



## Appendix O

# REPORT OF GEOTECHNICAL INVESTIGATION AND EXISTING FILL EVALUATION



**REPORT OF GEOTECHNICAL INVESTIGATION  
AND EXISTING FILL EVALUATION**

San Diego Corporate Center – Development Site  
Southwest Corner of Del Mar Heights Road  
and El Camino Real  
San Diego, California

**JOB NO. 07-9487**

31 March 2008

Prepared for:

***Kilroy Realty Corporation***





# Geotechnical Exploration, Inc.

SOIL AND FOUNDATION ENGINEERING • GROUNDWATER • ENGINEERING GEOLOGY

31 March 2008

Kilroy Realty Corporation  
3611 Valley Centre Drive, Suite 550  
San Diego, CA 92130-3318  
Attn: Mr. Randy Jackson

**Job No. 07-9487**

Subject: **Report of Geotechnical Investigation and Existing Fill Evaluation**  
San Diego Corporate Center – Development Site  
Southwest Corner of Del Mar Heights Road and El Camino Real  
San Diego, California

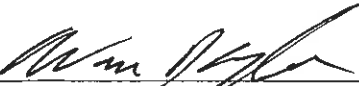
Gentlemen:

In accordance with your request, and our proposal of November 6, 2007, **Geotechnical Exploration, Inc.** has performed a geotechnical investigation and an evaluation of the existing fills for the subject property in San Diego, California. The fieldwork was performed during the period of November 27, 2007, to January 17, 2008.

This opportunity to be of service is sincerely appreciated. Should you have any questions concerning the following report, please do not hesitate to contact us. Reference to our **Job No. 07-9487** will expedite a response to your inquiries.

Respectfully submitted,

**GEOTECHNICAL EXPLORATION, INC.**

  
Wm. D. Hespeler, G.E. 396  
Senior Geotechnical Engineer

  
Leslie D. Reed, President  
C.E.G. 999[exp. 3/31/09]/R.G. 3391



## TABLE OF CONTENTS

|                                          | <u>PAGE</u> |
|------------------------------------------|-------------|
| I. PROJECT SUMMARY AND SCOPE OF SERVICES | 1           |
| II. SITE BACKGROUND                      | 3           |
| III. GEOLOGY AND SEISMICITY              | 4           |
| IV. FIELD INVESTIGATION                  | 5           |
| V. GROUNDWATER                           | 7           |
| VI. LABORATORY TESTS                     | 8           |
| VII. SOIL DESCRIPTION                    | 9           |
| VIII. EVALUATION AND CONCLUSIONS         | 9           |
| IX. PRELIMINARY RECOMMENDATIONS          | 10          |
| X. ADDITIONAL STUDIES                    | 11          |
| XI. LIMITATIONS                          | 12          |

### **FIGURES**

- I. Site Plan
- IIa-f. Exploratory Boring Logs
- III. Test Pit Log

### **APPENDICES**

- A. CPT Logs
- B. Unified Soil Classification System



# **REPORT OF GEOTECHNICAL INVESTIGATION AND EXISTING FILL EVALUATION**

San Diego Corporate Center – Development Site  
Southwest Corner of Del Mar Heights Road and El Camino Real  
San Diego, California

**JOB NO. 07-9487**

The following report presents the findings and recommendations of ***Geotechnical Exploration, Inc.*** for the subject property.

## **I. PROJECT SUMMARY AND SCOPE OF SERVICES**

The subject property is a 23-acre site located southwest of the intersection of Del Mar Heights Road and El Camino Real in San Diego, California. The vacant property has been previously mass graded into three relatively flat lots that step up in elevation to the north and west. As indicated in our previous feasibility report dated October 30, 2007, no as-built geotechnical documentation is available for the previous mass grading of the property and the permit for the grading remains open. Although it is our understanding that development plans for the site are uncertain at this time, we anticipate that the site may be developed with office/commercial buildings varying from two to six stories in height and two- and three-level parking structures.

Based on the preceding, the scope of work performed for this investigation included research at the City of San Diego archives with respect to as-built documentation, review of documents and plans noted below, a site reconnaissance and subsurface exploration program, laboratory testing of samples retrieved from the exploration work, geotechnical engineering analysis of the research, field, and laboratory testing data, and the preparation of this report. The primary purpose of this investigation was to evaluate the compaction of the site fills and, if satisfactory results were obtained, provide a detailed investigation report for your evaluation of



the property and submittal to the City to serve as an as-built geotechnical report for purposes of satisfying the permit requirements.

Following is a list of the pertinent geotechnical documents and plans provided us for our study and/or obtained from our research:

- William J. Elliott, July 18, 1986, "Project No. 00407, Reconnaissance Geologic Investigation, Proposed Employment Center Development, Unit 2-D, South of Del Mar Heights Road and West of El Camino Real (new alignment), North City West, San Diego, California."
- Benton Engineering, Inc., July 25, 1986, "Project No. 86-6-14F, Preliminary Soils Investigation, North City West, Employment Center Unit 2D, San Diego, California."
- Rick Engineering Company, signed July 24, 1986, titled "Plans for the Grading of Lot 16 of Map No. 10945 and a Portion of Section T.14S, R.3W., SBM," Sheets 23217-8 and 9-D.
- Rick Engineering Company, "A.L.T.A-A.C.S.M. Land Title Survey" dated October 4, 2007.
- Ardent Environmental Group, Inc., "Phase I Environmental Site Assessment, San Diego Corporate Center, San Diego, California, 92130, Contract No. KIL-P1AGR-007," dated November 30, 2007.
- Geocon, Inc, "Final Report of Testing and Observation Services Performed During Site Grading, Neorocrine Biosciences, Carmel Valley Campus, Drawing



No. 32429-D, W.O. No. 421274, San Diego, California,” dated May 6, 2006 (adjacent property).

## **II. SITE BACKGROUND**

Based on our review of the reports and grading plan provided, the site appears to have been originally mass graded after 1986 and before 1990; no as-built geotechnical grading report was provided and we were unable to locate a report at the City of San Diego archives. The enclosed Site Plan, Figure No. I, was provided by Rick Engineering Company by electronically combining a scanned copy of the 1986 grading plan and the 2007 A.L.T.A. plan they prepared. The topography depicted on the 2007 A.L.T.A. plan and the 1986 grading plan depict similar elevations and it appears the site was graded as shown on the 1986 grading plan.

The 1986 soil and geologic reports indicate that prior to grading the site was underlain at variable depths by dense sands of the Torrey Sandstone formation. The sandstone materials were overlain in a large portion of the site by relatively incompetent materials consisting of undocumented fill, alluvium and colluvium. The soil investigation report recommended that the incompetent materials be removed and replaced as properly compacted structural fill and that all structural fill was to be compacted to a minimum degree of compaction of 90 percent based on ASTM D1557. The report also recommended that subdrains be installed in two major drainage areas prior to filling, as indicated on the 1986 grading plan. Based on our review of the 2006 Geocon grading report for the adjacent property to the south, the western of the planned subdrains was encountered during grading of the property immediately south of the site and the subdrain was connected to the storm drain on that property. We were not able to verify the existence of the eastern subdrain system indicated on the grading plan as it was planned to be connected by lug to an existing main storm drain line in El Camino Real. In light of the fact that



we did not encounter groundwater in that portion of the site, or anywhere else on the site, it is our opinion that verification of the eastern subdrain system is not necessary.

### **III. GEOLOGY AND SEISMICITY**

Based on our review of the above referenced reports as well as readily available geotechnical literature and our recent field investigation, the cut portion of the site is underlain by formational materials of the Torrey Sandstone. The remainder of the site is underlain by fill soils overlying the Torrey Sandstone. The formational materials encountered on the site consist of dense to very dense, clayey and silty sand (sandstone). The fill soils encountered at the site consist predominantly of medium dense clayey and silty sands.

Based on formation outcrops and our prior work in the vicinity of the subject property, the Torrey Sandstone is essentially flat-lying with no significant geologic structure such as tilting or folding.

Based on our review of some available published information including the City of San Diego Seismic Safety Study, Geologic Hazards and Faults Map (Sheet 38), there are no faults known to pass through the site. The prominent fault zones generally considered having the most potential for earthquake damage in the vicinity of the site are the active Rose Canyon and Coronado Bank fault zones mapped approximately 3 and 16 miles southwest of the site, respectively, and the active Elsinore and San Jacinto fault zones mapped approximately 31 and 54 miles northeast of the site, respectively.



#### **IV. FIELD INVESTIGATION**

The field investigation consisted of a surface reconnaissance and a subsurface exploration program utilizing a cone penetrometer rig, a truck-mounted continuous flight auger, and a backhoe. Forty-six cone penetrometer (CPT) soundings (attached in Appendix A) and eleven, 8-inch-diameter, continuous flight auger, geotechnical borings were drilled during the period of November 27 to December 4, 2007. In addition, one exploratory test pit was excavated on January 17, 2008, adjacent to Probe 20 and Boring 20. The soils encountered in the borings and test pit were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (Refer to Appendix B). One downhole shear wave velocity measurement was also obtained in CPT 33 (see Appendix A). The locations of the penetrometer soundings, borings, and test pit are shown on Figure No. I. The CPT probe and boring designations are the last two digits of the 2000 series grid points indicated on the plan.

The cone penetrometer soundings were generally located on a 150-foot grid pattern to provide a spatially arbitrary, continuous record of penetration resistance in the fills. The exploratory boring locations were selected to secure samples for laboratory density testing of the in-place fill soils where, in general, lower penetration values were very occasionally measured in the CPT probes. The exploratory test pit was excavated adjacent to CPT 20 and Boring to 20 allow direct visual observation of the fill soils at that location and to perform in-place field density tests in accordance with ASTM D1556 at the location of lower CPT test data. Bulk samples were obtained from the borings and test pit for laboratory maximum density determinations in accordance with ASTM D1557-07.

Standard penetration resistance blow counts were obtained in the borings by driving a 2-inch O.D. split spoon sampler and relatively undisturbed liner samples and bulk



samples of the fill soils were obtained in the borings for laboratory density determinations of the liner samples and laboratory maximum density determinations in accordance with ASTM D1557. This data was obtained for correlation with the CPT data. Standard penetration resistance blow counts were obtained by driving a 2-inch O.D. split spoon sampler with a 140-pound hammer dropping through a 30-inch free fall. The sampler was driven a maximum of 18 inches and the number of blows for each 6-inch interval was recorded. The blows per foot indicated on the boring logs represent the accumulated number of blows that were required to drive the last 12 inches or portion thereof. Samples contained in liners were recovered by driving a 3.0-inch O.D. California sampler 18 inches into the soil using a 140-pound hammer. The samplers were driven a maximum of 18 inches and the number of blows for each 6-inch interval was recorded. The blows per foot indicated on the boring logs represent the accumulated number of blows that were required to drive the last 12 inches or portion thereof. All samples were returned to our laboratory for evaluation and testing.

Boring and test pit logs have been prepared on the basis of our observations and laboratory testing results. Logs of the borings and test pit are attached as Figure Nos. II and III, respectively. The following chart provides an in-house correlation between the number of blows and the relative density of the soil for the Standard Penetration Test and Modified California samples.



| <b>SOIL</b>                 | <b>DENSITY<br/>DESIGNATION</b> | <b>2-INCH O.D.<br/>SAMPLER<br/>BLOWS/FOOT</b> | <b>3-INCH O.D.<br/>SAMPLER<br/>BLOWS/FOOT</b> |
|-----------------------------|--------------------------------|-----------------------------------------------|-----------------------------------------------|
| Sand and<br>Nonplastic Silt | Very loose                     | 0-4                                           | 0-7                                           |
|                             | Loose                          | 5-10                                          | 8-20                                          |
|                             | Medium                         | 11-30                                         | 21-53                                         |
|                             | Dense                          | 31-50                                         | 54-98                                         |
|                             | Very Dense                     | Over 50                                       | Over 98                                       |
| Clay and<br>Plastic Silt    | Very soft                      | 0-2                                           | 0-2                                           |
|                             | Soft                           | 3-4                                           | 3-4                                           |
|                             | Firm                           | 5-8                                           | 5-9                                           |
|                             | Stiff                          | 9-15                                          | 10-18                                         |
|                             | Very stiff                     | 16-30                                         | 19-45                                         |
|                             | Hard                           | 31-60                                         | 46-90                                         |
|                             | Very Hard                      | Over 60                                       | Over 90                                       |

## **V. GROUNDWATER**

Free groundwater was not encountered in the penetrometer soundings, exploratory borings or exploratory test pit. It must be noted, however, that fluctuations in the level of groundwater may occur due to variations in ground surface topography, subsurface stratification, rainfall, and other possible factors which may not have been evident at the time of our field investigation.

It should be kept in mind that grading operations can change surface drainage patterns and/or reduce permeabilities due to the densification of compacted soils. Such changes of surface and subsurface hydrologic conditions, plus irrigation of landscaping or significant increases in rainfall, may result in the appearance of surface or near-surface water at locations where none existed previously. The appearance of such water is expected to be localized and cosmetic in nature, if good positive drainage is implemented, as recommended in this report, during and at the completion of construction.



It must be understood that unless discovered during initial site exploration or encountered during site grading operations, it is extremely difficult to predict if or where perched or true groundwater conditions may appear in the future. When site fill or formational soils are fine-grained and of low permeability, water problems may not become apparent for extended periods of time.

Water conditions, where suspected or encountered during construction, should be evaluated and remedied by the project civil and geotechnical consultants. The project developer and property owner, however, must realize that post-construction appearances of groundwater may have to be dealt with on a site-specific basis.

## **VI. LABORATORY TESTS**

Twenty-two No. 200 sieve tests (ASTM D1140-00) were performed on selected samples of the subsurface soils to aid in classifying the soils according to the Unified Soil Classification System.

The water content and dry unit weight was determined on 49 relatively undisturbed samples of the existing fill soils retrieved from the borings in liners with the Modified California Sampler. In addition, laboratory, oven dried, moisture determinations were made on samples of the soils encountered in the in-place density tests (ASTM D1556-07) performed in the exploratory test pit.

Six laboratory compaction tests and five compaction test check points (ASTM D1557-07) were performed on representative bulk samples of the existing fill soils retrieved from the borings and test pit.

The purpose of the dry unit weight tests and laboratory compaction tests was to aid in evaluating the compactness of the existing fill soils.



The laboratory test results are shown on the exploratory boring and test pit logs at the appropriate depths.

## **VII. SOIL DESCRIPTION**

Existing fill soils comprised of medium dense clayey and silty sands were encountered in all the borings to depths of 12.5 to 35 feet. In Borings 24, 30, and 33, the fill soils were underlain by dense to very dense, natural, clayey and silty sands (formational sandstone) at depths of 12.5 to 27 feet. Existing fill soils comprised of medium dense clayey and silty sands were also encountered in the exploratory test pit to the depth excavated of 12 feet. Based on our laboratory testing and past experience with similar materials, the fill and formational materials encountered in the borings and test pit have a low to very low potential for expansion.

The CPT, exploratory boring and exploratory test pit logs and related information depict subsurface conditions only at the specific locations shown on the site plan and on the particular dates designated on the logs. Subsurface conditions at other locations may differ from conditions occurring at these boring locations. Based on the extensive data collected, however, our findings are, in our opinion, representative of existing fill soil conditions.

## **VIII. EVALUATION AND CONCLUSIONS**

Although some of the measured degrees of compaction determined from the boring samples and in the exploratory test pit were less than the nominal standard of 90 percent, given the facts that (1) the samples were all selected at the few locations that indicated the lowest cone penetrometer resistance; (2) that the cone penetrometer provides a continuous record of resistance versus an intermittent



sampling of resistance; and 3) that the cone penetrometer soundings predominantly indicate high resistance values indicative of dense soils, it is our opinion that the soil engineering and engineering geologic aspects of the grading are in compliance with the approved geotechnical report and the grading and/or improvement plans (Parcels 1-3, Drawing No. D-23217). Accordingly, it is our opinion that the existing fill soils are, in general, suitable for the support of future buildings and associated improvements.

## **IX. PRELIMINARY RECOMMENDATIONS**

### **A. Site Preparation**

Due to the effects of weathering and burrowing rodents, we recommend that the existing surface soils (that are not removed by planned cuts) be recompacted to a depth of 2 feet in all areas to receive fill and/or buildings and associated improvements. In addition, with the exception of buildings that are not completely founded on formational sandstone materials, we recommend that the existing fill and/or formational sandstone materials be removed and recompacted in building areas to a depth of 5 feet or equal to the width of the largest footing dimensions, whichever is greater, to minimize the potential for excessive differential settlements. In general, all new fill should be compacted to a minimum degree of compaction of 90 percent.

More detailed earthwork recommendations will be provided when site development plans are finalized.



## **B. Foundations**

For preliminary estimating purposes, we anticipate that footings for buildings supported on compacted fill mats (as described above) can be designed for an allowable dead plus live bearing pressure on the order of 4,000 pounds per square foot. Footings for buildings supported completely on formational sandstone materials can be designed for an allowable dead plus live bearing pressure on the order of 8,000 pounds per square foot.

Site-specific seismic design criteria for proposed structures are presented in the following table in accordance with Section 1613 of the 2007 CBC, which incorporates by reference ASCE 7-05 for seismic design. We have determined the mapped spectral acceleration values for the site, based on a latitude of 32.8185 degrees and longitude of -117.1811 degrees, utilizing a program titled "Seismic Hazard Curves, Response Parameters and Design Parameters-v5.0.8," provided by the USGS, which provides a solution for ASCE 7-05 (Section 1613 of the 2007 CBC) utilizing digitized files for the Spectral Acceleration maps. In addition, we have assigned a Site Soil Classification of C.

**TABLE I**

***Mapped Spectral Acceleration Values and Design Parameters***

| $S_s$ | $S_1$ | $F_a$ | $F_v$ | $S_{ms}$ | $S_{m1}$ | $S_{ds}$ | $S_{d1}$ |
|-------|-------|-------|-------|----------|----------|----------|----------|
| 1.522 | 0.581 | 1.0   | 1.3   | 1.522    | 0.755    | 1.014    | 0.503    |

## **X. ADDITIONAL STUDIES**

As detailed grading and building plans are developed, we should be retained to develop detailed grading, foundation design, and construction recommendations.



Some additional field exploration and laboratory testing will be required to develop detailed building foundation design and construction criteria.

## **XI. LIMITATIONS**

Our services consist of professional opinions and recommendations made in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties either expressed or implied.

Our conclusions and recommendations have been based on available data obtained from our research, field investigation and laboratory analysis, as well as our experience with similar soils and formational materials located in this area of San Diego. Of necessity, we must assume a certain degree of continuity between exploratory excavations.

The work performed and recommendations presented herein are the result of an investigation and analysis that meet the contemporary standard of care in our profession within the City of San Diego. No warranty is provided. This report should be considered valid for a period of two (2) years, and is subject to review by our firm following that time.

The firm of ***Geotechnical Exploration, Inc.*** shall not be held responsible for changes to the physical condition of the property, such as addition of fill soils or changing drainage patterns, which occur subsequent to issuance of this report and the changes are made without our observations, testing, and approval.

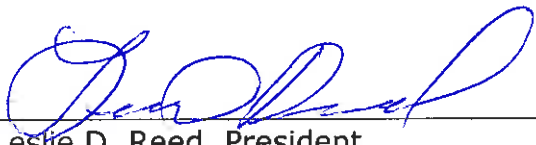


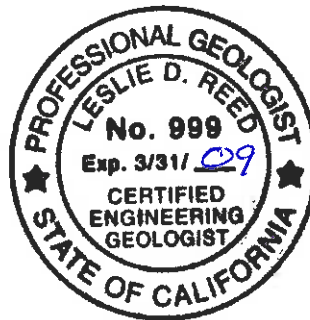
Thank you for this opportunity to be of service. Should you have any questions concerning this project, please do not hesitate to contact our office. Reference to our **Job No. 07-9487** will help to expedite a response to your inquiries.

Respectfully submitted,

**GEOTECHNICAL EXPLORATION, INC.**

  
Wm. D. Hespeler, G.E. 396  
Senior Geotechnical Engineer

  
Leslie D. Reed, President  
C.E.G. 999[exp. 3/31/09]/R.G. 3391



|                                                     |                                                                 |                               |
|-----------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>          | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>12-4-07</b> |
| SURFACE ELEVATION<br><b>± 182.8' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>SO</b>        |

| DEPTH (feet) | SYMBOL                                                                              | SAMPLE                                                                              | FIELD DESCRIPTION AND CLASSIFICATION                                                      |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. - (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|------------------------|-----------------|----------------------|
|              |                                                                                     |                                                                                     | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                         |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 2            |   |    | <b>CLAYEY AND SILTY SAND</b> fine- to medium-grained. Medium dense. Moist. Grayish brown. |  | SC-SM    | 16.0                  | 110.4                      |                      |                           | 88                    |                        | 29              | 3"                   |
| 4            |                                                                                     |                                                                                     | <b>FILL (Qaf)</b>                                                                         |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 6            |                                                                                     |                                                                                     |                                                                                           |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 8            |                                                                                     |                                                                                     | – Bulk bag sample from 7'-10'.                                                            |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
|              |                                                                                     |                                                                                     | – 36% passing #200 sieve.                                                                 |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 10           |                                                                                     |                                                                                     | – 25% passing #200 sieve.                                                                 |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
|              |                                                                                     |                                                                                     |                                                                                           |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 12           |                                                                                     |                                                                                     |                                                                                           |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 14           |                                                                                     |                                                                                     |                                                                                           |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 16           |                                                                                     |                                                                                     |        |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 18           |                                                                                     |                                                                                     |                                                                                           |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 20           |  |  | <b>CLAYEY SAND</b> fine- to medium-grained. Medium dense. Moist. Grayish brown.           |  | SC       |                       |                            |                      |                           |                       | 19                     | 2"              |                      |
| 22           |                                                                                     |                                                                                     | <b>TORREY SANDSTONE (Tt)</b>                                                              |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
|              |                                                                                     |                                                                                     | Bottom @ 21.5'                                                                            |  |          |                       |                            |                      |                           |                       |                        |                 |                      |

EXPLORATION LOG 9487 SD CORP CTR.GPJ GEO\_EXPL.GDT 3/25/08

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  DRIVE SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

|                                                                                       |                                                                                                                             |             |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------|
| JOB NAME<br><b>San Diego Corporate Center - Development Site</b>                      |                                                                                                                             |             |
| SITE LOCATION<br><b>SW of Del Mar Heights Rd. &amp; El Camino Real, San Diego, CA</b> |                                                                                                                             |             |
| JOB NUMBER<br><b>07-9487</b>                                                          | REVIEWED BY<br><b>WDH</b>                                                                                                   | LOG No.     |
| FIGURE NUMBER<br><b>IIa</b>                                                           |  <b>Geotechnical Exploration, Inc.</b> | <b>B-20</b> |

|                                                     |                                                                 |                               |
|-----------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>          | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>12-4-07</b> |
| SURFACE ELEVATION<br><b>± 185.2' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>SO</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                      |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + (% CONSOL. - | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|-------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|-----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                         |  |          |                       |                            |                      |                           |                       |                       |                 |                      |
| 2            |        |        | <b>CLAYEY AND SILTY SAND</b> fine- to medium-grained. Medium dense. Moist. Grayish brown. |  | SC-SM    |                       |                            |                      |                           |                       |                       |                 |                      |
| 4            |        |        | <b>FILL (Qaf)</b><br>– 22% passing #200 sieve.                                            |  |          | 7.2<br>10.3           | 125.7<br>112.5             |                      |                           | 97<br>90              |                       | 55              | 3"                   |
| 6            |        |        |                                                                                           |  |          |                       |                            |                      |                           |                       |                       |                 |                      |
| 8            |        |        |                                                                                           |  |          |                       |                            |                      |                           |                       |                       |                 |                      |
| 10           |        |        |                                                                                           |  |          |                       |                            |                      |                           |                       |                       |                 |                      |
| 12           |        |        |                                                                                           |  |          |                       |                            |                      |                           |                       |                       |                 |                      |
| 14           |        |        |                                                                                           |  |          |                       |                            |                      |                           |                       |                       |                 |                      |
| 16           |        |        |                                                                                           |  |          |                       |                            |                      |                           |                       |                       |                 |                      |
| 18           |        |        |                                                                                           |  |          |                       |                            |                      |                           |                       |                       |                 |                      |
| 20           |        |        |                                                                                           |  |          |                       |                            |                      |                           |                       |                       |                 |                      |
| 22           |        |        |                                                                                           |  |          |                       |                            |                      |                           |                       |                       |                 |                      |
| 24           |        |        | – 41% passing #200 sieve.                                                                 |  | SC       | 13.7<br>13.8          | 108.0<br>115.6             |                      |                           | 86<br>92              |                       | 29              | 3"                   |
| 26           |        |        | <b>CLAYEY SAND</b> , fine- to medium-grained. Dense. Moist. Grayish brown.                |  |          |                       |                            |                      |                           |                       |                       | 33              | 2"                   |
| 28           |        |        | <b>TORREY SANDSTONE (Tt)</b><br>Bottom @ 26'                                              |  |          |                       |                            |                      |                           |                       |                       |                 |                      |

EXPLORATION LOG B487 SD CORP CTR.GPJ GEO EXPL GDT 3/26/08

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  DRIVE SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

|                                                                                       |                                                                                                                             |                        |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------|
| JOB NAME<br><b>San Diego Corporate Center - Development Site</b>                      |                                                                                                                             |                        |
| SITE LOCATION<br><b>SW of Del Mar Heights Rd. &amp; El Camino Real, San Diego, CA</b> |                                                                                                                             |                        |
| JOB NUMBER<br><b>07-9487</b>                                                          | REVIEWED BY<br><b>WDH</b>                                                                                                   | LOG No.<br><b>B-22</b> |
| FIGURE NUMBER<br><b>IIb</b>                                                           |  <b>Geotechnical Exploration, Inc.</b> |                        |

|                                                     |                                                                 |                               |
|-----------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>          | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>12-3-07</b> |
| SURFACE ELEVATION<br><b>± 215.5' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>SO</b>        |

| DEPTH (feet) | SYMBOL                                                                             | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                       |                                                                | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + (% CONSOL. - | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |  |
|--------------|------------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|-----------------------|-----------------|----------------------|--|
|              |                                                                                    |        | DESCRIPTION AND REMARKS (Grain size, Density, Moisture, Color)                                                             |                                                                |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 2            |  |        | <b>CLAYEY AND SILTY SAND</b> fine- to medium-grained. Medium dense. Moist. Tan and grayish brown.<br><br><b>FILL (Qaf)</b> |                                                                | SC-SM    |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 4            |                                                                                    |        |                                                                                                                            |                                                                |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 6            |                                                                                    |        |                                                                                                                            |                                                                |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 8            |                                                                                    |        |                                                                                                                            |                                                                |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 10           |                                                                                    |        |                                                                                                                            |                                                                |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 12           |                                                                                    |        |                                                                                                                            |                                                                |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 14           |                                                                                    |        |                                         | -- 23% passing #200 sieve.                                     |          | 12.1                  | 110.9                      |                      |                           | 88                    |                       | 38              | 3"                   |  |
| 16           |                                                                                    |        |                                                                                                                            |                                                                |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 18           |                                                                                    |        |                                         | -- 23% passing #200 sieve.                                     |          | 14.6                  | 109.2                      |                      |                           | 87                    |                       | 25              | 3"                   |  |
| 20           |                                                                                    |        |                                         | -- Bulk bag sample from 18'-21'.<br>-- 30% passing #200 sieve. |          | 14.6                  | 111.1                      |                      |                           | 86                    |                       |                 |                      |  |
| 22           |                                                                                    |        |                                                                                                                            |                                                                |          |                       |                            | 8.7                  | 128.5                     |                       |                       |                 |                      |  |
| 24           |                                                                                    |        |                                                                                                                            |                                                                |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 26           |                                                                                    |        |                                         | -- 28% passing #200 sieve.                                     |          | 15.0                  | 107.2                      |                      |                           | 85                    |                       | 43              | 3"                   |  |
| 28           |                                                                                    |        |                                                                                                                            |                                                                |          | 13.4                  | 114.5                      |                      |                           | 91                    |                       |                 |                      |  |
| 30           |                                                                                    |        |                                                                                                                            | Bottom @ 27'                                                   |          |                       |                            |                      |                           |                       |                       |                 |                      |  |

EXPLORATION LOG 9487 SD CORP CTR.GPJ GEO. EXPL.GDT 3/26/08

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  DRIVE SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

|                                                                                       |                                                                                                                             |                        |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------|
| JOB NAME<br><b>San Diego Corporate Center - Development Site</b>                      |                                                                                                                             |                        |
| SITE LOCATION<br><b>SW of Del Mar Heights Rd. &amp; El Camino Real, San Diego, CA</b> |                                                                                                                             |                        |
| JOB NUMBER<br><b>07-9487</b>                                                          | REVIEWED BY<br><b>WDH</b>                                                                                                   | LOG No.<br><b>B-24</b> |
| FIGURE NUMBER<br><b>Ilc</b>                                                           |  <b>Geotechnical Exploration, Inc.</b> |                        |

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>12-4-07</b> |
| SURFACE ELEVATION<br><b>± 200' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>S0</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                              |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + (%<br>CONSOL. - | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|---------------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|--------------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                 |  |          |                       |                            |                      |                           |                       |                          |                 |                      |
|              |        |        | <b>CLAYEY AND SILTY SAND</b> fine- to medium-grained. Medium dense. Moist. Tan and grayish brown. |  | SC-SM    |                       |                            |                      |                           |                       |                          |                 |                      |
|              |        |        | <b>FILL (Qaf)</b>                                                                                 |  |          |                       |                            |                      |                           |                       |                          |                 |                      |
| 2            |        |        |                                                                                                   |  |          |                       |                            |                      |                           |                       |                          |                 |                      |
| 4            |        |        |                                                                                                   |  |          |                       |                            |                      |                           |                       |                          |                 |                      |
| 6            |        |        |                                                                                                   |  |          |                       |                            |                      |                           |                       |                          |                 |                      |
| 8            |        |        |                                                                                                   |  |          | 9.9                   | 117.2                      |                      |                           | 93                    |                          | 48              | 3"                   |
|              |        |        |                                                                                                   |  |          | 13.1                  | 119.0                      |                      |                           | 95                    |                          |                 |                      |
| 10           |        |        | -- Bulk bag sample from 7'-10'.                                                                   |  |          |                       |                            |                      |                           |                       |                          |                 |                      |
| 12           |        |        | -- 26% passing #200 sieve.                                                                        |  |          | 13.7                  | 111.4                      |                      |                           | 89                    |                          | 43              | 3"                   |
|              |        |        |                                                                                                   |  |          | 11.3                  | 104.2                      |                      |                           | 83                    |                          |                 |                      |
| 14           |        |        | Bottom @ 12.5'                                                                                    |  |          |                       |                            |                      |                           |                       |                          |                 |                      |

EXPLORATION LOG 9487 SD CORP CTR.GPJ GEO\_EXPL.GDT 3/26/08

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  DRIVE SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

|                                                                                       |                           |
|---------------------------------------------------------------------------------------|---------------------------|
| JOB NAME<br><b>San Diego Corporate Center - Development Site</b>                      |                           |
| SITE LOCATION<br><b>SW of Del Mar Heights Rd. &amp; El Camino Real, San Diego, CA</b> |                           |
| JOB NUMBER<br><b>07-9487</b>                                                          | REVIEWED BY<br><b>WDH</b> |
| FIGURE NUMBER<br><b>11d</b>                                                           | LOG No.<br><b>B-30</b>    |



Geotechnical  
Exploration, Inc.

|                                                     |                                                                 |                               |
|-----------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>          | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>12-4-07</b> |
| SURFACE ELEVATION<br><b>± 198.2' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>WDH</b>       |

| DEPTH (feet) | SYMBOL                                                                             | SAMPLE                                                                             | FIELD DESCRIPTION AND CLASSIFICATION                                                              |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |    |
|--------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|----|
|              |                                                                                    |                                                                                    | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                 |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 2            |  |  | <b>CLAYEY AND SILTY SAND</b> fine- to medium-grained. Medium dense. Moist. Tan and grayish brown. |  | SC-SM    |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 4            |                                                                                    |                                                                                    | <b>FILL (Qaf)</b>                                                                                 |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 6            |                                                                                    |                                                                                    |                                                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 8            |                                                                                    |                                                                                    |                                                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 10           |                                                                                    |                                                                                    | Lense of <b>SANDY CLAY</b> .                                                                      |  |          | CL                    |                            |                      |                           |                       |                      |                 |                      |    |
| 12           |                                                                                    |                                                                                    | -- 67% passing #200 sieve.                                                                        |  |          |                       | 9.8                        | 118.3                |                           |                       | 92                   |                 | 64                   | 3" |
| 14           |                                                                                    |                                                                                    |                                                                                                   |  |          |                       | 12.7                       | 118.2                |                           |                       | 92                   |                 |                      |    |
| 16           |                                                                                    |                                                                                    |                                                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 18           |                                                                                    |                                                                                    | -- 37% passing #200 sieve.                                                                        |  |          |                       | 12.9                       | 105.7                |                           |                       | 84                   |                 | 36                   | 3" |
| 20           |                                                                                    |                                                                                    |                                                                                                   |  |          |                       | 16.1                       | 111.8                |                           |                       | 89                   |                 |                      |    |
|              |                                                                                    |                                                                                    | Bottom @ 18.5'                                                                                    |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |

EXPLORATION LOG 9487 SD CORP CTR GPJ GEO. EXPL.GDT 3/25/06

|                                                                                                                                                                                              |                                                                  |                                                                                                                             |             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------|
| <div>▼ PERCHED WATER TABLE</div> <div>⊠ LOOSE BAG SAMPLE</div> <div>1 IN-PLACE SAMPLE</div> <div>■ DRIVE SAMPLE</div> <div>S FIELD DENSITY TEST</div> <div>▨ STANDARD PENETRATION TEST</div> | JOB NAME<br><b>San Diego Corporate Center - Development Site</b> | SITE LOCATION<br><b>SW of Del Mar Heights Rd. &amp; El Camino Real, San Diego, CA</b>                                       |             |
|                                                                                                                                                                                              | JOB NUMBER<br><b>07-9487</b>                                     | REVIEWED BY<br><b>WDH</b>                                                                                                   | LOG No.     |
|                                                                                                                                                                                              | FIGURE NUMBER<br><b>Ile</b>                                      |  <b>Geotechnical Exploration, Inc.</b> | <b>B-33</b> |
|                                                                                                                                                                                              |                                                                  |                                                                                                                             |             |

|                                                     |                                                                 |                               |
|-----------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>          | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>12-4-07</b> |
| SURFACE ELEVATION<br><b>± 215.1' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>SO</b>        |

| DEPTH (feet) | SYMBOL                                                                              | SAMPLE                                                                             | FIELD DESCRIPTION AND CLASSIFICATION                                                              |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |                                                                                     |                                                                                    | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                 |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 4            |    |   | <b>CLAYEY AND SILTY SAND</b> fine- to medium-grained. Medium dense. Moist. Tan and grayish brown. |  | SC-SM    |                       |                            |                      |                           |                       |                      |                 |                      |
| 8            |                                                                                     |                                                                                    | <b>FILL (Qaf)</b>                                                                                 |  |          | 9.9<br>12.8           | 122.1<br>120.8             | 95<br>94             | 41                        | 3"                    |                      |                 |                      |
| 12           |                                                                                     |                                                                                    |                                                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 16           |   |  |                                                                                                   |  | CL       | 11.2<br>13.6          | 117.3<br>117.7             |                      |                           | 91<br>91              |                      | 40              | 3"                   |
| 20           |                                                                                     |                                                                                    |                                                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 24           |                                                                                     |                                                                                    | Lense of very stiff <b>SANDY CLAY</b> .<br>— 56% passing #200 sieve.                              |  |          | 19.4<br>13.3          | 92.9<br>100.1              |                      | 31                        | 3"                    |                      |                 |                      |
| 28           |                                                                                     |                                                                                    |                                                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 32           |                                                                                     |                                                                                    |                                                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 36           |  |                                                                                    | <b>CLAYEY SAND</b> , fine- to medium-grained. Dense. Moist. Grayish brown.                        |  | SC       |                       |                            |                      |                           |                       |                      | 48              | 2"                   |
| 40           |                                                                                     |                                                                                    | <b>TORREY SANDSTONE (Tt)</b><br>Bottom @ 36.5'                                                    |  |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487 SD CORP CTR.GPJ GEO. EXPL.GDT 3/26/08

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  DRIVE SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

|                                                                                       |                                                                                                                             |                        |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------|
| JOB NAME<br><b>San Diego Corporate Center - Development Site</b>                      |                                                                                                                             |                        |
| SITE LOCATION<br><b>SW of Del Mar Heights Rd. &amp; El Camino Real, San Diego, CA</b> |                                                                                                                             |                        |
| JOB NUMBER<br><b>07-9487</b>                                                          | REVIEWED BY<br><b>WDH</b>                                                                                                   | LOG No.<br><b>B-35</b> |
| FIGURE NUMBER<br><b>II f</b>                                                          |  <b>Geotechnical Exploration, Inc.</b> |                        |

|                                                     |                                                                 |                               |
|-----------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>          | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>12-4-07</b> |
| SURFACE ELEVATION<br><b>± 216.7' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>SO</b>        |

| DEPTH (feet) | SYMBOL                                                                              | SAMPLE                                                                              | FIELD DESCRIPTION AND CLASSIFICATION                                                              |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.I.) | EXPAN. + CONSOL. - (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|------------------------|-----------------|----------------------|
|              |                                                                                     |                                                                                     | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                 |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 4            |    |    | <b>CLAYEY AND SILTY SAND</b> fine- to medium-grained. Medium dense. Moist. Tan and grayish brown. |  | SC-SM    |                       |                            |                      |                           |                       |                        |                 |                      |
|              |                                                                                     |                                                                                     | <b>FILL (Qaf)</b>                                                                                 |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 8            |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
|              |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 12           |   |   |                                                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
|              |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 16           |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
|              |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 20           |  |  | Sampler driven on rock - no recovery.                                                             |  |          |                       |                            |                      |                           |                       |                        | 58              | 3"                   |
|              |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 24           |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
|              |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 28           |  |  |                                                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
|              |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 32           |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
|              |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 36           |  |  | <b>CLAYEY SAND</b> , fine- to medium-grained. Dense. Moist. Grayish brown.                        |  | SC       |                       |                            |                      |                           |                       |                        | 38              | 2"                   |
|              |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 40           |                                                                                     |                                                                                     | <b>TORREY SANDSTONE (Tt)</b><br>Bottom @ 36.5'                                                    |  |          |                       |                            |                      |                           |                       |                        |                 |                      |

EXPLORATION LOG 9487 SD CORP CTR.GPJ GEO EXPL GDT 3/25/08

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  DRIVE SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

|                                                                                       |                                                                                                                             |                        |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------|
| JOB NAME<br><b>San Diego Corporate Center - Development Site</b>                      |                                                                                                                             |                        |
| SITE LOCATION<br><b>SW of Del Mar Heights Rd. &amp; El Camino Real, San Diego, CA</b> |                                                                                                                             |                        |
| JOB NUMBER<br><b>07-9487</b>                                                          | REVIEWED BY<br><b>WDH</b>                                                                                                   | LOG No.<br><b>B-36</b> |
| FIGURE NUMBER<br><b>Ilg</b>                                                           |  <b>Geotechnical Exploration, Inc.</b> |                        |

|                                                     |                                                                 |                               |
|-----------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>          | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>12-4-07</b> |
| SURFACE ELEVATION<br><b>± 202.1' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>SO</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                              |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |    |
|--------------|--------|--------|---------------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|----|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                 |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
|              |        |        | <b>CLAYEY AND SILTY SAND</b> fine- to medium-grained. Medium dense. Moist. Tan and grayish brown. |  | SC-SM    |                       |                            |                      |                           |                       |                      |                 |                      |    |
|              |        |        | <b>FILL (Qaf)</b>                                                                                 |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 4            |        |        | - 24% passing #200 sieve.                                                                         |  |          |                       | 11.5                       | 109.8                |                           |                       | 88                   |                 | 47                   | 3" |
|              |        |        | - 26% passing #200 sieve.                                                                         |  |          |                       | 11.2                       | 120.8                |                           |                       | 96                   |                 |                      |    |
| 8            |        |        |                                                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
|              |        |        |                                                                                                   |  |          | 9.1                   | 118.8                      |                      |                           | 92                    |                      | 68              | 3"                   |    |
| 12           |        |        |                                                                                                   |  |          | 9.1                   | 117.6                      |                      |                           | 91                    |                      |                 |                      |    |
| 16           |        |        |                                                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 20           |        |        |                                                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 24           |        |        |                                                                                                   |  |          | 11.4                  | 117.4                      |                      |                           | 91                    |                      | 38              | 3"                   |    |
| 28           |        |        | <b>CLAYEY SAND</b> , fine- to medium-grained. Medium dense. Moist. Grayish brown.                 |  | SC       |                       |                            |                      |                           |                       |                      | 24              | 2"                   |    |
|              |        |        | <b>TORREY SANDSTONE (Tt)</b>                                                                      |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
|              |        |        | Bottom @ 28.5'                                                                                    |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |

EXPLORATION LOG 9487 SD CORP CTR.GPJ GEO. EXPL.GDT 3/26/08

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  DRIVE SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

|                                                                                                                             |                           |
|-----------------------------------------------------------------------------------------------------------------------------|---------------------------|
| JOB NAME<br><b>San Diego Corporate Center - Development Site</b>                                                            |                           |
| SITE LOCATION<br><b>SW of Del Mar Heights Rd. &amp; El Camino Real, San Diego, CA</b>                                       |                           |
| JOB NUMBER<br><b>07-9487</b>                                                                                                | REVIEWED BY<br><b>WDH</b> |
| FIGURE NUMBER<br><b>llh</b>                                                                                                 | LOG No.<br><b>B-38</b>    |
|  <b>Geotechnical Exploration, Inc.</b> |                           |

|                                                     |                                                                 |                               |
|-----------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>          | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>12-3-07</b> |
| SURFACE ELEVATION<br><b>± 200.1' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>WDH</b>       |

| DEPTH (feet) | SYMBOL                                                                              | SAMPLE                                                                              | FIELD DESCRIPTION AND CLASSIFICATION                                                              |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + (% CONSOL. - | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |    |    |  |
|--------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|-----------------------|-----------------|----------------------|----|----|--|
|              |                                                                                     |                                                                                     | DESCRIPTION AND REMARKS (Grain size, Density, Moisture, Color)                                    |  |          |                       |                            |                      |                           |                       |                       |                 |                      |    |    |  |
| 2            |    |    | <b>CLAYEY AND SILTY SAND</b> fine- to medium-grained. Medium dense. Moist. Tan and grayish brown. |  | SC-SM    |                       |                            |                      |                           |                       |                       |                 |                      |    |    |  |
|              |                                                                                     |                                                                                     | <b>FILL (Qaf)</b>                                                                                 |  |          |                       |                            |                      |                           |                       |                       |                 |                      |    |    |  |
| 4            |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                       |                 |                      |    |    |  |
| 6            |                                                                                     |                                                                                     | -- 20% passing #200 sieve.                                                                        |  |          |                       |                            | 10.6                 | 104.5                     |                       |                       | 83              |                      |    |    |  |
|              |                                                                                     |                                                                                     | -- 24% passing #200 sieve.                                                                        |  |          |                       |                            | 10.3                 | 108.4                     |                       |                       | 86              |                      | 19 | 3" |  |
|              |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            | 10.7                 | 110.2                     |                       |                       | 88              |                      |    |    |  |
| 8            |                                                                                     |                                                                                     | -- 17% passing #200 sieve.                                                                        |  |          |                       |                            | 8.7                  | 112.6                     |                       |                       | 89              |                      | 44 | 3" |  |
|              |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            | 10.1                 | 115.2                     |                       |                       | 89              |                      |    |    |  |
| 10           |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                       |                 |                      |    |    |  |
| 12           |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                       |                 |                      |    |    |  |
| 14           |                                                                                     |                                                                                     |                                                                                                   |  |          |                       |                            |                      |                           |                       |                       |                 |                      |    |    |  |
| 16           |  |  | -- 20% passing #200 sieve.                                                                        |  |          |                       |                            | 8.5                  | 129.0                     |                       |                       |                 |                      |    |    |  |
| 18           |                                                                                     |                                                                                     | <b>CLAYEY SAND</b> , fine- to medium-grained. Medium dense. Moist. Grayish brown.                 |  | SC       |                       |                            |                      |                           |                       |                       | 29              | 2"                   |    |    |  |
|              |                                                                                     |                                                                                     | <b>TORREY SANDSTONE (Tt)</b>                                                                      |  |          |                       |                            |                      |                           |                       |                       |                 |                      |    |    |  |
| 20           |                                                                                     |                                                                                     | Bottom @ 18.5'                                                                                    |  |          |                       |                            |                      |                           |                       |                       |                 |                      |    |    |  |

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  DRIVE SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

|                                                                                       |                           |
|---------------------------------------------------------------------------------------|---------------------------|
| JOB NAME<br><b>San Diego Corporate Center - Development Site</b>                      |                           |
| SITE LOCATION<br><b>SW of Del Mar Heights Rd. &amp; El Camino Real, San Diego, CA</b> |                           |
| JOB NUMBER<br><b>07-9487</b>                                                          | REVIEWED BY<br><b>WDH</b> |
| FIGURE NUMBER<br><b>III</b>                                                           | LOG No.<br><b>B-39</b>    |

EXPLORATION LOG 9487 SD CORP CTR.GPJ GEO\_EXPL.GDT 3/26/08


 Geotechnical  
Exploration, Inc.

|                                                     |                                                                 |                               |
|-----------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>          | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>12-3-07</b> |
| SURFACE ELEVATION<br><b>± 202.6' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>WDH</b>       |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                              |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + (% CONSOL. - | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |  |
|--------------|--------|--------|---------------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|-----------------------|-----------------|----------------------|--|
|              |        |        | DESCRIPTION AND REMARKS (Grain size, Density, Moisture, Color)                                    |  |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 2            |        |        | <b>CLAYEY AND SILTY SAND</b> fine- to medium-grained. Medium dense. Moist. Tan and grayish brown. |  | SC-SM    |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 4            |        |        | <b>FILL (Qaf)</b>                                                                                 |  |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 6            |        |        | - 16% passing #200 sieve.                                                                         |  |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 6            |        |        | -- 17% passing #200 sieve.                                                                        |  |          | 10.5                  | 112.8                      | 8.0                  | 126.5                     | 89                    |                       | 29              | 3"                   |  |
| 6            |        |        |                                                                                                   |  |          | 11.9                  | 115.5                      |                      |                           | 91                    |                       |                 |                      |  |
| 8            |        |        |                                                                                                   |  |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 10           |        |        |                                                                                                   |  |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 12           |        |        |                                                                                                   |  |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 14           |        |        |                                                                                                   |  |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 16           |        |        |                                                                                                   |  |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 18           |        |        |                                                                                                   |  |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 18           |        |        | -- 21% passing #200 sieve.                                                                        |  |          |                       |                            |                      | 11.0                      | 125.5                 |                       |                 |                      |  |
| 20           |        |        | <b>SILTY SAND</b> , fine- to medium-grained. Dense. Moist. Grayish brown.                         |  | SM       |                       |                            |                      |                           |                       |                       | 40              | 2"                   |  |
| 22           |        |        | <b>TORREY SANDSTONE (Tt)</b>                                                                      |  |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
|              |        |        | Bottom @ 21.5'                                                                                    |  |          |                       |                            |                      |                           |                       |                       |                 |                      |  |

EXPLORATION LOG 9487 SD CORP CTR.GPJ GEO\_EXPL.GDT 3/26/08

|                                                                                                                                                                                              |                                                                                       |                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>▼ PERCHED WATER TABLE</div> <div>⊠ LOOSE BAG SAMPLE</div> <div>1 IN-PLACE SAMPLE</div> <div>■ DRIVE SAMPLE</div> <div>S FIELD DENSITY TEST</div> <div>▨ STANDARD PENETRATION TEST</div> | JOB NAME<br><b>San Diego Corporate Center - Development Site</b>                      |                                                                                                                                                                            |
|                                                                                                                                                                                              | SITE LOCATION<br><b>SW of Del Mar Heights Rd. &amp; El Camino Real, San Diego, CA</b> |                                                                                                                                                                            |
|                                                                                                                                                                                              | JOB NUMBER<br><b>07-9487</b>                                                          | REVIEWED BY<br><b>WDH</b>                                                                                                                                                  |
|                                                                                                                                                                                              | FIGURE NUMBER<br><b>Ilj</b>                                                           | LOG No.<br><div>  <b>Geotechnical Exploration, Inc.</b> </div> <div><b>B-43</b></div> |

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>12-4-07</b> |
| SURFACE ELEVATION<br><b>± 214' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>SO</b>        |

| DEPTH (feet) | SYMBOL                                                                             | SAMPLE                                                                              | FIELD DESCRIPTION AND CLASSIFICATION                                                      |                                                                 | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + (% CONSOL. - | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |  |
|--------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|-----------------------|-----------------|----------------------|--|
|              |                                                                                    |                                                                                     | DESCRIPTION AND REMARKS (Grain size, Density, Moisture, Color)                            |                                                                 |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 2            |  |                                                                                     | <b>CLAYEY AND SILTY SAND</b> fine- to medium-grained. Medium dense. Moist. Grayish brown. |                                                                 | SC-SM    |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 4            |                                                                                    |                                                                                     | <b>FILL (Qaf)</b>                                                                         |                                                                 |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 6            |                                                                                    |                                                                                     |                                                                                           |                                                                 |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 8            |                                                                                    |    | - 19% passing #200 sieve.                                                                 |                                                                 |          | 8.1 109.9             | 87                         | 52                   | 3"                        |                       |                       |                 |                      |  |
| 10           |                                                                                    |                                                                                     |                                                                                           |                                                                 |          | 8.0 116.1             | 92                         |                      |                           |                       |                       |                 |                      |  |
| 12           |                                                                                    |                                                                                     |                                                                                           |                                                                 |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 14           |                                                                                    |                                                                                     |                                                                                           |                                                                 |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 16           |                                                                                    |                                                                                     |                                                                                           |                                                                 |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
| 18           |                                                                                    |  |                                                                                           | <b>SILTY SAND</b> , fine- to medium-grained. Dense. Moist. Tan. |          | SM                    |                            |                      |                           |                       |                       | 32              | 2"                   |  |
| 20           |                                                                                    |                                                                                     |                                                                                           | <b>TORREY SANDSTONE (Tt)</b>                                    |          |                       |                            |                      |                           |                       |                       |                 |                      |  |
|              |                                                                                    |                                                                                     | Bottom @ 19'                                                                              |                                                                 |          |                       |                            |                      |                           |                       |                       |                 |                      |  |

EXPLORATION LOG 9487 SD CORP CTR.GPJ GEO. EXPL.GDT 3/25/08

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  DRIVE SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

|                                                                                       |                                                                                                                             |                        |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------|
| JOB NAME<br><b>San Diego Corporate Center - Development Site</b>                      |                                                                                                                             |                        |
| SITE LOCATION<br><b>SW of Del Mar Heights Rd. &amp; El Camino Real, San Diego, CA</b> |                                                                                                                             |                        |
| JOB NUMBER<br><b>07-9487</b>                                                          | REVIEWED BY<br><b>WDH</b>                                                                                                   | LOG No.<br><b>B-46</b> |
| FIGURE NUMBER<br><b>Ilk</b>                                                           |  <b>Geotechnical Exploration, Inc.</b> |                        |

|                                         |                                                                  |                               |
|-----------------------------------------|------------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>Rubber-tire Backhoe</b> | DIMENSION & TYPE OF EXCAVATION<br><b>2' X 10' X 12' Test Pit</b> | DATE LOGGED<br><b>1-17-08</b> |
| SURFACE ELEVATION                       | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>             | LOGGED BY<br><b>WDH</b>       |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                      |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|-------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                         | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 2            |        |        | <b>CLAYEY AND SILTY SAND</b> fine- to medium-grained. Medium dense. Moist. Grayish brown. | SC-SM    |                       |                            |                      |                           |                       |                      |                 |                      |
|              |        |        | <b>FILL (Qaf)</b>                                                                         |          |                       |                            |                      |                           |                       |                      |                 |                      |
|              |        | 1      |                                                                                           |          | 10.4                  | 111.8                      |                      | 125.0                     | 89                    |                      |                 |                      |
|              |        | 2      |                                                                                           |          | 12.4                  | 119.4                      |                      | 126.0                     | 95                    |                      |                 |                      |
|              |        | 3      |                                                                                           |          | 14.4                  | 114.0                      |                      | 123.5                     | 92                    |                      |                 |                      |
|              |        | 4      |                                                                                           |          | 14.3                  | 117.6                      |                      | 124.0                     | 95                    |                      |                 |                      |
|              |        | 5      |                                                                                           |          | 13.9                  | 105.7                      |                      | 128.5                     | 82                    |                      |                 |                      |
|              |        | 6      |                                                                                           |          | 13.6                  | 112.9                      | 10.5                 | 124.5                     | 91                    |                      |                 |                      |
|              |        | 7      |                                                                                           |          | 8.1                   | 110.3                      | 10.8                 | 126.0                     | 88                    |                      |                 |                      |
| 12           |        |        | Bottom @ 12'<br>* Indicates maximum density estimated from check point.                   |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487 SD CORP CTR.GPJ GEO\_EXPL.GDT 3/26/08

|                                                                                                                               |                                                                  |                                                                                       |             |
|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------|
| PERCHED WATER TABLE<br>LOOSE BAG SAMPLE<br>IN-PLACE SAMPLE<br>DRIVE SAMPLE<br>FIELD DENSITY TEST<br>STANDARD PENETRATION TEST | JOB NAME<br><b>San Diego Corporate Center - Development Site</b> | SITE LOCATION<br><b>SW of Del Mar Heights Rd. &amp; El Camino Real, San Diego, CA</b> |             |
|                                                                                                                               | JOB NUMBER<br><b>07-9487</b>                                     | REVIEWED BY<br><b>WDH</b>                                                             | LOG No.     |
|                                                                                                                               | FIGURE NUMBER<br><b>III</b>                                      | Geotechnical Exploration, Inc.                                                        | <b>TP-1</b> |
|                                                                                                                               |                                                                  |                                                                                       |             |

# **APPENDIX A**

## **CPT LOGS**





# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-02

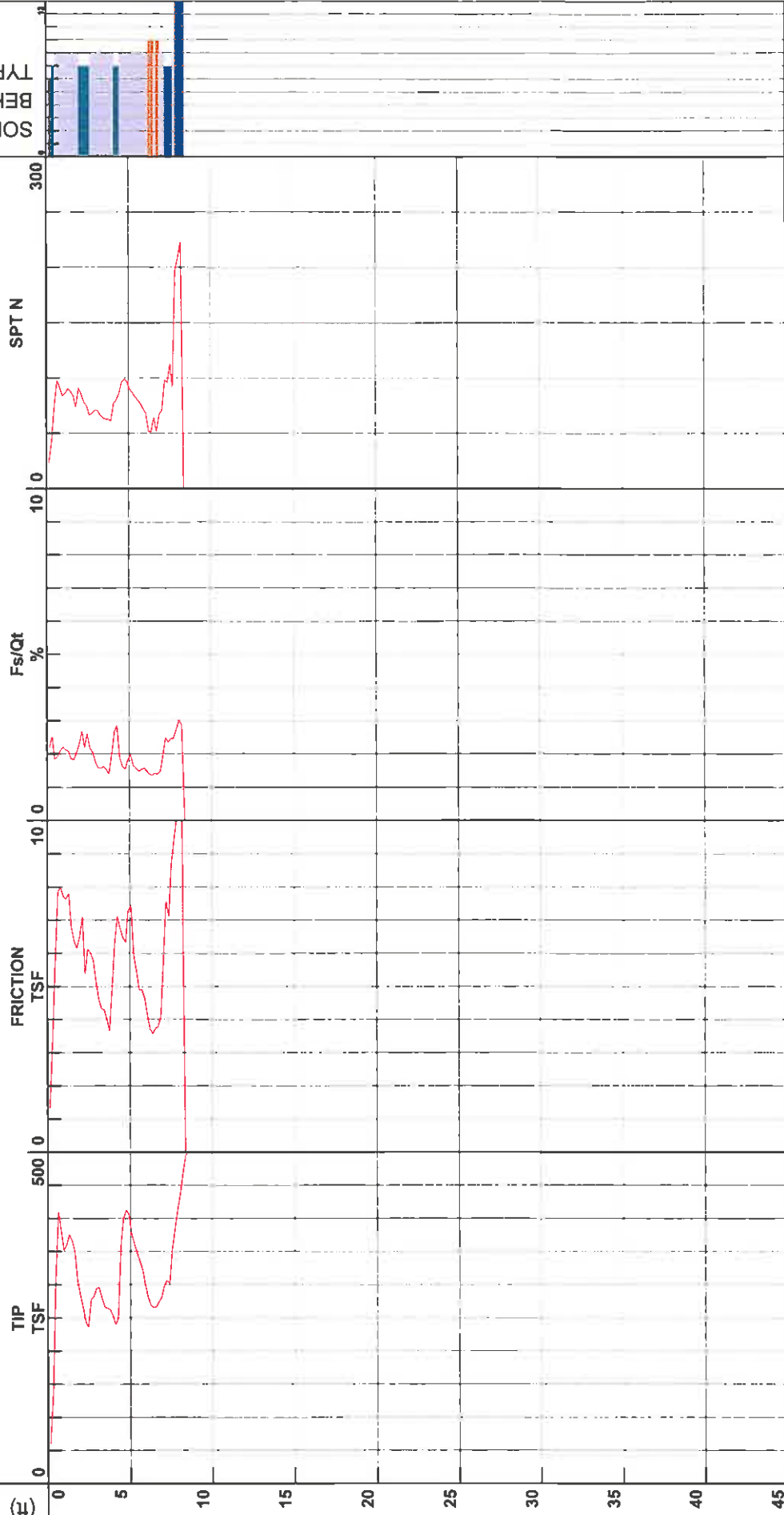
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/29/2007 4:13:56 PM

Filename  
GPS  
Maximum Depth  
SDF(437).cpt  
8.53 ft  
217.7

## CPT DATA

DEPTH  
(ft)



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-03

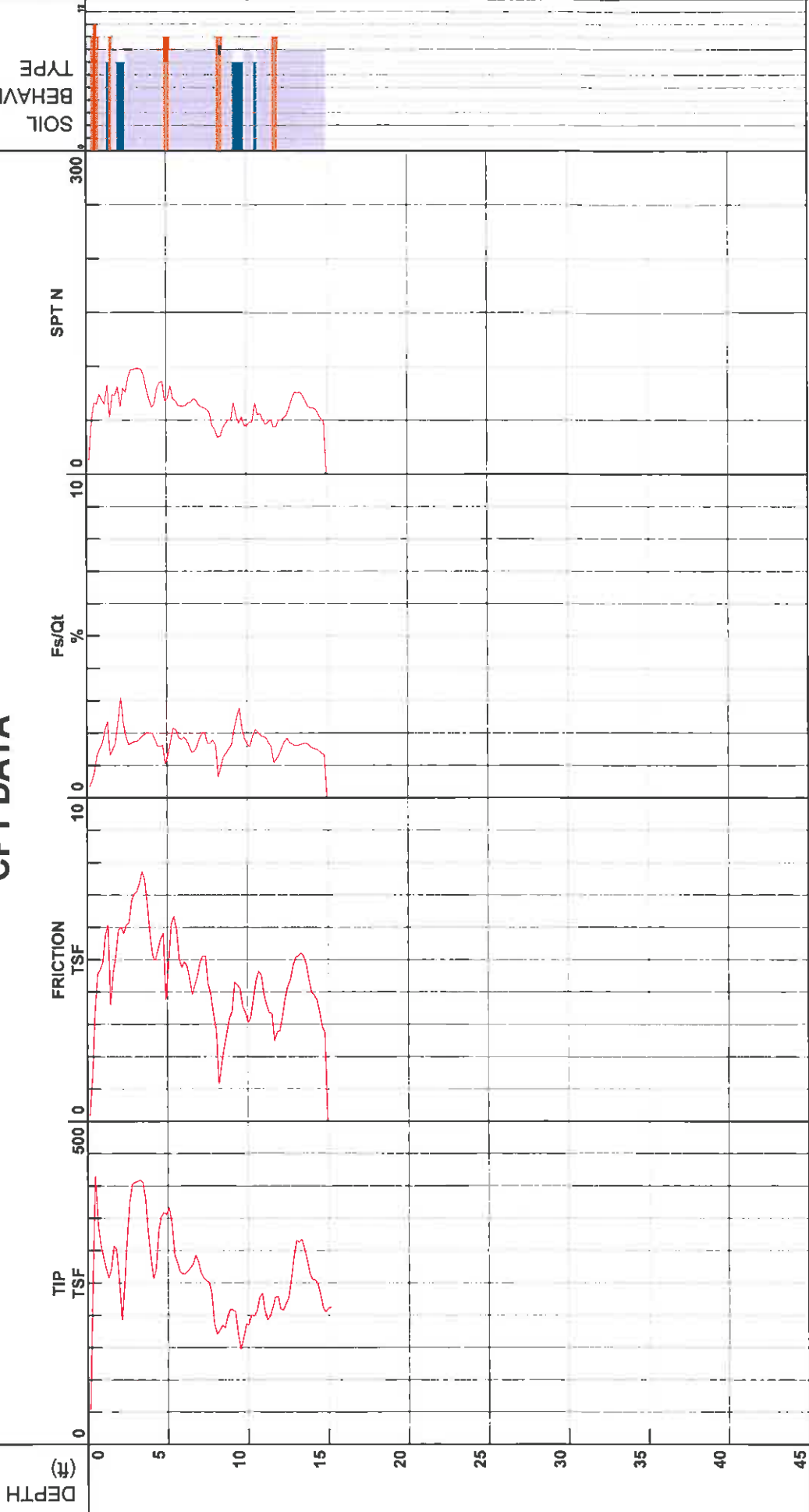
Operator  
Cone Number  
Date and Time

ML/CW  
DSG1023  
11/30/2007 8:59:59 AM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(440).cpt  
15.09 ft  
215.3

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-04

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/29/2007 3:56:43 PM

Filename  
GPS  
Maximum Depth  
SDF(436).cpt  
15.09 ft  
216.9

## CPT DATA

DEPTH  
(ft)

