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: 1/14/08

SAMPLE IDENTIFICATION: B-2265 SS-21

(A) Mass of oven-dried soil, grams:	50.93
(B) Mass of pycnometer filled with water at test temperature (T), grams:	654.83
(C) Mass of pycnometer, water and soil, grams:	686.75
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	23.0
(G) Specific Gravity at observed temperature: A / [C - (C - A)]	2.679
(F) ***Correction factor:***	0.99933
(G x F) **SPECIFIC GRAVITY @ 20°C:**	2.677

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

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

REMARKS: Estimated % ~~P~~assing # 4 : 100%

Fat CLAY with sand (CH)

EQUIPMENT USED

SCALES : 3.1.19

OVEN : 5.1.16

THERMOMETER : 5.1.01

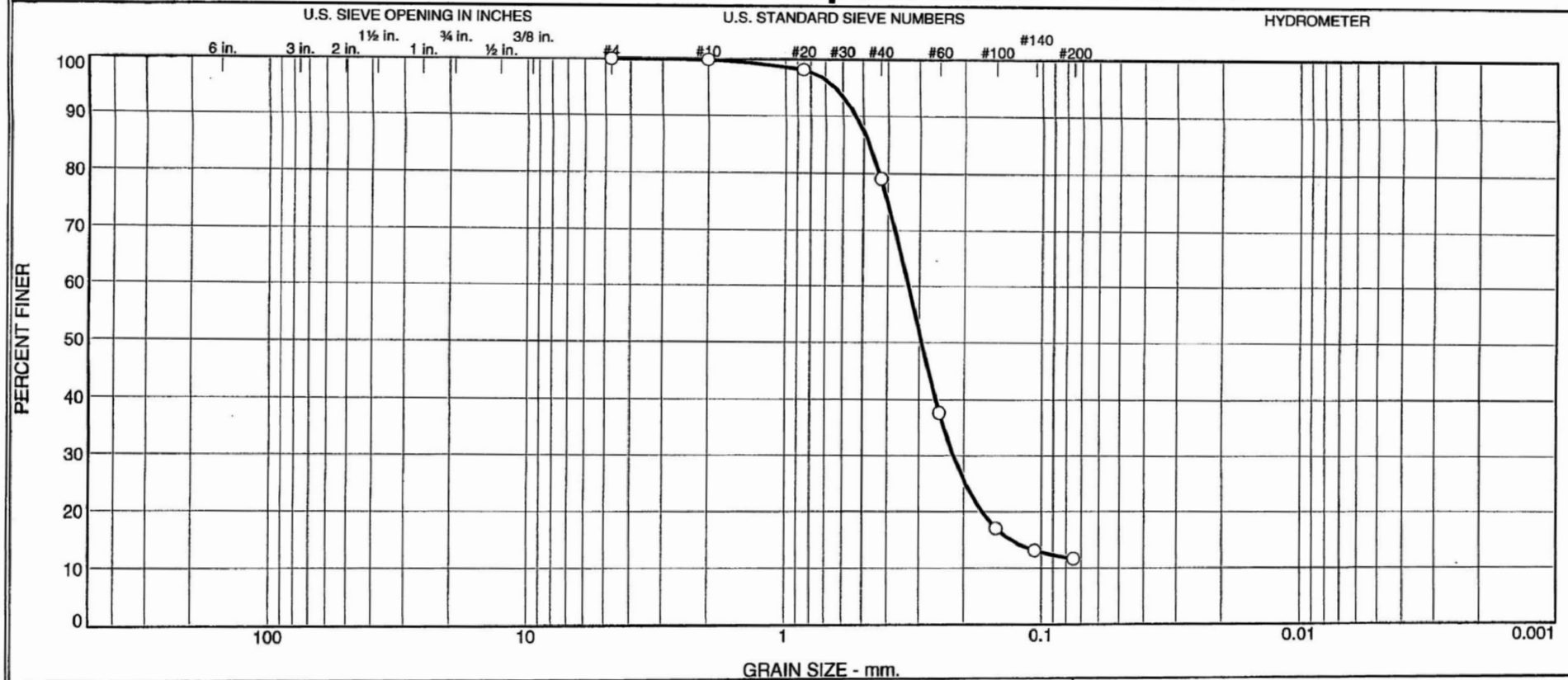
PYCNOMETER : P-5

TESTED BY: CS

\Test Reports\Soils\SPECIFIC GRAVITY(ref).xls **REVIEWED BY:** Brian Johnson

KAW 1/26/08

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	20.8	67.5	11.6	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2265	SS-22	93.5-95.0	11-10-07	SP-SC	Gray Poorly Graded SAND with clay (Visual)	16.7	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.655 (ASTM D854-06)
SIEVE ANALYSIS ONLY.
ND = Not determined

Tested By: CS **Checked By:** LBJ KAW 1/26/08

GRAIN SIZE DISTRIBUTION TEST DATA

1/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2265
Depth: 93.5-95.0 **Sample Number:** SS-22
Material Description: Gray Poorly Graded SAND with clay (Visual)
Date: 11-10-07 **Natural Moisture:** 16.7
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SP-SC
Testing Remarks: Specific Gravity = 2.655 (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
182.26	0.00	0.00	#4	0.00	100.0
			#10	0.19	99.9
101.20	0.00	0.00	#20	1.78	98.1
			#40	21.06	79.1
			#60	63.00	37.7
			#100	83.88	17.1
			#140	87.89	13.1
			#200	89.44	11.6

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.1	20.8	67.5	88.4			11.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.1310	0.1700	0.2197	0.2938	0.3311	0.4311	0.4721	0.5320	0.6439

Fineness Modulus
1.39

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: 1/19/08

SAMPLE IDENTIFICATION: B-2265 SS-22

(A) Mass of oven-dried soil, grams:		52.90
(B) Mass of pycnometer filled with water at test temperature (T), grams:		656.81
(C) Mass of pycnometer, water and soil, grams:		689.79
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		21.4
(G) Specific Gravity at observed temperature:	A / [C - (C - A)]	2.656
(F)	***Correction factor:***	0.99970
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.655

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

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

REMARKS: Estimated % Passing # 4 : 100%

Poorly Graded SAND with clay (SP-SC) - visual

EQUIPMENT USED

SCALES : 3.1.19

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNOMETER : P-5

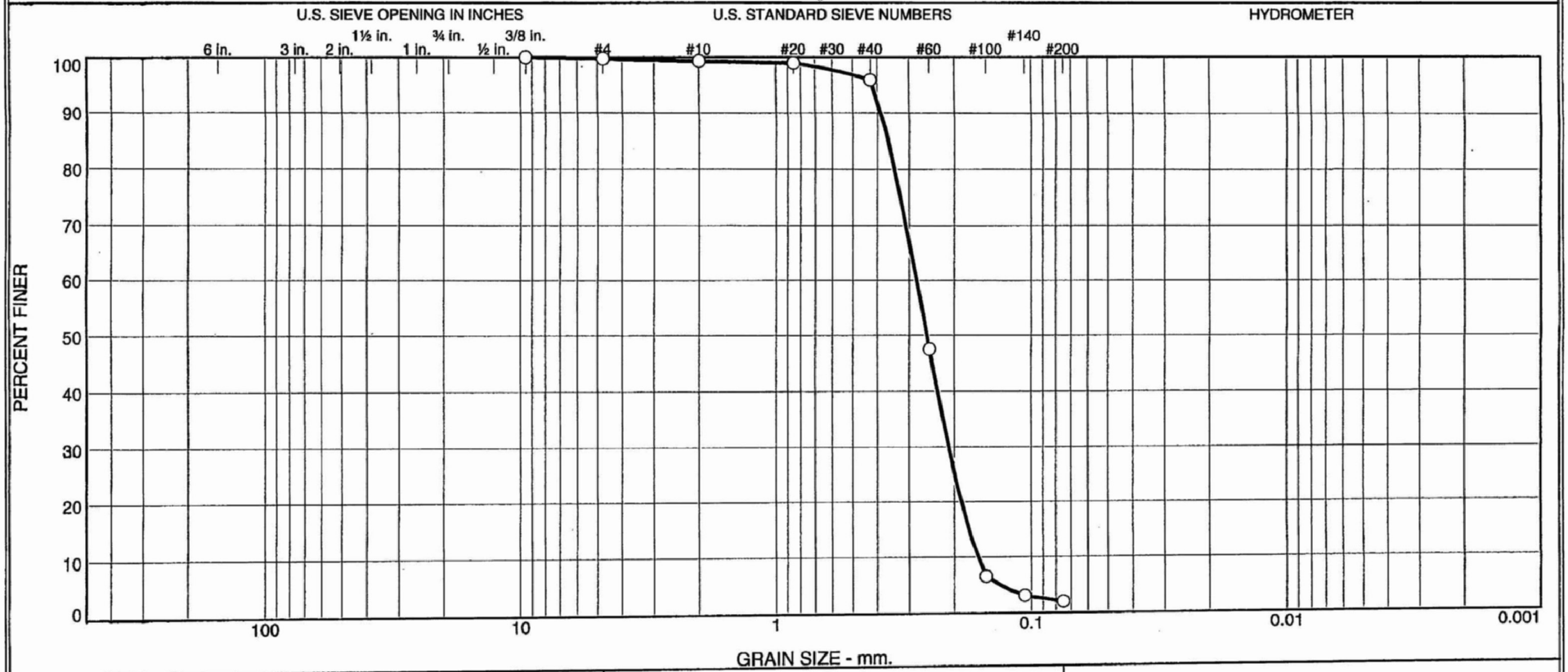
TESTED BY: CS

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

REVIEWED BY: Brian Johnson

KAW 1/26/08

Particle Size Distribution Report / ASTM D 6913-04e1



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	0.3	0.4	3.4	93.9	2.0

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2265	SS-23A	98.5-98.9	11-10-07	SP	Gray Poorly Graded SAND (Visual)	ND	ND	ND

