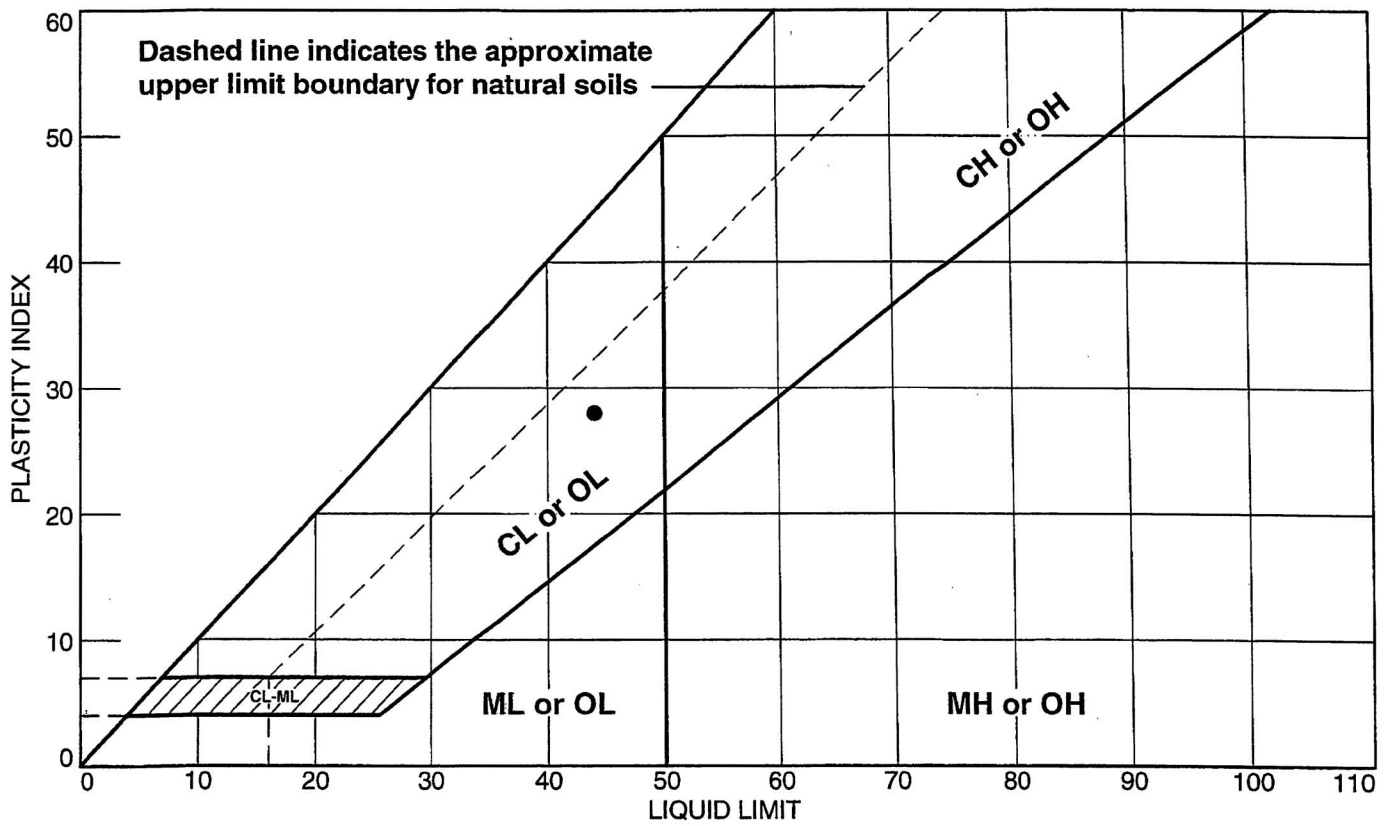
Fractional Components

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	4.1	4.3	41.9	53.8	95.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0041	0.0069	0.0236	0.0296	0.0414	0.0694

Fineness Modulus
0.01

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-6	13.5-15'	22.8	16	44	28	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

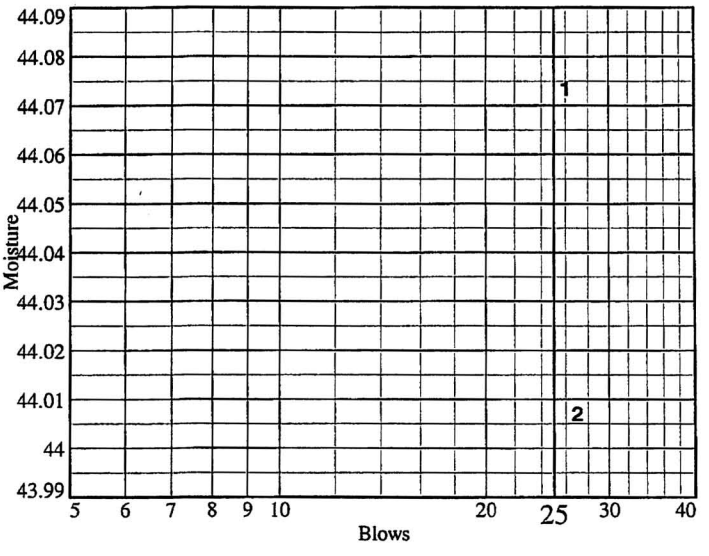
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 13.5-15' **Sample Number:** SS-6
Material Description: Yellowish Brown Lean CLAY
USCS: CL **AASHTO:** A-7-6(28)
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.10	19.16				
Dry+Tare	21.46	16.70				
Tare	15.47	11.11				
# Blows	26	27				
Moisture	44.1	44.0				



Liquid Limit= 44
Plastic Limit= 16
Plasticity Index= 28
Natural Moisture= 22.8
Liquidity Index= 0.2

Plastic Limit Data

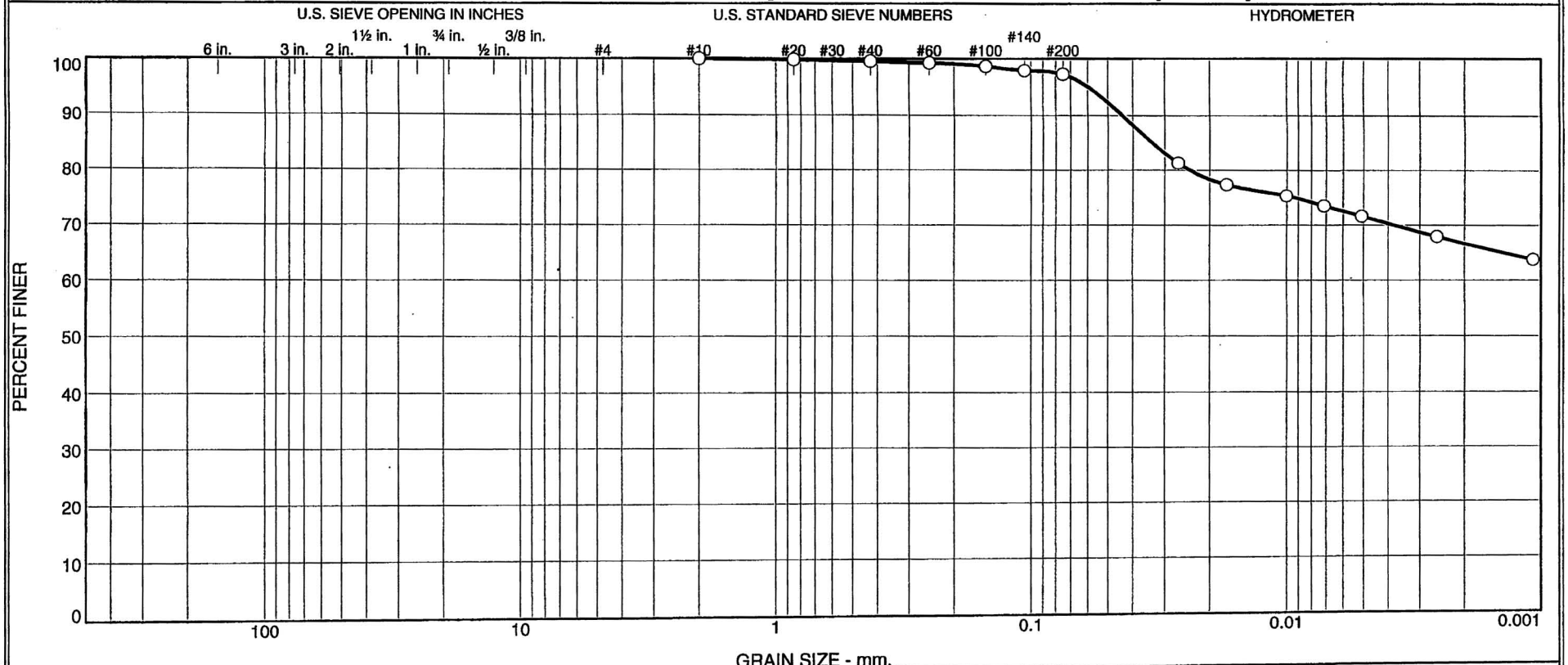
Run No.	1	2	3	4	
Wet+Tare	21.58	22.80			
Dry+Tare	20.71	21.86			
Tare	15.48	15.70			
Moisture	16.6	15.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
112.89	93.22	6.91	22.8

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	0.5	2.2	25.8	71.5

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-7	18.5-20'	12-03-07	CH	Yellowish Brown Fat CLAY	30.7	84	28

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.750 (ASTM D854-06)
Organic content = 7.8% (ASTM D2794-07)

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: 18.5-20' **Sample Number:** SS-7
Material Description: Yellowish Brown Fat CLAY
Date: 12-03-07 **Natural Moisture:** 30.7
Liquid Limit: 84 **Plastic Limit:** 28 **USCS Class.:** CH
Testing Remarks: Specific Gravity = 2.750 (ASTM D854-06)
Organic content = 7.8% (ASTM D2794-07)
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
148.93	0.00	0.00	#10	0.00	100.0
52.84	0.00	0.00	#20	0.10	99.8
			#40	0.25	99.5
			#60	0.39	99.3
			#100	0.70	98.7
			#140	1.09	97.9
			#200	1.44	97.3

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =52.84
Hygroscopic moisture correction:
Moist weight and tare = 26.22
Dry weight and tare = 25.69
Tare weight = 15.49
Hygroscopic moisture = 5.2%
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 = 2.750
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	22.6	46.0	41.7	0.0128	47.0	8.6	0.0266	81.3
5.00	22.5	44.0	39.7	0.0128	45.0	8.9	0.0172	77.4
15.00	22.4	43.0	38.7	0.0129	44.0	9.1	0.0100	75.4
30.00	22.6	42.0	37.7	0.0128	43.0	9.2	0.0071	73.5
60.00	22.7	41.0	36.8	0.0128	42.0	9.4	0.0051	71.6
240.00	23.1	39.0	34.9	0.0128	40.0	9.7	0.0026	67.9
1440.00	22.6	37.0	32.7	0.0128	38.0	10.1	0.0011	63.8

MACTEC, Inc.

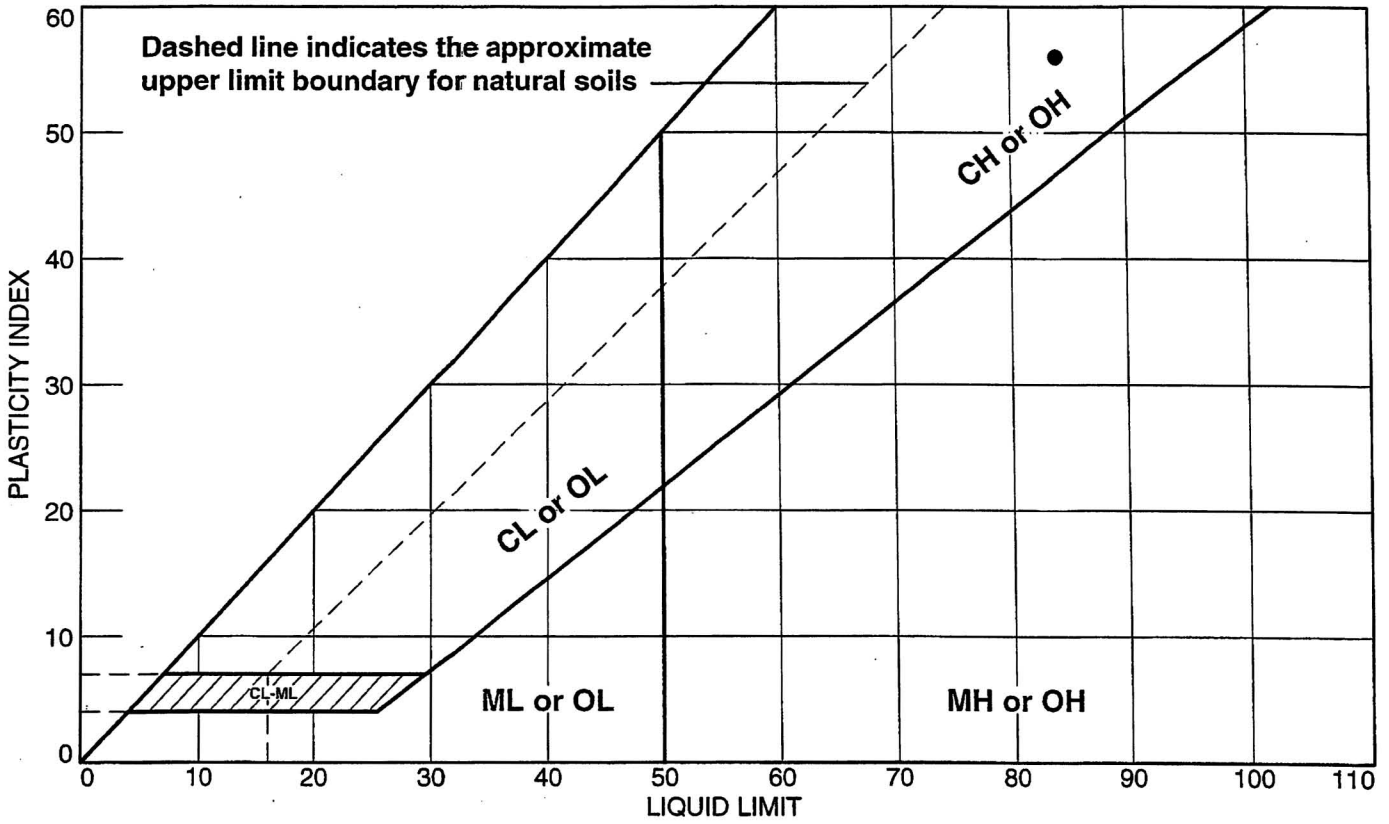
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.5	2.2	2.7	25.8	71.5	97.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
						0.0239	0.0335	0.0439	0.0596

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-2251	SS-7	18.5-20'	30.7	28	84	56	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

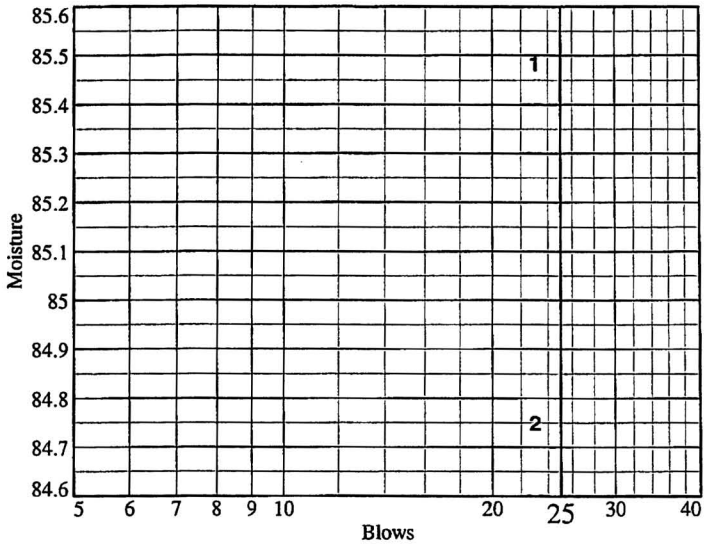
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 18.5-20'
Sample Number: SS-7
Material Description: Yellowish Brown Fat CLAY
USCS: CH
AASHTO: A-7-6(64)
Tested by: CS
Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.70	23.19				
Dry+Tare	20.46	19.80				
Tare	15.50	15.80				
# Blows	23	23				
Moisture	85.5	84.8				



Liquid Limit= 84
Plastic Limit= 28
Plasticity Index= 56
Natural Moisture= 30.7
Liquidity Index= 0.0

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.62	23.22			
Dry+Tare	20.29	21.49			
Tare	15.45	15.27			
Moisture	27.5	27.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
125.24	97.95	9.09	30.7

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-7

(A) Mass of oven-dried soil, grams:		45.95
(B) Mass of pycnometer filled with water at test temperature (T), grams:		654.91
(C) Mass of pycnometer, water and soil, grams:		684.16
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		22.3
(G) Specific Gravity at observed temperature:	A / [A + (B - C)]	2.751
(F)	***Correction factor:***	0.99950
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.750

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

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

REMARKS: Estimated % Passing # 4 : 100%
Fat CLAY (CH)

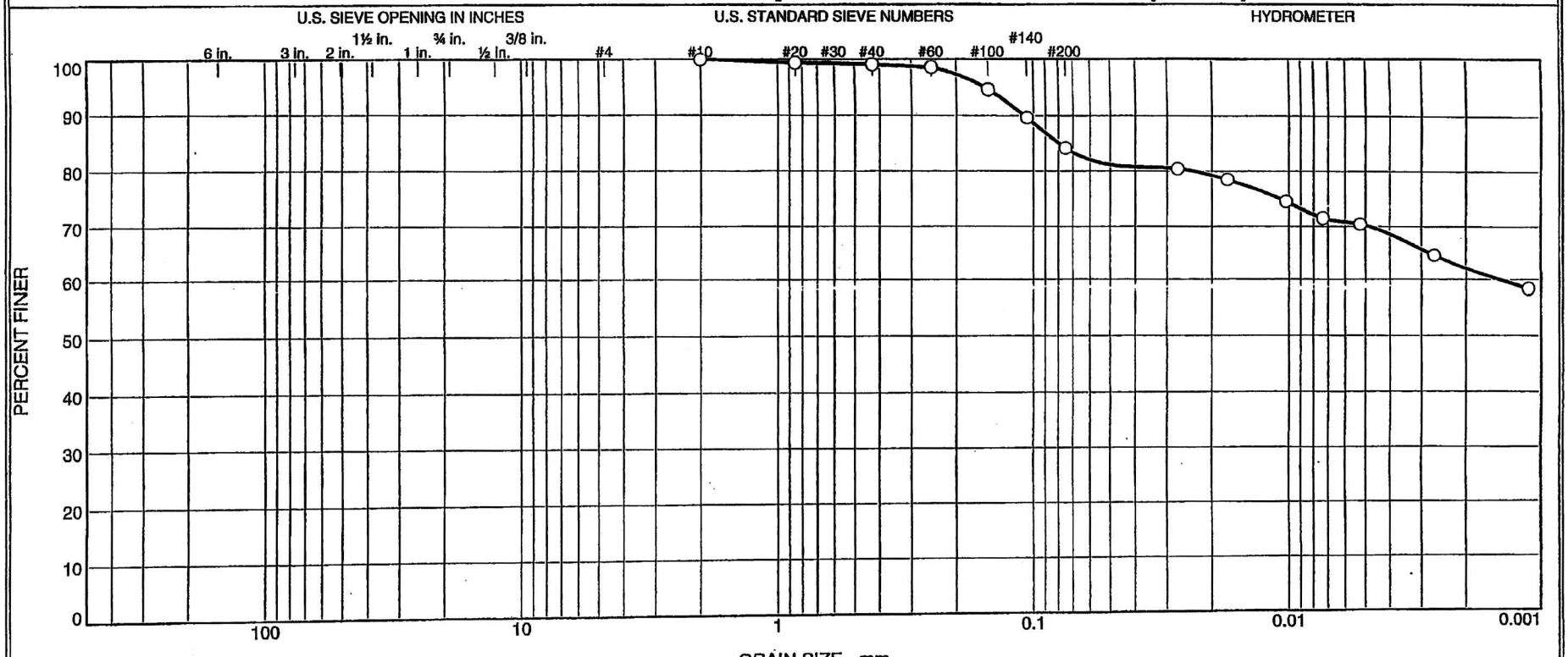
EQUIPMENT USED
SCALES : 3.1.99
OVEN : 5.1.16
THERMOMETER : 5.1.01
PYCNOMETER : P-5

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



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
O	0.0	0.0	0.0	0.0	0.9	15.0	13.9	70.2

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
O	Boring B-2251	SS-8	23.5-25'	12-03-07	CH	Yellowish Brown Fat CLAY with sand	21.9	58	19

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

O 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-2251
Depth: 23.5-25' **Sample Number:** SS-8
Material Description: Yellowish Brown Fat CLAY with sand
Date: 12-03-07 **Natural Moisture:** 21.9
Liquid Limit: 58 **Plastic Limit:** 19 **USCS Class.:** CH
Testing Remarks: Specific Gravity is assumed.
Tested by: CS **Checked by:** LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
230.17	0.00	0.00	#10	0.00	100.0
52.10	0.00	0.00	#20	0.34	99.3
			#40	0.49	99.1
			#60	0.76	98.5
			#100	2.79	94.6
			#140	5.39	89.7
			#200	8.29	84.1

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =52.1
Hygroscopic moisture correction:
Moist weight and tare = 28.40
Dry weight and tare = 27.90
Tare weight = 15.54
Hygroscopic moisture = 4.0%
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 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.5	45.0	40.7	0.0130	46.0	8.8	0.0273	80.4
5.00	22.5	44.0	39.7	0.0130	45.0	8.9	0.0174	78.4
15.00	22.3	42.0	37.7	0.0131	43.0	9.2	0.0103	74.4
30.00	22.4	40.5	36.2	0.0131	41.5	9.5	0.0073	71.5
60.00	22.3	40.0	35.7	0.0131	41.0	9.6	0.0052	70.4
240.00	22.5	37.0	32.7	0.0130	38.0	10.1	0.0027	64.6
1440.00	22.0	34.0	29.6	0.0131	35.0	10.6	0.0011	58.4

MACTEC, Inc.

Fractional Components

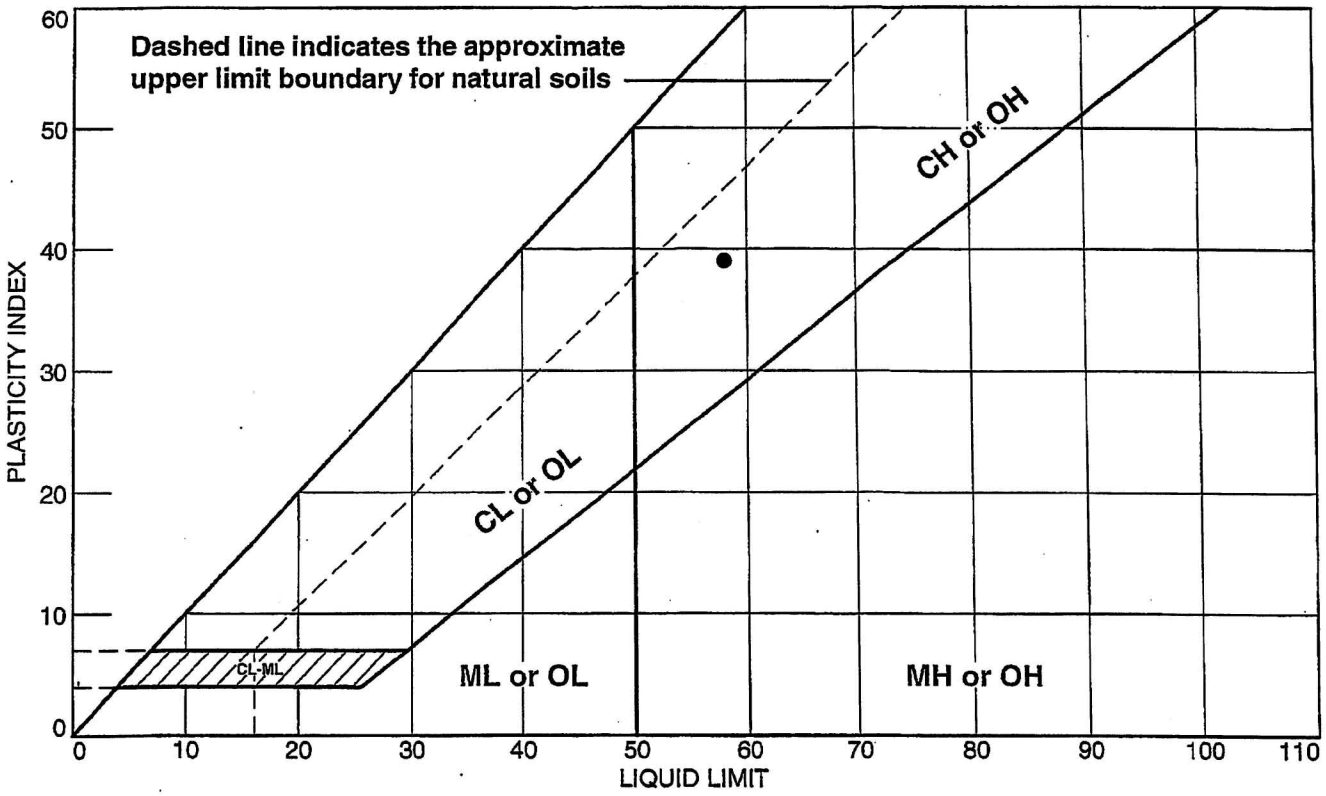
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.9	15.0	15.9	13.9	70.2	84.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
					0.0015	0.0237	0.0801	0.1082	0.1547

Fineness Modulus
0.08

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-8	23.5-25'	21.9	19	58	39	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 1-21-08

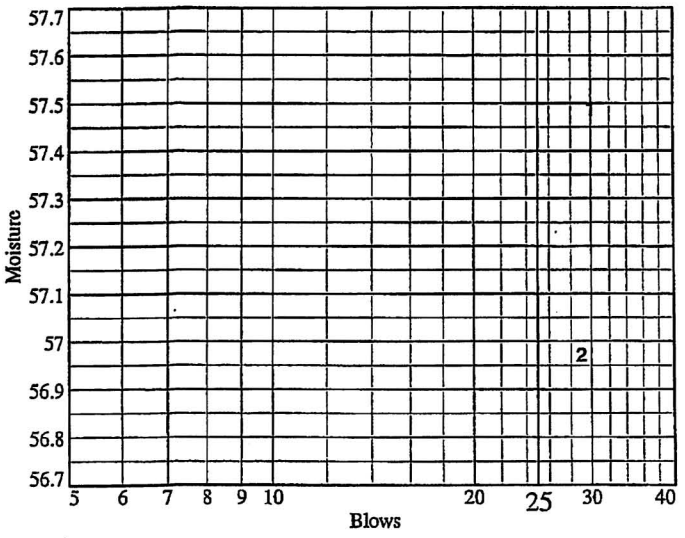
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 23.5-25' **Sample Number:** SS-8
Material Description: Yellowish Brown Fat CLAY with sand
USCS: CH **AASHTO:** A-7-6(34)
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	22.88	24.74				
Dry+Tare	20.27	21.39				
Tare	15.73	15.51				
# Blows	30	29				
Moisture	57.5	57.0				



