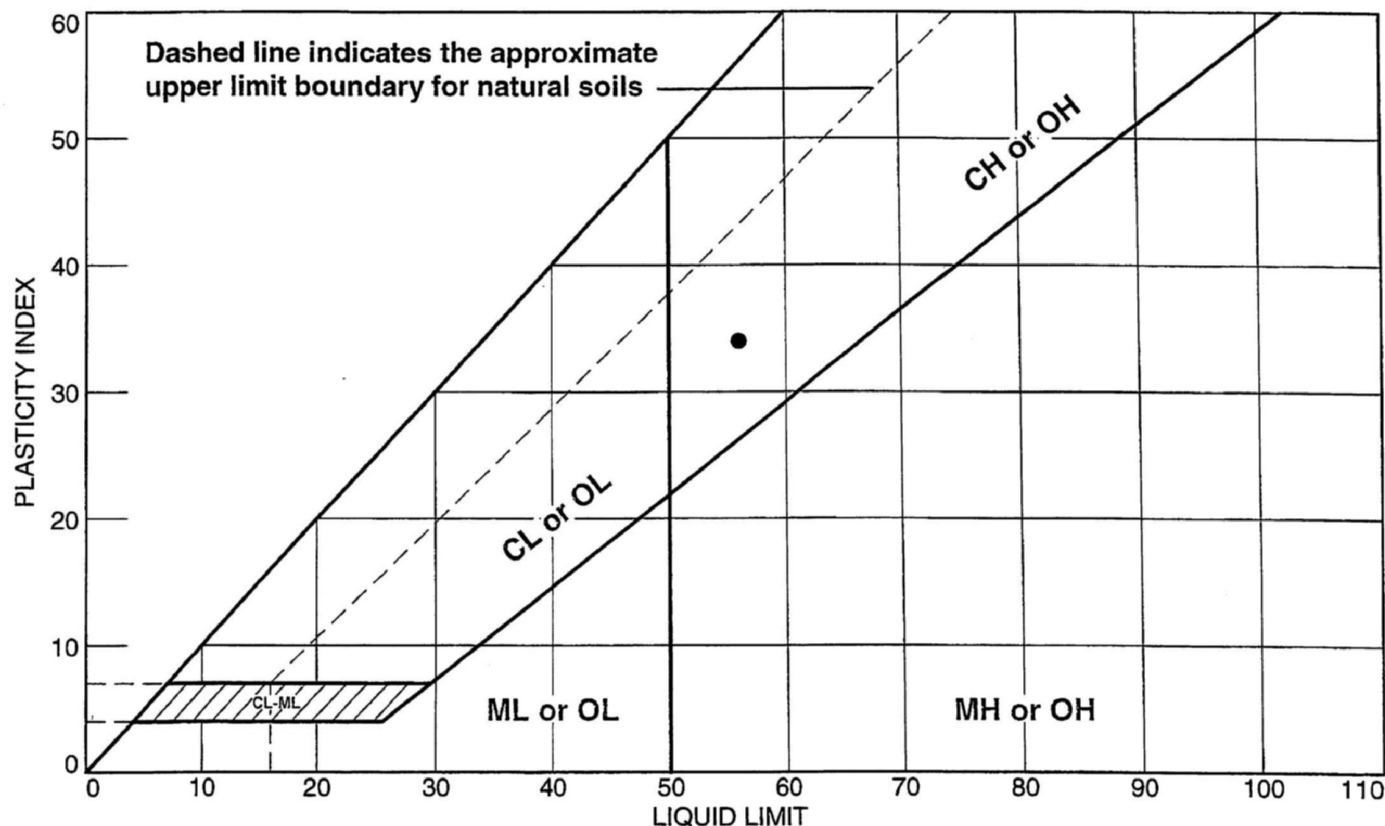
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.6	18.3	18.9	17.1	64.0	81.1

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
					0.0017	0.0613	0.1131	0.1606	0.2285

Fineness Modulus
0.14

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-2304A	SS-17	68.5-70	19.8	22	56	34	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: LBJ

DSC 4-2-08

LIQUID AND PLASTIC LIMIT TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: Boring B-2304A

Depth: 68.5-70

Sample Number: SS-17

Material Description: Light Gray Fat CLAY with sand

USCS: CH

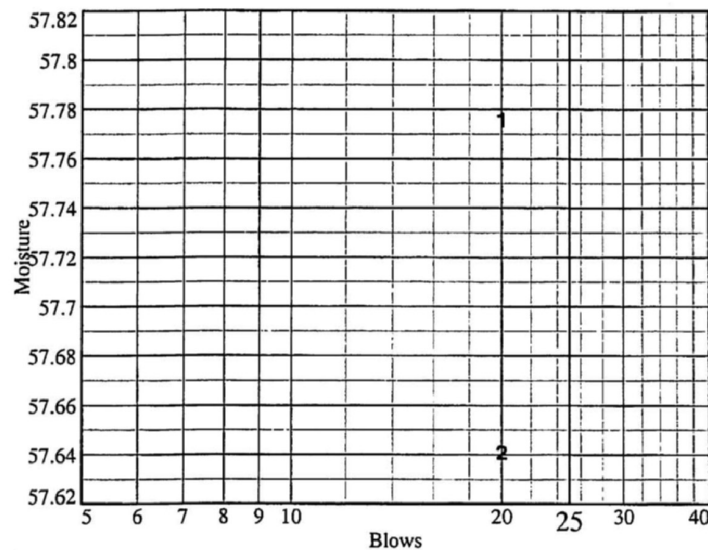
AASHTO: A-7-6(29)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	33.04	30.85				
Dry+Tare	26.65	25.23				
Tare	15.59	15.48				
# Blows	20	20				
Moisture	57.8	57.6				



Liquid Limit= 56
 Plastic Limit= 22
 Plasticity Index= 34
 Natural Moisture= 19.8
 Liquidity Index= -0.1

Plastic Limit Data

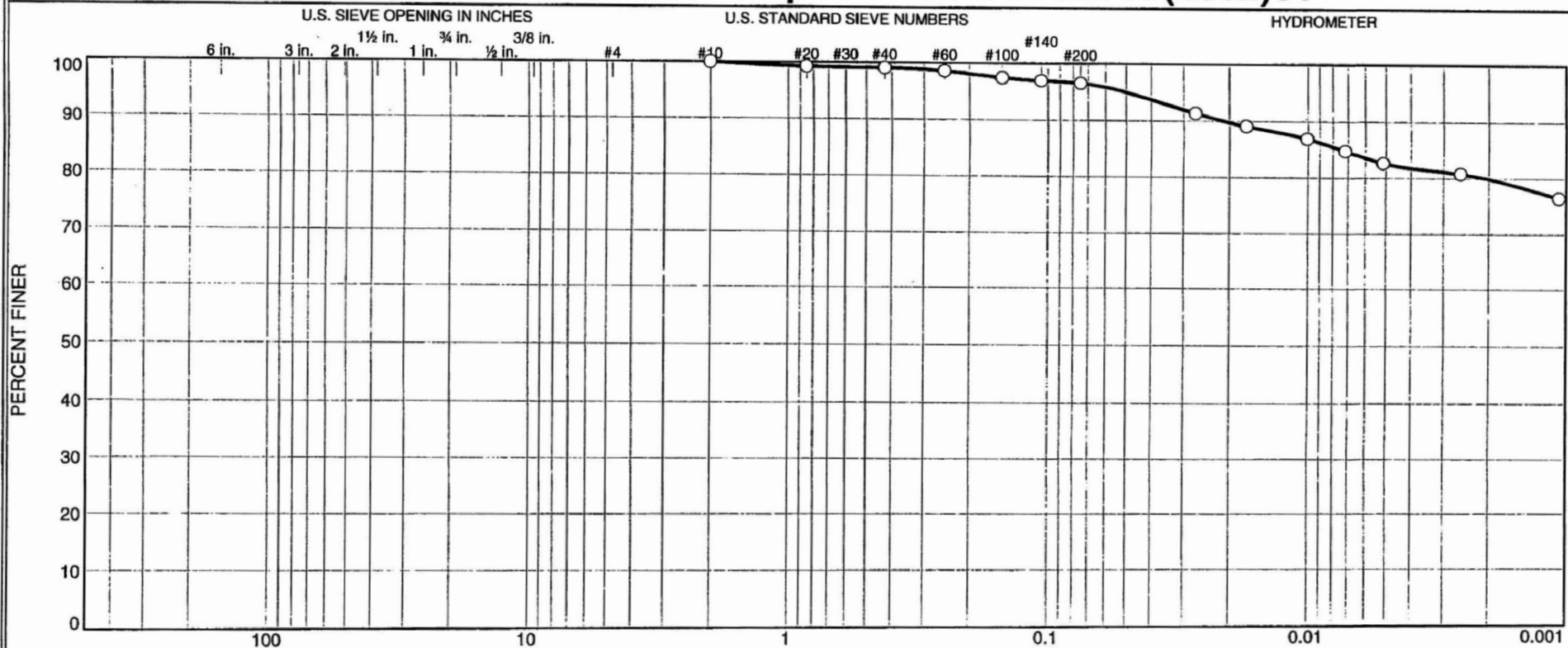
Run No.	1	2	3	4
Wet+Tare	22.48	22.62		
Dry+Tare	21.20	21.32		
Tare	15.46	15.49		
Moisture	22.3	22.3		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
136.37	115.33	9.30	19.8

