<table>
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<tr>
<th>ELEVATION (ft)</th>
<th>DEPTH (ft)</th>
<th>BOX #</th>
<th>RUN #</th>
<th>% RECOVERY</th>
<th>MOISTURE-CONTENT (% of dry wt.)</th>
<th>PERCENT PASSING No. 200 SIEVE</th>
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<td>5.0</td>
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**Ground-water level not measured.**

Becomes fine to coarse sand, more gravel

POORLY GRADED GRAVEL WITH CLAY AND SAND - dense, wet, dark olive gray (5Y 3/2), medium to coarse sand, some fine, gravel (up to 1 inch in size), alternating with Clayey Sand and Silty Sand

SILTY SAND WITH GRAVEL - dense, wet, fine to coarse shale gravel, trace clay, some quartz, iron

SILTY CLAYEY GRAVEL WITH SAND - wet, dark olive gray (5Y 3/2), fine to coarse sand, subrounded to well rounded slate gravel (up to 3 inches in size), cobbles (up to 3½ inches in size)

WELL GRADED SAND WITH GRAVEL - wet, dark olive gray, gravel (up to ½ inch in size)

SILTY CLAYEY GRAVEL WITH SAND - dense, wet, very dark grayish brown (10YR 3/2), fine to coarse sand, slate gravel (up to 1 inch in size), some sandstone

LEAN CLAY - moist, olive brown (2.5Y 4/3), some fine sand

SILTY CLAY - hard, moist, grayish brown (2.5Y 5/2), fine sand, some clay

Becomes very moist, trace wood and charcoal fragments

**Lakewood Formation [Qlw]**

CLAYEY SAND - dense, moist, olive (5Y 5/3), fine grained

SILTY SAND - dense, moist, olive (5Y 5/4), fine grained, some medium, layers of Poorly Graded Sand with Silt

Becomes light olive (5Y 6/3)
SILTY CLAYEY SAND - dense, moist, olive gray (5Y 5/2), fine grained

Silty SAND - dense, wet, pale olive (5Y 6/4) and olive yellow (5Y 6/8) mottling, fine grained, some iron oxide

SILTY CLAYEY SAND - dense, wet, pale olive (5Y 5/2), fine grained

POORLY GRADED SAND with SILT - medium dense, wet, olive yellow (5Y 6/3 and 5Y 6/8) and mottled pale olive, fine to medium grained

Becomes light olive, (5Y 6/4)

POORLY GRADED SAND with SILT - medium dense, wet, pale olive (5Y 5/2), fine grained

Becomes wet, 1 inch mottled with iron oxide stains, vague stratification at base

SILTY SAND - medium dense, wet, pale olive (5Y 6/4), fine grained

No core recovery from 72 to 74'

Trace medium grained, (2.5Y 5/6)

POORLY GRADED SAND with SILT - wet, light olive brown (2.5Y 5/4), fine to medium grained, trace coarse, some gravels (up to ¾ inch in size), predominantly slate

POORLY GRADED GRAVEL with SILT and SAND - dense, wet, light brown, fine to coarse sand, slate gravel (up to ½ inches in size), quartzite

This record is an interpretation of subsurface conditions at the exploration location. Latitude and longitude of boring location shown on logs are approximate. Interfaces between strata are approximate. Transitions between strata may be gradual.
**San Pedro Formation (Ool)**

<table>
<thead>
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**Interpretation of Subsurface Conditions**

**Subsurface Conditions at Other Locations and at Other Times May Differ. Interfaces Between Strata Are Approximate. Transitions Between Strata May Be Gradual.**

**LOG OF BORING**

<table>
<thead>
<tr>
<th>BORING NO.</th>
<th>DATE DRILLED</th>
<th>HOE DIAMETER</th>
<th>GROUND-WATER READINGS</th>
<th>MOISTURE CONTENT (% of dry wt.)</th>
<th>% RECOVERY</th>
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<td>Ground-water level not measured.</td>
<td>GROUND EL.</td>
<td>BOX #</td>
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**DRILLING METHOD**

Sonic Coring

**DRILLING COMPANY/DRILLING EQUIPMENT**

Boart Longyear / 600T Trusonic drill rig

**DATES DRILLED**

2/14/2011 - 2/18/2011

**GROUND-WATER READINGS**

Ground-water level not measured.

**ELEVATION (ft)**

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<thead>
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**S-111 (Continued)**

**LOG OF BORING**

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**DRILLING METHOD**

Sonic Coring

**DRILLING COMPANY/DRILLING EQUIPMENT**

Boart Longyear / 600T Trusonic drill rig

**DATES DRILLED**

2/14/2011 - 2/18/2011

**GROUND-WATER READINGS**

Ground-water level not measured.

**ELEVATION (ft)**

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**S-111 (Continued)**

**LOG OF BORING**

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<th>MOISTURE CONTENT (% of dry wt.)</th>
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<td>GROUND EL.</td>
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**DRILLING METHOD**

Sonic Coring

**DRILLING COMPANY/DRILLING EQUIPMENT**

Boart Longyear / 600T Trusonic drill rig

**DATES DRILLED**

2/14/2011 - 2/18/2011

**GROUND-WATER READINGS**

Ground-water level not measured.

**ELEVATION (ft)**

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<th>Elevation (ft)</th>
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**S-111 (Continued)**

**LOG OF BORING**

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**DRILLING METHOD**

Sonic Coring

**DRILLING COMPANY/DRILLING EQUIPMENT**

Boart Longyear / 600T Trusonic drill rig

**DATES DRILLED**

2/14/2011 - 2/18/2011

**GROUND-WATER READINGS**

Ground-water level not measured.

**ELEVATION (ft)**

<table>
<thead>
<tr>
<th>Depth (ft)</th>
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<tbody>
<tr>
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<tr>
<td>100</td>
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<tr>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
Alternating with layers of Sandy Silt, wet, very dark gray, fine to very fine grained

3-inch cemented zone containing gastropods, very dark gray (5Y 3/1), calcium carbonate nodules, small wood fragment, gastropod shells (up to ½ inch in size)

Less gastropod shells
3-inch thick carbonate cemented zone
2-inch by 3-inch carbonate cemented zone, some silt

Becomes wet, very dark gray (5Y 3/1), trace to few shell fragments (gastropods, bivalves), occasional subrounded rock fragments

3-inch thick cementation with gastropod fragments
SANDY SILT - wet, dark gray, very fine to fine sand, trace scattered shell fragments, some intact gastropods

Trace clay
3-inch thick carbonate concretion
Volcanic rock fragments, gravel concretionary clast containing sublong slate fragments (up to ½ inch in size), shell fragments

SILT - hard, moist, very dark gray (5Y 3/1), trace coarse sand, some granitic rock fragments, some clay

Becomes greenish black, ½ inch granite clasts

Layers of Sandy Silt with Clay, very stiff to hard, fine to coarse sand
Becomes 3 inches clast, subrounded, scattered granitic rock fragments (up to ½ inch in size)

CLAYEY SAND - very dark greenish gray (10Y 1-3/10GY), fine to coarse grained

No core recovery from 124.6 to 127'

POORLY GRADED GRAVEL with SAND and SILT - very dense, moist, dark grayish green (5GY 4/2), fine to medium sand, subangular to well rounded gravel (up to 2 inches in size), locally clast supported

Layers of Poorly Graded Sand, fine grained, trace subrounded to well rounded gravel

Becomes dense, moist, subrounded to well rounded gravel (up to 3 inches in size)

Layers of Silty Sand - moist, (5GY 4/2), fine to medium grained, occasional gravels at base (up to 1 inch in size)

Gravel (up to 1½ inches in size)

No core recovery from 132 to 132.8'

POORLY GRADED SAND with SILT and GRAVEL - moist, grayish green (5GY 5/2), fine grained, fine to coarse gravel (up to 3 inches in size)

SILTY SAND with GRAVEL - moist, greenish gray, fine grained, gravel (up to 1 inch in size)

POORLY GRADED SAND with SILT and GRAVEL - moist, greenish gray (10GY 5/1), gravel (up to ½ inch in size), granite, some slate and quartzite

Becomes medium grained, trace fine gravel (up to ½ inch in size) at base of bed

Becomes light greenish gray (5GY 7/1), trace subrounded to well rounded gravel (up to 1½ inches in size)

Becomes dense, dark greenish gray (10GY 4/1), fine to medium grained

Trace well rounded gravel (up to 1 inch in size)
<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Box #</th>
<th>Run #</th>
<th>Moisture Content (% of dry wt.)</th>
<th>Percent Passing No. 200 Sieve</th>
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<td>SM</td>
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</table>

SILTY SAND with GRAVEL - moist, very dark greenish gray (5G-1 3/1), fine grained, trace subrounded to well rounded gravels (up to 1 inch in size)

POORLY GRADED SAND with SILT - dense, moist, very dark greenish gray (10Y 4/1), fine grained, trace fine gravel

SILTY SAND - wet, very dark greenish gray (5G-1 3/1), very fine to fine grained

Thick bed, massive

Becomes dense, moist, greenish black (10Y 2.5/1), fine grained, few gravel (up to ¾ inch in size), well rounded to rounded

Occasional rounded to well rounded gravels (up to 1 inch in size)

END OF BORING AT 150 FEET

NOTES:

Consistency description on this log is based on pocket penetrometer test results and/or visual observation of soil samples.

Hand augered upper 8½ feet to avoid damage to utilities.

Borehole grouted with cement-bentonite slurry and patched with asphalt concrete.
Kehoe Testing & Engineering
Office: (714) 901-7270
Fax: (714) 901-7289
rich@kehoetesting.com
www.kehoetesting.com

CPT Data
30 ton rig

Date: 05/Mar/2011
Test ID: C-117
Project: LosAngeles
Customer: MACTEC
Job Site: Beverly Hills High School

Test ID: C-117
File: Z05M1102C.ECP

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0 | Tip Stress COR (tsf) | 600 |
0 | Sleeve Stress (tsf) | 14  |
0 | Pore Pressure (tsf) | -1  |
0 | Ratio COR (%) | 8   |
2 | SBT FR (Rob. 1986) | 12  |

Hand Auger
Silt Mix
Sandy Silt
Silt Mix
Silty Clay
Silty Sand
Sandy Silt
Vt Fine Gr
Sandy Silt
Silt Mix
Silty Clay
CPT Data
30 ton rig

Customer: MACTEC
Job Site: Beverly Hills High School

Date: 26/Feb/2011
Test ID: C-118
Project: LosAngeles

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)

Depth (ft)

Hand Auger
VS Fine Gr
Clay
Sandy Silt
Silt Mix
Silty Clay
Clay
Silty Clay
Clay

Maximum depth: 76.08 (ft)
Page 1 of 2
CPT Data

30 ton rig

Test ID: C-118

Customer: MACTEC

Job Site: Beverly Hills High School

Date: 26/Feb/2011

Project: LosAngeles

Maximum depth: 76.08 (ft)

Tip Stress COR (tsf)

Sleeve Stress (tsf)

Pore Pressure (tsf)

Ratio COR (%)

SBT FR (Rob. 1986)

Depth (ft)

- Clay
- Silty Clay
- Clay
- Silty Clay
- Silt Mix
- Clay
- Sand Mix
- VS Fine Gr
- Sandy Silt
- Clay

Test ID: C-118

File: Z26F1104C.ECP
CPT Data

30 ton rig

Date: 26/Feb/2011
Test ID: C-119A
Project: LosAngeles

Customer: MACTEC
Job Site: Beverly Hills High School

Tip Stress COR (tsf)

Sleeve Stress (tsf)

Pore Pressure (tsf)

Ratio COR (%)

SBT FR (Rob. 1986)

Max depth: 75.03 (ft)

VS Fine Gr
Silty Clay
Clay
Clay
Silty Clay
Clay
Silty Clay
Sand Mix
Silt Mix
Maximum depth: 75.03 (ft)

Page 2 of 2
Figure A-4.25 Test ID: C-120

File: Z26F1102C.ECP
Kehoe Testing & Engineering
Office: (714) 901-7270
Fax: (714) 901-7289
rich@kehoetesting.com
www.kehoetesting.com

CPT Data
30 ton rig

Customer: MACTEC
Test ID: C-120
Project: Los Angeles
Job Site: Beverly Hills High School

Date: 26/Feb/2011
Test ID: C-120

Figure A-4.26
Test ID: C-120
File: Z26F1102C.ECP

Tip Stress COR (tsf) 600
Sleeve Stress (tsf) 14
Pore Pressure (tsf) 14
Ratio COR (%) 8
SBT FR (Rob. 1986) 12

Depth (ft)

Maximum depth: 70.01 (ft)
Page 2 of 2
APPENDIX C-3  LOGS OF BORINGS – PREVIOUS INVESTIGATION

G-13 and G-14  (MACTEC, 2010)
SB-1 and SB-2  (MACTEC, 2010)
67-065B-19    (LeRoy Crandall and Associates, 1968)
84-ADE277-03  (LeRoy Crandall and Associates, 1984)
### Sand and Clay Descriptions

#### SANDY LEAN CLAY
- Stiff, moist, brown, shale fragments up to 3/4-inch diameter

#### CLAYEY SAND with Gravel
- Loose to dense, moist, reddish brown, fine, trace shale fragments
  - 47.3% Passing No. 200 Sieve

#### Sample Issues
- Increased sand content, very dark gray with rust mottling
  - 17.3% Passing No. 200 Sieve
- Sample not recovered, low blow count due to heavy rig chatter caused by gravel in cuttings
- Abundant shale fragments

### Soil Composition

#### FILL - SILTY SAND
- Moist, brown

#### QUATERNARY YOUNGER ALLUVIUM [Qal]
- SANDY SILT
  - Stiff, moist, very dark brown, shale fragments
    - 51.0% Passing No. 200 Sieve

#### SANDY LEAN CLAY
- Stiff, moist, brown, shale fragments up to 3/4-inch diameter

#### CLAYEY SAND with Gravel
- Loose to dense, moist, reddish brown, fine, trace shale fragments
  - 47.3% Passing No. 200 Sieve

#### Increased sand content, very dark gray with rust mottling
  - 17.3% Passing No. 200 Sieve

#### Sample
- Sample not recovered, low blow count due to heavy rig chatter caused by gravel in cuttings
  - Abundant shale fragments

### Other Notes
- This record is a reasonable interpretation of subsurface conditions at the exploration location. Latitude and longitude of boring location shown on logs are approximate; refer to plot plan for more accurate location information. Subsurface conditions at other locations and at other times may differ. Interfaces between strata are approximate. Transitions between strata may be gradual.
SANDY LEAN CLAY - hard, wet, gray with brown mottling, trace subrounded and subangular gravel
(69.8% Passing No. 200 Sieve, LL=42, PI=22)

Sample not recovered

CLAYEY SAND - very dense, wet, brown, fine to medium, trace silt, contains carbonate-lined root cracks and carbonate nodules
(39.8% Passing No. 200 Sieve)

Sample not recovered

FAT CLAY - wet, brown

Sample not recovered

SILTY SAND - very dense, wet, reddish brown, fine to medium, trace clay
(NP, NP)

Sample not recovered

This record is a reasonable interpretation of subsurface conditions at the exploration location. Latitude and longitude of boring location shown on logs are approximate; refer to plot plan for more accurate location information. Subsurface conditions at other locations and at other times may differ. Interfaces between strata are approximate. Transitions between strata may be gradual.