Liquid Limit= 58
Plastic Limit= 19
Plasticity Index= 39
Natural Moisture= 21.9
Liquidity Index= 0.1

Plastic Limit Data

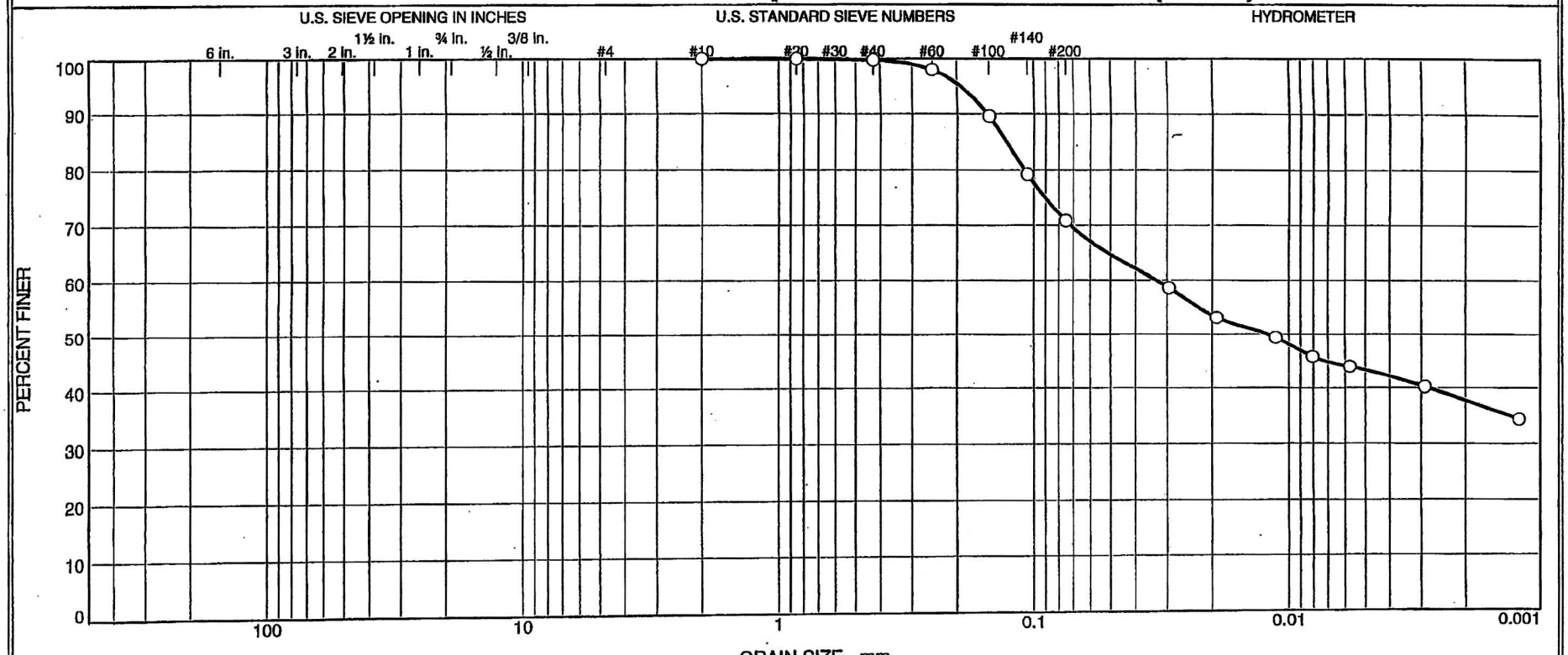
Run No.	1	2	3	4	
Wet+Tare	26.00	25.54			
Dry+Tare	24.29	23.99			
Tare	15.49	15.62			
Moisture	19.4	18.5			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
119.06	99.30	9.21	21.9

MACTEC, Inc.

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	0.2	29.0	27.6	43.2

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
O	Boring B-2251	SS-9	28.5-30'	12-03-07	CL	Greenish Gray Lean CLAY with sand	19.3	40	14

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

O Specific Gravity is assumed.
Organic content = 4.4% (ASTM D2974-07)

Tested By: CS **Checked By:** LBJ DSC 3-17-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/25/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 28.5-30' **Sample Number:** SS-9
Material Description: Greenish Gray Lean CLAY with sand
Date: 12-03-07 **Natural Moisture:** 19.3
Liquid Limit: 40 **Plastic Limit:** 14 **USCS Class.:** CL
Testing Remarks: Specific Gravity is assumed.
Organic content = 4.4% (ASTM D2974-07)
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
205.39	0.00	0.00	#10	0.00	100.0
51.67	0.00	0.00	#20	0.01	100.0
			#40	0.12	99.8
			#60	1.04	98.0
			#100	5.35	89.6
			#140	10.72	79.3
			#200	15.07	70.8

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =54.68
Hygroscopic moisture correction:
Moist weight and tare = 24.50
Dry weight and tare = 24.18
Tare weight = 11.10
Hygroscopic moisture = 2.4%
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 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.3	36.0	31.7	0.0131	37.0	10.2	0.0296	58.7
5.00	22.3	33.0	28.7	0.0131	34.0	10.7	0.0191	53.1
15.00	22.3	31.0	26.7	0.0131	32.0	11.0	0.0112	49.4
30.00	22.3	29.0	24.7	0.0131	30.0	11.4	0.0080	45.7
60.00	22.2	28.0	23.6	0.0131	29.0	11.5	0.0057	43.8
240.00	22.4	26.0	21.7	0.0131	27.0	11.9	0.0029	40.2
1440.00	21.8	23.0	18.5	0.0131	24.0	12.4	0.0012	34.3

MACTEC, Inc.

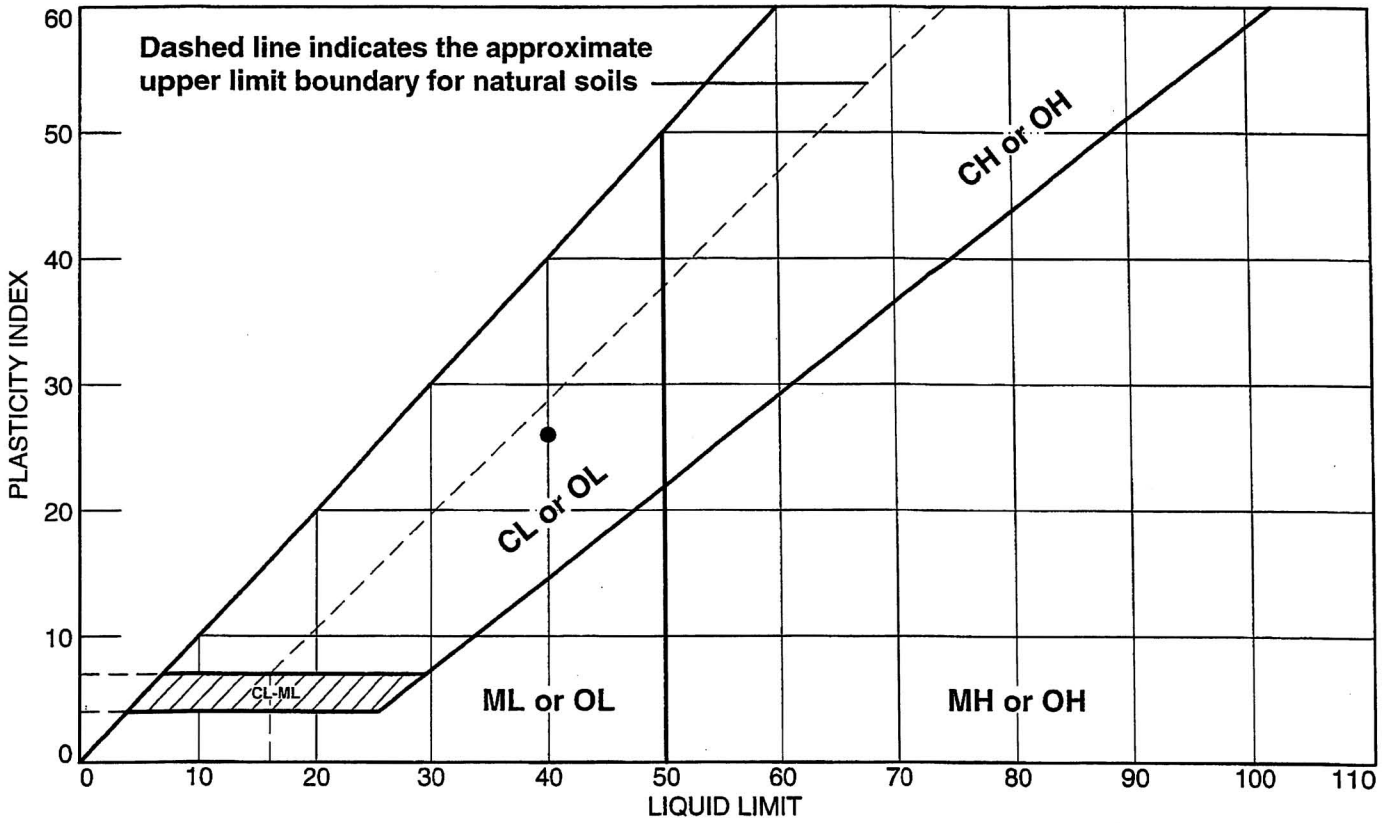
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.2	29.0	29.2	27.6	43.2	70.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0120	0.0329	0.1087	0.1278	0.1521	0.1939

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-2251	SS-9	28.5-30'	19.3	14	40	26	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

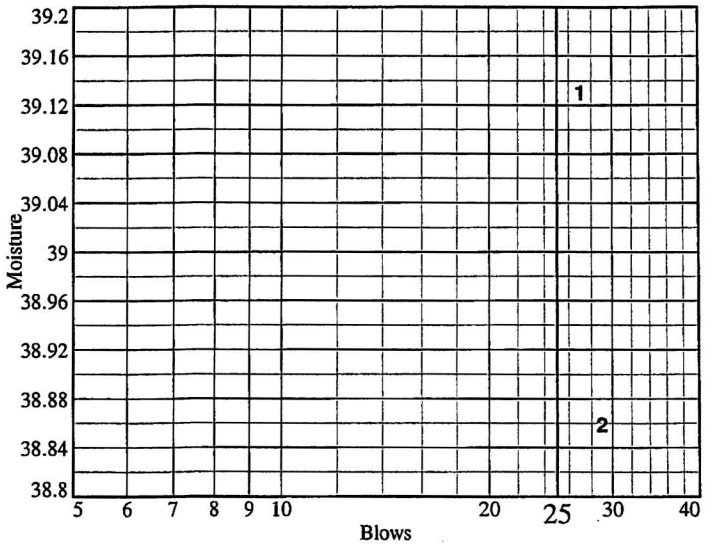
LIQUID AND PLASTIC LIMIT TEST DATA

1/25/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 28.5-30' **Sample Number:** SS-9
Material Description: Greenish Gray Lean CLAY with sand
USCS: CL **AASHTO:** A-6(16)
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.73	23.28				
Dry+Tare	22.85	21.10				
Tare	15.49	15.49				
# Blows	27	29				
Moisture	39.1	38.9				



Liquid Limit= 40
Plastic Limit= 14
Plasticity Index= 26
Natural Moisture= 19.3
Liquidity Index= 0.2

Plastic Limit Data

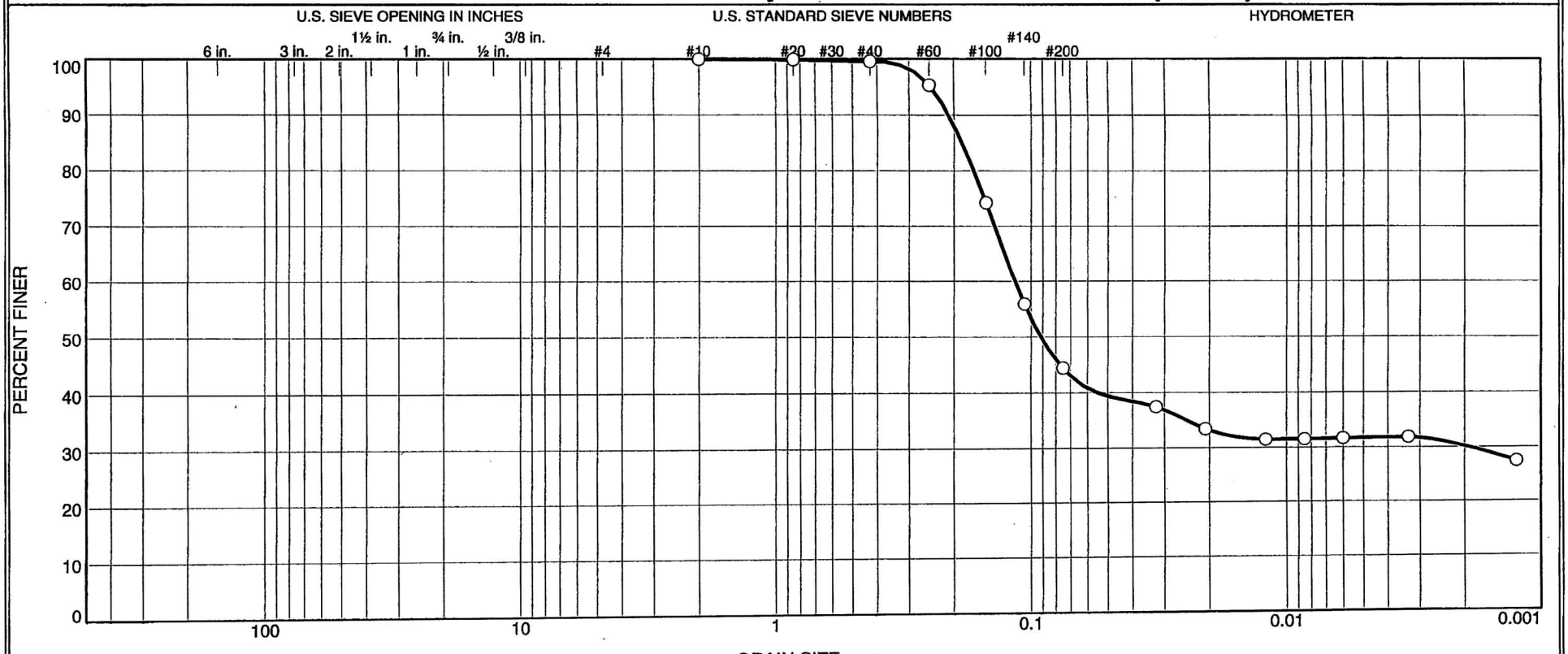
Run No.	1	2	3	4	
Wet+Tare	29.52	25.45			
Dry+Tare	27.85	23.73			
Tare	15.46	11.08			
Moisture	13.5	13.6			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
119.89	102.00	9.47	19.3

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	0.4	55.2	12.6	31.8

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-10	33.5-35'	12-03-07	SC	Greenish Gray Clayey SAND	19.1	30	15

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-2251
Depth: 33.5-35' **Sample Number:** SS-10
Material Description: Greenish Gray Clayey SAND
Date: 12-03-07 **Natural Moisture:** 19.1
Liquid Limit: 30 **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
217.39	0.00	0.00	#10	0.00	100.0
50.41	0.00	0.00	#20	0.05	99.9
			#40	0.22	99.6
			#60	2.35	95.3
			#100	13.00	74.2
			#140	22.24	55.9
			#200	28.04	44.4

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =50.41
Hygroscopic moisture correction:
Moist weight and tare = 27.38
Dry weight and tare = 27.15
Tare weight = 15.56
Hygroscopic moisture = 2.0%
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.6	23.0	18.7	0.0130	24.0	12.4	0.0324	37.5
5.00	22.6	21.0	16.7	0.0130	22.0	12.7	0.0207	33.5
15.00	22.7	20.0	15.8	0.0130	21.0	12.9	0.0120	31.6
30.00	22.8	20.0	15.8	0.0130	21.0	12.9	0.0085	31.6
60.00	23.0	20.0	15.9	0.0130	21.0	12.9	0.0060	31.7
193.00	23.4	20.0	16.0	0.0129	21.0	12.9	0.0033	31.9
1440.00	22.6	18.0	13.7	0.0130	19.0	13.2	0.0012	27.5

MACTEC, Inc.

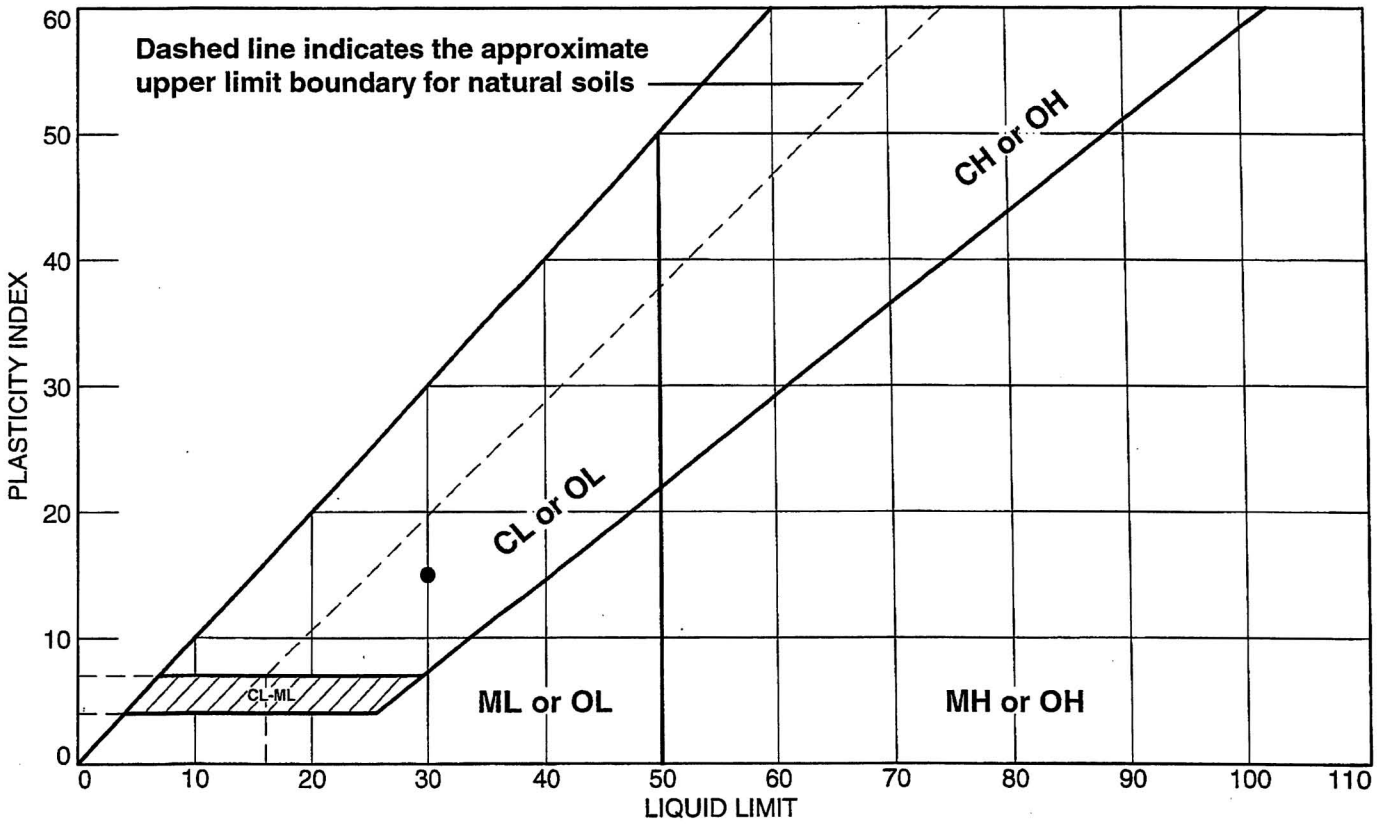
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.4	55.2	55.6	12.6	31.8	44.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0019	0.0916	0.1154	0.1676	0.1863	0.2102	0.2465

Fineness Modulus
0.28

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-10	33.5-35'	19.1	15	30	15	SC

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

Tested By: CS **Checked By:** LBJ DJC 1-25-08

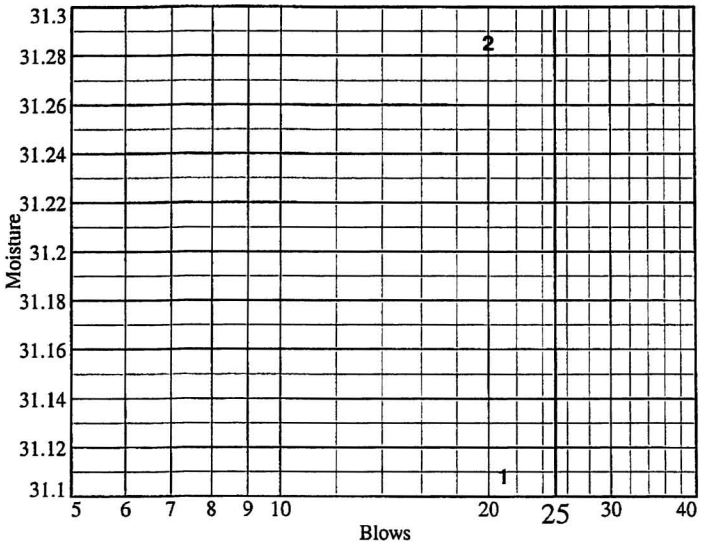
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 33.5-35'
Sample Number: SS-10
Material Description: Greenish Gray Clayey SAND
USCS: SC
AASHTO: A-6(3)
Tested by: CS
Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	21.51	27.09				
Dry+Tare	19.04	24.34				
Tare	11.10	15.55				
# Blows	21	20				
Moisture	31.1	31.3				



Liquid Limit= 30
Plastic Limit= 15
Plasticity Index= 15
Natural Moisture= 19.1
Liquidity Index= 0.3

Plastic Limit Data

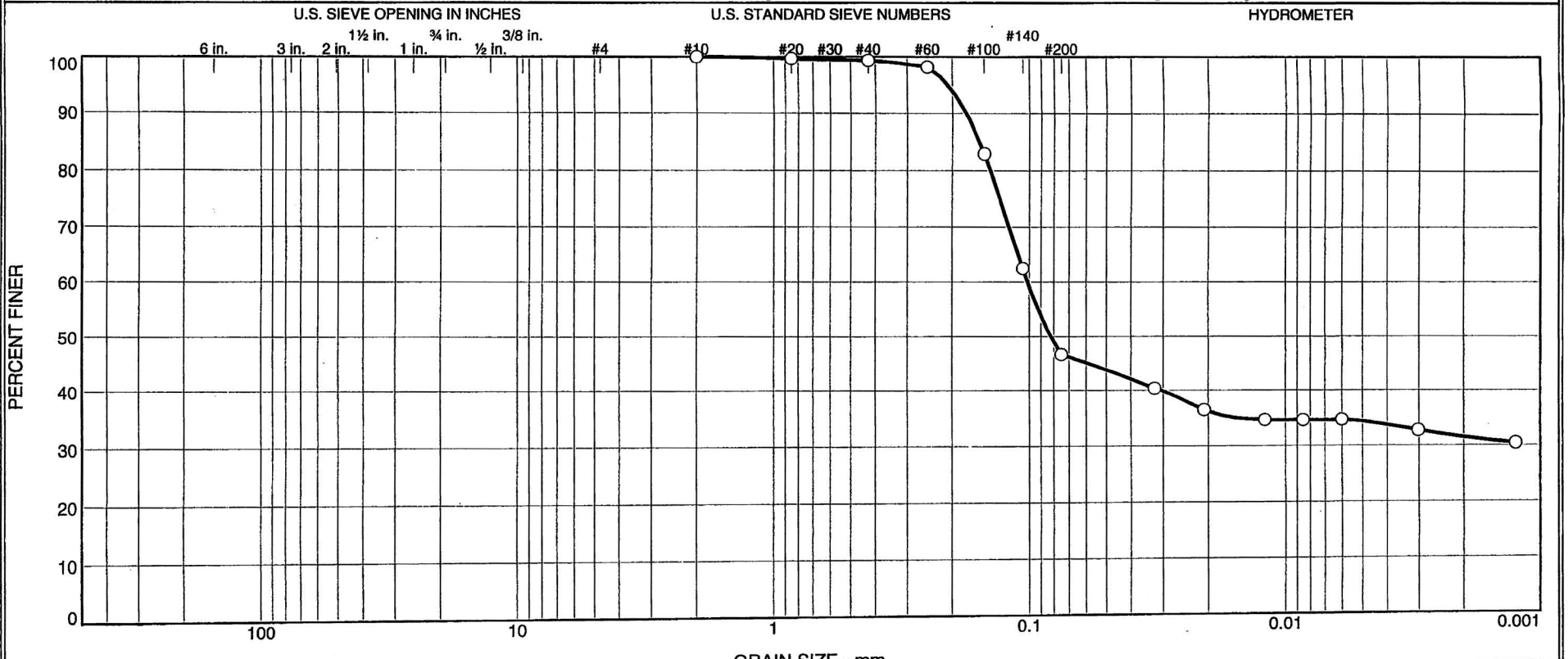
Run No.	1	2	3	4	
Wet+Tare	22.97	22.16			
Dry+Tare	22.01	21.31			
Tare	15.49	15.50			
Moisture	14.7	14.6			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
114.58	97.70	9.26	19.1

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	52.7	12.4	34.3

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-11	38.5-40'	12-03-07	SC	Greenish Gray Clayey SAND	17.7	36	17

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.673 (ASTM D854-06)
Organic content = 3.7% (ASTM D2794-07)

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: 38.5-40' **Sample Number:** SS-11
Material Description: Greenish Gray Clayey SAND
Date: 12-03-07 **Natural Moisture:** 17.7
Liquid Limit: 36 **Plastic Limit:** 17 **USCS Class.:** SC
Testing Remarks: Specific Gravity = 2.673 (ASTM D854-06)
Organic content = 3.7% (ASTM D2794-07)
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
184.07	0.00	0.00	#10	0.00	100.0
51.90	0.00	0.00	#20	0.18	99.7
			#40	0.33	99.4
			#60	0.95	98.2
			#100	8.83	83.0
			#140	19.47	62.5
			#200	27.68	46.7

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =51.9
Hygroscopic moisture correction:
Moist weight and tare = 27.30
Dry weight and tare = 27.07
Tare weight = 15.51
Hygroscopic moisture = 2.0%
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 = 2.673
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	22.2	25.0	20.6	0.0132	26.0	12.0	0.0323	40.3
5.00	22.2	23.0	18.6	0.0132	24.0	12.4	0.0207	36.4
15.00	22.4	22.0	17.7	0.0132	23.0	12.5	0.0120	34.6
30.00	22.3	22.0	17.7	0.0132	23.0	12.5	0.0085	34.5
60.00	22.4	22.0	17.7	0.0132	23.0	12.5	0.0060	34.6
240.00	22.5	21.0	16.7	0.0131	22.0	12.7	0.0030	32.7
1440.00	21.9	20.0	15.6	0.0132	21.0	12.9	0.0013	30.4

MACTEC, Inc.