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	0.0	0.9	2.6	13.9	82.6

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2304A	SS-18	73.5-75.0	1-17-08	CH	Mottled Pale Yellow and Olive Yellow Fat CLAY	28.8	79	33

Client Bechtel		MACTEC, Inc. Raleigh, North Carolina	○ Specific Gravity is assumed
Project Exelon Texas COL (Victoria Reservoir)			
Project No. 6468071777	Figure <i>NA</i>		

GRAIN SIZE DISTRIBUTION TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: Boring B-2304A

Depth: 73.5-75.0

Sample Number: SS-18

Material Description: Mottled Pale Yellow and Olive Yellow Fat CLAY

Date: 1-17-08

Natural Moisture: 28.8

Liquid Limit: 79

Plastic Limit: 33

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
189.84	0.00	0.00	#10	0.00	100.0
48.09	0.00	0.00	#20	0.36	99.3
			#40	0.45	99.1
			#60	0.68	98.6
			#100	1.22	97.5
			#140	1.47	96.9
			#200	1.66	96.5

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 48.09

Hygroscopic moisture correction:

Moist weight and tare = 28.50

Dry weight and tare = 27.81

Tare weight = 15.50

Hygroscopic moisture = 5.6%

Table of composite correction values:

Temp., deg. C: 13.0 29.8

Comp. corr.: -8.0 -2.0

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	21.6	47.0	42.1	0.0132	48.0	8.4	0.0270	91.4
5.00	21.6	46.0	41.1	0.0132	47.0	8.6	0.0173	89.2
15.00	21.6	45.0	40.1	0.0132	46.0	8.8	0.0101	87.0
30.00	21.6	44.0	39.1	0.0132	45.0	8.9	0.0072	84.8
60.00	21.6	43.0	38.1	0.0132	44.0	9.1	0.0051	82.7
240.00	22.0	42.0	37.2	0.0131	43.0	9.2	0.0026	80.8
1440.00	22.1	40.0	35.3	0.0131	41.0	9.6	0.0011	76.5

MACTEC, Inc.

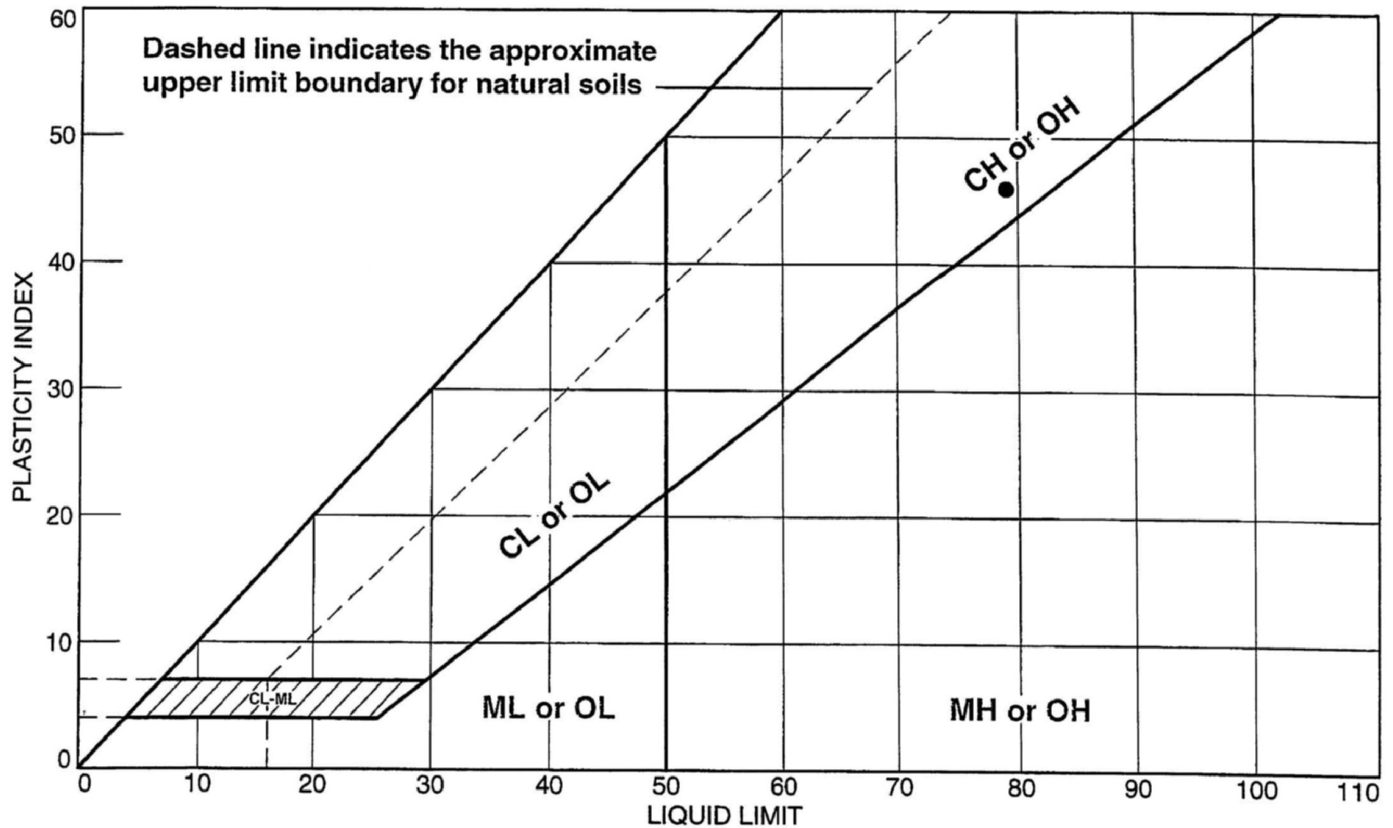
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.9	2.6	3.5	13.9	82.6	96.5

D10	D15	D20	D30	D50	D60	D80	D85	D90	D95
						0.0020	0.0073	0.0208	0.0502

Fineness Modulus
0.05

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-2304A	SS-18	73.5-75.0	28.8	33	79	46	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: LBJ