Field Tech: DW
Prepared By: NH
Checked By:

MTA Westside Extension
Los Angeles, California

LOG OF BORING
Project: 4953-09-0472 Figure: A-1.13b
## BORING G-13 (Continued)

**DATE DRILLED:** May 28, 2009  
**EQUIPMENT USED:** Rotary Wash  
**HOLE DIAMETER (in.):** 5  
**LOCATION:** AVE. OF THE STARS & SANTA MONICA BL.  
**ELEVATION:** 282 **

**LATITUDE:** 34.06194 °  
**LONGITUDE:** -118.41752

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<tr>
<th>ELEVATION (ft)</th>
<th>DEPTH (ft)</th>
<th>&quot;N&quot; VALUE STD.PEN.TEST</th>
<th>OVA (ppm)***</th>
<th>MOISTURE (% of dry wt.)</th>
<th>DRY DENSITY (pcf)</th>
<th>BLOW COUNT* (blows/ft)</th>
<th>SAMPLE LOC.</th>
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**Lean Clay -** hard, wet, brown with gray mottling

Increased sand content

**Silty Sand -** very dense, wet, brown with gray mottling, fine to medium, some slate gravel

**Poorly Graded Sand with Gravel -** very dense, wet, brown with gray mottling, fine to medium

Gravel and cobbles up to at least 3-inch diameter

**END OF BORING AT 101 FEET**

**NOTES:**

Ground-water level measured at 27 feet on June 1, 2009 after 4 day hiatus in drilling. Boring grouted with a cement-bentonite slurry from the bottom up.

*Number of blows required to drive Crandall Sampler 12 inches using 300 pound downhole hammer falling 18 inches.

Field Tech: DW  
Prepared By: NH  
Checked By:
### BORING G-14

**DATE DRILLED:** 07/14/2009 to 07/15/2009  
**EQUIPMENT USED:** Rotary Wash  
**HOLE DIAMETER (in.):** 5  
**LOCATION:** AVE. OF THE STARS & SANTA MONICA BL.  
**ELEVATION:** 281 **  
**LATITUDE:** 34.06136 °  
**LONGITUDE:** -118.41840

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<th>DEPTH (ft)</th>
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<th>OVA (ppm)**</th>
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- **FILL - SANDY CLAY** - moist, brown and gray
  - Becomes dark gray

- **FILL - SILTY SAND with Gravel** - loose, moist, brown, fine to medium with some coarse
  - (39.3% Passing No. 200 Sieve)

- **QUATERNARY YOUNGER ALLUVIUM [Qa]**
  - SANDY CLAY - stiff, moist, brown, some slate gravel

- **SILTY SAND** - loose to medium dense, moist, brown, fine to medium, some gravel

---

Field Tech: AR  
Prepared By: NH  
Checked By:  

MTA Westside Extension  
Los Angeles, California  
LOG OF BORING  
Project: 4953-09-0472  
Figure: A-1.14a
### BORING G-14 (Continued)

**DATE DRILLED:** 07/14/2009 to 07/15/2009  
**EQUIPMENT USED:** Rotary Wash  
**HOLE DIAMETER (in.):** 5  
**LOCATION:** AVE. OF THE STARS & SANTA MONICA BL.  
**ELEVATION:** 281 **  
**LATITUDE:** 34.06136 °  
**LONGITUDE:** -118.41840

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**LOG OF BORING**

**MTA Westside Extension**
**Los Angeles, California**

**Figure:** A-1.14b

**Field Tech:** AR  
**Prepared By:** NH  
**Checked By:**

---

**QUATERNARY OLDER ALLUVIUM [Qalo]**  
Grades to Gravelly Sand  
Approximate 2-inch thick Clay layer at 43 feet  
Sample not recovered due to 3-inch cobble in bit  

**FAT CLAY -** very stiff to hard, moist, brown, some slate gravel, trace fine sand  
(LL=65, PI=33)

**SILTY SAND with Gravel -** dense, moist, brown, fine to coarse  
Thin layer of Lean Clay  

**POORLY GRADED SAND with Gravel -** moist, light brown, fine to coarse  
Thin layer of Sandy Clay  
(50.6% Passing No. 200 Sieve)  

**WELL GRADED SAND with Gravel -** very dense, moist, light brown, fine to coarse  
Thin layer of Sandy Clay  
(50.6% Passing No. 200 Sieve)
Sample not recovered

6- to 8-inch diameter cobble

Sample not recovered due to large gravel in bit

END OF BORING AT 85.5 FEET

NOTES:

Hand augered top 5 feet due to utilities.
Pressure meter test performed at 65 feet.
Two separate 1-inch diameter ground-water monitoring wells extending to 20 feet and 49 feet, respectively, installed in borehole upon completion of drilling (see well construction diagram for G-14).

*Number of blows required to drive Crandall Sampler 12 inches using 340 pound downhole hammer falling 18 inches.
**BORING SB-1**

**DATE DRILLED:** 6/2/10

**EQUIPMENT USED:** Sonic Rig

**HOLE DIAMETER (in.):** 6" outer casing/4" core diameter

**ELEVATION:** **

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- **7" of thick Asphaltic Concrete**
- **Artificial Fill**

**Older Alluvial Fan deposits (Qalo)**

Clayey Silt (ML) with trace medium to coarse sand grains and sub-angular gray slate fragments, moist

Less clay content from 3 to 4 ft

Sandy Silt with trace clay and scattered sub-angular slate fragments, moist, red-brown (5 YR)

- **Argillic between soil horizon, Clayey to Silty fine Sand (SC-SM) with few medium to coarse grains and trace slate fragments, moist, red-brown (5 YR)**

- **Grading to Silty Sand (ML), fine grained with few medium to coarse grains, trace clay, moist**

- **Clayey Sand (SC)**

- **Clayey Silt with slate fragments (ML), moist**

- **Silty Sand (SM) and Clayey fine Sand (SC), abundant sub-angular to sub-rounded slate and shale rock fragments less than or equal to 1", moist, appears dense, dark yellowish brown (10 YR 3/6) to dark grayish brown (10 YR 4/2), pocket pen: 3.5 ton/ft**

Graded transition

Fine Sandy Silt to Clayey Silt (ML) with discontinuous dark lamellae, abundant carbonate debris/fragments, very dense, olive gray (5 Y 4/2), slightly moist to moist, pocket pen: +4.5 ton/ft

Field Tech: DLP/MAE

Prepared By:

Checked By:

(Continued on following figure)
**BORING SB-1 (Continued)**

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**Very fine Sandy Silt (ML) with scattered sub-rounded carbonate nodules, rock fragments less than or equal to 1/4", moist to very moist, dense, massive to slightly mottled, dark yellowish brown (10 YR 3/6 to 4/6), pocket pen: 3.5 ton/ft**

**Silty fine Sand (SM) with occasional sub-rounded slate fragments less than or equal to 1/4", dense, dark brown (10 YR 3/3) to dark yellowish brown (10 YR 4/3), trace clays**

**Silty fine to medium Sand with some clays (SM-SC), abundant sub-rounded slate and other granite rock fragments that are less than or equal to 1.5", dense, slightly moist to moist, massive, pocket pen: 4.0 ton/ft**

**Saturated zone, groundwater encountered, pocket pen: 0.5 to 3.5 ton/ft**

**Clayey Silt (ML) with trace fine sand, occasional sub-rounded slate and other rock fragments/gravels that are less than or equal to 1/4", abundant carbonate forams/shell fragments and sub-angular rock fragments that are less than or equal to 1/4", very stiff to hard, moist, mottled to slightly lenticular, clayey silt is dark brown (10 YR 3/3), thin laminae of sandy silt is dark yellowish brown (10 YR 4/4), pocket pen: 3.5 to +4.5 ton/ft**

**Increase in Sandy Silt lenticular bedding, dense, increasing sub-rounded to sub-angular gravels, slate and other rock fragments with depth less than or equal to 1", mottled appearance, dark yellowish brown (10 YR 4/4), pocket pen: 4.5 ton/ft**

**Silty Silt to Silty Sand (ML/SM), sub-angular to sub-rounded slate and other gravels less than or equal to 1"**

**Silty fine Sand to Sandy Silt (ML/SM) with Clayey Silt (ML) and occasional sub-rounded to sub-angular slate, carbonate, and shaley gravels less than or equal to 1/2", moist, stiff, mottled to faintly layered/lenticular (SP-SM), iron-oxide stained and grayish, mostly dark yellowish brown (10 YR 3/4) to olive brown (2.5 Y 4/3), pocket pen: 2.75 to 4.5 ton/ft**
Clayey Silt (ML), stiff, moist, olive (5 Y 5/3), pocket pen: 3.0 to 4.5 ton/ft

Silty fine Sand to Sandy Silt (ML/SM) with Clayey Silt (ML) and occasional sub-rounded to sub-angular slate, carbonate, and shaley gravels less than or equal to 1/2", moist, stiff, mottled to faintly layered/lenticular (SP-SM), iron-oxide stained and grayish, mostly dark yellowish brown (10 YR 3/4) to olive brown (2.5 Y 4/3), pocket pen: 2.75 to 4.5 ton/ft

Clayey Silt (ML) to Silty Clay (CL), stiff, moist, mottled to massive, abundant iron-oxide staining where silty, olive brown (2.5 Y 4/4), pocket pen: 2.5 ton/ft

Very moist to wet at 67 to 68.5 ft

Thin layer of Silty Sand (SP) with sub-rounded gravels less than or equal to 1/8”

Clayey Silt (ML) to Silty Clay (CL), stiff, moist to wet, olive gray (5 Y 4/2) to olive (5 Y 4/3), pocket pen: 2.5 to 4.5 ton/ft

Silty fine to medium Sand (SM) and sub-rounded to sub-angular slate and other gravels that are less than or equal to 2”, iron-oxide staining and mottled throughout, few layers/lens of sandy silt (ML)

70.2 to 71 ft Olive Brown (2.5 Y 4/3)

71 to 72.8 ft Olive (5 Y 4/3) with Fe staining

72.8 to 73.7 ft Olive Brown (2.5 Y 4/3)

Gradational coarsening up sequence from Sandy Silt (ML) to Silty fine Sand (SM)

Clayey Silt (ML), stiff, moist, olive (5 Y 5/3), pocket pen: 3.0 to 4.5 ton/ft

Clayey Silt (ML) to Silty Clay (CL), increase in carbonate debris

[No recovery from 76 to 76.3 ft]

Clayey Silt (CL), very firm, abundant carbonate organics or debris, less than or equal to 1/2", dark gray (5 Y 4/1) to olive gray (5 Y 4/2), massive to slightly mottled, pocket pen: 2.5 to 3.5 ton/ft

Gradational transition into Sandy Silt

Sandy Silt (ML) interlayered with Silty fine Sand (SM), olive brown (2.5 Y 4/4)

(Continued on following figure)
Boring SB-1 (Continued)

Clayey Sand to Silt (SC-SM), abundant sub-angular rock fragments that are less than or equal to 1/2", charcoal fragments, moist, very mottled

Silty fine Sand interlayered with Sandy Silt (SM) with olive brown (2.5 Y 4/4), moist to very moist

Clayey Sand to Silt (SC-SM), abundant sub-rounded rock fragments less than or equal to 1", olive (5 Y 4/4 to 5/6) to light olive gray (5 Y 6/2), few scattered charcoal fragments, moist, decrease in gravels with depth, pocket pen: 2.5 to 4.0 ton/ft

Silty fine Sand to Sandy Silt (SM/ML), with trace clays

Thin layer of Sandy Clay (SC) to Silty Clay (CL) at 88.4 to 88.5 ft

Sandy Clay (SC) to Silty Clay (CL), moist, stiff, abundant organics-carbonate and thin black lamellae, mottled to massive, occassional gray sub-rounded slate rock fragments/gravels that are less than or equal to 1/4", olive (5 Y 4/4 to 4/3), pocket pen: 2.75 to 4.0 ton/ft

Silty fine to medium Sand (SM) with trace clays, decrease in size and an abundance of sub-rounded to sub-angular slate gravels with depth, mottled, olive brown (2.5 Y 4/3 - 4/4) with iron-oxide staining, pocket pen: +4.3 ton/ft

Black organic discontinuous lamellae/lenses

Silty fine Sand to fine Sandy Silt (SM/ML), occassional and few sub-rounded slate and other gravels less than or equal to 1/4"

Silty Sand (SM) to Sand with Silt (SP), moist, massive to vague lenticular layers/beds, occassional rounded to sub-rounded slate and granitic rock fragments that are less than or equal to 1/2", slightly mottled, dark yellowish brown (10 YR 2/2) occassional iron-oxide staining to moderate yellowish brown (10 YR 5/4), pocket pen: 2.5 to 4.25 ton/ft