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

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Raleigh, North Carolina

○ SIEVE ANALYSIS ONLY.
ND=Not Determined

Tested By: CS **Checked By:** LBJ KAW 1/26/08

GRAIN SIZE DISTRIBUTION TEST DATA

1/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2265
Depth: 98.5-98.9 **Sample Number:** SS-23A
Material Description: Gray Poorly Graded SAND (Visual)
Date: 11-10-07 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SP
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
131.13	0.00	0.00	3/8"	0.00	100.0
			#4	0.34	99.7
			#10	0.87	99.3
97.99	0.00	0.00	#20	0.34	99.0
			#40	3.42	95.9
			#60	51.00	47.6
			#100	91.56	6.5
			#140	94.92	3.1
			#200	96.00	2.0

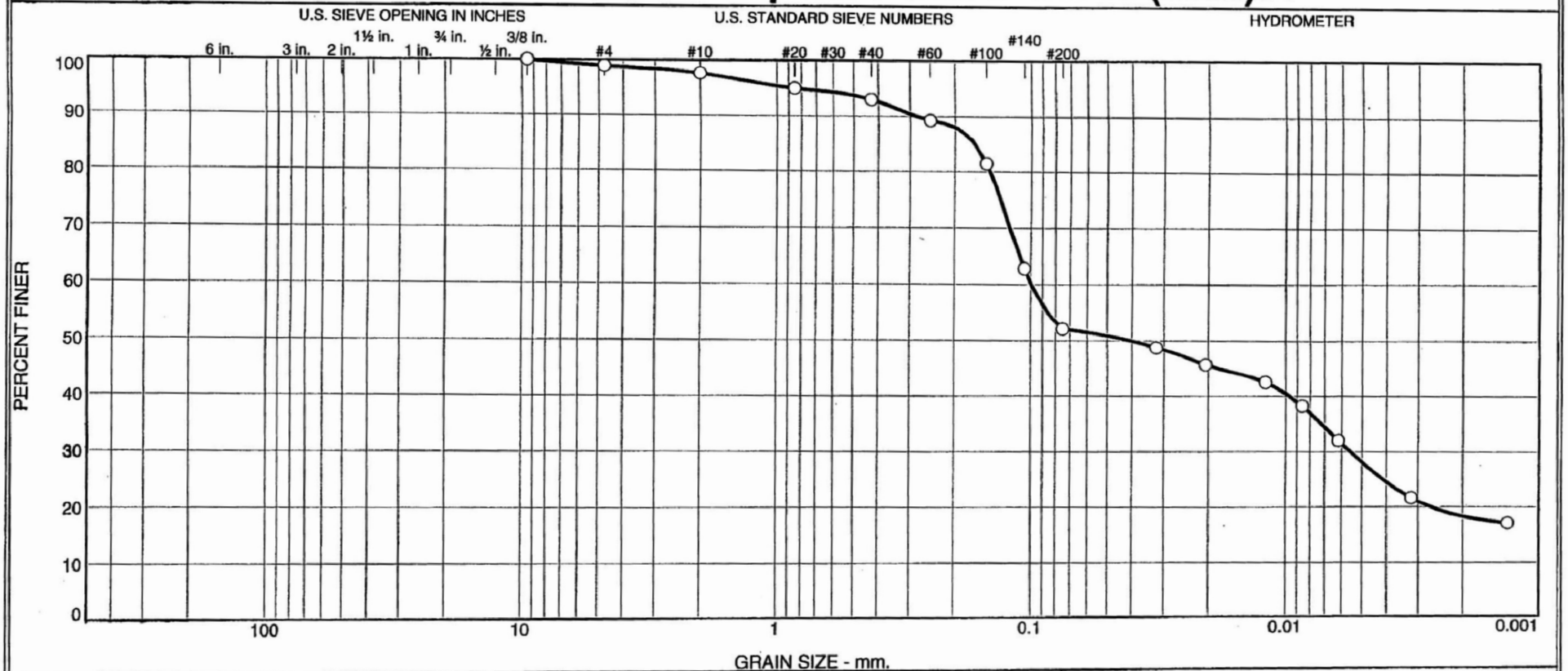
Fractional Components

Cobbles	Gravel			Sand				Fines
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	
0.0	0.0	0.3	0.3	0.4	3.4	93.9	97.7	2.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1620	0.1756	0.1876	0.2102	0.2556	0.2807	0.3426	0.3629	0.3870	0.4183

Fineness Modulus	C_u	C_c
1.30	1.73	0.97

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	1.1	1.3	4.6	40.8	24.0	28.2

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2265	SS-23B	98.9-100.0	11-10-07	CL	Gray Sandy Lean CLAY	13.3	24	12

Client Bechtel
Project Exelon Texas COL (Victoria)
Project No. 6468071777 Figure NA

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Raleigh, North Carolina

○ Specific Gravity = 2.656 (ASTM D854-06)

Tested By: CS **Checked By:** LBJ KAW 1/26/08

GRAIN SIZE DISTRIBUTION TEST DATA

1/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2265
Depth: 98.9-100.0 **Sample Number:** SS-23B
Material Description: Gray Sandy Lean CLAY
Date: 11-10-07 **Natural Moisture:** 13.3
Liquid Limit: 24 **Plastic Limit:** 12 **USCS Class.:** CL
Testing Remarks: Specific Gravity = 2.656 (ASTM D854-06)
Tested by: CS **Checked by:** LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
184.81	0.00	0.00	3/8"	0.00	100.0
			#4	2.00	98.9
			#10	4.40	97.6
47.49	0.00	0.00	#20	1.30	94.9
			#40	2.26	93.0
			#60	4.03	89.3
			#100	7.83	81.5
			#140	16.93	62.8
			#200	22.11	52.2

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 97.6
Weight of hydrometer sample =47.49
Hygroscopic moisture correction:
Moist weight and tare = 27.29
Dry weight and tare = 27.13
Tare weight = 15.49
Hygroscopic moisture = 1.4%
Table of composite correction values:

Temp., deg. C:	12.8	27.3
Comp. corr.:	-7.0	-3.0

Meniscus correction only = 1.0
Specific gravity of solids = 2.656
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.6	28.0	23.4	0.0134	29.0	11.5	0.0321	48.8
5.00	21.5	26.5	21.9	0.0134	27.5	11.8	0.0205	45.6
15.00	21.5	25.0	20.4	0.0134	26.0	12.0	0.0120	42.5
30.00	21.5	23.0	18.4	0.0134	24.0	12.4	0.0086	38.3
60.00	21.6	20.0	15.4	0.0134	21.0	12.9	0.0062	32.1
240.00	21.5	15.0	10.4	0.0134	16.0	13.7	0.0032	21.6
1440.00	20.9	13.0	8.2	0.0135	14.0	14.0	0.0013	17.1

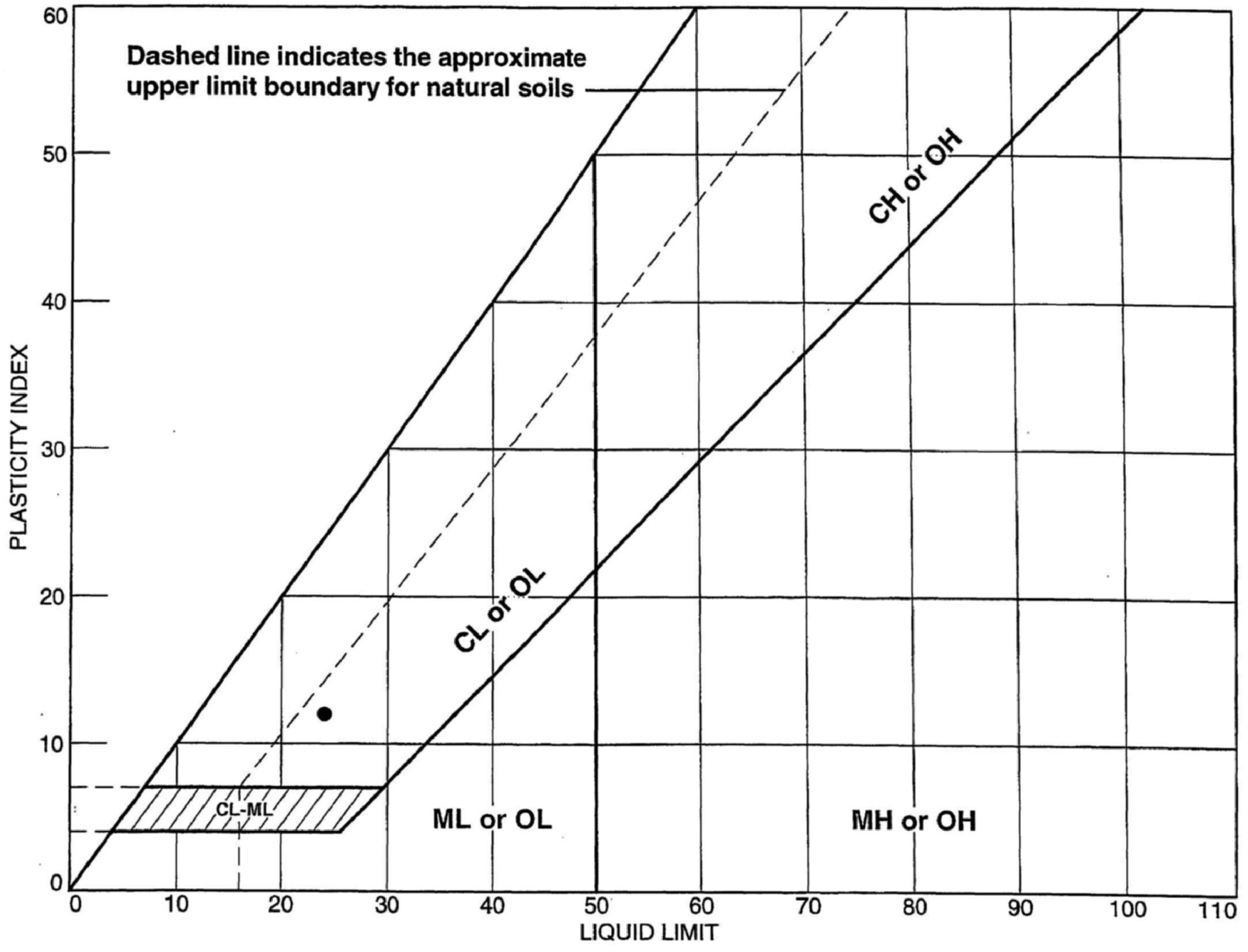
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.1	1.1	1.3	4.6	40.8	46.7	24.0	28.2	52.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0027	0.0055	0.0402	0.0996	0.1450	0.1661	0.2812	0.8698

