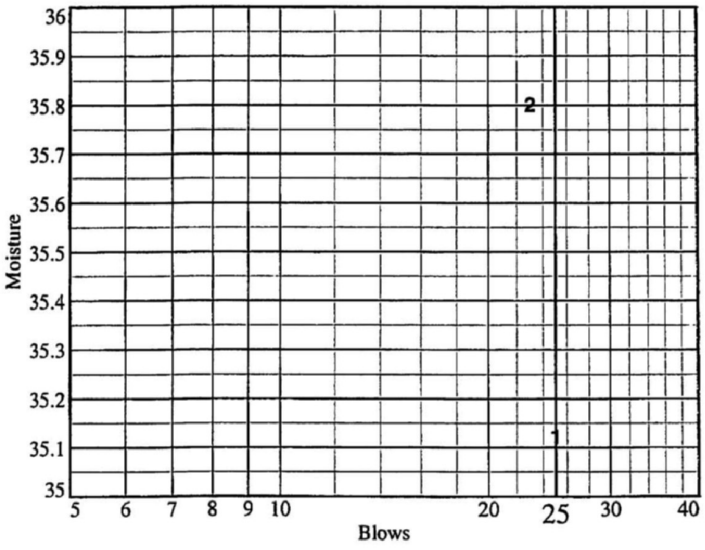
LIQUID AND PLASTIC LIMIT TEST DATA

2/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2352
Depth: 63.5-65.0 **Sample Number:** SS-16
Material Description: Light Yellowish Brown Sandy Lean CLAY
USCS: CL **AASHTO:** A-6(7)
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	21.52	23.16				
Dry+Tare	19.95	21.13				
Tare	15.48	15.46				
# Blows	25	23				
Moisture	35.1	35.8				



Liquid Limit= 35
Plastic Limit= 12
Plasticity Index= 23
Natural Moisture= 20.5
Liquidity Index= 0.4

Plastic Limit Data

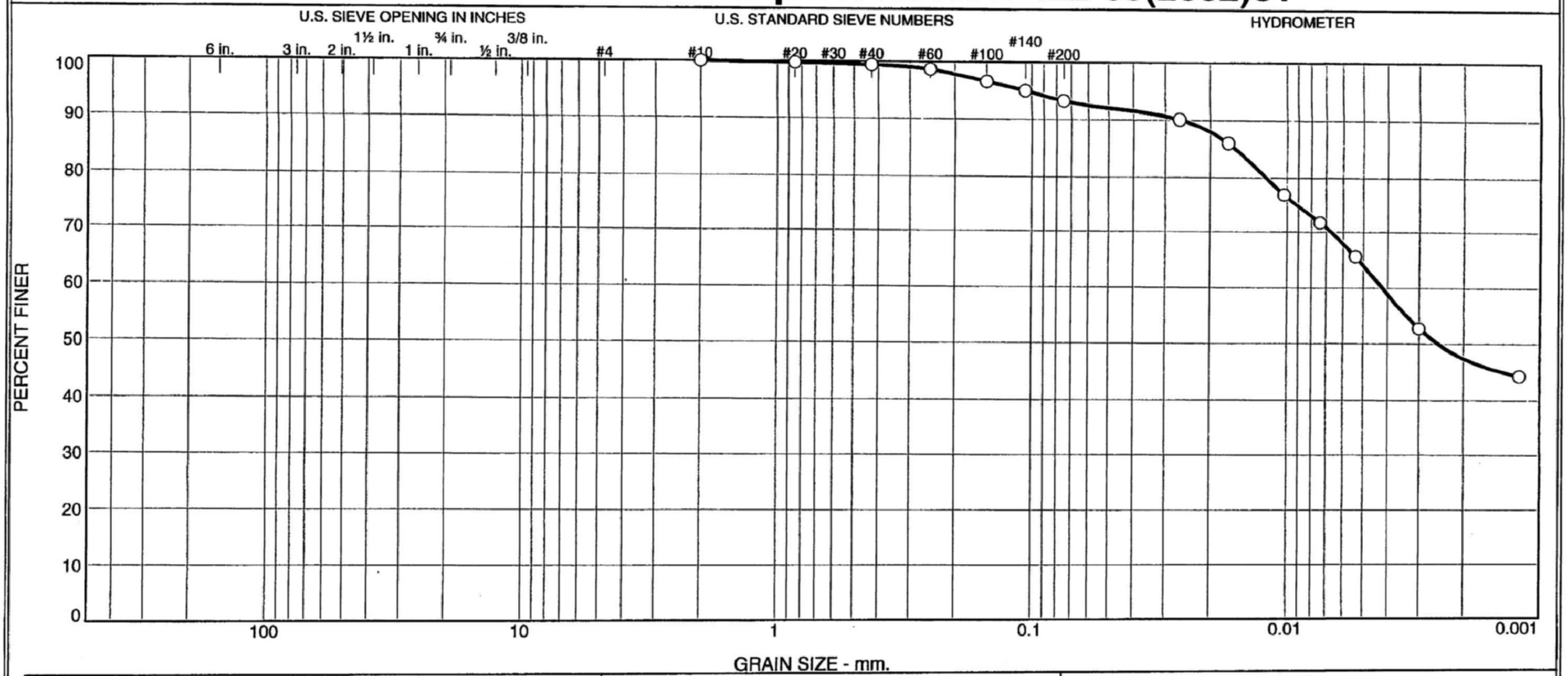
Run No.	1	2	3	4	
Wet+Tare	24.72	24.09			
Dry+Tare	23.72	23.19			
Tare	15.46	15.49			
Moisture	12.1	11.7			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
167.99	140.93	9.16	20.5

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	6.2	29.0	64.2

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2352	SS-17	68.6-70.1	1-3-08	CH	Light Gray Fat CLAY	25.1	59	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 2-28-08

GRAIN SIZE DISTRIBUTION TEST DATA

2/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2352
Depth: 68.6-70.1 **Sample Number:** SS-17
Material Description: Light Gray Fat CLAY
Date: 1-3-08 **Natural Moisture:** 25.1
Liquid Limit: 59 **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
278.18	0.00	0.00	#10	0.00	100.0
50.44	0.00	0.00	#20	0.13	99.7
			#40	0.30	99.4
			#60	0.69	98.6
			#100	1.76	96.5
			#140	2.54	95.0
			#200	3.44	93.2

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =50.44
Hygroscopic moisture correction:
Moist weight and tare = 28.08
Dry weight and tare = 27.60
Tare weight = 15.45
Hygroscopic moisture = 4.0%
Table of composite correction values:

Temp., deg. C:	12.9	29.9
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	22.0	49.0	44.2	0.0131	50.0	8.1	0.0264	90.1
5.00	22.1	47.0	42.2	0.0131	48.0	8.4	0.0170	86.1
15.00	22.1	42.5	37.7	0.0131	43.5	9.2	0.0102	76.9
30.00	22.0	40.0	35.2	0.0131	41.0	9.6	0.0074	71.8
60.00	22.1	37.0	32.2	0.0131	38.0	10.1	0.0054	65.7
215.00	21.1	31.0	25.9	0.0133	32.0	11.0	0.0030	52.8
1440.00	20.6	27.0	21.7	0.0133	28.0	11.7	0.0012	44.3