Fine Sand with Silt (SP-SM), slightly moist

(Continued on following figure)
**LOG OF BORING**

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**ELEVATION (ft)**

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**DATE DRILLED:** 6/2/10
**EQUIPMENT USED:** Sonic Rig
**HOLE DIAMETER (in.):** 6" outer casing/4" core diameter

**ELEVATION:** 6/2/10

**HOLE DIAMETER:** 6" outer casing/4" core diameter

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**METRO WSE**

Los Angeles County, California

**Los Angeles County, California**

**THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE; REFER TO PLOT PLAN FOR MORE ACCURATE LOCATION INFORMATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.**
### BORING SB-1 (Continued)

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**Sandy Silt to Clayey Silt (SM-ML)**

Clayey Silt (ML), very stiff to hard, massive, abundant foram debris, pocket pen: +4.5 ton/ft

[No recovery from 121.5 to 122.5 ft]

Clayey Silt (ML), hard, massive, abundant foram debris, pocket pen: +4.5 ton/ft

Increase in foram debris, occasional sub-rounded gravels that are less than or equal to 1/2"

Clayey Silt (ML) to Silty Clay (CL), some shell and foram debris fragments, decrease in gravel content, very firm, massive, dark greenish gray (5 G 4/1) to greenish black (5 G 2/1)

Notes:
- No Caving
- Groundwater at depths indicated on log
- Grouted from 133 to 1 foot bgs on 06/04/2010
- Cement (Redset) from 1 foot bgs to surface

Field Tech: DLP/MAE
Prepared By: MAE
Checked By: MAE

---

**LOG OF BORING**

Metro WSE
Los Angeles County, California
**Asphalt Older Alluvial Deposits (Qalo)**

- Sandy Clay (CL)/Clayey Sand (SC)
- Slough from 10 to 10.3 ft
- Sandy Clay (CL) to Clayey Silt (ML), mottled, abundant rock fragments that are less than or equal to 1/8", dark gray

**Sandy Silt (ML)**

- Very fine sand, trace clays, very stiff to hard, mottled, massive, abundant rock fragments/gravel that is less than or equal to 1/4", sub-rounded to angular shale fragments, lenticular to discontinuous vague layers, black manganese coating some clasts, yellowish brown (10 YR 5/4), pocket pen: +4.5 ton/ft³

**Fine to medium grained Sand (SP)**

- Trace silt, occasional rounded to sub-rounded gravel that is less than or equal to 1/2"

---

**LOG OF BORING**

- **Asphalt Base Gravel**
- **Older Alluvial Deposits (Qalo)**
- **Sandy Clay (CL)/Clayey Sand (SC)**

**Moisture (% of dry wt.)**

- No recovery from 16 to 17.6 ft

**Blow Count** (blows/ft)

- [Figure: A-c]

**Elevation (ft)**

- [Field Tech: DLP/MAE]

**Prepared By:**

**Checked By:**

**Project:** 4953-09-0473

**DATE DRILLED:** 6/7/10

**HOLE DIAMETER (in.):**

**EQUIPMENT USED:** Sonic Rig

**HOLE DIAMETER (in.):** 6" outer casing, 4" core diameter

---

**THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE; REFER TO PLOT PLAN FOR MORE ACCURATE LOCATION INFORMATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.**
Clayey Silt to Clay (ML/CL), very stiff, moist, olive brown (2.5 Y 4/4), pocket pen: +4.5 ton/ft

SAMPLE LOC.

BLOW COUNT* (blows/ft)

DRY DENSITY (pcf)

MOISTURE (% of dry wt.)

ELEVATION (ft)

DEPTH (ft)

Grades to fine Sandy Silt (ML), yellowish brown (10 YR 5/4), stiff, moist, pocket pen: +4.5 ton/ft

Clayey Silt to Silty Clay (ML/CL), trace very fine sand, very stiff, moist, olive brown (2.5 Y 4/4), pocket pen: +4.5 ton/ft

Clayey Silt to Clay (ML/CL), very stiff, moist, olive brown (2.5 Y 4/4), pocket pen: +4.5 ton/ft

Clayey Silt to Silt (ML), stiff, mottled to faintly laminated, iron-oxide stained throughout, dark yellowish brown (10 YR 4/4) to light olive brown (2.5 Y 5/4), occasional fine sand to sandy silt within discontinuous lenses, pocket pen: 2.5 to +4.5 ton/ft

Silty fine to medium Sand (SM), trace clays, olive brown (2.5 Y 4/4)

Fine to medium grained Sand (SP), loose, dry, light yellowish brown (2.5 Y 6/4), thinly bedded, iron-oxide stained and black manganese layers/lenses, very thin layers

Field Tech: DLP/MAE
Prepared By:
Checked By:

FIGURE: A-c

LOG OF BORING
Project: 4953-09-0473 Figure: A-c

Metro WSE
Los Angeles County, California

MACTEC
<table>
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<th>MOISTURE (% of dry wt.)</th>
<th>DRY DENSITY (pcf)</th>
<th>BLOW COUNT* (blows/ft)</th>
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- Fine to medium Sand (SP), light yellowish brown (2.5 Y 6/3), few gravels, thinly layered/bounded consisting of alternating iron-oxide and manganese oxide stained layers
- Fine to medium Sand with trace Silt (SP-SM) with silty clast nodules, slightly moist, olive (5 Y 4/3)
- Medium to coarse Sand (SP), trace fine grains, loose and dry, iron-oxide stained and black manganese, thin layers/lenses, pale olive (5 Y 6/4)
  - [No recovery from 46 to 46.7 ft]
- Fine to coarse Sand (SP) with abundant angular to sub-rounded gravel of varying lithologies (granitics and shale) that are less than or equal to 3", some elongate, slightly moist, loose, vague bedding, iron-oxide stained layers
- Fine Sandy Silt to Silty Sand (ML/SM), slightly moist, iron-oxide stained layers
  - Angular to sub-rounded gravels
    - Pocket Pen: 2.5 ton/ft
- Fine to medium Sand (SP), slightly moist
  - Silty, very fine Sand (SM), slightly moist, iron-oxide stained layers of thin beds, very few sub-angular slate fragments/gravels that are less than or equal to 1/8"
  - [No recovery from 56 to 56.3 ft]
- Fine Sand to Silty fine Sand (SP-SM), thinly bedded to laminated, iron-oxide stained layers throughout, slightly undulatory beds, dry to slightly moist, occasional rounded to sub-rounded gravels that are less than or equal to 2", light yellowish brown (2.5 Y 6/3) to olive yellow (2.5 Y 6/6)
- Fine Sandy Silt (ML), trace fine sand, slightly moist, stiff, pale olive (5 Y 6/4) to pale yellow (5 Y 7/4), thinly bedded, iron-oxide stained and organics/black layers, pocket pen: ~3.0 ton/ft

Field Tech: DLP/MAE
Prepared By: 
Checked By: 

(Continued on following figure)
Very fine Sandy Silt (ML), moist, stiff, vaguely bedded to massive, olive gray (5 Y 5/2) to iron-oxide stained light olive brown (2.5 Y 5/6), occasional rounded gravel that is less than or equal to 1/2", pocket pen: 4.5 ton/ft

Field Tech: DLP/MAE
Prepared By: MACTEC
Checked By: Metro WSE
Los Angeles County, California

BORING SB-2  (Continued)

DATE DRILLED: 6/7/10
EQUIPMENT USED: Sonic Rig
HOLE DIAMETER (in.): 6" outer casing/4" core diameter
ELEVATION: **

65

70

75

80

Very fine, Sandy Silt (ML), moist, stiff, mottled olive gray (5 Y 5/2) to iron-oxide stained light olive brown (2.5 Y 5/6), occasional rounded gravel that is less than or equal to 1/2", pocket pen: 2.5 to 4.0 ton/ft

Less iron-oxide staining, increased moisture

Clayey Silt to Silty Clay (ML/CL) with abundant shell or foram debris

Very fine Sandy Silt (ML), moist, stiff, vaguely bedded to massive, olive gray (5 Y 5/2) to iron-oxide stained light olive brown (2.5 Y 5/6), pocket pen: 4.5 ton/ft

(Continued on Following Figure)
Gravelly Silty Sand to Clayey Sand (SC) with shell fragments, andesitic gravels that are less than or equal to 1", angular to sub-angular

Fine to medium grained Sand with silt (SP-SM), rounded to sub-angular gravels (slate, andesite, shale) that are less than or equal to 3.5", light olive brown (2.5 Y 5/6)

Fine to medium Sand (SP), trace silts, some thinly undulatory bedding, iron-oxide stained layers, darker silty layers, occassional sub-angular to sub-rounded andesite gravels that are less than or equal to 3", olive brown (2.5 Y 4/4), pocket pen: 2.5-3.5 ton/ft

Fragments are ~3", elongated, fractured sub-angular to sub-rounded andesitic gravel

Silty Clay to Clay (CL), very stiff, trace organic fragments, massive, very dark gray (5Y 3/1)

Darker blackish undulatory layer from 84.5 to 84.6 ft
Black Clay (CL), very moist, moderately plastic

[No recovery from 86 to 86.4 ft]

Silty Clay to Clay (CL), very stiff, moist, massive, very dark gray (5 Y 3/1), trace organic fragments, pocket pen: 3.5 to 4.5 ton/ft

Fine to medium Sand (SP) with trace silts, occassional organic debris/fragments, minor and few sub-angular to sub-rounded shale and shell gravels that are less than or equal to 1/8", wet, slightly firm, very few rounded gravels that are less than or equal to 1/2", dark yellowish brown (10 YR 4/6-3/6), massive to mottled occassional silty clay (CL) lens

Gravelly Silty Sand to Clayey Sand (SC) with shell fragments, andesitic gravels that are less than or equal to 1", angular to sub-angular

Silty Clay and Clay (CL) with occassional shell fragments that are less than or equal to 1/4"

Fine to medium Sand with Silts and Clay (SP-SC), few silty clay (CL) layers/lenses, moist, slightly firm, massive to slightly bedded, dark yellowish brown (10 YR 3/6), pocket pen: 1.5 to 2.0 ton/ft

Silty Sand (SM), fine grained with trace medium grains, dark yellowish brown (10 YR 4/6), very moist to wet, saturated at 97 ft (free water)

Contains black to olive gray Clayey Silt lenses about 1/2" thick from 98.1 to 98.9 ft, pocket pen: 1.5 to 2.0 ton/ft

Clayey Silt to Silty Clay (ML-CL), moist, slightly firm/stiff, abundant organic debris, reaction with HCl, greenish black (10 Y 2.5/1), pocket pen: 3.5 ton/ft

Field Tech: DLP/MAE
Prepared By:
Checked By:

(Continued on following figure)
**BORING SB-2 (Continued)**

**DATE DRILLED:** 6/7/10  
**EQUIPMENT USED:** Sonic Rig  
**HOLE DIAMETER (in.):** 6" outer casing/4" core diameter  
**ELEVATION:** **

Fine to medium grained Sand with trace Silt (SP-SM), rounded to sub-angular slate, granite and andesite gravels from 1/4" to 3.5", poorly sorted, slightly moist, gray (N 5/0)  

Increase in gravel content ~25-30% at 101 to 101.7 feet

Very fine Sandy Silt (ML), slightly moist, greenish gray (10 Y 3/1)  

Silty fine to coarse Sand (SM), rounded to sub-angular slate, granite and andesite gravels that are less than or equal to 3.5", poorly sorted, slightly moist, very dark greenish gray (10 Y 3/1)

Alternating thin beds and lenses of silty fine to medium coarse grained Sand (SM), fine Sandy Silt, and Clayey Silt (ML), several sub-rounded to sub-angular gravels that are less than or equal to 1.5", abundant shell/foram debris fragments that are less than or equal to 1/16", moist to slightly moist, very dark greenish gray (5 GY 3/1), pocket pen: 4.0 ton/ft

Silty fine to medium Sand (SM) and Sandy Silt (ML) trace clays, abundant sub-rounded to sub-angular gravels and shell/foram debris that are less than or equal to 2.5", very dark greenish gray (10 Y 3/1), slightly moist, pocket pen: 4.0 to 4.5 ton/ft

Fine Sandy Silt (ML) to Silty Clay (CL), abundant carbonate (shell/foram) debris, moist  

Silty Clay (CL), decrease in carbonate debris, very stiff, moist, greenish black (10 Y 2.5/1), pocket pen: 4.5 ton/ft  

[No recovery from 116 to 116.5 ft]

Clayey Silt (ML), abundant whitish grains that are less than or equal to 1/32", some rounded gravel that are less than or equal to 1/2", very stiff to hard, moist, very dark greenish gray (10 GY 3/1) to greenish black (10 GY 2.5/1), pocket pen: +4.5 ton/ft

Silty fine Sand (SM), slightly stiff, moist, occasional rounded gravel that is less than or equal to 1/4", greenish black (5 GY 2.5/1), massive, pocket pen: +4.5 ton/ft

Fine to medium Sand (SP), slightly moist, occasional rounded gravel that is less than or equal to 1/4", dark greenish gray (10 Y 4/1)

Field Tech: DLP/MAE  
Prepared By:  
Checked By:  

**Metro WSE**  
**Los Angeles County, California**  

**LOG OF BORING**  
**Project:** 4953-09-0473  
**Figure:** A-c
### Logan SB-2 (Continued)

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<th>DEPTH (ft)</th>
<th>MOISTURE (% of dry wt.)</th>
<th>DRY DENSITY (pcf)</th>
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- Slough from 121.3 to 122 ft
- Silty fine Sand (SM), dense, very moist, massive, occasional sub-rounded to sub-angular gravel that is less than or equal to 1/2", greenish black (5 GY 2.5/1)
- Fine Sand (SP), slightly moist, occasional rounded gravel that is less than or equal to 1/4", grey (N 5/0)
- Gradational increase in moisture and Silt
- Silty fine Sand (SM), moist, occasional silt nodule clast that is less than or equal to 1/2", sub-rounded to sub-angular gravel that is less than or equal to 1/2", greenish black (5 GY 2.5/1)
- Silty fine to medium Sand and Clayey Sand (SM-SC) with gravels that are less than or equal to 1.5", sub-rounded to sub-angular, very moist, very dark bluish gray (10B 3/1) to very dark greenish gray (10 Y 3/1), pocket pen: 2.5 to 3.5 ft
- [No recovery from 120 to 122 ft, dumped in drum inadvertently]

