GRAIN SIZE DISTRIBUTION TEST DATA

4/2/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2304A
Depth: 28.5-30.0 **Sample Number:** SS-9
Material Description: Pale Yellow Silty SAND
Date: 1-17-08 **Natural Moisture:** 10.4
Liquid Limit: NV **Plastic Limit:** NP **USCS Class.:** 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
233.46	0.00	0.00	#10	0.00	100.0
99.83	0.00	0.00	#20	0.10	99.9
			#40	0.69	99.3
			#60	11.36	88.6
			#100	50.23	49.7
			#140	76.39	23.5
			#200	85.36	14.5

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =99.83
Hygroscopic moisture correction:
Moist weight and tare = 27.81
Dry weight and tare = 27.68
Tare weight = 15.50
Hygroscopic moisture = 1.1%
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.3	15.0	10.0	0.0132	16.0	13.7	0.0346	10.0
5.00	21.3	14.0	9.0	0.0132	15.0	13.8	0.0220	9.0
15.00	21.3	13.0	8.0	0.0132	14.0	14.0	0.0128	8.0
30.00	21.4	12.0	7.0	0.0132	13.0	14.2	0.0091	7.0
60.00	21.4	11.0	6.0	0.0132	12.0	14.3	0.0065	6.0
240.00	21.6	10.0	5.1	0.0132	11.0	14.5	0.0032	5.1
1440.00	21.1	10.0	4.9	0.0133	11.0	14.5	0.0013	4.9

MACTEC, Inc.

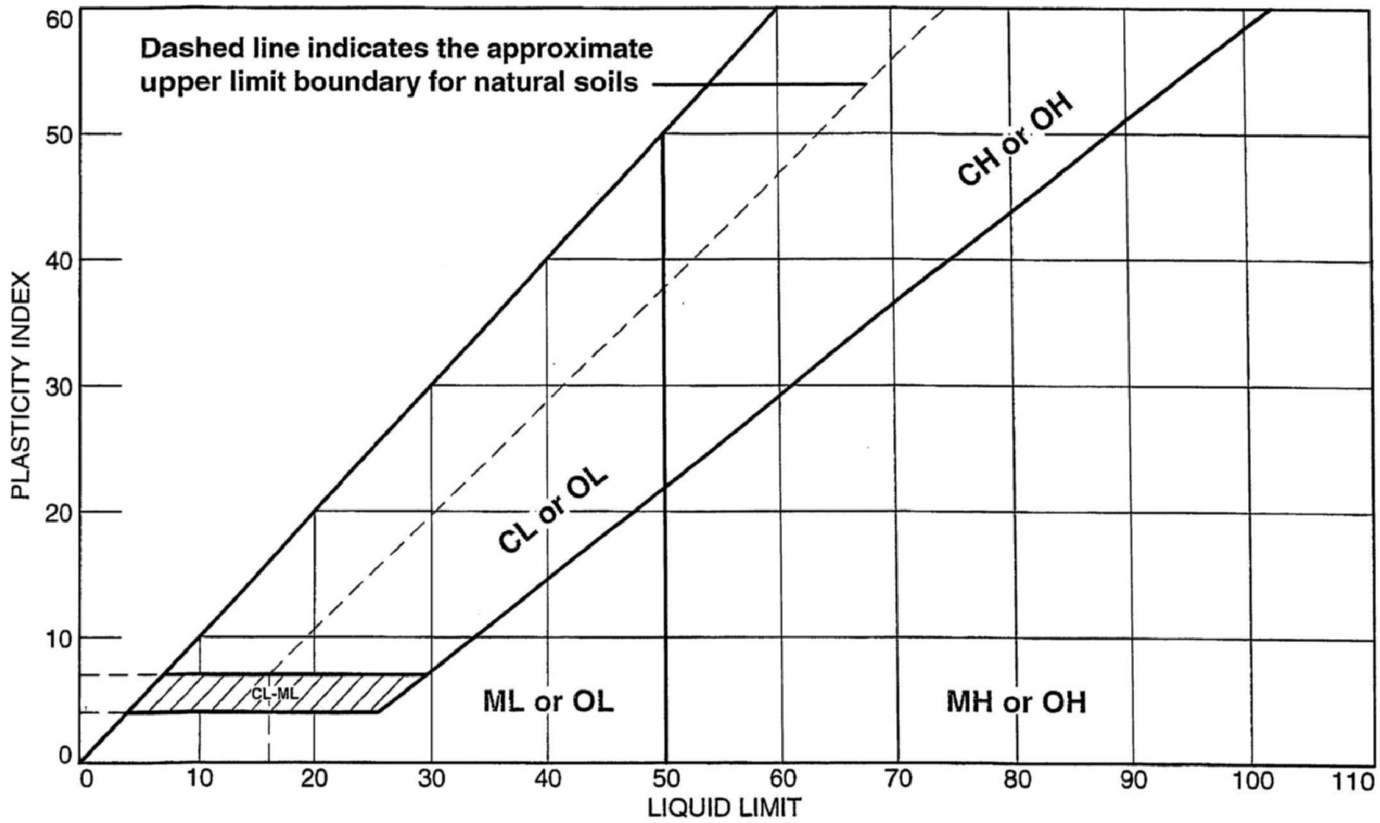
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.7	84.8	85.5	9.0	5.5	14.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0349	0.0782	0.0978	0.1180	0.1505	0.1686	0.2166	0.2340	0.2574	0.2967

Fineness Modulus	C_u	C_c
0.55	4.83	2.36

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-9	28.5-30.0	10.4	NP	NV	NP	SM

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

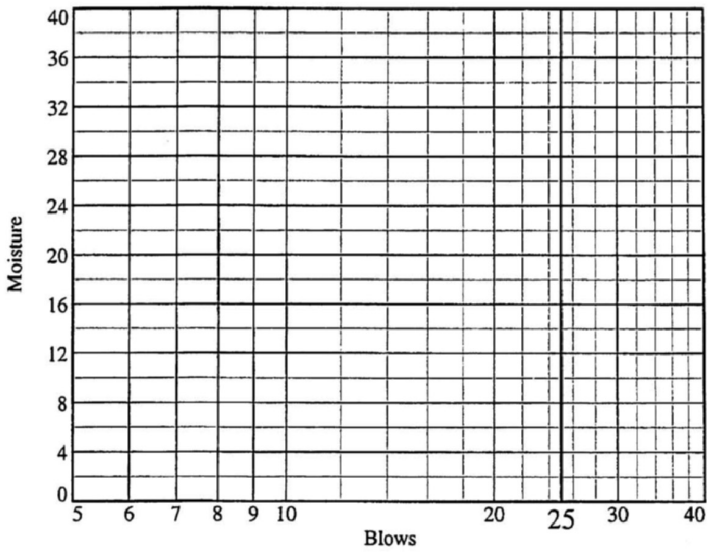
LIQUID AND PLASTIC LIMIT TEST DATA

4/2/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2304A
Depth: 28.5-30.0 **Sample Number:** SS-9
Material Description: Pale Yellow Silty 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= 10.4