DSC 4-2-08

LIQUID AND PLASTIC LIMIT TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: Boring B-2304A

Depth: 73.5-75.0

Sample Number: SS-18

Material Description: Mottled Pale Yellow and Olive Yellow Fat CLAY

USCS: CH

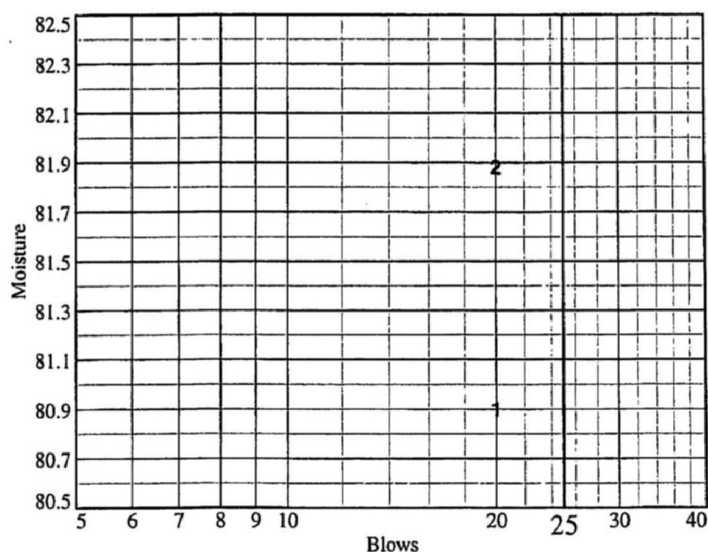
AASHTO: A-7-5(53)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	30.71	30.52				
Dry+Tare	23.89	23.74				
Tare	15.46	15.46				
# Blows	20	20				
Moisture	80.9	81.9				



Liquid Limit= 79
 Plastic Limit= 33
 Plasticity Index= 46
 Natural Moisture= 28.8
 Liquidity Index= -0.1

Plastic Limit Data

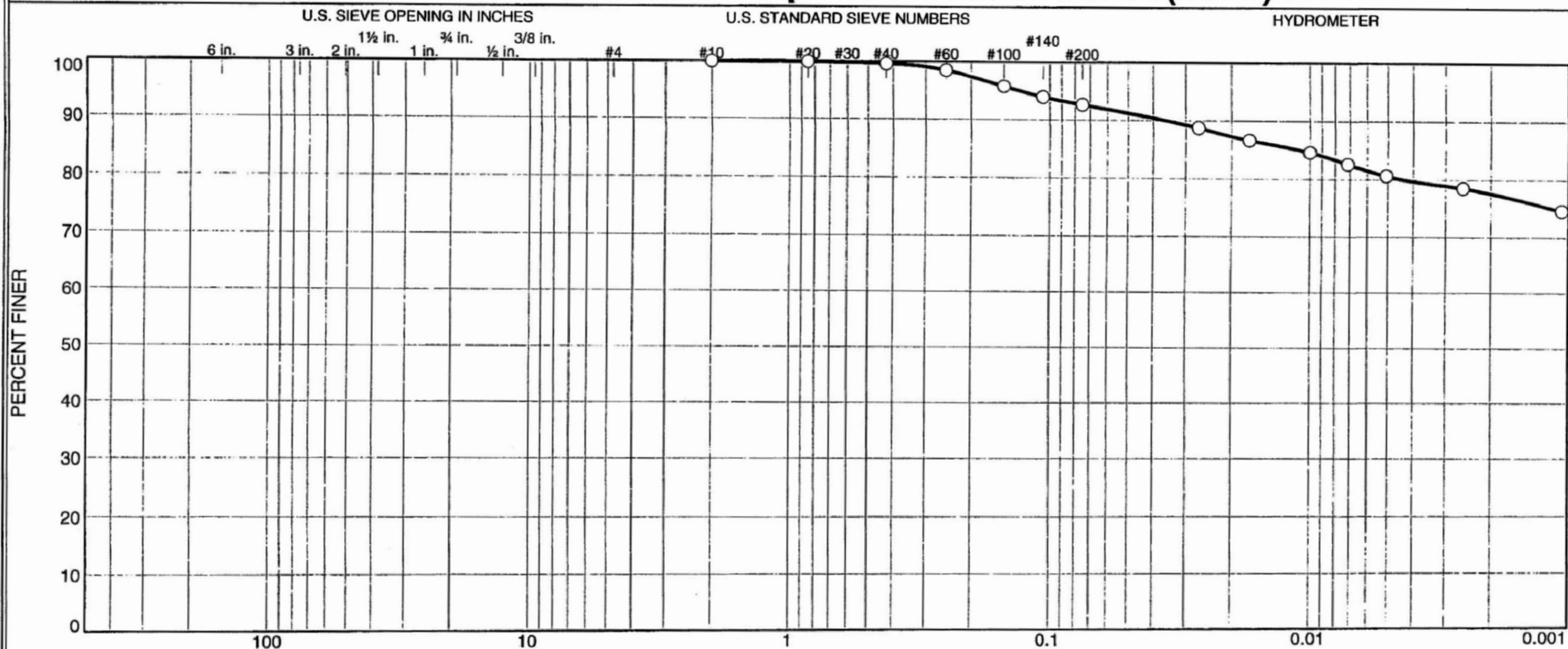
Run No.	1	2	3	4
Wet+Tare	23.44	22.31		
Dry+Tare	21.43	20.62		
Tare	15.33	15.65		
Moisture	33.0	34.0		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
65.61	53.00	9.15	28.8

MACTEC, Inc.

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



GRAIN SIZE DISTRIBUTION TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: Boring B-2304A

Depth: 78.5-80.0

Sample Number: SS-19

Material Description: Mottled Pale Yellow and Olive Yellow Fat CLAY

Date: 1-17-08

Natural Moisture: 31.0

Liquid Limit: 83

Plastic Limit: 30

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
219.38	0.00	0.00	#10	0.00	100.0
50.76	0.00	0.00	#20	0.02	100.0
			#40	0.18	99.6
			#60	0.72	98.6
			#100	2.17	95.7
			#140	3.09	93.9
			#200	3.76	92.6

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 50.64

Hygroscopic moisture correction:

Moist weight and tare = 24.29

Dry weight and tare = 23.58

Tare weight = 11.04

Hygroscopic moisture = 5.7%

Table of composite correction values:

Temp., deg. C: 13.0 29.8

Comp. corr.: -8.0 -2.0

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	21.5	48.0	43.0	0.0132	49.0	8.3	0.0268	88.8
5.00	21.5	47.0	42.0	0.0132	48.0	8.4	0.0171	86.7
15.00	21.5	46.0	41.0	0.0132	47.0	8.6	0.0100	84.7
30.00	21.5	45.0	40.0	0.0132	46.0	8.8	0.0071	82.6
60.00	21.6	44.0	39.1	0.0132	45.0	8.9	0.0051	80.6
240.00	21.6	43.0	38.1	0.0132	44.0	9.1	0.0026	78.6
1440.00	21.9	41.0	36.2	0.0131	42.0	9.4	0.0011	74.6

MACTEC, Inc.