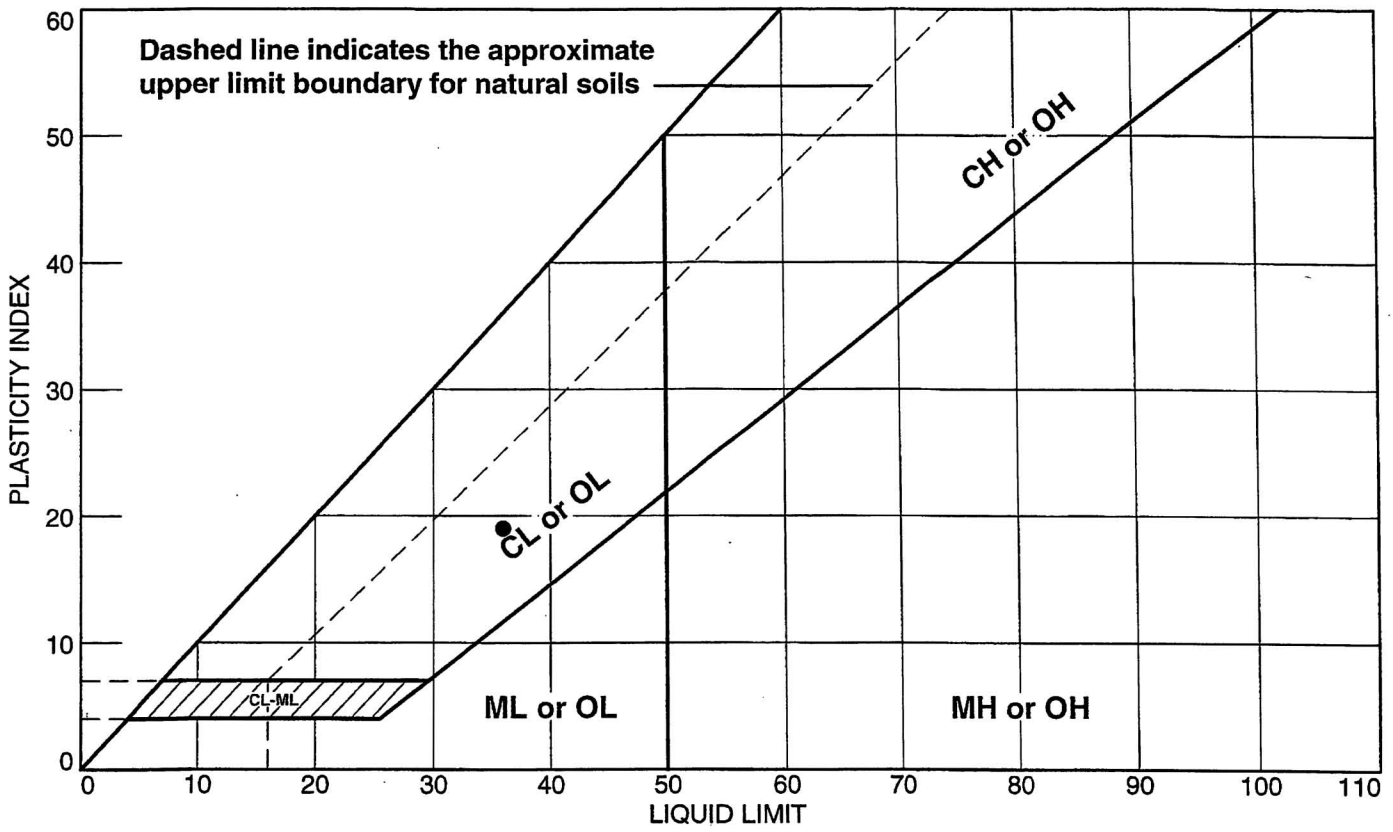
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.6	52.7	53.3	12.4	34.3	46.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0824	0.1015	0.1419	0.1563	0.1761	0.2083

Fineness Modulus
0.19

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-11	38.5-40'	17.7	17	36	19	SC

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

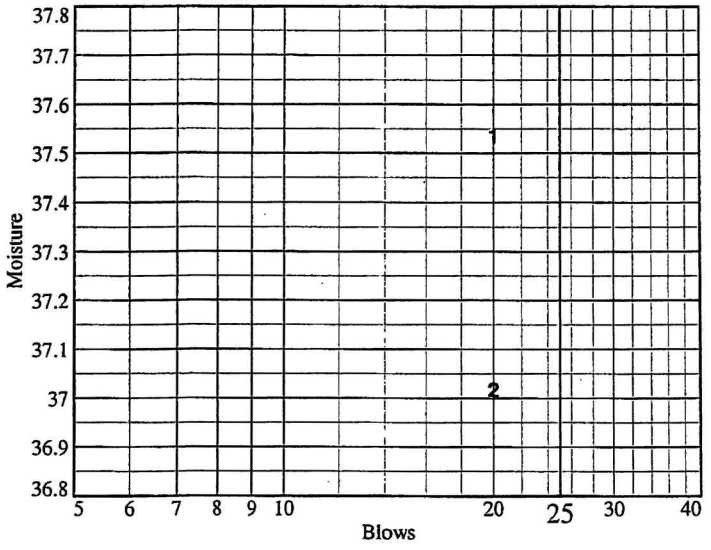
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 38.5-40'
Sample Number: SS-11
Material Description: Greenish Gray Clayey SAND
USCS: SC
AASHTO: A-6(5)
Tested by: CS
Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.09	26.20				
Dry+Tare	22.47	23.32				
Tare	15.49	15.54				
# Blows	20	20				
Moisture	37.5	37.0				



Liquid Limit= 36
Plastic Limit= 17
Plasticity Index= 19
Natural Moisture= 17.7
Liquidity Index= 0.0

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	26.90	26.43			
Dry+Tare	25.32	24.86			
Tare	15.73	15.51			
Moisture	16.5	16.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
149.29	128.2	9.18	17.7

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: 1/5/08

SAMPLE IDENTIFICATION: B-2251 SS-11

(A) Mass of oven-dried soil, grams:		48.35
(B) Mass of pycnometer filled with water at test temperature (T), grams:		654.89
(C) Mass of pycnometer, water and soil, grams:		685.16
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		22.5
(G) Specific Gravity at observed temperature:	A / [A + (B - C)]	2.674
(F)	***Correction factor:***	0.99945
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.673

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

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

REMARKS: Estimated % Passing # 4 : 100%

Clayey SAND (SC)

EQUIPMENT USED

SCALES : 3.1.99

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNOMETER : P-5

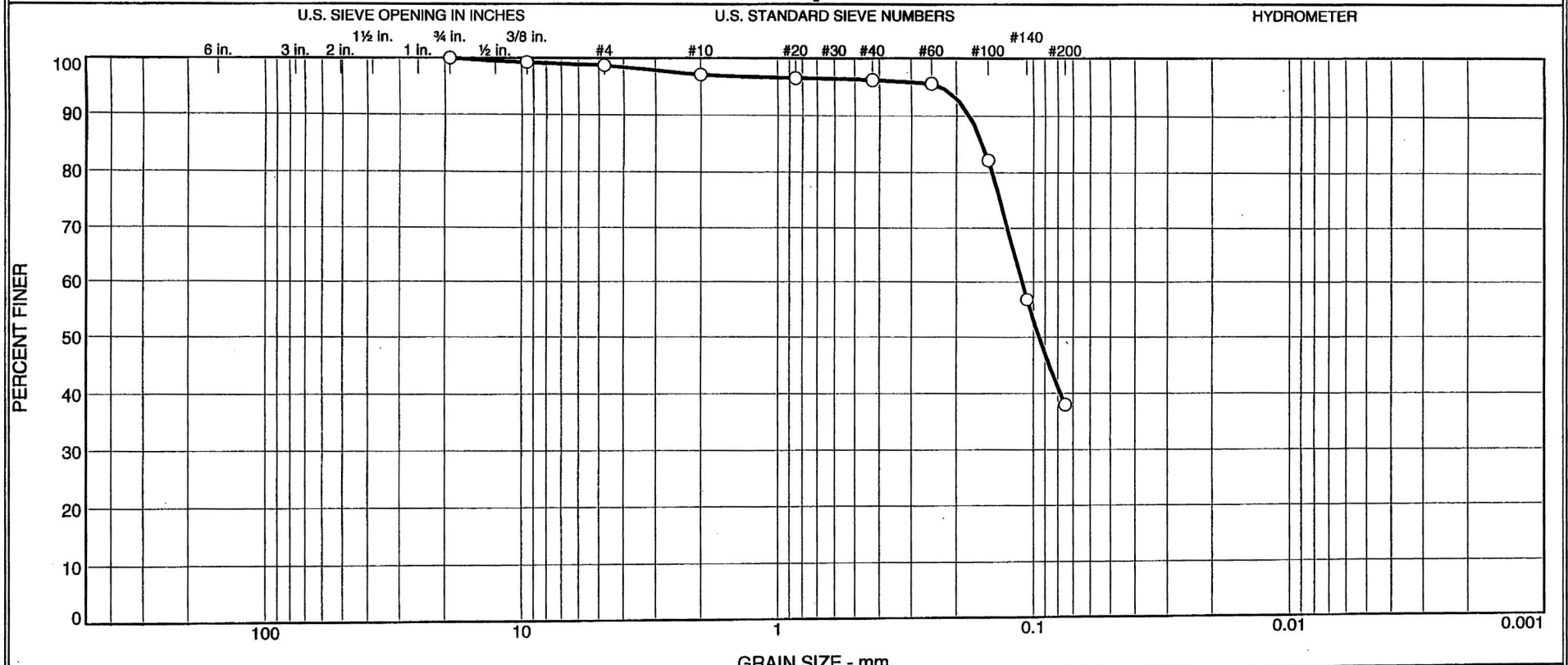
TESTED BY: CS

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

REVIEWED BY: Brian Johnson

DSC 1-25-08

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



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	1.3	1.6	0.9	58.2	38.0	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-12	43.5-45'	12-03-07	SC	Greenish Gray Clayey SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ SIEVE ANALYSIS ONLY
ND = Not Determined

Tested By: CS **Checked By:** LBJ DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 43.5-45'
Sample Number: SS-12
Material Description: Greenish Gray Clayey SAND (Visual)
Date: 12-03-07
Natural Moisture: ND
Liquid Limit: ND
Plastic Limit: ND
USCS Class.: SC
Testing Remarks: SIEVE ANALYSIS ONLY
ND = Not Determined
Tested by: CS
Checked by: LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
204.36	0.00	0.00	3/4	0.00	100.0
			3/8"	1.56	99.2
			#4	2.70	98.7
			#10	5.99	97.1
51.28	0.00	0.00	#20	0.32	96.5
			#40	0.48	96.2
			#60	0.81	95.5
			#100	7.82	82.3
			#140	21.28	56.8
			#200	31.20	38.0

Fractional Components

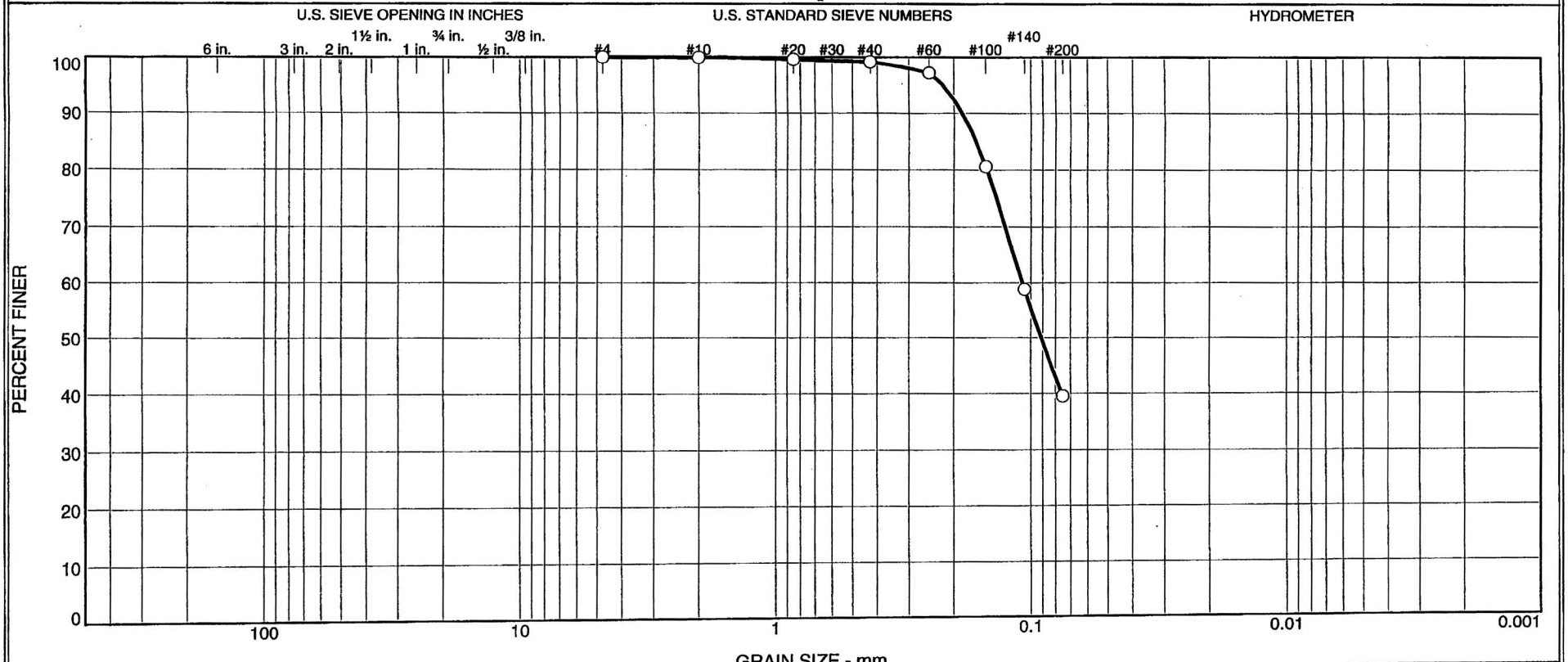
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.3	1.3	1.6	0.9	58.2	60.7			38.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0952	0.1109	0.1447	0.1576	0.1778	0.2316

Fineness Modulus
0.34

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	0.8	59.7	39.5	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-13	48.5-50'	12-03-07	SC	Greenish Gray Clayey SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ SIEVE ANALYSIS ONLY
ND = Not Determined.

Tested By: CS Checked By: LBJ DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 48.5-50'
Sample Number: SS-13
Material Description: Greenish Gray Clayey SAND (Visual)
Date: 12-03-07
Natural Moisture: ND
Liquid Limit: ND
Plastic Limit: ND
USCS Class.: SC
Testing Remarks: SIEVE ANALYSIS ONLY
ND = Not Determined.
Tested by: CS
Checked by: LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
170.81	0.00	0.00	#4	0.00	100.0
			#10	0.06	100.0
91.74	0.00	0.00	#20	0.36	99.6
			#40	0.73	99.2
			#60	2.57	97.2
			#100	17.77	80.6
			#140	37.73	58.9
			#200	55.46	39.5

Fractional Components

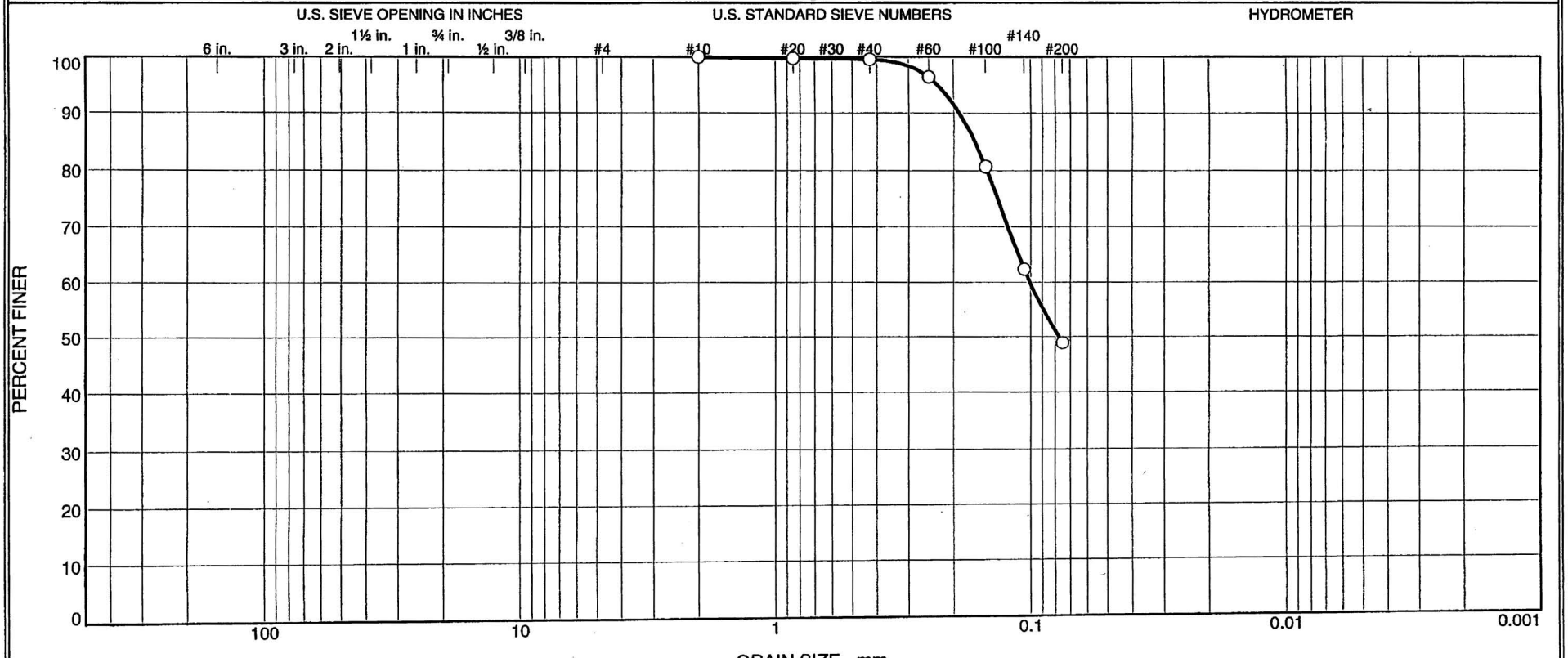
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.8	59.7	60.5			39.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0911	0.1080	0.1484	0.1638	0.1853	0.2212

Fineness Modulus
0.22

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	0.5	50.6	48.9	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-14	53.5-55'	12-03-07	SC	Greenish Gray Clayey SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ SIEVE ANALYSIS ONLY
ND = Not Determined

Tested By: CS **Checked By:** LBJ DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 53.5-55'
Sample Number: SS-14
Material Description: Greenish Gray Clayey SAND (Visual)
Date: 12-03-07
Natural Moisture: ND
Liquid Limit: ND
Plastic Limit: ND
USCS Class.: SC
Testing Remarks: SIEVE ANALYSIS ONLY
ND = Not Determined
Tested by: CS
Checked by: LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
241.13	0.00	0.00	#10	0.00	100.0
47.69	0.00	0.00	#20	0.14	99.7
			#40	0.23	99.5
			#60	1.75	96.3
			#100	9.21	80.7
			#140	17.94	62.4
			#200	24.38	48.9

Fractional Components

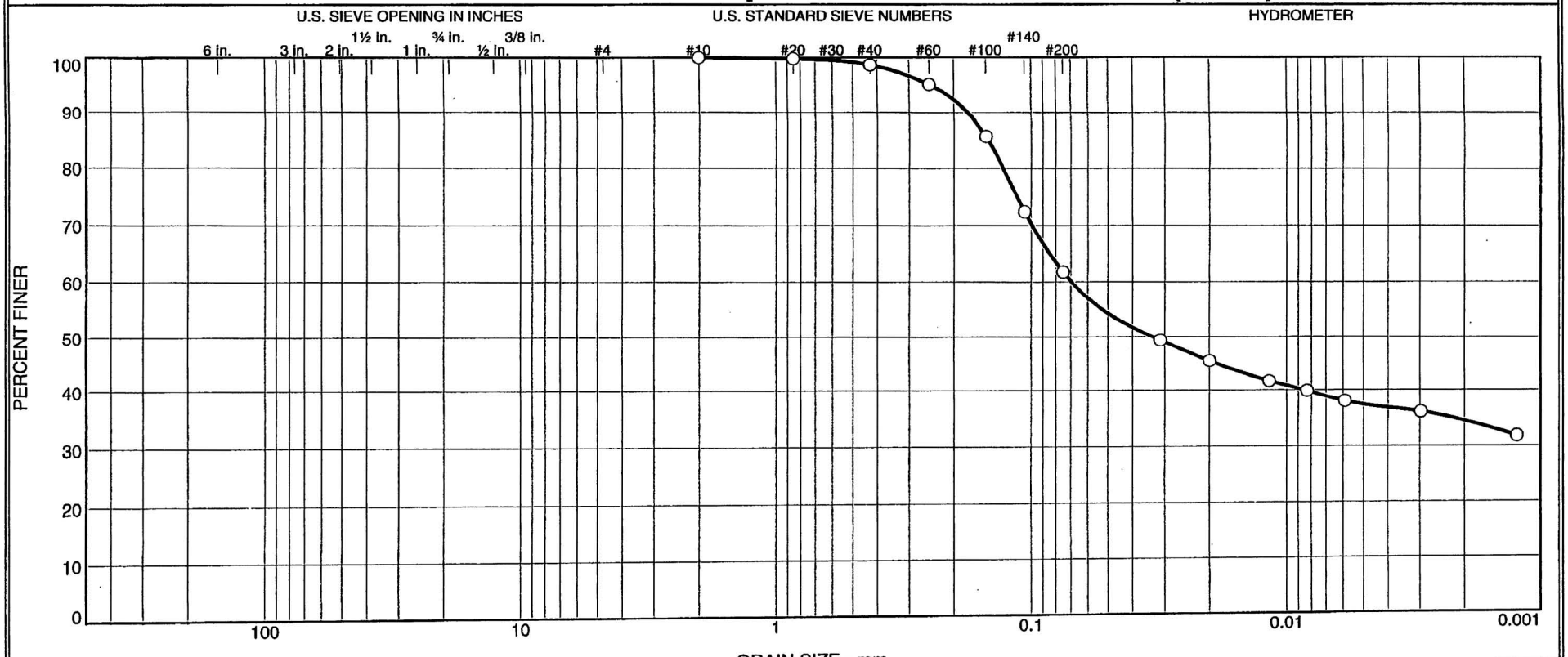
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.5	50.6	51.1			48.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0775	0.1007	0.1479	0.1652	0.1898	0.2315

Fineness Modulus
0.21

MACTEC, Inc.

Particle Size Distribution Report / ASTM D 422-63-04(2002)e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	1.3	36.9	24.5	37.3

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-15	58.5-60'	12-03-07	CL	Light Greenish Gray Sandy Lean CLAY	ND	36	14

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.685 (ASTM D854-06)
ND = Not Determined

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: 58.5-60' **Sample Number:** SS-15
Material Description: Light Greenish Gray Sandy Lean CLAY
Date: 12-03-07 **Natural Moisture:** ND
Liquid Limit: 36 **Plastic Limit:** 14 **USCS Class.:** CL
Testing Remarks: Specific Gravity = 2.685 (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
209.01	0.00	0.00	#10	0.00	100.0
51.79	0.00	0.00	#20	0.12	99.8
			#40	0.69	98.7
			#60	2.55	95.1
			#100	7.40	85.7
			#140	14.27	72.4
			#200	19.79	61.8

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =51.79
Hygroscopic moisture correction:
Moist weight and tare = 29.19
Dry weight and tare = 29.12
Tare weight = 15.53
Hygroscopic moisture = 0.5%
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 = 2.685
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	22.2	30.0	25.6	0.0131	31.0	11.2	0.0311	49.4
5.00	22.2	28.0	23.6	0.0131	29.0	11.5	0.0200	45.5
15.00	22.2	26.0	21.6	0.0131	27.0	11.9	0.0117	41.7
30.00	22.4	25.0	20.7	0.0131	26.0	12.0	0.0083	39.8
60.00	22.5	24.0	19.7	0.0131	25.0	12.2	0.0059	38.0
240.00	22.5	23.0	18.7	0.0131	24.0	12.4	0.0030	36.0
1440.00	21.7	21.0	16.5	0.0132	22.0	12.7	0.0012	31.8

MACTEC, Inc.