Gravelly sand, well cemented with calcite, abundant varying angular to rounded gravels (granitics, mafics, shell fragments) that are less than or equal to 1", gray (N 6/0) to light gray (N 7/0)
- [No recovery from 137 to 141 ft]

---

Field Tech: DLP/MAE
Prepared By: MAE
Checked By: MACTEC

Metro WSE
Los Angeles County, California

LOG OF BORING
Project: 4953-09-0473
Figure: A-c
**BORING SB-2**  (Continued)

<table>
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<td>160</td>
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</table>

Silty fine to medium Sand (SM) and Sandy Silt (ML), rounded to sub-angular gravels that are less than or equal to 2", some elongate, moist, very dark greenish gray (5 GY 3/1), pocket pen: 2.0 ton/ft

Silty fine to medium Sand (SM), slightly moist to moist, moderately sorted, very dark grey (N 3/0), occasional sub-rounded to sub-angular andesitic gravels that are less then or equal to 1/4", pocket pen: 1.0 ton/ft

Increase in sub-rounded to sub-angular andesitic gravels that are less than or equal to 3"

Silty fine Sand to Sandy Silt (SM/ML), occassional sub-rounded to sub-angular andesitic gravels that are less than or equal to 1/2", moist, dark gray (5 Y 4/1) to very dark gray (5 Y 3/1), pocket pen: 2.5 ton/ft

Sandy Silt (ML), thin layer from 149.9 to 150 feet

Saturated zone from 151 to 151.7 ft

Fine to medium Sand with Silt (SF-SM), slightly moist, pocket pen: 2.5 to 3.5 ton/ft

Fine Sandy Silt to Silty Sand (ML/SM), slightly moist, very dark greenish gray (10 Y 3/1), slightly firm, pocket pen: 3.0 ton/ft

Fine Sandy Silt to Silty Sand (ML/SM), slightly moist, slightly firm, gray (5 Y 6/1 to 5/1)

Field Tech: DLP/MAE
Prepared By: MAE
Checked By: DLP/MAE
As above with trace clay, moist to wet, stiff, occasional carbonate (shell/foram) debris/fragments that are angular to sub-angular and elongated with depth, less than or equal to 1/32", very thinly bedded/banded discontinuous to lenticular and undulatory, gray (5 Y 3/1) to greenish black (10 Y 2.5/1)

Very fine Sandy Silt (ML), slightly moist, very dark gray (5 Y 3/1)

As above, moist to wet, stiff, occasional sub-rounded to sub-angular andesitic gravel that is mostly less than or equal to 1/2", pocket pen: 2.5 ton/ft
wet from 166.5 to 167.2 ft

Sub-angular andesitic cobble that is ~4"
wet from 169.4 to 171 ft

As above with trace clay, moist to wet, stiff, occasional carbonate (shell/foram) debris/fragments that are angular to sub-angular and elongated with depth, less than or equal to 1/32", very thinly bedded/banded discontinuous to lenticular and undulatory, gray (5 Y 3/1) to greenish black (10 Y 2.5/1)
### LOG OF BORING

**BORING SB-2** (Continued)

<table>
<thead>
<tr>
<th>ELEVATION (ft)</th>
<th>DEPTH (ft)</th>
<th>MOISTURE (% of dry wt.)</th>
<th>DRY DENSITY (pcf)</th>
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**DATE DRILLED:** 6/7/10  
**EQUIPMENT USED:** Sonic Rig  
**HOLE DIAMETER (in.):** 6" outer casing/4" core diameter  
**ELEVATION:** **

As above with trace clay, moist to wet, stiff, occasional carbonate (shell/foram) debris/fragments that are angular to sub-angular and elongated with depth, less than or equal to 1/32", very thinly bedded/banded discontinuous to lenticular and undulatory, gray (5 Y 3/1) to greenish black (10 Y 2.5/1)

Silty Clay to Clayey Silt (ML/CL), very stiff, moist to wet, trace very fine sand within lenticular bedding, very thinly bedded/banded to lenticular and discontinuous, greenish black (10 Y 2.5/1) to very dark greenish gray (10 GY 3/1) and dark gray (N 4/0), occasional carbonate (shell/foram) debris/fragments that are less than or equal to 1/16", pocket pen: 3.5 to +4.5 ton/ft

Silty Clay to Clayey Silt (ML-CL), very stiff, very moist to wet, trace very fine sand in lenticular bedding, very thinly bedded/banded to lenticular and discontinuous, greenish black (10 Y 2.5/1) to very dark greenish gray (10 GY 3/1) and dark gray (N 4/0), occasional carbonate (shell/foram) debris/fragments that are angular to sub-angular and elongated with depth, less than or equal to 1/32", very thinly bedded/banded discontinuous to lenticular and undulatory, gray (5 Y 3/1) to greenish black (10 Y 2.5/1)

As above with trace clay, moist to wet, stiff, occasional carbonate (shell/foram) debris/fragments that are angular to sub-angular and elongated with depth, less than or equal to 1/32", very thinly bedded/banded discontinuous to lenticular and undulatory, gray (5 Y 3/1) to greenish black (10 Y 2.5/1)

Field Tech: DLP/MAE  
Prepared By:  
Checked By:

---

**Metro WSE**  
Los Angeles County, California  

**LOG OF BORING**  
Project: 4953-09-0473  
Figure: A-e
BORING SB-2 (Continued)

 Date Drilled: 6/7/10
 Equipment Used: Sonic Rig
 Hole Diameter (in.): 6" outer casing/4" core diameter
 Elevation: **

Dry Density (pcf)

Moisture (% of dry wt.)

Blow Count* (blows/ft)

Sample Loc.

Elevation: 205

Silty Clay to Clayey Silt (CL-ML), very stiff, moist to wet, trace very fine sand, thickly bedded to lenticular beds, greenish black (10 Y 2.5/1) to dark gray (N 4/0), occasional carbonate (shell/foram) debris/fragments that are less than or equal to 1/16", pocket pen: 4.0 to +4.5 ton/ft

Elevation: 210

Slough from 206 to 206.5 ft

Silty Clay to Clayey Silt (ML-CL), very stiff, very moist to wet, trace very fine sand within thinly bedded/lenticular beds, greenish black (10 Y 2.5/1), occasional carbonate (shell/foram) debris/fragments that are less than or equal to 1/8 to 1/16", pocket pen: +4.5 ton/ft

Elevation: 215

Silty Clay to Clayey Silt (ML-CL), very stiff, very moist to wet, some very fine sandy silt lenticular to discontinuous bedding, lamellae of manganese, black to dark gray, undulatory, thin bedding/banding, greenish black (10 Y 2.5/1) to dark gray (N 4/0), occasional carbonate shell/foram debris or fragments that are less than or equal to 1/16", pocket pen: 3.0 to +4.5 ton/ft

Elevation: 220

Silty Clay to Clayey Silt (ML-CL), very stiff, moist to wet, trace very fine sand, thinly bedded to lenticular beds, greenish black (10 Y 2.5/1), occasional carbonate (shell/foram) debris/fragments, pocket pen: 3.0 to +4.5 ton/ft

Continued on following figure

Field Tech: DLP/MAE
Prepared By: MACTEC
Checked By: MACTEC

Metro WSE
Los Angeles County, California

LOG OF BORING
Project: 4953-09-0473
Figure: A-c
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Silty Clay to Clayey Silt (CL-ML), very stiff, moist to wet, trace very fine sand, thinly bedded to lenticular beds, greenish black (10 Y 2.5/1), occasional carbonate (shell/foram) debris fragment, pocket pen: 3.0 to +4.5 ton/ft

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**Notes:**
Grouted from 223 feet to 1 foot below ground surface (bgs).
Rapid set cement from 1 foot bgs to surface.
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<tr>
<td>120</td>
<td>2.9</td>
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<tr>
<td>110</td>
<td>3.1</td>
<td>110</td>
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<tr>
<td>100</td>
<td>3.3</td>
<td>122</td>
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<tr>
<td>90</td>
<td>3.5</td>
<td>101</td>
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<td>80</td>
<td>3.7</td>
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<tr>
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<td>3.9</td>
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<td>60</td>
<td>4.1</td>
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<td>50</td>
<td>4.3</td>
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<td>4.5</td>
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<td>4.7</td>
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<td>20</td>
<td>4.9</td>
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</tr>
<tr>
<td>10</td>
<td>5.1</td>
<td></td>
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</tr>
</tbody>
</table>

**LOG OF BORING**

**DATE DRILLED:** May 17, 1966

**EQUIPMENT USED:** 24" Diameter Bucket

**REMARKS:**
- *Silty Clay and Sand*—well graded, 10% to 15% gravel, mottled brown
- *CLAYEY Silt*—few gravel, brown
- *Sandy Silt*—mottled brown
- *Layer of Silty Sand*—light grayish-brown
- *Sandy Silt*—grayish-brown
- *CLAYEY Silt*—grayish-brown
- *Silty Sand*—fine, yellowish-brown
- *Sandy*—fine, yellowish-brown and grayish-brown
- *Gray*—15% gravel 2% to 10% cobbles 7% (1" in diameter)
- *Silty Sand*—fine, gray
- *Layer of Sand*—fine, light gray
- *Layer of Sandy Silt*—gray
- *Cemented Layer* (SAND AND CHOPPING BUCKET USED)
- *Sandy*—fine, gravel, gray
- *Layer of Silty Sand*—fine, dark gray 10% gravel

**NOTE:** Water not encountered. Heavy caving from 84' to 88'.
LOG OF BORING

BORING 1
DATE DRILLED: March 11-13, 1969
EQUIPMENT USED: 5"-Diameter Rotary Wash

ELEVATION 270.5
11.5 116
14.0 115

270-200
11.5 121
11.4 118
22.4 104

200-250
17.1 118
16.4 124

250-300
15.3 119
18.9 110
23.2 101
30.5 92
5.2 110

300-350
7.4 108
10.0 116
10.2 105
10.1 99
13.1 110

350-400
7.8 108
9.3 108
10.1 103
13.4 118

400-450
5.2 103
12.1 122
9.2 114
8.6 111

450-600
21.1 97
12.1 109
13.9 100
12.2 96

600-780
13.9 97
24.1 98
22.6 102
31.1 89

100-180
NOTE: Drilling mud used in drilling process. Water level not established.

SILTY CLAY - same Sand, few gravel, brown
Layer of SAND

SAND - well graded, about 25% gravel some Clay, brown

SILTY CLAY - very silty, same Sand, mottled grey and brown

Layer of SILTY SAND

SAND - fine, few gravel, grey

Layer of CLAY

SILTY SAND - fine, dark grey
Few shells
Cemented layers

SAND - fine, dark grey
Cemented layer
Layer of SILTY SAND - fine, dark grey

Large amount of gravel

SILTY SAND - fine, few gravel, dark grey
Occasional cemented layers

Cemented layers

* Elevations refer to datum of reference survey; see Plate 1.
Soils classified in accordance with the Unified Soil Classification System.
LOG OF BORING

SILTY CLAY - some Sand, brown
Modified greyish-brown
Few gravel
Layer of SAND - fine

Layer of SILTY SAND - fine, grey
Grey

SAND - fine, few gravel, light grey

SILTY SAND - fine, grey

Clayey
Few shells

SAND - fine, few gravel, light grey

SILTY SAND - fine, dark grey

Layer of SILTY CLAY - grey
Cemented layers
Few shells

SAND - fine, few gravel, grey

SILTY SAND - fine, few gravel, grey
Cemented layer (very hard)
Few shells
Few shells

NOTE: Drilling mud used in drilling process in rotary wash hole. A bucket hole was drilled to a depth of 36' adjacent to the rotary wash hole. Slight water seepage encountered at a depth of 22'. Water level at a depth of 64' at completion of drilling. Caving from 29' to 34' (to 3' in diameter) in bucket hole.
NOTE: Drilling mud used in drilling process. Mud removed after drilling completed; no water observed in the hole one-half hour after removing mud.

LOG OF BORING

LEROD CRANDALL AND ASSOCIATES
BORING 1
DATE DRILLED: August 18, 1971
EQUIPMENT USED: 18"-Diameter Bucket

ELEVATION 272.9

2½" Asphaltic Paving - 3" Base Course
FILL - CLAYEY SILT - SANDY SILT - SILTY CLAY
few pieces of wood, mottled brown

ML
CL

Few gravel

Piece of concrete

SANDY SILT - some clay, dark brown

ML

Few gravel

Layer of Silty Sand and Gravel

(continued on following plate)

LOG OF BORING

LEROY CRANDALL AND ASSOCIATES

PLATE A-1
**Boring 1 (Continued)**

**Date Drilled:** August 18, 1971  
**Equipment Used:** 18"-Diameter Bucket

<table>
<thead>
<tr>
<th>Elevation (ft)</th>
<th>Depth (ft)</th>
<th>Moisture %</th>
<th>Density lbs/ft³</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>230</td>
<td>3.2</td>
<td>102</td>
<td>SP</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>225</td>
<td>5.2</td>
<td>120</td>
<td>SW</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>220</td>
<td>13.9</td>
<td>113</td>
<td>ML</td>
</tr>
<tr>
<td></td>
<td>55</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>215</td>
<td></td>
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<tr>
<td></td>
<td>210</td>
<td>20.9</td>
<td>100</td>
<td>SM</td>
</tr>
<tr>
<td></td>
<td>65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>205</td>
<td>21.7</td>
<td>101</td>
<td>SP</td>
</tr>
<tr>
<td></td>
<td>70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>22.9</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td></td>
<td>75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>195</td>
<td>23.4</td>
<td>99</td>
<td>CL</td>
</tr>
<tr>
<td></td>
<td>80</td>
<td>37.1</td>
<td>81</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- SAND - fine, few gravel, greyish-brown
- SAND - well graded, 10% to 15% gravel, brown
- SANDY SILT - some clay, brown
- SAND - well graded, 15% to 20% gravel, brown
- SILTY SAND - fine, very silty, light greyish-brown
- Yellowish-brown  
  Few gravel
- (WATER ENCOUNTERED)
- SAND - fine, grey
- Patches of Clay

**Note:** Water encountered at a depth of 68'.  
Water level at a depth of 69' 20 minutes after completion of drilling.  Caving from 68' to 79'.