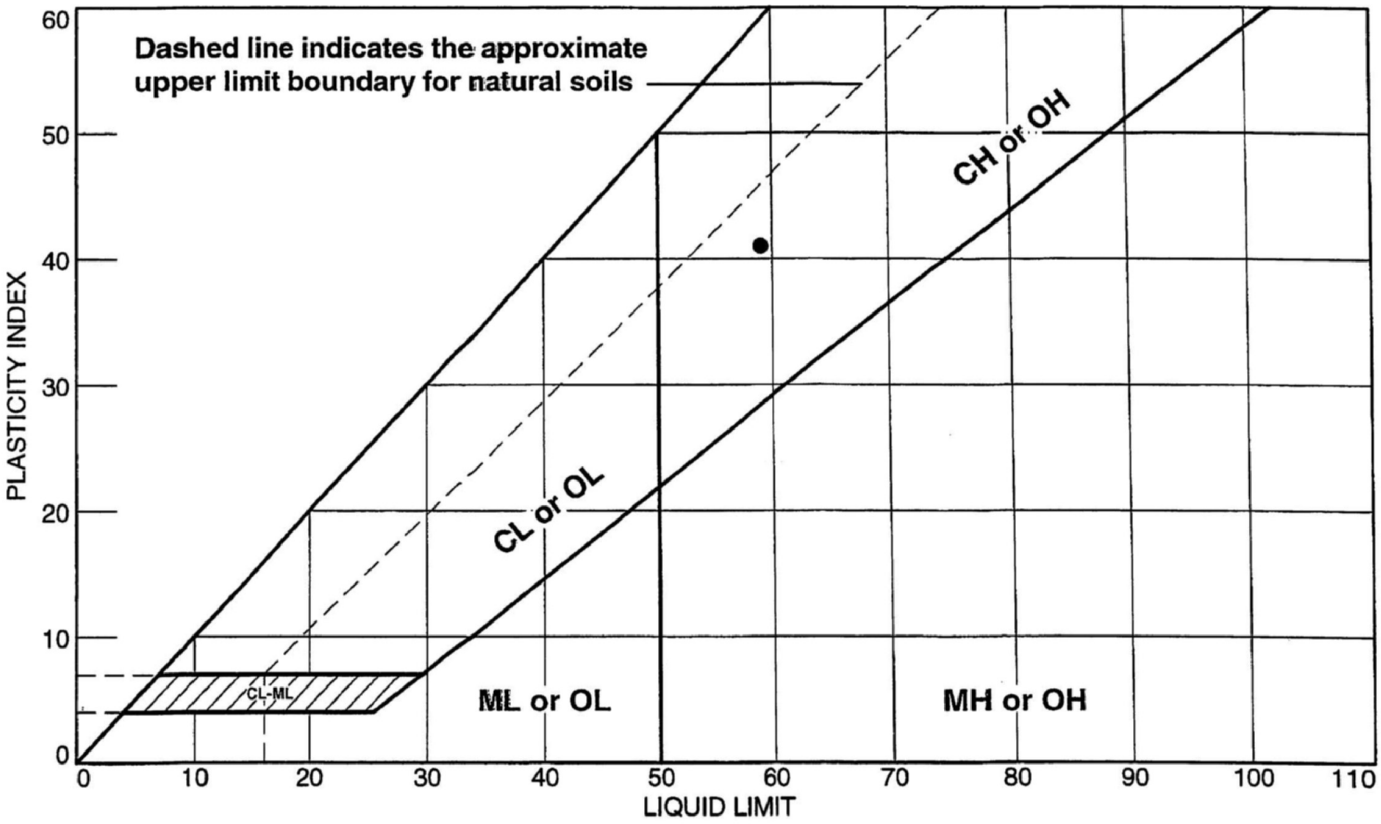
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.6	6.2	6.8	29.0	64.2	93.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0025	0.0042	0.0121	0.0158	0.0259	0.1068

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-2352	SS-17	68.6-70.1	25.1	18	59	41	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project No.: 6468071777

Figure N A

Tested By: CS **Checked By:** LBJ DSC 2-28-08

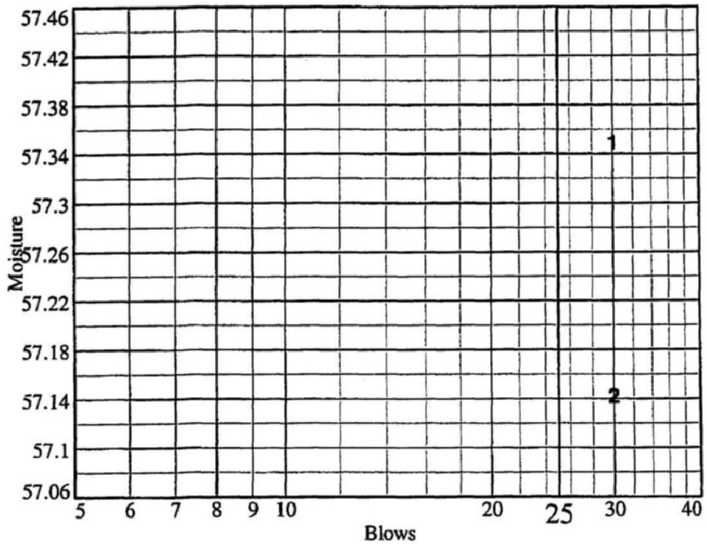
LIQUID AND PLASTIC LIMIT TEST DATA

2/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2352
Depth: 68.6-70.1 **Sample Number:** SS-17
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	29.62	31.00				
Dry+Tare	24.47	25.36				
Tare	15.49	15.49				
# Blows	30	30				
Moisture	57.3	57.1				



Liquid Limit= 59
Plastic Limit= 18
Plasticity Index= 41
Natural Moisture= 25.1
Liquidity Index= 0.2

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	22.90	23.12			
Dry+Tare	21.81	21.95			
Tare	15.43	15.50			
Moisture	17.1	18.1			

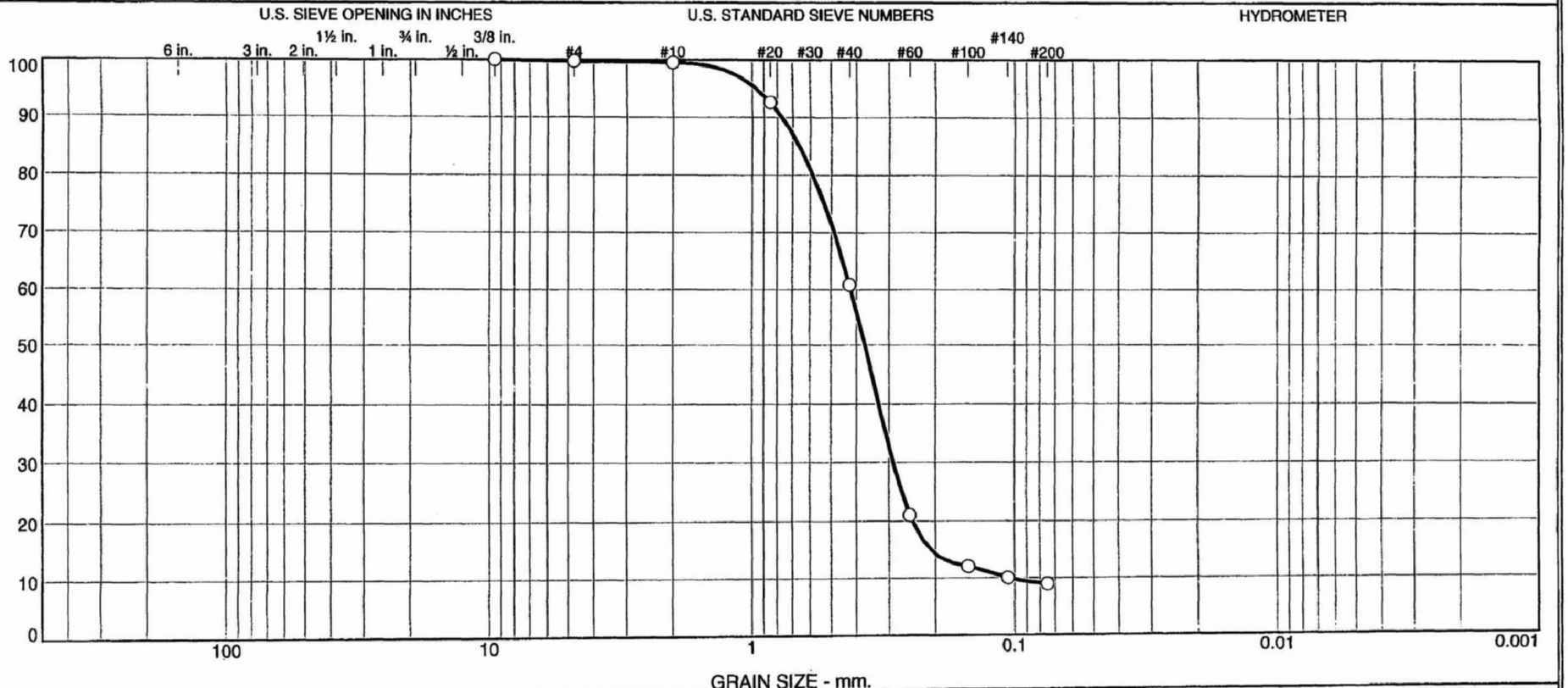
Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
131.16	106.14	6.53	25.1

MACTEC, Inc.