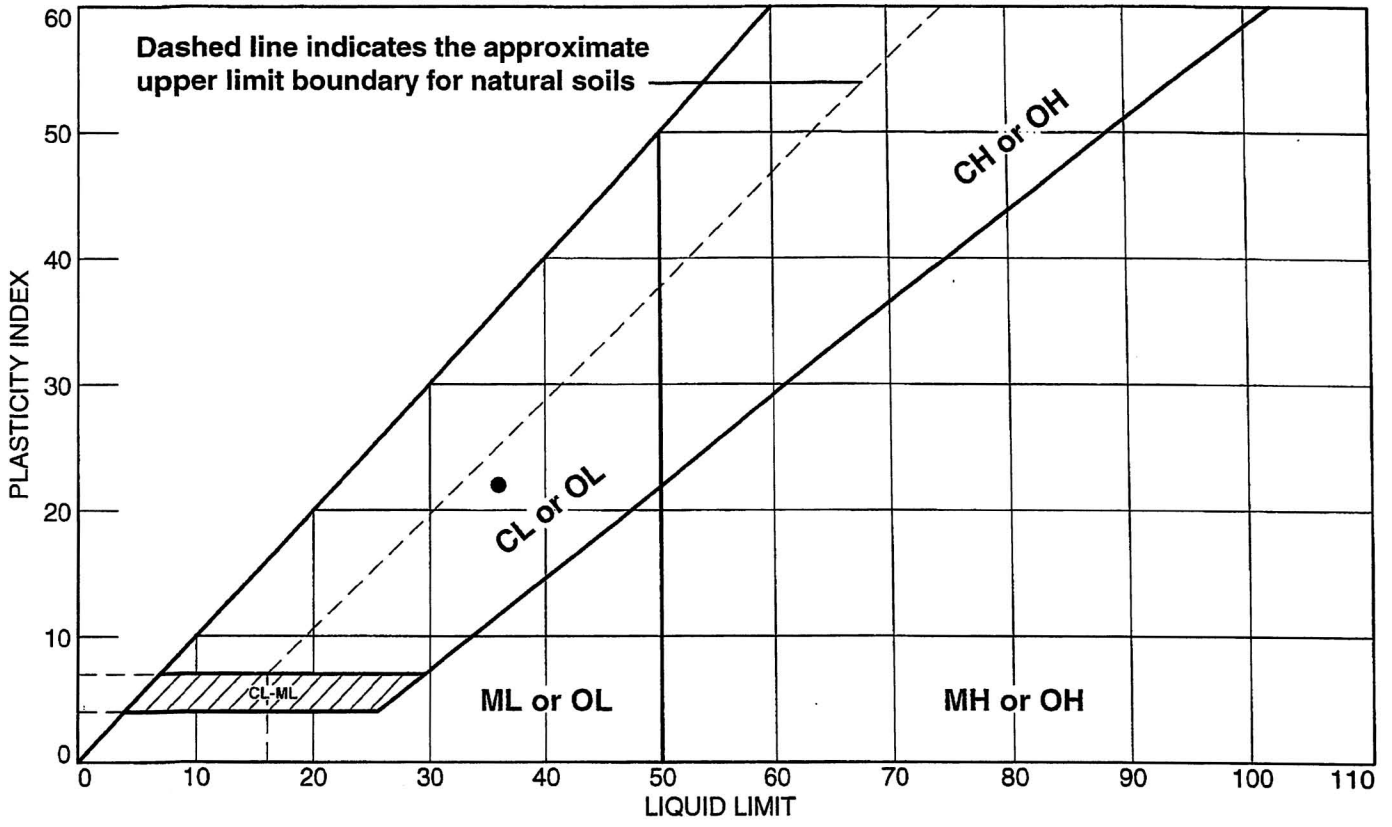
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.3	36.9	38.2	24.5	37.3	61.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0334	0.0694	0.1283	0.1468	0.1763	0.2481

Fineness Modulus
0.18

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-15	58.5-60'	ND	14	36	22	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

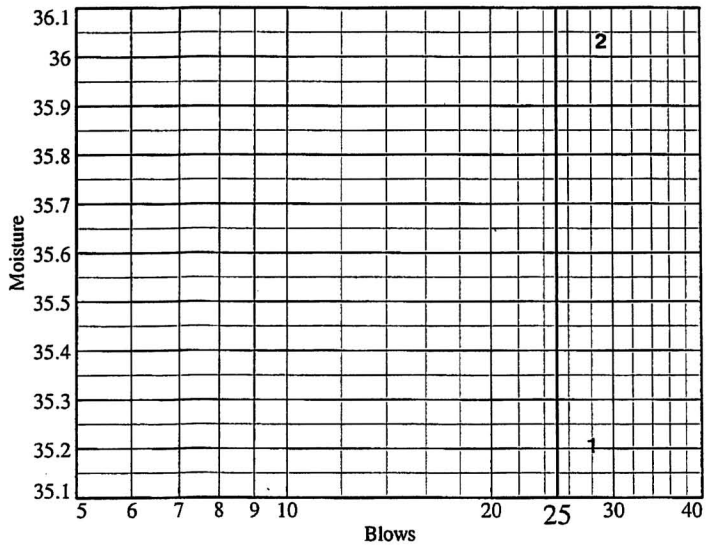
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 58.5-60'
Sample Number: SS-15
Material Description: Light Greenish Gray 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	24.63	23.72				
Dry+Tare	22.25	21.54				
Tare	15.49	15.49				
# Blows	28	29				
Moisture	35.2	36.0				



Liquid Limit= 36
Plastic Limit= 14
Plasticity Index= 22
Natural Moisture= ND

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	31.65	26.80			
Dry+Tare	29.66	25.40			
Tare	15.48	15.50			
Moisture	14.0	14.1			

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: 1/5/08

SAMPLE IDENTIFICATION: B-2251 SS-15

(A) Mass of oven-dried soil, grams:		49.64
(B) Mass of pycnometer filled with water at test temperature (T), grams:		656.60
(C) Mass of pycnometer, water and soil, grams:		687.76
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		22.7
(G) Specific Gravity at observed temperature:	A / [A + (B - C)]	2.686
(F)	***Correction factor:***	0.99940
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.685

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

PREPARATION METHOD: [X] **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

PYCNOMETER : P-6

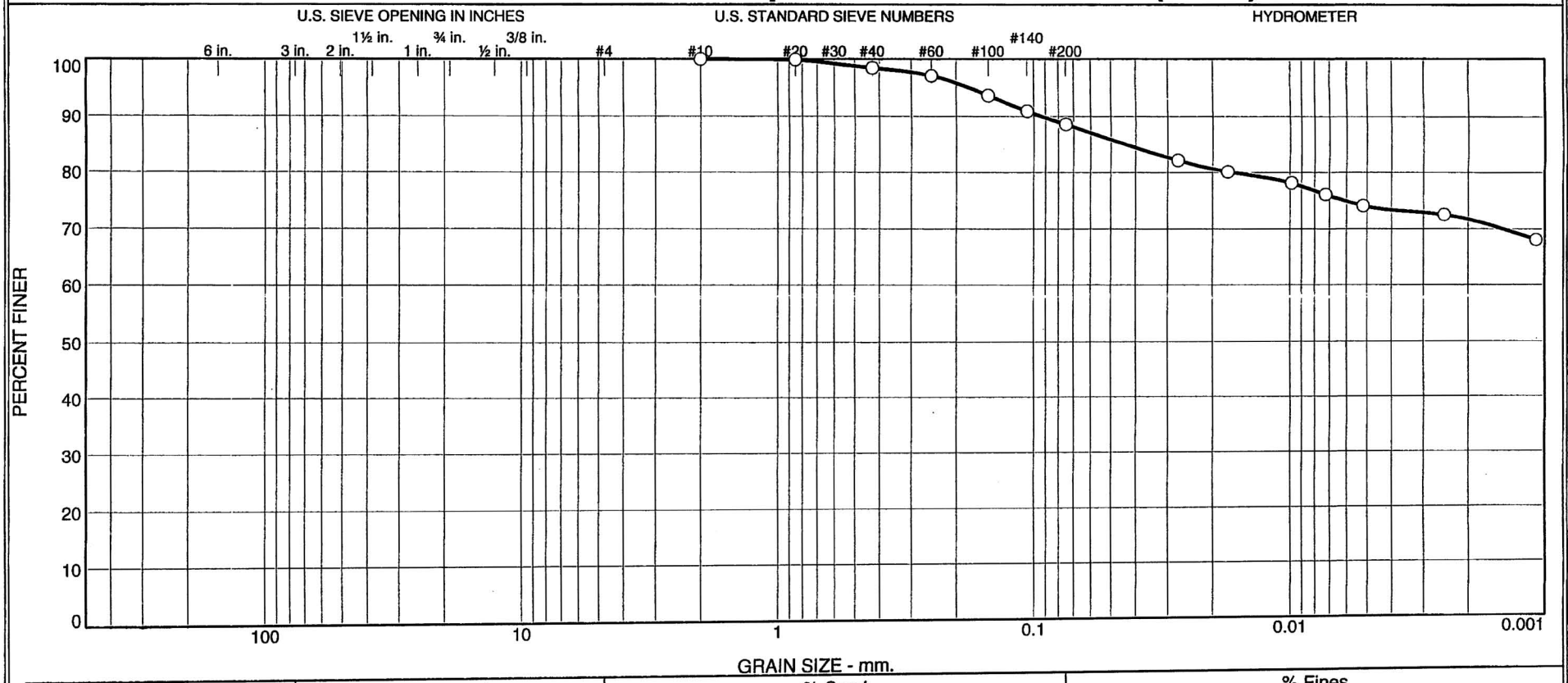
TESTED BY: CS

\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



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	1.5	9.9	14.6	74.0

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-16	63.5-65'	12-03-07	CH	Greenish Gray Fat CLAY	32.3	73	29

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-2251
Depth: 63.5-65' **Sample Number:** SS-16
Material Description: Greenish Gray Fat CLAY
Date: 12-03-07 **Natural Moisture:** 32.3
Liquid Limit: 73 **Plastic Limit:** 29 **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
195.70	0.00	0.00	#10	0.00	100.0
51.82	0.00	0.00	#20	0.05	99.9
			#40	0.80	98.5
			#60	1.50	97.1
			#100	3.30	93.6
			#140	4.70	90.9
			#200	5.90	88.6

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =51.82
Hygroscopic moisture correction:
Moist weight and tare = 28.20
Dry weight and tare = 27.52
Tare weight = 15.74
Hygroscopic moisture = 5.8%
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.4	45.0	40.7	0.0131	46.0	8.8	0.0273	82.1
5.00	22.4	44.0	39.7	0.0131	45.0	8.9	0.0174	80.1
16.00	22.5	43.0	38.7	0.0130	44.0	9.1	0.0098	78.2
30.00	22.5	42.0	37.7	0.0130	43.0	9.2	0.0072	76.1
60.00	22.5	41.0	36.7	0.0130	42.0	9.4	0.0052	74.1
258.00	23.3	40.0	35.9	0.0129	41.0	9.6	0.0025	72.5
1440.00	22.5	38.0	33.7	0.0130	39.0	9.9	0.0011	68.1

MACTEC, Inc.

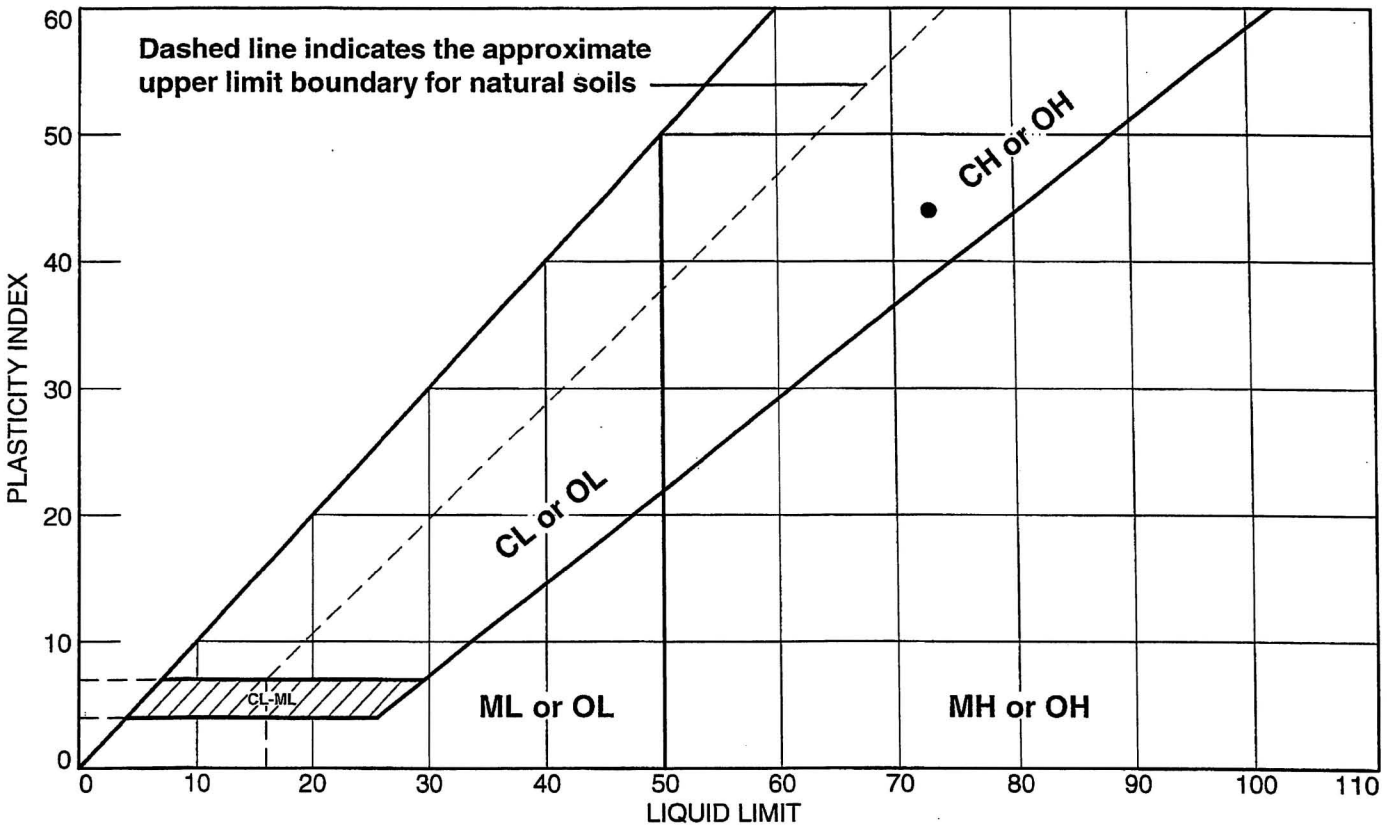
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.5	9.9	11.4	14.6	74.0	88.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
						0.0168	0.0436	0.0927	0.1787

Fineness Modulus
0.09

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-16	63.5-65'	32.3	29	73	44	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

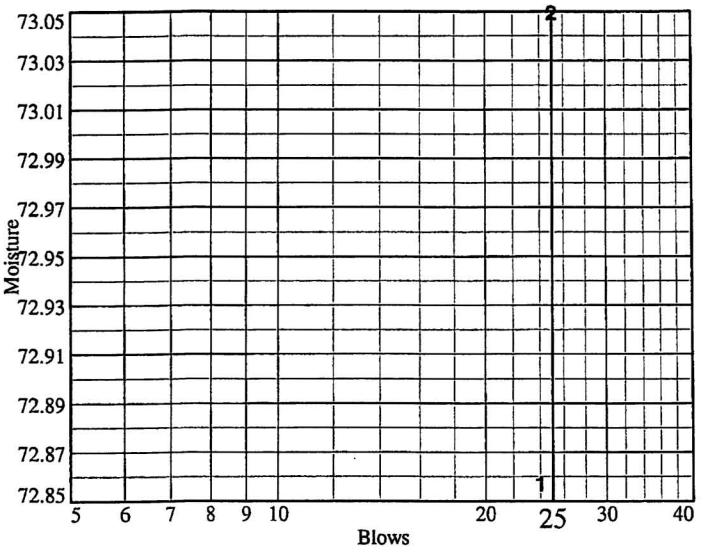
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 63.5-65'
Sample Number: SS-16
Material Description: Greenish Gray Fat CLAY
USCS: CH
AASHTO: A-7-6(45)
Tested by: CS
Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.21	22.77				
Dry+Tare	21.13	19.68				
Tare	15.53	15.45				
# Blows	24	25				
Moisture	72.9	73.0				



Liquid Limit= 73
Plastic Limit= 29
Plasticity Index= 44
Natural Moisture= 32.3
Liquidity Index= 0.1

Plastic Limit Data

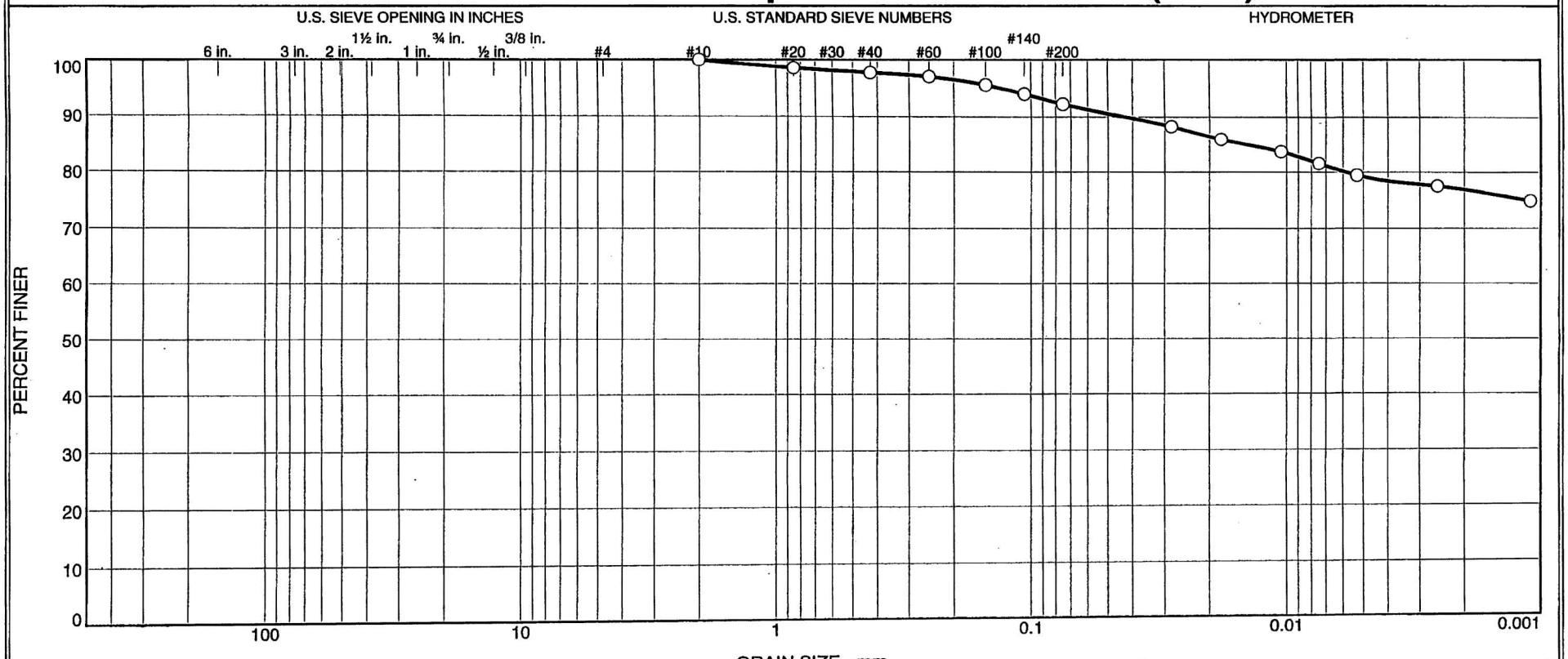
Run No.	1	2	3	4	
Wet+Tare	21.48	21.96			
Dry+Tare	20.13	20.55			
Tare	15.48	15.70			
Moisture	29.0	29.1			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
138.00	106.60	9.30	32.3

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	2.3	5.5	13.0	79.2

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-17	68.5-70'	12-03-07	CH	Yellowish Brown Fat CLAY	33.2	74	30

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed.
Organic content = 3.1% (ASTM D2794-07)

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: 68.5-70' **Sample Number:** SS-17
Material Description: Yellowish Brown Fat CLAY
Date: 12-03-07 **Natural Moisture:** 33.2
Liquid Limit: 74 **Plastic Limit:** 30 **USCS Class.:** CH
Testing Remarks: Specific Gravity is assumed.
Organic content = 3.1% (ASTM D2794-07)
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
163.78	0.00	0.00	#10	0.00	100.0
46.18	0.00	0.00	#20	0.67	98.5
			#40	1.06	97.7
			#60	1.40	97.0
			#100	2.08	95.5
			#140	2.80	93.9
			#200	3.61	92.2

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =46.18
Hygroscopic moisture correction:
Moist weight and tare = 26.41
Dry weight and tare = 25.63
Tare weight = 15.43
Hygroscopic moisture = 7.6%
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.1	43.0	38.3	0.0133	44.0	9.1	0.0283	88.3
5.00	21.1	42.0	37.3	0.0133	43.0	9.2	0.0180	86.0
15.00	21.2	41.0	36.3	0.0132	42.0	9.4	0.0105	83.7
30.00	21.5	40.0	35.4	0.0132	41.0	9.6	0.0075	81.6
60.00	21.8	39.0	34.5	0.0131	40.0	9.7	0.0053	79.5
258.00	22.4	38.0	33.6	0.0131	39.0	9.9	0.0026	77.6
1440.00	21.8	37.0	32.5	0.0131	38.0	10.1	0.0011	74.9

MACTEC, Inc.

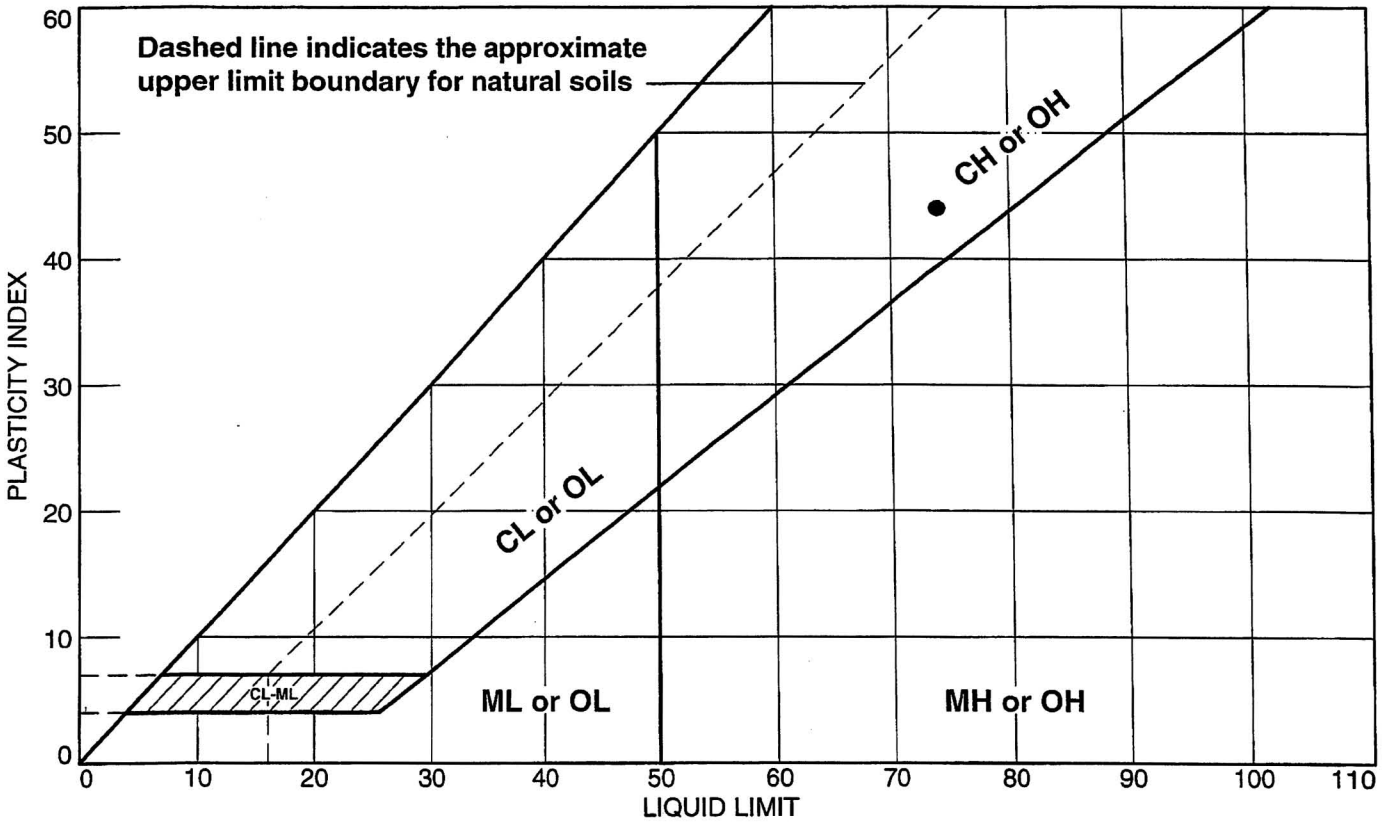
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	2.3	5.5	7.8	13.0	79.2	92.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
						0.0058	0.0142	0.0430	0.1329

Fineness Modulus
0.10

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-17	68.5-70'	33.2	30	74	44	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

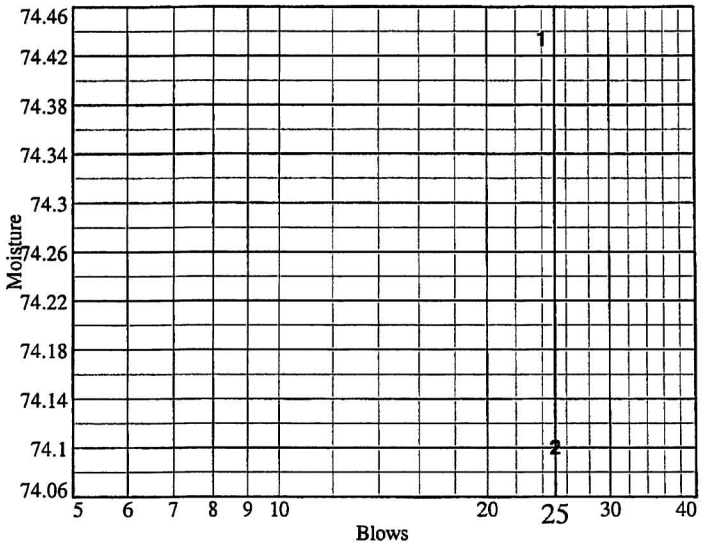
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 68.5-70'
Sample Number: SS-17
Material Description: Yellowish Brown Fat CLAY
USCS: CH
AASHTO: A-7-5(47)
Tested by: CS
Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	23.18	22.82				
Dry+Tare	19.89	19.73				
Tare	15.47	15.56				
# Blows	24	25				
Moisture	74.4	74.1				



Liquid Limit= 74
Plastic Limit= 30
Plasticity Index= 44
Natural Moisture= 33.2
Liquidity Index= 0.1

Plastic Limit Data

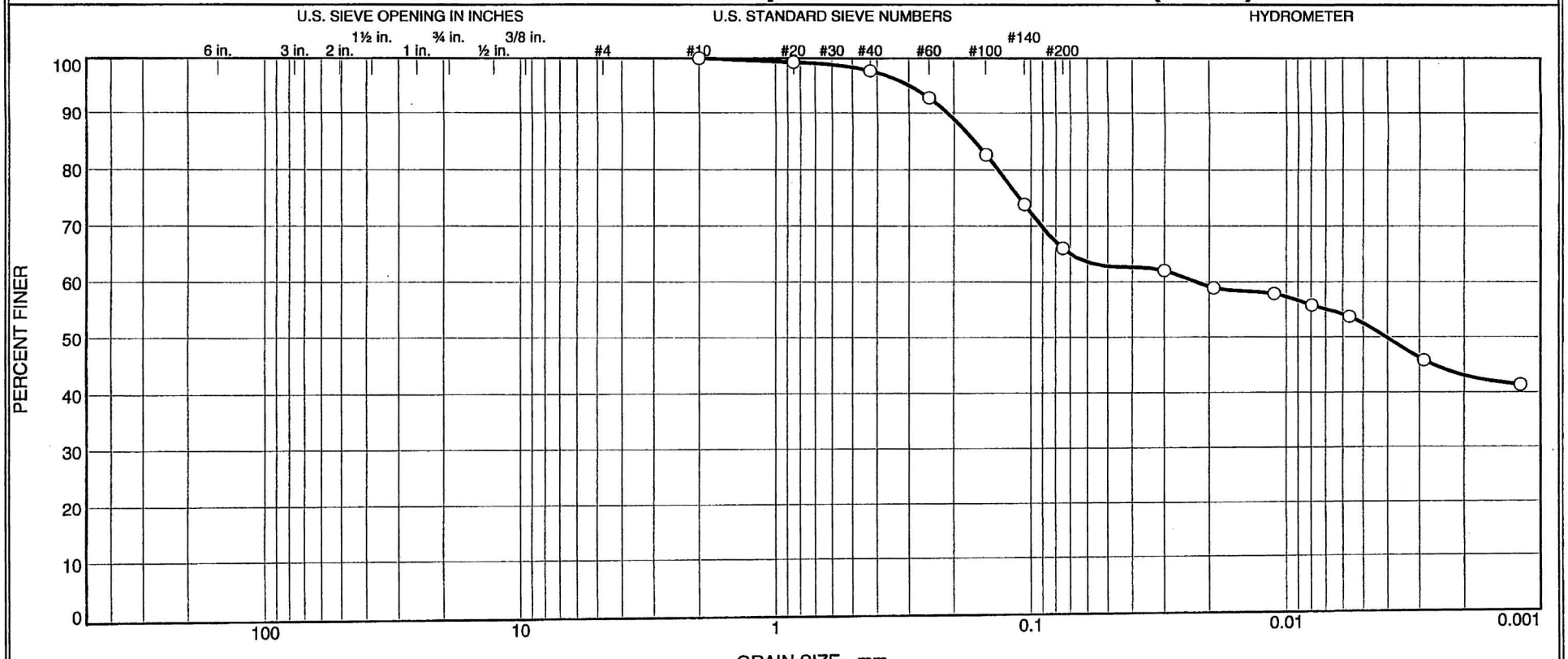
Run No.	1	2	3	4	
Wet+Tare	22.94	23.38			
Dry+Tare	21.22	21.55			
Tare	15.55	15.49			
Moisture	30.3	30.2			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
108.30	83.00	6.80	33.2

MACTEC, Inc.