Plastic Limit Data

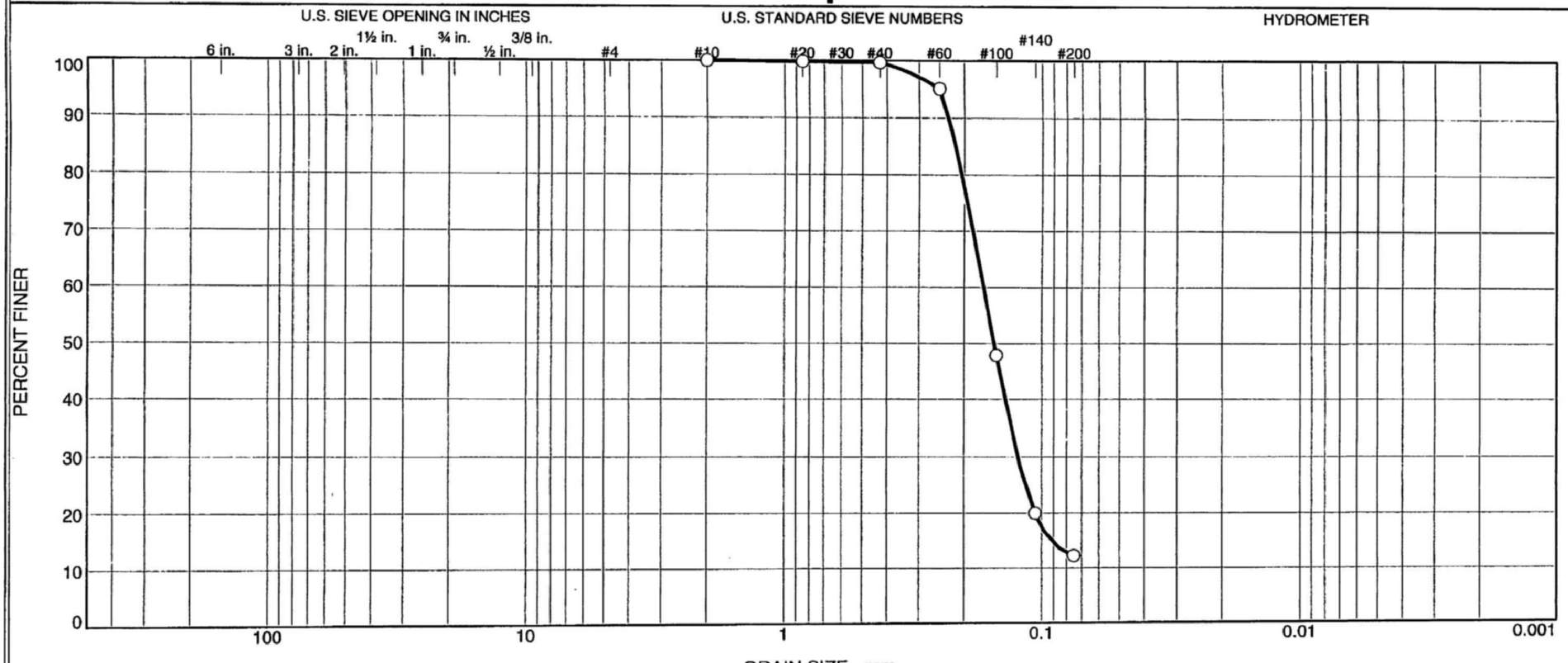
Run No.	1	2	3	4	
Wet+Tare					
Dry+Tare					
Tare					
Moisture					

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
130.98	120.16	15.69	10.4

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	0.3	87.4	12.3	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2304A	SS-10	33.5-35	1-17-08	SM	Pale Yellow Silty SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria Reservoir)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.655 (ASTM D2794-07)
SIEVE ANALYSIS ONLY
ND= Not Determined

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: 33.5-35 **Sample Number:** SS-10
Material Description: Pale Yellow Silty SAND (Visual)
Date: 1-17-08 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SM
Testing Remarks: Specific Gravity = 2.655 (ASTM D2794-07)
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
221.08	0.00	0.00	#10	0.00	100.0
97.85	0.00	0.00	#20	0.14	99.9
			#40	0.32	99.7
			#60	4.85	95.0
			#100	50.96	47.9
			#140	78.27	20.0
			#200	85.85	12.3

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	0.3	87.4	87.7			12.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0918	0.1060	0.1236	0.1531	0.1682	0.2047	0.2165	0.2307	0.2498

Fineness Modulus
0.55

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-10

(A) Mass of oven-dried soil, grams:		76.40
(B) Mass of pycnometer filled with water at test temperature (T), grams:		655.67
(C) Mass of pycnometer, water and soil, grams:		703.31
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		22.0
(G) Specific Gravity at observed temperature:	A / [B - (C - A)]	2.656
(F)	***Correction factor:***	0.99957
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.655

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

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

REMARKS: Estimated % Passing # 4 : 100

Silty SAND (SM) - Visual

EQUIPMENT USED

SCALES : 3.1.99

OVEN :5.1.16

THERMOMETER :5.1.01

PYCNOMETER :P-3

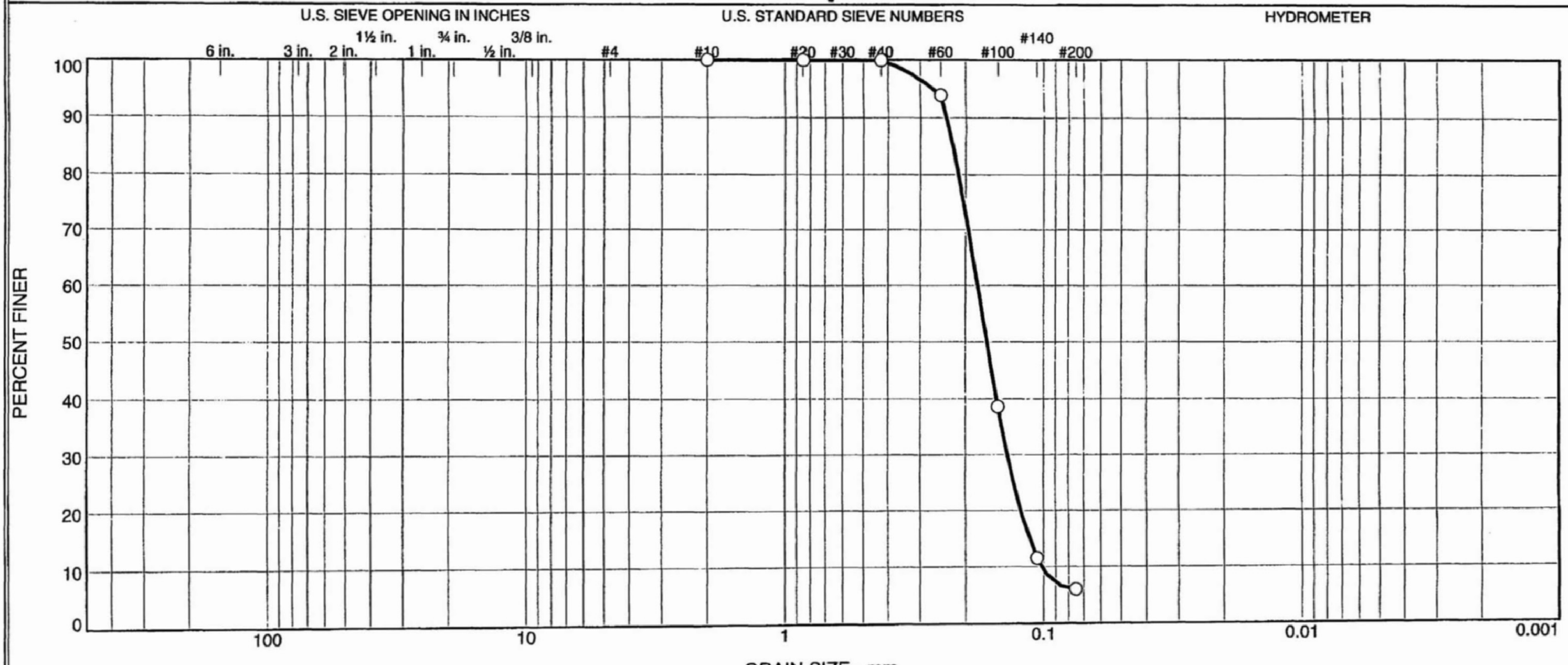
TESTED BY: CS

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

REVIEWED BY: LBJ

DSC 4-1-08

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	0.1	93.9	6.0	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2304A	SS-11	38.5-40	1-17-08	SP-SM	Pale Yellow Poorly Graded Sand with silt (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria Reservoir)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ SIEVE ANALYSIS ONLY
ND= Not Determined