Volume 3 Rev. 0 - 7/18/2008 PERCENT FINER Page 677 of 2042

Particle Size Distribution Report / ASTM D 6913-04e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
O	0.0	0.0	0.2	0.3	38.7	51.8	9.0	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
O	Boring B-2352	SS-18	73.5-75.0	1-3-08	SP-SM	Pale Brown Poorly Graded SAND with silt (Visual)	ND	ND	ND

DCN# EXE008

Client Bechtel

Project Exelon Texas COL (Victoria Reservoir)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

O SIEVE ANALYSIS ONLY
ND = Not Determined

Tested By: CS **Checked By:** LBJ DSC 2-28-08

GRAIN SIZE DISTRIBUTION TEST DATA

2/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2352
Depth: 73.5-75.0 **Sample Number:** SS-18
Material Description: Pale Brown Poorly Graded SAND with silt (Visual)
Date: 1-3-08 **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
328.36	0.00	0.00	3/8"	0.00	100.0
			#4	0.81	99.8
			#10	1.61	99.5
100.24	0.00	0.00	#20	6.93	92.6
			#40	38.95	60.8
			#60	79.09	21.0
			#100	88.10	12.1
			#140	90.12	10.0
			#200	91.18	9.0

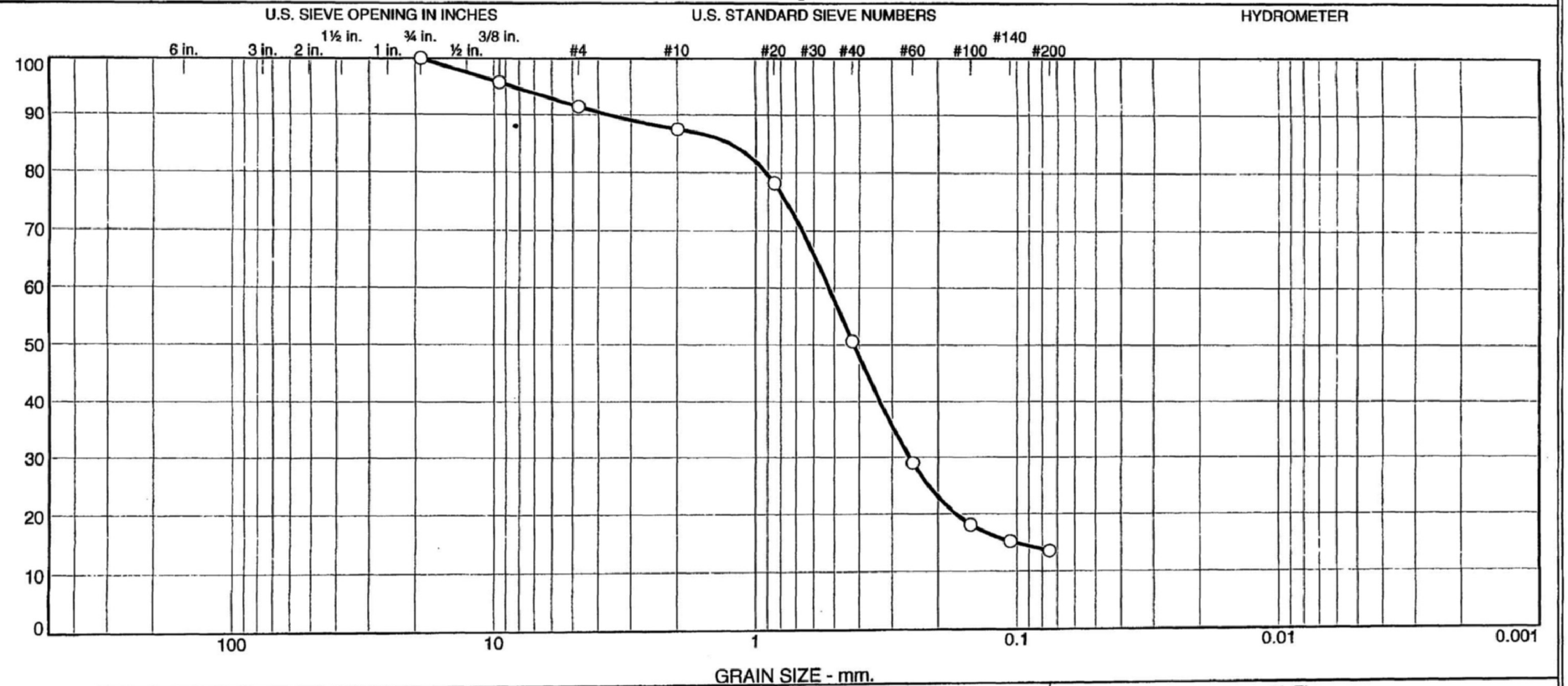
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.2	0.2	0.3	38.7	51.8	90.8			9.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1050	0.2097	0.2448	0.2894	0.3710	0.4203	0.5847	0.6583	0.7663	0.9585

Fineness Modulus	C_u	C_c
1.77	4.00	1.90

Particle Size Distribution Report / ASTM D 6913-04e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
O	0.0	0.0	8.6	3.9	36.9	37.0	13.6	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
O	Boring B-2352	SS-19	78.5-80.0	1-3-08	SC	Pale Brown Clayey SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria Reservoir)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

O Specific Gravity = 2.656 (ASTM D854-06)
SIEVE ANALYSIS ONLY
ND = Not Determined

O DCN# EXE-808

Tested By: CS **Checked By:** LBJ DSC 2-28-08

GRAIN SIZE DISTRIBUTION TEST DATA

2/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2352
Depth: 78.5-80.0 **Sample Number:** SS-19
Material Description: Pale Brown Clayey SAND (Visual)
Date: 1-3-08 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SC
Testing Remarks: Specific Gravity = 2.656 (ASTM D854-06)
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
357.56	0.00	0.00	3/4	0.00	100.0
			3/8	15.23	95.7
			#4	30.66	91.4
			#10	44.69	87.5
100.11	0.00	0.00	#20	10.60	78.2
			#40	42.19	50.6
			#60	66.94	29.0
			#100	79.33	18.2
			#140	82.63	15.3
			#200	84.52	13.6

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	8.6	8.6	3.9	36.9	37.0	77.8			13.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.1008	0.1708	0.2578	0.4192	0.5224	0.9123	1.2506	3.6362	8.4780

Fineness Modulus
2.21

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: 2/9/08

SAMPLE IDENTIFICATION: B-2352 SS-19

(A) Mass of oven-dried soil, grams:		75.96
(B) Mass of pycnometer filled with water at test temperature (T), grams:		656.73
(C) Mass of pycnometer, water and soil, grams:		704.10
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		22.1
(G) Specific Gravity at observed temperature:	A / [B - (C - A)]	2.657
(F)	***Correction factor:***	0.99954
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.656