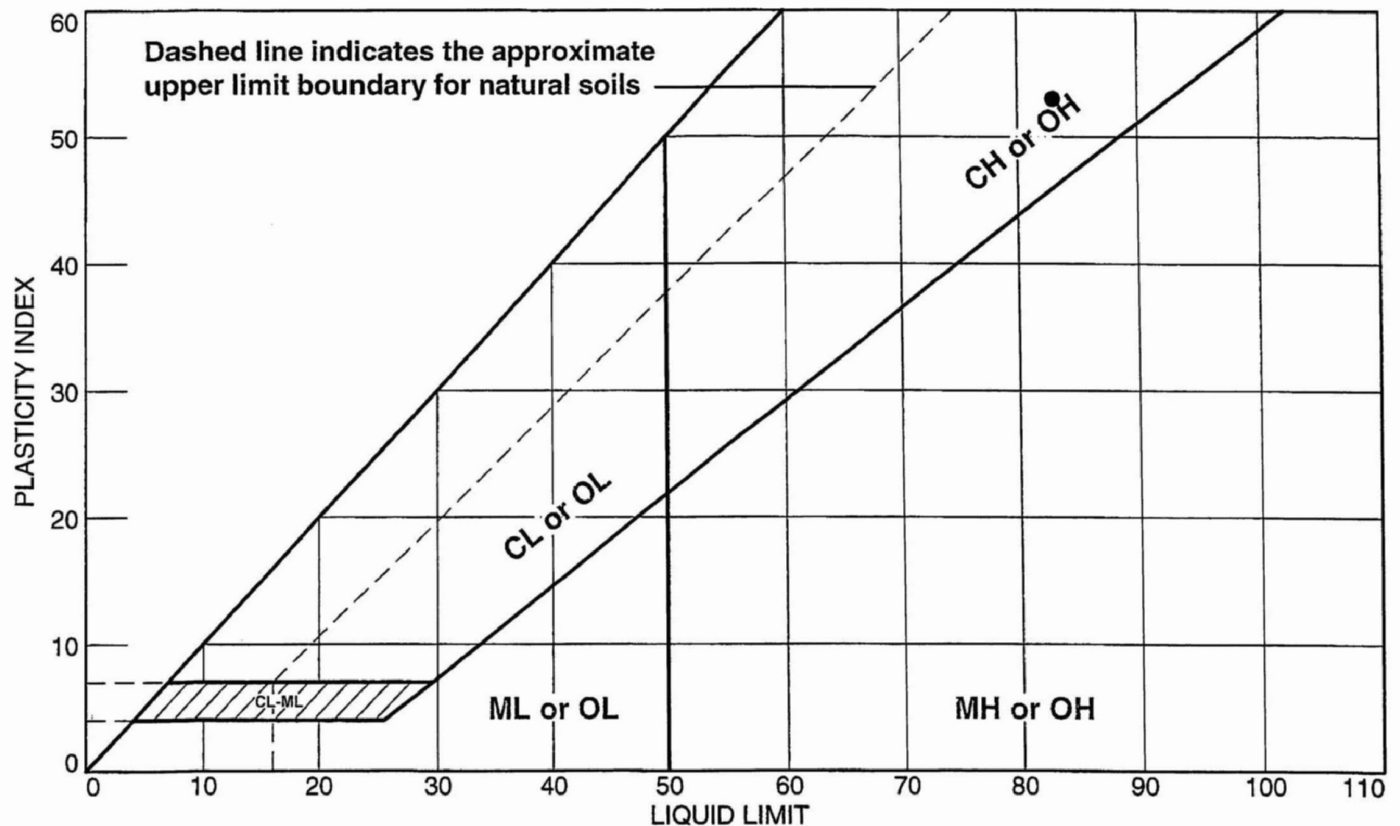
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.4	7.0	7.4	12.1	80.5	92.6

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
						0.0044	0.0107	0.0357	0.1320

Fineness Modulus
0.05

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-2304A	SS-19	78.5-80.0	31.0	30	83	53	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project No.: 6468071777

Figure *NA*

Tested By: CS

Checked By: LBJ

DSC 4-2-08

LIQUID AND PLASTIC LIMIT TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: Boring B-2304A

Depth: 78.5-80.0

Sample Number: SS-19

Material Description: Mottled Pale Yellow and Olive Yellow Fat CLAY

USCS: CH

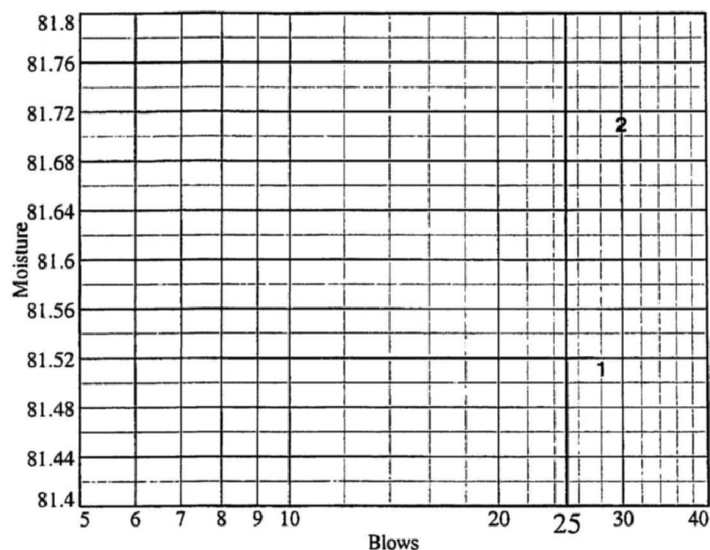
AASHTO: A-7-5(58)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	28.93	30.77				
Dry+Tare	22.89	23.89				
Tare	15.48	15.47				
# Blows	28	30				
Moisture	81.5	81.7				



Liquid Limit= 83
 Plastic Limit= 30
 Plasticity Index= 53
 Natural Moisture= 31.0
 Liquidity Index= 0.0

Plastic Limit Data

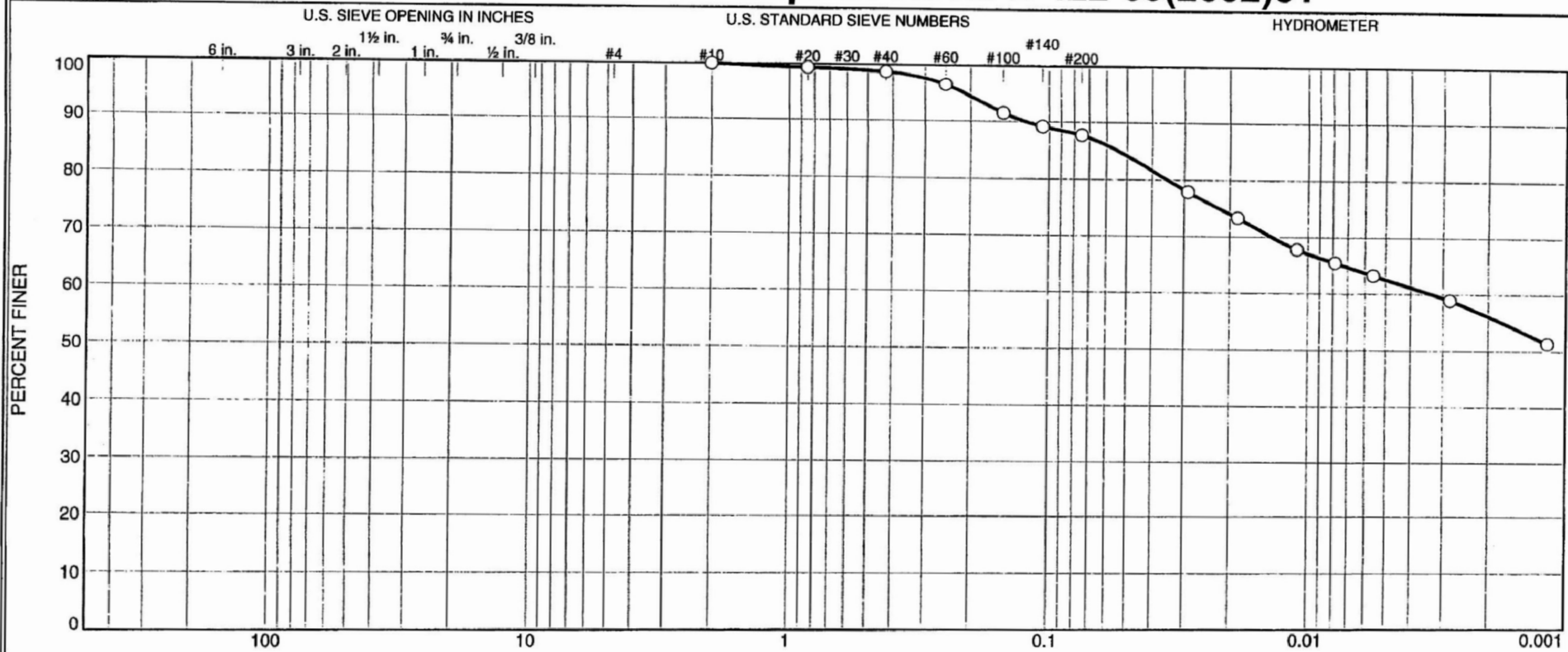
Run No.	1	2	3	4
Wet+Tare	21.49	21.77		
Dry+Tare	20.09	20.32		
Tare	15.26	15.52		
Moisture	29.0	30.2		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
125.49	97.48	7.18	31.0