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: 38.5-40 **Sample Number:** SS-11
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
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
199.80	0.00	0.00	#10	0.00	100.0
100.62	0.00	0.00	#20	0.03	100.0
			#40	0.11	99.9
			#60	6.13	93.9
			#100	61.74	38.6
			#140	89.03	11.5
			#200	94.56	6.0

Fractional Components

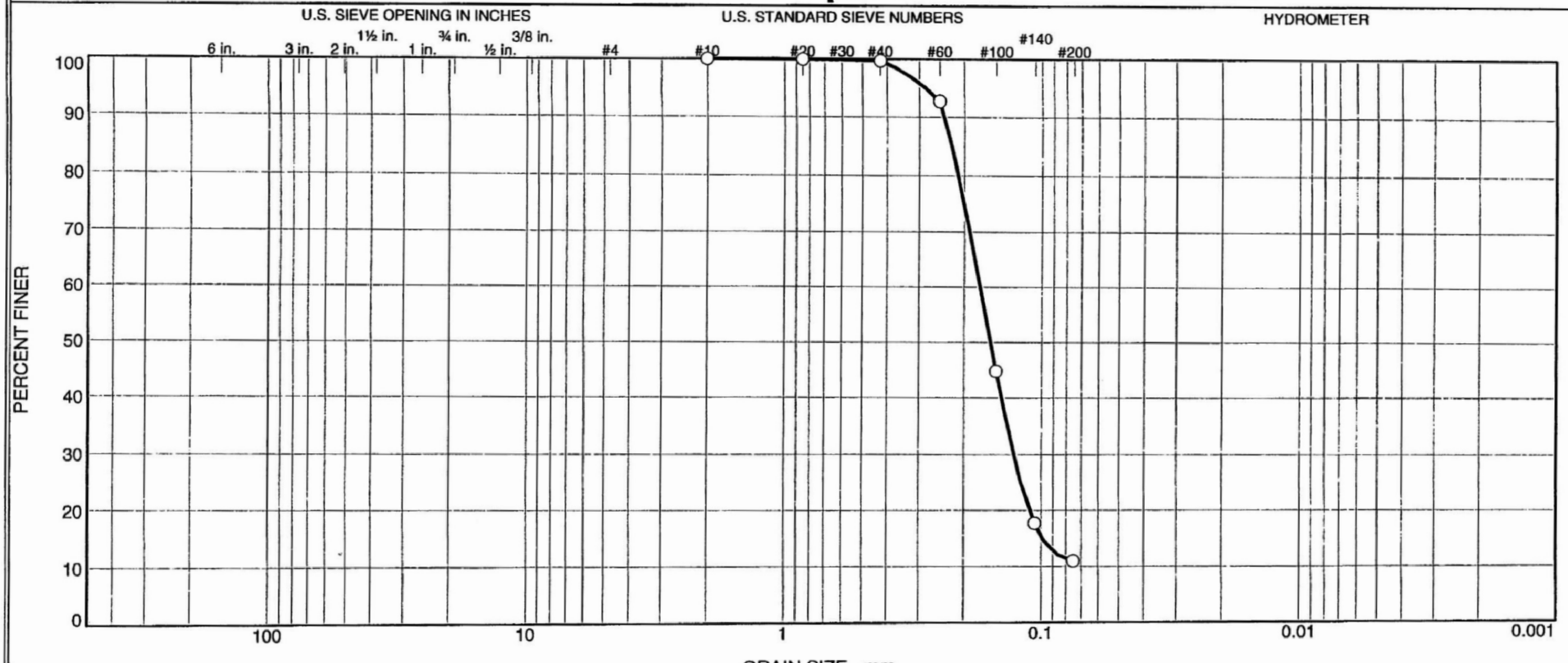
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.1	93.9	94.0			6.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1018	0.1136	0.1226	0.1379	0.1655	0.1796	0.2133	0.2241	0.2371	0.2683

Fineness Modulus	C_u	C_c
0.65	1.76	1.04

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	0.3	88.7	11.0	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2304A	SS-12	43.5-45.0	1-17-08	SP-SM	Pale Yellow Poorly Graded SAND with silt (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria Reservoir)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ SIEVE ANALYSIS ONLY
ND = Not Determined

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: 43.5-45.0 **Sample Number:** SS-12
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
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
217.39	0.00	0.00	#10	0.00	100.0
102.98	0.00	0.00	#20	0.04	100.0
			#40	0.29	99.7
			#60	7.53	92.7
			#100	56.82	44.8
			#140	84.74	17.7
			#200	91.66	11.0

Fractional Components

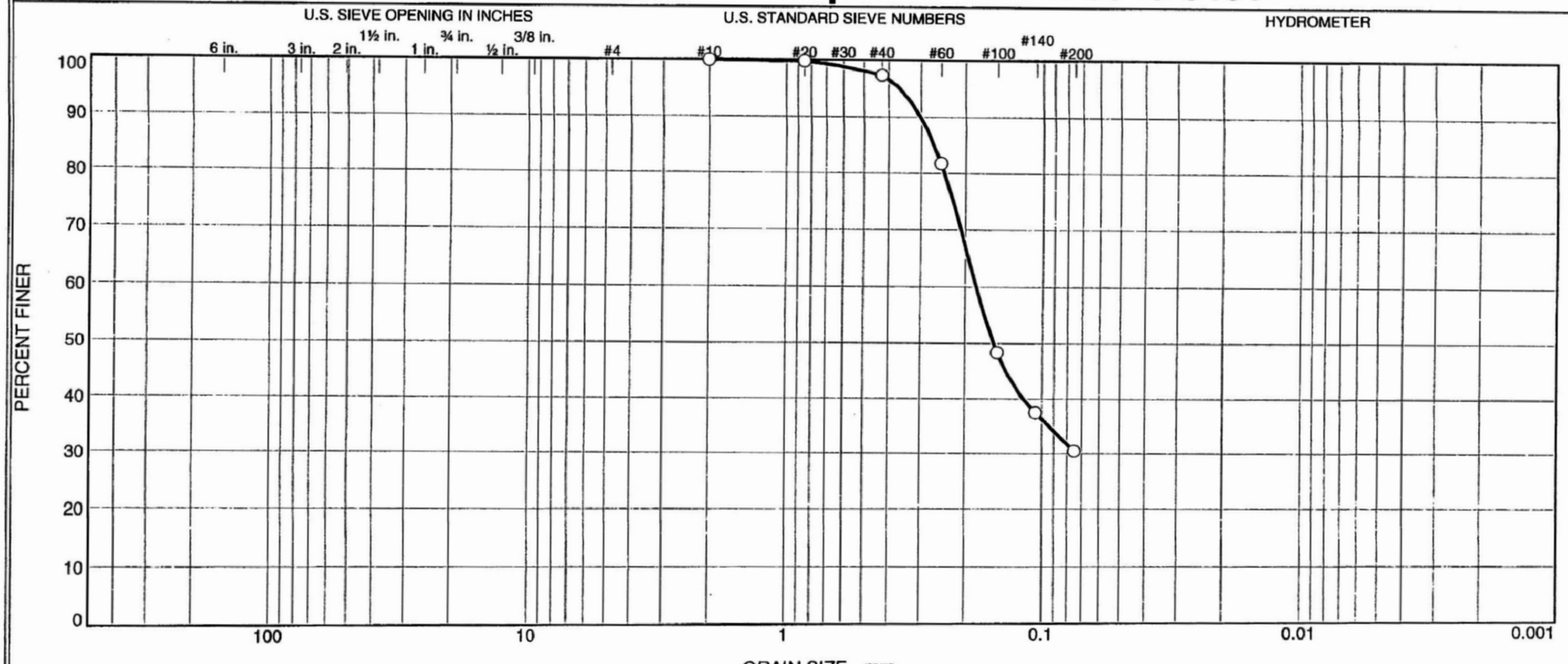
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.3	88.7	89.0			11.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0988	0.1108	0.1278	0.1577	0.1733	0.2113	0.2239	0.2394	0.2854