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

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

REMARKS: Estimated % Passing # 4 :100

Clayey SAND (SC)-Visual

EQUIPMENT USED

SCALES :3.1.99

OVEN : 5.1.16

THERMOMETER :5.1.01

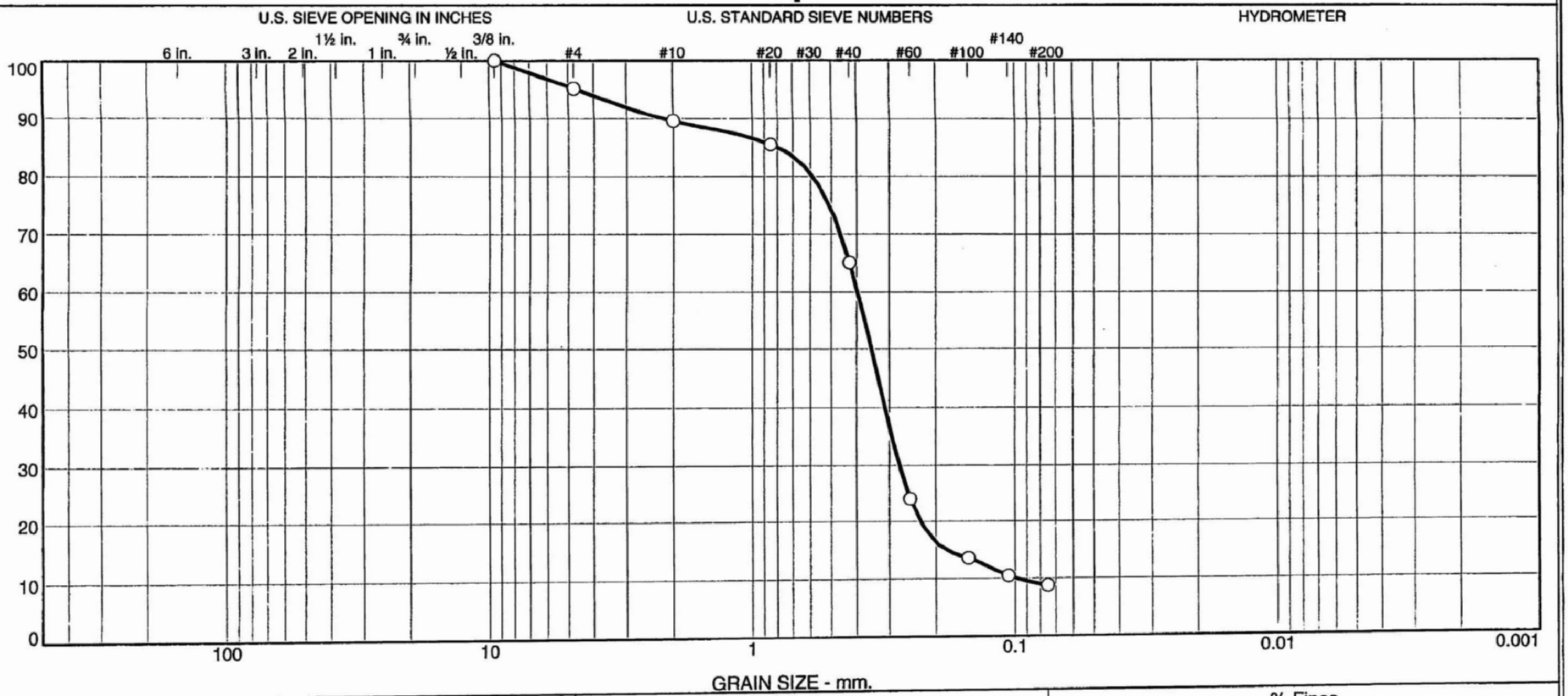
PYCNOMETER : P-6

TESTED BY:

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

REVIEWED BY: DSC 2-28-08

Particle Size Distribution Report / ASTM D 6913-04e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	4.8	5.6	24.4	56.4	8.8	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2352	SS-20	83.6-85.1	1-3-08	SP-SM	Pale Brown 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

DCN# EXE608

Tested By: CS **Checked By:** LBJ DSC 2-28-08

GRAIN SIZE DISTRIBUTION TEST DATA

2/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2352
Depth: 83.6-85.1 **Sample Number:** SS-20
Material Description: Pale Brown Poorly Graded SAND with silt (Visual)
Date: 1-3-08 **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
302.70	0.00	0.00	3/8"	0.00	100.0
			#4	14.68	95.2
			#10	31.40	89.6
100.55	0.00	0.00	#20	4.53	85.6
			#40	27.44	65.2
			#60	73.60	24.0
			#100	85.30	13.6
			#140	88.75	10.5
			#200	90.69	8.8

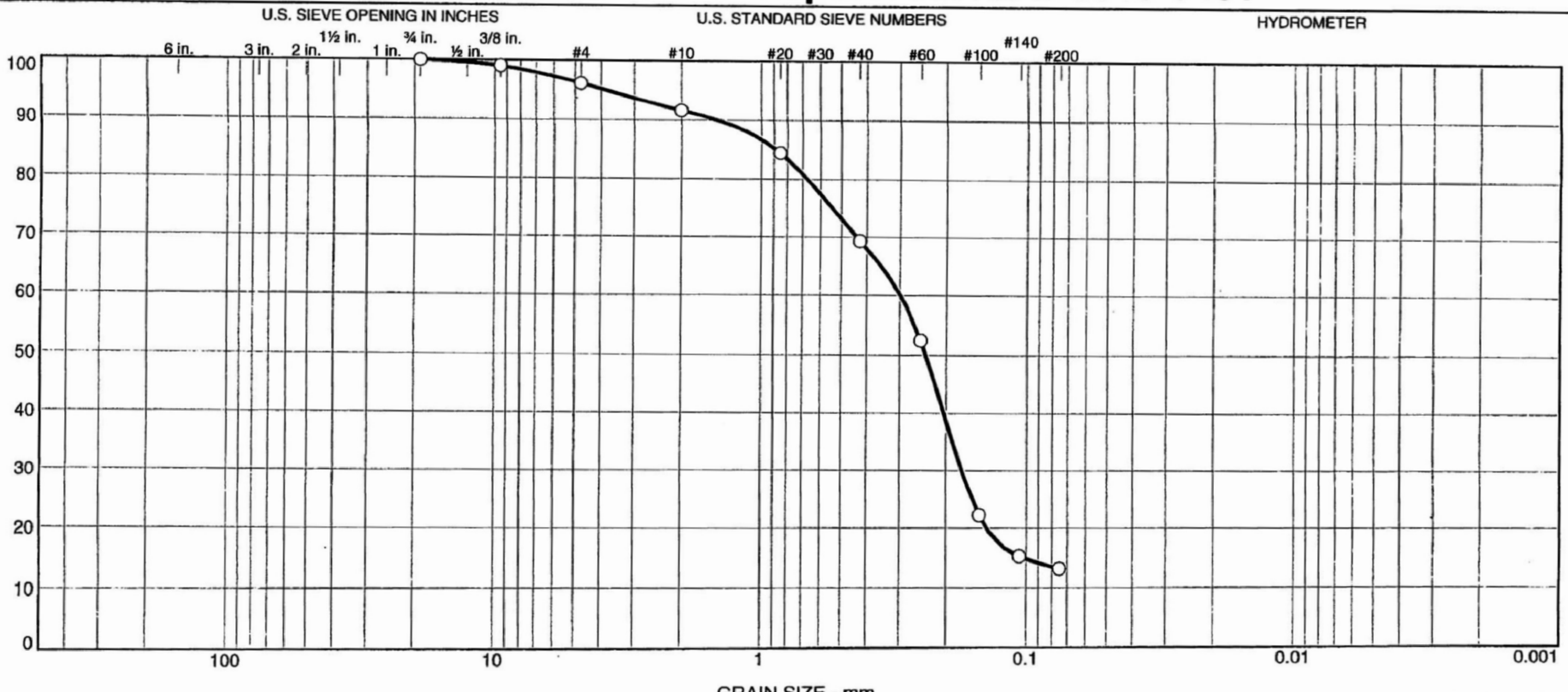
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	4.8	4.8	5.6	24.4	56.4	86.4			8.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0983	0.1819	0.2288	0.2748	0.3508	0.3960	0.5875	0.7926	2.1603	4.6510

Fineness Modulus	C_u	C_c
1.96	4.03	1.94

Particle Size Distribution Report / ASTM D 6913-04e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
O	0.0	0.0	3.9	4.5	22.2	56.2	13.2	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
O	Boring B-2352	SS-21	88.5-90.0	1-3-08	SM	Pale Brown Silty SAND (Visual)	ND	ND	ND

DCN# EXE-008

Client Bechtel

Project Exelon Texas COL (Victoria Reservoir)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

O SIEVE ANALYSIS ONLY
ND = Not Determined

Tested By: CS **Checked By:** LBJ DSC 2-28-08

GRAIN SIZE DISTRIBUTION TEST DATA

2/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2352
Depth: 88.5-90.0 **Sample Number:** SS-21
Material Description: Pale Brown Silty SAND (Visual)
Date: 1-3-08 **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
329.80	0.00	0.00	3/4	0.00	100.0
			3/8"	3.29	99.0
			#4	12.90	96.1
			#10	27.77	91.6
103.87	0.00	0.00	#20	8.03	84.5
			#40	25.20	69.4
			#60	44.39	52.4
			#100	78.73	22.2
			#140	86.54	15.3
			#200	88.91	13.2