MACTEC, Inc.

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



GRAIN SIZE DISTRIBUTION TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: Boring B-2304A

Depth: 83.5-85.0

Sample Number: SS-20

Material Description: Mottled Light Gray and Brownish Yellow Fat CLAY

Date: 1-17-08

Natural Moisture: 33.3

Liquid Limit: 81

Plastic Limit: 32

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
197.81	0.00	0.00	#10	0.00	100.0
46.20	0.00	0.00	#20	0.29	99.4
			#40	0.58	98.7
			#60	1.61	96.5
			#100	3.91	91.5
			#140	4.98	89.2
			#200	5.65	87.8

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 46.20

Hygroscopic moisture correction:

Moist weight and tare = 27.93

Dry weight and tare = 27.28

Tare weight = 15.42

Hygroscopic moisture = 5.5%

Table of composite correction values:

Temp., deg. C: 13.0 29.8

Comp. corr.: -8.0 -2.0

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	21.4	39.5	34.5	0.0132	40.5	9.7	0.0290	77.9
5.00	21.4	37.5	32.5	0.0132	38.5	10.0	0.0187	73.4
15.00	21.5	35.0	30.0	0.0132	36.0	10.4	0.0110	67.8
30.00	21.5	34.0	29.0	0.0132	35.0	10.6	0.0078	65.6
60.00	21.5	33.0	28.0	0.0132	34.0	10.7	0.0056	63.3
240.00	21.7	31.0	26.1	0.0132	32.0	11.0	0.0028	58.9
1440.00	22.1	27.5	22.8	0.0131	28.5	11.6	0.0012	51.4

MACTEC, Inc.

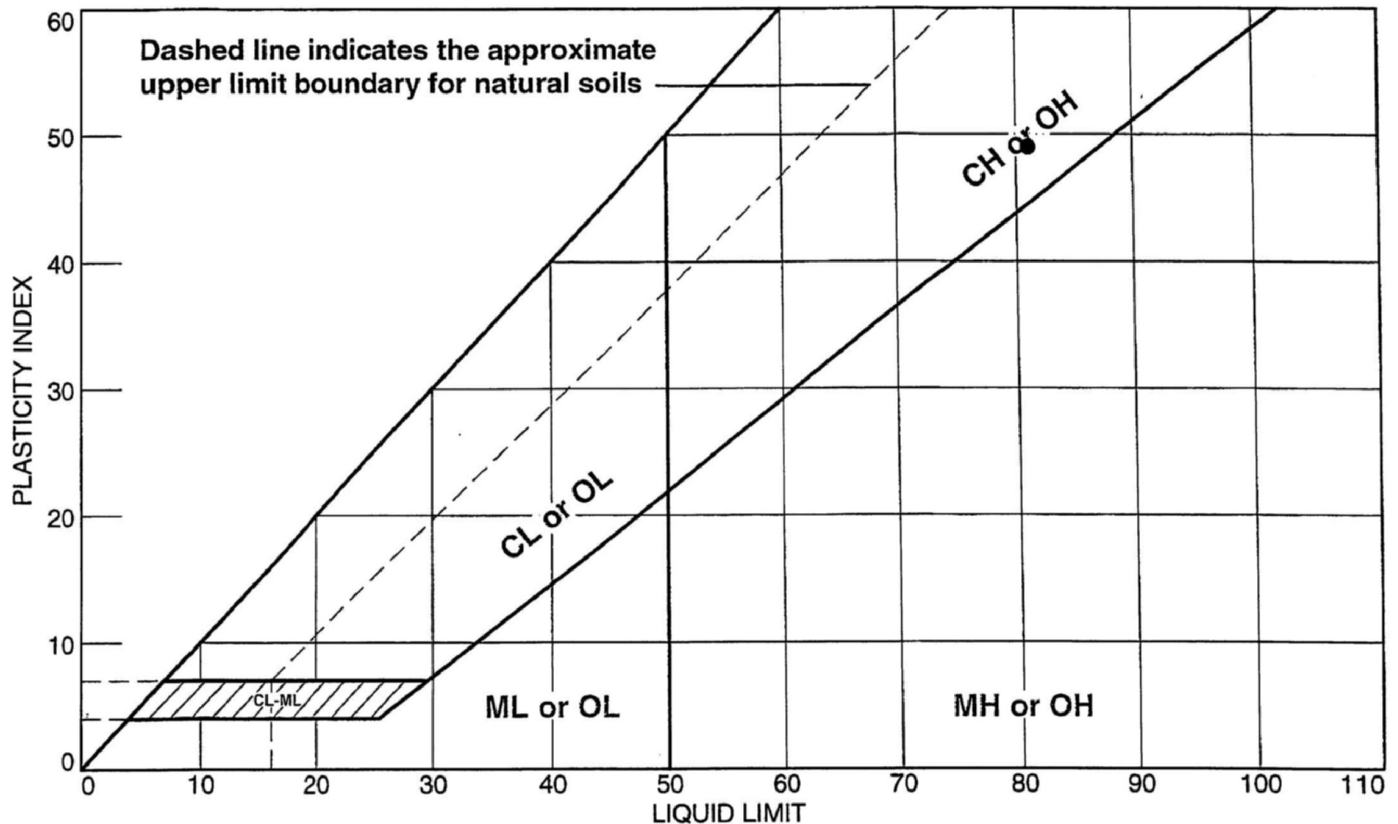
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.3	10.9	12.2	25.2	62.6	87.8

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
					0.0033	0.0349	0.0537	0.1225	0.2114

Fineness Modulus
0.12

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-2304A	SS-20	83.5-85.0	33.3	32	81	49	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: LBJ

DSC 4-2-08

LIQUID AND PLASTIC LIMIT TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: Boring B-2304A

Depth: 83.5-85.0

Sample Number: SS-20

Material Description: Mottled Light Gray and Brownish Yellow Fat CLAY

USCS: CH

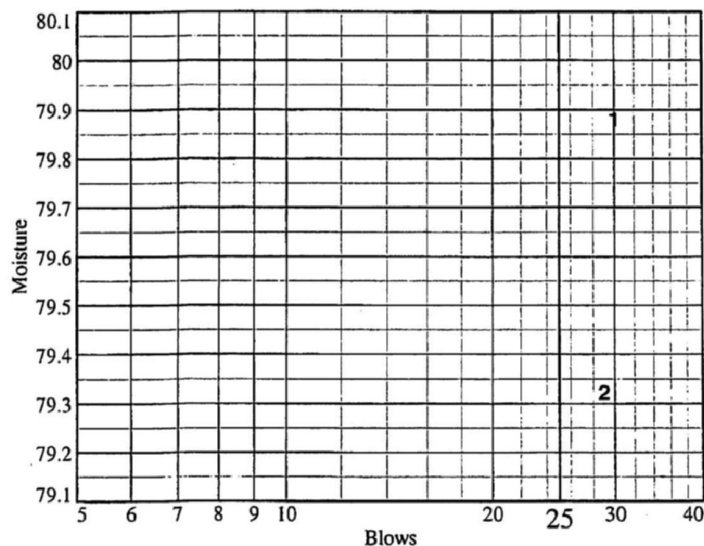
AASHTO: A-7-5(50)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	30.64	29.85				
Dry+Tare	23.93	23.52				
Tare	15.53	15.54				
# Blows	30	29				
Moisture	79.9	79.3				