Fineness Modulus
0.60

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	66.8	30.5	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2304A	SS-13	48.5-50.0	1-17-08	SM	Pale Yellow Silty SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria Reservoir)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ SIEVE ANALYSIS ONLY
ND = Not Determined

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: 48.5-50.0 **Sample Number:** SS-13
Material Description: Pale Yellow Silty SAND (Visual)
Date: 1-17-08 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SM
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
204.15	0.00	0.00	#10	0.00	100.0
98.56	0.00	0.00	#20	0.19	99.8
			#40	2.63	97.3
			#60	17.95	81.8
			#100	50.95	48.3
			#140	61.53	37.6
			#200	68.50	30.5

Fractional Components

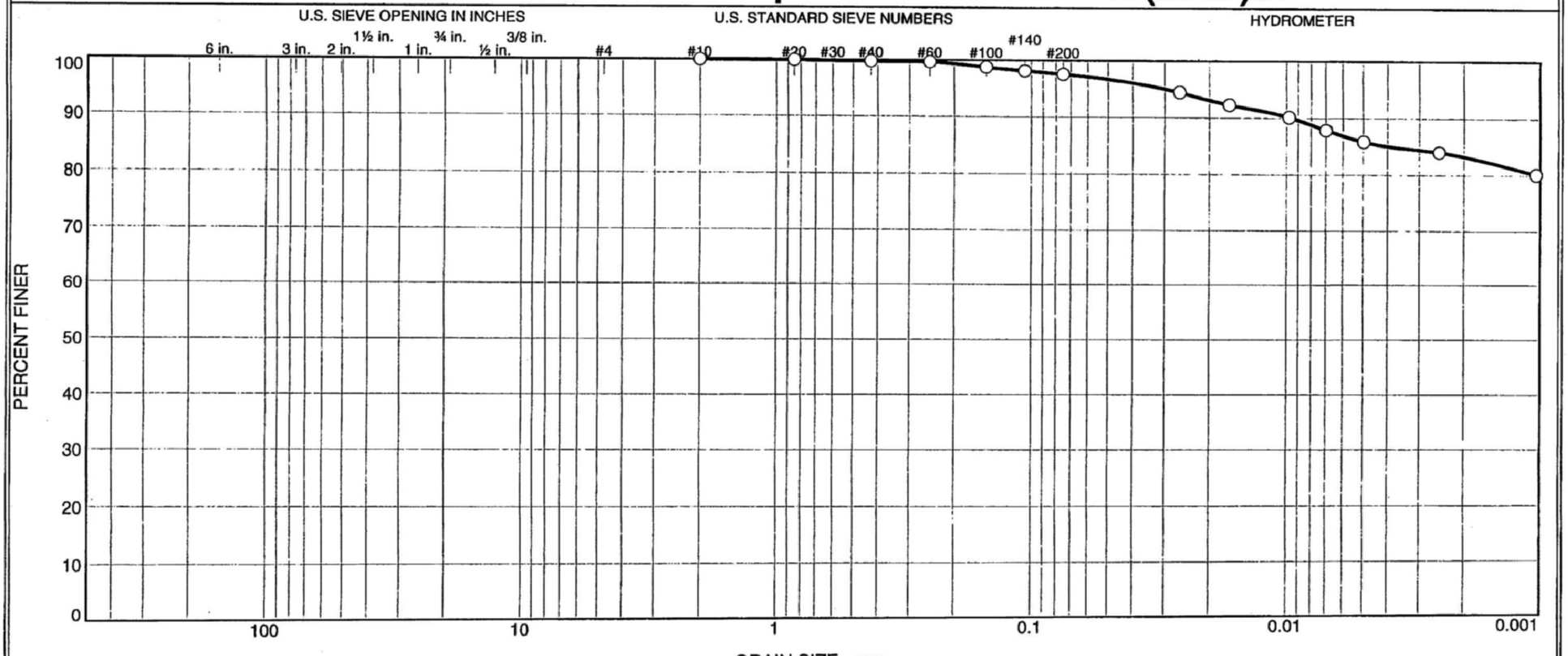
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	2.7	66.8	69.5			- 30.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.1549	0.1814	0.2424	0.2659	0.3002	0.3630

Fineness Modulus
0.63

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	0.3	2.2	11.6	85.9

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2304A	SS-14	53.5-55	1-17-08	CH	Pale Yellow Fat CLAY	30.6	89	30

Client Bechtel

Project Exelon Texas COL (Victoria Reservoir)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.706 (ASTM D854-06)

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: 53.5-55 **Sample Number:** SS-14
Material Description: Pale Yellow Fat CLAY
Date: 1-17-08 **Natural Moisture:** 30.6
Liquid Limit: 89 **Plastic Limit:** 30 **USCS Class.:** CH
Testing Remarks: Specific Gravity = 2.706 (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
163.90	0.00	0.00	#10	0.00	100.0
50.17	0.00	0.00	#20	0.02	100.0
			#40	0.13	99.7
			#60	0.16	99.7
			#100	0.64	98.7
			#140	0.96	98.1
			#200	1.25	97.5

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =50.17
Hygroscopic moisture correction:
Moist weight and tare = 27.27
Dry weight and tare = 26.58
Tare weight = 15.52
Hygroscopic moisture = 6.2%
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 = 2.706
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.7	50.0	45.1	0.0131	51.0	7.9	0.0262	94.3
5.00	21.7	49.0	44.1	0.0131	50.0	8.1	0.0167	92.2
15.00	21.7	48.0	43.1	0.0131	49.0	8.3	0.0098	90.2
30.00	21.5	47.0	42.0	0.0132	48.0	8.4	0.0070	87.9
60.00	21.6	46.0	41.1	0.0132	47.0	8.6	0.0050	85.9
240.00	21.9	45.0	40.2	0.0131	46.0	8.8	0.0025	84.0
1440.00	22.3	43.0	38.3	0.0130	44.0	9.1	0.0010	80.1

MACTEC, Inc.