**Silty Clay - black**  
(Boring terminated due to heavy caving)

**Log of Boring**

*Leroy Crandall and Associates*
Boring 2-A
Date Drilled: August 18, 1971
Equipment Used: 18"-Diameter Bucket

<table>
<thead>
<tr>
<th>Elevation (ft)</th>
<th>Depth (ft)</th>
<th>Moisture (% of Dry wt)</th>
<th>Density (lbs/ft³)</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>274.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2" Asphaltic Paving - 2" Base Course
Fill - Silty Sand - Silty Clay - Clayey Silt
few gravel, mottled brown

Sandy Silt - some clay, few gravel, dark brown
Layer of Sandy Clay - few gravel, brown

(Continued on following plate)

Log of Boring

LEROY CRANDALL AND ASSOCIATES
PLATE A-4
BOARING 2-A (CONTINUED)

DATE DRILLED: August 18, 1971
EQUIPMENT USED: 18"-Diameter Bucket

<table>
<thead>
<tr>
<th>ELEVATION (ft)</th>
<th>DEPTH (ft)</th>
<th>MOISTURE (%)</th>
<th>DRY DENSITY (lbs/cu ft)</th>
<th>SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>230</td>
<td>10.5</td>
<td>104</td>
<td></td>
<td>SM</td>
</tr>
<tr>
<td>225</td>
<td>3.8</td>
<td>113</td>
<td></td>
<td>SW</td>
</tr>
<tr>
<td>220</td>
<td>5.0</td>
<td>107</td>
<td></td>
<td></td>
</tr>
<tr>
<td>215</td>
<td>8.0</td>
<td>115</td>
<td></td>
<td>SM</td>
</tr>
<tr>
<td>210</td>
<td>5.6</td>
<td>101</td>
<td></td>
<td>SP</td>
</tr>
<tr>
<td>205</td>
<td>6.9</td>
<td>127</td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>195</td>
<td>7.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SILTY SAND - fine, brown

SAND - well graded, about 10% gravel, greyish-brown
15% to 20% gravel

Some Clay

SILTY SAND - fine, few gravel, grey and brown

SAND - fine, light bluish-grey

(WATER ENCOUNTERED)

Fine and coarse
10% to 20% gravel

(BORING TERMINATED DUE TO HEAVY CAVING)

NOTE: Water level at a depth of 70' 10 minutes after completion of drilling. Caving below 70'.

LOG OF BORING

LEROY CRANDALL AND ASSOCIATES
### BORING 3

**DATE DRILLED:** September 18, 1984  
**EQUIPMENT USED:** 5"-Diameter Rotary Wash

<table>
<thead>
<tr>
<th>ELEVATION</th>
<th>CL</th>
<th>3&quot; Asphalctic Paving</th>
</tr>
</thead>
<tbody>
<tr>
<td>285</td>
<td>15.6</td>
<td>FILL - SILTY CLAY - few gravel, brown</td>
</tr>
<tr>
<td></td>
<td>112</td>
<td>Few pieces of metal</td>
</tr>
<tr>
<td>280</td>
<td>20.8</td>
<td>Greyish-brown</td>
</tr>
<tr>
<td></td>
<td>108</td>
<td>Some Sand</td>
</tr>
<tr>
<td>275</td>
<td>18.2</td>
<td>Little to no Sand</td>
</tr>
<tr>
<td></td>
<td>114</td>
<td>Some Sand</td>
</tr>
<tr>
<td>270</td>
<td>17.3</td>
<td>FILL - CLAYEY SILT - some Sand, greyish-brown</td>
</tr>
<tr>
<td></td>
<td>111</td>
<td></td>
</tr>
<tr>
<td>265</td>
<td>15.4</td>
<td>FILL - SILTY CLAY - dark grey</td>
</tr>
<tr>
<td></td>
<td>116</td>
<td></td>
</tr>
<tr>
<td>260</td>
<td>14.1</td>
<td>SANDY SILT - slightly Clayey, few gravel, dark grey</td>
</tr>
<tr>
<td></td>
<td>113</td>
<td></td>
</tr>
<tr>
<td>255</td>
<td>13.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>125</td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>12.9</td>
<td>SM</td>
</tr>
<tr>
<td></td>
<td>116</td>
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<tr>
<td>240</td>
<td>15.1</td>
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</tr>
<tr>
<td></td>
<td>118</td>
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</tbody>
</table>

(Continued on following plate)

**LOG OF BORING**

LEROY CRANDALL AND ASSOCIATES

PLATE A-13a
BOARING 3 (CONTINUED)

DATE DRILLED: September 18, 1984
EQUIPMENT USED: 5"-Diameter Rotary Wash

<table>
<thead>
<tr>
<th>ELEVATION (ft)</th>
<th>DEPTH (ft)</th>
<th>&quot;N&quot; VALUE</th>
<th>MOISTURE %</th>
<th>DRY DENSITY (lbs/ft³)</th>
<th>DRIVE ENERGY (ft-lb/ft)</th>
<th>SAMPLE LOC.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>245</td>
<td>9.9</td>
<td>128</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td>SP</td>
</tr>
<tr>
<td>240</td>
<td>7.1</td>
<td>121</td>
<td>54</td>
<td></td>
<td></td>
<td></td>
<td>SAND - fine to coarse, about 30% gravel, grey</td>
</tr>
<tr>
<td>235</td>
<td>8.9</td>
<td>118</td>
<td>54</td>
<td></td>
<td></td>
<td></td>
<td>Few gravel, greyish-brown</td>
</tr>
<tr>
<td>230</td>
<td>10.2</td>
<td>111</td>
<td>54</td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
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<tr>
<td>225</td>
<td>11.6</td>
<td>123</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
<td>SILTY SAND - fine, light brownish-grey</td>
</tr>
<tr>
<td>220</td>
<td>14.5</td>
<td>110</td>
<td>48</td>
<td></td>
<td></td>
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<tr>
<td>215</td>
<td>19.6</td>
<td>104</td>
<td>54</td>
<td></td>
<td></td>
<td></td>
<td>SAND - fine, light grey</td>
</tr>
<tr>
<td>210</td>
<td>16.4</td>
<td>114</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SILTY SAND - fine, light grey</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SP</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SAND - fine, light bluish-grey</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>About 50% gravel</td>
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</tbody>
</table>

(CONTINUED ON FOLLOWING PLATE)

LOG OF BORING

LEROY CRANDALL AND ASSOCIATES

PLATE A-1.3b
### BORING 3 (CONTINUED)

**DATE DRILLED:** September 18, 1984  
**EQUIPMENT USED:** 5"-Diameter Rotary Wash

<table>
<thead>
<tr>
<th>ELEVATION</th>
<th>DEPTH</th>
<th>&quot;W&quot; VALUE</th>
<th>STD PERCENT</th>
<th>DRY T/P</th>
<th>DRY DENSITY</th>
<th>DRIVE ENERGY</th>
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<tbody>
<tr>
<td>(ft)</td>
<td>(ft)</td>
<td>(ft)</td>
<td>% of dry wt</td>
<td>(lb/ft³)</td>
<td>(lb/ft³)</td>
<td>(ft-lb/ft²)</td>
</tr>
<tr>
<td>205</td>
<td></td>
<td>27.7</td>
<td>93</td>
<td>62</td>
<td></td>
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<tr>
<td>195</td>
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<td>19.5</td>
<td>107</td>
<td>72</td>
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<tr>
<td>185</td>
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<td>7.6</td>
<td>115</td>
<td>108</td>
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<td>115</td>
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<td>105</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**NOTE:** Drilling mud used in drilling process. Removed mud after completion of drilling. Water level not established.

**LOG OF BORING**

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.3c
APPENDIX C-4  CPT DATA – CURRENT FAULT INVESTIGATION

Amec, Current Fault Investigation

T1-C1 through T1-C10, T1-C12 through T1-C20, T1-C22, T1-C25 through T1-C33

T2-C1, T2-C3, T2-C5, T2-C7, T2-C8, T2-C10 through T2-C12, T2-C14, T2-C15, T2-C18, T2-C20 through T2-C23, T2-C25, T2-C27, T2-C29, T2-C31, T2-C33, T2-C35, T2-C37, and T2-C41

T2E-C1 through T2E-C34

T3-C1 through T3-C27, T3-29 through T3-C39

T4-C1 through T4-C7, T4-C9 through T4-C31

T7-C1 through T7-C5, T7-C7 through T7-C21

T8-C1 through T8-C15
CPT Data
30 ton rig
Date: 14/Feb/2011
Test ID: T1-C1
Customer: MACTEC
Job Site: Westside Subway Extension/Ave Of The Stars

Maximum depth: 60.02 (ft)

Tip Stress COR (tsf)

Sleeve Stress (tsf)

Pore Pressure (tsf)

Ratio COR (%)

SBT FR (Rob. 1986)

Maximum depth: 60.02 (ft)

Page 1 of 2
CPT Data
30 ton rig
Test ID: T1-C1
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension/Ave Of The Stars

Date: 14/Feb/2011

Test ID: T1-C1
File: Z14F1103C.ECP

Depth (ft)

Tip Stress COR (tsf)
0 14 700

Sleeve Stress (tsf)
0 14

Pore Pressure (tsf)
0 8

Ratio COR (%)
0 8

SBT FR (Rob. 1986)
2 12

Maximum depth: 60.02 (ft)
CPT Data
30 ton rig
Date: 14/ Feb/ 2011
Test ID: T1- C3
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension/ Ave Of The Stars
CPT Data
30 ton rig
Test ID: T1-C4
Project: Los Angeles
Customer: MACTEC
Job Site: Westside Subway Extension/Ave Of The Stars

Date: 14/Feb/2011

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 67.54 (ft)
Page 2 of 2
CPT Data
30 ton rig
Date: 16/Feb/2011
Test ID: T1-C5
Project: LosAngeles
Customer: MACTEC
Job Site: Westside Subway Extension/Ave Of The Stars

Depth (ft)

Tip Stress COR (tsf)

Sleeve Stress (tsf)

Pore Pressure (tsf)

Ratio COR (%)

SBT FR (Rob. 1986)

Hand Auger

Clay

Sandy Silt

Sand Mix

Sandy Silt

Sand Mix

Sand

Silty Sand

Sand Mix

Silty Sand

Sand

Maximum depth: 68.22 (ft)
Page 1 of 2
Kehoe Testing & Engineering
Office: (714) 901-7270
Fax: (714) 901-7289
rich@kehoetesting.com
www.kehoetesting.com

CPT Data
30 ton rig
Date: 16/Feb/2011
Test ID: T1-C5
Customer: MACTEC
Project: LosAngeles
Job Site: Westside Subway Extension/Ave Of The Stars

Test ID: T1-C5
File: Z16F1101C.ECP

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 68.22 (ft)
Page 2 of 2
<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Tip Stress COR (tsf)</th>
<th>Sleeve Stress (tsf)</th>
<th>Pore Pressure (tsf)</th>
<th>Ratio COR (%)</th>
<th>SBT FR (Rob. 1986)</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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<td>50</td>
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</table>

Maximum depth: 75.02 (ft)

Tip Stress COR (tsf)
- 0 ft: 0 tsf
- 10 ft: 10 tsf
- 20 ft: 20 tsf
- 30 ft: 30 tsf
- 40 ft: 40 tsf
- 50 ft: 50 tsf

Sleeve Stress (tsf)
- 0 ft: 0 tsf
- 10 ft: 10 tsf
- 20 ft: 20 tsf
- 30 ft: 30 tsf
- 40 ft: 40 tsf
- 50 ft: 50 tsf

Pore Pressure (tsf)
- 0 ft: 0 tsf
- 10 ft: 0 tsf
- 20 ft: 0 tsf
- 30 ft: 0 tsf
- 40 ft: 0 tsf
- 50 ft: 0 tsf

Ratio COR (%)
- 0 ft: 0%
- 10 ft: 10%
- 20 ft: 20%
- 30 ft: 30%
- 40 ft: 40%
- 50 ft: 50%

SBT FR (Rob. 1986)
- 0 ft: 0
- 10 ft: 10
- 20 ft: 20
- 30 ft: 30
- 40 ft: 40
- 50 ft: 50

Hand Auger
- Silt Mix
- Clay
- Sandy Silt
- Silty Sand
- Clay
- Silt Mix
- Sand Mix
- Silty Clay
- Clay
- Silt Mix
- Silty Sand
- Sandy Silt
- Silt Mix

Test ID: T1-C6
File: Z07M1101C.ECP
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Office: (714) 901-7270
Fax: (714) 901-7289
rich@kehoetesting.com
www.kehoetesting.com

CPT Data
30 ton rig

Date: 16/Feb/2011
Test ID: T1-C7
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension/Ave Of The Stars

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 77.08 ft
Page 2 of 2
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Fax: (714) 901-7289
rich@kehoetesting.com
www.kehoetesting.com

CPT Data
30 ton rig
Test ID: T1-C8
Date: 17/Feb/2011
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension/Ave Of The Stars

Tip Stress COR (tsf)
0 700

Sleeve Stress (tsf)
0 14

Pore Pressure (tsf)
-2 8

Ratio COR (%)
0 8

SBT FR (Rob. 1986)
2 12

Hand Auger
Clay
Silt Mix
Sandy Silt
Silt Mix
Sand Mix
Sandy Silt
Silty Sand
Silt Mix
Sandy Silt
Silty Sand
Silt Mix
Clay
Silty Clay
Silty Clay
Silty Sand
Silt Mix

Depth (ft)
0 50

Maximum depth: 64.99 (ft)
Page 1 of 2
CPT Data
30 ton rig
Date: 17/Feb/2011
Test ID: T1-C8
Project: LosAngeles
Customer: MACTEC
Job Site: Westside Subway Extension/Ave Of The Stars