Fineness Modulus
0.41

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-2265	SS-23B	98.9-100.0	13.3	12	24	12	CL

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project No.: 6468071777
Figure NA

Tested By: CS **Checked By:** LBJ KAW 1/26/08

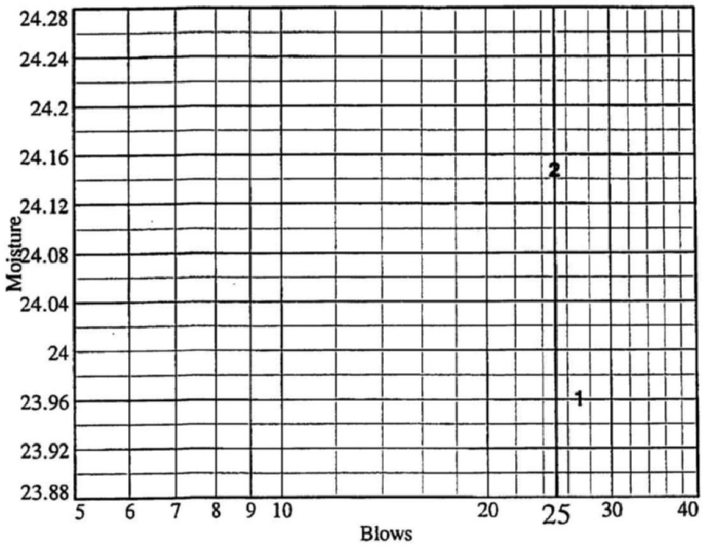
LIQUID AND PLASTIC LIMIT TEST DATA

1/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2265
Depth: 98.9-100.0 **Sample Number:** SS-23B
Material Description: Gray Sandy Lean CLAY
USCS: CL **AASHTO:** A-6(3)
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	34.73	32.55				
Dry+Tare	31.04	29.22				
Tare	15.64	15.43				
# Blows	27	25				
Moisture	24.0	24.1				



Liquid Limit= 24
Plastic Limit= 12
Plasticity Index= 12
Natural Moisture= 13.3
Liquidity Index= 0.1

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	26.05	23.66			
Dry+Tare	24.92	22.86			
Tare	15.46	15.67			
Moisture	11.9	11.1			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
101.30	90.46	9.20	13.3

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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: 1/20/08

SAMPLE IDENTIFICATION: B-2265 SS-23B

(A) Mass of oven-dried soil, grams:	50.03
(B) Mass of pycnometer filled with water at test temperature (T), grams:	654.79
(C) Mass of pycnometer, water and soil, grams:	686.00
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	23.3
(G) Specific Gravity at observed temperature: A / [C - (C - A)]	2.658
(F) ***Correction factor:***	0.99926
(G x F) **SPECIFIC GRAVITY @ 20°C:**	2.656

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

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

REMARKS: Estimated % Passing # 4 : 100%

Sandy Lean CLAY (CL)

EQUIPMENT USED

SCALES : 3.1.19

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNOMETER : P-5

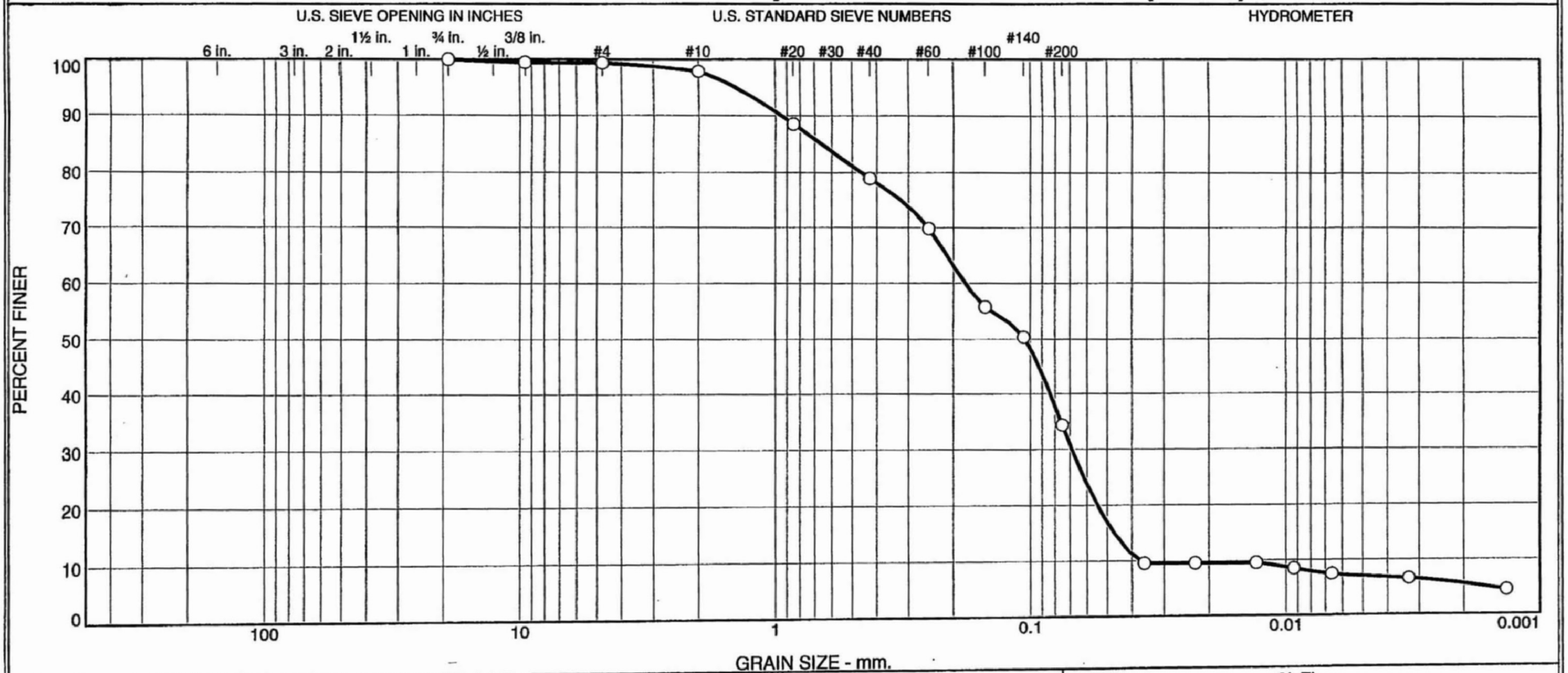
TESTED BY: CS

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

REVIEWED BY: **Brian Johnson**

KAW 1/26/08

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	0.6	1.5	18.9	44.6	27.3	7.1

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2265	SS-24	108.5-110.0	11-10-07	SC-SM	Light Brownish Gray Silty, Clayey SAND	16.0	20	15

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.651 (ASTM D854-06)

Tested By: CS **Checked By:** LBJ KAW 1/26/08

GRAIN SIZE DISTRIBUTION TEST DATA

1/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2265
Depth: 108.5-110.0 **Sample Number:** SS-24
Material Description: Light Brownish Gray Silty, Clayey SAND
Date: 11-10-07 **Natural Moisture:** 16.0
Liquid Limit: 20 **Plastic Limit:** 15 **USCS Class.:** SC-SM
Testing Remarks: Specific Gravity = 2.651 (ASTM D854-06)
Tested by: CS **Checked by:** LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
215.61	0.00	0.00	3/4	0.00	100.0
			3/8"	1.19	99.4
			#4	1.38	99.4
			#10	4.58	97.9
93.94	0.00	0.00	#20	8.96	88.5
			#40	18.15	79.0
			#60	26.94	69.8
			#100	40.36	55.8
			#140	45.63	50.3
			#200	60.96	34.4