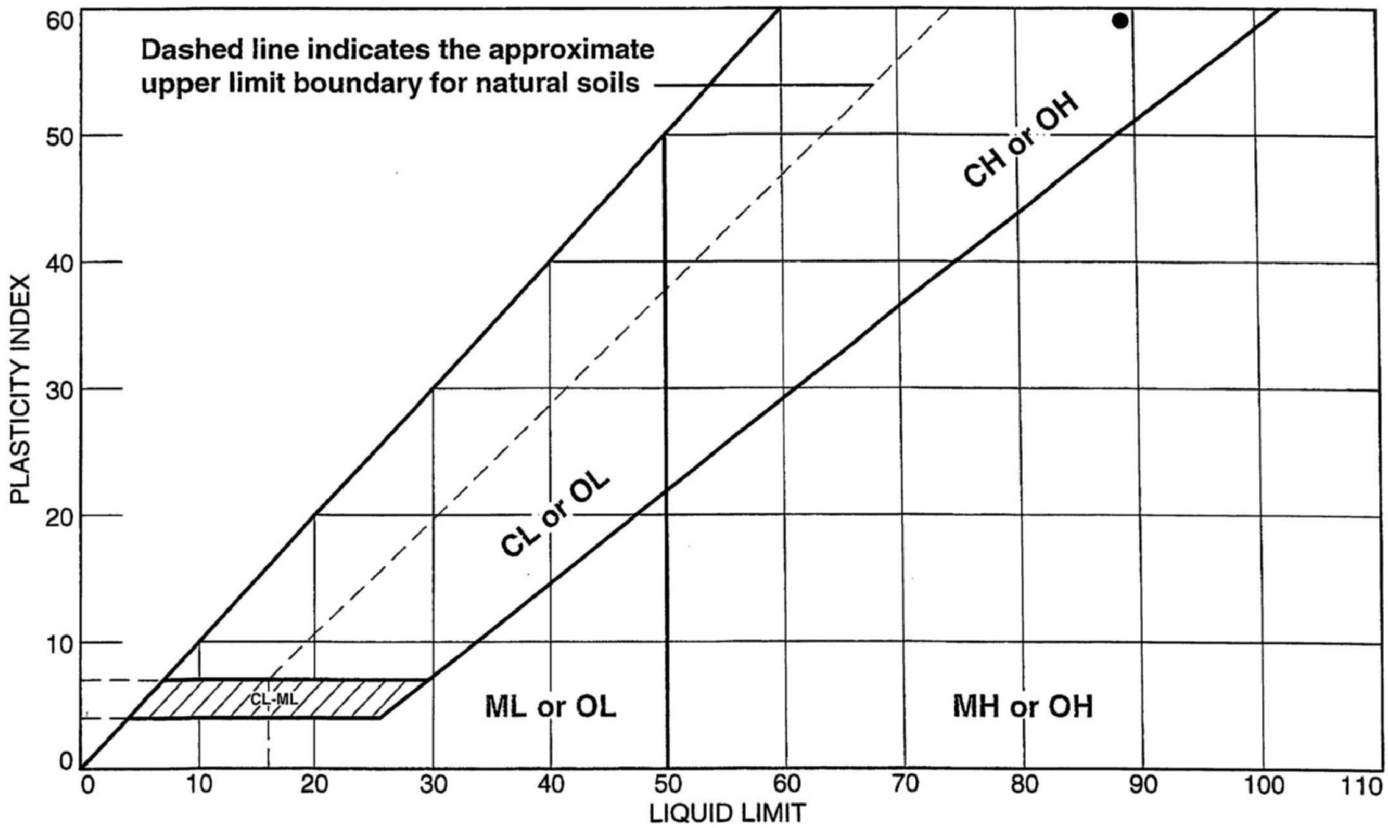
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.3	2.2	2.5	11.6	85.9	97.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
							0.0038	0.0095	0.0305

Fineness Modulus
0.02

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-14	53.5-55	30.6	30	89	59	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

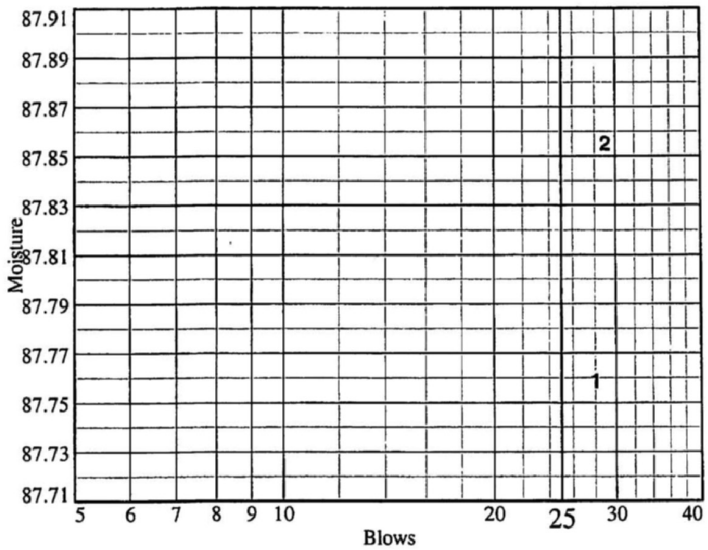
LIQUID AND PLASTIC LIMIT TEST DATA

4/2/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2304A
Depth: 53.5-55 **Sample Number:** SS-14
Material Description: Pale Yellow Fat CLAY
USCS: CH **AASHTO:** A-7-5(69)
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.50	29.96				
Dry+Tare	20.84	23.16				
Tare	15.53	15.42				
# Blows	28	29				
Moisture	87.8	87.9				



Liquid Limit= 89
Plastic Limit= 30
Plasticity Index= 59
Natural Moisture= 30.6
Liquidity Index= 0.0

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.56	22.34			
Dry+Tare	20.16	20.78			
Tare	15.49	15.48			
Moisture	30.0	29.4			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
112.09	87.39	6.77	30.6

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-14

(A) Mass of oven-dried soil, grams:	49.44
(B) Mass of pycnometer filled with water at test temperature (T), grams:	656.72
(C) Mass of pycnometer, water and soil, grams:	687.90
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	22.0
(G) Specific Gravity at observed temperature: A / [B - (C - A)]	2.708
(F) ***Correction factor:***	0.99957
(G x F) **SPECIFIC GRAVITY @ 20°C:**	2.706

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

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

REMARKS: Estimated % Passing # 4 : 100

Fat CLAY (CH)