TIP  
TSF

FRICTION  
TSF

Fs/Qt  
%

SPT N

SOIL  
BEHAVIOR  
TYPE

- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

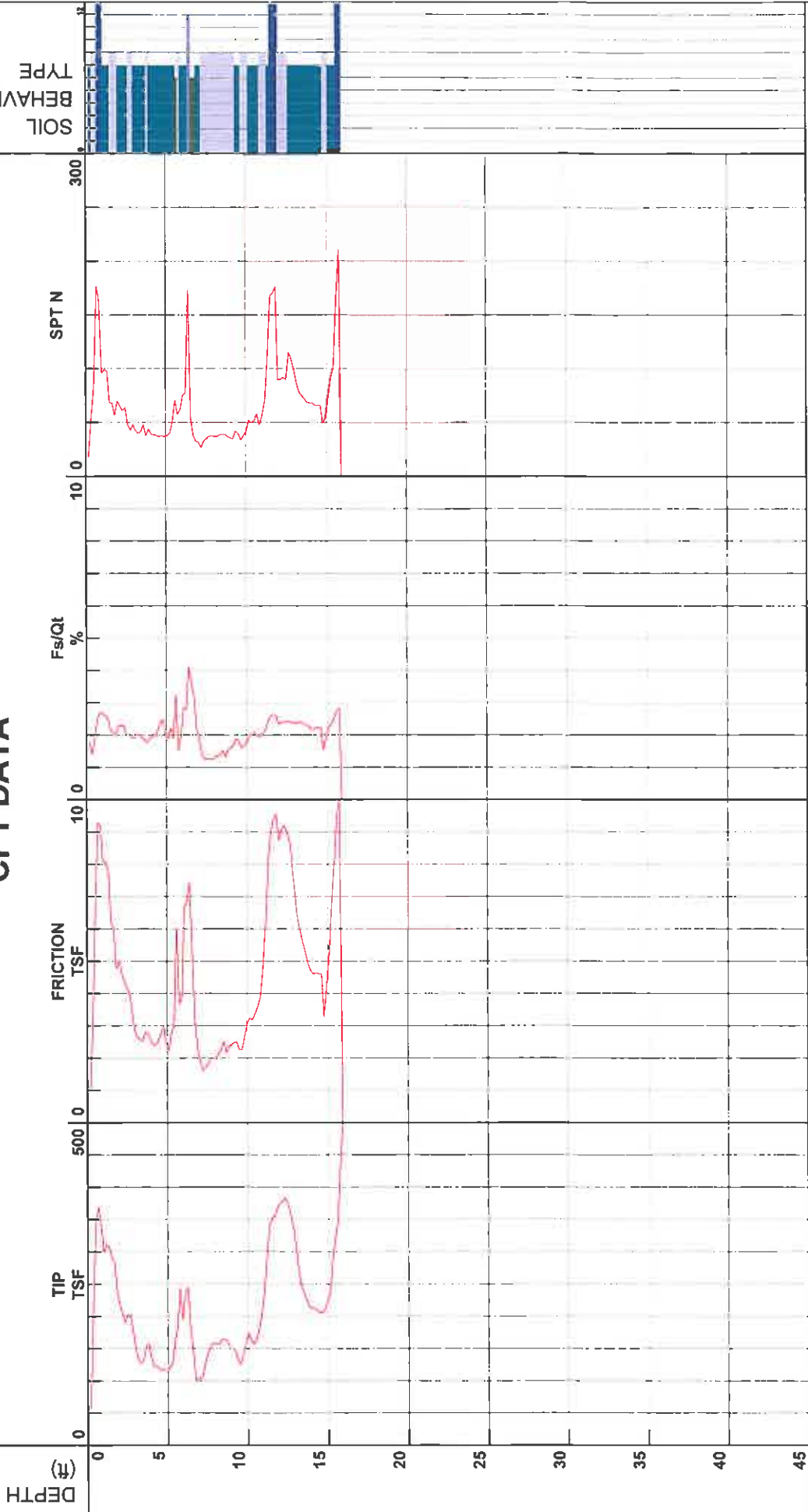
Del Mar Heights  
07-9487  
CPT-05

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/28/2007 12:13:06 PM

Filename  
GPS  
Maximum Depth  
SDF(416).cpt  
16.08 ft  
218.6

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

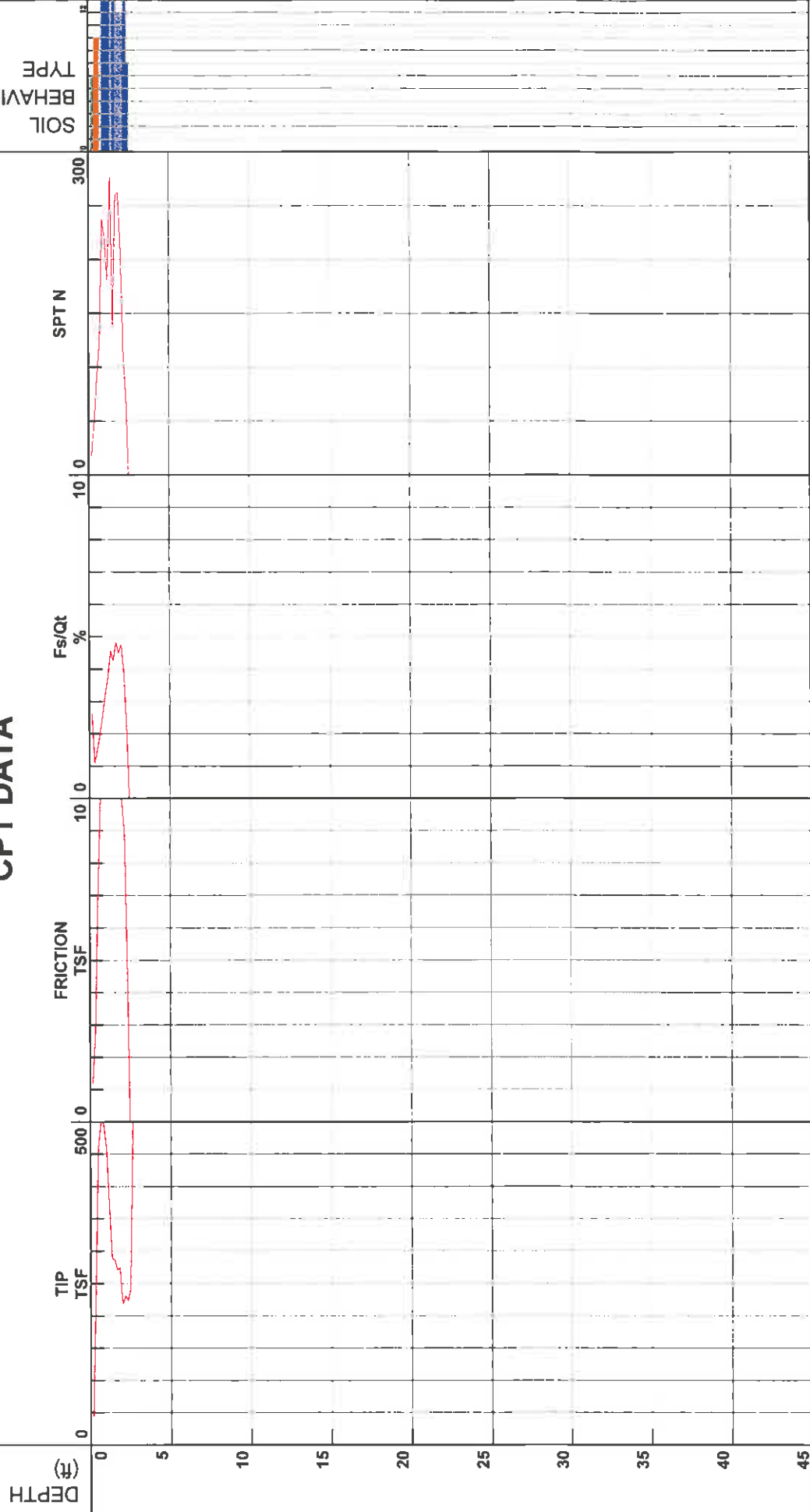
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                        |               |              |
|-------------------|-----------------|---------------|------------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                  | Filename      | SDF(415).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023                | GPS           |              |
| Hole Number       | CPT-06          | Date and Time | 11/28/2007 11:53:12 AM | Maximum Depth | 2.62 ft      |
| Water Table Depth |                 |               |                        | Elevation     | 218.5        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-07

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/29/2007 3:40:19 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(435).cpt  
12.47 ft  
216.8

## CPT DATA

DEPTH  
(ft)

TIP  
TSF

500

FRICTION  
TSF

10

Fs/Qt  
%

10

SPT N

300

SOIL  
BEHAVIOR  
TYPE

1 - sensitive fine grained

2 - organic material

3 - clay

4 - silty clay to clay

5 - clayey silt to silty clay

6 - sandy silt to clayey silt

7 - silty sand to sandy silt

8 - sand to silty sand

9 - sand

10 - gravelly sand to sand

11 - very stiff fine grained (\*)

12 - sand to clayey sand (\*)

Depth Increment

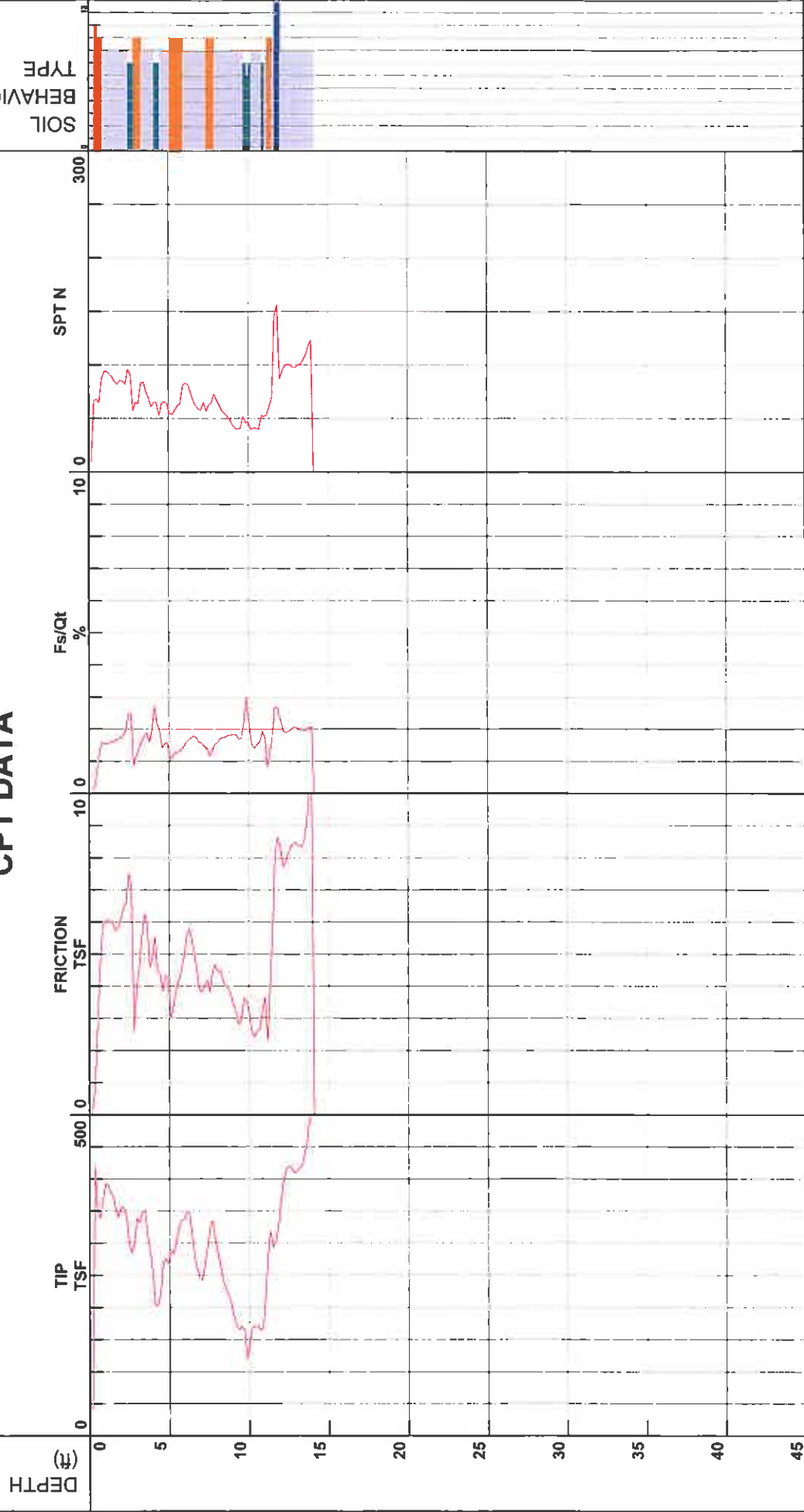
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(441).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-08          | Date and Time | 11/30/2007 9:17:19 AM | Maximum Depth | 14.27 ft     |
| Water Table Depth |                 |               | 0.00 ft               | Elevation     | 215.2        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

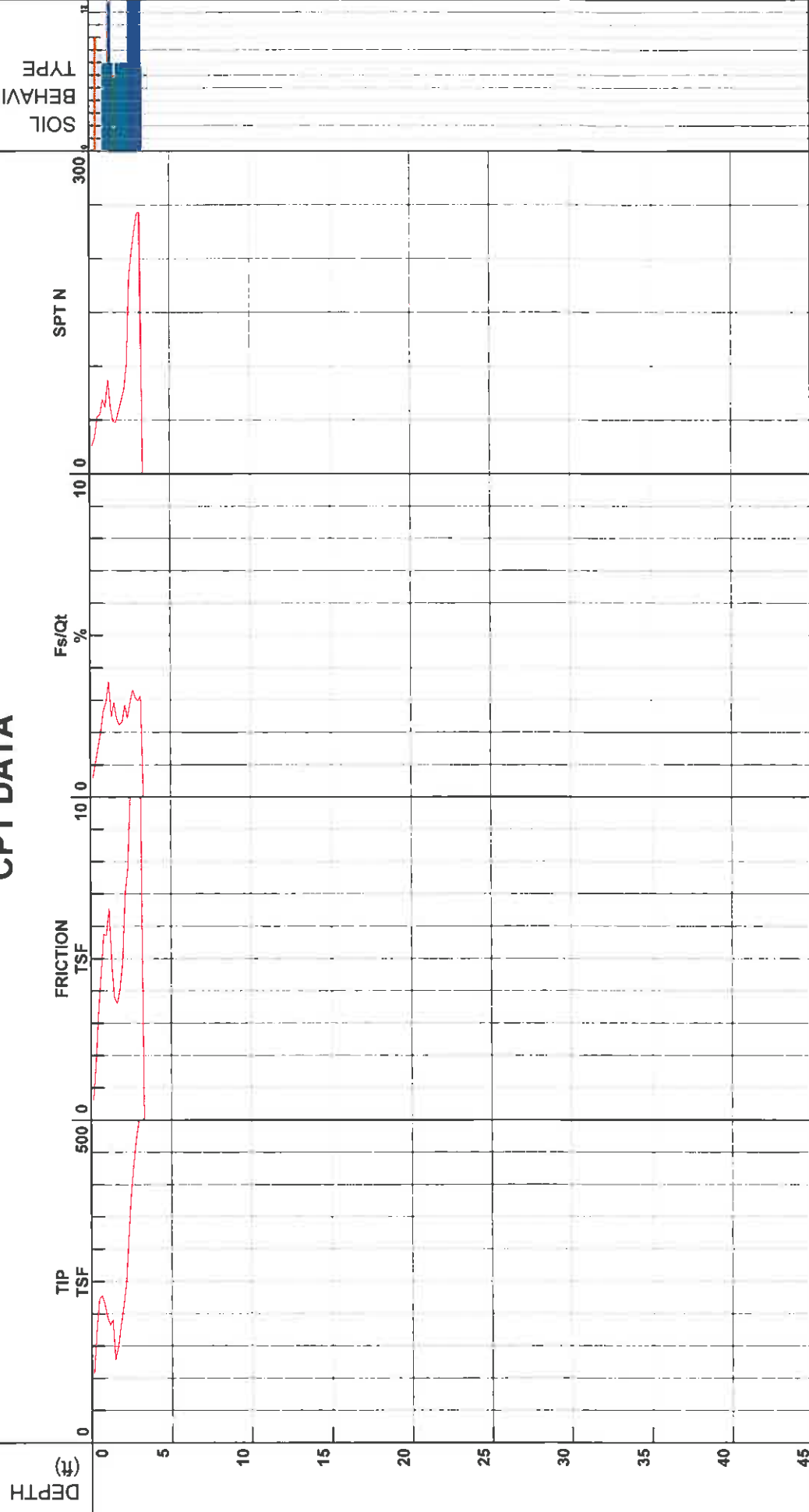
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(419).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-10          | Date and Time | 11/28/2007 3:01:11 PM | Maximum Depth | 3.44 ft      |
| Water Table Depth | 0.00 ft         |               |                       | Elevation     | 186.9        |

## CPT DATA



Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

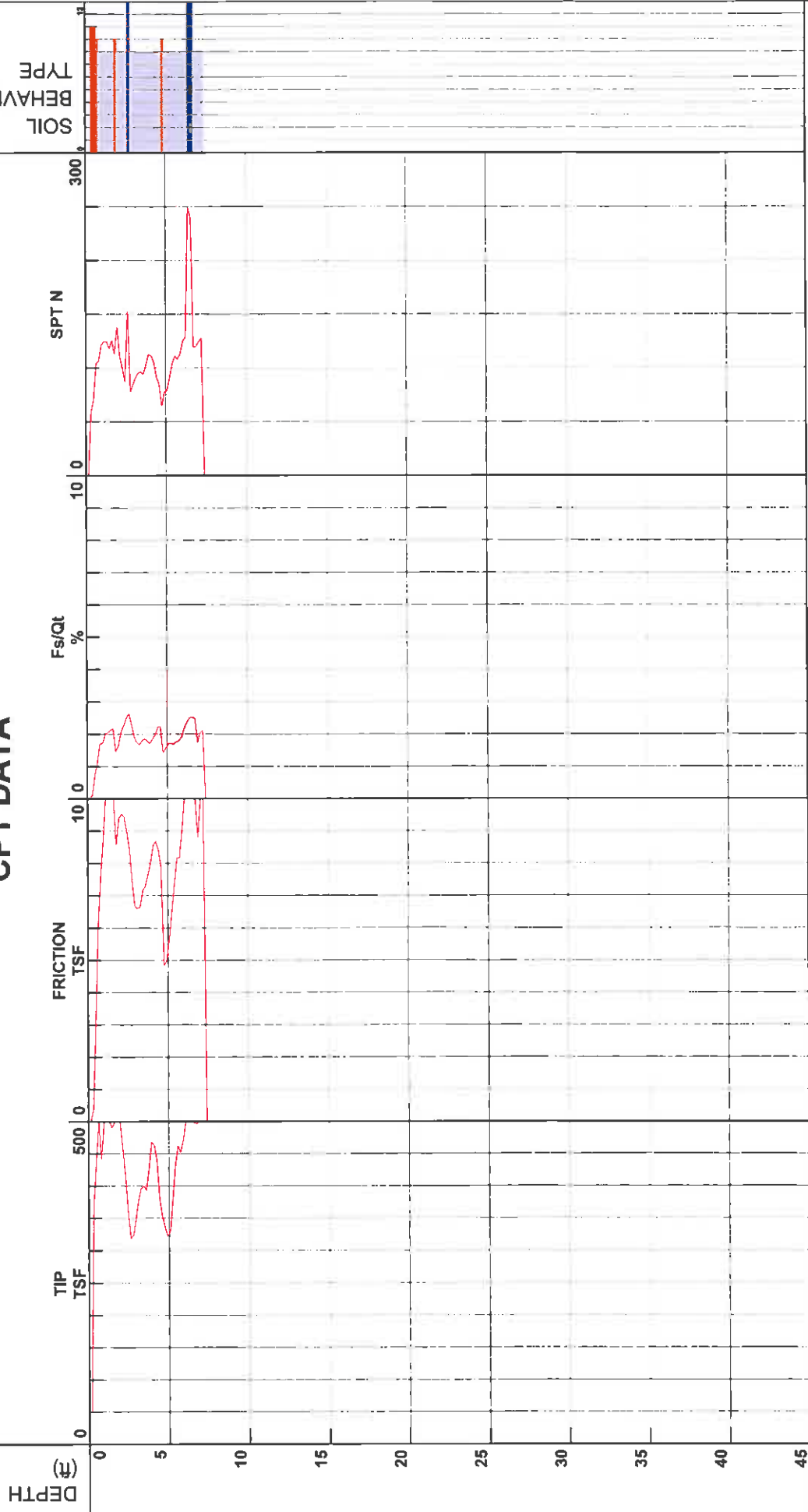
Del Mar Heights  
07-9487  
CPT-11

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/30/2007 9:33:56 AM

Filename  
GPS  
Maximum Depth  
SDF(442).cpt  
7.55 ft  
212.9

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-12

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/30/2007 9:52:31 AM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(443).cpt  
2.79 ft  
215.1

## CPT DATA

DEPTH  
(ft)

TIP  
TSF

500

FRICTION  
TSF

10

Fs/Qt  
%

10

SPT N

300

SOIL  
BEHAVIOR  
TYPE

1 - sensitive fine grained

2 - organic material

3 - clay

4 - silty clay to clay

5 - clayey silt to silty clay

6 - sandy silt to clayey silt

7 - silty sand to sandy silt

8 - sand to silty sand

9 - sand

10 - gravelly sand to sand

11 - very stiff fine grained (\*)

12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

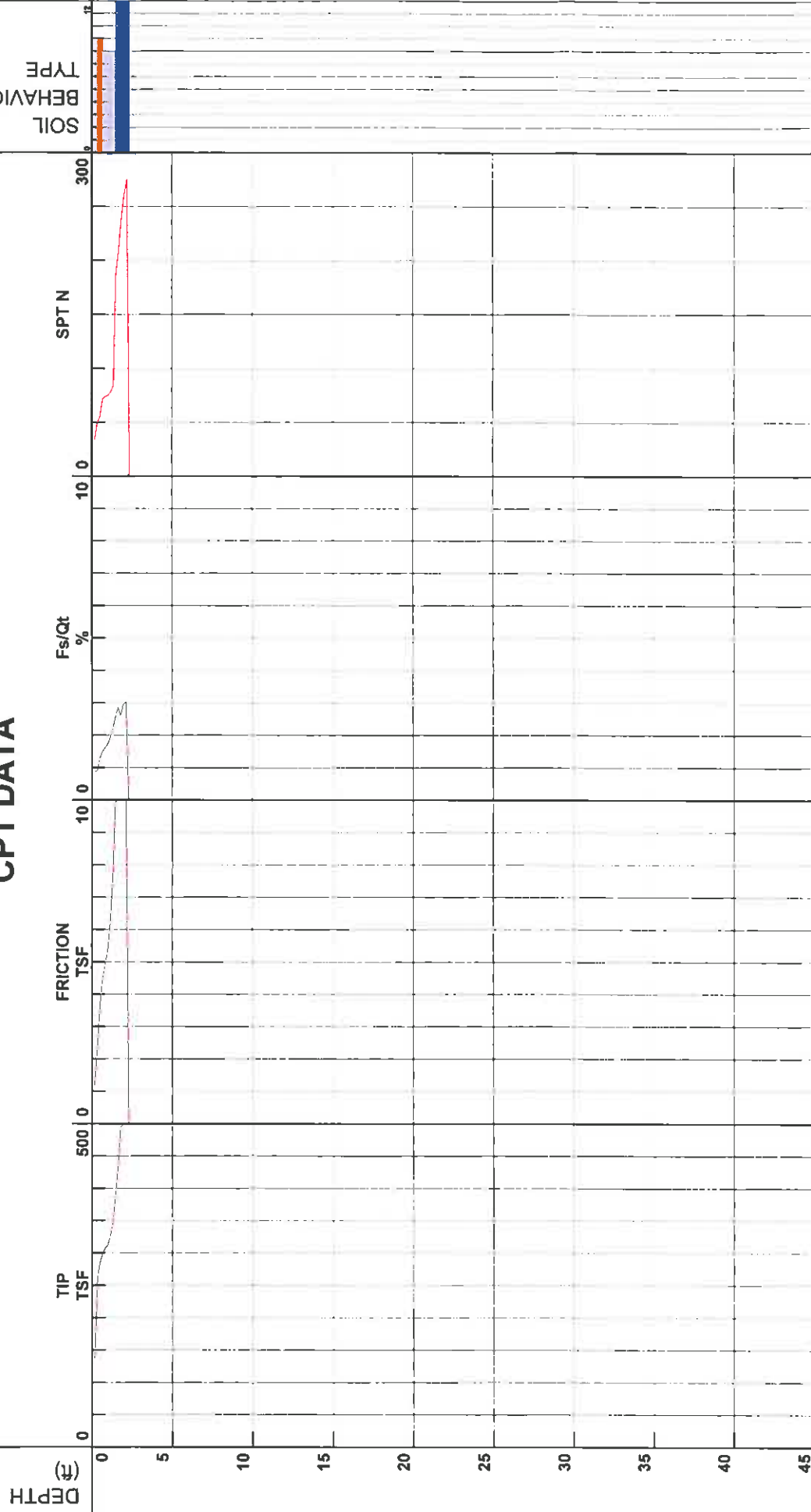
Del Mar Heights  
07-9487  
CPT-13

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/29/2007 3:31:02 PM

Filename  
GPS  
Maximum Depth  
SDF(434).cpt  
2.46 ft  
216.5

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location Del Mar Heights  
Job Number 07-9487  
Hole Number CPT-14  
Water Table Depth

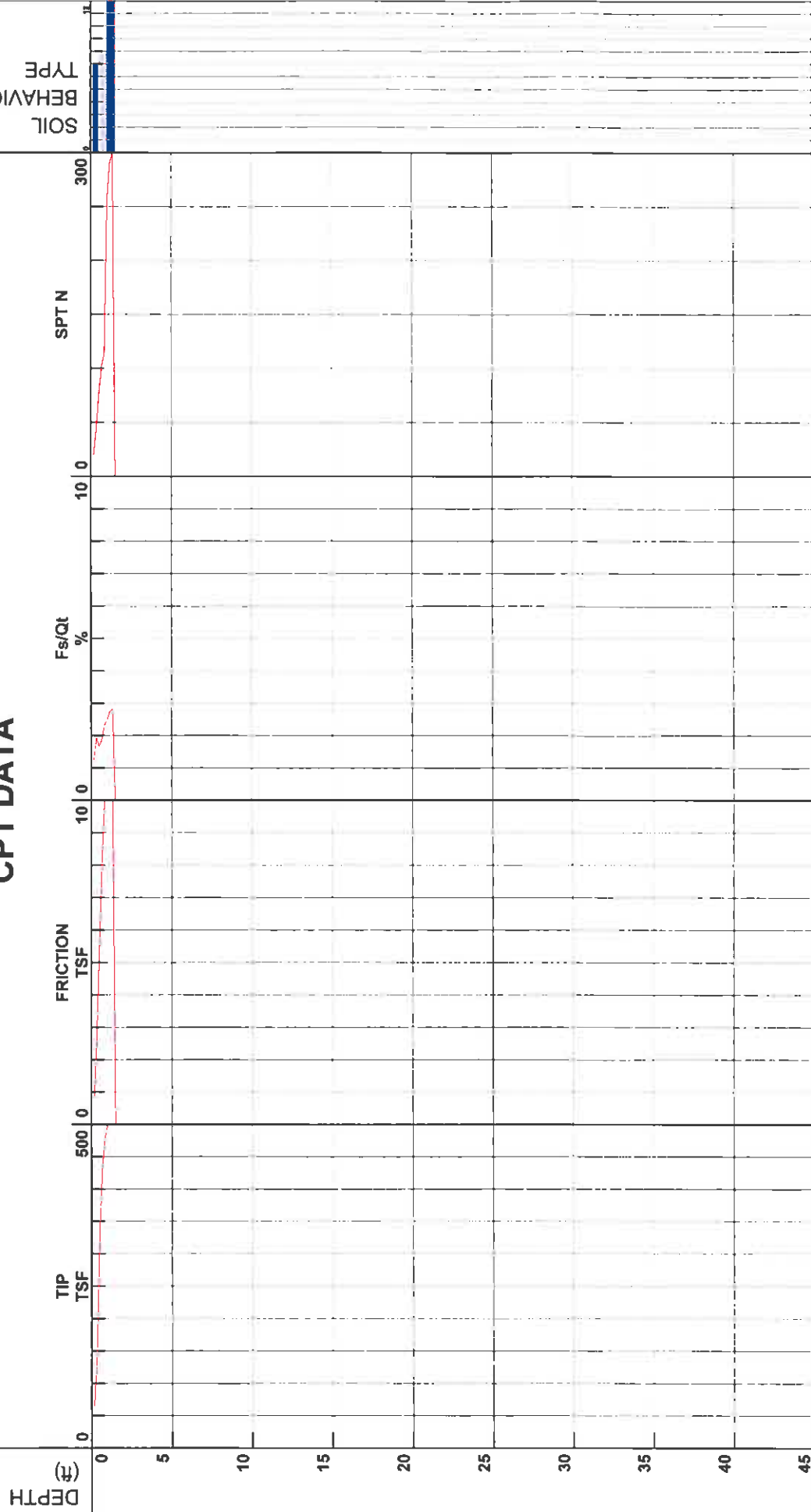
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023

11/28/2007 11:42:37 AM

Filename SDF(414).cpt  
GPS  
Maximum Depth  
1.64 ft  
Elevation  
217.8

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-15

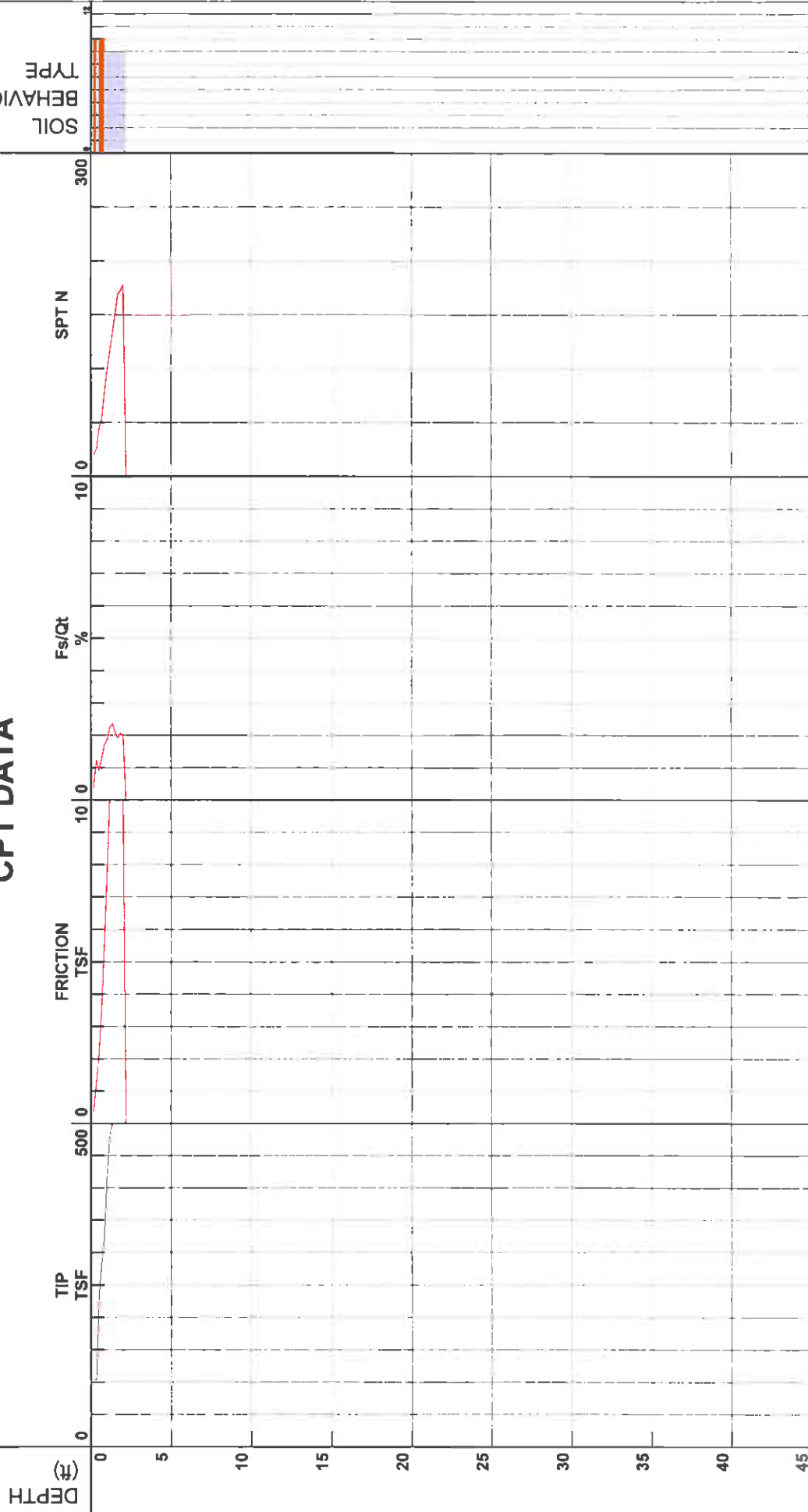
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/28/2007 11:33:24 AM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(413).cpt  
2.30 ft  
217.3

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

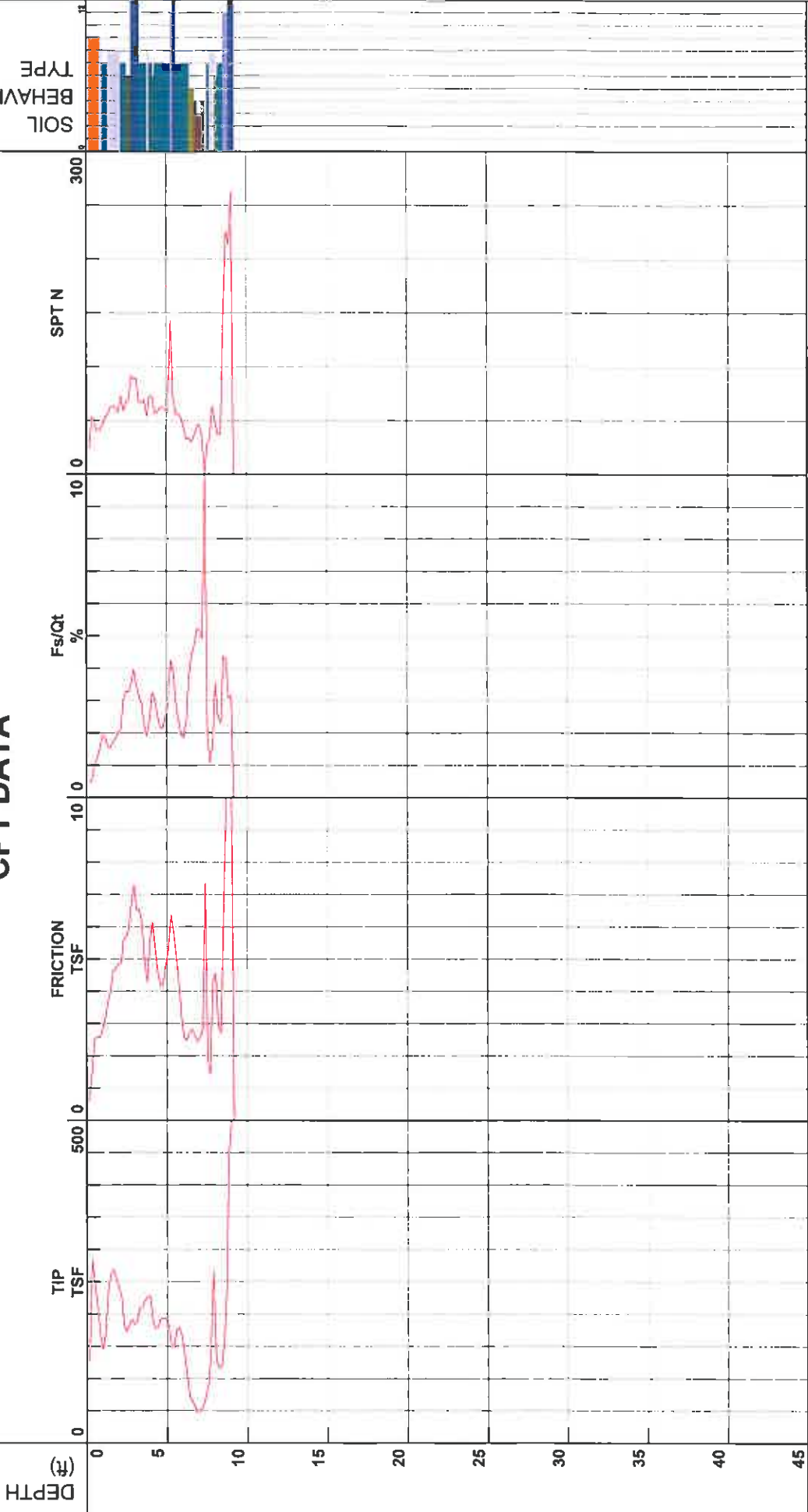
Del Mar Heights  
07-9487  
CPT-16

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/29/2007 3:18:04 PM

Filename  
GPS  
Maximum Depth  
SDF(433).cpt  
9.35 ft  
216.7

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-17

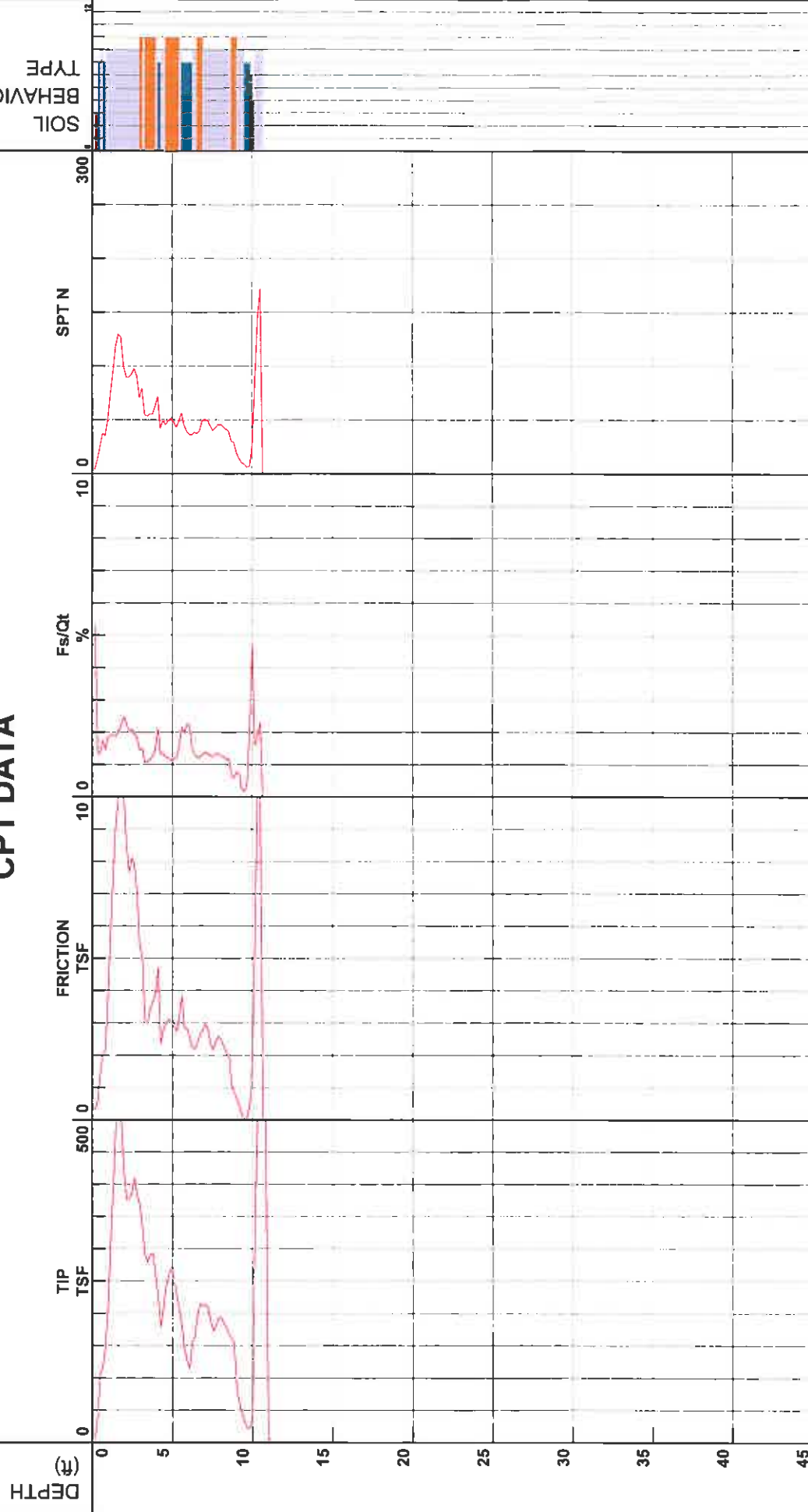
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/30/2007 10:19:32 AM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(444).cpt  
11.15 ft  
214.7

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-18

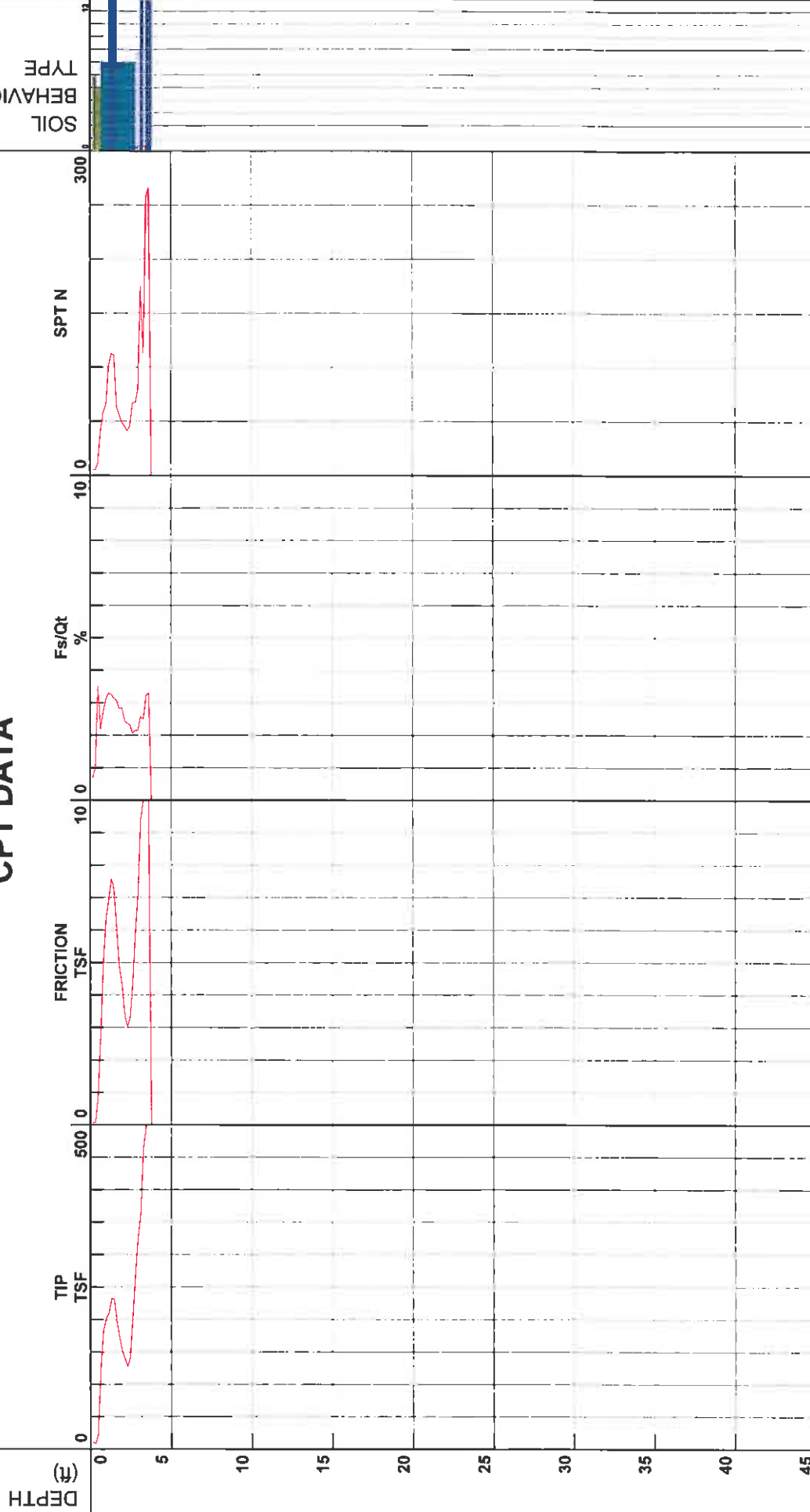
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/29/2007 7:58:18 AM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(424).cpt  
3.94 ft  
187.8

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-19

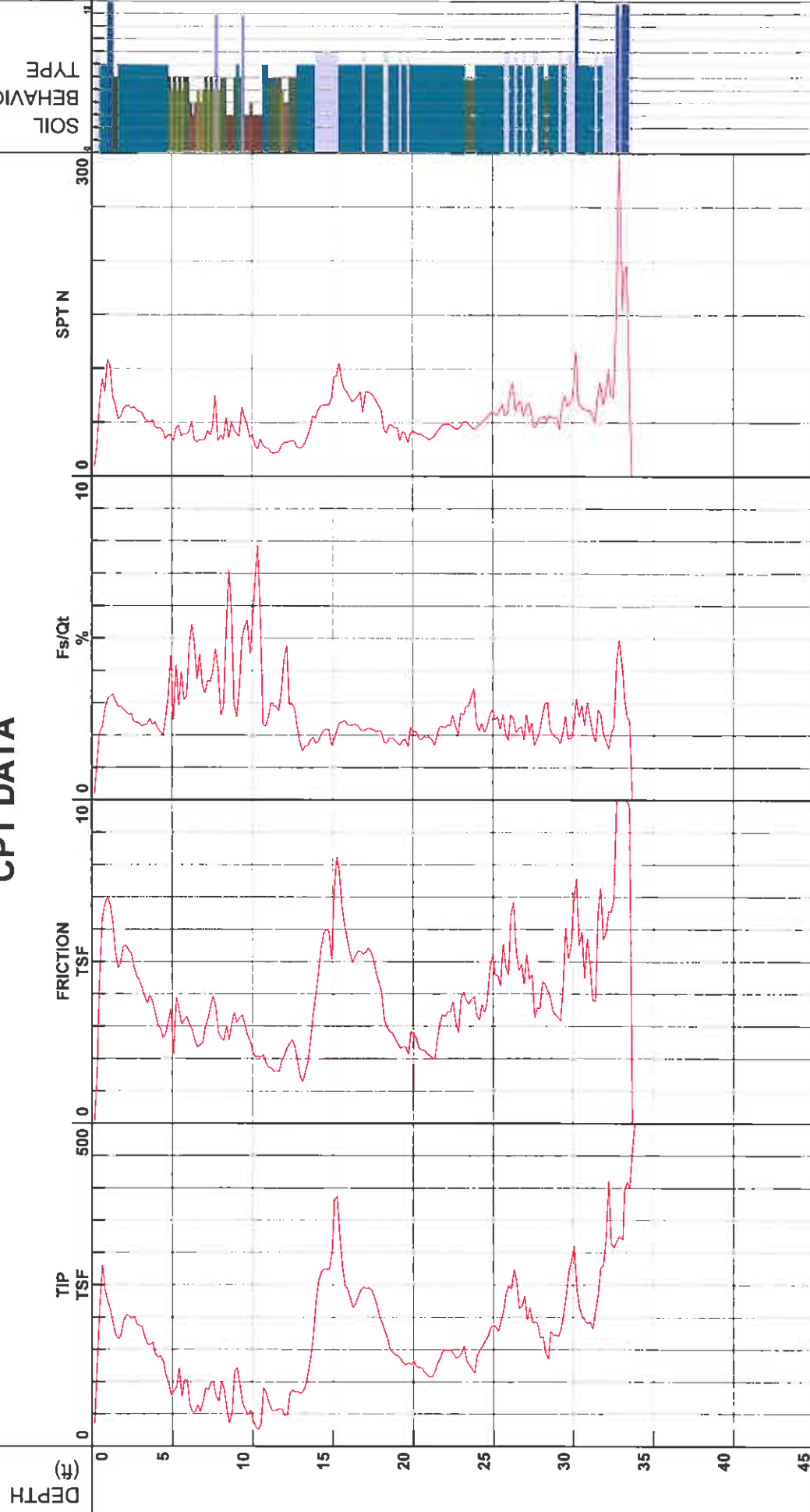
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/28/2007 2:23:34 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(418).cpt  
33.79 ft  
186.0

## CPT DATA



\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

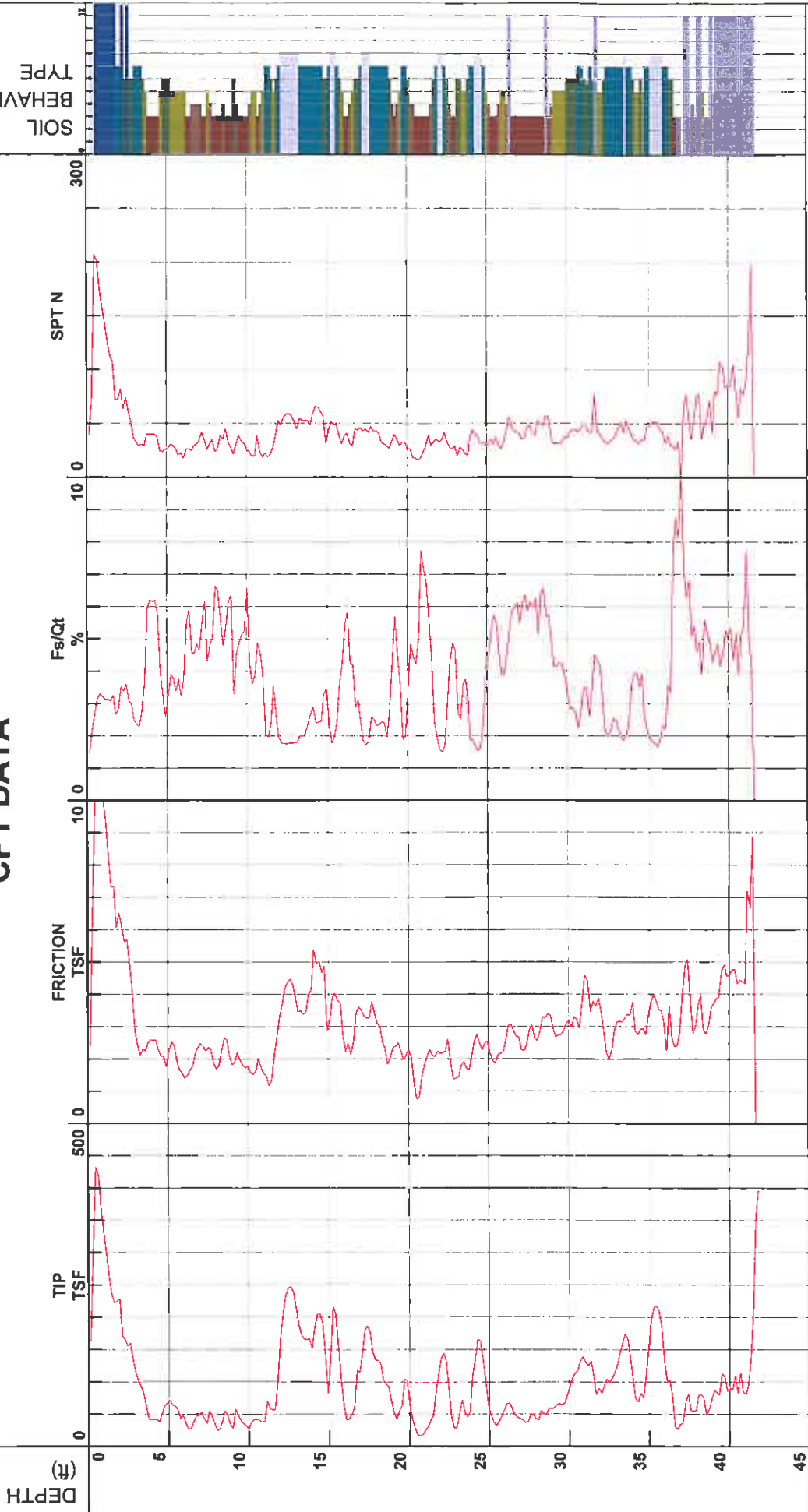
Del Mar Heights  
07-9487  
CPT-20

Operator  
Cone Number  
Date and Time  
0.00 ft

Filename  
GPS  
Maximum Depth  
Elevation

SDF(422).cpt  
41.83 ft  
182.8

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-21

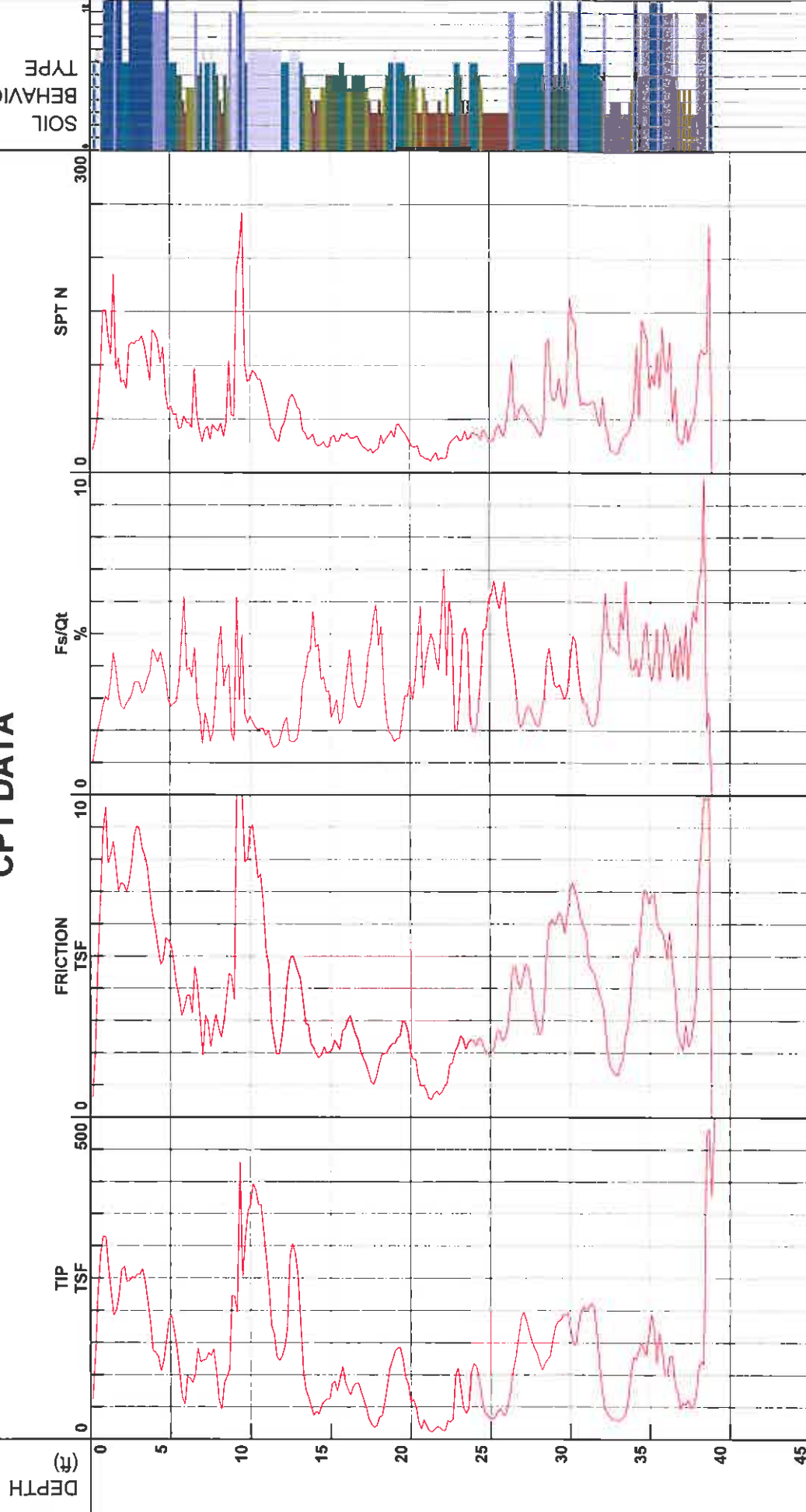
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/29/2007 8:16:34 AM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(425).cpt  
39.04 ft  
184.1

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-22

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/28/2007 1:19:54 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(417).cpt  
54.63 ft  
185.