Maximum depth: 64.99 (ft)

<table>
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<tr>
<th>Depth (ft)</th>
<th>Tip Stress COR (tsf)</th>
<th>Sleeve Stress (tsf)</th>
<th>Pore Pressure (tsf)</th>
<th>Ratio COR (%)</th>
<th>SBT FR (Rob. 1986)</th>
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<tr>
<td>50</td>
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<td>70</td>
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<td>Sandy Silt</td>
</tr>
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<td>Silt Mix</td>
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<td></td>
<td></td>
<td></td>
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<td>Sandy Silt</td>
</tr>
</tbody>
</table>

Interbedded

Silt Mix
Sandy Silt
CPT Data
30 ton rig
Date: 16/Feb/2011
Test ID: T1-C9
Project: LosAngeles
Customer: MACTEC
Job Site: Westside Subway Extension/Ave Of The Stars

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)
Maximum depth: 81.09 (ft)
Page 2 of 2
CPT Data
30 ton rig
Date: 15/Feb/2011
Test ID: T1-C12
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension/Ave Of The Stars

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)
0 10 20 30 40 50

Maximum depth: 67.96 (ft)
Page 1 of 2
CPT Data
30 ton rig
Date: 15/Feb/2011
Test ID: T1-C12
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension/Ave Of The Stars

Test ID: T1-C12
File: Z15F1104C.ECP
**CPT Data**

- **30 ton rig**
- **Test ID: T1-C13**
- **Project: LosAngeles**

**Customer:** MACTEC  
**Job Site:** Westside Subway Extension/Ave Of The Stars

**Date:** 15/Feb/2011

**File:** Z15F1101C.ECP

---

**Depth (ft):**
- Maximum depth: 15.35 (ft)
CPT Data
30 ton rig
Test ID: T1-C14
Project: Los Angeles

Customer: MACTEC
Job Site: Westside Subway Extension/Ave Of The Stars

Date: 15/Feb/2011

Maximum depth: 76.57 (ft)

Tip Stress COR (tsf) 700
Sleeve Stress (tsf) 14
Pore Pressure (tsf) 8
Ratio COR (%) 8
SBT FR (Rob. 1986) 12

Depth (ft)

50 60 70 80 90 100

Test ID: T1-C14
File: Z15F1102C.ECP
CPT Data
30 ton rig
Test ID: T1-C15
Customer: MACTEC
Job Site: Westside Subway Extension/Ave Of The Stars
Date: 17/Feb/2011
Project: LosAngeles

Depth (ft)

Tip Stress COR (tsf)

Sleeve Stress (tsf)

Pore Pressure (tsf)

Ratio COR (%)

SBT FR (Rob. 1986)

Maximum depth: 60.01 (ft)

Page 1 of 2
CPT Data
30 ton rig
Test ID: T1-C15
Project: LosAngeles
Customer: MACTEC
Job Site: Westside Subway Extension/Ave Of The Stars

Date: 17/Feb/2011

Tip Stress COR
(tsf) 700
0
Sleeve Stress
(tsf) 14
0
Pore Pressure
(tsf) 8
0
Ratio COR
(%)
8
SBT FR
(Rob. 1986)
12

Max depth: 60.01 (ft)

VS Fine Gr
Interbedded

Depth (ft)
0 100
50 100
60 60
70 80
80 90
90 100
CPT Data

30 ton rig

Test ID: T1-C16

Project: Los Angeles

Customer: MACTEC

Job Site: Westside Subway Extension/Century Park

Date: 04/Mar/2011

Tip Stress COR (tsf)

Sleeve Stress (tsf)

Pore Pressure (tsf)

Ratio COR (%)

SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 8.84 (ft)

Hand Auger

Silty Clay

Clay
Tip Stress COR (tsf)

Sleeve Stress (tsf)

Pore Pressure (tsf)

Ratio COR (%)

SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 8.69 (ft)
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www.kehoetesting.com

CPT Data
30 ton rig

Date: 04/Mar/2011
Test ID: T1-C17
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension/Century Park

Tip Stress COR
(tsf)

Sleeve Stress
(tsf)

Pore Pressure
(tsf)

Ratio COR
(%)

SBT FR
(Rob. 1986)

Depth (ft)

Maximum depth: 43.83 (ft)
Maximum depth: 72.26 ft

**CPT Data**
- 30 ton rig
- Customer: MACTEC
- Job Site: Westside Subway Extension/Ave Of The Stars

**Test ID: T1-C18**
- Date: 03/Mar/2011
- Project: LosAngeles

**Depth (ft)**
- 0
- 10
- 20
- 30
- 40
- 50

**Hand Auger**
- Clay
- Silty Sand
- Silty Clay
- Sandy Silt
- Silty Clay
- Sandy Silt
- Silty Sand
- Sand
- Silty Clay
- Sand Mix
- Sandy Silt
- Silty Sand
- Sand
- Silt Mix
- Silty Sand
- Sand
- Silty Mix

**Graphs:**
- Tip Stress COR (tsf)
- Sleeve Stress (tsf)
- Pore Pressure (tsf)
- Ratio COR (%)
- SBT FR (Rob. 1986)
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www.kehoetesting.com

CPT Data
30 ton rig
Test ID: T1-C19
Customer: MACTEC
Job Site: Westside Subway Extension/Ave Of The Stars
Date: 07/Mar/2011
Project: LosAngeles

Test ID: T1-C19
File: Z07M1103C.ECP

Maximum depth: 75.11 (ft)
Page 2 of 2
CPT Data
30 ton rig

Date: 04/Mar/2011
Test ID: T1-C20
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension/Century Park
<table>
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<tr>
<th>Depth (ft)</th>
<th>Tip Stress COR (tsf)</th>
<th>Sleeve Stress (tsf)</th>
<th>Pore Pressure (tsf)</th>
<th>Ratio COR (%)</th>
<th>SBT FR (Rob. 1986)</th>
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Maximum depth: 75.08 (ft)

Test ID: T1-C20

File: Z04M1101C.ECP
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www.kehoetesting.com

CPT Data
30 ton rig

Customer: MACTEC
Job Site: Westside Subway Extension/Golf Course

Date: 07/Apr/2011
Test ID: T1-C22
Project: LosAngeles

Tip Stress COR
(tsf)

Sleeve Stress
(tsf)

Pore Pressure
(tsf)

Ratio COR
(%)

SBT FR
(Rob. 1986)

Hand Auger
Sand Mix
Sandy Silt
Sand Mix
Clay
Sand Mix
Silt Mix
Sand
Silty Sand
Sens. FR
Silt Mix
Silty Sand
Sandy Silt
Sandy Silt
Silt Mix
Sandy Silt

Depth (ft)

Maximum depth: 75.14 (ft)
Page 1 of 2
CPT Data
30 ton rig
Test ID: T1-C25
Date: 07/Apr/2011
Customer: MACTEC
Project: LosAngeles
Job Site: Westside Subway Extension/Golf Course

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 66.01 (ft)
Page 2 of 2
CPT Data
30 ton rig
Test ID: T1-C26
Date: 06/Apr/2011
Customer: MACTEC
Job Site: Westside Subway Extension/Golf Course
Project: Los Angeles

File: Z06A1102C.ECP
Test ID: T1-C26

<table>
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<th>Depth (ft)</th>
<th>Tip Stress COR (tsf)</th>
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<th>Pore Pressure (tsf)</th>
<th>Ratio COR (%)</th>
<th>SBT FR (Rob. 1986)</th>
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<td>100</td>
<td>14</td>
<td>8</td>
<td>8</td>
<td>12</td>
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Maximum depth: 62.15 (ft)
CPT Data
30 ton rig

Date: 05/Apr/2011
Test ID: T1-C27

Customer: MACTEC
Job Site: Westside Subway Extension/Golf Course

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)

Depth (ft)

Sand Mix
Sandy Silt
Gr Sand

Note: Maximum depth: 59.10 (ft)
CPT Data
30 ton rig
Date: 06/Apr/2011
Test ID: T1-C28
Project: LosAngeles
Customer: MACTEC
Job Site: Westside Subway Extension/Golf Course

Tip Stress COR (tsf) 700
Sleeve Stress (tsf) 14
Pore Pressure (tsf) 8
Ratio COR (%) 8
SBT FR (Rob. 1986) 12

Hand Auger
Silty Sand
Silty Sand
Sandy Silt
Sand
Silty Sand
Sandy Silt
Sand
Silt Mix
Silt Mix
Silty Sand
Silt Mix
Sand
Sandy Silt
Silt Mix
Sandy Silt
Sand
Sandy Silt
Sandy Silt
Sand
Interbedded
Sandy Silt

Maximum depth: 51.16 (ft)
Page 1 of 2
CPT Data
30 ton rig
Test ID: T1-C28
Project: Los Angeles
Customer: MACTEC
Job Site: Westside Subway Extension/Golf Course

Date: 06/Apr/2011

Test ID: T1-C28
File: Z06A1101C.ECP

Maximum depth: 51.16 (ft)

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Gr Sand

Depth (ft)

0 700 0 14 0 8 2 50 60 70 80 90 100

Maximum depth: 51.16 (ft)
Page 2 of 2
CPT Data
30 ton rig
Date: 05/Apr/2011
Test ID: T1-C29
Project: LosAngeles
Customer: MACTEC
Job Site: Westside Subway Extension/Golf Course

Maximum depth: 75.14 (ft)

- Tip Stress COR (tsf)
- Sleeve Stress (tsf)
- Pore Pressure (tsf)
- Ratio COR (%)
- SBT FR (Rob. 1986)

Depth (ft):
0 10 20 30 40 50

Materials:
- Hand Auger
- Sand Mix
- Silty Sand
- Sandy Silt
- Sandy Silt
- Silty Sand
- Sand
- Sand Mix
- Silty Sand
- Sandy Silt
- Silty Sand
- Sand
- Sand Mix
- Silty Sand
- Sandy Silt
- Silty Sand
- Sand
Maximum depth: 75.29 ft

Test ID: T1-C30

Customer: MACTEC
Job Site: Westside Subway Extension/Golf Course

Date: 06/Apr/2011

Project: LosAngeles
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www.kehoetesting.com

CPT Data
30 ton rig

Date: 06/Apr/2011
Test ID: T1-C30
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension/Golf Course

Maximum depth: 75.29 (ft)

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

File: Z06A1103C.ECP
CPT Data
30 ton rig

Date: 06/Apr/2011
Test ID: T1-C31
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension/Golf Course

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depths:
0
10
20
30
40
50

Test ID: T1-C31
File: 206A1104C.ECP

Maximum depth: 75.24  (ft)
Page 1 of 2
**CPT Data**

- **Date:** 06/Apr/2011
- **Test ID:** T1-C31
- **Project:** LosAngeles
- **Customer:** MACTEC
- **Job Site:** Westside Subway Extension/Golf Course

**Test ID:** T1-C31

**File:** Z06A1104C.ECP

---

**Graphs:**
- **Tip Stress COR** (tsf) vs Depth (ft)
- **Sleeve Stress** (tsf) vs Depth (ft)
- **Pore Pressure** (tsf) vs Depth (ft)
- **Ratio COR** (%) vs Depth (ft)
- **SBT FR** (Rob. 1986) vs Depth (ft)

---

**Depth (ft):**
- 50
- 60
- 70
- 80
- 90
- 100

**Maximum depth:** 75.24 ft

Page 2 of 2
CPT Data
30 ton rig
Test ID: T1-C33
Date: 07/Apr/2011
Customer: MACTEC
Job Site: Westside Subway Extension/Golf Course
Project: LosAngeles

Maximum depth: 75.16 (ft)

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Silt Mix
Sandy Silt
Sand
Sand Mix
Silt Mix
Sandy Silt
Silt Mix
Clay
Interbedded
Kehoe Testing & Engineering
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CPT Data
30 ton rig

Date: 17/May/2011
Test ID: T2-C1
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension

CPT Data
30 ton rig
Customer: MACTEC
Job Site: Westside Subway Extension
CPT Data
30 ton rig

Date: 17/May/2011
Test ID: T2-C1

Customer: MACTEC
Job Site: Westside Subway Extension

Maximum depth: 82.09 (ft)

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Fax: (714) 901-7289
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www.kehoetesting.com

File: Z17Y1104C.ECP
CPT Data
30 ton rig
Test ID: T2-C1
Customer: MACTEC
Job Site: Westside Subway Extension

Date: 17/May/2011
Project: LosAngeles

Tip Stress COR (tsf)

Sleeve Stress (tsf)

Pore Pressure (tsf)

Ratio COR (%)

SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 82.09 (ft)

Page 2 of 2
Maximum depth: 80.03 (ft)

Test ID: T2-C3
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension
Tip Stress COR (tsf) | Sleeve Stress (tsf) | Pore Pressure (tsf) | Ratio COR (%) | SBT FR (Rob. 1986)
---|---|---|---|---
0 | 0 | -2 | 0 | 2
700 | 14 | 8 | 8 | 12

Depth (ft)

50 | 60 | 70 | 80 | 90 | 100

Maximum depth: 80.03 (ft)
Page 2 of 2
Maximum depth: 79.26 (ft)
Page 1 of 2

CPT Data
30 ton rig
Test ID: T2-C5
Customer: MACTEC
Job Site: Westside Subway Extension

Date: 17/May/2011
Project: LosAngeles

Test ID: T2-C5
File: Z17Y1103C.ECP

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)
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www.kehoetesting.com

CPT Data
30 ton rig
Date: 19/May/2011
Test ID: T2-C7
Customer: MACTEC
Job Site: Westside Subway Extension
Project: LosAngeles