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 97.9
Weight of hydrometer sample =93.94
Hygroscopic moisture correction:
Moist weight and tare = 27.06
Dry weight and tare = 26.89
Tare weight = 15.68
Hygroscopic moisture = 1.5%
Table of composite correction values:

Temp., deg. C:	12.8	27.3
Comp. corr.:	-7.0	-3.0

Meniscus correction only = 1.0
Specific gravity of solids = 2.651
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	20.3	14.0	9.1	0.0136	15.0	13.8	0.0357	9.6
5.00	20.3	14.0	9.1	0.0136	15.0	13.8	0.0226	9.6
15.00	20.3	14.0	9.1	0.0136	15.0	13.8	0.0131	9.6
30.00	20.3	13.0	8.1	0.0136	14.0	14.0	0.0093	8.5
60.00	20.4	12.0	7.1	0.0136	13.0	14.2	0.0066	7.5
240.00	21.0	11.0	6.3	0.0135	12.0	14.3	0.0033	6.6
1440.00	20.9	9.0	4.2	0.0135	10.0	14.7	0.0014	4.5

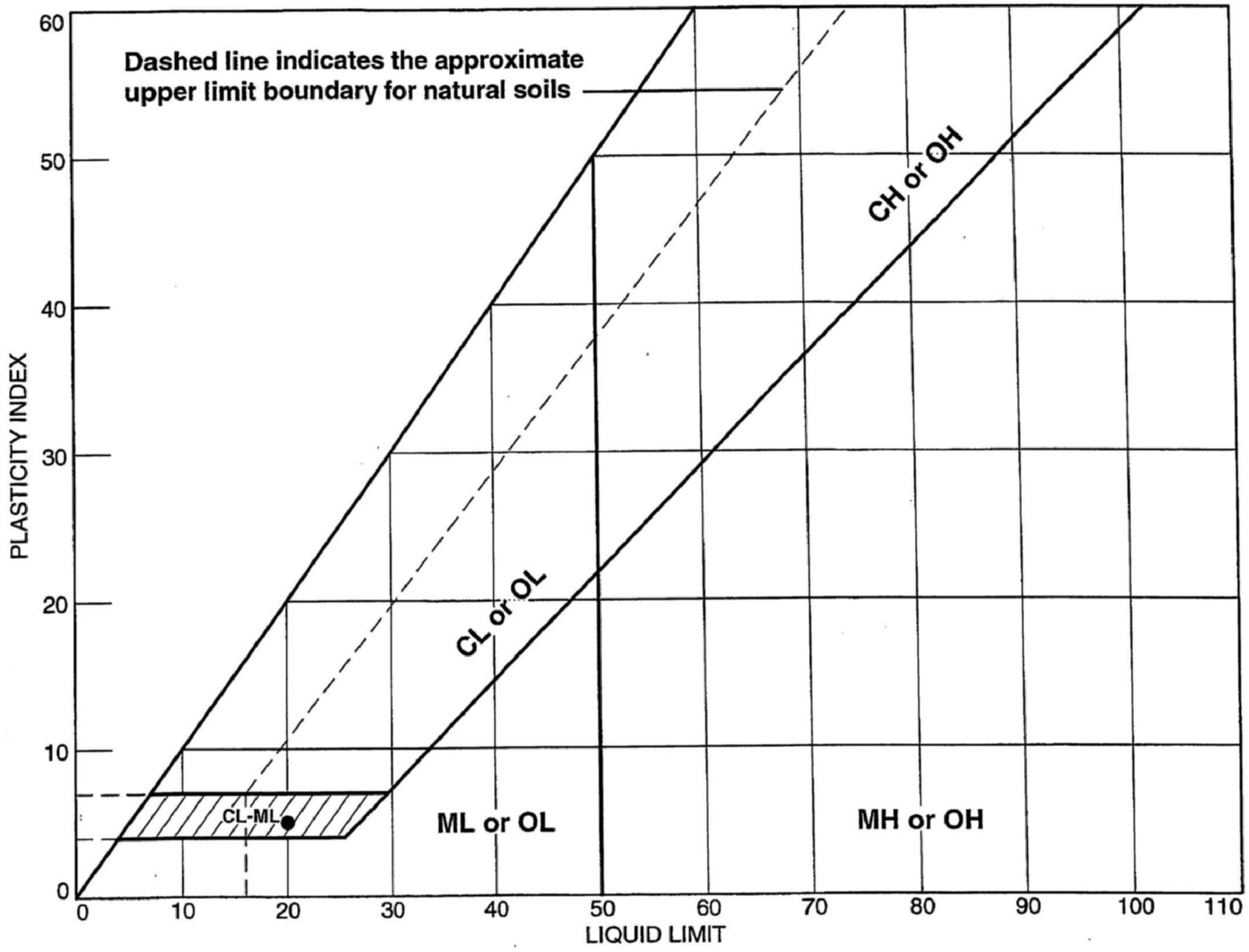
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.6	0.6	1.5	18.9	44.6	65.0	27.3	7.1	34.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0370	0.0469	0.0545	0.0687	0.1048	0.1796	0.4591	0.6590	0.9463	1.4251

Fineness Modulus	C_u	C_c
0.97	4.85	0.71

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-2265	SS-24	108.5-110.0	16.0	15	20	5	SC-SM

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

Tested By: CS **Checked By:** LBJ KAW 1/26/08

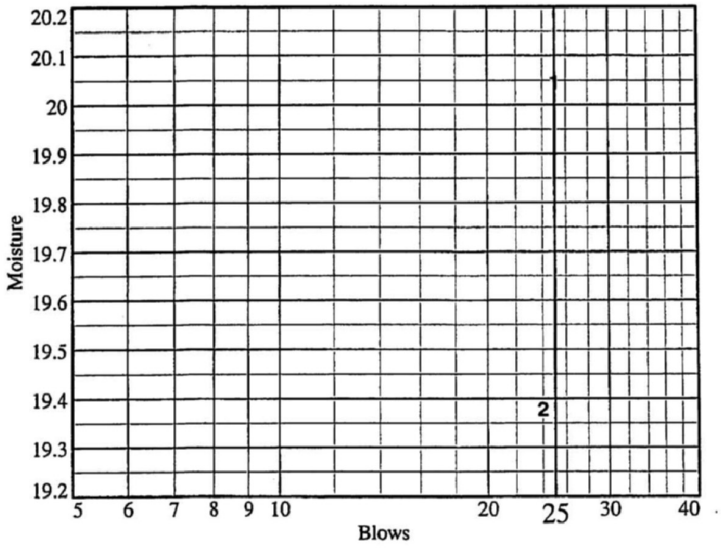
LIQUID AND PLASTIC LIMIT TEST DATA

1/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2265
Depth: 108.5-110.0 **Sample Number:** SS-24
Material Description: Light Brownish Gray Silty, Clayey SAND
USCS: SC-SM **AASHTO:** A-2-4(0)
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.81	25.11				
Dry+Tare	24.08	23.55				
Tare	15.45	15.50				
# Blows	25	24				
Moisture	20.0	19.4				



Liquid Limit= 20
Plastic Limit= 15
Plasticity Index= 5
Natural Moisture= 16.0
Liquidity Index= 0.2

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	24.65	23.13			
Dry+Tare	23.40	22.13			
Tare	15.54	15.45			
Moisture	15.9	15.0			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
150.20	130.49	7.00	16.0

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: 1/17/08

SAMPLE IDENTIFICATION: B-2265 SS-24

(A) Mass of oven-dried soil, grams:		49.13
(B) Mass of pycnometer filled with water at test temperature (T), grams:		655.11
(C) Mass of pycnometer, water and soil, grams:		685.71
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		21.3
(G) Specific Gravity at observed temperature:	A / [C - (C - A)]	2.651
(F)	***Correction factor:***	0.99972
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.651

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

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

REMARKS: Estimated % Passing # 4 : 100%
Silty, Clayey SAND (SC-SM)