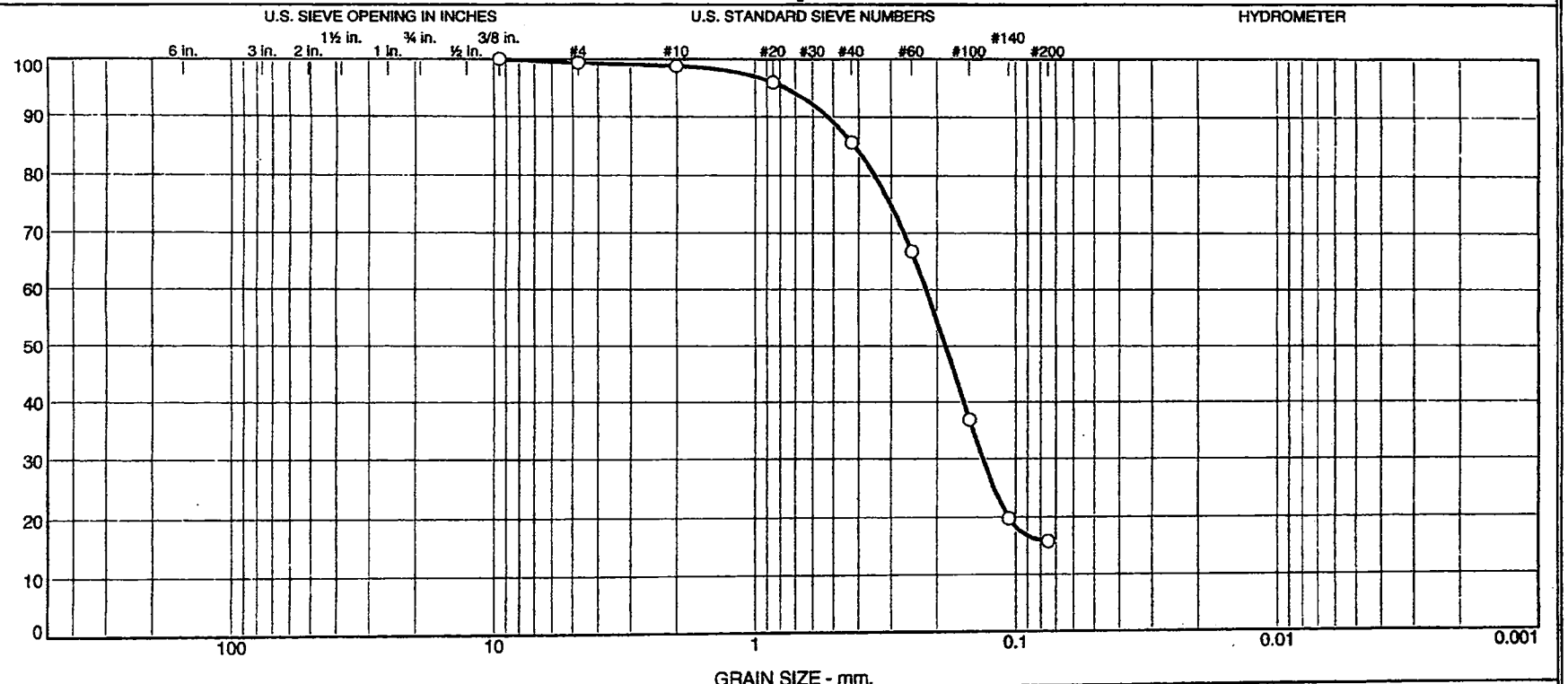
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	3.9	3.9	4.5	22.2	56.2	82.9			13.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.1022	0.1412	0.1747	0.2392	0.2976	0.6723	0.8773	1.4586	3.8621

Fineness Modulus
1.64

Particle Size Distribution Report / ASTM D 6913-04e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
O	0.0	0.0	0.6	0.7	13.0	69.9	15.8	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
O	Boring B-2352	SS-22	93.6-95.1	1-4-08	SC	Pale Brown Clayey SAND (Visual)	ND	ND	ND

DCN# EXE-808

Client Bechtel

Project Exelon Texas COL (Victoria Reservoir)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

O SIEVE ANALYSIS ONLY
ND = Not Determined

Tested By: CS **Checked By:** LBJ DSC 2-28-08

GRAIN SIZE DISTRIBUTION TEST DATA

2/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2352
Depth: 93.6-95.1 **Sample Number:** SS-22
Material Description: Pale Brown Clayey SAND (Visual)
Date: 1-4-08 **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
329.92	0.00	0.00	3/8"	0.00	100.0
			#4	2.13	99.4
			#10	4.14	98.7
105.38	0.00	0.00	#20	3.08	95.9
			#40	13.94	85.7
			#60	34.07	66.8
			#100	65.98	36.9
			#140	84.29	19.8
			#200	88.50	15.8

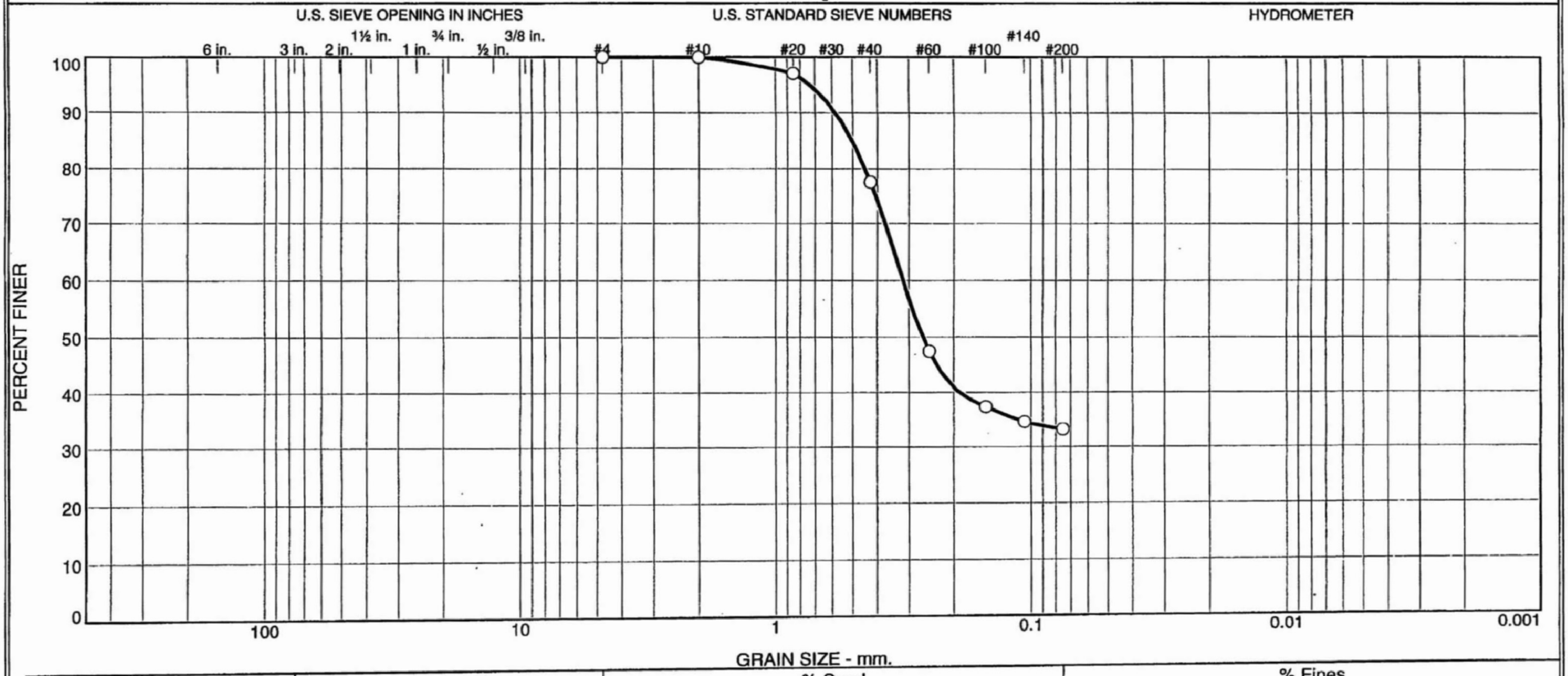
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.6	0.6	0.7	13.0	69.9	83.6			15.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.1068	0.1333	0.1856	0.2198	0.3467	0.4134	0.5231	0.7667

Fineness Modulus
1.00

Particle Size Distribution Report / ASTM D6913-04e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	22.4	44.4	33.2	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2352	SS-23	98.5-100.0	1-4-08	SM	Very Pale Brown 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 2-28-08