Tip Stress COR (tsf)
Depth (ft)
0 700
0 0
10 10
20 20
30 30
40 40
50 50

Sleeve Stress (tsf)
Depth (ft)
0 14
0 -2
8 8

Pore Pressure (tsf)
Depth (ft)
0 8
0 8

Ratio COR (%)
Depth (ft)
0 8
0 8

SBT FR (Rob. 1986)
Depth (ft)
0 12
0 12

Material:
- Hand Auger
- Clay
- VS Fine Gr
- Silty Clay
- Silty Sand
- Sand Mix
- Silty Clay
- Clay
- Silty Clay
- Clay
- Silty Clay
- Clay
- Silty Clay
- Clay
- Silty Clay
- Clay
Maximum depth: 80.02 (ft)
Page 2 of 2
Maximum depth: 80.07 (ft)

Tip Stress COR (tsf)

Sleeve Stress (tsf)

Pore Pressure (tsf)

Ratio COR (%)

SBT FR (Rob. 1986)

Depth (ft)

Hand Auger

Silty Clay

VS Fine Gr

Silty Clay

Silt Mix

Sandy Silt

Silt Mix

Clay

Silty Clay

Interbedded

Silt Mix

Silty Clay

Silt Mix

Silty Clay

Maximum depth: 80.07 (ft)

Page 1 of 2
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CPT Data
30 ton rig

Date: 18/May/2011
Test ID: T2-C10
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR (tsf)
0 700
Sleeve Stress (tsf)
0 14
Pore Pressure (tsf)
0 8
Ratio COR (%)
0 8

SBT FR (Rob. 1986)
2 12

Depth (ft)
0 100

Maximum depth: 80.02 (ft)
Page 2 of 2
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rich@kehoetesting.com
www.kehoetesting.com

CPT Data
30 ton rig

Date: 16/May/2011
Test ID: T2-C11

Customer: MACTEC
Job Site: Westside Subway Extension

Test ID: T2-C11
File: Z16Y1105C.ECP

Maximum depth: 81.08 (ft)
Page 1 of 2
Maximum depth: 81.08 ft
Customer: MACTEC
Job Site: Westside Subway Extension

Date: 19/May/2011
Test ID: T2-C14
Project: LosAngeles

CPT Data
30 ton rig
Test ID: T2-C14

File: Z19Y1102C.ECP

Maximum depth: 93.58 (ft)
CPT Data
30 ton rig
Date: 20/May/2011
Test ID: T2-C15
Project: LosAngeles
Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)
0 10 20 30 40 50

Maximum depth: 90.66 (ft)
Page 1 of 2
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CPT Data
30 ton rig
Test ID: T2-C20
Customer: MACTEC
Job Site: Westside Subway Extension

Date: 20/May/2011
Project: LosAngeles

Test ID: T2-C20
File: Z20Y1102C.ECP

Tip Stress COR
(tsf)

Sleeve Stress
(tsf)

Pore Pressure
(tsf)

Ratio COR
(%)

SBT FR
(Rob. 1986)

Depth (ft)

Maximum depth: 69.68 (ft)
Page 1 of 2
CPT Data
30 ton rig
Test ID: T2-C20
Customer: MACTEC
Job Site: Westside Subway Extension

Date: 20/May/2011
Project: LosAngeles

Maximum depth: 69.68 (ft)

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Silt Mix
Silty Clay
Silt Mix
Sand
Sandy Silt
Interbedded
**CPT Data**

- **30 ton rig**
- **Customer: MACTEC**
- **Job Site: Westside Subway Extension**
- **Date: 16/May/2011**
- **Test ID: T2-C21A**
- **Project: LosAngeles**

**Tip Stress COR (tsf)**

**Sleeve Stress (tsf)**

**Pore Pressure (tsf)**

**Ratio COR (%)**

**SBT FR (Rob. 1986)**

**Depth (ft)**

0 10 20 30 40 50

**Maximum depth: 11.86 (ft)**
CPT Data
30 ton rig
Test ID: T2-C22

Customer: MACTEC
Job Site: Westside Subway Extension

Date: 16/May/2011
Project: LosAngeles

Tip Stress COR
Sleeve Stress
Pore Pressure
Ratio COR
SBT FR

Hand Auger
Silt Mix
Clay
Sand Mix
Sandy Silt
Clay
Sand Mix
Sand
Silt Mix
Sand
Clay
Silty Sand
Sand
Silt Mix
Sand Mix
Sandy Silt
Silt Mix
Silt Mix

Maximum depth: 75.12 (ft)
CPT Data
30 ton rig
Test ID: T2-C22
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension

Date: 16/May/2011

Tip Stress COR
(tsf)

Sleeve Stress
(tsf)

Pore Pressure
(tsf)

Ratio COR
(%)

SBT FR
(Rob. 1986)

Silt Mix
Sandy Silt
Silt Mix
Sandy Silt
Silty Sand
Sandy Silt
Sandy Silt
Interbedded

Depth (ft)

Maximum depth: 75.12 (ft)
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CPT Data
30 ton rig

Date: 16/May/2011
Test ID: T2-C23

Customer: MACTEC
Job Site: Westside Subway Extension

---

Tip Stress COR (tsf)

Max depth: 75.04 ft

---

Sleeve Stress (tsf)

---

Pore Pressure (tsf)

---

Ratio COR (%)

---

SBT FR (Rob. 1986)

---

Test ID: T2-C23
File: 211Y1104C.ECP
Maximum depth: 80.00 (ft)

Test ID: T2-C25
File: Z20Y1103C.ECP

Hand Auger
Silty Clay
Clay
Silt Mix
Clay
Sand Mix
Silty Clay
Clay
Silt Mix
Silty Clay
Silt Mix
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Silty Clay
Silt Mix
CPT Data
30 ton rig
Test ID: T2-C25
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension

Date: 20/May/2011
Test ID: T2-C25

Maximum depth: 80.00 (ft)

Tip Stress COR (tsf)

Sleeve Stress (tsf)

Pore Pressure (tsf)

Ratio COR (%)

SBT FR (Rob. 1986)

Depth (ft)

File: Z20Y1103C.ECP
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www.kehoetesting.com

CPT Data
30 ton rig

Date: 20/May/2011
Test ID: T2-C27

Customer: MACTEC
Job Site: Westside Subway Extension

---

Maximum depth: 80.01 (ft)

---

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

---

Depth (ft)
0
10
20
30
40
50

---

Testing Levels:

- Hand Auger
- Clay
- Sand Mix
- Clay
- Silt Mix
- Clay
- Silty Clay
- Silt Mix
- Silty Clay
- Interbedded
### CPT Data

**30 ton rig**

**Test ID:** T2-C27

**Customer:** MACTEC

**Job Site:** Westside Subway Extension

**Date:** 20/May/2011

**Project:** LosAngeles

---

<table>
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<tr>
<th>Depth (ft)</th>
<th>Tip Stress COR (tsf)</th>
<th>Sleeve Stress (tsf)</th>
<th>Pore Pressure (tsf)</th>
<th>Ratio COR (%)</th>
<th>SBT FR (Rob. 1986)</th>
</tr>
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</tbody>
</table>

Maximum depth: 80.01 ft

---

Legend:
- Silty Clay
- VS Fine Gr
- Silt Mix
- Sandy Silt
- Interbedded

---

**File:** Z20Y1104C.ECP
CPT Data
30 ton rig
Test ID: T2-C29
Customer: MACTEC
Job Site: Westside Subway Extension
Date: 21/May/2011
Project: LosAngeles

Maximum depth: 56.74 ft

Depth (ft)
0 70 140 210 280 350 420 490 560 630 700 770 840 910 980 1050

Tip Stress COR (tsf)
0 50 100 150 200 250 300 350 400 450 500 550 600 650 700

Sleeve Stress (tsf)
0 14 28 42 56 70 84 98 112 126 140 154 168 182 196 210

Pore Pressure (tsf)
0 8 16 24 32 40 48 56 64 72 80 88 96 104 112 120

Ratio COR (%)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30

SBT FR (Rob. 1986)
2 12 50

Silt Mix
Customer: MACTEC
Job Site: Westside Subway Extension

Test ID: T2-C31
Date: 21/May/2011
Project: LosAngeles

Maximum depth: 80.09 (ft)

CPT Data
30 ton rig

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

0 10 20 30 40 50

0 700 0 14 -2 8 0 8

Hand Auger Sand Mix Silty Clay Clay Silty Clay Sandy Till Silt Mix Clay Silty Clay Silt Mix Silty Clay Clay Silt Mix

File: Z21Y1102C.ECP
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CPT Data
30 ton rig
Test ID: T2-C31
Customer: MACTEC
Job Site: Westside Subway Extension

Date: 21/May/2011
Project: LosAngeles

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Maximum depth: 80.09 (ft)

Depth (ft)
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CPT Data
30 ton rig

Date: 21/May/2011
Test ID: T2-C33
Project: LosAngeles
Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR
(tsf) 700

Sleeve Stress
(tsf) 14

Pore Pressure
(tsf) 8

Ratio COR
(%)

SBT FR
(Rob. 1986) 12

Depth (ft)

Maximum depth: 80.03 (ft)

Page 2 of 2
CPT Data
30 ton rig

Date: 21/May/2011
Test ID: T2-C35
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension

Maximum depth: 80.10  (ft)

Tip Stress COR  (tsf)  700
Sleeve Stress  (tsf)  14
Pore Pressure  (tsf)  8
Ratio COR  (%)  8
SBT FR  (Rob. 1986)  12

0  0  0  0  0  0  0  0
0  0  0  0  0

Hand Auger
Clay
Clay
Silt Mix
Silty Sand
Sandy Silt
Clay
Silt Mix
Silty Sand
Silt Mix
Silty Clay
Silty Clay
Clay
Silty Clay
Silty Clay
Clay
Silty Clay
Silty Clay
Silty Clay

Depth (ft)
CPT Data
30 ton rig

Test ID: T2-C37

Customer: MACTEC

Job Site: Westside Subway Extension

Date: 21/May/2011

Project: LosAngeles

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)
0
10
20
30
40
50

Maximum depth: 80.03 (ft)
CPT Data
30 ton rig
Test ID: T2-C37
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension

Date: 21/May/2011

Maximum depth: 80.03 (ft)

Tip Stress COR (tsf) 700
Sleeve Stress (tsf) 14
Pore Pressure (tsf) 8
Ratio COR (%) 8
SBT FR (Rob. 1986) 12

Depth (ft)

50
60
70
80
90
100

Silty Clay
VS Fine Gr
Silty Sand
VS Fine Gr
Silt Mix
Silty Clay
CPT Data
30 ton rig
Date: 26/May/2011
Test ID: T2-C41
Project: LosAngeles
Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Hand Auger
Clay
Sand Mix
Clay
Silty Clay
VS - Sandy

Depth (ft)
0 10 20 30 40 50
0 10 20 30 40 50
0 10 20 30 40 50
0 10 20 30 40 50
0 10 20 30 40 50

Maximum depth: 75.21 (ft)
Page 1 of 2
CPT Data
30 ton rig
Date: 01/Jul/2011
Test ID: T2E-C1
Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 80.43 (ft)
Page 1 of 2
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CPT Data
30 ton rig
Test ID: T2E-C4
Project: LosAngeles

Customer: Mactec
Job Site: West Side Subway Extension

Date: 06/Jun/2011

Test ID: T2E-C4
File: Z06U1103C.ECP

Depth (ft)
0 10 20 30 40 50

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Maximum depth: 87.88 (ft)
Page 1 of 2
CPT Data
30 ton rig
Test ID: T2E-C5
Customer: Mactec
Project: Los Angeles
Job Site: West Side Subway Extension

Date: 06/Jun/2011

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Maximum depth: 104.04 (ft)
Page 1 of 3
Tip Stress COR (tsf)  
Sleeve Stress (tsf)  
Pore Pressure (tsf)  
Ratio COR (%)  
SBT FR (Rob. 1986)  

Maximum depth: 104.04 (ft)
Page 2 of 3
CPT Data
30 ton rig
Test ID: T2E-C5
Customer: Mactec
Project: Los Angeles

Date: 06/Jun/2011
Job Site: West Side Subway Extension
File: Z06U1104C.ECP

Depth (ft)
100
110
120
130
140
150

Maximum depth: 104.04 (ft)
CPT Data
30 ton rig
Date: 06/Jul/2011
Test ID: T2E-C6
Project: LosAngeles
Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 31.06 (ft)
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CPT Data
30 ton rig

Date: 06/Jul/2011
Test ID: T2E-C8

Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Maximum depth: 78.96 (ft)

Page 1 of 2
CPT Data
30 ton rig

Date: 06/Jul/2011
Test ID: T2E-C8

Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Material:
- Clay
- Silt Mix
- Silty Clay
- VS Fine Gr
- VS - Sandy
- Silt Mix

Maximum depth: 78.96 (ft)
CPT Data
30 ton rig
Date: 01/Jul/2011
Test ID: T2E-C9
Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR
(tsf)
0 700
0

Sleeve Stress
(tsf)
0 14
-2

Pore Pressure
(tsf)
0 8
0

Ratio COR
(%)
0 8
2

SBT FR
(Rob. 1986)
0 12
0

Depth (ft)
0 0
10 10
20 20
30 30
40 40
50 50

Maximum depth: 80.27 (ft)
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Fax: (714) 901-7289
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www.kehoetesting.com

CPT Data
30 ton rig

Date: 06/Jul/2011
Test ID: T2E-C10
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR
(tsf) 700

Sleeve Stress (tsf) 14

Pore Pressure (tsf) 8

Ratio COR (%)

SBT FR (Rob. 1986) 12

Hand Auger
Clay
Silty Clay
Silt Mix
VS Fine Gr
Sandy Silt
Silty Clay
VS Fine Gr
Sandy Silt
Silt Mix
VS Fine Gr

Depth (ft)

0 0
10 10
20 20
30 30
40 40
50 50

Maximum depth: 80.14 (ft)
Page 1 of 2
CPT Data
30 ton rig
Date: 02/Jun/2011
Test ID: T2E-C11
Customer: MACTEC
Job Site: Westside Subway Extension

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<th>Depth (ft)</th>
<th>Tip Stress COR (tsf)</th>
<th>Sleeve Stress (tsf)</th>
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Clay
Silt Mix
VS Fine Gr
Clay
Silty Clay
VS Fine Gr
Clay
Silty Clay