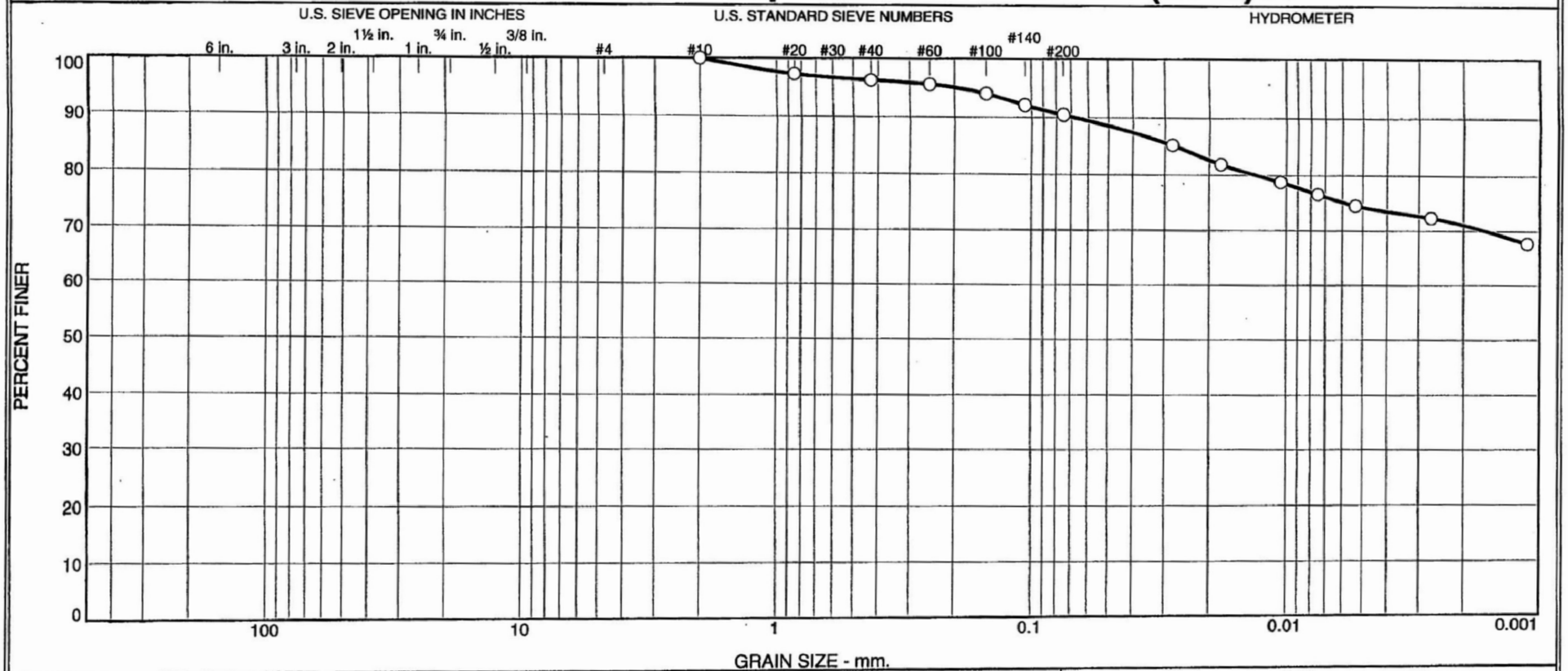
EQUIPMENT USED
SCALES : 3.1.19
OVEN : 5.1.16
THERMOMETER : 5.1.01
PYCNOMETER : P-5

TESTED BY: CS

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

REVIEWED BY: Brian Johnson
KAW 1/26/08

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	3.8	5.7	16.2	74.3

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2265	SS-25	118.5-120.0	11-10-07	CH	Light Greenish Gray Fat CLAY	34.0	98	26

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 KAW 1/26/08

GRAIN SIZE DISTRIBUTION TEST DATA

1/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2265
Depth: 118.5-120.0 **Sample Number:** SS-25
Material Description: Light Greenish Gray Fat CLAY
Date: 11-10-07 **Natural Moisture:** 34.0
Liquid Limit: 98 **Plastic Limit:** 26 **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
171.37	0.00	0.00	#10	0.00	100.0
47.99	0.00	0.00	#20	1.31	97.3
			#40	1.82	96.2
			#60	2.16	95.5
			#100	2.91	93.9
			#140	3.82	92.0
			#200	4.58	90.5

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =47.99
Hygroscopic moisture correction:
Moist weight and tare = 27.31
Dry weight and tare = 26.71
Tare weight = 15.46
Hygroscopic moisture = 5.3%
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	44.0	39.3	0.0133	45.0	8.9	0.0280	85.3
5.00	20.9	42.5	37.7	0.0133	43.5	9.2	0.0180	81.9
15.00	21.1	41.0	36.3	0.0133	42.0	9.4	0.0105	78.8
30.00	21.1	40.0	35.3	0.0133	41.0	9.6	0.0075	76.6
60.00	21.3	39.0	34.3	0.0132	40.0	9.7	0.0053	74.5
240.00	21.3	38.0	33.3	0.0132	39.0	9.9	0.0027	72.4
1440.00	20.9	36.0	31.2	0.0133	37.0	10.2	0.0011	67.8

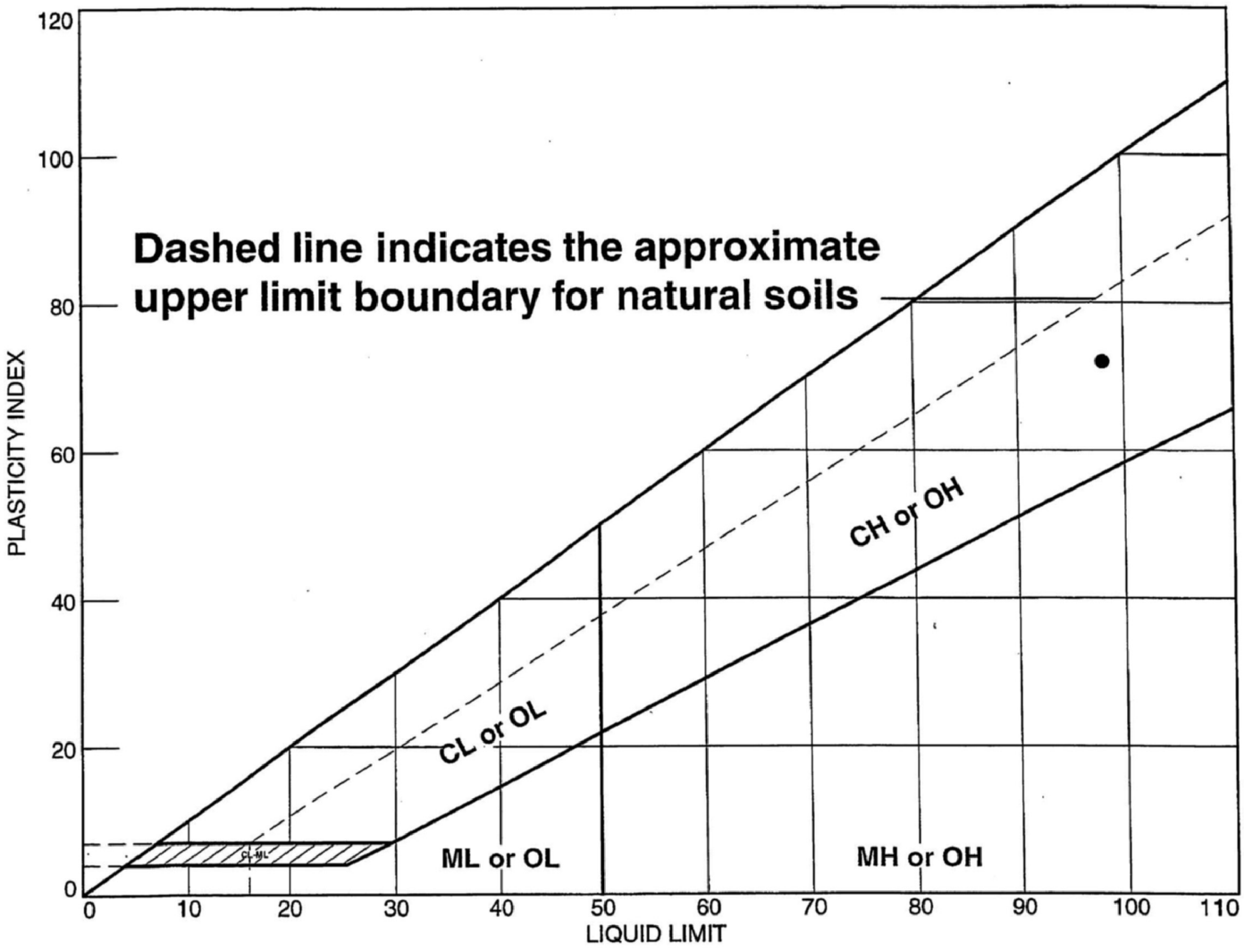
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	3.8	5.7	9.5	16.2	74.3	90.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
						0.0131	0.0270	0.0673	0.2001

Fineness Modulus
0.15

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-2265	SS-25	118.5-120.0	34.0	26	98	72	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project No.: 6468071777
Figure NA

Tested By: CS **Checked By:** LBJ KAW 1/26/08

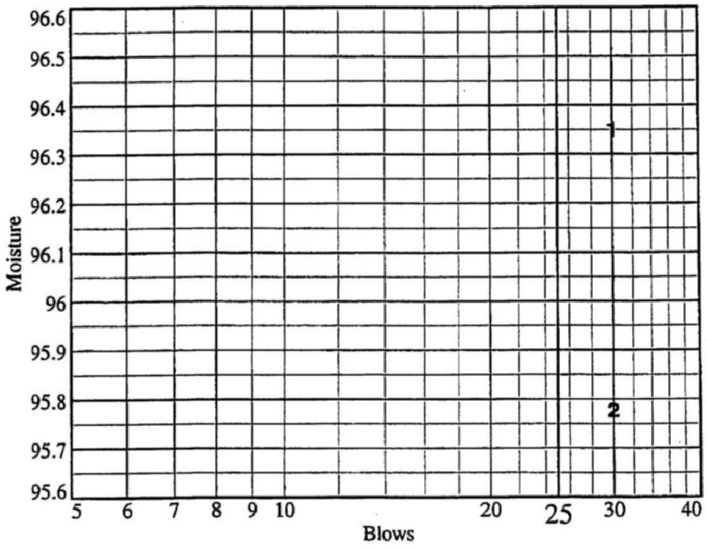
LIQUID AND PLASTIC LIMIT TEST DATA

1/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2265
Depth: 118.5-120.0 **Sample Number:** SS-25
Material Description: Light Greenish Gray Fat CLAY
USCS: CH **AASHTO:** A-7-6(73)
Tested by: CS **Checked by:** LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	30.25	30.37				
Dry+Tare	23.12	23.11				
Tare	15.72	15.53				
# Blows	30	30				
Moisture	96.4	95.8				