GRAIN SIZE DISTRIBUTION TEST DATA

2/27/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2352
Depth: 98.5-100.0 **Sample Number:** SS-23
Material Description: Very Pale Brown Silty SAND (Visual)
Date: 1-4-08 **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
357.65	0.00	0.00	#4	0.00	100.0
			#10	0.16	100.0
101.31	0.00	0.00	#20	3.02	97.0
			#40	22.69	77.6
			#60	53.24	47.4
			#100	63.47	37.3
			#140	66.27	34.6
			#200	67.69	33.2

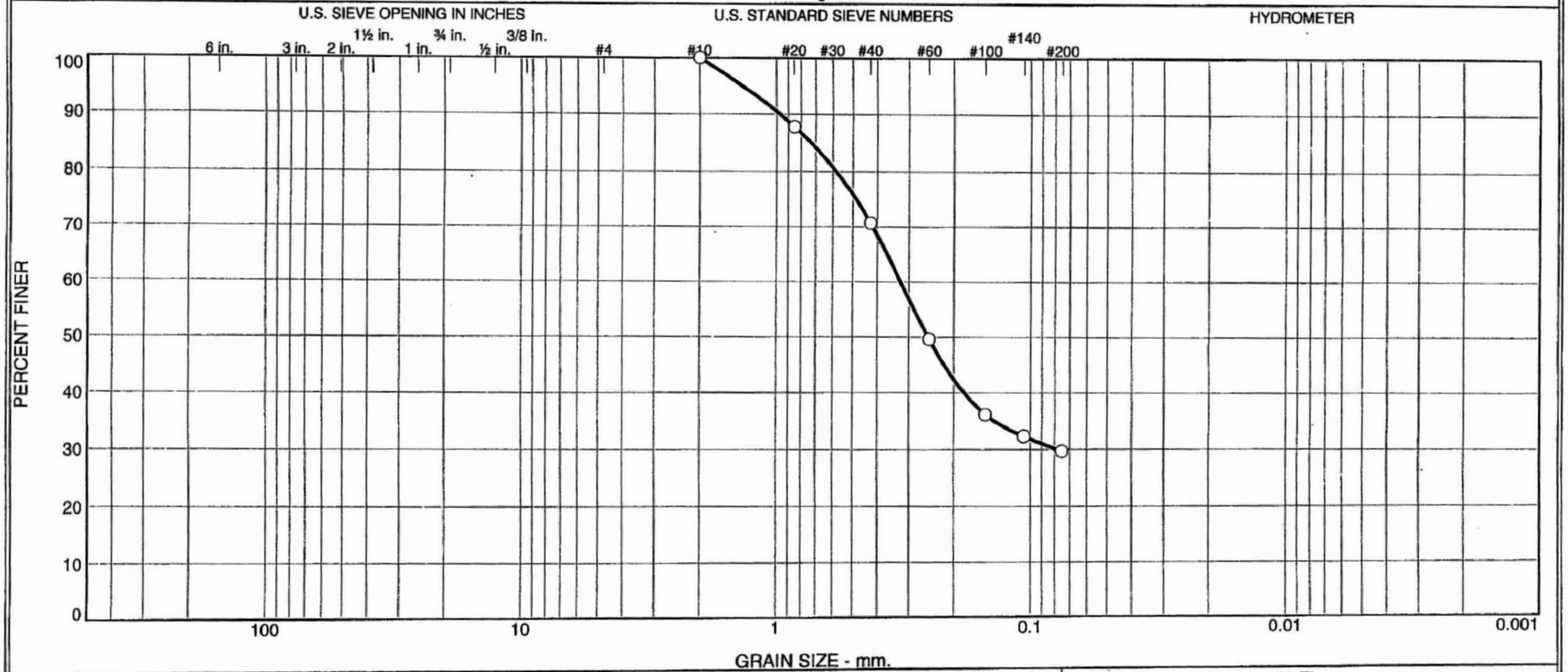
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	22.4	44.4	66.8			33.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.2646	0.3165	0.4462	0.5011	0.5829	0.7342

Fineness Modulus
1.17

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	29.3	41.0	29.7	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2352	SS-24	108.5-110.0	1-4-08	SM	Pale Brown 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 2-28-08

GRAIN SIZE DISTRIBUTION TEST DATA

2/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2352
Depth: 108.5-110.0 **Sample Number:** SS-24
Material Description: Pale Brown Silty SAND (Visual)
Date: 1-4-08 **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
335.17	0.00	0.00	#10	0.00	100.0
101.26	0.00	0.00	#20	12.30	87.9
			#40	29.67	70.7
			#60	50.99	49.6
			#100	64.68	36.1
			#140	68.58	32.3
			#200	71.19	29.7

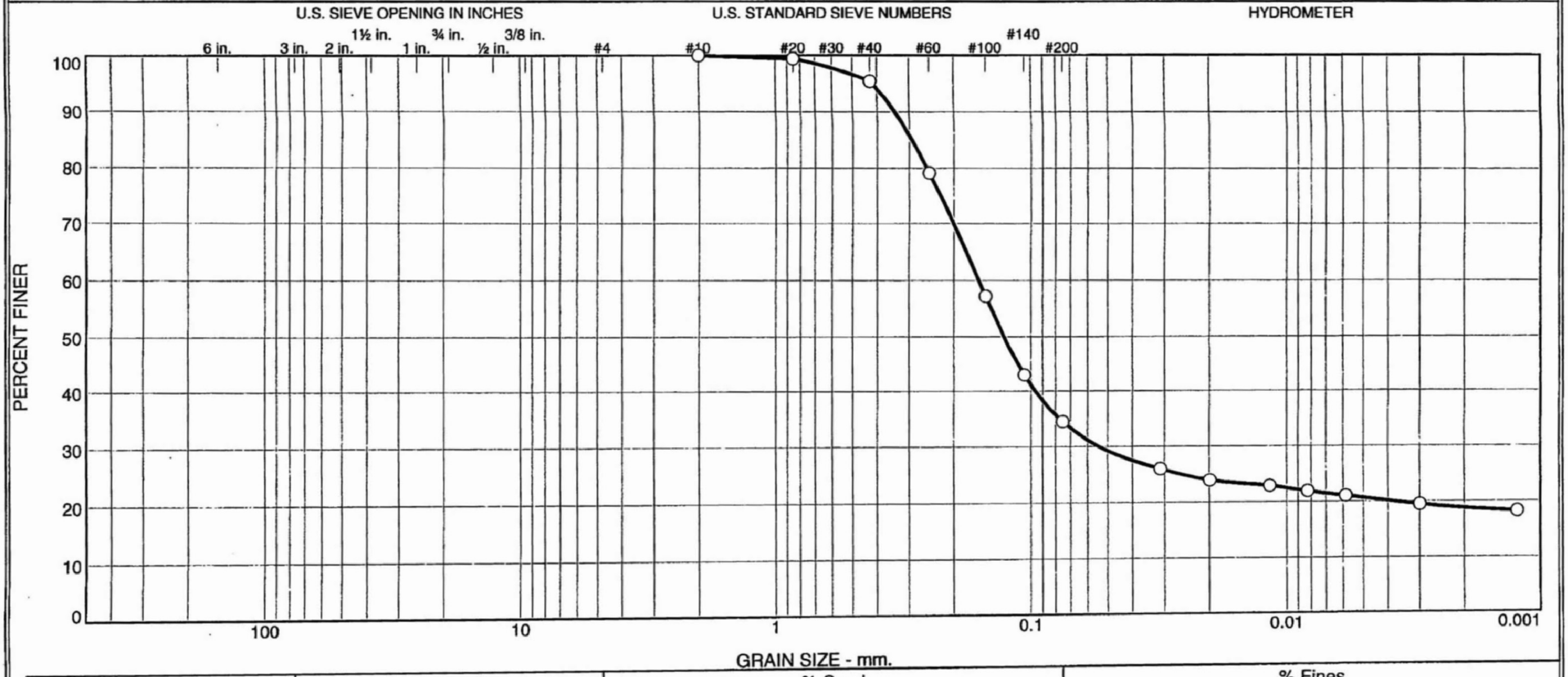
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	29.3	41.0	70.3			29.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0783	0.2524	0.3242	0.5801	0.7279	0.9668	1.3589

Fineness Modulus
1.33

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



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
O	0.0	0.0	0.0	0.0	4.6	60.9	13.9	20.6