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



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	2.3	31.6	13.5	52.6

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-18	73.5-75'	12-03-07	CL	Greenish Gray Sandy Lean CLAY	15.4	40	13

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure N/A

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-2251
Depth: 73.5-75' **Sample Number:** SS-18
Material Description: Greenish Gray Sandy Lean CLAY
Date: 12-03-07 **Natural Moisture:** 15.4
Liquid Limit: 40 **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
232.60	0.00	0.00	#10	0.00	100.0
48.67	0.00	0.00	#20	0.34	99.3
			#40	1.10	97.7
			#60	3.54	92.7
			#100	8.43	82.7
			#140	12.72	73.9
			#200	16.51	66.1

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =48.66
Hygroscopic moisture correction:
Moist weight and tare = 28.77
Dry weight and tare = 28.40
Tare weight = 15.72
Hygroscopic moisture = 2.9%
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 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.4	34.0	29.7	0.0131	35.0	10.6	0.0300	62.1
5.00	22.4	32.5	28.2	0.0131	33.5	10.8	0.0192	59.0
15.00	22.4	32.0	27.7	0.0131	33.0	10.9	0.0111	57.9
30.00	22.4	31.0	26.7	0.0131	32.0	11.0	0.0079	55.8
60.00	22.4	30.0	25.7	0.0131	31.0	11.2	0.0056	53.7
240.00	23.0	26.0	21.9	0.0130	27.0	11.9	0.0029	45.7
1440.00	22.6	24.0	19.7	0.0130	25.0	12.2	0.0012	41.3

MACTEC, Inc.

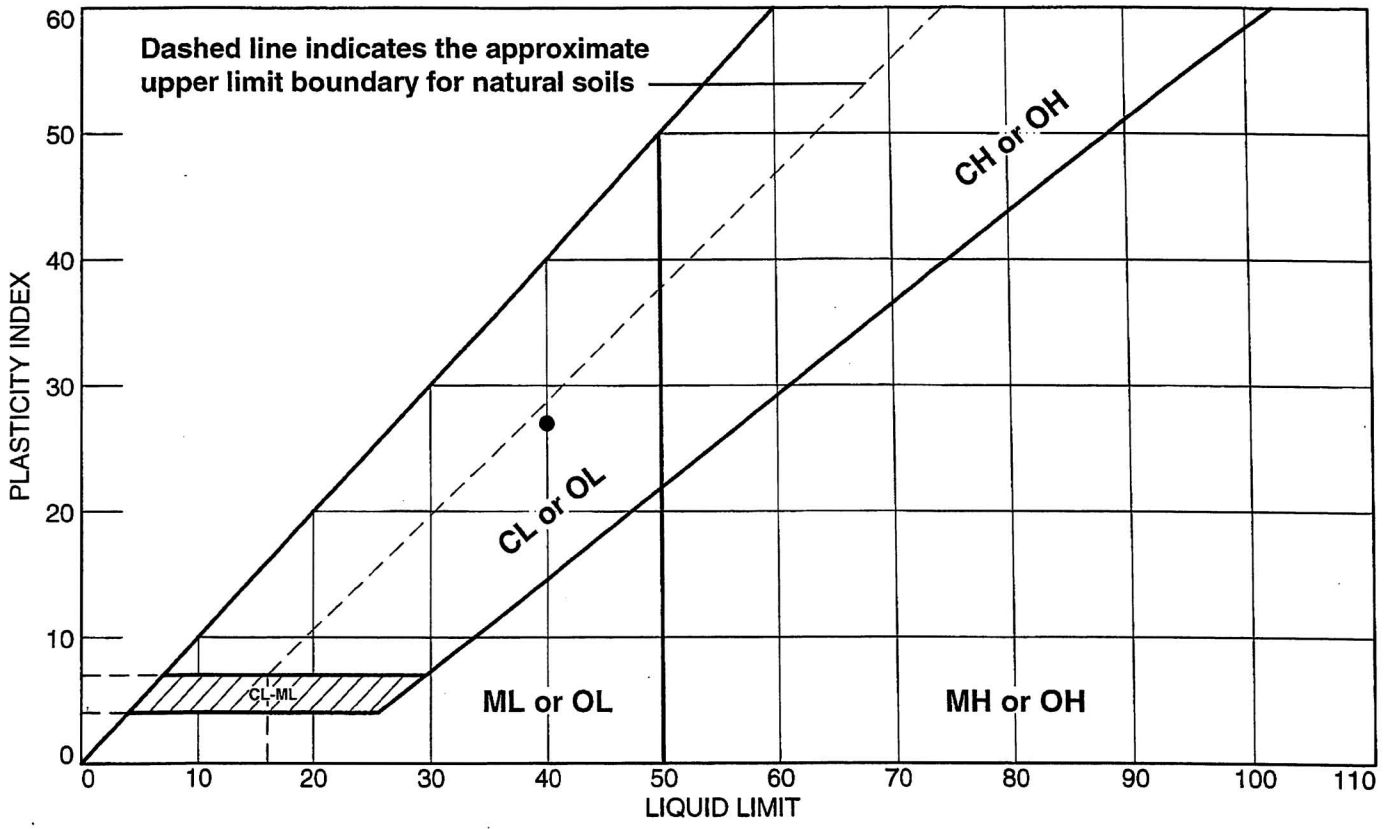
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	2.3	31.6	33.9	13.5	52.6	66.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0041	0.0224	0.1345	0.1658	0.2118	0.2992

Fineness Modulus
0.24

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-18	73.5-75'	15.4	13	40	27	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

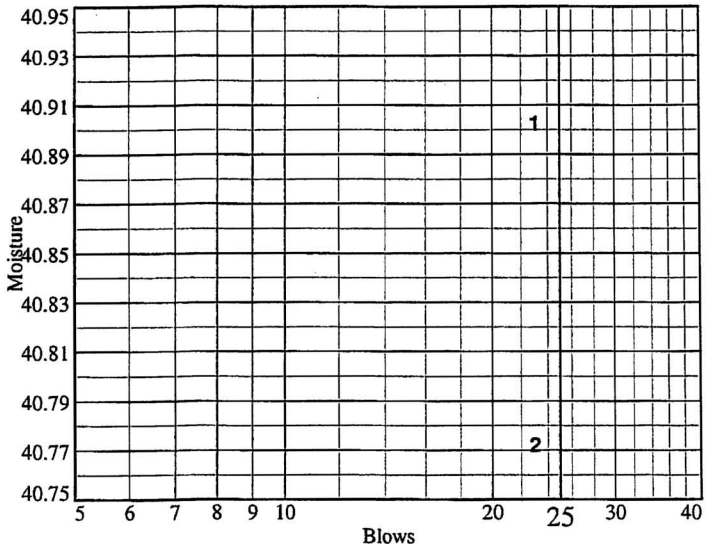
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 73.5-75'
Sample Number: SS-18
Material Description: Greenish Gray Sandy Lean CLAY
USCS: CL
AASHTO: A-6(15)
Tested by: CS
Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.71	25.18				
Dry+Tare	22.81	22.33				
Tare	15.72	15.34				
# Blows	23	23				
Moisture	40.9	40.8				



Liquid Limit= 40
Plastic Limit= 13
Plasticity Index= 27
Natural Moisture= 15.4
Liquidity Index= 0.1

Plastic Limit Data

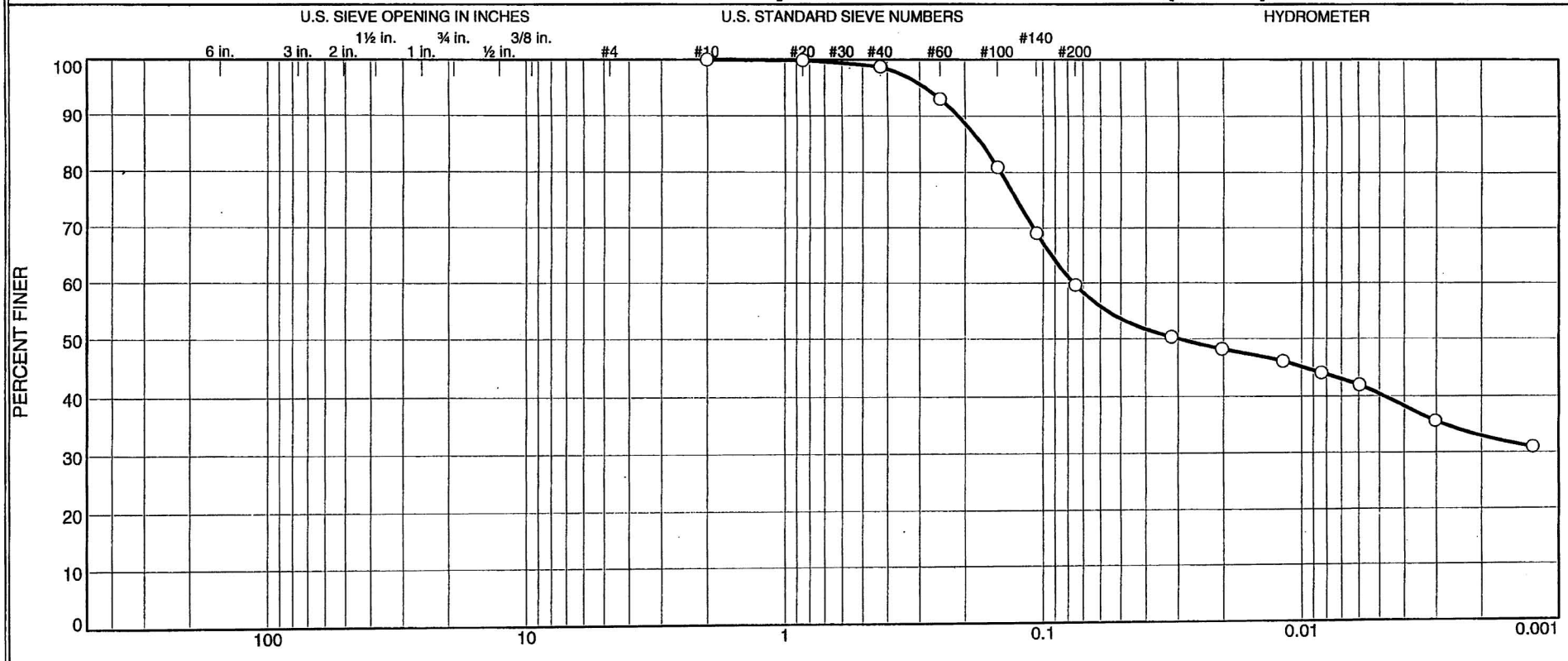
Run No.	1	2	3	4	
Wet+Tare	22.46	17.10			
Dry+Tare	21.70	16.42			
Tare	15.54	11.09			
Moisture	12.3	12.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
117.70	102.90	6.80	15.4

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	1.3	39.0	19.3	40.4

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-19	78.5-80'	12-03-07	CL	Gray Sandy Lean CLAY	18.3	34	15

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.664 (ASTM D854-06)
Organic content = 4.6% (ASTM D2794-07)

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: 78.5-80' **Sample Number:** SS-19
Material Description: Gray Sandy Lean CLAY
Date: 12-03-07 **Natural Moisture:** 18.3
Liquid Limit: 34 **Plastic Limit:** 15 **USCS Class.:** CL
Testing Remarks: Specific Gravity = 2.664 (ASTM D854-06)
Organic content = 4.6% (ASTM D2794-07)
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
196.17	0.00	0.00	#10	0.00	100.0
47.92	0.00	0.00	#20	0.06	99.9
			#40	0.61	98.7
			#60	3.34	93.0
			#100	9.16	80.9
			#140	14.82	69.1
			#200	19.31	59.7

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =47.92
Hygroscopic moisture correction:
Moist weight and tare = 26.52
Dry weight and tare = 26.25
Tare weight = 15.49
Hygroscopic moisture = 2.5%
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 = 2.664
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	22.1	28.0	23.6	0.0132	29.0	11.5	0.0318	50.4
5.00	22.1	27.0	22.6	0.0132	28.0	11.7	0.0203	48.2
15.00	22.1	26.0	21.6	0.0132	27.0	11.9	0.0118	46.1
30.00	22.3	25.0	20.7	0.0132	26.0	12.0	0.0084	44.1
60.00	22.3	24.0	19.7	0.0132	25.0	12.2	0.0060	41.9
240.00	22.5	21.0	16.7	0.0132	22.0	12.7	0.0030	35.7
1440.00	21.9	19.0	14.6	0.0133	20.0	13.0	0.0013	31.0

MACTEC, Inc.

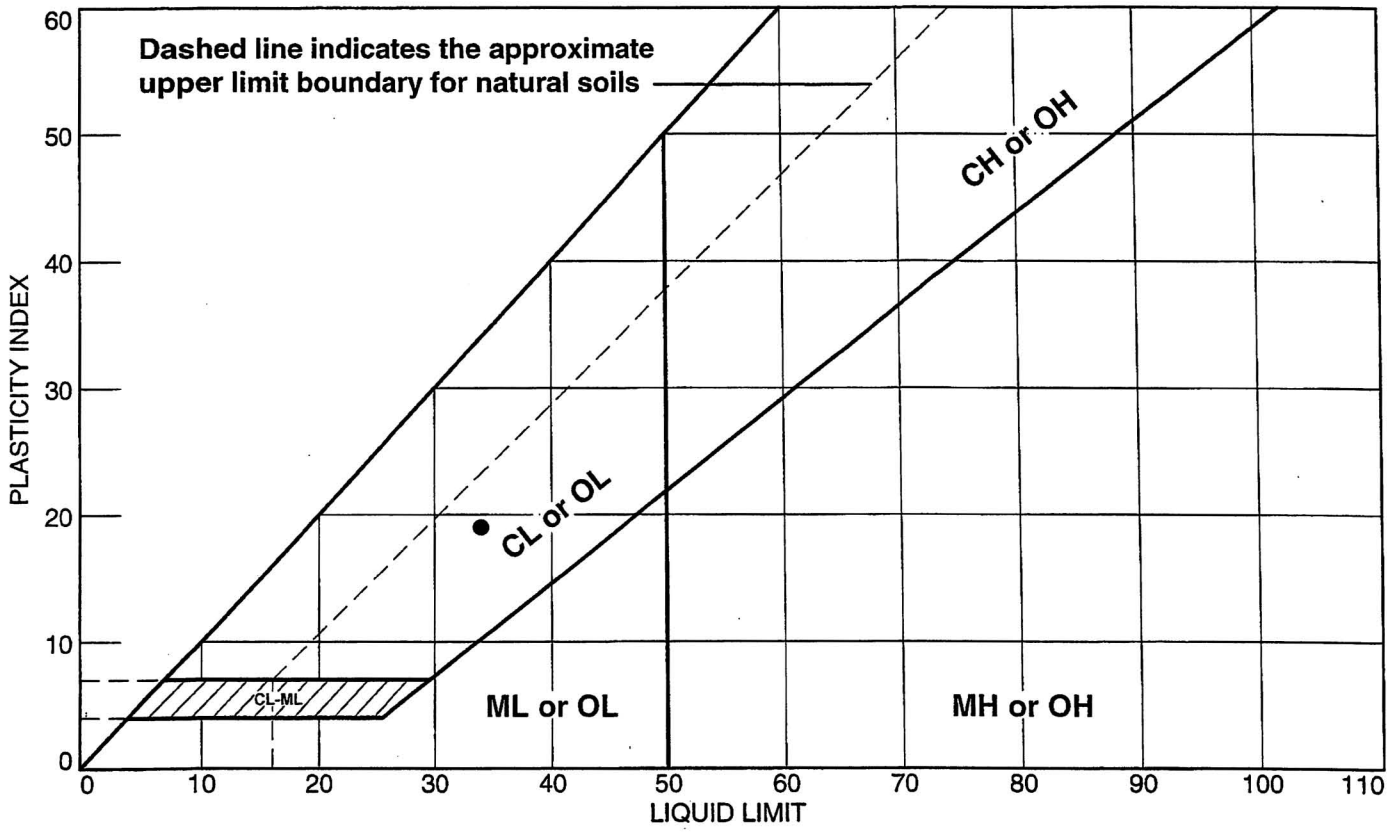
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.3	39.0	40.3	19.3	40.4	59.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0297	0.0760	0.1459	0.1725	0.2126	0.2850

Fineness Modulus
0.24

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-19	78.5-80'	18.3	15	34	19	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

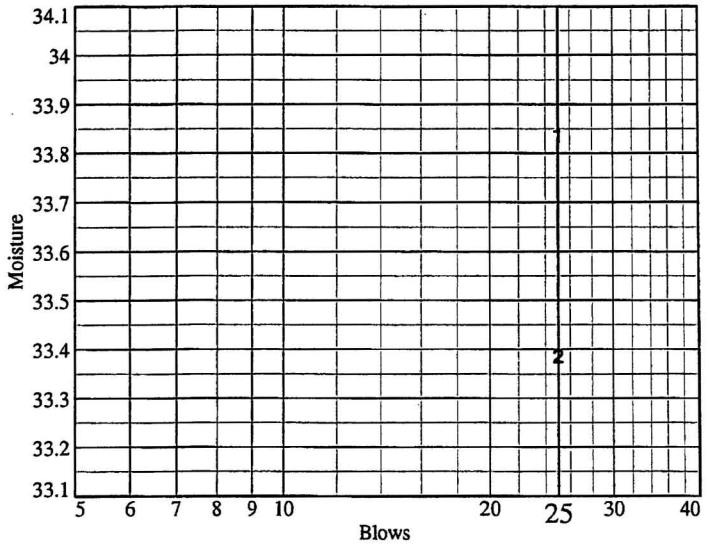
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 78.5-80'
Sample Number: SS-19
Material Description: Gray Sandy Lean CLAY
USCS: CL
AASHTO: A-6(8)
Tested by: CS
Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.36	23.76				
Dry+Tare	22.12	21.69				
Tare	15.50	15.49				
# Blows	25	25				
Moisture	33.8	33.4				



Liquid Limit= 34
Plastic Limit= 15
Plasticity Index= 19
Natural Moisture= 18.3
Liquidity Index= 0.2

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	30.69	30.63			
Dry+Tare	28.69	28.56			
Tare	15.50	15.39			
Moisture	15.2	15.7			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
169.80	144.60	6.90	18.3

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: 1/9/08

SAMPLE IDENTIFICATION: B-2251 SS-19

(A) Mass of oven-dried soil, grams:		49.40
(B) Mass of pycnometer filled with water at test temperature (T), grams:		654.84
(C) Mass of pycnometer, water and soil, grams:		685.71
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		22.9
(G) Specific Gravity at observed temperature:	A / [A + (B - C)]	2.666
(F)	***Correction factor:***	0.99936
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.664

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

PREPARATION METHOD: [X] **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

PYCNOMETER : P-5

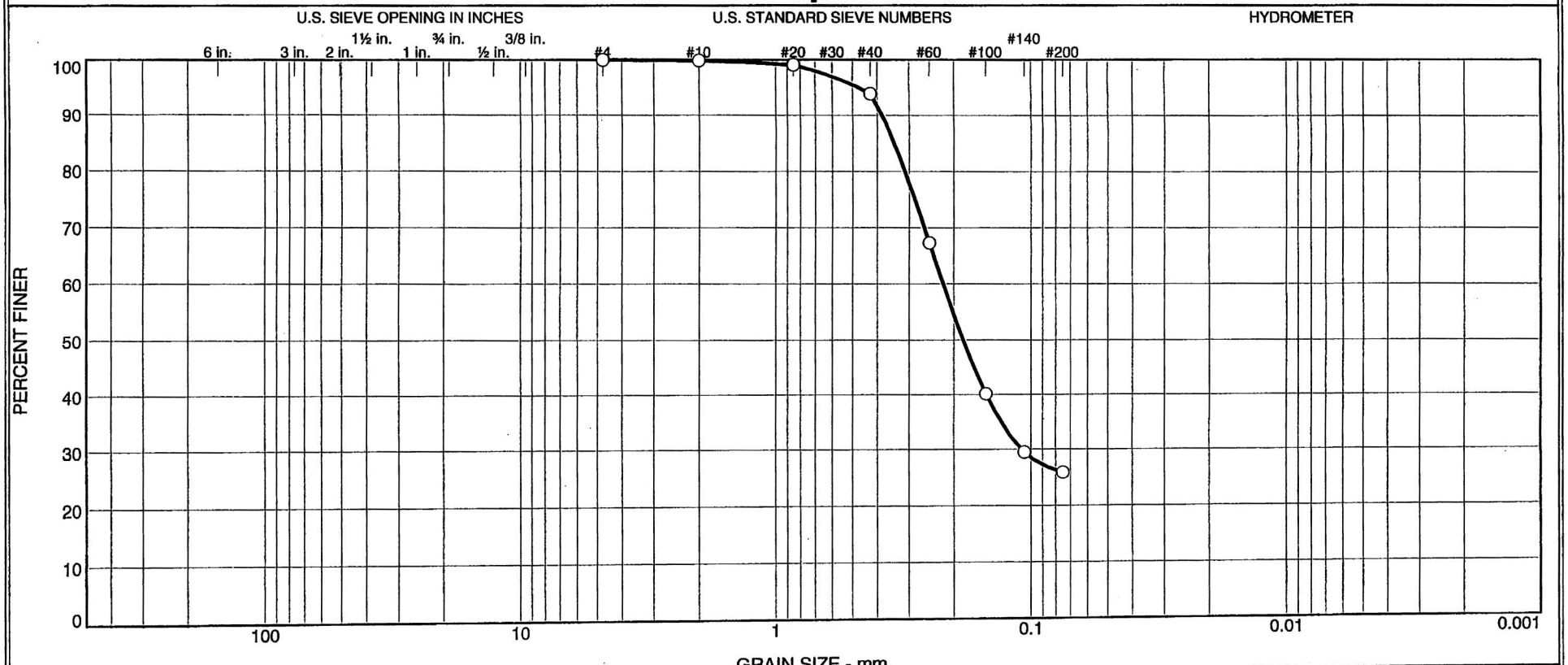
TESTED BY: CS

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

REVIEWED BY: **Brian Johnson**

DSC 1-25-08

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



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.1	6.0	68.0	25.9	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-20	83.5-85'	12-03-07	SC	Light Brownish Gray Clayey SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ SIEVE ANALYSIS ONLY
ND = Not Determined

Tested By: CS **Checked By:** LBJ DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 83.5-85' **Sample Number:** SS-20
Material Description: Light Brownish Gray Clayey SAND (Visual)
Date: 12-03-07 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SC
Testing Remarks: SIEVE ANALYSIS ONLY
ND = Not Determined
Tested by: CS **Checked by:** LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
234.52	0.00	0.00	#4	0.00	100.0
			#10	0.23	99.9
104.15	0.00	0.00	#20	0.84	99.1
			#40	6.30	93.9
			#60	33.91	67.4
			#100	62.31	40.1
			#140	73.38	29.5
			#200	77.16	25.9