Liquid Limit= 98
Plastic Limit= 26
Plasticity Index= 72
Natural Moisture= 34.0
Liquidity Index= 0.1

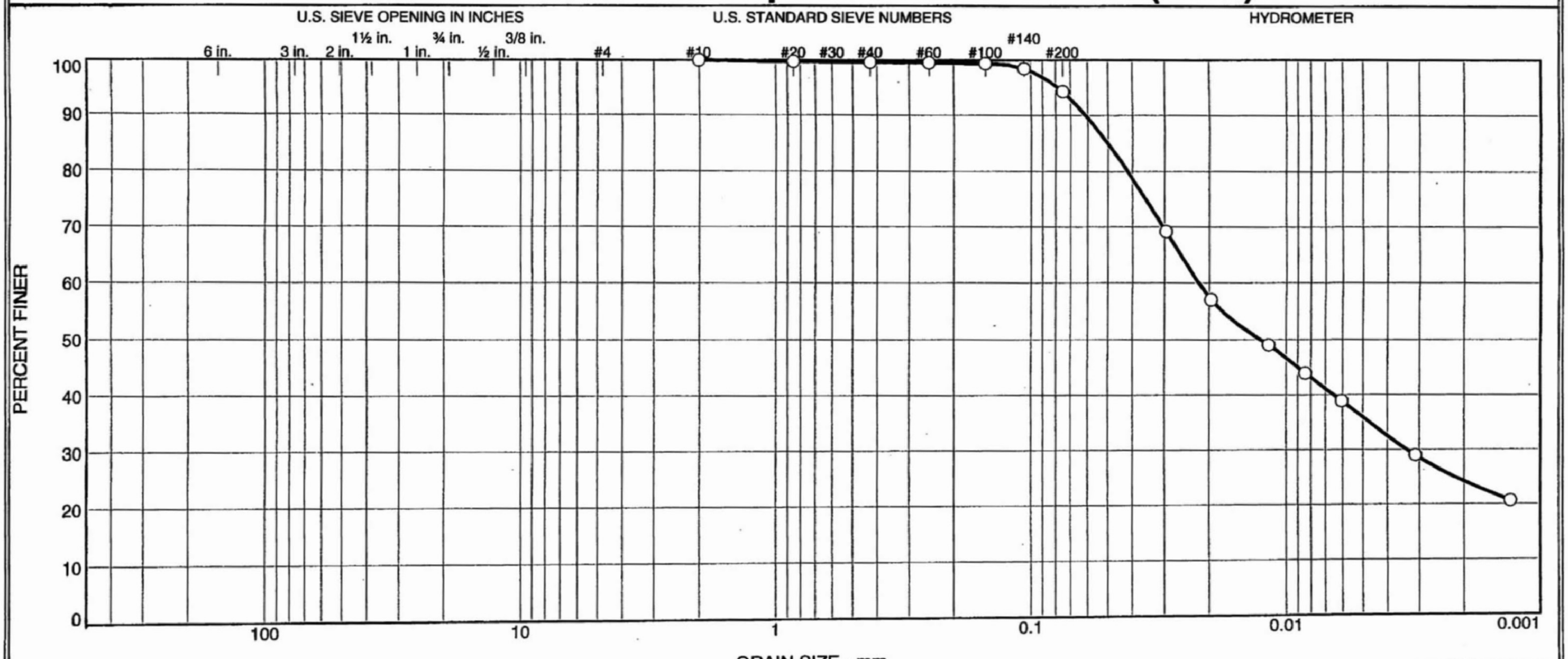
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.42	21.25			
Dry+Tare	20.22	20.06			
Tare	15.52	15.45			
Moisture	25.5	25.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
92.00	71.06	9.40	34.0

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	5.4	58.2	36.0

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2265	SS-26	128.5-130.0	11/11/07	CL	Light Greenish Gray Lean CLAY	17.8	32	14

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 = .9% (ASTM D 2974-07)

Tested By: CS **Checked By:** LBJ KAW 1/26/08

GRAIN SIZE DISTRIBUTION TEST DATA

1/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2265
Depth: 128.5-130.0 **Sample Number:** SS-26
Material Description: Light Greenish Gray Lean CLAY
Date: 11/11/07 **Natural Moisture:** 17.8
Liquid Limit: 32 **Plastic Limit:** 14 **USCS Class.:** CL
Testing Remarks: Specific Gravity = 2.664 (ASTM D854-06)
Organic Content = .9% (ASTM D 2974-07)
Tested by: CS **Checked by:** LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
219.32	0.00	0.00	#10	0.00	100.0
50.09	0.00	0.00	#20	0.13	99.7
			#40	0.19	99.6
			#60	0.23	99.5
			#100	0.31	99.4
			#140	0.76	98.5
			#200	2.90	94.2

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =50.09
Hygroscopic moisture correction:
Moist weight and tare = 27.65
Dry weight and tare = 27.49
Tare weight = 15.70
Hygroscopic moisture = 1.4%
Table of composite correction values:

Temp., deg. C:	12.8	27.3
Comp. corr.:	-7.0	-3.0

Meniscus correction only = 1.0
Specific gravity of solids = 2.664
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	21.1	39.0	34.3	0.0134	40.0	9.7	0.0296	69.2
5.00	21.1	33.0	28.3	0.0134	34.0	10.7	0.0196	57.1
15.00	21.1	29.0	24.3	0.0134	30.0	11.4	0.0117	49.0
30.00	21.1	26.5	21.8	0.0134	27.5	11.8	0.0084	44.0
60.00	21.1	24.0	19.3	0.0134	25.0	12.2	0.0060	38.9
240.00	21.4	19.0	14.4	0.0134	20.0	13.0	0.0031	29.0
1440.00	20.9	15.0	10.2	0.0134	16.0	13.7	0.0013	20.6

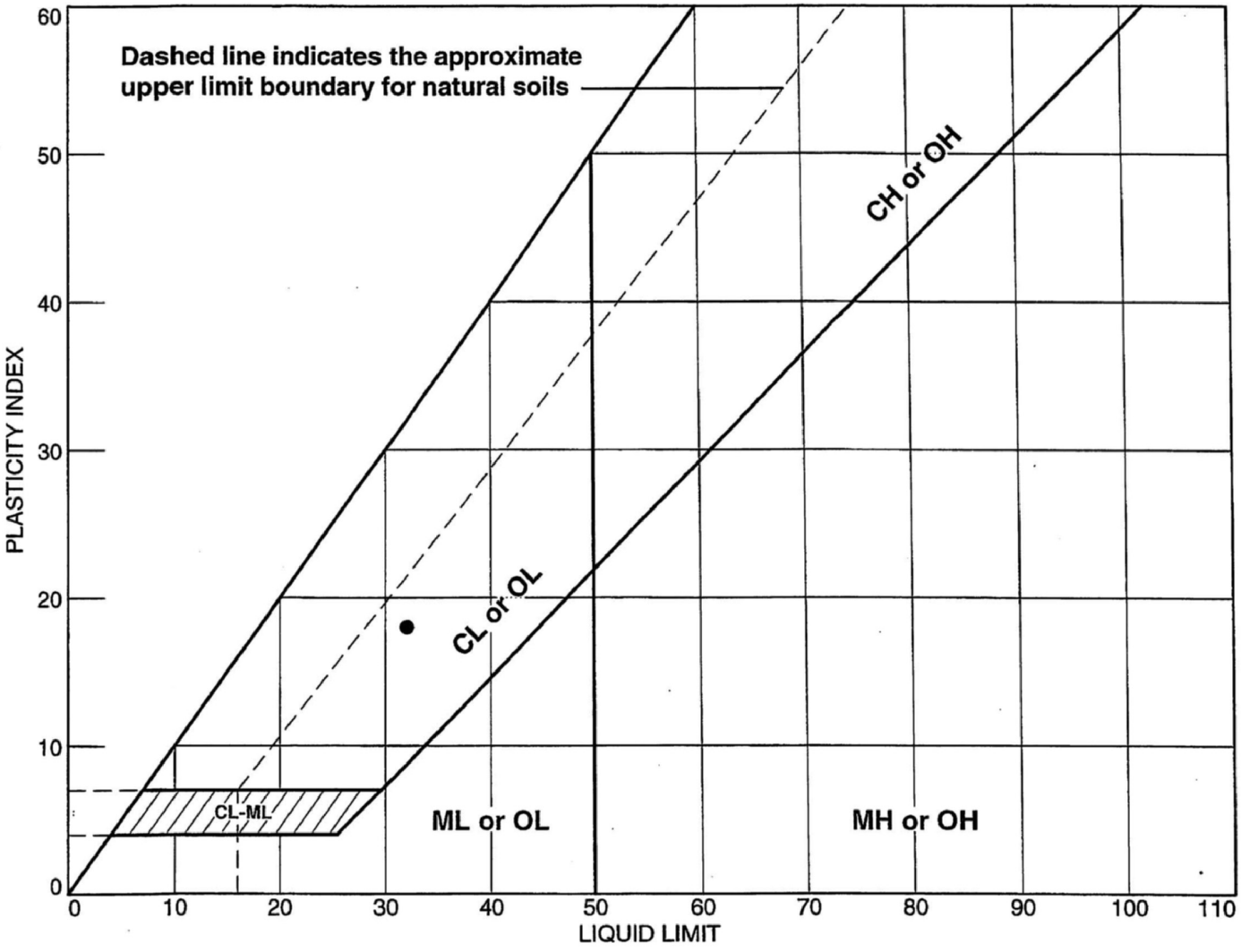
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.4	5.4	5.8	58.2	36.0	94.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0034	0.0126	0.0220	0.0418	0.0499	0.0610	0.0786