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
O	Boring B-2352	SS-25	118.6-120.1	1-4-08	SC	Light Gray with Brownish Yellow Clayey SAND	19.9	26	15

Client Bechtel

Project Exelon Texas COL (Victoria Reservoir)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

O Specific Gravity is assumed

Tested By: CS **Checked By:** LBJ DSC 2-28-08

GRAIN SIZE DISTRIBUTION TEST DATA

2/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2352
Depth: 118.6-120.1 **Sample Number:** SS-25
Material Description: Light Gray with Brownish Yellow Clayey SAND
Date: 1-4-08 **Natural Moisture:** 19.9
Liquid Limit: 26 **Plastic Limit:** 15 **USCS Class.:** SC
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
232.26	0.00	0.00	#10	0.00	100.0
97.95	0.00	0.00	#20	0.58	99.4
			#40	4.49	95.4
			#60	20.45	79.1
			#100	41.90	57.2
			#140	55.89	42.9
			#200	64.15	34.5

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =97.95
Hygroscopic moisture correction:
Moist weight and tare = 27.75
Dry weight and tare = 27.50
Tare weight = 15.54
Hygroscopic moisture = 2.1%
Table of composite correction values:

Temp., deg. C:	12.9	29.9
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	22.0	30.0	25.2	0.0131	31.0	11.2	0.0311	26.0
5.00	22.0	28.0	23.2	0.0131	29.0	11.5	0.0199	23.9
15.00	21.9	27.0	22.2	0.0131	28.0	11.7	0.0116	22.9
30.00	22.0	26.0	21.2	0.0131	27.0	11.9	0.0082	21.9
60.00	22.5	25.0	20.4	0.0130	26.0	12.0	0.0058	21.0
240.00	21.1	24.0	18.9	0.0133	25.0	12.2	0.0030	19.5
1440.00	20.6	23.0	17.7	0.0133	24.0	12.4	0.0012	18.3

MACTEC, Inc.

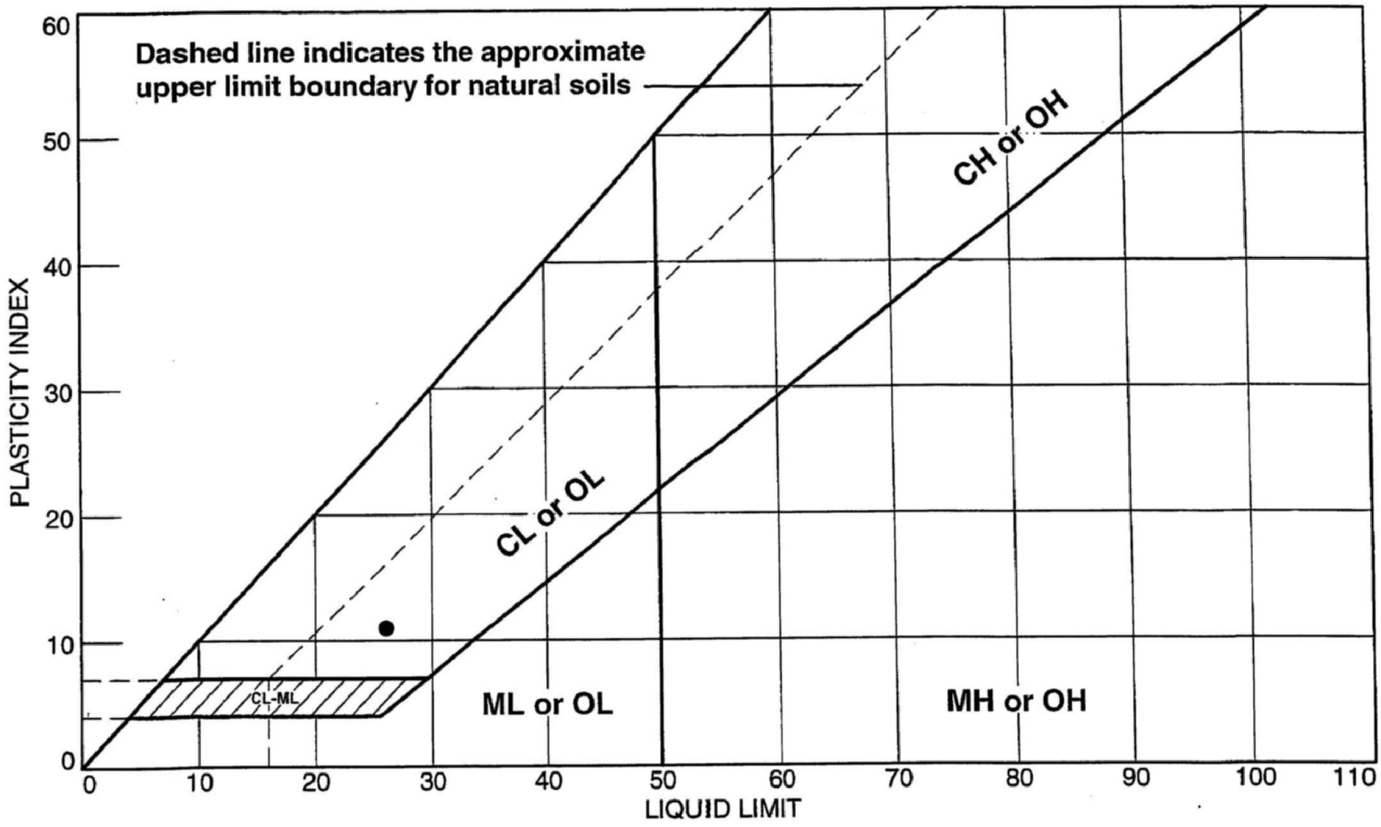
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	4.6	60.9	65.5	13.9	20.6	34.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0038	0.0540	0.1273	0.1596	0.2557	0.2924	0.3408	0.4160

Fineness Modulus
0.59

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-2352	SS-25	118.6-120.1	19.9	15	26	11	SC

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 2-28-08

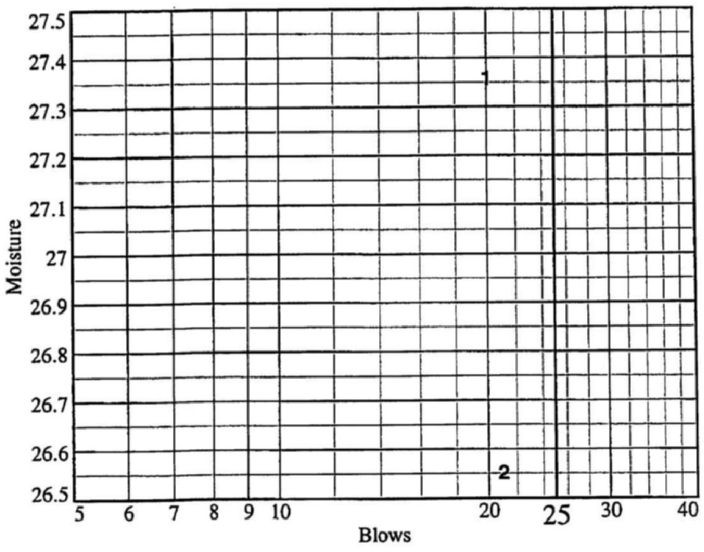
LIQUID AND PLASTIC LIMIT TEST DATA

2/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2352
Depth: 118.6-120.1 **Sample Number:** SS-25
Material Description: Light Gray with Brownish Yellow Clayey SAND
USCS: SC **AASHTO:** A-2-6(0)
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	36.82	32.53				
Dry+Tare	32.24	28.94				
Tare	15.50	15.42				
# Blows	20	21				
Moisture	27.4	26.6				



Liquid Limit= 26
Plastic Limit= 15
Plasticity Index= 11
Natural Moisture= 19.9
Liquidity Index= 0.4