Liquid Limit= 81
 Plastic Limit= 32
 Plasticity Index= 49
 Natural Moisture= 33.3
 Liquidity Index= 0.0

Plastic Limit Data

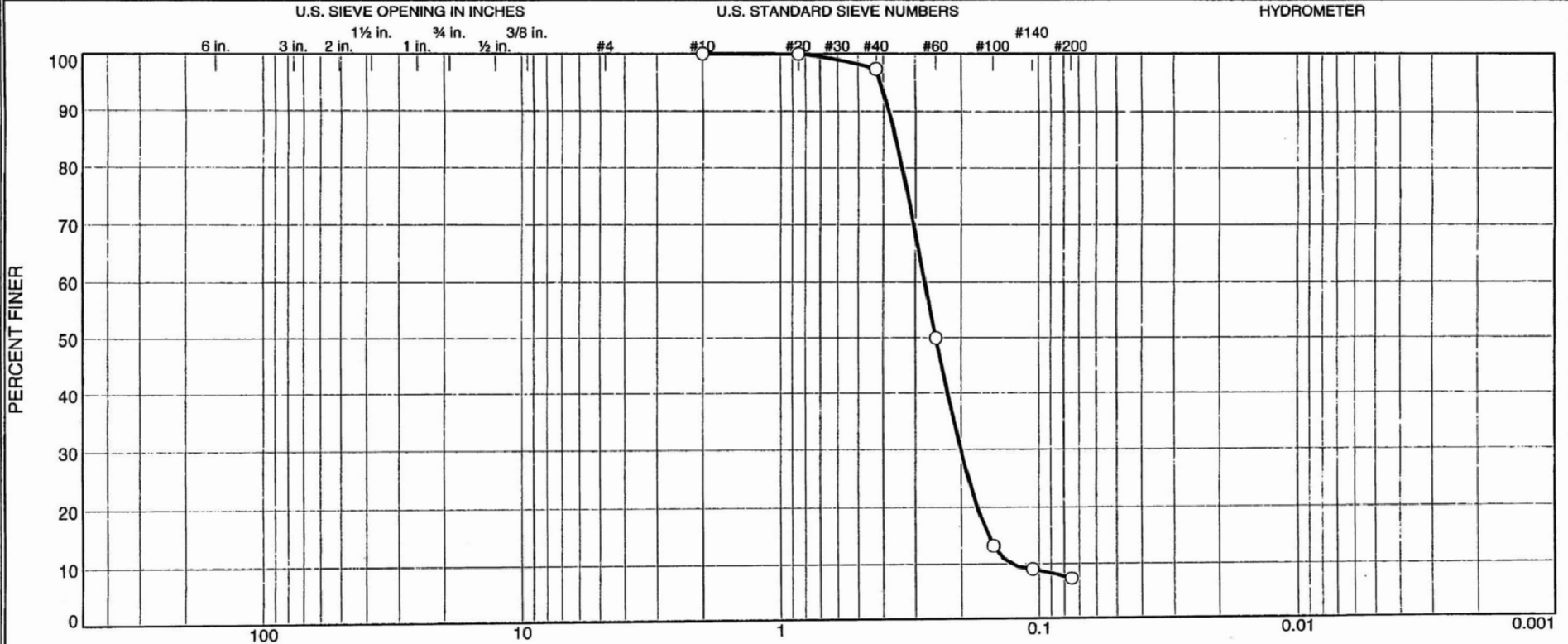
Run No.	1	2	3	4
Wet+Tare	22.30	21.94		
Dry+Tare	20.64	20.36		
Tare	15.50	15.46		
Moisture	32.3	32.2		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
78.35	61.08	9.17	33.3

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	2.7	89.9	7.4	

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2304A	SS-21	88.5-90.0	1-17-08	SP-SM	Pale Yellow Poorly Graded SAND with silt (Visual)	ND	ND	ND

Client Bechtel		MACTEC, Inc. Raleigh, North Carolina	○ SIEVE ANALYSIS ONLY Specific Gravity = 2.650 (ASTM D854-06) ND= Not Determined
Project Exelon Texas COL (Victoria Reservoir)			
Project No. 6468071777	Figure <i>NA</i>		

GRAIN SIZE DISTRIBUTION TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: Boring B-2304A

Depth: 88.5-90.0

Sample Number: SS-21

Material Description: Pale Yellow Poorly Graded SAND with silt (Visual)

Date: 1-17-08

Natural Moisture: ND

Liquid Limit: ND

Plastic Limit: ND

USCS Class.: SP-SM

Testing Remarks: SIEVE ANALYSIS ONLY

Specific Gravity = 2.650 (ASTM D854-06)

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
217.77	0.00	0.00	#10	0.00	100.0
100.49	0.00	0.00	#20	0.04	100.0
			#40	2.70	97.3
			#60	50.36	49.9
			#100	87.18	13.2
			#140	91.38	9.1
			#200	93.07	7.4

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	2.7	89.9	92.6			7.4

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
0.1283	0.1571	0.1734	0.2004	0.2503	0.2763	0.3378	0.3572	0.3799	0.4083

Fineness Modulus	C _u	C _c
1.19	2.15	1.13

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: 4/1/08

SAMPLE IDENTIFICATION: B-2304A SS-21

(A) Mass of oven-dried soil, grams:	75.61
(B) Mass of pycnometer filled with water at test temperature (T), grams:	656.61
(C) Mass of pycnometer, water and soil, grams:	703.71
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	23.0
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.652
(F) Correction factor:	0.99933
(G x F) SPECIFIC GRAVITY @ 20°C:	2.650

MATERIAL TESTED:

☒ X
- # 4

☐
- # 10

PREPARATION METHOD:

☒ X
DRY

☐
WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100
Poorly Graded SAND with silt (SP-SM) - Visual