## CPT DATA

DEPTH  
(ft)

TIP  
TSF

500

FRICTION  
TSF

10

Fs/Qt  
%

10

SPT N

300

SOIL  
BEHAVIOR  
TYPE

- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-23

Operator  
Cone Number  
Date and Time

ML/CW  
DSG1023  
11/28/2007 4:40:56 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(423).cpt  
29.20 ft  
186.6

## CPT DATA

DEPTH  
(ft)

TIP  
TSF

FRICTION  
TSF

Fs/Qt  
%

SPT N

SOIL  
BEHAVIOR

- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-24

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/29/2007 1:54:08 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(431).cpt  
34.28 ft  
215.5

## CPT DATA

DEPTH  
(ft)

TIP  
TSF

FRICTION  
TSF

Fs/Qt  
%

SPT N

SOIL  
BEHAVIOR  
TYPE

- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-25

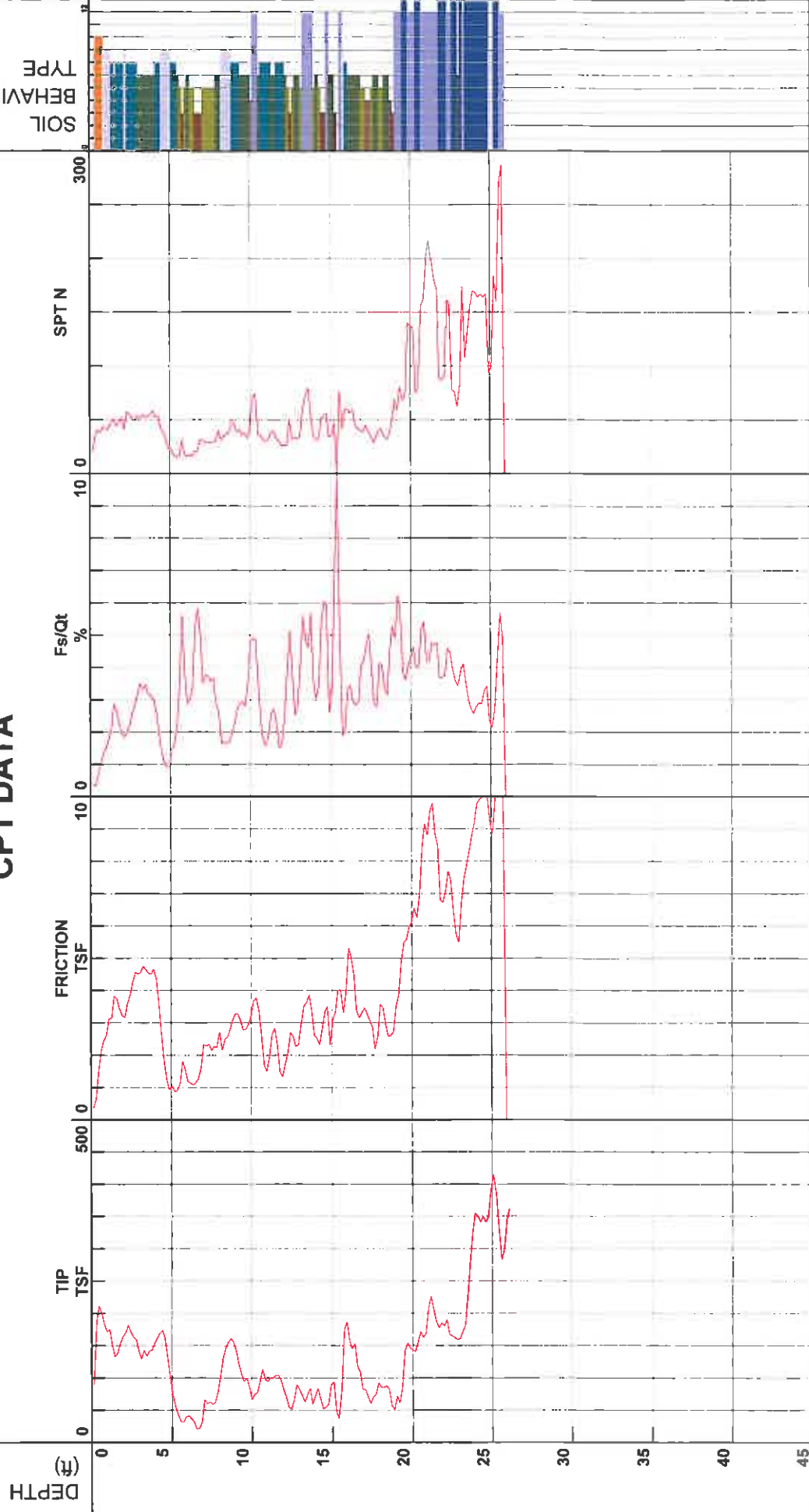
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/29/2007 2:46:45 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(432).cpt  
26.08 ft  
215.3

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

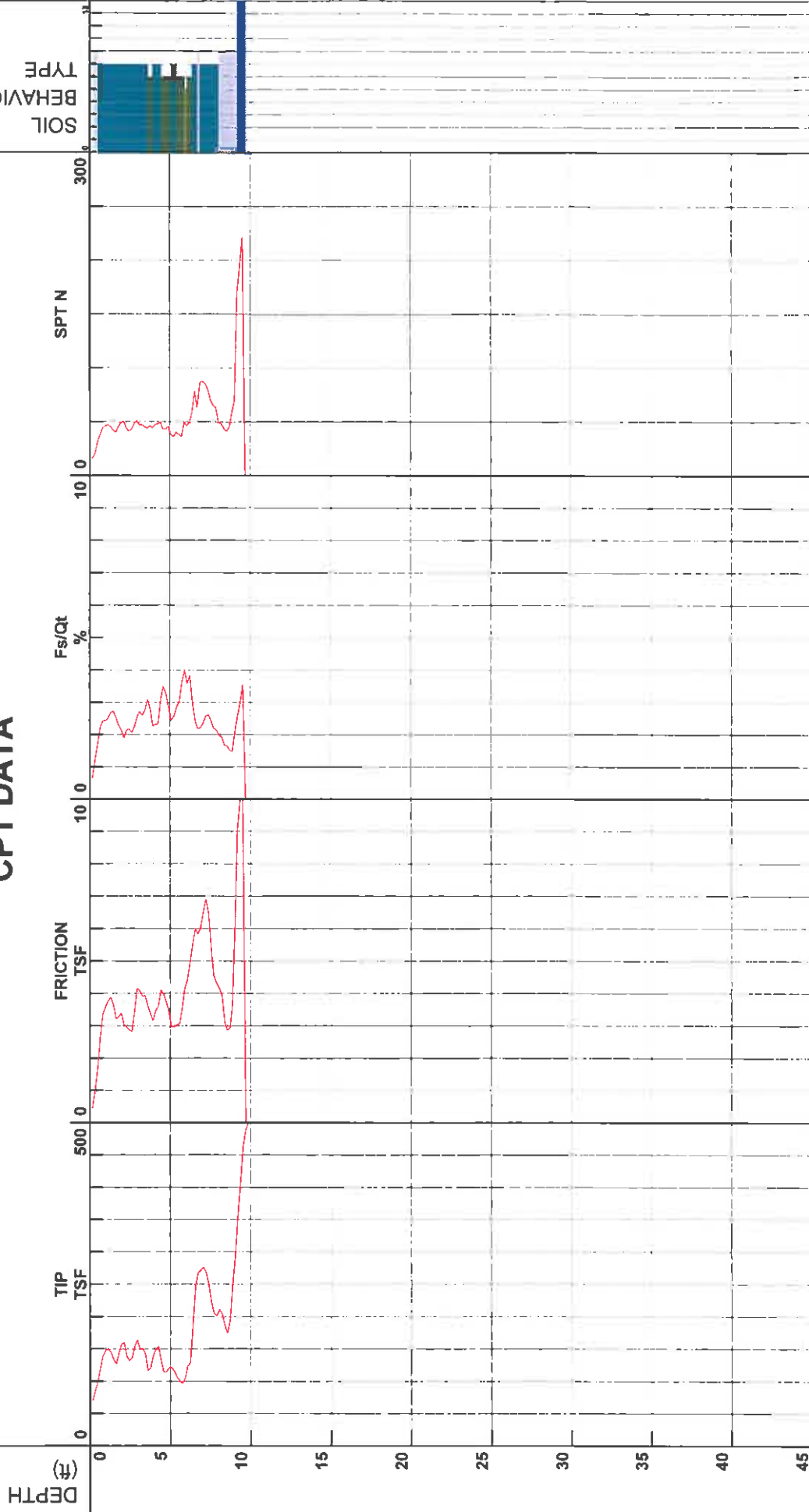
Del Mar Heights  
07-9487  
CPT-26

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/28/2007 11:08:43 AM

Filename  
GPS  
Maximum Depth  
SDF(412).cpt  
9.84 ft  
217.0

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-27

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/29/2007 9:34:41 AM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(427).cpt  
32.97 ft  
216.7

## CPT DATA

DEPTH  
(ft)

TIP  
TSF

FRICTION  
TSF

Fs/Qt  
%

SPT N

SOIL  
BEHAVIOR  
TYPE

- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-28

Operator  
Cone Number  
Date and Time  
0.00 ft

Filename  
GPS  
Maximum Depth  
Elevation

SDF(429).cpt  
31.82 ft  
215.1

## CPT DATA

DEPTH  
(ft)

TIP  
TSF

FRICTION  
TSF

Fs/Qt  
%

SPT N

SOIL  
BEHAVIOR  
TYPE

- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-29

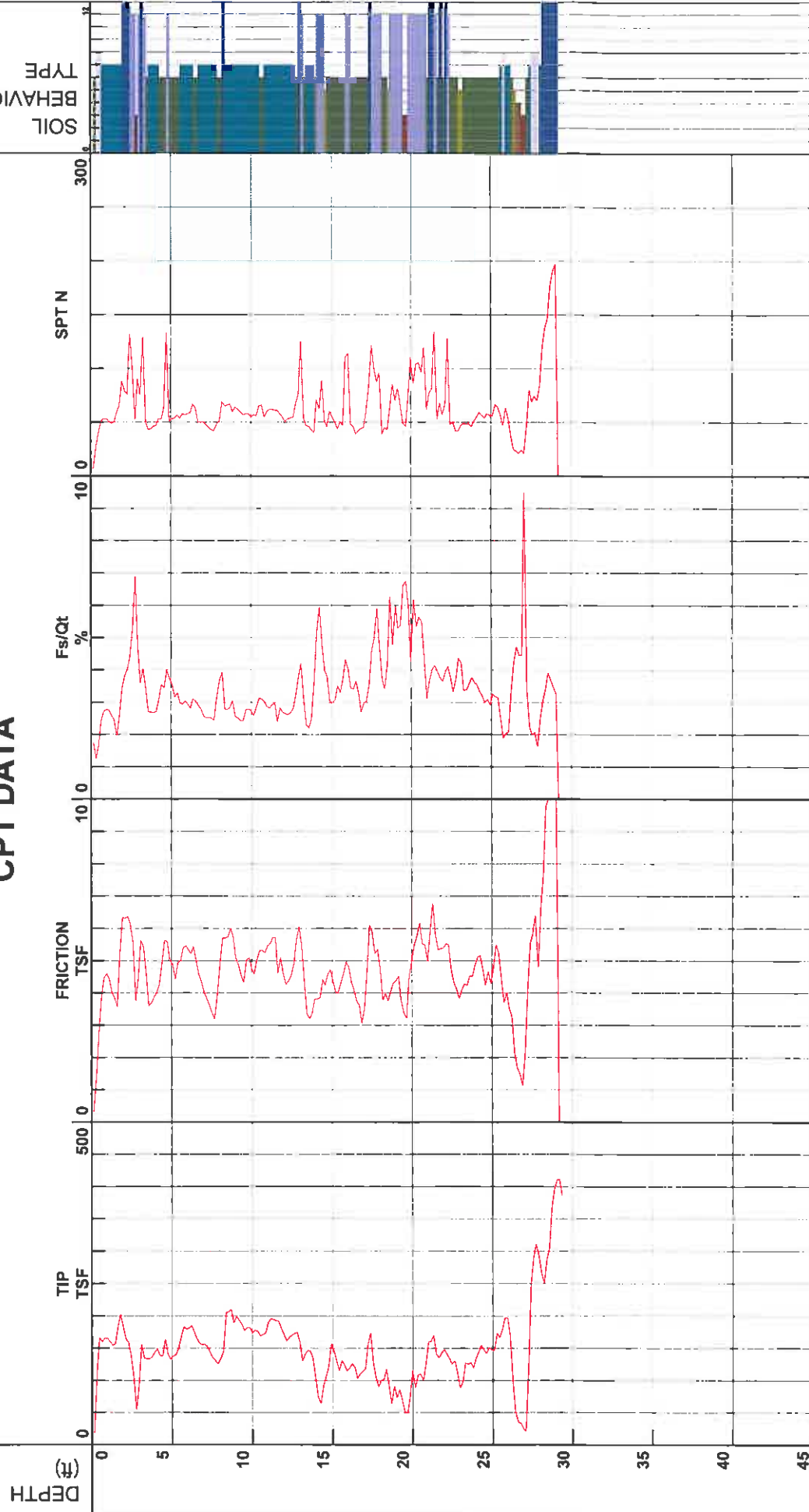
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/29/2007 12:59:48 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(430).cpt  
29.36 ft  
213.7

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Del Mar Heights  
Job Number  
07-9487  
Hole Number  
CPT-30  
Water Table Depth

Operator  
ML/CW  
Cone Number  
DSG1023  
Date and Time  
11/28/2007 9:02:54 AM  
0.00 ft

Filename  
SDF(410).cpt  
GPS  
Maximum Depth  
24.28 ft  
Elevation  
200.0

## CPT DATA

DEPTH (ft)

TIP  
TSF

FRICTION  
TSF

Fs/Qt  
%

SPT N

SOIL  
BEHAVIOR  
TYPE

- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

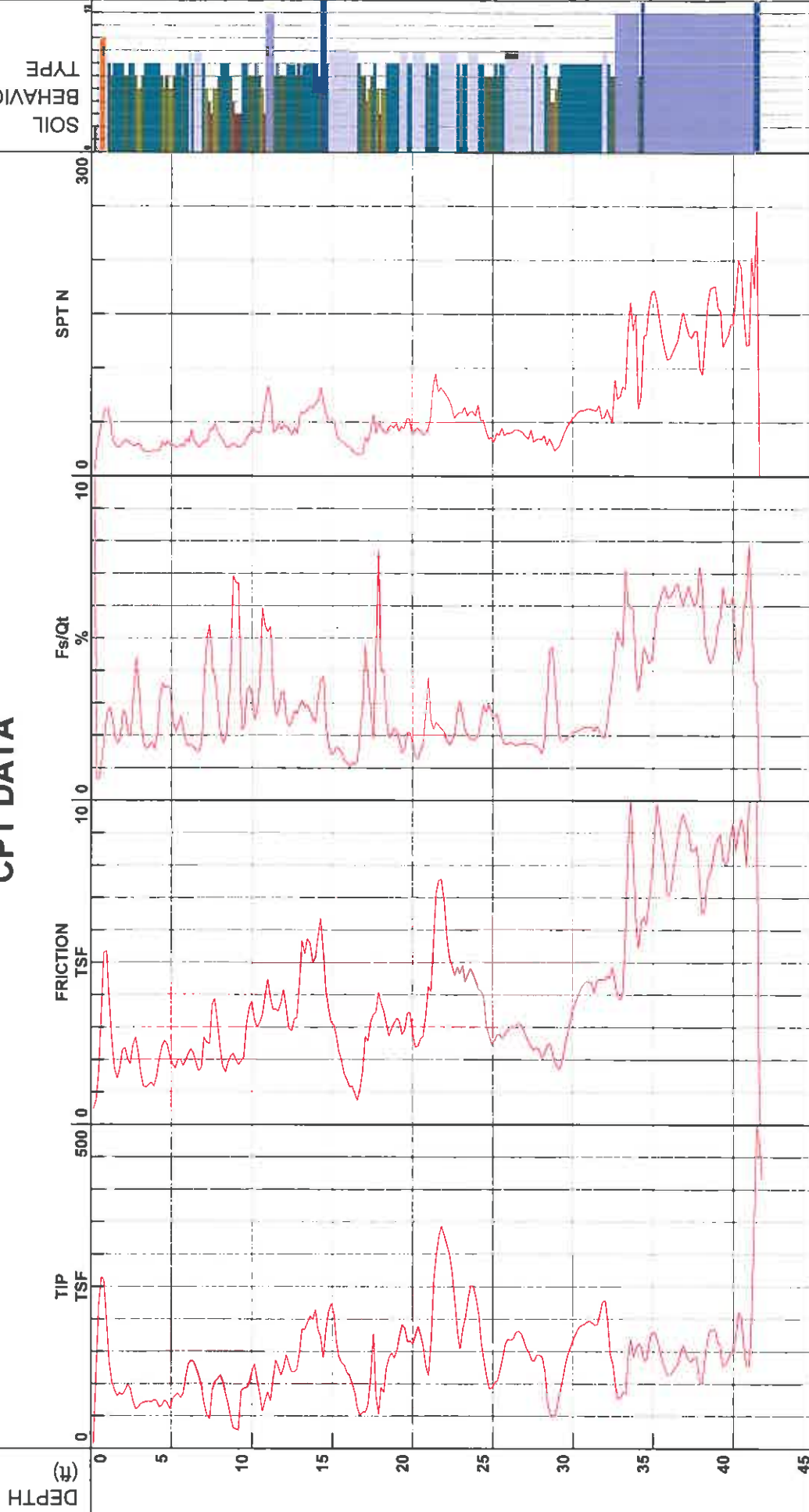
Location Del Mar Heights  
Job Number 07-9487  
Hole Number CPT-31  
Water Table Depth

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/28/2007 7:48:11 AM

Filename SDF(409).cpt  
GPS  
Maximum Depth  
41.83 ft  
Elevation  
196.4

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

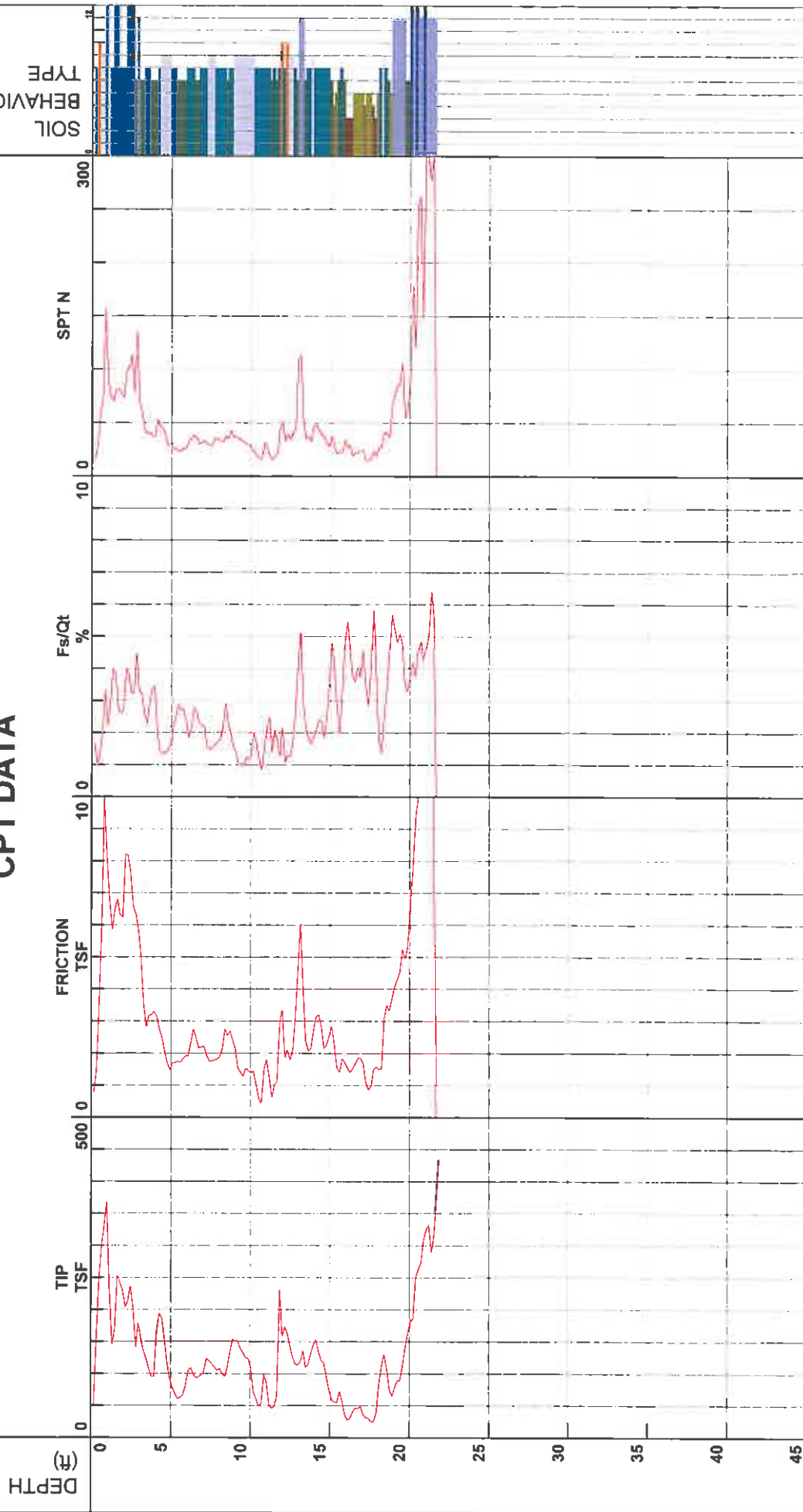
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(408).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-32          | Date and Time | 11/27/2007 4:59:07 PM | Maximum Depth | 21.82 ft     |
| Water Table Depth |                 |               |                       | Elevation     | 196.6        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



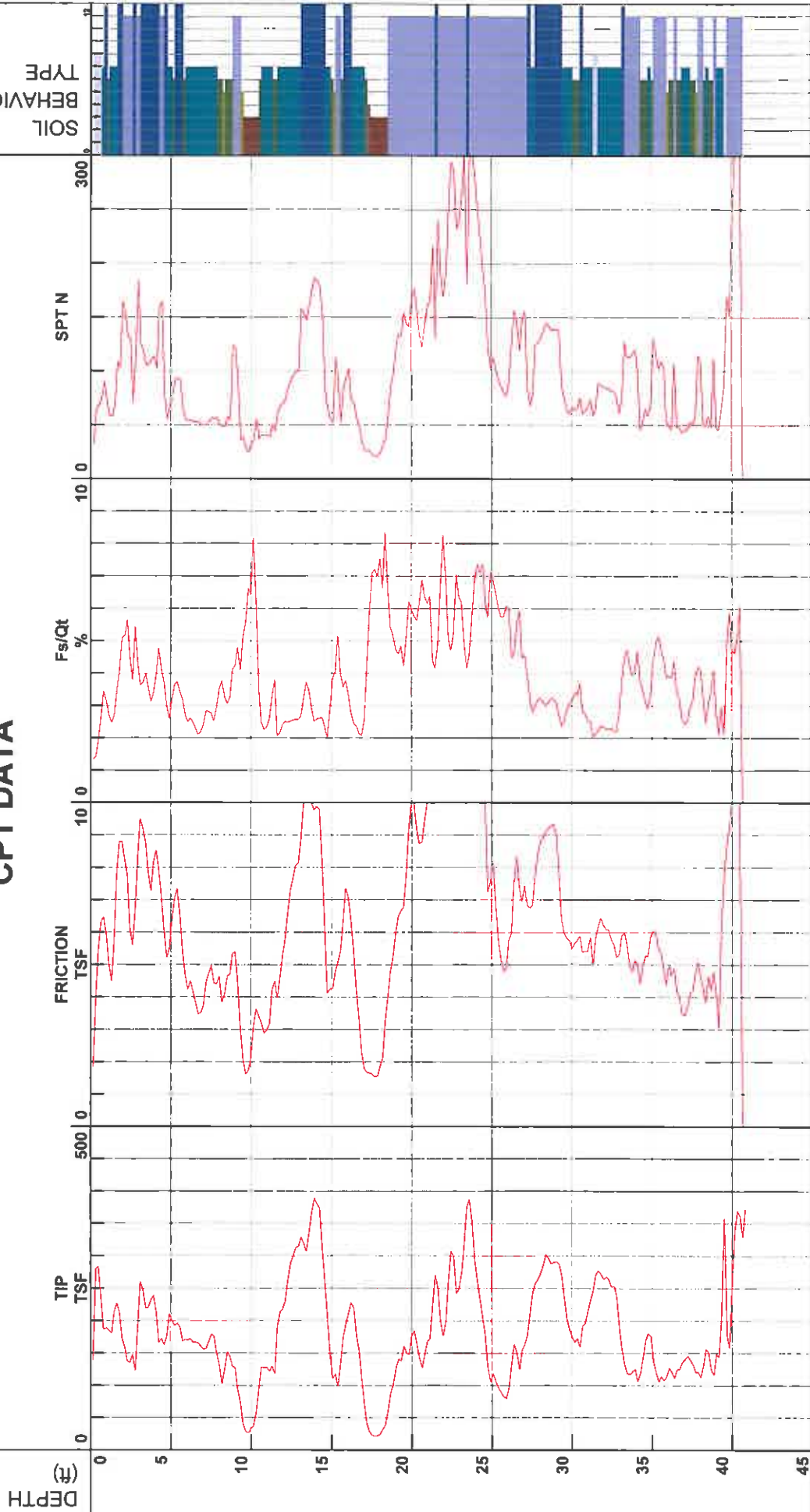
# Geotechnical Exploration

Location  
Del Mar Heights  
Job Number  
07-9487  
Hole Number  
CPT-33  
Water Table Depth  
0.00 ft

Operator  
ML/CW  
Cone Number  
DSG1023  
Date and Time  
11/28/2007 10:03:26 AM

Filename  
GPS  
SDF(411).cpt  
Maximum Depth  
40.85 ft  
Elevation  
198.2

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-34

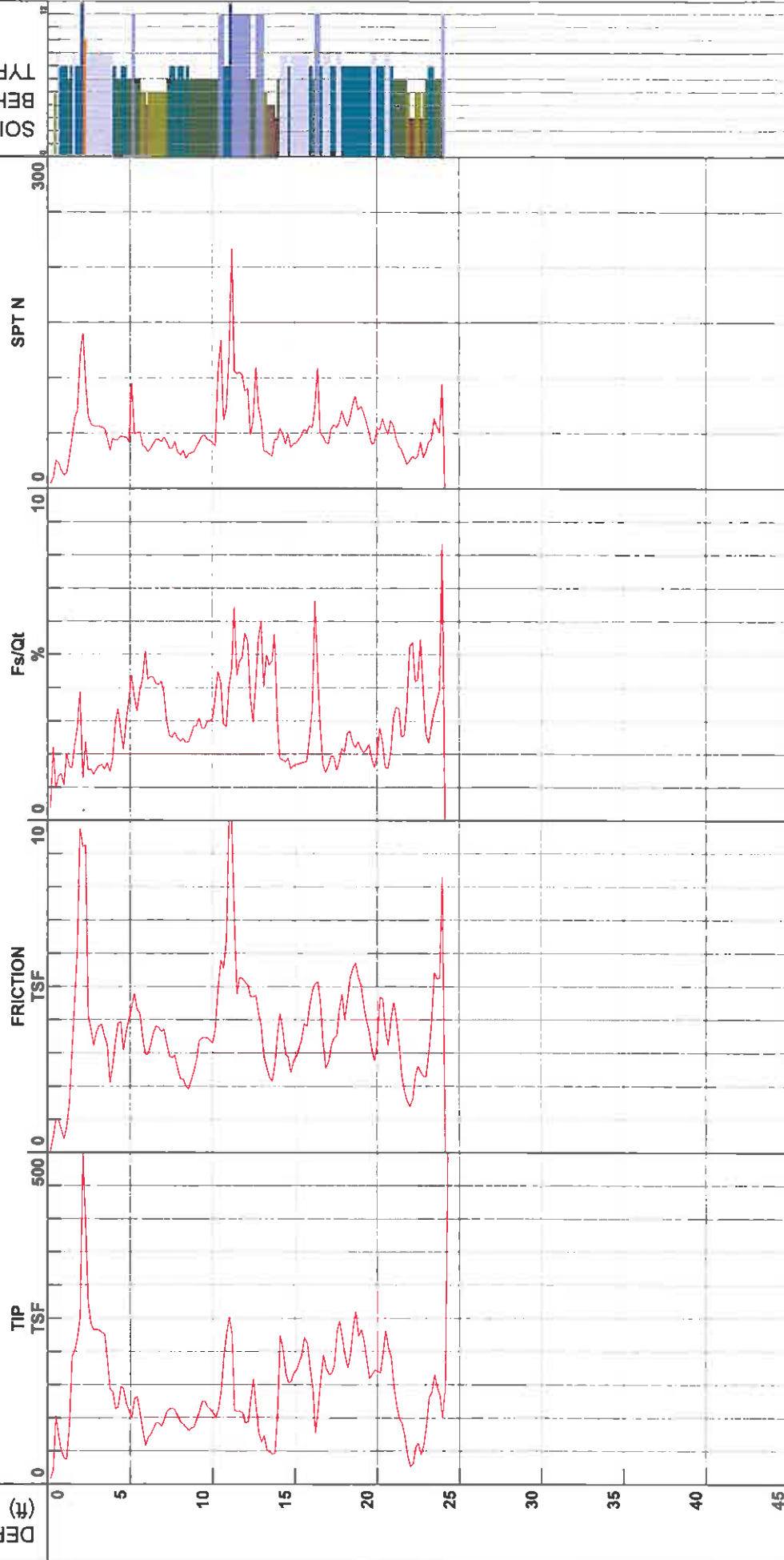
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/27/2007 3:56:00 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(406).cpt  
24.28 ft  
202.4

## CPT DATA



\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-35

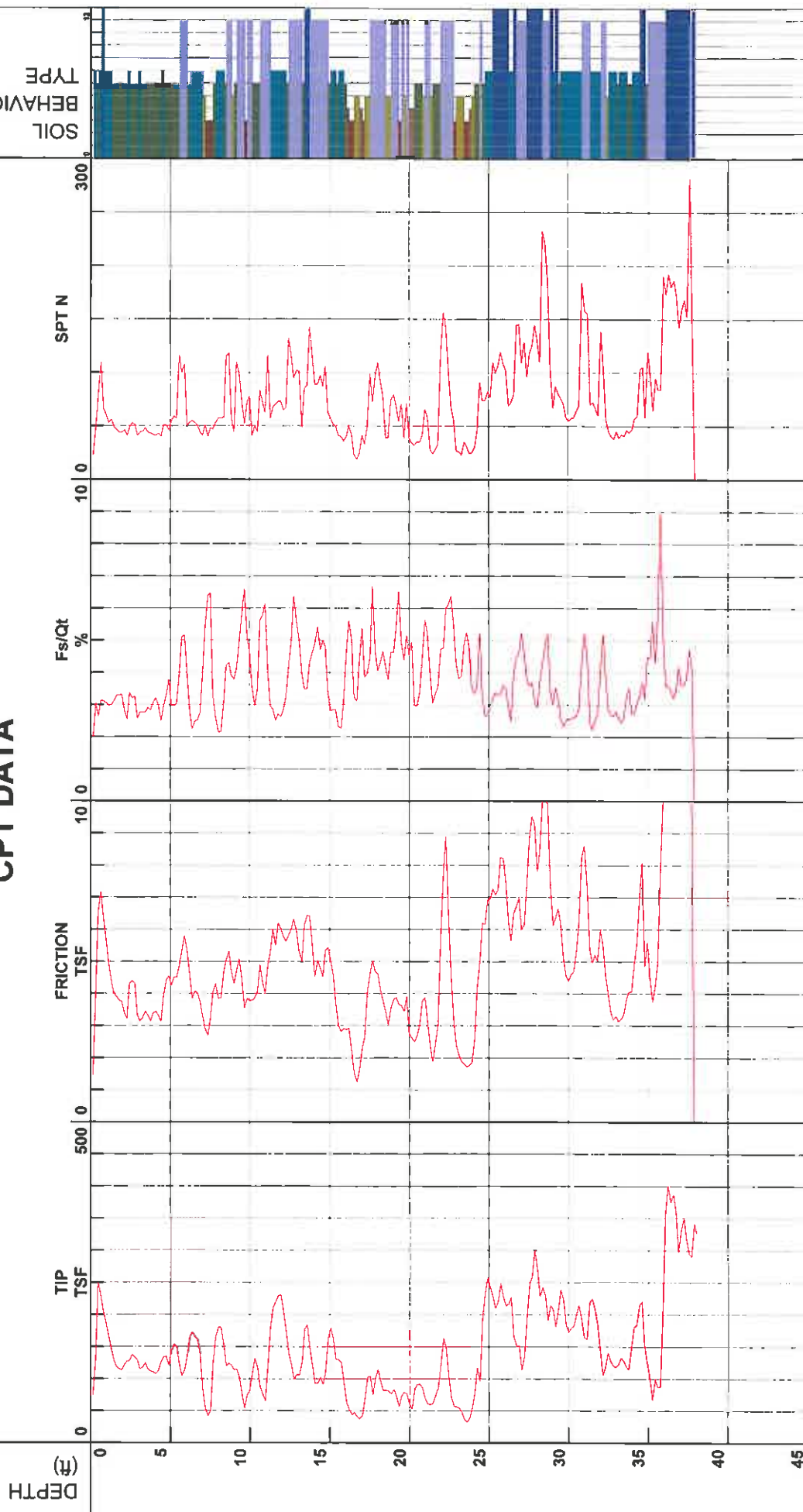
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/29/2007 10:27:51 AM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(428).cpt  
38.06 ft  
215.0

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

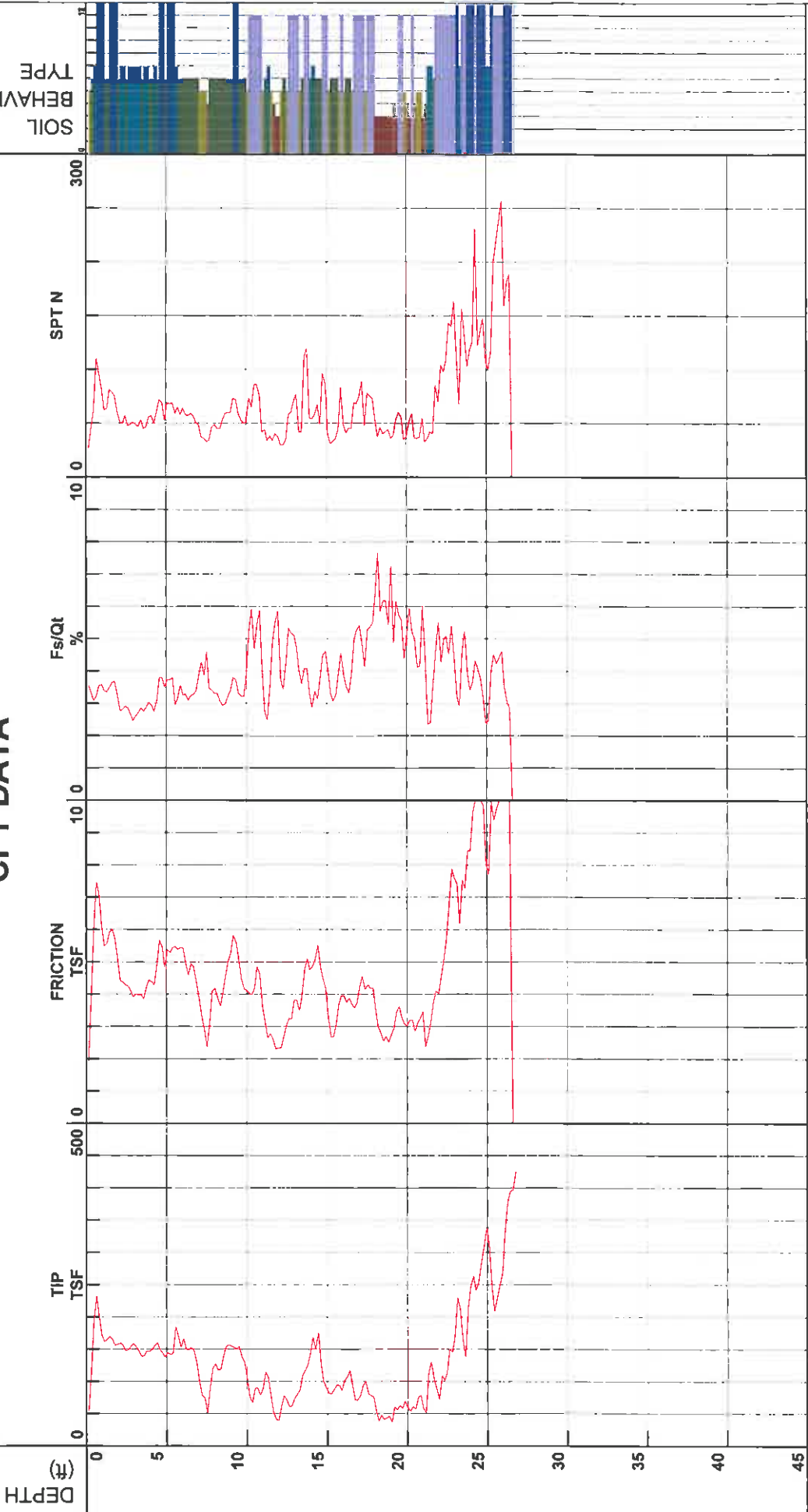
Del Mar Heights  
07-9487  
CPT-36

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/29/2007 9:01:38 AM

Filename  
GPS  
Maximum Depth  
SDF(426).cpt  
26.74 ft  
216.7

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-37

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/27/2007 11:34:41 AM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(400).cpt  
43.14 ft  
203.1

## CPT DATA

DEPTH (ft)

TIP  
TSF

FRICTION  
TSF

Fs/Qt  
%

SPT N

SOIL  
BEHAVIOR  
TYPE

- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-38

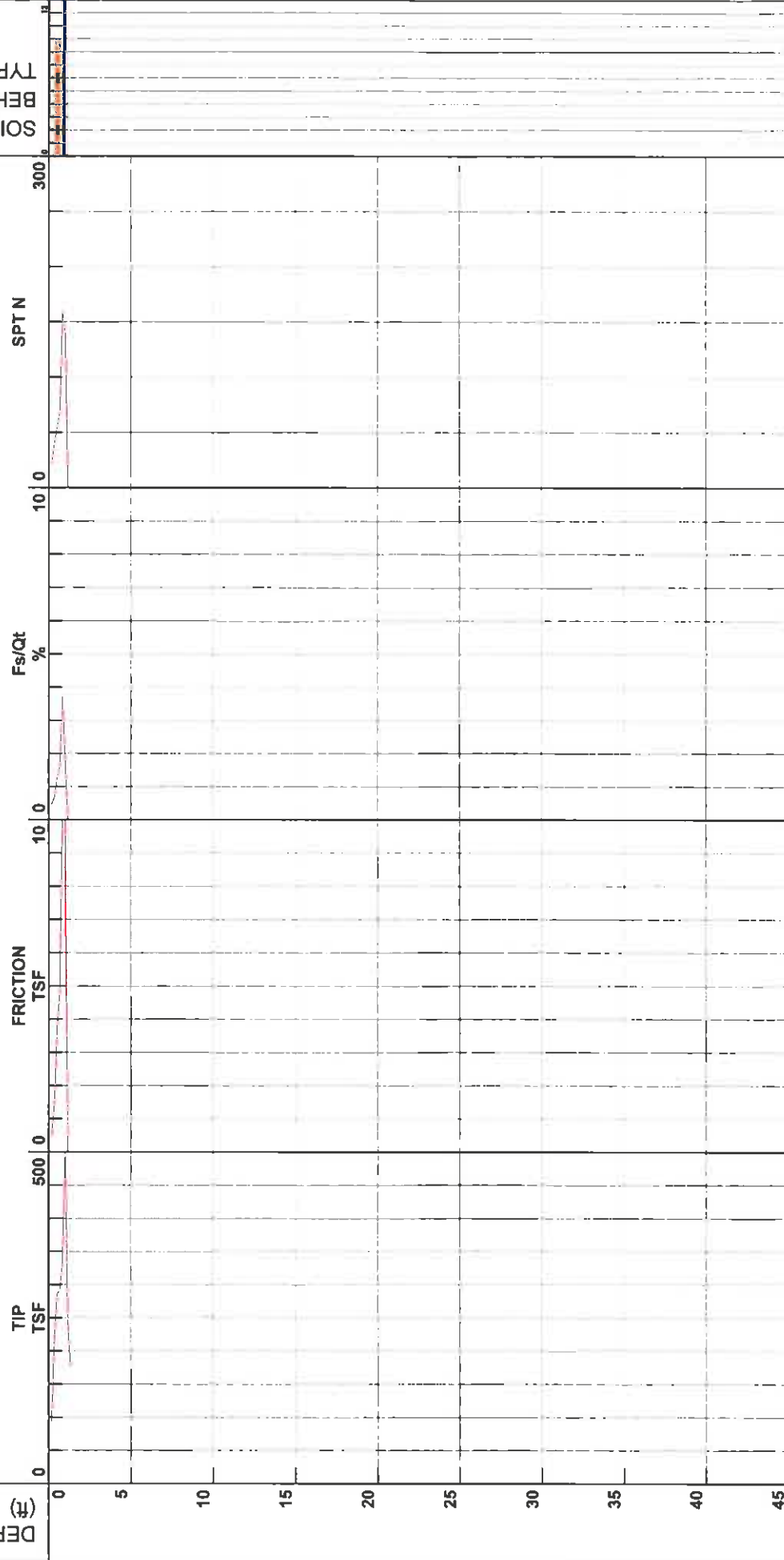
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/27/2007 12:20:25 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(401).cpt  
1.31 ft  
202.1

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-38A

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/27/2007 12:33:42 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(402).cpt  
38.71 ft  
202.1

## CPT DATA

DEPTH (ft)

TIP  
TSF

FRICTION  
TSF

F<sub>s</sub>/Q<sub>t</sub>  
%

SPT N

SOIL  
BEHAVIOR  
TYPE

- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-39

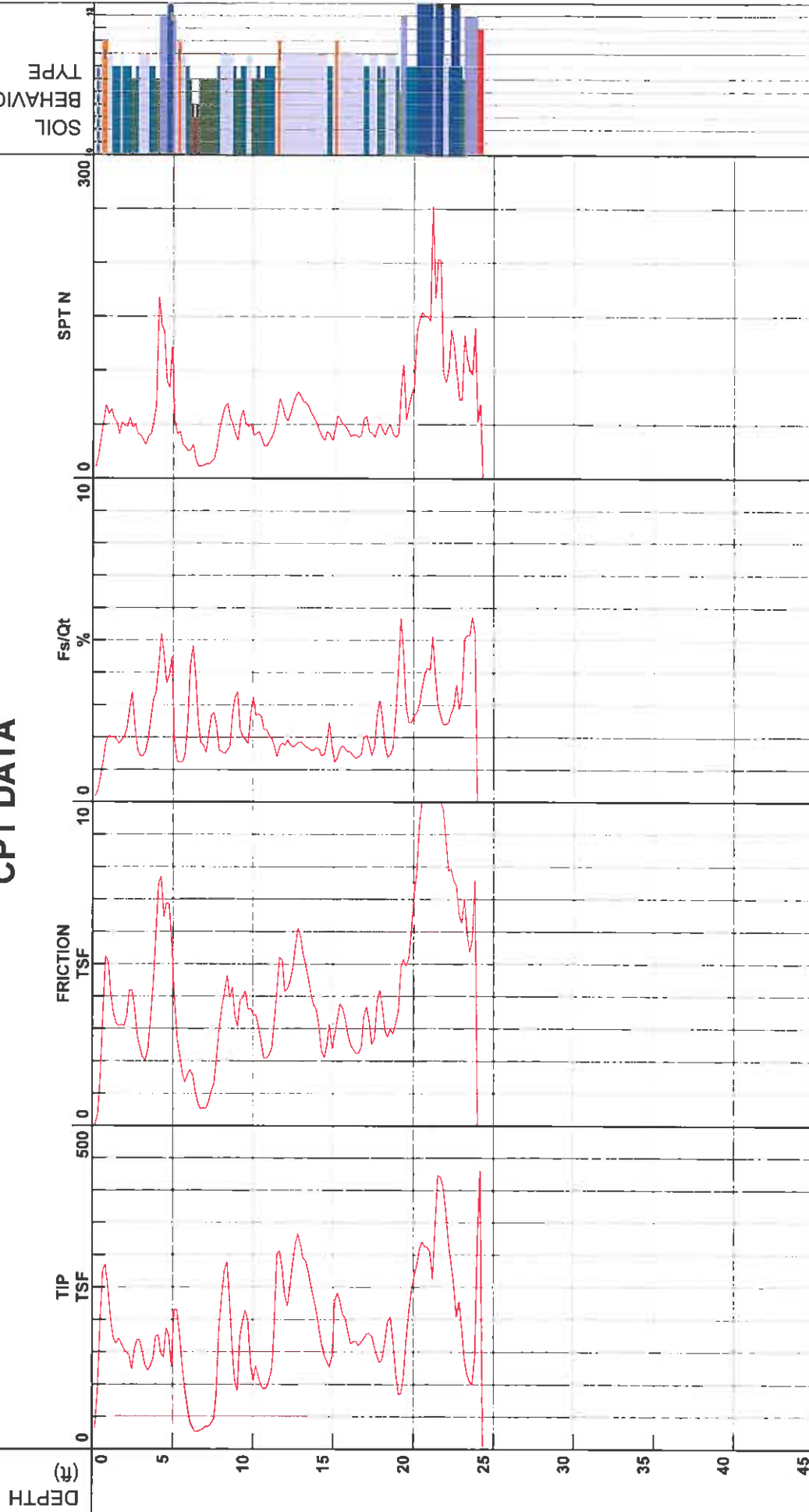
Operator  
Cone Number  
Date and Time

ML/CW  
DSG1023  
11/27/2007 3:29:02 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(405).cpt  
24.44 ft  
200.1

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-40

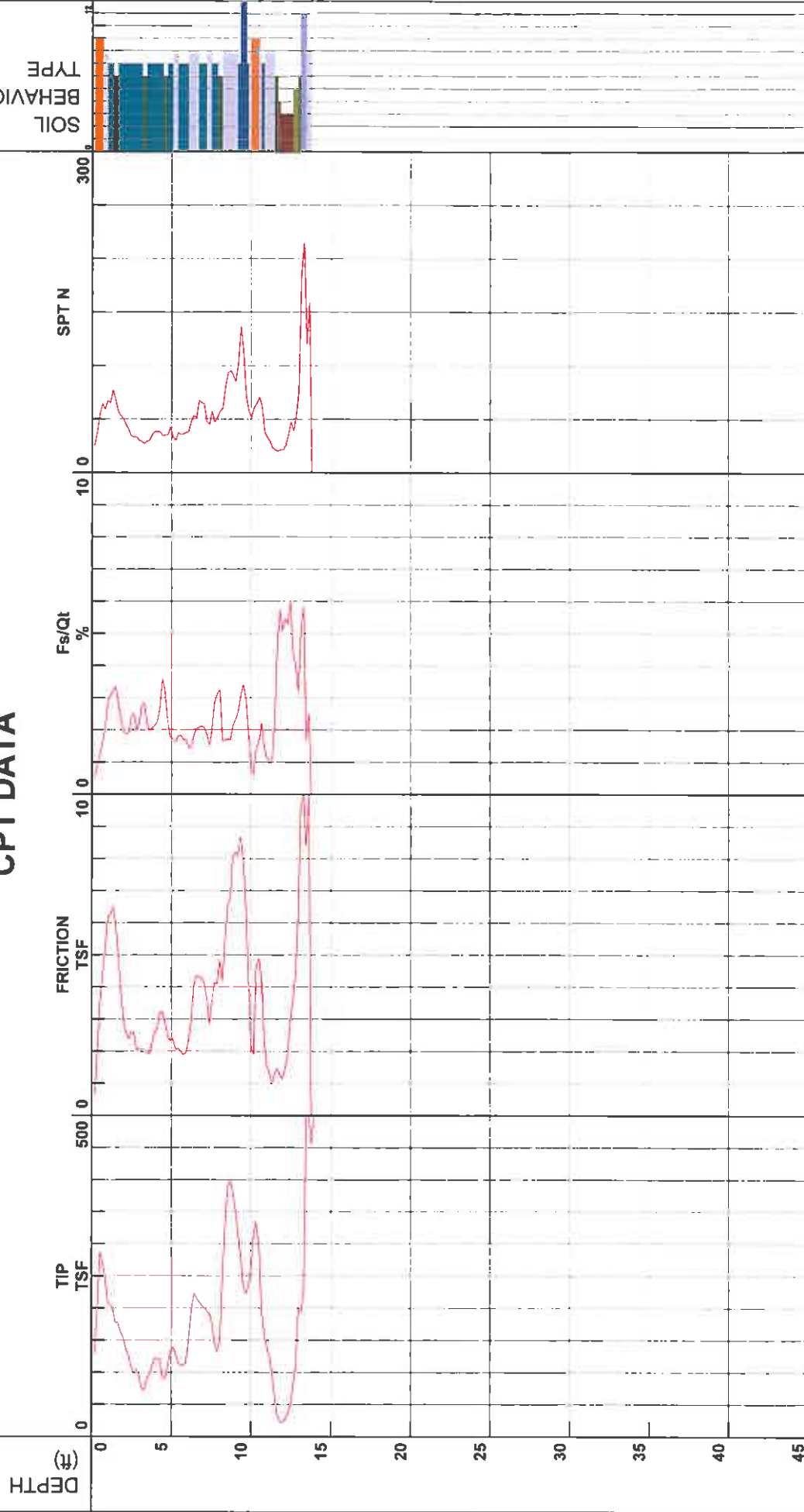
Operator  
Core Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/27/2007 4:28:54 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(407).cpt  
13.94 ft  
198.3

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-41

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/27/2007 3:02:43 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(404).cpt  
23.29 ft  
199.5

## CPT DATA

DEPTH (ft)

TIP  
TSF

FRICTION  
TSF

F<sub>s</sub>/Q<sub>t</sub>  
%

SPT N

SOIL  
BEHAVIOR  
TYPE

- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay

- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt

- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand

- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-42

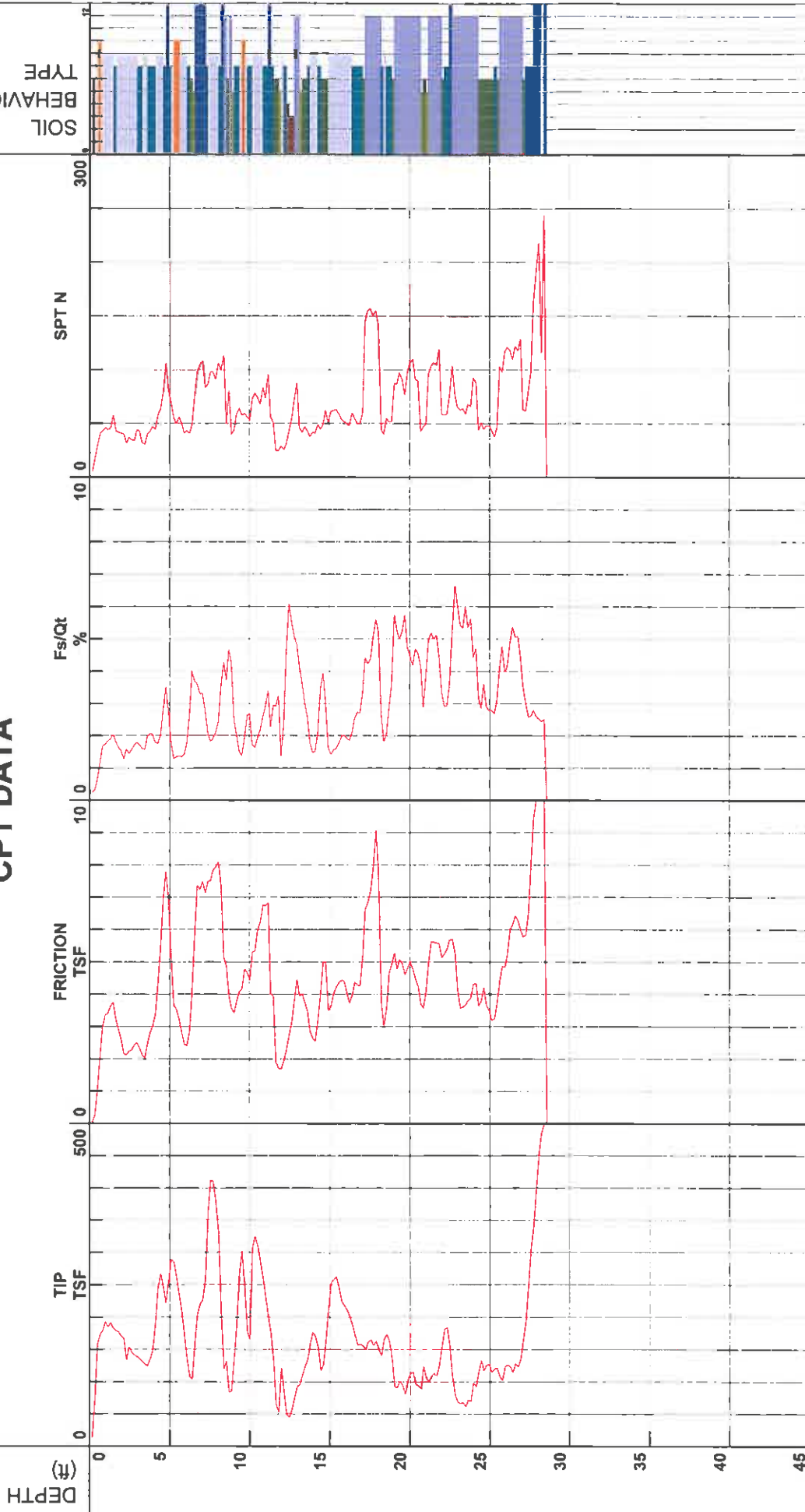
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/27/2007 2:34:59 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(403).cpt  
28.71 ft  
200.9

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

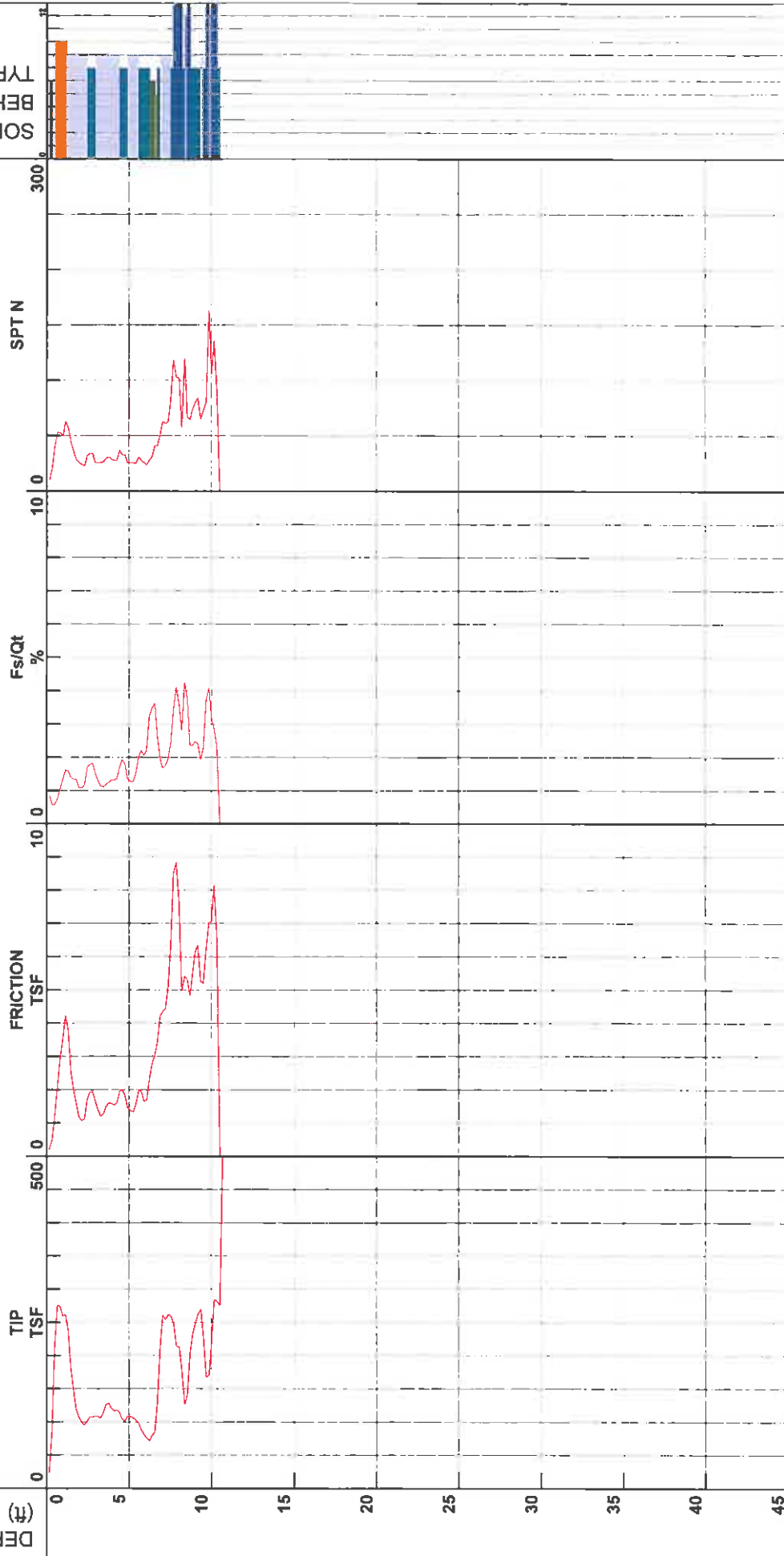
Del Mar Heights  
07-9487  
CPT-43

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/27/2007 10:37:40 AM

Filename  
GPS  
Maximum Depth  
SDF(398).cpt  
10.66 ft  
202.6

## CPT DATA



\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-43A

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/27/2007 10:53:20 AM

Filename  
GPS  
Maximum Depth  
SDF(399).cpt  
35.60 ft  
202.6

## CPT DATA

DEPTH  
(ft)

TIP  
TSF

FRICTION  
TSF

Fs/Qt  
%

SPT N

SOIL  
BEHAVIOR  
TYPE

- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

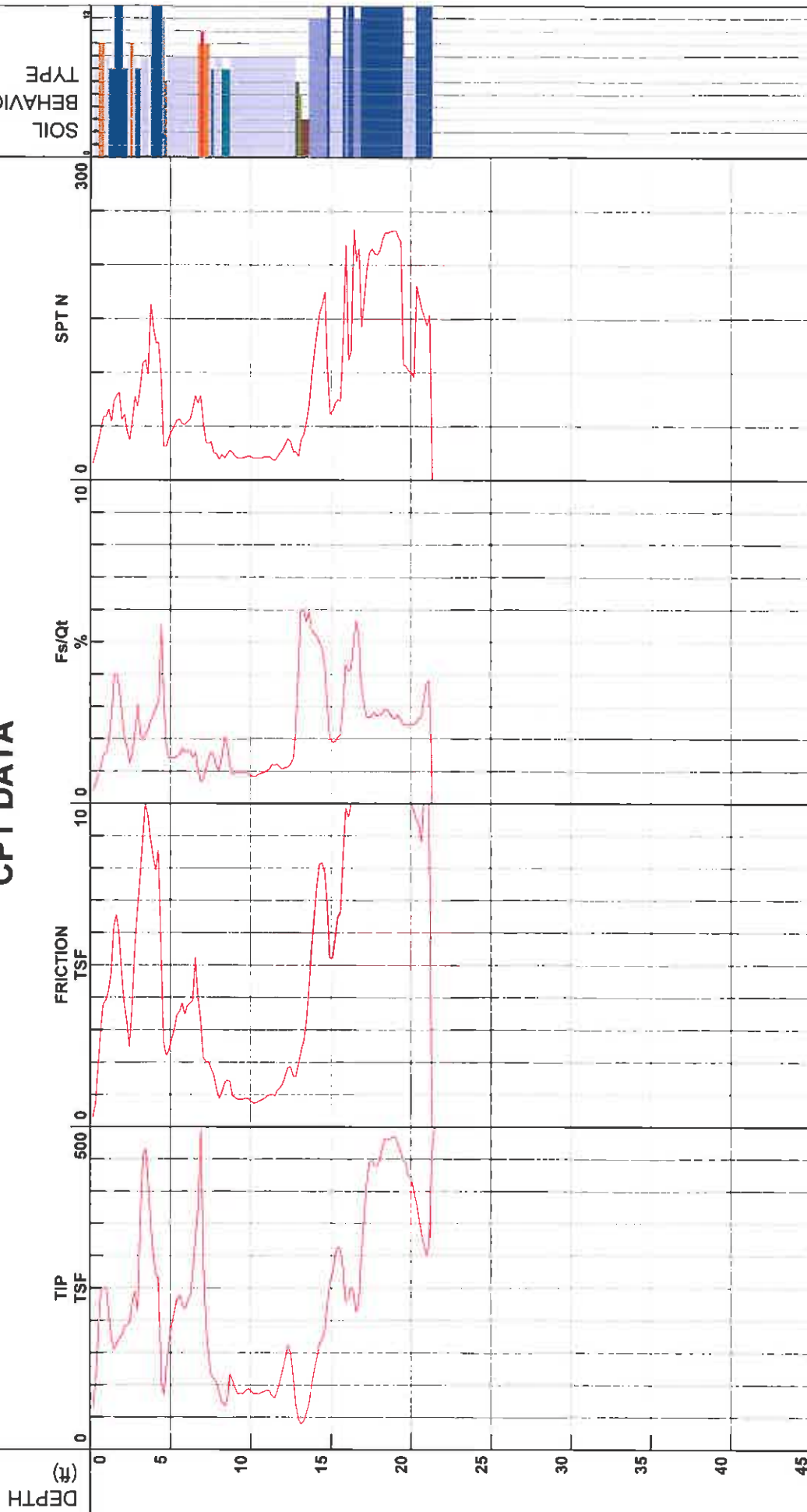
Del Mar Heights  
07-9487  
CPT-44

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/27/2007 9:53:18 AM

Filename  
GPS  
Maximum Depth  
SDF(397).cpt  
21.49 ft  
201.9

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-45

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/30/2007 7:55:32 AM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(438).cpt  
14.60 ft  
215.8

## CPT DATA

DEPTH  
(ft)

TIP  
TSF

FRICTION  
TSF

Fs/Qt  
%

SPT N

SOIL  
BEHAVIOR  
TYPE

- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-46

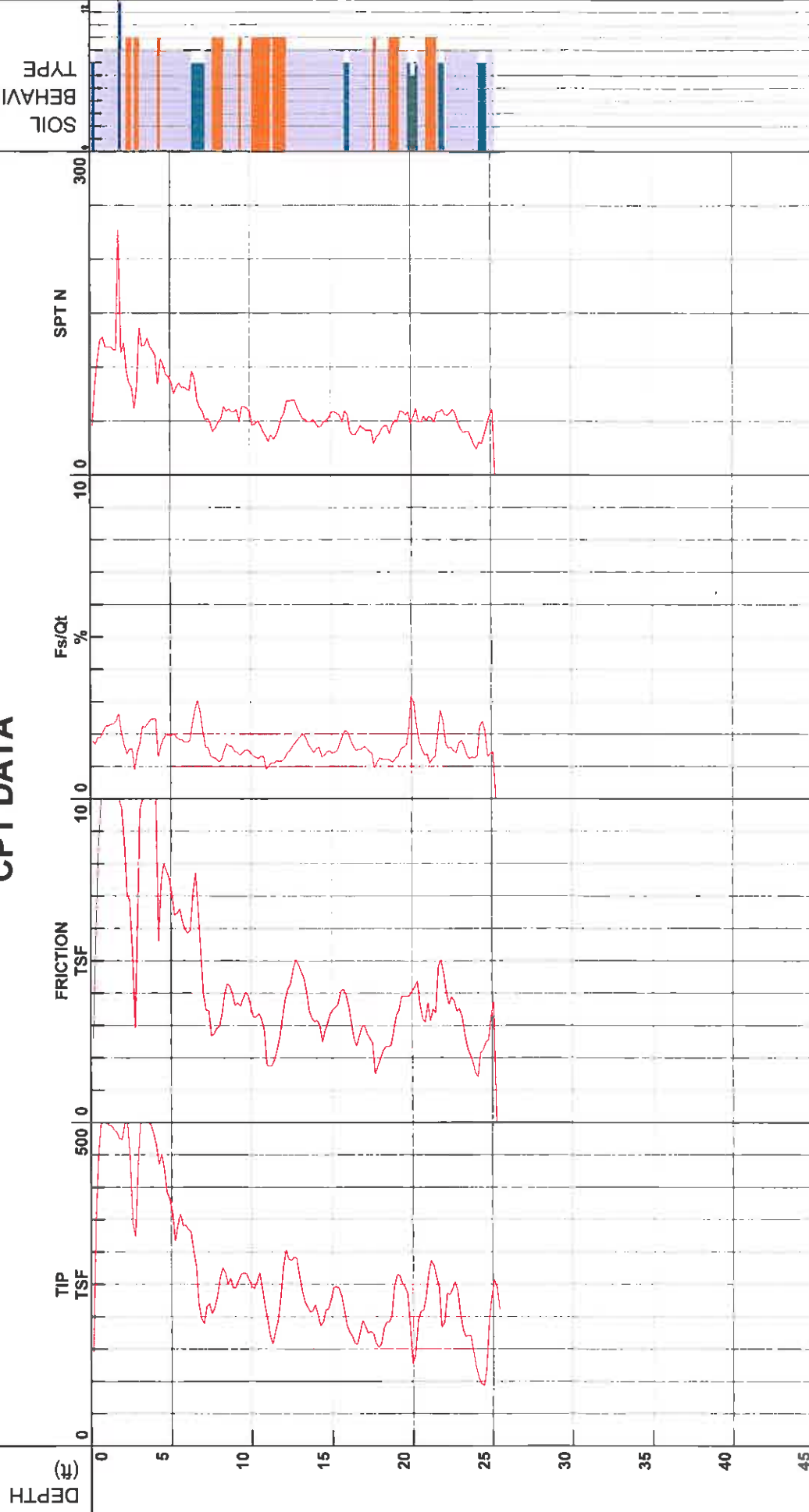
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/30/2007 8:16:25 AM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(439).cpt  
25.43 ft  
214.0

## CPT DATA



\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-47

Operator  
Cone Number  
Date and Time

ML/CW  
DSG1023  
11/28/2007 3:17:36 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(420).cpt  
3.61 ft  
191.2

## CPT DATA

DEPTH  
(ft)

TIP  
TSF

500

FRICTION  
TSF

10

Fs/Qt  
%

10

SPT N

300

SOIL  
BEHAVIOR  
TYPE

- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-48

Operator  
Cone Number  
Date and Time

ML/CW  
DSG1023  
11/28/2007 3:38:43 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(421).cpt  
5.74 ft  
184.6

## CPT DATA

DEPTH (ft)

TIP

TSF

500

0

FRICTION

TSF

10

0

Fs/Qt

%

10

0

SPT N

300

SOIL BEHAVIOR TYPE

1 - sensitive fine grained

2 - organic material

3 - clay

4 - silty clay to clay

5 - clayey silt to silty clay

6 - sandy silt to clayey silt

7 - silty sand to sandy silt

8 - sand to silty sand

9 - sand

10 - gravelly sand to sand

11 - very stiff fine grained (\*)

12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983

## APPENDIX B

### UNIFIED SOIL CLASSIFICATION CHART

#### SOIL DESCRIPTION

#### Coarse-grained (More than half of material is larger than a No. 200 sieve)

|                                                                                                                    |    |                                                                      |
|--------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------|
| GRAVELS, CLEAN GRAVELS<br>(More than half of coarse fraction is larger than No. 4 sieve size, but smaller than 3") | GW | Well-graded gravels, gravel and sand mixtures, little or no fines.   |
|                                                                                                                    | GP | Poorly graded gravels, gravel and sand mixtures, little or no fines. |
| GRAVELS WITH FINES<br>(Appreciable amount)                                                                         | GC | Clay gravels, poorly graded gravel-sand-silt mixtures                |
| SANDS, CLEAN SANDS<br>(More than half of coarse fraction is smaller than a No. 4 sieve)                            | SW | Well-graded sand, gravelly sands, little or no fines                 |
|                                                                                                                    | SP | Poorly graded sands, gravelly sands, little or no fines.             |
| SANDS WITH FINES<br>(Appreciable amount)                                                                           | SM | Silty sands, poorly graded sand and silty mixtures.                  |
|                                                                                                                    | SC | Clayey sands, poorly graded sand and clay mixtures.                  |

#### Fine-grained (More than half of material is smaller than a No. 200 sieve)

##### SILTS AND CLAYS

|                                     |    |                                                                                                                    |
|-------------------------------------|----|--------------------------------------------------------------------------------------------------------------------|
| <u>Liquid Limit Less than 50</u>    | ML | Inorganic silts and very fine sands, rock flour, sandy silt and clayey-silt sand mixtures with a slight plasticity |
|                                     | CL | Inorganic clays of low to medium plasticity, gravelly clays, silty clays, clean clays.                             |
|                                     | OL | Organic silts and organic silty clays of low plasticity.                                                           |
| <u>Liquid Limit Greater than 50</u> | MH | Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.                               |
|                                     | CH | Inorganic clays of high plasticity, fat clays.                                                                     |
|                                     | OH | Organic clays of medium to high plasticity.                                                                        |
| HIGHLY ORGANIC SOILS                | PT | Peat and other highly organic soils                                                                                |

(rev. 6/05)





- Legend**
- 2031 Indicates Location of Cone Penetrometer Probe No. 31
  - ✕ 2036 Indicates Location of Cone Penetrometer Probe No. 36 and Exploratory Boring No. 36
  - TP-1 Indicates Approximate Location of Exploratory Test Pit
  - Tt Torrey Sandstone
  - Qaf/Tt Artificial Fill over Torrey Sandstone
  - Approximate Location of Geologic Contact

## SITE PLAN

San Diego Corporate Center - Development Site  
SW of Del Mar Heights Road & El Camino Real  
San Diego, CA.  
Figure No. I  
Job No. 07-9487





## Appendix P

# PRELIMINARY GEOTECHNICAL INVESTIGATION



**REPORT OF PRELIMINARY GEOTECHNICAL  
INVESTIGATION**

San Diego Corporate Center Lots 1 and 2  
Phase I Development  
Southwest Corner of Del Mar Heights Road and El Camino Real  
San Diego, California

**JOB NO. 07-9487.1**

03 May 2011

Prepared for:

***KILROY REALTY CORPORATION***





# Geotechnical Exploration, Inc.

SOIL AND FOUNDATION ENGINEERING • GROUNDWATER • ENGINEERING GEOLOGY

03 May 2011

KILROY REALTY CORPORATION  
3611 Valley Centre Drive, Suite 550  
San Diego, CA 92130  
Attn: Mr. Bob Little

**Job No. 07-9487.1**

Subject: **Report of Preliminary Geotechnical Investigation**  
San Diego Corporate Center Lots 1 and 2  
Phase I Development  
Southwest Corner of Del Mar Heights Road and El Camino Real  
San Diego, California

In accordance with your request, and our revised proposal dated November 4, 2010, **Geotechnical Exploration, Inc.** has performed a preliminary geotechnical investigation for the subject project in San Diego, California. The fieldwork was performed during the period of February 7 through 17, 2011.