Plastic Limit Data

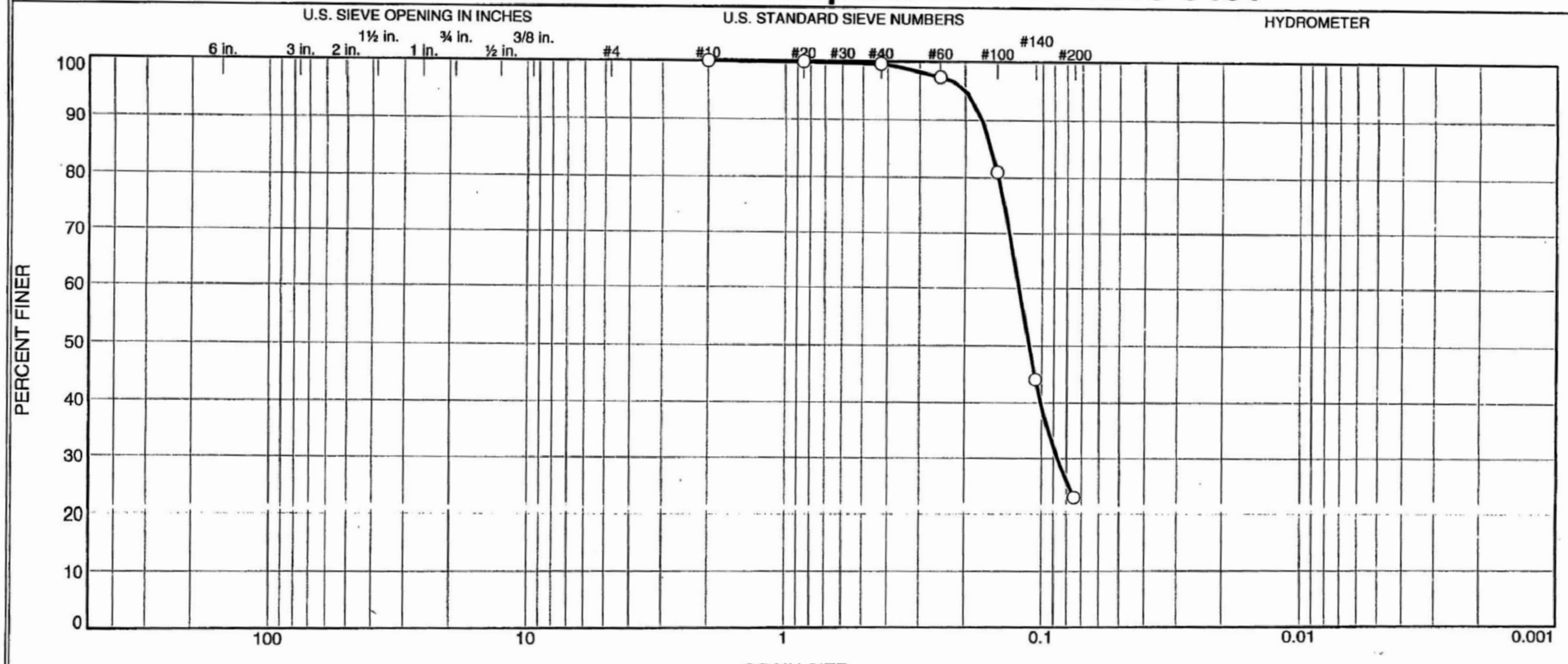
Run No.	1	2	3	4	
Wet+Tare	24.71	25.14			
Dry+Tare	23.51	23.85			
Tare	15.43	15.48			
Moisture	14.9	15.4			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
211.27	177.31	7.00	19.9

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	0.4	76.7	22.9	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2352	SS-26	128.6-130.1	1-4-08	SC	Pinkish Gray Clayey SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria Reservoir)

Project No. 6468071777 Figure N4

MACTEC, Inc.

Raleigh, North Carolina

○ SIEVE ANALYSIS ONLY
ND = Not Determined

Tested By: CS **Checked By:** LBJ DSC 2-28-08

GRAIN SIZE DISTRIBUTION TEST DATA

2/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2352
Depth: 128.6-130.1 **Sample Number:** SS-26
Material Description: Pinkish Gray Clayey SAND (Visual)
Date: 1-4-08 **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
268.18	0.00	0.00	#10	0.00	100.0
99.69	0.00	0.00	#20	0.12	99.9
			#40	0.43	99.6
			#60	2.65	97.3
			#100	18.97	81.0
			#140	55.78	44.0
			#200	76.88	22.9

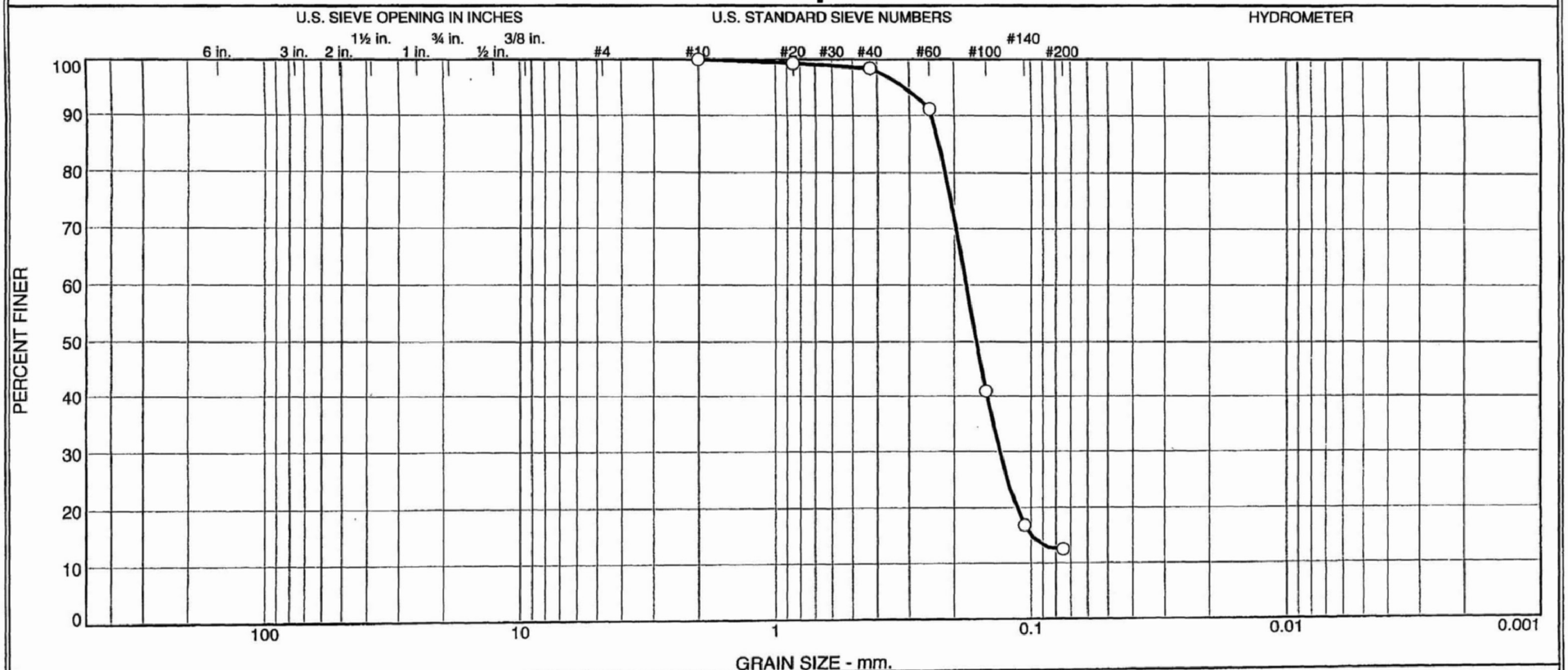
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.4	76.7	77.1			22.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0869	0.1125	0.1230	0.1483	0.1580	0.1719	0.1996

Fineness Modulus
0.21

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	1.6	85.8	12.6	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2352	SS-27	138.4-139.9	1-4-08	SM	Light Yellowish Brown 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 2-28-08

GRAIN SIZE DISTRIBUTION TEST DATA

2/27/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria Reservoir)
Project Number: 6468071777
Location: Boring B-2352
Depth: 138.4-139.9 **Sample Number:** SS-27
Material Description: Light Yellowish Brown Silty SAND (Visual)
Date: 1-4-08 **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
210.20	0.00	0.00	#10	0.00	100.0
97.86	0.00	0.00	#20	0.69	99.3
			#40	1.53	98.4
			#60	8.65	91.2
			#100	57.81	40.9
			#140	81.35	16.9
			#200	85.56	12.6

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	1.6	85.8	87.4			12.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0997	0.1138	0.1326	0.1638	0.1794	0.2171	0.2297	0.2455	0.3142

Fineness Modulus
0.66