Fineness Modulus
0.02

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-2265	SS-26	128.5-130.0	17.8	14	32	18	CL

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project No.: 6468071777 **Figure** NA

Tested By: CS **Checked By:** LBJ KAW 1/26/08

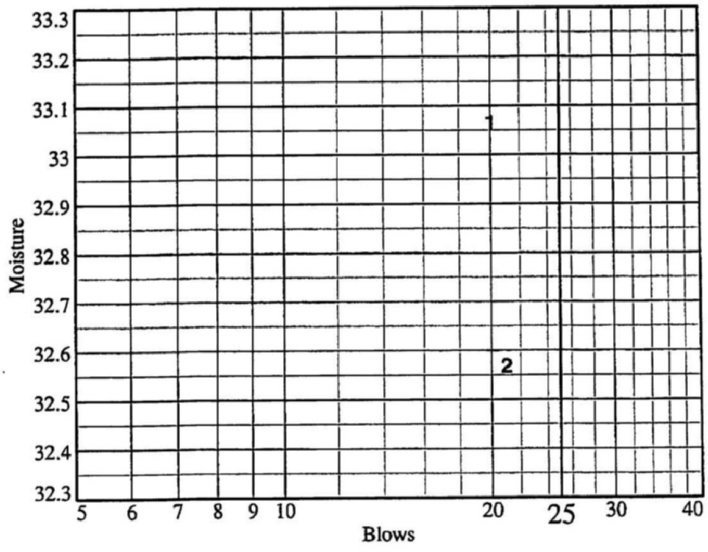
LIQUID AND PLASTIC LIMIT TEST DATA

1/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2265
Depth: 128.5-130.0 **Sample Number:** SS-26
Material Description: Light Greenish Gray Lean CLAY
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	32.44	31.14				
Dry+Tare	28.30	27.30				
Tare	15.78	15.51				
# Blows	20	21				
Moisture	33.1	32.6				



Liquid Limit= 32
Plastic Limit= 14
Plasticity Index= 18
Natural Moisture= 17.8
Liquidity Index= 0.2

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	25.20	26.90			
Dry+Tare	24.06	25.51			
Tare	15.45	15.42			
Moisture	13.2	13.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
182.60	156.00	6.90	17.8

MACTEC, Inc.

MACTEC ENGINEERING AND CONSULTING, INC.
RALEIGH, NORTH CAROLINA

REPORT OF THE STANDARD TEST METHOD FOR SPECIFIC GRAVITY OF SOILS
Performed in General Accordance with ASTM D 854-06 (Method B)

PROJECT NAME:EXELON COL PROJECT (VICTORIA)

PROJECT NUMBER: 6468071777

DATE: 1/20/08

SAMPLE IDENTIFICATION: B-2265 SS-26

(A) Mass of oven-dried soil, grams:		75.00
(B) Mass of pycnometer filled with water at test temperature (T), grams:		655.00
(C) Mass of pycnometer, water and soil, grams:		701.86
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		22.3
(G) Specific Gravity at observed temperature:	A / [C - (C - A)]	2.665
(F)	***Correction factor:***	0.99950
(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%

Lean CLAY (CL)

EQUIPMENT USED

SCALES : 3.1.19

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNOMETER : P-5

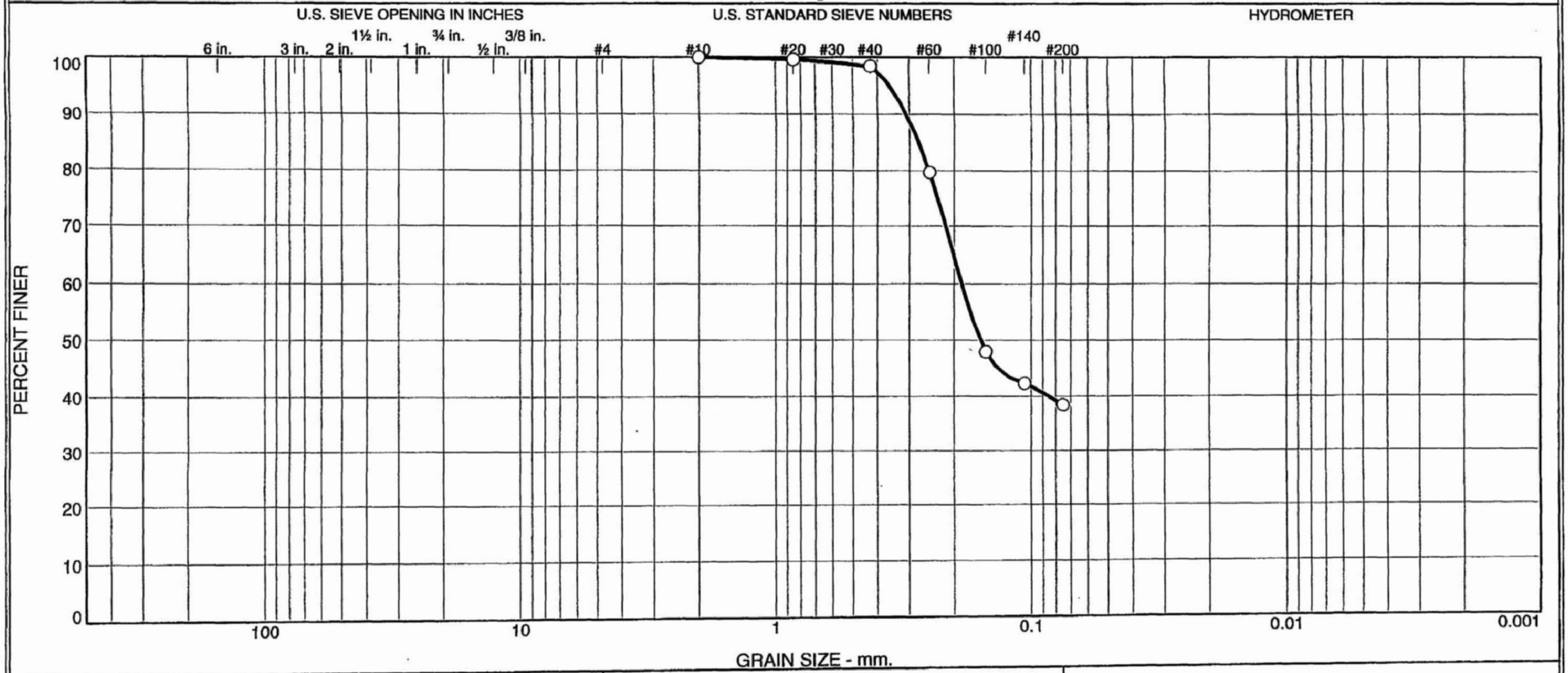
TESTED BY: CS

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REVIEWED BY: Brian Johnson

KAW 1/26/08

Particle Size Distribution Report / ASTM D 6913-04e1



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	0.0	0.0	1.6	59.9	38.5

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2265	SS-27	138.5-140.0	11-11-07	SC	Light Gray Clayey SAND (Visual)	22.8		

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.655 (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-2265
Depth: 138.5-140.0 **Sample Number:** SS-27
Material Description: Light Gray Clayey SAND (Visual)
Date: 11-11-07 **Natural Moisture:** 22.8
USCS Class.: SC
Testing Remarks: Specific Gravity = 2.655 (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
193.55	0.00	0.00	#10	0.00	100.0
97.71	0.00	0.00	#20	0.38	99.6
			#40	1.53	98.4
			#60	19.86	79.7
			#100	50.89	47.9
			#140	56.42	42.3
			#200	60.12	38.5

Fractional Components

Cobbles	Gravel			Sand				Fines
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	
0.0	0.0	0.0	0.0	0.0	1.6	59.9	61.5	38.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.1576	0.1870	0.2514	0.2754	0.3080	0.3589

Fineness Modulus
0.64

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: 3/12/08

SAMPLE IDENTIFICATION: B-2265 SS-27

(A) Mass of oven-dried soil, grams:		75.00
(B) Mass of pycnometer filled with water at test temperature (T), grams:		656.80
(C) Mass of pycnometer, water and soil, grams:		703.56
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		21.5
(G) Specific Gravity at observed temperature:	A / [C - (C - A)]	2.656
(F)	***Correction factor:***	0.99968
(G x F)	**SPECIFIC GRAVITY @ 20°C:**	2.655