If the conclusions and recommendations presented in this report are incorporated into the design and construction of the proposed development, it is our opinion that the site is suitable for the project.

This opportunity to be of service is sincerely appreciated. Should you have any questions concerning the following report, please do not hesitate to contact us. Reference to our **Job No. 07-9487.1** will expedite a response to your inquiries.

Respectfully submitted,

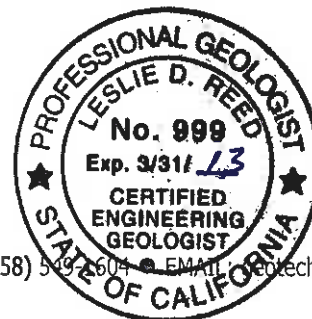
**GEOTECHNICAL EXPLORATION, INC.**

Wm. D. Hespeler, G.E.  
Senior Geotechnical Engineer



Jay K. Heiser  
Senior Project Geologist

Leslie D. Reed, President  
C.E.G. 999[exp. 3/31/13]/R.G. 3391



## TABLE OF CONTENTS

|                                            | <u>PAGE</u> |
|--------------------------------------------|-------------|
| I. PROJECT SUMMARY AND SCOPE OF SERVICES   | 1           |
| II. SITE DESCRIPTION                       | 2           |
| III. FIELD INVESTIGATION                   | 2           |
| IV. SOIL DESCRIPTION                       | 4           |
| V. GROUNDWATER                             | 5           |
| VI. SEISMIC CONSIDERATIONS                 | 6           |
| VII. LABORATORY TESTS AND SOIL INFORMATION | 8           |
| VIII. CONCLUSION AND RECOMMENDATIONS       | 10          |
| IX. GRADING NOTES                          | 27          |
| X. LIMITATIONS                             | 27          |

## **REFERENCES**

## **FIGURES**

- I. Vicinity Map
- II. Building Layout Plan
- III. Site Exploration Plan
- IV. Exploratory Boring Logs
- V. Geologic Map of San Diego
- VI. Direct Shear Test Results

## **APPENDICES**

- A. Unified Soil Classification System
- B. Cone Penetrometer Logs from 2008 Investigation
- C. Geophysical Survey Report – Southwest Geophysics Inc



# **REPORT OF PRELIMINARY GEOTECHNICAL INVESTIGATION**

San Diego Corporate Center Lots 1 and 2  
Phase I Development  
Southwest Corner of Del Mar Heights Road and El Camino Real  
San Diego, California

**Job No. 07-9487.1**

## **I. PROJECT SUMMARY AND SCOPE OF SERVICES**

In accordance with your request, we have performed a preliminary geotechnical investigation for the subject project located at the southwest corner of Del Mar Heights Road and El Camino Real in the City of San Diego (see enclosed Vicinity Map, Figure No. I). We previously performed a limited geotechnical investigation for the entire site, the results of which were presented in our report titled "Report of Geotechnical Investigation and Existing Fill Evaluation," dated March 31, 2008. The purpose of that investigation was to evaluate the compaction of the undocumented site fills and provide an investigation report for your evaluation of the property and submittal to the City to serve as an as-built geotechnical report for purposes of satisfying the grading permit requirements. The purpose of this investigation was to evaluate the foundation conditions for the Phase I portion of the site to allow development of design and construction recommendations for the planned construction.

Based on our review of the submittal plans dated October 8, 2010, the proposed Phase I development will include the construction of Garage 4 and Buildings 8 through 12 (see enclosed Figure No. II, "Building Layout Plan"). The lower levels of Garage 4 will cover nearly all of the Phase I site, with some portions having up to 7 levels. Buildings 8, 10 and 11 will be two to four stories over two to five levels of Garage 4 parking. Buildings 9 and 12 will be essentially 9- and 10-story structures over two levels of Garage 4. Based on information provided by your structural engineer, maximum combined dead and live column loads for Garage 4 and



Buildings 9 and 12 will be on the order of 1,030 kips, 1,710 kips and 1,300 kips, respectively.

The scope of work performed for this investigation included a review of our previous work for the site as well as the proposed Phase I development plans (dated October 8, 2010), a site reconnaissance and subsurface exploration program, laboratory testing, engineering analysis of the field and laboratory data, and the preparation of this report. The data obtained and the analyses performed were for the purpose of providing design and construction criteria for the project earthwork, building foundations, slab-on-grade floors, basement and retaining walls, and pavements.

## **II. SITE DESCRIPTION**

The Phase I development site is a portion of the 23-acre property known as Lots 1 and 2 of the San Diego Corporate Center (APN Numbers 304-070-40, 43, 52 and 57), located southwest of the intersection of Del Mar Heights Road and El Camino Real in San Diego, California (see Figure No. III). The vacant property has been previously mass graded into three relatively flat lots that step up in elevation to the north and west. Surface vegetation on the padded lots consists of a light to moderate growth of weeds.

## **III. FIELD INVESTIGATION**

The field investigation consisted of a surface reconnaissance and a subsurface exploration program using a truck-mounted, continuous-flight auger drill to investigate and sample the subsurface soils. During the period of February 7 through 17, 2011, 13 exploratory borings were drilled in the proposed Phase I building areas to a maximum depth of 55 feet, and three exploratory borings were



drilled in the Phase III area to a maximum depth of 66.5 feet for preliminary information for that future work. The soils encountered in the borings were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (refer to Appendix A). The approximate locations of the borings (which were surveyed by your Civil Engineer) are shown on the Site Exploration Plan, Figure No. III. In addition, the location plan and logs of our previous borings and cone penetrometer soundings are included in Appendix B.

Representative samples were obtained from the exploratory borings at selected depths appropriate to the investigation. All samples were returned to our laboratory for evaluation and testing. Standard penetration resistance blow counts were obtained by driving a 2-inch O.D. split spoon sampler with a 140-pound hammer dropping through a 30-inch free fall. The sampler was driven a maximum of 18 inches and the number of blows for each 6-inch interval was recorded. The blows per foot indicated on the boring logs represent the accumulated number of blows that were required to drive the last 12 inches or portion thereof. Samples contained in liners were recovered by driving a 3.0-inch O.D. California sampler 18 inches into the soil using a 140-pound hammer.

Boring logs have been prepared on the basis of our observations and laboratory test results. Logs of the borings for this investigation are attached as Figure No. IV. The following chart provides an in-house correlation between the number of blows and the relative density of the soil for the Standard Penetration Test and the 3-inch sampler.



| <b>SOIL</b>                 | <b>DENSITY<br/>DESIGNATION</b> | <b>2-INCH O.D.<br/>SAMPLER<br/>BLOWS/FOOT</b> | <b>3-INCH O.D.<br/>SAMPLER<br/>BLOWS/FOOT</b> |
|-----------------------------|--------------------------------|-----------------------------------------------|-----------------------------------------------|
| Sand and<br>Nonplastic Silt | Very loose                     | 0-4                                           | 0-7                                           |
|                             | Loose                          | 5-10                                          | 8-20                                          |
|                             | Medium                         | 11-30                                         | 21-53                                         |
|                             | Dense                          | 31-50                                         | 54-98                                         |
|                             | Very Dense                     | Over 50                                       | Over 98                                       |
| Clay and<br>Plastic Silt    | Very soft                      | 0-2                                           | 0-2                                           |
|                             | Soft                           | 3-4                                           | 3-4                                           |
|                             | Firm                           | 5-8                                           | 5-9                                           |
|                             | Stiff                          | 9-15                                          | 10-18                                         |
|                             | Very stiff                     | 16-30                                         | 19-45                                         |
|                             | Hard                           | 31-60                                         | 46-90                                         |
|                             | Very Hard                      | Over 60                                       | Over 90                                       |

In addition to our borings, we retained Southwest Geophysics, Inc. to perform two geophysical traverses in the area of the site that is and will be underlain by the deepest layers of fill soil (see Figure No. III). The purpose of the traverses was to obtain information regarding the site Soil Classification to be utilized for determining seismic response parameters for structural design. The geophysical report is included in Appendix C and indicates characteristic shear wave velocities in the upper 100 feet of 1,430 and 1,565 feet per second. Accordingly, the recommended site Soil Classification for seismic design is "C".

#### **IV. SOIL DESCRIPTION**

Fill soils consisting predominantly of medium dense to dense clayey and silty sands were encountered in Borings 1, 2, 4 through 12, 15, and 16, to depths of 3 to 63 feet. The fill soils were underlain by materials of the Torrey Sandstone consisting of dense to very dense clayey and silty sands (formational sandstone) and dense to very dense sandy gravel (formational conglomerate) to the depths explored.



Materials of the Torrey Sandstone consisting of dense to very dense clayey and silty sands (formational sandstone) and dense to very dense sandy gravel (formational conglomerate) were encountered from the existing ground surface to the depths explored in Borings 3, 13 and 14. Although the sandstone and conglomerate materials encountered were very dense, they were of low cohesion and we did not encounter cemented materials.

Based on our laboratory testing as well as our experience with similar materials, the silty and clayey sand fill and formational materials encountered in the borings possess a low potential for expansion.

The boring logs and related information depict subsurface conditions only at the specific locations shown on the site exploration plan and on the particular dates designated on the logs. Subsurface conditions at other locations may differ from conditions occurring at these boring locations. Also, the passage of time may result in changes in the subsurface conditions due to environmental changes.

## **V. GROUNDWATER**

Free groundwater was not encountered in Borings 1 through 15. Groundwater seepage was encountered in Boring 16 at a depth of about 61 feet, which corresponds to an elevation of +154 feet. At this depth we do not anticipate that groundwater seepage will impact the proposed Phase I construction or performance of the completed development. It must be noted, however, that fluctuations in the level of groundwater may occur due to variations in ground surface topography, subsurface stratification, rainfall, and other possible factors that may not have been evident at the time of our field investigation.



It should be kept in mind that grading operations can change surface drainage patterns and/or reduce permeabilities due to the densification of compacted soils. Such changes of surface and subsurface hydrologic conditions, plus irrigation of landscaping or significant increases in rainfall, may result in the appearance of surface or near-surface water at locations where none existed previously. The appearance of such water is expected to be localized and cosmetic in nature, if good positive drainage is implemented, as recommended in this report, during and at the completion of construction.

It must be understood that unless discovered during initial site exploration or encountered during site grading operations, it is extremely difficult to predict if or where perched or true groundwater conditions may appear in the future. When site fill or formational soils are relatively fine-grained and of low permeability, water problems may not become apparent for extended periods of time.

Water conditions, where suspected or encountered during construction, should be evaluated and remedied by the project civil and geotechnical consultants. The project developer and property owner, however, must realize that post-construction appearances of groundwater may have to be dealt with on a site-specific basis.

## **VI. FAULTING AND GEOLOGIC HAZARDS**

The San Diego area, as most of California, is located in a seismically active region. The San Diego area has been referred to as the eastern edge of the Southern California Continental Borderland, an extension of the Peninsular Ranges Geomorphic Province. The borderland is part of a broad tectonic boundary between the North American and Pacific Plates. The plate boundary is dominated by a complex system of active major strike-slip (right lateral), northwest trending faults



extending from the San Andreas fault, about 70 miles east, to the San Clemente fault, about 50 miles west of the San Diego metropolitan area.

Based on our review of some available published information including the City of San Diego Seismic Safety Study, Geologic Hazards and Faults Map (Sheet 38), there are no faults known to pass through the site. The prominent fault zones generally considered having the most potential for earthquake damage in the vicinity of the site are the active Rose Canyon and Coronado Bank fault zones mapped approximately 3 and 16 miles southwest of the site, respectively, and the active Elsinore and San Jacinto fault zones mapped approximately 31 and 54 miles northeast of the site, respectively.

Although research on earthquake prediction has greatly increased in recent years, geologists and seismologists have not yet reached the point where they can predict when and where an earthquake will occur. Nevertheless, on the basis of current technology, it is reasonable to assume that the proposed buildings may be subject to the effects of at least one moderate to major earthquake during their design lives. During such an earthquake, the danger from fault offset through the site is remote, but relatively strong ground shaking is likely to occur.

Strong ground shaking not only can cause structures to shake, but it also has the potential for including other phenomena that can indirectly cause substantial ground movements or other hazards resulting in damage to structures. These phenomena include seismically induced waves such as tsunamis and seiches, inundation due to dam or embankment failure, soil liquefaction, landsliding, lateral spreading, differential compaction and ground cracking. Available information indicates that the location of and geotechnical conditions at the site are not conducive to any of these phenomena.



Based on our review of readily available geotechnical literature and our recent field investigation, the cut portion of the site is underlain by formational materials of the Torrey Sandstone (see Figure Nos. Va and Vb). The remainder of the site is underlain by fill soils overlying the Torrey Sandstone. The formational materials encountered on the site consist of dense to very dense, clayey and silty sand (sandstone) and dense to very dense sandy gravel (formational conglomerate). The fill soils encountered at the site consist predominantly of medium dense clayey and silty sands.

Based on formation outcrops and our prior work in the vicinity of the subject property, the Torrey Sandstone is essentially flat-lying with no significant geologic structure such as tilting or folding.

#### **VII. LABORATORY TESTS AND SOIL INFORMATION**

Laboratory tests were performed on samples of the soils and formational materials encountered in order to evaluate their index, strength, expansion, and compressibility properties. The following tests were conducted on the sampled soils:

1. Laboratory Compaction Characteristics (ASTM D1557-09)
2. Determination of Percentage of Particles Smaller than #200 (ASTM D1140-06)
3. Expansion Index (ASTM D4829-07)
4. Direct Shear Test (ASTM D3080-04)
5. Ring-lined Barrel Density Test (ASTM D3550-07)



Laboratory compaction tests establish the laboratory maximum dry density and optimum moisture content of the tested soils and are also used to aid in evaluating the strength characteristics of the soils. The test results are presented on the boring logs at the appropriate sample depths.

The particle size smaller than a No. 200 sieve analysis aids in classifying the tested soils in accordance with the Unified Soil Classification System and provides qualitative information related to engineering characteristics such as expansion potential, permeability, and shear strength. The test results are presented on the boring logs at the appropriate sample depths.

The expansion potential of a sample of the more clayey soils encountered within the depth of proposed grading was determined utilizing the procedures specified in (ASTM D4829). The measured Expansion Index is 32. The test results are presented on the boring log. Based on this test, the classification tests and our past experience with similar soils, it is our opinion that the more clayey soils encountered with the proposed grading depths possess a low potential for expansion.

Four laboratory direct shear tests were performed to aid in evaluating the strength properties of the on-site soils. Two tests were performed on relatively undisturbed samples of the formational sandstone materials encountered and two tests were performed on samples of the formational sandstone and existing fill soils remolded to approximately 95 percent of the laboratory maximum density (95 percent relative compaction). The test results are shown on Figure Nos. VIa-VId.



Laboratory dry density tests were performed on selected relatively undisturbed samples of the existing fill and formational materials encountered to aid in evaluating engineering characteristics. The test results are presented on the boring logs at the appropriate sample depths.

### **VIII. CONCLUSIONS AND RECOMMENDATIONS**

The following conclusions and recommendations are based on the field investigation conducted by our firm, our laboratory test results, and our experience with similar soils and formational bedrock materials. The primary feature of concern at the site is the potential for excessive differential settlements of the proposed structures due to relatively heavy and variable foundation loads and the presence of both very dense formational sandstone materials and varying depths of fill at the planned foundation level. In order to minimize the potential for differential settlement damage to the proposed structures due to the relatively high and variable foundation loads and mixed foundation conditions, we recommend that all existing fill soils and any underlying loose natural soils be removed and replaced with fill soil compacted to a minimum degree of compaction of 95 percent.

The opinions, conclusions and recommendations presented in this report are contingent upon ***Geotechnical Exploration, Inc.*** being retained to review the final plans and specifications as they are developed and to observe the site earthwork and installation of foundations.

#### **A. Earthwork**

1. *Clearing and Stripping:* The site should be cleared of any miscellaneous debris that may be present at the time of construction and stripped of all



vegetation. The cleared and stripped materials should be properly disposed of off-site.

2. Excavation: Based on the results of our exploratory borings as well as our experience with similar materials, it is our opinion that the natural formational materials can in general be excavated utilizing ordinary heavy earthmoving equipment. Contractors should not, however, be relieved of making their own independent evaluation of the excavatability of the on-site materials prior to submitting their bids.
3. Removal and Recomposition of Existing Fill and Underlying Loose Natural Soils: We recommend that all existing fill soils and any underlying loose natural soils be removed to a depth of 20 feet below the planned subgrade level and be replaced with fill soil compacted to a minimum degree of compaction of 95 percent at a moisture content within 2 percent of the laboratory optimum.
4. Subgrade Preparation: After the site has been cleared, stripped, and the required excavations made, the exposed subgrade soils in areas to receive fill and/or building improvements should be scarified to a depth of 8 inches, moisture conditioned to within 2 percent of the laboratory optimum, and compacted to the requirements for structural fill.
5. Material for Fill: All existing on-site soils with an organic content of less than 3 percent by volume are, in general, suitable for use as fill. Fill materials should not, however, contain rocks or lumps more than 6 inches in greatest dimension, not more than 15 percent larger than 2½ inches, and no more than 25 percent of the fill should be larger than ¼-inch. Any formational



conglomerate materials removed from the planned excavations should only be reused as fill in non-building areas. All materials for use as fill should be approved by our representative prior to filling.

6. Fill Compaction: All structural fill should, in general, be compacted to a minimum degree of compaction of 90 percent at a moisture content within 2 percent of the laboratory optimum based on ASTM D1557-09. As noted above in Recommendation #3, however, all fill soil placed in the upper 20 feet below the proposed structures and extending laterally 15 feet outside of the building limits should be compacted to a minimum degree of compaction of 95 percent at a moisture content within 2 percent of the laboratory optimum. In addition, the upper 6 inches of subgrade soil beneath pavements should be scarified, moisture conditioned, and compacted to a minimum degree of compaction of 95 percent just prior to placement of the aggregate base layer or concrete pavement. Fill material should be spread and compacted in uniform horizontal lifts not exceeding 8 inches in uncompacted thickness. Before compaction begins, the fill should be brought to the recommended water content by either aerating and drying the fill if it is too wet or moistening the fill with water if it is too dry. Each lift should be thoroughly mixed before compaction to ensure a uniform distribution of moisture.
7. Permanent Slopes: We recommend that any required permanent cut and fill slopes be constructed to an inclination no steeper than 2 (horizontal) to 1 (vertical). The project plans and specifications should contain all necessary design features and construction requirements to prevent erosion of the on-site soils both during and after construction. Slopes and other exposed



ground surfaces should be appropriately planted with a protective ground cover.

Fill slopes should be constructed so as to assure that the recommended minimum degree of compaction is attained out to the finished slope face. This may be accomplished by "backrolling" with a sheepsfoot roller or other suitable equipment as the fill is raised. Placement of fill near the tops of slopes should be carried out in such a manner as to assure that loose, uncompacted soils are not sloughed over the tops and allowed to accumulate on the slope face.

8. Temporary Slopes: Based on our subsurface investigation work, laboratory test results, and engineering analysis, temporary cut-slopes in the Torrey Sandstone materials and/or existing compacted fill materials should be safe against mass instability at an inclination of 3/4 (horizontal) to 1 (vertical). Some localized sloughing or ravelling of the soils exposed on the slopes, however, may occur. Since the stability of temporary construction slopes will depend largely on the contractor's activities and safety precautions (storage and equipment loadings near the tops of cut-slopes, surface drainage provisions, etc.) it should be the contractor's responsibility to establish and maintain all temporary construction slopes at a safe inclination appropriate to his methods of operation.
9. Temporary Shoring: We recommend that temporary shoring required where there is insufficient space for temporary slopes be designed to resist an equivalent fluid pressure of 30 pounds per cubic foot (pcf). Lateral resistance for the shoring caissons should be calculated utilizing a passive equivalent fluid pressure of 700 pcf against the diameter of the caissons.



10. Trench and Retaining/Basement Wall Backfills: All backfill soils placed in utility trenches or behind retaining/basement walls should be compacted to a minimum degree of compaction of 90 percent. Backfill material should be placed in lift thicknesses appropriate to the type of compaction equipment utilized and compacted to a minimum degree of 90 percent by mechanical means. In pavement areas, that portion of the trench backfill within the pavement section should conform to the material and compaction requirements of the adjacent pavement section.

Our experience has shown that even shallow, narrow trenches such as for irrigation and electrical lines that are not properly compacted can result in problems, particularly with respect to shallow groundwater accumulation and migration.

11. Surface Drainage: Positive surface gradients should be provided adjacent to the buildings, and roof gutters and downspouts should be installed so as to direct water away from foundations and slabs toward suitable discharge facilities. Ponding of surface water should not be allowed anywhere on the site.

In light of the relatively impermeable nature of the compacted fill and formational soils at the site, and the lack of any significant hydraulic head, it is our opinion that the site is not suitable for the infiltration/percolation of stormwater. In addition, groundwater infiltration from the proposed surface drainage swales will be negligible and have no adverse impact on this project or down-gradient properties.



Appropriate erosion control measures should be taken at all times during and after construction to prevent surface runoff waters from entering footing excavations or ponding on finished building pad areas.

**B. Foundations**

12. Footings: We recommend that the proposed buildings be supported on conventional, individual-spread and/or continuous footing foundations bearing on dense, undisturbed formational sandstone materials and/or fill soils compacted to a minimum degree of compaction of 95 percent. All footings should be founded at least 3 feet below the lowest adjacent finished grade and have a minimum width of 4 feet. Footings located adjacent to the tops of slopes should be extended sufficiently deep so as to provide at least 10 feet of horizontal cover or 1½ times the width of the footing, whichever is greater, between the slope face and outside edge of the footing at the footing bearing level. Footings located adjacent to utility trenches should have their bearing surfaces situated below an imaginary 1.5 to 1.0 plane projected upward from the bottom edge of the adjacent utility trench.

Footings conforming to the preceding recommendations may be designed for allowable bearing pressures of 8,000 pounds per square foot (psf) for combined dead and live loads and 10,600 psf for all loads, including wind or seismic.

All continuous footings should contain top and bottom reinforcement to provide structural continuity and to permit spanning of local irregularities. We recommend that a minimum of two No. 5 top and two No. 5 bottom reinforcing bars be provided in the footings. A minimum clearance of 3



inches should be maintained between steel reinforcement and the bottom or sides of the footing. In order for us to offer an opinion as to whether the footings are founded on soils of sufficient load bearing capacity, it is essential that our representative inspect the footing excavations prior to the placement of reinforcing steel or concrete.

*NOTE: The project Civil/Structural Engineer should review all reinforcing schedules. The reinforcing minimums recommended herein are not to be construed as structural designs, but merely as minimum reinforcement to reduce the potential for cracking and separations.*

13. *Seismic Design Criteria:* Site-specific seismic design criteria for the proposed structures are presented in the following table in accordance with Section 1613 of the 2010 CBC, which incorporates by reference ASCE 7-05 for seismic design. We have determined the mapped spectral acceleration values for the site, based on a latitude of 32.9507 degrees and longitude of -117.2385 degrees, utilizing a program titled "Seismic Hazard Curves, Response Parameters and Design Parameters-v5.0.8," provided by the USGS, which provides a solution for ASCE 7-05 (Section 1613 of the 2010 CBC) utilizing digitized files for the Spectral Acceleration maps. In addition, we have assigned a Site Soil Classification of C.

**TABLE I**  
**Mapped Spectral Acceleration Values and Design Parameters**

| $S_s$ | $S_1$ | $F_a$ | $F_v$ | $S_{ms}$ | $S_{m1}$ | $S_{ds}$ | $S_{d1}$ |
|-------|-------|-------|-------|----------|----------|----------|----------|
| 1.412 | 0.521 | 1.0   | 1.3   | 1.412    | 0.678    | 0.941    | 0.452    |



If the buildings are designed utilizing dynamic lateral force procedures, we recommend that the spectral acceleration values in the following table be utilized.

| <b>Acceleration Response Spectra</b> |                                  |
|--------------------------------------|----------------------------------|
| <b>Period (Sec)</b>                  | <b>Spectral Acceleration (g)</b> |
| 0                                    | 0.376                            |
| 0.096                                | 0.941                            |
| 0.200                                | 0.941                            |
| 0.480                                | 0.941                            |
| 0.500                                | 0.903                            |
| 0.600                                | 0.753                            |
| 0.700                                | 0.645                            |
| 0.800                                | 0.565                            |
| 0.900                                | 0.502                            |
| 1.000                                | 0.452                            |
| 1.100                                | 0.411                            |
| 1.200                                | 0.376                            |
| 1.300                                | 0.347                            |
| 1.400                                | 0.323                            |
| 1.500                                | 0.301                            |
| 1.600                                | 0.282                            |
| 1.700                                | 0.266                            |
| 1.800                                | 0.251                            |
| 1.900                                | 0.238                            |
| 2.000                                | 0.226                            |

14. **Lateral Loads:** Lateral load resistance for the structures supported on footing foundations may be developed in friction between the foundation bottoms and the supporting subgrade. An allowable friction coefficient of 0.35 is considered applicable. An additional allowable passive resistance equal to an equivalent fluid weight of 350 pounds per cubic foot acting against the foundations may be used in design provided the footings are poured neat against the adjacent undisturbed formational and/or compacted fill materials. These lateral resistance values assume a level surface in front of the footing



for a minimum distance of three times the embedment depth of the footing and any shear keys. For ground surfaces sloping down from footings at an inclination of 2.0 horizontal to 1.0 vertical, the allowable passive resistance should be reduced to 85 pcf. For variations between a level surface and 2.0:1.0 slopes in front of footings, passive resistance values may be interpolated.

15. Settlement: Settlements under building loads are expected to be within tolerable limits for the proposed structures. For footings designed in accordance with the recommendations presented in the preceding paragraphs, we anticipate that total settlements should range from about ½-inch for the smallest column loads to 1 inch for the largest column loads. Footing settlements should occur essentially as the construction progresses and loads are applied. We anticipate that post-construction differential settlements should be less than ¼-inch in 25 feet.
16. Retaining/Basement Walls: Retaining walls must be designed to resist lateral earth pressures and any additional lateral pressures caused by surcharge loads on the adjoining retained surface. We recommend that unrestrained (cantilever) walls with level backfill be designed for an equivalent fluid pressure of 35 pounds per cubic foot (pcf). We recommend that restrained walls (i.e., basement walls or any walls with angle points that restrain them from rotation) with level backfill be designed for an equivalent fluid pressure of 35 pcf plus an additional uniform lateral pressure of 5H pounds per square foot, where H is equal to the height of backfill above the top of the wall footing in feet. Unrestrained walls with up to 2.0:1.0 sloping backfills should be designed for an equivalent fluid pressure of 50 pcf. Restrained walls with up to 2.0:1.0 sloping backfills should be designed for an equivalent fluid



pressure of 50 pcf plus an additional uniform lateral pressure of  $7H$  pounds per square foot, where  $H$  is equal to the height of backfill above the top of the wall footing in feet. Wherever walls will be subjected to surcharge loads, they should also be designed for an additional uniform lateral pressure equal to one-third the anticipated surcharge pressure in the case of unrestrained walls and one-half the anticipated surcharge pressure in the case of restrained walls.

For seismic design of unrestrained walls, we recommend that the seismic pressure increment be taken as a fluid pressure distribution utilizing an equivalent fluid weight of 14 pcf. For restrained walls we recommend that the seismic pressure increment be taken as a fluid pressure distribution utilizing an equivalent fluid weight of 22 pcf added to the active static fluid pressure utilizing an equivalent fluid weight of 35 pcf.

The preceding design pressures assume that the walls are backfilled with low expansion potential materials (Expansion Index less than 50) and that there is sufficient drainage behind the walls to prevent the build-up of hydrostatic pressures from surface water infiltration. We recommend that drainage be provided by a composite drainage material such as Miradrain 6000/6200 and QuickDrain or equivalent. No gravel or perforated pipe is used with the Miradrain/QuickDrain system. The drainage material should terminate 12 inches below the finish surface where the surface is covered by slabs or 18 inches below the finish surface in landscape areas.

Backfill placed behind the walls should be compacted to a minimum degree of compaction of 90 percent using light compaction equipment. If heavy equipment is used, the walls should be appropriately temporarily braced.



Retaining walls should be supported on footing foundations designed in general accordance with Recommendation #12 above. Lateral load resistance for the walls can be developed in accordance with Recommendation #14 "Lateral Loads".

**C. Concrete Slab On-grade Criteria**

17. Minimum Floor Slab Thickness and Reinforcement: Based on our experience, we have found that, for various reasons, floor slabs occasionally crack, causing brittle surfaces such as ceramic tiles to become damaged. Therefore, we recommend that all slabs-on-grade contain at least a minimum amount of reinforcing steel to reduce the separation of cracks, should they occur. Interior floor slabs should be a minimum of 5 inches actual thickness and be reinforced with No. 4 bars on 24-inch centers, both ways, placed at midheight in the slab.
18. Concrete Isolation Joints: We recommend the project Civil/Structural Engineer incorporate isolation joints and sawcuts to at least one-fourth the thickness of the slab in any floor designs. The joints and cuts, if properly placed, should reduce the potential for and help control floor slab cracking. We recommend that concrete shrinkage joints be spaced no farther than approximately 20 feet apart, and also at re-entrant corners. However, due to a number of reasons (such as base preparation, construction techniques, curing procedures, and normal shrinkage of concrete), some cracking of slabs can be expected.



19. *Slab Moisture Emission:* Although it is not the responsibility of geotechnical engineering firms to provide moisture protection recommendations, as a service to our clients we provide the following discussion and suggested minimum protection criteria. Actual recommendations should be provided by the architect and waterproofing consultants.

Soil moisture vapor can result in damage to moisture-sensitive floors, some floor sealers, or sensitive equipment in direct contact with the floor, in addition to mold and staining on slabs, walls and carpets.

The common practice in Southern California has been to place vapor retarders made of PVC, or of polyethylene. PVC retarders are made in thickness ranging from 10- to 60-mil. Polyethylene retarders, called visqueen, range from 5- to 10-mil in thickness. These products are no longer considered adequate for moisture protection and can actually deteriorate over time.

Specialty vapor retarding and barrier products possess higher tensile strength and are more specifically designed for and intended to retard moisture transmission into and through concrete slabs. The use of such products is highly recommended for reduction of floor slab moisture emission.

The following American Society for Testing and Materials (ASTM) and American Concrete Institute (ACI) sections address the issue of moisture transmission into and through concrete slabs: ASTM E1745-97 (2009) Standard Specification for Plastic Water Vapor Retarders Used in Contact Concrete Slabs; ASTM E154-88 (2005) Standard Test Methods for Water



Vapor Retarders Used in Contact with Earth; ASTM E96-95 Standard Test Methods for Water Vapor Transmission of Materials; ASTM E1643-98 (2009) Standard Practice for Installation of Water Vapor Retarders Used in Contact Under Concrete Slabs; and ACI 302.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.

Based on the above, we recommend that the vapor barrier consist of a minimum 15-mil extruded polyolefin plastic (no recycled content or woven materials permitted). Permeance as tested before and after mandatory conditioning (ASTM E1745 Section 7.1 and sub-paragraphs 7.1.1-7.1.5) should be less than 0.01 perms (grains/square foot/hour inHg) and comply with the ASTM E1745 Class A requirements. Installation of vapor barriers should be in accordance with ASTM E1643. The basis of design is Stego wrap vapor barrier 15-mil.

- 19.1 Common to all acceptable products, vapor retarder/barrier joints must be lapped and sealed with mastic or the manufacturer's recommended tape or sealing products. In actual practice, stakes are often driven through the retarder material, equipment is dragged or rolled across the retarder, overlapping or jointing is not properly implemented, etc. All these construction deficiencies reduce the retarder's effectiveness. In no case should retarder/barrier products be punctured or gaps be allowed to form prior to or during concrete placement.
- 19.2 Vapor retarders/barriers do not provide full waterproofing for structures constructed below free water surfaces. They are intended to help reduce or prevent vapor transmission and/or capillary migration through the soil and through the concrete slabs.



Waterproofing systems must be designed and properly constructed if full waterproofing is desired. The owner and project designers should be consulted to determine the specific level of protection required.

20. **Exterior Slab Reinforcement:** As a minimum for protection of on-site improvements, we recommend that all exterior pedestrian concrete slabs be founded on properly compacted fill soils. The slabs should be 4 inches thick and reinforced with No. 4 bars at 24-inch centers, both ways, at the center of the slab, and contain adequate isolation and control joints. The performance of on-site improvements can be greatly affected by soil base preparation and the quality of construction. It is therefore important that all improvements are properly designed and constructed for the existing soil conditions. The improvements should not be built on loose soils or fills placed without our observation and testing.

For exterior slabs with the minimum shrinkage reinforcement, control joints should be placed at spaces no farther than 15 feet apart or the width of the slab, whichever is less, and also at re-entrant corners. Control joints in exterior slabs should be sealed with elastomeric joint sealant. The sealant should be inspected every 6 months and be properly maintained.

**D. Slope Performance**

21. **Slope Top/Face Performance:** The soils that occur in close proximity to the top or face of even properly compacted fill or dense natural ground cut slopes often possess poor lateral stability. The degree of lateral and vertical deformation depends on the inherent expansion and strength characteristics of the soil types comprising the slope, slope steepness and height, loosening



of slope face soils by burrowing rodents, and irrigation and vegetation maintenance practices, as well as the quality of compaction of fill soils. Structures and other improvements could suffer damage due to these soil movement factors if not properly designed to accommodate or withstand such movement.

22. *Slope Top Structure Performance:* Rigid improvements such as top-of-slope walls, columns, decorative planters, concrete flatwork, and other similar types of improvements can be expected to display varying degrees of separation typical of improvements constructed at the top of a slope. The separations result primarily from slope top lateral and vertical soil deformation processes. These separations often occur regardless of being underlain by cut or fill slope material. Proximity to a slope top is often the primary factor affecting the degree of separations occurring.

Typical and to-be-expected separations can range from minimal to up to 1 inch or greater in width. In order to minimize the effect of slope-top lateral soil deformation, we recommend that the top-of-slope improvements be designed with flexible connections and joints in rigid structures so that the separations do not result in visually apparent cracking damage and/or can be cosmetically dressed as part of the ongoing property maintenance. These flexible connections may include "slip joints" in wrought iron fencing, evenly spaced vertical joints in block walls or fences, control joints with flexible caulking in exterior flatwork improvements, etc.



**E. Pavements**

23. Concrete Pavement: We recommend that concrete pavements subject only to automobile and light truck traffic (including the parking garage slab) be 6 inches thick and be supported directly on properly prepared on-site subgrade soils. The concrete for areas subject to heavy truck traffic (such as trash trucks and heavy delivery trucks) should have a minimum thickness of 8 inches. The upper 8 inches of the subgrade below the slabs should be compacted to a minimum degree of compaction of 95 percent just prior to paving. The concrete should conform to Section 201 of The Standard Specifications for Public Works Construction, 1994 Edition, for Class 560-C-3250.

In order to control shrinkage cracking, we recommend that saw-cut, weakened-plane joints be provided at about 15-foot centers both ways. The pavement slabs should be saw-cut no more than 24 hours after the placement of the concrete. The depth of the joint should be one-quarter of the slab thickness and its width should not exceed 0.02-feet. Reinforcing steel is not necessary unless it is desired to increase the joint spacing recommended above.

24. Asphalt Concrete Pavement: Based on the results of our exploratory borings and laboratory tests as well as our experience with soils similar to those encountered at the site, we anticipate that any required AC pavement sections for the proposed development will be on the order of 2 inches of asphalt concrete on 6 inches of aggregate base for parking stalls and minor traffic channels (Traffic Index of 4.0), 2½ inches on 7 inches for major automobile traffic channels (TI of 5.0), and 3 inches on 9 inches for



pavements subject to up to 27 heavy 2-axle trucks per week (TI of 6.0). Final pavement section recommendations should be based on R-value (Resistance) tests performed on bulk samples of the soils that are exposed at the finished subgrade elevations across the site at the completion of the mass grading operations.

Asphalt concrete should consist of Type III-C2-PG64-10 conforming to the Standard Specifications for Public Works Construction, 2000 Edition (Standard Specifications), Section 400-4 and be placed in accordance with Section 302-5. Aggregate base should conform to the requirements for Crushed Aggregate Base or Crushed Miscellaneous Base in Section 200-2 of the Standard Specifications. The upper 6 inches of the pavement subgrade soil as well as the aggregate base layer should be compacted to a minimum degree of compaction of 95 percent. Preparation of the subgrade and placement of the asphalt concrete and base materials should be performed under the observation of our representative.

***F. General Recommendations***

25. *Project Start Up Notification:* In order to minimize any work delays during site development, this firm should be contacted 24 hours prior to any need for observation of footing excavations or field density testing of compacted fill soils. If possible, placement of formwork and steel reinforcement in footing excavations should not occur prior to observing the excavations; in the event that our observations reveal the need for deepening or redesigning foundation structures at any locations, any formwork or steel reinforcement in the affected footing excavation areas would have to be removed prior to



correction of the observed problem (i.e., deepening the footing excavation, recompacting soil in the bottom of the excavation, etc.).

26. *Waterproofing Quality Control:* It must be understood that it is not within the scope of our services to provide quality control oversight for basement or retaining wall waterproofing. It is the responsibility of the contractor and/or their retained construction inspection service provider to verify proper wall sealing and protection board installation (if needed).

### **IX. GRADING NOTES**

***Geotechnical Exploration, Inc.*** recommends that we be retained to verify the actual soil conditions revealed during site grading work and footing excavation to be as anticipated in this "*Report of Preliminary Geotechnical Investigation*" for the project. In addition, the compaction of any fill soils placed during site grading work must be observed and tested by the soil engineer. It is the responsibility of the grading contractor to comply with the requirements on the grading plans and the local grading ordinance. All retaining wall and trench backfill should be properly compacted. ***Geotechnical Exploration, Inc.*** will assume no liability for damage occurring due to improperly or uncompacted backfill placed without our observations and testing.

### **X. LIMITATIONS**

Our conclusions and recommendations have been based on available data obtained from our field investigation and laboratory analysis, as well as our experience with similar soils and formational materials located in this area of San Diego. Of necessity, we must assume a certain degree of continuity between exploratory



excavations. It is, therefore, necessary that all observations, conclusions, and recommendations be verified at the time grading operations begin or when footing excavations are placed. In the event discrepancies are noted, additional recommendations may be issued, if required.

The work performed and recommendations presented herein are the result of an investigation and analysis that meet the contemporary standard of care in our profession within the City of San Diego. No warranty is provided.

This report should be considered valid for a period of two (2) years, and is subject to review by our firm following that time. If significant modifications are made to the building plans, especially with respect to the height and location of any proposed structures, this report must be presented to us for immediate review and possible revision.

It is the responsibility of the owner and/or developer to ensure that the recommendations summarized in this report are carried out in the field operations and that our recommendations for design of this project are incorporated in the structural plans. We should be retained to review the project plans once they are available, to see that our recommendations are adequately incorporated in the plans.

This firm does not practice or consult in the field of safety engineering. We do not direct the contractor's operations, and we cannot be responsible for the safety of personnel other than our own on the site; the safety of others is the responsibility of the contractor. The contractor should notify the owner if any of the recommended actions presented herein are considered to be unsafe.

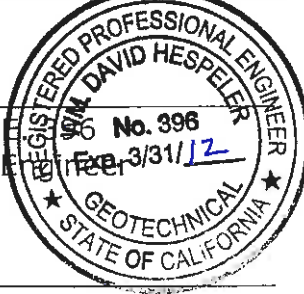
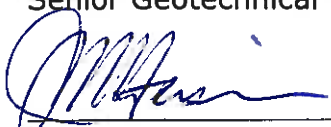


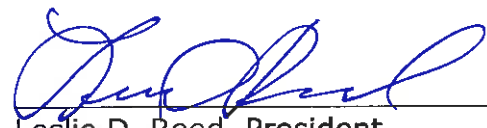
The firm of **Geotechnical Exploration, Inc.** shall not be held responsible for changes to the physical condition of the property, such as addition of fill soils or changing drainage patterns, which occur subsequent to issuance of this report and the changes are made without our observations, testing, and approval.

This opportunity to be of service is sincerely appreciated. Once again, should any questions arise concerning this report, please feel free to contact the undersigned. Reference to our **Job No. 07-9487.1** will expedite a reply to your inquiries.

Respectfully submitted,

**GEOTECHNICAL EXPLORATION, INC.**

  
Wm. D. Hespeler, G.E.  
Senior Geotechnical Engineer  
  
  
Jay K. Heiser  
Senior Project Geologist

  
Leslie D. Reed, President  
C.E.G. 999[exp. 3/31/13]/R.G. 3391



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Job No. 07-9487.1

May 2011

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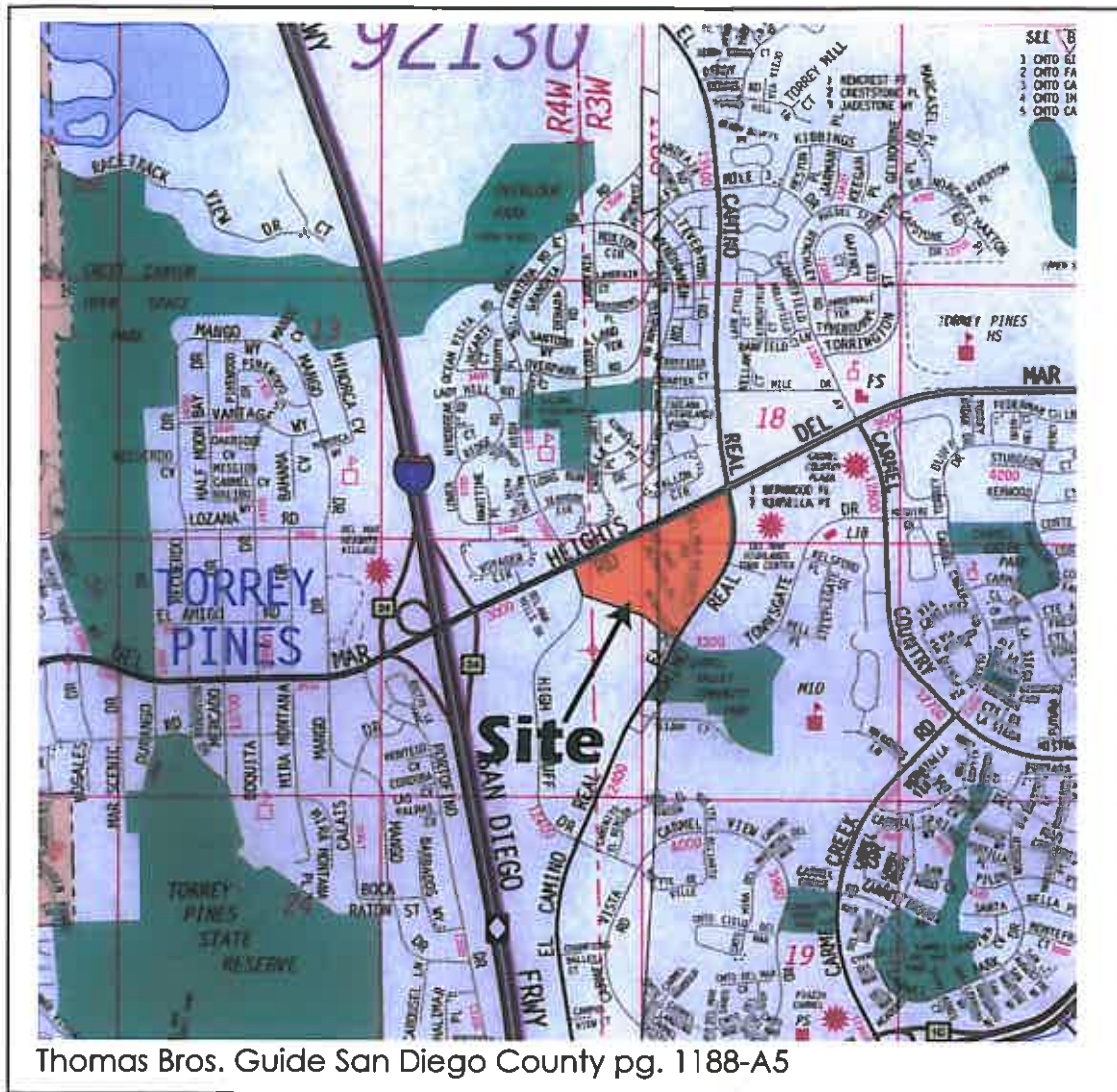
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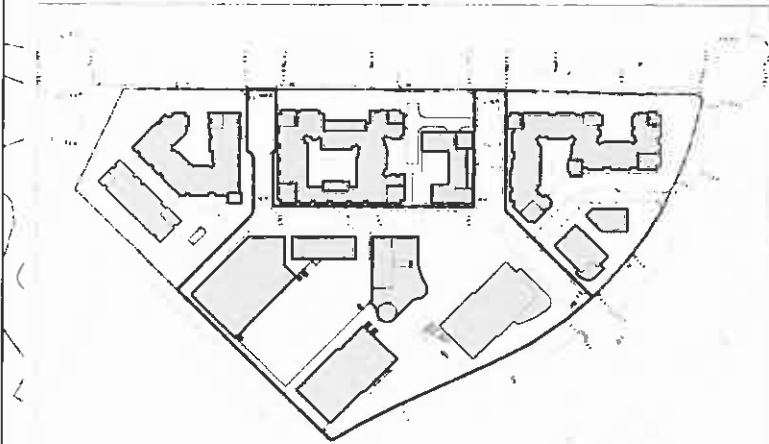
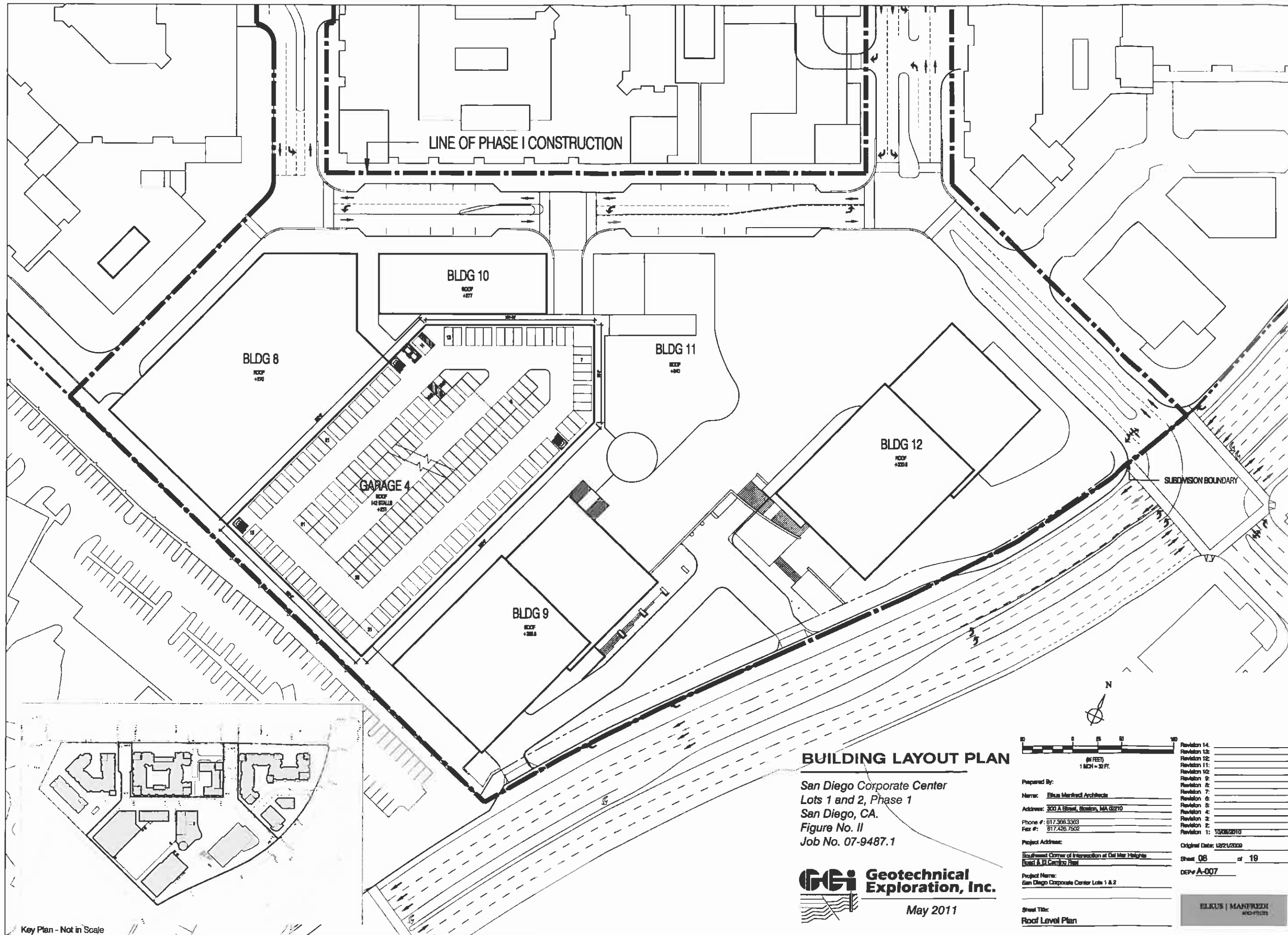
# VICINITY MAP



San Diego Corporate Center  
Lots 1 and 2 Phase 1  
San Diego, CA.

Figure No. 1  
Job No. 07-9487.1





# BUILDING LAYOUT PLAN

San Diego Corporate Center  
Lots 1 and 2, Phase 1  
San Diego, CA.  
Figure No. II  
Job No. 07-9487.1



|                                                     |                           |
|-----------------------------------------------------|---------------------------|
| Prepared By:                                        | Revision 14:              |
| Name: Elkus Manfred Architects                      | Revision 13:              |
| Address: 300 A Street, Boston, MA 02210             | Revision 12:              |
| Phone #: 617.506.3363                               | Revision 11:              |
| Fax #: 617.426.7632                                 | Revision 10:              |
| Project Address:                                    | Revision 9:               |
| Southeast Corner of Intersection at Del Mar Heights | Revision 8:               |
| Road A El Camino Real                               | Revision 7:               |
| Project Name:                                       | Revision 6:               |
| San Diego Corporate Center Lots 1 & 2               | Revision 5:               |
| Sheet Title:                                        | Revision 4:               |
| Roof Level Plan                                     | Revision 3:               |
|                                                     | Revision 2:               |
|                                                     | Revision 1: 10/08/2010    |
|                                                     | Original Date: 12/21/2009 |
|                                                     | Sheet 06 of 19            |
|                                                     | DEPR A-007                |



|                                                   |                                                                 |                              |
|---------------------------------------------------|-----------------------------------------------------------------|------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-6-11</b> |
| SURFACE ELEVATION<br><b>± 214' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>WDH</b>      |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|---------------------------------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 2            |        |        | <b>SILTY SAND</b> , fine- to medium-grained. Medium dense to dense. Moist. Yellowish brown and light grayish brown. |  | SM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 4            |        |        | <b>FILL (Qaf)</b>                                                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 6            |        |        |                                                                                                                     |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 8            |        |        |                                                                                                                     |  |          |                       |                            |                      |                           |                       |                      | 27              | 2"                   |
| 10           |        |        |                                                                                                                     |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 12           |        |        | - becomes dense.<br>- 17% passing #200 sieve.                                                                       |  |          | 8.2                   | 115.8                      |                      |                           |                       |                      | 83              | 3"                   |
| 14           |        |        |                                                                                                                     |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 16           |        |        |                                                                                                                     |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 18           |        |        |                                                                                                                     |  |          |                       |                            |                      |                           |                       |                      | 36              | 2"                   |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO. EXPL.GDT 3/22/11

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                    |                                                                                                                            |                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------|
|  <b>PERCHED WATER TABLE</b><br> <b>LOOSE BAG SAMPLE</b><br> <b>IN-PLACE SAMPLE</b><br> <b>MODIFIED CALIFORNIA SAMPLE</b><br> <b>FIELD DENSITY TEST</b><br> <b>STANDARD PENETRATION TEST</b> | JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                                                                                                                            |                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                                                                                                                            |                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b>                                                                                                  | LOG No.<br><b>B-1</b> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | FIGURE NUMBER<br><b>IVa</b>                                                        |  <b>Geotechnical Exploration, Inc.</b> |                       |

|                                                   |                                                                 |                              |
|---------------------------------------------------|-----------------------------------------------------------------|------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-6-11</b> |
| SURFACE ELEVATION<br><b>± 214' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>WDH</b>      |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|---------------------------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                   | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 20           |        |        | <b>SILTY SAND</b> , fine- to medium-grained. Medium dense to dense. Moist. Yellowish brown and light grayish brown. | SM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 22           |        |        | <b>FILL (Qaf)</b>                                                                                                   |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 24           |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b> fine- to medium-grained. Dense. Moist. Yellowish brown.                   | SM       | 8.8                   | 115.6                      |                      |                           |                       |                      | 65              | 3"                   |
| 26           |        |        | <b>TORREY SANDSTONE (Tt)</b><br>– 16% passing #200 sieve.                                                           |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 28           |        |        | – fine-grained.                                                                                                     |          |                       |                            |                      |                           |                       |                      | 24              | 2"                   |
| 30           |        |        |                                                                                                                     |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 32           |        |        | – very dense from 32'; lightly cemented, fine- to medium-grained.                                                   |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 34           |        |        |                                                                                                                     |          |                       |                            |                      |                           |                       |                      | 69              | 2"                   |
| 36           |        |        |                                                                                                                     |          | 5.1                   | 102.8                      |                      |                           |                       |                      | 100/8"          | 3"                   |

EXPLORATION LOG 9487.1 SDCG.GPJ GEO. EXPL.GDT 3/22/11

|                                                                                                                                                                                       |                                                                                    |                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------|
| <b>PERCHED WATER TABLE</b><br><b>LOOSE BAG SAMPLE</b><br><b>IN-PLACE SAMPLE</b><br><b>MODIFIED CALIFORNIA SAMPLE</b><br><b>FIELD DENSITY TEST</b><br><b>STANDARD PENETRATION TEST</b> | JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                           |
|                                                                                                                                                                                       | SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                           |
|                                                                                                                                                                                       | JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b> |
|                                                                                                                                                                                       | FIGURE NUMBER<br><b>IVb</b>                                                        | LOG No.<br><b>B-1</b>     |



Geotechnical  
Exploration, Inc.

|                                                   |                                                                 |                              |
|---------------------------------------------------|-----------------------------------------------------------------|------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-6-11</b> |
| SURFACE ELEVATION<br><b>± 214' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>WDH</b>      |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                                          |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                                             | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 40           |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b><br>fine- to medium-grained. Dense. Moist. Yellowish brown.                                          | SM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 42           |        |        | <b>TORREY SANDSTONE (Tt)</b>                                                                                                                  |          |                       |                            |                      |                           |                       |                      | 87/12"          | 2"                   |
| 44           |        |        |                                                                                                                                               |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 46           |        |        |                                                                                                                                               |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 48           |        |        | – very dense; no cementation, fine-grained.                                                                                                   |          |                       |                            |                      |                           |                       |                      | 89/9"           | 2"                   |
| 50           |        |        | <b>SANDY GRAVEL (FORMATIONAL CONGLOMERATE)</b> , with gravel to 1-1/2" in diameter and silty sand matrix. Very dense. Moist. Yellowish brown. | GM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 52           |        |        | <b>TORREY SANDSTONE (Tt)</b>                                                                                                                  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 54           |        |        |                                                                                                                                               |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 56           |        |        | Practical Drilling Refusal.<br>Bottom @ 55'                                                                                                   |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCC-GPJ GEO EXPL-GDT 3/22/11

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|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------|-----------------------|
| PERCHED WATER TABLE<br>LOOSE BAG SAMPLE<br>IN-PLACE SAMPLE<br>MODIFIED CALIFORNIA SAMPLE<br>FIELD DENSITY TEST<br>STANDARD PENETRATION TEST | JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                                |                       |
|                                                                                                                                             | SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                                |                       |
|                                                                                                                                             | JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b>      | LOG No.<br><b>B-1</b> |
|                                                                                                                                             | FIGURE NUMBER<br><b>IVc</b>                                                        | Geotechnical Exploration, Inc. |                       |

|                                                   |                                                                 |                              |
|---------------------------------------------------|-----------------------------------------------------------------|------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-6-11</b> |
| SURFACE ELEVATION<br><b>± 215' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>WDH</b>      |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                             |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|------------------------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 2            |        |        | <b>SILTY SAND</b> , fine- to medium-grained. Medium dense. Moist. Yellowish brown.                               | SM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 4            |        |        | <b>FILL (Qaf)</b>                                                                                                |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 6            |        |        |                                                                                                                  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 8            |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b> fine- to medium-grained. Medium dense. Moist. Yellowish brown and tan. | SM       |                       |                            |                      |                           |                       |                      | 26              | 2"                   |
| 10           |        |        | <b>TORREY SANDSTONE (Tt)</b>                                                                                     |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 12           |        |        |                                                                                                                  |          | 9.3                   | 123.6                      | 8.2                  | 130.1                     | 95                    |                      |                 |                      |
| 14           |        |        | – becomes very dense.                                                                                            |          |                       |                            |                      |                           |                       |                      | 106             | 2"                   |
| 16           |        |        |                                                                                                                  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 18           |        |        |                                                                                                                  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 20           |        |        |                                                                                                                  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 22           |        |        |                                                                                                                  |          | 9.3                   | 96.5                       |                      |                           |                       |                      | 108/6"          | 3"                   |
| 24           |        |        | – 15% passing #200 sieve.                                                                                        |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 26           |        |        |                                                                                                                  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 28           |        |        |                                                                                                                  |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO EXPL.GDT 3/22/11

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                    |                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------|
|  <b>PERCHED WATER TABLE</b><br> <b>LOOSE BAG SAMPLE</b><br> <b>IN-PLACE SAMPLE</b><br> <b>MODIFIED CALIFORNIA SAMPLE</b><br> <b>FIELD DENSITY TEST</b><br> <b>STANDARD PENETRATION TEST</b> | JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | FIGURE NUMBER<br><b>IVd</b>                                                        | LOG No.<br><b>B-2</b>     |



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|                                                   |                                                                 |                              |
|---------------------------------------------------|-----------------------------------------------------------------|------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-6-11</b> |
| SURFACE ELEVATION<br><b>± 215' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>WDH</b>      |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|---------------------------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                   | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 32           |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b><br>fine- to medium-grained. Medium dense. Moist. Yellowish brown and tan. | SM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 34           |        |        | <b>TORREY SANDSTONE (Tt)</b>                                                                                        |          |                       |                            |                      |                           |                       |                      | 100/5"          | 2"                   |
| 36           |        |        |                                                                                                                     |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 38           |        |        |                                                                                                                     |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 40           |        |        |                                                                                                                     |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 42           |        |        |                                                                                                                     |          | 6.6                   | 105.9                      |                      |                           |                       |                      | 165/6"          | 3"                   |
| 44           |        |        |                                                                                                                     |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 46           |        |        | <b>SANDY GRAVEL (FORMATIONAL CONGLOMERATE)</b> , with silty sand matrix. Very dense. Moist. Yellowish brown.        | GM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 48           |        |        | <b>TORREY SANDSTONE (Tt)</b><br>-- gravel is rounded and up to 2" in diameter.                                      |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 50           |        |        |                                                                                                                     |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 52           |        |        |                                                                                                                     |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 54           |        |        |                                                                                                                     |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 56           |        |        | Practical Drilling Refusal.<br>Bottom @ 54.5'                                                                       |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 58           |        |        |                                                                                                                     |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO\_EXPL\_ODT 3/22/11

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                    |                                                                                      |                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------|
|  PERCHED WATER TABLE<br> LOOSE BAG SAMPLE<br> IN-PLACE SAMPLE<br> MODIFIED CALIFORNIA SAMPLE<br> FIELD DENSITY TEST<br> STANDARD PENETRATION TEST | JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                                                                                      |                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                                                                                      |                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b>                                                            | LOG No.<br><b>B-2</b> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | FIGURE NUMBER<br><b>Ive</b>                                                        |  |                       |

|                                                   |                                                                 |                              |
|---------------------------------------------------|-----------------------------------------------------------------|------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-8-11</b> |
| SURFACE ELEVATION<br><b>± 192' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>WDH/AH</b>   |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                         |           | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|--------------------------------------------------------------------------------------------------------------|-----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                            | U.S.C.S.  |                       |                            |                      |                           |                       |                      |                 |                      |
| 2            |        |        | <b>SILTY SAND</b> , fine- to medium-grained. Very dense. Moist. Tan.                                         | <b>SM</b> |                       |                            |                      |                           |                       |                      |                 |                      |
| 4            |        |        | <b>TORREY SANDSTONE (Tt)</b>                                                                                 |           |                       |                            |                      |                           |                       |                      |                 |                      |
| 6            |        |        |                                                                                                              |           |                       |                            |                      |                           |                       |                      |                 |                      |
| 8            |        |        |                                                                                                              |           |                       |                            |                      |                           |                       |                      | 83/10"          | 2"                   |
| 10           |        |        |                                                                                                              |           |                       |                            |                      |                           |                       |                      |                 |                      |
| 12           |        |        |                                                                                                              |           |                       |                            |                      |                           |                       |                      | 97/10"          | 2"                   |
| 14           |        |        |                                                                                                              |           |                       |                            |                      |                           |                       |                      |                 |                      |
| 16           |        |        | <b>SANDY GRAVEL (FORMATIONAL CONGLOMERATE)</b> , with silty sand matrix. Very dense. Moist. Yellowish brown. | <b>GM</b> |                       |                            |                      |                           |                       |                      |                 |                      |
| 18           |        |        | <b>TORREY SANDSTONE (Tt)</b>                                                                                 |           |                       |                            |                      |                           |                       |                      |                 |                      |
| 20           |        |        |                                                                                                              |           |                       |                            |                      |                           |                       |                      | 88/6"           | 2"                   |
| 22           |        |        | Bottom @ 20.5'                                                                                               |           |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO. EXPL.GDT 3/22/11

-  **PERCHED WATER TABLE**
-  **LOOSE BAG SAMPLE**
-  **IN-PLACE SAMPLE**
-  **MODIFIED CALIFORNIA SAMPLE**
-  **FIELD DENSITY TEST**
-  **STANDARD PENETRATION TEST**

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**IVf**

REVIEWED BY  
**WDH**  
 **Geotechnical Exploration, Inc.**

LOG No.