EQUIPMENT USED

SCALES : 3.1.99

OVEN :5.1.16

THERMOMETER :5.1.01

PYCNOMETER :P-6

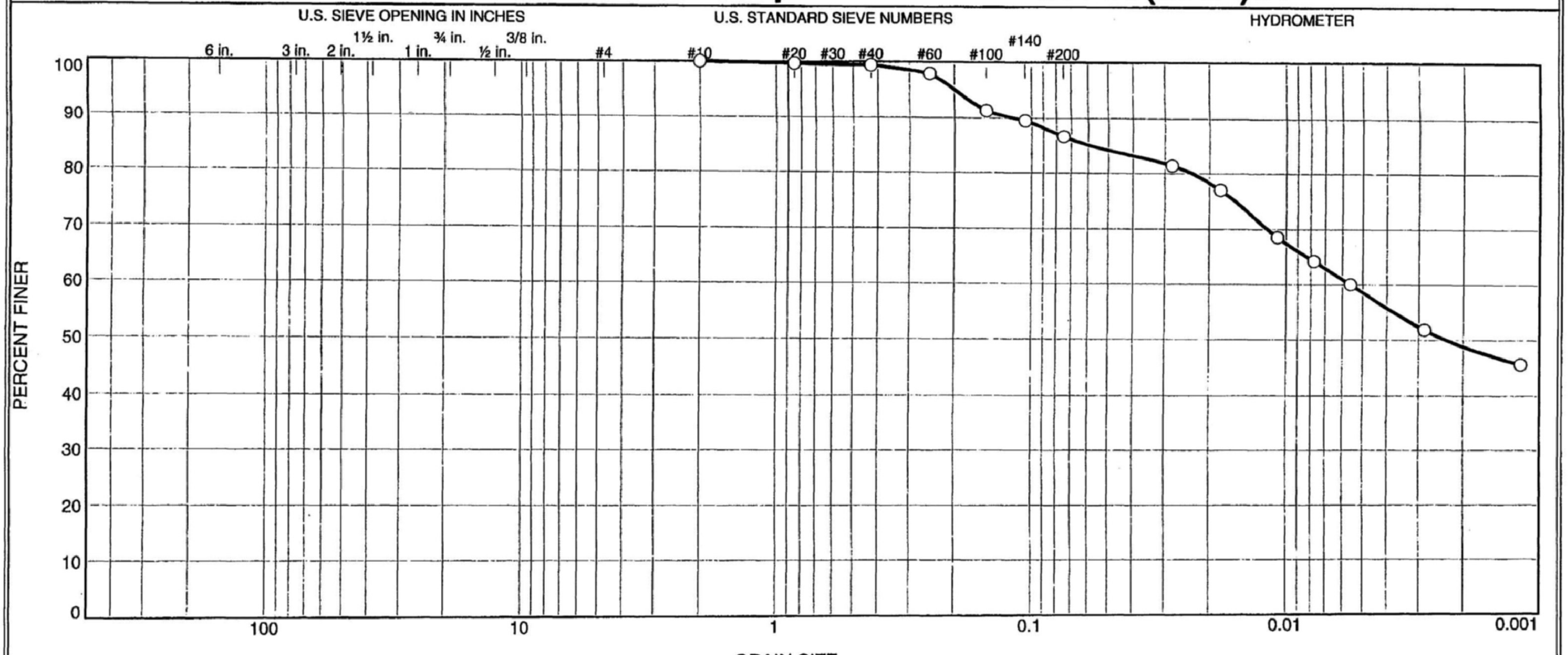
TESTED BY: CS

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

REVIEWED BY: LBJ

DSC 4-1-08

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



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.6	12.7	28.1	58.6

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2304A	SS-15A	58.5-59.5	1-2-08	CH	Pale yellow Fat CLAY	26.7	54	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: 58.5-59.5 **Sample Number:** SS-15A
Material Description: Pale yellow Fat CLAY
Date: 1-2-08 **Natural Moisture:** 26.7
Liquid Limit: 54 **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
227.99	0.00	0.00	#10	0.00	100.0
47.91	0.00	0.00	#20	0.16	99.7
			#40	0.30	99.4
			#60	0.98	98.0
			#100	4.16	91.3
			#140	5.01	89.5
			#200	6.38	86.7

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =47.91
Hygroscopic moisture correction:
Moist weight and tare = 29.19
Dry weight and tare = 28.72
Tare weight = 15.45
Hygroscopic moisture = 3.5%
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.6	43.0	38.1	0.0132	44.0	9.1	0.0281	81.4
5.00	21.6	41.0	36.1	0.0132	42.0	9.4	0.0181	77.1
15.00	21.6	37.0	32.1	0.0132	38.0	10.1	0.0108	68.5
30.00	21.6	35.0	30.1	0.0132	36.0	10.4	0.0078	64.3
60.00	21.6	33.0	28.1	0.0132	34.0	10.7	0.0056	60.0
240.00	22.1	29.0	24.3	0.0131	30.0	11.4	0.0029	51.8
1440.00	22.4	26.0	21.4	0.0131	27.0	11.9	0.0012	45.6

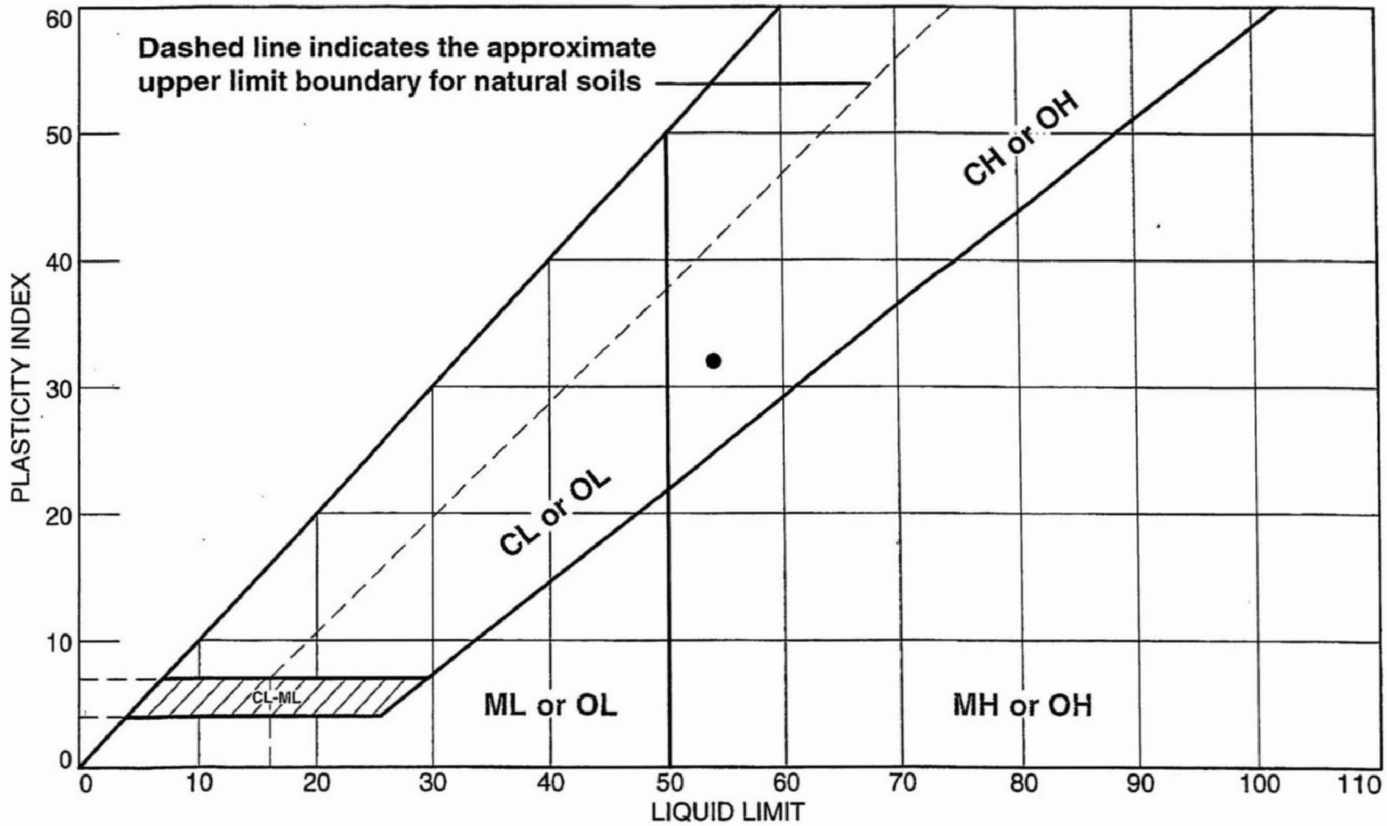
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.6	12.7	13.3	28.1	58.6	86.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0023	0.0056	0.0234	0.0587	0.1168	0.1993

Fineness Modulus
0.11

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-15A	58.5-59.5	26.7	22	54	32	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

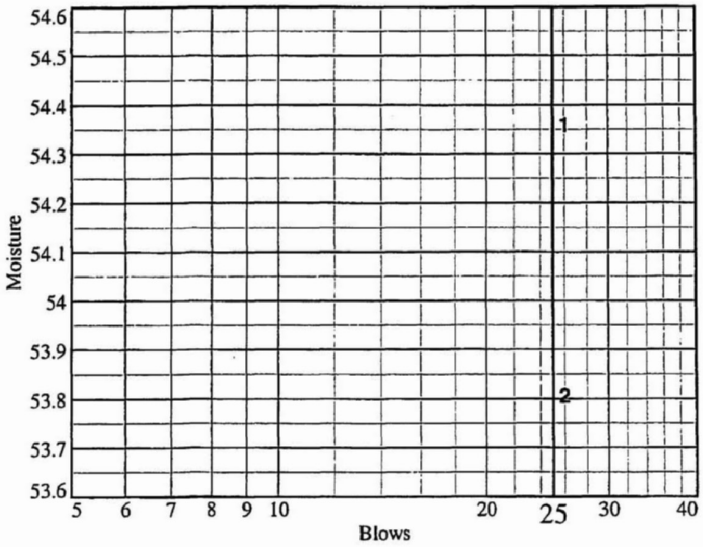
LIQUID AND PLASTIC LIMIT TEST DATA

4/2/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2304A
Depth: 58.5-59.5 **Sample Number:** SS-15A
Material Description: Pale yellow 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	29.24	30.82				
Dry+Tare	24.44	25.45				
Tare	15.61	15.47				
# Blows	26	26				
Moisture	54.4	53.8				