Fractional Components

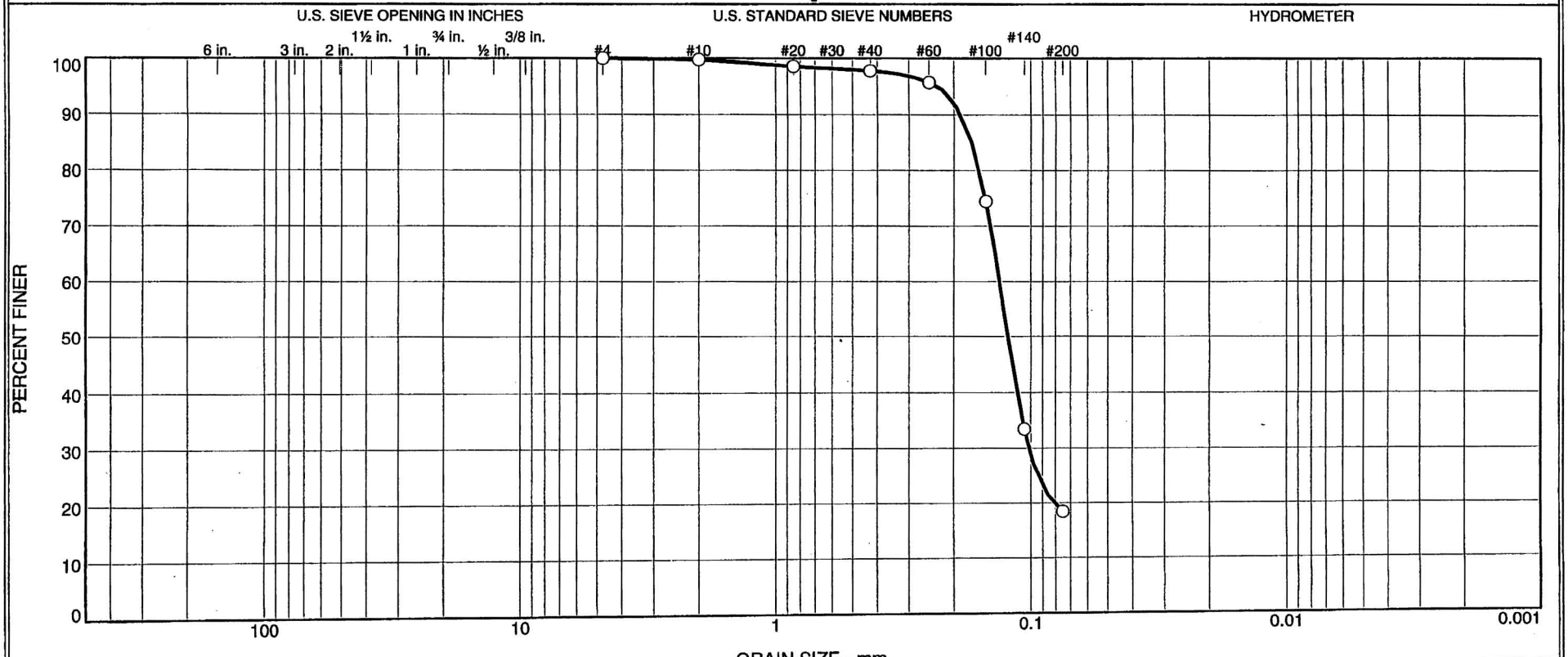
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.1	6.0	68.0	74.1			25.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.1087	0.1843	0.2205	0.3112	0.3425	0.3822	0.4762

Fineness Modulus
0.86

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	0.2	2.0	79.3	18.5	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-21	88.5-90'	12-03-07	SC	Gray Clayey SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ SIEVE ANALYSIS ONLY
Specific Gravity = 2.654 ASTM (D 854-06)
ND = Not Determined

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: 88.5-90'
Sample Number: SS-21
Material Description: Gray Clayey SAND (Visual)
Date: 12-03-07
Natural Moisture: ND
Liquid Limit: ND
Plastic Limit: ND
USCS Class.: SC
Testing Remarks: SIEVE ANALYSIS ONLY
Specific Gravity = 2.654 ASTM (D 854-06)
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
134.90	0.00	0.00	#4	0.00	100.0
			#10	0.31	99.8
101.97	0.00	0.00	#20	1.25	98.5
			#40	2.04	97.8
			#60	4.17	95.7
			#100	25.85	74.5
			#140	67.74	33.5
			#200	83.11	18.5

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.2	2.0	79.3	81.5			18.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0807	0.1016	0.1227	0.1326	0.1593	0.1707	0.1882	0.2328

Fineness Modulus
0.32

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: 1/9/08

SAMPLE IDENTIFICATION: B-2251 SS-21

(A) Mass of oven-dried soil, grams:		75.89
(B) Mass of pycnometer filled with water at test temperature (T), grams:		656.65
(C) Mass of pycnometer, water and soil, grams:		703.96
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		22.8
(G) Specific Gravity at observed temperature:	A / [A + (B - C)]	2.655
(F)	***Correction factor:***	0.99938
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.654

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

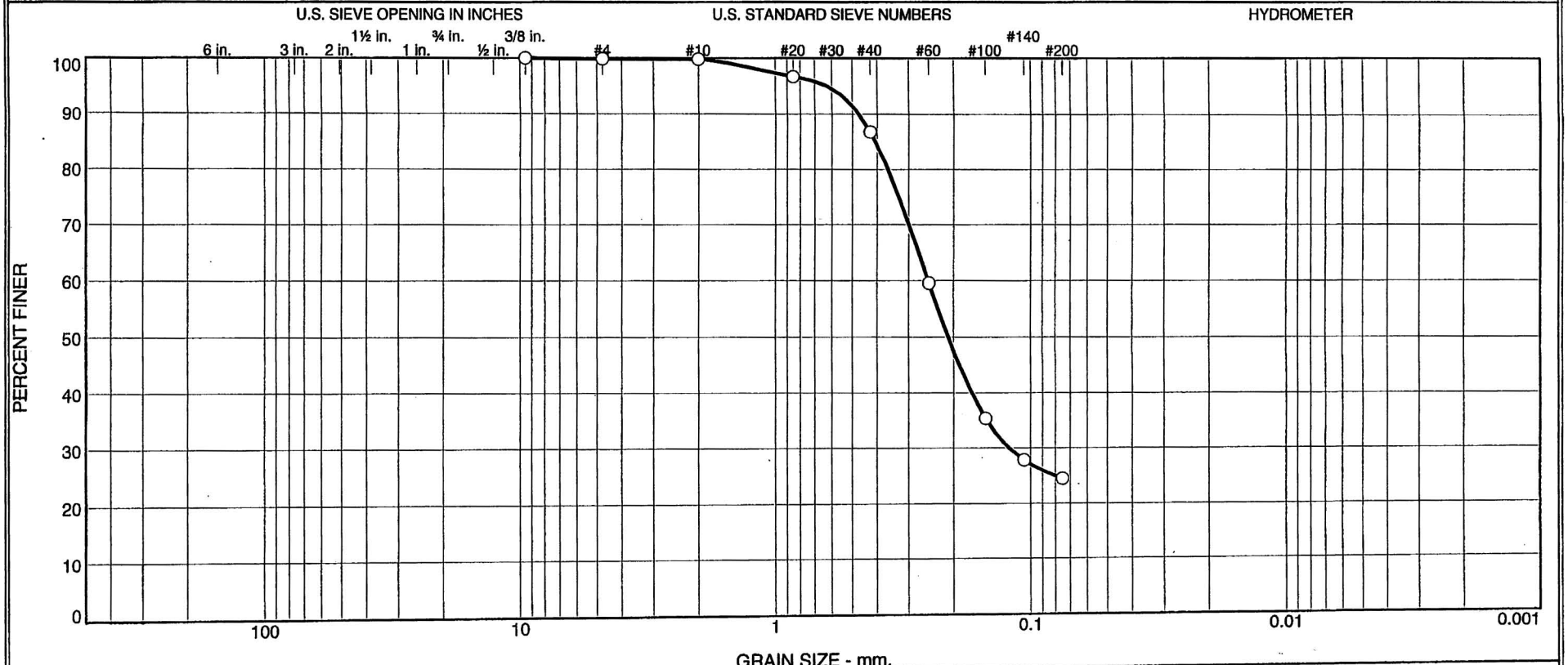
TESTED BY: CS

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

REVIEWED BY: **Brian Johnson**

DSC 1-25-08

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



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.2	0.0	12.9	62.4	24.5	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-22	93.5-95'	12-03-07	SC	Gray Clayey SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ SIEVE ANALYSIS ONLY
ND = Not Determined

Tested By: CS **Checked By:** LBJ DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 93.5-95'
Sample Number: SS-22
Material Description: Gray Clayey SAND (Visual)
Date: 12-03-07
Natural Moisture: ND
Liquid Limit: ND
Plastic Limit: ND
USCS Class.: SC
Testing Remarks: SIEVE ANALYSIS ONLY
ND = Not Determined
Tested by: CS
Checked by: LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
186.74	0.00	0.00	3/8	0.00	100.0
			#4	0.29	99.8
			#10	0.32	99.8
103.23	0.00	0.00	#20	3.20	96.7
			#40	13.42	86.9
			#60	41.61	59.6
			#100	66.70	35.3
			#140	74.39	27.9
			#200	77.89	24.5

Fractional Components

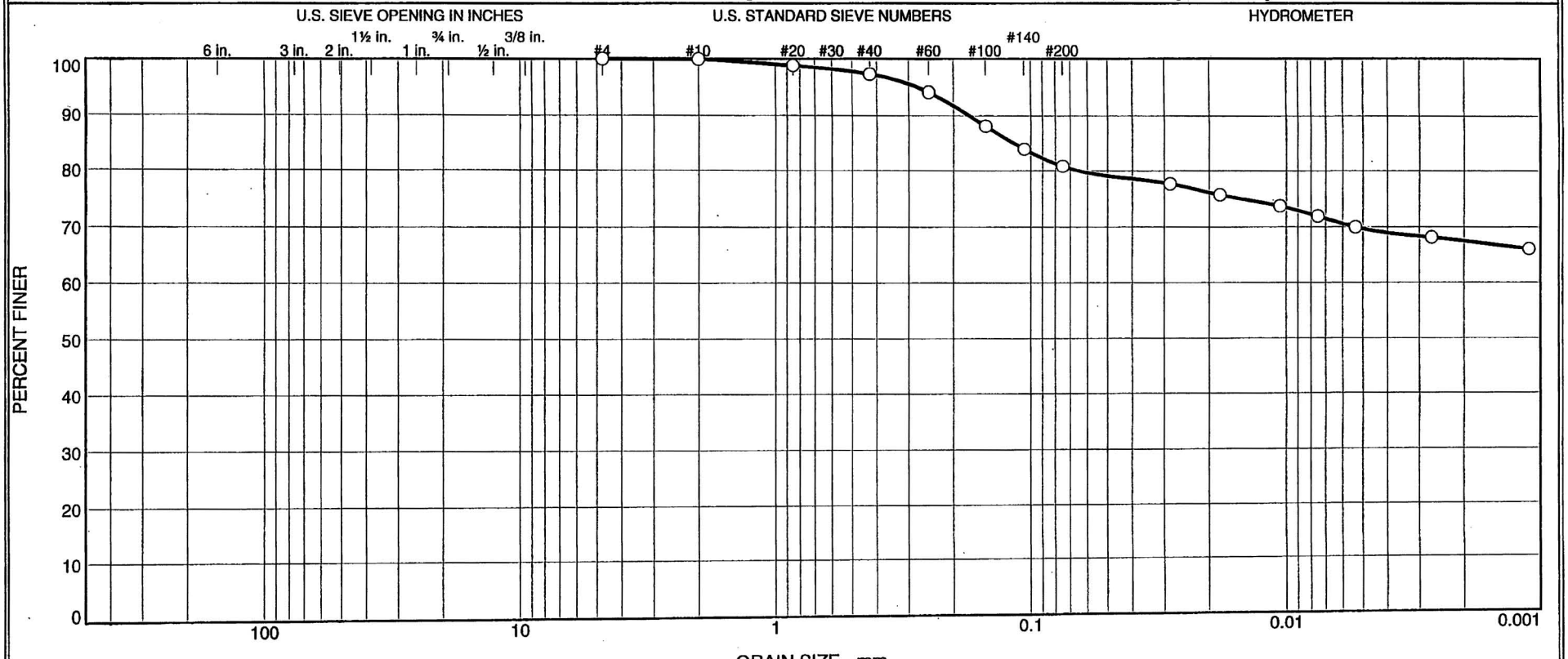
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.2	0.2	0.0	12.9	62.4	75.3			24.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.1212	0.2100	0.2518	0.3620	0.4049	0.4698	0.6263

Fineness Modulus
1.02

MACTEC, Inc.

Particle Size Distribution Report / ASTM D 422-63-04(2002)e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.1	2.6	16.5	11.1	69.7

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-23	98.5-100'	12-03-07	CL	Greenish Gray Lean CLAY with sand	13.6	33	14

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.654 (ASTM D854-06)
Organic content = 2.2% (ASTM D2794-07)

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: 98.5-100' **Sample Number:** SS-23
Material Description: Greenish Gray Lean CLAY with sand
Date: 12-03-07 **Natural Moisture:** 13.6
Liquid Limit: 33 **Plastic Limit:** 14 **USCS Class.:** CL
Testing Remarks: Specific Gravity = 2.654 (ASTM D854-06)
Organic content = 2.2% (ASTM D2794-07)
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
190.20	0.00	0.00	#4	0.00	100.0
			#10	0.13	99.9
51.54	0.00	0.00	#20	0.59	98.8
			#40	1.37	97.3
			#60	2.99	94.1
			#100	6.08	88.1
			#140	8.25	83.9
			#200	9.87	80.8

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.9
Weight of hydrometer sample =51.54
Hygroscopic moisture correction:
Moist weight and tare = 29.81
Dry weight and tare = 29.53
Tare weight = 15.53
Hygroscopic moisture = 2.0%
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 = 2.654
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	21.0	44.0	39.3	0.0135	45.0	8.9	0.0284	77.7
5.00	21.0	43.0	38.3	0.0135	44.0	9.1	0.0181	75.7
15.00	21.0	42.0	37.3	0.0135	43.0	9.2	0.0106	73.7
30.00	21.3	41.0	36.4	0.0134	42.0	9.4	0.0075	71.9
60.00	21.4	40.0	35.4	0.0134	41.0	9.6	0.0053	70.0
240.00	21.7	39.0	34.5	0.0133	40.0	9.7	0.0027	68.2
1440.00	21.5	38.0	33.5	0.0134	39.0	9.9	0.0011	66.1

MACTEC, Inc.

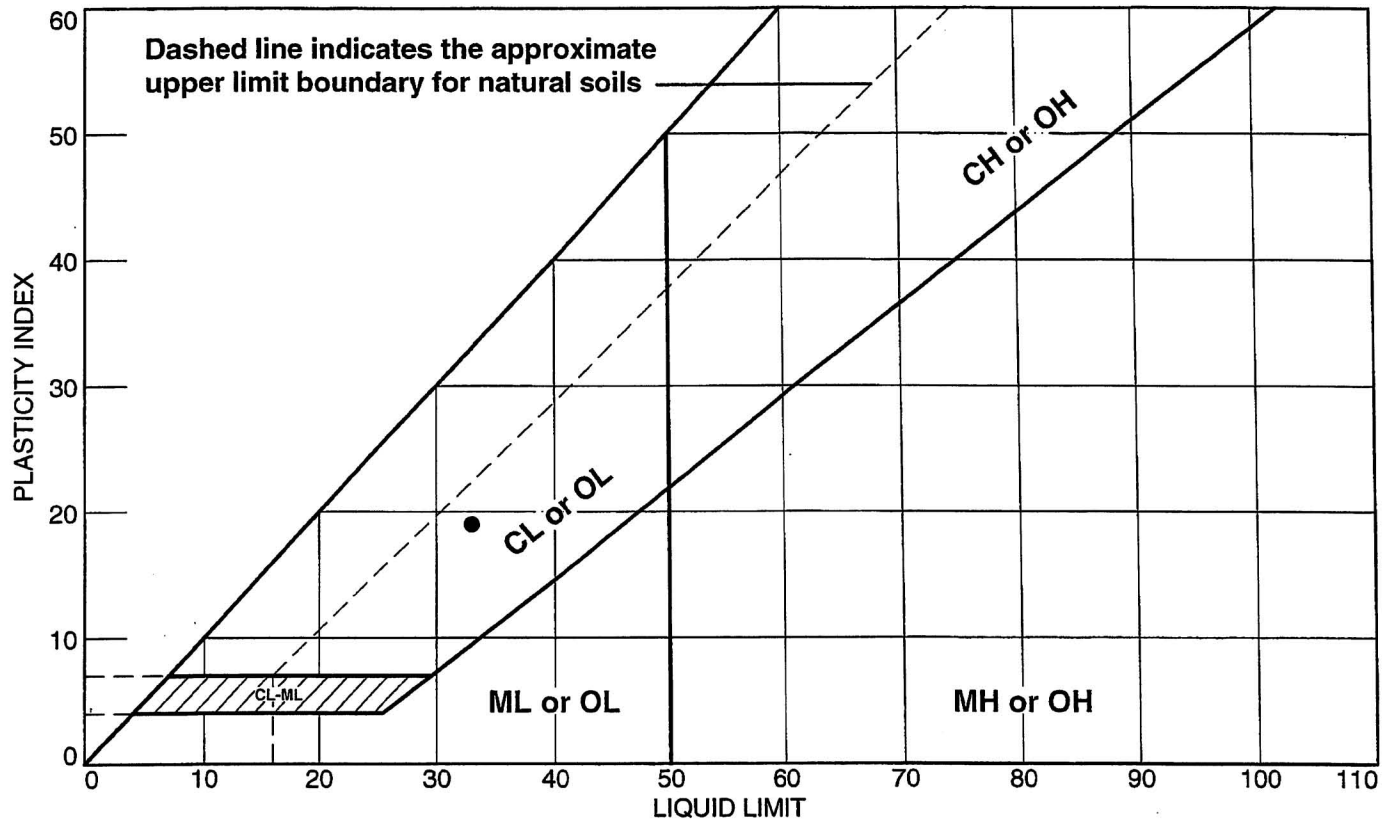
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.1	2.6	16.5	19.2	11.1	69.7	80.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
						0.0654	0.1164	0.1734	0.2770

Fineness Modulus
0.19

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-23	98.5-100'	13.6	14	33	19	CL

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

Tested By: CS **Checked By:** LBJ DJC 1-25-08

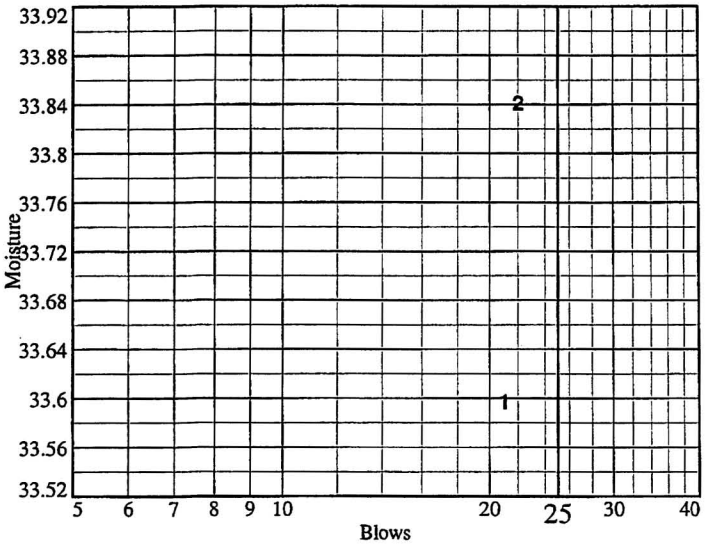
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 98.5-100'
Sample Number: SS-23
Material Description: Greenish Gray Lean CLAY with sand
USCS: CL
AASHTO: A-6(14)
Tested by: CS
Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	23.93	24.25				
Dry+Tare	21.81	22.03				
Tare	15.50	15.47				
# Blows	21	22				
Moisture	33.6	33.8				



Liquid Limit= 33
Plastic Limit= 14
Plasticity Index= 19
Natural Moisture= 13.6
Liquidity Index= 0.0

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	28.24	28.72			
Dry+Tare	26.66	27.11			
Tare	15.53	15.67			
Moisture	14.2	14.1			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
160.06	142.03	9.45	13.6

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: 1/8/08

SAMPLE IDENTIFICATION: B-2251 SS-23

(A) Mass of oven-dried soil, grams:		52.64
(B) Mass of pycnometer filled with water at test temperature (T), grams:		654.79
(C) Mass of pycnometer, water and soil, grams:		687.61
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		23.3
(G) Specific Gravity at observed temperature:	A / [A + (B - C)]	2.656
(F)	***Correction factor:***	0.99926
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.654

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

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

REMARKS: Estimated % Passing # 4 : 100%

Lean CLAY with sand (CL)

EQUIPMENT USED

SCALES : 3.1.99

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNOMETER : P-5

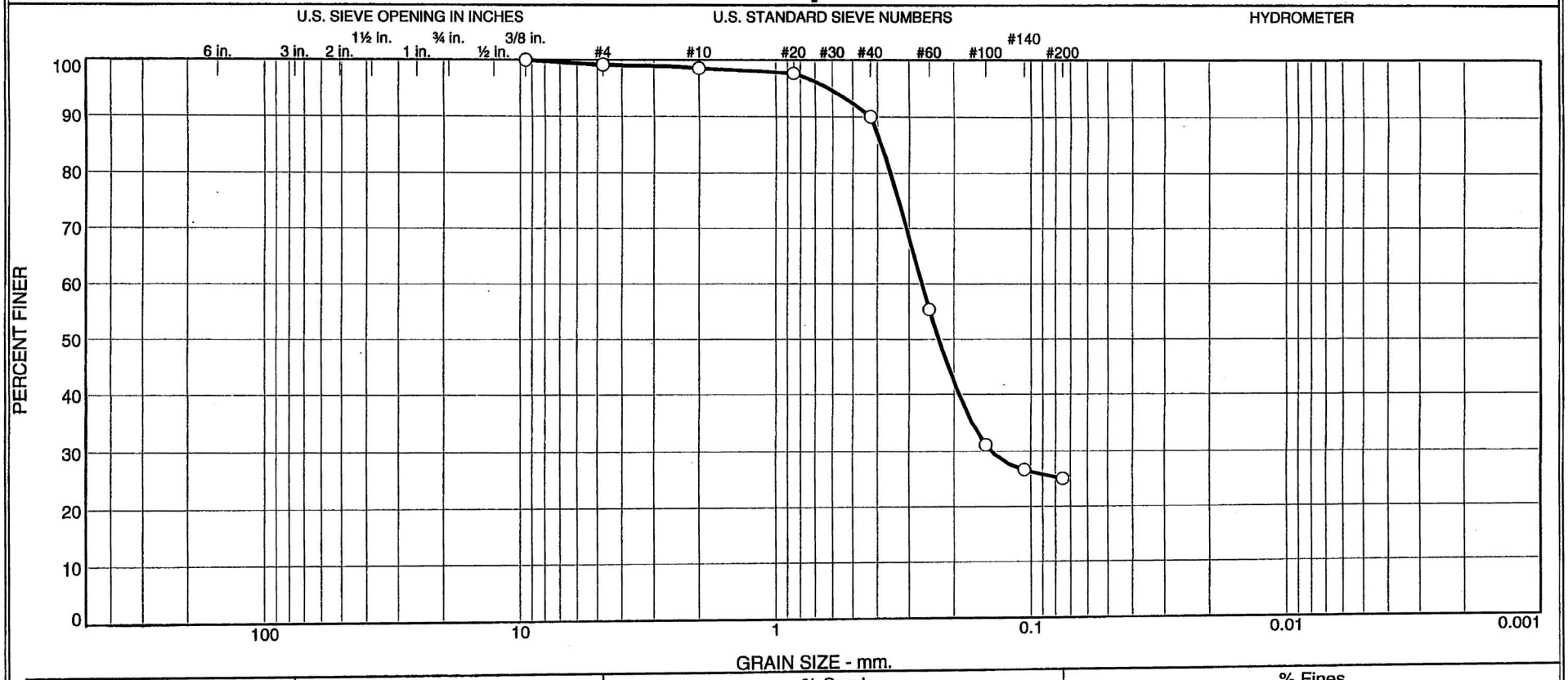
TESTED BY: CS

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

REVIEWED BY: **Brian Johnson**

DSC 1-25-08

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



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
O	0.0	0.0	0.8	0.6	8.5	65.0	25.1	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
O	Boring B-2251	SS-24	108.5-110'	12-03-07	SC	Light Brownish Gray Clayey SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

O Specific Gravity = 2.685 (ASTM D854-06)
SIEVE ANALYSIS ONLY
ND = Not Determined

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: 108.5-110' **Sample Number:** SS-24
Material Description: Light Brownish Gray Clayey SAND (Visual)
Date: 12-03-07 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SC
Testing Remarks: Specific Gravity = 2.685 (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
177.81	0.00	0.00	3/8"	0.00	100.0
			#4	1.46	99.2
			#10	2.53	98.6
93.22	0.00	0.00	#20	0.85	97.7
			#40	8.05	90.1
			#60	40.82	55.4
			#100	63.75	31.2
			#140	67.94	26.7
			#200	69.47	25.1

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.8	0.8	0.6	8.5	65.0	74.1			25.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.1424	0.2298	0.2672	0.3548	0.3849	0.4244	0.6214

Fineness Modulus
1.10

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: 1/8/08

SAMPLE IDENTIFICATION: B-2251 SS-24

(A) Mass of oven-dried soil, grams:		76.93
(B) Mass of pycnometer filled with water at test temperature (T), grams:		656.56
(C) Mass of pycnometer, water and soil, grams:		704.86
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		23.4
(G) Specific Gravity at observed temperature:	A / [A + (B - C)]	2.687
(F)	***Correction factor:***	0.99924
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.685

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

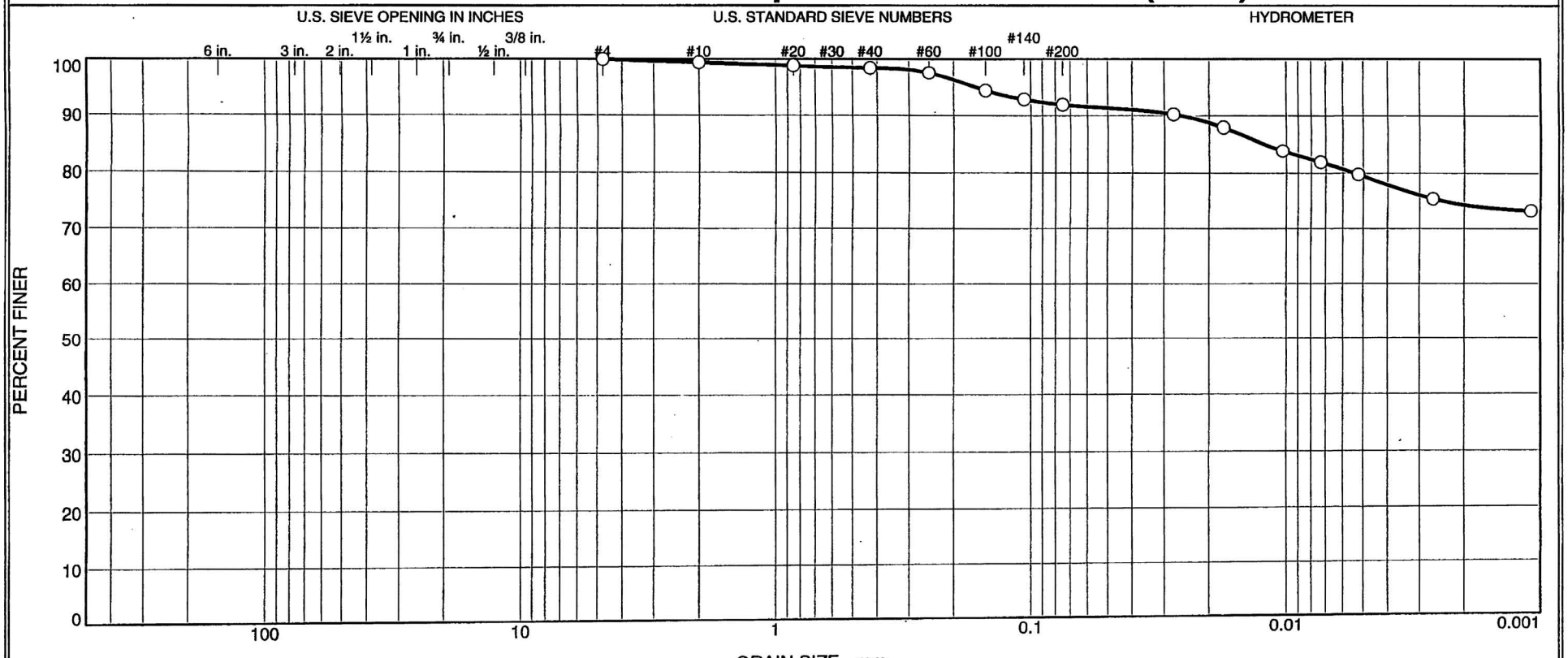
TESTED BY: CS

\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



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.6	0.9	6.6	12.5	79.4

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-25	118.5-120'	12-03-07	CH	Greenish Gray Fat CLAY	33.3	69	23

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.711 (ASTM D854-06)
Organic content =2.9% (ASTM D2794-07)

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: 118.5-120'
Sample Number: SS-25
Material Description: Greenish Gray Fat CLAY
Date: 12-03-07
Natural Moisture: 33.3
Liquid Limit: 69
Plastic Limit: 23
USCS Class.: CH
Testing Remarks: Specific Gravity = 2.711 (ASTM D854-06)
Organic content =2.9% (ASTM D2794-07)
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
155.13	0.00	0.00	#4	0.00	100.0
			#10	0.87	99.4
47.32	0.00	0.00	#20	0.27	98.9
			#40	0.46	98.5
			#60	0.87	97.6
			#100	2.41	94.4
			#140	3.15	92.8
			#200	3.58	91.9

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.4
Weight of hydrometer sample =47.32
Hygroscopic moisture correction:
Moist weight and tare = 27.34
Dry weight and tare = 26.70
Tare weight = 15.42
Hygroscopic moisture = 5.7%
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 = 2.711
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	20.5	46.0	41.2	0.0133	47.0	8.6	0.0276	90.2
5.00	20.5	45.0	40.2	0.0133	46.0	8.8	0.0176	88.0
15.00	20.9	43.0	38.3	0.0133	44.0	9.1	0.0103	83.9
30.00	21.3	42.0	37.4	0.0132	43.0	9.2	0.0073	81.9
60.00	21.3	41.0	36.4	0.0132	42.0	9.4	0.0052	79.7
240.00	21.3	39.0	34.4	0.0132	40.0	9.7	0.0027	75.4
1440.00	21.4	38.0	33.4	0.0132	39.0	9.9	0.0011	73.2

MACTEC, Inc.