**B-3**

|                                                   |                                                                 |                              |
|---------------------------------------------------|-----------------------------------------------------------------|------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-8-11</b> |
| SURFACE ELEVATION<br><b>± 191' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>       |

| DEPTH (feet) | SYMBOL                                                                              | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                                         |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|-------------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |                                                                                     |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                                            | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 2            |    |        | <b>SILTY SAND.</b> Loose. Moist. Dark brown.<br><br><b>TOPSOIL/ FILL (Qaf)</b>                                                               | SM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 4            |    |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b> medium- to coarse-grained. Very dense. Moist to wet. Tan.<br><br><b>TORREY SANDSTONE (Tt)</b>      | SM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 8            |   |        | <b>SANDY GRAVEL (FORMATIONAL CONGLOMERATE)</b> , fine- to medium-grained. Dense. Moist. Yellowish brown.<br><br><b>TORREY SANDSTONE (Tt)</b> | GM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 10           |  |        |                                                                                                                                              |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 12           |  |        |                                                                                                                                              |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 14           |  |        |                                                                                                                                              |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 16           |  |        |                                                                                                                                              |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO EXPL.GDT 3/22/11

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                    |                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------|
|  <b>PERCHED WATER TABLE</b><br> <b>LOOSE BAG SAMPLE</b><br> <b>IN-PLACE SAMPLE</b><br> <b>MODIFIED CALIFORNIA SAMPLE</b><br> <b>FIELD DENSITY TEST</b><br> <b>STANDARD PENETRATION TEST</b> | JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | FIGURE NUMBER<br><b>IVg</b>                                                        | LOG No.<br><b>B-4</b>     |



|                                                   |                                                                 |                              |
|---------------------------------------------------|-----------------------------------------------------------------|------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-8-11</b> |
| SURFACE ELEVATION<br><b>± 191' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>       |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                     |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|----------------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                        | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 18           |        |        | <b>SANDY GRAVEL (FORMATIONAL CONGLOMERATE)</b> , fine- to medium-grained. Dense. Moist. Yellowish brown. | GM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 20           |        |        | <b>TORREY SANDSTONE (Tt)</b>                                                                             |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 22           |        |        | <b>SILTY SAND</b> , fine- to medium-grained. Very dense. Moist. Yellowish brown to tan.                  | SM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 24           |        |        | <b>TORREY SANDSTONE (Tt)</b>                                                                             |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 26           |        |        |                                                                                                          |          |                       |                            |                      |                           |                       |                      | 90/6"           | 2"                   |
| 28           |        |        |                                                                                                          |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 30           |        |        |                                                                                                          |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 32           |        |        |                                                                                                          |          |                       |                            |                      |                           |                       |                      | 90/8"           | 2"                   |
|              |        |        | Bottom @ 32.5'                                                                                           |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO EXPL.GDT 3/22/11

|                                                                                                                                             |                                                                                    |                           |
|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------|
| PERCHED WATER TABLE<br>LOOSE BAG SAMPLE<br>IN-PLACE SAMPLE<br>MODIFIED CALIFORNIA SAMPLE<br>FIELD DENSITY TEST<br>STANDARD PENETRATION TEST | JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                           |
|                                                                                                                                             | SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                           |
|                                                                                                                                             | JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b> |
|                                                                                                                                             | FIGURE NUMBER<br><b>IVh</b>                                                        | LOG No.<br><b>B-4</b>     |



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|                                                   |                                                                 |                              |
|---------------------------------------------------|-----------------------------------------------------------------|------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>2-8-11</b> |
| SURFACE ELEVATION<br><b>± 184' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>       |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                           |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + (%)<br>CONSOL. - | EXPANSION INDEX | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|---------------------------|-----------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                              | U.S.C.S. |                       |                            |                      |                           |                       |                           |                 |                 |                      |
| 0            |        |        | <b>SILTY SAND</b> , fine- to medium-grained.<br>Medium dense. Moist. Tan.                      | SM       |                       |                            |                      |                           |                       |                           |                 |                 |                      |
| 2            |        |        | <b>FILL (Qaf)</b>                                                                              |          |                       |                            |                      |                           |                       |                           |                 |                 |                      |
| 2            |        |        | <b>CLAYEY SAND</b> , medium-grained.<br>Medium dense. Moist. Grayish brown.                    | SC       |                       |                            |                      |                           |                       |                           |                 |                 |                      |
| 4            |        |        | <b>FILL (Qaf)</b>                                                                              |          |                       |                            |                      |                           |                       |                           |                 |                 |                      |
| 6            |        |        | – 26% passing #200 sieve.                                                                      |          | 10.0                  | 117.8                      | 11.0                 | 124.0                     | 95                    |                           | 32              |                 |                      |
| 8            |        |        | – fill materials vary; becomes more clayey and dark brown.                                     |          | 14.4                  | 113.6                      |                      |                           |                       |                           |                 | 34              | 3"                   |
| 10           |        |        |                                                                                                |          |                       |                            |                      |                           |                       |                           |                 |                 |                      |
| 12           |        |        | <b>CLAYEY SAND</b> , fine- to medium-grained, with gravel. Medium dense. Moist. Grayish brown. | SC       |                       |                            |                      |                           |                       |                           |                 | 32              | 2"                   |
| 14           |        |        | <b>FILL (Qaf)</b>                                                                              |          |                       |                            |                      |                           |                       |                           |                 |                 |                      |
| 16           |        |        | <b>SILTY SAND</b> , fine- to medium-grained.<br>Dense. Moist. Grayish brown.                   | SM       |                       |                            |                      |                           |                       |                           |                 |                 |                      |
| 18           |        |        | <b>FILL (Qaf)</b><br>– 12% passing #200 sieve.                                                 |          | 5.2                   |                            |                      |                           |                       |                           |                 | 15              | 2"                   |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO. EXPL.GDT 3/22/11

-  **PERCHED WATER TABLE**
-  **LOOSE BAG SAMPLE**
-  **IN-PLACE SAMPLE**
-  **MODIFIED CALIFORNIA SAMPLE**
-  **FIELD DENSITY TEST**
-  **STANDARD PENETRATION TEST**

**JOB NAME**  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

**SITE LOCATION**  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

**JOB NUMBER**  
**07-9487.1**

**FIGURE NUMBER**  
**IVI**

**REVIEWED BY**  
**WDH**



**LOG No.**

**B-5**

|                                                   |                                                                 |                              |
|---------------------------------------------------|-----------------------------------------------------------------|------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-8-11</b> |
| SURFACE ELEVATION<br><b>± 184' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>       |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                                                                         |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + (% CONSOL. -) | EXPANSION INDEX | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|------------------------|-----------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                                                                            | U.S.C.S. |                       |                            |                      |                           |                       |                        |                 |                 |                      |
| 20           |        |        | <b>SILTY SAND</b> , fine- to medium-grained.<br>Dense. Moist. Grayish brown.<br><br><b>FILL (Qaf)</b>                                                                        | SM       |                       |                            |                      |                           |                       |                        |                 |                 |                      |
| 22           |        |        | <b>CLAYEY SAND</b> , fine- to medium-grained.<br>Medium dense. Moist. Dark brown.<br><br><b>FILL (Qaf)</b><br>– 22% passing #200 sieve.                                      | SC       | 11.9                  | 108.2                      |                      |                           |                       |                        |                 | 42              | 3"                   |
| 24           |        |        |                                                                                                                                                                              |          |                       |                            |                      |                           |                       |                        |                 |                 |                      |
| 26           |        |        |                                                                                                                                                                              |          |                       |                            |                      |                           |                       |                        |                 |                 |                      |
| 28           |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b> , fine- to medium-grained.<br>Very dense. Moist. Yellowish brown.<br><br><b>TORREY SANDSTONE (Tt)</b><br>– 15% passing #200 sieve. | SM       | 9.2                   |                            |                      |                           |                       |                        |                 | 94/<br>8"       | 2"                   |
| 30           |        |        |                                                                                                                                                                              |          |                       |                            |                      |                           |                       |                        |                 |                 |                      |
| 32           |        |        |                                                                                                                                                                              |          |                       |                            |                      |                           |                       |                        |                 | 90/<br>9"       | 2"                   |
| 34           |        |        | Bottom @ 32.8'                                                                                                                                                               |          |                       |                            |                      |                           |                       |                        |                 |                 |                      |
| 36           |        |        |                                                                                                                                                                              |          |                       |                            |                      |                           |                       |                        |                 |                 |                      |

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  MODIFIED CALIFORNIA SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**IVj**

REVIEWED BY  
**WDH**  
 **Geotechnical Exploration, Inc.**

LOG No.

**B-5**

EXPLORATION LOG 9487.1 SDCC.GPJ GEO EXPL.GDT 3/22/11

|                                                   |                                                                 |                              |
|---------------------------------------------------|-----------------------------------------------------------------|------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-9-11</b> |
| SURFACE ELEVATION<br><b>± 186' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>       |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                              |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |    |
|--------------|--------|--------|-------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|----|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color) |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
|              |        |        | CLAYEY SAND, medium-grained. Medium dense. Moist. Brown.          |  | SC       |                       |                            |                      |                           |                       |                      |                 |                      |    |
|              |        |        | FILL (Qaf)                                                        |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 2            |        |        |                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 4            |        |        | — becomes grayish brown.                                          |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 6            |        |        |                                                                   |  |          |                       |                            |                      | 10.2                      | 126.0                 |                      |                 |                      |    |
| 8            |        |        | — becomes very dark brown to black.<br>— 21% passing #200 sieve.  |  |          | 11.3                  |                            |                      |                           |                       |                      |                 | 63                   | 3" |
| 10           |        |        |                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 12           |        |        |                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 14           |        |        | — 20% passing #200 sieve.                                         |  | 8.9      |                       |                            |                      |                           |                       |                      | 47              | 2"                   |    |
| 16           |        |        |                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |

-  **PERCHED WATER TABLE**
-  **LOOSE BAG SAMPLE**
-  **IN-PLACE SAMPLE**
-  **MODIFIED CALIFORNIA SAMPLE**
-  **FIELD DENSITY TEST**
-  **STANDARD PENETRATION TEST**

**JOB NAME**  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

**SITE LOCATION**  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

**JOB NUMBER**  
**07-9487.1**

**FIGURE NUMBER**  
**IVk**

**REVIEWED BY**  
**WDH**



**LOG No.**

**B-6**

EXPLORATION LOG 9487.1 SDCC.GPJ GEO EXPL.GDT 3/22/11

|                                                   |                                                                 |                              |
|---------------------------------------------------|-----------------------------------------------------------------|------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-9-11</b> |
| SURFACE ELEVATION<br><b>± 186' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>       |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                                                                        |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                                                                           | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 20           |        |        | <b>CLAYEY SAND</b> , medium-grained. Medium dense. Moist. Brown.<br><br><b>FILL (Qaf)</b><br>– 20% passing #200 sieve.                                                      | SC       | 7.2                   |                            |                      |                           |                       |                      | 48              | 2"                   |
| 22           |        |        |                                                                                                                                                                             |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 24           |        |        | – 20% passing #200 sieve.                                                                                                                                                   |          | 11.4                  |                            |                      |                           |                       |                      | 23              | 2"                   |
| 26           |        |        |                                                                                                                                                                             |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 28           |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b> fine- to medium-grained. Very dense. Moist. Light reddish brown.<br><br><b>TORREY SANDSTONE (Tt)</b><br>– 18% passing #200 sieve. | SM       | 9.5                   |                            |                      |                           |                       |                      | 78/<br>8"       | 2"                   |
| 30           |        |        |                                                                                                                                                                             |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 32           |        |        |                                                                                                                                                                             |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 34           |        |        |                                                                                                                                                                             |          |                       |                            |                      |                           |                       |                      | 95/<br>9"       | 2"                   |
|              |        |        | Bottom @ 33.8'                                                                                                                                                              |          |                       |                            |                      |                           |                       |                      |                 |                      |

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  MODIFIED CALIFORNIA SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**IVI**

REVIEWED BY  
**WDH**



LOG No.

**B-6**

EXPLORATION LOG 9487.1 SDCC.GPJ GEO EXPLGDT 3/22/11

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-10-11</b> |
| SURFACE ELEVATION<br><b>± 184' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                         |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|----------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                            | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 2            |        |        | <b>CLAYEY SAND</b> , fine- to medium-grained.<br>Dense. Moist. Grayish brown and dark brown. | SC       |                       |                            |                      |                           |                       |                      |                 |                      |
| 4            |        |        | <b>FILL (Qaf)</b>                                                                            |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 6            |        |        |                                                                                              |          |                       |                            |                      |                           |                       |                      | 66              | 3"                   |
| 8            |        |        |                                                                                              |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 10           |        |        |                                                                                              |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 12           |        |        |                                                                                              |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 14           |        |        |                                                                                              |          |                       |                            |                      |                           |                       |                      | 38              | 2"                   |
| 16           |        |        |                                                                                              |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 18           |        |        | - 20% passing #200 sieve.                                                                    |          | 6.9                   |                            |                      |                           |                       |                      | 31              | 2"                   |
| 20           |        |        |                                                                                              |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 22           |        |        | <b>POORLY GRADED SAND</b> , fine- grained.<br>Dense. Moist. Tan.                             | SP       |                       |                            |                      |                           |                       |                      |                 |                      |
| 24           |        |        | <b>FILL (Qaf)</b><br>- 3% passing #200 sieve.                                                |          | 1.6                   |                            |                      |                           |                       |                      | 31              | 2"                   |

EXPLORATION LOG B487.1 SDCC.GPJ GEO EXPL.GDT 3/22/11

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  MODIFIED CALIFORNIA SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**IVm**

REVIEWED BY  
**WDH**



LOG No.

**B-7**

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-10-11</b> |
| SURFACE ELEVATION<br><b>± 184' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                       |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|--------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                          | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 26           |        |        | <b>CLAYEY SAND</b> , fine- to medium-grained. Dense. Moist. Grayish brown.                 | SC       |                       |                            |                      |                           |                       |                      |                 |                      |
| 28           |        |        | <b>FILL (Qaf)</b>                                                                          |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 30           |        |        | – 31% passing #200 sieve.                                                                  |          | 11.6                  |                            |                      |                           |                       |                      | 35              | 2"                   |
| 32           |        |        | <b>SANDY CLAY</b> . Very stiff. Very moist. Dark grayish brown.                            | CL       |                       |                            |                      |                           |                       |                      |                 |                      |
| 34           |        |        | <b>FILL (Qaf)</b>                                                                          |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 36           |        |        | – 79% passing #200 sieve.                                                                  |          | 29.6                  |                            |                      |                           |                       |                      | 31              | 2"                   |
| 38           |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b> fine- to medium-grained. Very dense. Moist. Tan. | SM       |                       |                            |                      |                           |                       |                      | 78/8"           | 2"                   |
| 40           |        |        | <b>TORREY SANDSTONE (Ti)</b>                                                               |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 42           |        |        |                                                                                            |          |                       |                            |                      |                           |                       |                      | 84              | 2"                   |
| 44           |        |        | Bottom @ 43'                                                                               |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 46           |        |        |                                                                                            |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 48           |        |        |                                                                                            |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 0487.1 SDCC.GPJ GEO EXPLD.T 3/22/11

|                                                                                                                                             |                                                                                    |                           |
|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------|
| PERCHED WATER TABLE<br>LOOSE BAG SAMPLE<br>IN-PLACE SAMPLE<br>MODIFIED CALIFORNIA SAMPLE<br>FIELD DENSITY TEST<br>STANDARD PENETRATION TEST | JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                           |
|                                                                                                                                             | SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                           |
|                                                                                                                                             | JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b> |
|                                                                                                                                             | FIGURE NUMBER<br><b>IVn</b>                                                        | LOG No.<br><b>B-7</b>     |



|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-10-11</b> |
| SURFACE ELEVATION<br><b>± 185' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL                                                                             | SAMPLE                                                                            | FIELD DESCRIPTION AND CLASSIFICATION                                                    |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |       |     |  |  |  |  |  |  |  |  |    |     |  |  |  |  |  |  |  |  |
|--------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|-------|-----|--|--|--|--|--|--|--|--|----|-----|--|--|--|--|--|--|--|--|
|              |                                                                                    |                                                                                   | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                       |  |          |                       |                            |                      |                           |                       |                      |                 |                      |       |     |  |  |  |  |  |  |  |  |    |     |  |  |  |  |  |  |  |  |
| 2            |  |  | <b>CLAYEY SAND</b> , fine- to medium-grained.<br>Dense. Moist. Grayish brown.           |  | SC       |                       |                            |                      |                           |                       |                      |                 |                      |       |     |  |  |  |  |  |  |  |  |    |     |  |  |  |  |  |  |  |  |
| 4            |                                                                                    |                                                                                   | <b>FILL (Qaf)</b>                                                                       |  |          |                       |                            |                      |                           |                       |                      |                 |                      |       |     |  |  |  |  |  |  |  |  |    |     |  |  |  |  |  |  |  |  |
| 6            |                                                                                    |                                                                                   |                                                                                         |  |          |                       |                            |                      |                           |                       |                      |                 |                      |       |     |  |  |  |  |  |  |  |  |    |     |  |  |  |  |  |  |  |  |
| 8            |                                                                                    |                                                                                   |                                                                                         |  |          |                       |                            |                      |                           |                       |                      |                 |                      |       |     |  |  |  |  |  |  |  |  |    |     |  |  |  |  |  |  |  |  |
| 10           |                                                                                    |                                                                                   |                                                                                         |  |          |                       |                            |                      |                           |                       |                      |                 |                      |       |     |  |  |  |  |  |  |  |  |    |     |  |  |  |  |  |  |  |  |
| 12           |                                                                                    |                                                                                   |                                                                                         |  |          |                       |                            |                      |                           |                       |                      |                 |                      |       |     |  |  |  |  |  |  |  |  |    |     |  |  |  |  |  |  |  |  |
| 14           |                                                                                    |                                                                                   | <b>POORLY GRADED-SILTY SAND</b> , fine- to medium-grained. Dense. Moist. Grayish brown. |  |          |                       |                            |                      |                           |                       |                      |                 |                      | SP-SM | 5.4 |  |  |  |  |  |  |  |  |    |     |  |  |  |  |  |  |  |  |
| 16           |                                                                                    |                                                                                   | <b>FILL (Qaf)</b><br>- 10% passing #200 sieve.                                          |  |          |                       |                            |                      |                           |                       |                      |                 |                      |       |     |  |  |  |  |  |  |  |  |    |     |  |  |  |  |  |  |  |  |
| 18           |                                                                                    |                                                                                   |                                                                                         |  |          |                       |                            |                      |                           |                       |                      |                 |                      |       |     |  |  |  |  |  |  |  |  |    |     |  |  |  |  |  |  |  |  |
| 20           |                                                                                    |                                                                                   |                                                                                         |  |          |                       |                            |                      |                           |                       |                      |                 |                      |       |     |  |  |  |  |  |  |  |  |    |     |  |  |  |  |  |  |  |  |
| 22           |                                                                                    |                                                                                   | <b>CLAYEY SAND</b> , fine- to medium-grained.<br>Dense. Dry to moist. Grayish brown.    |  |          |                       |                            |                      |                           |                       |                      |                 |                      |       |     |  |  |  |  |  |  |  |  | SC | 6.0 |  |  |  |  |  |  |  |  |
| 24           |                                                                                    |                                                                                   | <b>FILL (Qaf)</b><br>- 16% passing #200 sieve.                                          |  |          |                       |                            |                      |                           |                       |                      |                 |                      |       |     |  |  |  |  |  |  |  |  |    |     |  |  |  |  |  |  |  |  |

-  **PERCHED WATER TABLE**
-  **LOOSE BAG SAMPLE**
-  **IN-PLACE SAMPLE**
-  **MODIFIED CALIFORNIA SAMPLE**
-  **FIELD DENSITY TEST**
-  **STANDARD PENETRATION TEST**

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**IVo**

REVIEWED BY  
**WDH**

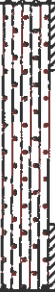


LOG No.

**B-8**

EXPLORATION LOG 9487.1 SDCC.GPJ GEO EXPL.GDT 3/22/11

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-10-11</b> |
| SURFACE ELEVATION<br><b>± 185' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL                                                                             | SAMPLE                                                                             | FIELD DESCRIPTION AND CLASSIFICATION                                                            |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |                                                                                    |                                                                                    | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                               |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 26           |   |   | <b>CLAYEY SAND</b> , fine- to medium-grained. Dense. Dry to moist. Grayish brown.               |  | SC       | 17.0                  |                            |                      |                           |                       |                      | 19              | 2"                   |
| 28           |                                                                                    |                                                                                    | <b>FILL (Qaf)</b><br>- becomes medium dense.<br>- 37% passing #200 sieve.                       |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 30           |                                                                                    |                                                                                    |                                                                                                 |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 32           |                                                                                    |                                                                                    | - becomes dense.<br>- 25% passing #200 sieve.                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 34           |                                                                                    |                                                                                    |                                                                                                 |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 36           |  |  | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b> fine- to medium-grained. Dense. Moist. Grayish brown. |  | SM       | 4.7                   |                            |                      |                           |                       |                      | 45              | 2"                   |
| 38           |                                                                                    |                                                                                    |                                                                                                 |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 40           |                                                                                    |                                                                                    | <b>TORREY SANDSTONE (Tt)</b><br>- 11% passing #200 sieve.                                       |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 42           |                                                                                    |                                                                                    | - 24% passing #200 sieve.                                                                       |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 44           |                                                                                    |                                                                                    |                                                                                                 |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 46           |                                                                                    |                                                                                    | Bottom @ 43.5'                                                                                  |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 48           |                                                                                    |                                                                                    |                                                                                                 |  |          |                       |                            |                      |                           |                       |                      |                 |                      |

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  MODIFIED CALIFORNIA SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**IVp**

REVIEWED BY  
**WDH**



LOG No.

**B-8**

EXPLORATION LOG 9487.1 SDCC.GPJ GEO EXPL.GDT 3/22/11

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-11-11</b> |
| SURFACE ELEVATION<br><b>± 200' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                   |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|----------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                      | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 2            |        |        | <b>CLAYEY SAND</b> Dense. Moist. Gray-brown.<br><b>FILL (Qaf)</b>                      | SC       |                       |                            |                      |                           |                       |                      |                 |                      |
| 4            |        |        |                                                                                        |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 6            |        |        |                                                                                        |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 8            |        |        |                                                                                        |          |                       |                            |                      |                           |                       |                      | 86              | 3"                   |
| 10           |        |        |                                                                                        |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 12           |        |        |                                                                                        |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 14           |        |        |                                                                                        |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 16           |        |        | -- sample encountered gravel.                                                          |          |                       |                            |                      |                           |                       |                      | 91/9"           | 3"                   |
| 18           |        |        |                                                                                        |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 20           |        |        | <b>SILTY SAND</b> , fine- to medium-grained. Dense. Moist. Brown.<br><b>FILL (Qaf)</b> | SM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 22           |        |        | -- 21% passing #200 sieve.                                                             |          | 8.7                   |                            |                      |                           |                       |                      | 31              | 2"                   |

EXPLORATION LOG 8487.1 SDCC.GPJ GEO EXPL.GDT 3/22/11

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  MODIFIED CALIFORNIA SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**IVq**

REVIEWED BY  
**WDH**  
 **Geotechnical Exploration, Inc.**

LOG No.

**B-9**

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-11-11</b> |
| SURFACE ELEVATION<br><b>± 200' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                         |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|--------------------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                            | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 24           |        |        | <b>SILTY SAND</b> , fine- to medium-grained. Dense. Moist. Brown.                                            | SM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 26           |        |        | <b>FILL (Qaf)</b>                                                                                            |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 28           |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b> fine- to medium-grained. Very dense. Dry. Gray with red and brown. | SM       | 12.7                  |                            |                      |                           |                       |                      | 31              | 2"                   |
| 30           |        |        | <b>TORREY SANDSTONE (Tt)</b><br>- 18% passing #200 sieve.                                                    |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 32           |        |        | <b>SANDY GRAVEL (FORMATIONAL CONGLOMERATE)</b> Very dense. Moist. Light gray and red.                        | GM       |                       |                            |                      |                           |                       |                      | 113             | 2"                   |
| 34           |        |        | <b>TORREY SANDSTONE (Tt)</b>                                                                                 |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 36           |        |        |                                                                                                              |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 38           |        |        |                                                                                                              |          |                       |                            |                      |                           |                       |                      | 100/6"          | 3"                   |
| 40           |        |        |                                                                                                              |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 42           |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b> fine- to medium-grained. Very dense. Moist. Gray and brown.        | SM       | 7.9                   |                            |                      |                           |                       |                      | 100/6"          | 3"                   |
| 44           |        |        | <b>TORREY SANDSTONE (Tt)</b><br>- 23% passing #200 sieve.                                                    |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 46           |        |        | Bottom @ 42.5'                                                                                               |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO EXPL.GDT 3/22/11

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  MODIFIED CALIFORNIA SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

|                                                                                    |                                                                                                                            |                       |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------|
| JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                                                                                                                            |                       |
| SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                                                                                                                            |                       |
| JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b>                                                                                                  | LOG No.<br><b>B-9</b> |
| FIGURE NUMBER<br><b>IVr</b>                                                        |  <b>Geotechnical Exploration, Inc.</b> |                       |

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>2-14-11</b> |
| SURFACE ELEVATION<br><b>± 198' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                     |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|----------------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                        | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 2            |        |        | <b>CLAYEY SAND</b> , fine- to medium-grained.<br>Medium dense to dense. Moist. Brown to yellowish brown. | SC       |                       |                            |                      |                           |                       |                      |                 |                      |
| 4            |        |        | <b>FILL (Qaf)</b>                                                                                        |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 6            |        |        | – 21% passing #200 sieve.                                                                                |          | 9.2                   | 121.4                      |                      |                           |                       |                      | 83              | 3"                   |
| 8            |        |        |                                                                                                          |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 10           |        |        |                                                                                                          |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 12           |        |        | – 22% passing #200 sieve.                                                                                |          | 7.7                   |                            |                      |                           |                       |                      | 22              | 2"                   |
| 14           |        |        |                                                                                                          |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 16           |        |        |                                                                                                          |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 18           |        |        | – 22% passing #200 sieve.                                                                                |          | 6.6                   | 118.8                      |                      |                           |                       |                      | 105/9"          | 3"                   |
| 20           |        |        |                                                                                                          |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO. EXPL. LOG 3/22/11

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  MODIFIED CALIFORNIA SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**IVs**

REVIEWED BY

**WDH**



Geotechnical  
Exploration, Inc.

LOG No.

**B-10**

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>2-14-11</b> |
| SURFACE ELEVATION<br><b>± 198' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                 |           | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|----------------------------------------------------------------------|-----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)    | U.S.C.S.  |                       |                            |                      |                           |                       |                      |                 |                      |
| 22           |        |        | <b>SILTY SAND</b> , fine- to medium-grained. Very dense. Moist. Tan. | <b>SM</b> | <b>7.8</b>            |                            |                      |                           |                       |                      | <b>99/9"</b>    | <b>2"</b>            |
| 24           |        |        | <b>TORREY SANDSTONE (Tt)</b>                                         |           |                       |                            |                      |                           |                       |                      |                 |                      |
| 26           |        |        |                                                                      |           |                       |                            |                      |                           |                       |                      |                 |                      |
| 28           |        |        | - 17% passing #200 sieve.                                            |           |                       |                            |                      |                           |                       |                      | <b>99/8"</b>    | <b>2"</b>            |
| 30           |        |        |                                                                      |           |                       |                            |                      |                           |                       |                      |                 |                      |
| 32           |        |        |                                                                      |           |                       |                            |                      |                           |                       |                      | <b>103/8.5"</b> | <b>2"</b>            |
| 34           |        |        |                                                                      |           |                       |                            |                      |                           |                       |                      |                 |                      |
| 36           |        |        |                                                                      |           |                       |                            |                      |                           |                       |                      |                 |                      |
| 38           |        |        |                                                                      |           |                       |                            |                      |                           |                       |                      | <b>97/8"</b>    | <b>2"</b>            |
| 40           |        |        | <b>Bottom @ 38.7'</b>                                                |           |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO EXPLDGT 3/22/11

-  **PERCHED WATER TABLE**
-  **LOOSE BAG SAMPLE**
-  **IN-PLACE SAMPLE**
-  **MODIFIED CALIFORNIA SAMPLE**
-  **FIELD DENSITY TEST**
-  **STANDARD PENETRATION TEST**

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**IVt**

REVIEWED BY  
**WDH**  
 **Geotechnical Exploration, Inc.**

LOG No.  
**B-10**

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-15-11</b> |
| SURFACE ELEVATION<br><b>± 198' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                 |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|----------------------------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                    | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 2            |        |        | <b>CLAYEY SAND</b> , fine- to medium-grained. Medium dense to dense. Moist. Yellowish brown to brown and dark brown. | SC       |                       |                            |                      |                           |                       |                      |                 |                      |
| 4            |        |        | <b>FILL (Qaf)</b>                                                                                                    |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 6            |        |        |                                                                                                                      |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 8            |        |        |                                                                                                                      |          |                       |                            |                      |                           |                       |                      | 41              | 3"                   |
| 10           |        |        |                                                                                                                      |          |                       |                            | 10.8                 | 125.0                     |                       |                      |                 |                      |
| 12           |        |        | – 18% passing #200 sieve.                                                                                            |          | 8.9                   |                            |                      |                           |                       |                      | 22              | 2"                   |
| 14           |        |        |                                                                                                                      |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 16           |        |        |                                                                                                                      |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 18           |        |        |                                                                                                                      |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 20           |        |        |                                                                                                                      |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 22           |        |        | – 20% passing #200 sieve.                                                                                            |          | 9.8                   |                            |                      |                           |                       |                      | 33              | 2"                   |
| 24           |        |        |                                                                                                                      |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO EXPL.GDT 3/22/11

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                    |                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------|
|  <b>PERCHED WATER TABLE</b><br> <b>LOOSE BAG SAMPLE</b><br> <b>IN-PLACE SAMPLE</b><br> <b>MODIFIED CALIFORNIA SAMPLE</b><br> <b>FIELD DENSITY TEST</b><br> <b>STANDARD PENETRATION TEST</b> | JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | FIGURE NUMBER<br><b>IVu</b>                                                        | LOG No.<br><b>B-11</b>    |



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|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-15-11</b> |
| SURFACE ELEVATION<br><b>± 198' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                 |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|----------------------------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                    | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 26           |        |        | <b>CLAYEY SAND</b> , fine- to medium-grained. Medium dense to dense. Moist. Yellowish brown to brown and dark brown. | SC       |                       |                            |                      |                           |                       |                      |                 |                      |
| 28           |        |        | <b>FILL (Qaf)</b><br>- 29% passing #200 sieve.                                                                       |          | 13.9                  |                            |                      |                           |                       |                      | 18              | 2"                   |
| 30           |        |        |                                                                                                                      |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 32           |        |        |                                                                                                                      |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 34           |        |        |                                                                                                                      |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 36           |        |        | <b>CLAYEY SAND (FORMATIONAL SANDSTONE)</b> , fine- to medium-grained. Very dense. Moist. Brown.                      | SC       |                       |                            |                      |                           |                       |                      |                 |                      |
| 38           |        |        | <b>TORREY SANDSTONE (Tt)</b><br>- 29% passing #200 sieve.                                                            |          | 7.7                   |                            |                      |                           |                       |                      | 54              | 2"                   |
| 40           |        |        |                                                                                                                      |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 42           |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b> , fine- to medium-grained. Very dense. Moist. Brown.                       | SM       |                       |                            |                      |                           |                       |                      | 94/12"          | 2"                   |
| 44           |        |        | <b>TORREY SANDSTONE (Tt)</b><br>Bottom @ 43'                                                                         |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 46           |        |        |                                                                                                                      |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 48           |        |        |                                                                                                                      |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCG.GPJ GEO EXPL.GDT 3/22/11

|                                                                                                                                             |                                                                                    |                           |
|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------|
| PERCHED WATER TABLE<br>LOOSE BAG SAMPLE<br>IN-PLACE SAMPLE<br>MODIFIED CALIFORNIA SAMPLE<br>FIELD DENSITY TEST<br>STANDARD PENETRATION TEST | JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                           |
|                                                                                                                                             | SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                           |
|                                                                                                                                             | JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b> |
|                                                                                                                                             | FIGURE NUMBER<br><b>IVv</b>                                                        | LOG No.<br><b>B-11</b>    |



|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-14-11</b> |
| SURFACE ELEVATION<br><b>± 197' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                   |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |    |    |
|--------------|--------|--------|--------------------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|----|----|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                      |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |    |
| 2            |        |        | CLAYEY SAND, fine- to medium-grained.<br>Medium dense. Moist. Tan and grayish brown.<br><br>FILL (Qaf) |  | SC       |                       |                            | 10.1                 | 126.0                     |                       |                      |                 |                      |    |    |
| 4            |        |        |                                                                                                        |  |          |                       |                            |                      |                           |                       |                      |                 |                      | 39 | 3" |
| 6            |        |        |                                                                                                        |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |    |
| 8            |        |        |                                                                                                        |  |          |                       |                            |                      |                           |                       |                      | 23              | 2"                   |    |    |
| 10           |        |        |                                                                                                        |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |    |
| 12           |        |        |                                                                                                        |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |    |
| 14           |        |        |                                                                                                        |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |    |
| 16           |        |        |                                                                                                        |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |    |
| 18           |        |        |                                                                                                        |  |          | 9.7                   |                            |                      |                           |                       |                      | 34              | 2"                   |    |    |
| 20           |        |        |                                                                                                        |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |    |
| 22           |        |        |                                                                                                        |  |          | 7.1                   |                            |                      |                           |                       |                      | 23              | 2"                   |    |    |
| 24           |        |        |                                                                                                        |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |    |

EXPLORATION LOG 9487.1 SDCG.GPJ GEO EXPLDGT 3/22/11

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                    |                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------|
|  <b>PERCHED WATER TABLE</b><br> <b>LOOSE BAG SAMPLE</b><br> <b>IN-PLACE SAMPLE</b><br> <b>MODIFIED CALIFORNIA SAMPLE</b><br> <b>FIELD DENSITY TEST</b><br> <b>STANDARD PENETRATION TEST</b> | JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | FIGURE NUMBER<br><b>IVw</b>                                                        | LOG No.<br><b>B-12</b>    |


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|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-14-11</b> |
| SURFACE ELEVATION<br><b>± 197' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                                              |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                                                 |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 26           |        |        | <b>CLAYEY SAND, fine- to medium-grained.</b><br><b>Medium dense. Moist. Tan and grayish brown.</b>                                                |  | SC       |                       |                            |                      |                           |                       |                      |                 |                      |
|              |        |        | <b>FILL (Qaf)</b>                                                                                                                                 |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 28           |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b><br><b>fine- to medium-grained. Medium dense. Moist.</b><br><b>Grayish brown with red bands.</b>         |  | SM       | 7.9                   |                            |                      |                           |                       |                      | 27              | 2"                   |
| 30           |        |        | <b>TORREY SANDSTONE (Tt)</b><br><b>– 21% passing #200 sieve.</b>                                                                                  |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 32           |        |        | <b>CLAYEY SAND (FORMATIONAL SANDSTONE)</b><br><b>, fine- grained. Medium dense. Moist. Reddish brown.</b>                                         |  | SC       | 14.7                  |                            |                      |                           |                       |                      | 20              | 2"                   |
| 34           |        |        | <b>TORREY SANDSTONE (Tt)</b><br><b>– 25% passing #200 sieve.</b>                                                                                  |  | GM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 36           |        |        | <b>SANDY GRAVEL (FORMATIONAL CONGLOMERATE), with silty sand matrix. Very dense. Moist. Yellowish brown.</b>                                       |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 38           |        |        | <b>TORREY SANDSTONE (Tt)</b><br><b>CLAYEY SAND (FORMATIONAL SANDSTONE)</b><br><b>, fine- to medium-grained. Very dense. Moist. Reddish brown.</b> |  | SC       | 11.8                  | 117.0                      |                      |                           |                       |                      | 93              | 3"                   |
| 40           |        |        | <b>TORREY SANDSTONE (Tt)</b><br><b>– 24% passing #200 sieve @ 39'.</b>                                                                            |  |          |                       |                            |                      |                           |                       |                      | 88/9.5"         | 2"                   |
| 42           |        |        |                                                                                                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 44           |        |        | <b>Bottom @ 42.8'</b>                                                                                                                             |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 46           |        |        |                                                                                                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 48           |        |        |                                                                                                                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO EXPL.GDT 3/22/11

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                    |                                                                                                                            |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------|
|  <b>PERCHED WATER TABLE</b><br> <b>LOOSE BAG SAMPLE</b><br> <b>IN-PLACE SAMPLE</b><br> <b>MODIFIED CALIFORNIA SAMPLE</b><br> <b>FIELD DENSITY TEST</b><br> <b>STANDARD PENETRATION TEST</b> | JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                                                                                                                            |                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                                                                                                                            |                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b>                                                                                                  | LOG No.<br><b>B-12</b> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | FIGURE NUMBER<br><b>IVx</b>                                                        |  <b>Geotechnical Exploration, Inc.</b> |                        |

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-17-11</b> |
| SURFACE ELEVATION<br><b>± 191' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                                                                      |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                                                                         | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 4            |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b><br>fine- to medium-grained. Very dense. Moist. Light brown.<br><br><b>TORREY SANDSTONE (Tt)</b>                                 | SM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 8            |        |        | <b>SANDY GRAVEL (FORMATIONAL CONGLOMERATE)</b> , with silty sand matrix. Very dense. Moist. Yellowish brown matrix.<br><br><b>TORREY SANDSTONE (Tt)</b>                   | GM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 12           |        |        |                                                                                                                                                                           |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 16           |        |        |                                                                                                                                                                           |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 20           |        |        |                                                                                                                                                                           |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 24           |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b><br>fine- to medium-grained. Very dense. Moist. Grayish brown.<br><br><b>TORREY SANDSTONE (Tt)</b><br>-- 12% passing #200 sieve. | SM       | 7.4                   |                            |                      |                           |                       |                      | 106/8"          | 2"                   |
| 28           |        |        |                                                                                                                                                                           |          |                       |                            |                      |                           |                       |                      | 94/6"           | 2"                   |
|              |        |        | Bottom @ 29.5'                                                                                                                                                            |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCG.GPJ GEO EXPLORDT 3/22/11

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  MODIFIED CALIFORNIA SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**IVy**

REVIEWED BY  
**WDH**  
 Geotechnical  
Exploration, Inc.

LOG No.  
**B-13**

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-15-11</b> |
| SURFACE ELEVATION<br><b>± 218' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                         |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. - (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|----------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|------------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                            |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 2            |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b><br>fine- to medium-grained. Very dense. Moist Tan. |  | SM       |                       |                            |                      |                           |                       |                        |                 |                      |
| 4            |        |        | <b>TORREY SANDSTONE (Tt)</b>                                                                 |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 6            |        |        |                                                                                              |  |          |                       |                            |                      |                           |                       |                        | 105/<br>10.5"   | 2"                   |
| 8            |        |        |                                                                                              |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 10           |        |        |                                                                                              |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 12           |        |        |                                                                                              |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 14           |        |        |                                                                                              |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 16           |        |        |                                                                                              |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 18           |        |        | - 12% passing #200 sieve.                                                                    |  |          | 7.4                   |                            |                      |                           |                       |                        | 95/<br>9"       | 2"                   |
| 20           |        |        |                                                                                              |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 22           |        |        |                                                                                              |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 24           |        |        |                                                                                              |  |          |                       |                            |                      |                           |                       |                        |                 |                      |

EXPLORATION LOG 9487.1 SDC.GPJ GEO EXPL.GDT 3/22/11

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  MODIFIED CALIFORNIA SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**IVz**

REVIEWED BY  
**WDH**  
 Geotechnical  
Exploration, Inc.

LOG No.

**B-14**

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-15-11</b> |
| SURFACE ELEVATION<br><b>± 218' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE                                                                             | FIELD DESCRIPTION AND CLASSIFICATION                                                          |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. - (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|------------------------|-----------------|----------------------|
|              |        |                                                                                    | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                             |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 26           |        |                                                                                    | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b><br>fine- to medium-grained. Very dense. Moist. Tan. |  | SM       |                       |                            |                      |                           |                       |                        |                 |                      |
| 28           |        |   | <b>TORREY SANDSTONE (Tt)</b><br><br>— 11% passing #200 sieve.                                 |  |          |                       | 7.7                        |                      |                           |                       |                        |                 | 96/<br>9.5"          |
| 30           |        |                                                                                    |                                                                                               |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 32           |        |                                                                                    |                                                                                               |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 34           |        |                                                                                    |                                                                                               |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 36           |        |                                                                                    |                                                                                               |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 38           |        |  | — 12% passing #200 sieve.                                                                     |  |          | 7.2                   |                            |                      |                           |                       |                        | 107/<br>9"      | 2"                   |
| 40           |        |                                                                                    |                                                                                               |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 42           |        |                                                                                    |                                                                                               |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 44           |        |                                                                                    |                                                                                               |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 46           |        |                                                                                    | — encountered gravel layer.                                                                   |  |          |                       |                            |                      |                           |                       |                        |                 |                      |
| 48           |        |                                                                                    | Practical drilling refusal.<br><br>Bottom @ 46'                                               |  |          |                       |                            |                      |                           |                       |                        |                 |                      |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO\_EXPLGDT 3/22/11

|                                                                                                                                                                                                                                                                                                                         |                                                                                    |                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------|
| <input type="checkbox"/> PERCHED WATER TABLE<br><input checked="" type="checkbox"/> LOOSE BAG SAMPLE<br><input type="checkbox"/> IN-PLACE SAMPLE<br><input type="checkbox"/> MODIFIED CALIFORNIA SAMPLE<br><input type="checkbox"/> FIELD DENSITY TEST<br><input checked="" type="checkbox"/> STANDARD PENETRATION TEST | JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                           |
|                                                                                                                                                                                                                                                                                                                         | SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                           |
|                                                                                                                                                                                                                                                                                                                         | JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b> |
|                                                                                                                                                                                                                                                                                                                         | FIGURE NUMBER<br><b>IVaa</b>                                                       | LOG No.<br><b>B-14</b>    |



|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-17-11</b> |
| SURFACE ELEVATION<br><b>± 217' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                    |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|-------------------------------------------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                       | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 2            |        |        | <b>CLAYEY SAND</b> , fine- to medium-grained. Medium dense to dense. Moist. Yellowish brown, brown and very dark brown. | SC       |                       |                            |                      |                           |                       |                      |                 |                      |
| 4            |        |        | <b>FILL (Qaf)</b>                                                                                                       |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 8            |        |        | – 25% passing #200 sieve.                                                                                               |          | 13.0                  |                            |                      |                           |                       |                      | 16              | 2"                   |
| 12           |        |        | – 29% passing #200 sieve.                                                                                               |          | 11.5                  | 120.0                      |                      |                           |                       |                      | 38              | 3"                   |
| 18           |        |        | – 20% passing #200 sieve.                                                                                               | SM       | 9.7                   |                            |                      |                           |                       |                      | 40              | 2"                   |
| 24           |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b> fine- to medium-grained. Medium dense to dense. Damp. Tan.                    |          | 5.6                   |                            |                      |                           |                       |                      | 36              | 2"                   |
| 26           |        |        | <b>TORREY SANDSTONE (Tt)</b> – 11% passing #200 sieve.                                                                  |          |                       |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO. EXPL.GDT 3/22/11

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  MODIFIED CALIFORNIA SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**Ivab**

REVIEWED BY  
**WDH**



LOG No.

**B-15**

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-17-11</b> |
| SURFACE ELEVATION<br><b>± 217' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>Not Encountered</b>            | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |    |
|--------------|--------|--------|---------------------------------------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|----|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                   |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 30           |        |        | <b>SILTY SAND (FORMATIONAL SANDSTONE)</b><br>fine- to medium-grained. Medium dense to dense. Damp. Tan.             |  | SM       |                       |                            |                      |                           |                       |                      | 24              | 2"                   |    |
| 32           |        |        | <b>TORREY SANDSTONE (Tt)</b><br><br>- 23% passing #200 sieve.                                                       |  |          | 9.0                   |                            |                      |                           |                       |                      |                 | 23                   | 2" |
| 34           |        |        |                                                                                                                     |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 36           |        |        |                                                                                                                     |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 38           |        |        | - becomes very dense.<br><br>- 23% passing #200 sieve.                                                              |  | 6.3      |                       |                            |                      |                           |                       |                      | 99/8"           | 2"                   |    |
| 40           |        |        |                                                                                                                     |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 42           |        |        |                                                                                                                     |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 44           |        |        |                                                                                                                     |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 46           |        |        | <b>SANDY GRAVEL (FORMATIONAL CONGLOMERATE)</b> , 3/4"- 1-1/2" gravel with silty sand matrix. Very dense. Damp. Tan. |  | GM       |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 48           |        |        | <b>TORREY SANDSTONE (Tt)</b><br>Practical drilling refusal.                                                         |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 50           |        |        | Bottom @ 46'                                                                                                        |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 52           |        |        |                                                                                                                     |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |
| 54           |        |        |                                                                                                                     |  |          |                       |                            |                      |                           |                       |                      |                 |                      |    |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO EXPL.GDT 3/22/11

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  MODIFIED CALIFORNIA SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**IVac**

REVIEWED BY  
**WDH**



LOG No.

**B-15**

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-17-11</b> |
| SURFACE ELEVATION<br><b>± 215' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>61 feet</b>                    | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                               |          | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|------------------------------------------------------------------------------------|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                  | U.S.C.S. |                       |                            |                      |                           |                       |                      |                 |                      |
| 2            |        |        | <b>SILTY SAND</b> , fine- to medium-grained. Medium dense. Moist. Yellowish brown. | SM       |                       |                            |                      |                           |                       |                      |                 |                      |
| 4            |        |        | <b>FILL (Qaf)</b>                                                                  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 6            |        |        |                                                                                    |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 8            |        |        |                                                                                    |          |                       |                            |                      |                           |                       |                      | 22              | 2"                   |
| 10           |        |        | <b>CLAYEY SAND</b> , fine- to medium-grained. Medium dense. Moist. Grayish brown.  | SC       |                       |                            |                      |                           |                       |                      |                 |                      |
| 12           |        |        | <b>FILL (Qaf)</b>                                                                  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 14           |        |        | – 26% passing #200 sieve.                                                          |          | 11.2                  | 114.7                      |                      |                           |                       |                      | 44              | 3"                   |
| 16           |        |        |                                                                                    |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 18           |        |        | – 40% passing #200 sieve.                                                          |          | 15.0                  |                            |                      |                           |                       |                      | 24              | 2"                   |
| 20           |        |        |                                                                                    |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 22           |        |        |                                                                                    |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 24           |        |        | – 20% passing #200 sieve.                                                          |          | 10.5                  |                            |                      |                           |                       |                      | 32              | 2"                   |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO. EXPL.GDT 3/22/11

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  MODIFIED CALIFORNIA SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**Ivad**

REVIEWED BY  
**WDH**



LOG No.

**B-16**

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-Inch diameter Boring</b> | DATE LOGGED<br><b>2-17-11</b> |
| SURFACE ELEVATION<br><b>± 215' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>61 feet</b>                    | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                 |  | U.S.C.S. | IN-PLACE MOISTURE (%) | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|--------------------------------------------------------------------------------------|--|----------|-----------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                    |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 26           |        |        | <b>CLAYEY SAND</b> , fine- to medium-grained.<br>Medium dense. Moist. Grayish brown. |  | SC       |                       |                            |                      |                           |                       |                      |                 |                      |
| 28           |        |        | <b>FILL (Qaf)</b>                                                                    |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 30           |        |        | – 17% passing #200 sieve.                                                            |  |          | 7.3                   |                            |                      |                           |                       |                      | 46              | 2"                   |
| 32           |        |        |                                                                                      |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 34           |        |        | – 19% passing #200 sieve.                                                            |  |          | 11.1                  |                            |                      |                           |                       |                      | 34              | 2"                   |
| 36           |        |        |                                                                                      |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 38           |        |        |                                                                                      |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 40           |        |        | – 23% passing #200 sieve.                                                            |  |          | 11.1                  |                            |                      |                           |                       |                      | 47              | 2"                   |
| 42           |        |        |                                                                                      |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 44           |        |        |                                                                                      |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 46           |        |        |                                                                                      |  |          |                       |                            |                      |                           |                       |                      |                 |                      |
| 48           |        |        | – 19% passing #200 sieve.                                                            |  |          | 11.9                  |                            |                      |                           |                       |                      | 25              | 2"                   |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO EXPL.GDT 3/22/11

-  PERCHED WATER TABLE
-  LOOSE BAG SAMPLE
-  IN-PLACE SAMPLE
-  MODIFIED CALIFORNIA SAMPLE
-  FIELD DENSITY TEST
-  STANDARD PENETRATION TEST

JOB NAME  
**Phase I - San Diego Corporate Center, Lots 1 & 2**

SITE LOCATION  
**SW Cnr Del Mar Heights & El Camino Real, San Diego, CA**

JOB NUMBER  
**07-9487.1**

FIGURE NUMBER  
**IVae**

REVIEWED BY  
**WDH**



Geotechnical  
Exploration, Inc.

LOG No.

**B-16**

|                                                   |                                                                 |                               |
|---------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| EQUIPMENT<br><b>CME 55 Auger Drill Rig</b>        | DIMENSION & TYPE OF EXCAVATION<br><b>8-inch diameter Boring</b> | DATE LOGGED<br><b>2-17-11</b> |
| SURFACE ELEVATION<br><b>± 215' Mean Sea Level</b> | GROUNDWATER/ SEEPAGE DEPTH<br><b>61 feet</b>                    | LOGGED BY<br><b>AH</b>        |

| DEPTH (feet) | SYMBOL | SAMPLE | FIELD DESCRIPTION AND CLASSIFICATION                                                                                                                                                                       |          | IN-PLACE MOISTURE (%)        | IN-PLACE DRY DENSITY (pcf) | OPTIMUM MOISTURE (%) | MAXIMUM DRY DENSITY (pcf) | DENSITY (% of M.D.D.) | EXPAN. + CONSOL. (%) | BLOW COUNTS/FT. | SAMPLE O.D. (INCHES) |
|--------------|--------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------------|----------------------------|----------------------|---------------------------|-----------------------|----------------------|-----------------|----------------------|
|              |        |        | DESCRIPTION AND REMARKS<br>(Grain size, Density, Moisture, Color)                                                                                                                                          | U.S.C.S. |                              |                            |                      |                           |                       |                      |                 |                      |
| 52           |        |        | <b>CLAYEY SAND</b> , fine- to medium-grained.<br>Medium dense. Moist. Grayish brown.                                                                                                                       | SC       |                              |                            |                      |                           |                       |                      |                 |                      |
| 54           |        |        | <b>FILL (Qaf)</b><br>- 42% passing #200 sieve.<br>- 44% passing #200 sieve.<br>- 29% passing #200 sieve.                                                                                                   |          | 18.1<br>17.8<br>14.7         |                            |                      |                           |                       |                      | 17              | 2"                   |
| 56           |        |        |                                                                                                                                                                                                            |          |                              |                            |                      |                           |                       |                      |                 |                      |
| 58           |        |        | - 16% passing #200 sieve.                                                                                                                                                                                  |          | 12.9                         |                            |                      |                           |                       |                      | 32              | 2"                   |
| 60           |        |        | - 15% passing #200 sieve.<br>- 11% passing #200 sieve.                                                                                                                                                     |          | 13.5<br>13.5                 |                            |                      |                           |                       |                      | 88              | 3"                   |
| 62           |        |        | - seepage @ 61'.<br>- 20% passing #200 sieve.                                                                                                                                                              |          | 21.2                         |                            |                      |                           |                       |                      | 17              | 2"                   |
| 64           |        |        | <b>CLAYEY-SILTY SAND (FORMATIONAL SANDSTONE)</b> , fine- to medium-grained.<br>Medium dense. Wet to saturated. Tan.                                                                                        | SC-SM    |                              |                            |                      |                           |                       |                      |                 |                      |
| 66           |        |        | <b>TORREY SANDSTONE (Tt)</b><br>- 19% passing #200 sieve.<br>- 65% passing #200 sieve.<br>- 3" thick layer of very stiff gray clay (CH) at 65.3'.<br>- 5% passing #200 sieve.<br>- 33% passing #200 sieve. |          | 19.0<br>26.6<br>19.5<br>23.5 |                            |                      |                           |                       |                      | 24              | 2"                   |
| 68           |        |        |                                                                                                                                                                                                            |          |                              |                            |                      |                           |                       |                      |                 |                      |
| 70           |        |        | Bottom @ 66.5'                                                                                                                                                                                             |          |                              |                            |                      |                           |                       |                      |                 |                      |
| 72           |        |        |                                                                                                                                                                                                            |          |                              |                            |                      |                           |                       |                      |                 |                      |
| 74           |        |        |                                                                                                                                                                                                            |          |                              |                            |                      |                           |                       |                      |                 |                      |

EXPLORATION LOG 9487.1 SDCC.GPJ GEO. EXPL.GDT 3/22/11

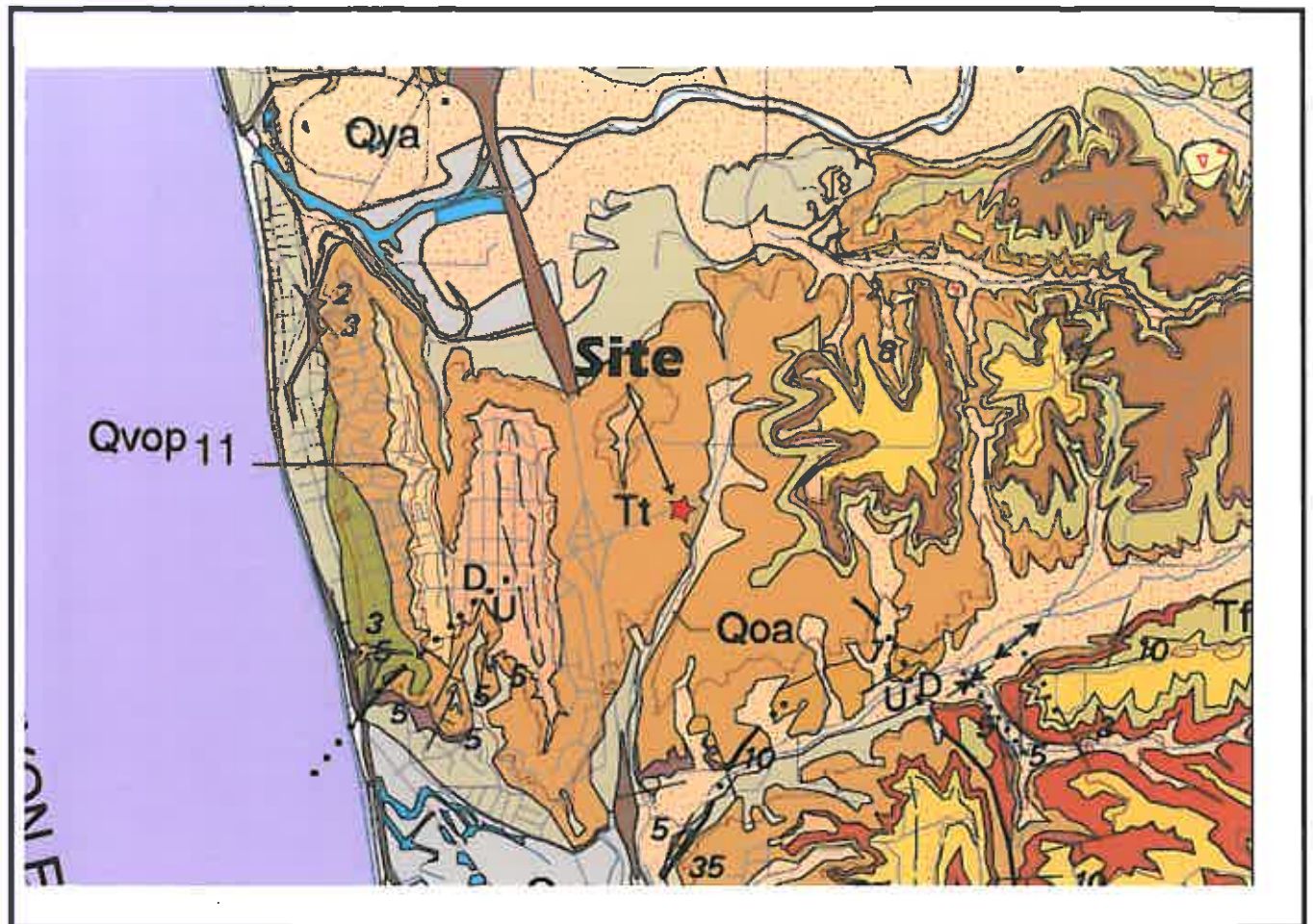
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                    |                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------|
|  <b>PERCHED WATER TABLE</b><br> <b>LOOSE BAG SAMPLE</b><br> <b>IN-PLACE SAMPLE</b><br> <b>MODIFIED CALIFORNIA SAMPLE</b><br> <b>FIELD DENSITY TEST</b><br> <b>STANDARD PENETRATION TEST</b> | JOB NAME<br><b>Phase I - San Diego Corporate Center, Lots 1 &amp; 2</b>            |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SITE LOCATION<br><b>SW Cnr Del Mar Heights &amp; El Camino Real, San Diego, CA</b> |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | JOB NUMBER<br><b>07-9487.1</b>                                                     | REVIEWED BY<br><b>WDH</b> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | FIGURE NUMBER<br><b>IVaf</b>                                                       | LOG No.<br><b>B-16</b>    |



Geotechnical  
Exploration, Inc.

# GEOLOGIC MAP OF SAN DIEGO 2005

compiled by Michael P. Kennedy  
and Siang S Tan



San Diego Corporate Center  
Lots 1 and 2, Phase 1  
San Diego, CA.

Figure No. Va  
Job No. 07-9487.1



*Correlation of Map Units and Description of Map Units  
for the*  
**Geologic Map of the  
San Diego 30' X 60' Quadrangle, California**

*Compiled by*  
*Michael P. Kennedy and Siang S. Tan*

2005

*Digital Preparation by*  
*Kelly R. Boyard<sup>1</sup>, Anne G. Garcia<sup>1</sup> and Diane Burns<sup>1</sup>*

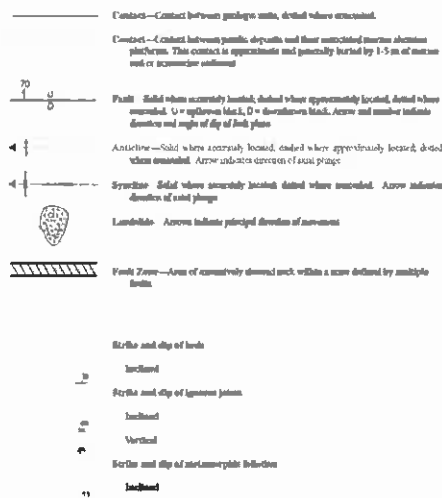
<sup>1</sup> U.S. Geological Survey, Department of Earth Sciences, University of California, Riverside

**DESCRIPTION OF MAP UNITS**

**Torrey Sandstone (middle Eocene)**—White to light-brown, medium- to coarse-grained, moderately well indurated, massive and broadly cross-bedded, **arkosic sandstone**. This unit is the Torrey Sand Member of Hanna (1926) and was named for exposures at Torrey Pines State Park. It is now considered a formation of the La Jolla Group (Kennedy and Moore, 1971)

**Old alluvial flood plain deposits undivided (late to middle Pleistocene)**—Fluvial sediments deposited on canyon floors. Consists of moderately well consolidated, poorly sorted, permeable, commonly slightly dissectioned gravel, sand, silt, and clay-bearing alluvium

**ONSHORE MAP SYMBOLS**



STATE OF CALIFORNIA - ARNOLD SCHWARZENEGGER, GOVERNOR  
THE RESOURCES AGENCY - MICHAEL CHRISMAN, SECRETARY  
DEPARTMENT OF CONSERVATION - DEBBIE SARETRAM, INTERIM DIRECTOR

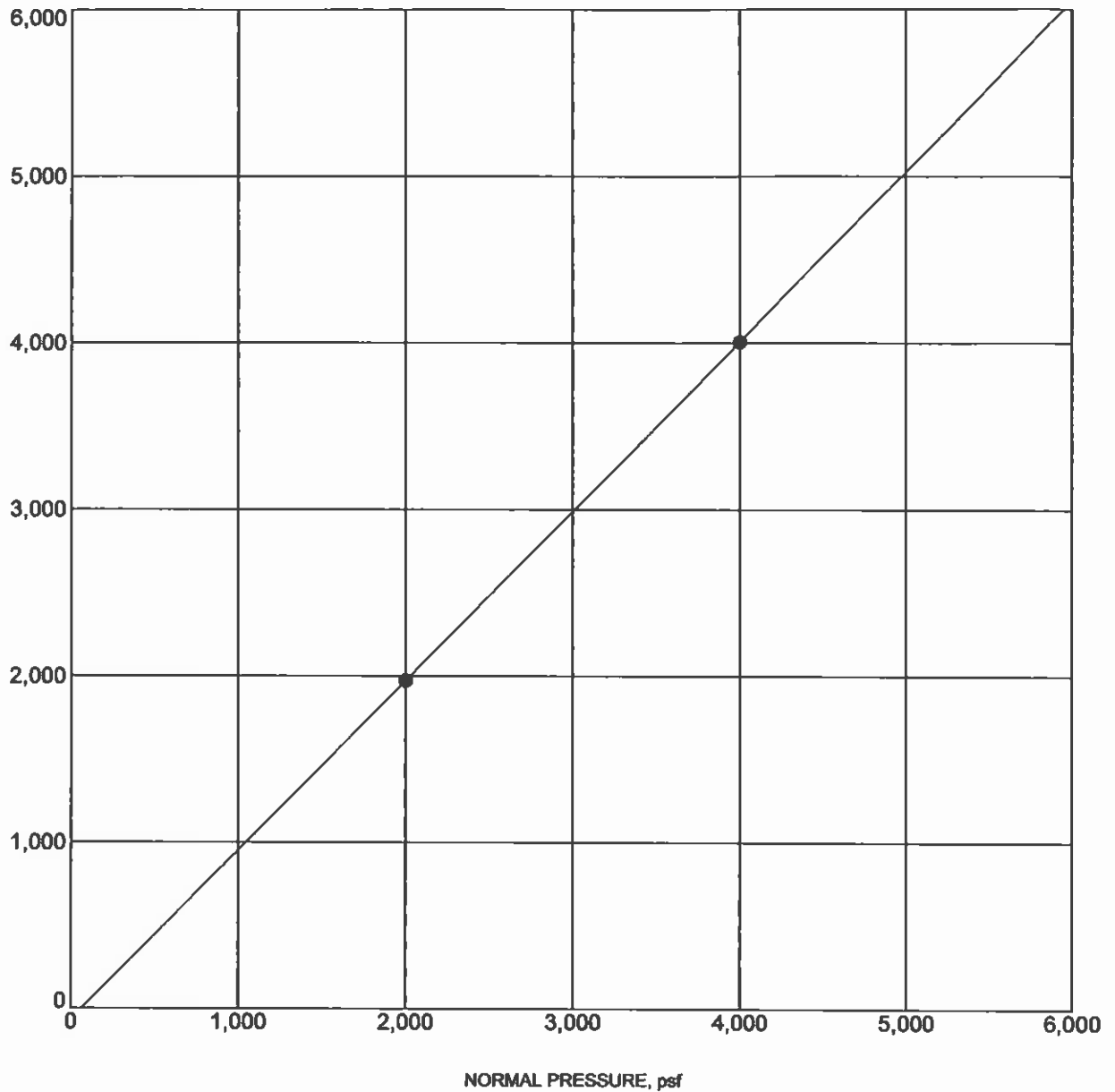
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suitability of this product for any particular purpose.