Liquid Limit= 54
Plastic Limit= 22
Plasticity Index= 32
Natural Moisture= 26.7
Liquidity Index= 0.1

Plastic Limit Data

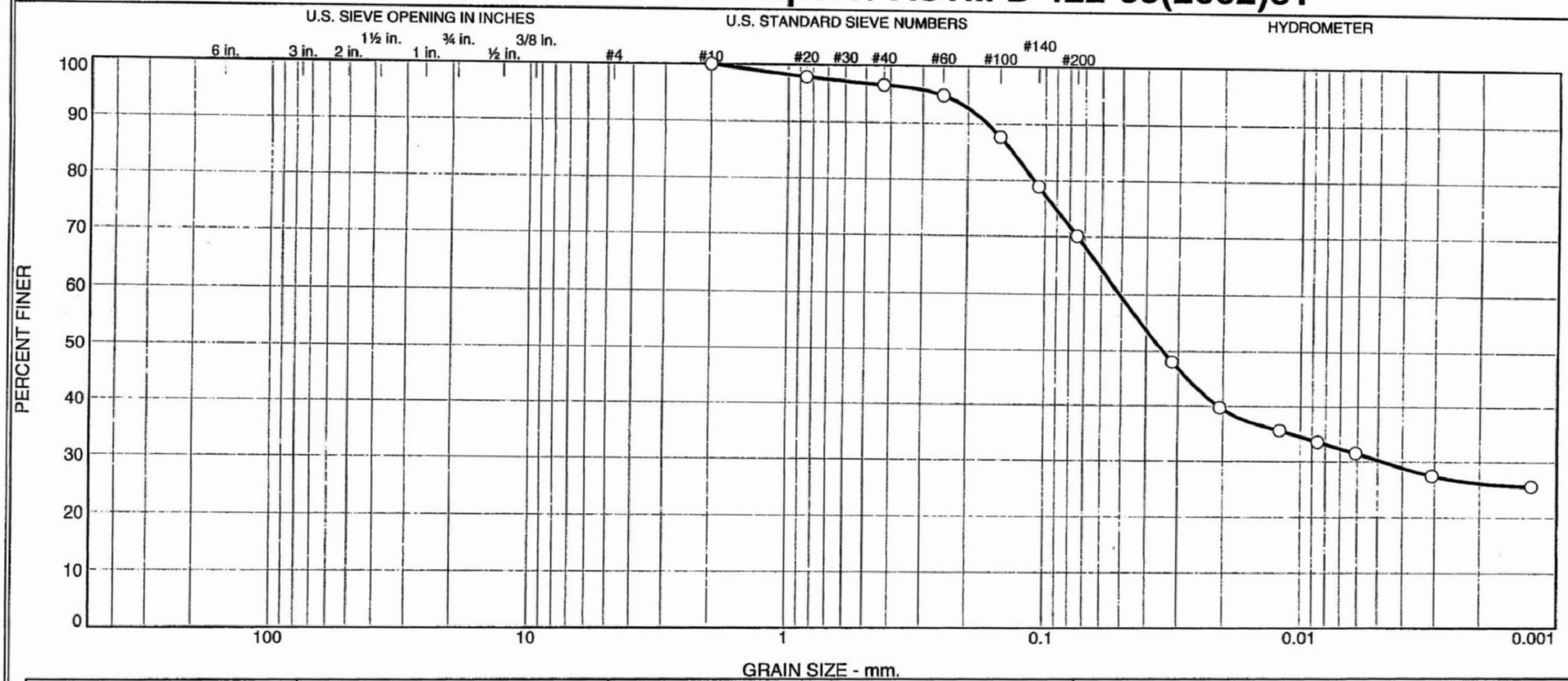
Run No.	1	2	3	4	
Wet+Tare	23.69	21.61			
Dry+Tare	22.23	20.47			
Tare	15.63	15.44			
Moisture	22.1	22.7			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
109.95	88.23	6.77	26.7

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	3.5	26.3	39.9	30.3

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2304A	SS-15B	59.5-60.0	1-17-08	CL	Pale Yellow Sandy Lean CLAY	18.2	32	14

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: 59.5-60.0 **Sample Number:** SS-15B
Material Description: Pale Yellow Sandy Lean CLAY
Date: 1-17-08 **Natural Moisture:** 18.2
Liquid Limit: 32 **Plastic Limit:** 14 **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
142.15	0.00	0.00	#10	0.00	100.0
48.12	0.00	0.00	#20	1.02	97.9
			#40	1.67	96.5
			#60	2.50	94.8
			#100	5.88	87.8
			#140	10.15	78.9
			#200	14.36	70.2

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =48.12
Hygroscopic moisture correction:
Moist weight and tare = 27.05
Dry weight and tare = 26.90
Tare weight = 15.47
Hygroscopic moisture = 1.3%
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.6	28.0	23.1	0.0132	29.0	11.5	0.0317	48.0
5.00	21.6	24.0	19.1	0.0132	25.0	12.2	0.0206	39.7
15.00	21.6	22.0	17.1	0.0132	23.0	12.5	0.0120	35.5
30.00	21.7	21.0	16.1	0.0132	22.0	12.7	0.0086	33.5
60.00	21.8	20.0	15.1	0.0131	21.0	12.9	0.0061	31.5
240.00	22.0	18.0	13.2	0.0131	19.0	13.2	0.0031	27.5
1440.00	22.3	17.0	12.3	0.0131	18.0	13.3	0.0013	25.7

MACTEC, Inc.