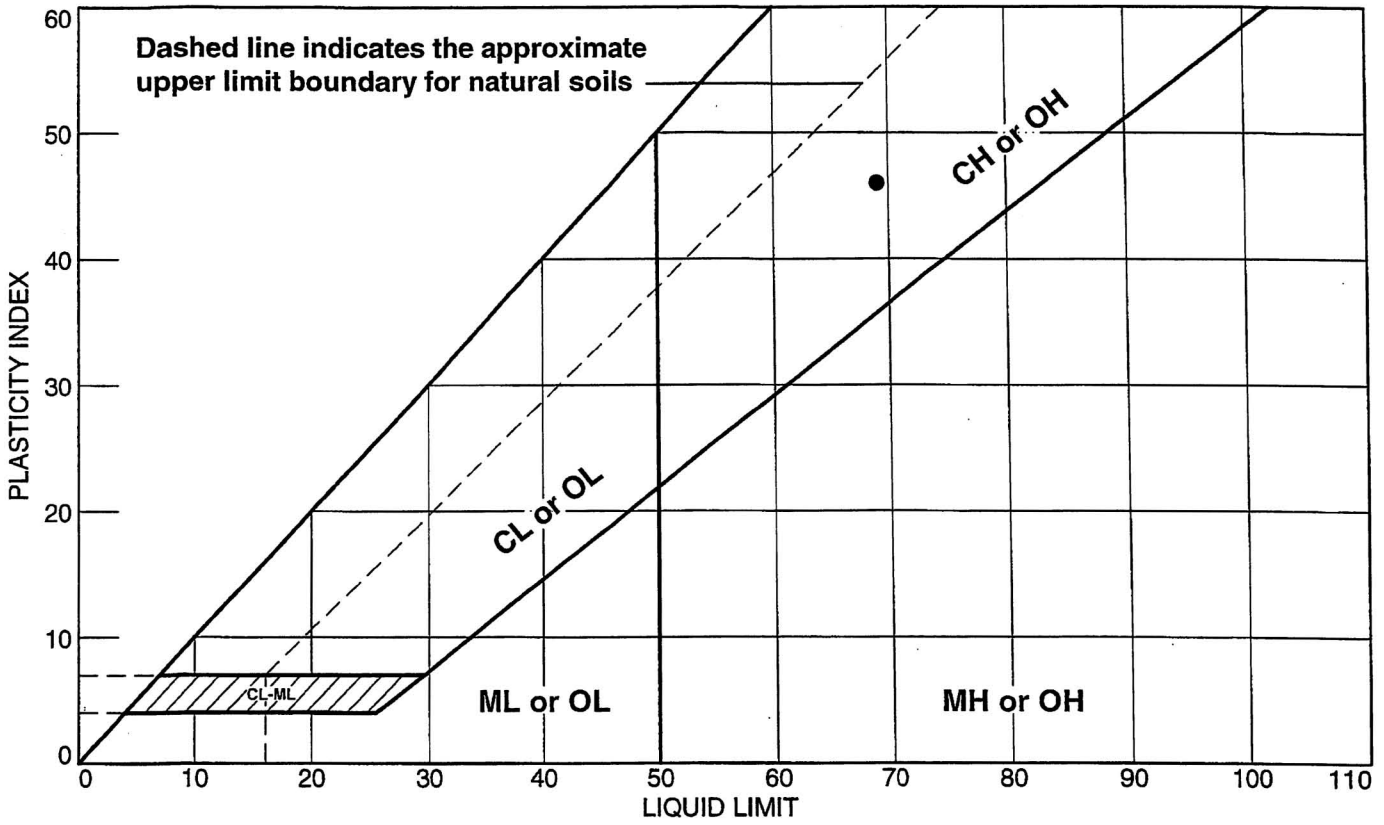
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.6	0.9	6.6	8.1	12.5	79.4	91.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
						0.0054	0.0120	0.0258	0.1654

Fineness Modulus
0.10

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-25	118.5-120'	33.3	23	69	46	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

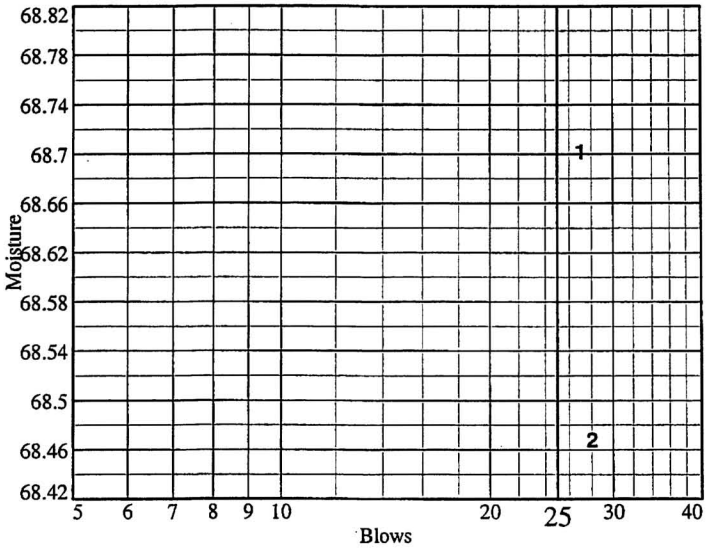
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 118.5-120'
Sample Number: SS-25
Material Description: Greenish Gray Fat CLAY
USCS: CH
AASHTO: A-7-6(47)
Tested by: CS
Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	22.12	22.98				
Dry+Tare	19.42	19.94				
Tare	15.49	15.50				
# Blows	27	28				
Moisture	68.7	68.5				



Liquid Limit= 69
Plastic Limit= 23
Plasticity Index= 46
Natural Moisture= 33.3
Liquidity Index= 0.2

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	24.44	25.55			
Dry+Tare	22.72	23.66			
Tare	15.43	15.55			
Moisture	23.6	23.3			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
145.04	110.50	6.85	33.3

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: 1/8/08

SAMPLE IDENTIFICATION: B-2251 SS-25

(A) Mass of oven-dried soil, grams:		51.32
(B) Mass of pycnometer filled with water at test temperature (T), grams:		656.47
(C) Mass of pycnometer, water and soil, grams:		688.88
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		24.1
(G) Specific Gravity at observed temperature:	A / [A + (B - C)]	2.714
(F)	***Correction factor:***	0.99907
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.711

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

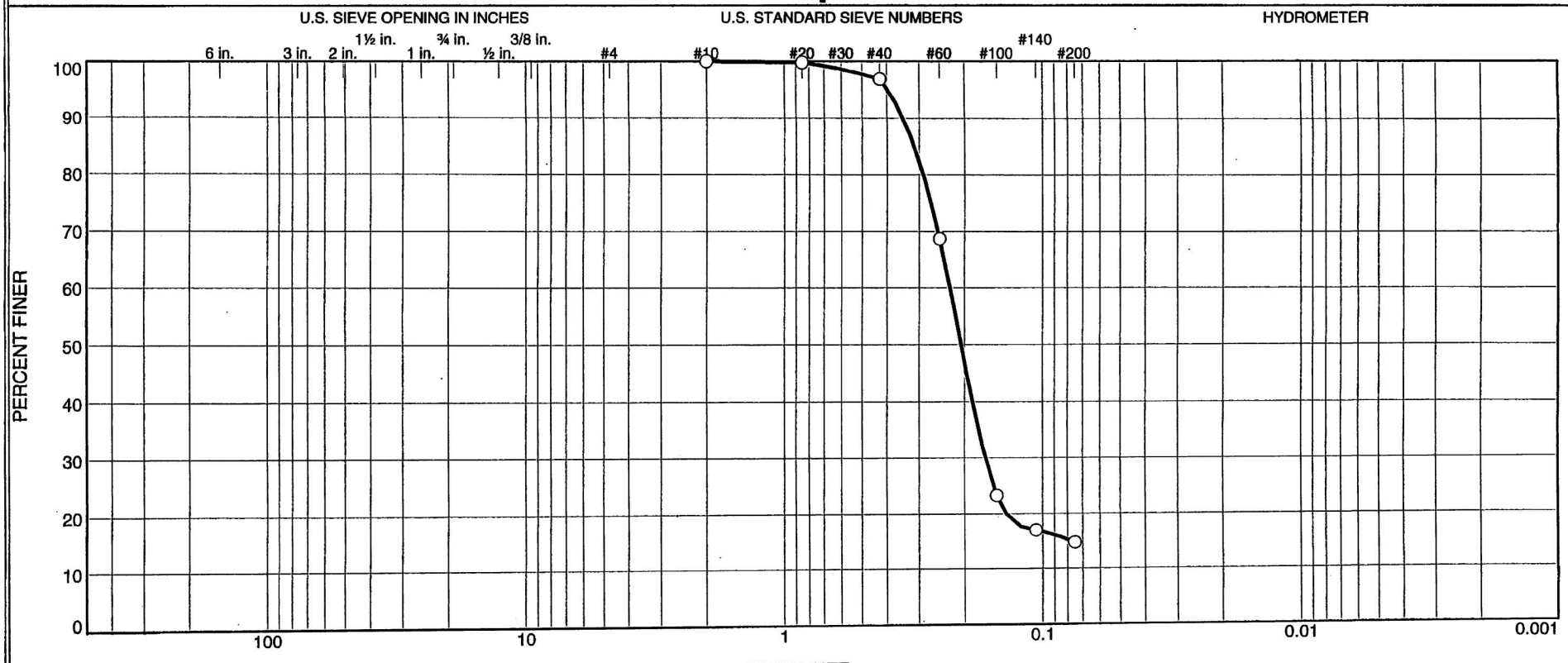
TESTED BY: CS

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

REVIEWED BY: **Brian Johnson**

DSC 1-25-08

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	3.1	82.1	14.8	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-27	138.5-140'	12-03-07	SC	Brown Clayey SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific gravity = 2.654 (ASTM D854-06)
SIEVE ANALYSIS ONLY
ND = Not Determined

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: 138.5-140'
Sample Number: SS-27
Material Description: Brown Clayey SAND (Visual)
Date: 12-03-07
Natural Moisture: ND
Liquid Limit: ND
Plastic Limit: ND
USCS Class.: SC
Testing Remarks: Specific gravity = 2.654 (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
144.64	0.00	0.00	#10	0.00	100.0
101.43	0.00	0.00	#20	0.22	99.8
			#40	3.16	96.9
			#60	31.69	68.8
			#100	77.79	23.3
			#140	84.14	17.0
			#200	86.43	14.8

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	3.1	82.1	85.2			14.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0770	0.1381	0.1663	0.2063	0.2278	0.2891	0.3135	0.3462	0.3961

Fineness Modulus
0.96

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: 1/9/08

SAMPLE IDENTIFICATION: B-2251 SS-27

(A) Mass of oven-dried soil, grams:		75.95
(B) Mass of pycnometer filled with water at test temperature (T), grams:		654.72
(C) Mass of pycnometer, water and soil, grams:		702.07
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		23.9
(G) Specific Gravity at observed temperature:	A / [A + (B - C)]	2.656
(F)	***Correction factor:***	0.99912
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.654

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-5

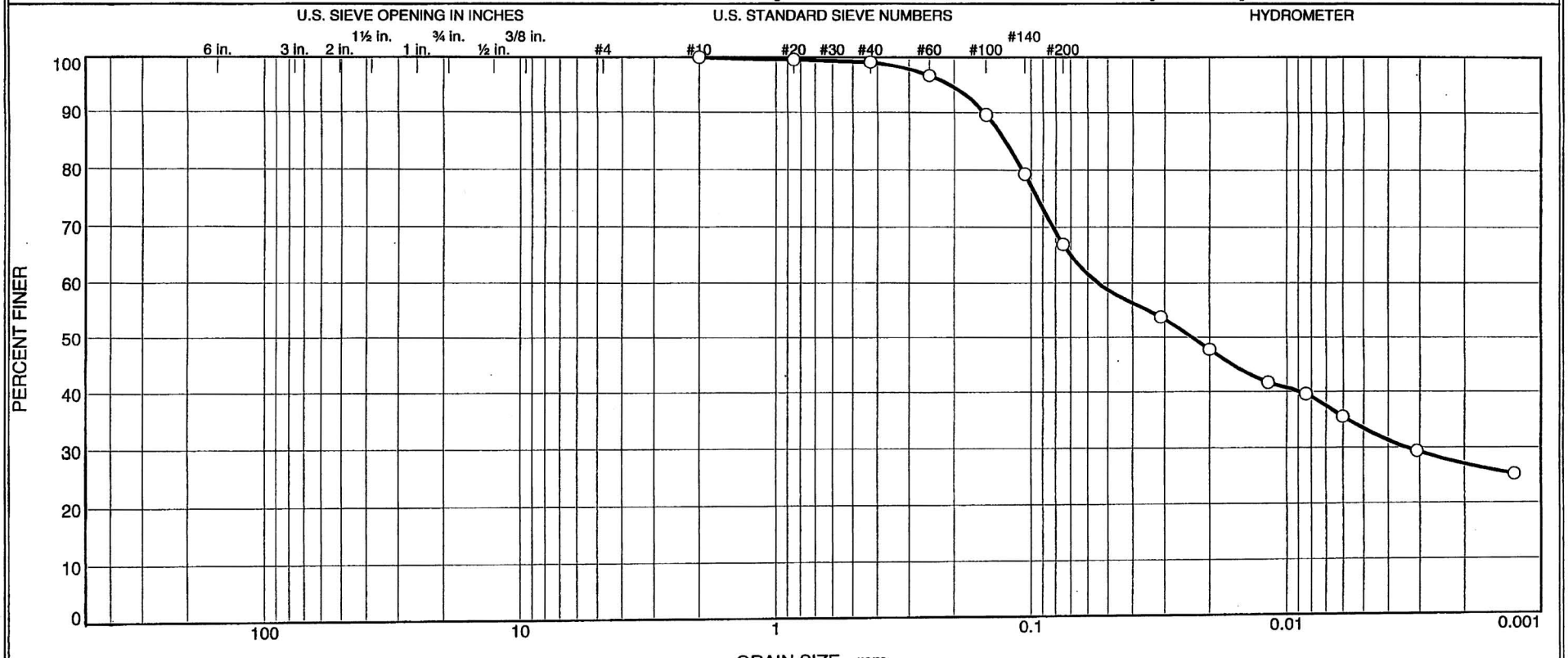
TESTED BY: CS

\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



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.9	32.1	33.6	33.4

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-28	148.5-150'	12-03-07	CL	Brown Sandy Lean CLAY	21.9	36	15

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.698 (ASTM D854-06)
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: 148.5-150' **Sample Number:** SS-28
Material Description: Brown Sandy Lean CLAY
Date: 12-03-07 **Natural Moisture:** 21.9
Liquid Limit: 36 **Plastic Limit:** 15 **USCS Class.:** CL
Testing Remarks: Specific Gravity = 2.698 (ASTM D854-06)
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
196.58	0.00	0.00	#10	0.00	100.0
49.89	0.00	0.00	#20	0.21	99.6
			#40	0.43	99.1
			#60	1.68	96.6
			#100	5.16	89.7
			#140	10.30	79.4
			#200	16.46	67.0

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =49.89
Hygroscopic moisture correction:
Moist weight and tare = 28.67
Dry weight and tare = 28.36
Tare weight = 15.92
Hygroscopic moisture = 2.5%
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 = 2.698
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	31.0	26.5	0.0132	32.0	11.0	0.0310	53.8
5.00	21.6	28.0	23.5	0.0132	29.0	11.5	0.0200	47.7
15.00	21.6	25.0	20.5	0.0132	26.0	12.0	0.0118	41.6
30.00	21.6	24.0	19.5	0.0132	25.0	12.2	0.0084	39.6
60.00	21.6	22.0	17.5	0.0132	23.0	12.5	0.0060	35.5
240.00	21.5	19.0	14.5	0.0132	20.0	13.0	0.0031	29.4
1440.00	21.4	17.0	12.4	0.0132	18.0	13.3	0.0013	25.3

MACTEC, Inc.

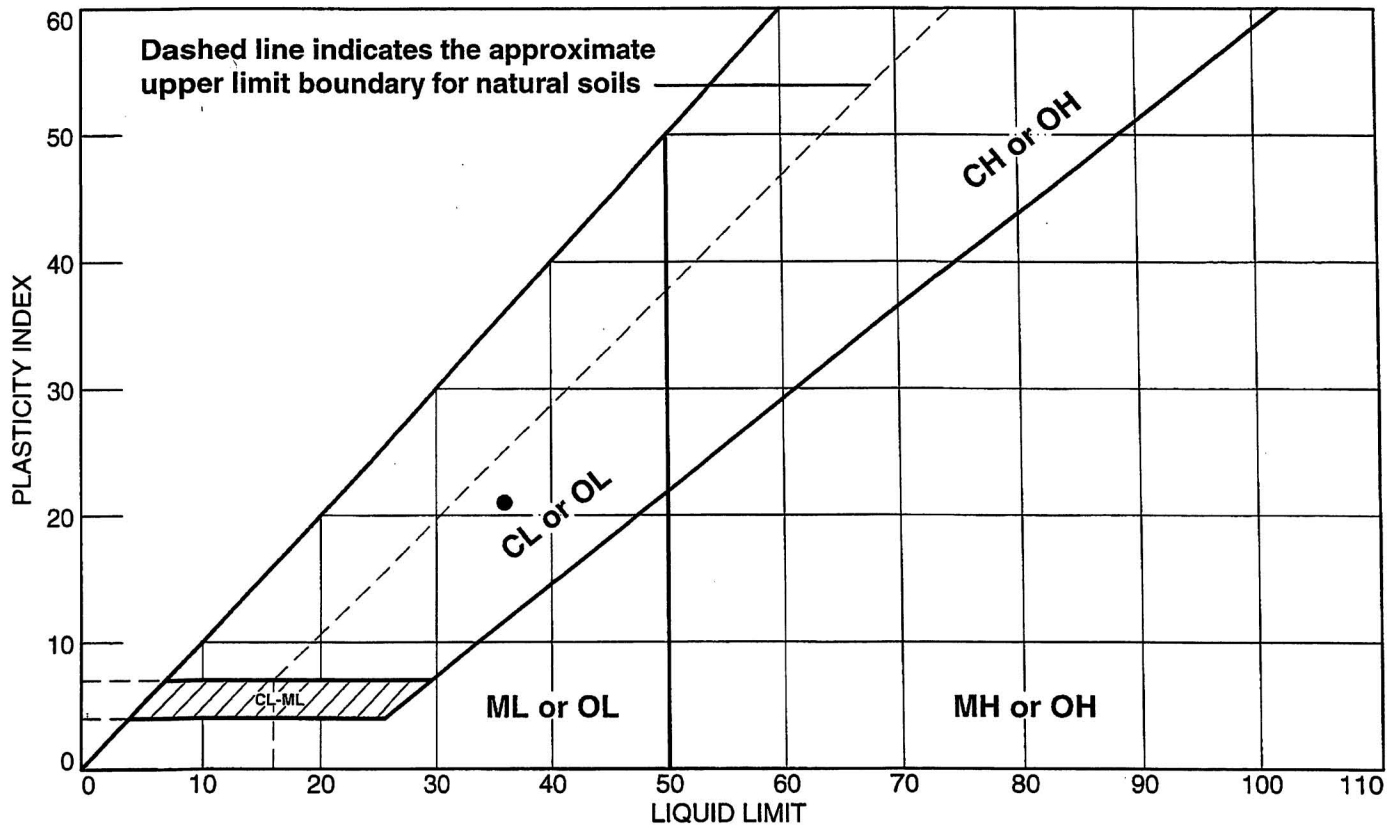
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.9	32.1	33.0	33.6	33.4	67.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0034	0.0234	0.0545	0.1079	0.1258	0.1523	0.2088

Fineness Modulus
0.13

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-28	148.5-150'	21.9	15	36	21	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

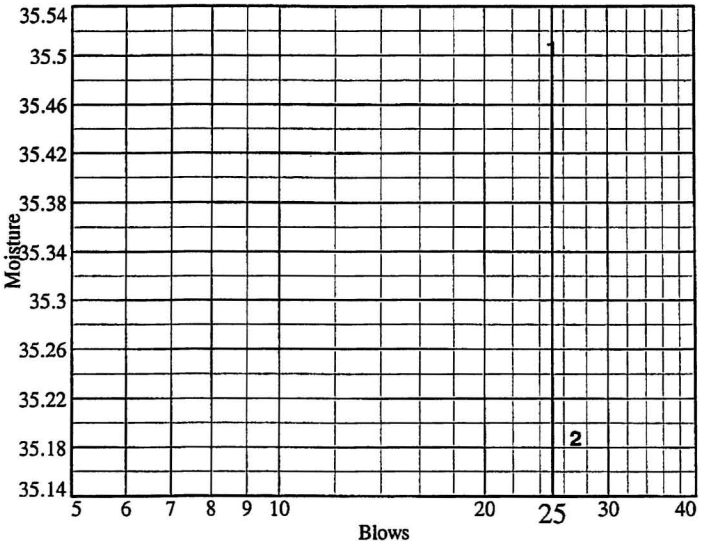
LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 148.5-150'
Sample Number: SS-28
Material Description: Brown Sandy Lean CLAY
USCS: CL
AASHTO: A-6(11)
Tested by: CS
Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	23.64	24.52				
Dry+Tare	21.57	22.18				
Tare	15.74	15.53				
# Blows	25	27				
Moisture	35.5	35.2				



Liquid Limit= 36
Plastic Limit= 15
Plasticity Index= 21
Natural Moisture= 21.9
Liquidity Index= 0.3

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	25.65	24.58			
Dry+Tare	24.31	23.38			
Tare	15.52	15.58			
Moisture	15.2	15.4			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
156.55	130.08	9.24	21.9

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: 1/12/08

SAMPLE IDENTIFICATION: B-2251 SS-28

(A) Mass of oven-dried soil, grams:		47.30
(B) Mass of pycnometer filled with water at test temperature (T), grams:		654.72
(C) Mass of pycnometer, water and soil, grams:		684.50
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		23.9
(G) Specific Gravity at observed temperature:	A / [A + (B - C)]	2.700
(F)	***Correction factor:***	0.99912
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.698