**Figure No. Vb**  
**Job No. 07-9487.1**



SHEAR STRENGTH, psf



US DIRECT SHEAR 9487.1 SDOC.GPJ GEO\_EXPL.GDT 3/22/11

| Specimen Identification | Classification                                | $\gamma_d$ | MC% | c   | $\phi$ |
|-------------------------|-----------------------------------------------|------------|-----|-----|--------|
| ● B-1 @ 37.0'           | SILTY SAND (SM), Yellowish-brown; Undisturbed | 103        | 5   | -63 | 45     |
|                         |                                               |            |     |     |        |
|                         |                                               |            |     |     |        |
|                         |                                               |            |     |     |        |
|                         |                                               |            |     |     |        |
|                         |                                               |            |     |     |        |



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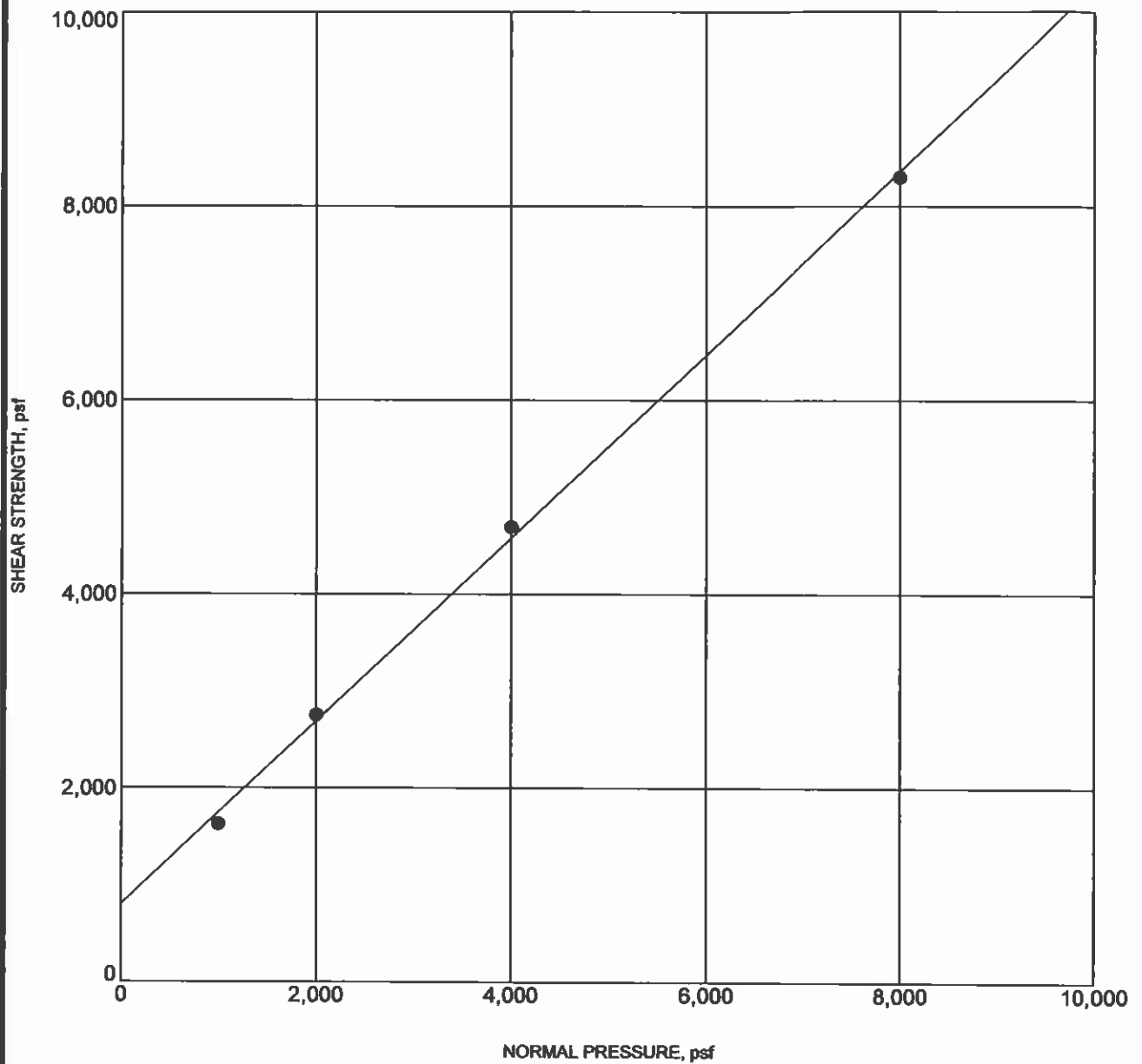
### DIRECT SHEAR TEST

Figure Number: Via

Job Name: Phase I - San Diego Corporate Center, Lots 1 & 2

Site Location: SW Cnr Del Mar Heights & El Camino Real San

Job Number: 07-9487.1



US DIRECT SHEAR 9487.1 SDCC.GPJ GEO. EXPL.GDT 3/23/11

| Specimen Identification | Classification                 | $\gamma_d$ | MC% | c   | $\phi$ |
|-------------------------|--------------------------------|------------|-----|-----|--------|
| ● B-2 @ 10.0'           | SILTY SAND (SM), Tan; Remolded | 124        | 9   | 804 | 43     |
|                         |                                |            |     |     |        |
|                         |                                |            |     |     |        |
|                         |                                |            |     |     |        |
|                         |                                |            |     |     |        |
|                         |                                |            |     |     |        |



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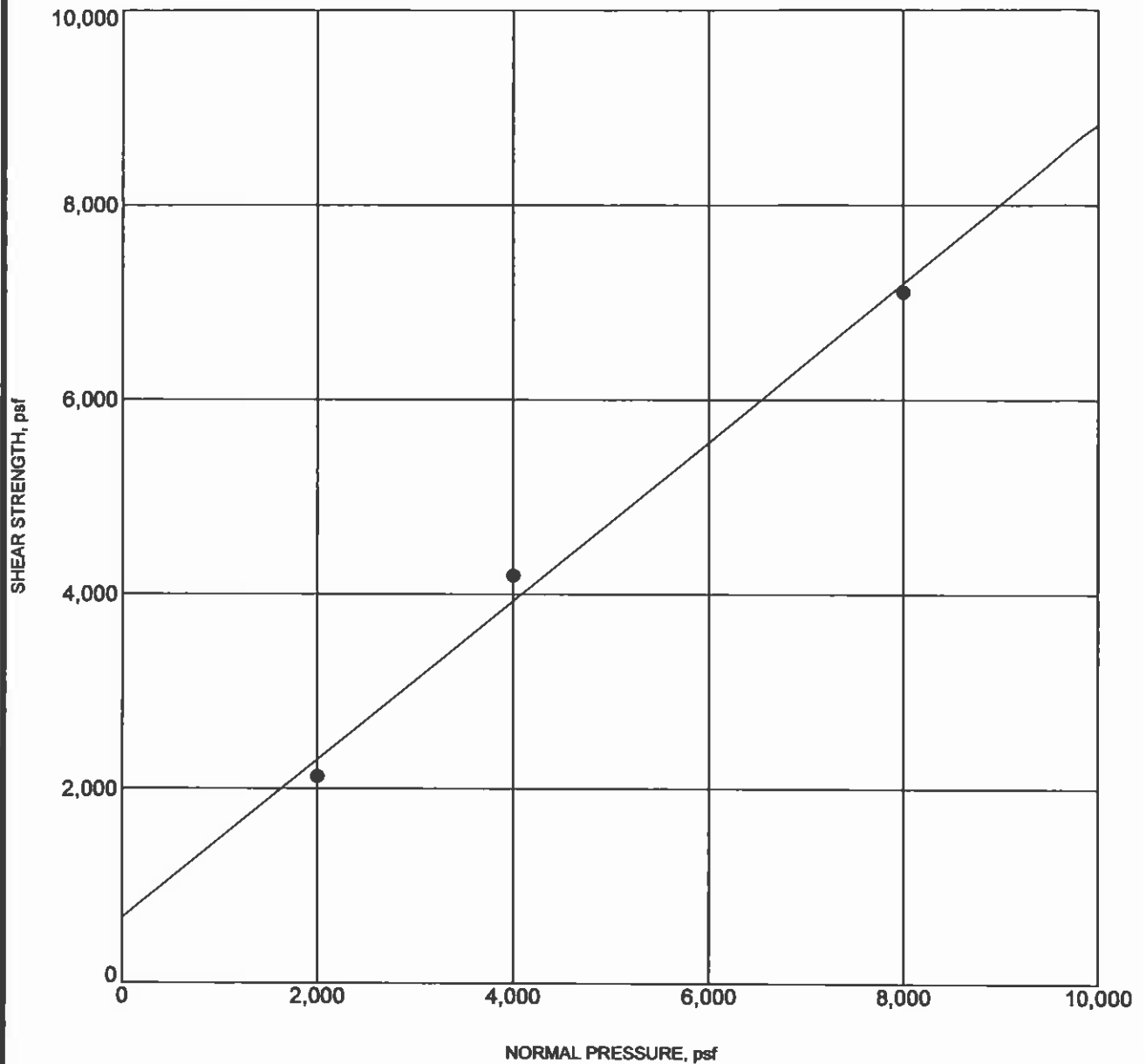
### DIRECT SHEAR TEST

Figure Number: Vlb

Job Name: Phase I - San Diego Corporate Center, Lots 1 & 2

Site Location: SW Cnr Del Mar Heights & El Camino Real San

Job Number: 07-9487.1



US DIRECT SHEAR 9487.1 SDCC.GPJ GEO\_EXPL.GDT 3/22/11

| Specimen Identification | Classification                                | $\gamma_d$ | MC% | c   | $\phi$ |
|-------------------------|-----------------------------------------------|------------|-----|-----|--------|
| ● B-2 @ 42.0'           | SILTY SAND (SM), Yellowish brown; Undisturbed | 106        | 6   | 673 | 39     |
|                         |                                               |            |     |     |        |
|                         |                                               |            |     |     |        |
|                         |                                               |            |     |     |        |
|                         |                                               |            |     |     |        |
|                         |                                               |            |     |     |        |



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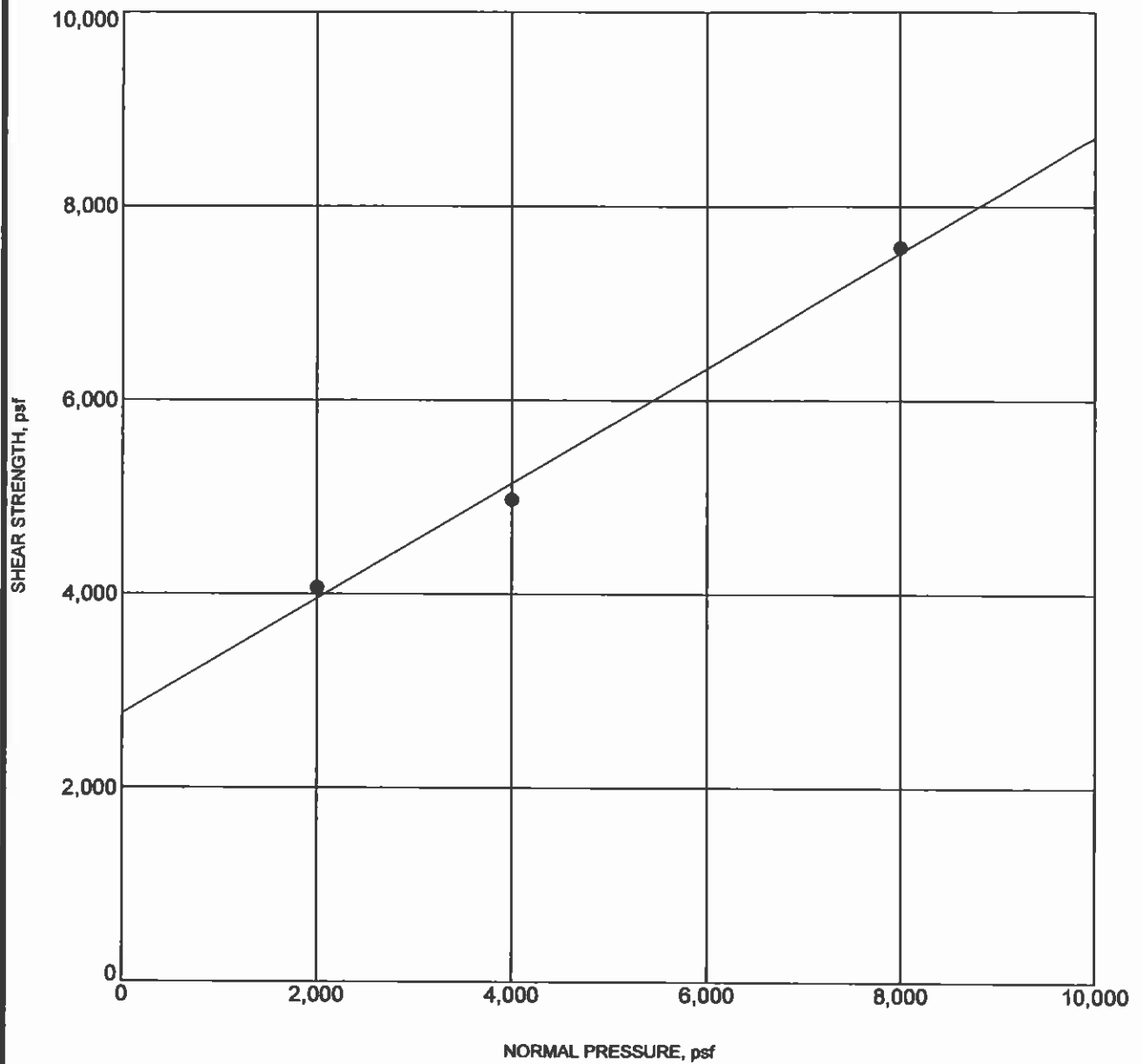
### DIRECT SHEAR TEST

Figure Number: Vlc

Job Name: Phase I - San Diego Corporate Center, Lots 1 & 2

Site Location: SW Cnr Del Mar Heights & El Camino Real San

Job Number: 07-9487.1



US DIRECT SHEAR 9487.1 SDCC.GPJ GEO\_EXPL.GDT 3/22/11

| Specimen Identification | Classification                            | $\gamma_d$ | MC% | c    | $\phi$ |
|-------------------------|-------------------------------------------|------------|-----|------|--------|
| ● B-5 @ 5.0'            | CLAYEY SAND (SC), Grayish brown; Remolded | 118        | 10  | 2771 | 31     |
|                         |                                           |            |     |      |        |
|                         |                                           |            |     |      |        |
|                         |                                           |            |     |      |        |
|                         |                                           |            |     |      |        |
|                         |                                           |            |     |      |        |



**Geotechnical  
Exploration, Inc.**

### DIRECT SHEAR TEST

Figure Number: Vid

Job Name: Phase I - San Diego Corporate Center, Lots 1 & 2

Site Location: SW Cnr Del Mar Heights & El Camino Real San

Job Number: 07-9487.1

# APPENDIX A

## UNIFIED SOIL CLASSIFICATION CHART

### SOIL DESCRIPTION

#### Coarse-grained (More than half of material is larger than a No. 200 sieve)

|                                                                                                                    |    |                                                                      |
|--------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------|
| GRAVELS, CLEAN GRAVELS<br>(More than half of coarse fraction is larger than No. 4 sieve size, but smaller than 3") | GW | Well-graded gravels, gravel and sand mixtures, little or no fines.   |
|                                                                                                                    | GP | Poorly graded gravels, gravel and sand mixtures, little or no fines. |
| GRAVELS WITH FINES<br>(Appreciable amount)                                                                         | GC | Clay gravels, poorly graded gravel-sand-silt mixtures                |
| SANDS, CLEAN SANDS<br>(More than half of coarse fraction is smaller than a No. 4 sieve)                            | SW | Well-graded sand, gravelly sands, little or no fines                 |
|                                                                                                                    | SP | Poorly graded sands, gravelly sands, little or no fines.             |
| SANDS WITH FINES<br>(Appreciable amount)                                                                           | SM | Silty sands, poorly graded sand and silty mixtures.                  |
|                                                                                                                    | SC | Clayey sands, poorly graded sand and clay mixtures.                  |

#### Fine-grained (More than half of material is smaller than a No. 200 sieve)

##### SILTS AND CLAYS

|                                     |    |                                                                                                                    |
|-------------------------------------|----|--------------------------------------------------------------------------------------------------------------------|
| <u>Liquid Limit Less than 50</u>    | ML | Inorganic silts and very fine sands, rock flour, sandy silt and clayey-silt sand mixtures with a slight plasticity |
|                                     | CL | Inorganic clays of low to medium plasticity, gravelly clays, silty clays, clean clays.                             |
|                                     | OL | Organic silts and organic silty clays of low plasticity.                                                           |
| <u>Liquid Limit Greater than 50</u> | MH | Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.                               |
|                                     | CH | Inorganic clays of high plasticity, fat clays.                                                                     |
|                                     | OH | Organic clays of medium to high plasticity.                                                                        |
| HIGHLY ORGANIC SOILS                | PT | Peat and other highly organic soils                                                                                |

(rev. 6/05)



## **APPENDIX B**

# **CONE PENETROMETER LOGS FROM 2008 INVESTIGATION**

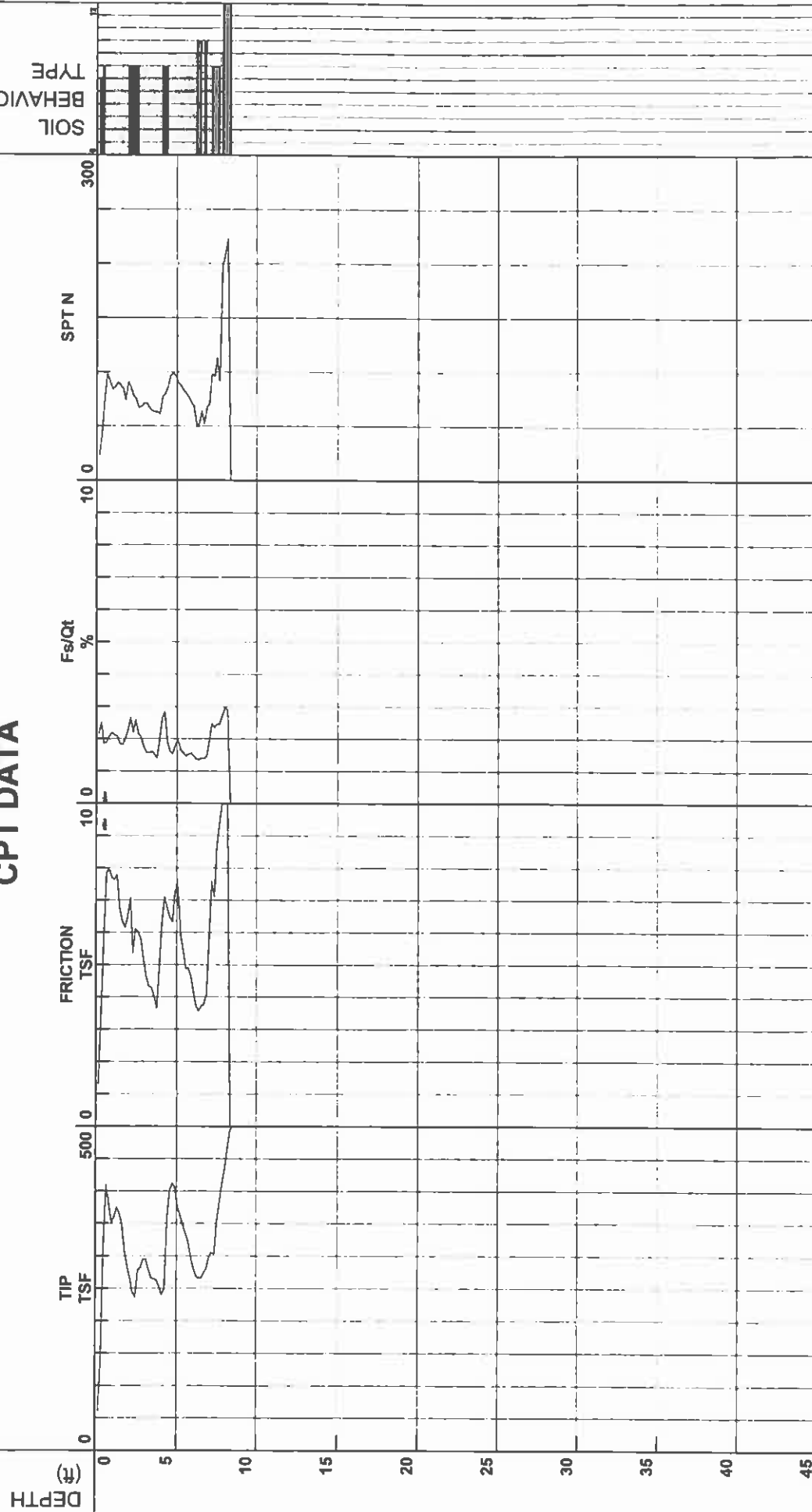




# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(437).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-02          | Date and Time | 11/29/2007 4:13:56 PM | Maximum Depth | 8.53 ft      |
| Water Table Depth |                 |               |                       | Elevation     | 217.7        |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

Depth Increment

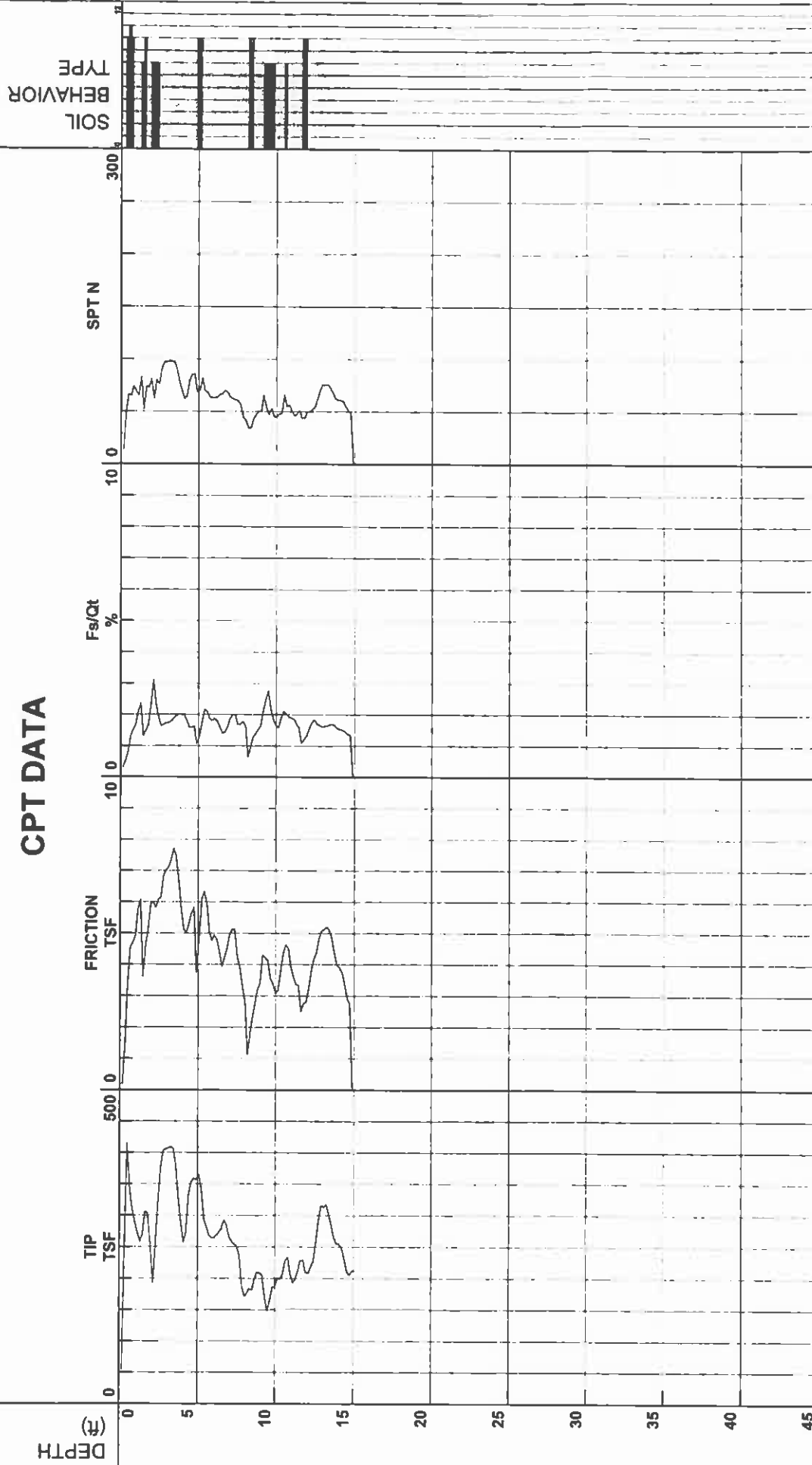
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(440).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-03          | Date and Time | 11/30/2007 8:59:59 AM | Maximum Depth | 15.09 ft     |
| Water Table Depth | 0.00 ft         |               |                       | Elevation     | 215.3        |

## CPT DATA



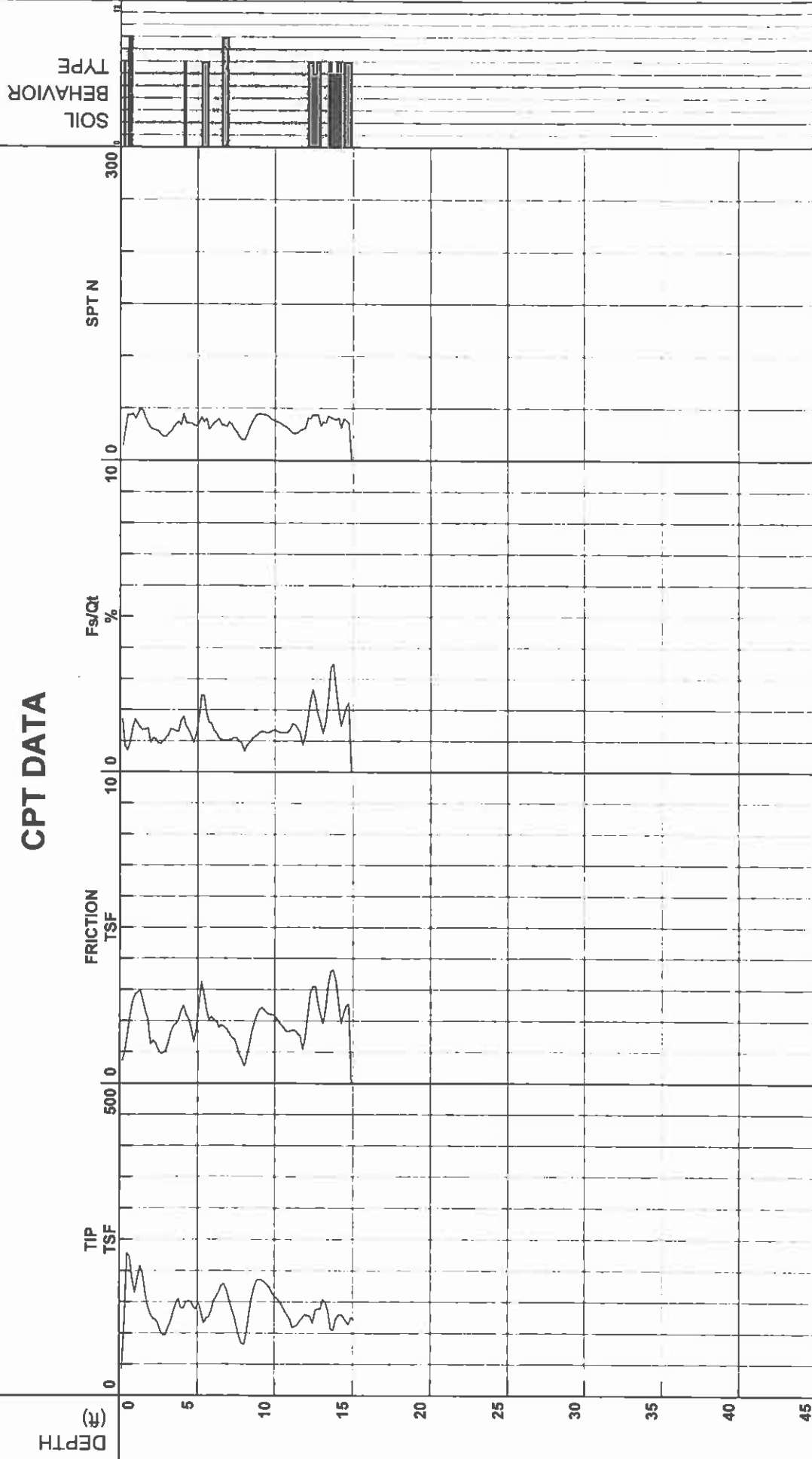
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(436).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-04          | Date and Time | 11/29/2007 3:56:43 PM | Maximum Depth | 15.09 ft     |
| Water Table Depth |                 |               |                       | Elevation     | 216.9        |

## CPT DATA



- |                            |                              |                                  |
|----------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

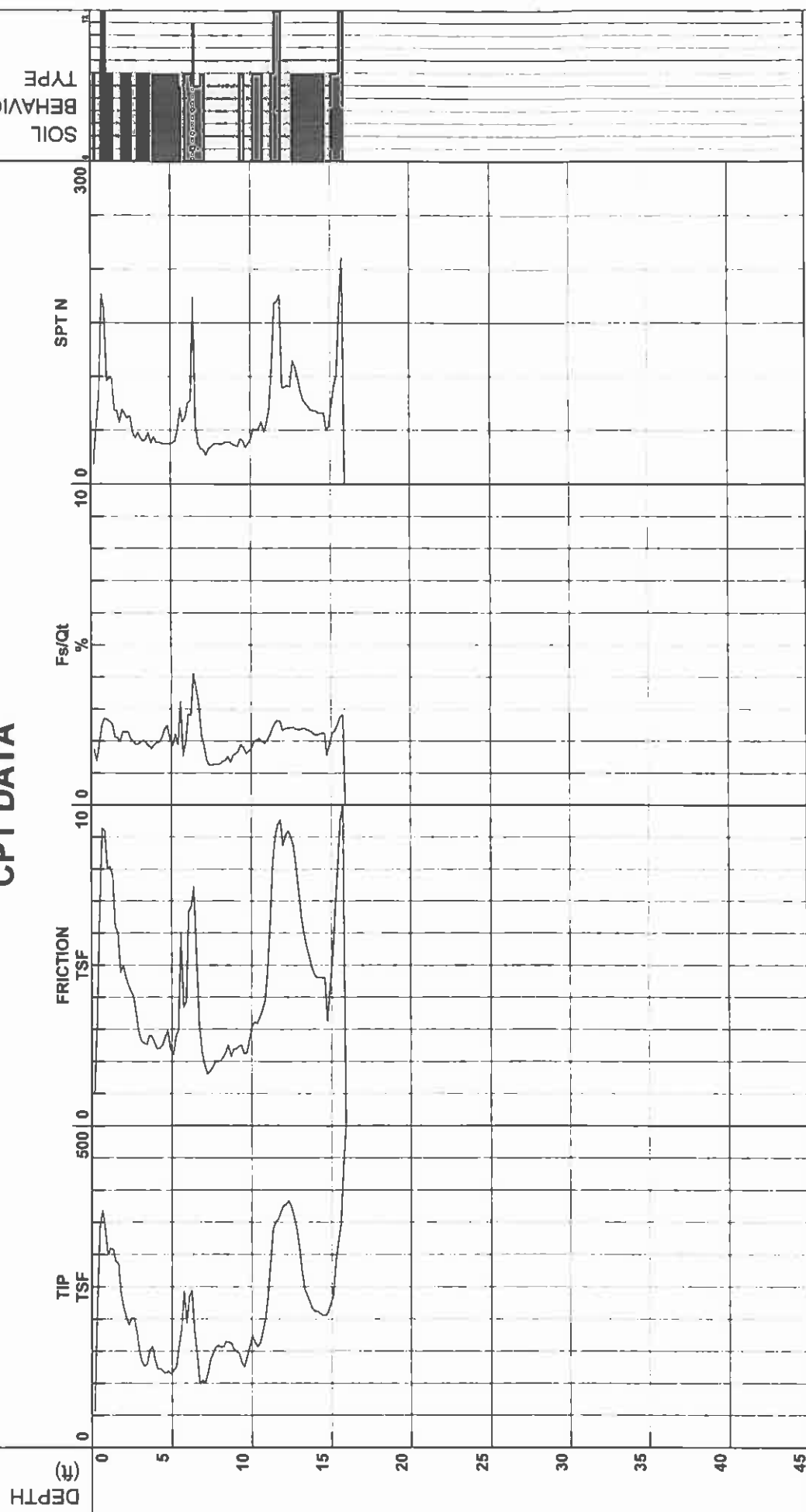
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                        |
|-------------------|-----------------|---------------|------------------------|
| Location          | Del Mar Heights | Operator      | ML/CW                  |
| Job Number        | 07-9487         | Cone Number   | DSG1023                |
| Site Number       | CPT-05          | Date and Time | 11/28/2007 12:13:06 PM |
| Water Table Depth |                 | Maximum Depth | 16.08 ft               |
|                   |                 | Elevation     | 218.6                  |
|                   |                 | Filename      | SDF(416).cpt           |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

Depth Increment

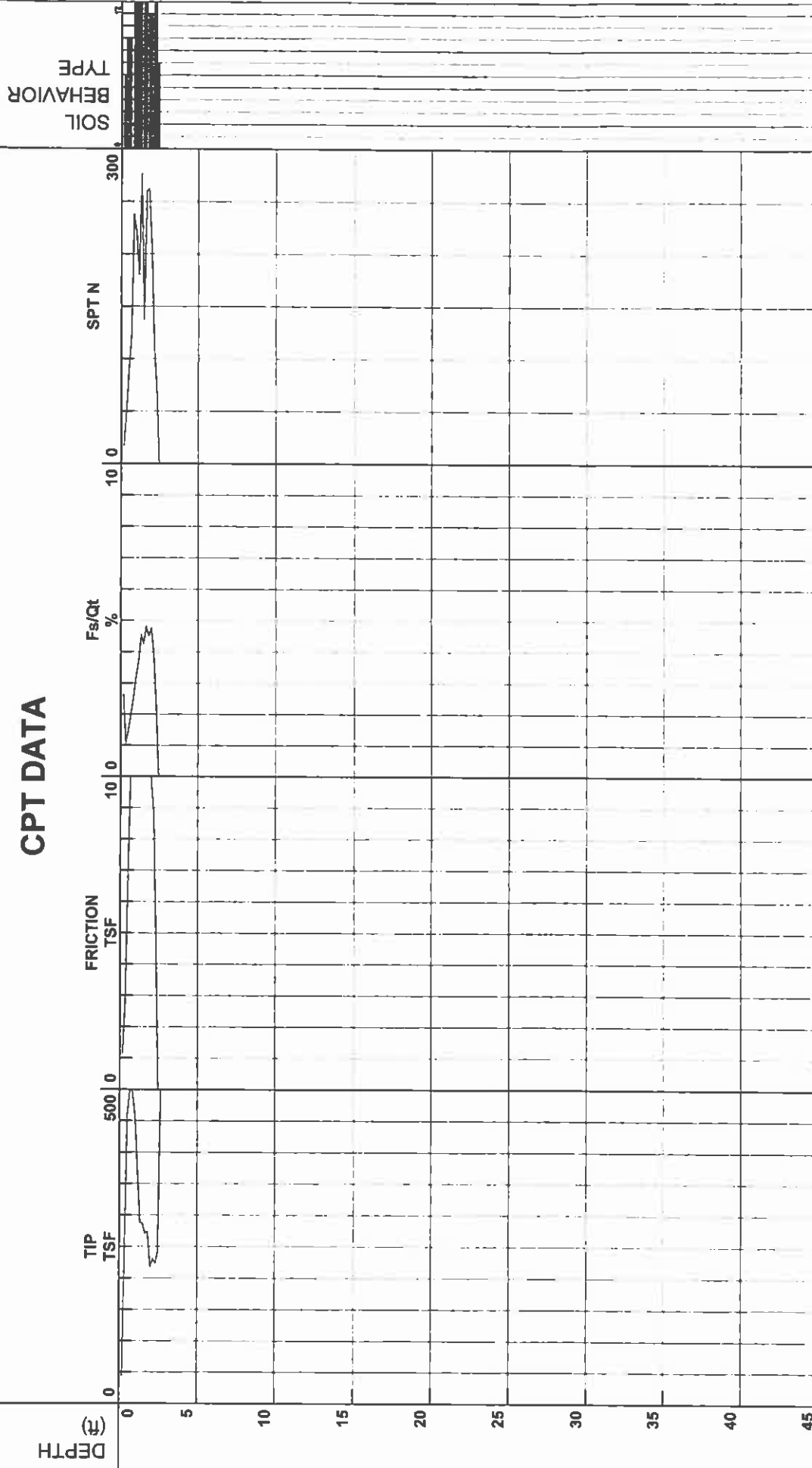
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                        |               |              |
|-------------------|-----------------|---------------|------------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                  | Filename      | SDF(415).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023                | GPS           |              |
| Hole Number       | CPT-06          | Date and Time | 11/28/2007 11:53:12 AM | Maximum Depth | 2.62 ft      |
| Water Table Depth |                 |               |                        | Elevation     | 218.5        |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

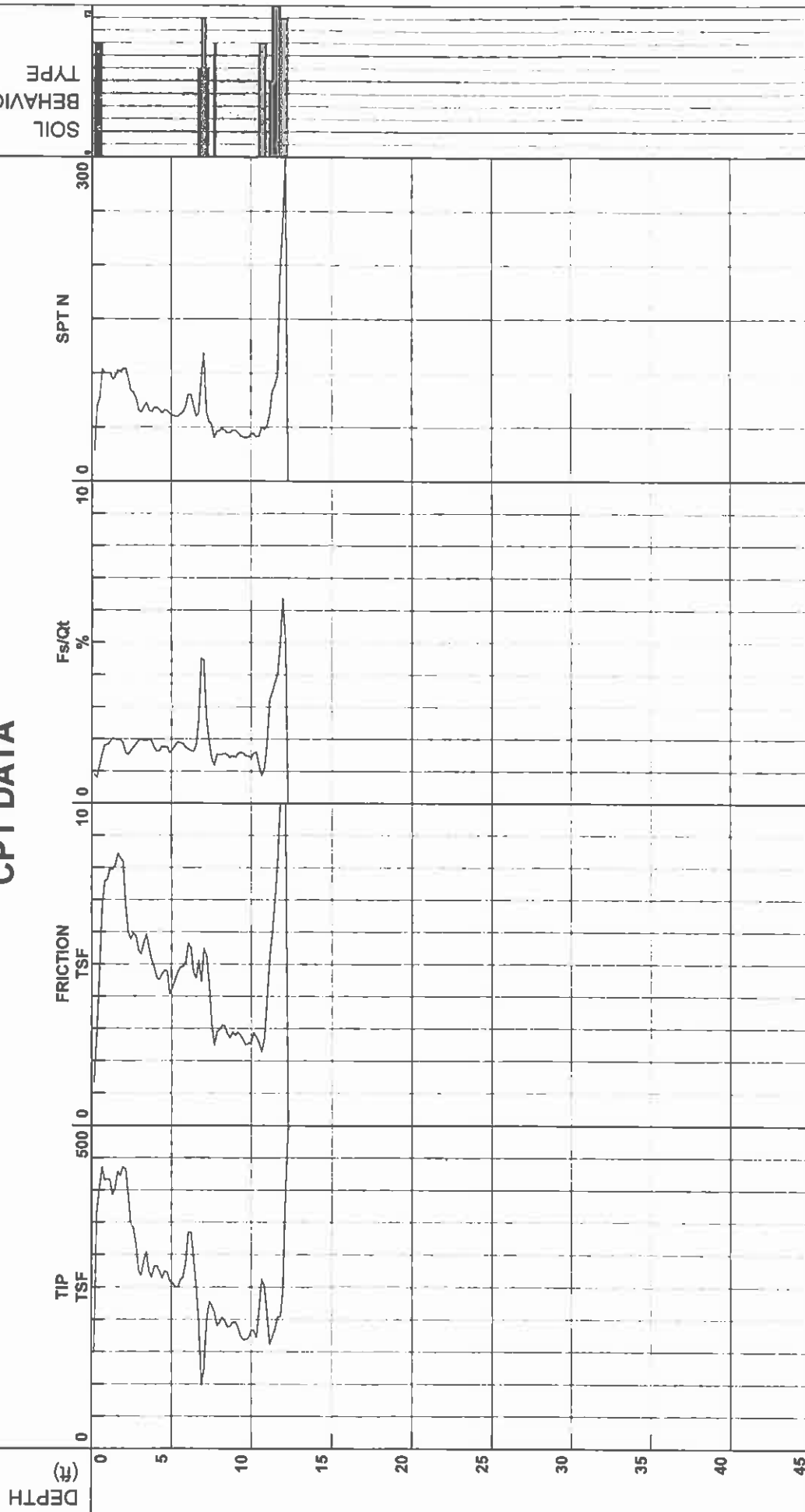
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |
|-------------------|-----------------|---------------|-----------------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 |
| Job Number        | 07-9487         | Cone Number   | DSG1023               |
| Hole Number       | CPT-07          | Date and Time | 11/29/2007 3:40:19 PM |
| Water Table Depth |                 | 0.00 ft       |                       |
| Filename          | SDF(435).cpt    | GPS           |                       |
| Maximum Depth     | 12.47 ft        | Elevation     | 216.8                 |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

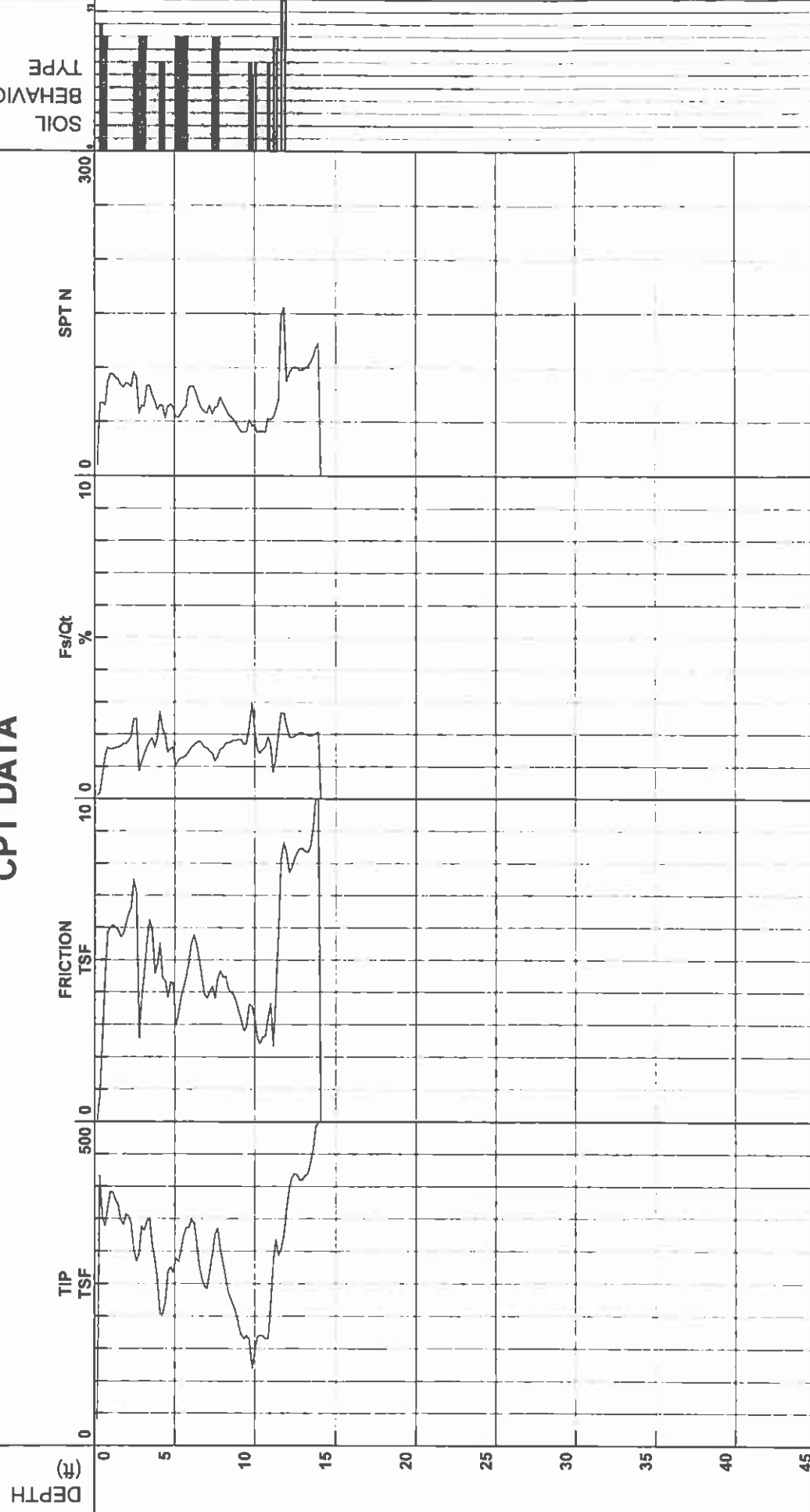
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |
|-------------------|-----------------|---------------|-----------------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 |
| Job Number        | 07-9487         | Cone Number   | DSG1023               |
| Hole Number       | CPT-08          | Date and Time | 11/30/2007 9:17:19 AM |
| Water Table Depth |                 | 0.00 ft       |                       |
| Filename          | SDF(441).cpt    | GPS           |                       |
| Maximum Depth     | 14.27 ft        | Elevation     | 215.2                 |

## CPT DATA



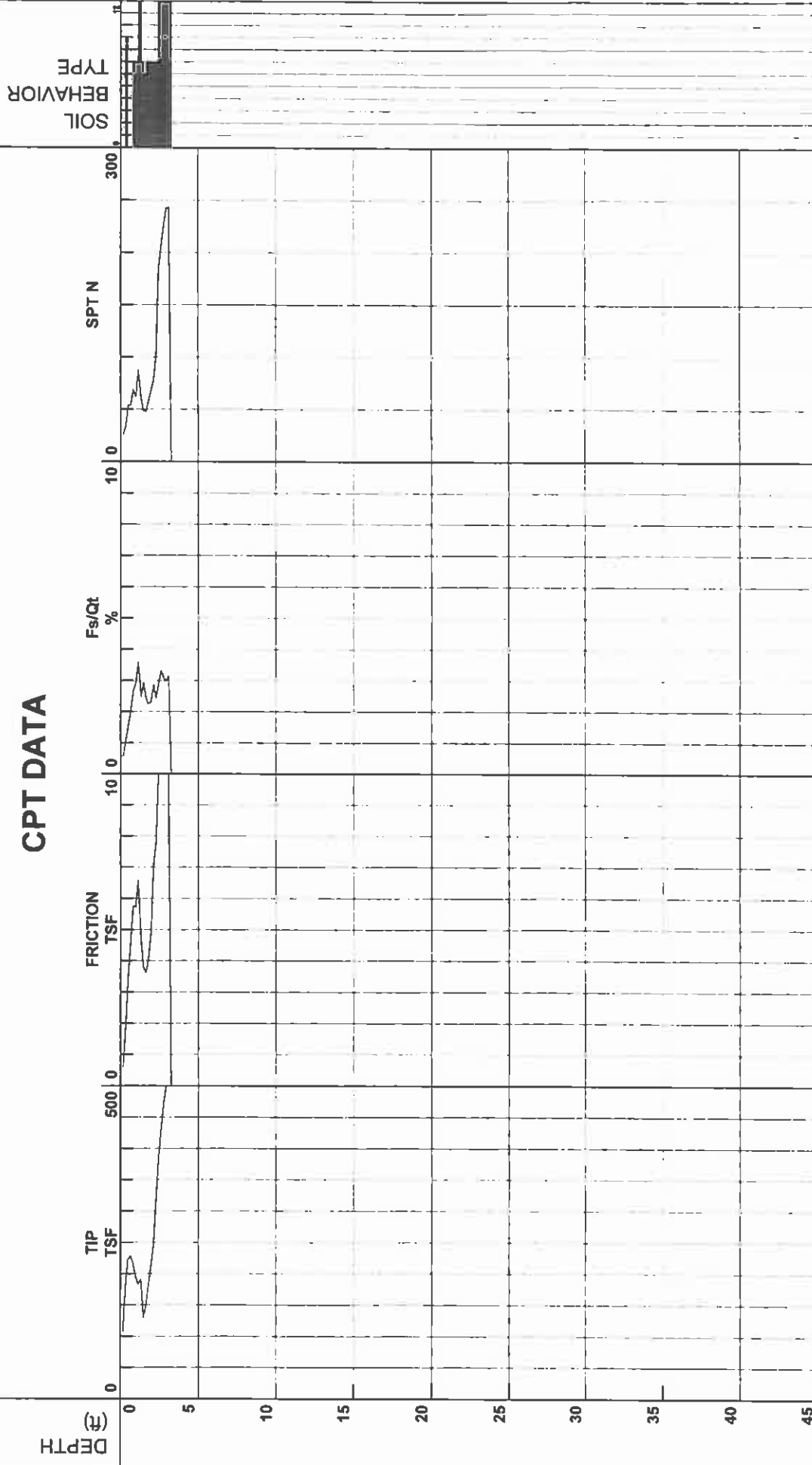
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(419).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-10          | Date and Time | 11/28/2007 3:01:11 PM | Maximum Depth | 3.44 ft      |
| Water Table Depth |                 |               |                       | Elevation     | 186.9        |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

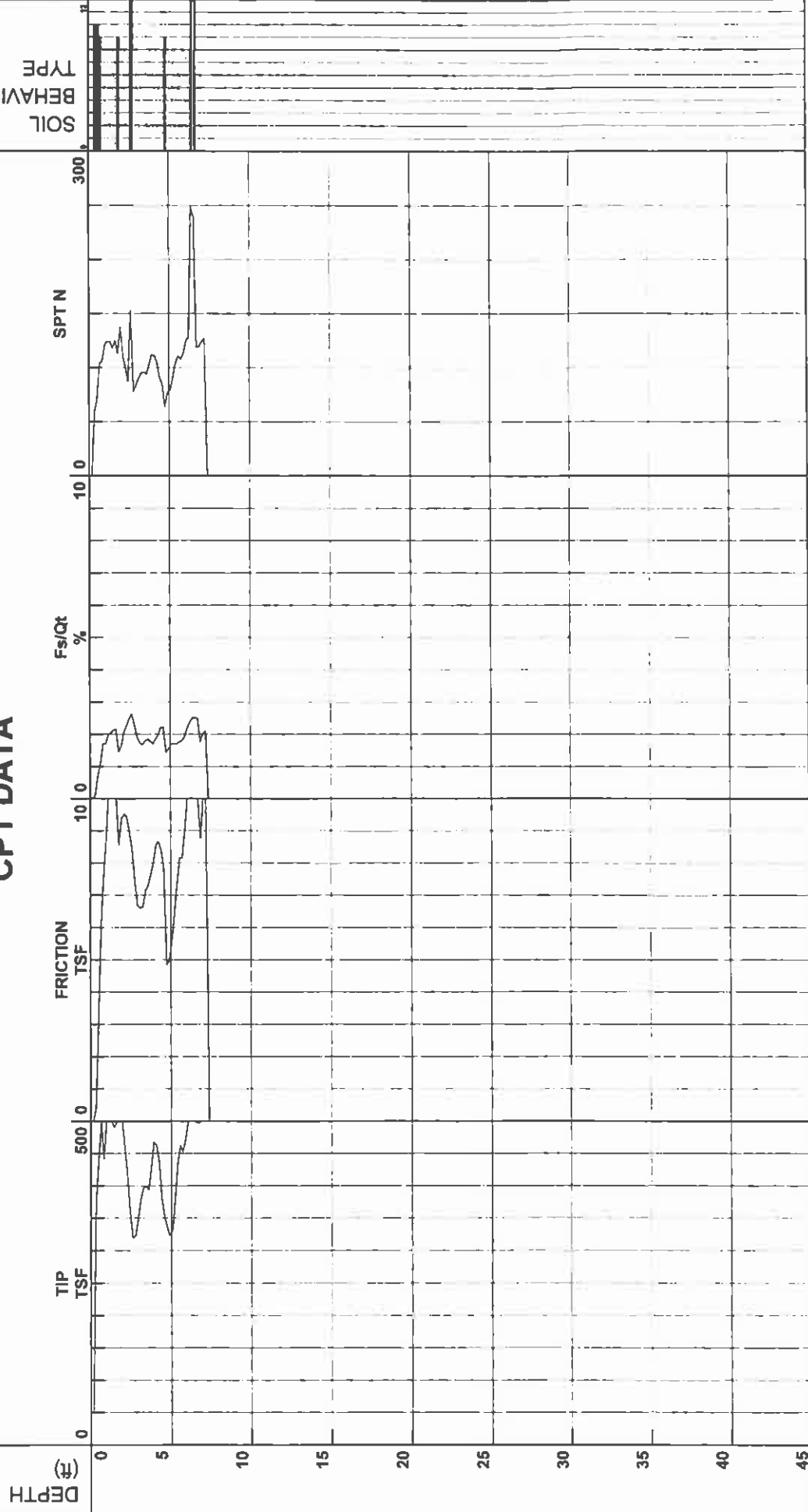
Del Mar Heights  
07-9487  
CPT-11

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/30/2007 9:33:56 AM

Filename  
GPS  
Maximum Depth  
SDF(442).cpt  
7.55 ft  
212.9

## CPT DATA



- 1 - sensitive fine grained  
2 - organic material  
3 - clay  
4 - silty clay to clay  
5 - clayey silt to silty clay  
6 - sandy silt to clayey silt  
7 - silty sand to sandy silt  
8 - sand to silty sand  
9 - sand  
10 - gravelly sand to sand  
11 - very stiff fine grained (\*)  
12 - sand to clayey sand (\*)

Depth Increment

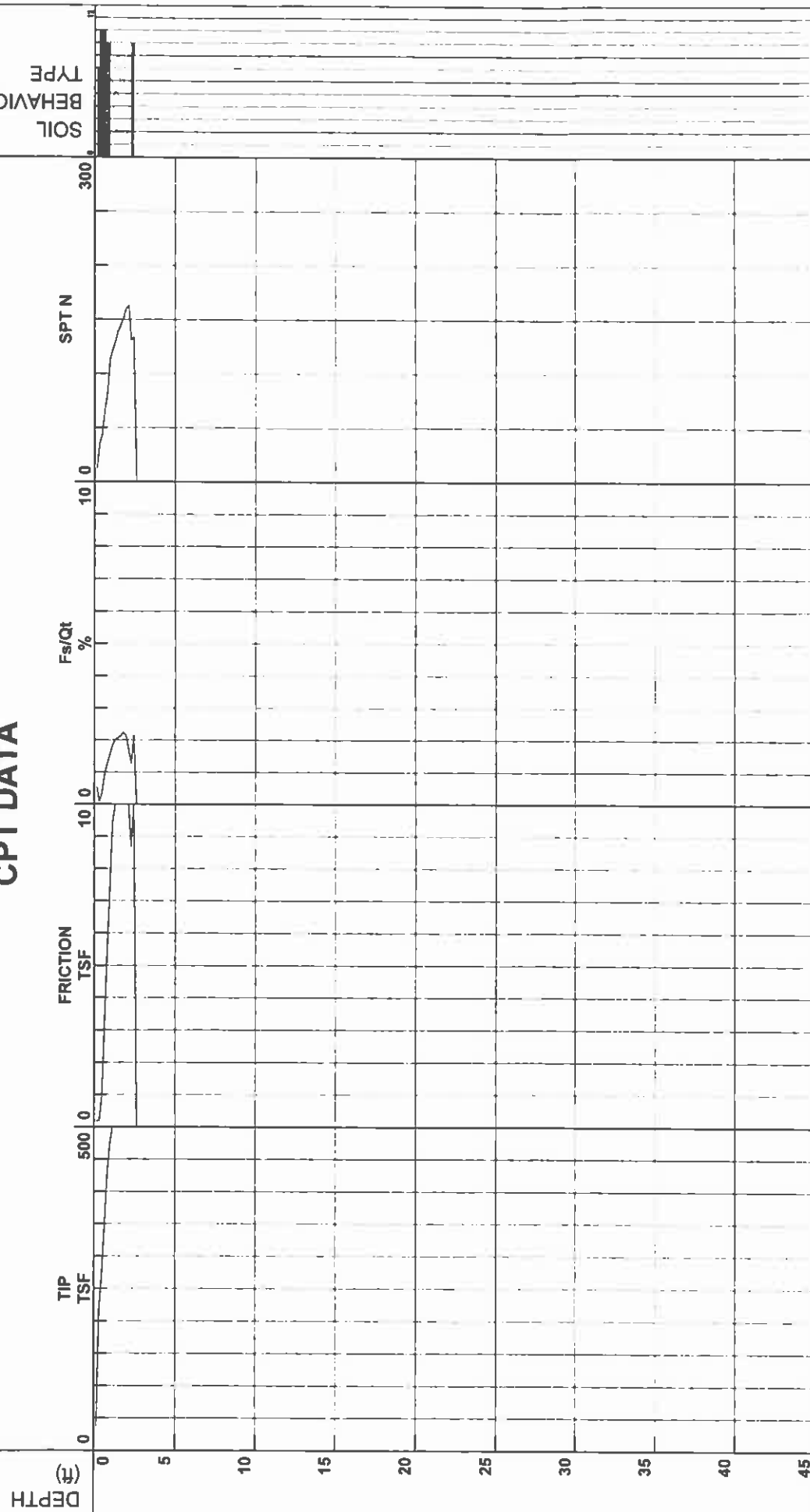
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(443).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-12          | Date and Time | 11/30/2007 9:52:31 AM | Maximum Depth | 2.79 ft      |
| Water Table Depth | 0.00 ft         |               |                       | Elevation     | 215.1        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

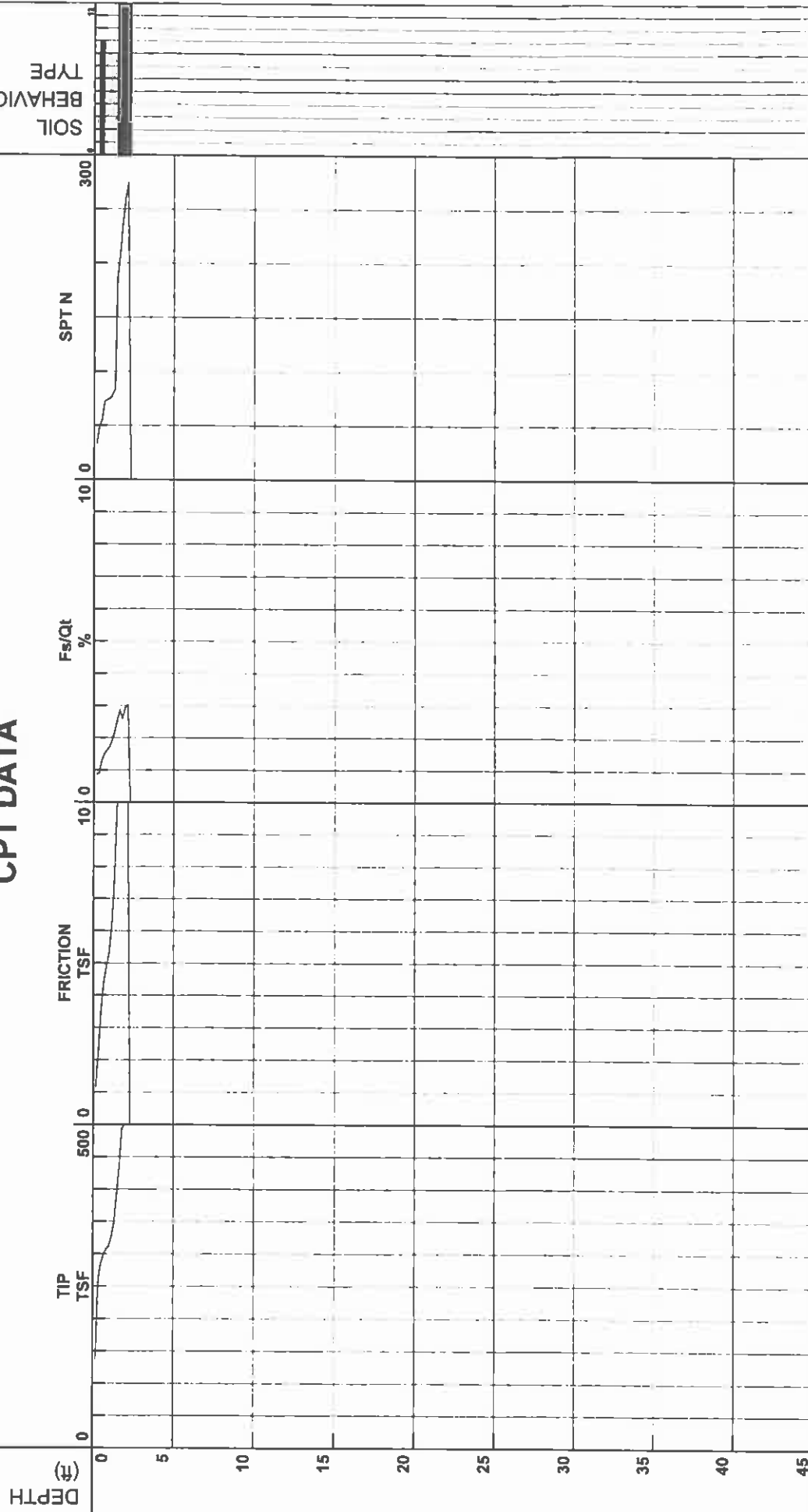
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(434).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Site Number       | CPT-13          | Date and Time | 11/29/2007 3:31:02 PM | Maximum Depth | 2.46 ft      |
| Water Table Depth | 0.00 ft         |               |                       | Elevation     | 216.5        |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