Maximum depth: 75.09 (ft)
Page 1 of 2
CPT Data
30 ton rig
Test ID: T2E-C13

Customer: MACTEC
Job Site: Westside Subway Extension
Date: 29/Jun/2011
Project: LosAngeles

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 105.79 (ft)
CPT Data

30 ton rig

Test ID: T2E-C14

Customer: MACTEC

Job Site: Westside Subway Extension

Date: 28/Jun/2011

Project: LosAngeles

Maximum depth: 80.01 (ft)

Tip Stress COR (tsf)

Sleeve Stress (tsf)

Pore Pressure (tsf)

Ratio COR (%)

SBT FR (Rob. 1986)

File: Z28U1107C.ECP

Depth (ft)

0

10

20

30

40

50

Hand Auger

Silty Sand

Silt Mix

Clay

VS Fine Gr

Silt Mix

Sand Mix

Clay

Sandy Silt

Silt Mix

Silty Clay

Silt Mix

0

8

12

0

2

10

20

30

40

50
Customer: MACTEC
Job Site: Westside Subway Extension

Test ID: T2E-C15
Date: 29/Jun/2011

Project: LosAngeles

Maximum depth: 104.44 ft

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CPT Data
30 ton rig

Hand Auger
Clay
VS Fine Gr
Sand Mix
Silty Clay
Silt Mix
Sandy Silt
Silt Mix
VS Fine Gr
Interbedded
CPT Data
30 ton rig
Date: 29/Jun/2011
Test ID: T2E-C15
Customer: MACTEC
Job Site: Westside Subway Extension

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Tip Stress COR (tsf)
50
0
50
60
70
80
90
100
Depth (ft)

Sleeve Stress (tsf)
0
14

Pore Pressure (tsf)
-2
8

Ratio COR (%)
0
8

SBT FR (Rob. 1986)
2
12
50
60
70
80
90
100

Maximum depth: 104.44 (ft)
Page 2 of 3
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CPT Data
30 ton rig

Date: 29/Jul/2011
Test ID: T2E-C16

Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Hand Auger
VS Fine Gr
Clay
Sandy Silt
VS Fine Gr
Silty Clay
Interbedded
Clay
Silt Mix
Silty Clay
Silt Mix
Clay
Silt Mix
Silt Mix
Sandy Silt
VS Fine Gr
Silt Mix
Sandy Silt
VS Fine Gr
Silt Mix
Sandy Silt

Maximum depth: 82.53 (ft)
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CPT Data
30 ton rig

Date: 29/Jun/2011
Test ID: T2E-C16

Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR
(tsf)

Sleeve Stress
(tsf)

Pore Pressure
(tsf)

Ratio COR (%)

SBT FR
Rob. 1986

Depth (ft)

Maximum depth: 82.53 (ft)
Page 2 of 2
CPT Data
30 ton rig
Date: 29/Jun/2011
Test ID: T2E-C17
Customer: MACTEC
Project: LosAngeles

Job Site: Westside Subway Extension
Maximum depth: 69.32 (ft)

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CPT Data
30 ton rig
Test ID: T2E-C17

Customer: MACTEC
Job Site: Westside Subway Extension

Date: 29/Jun/2011
Project: LosAngeles

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 69.32 (ft)
CPT Data
30 ton rig
Test ID: T2E-C18
Customer: MACTEC
Job Site: Westside Subway Extension
Date: 29/Jun/2011
Project: LosAngeles

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 69.61 (ft)
Page 2 of 2
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CPT Data
30 ton rig

Test ID: T2E-C19
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension

Date: 29/Jun/2011

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Maximum depth: 99.49 (ft)

Depth (ft)
0 10 20 30 40 50

Tip Stress COR
Sleeve Stress
Pore Pressure
Ratio COR
SBT FR

Hand Auger
Clay
Silty Clay
Sandy Clay
Sand Mix
Silt Mix
VS Fine Gr
Interbedded
Sand Mix
VS Fine Gr
Silt Mix
Sandy Silt
VS Fine Gr
Silt Mix
Sandy Silt
VS Fine Gr
Silt Mix
Sandy Silt
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Silt Mix
Sandy Silt
V
CPT Data
30 ton rig
Test ID: T2E-C19
Date: 29/Jun/2011
Project: LosAngeles
Customer: MACTEC
Job Site: Westside Subway Extension

Maximum depth: 99.49 (ft)

Tip Stress COR (tsf) 700
Sleeve Stress (tsf) 14
Pore Pressure (tsf) 8
Ratio COR (%) 8
SBT FR (Rob. 1986) 12

Depth (ft)
0 50
50
60
70
80
90
100

Sandy Silt
Silt Mix
Silty Clay
Interbedded
Silt Mix
Silty Sand
VS Fine Gr
Silty Sand
Sandy Silt
Sand Mix
VS Fine Gr
Sandy Silt
Silty Sand
VS - Sandy
VS Fine Gr
Sandy Silt

File: Z29U1106C.ECP
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CPT Data
30 ton rig

Date: 10/Jun/2011
Test ID: T2E-C20
Project: LosAngeles
Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 76.93 (ft)
Page 1 of 2
CPT Data
30 ton rig

Date: 10/Jun/2011
Test ID: T2E-C20

Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 76.93 (ft)
Page 2 of 2
CPT Data
30 ton rig
Test ID: T2E-C21
Customer: MACTEC
Job Site: Westside Subway Extension
Date: 10/Jun/2011
Project: LosAngeles
CPT Data
30 ton rig

Date: 10/Jun/2011
Test ID: T2E-C22
Project: LosAngeles
Customer: MACTEC
Job Site: Westside Subway Extension

Maximum depth: 80.69 (ft)

Tip Stress COR (tsf)

Sleeve Stress (tsf)

Pore Pressure (tsf)

Ratio COR (%)

SBT FR (Rob. 1986)

Depth (ft)

VS Fine Gr
Silt Mix
Clay
Silt Mix
Silty Clay
Sandy Silt
Silt Mix
Clay
Silt Mix
VS Fine Gr

Maximum depth: 80.69 (ft)
CPT Data
30 ton rig
Date: 10/Jun/2011
Test ID: T2E-C23
Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 71.95 (ft)
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CPT Data
30 ton rig

Date: 10/Jun/2011
Test ID: T2E-C23
Customer: MACTEC
Job Site: Westside Subway Extension

Project: LosAngeles

Test ID: T2E-C23
File: Z10U1102C.ECP

Maximum depth: 71.95 (ft)
Page 2 of 2
CPT Data

30 ton rig

Date: 10/Jun/2011
Test ID: T2E-C24
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Maximum depth: 82.43 (ft)

Depth (ft)

0 10 20 30 40 50

Hand Auger
Clay
Sandy Silt
Clay
VS Fine Gr

VS - Sandy
Silty Sand
Clay

Sandy Silt
Silty Clay
Silt Mix

Sandy Silt
Silty Clay
Silt Mix

Silt Mix
VS Fine Gr
CPT Data
30 ton rig

Date: 10/Jun/2011
Test ID: T2E-C24

Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR
(tsf)

Sleeve Stress
(tsf)

Pore Pressure
(tsf)

Ratio COR
(%)

Depth (ft)

SBT FR
(Rob. 1986)

Maximum depth: 82.43 (ft)
CPT Data
30 ton rig
Test ID: T2E-C25
Date: 09/Jun/2011
Project: LosAngeles
Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 67.39 (ft)
Page 2 of 2
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CPT Data
30 ton rig

Date: 09/June/2011
Test ID: T2E-C26
Customer: MACTEC
Job Site: Westside Subway Extension

Tip Stress COR (tsf) 0 700
Sleeve Stress (tsf) 0 14
Pore Pressure (tsf) -2 8
Ratio COR (%) 0 8
SBT FR (Rob. 1986) 2 12

Hand Auger
Clay
Sandy Silt
Silty Sand
Sand Mix
Sand
Silty Sand
Sand Mix
VS Fine Gr
Clay
Sand Mix
Clay
Silt Mix
VS Fine Gr
VS - Sandy
VS - Sandy
Interbedded

Depth (ft)
0 10 20 30 40 50

Maximum depth: 83.37 (ft)
Page 1 of 2
CPT Data
30 ton rig
Test ID: T2E-C26
Customer: MACTEC
Job Site: Westside Subway Extension
Date: 09/Jun/2011
Project: LosAngeles

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Depth (ft)

Tip Stress COR (tsf)

Sleeve Stress (tsf)

Pore Pressure (tsf)

Ratio COR (%)

SBT FR (Rob. 1986)

Maximum depth: 83.37 (ft)

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CPT Data
30 ton rig

Date: 11/Jun/2011
Test ID: T2E-C28
Project: LosAngeles

Customer: MACTEC
Job Site: Westside Subway Extension

Maximum depth: 88.04  (ft)

Tip Stress COR (tsf) 700
Sleeve Stress (tsf) 14
Pore Pressure (tsf) 8
Ratio COR (%) 8
SBT FR (Rob. 1986) 12

Depth (ft)

Maximum depth: 88.04  (ft)
Page 1 of 2
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CPT Data
30 ton rig
Test ID: T2E-C29

Customer: MACTEC
Job Site: Westside Subway Extension

Date: 11/Jun/2011
Project: LosAngeles

Maximum depth: 89.41 (ft)

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)
50
60
70
80
90
100

Maximum depth: 89.41 (ft)
Page 2 of 2
CPT Data

30 ton rig

Customer: MACTEC
Job Site: Westside Subway Extension

Date: 09/Jun/2011
Test ID: T2E-C30
Project: LosAngeles

Tip Stress COR
(tsf)

Sleeve Stress
(tsf)

Pore Pressure
(tsf)

Ratio COR
(%)

SBT FR
(Rob. 1986)

Hand Auger

Clay

Silty Clay

Sandy Silt

Silt Mix

Sandy Silt

Clay

Silty Sand

Sand

Silty Sand

VS Fine Gr

VS - Sandy

VS Fine Gr

Silty Sand

Silt Mix

Silt Mix

Silty Clay

Silt Mix

Maximum depth: 88.44 ft

Page 1 of 2
CPT Data
30 ton rig

Date: 09/Jun/2011
Test ID: T2E-C30

Customer: MACTEC
Job Site: Westside Subway Extension

Maximum depth: 88.44 (ft)

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)

Depth (ft)
50
60
70
80
90
100

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)

Depth (ft)
50
60
70
80
90
100

Maximum depth: 88.44 (ft)
Tip Stress COR (tsf) | Sleeve Stress (tsf) | Pore Pressure (tsf) | Ratio COR (%) | SBT FR (Rob. 1986)
---|---|---|---|---
0 | 0 | -2 | 0 | 2
700 | 14 | 8 | 0 | 12

Depth (ft)
0 | 10 | 20 | 30 | 40 | 50

Maximum depth: 94.87 (ft)
CPT Data
30 ton rig
Test ID: T2E-C31
Customer: MACTEC
Job Site: Westside Subway Extension

Date: 09-Jun/2011
Project: LosAngeles

Maximum depth: 94.87 (ft)

Tip Stress COR (tsf) 700
Sleeve Stress (tsf) 14
Pore Pressure (tsf) 8
Ratio COR (%) 8
SBT FR (Rob. 1986) 12

0 50 60 70 80 90 100

Depth (ft)

50 60 70 80 90 100

Maximum depth: 94.87 (ft)
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CPT Data
30 ton rig
Test ID: T2E-C32
Customer: MACTEC
Job Site: Westside Subway Extension

Date: 09/Jun/2011
Project: LosAngeles

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)

Depth (ft)
0 50 100
50 100
60
70
80
90
100

Maximum depth: 80.73 (ft)
Page 2 of 2
CPT Data
30 ton rig
Date: 08/Jun/2011
Test ID: T2E-C33
Customer: MACTEC
Project: LosAngeles

Test ID: T2E-C33
File: Z08U1104C.ECP

Maximum depth: 82.83 (ft)
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CPT Data
30 ton rig
Test ID: T2E-C33
Date: 08/Jun/2011

Customer: MACTEC
Job Site: Westside Subway Extension

Project: LosAngeles

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Maximum depth: 82.83 (ft)
Maximum depth: 82.83 (ft)
Maximum depth: 82.83 (ft)
Maximum depth: 82.83 (ft)
Maximum depth: 82.83 (ft)
CPT Data
30 ton rig
Date: 08/Jun/2011
Test ID: T2E-C34
Customer: MACTEC
Job Site: Westside Subway Extension

Maximum depth: 82.75 ft

Tip Stress COR
(tsf)

Sleeve Stress
(tsf)

Pore Pressure
(tsf)

Ratio COR (%)

SBT FR (Rob. 1986)

Depth (ft)

0 10 20 30 40 50

0 700 0 14 -2 8 0 8

Hand Auger
Sandy Silt
Clay
Silt Mix
Sandy Silt
Clay
Silt Mix
Clay
Silt Mix
Sand Mix
Clay
Sand
Sandy Silt
Silt Mix
Sand
Sandy Silt
Silt Mix
Clay
Silt Mix
Sand
Sandy Silt
Silt Mix

Test ID: T2E-C34
File: Z8U1103C.ECP
CPT Data
30 ton rig
Test ID: T2E-C34

Customer: MACTEC
Job Site: Westside Subway Extension
Date: 08/Jun/2011
Project: LosAngeles

Tip Stress COR (tsf)
Sleeve Stress (tsf)
Pore Pressure (tsf)
Ratio COR (%)
SBT FR (Rob. 1986)

Depth (ft)

Maximum depth: 82.75 (ft)
CPT Data
30 ton rig
Date: 24/Feb/2011
Test ID: T3-C3
Customer: MACTEC
Job Site: Westside Subway Extension/Century Park

Maximum depth: 27.25 (ft)

Tip Stress COR
(tsf)

Sleeve Stress
(tsf)

Pore Pressure
(tsf)

Ratio COR
(%)

SBT FR
(Rob. 1986)

0 700
0 14
0 8
0 8
2 12

Hand Auger
Sand Mix
Sandy Silt
Sand Mix
Silt Mix
Sand Mix
Silty Sand
VS - Sandy

Depth (ft)

0 10 20 30 40 50
0 10 20 30 40 50