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

PREPARATION METHOD: [X] **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

PYCNOMETER : P-5

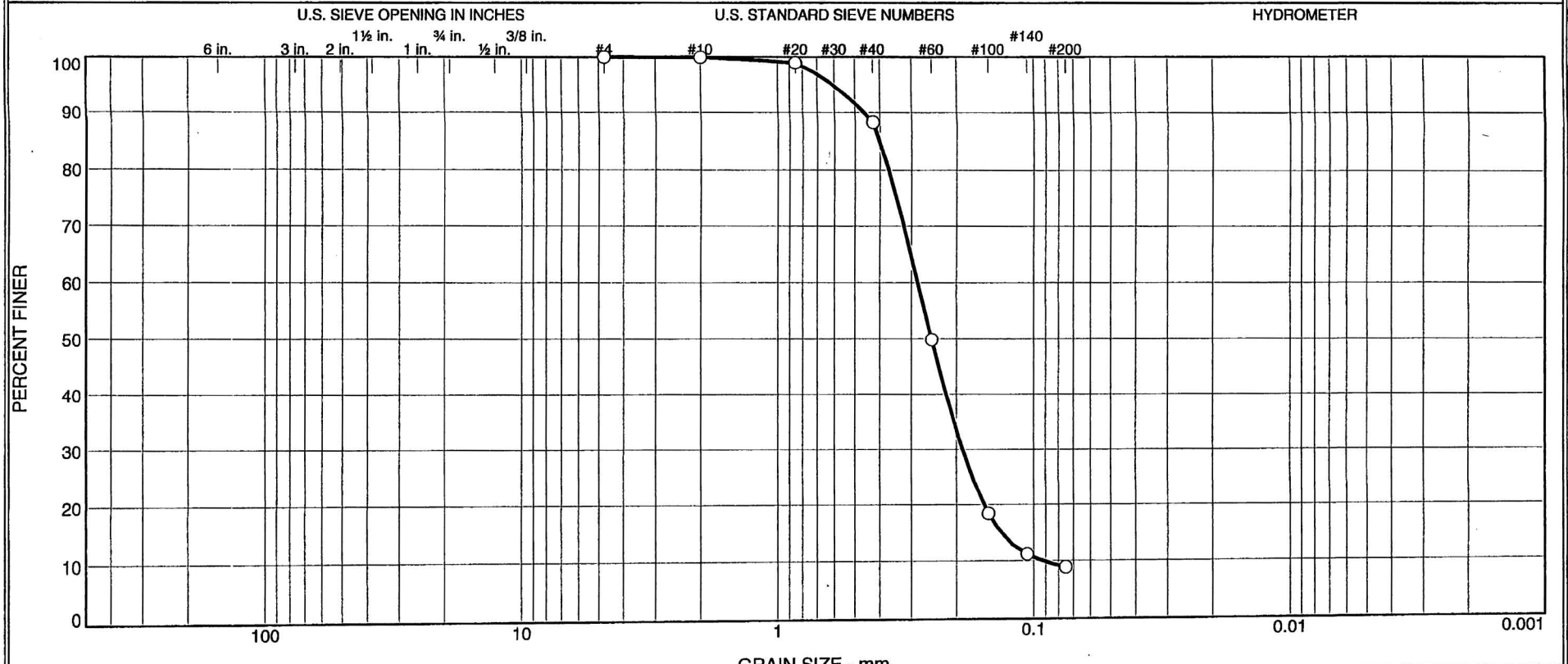
TESTED BY: CS

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

REVIEWED BY: **Brian Johnson**

DSC 1-25-08

Particle Size Distribution Report / ASTM D 6913-04e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.1	11.5	79.5	8.9	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-29	158.5-160'	12-04-07	SP-SM	Brown Poorly Graded SAND with silt (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.650 (ASTM D854-06)
SIEVE ANALYSIS ONLY
ND = Not Determined

Tested By: CS **Checked By:** LBJ DSC 2-6-08

GRAIN SIZE DISTRIBUTION TEST DATA

2/6/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 158.5-160' **Sample Number:** SS-29
Material Description: Brown Poorly Graded SAND with silt (Visual)
Date: 12-04-07 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SP-SM
Testing Remarks: Specific Gravity = 2.650 (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
240.07	0.00	0.00	#4	0.00	100.0
			#10	0.18	99.9
102.88	0.00	0.00	#20	1.04	98.9
			#40	11.85	88.4
			#60	51.58	49.8
			#100	83.95	18.4
			#140	91.41	11.1
			#200	93.71	8.9

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.1	11.5	79.5	91.1			8.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0922	0.1343	0.1563	0.1893	0.2505	0.2836	0.3685	0.3989	0.4588	0.6112

Fineness Modulus	C_u	C_c
1.23	3.08	1.37

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: 1/12/08

SAMPLE IDENTIFICATION: B-2251 SS-29

(A) Mass of oven-dried soil, grams:		75.10
(B) Mass of pycnometer filled with water at test temperature (T), grams:		656.50
(C) Mass of pycnometer, water and soil, grams:		703.28
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		23.9
(G) Specific Gravity at observed temperature:	A / [A + (B - C)]	2.652
(F)	***Correction factor:***	0.99912
(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

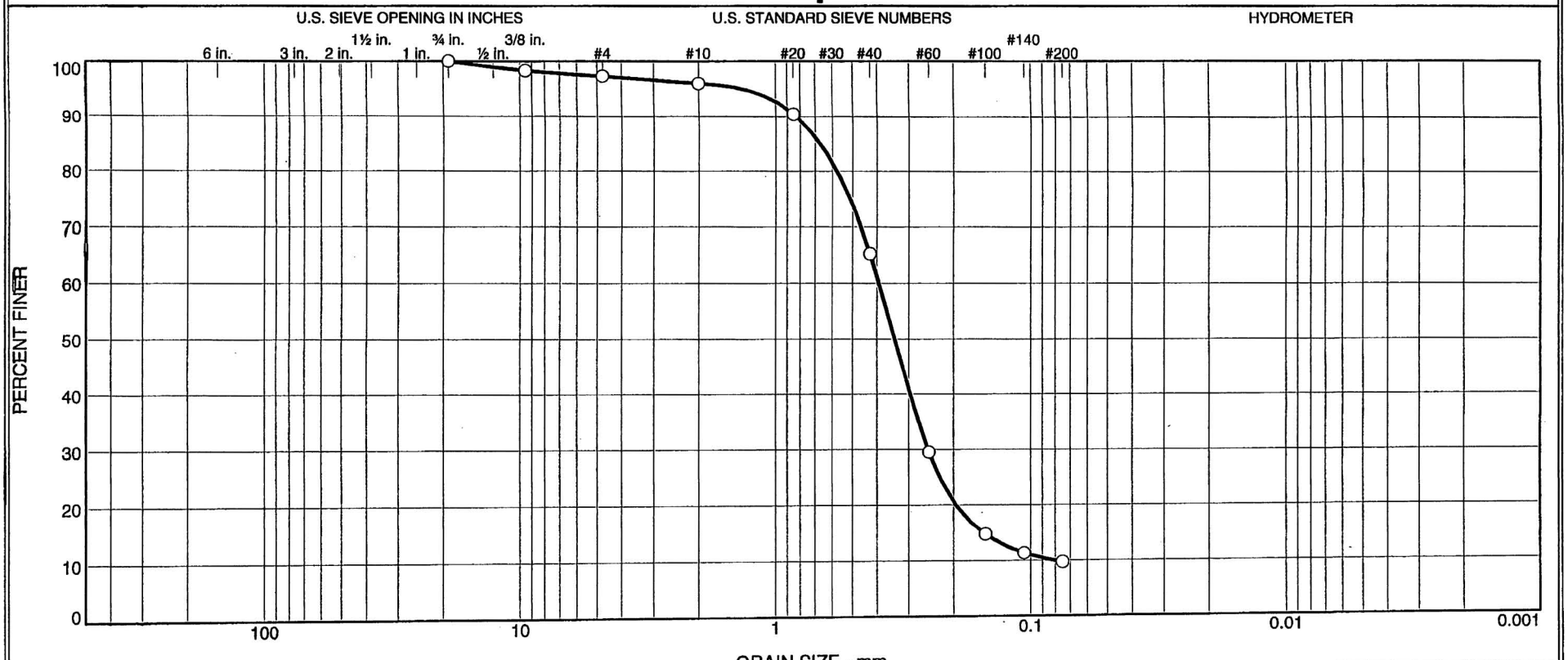
TESTED BY: CS

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

REVIEWED BY: **Brian Johnson**

DSC 1-25-08

Particle Size Distribution Report / ASTM D 6913-04e1



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	2.7	1.3	30.8	55.5	9.7	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-30	168.5-170'	12-03-07	SP-SM	Brown Poorly Graded SAND with silt (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ SIEVE ANALYSIS ONLY
ND = Not Determined

Tested By: CS **Checked By:** LBJ DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 168.5-170' **Sample Number:** SS-30
Material Description: Brown Poorly Graded SAND with silt (Visual)
Date: 12-03-07 **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
245.32	0.00	0.00	3/4	0.00	100.0
			3/8"	4.06	98.3
			#4	6.53	97.3
			#10	9.79	96.0
96.28	0.00	0.00	#20	5.60	90.4
			#40	30.88	65.2
			#60	66.65	29.5
			#100	81.49	14.7
			#140	84.90	11.3
			#200	86.53	9.7

Fractional Components

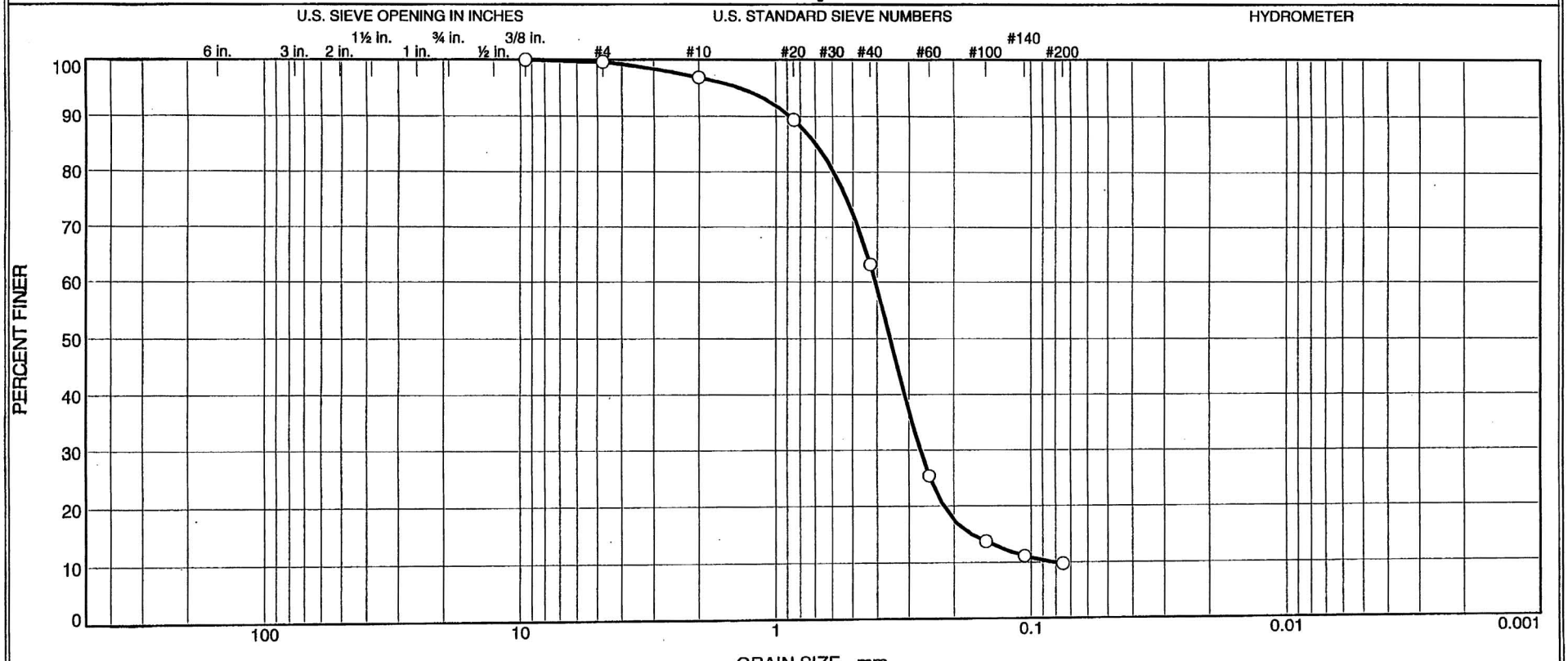
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	2.7	2.7	1.3	30.8	55.5	87.6			9.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0806	0.1527	0.1962	0.2521	0.3408	0.3924	0.5732	0.6668	0.8296	1.3339

Fineness Modulus	C_u	C_c
1.76	4.87	2.01

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	0.4	2.7	33.7	53.4	9.8	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-31	178.5-180'	12-03-07	SP-SM	Brown Poorly Graded SAND with silt (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.665 (ASTM D 854-06)
SIEVE ANALYSIS ONLY
ND = Not Determined

Tested By: CS **Checked By:** LBJ DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/25/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2251
Depth: 178.5-180' **Sample Number:** SS-31
Material Description: Brown Poorly Graded SAND with silt (Visual)
Date: 12-03-07 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SP-SM
Testing Remarks: Specific Gravity = 2.665 (ASTM D 854-06)
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
213.75	0.00	0.00	3/8"	0.00	100.0
			#4	0.83	99.6
			#10	6.67	96.9
104.23	0.00	0.00	#20	8.04	89.4
			#40	36.26	63.2
			#60	76.91	25.4
			#100	89.45	13.7
			#140	92.24	11.1
			#200	93.73	9.8

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.4	0.4	2.7	33.7	53.4	89.8			9.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0809	0.1714	0.2194	0.2709	0.3554	0.4059	0.5925	0.6948	0.8796	1.3730

Fineness Modulus	C_u	C_c
1.78	5.02	2.24

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: 1/12/08

SAMPLE IDENTIFICATION: B-2251 SS-31

(A) Mass of oven-dried soil, grams:	74.76
(B) Mass of pycnometer filled with water at test temperature (T), grams:	656.57
(C) Mass of pycnometer, water and soil, grams:	703.30
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	23.3
(G) Specific Gravity at observed temperature: A / [A + (B - C)]	2.667
(F) ***Correction factor:***	0.99926
(G x F) **SPECIFIC GRAVITY @ 20°C:**	2.665

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

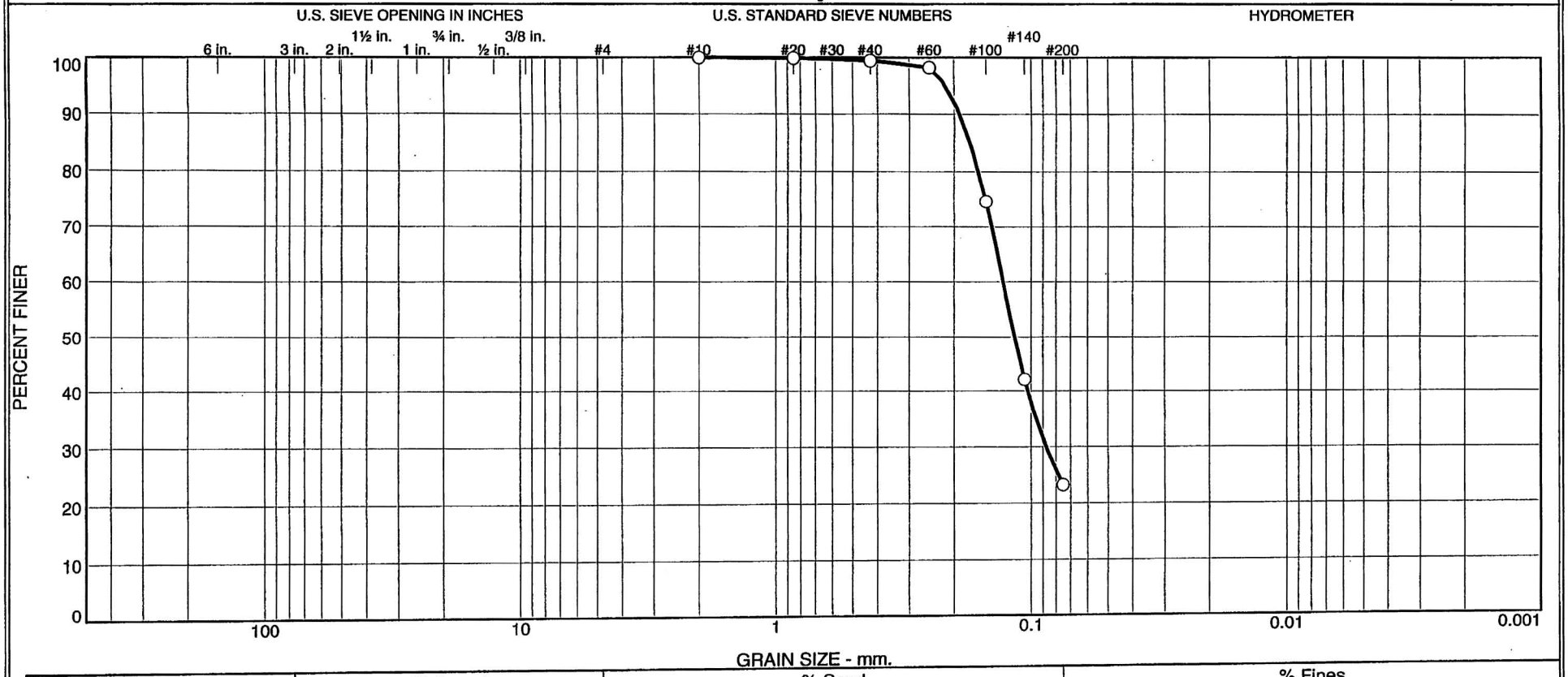
TESTED BY: CS

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

REVIEWED BY: **Brian Johnson**

DSC 1-25-08

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	0.6	76.1	23.3	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-32	188.5-190'	12-03-07	SC	Brown Clayey SAND(Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ SIEVE ANALYSIS ONLY
ND = Not Determined

Tested By: CS **Checked By:** LBJ PSC 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: 188.5-190'
Sample Number: SS-32
Material Description: Brown Clayey SAND(Visual)
Date: 12-03-07
Natural Moisture: ND
Liquid Limit: ND
Plastic Limit: ND
USCS Class.: SC
Testing Remarks: SIEVE ANALYSIS ONLY
ND = Not Determined
Tested by: CS
Checked by: LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
187.54	0.00	0.00	#10	0.00	100.0
97.88	0.00	0.00	#20	0.09	99.9
			#40	0.54	99.4
			#60	1.72	98.2
			#100	24.85	74.6
			#140	56.67	42.1
			#200	75.12	23.3

Fractional Components

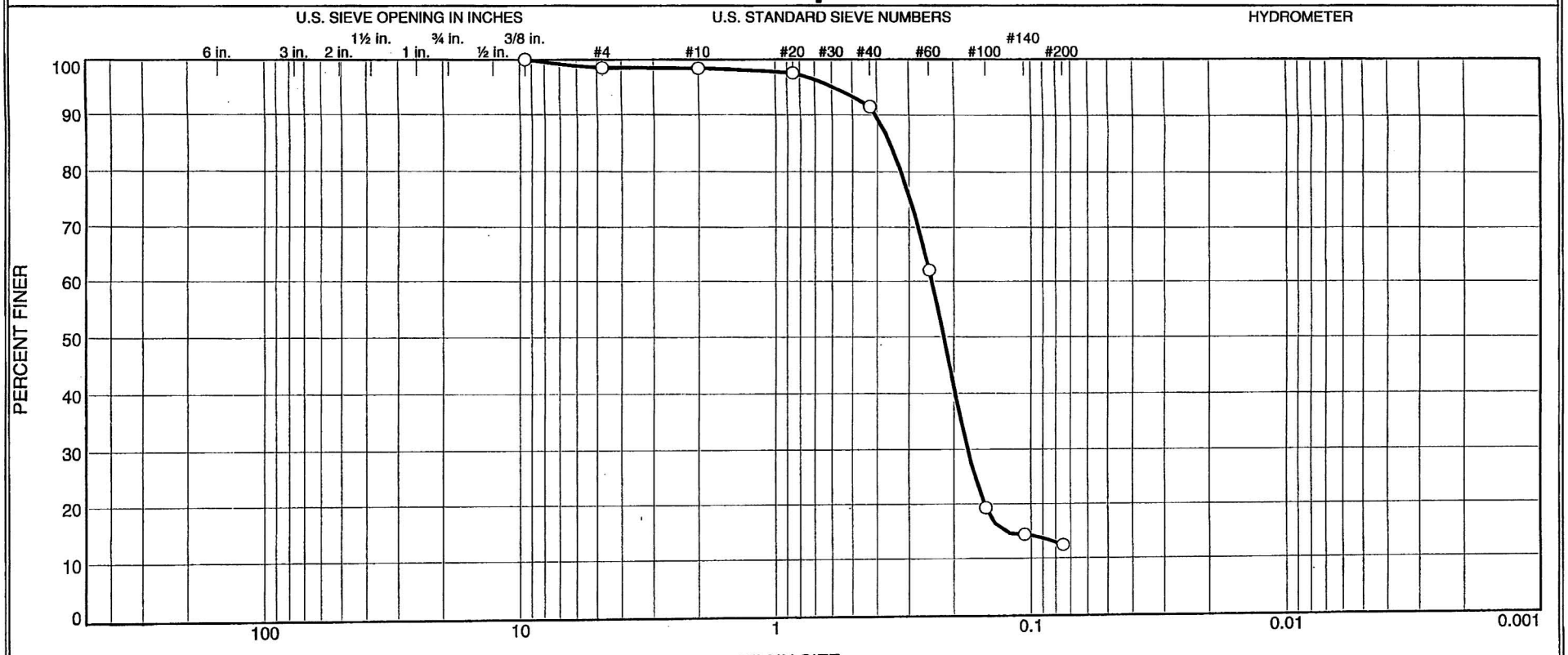
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.6	76.1	76.7			23.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0873	0.1160	0.1285	0.1606	0.1732	0.1902	0.2168

Fineness Modulus
0.27

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	1.5	0.1	6.9	79.1	12.4	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2251	SS-34	208.5-210'	12-03-07	SM	Brown Silty SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.653 (ASTM D854-06)
SIEVE ANALYSIS ONLY
ND = Not Determined

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: 208.5-210'
Sample Number: SS-34
Material Description: Brown Silty SAND (Visual)
Date: 12-03-07
Natural Moisture: ND
Liquid Limit: ND
Plastic Limit: ND
USCS Class.: SM
Testing Remarks: Specific Gravity = 2.653 (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
213.95	0.00	0.00	3/8"	0.00	100.0
			#4	3.14	98.5
			#10	3.36	98.4
102.92	0.00	0.00	#20	0.91	97.6
			#40	7.27	91.5
			#60	37.99	62.1
			#100	82.76	19.3
			#140	87.93	14.3
			#200	89.92	12.4

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.5	1.5	0.1	6.9	79.1	86.1			12.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.1274	0.1523	0.1766	0.2193	0.2441	0.3223	0.3559	0.4049	0.5930

Fineness Modulus
1.15

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: 1/12/08

SAMPLE IDENTIFICATION: B-2251 SS-34

(A) Mass of oven-dried soil, grams:		75.35
(B) Mass of pycnometer filled with water at test temperature (T), grams:		656.62
(C) Mass of pycnometer, water and soil, grams:		703.59
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		22.9
(G) Specific Gravity at observed temperature:	A / [A + (B - C)]	2.655
(F)	***Correction factor:***	0.99936
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.653

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-6

TESTED BY: CS

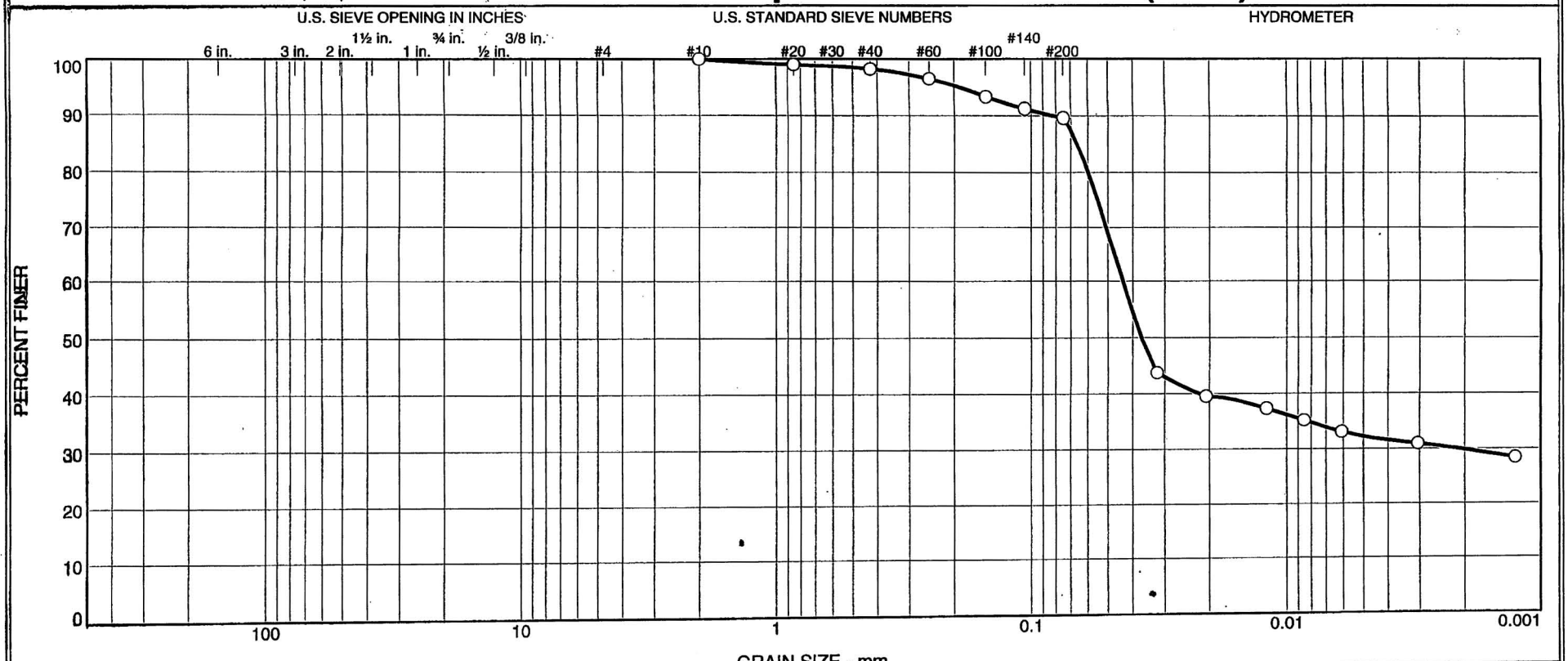
\Test Reports\Soils\SPECIFIC GRAVITY(ref).xls

REVIEWED BY: **Brian Johnson**

DSC 1-25-08

Boring B-2265

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	1.8	8.6	57.3	32.3

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2265	SS-1	0-1.5	11-9-07	CL	Black Lean CLAY	17.0	35	13

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity is assumed
Organic content = 5.1% (ASTM D2794-07)

Tested By: CS Checked By: LBJ SSC 1/28/08