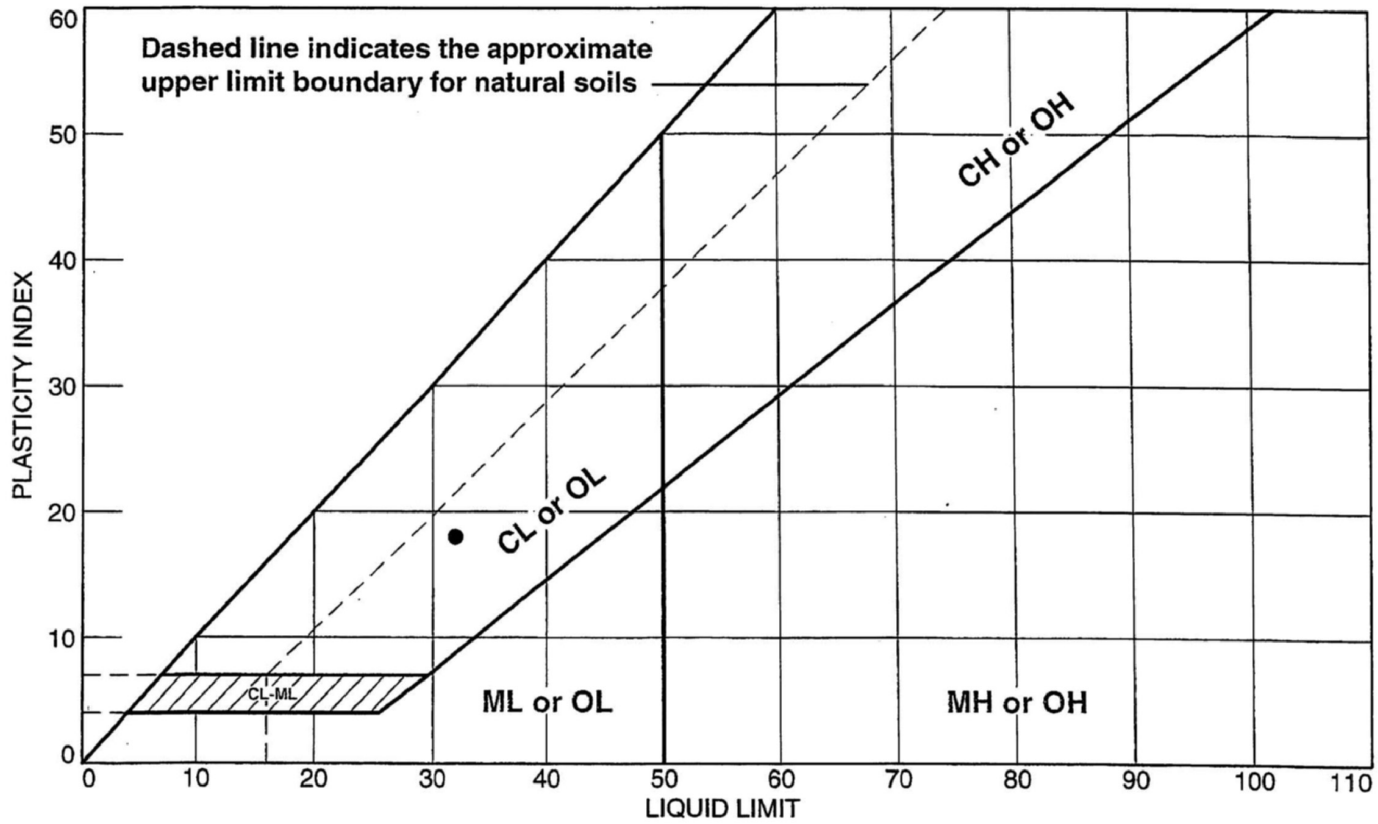
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	3.5	26.3	29.8	39.9	30.3	70.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0048	0.0344	0.0508	0.1105	0.1335	0.1677	0.2575

Fineness Modulus
0.21

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-15B	59.5-60.0	18.2	14	32	18	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

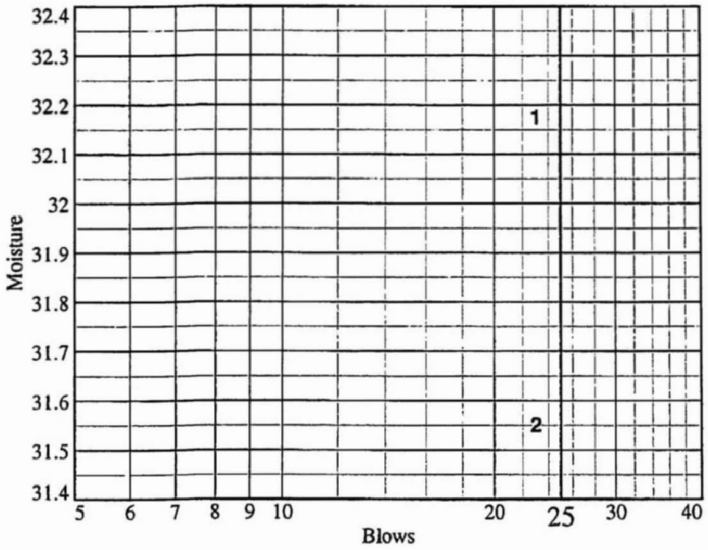
LIQUID AND PLASTIC LIMIT TEST DATA

4/2/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2304A
Depth: 59.5-60.0 **Sample Number:** SS-15B
Material Description: Pale Yellow Sandy Lean CLAY
USCS: CL **AASHTO:** A-6(10)
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	32.87	31.35				
Dry+Tare	28.70	27.57				
Tare	15.74	15.59				
# Blows	23	23				
Moisture	32.2	31.6				



Liquid Limit= 32
Plastic Limit= 14
Plasticity Index= 18
Natural Moisture= 18.2
Liquidity Index= 0.2

Plastic Limit Data

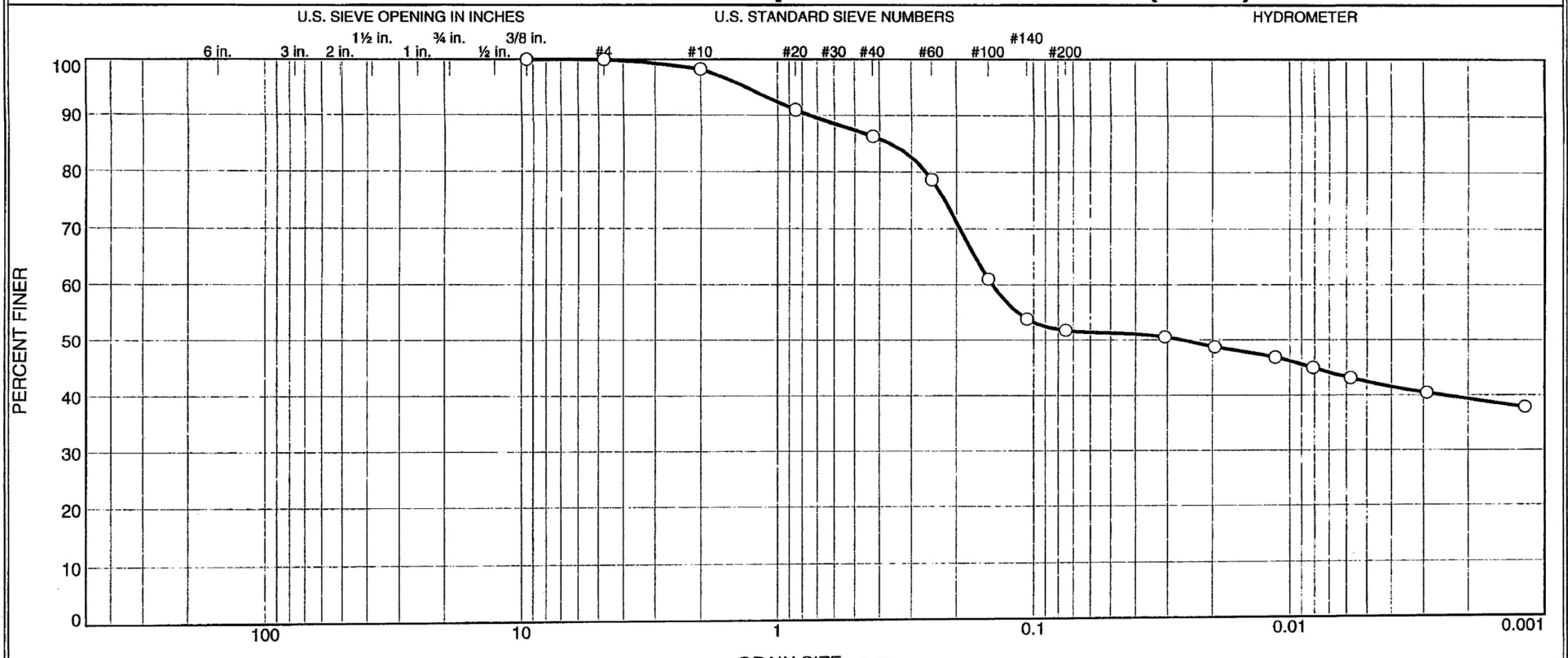
Run No.	1	2	3	4	
Wet+Tare	23.47	22.32			
Dry+Tare	22.50	21.43			
Tare	15.44	15.47			
Moisture	13.7	14.9			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
52.22	45.20	6.66	18.2

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	1.7	11.9	34.6	9.4	42.4

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2304A	SS-16	63.5-65.0	1-17-08	CL	Light Gray Sandy Lean CLAY	18.0	45	18

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