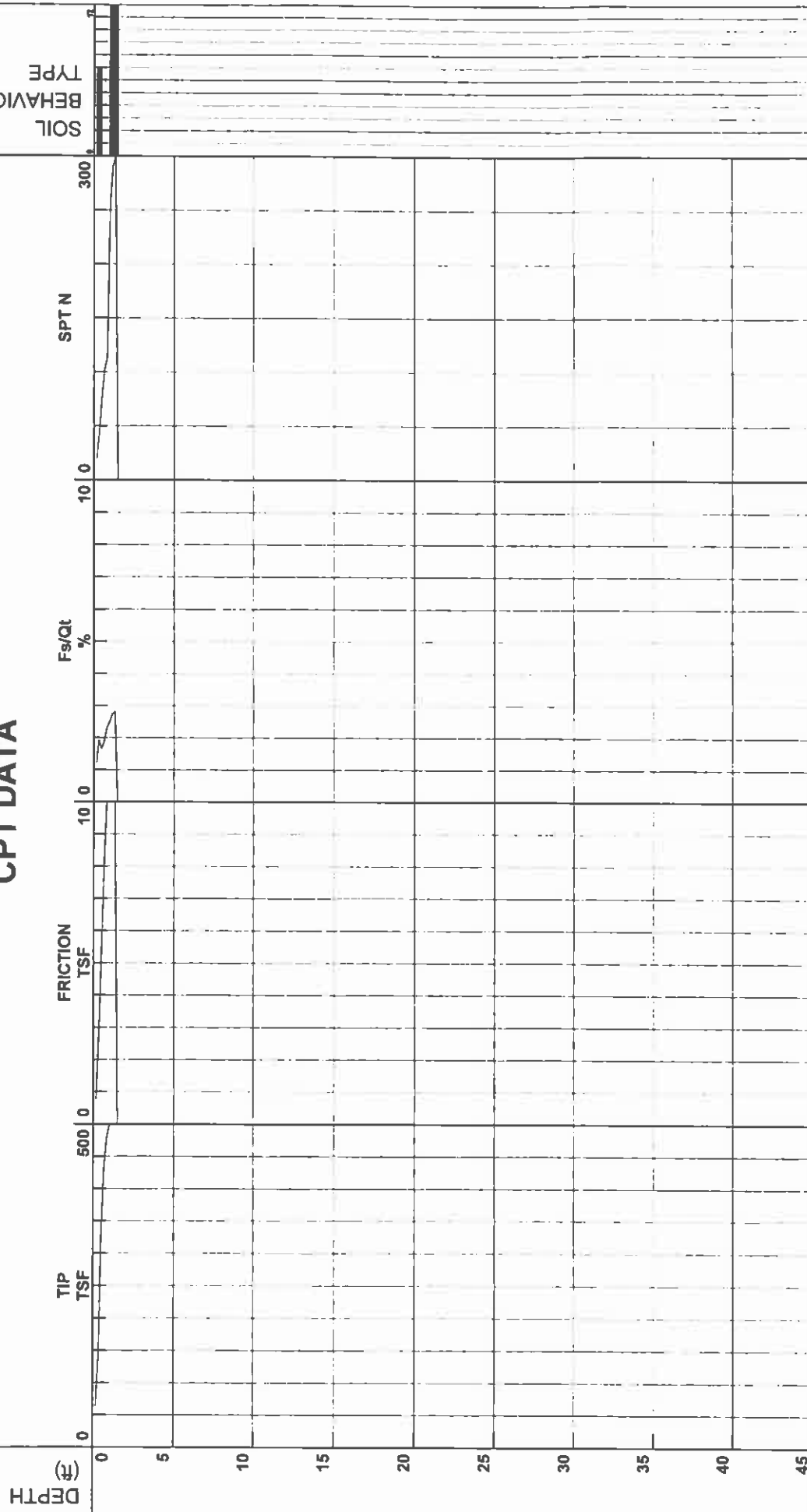
# Geotechnical Exploration

Location Del Mar Heights  
Job Number 07-9487  
Hole Number CPT-14  
Water Table Depth

Operator ML/CW  
Cone Number DSG1023  
Date and Time 11/28/2007 11:42:37 AM  
0.00 ft

Filename SDF(414).cpt  
GPS  
Maximum Depth 1.64 ft  
Elevation 217.8

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

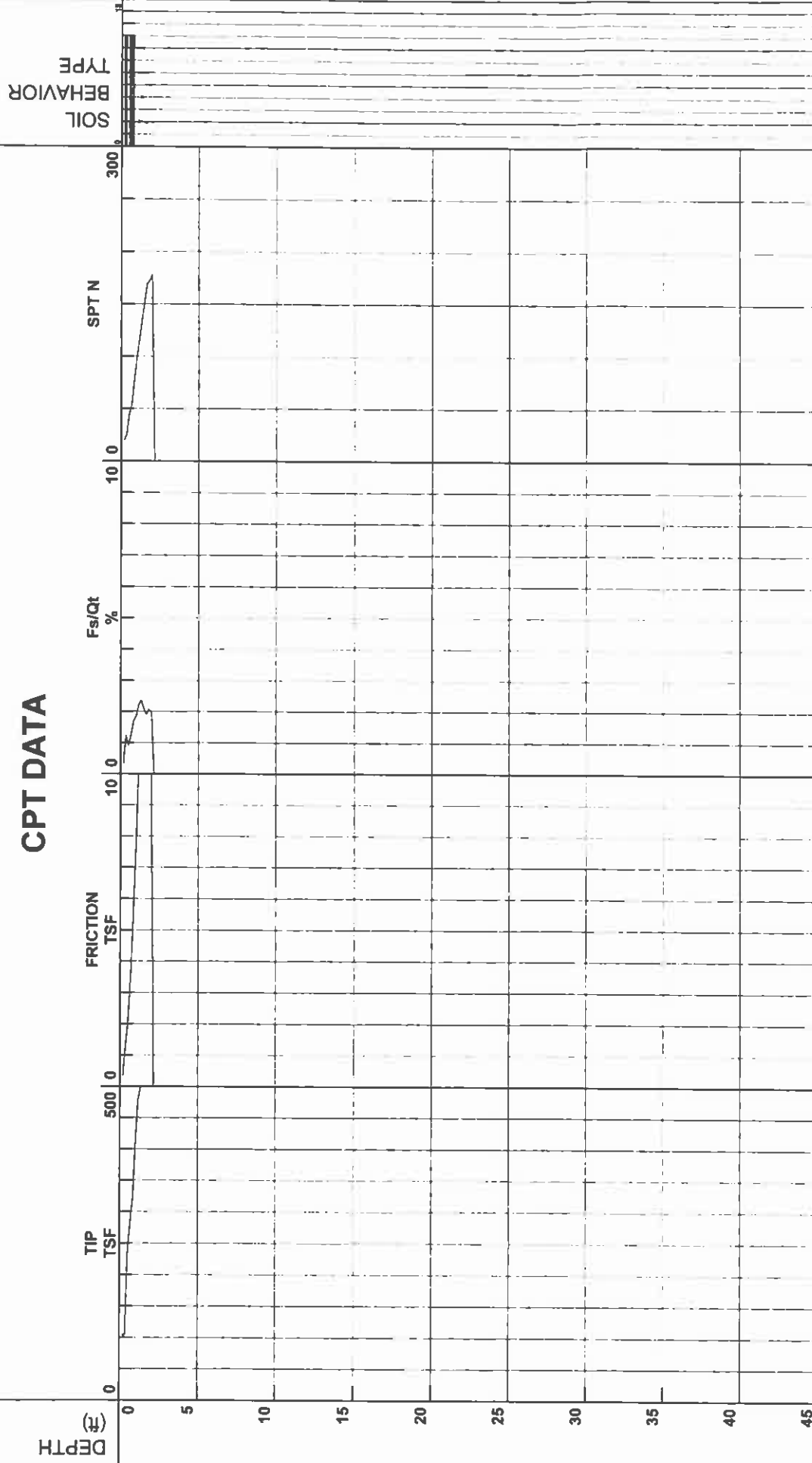
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                        |               |              |
|-------------------|-----------------|---------------|------------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                  | Filename      | SDF(413).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023                | GPS           |              |
| Hole Number       | CPT-15          | Date and Time | 11/28/2007 11:33:24 AM | Maximum Depth | 2.30 ft      |
| Water Table Depth |                 |               |                        | Elevation     | 217.3        |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

Depth Increment

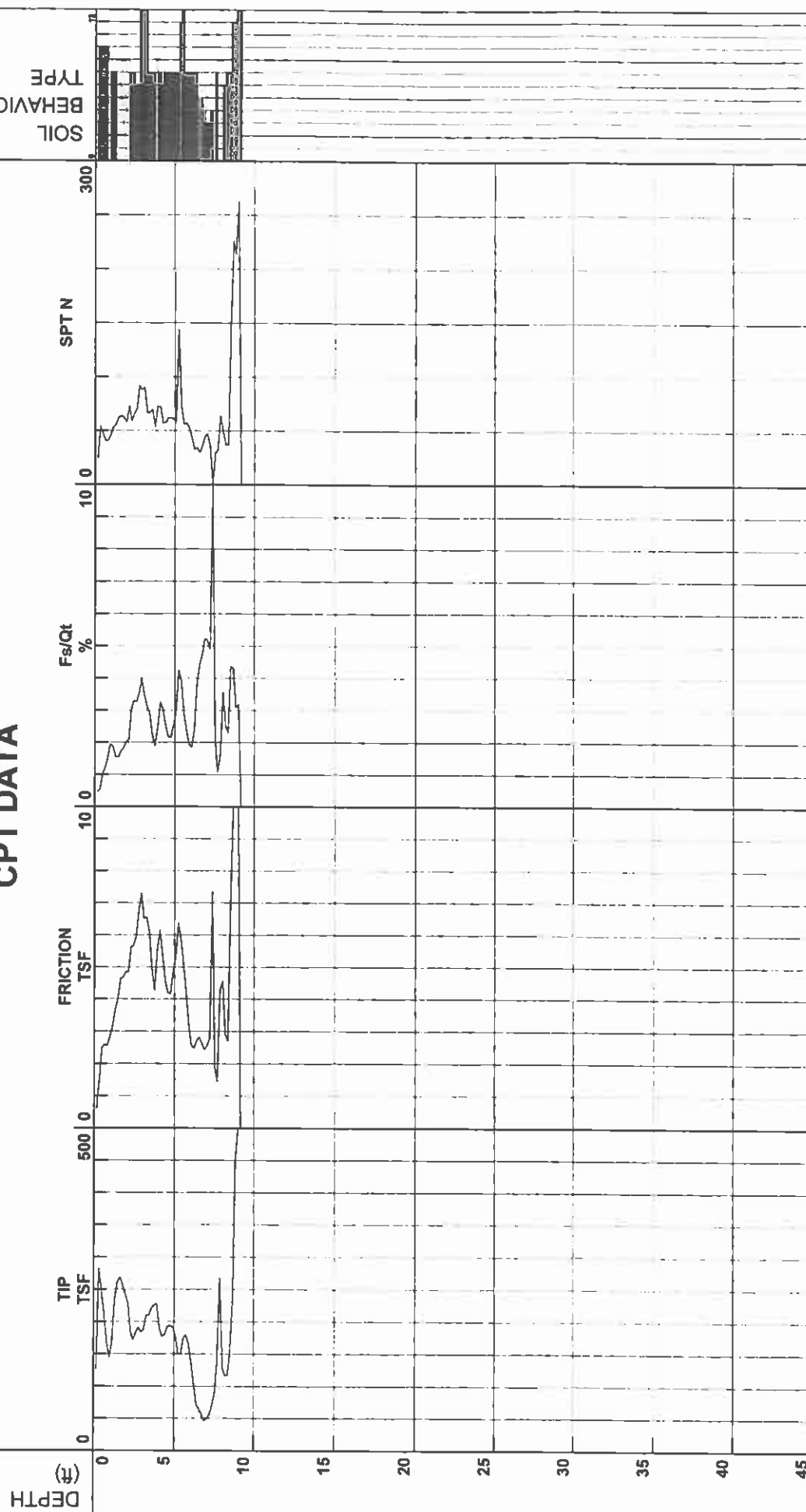
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(433).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-16          | Date and Time | 11/29/2007 3:18:04 PM | Maximum Depth | 9.35 ft      |
| Water Table Depth | 0.00 ft         |               |                       | Elevation     | 216.7        |

## CPT DATA



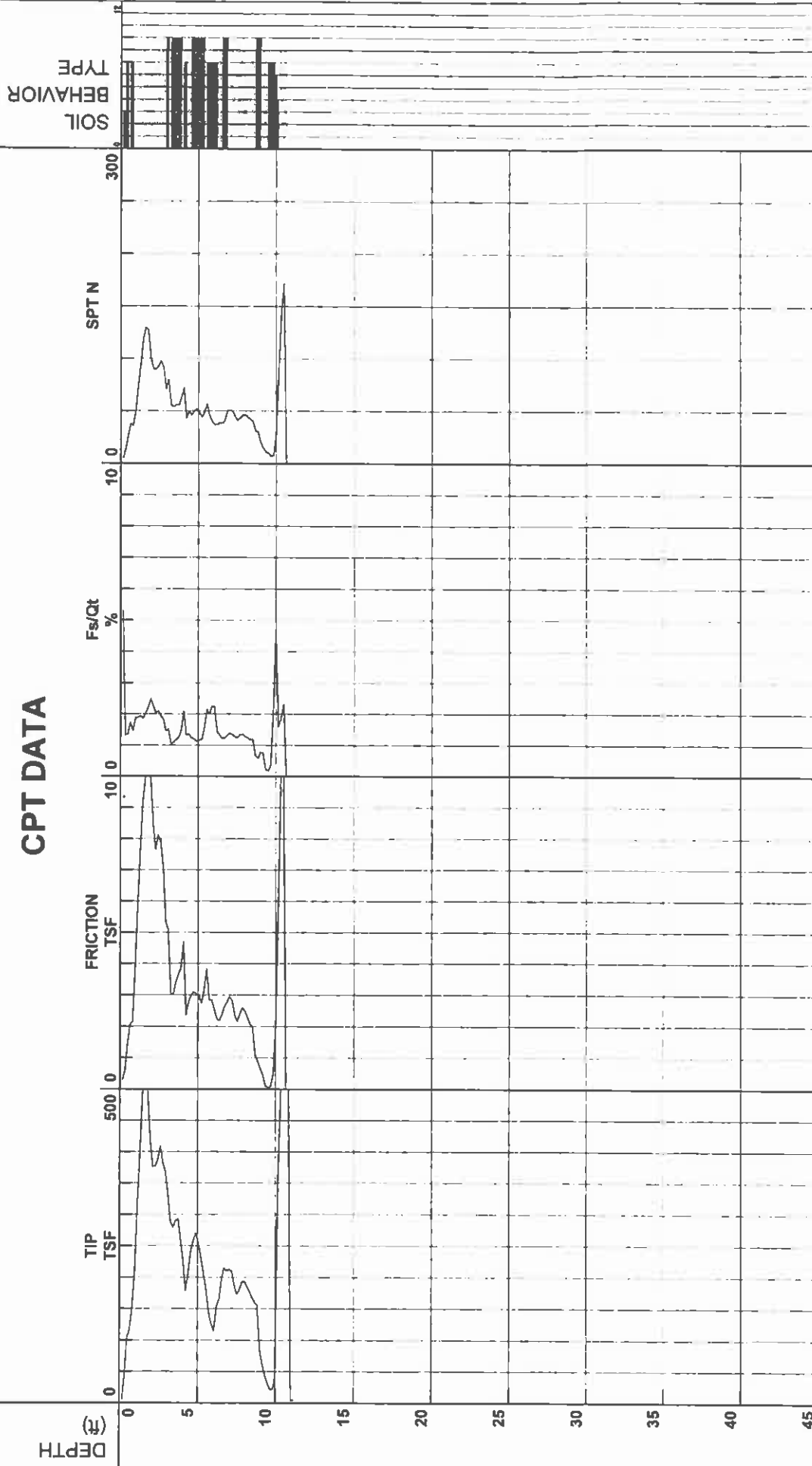
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                        |               |              |
|-------------------|-----------------|---------------|------------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                  | Filename      | SDF(444).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023                | GPS           |              |
| Hole Number       | CPT-17          | Date and Time | 11/30/2007 10:19:32 AM | Maximum Depth | 11.15 ft     |
| Water Table Depth |                 |               |                        | Elevation     | 214.7        |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

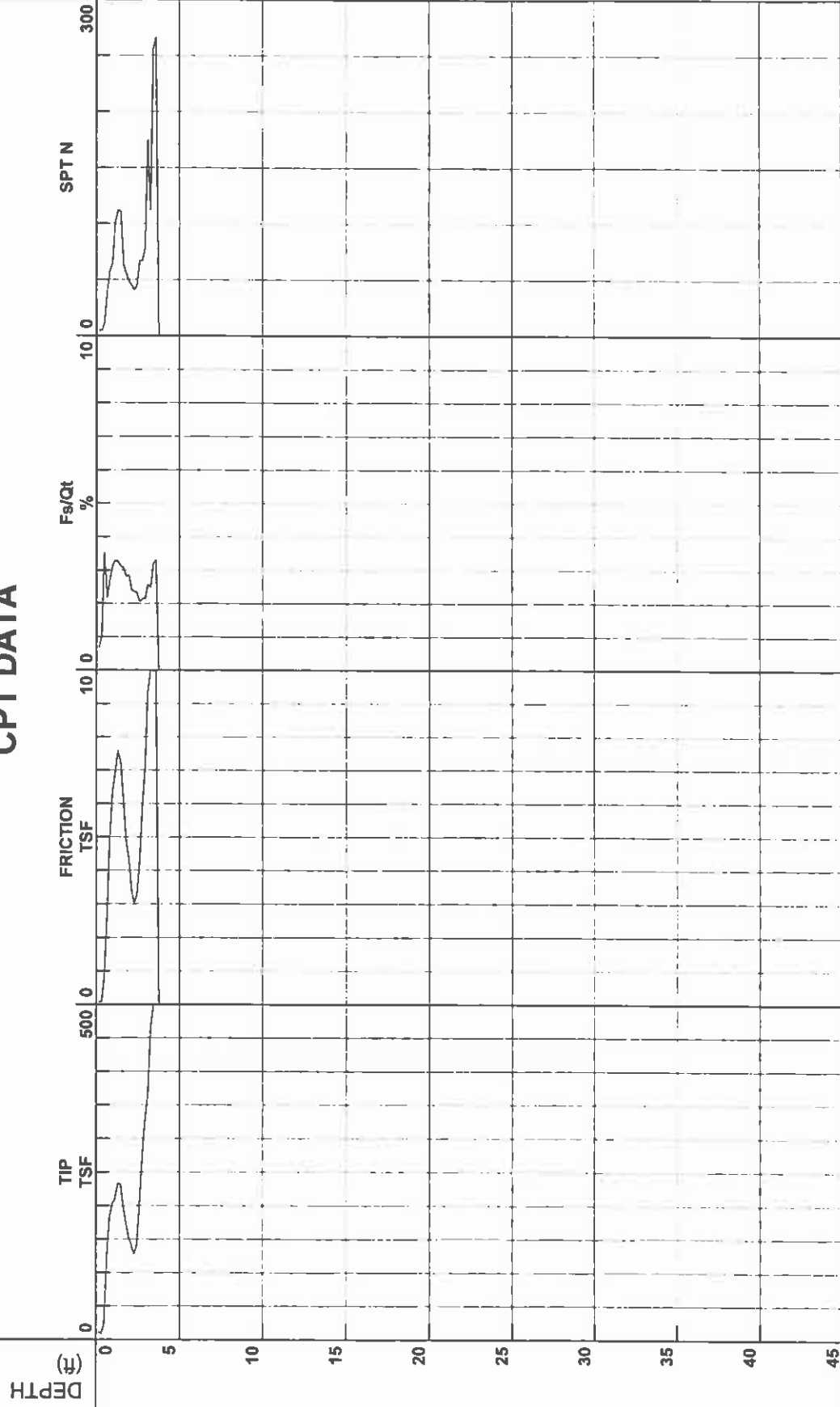
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |
|-------------------|-----------------|---------------|-----------------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 |
| Job Number        | 07-9487         | Cone Number   | DSG1023               |
| Hole Number       | CPT-18          | Date and Time | 11/29/2007 7:58:18 AM |
| Water Table Depth | 0.00 ft         | Maximum Depth | 3.94 ft               |
|                   |                 | Elevation     | 187.8                 |
|                   |                 | Filename      | SDF(424).cpt          |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

Depth Increment

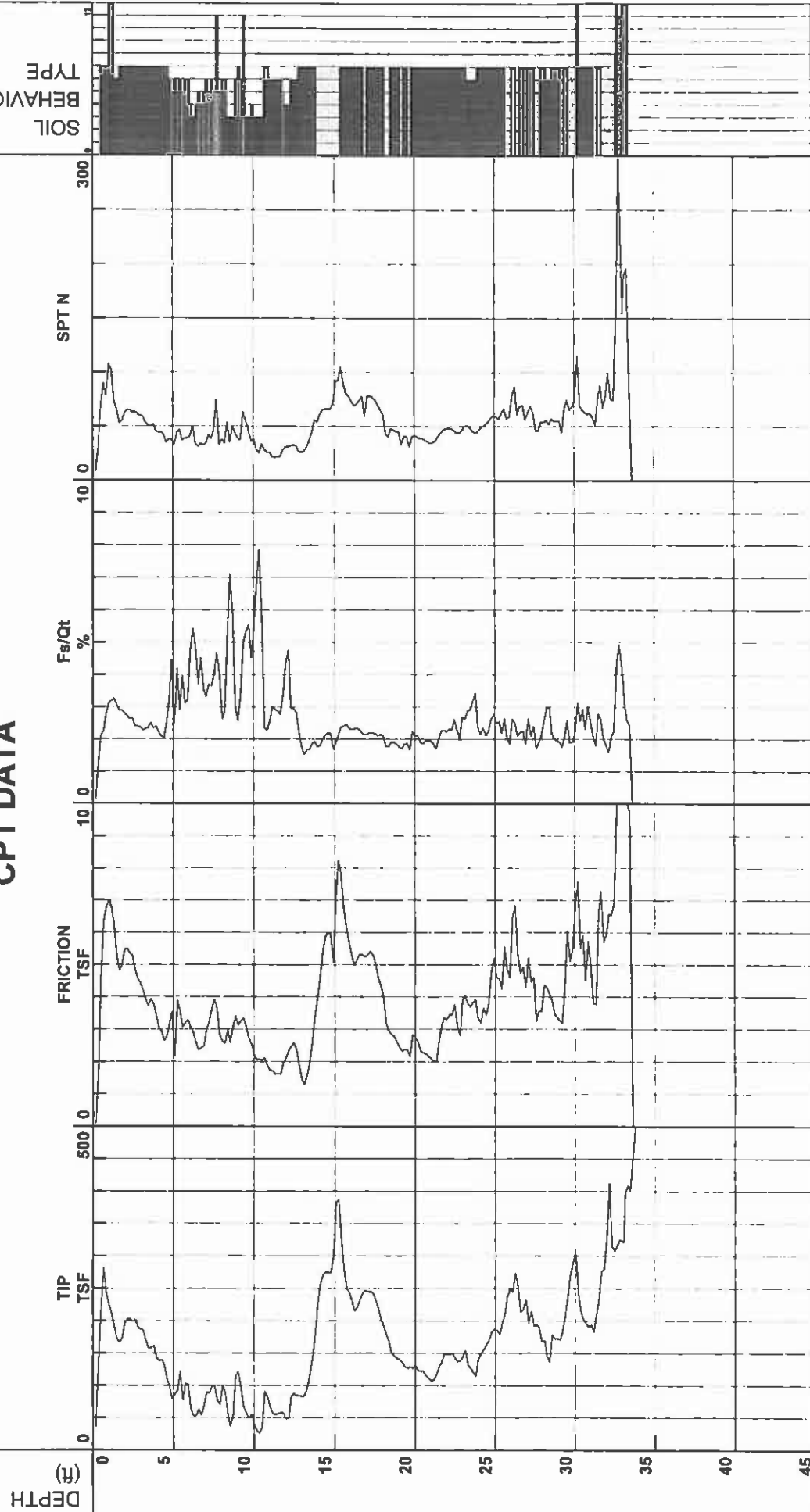
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(418).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-19          | Date and Time | 11/28/2007 2:23:34 PM | Maximum Depth | 33.79 ft     |
| Water Table Depth |                 |               |                       | Elevation     | 186.0        |

## CPT DATA



- |                            |                              |                                  |
|----------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

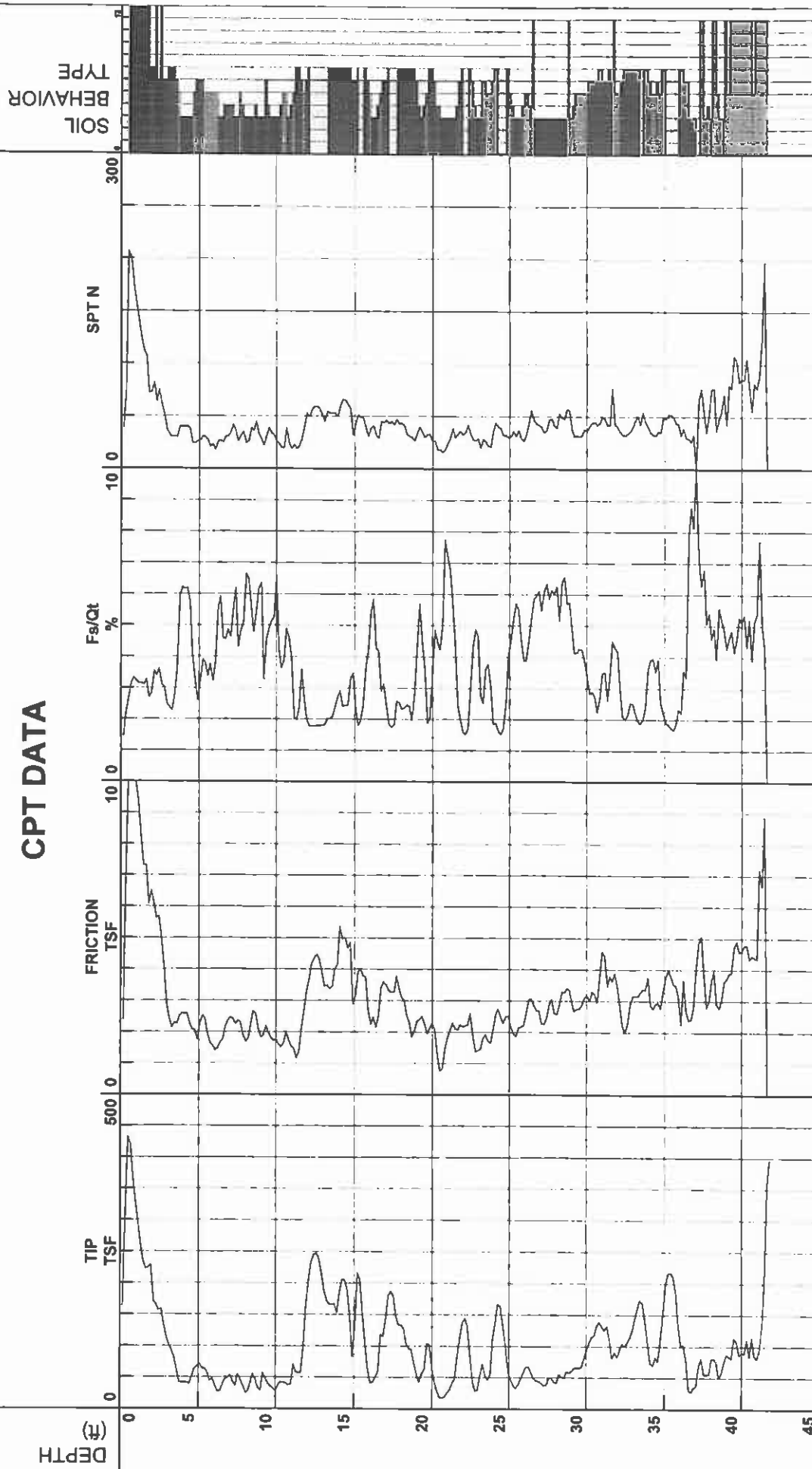
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(422).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-20          | Date and Time | 11/28/2007 3:56:57 PM | Maximum Depth | 41.83 ft     |
| Water Table Depth |                 |               |                       | Elevation     | 182.8        |

## CPT DATA



\*Soil behavior type and SPT based on data from UBC-1983

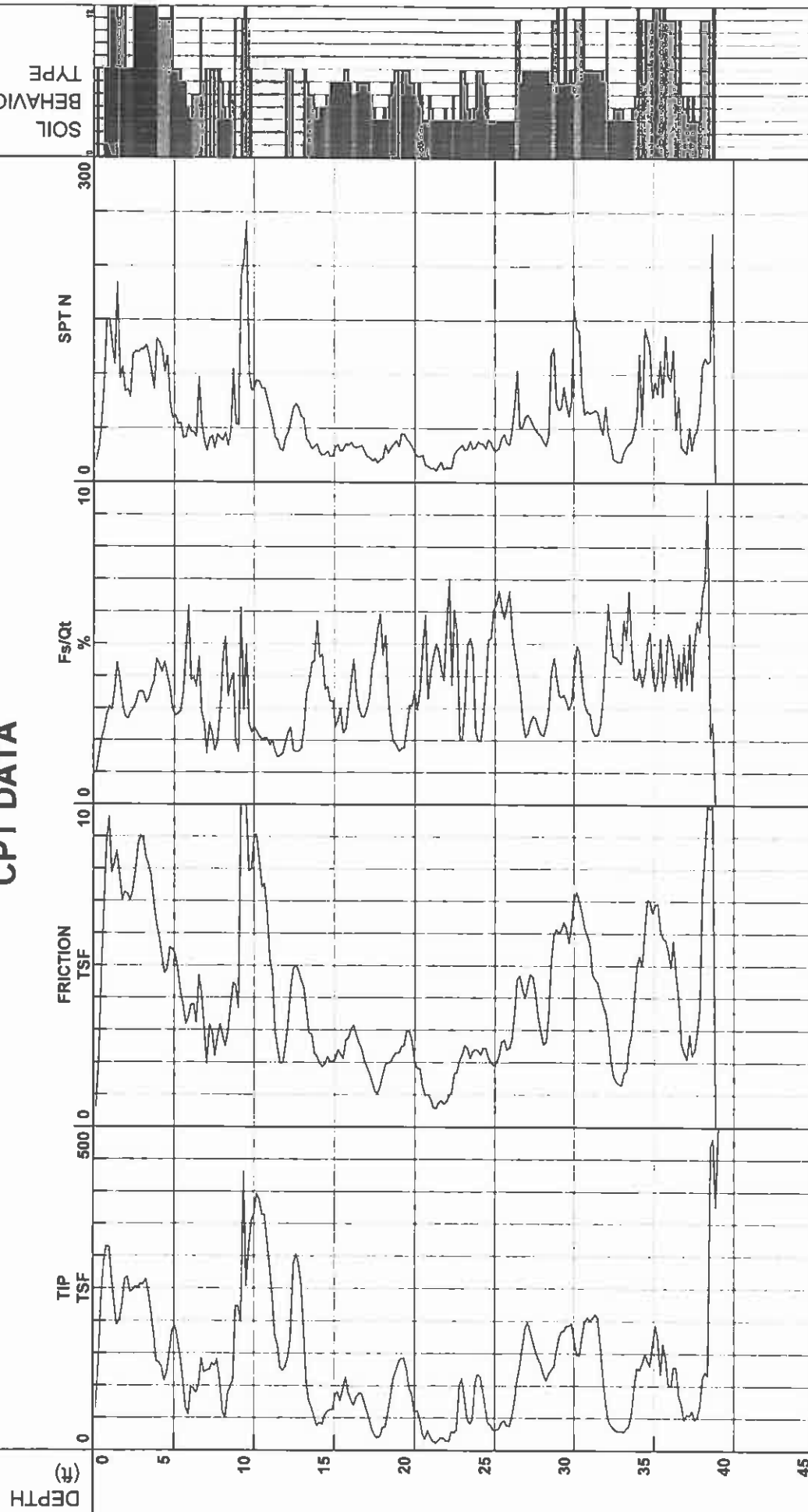
Depth increment



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(425).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-21          | Date and Time | 11/29/2007 8:16:34 AM | Maximum Depth | 39.04 ft     |
| Water Table Depth | 0.00 ft         |               |                       | Elevation     | 184.1        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

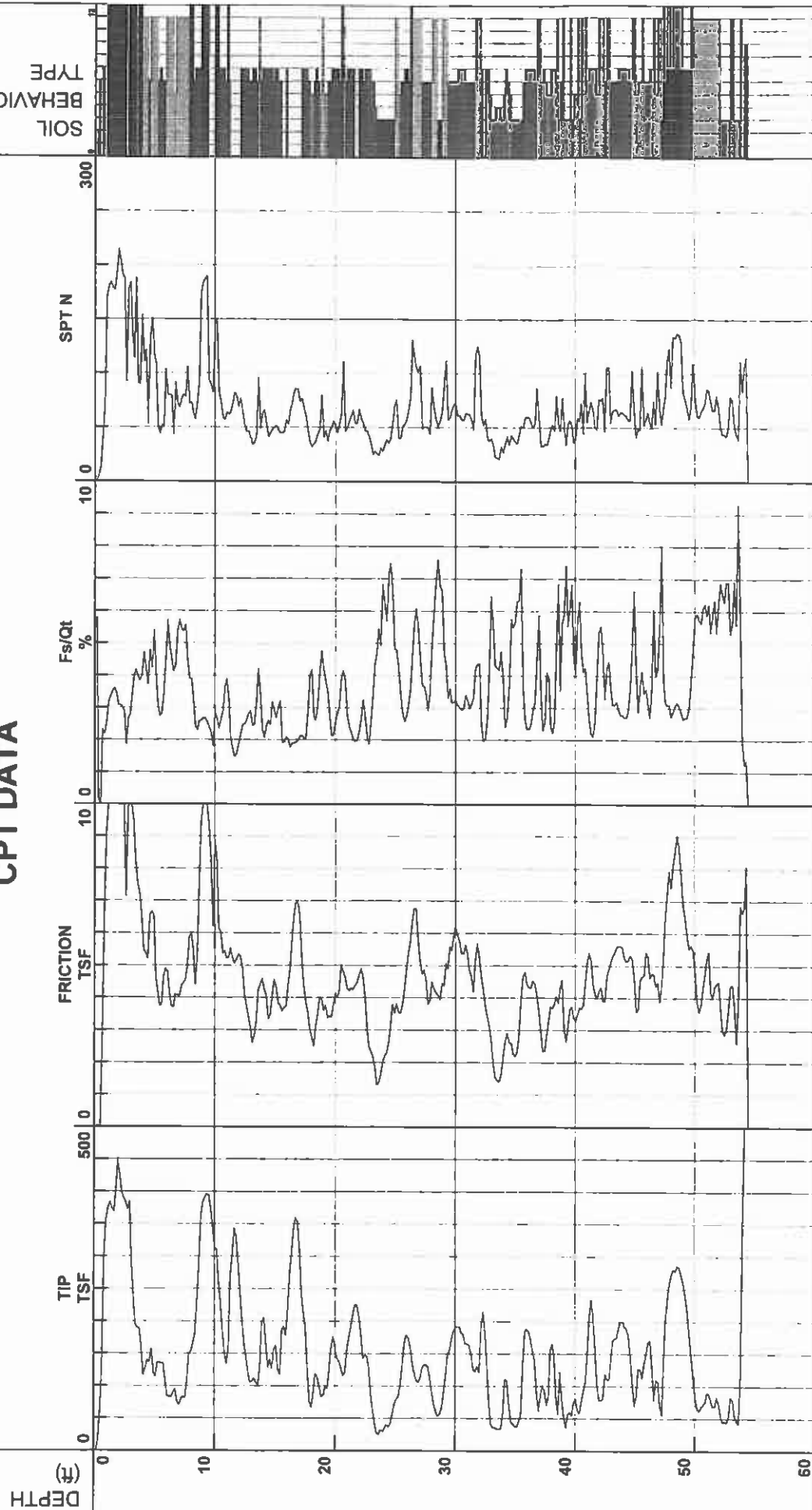
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(417).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-22          | Date and Time | 11/28/2007 1:19:54 PM | Maximum Depth | 54.63 ft     |
| Water Table Depth | 0.00 ft         |               |                       | Elevation     | 185.         |

## CPT DATA



- |                            |                              |                                  |
|----------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

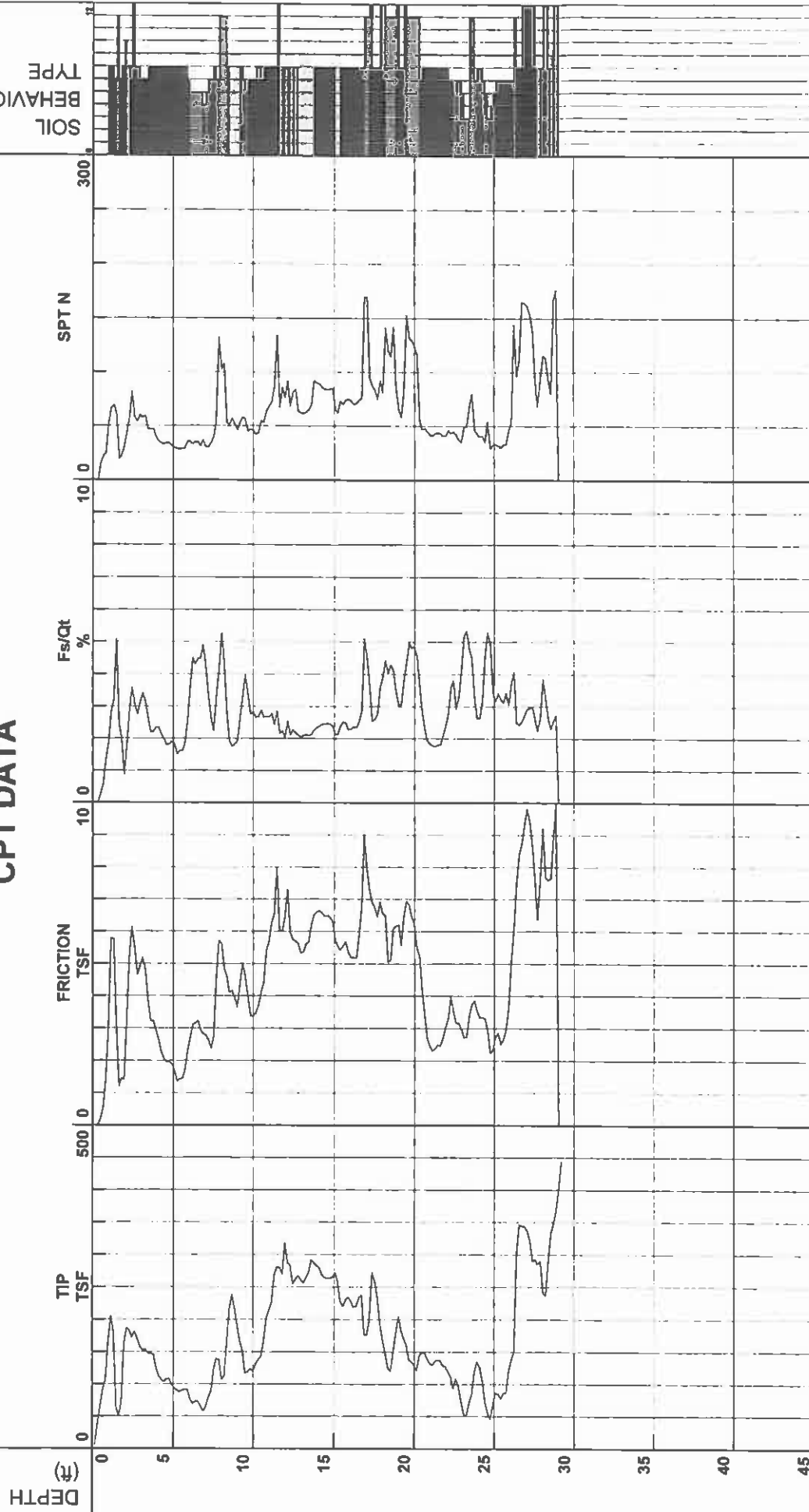
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(423).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-23          | Date and Time | 11/28/2007 4:40:56 PM | Maximum Depth | 29.20 ft     |
| Water Table Depth | 0.00 ft         |               |                       | Elevation     | 186.6        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

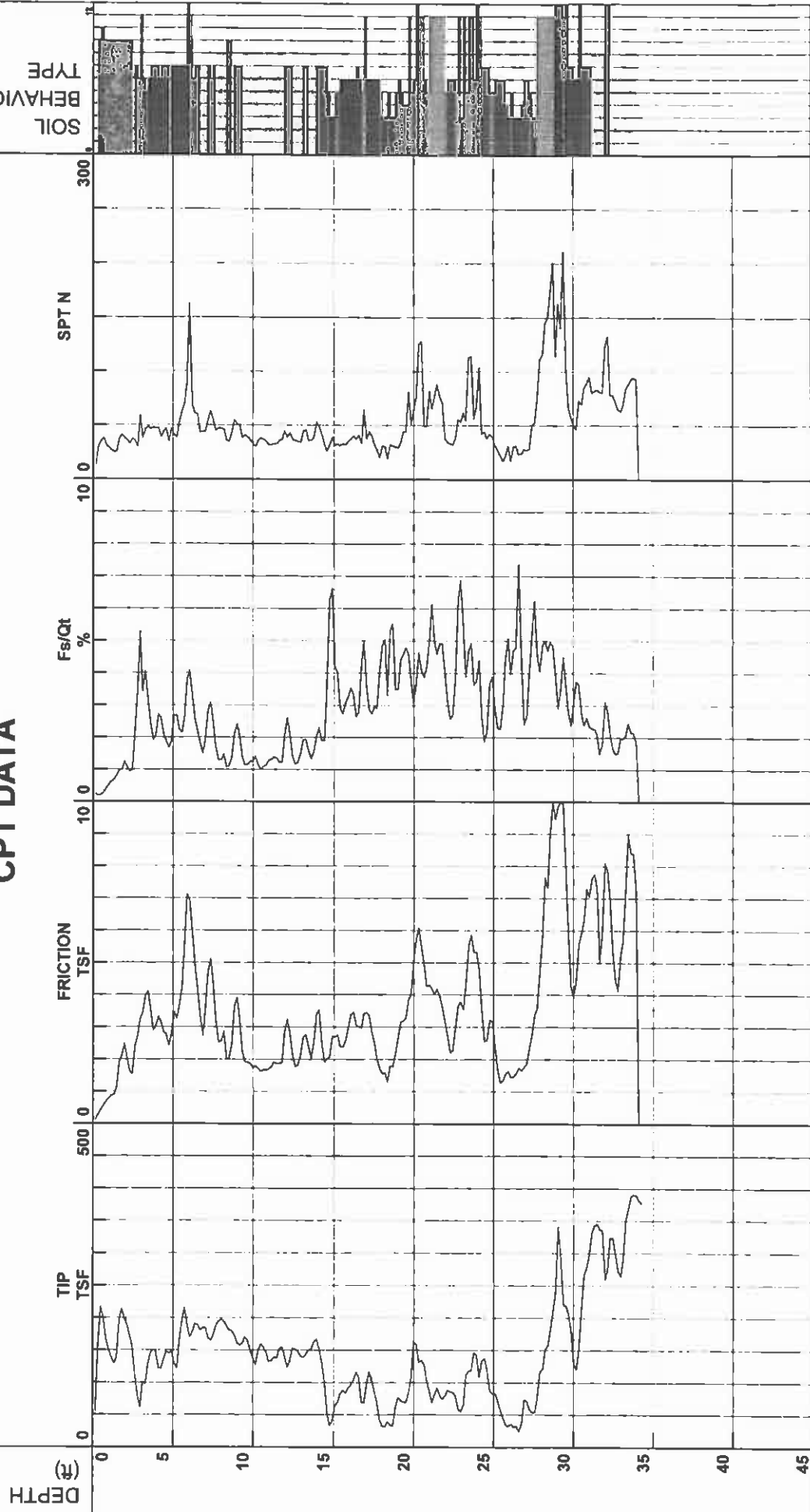
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |
|-------------------|-----------------|---------------|-----------------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 |
| Job Number        | 07-9487         | Cone Number   | DSG1023               |
| File Number       | CPT-24          | Date and Time | 11/29/2007 1:54:08 PM |
| Water Table Depth | 0.00 ft         | Maximum Depth | 34.28 ft              |
|                   |                 | Elevation     | 215.5                 |
|                   |                 | Filename      | SDF(431).cpt          |

## CPT DATA



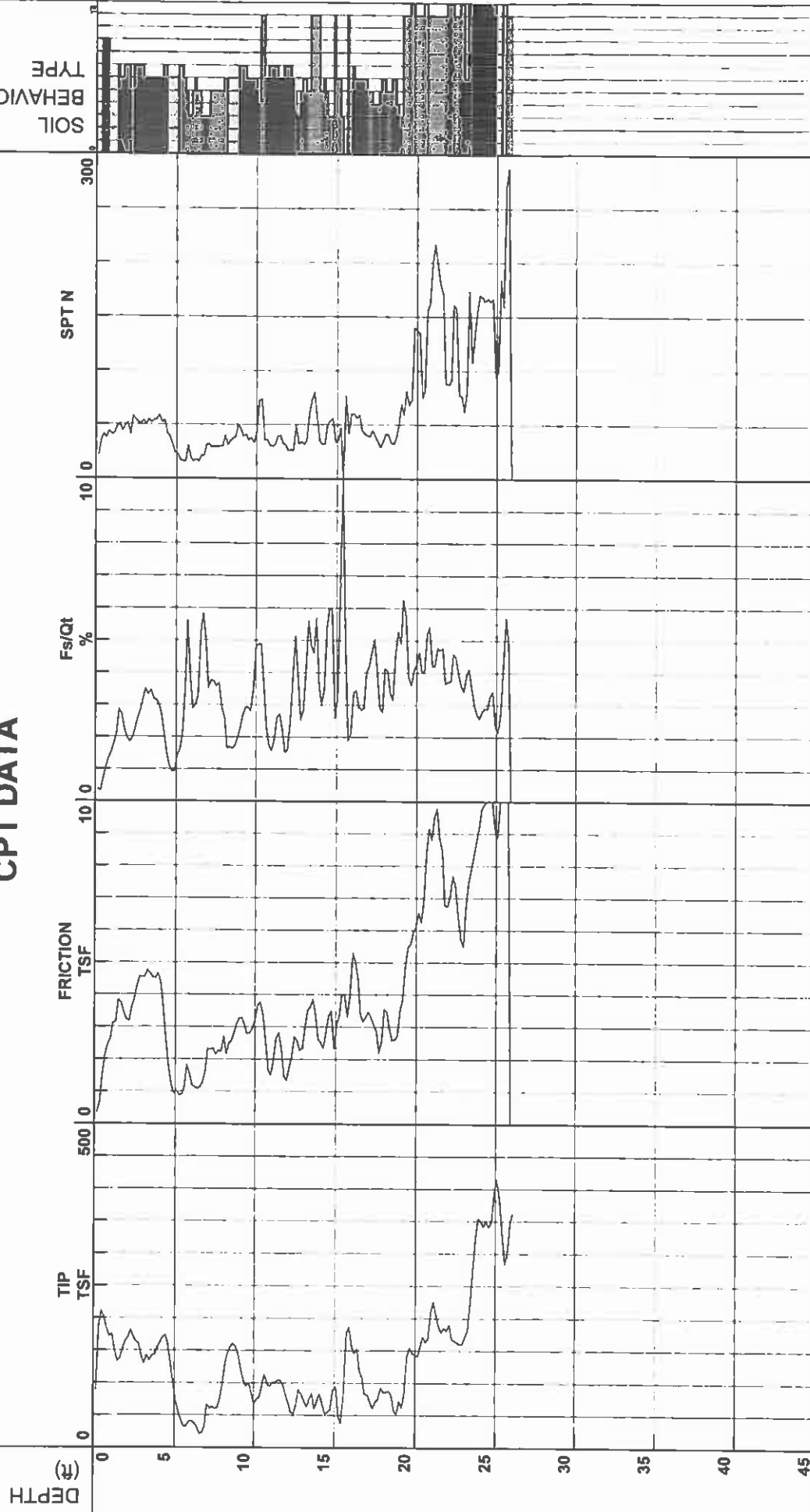
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |
|-------------------|-----------------|---------------|-----------------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 |
| Job Number        | 07-9487         | Cone Number   | DSG1023               |
| Hole Number       | CPT-25          | Date and Time | 11/29/2007 2:46:45 PM |
| Water Table Depth | 0.00 ft         | Maximum Depth | 26.08 ft              |
|                   |                 | Elevation     | 215.3                 |
|                   |                 | Filename      | SDF(432).cpt          |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-26

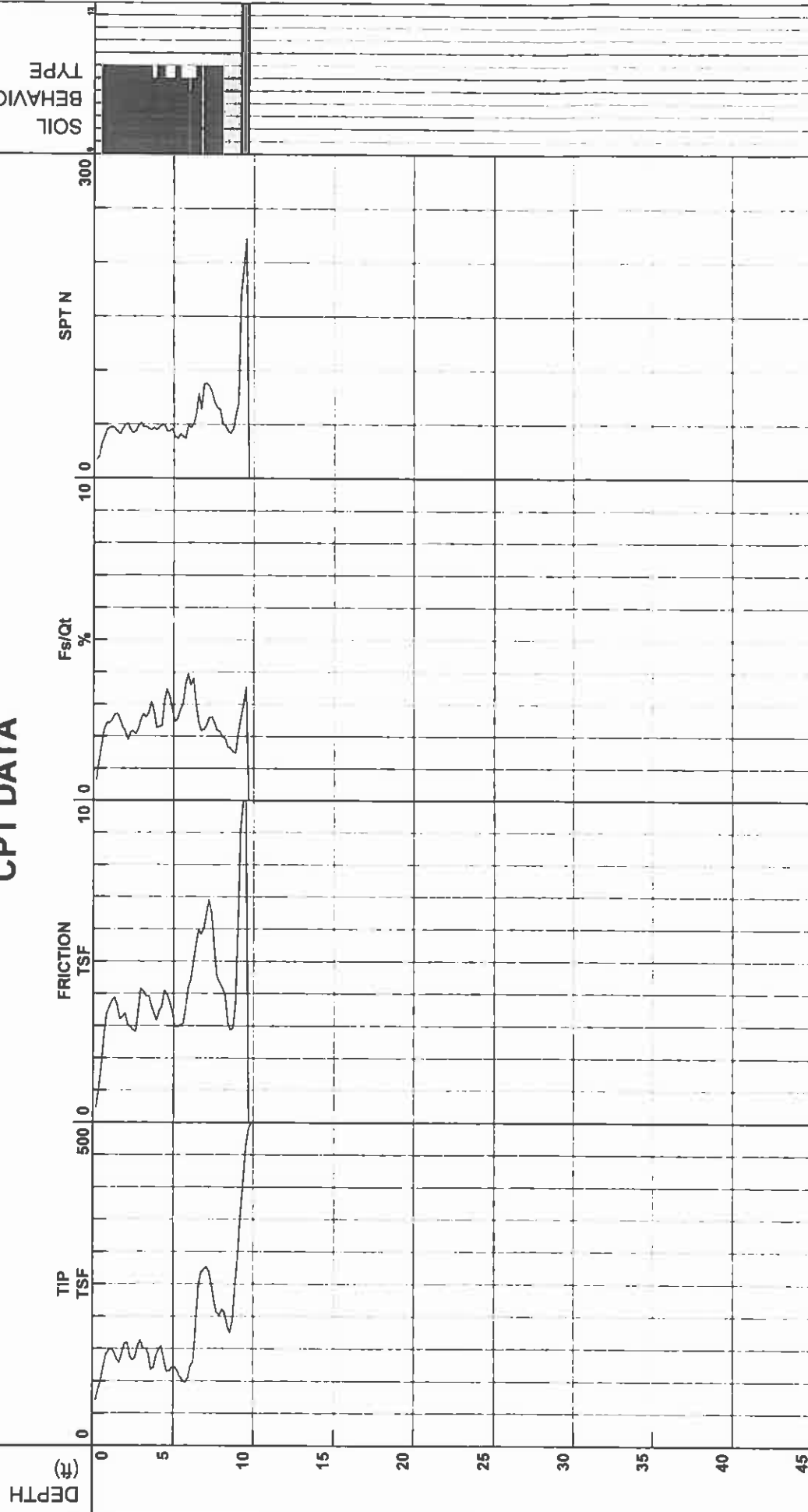
Operator  
Cone Number  
Date and Time

ML/CW  
DSG1023  
11/28/2007 11:08:43 AM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(412).cpt  
9.84 ft  
217.0

## CPT DATA



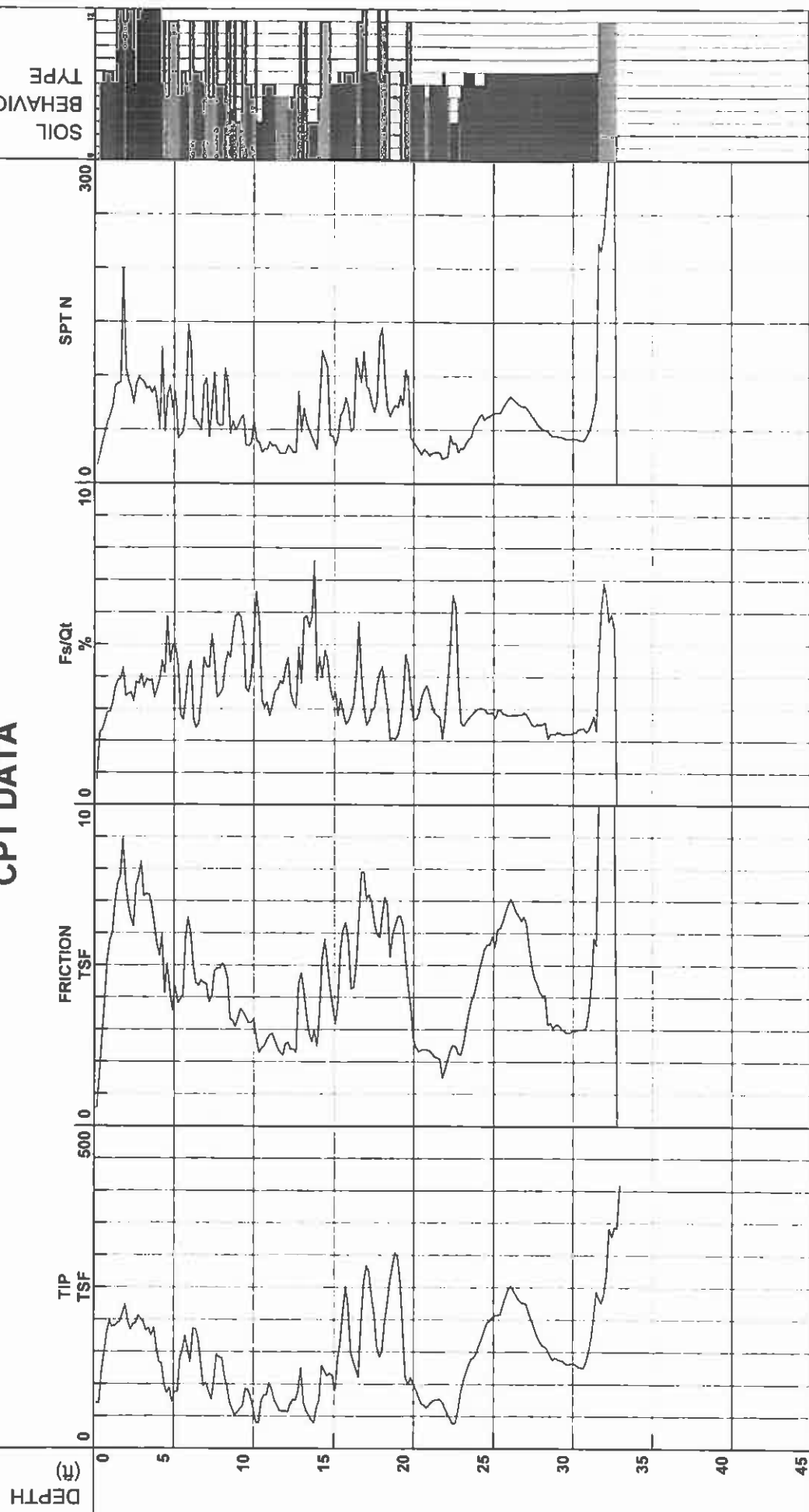
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(427).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-27          | Date and Time | 11/29/2007 9:34:41 AM | Maximum Depth | 32.97 ft     |
| Water Table Depth |                 |               | 0.00 ft               | Elevation     | 216.7        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

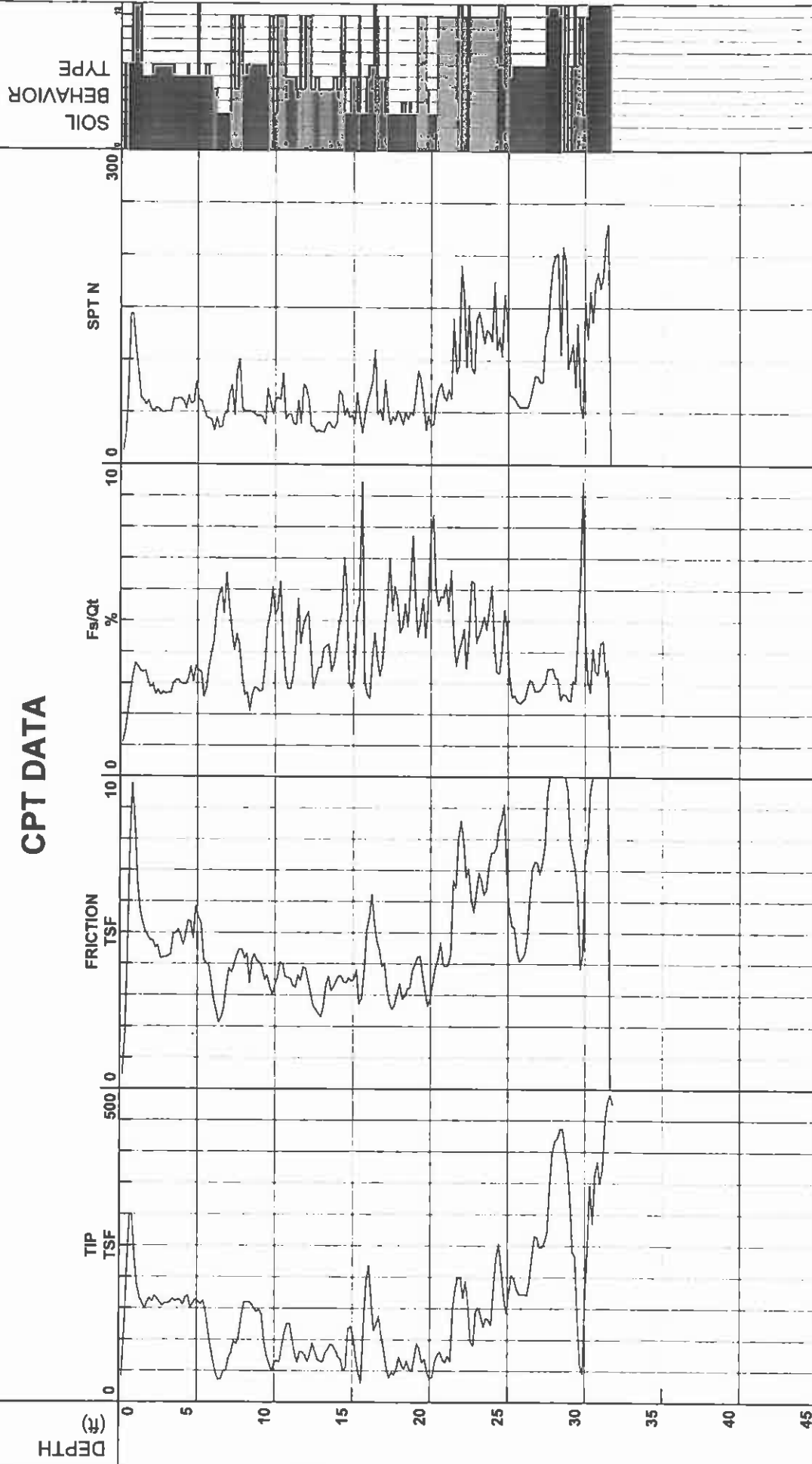
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                        |               |              |
|-------------------|-----------------|---------------|------------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                  | Filename      | SDF(429).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023                | GPS           |              |
| Hole Number       | CPT-28          | Date and Time | 11/29/2007 11:10:20 AM | Maximum Depth | 31.82 ft     |
| Water Table Depth |                 |               |                        | Elevation     | 215.1        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

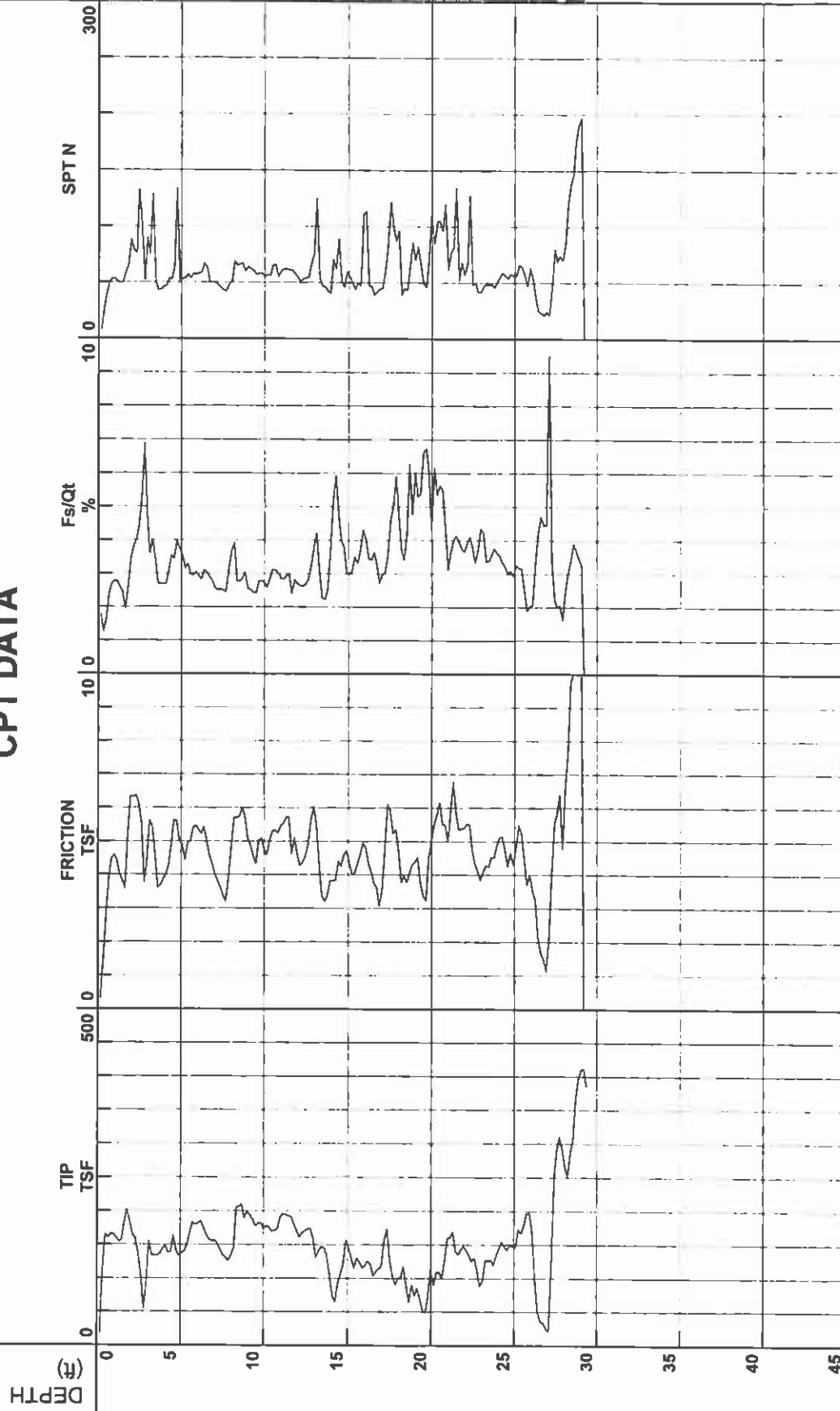
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                        |
|-------------------|-----------------|---------------|------------------------|
| Location          | Del Mar Heights | Operator      | ML/CW                  |
| Job Number        | 07-9487         | Cone Number   | DSG1023                |
| Hole Number       | CPT-29          | Date and Time | 11/29/2007 12:59:48 PM |
| Water Table Depth | 0.00 ft         | Maximum Depth | 29.36 ft               |
|                   |                 | Elevation     | 213.7                  |
|                   |                 | Filename      | SDF(430).cpt           |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