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

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

REMARKS: Estimated % Passing # 4 : 100%

Clayey SAND (SC) - visual

EQUIPMENT USED

SCALES : 3.1.19

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNOMETER : P-5

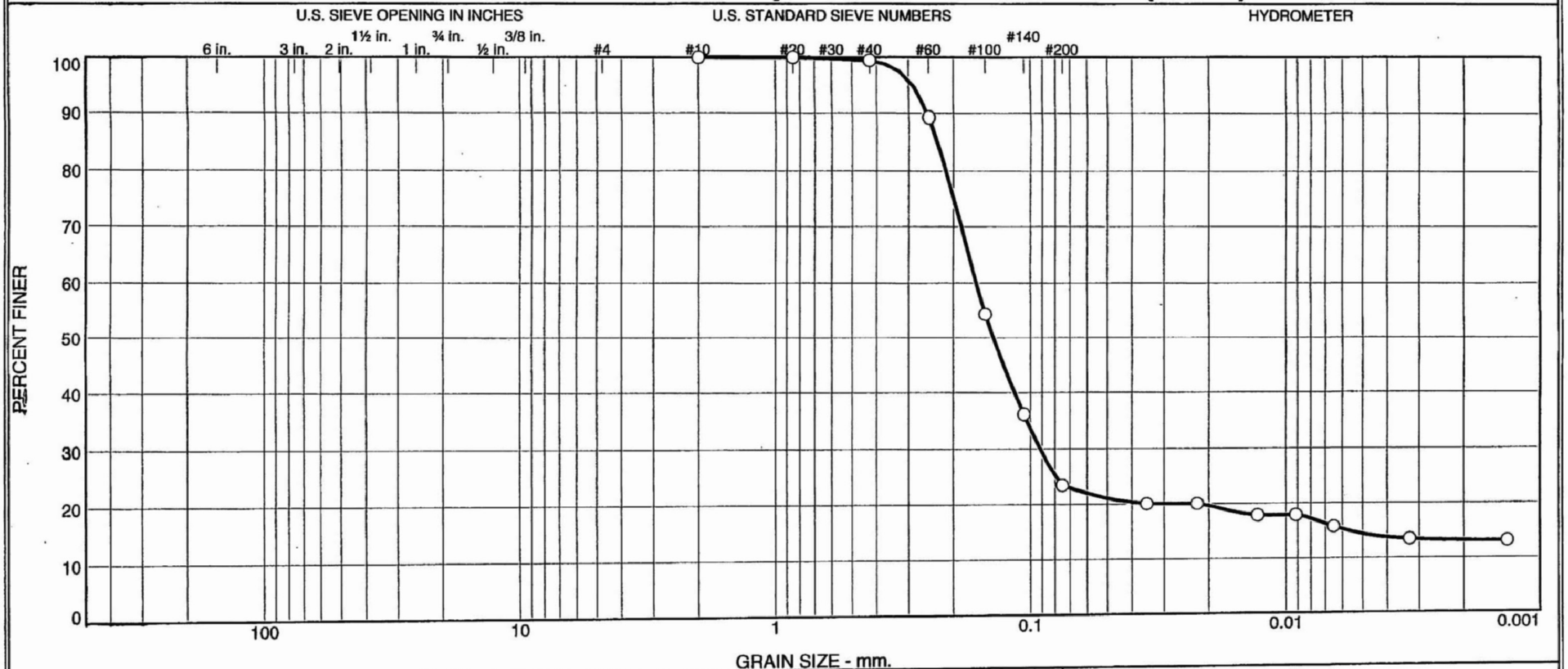
TESTED BY: CS

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REVIEWED BY: Brian Johnson

DSC 3-13-08

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



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.6	76.0	9.0	14.4

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Boring B-2265	SS-29	152.5-154.0	11-11-07	SM	Light Gray Silty SAND	19.9	NV	NP

Client Bechtel

Project Exelon Texas COL (Victoria)

Project No. 6468071777 Figure NA

MACTEC, Inc.

Raleigh, North Carolina

○ Specific Gravity = 2.650 (ASTM D854-06)

Tested By: CS **Checked By:** LBJ KAW 1/26/08

GRAIN SIZE DISTRIBUTION TEST DATA

1/26/2008

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468071777
Location: Boring B-2265
Depth: 152.5-154.0 **Sample Number:** SS-29
Material Description: Light Gray Silty SAND
Date: 11-11-07 **Natural Moisture:** 19.9
Liquid Limit: NV **Plastic Limit:** NP **USCS Class.:** SM
Testing Remarks: Specific Gravity = 2.650 (ASTM D854-06)
Tested by: CS **Checked by:** LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
175.10	0.00	0.00	#10	0.00	100.0
48.97	0.00	0.00	#20	0.01	100.0
			#40	0.27	99.4
			#60	5.23	89.3
			#100	22.34	54.4
			#140	31.26	36.2
			#200	37.49	23.4

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =48.97
Hygroscopic moisture correction:
Moist weight and tare = 27.36
Dry weight and tare = 26.98
Tare weight = 15.29
Hygroscopic moisture = 3.3%
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 = 2.650
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	21.9	14.0	9.5	0.0133	15.0	13.8	0.0351	20.1
5.00	21.9	14.0	9.5	0.0133	15.0	13.8	0.0222	20.1
15.00	21.8	13.0	8.5	0.0133	14.0	14.0	0.0129	17.9
30.00	21.8	13.0	8.5	0.0133	14.0	14.0	0.0091	17.9
60.00	21.7	12.0	7.5	0.0134	13.0	14.2	0.0065	15.7
240.00	21.5	11.0	6.4	0.0134	12.0	14.3	0.0033	13.5
1440.00	20.9	11.0	6.2	0.0135	12.0	14.3	0.0013	13.1

MACTEC, Inc.

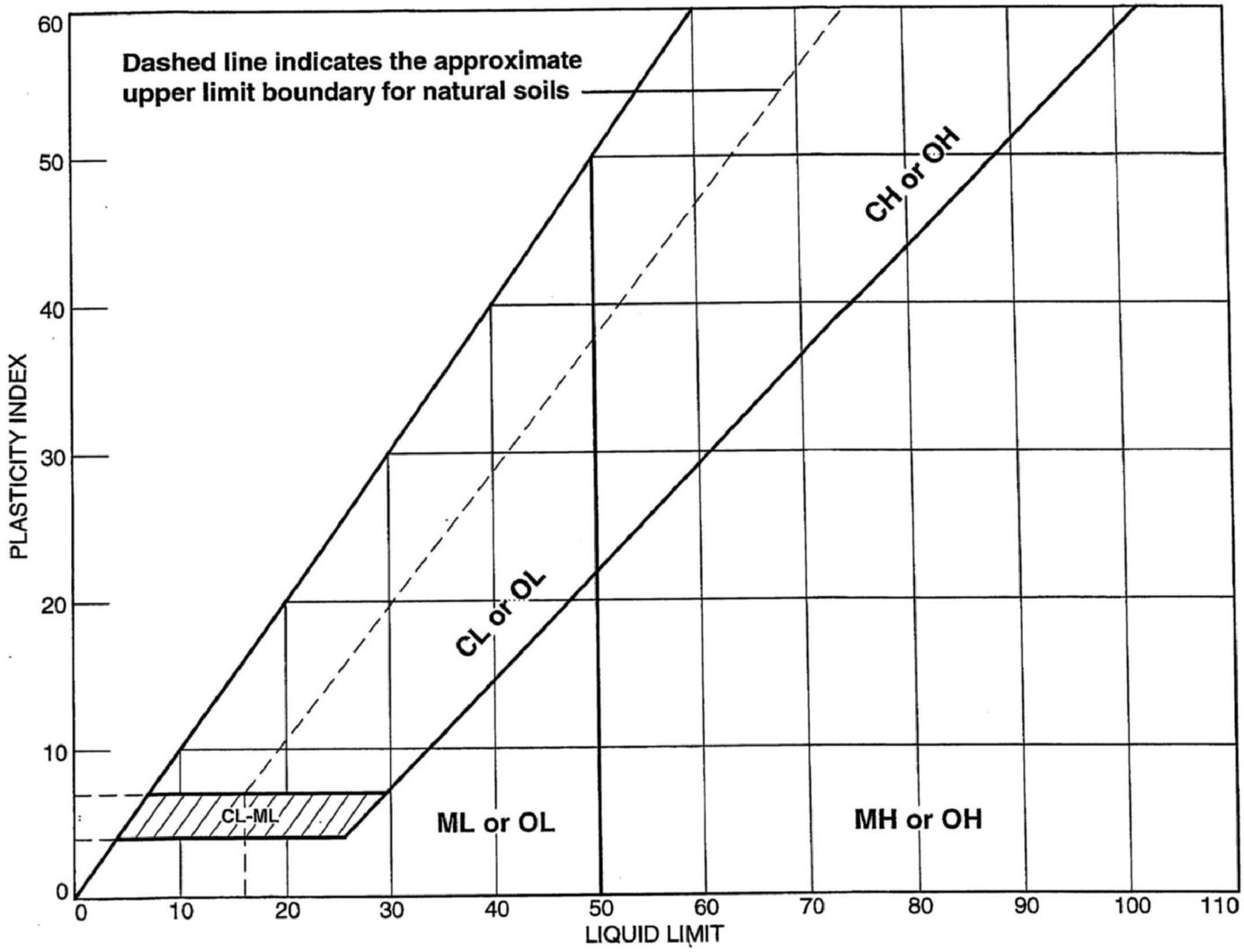
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.6	76.0	76.6	9.0	14.4	23.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0058	0.0219	0.0916	0.1398	0.1628	0.2139	0.2311	0.2536	0.2906

Fineness Modulus
0.50

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Boring B-2265	SS-29	152.5-154.0	19.9	NP	NV	NP	SM

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project No.: 6468071777 **Figure** NA

Tested By: CS **Checked By:** LBJ KAW 1/26/08