EQUIPMENT USED

SCALES : 3.1.99

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNOMETER : P-6

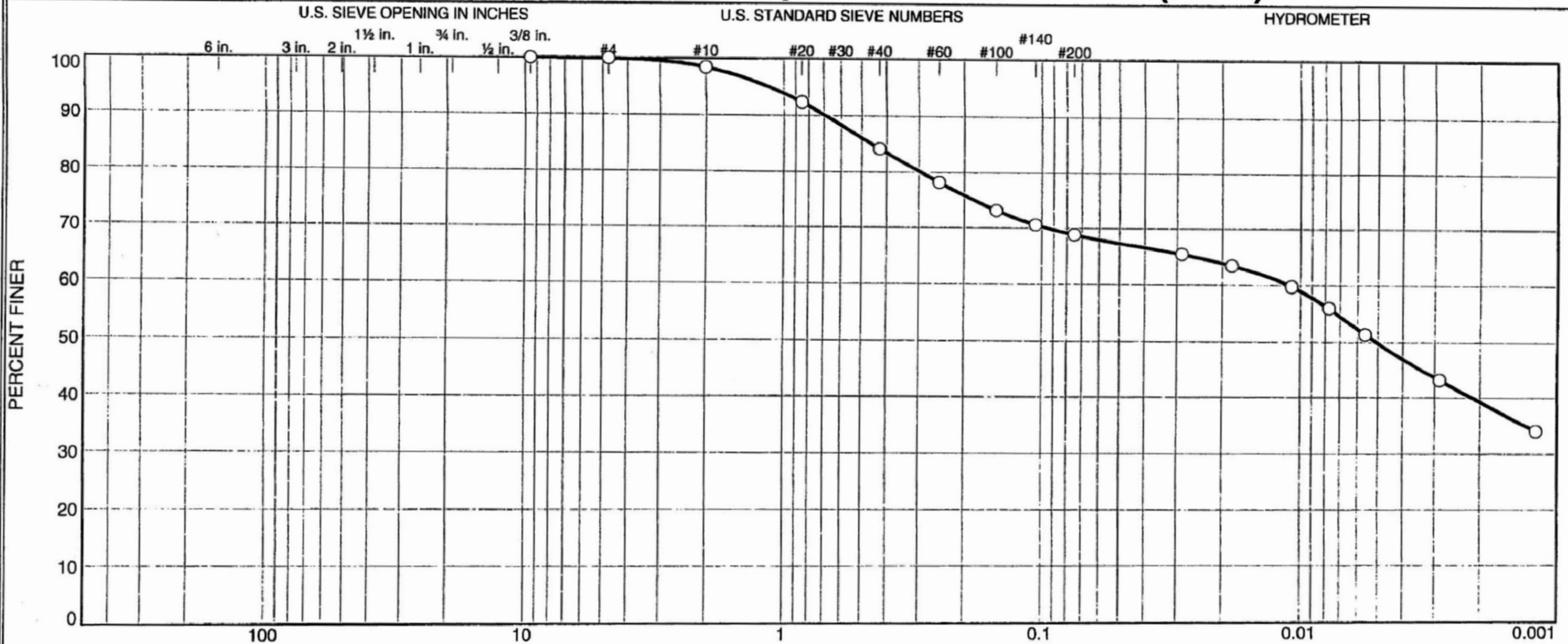
TESTED BY: CS

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

REVIEWED BY: LBJ

DSC 4-1-08

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



GRAIN SIZE DISTRIBUTION TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: Boring B-2304A

Depth: 93.5-95.0

Sample Number: SS-22

Material Description: Light Gray Sandy Lean CLAY

Date: 1-17-08

Natural Moisture: 18.1

Liquid Limit: 43

Plastic Limit: 15

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
141.02	0.00	0.00	3/8"	0.00	100.0
			#4	0.10	99.9
			#10	2.24	98.4
53.11	0.00	0.00	#20	3.29	92.3
			#40	7.66	84.2
			#60	10.90	78.2
			#100	13.64	73.1
			#140	15.01	70.6
			#200	15.96	68.8

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 98.4

Weight of hydrometer sample = 53.11

Hygroscopic moisture correction:

Moist weight and tare = 27.86

Dry weight and tare = 27.67

Tare weight = 15.50

Hygroscopic moisture = 1.6%

Table of composite correction values:

Temp., deg. C: 13.0 29.8

Comp. corr.: -8.0 -2.0

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	40.0	35.1	0.0131	41.0	9.6	0.0288	65.4
5.00	21.6	39.0	34.1	0.0132	40.0	9.7	0.0184	63.4
15.00	21.7	37.0	32.1	0.0132	38.0	10.1	0.0108	59.8
30.00	21.7	35.0	30.1	0.0132	36.0	10.4	0.0077	56.0
60.00	21.7	32.5	27.6	0.0132	33.5	10.8	0.0056	51.4
240.00	22.0	28.0	23.2	0.0131	29.0	11.5	0.0029	43.2
1440.00	22.3	23.0	18.3	0.0131	24.0	12.4	0.0012	34.1

MACTEC, Inc.

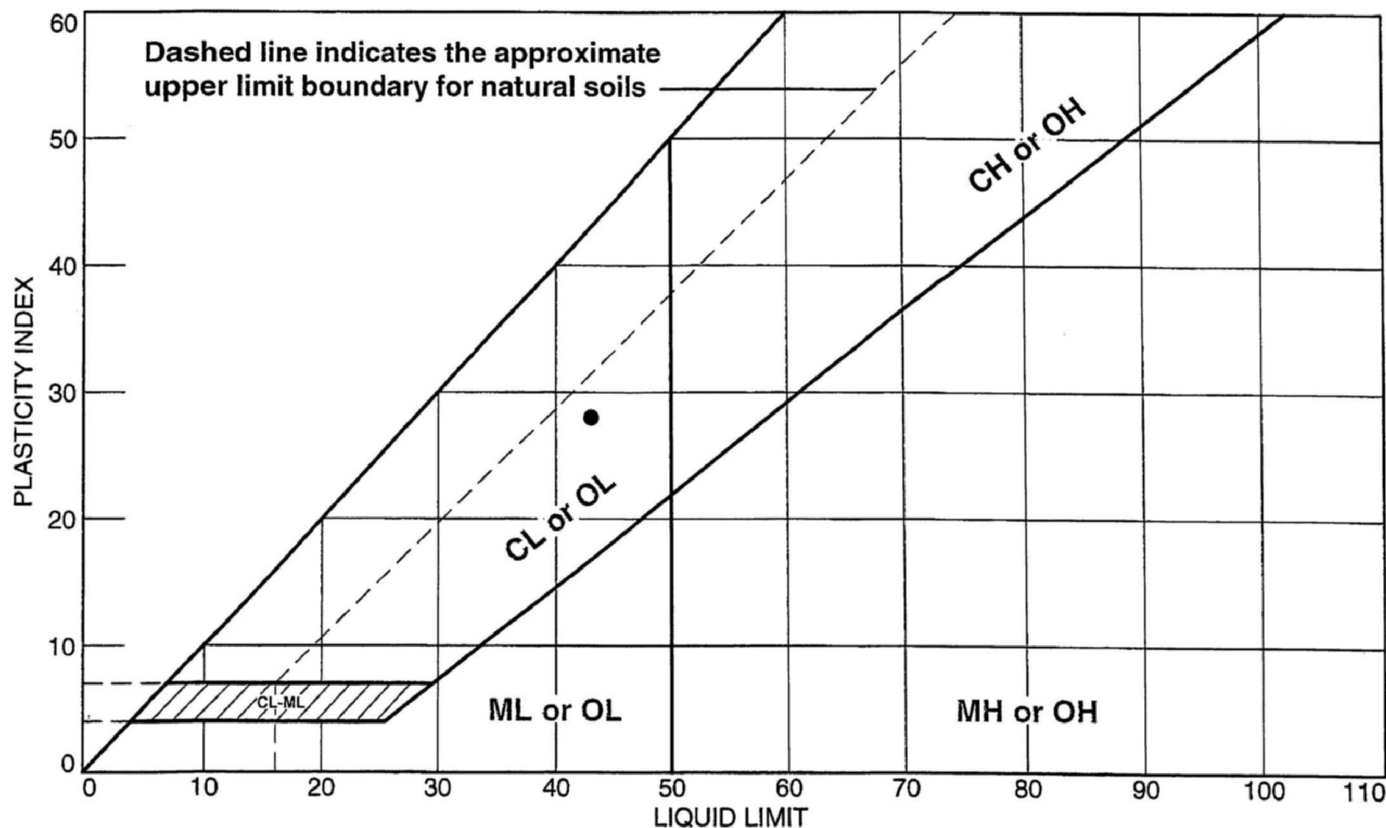
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.1	0.1	1.5	14.2	15.4	31.1	18.9	49.9	68.8

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0051	0.0111	0.2943	0.4536	0.6880	1.1383

Fineness Modulus
0.64

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-2304A	SS-22	93.5-95.0	18.1	15	43	28	CL

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project No.: 6468071777

Figure **NA**

Tested By: CS

Checked By: LBJ

DSC 4-2-08

LIQUID AND PLASTIC LIMIT TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: Boring B-2304A

Depth: 93.5-95.0

Sample Number: SS-22

Material Description: Light Gray Sandy Lean CLAY

USCS: CL

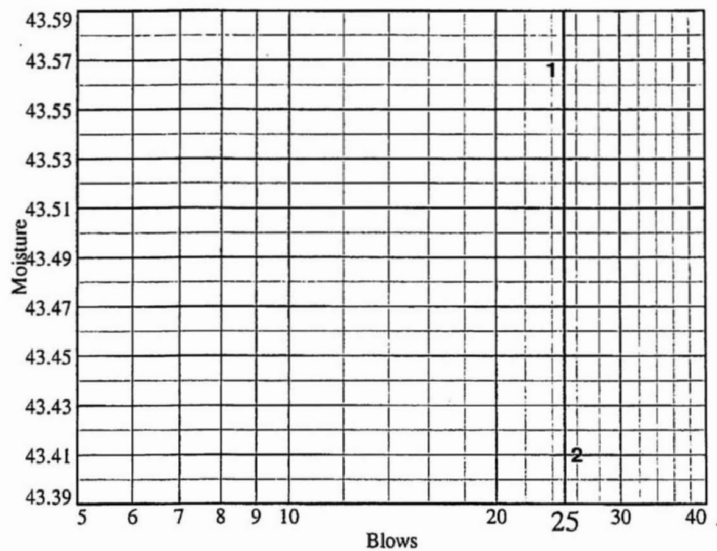
AASHTO: A-7-6(17)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	29.58	33.05				
Dry+Tare	25.28	27.78				
Tare	15.41	15.64				
# Blows	24	26				
Moisture	43.6	43.4				



Liquid Limit= 43
 Plastic Limit= 15
 Plasticity Index= 28
 Natural Moisture= 18.1
 Liquidity Index= 0.1

Plastic Limit Data

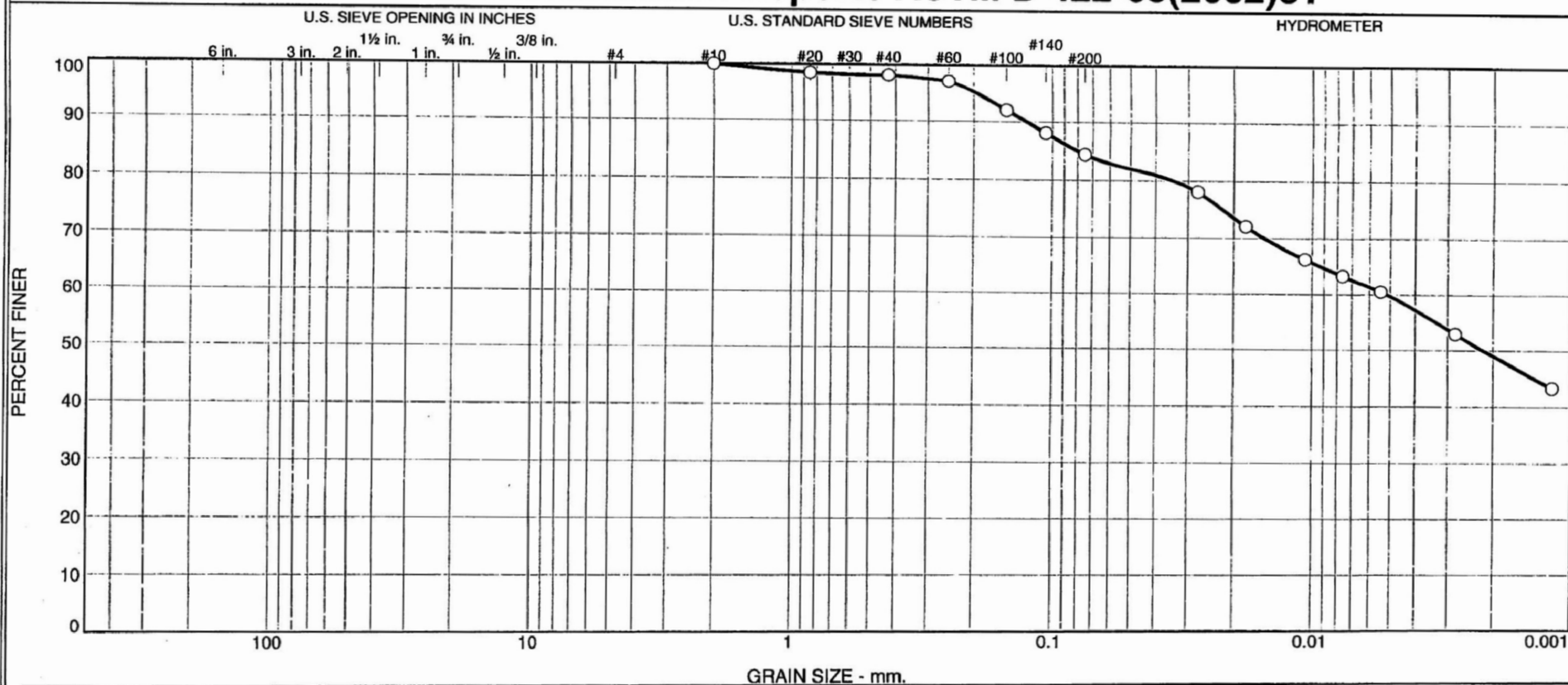
Run No.	1	2	3	4
Wet+Tare	21.69	22.13		
Dry+Tare	20.88	21.25		
Tare	15.59	15.40		
Moisture	15.3	15.0		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
66.50	57.69	9.12	18.1

MACTEC, Inc.

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

[illegible][illegible]

Client Bechtel

Project Exelon Texas COL (Victoria Reservoir)

Project No. 6468071777

Figure

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed

GRAIN SIZE DISTRIBUTION TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: Boring B-2304A

Depth: 98.5-100.0

Sample Number: SS-23

Material Description: Mottled Brownish Yellow and Light Gray Fat CLAY with sand

Date: 1-17-08

Natural Moisture: 20.5

Liquid Limit: 54

Plastic Limit: 18

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
225.93	0.00	0.00	#10	0.00	100.0
52.52	0.00	0.00	#20	0.78	98.5
			#40	0.97	98.2
			#60	1.52	97.1
			#100	4.20	92.0
			#140	6.21	88.2
			#200	8.15	84.5

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 52.52

Hygroscopic moisture correction:

Moist weight and tare = 26.86

Dry weight and tare = 26.47

Tare weight = 15.53

Hygroscopic moisture = 3.6%

Table of composite correction values:

Temp., deg. C: 13.0 29.8

Comp. corr.: -8.0 -2.0

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	21.5	45.0	40.0	0.0132	46.0	8.8	0.0276	78.1
5.00	21.3	42.0	37.0	0.0132	43.0	9.2	0.0180	72.1
15.00	21.4	39.0	34.0	0.0132	40.0	9.7	0.0106	66.3
30.00	21.4	37.5	32.5	0.0132	38.5	10.0	0.0076	63.4
60.00	21.6	36.0	31.1	0.0132	37.0	10.2	0.0054	60.6
240.00	21.8	32.0	27.1	0.0131	33.0	10.9	0.0028	52.9
1440.00	22.0	27.0	22.2	0.0131	28.0	11.7	0.0012	43.3

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	13.7	15.5	24.7	59.8	84.5

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0022	0.0051	0.0341	0.0793	0.1251	0.1959

Fineness Modulus
0.13