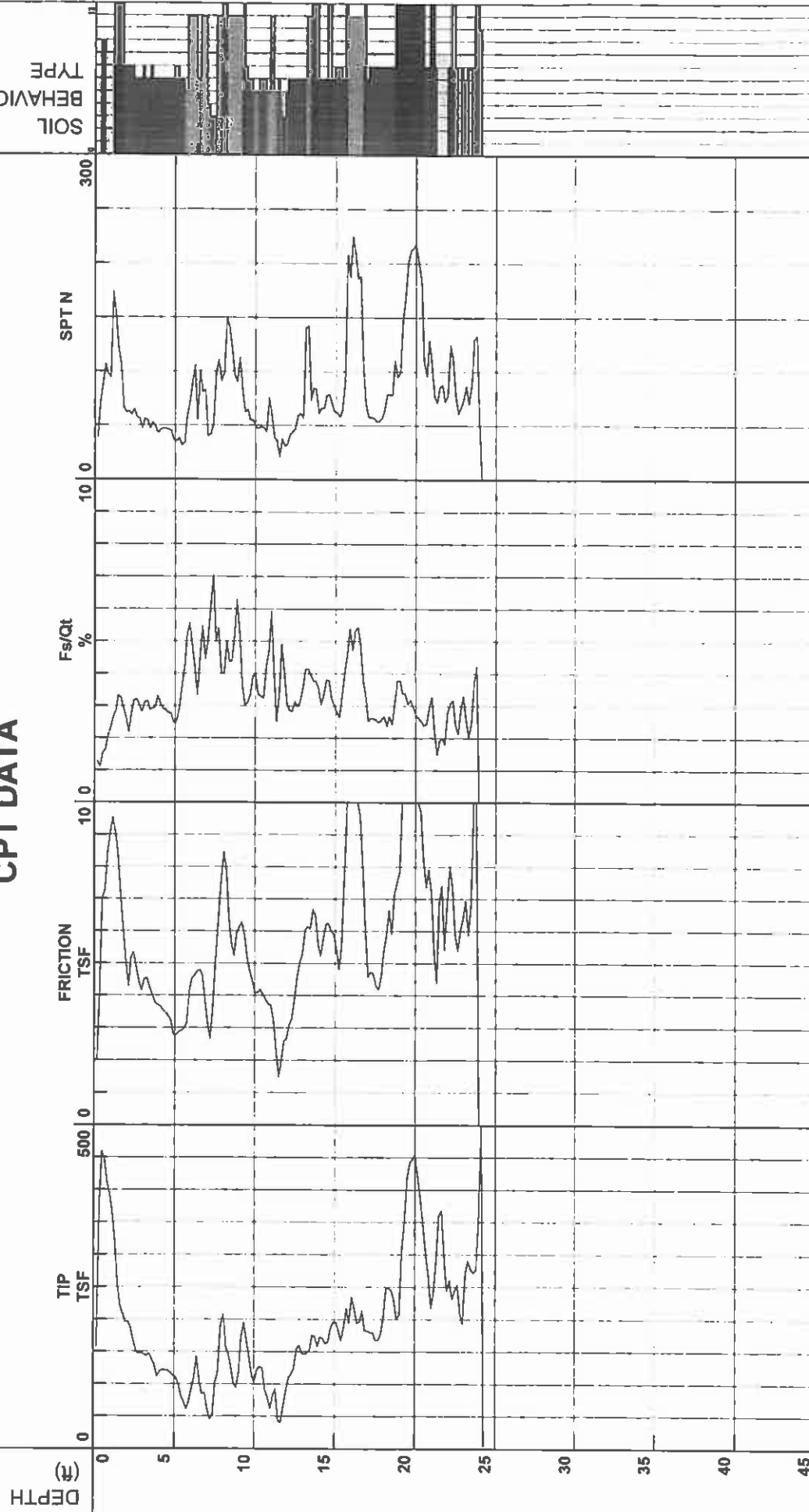
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |
|-------------------|-----------------|---------------|-----------------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 |
| Job Number        | 07-9487         | Cone Number   | DSG1023               |
| Hole Number       | CPT-30          | Date and Time | 11/28/2007 9:02:54 AM |
| Water Table Depth | 0.00 ft         | Maximum Depth | 24.28 ft              |
|                   |                 | Elevation     | 200.0                 |
|                   |                 | Filename      | SDF(410).cpt          |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-31

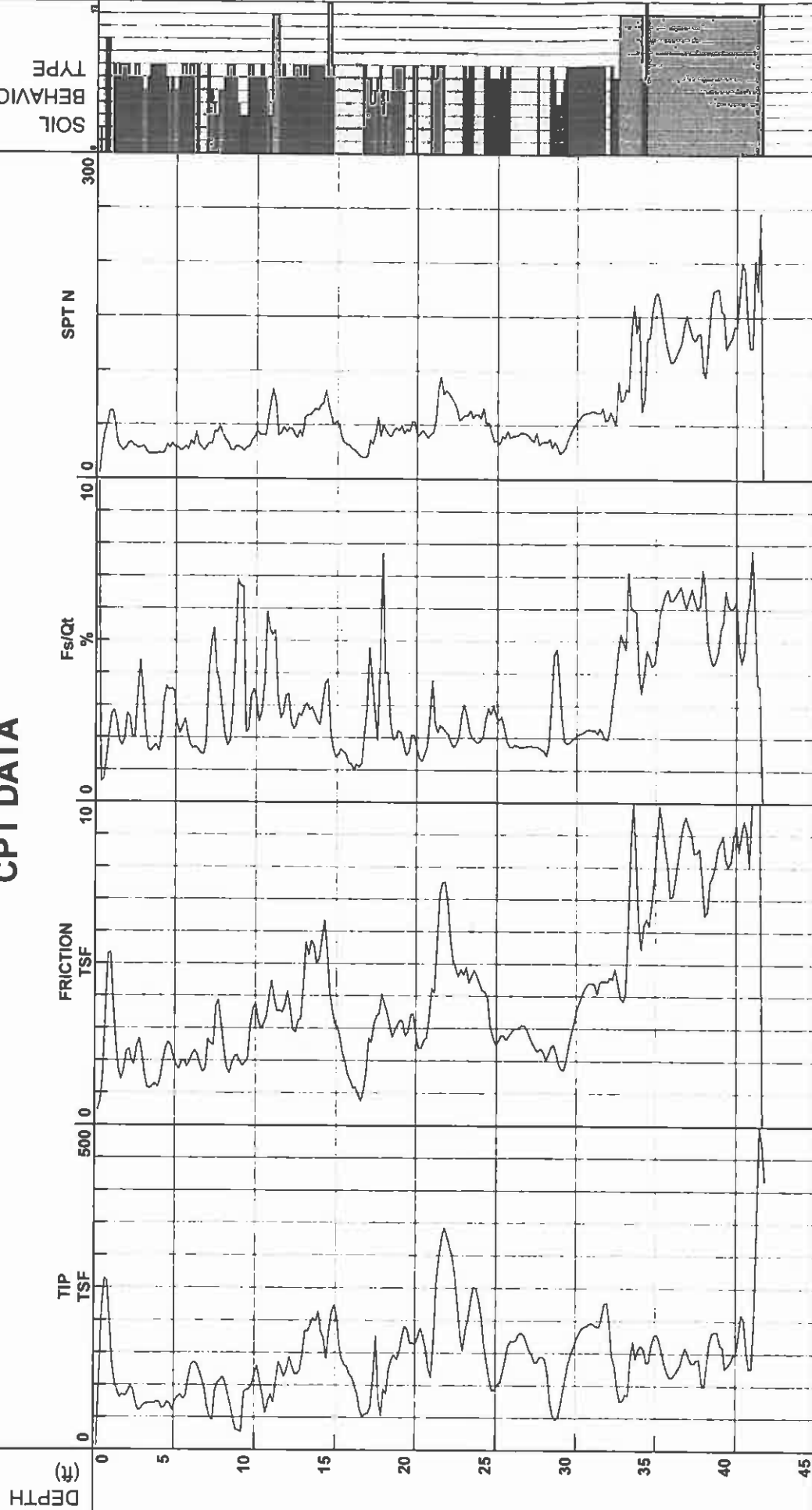
Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/28/2007 7:48:11 AM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(409).cpt  
41.83 ft  
196.4

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

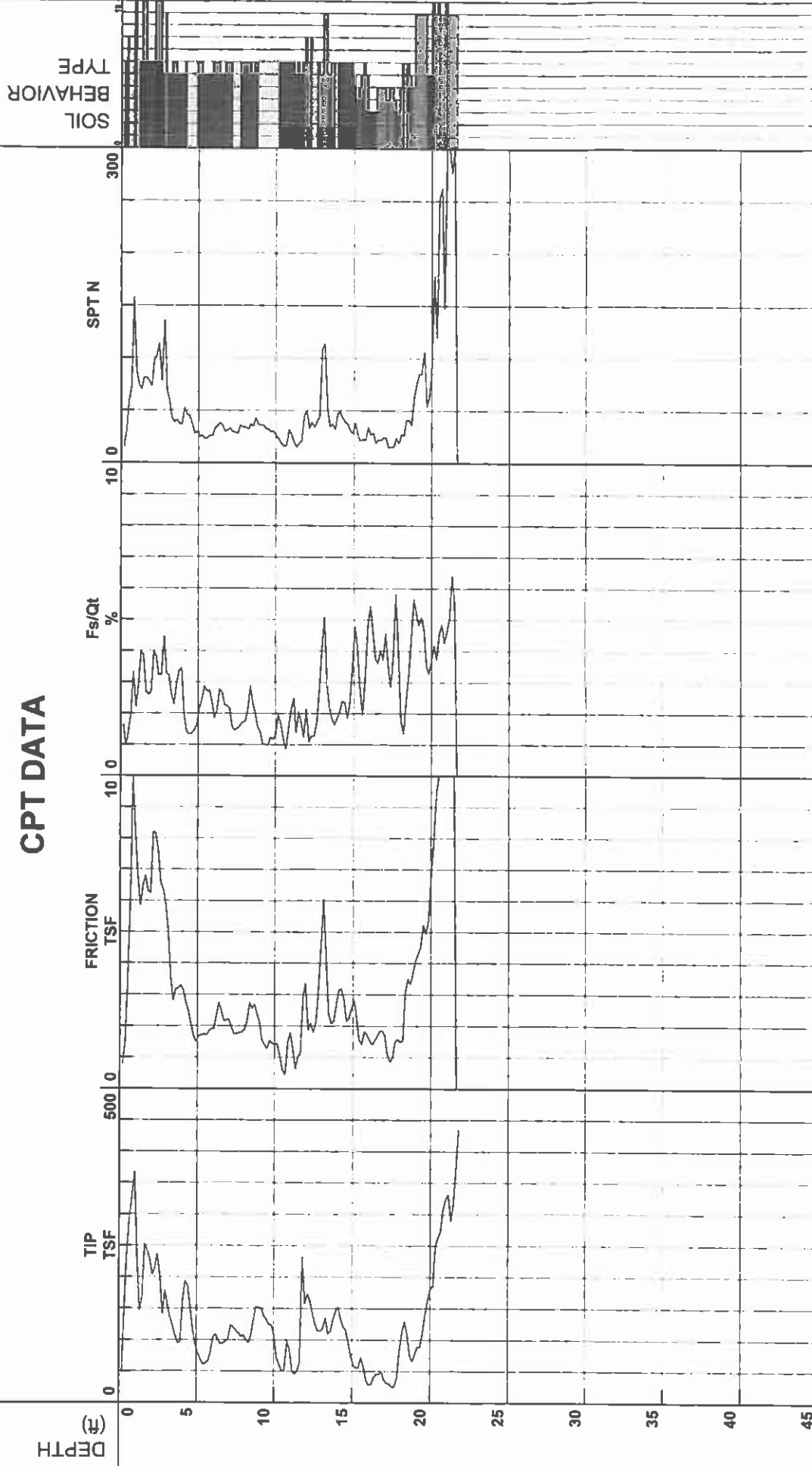
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(408).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-32          | Date and Time | 11/27/2007 4:59:07 PM | Maximum Depth | 21.82 ft     |
| Water Table Depth |                 |               |                       | Elevation     | 196.6        |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

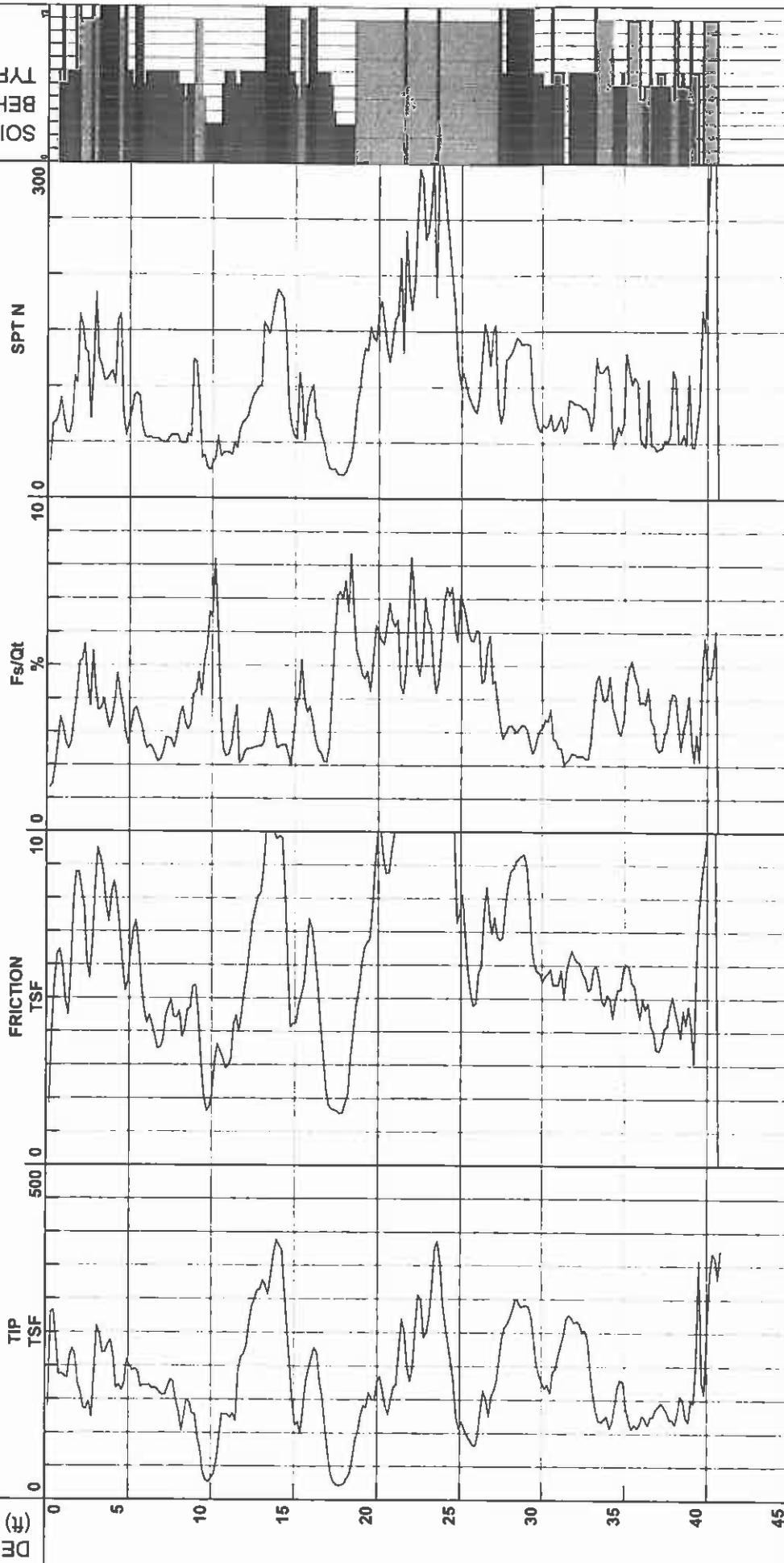
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                        |               |              |
|-------------------|-----------------|---------------|------------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                  | Filename      | SDF(411).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023                | GPS           |              |
| Hole Number       | CPT-33          | Date and Time | 11/28/2007 10:03:26 AM | Maximum Depth | 40.85 ft     |
| Water Table Depth |                 |               |                        | Elevation     | 198.2        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

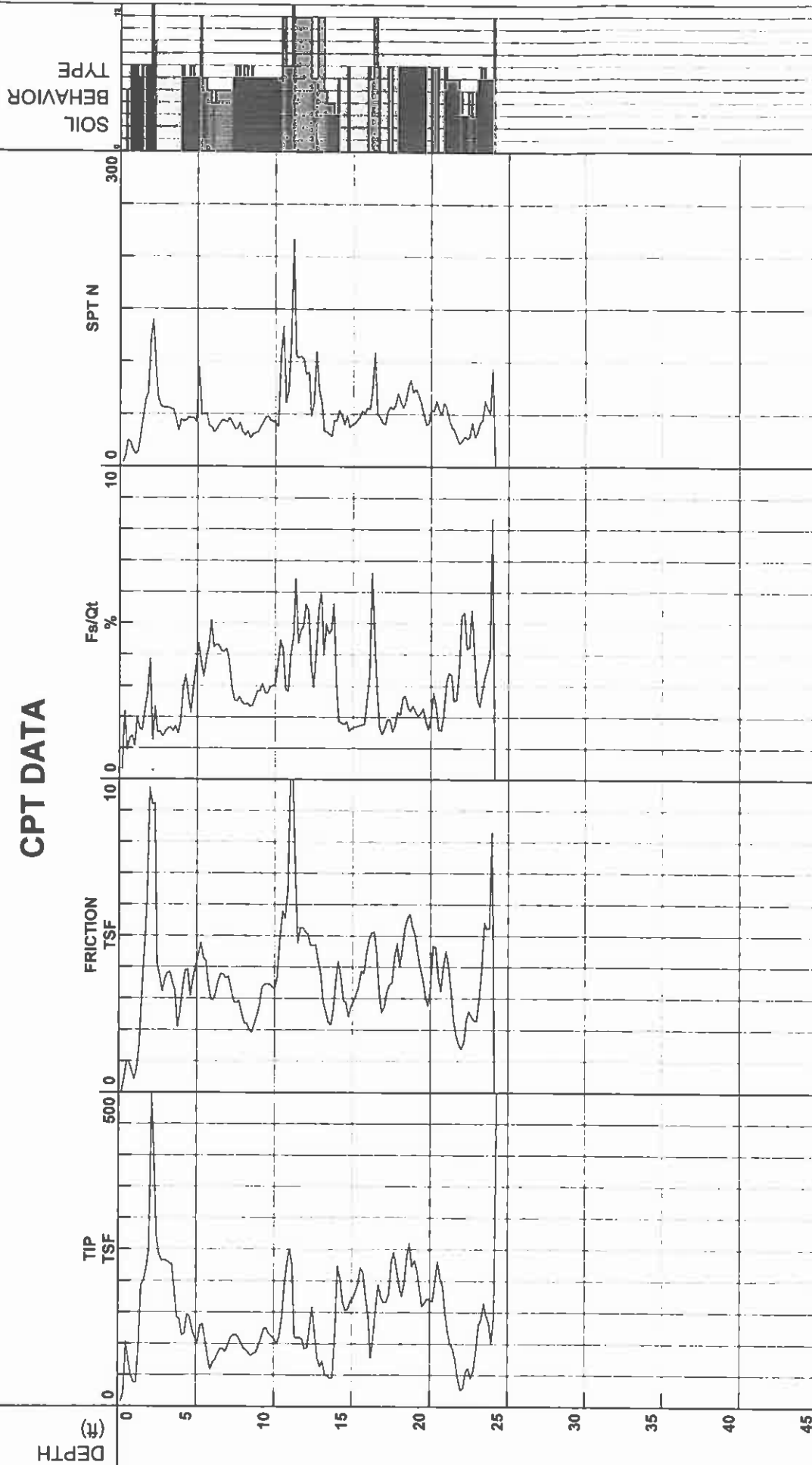
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(406).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-34          | Date and Time | 11/27/2007 3:56:00 PM | Maximum Depth | 24.28 ft     |
| Water Table Depth |                 |               |                       | Elevation     | 202.4        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

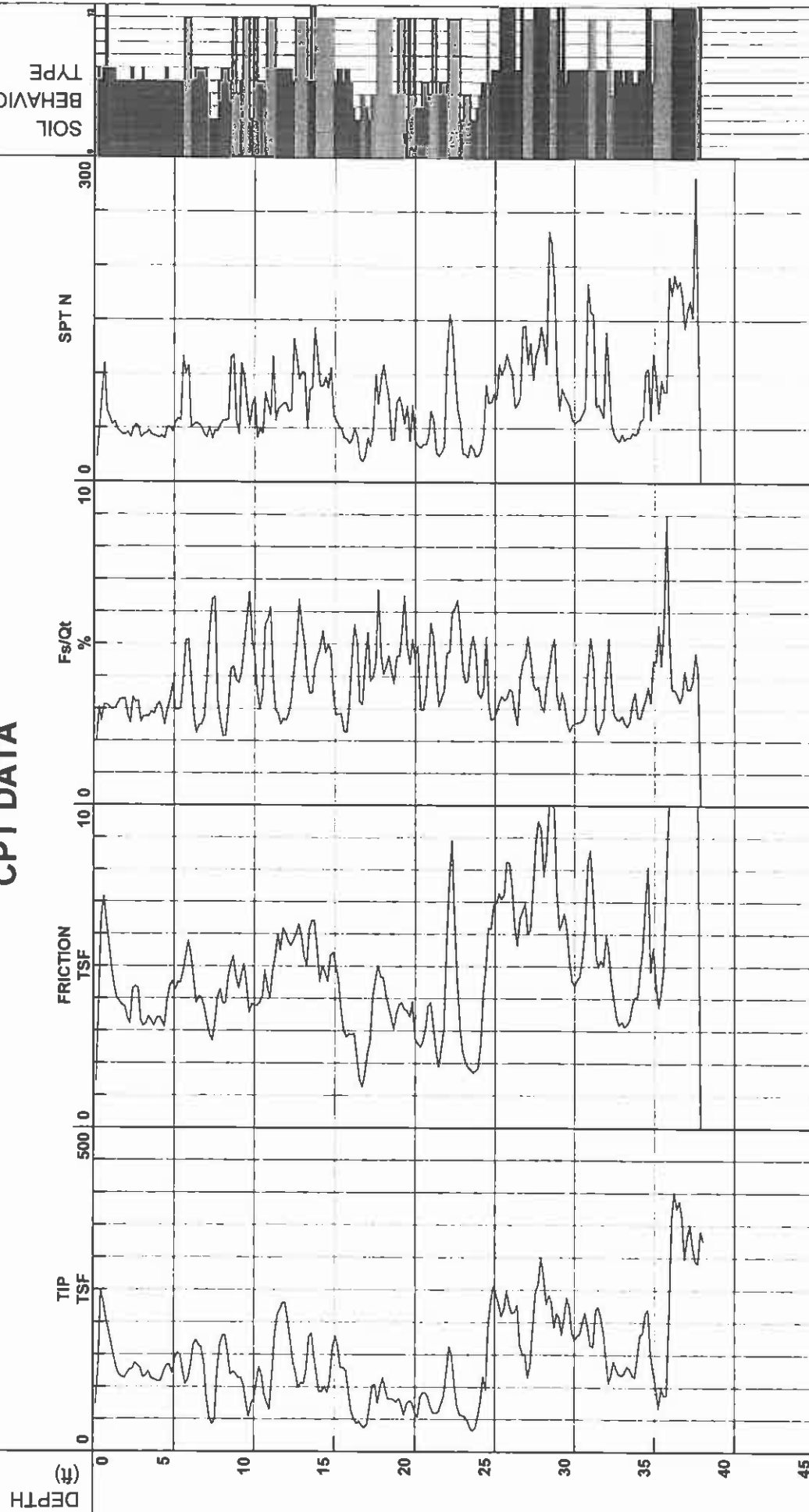
Del Mar Heights  
07-9487  
CPT-35

Operator  
Cone Number  
Date and Time  
0.00 ft

ML/CW  
DSG1023  
11/29/2007 10:27:51 AM

Filename  
GPS  
Maximum Depth  
SDF(428).cpt  
38.06 ft  
215.0

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

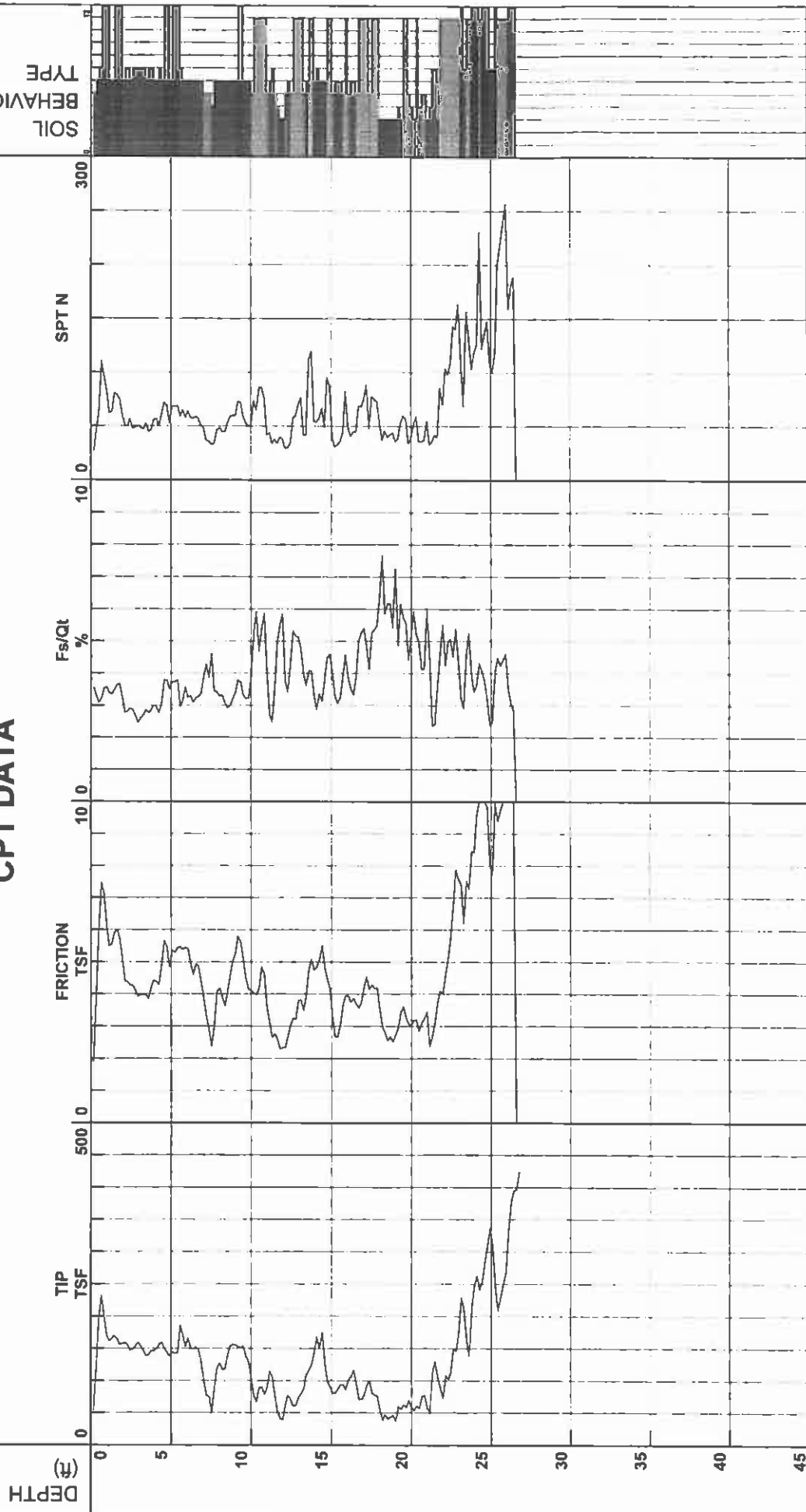
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(426).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-36          | Date and Time | 11/29/2007 9:01:38 AM | Maximum Depth | 26.74 ft     |
| Water Table Depth |                 |               | 0.00 ft               | Elevation     | 216.7        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

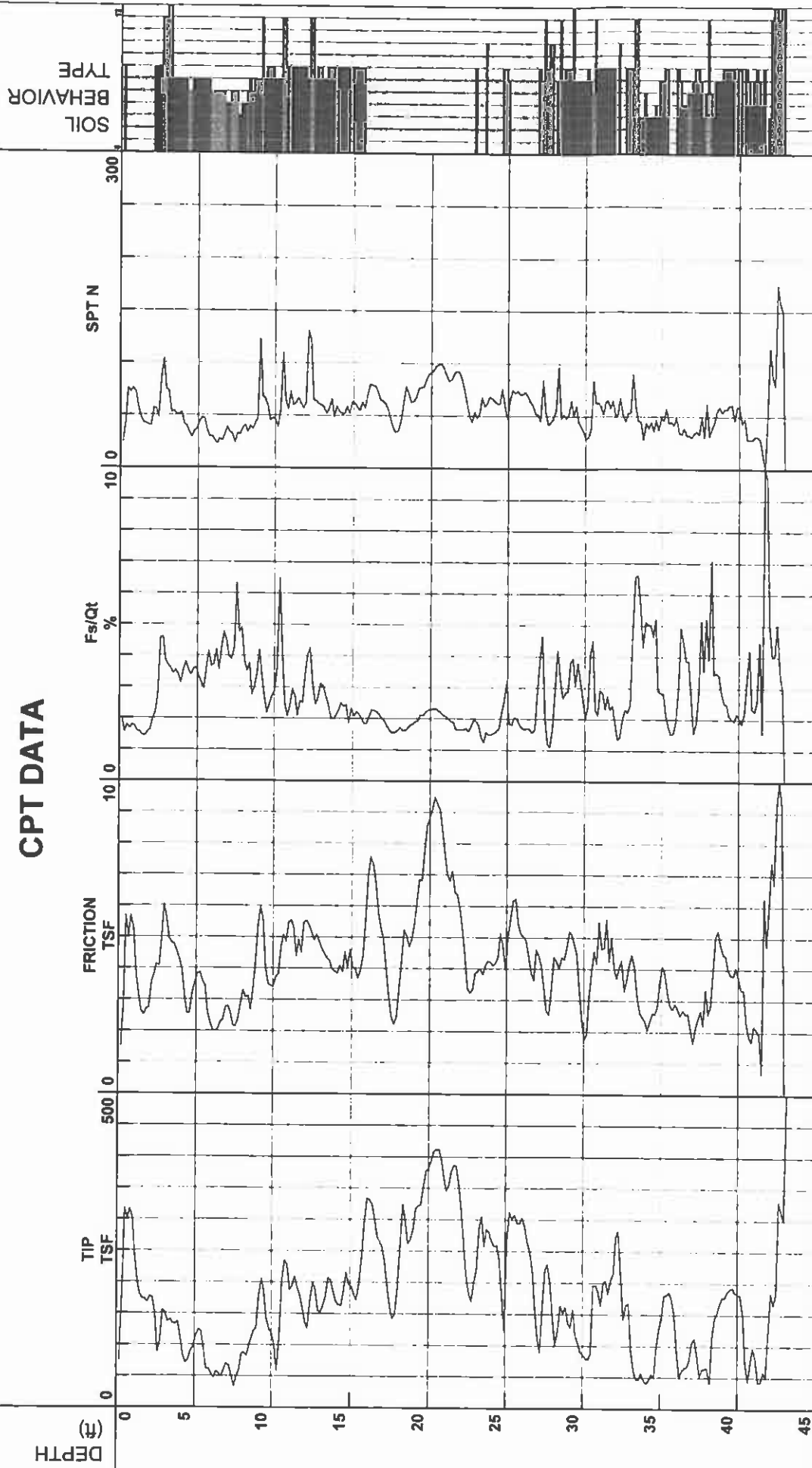
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                        |               |              |
|-------------------|-----------------|---------------|------------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                  | Filename      | SDF(400).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023                | GPS           |              |
| Hole Number       | CPT-37          | Date and Time | 11/27/2007 11:34:41 AM | Maximum Depth | 43.14 ft     |
| Water Table Depth |                 |               |                        | Elevation     | 203.1        |

## CPT DATA



- |                               |                              |                                  |
|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained    | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material          | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                      | 9 - sand                     | 12 - sand to clayey sand (*)     |
| 4 - silty clay to clay        |                              |                                  |
| 5 - clayey silt to silty clay |                              |                                  |
| 6 - sandy silt to clayey silt |                              |                                  |

\*Soil behavior type and SPT based on data from UBC-1983

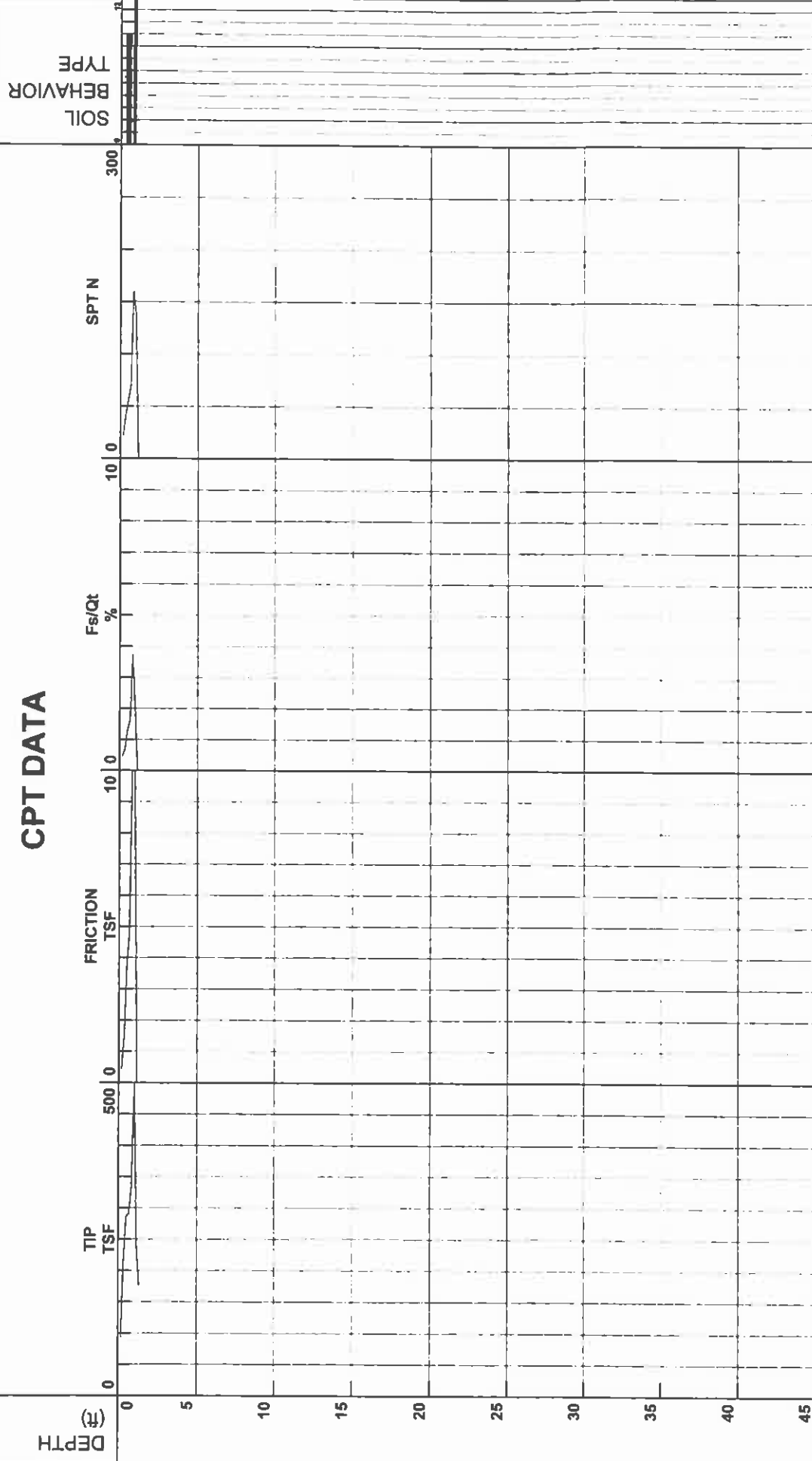
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                        |               |              |
|-------------------|-----------------|---------------|------------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                  | Filename      | SDF(401).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023                | GPS           |              |
| Hole Number       | CPT-38          | Date and Time | 11/27/2007 12:20:25 PM | Maximum Depth | 1.31 ft      |
| Water Table Depth |                 |               |                        | Elevation     | 202.1        |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

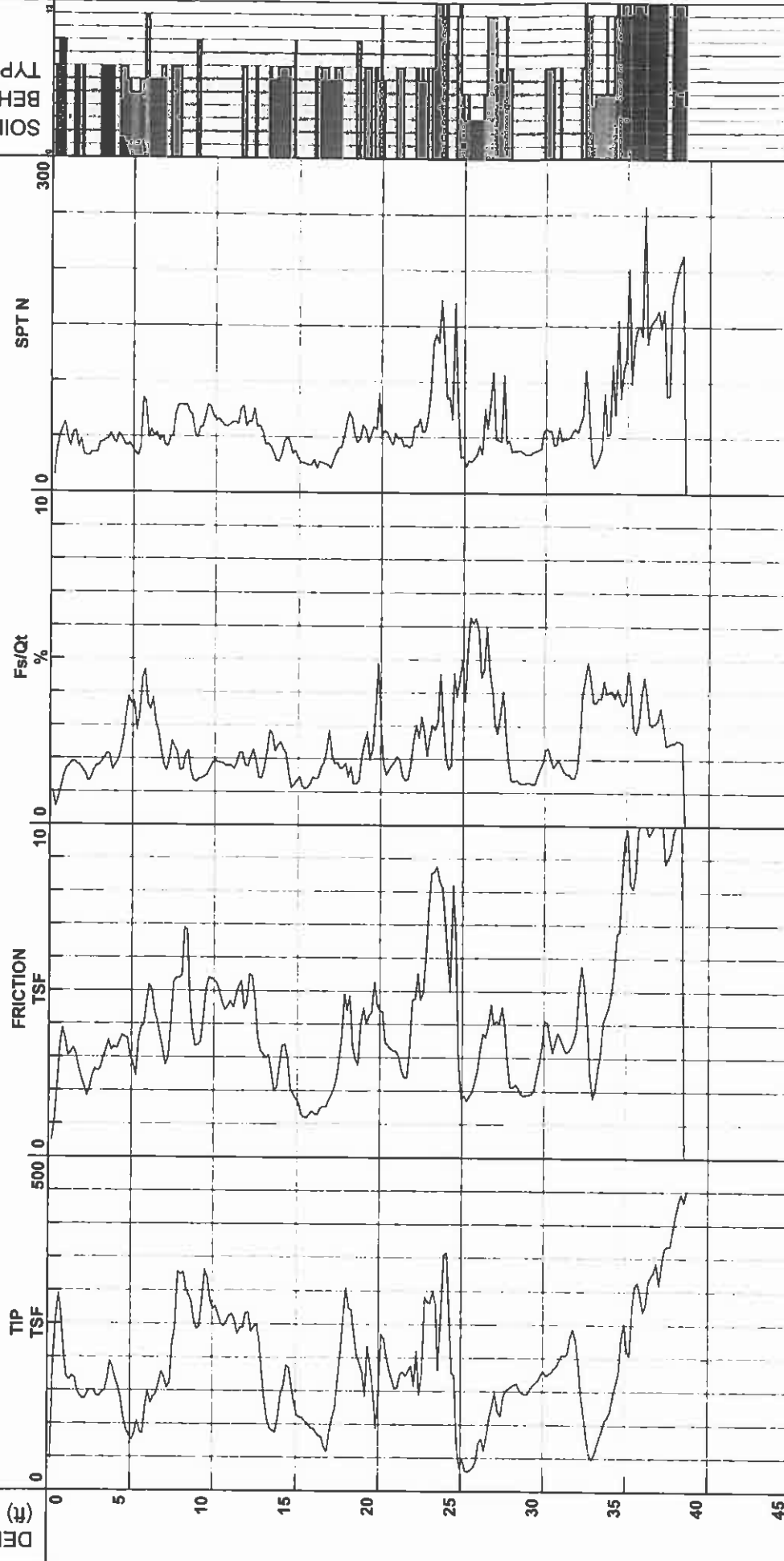
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                        |
|-------------------|-----------------|---------------|------------------------|
| Location          | Del Mar Heights | Operator      | ML/CW                  |
| Job Number        | 07-9487         | Cone Number   | DSG1023                |
| Hole Number       | CPT-38A         | Date and Time | 11/27/2007 12:33:42 PM |
| Water Table Depth |                 |               |                        |
|                   |                 | Maximum Depth | 38.71 ft               |
|                   |                 | Elevation     | 202.1                  |
|                   |                 | Filename      | SDF(402).cpt           |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravely sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

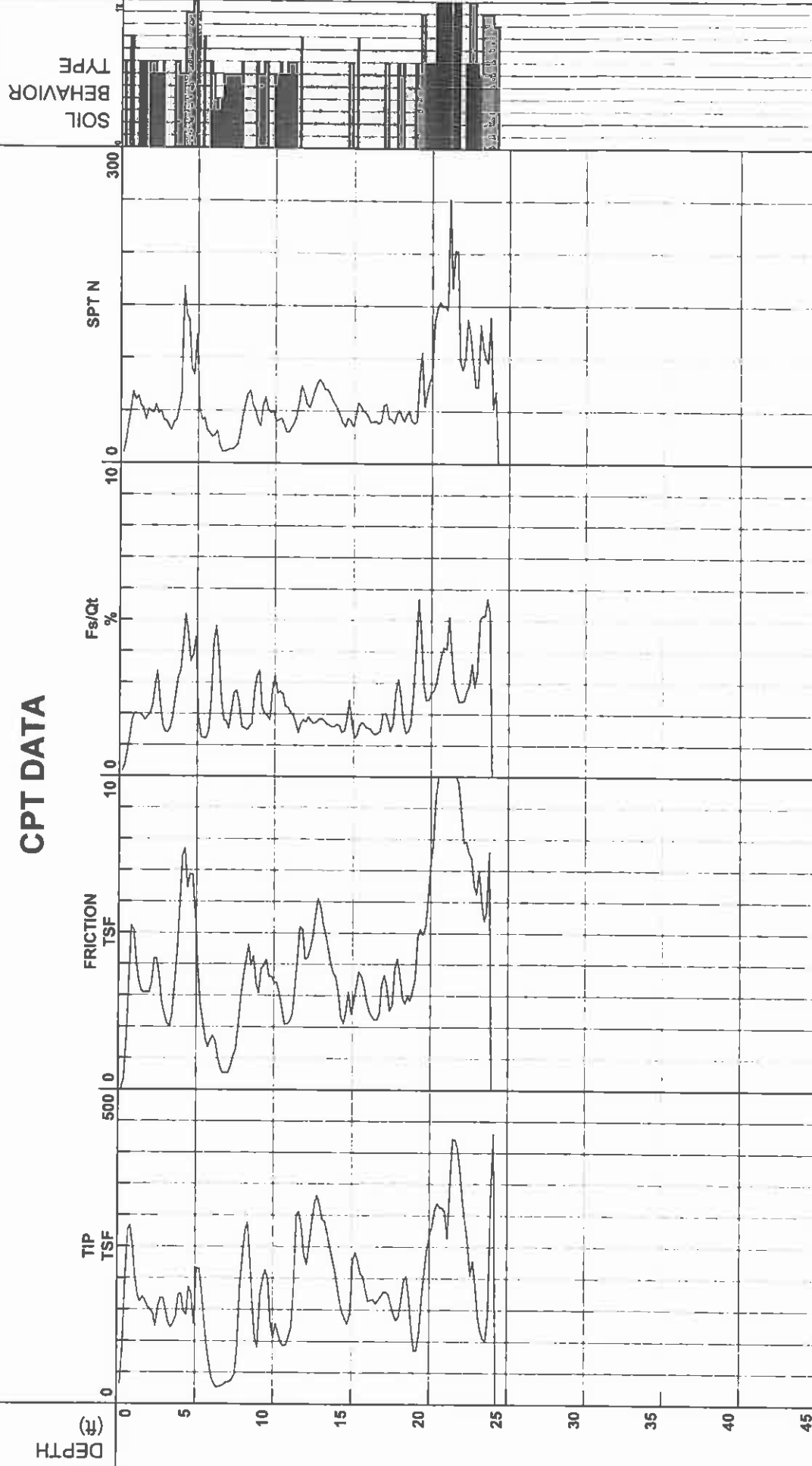
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(405).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-39          | Date and Time | 11/27/2007 3:29:02 PM | Maximum Depth | 24.44 ft     |
| Water Table Depth | 0.00 ft         |               |                       | Elevation     | 200.1        |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

Depth Increment



# Geotechnical Exploration

Location  
Job Number  
Hole Number  
Water Table Depth

Del Mar Heights  
07-9487  
CPT-40

Operator  
Cone Number  
Date and Time

ML/CW  
DSG1023  
11/27/2007 4:28:54 PM

Filename  
GPS  
Maximum Depth  
Elevation

SDF(407).cpt  
13.94 ft  
198.3

## CPT DATA

DEPTH (ft)

TIP  
TSF

500

FRICTION  
TSF

500

10

0

Fs/Qt  
%

10

0

SPT N

10

0

SOIL  
BEHAVIOR  
TYPE

300

1 - sensitive fine grained

2 - organic material

3 - clay

4 - silty clay to clay

5 - clayey silt to silty clay

6 - sandy silt to clayey silt

7 - silty sand to sandy silt

8 - sand to silty sand

9 - sand

10 - gravelly sand to sand

11 - very stiff fine grained (\*)

12 - sand to clayey sand (\*)

Depth Increment

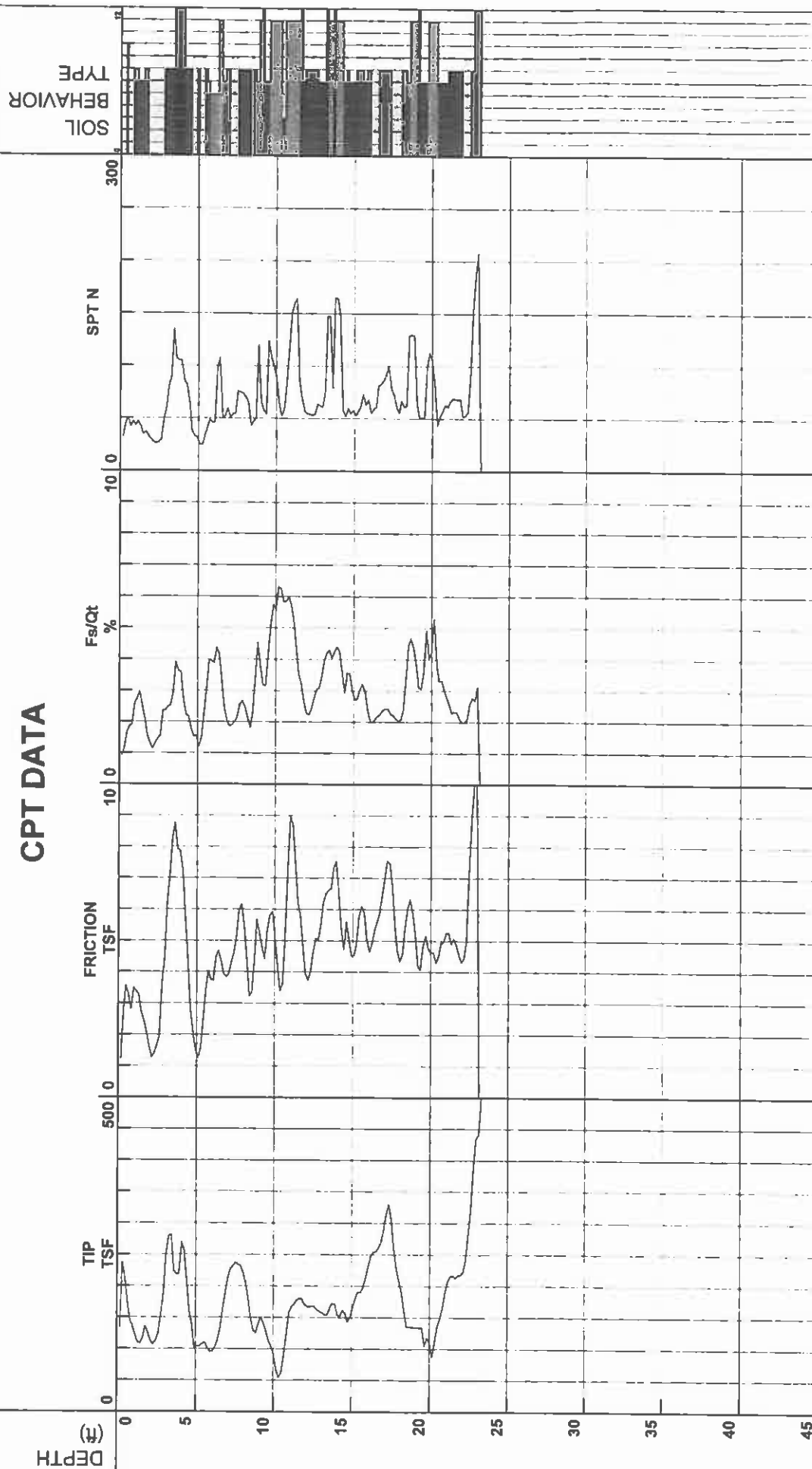
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                       |
|-------------------|-----------------|---------------|-----------------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 |
| Job Number        | 07-9487         | Cone Number   | DSG1023               |
| Hole Number       | CPT-41          | Date and Time | 11/27/2007 3:02:43 PM |
| Water Table Depth | 0.00 ft         | Maximum Depth | 23.29 ft              |
|                   |                 | Elevation     | 199.5                 |
|                   |                 | Filename      | SDF(404).cpt          |

## CPT DATA



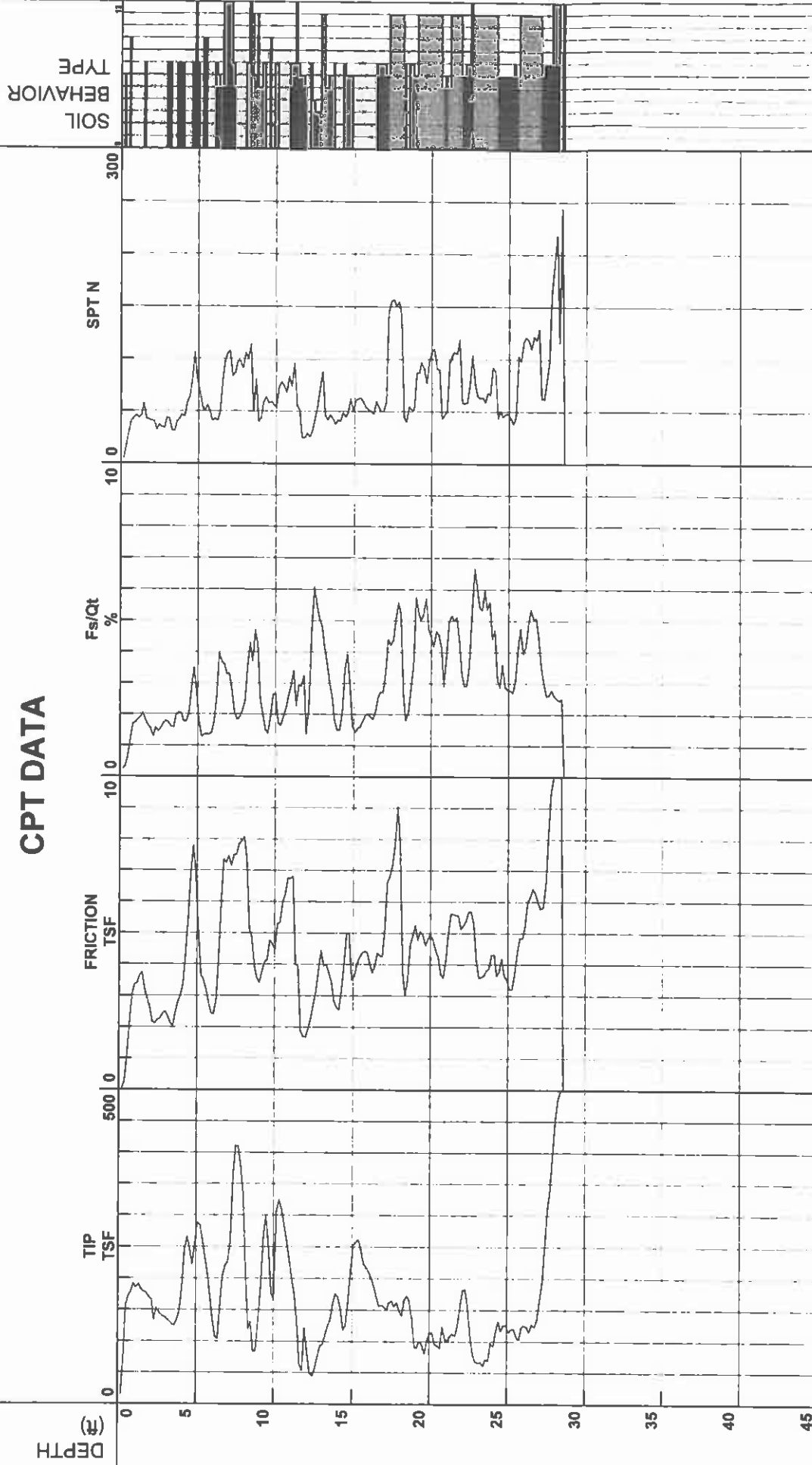
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(403).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-42          | Date and Time | 11/27/2007 2:34:59 PM | Maximum Depth | 28.71 ft     |
| Water Table Depth | 0.00 ft         |               |                       | Elevation     | 200.9        |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

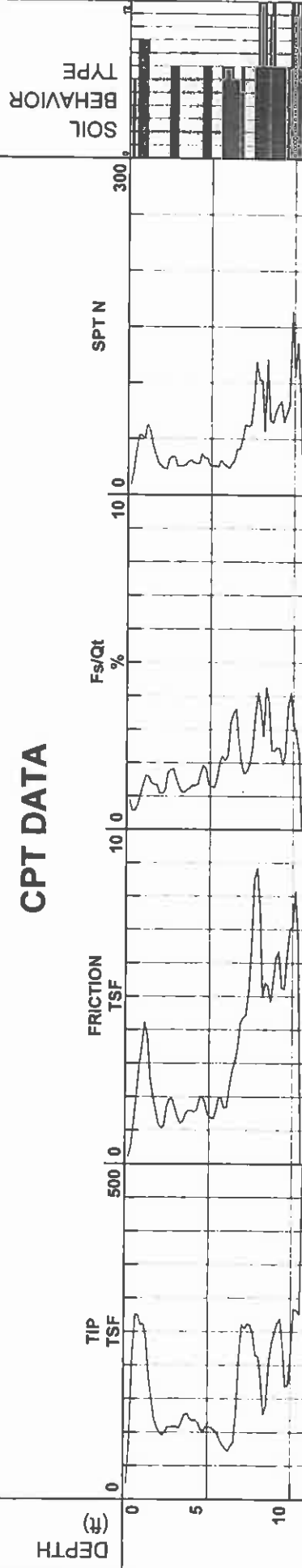
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                        |               |              |
|-------------------|-----------------|---------------|------------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                  | Filename      | SDF(398).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023                | GPS           |              |
| Hole Number       | CPT-43          | Date and Time | 11/27/2007 10:37:40 AM | Maximum Depth | 10.66 ft     |
| Water Table Depth |                 |               |                        | Elevation     | 202.6        |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

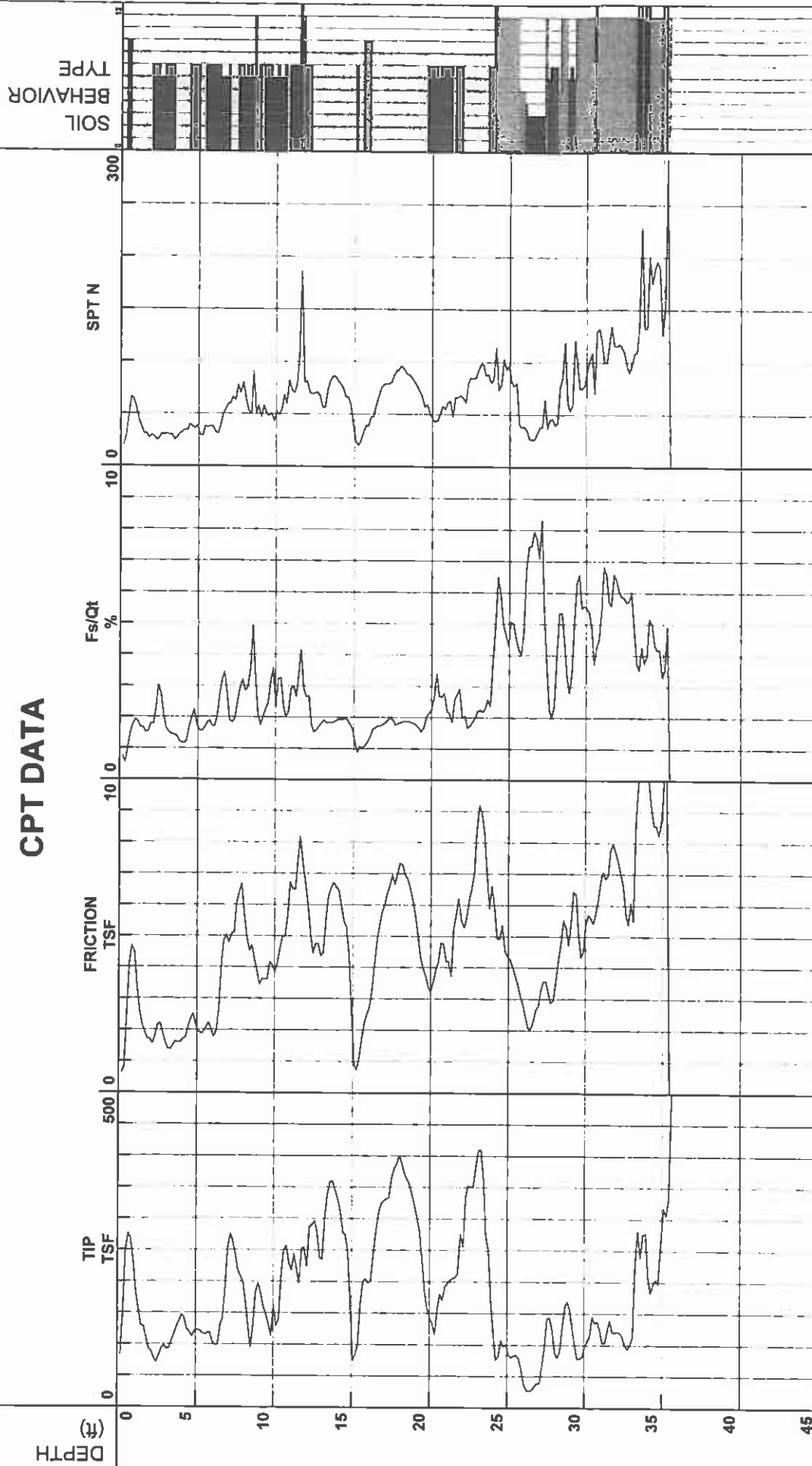
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                        |               |              |
|-------------------|-----------------|---------------|------------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                  | Filename      | SDF(399).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023                | GPS           |              |
| Hole Number       | CPT-43A         | Date and Time | 11/27/2007 10:53:20 AM | Maximum Depth | 35.60 ft     |
| Water Table Depth |                 |               |                        | Elevation     | 202.6        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

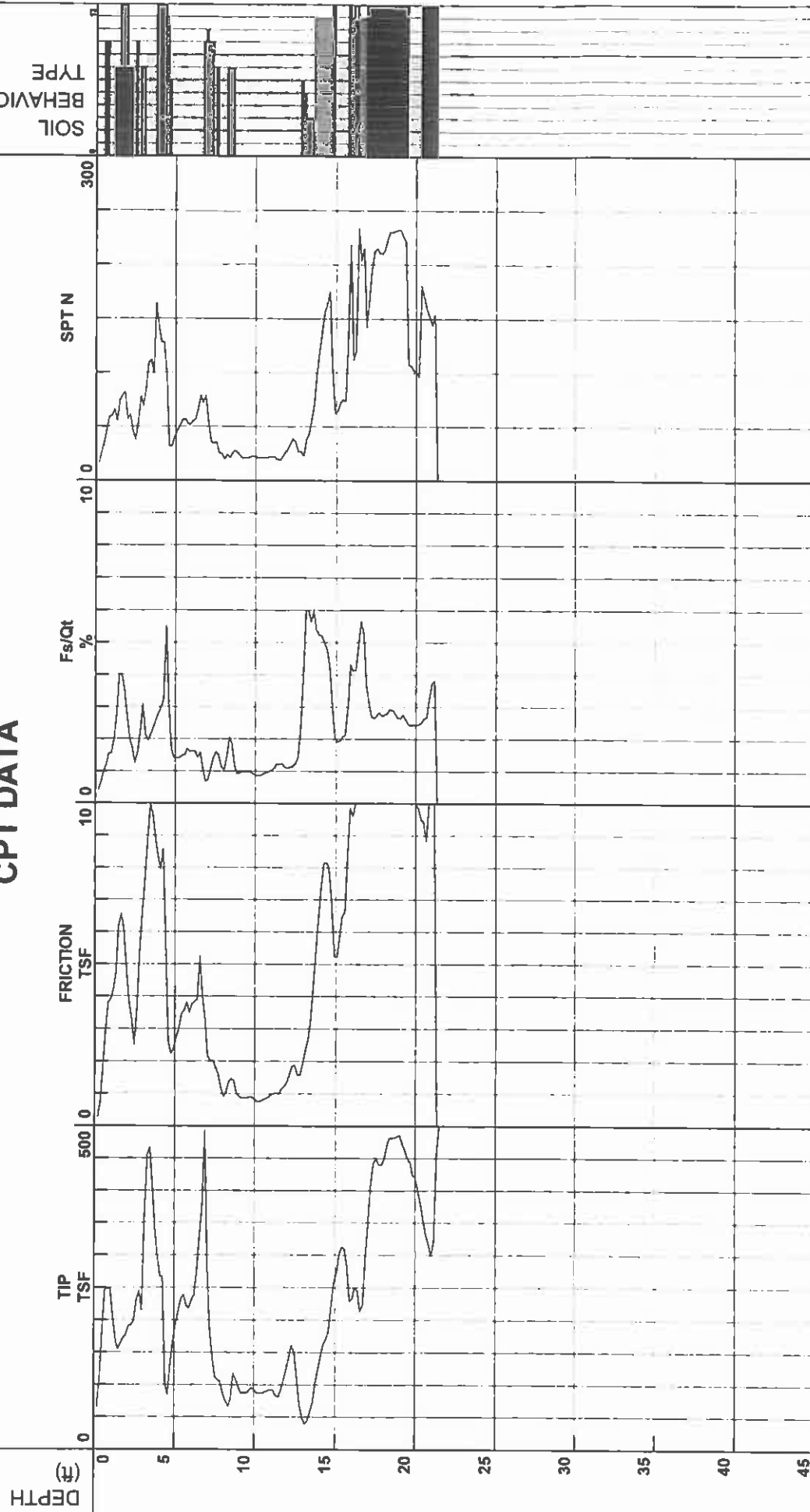
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(397).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-44          | Date and Time | 11/27/2007 9:53:18 AM | Maximum Depth | 21.49 ft     |
| Water Table Depth | 0.00 ft         |               |                       | Elevation     | 201.9        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

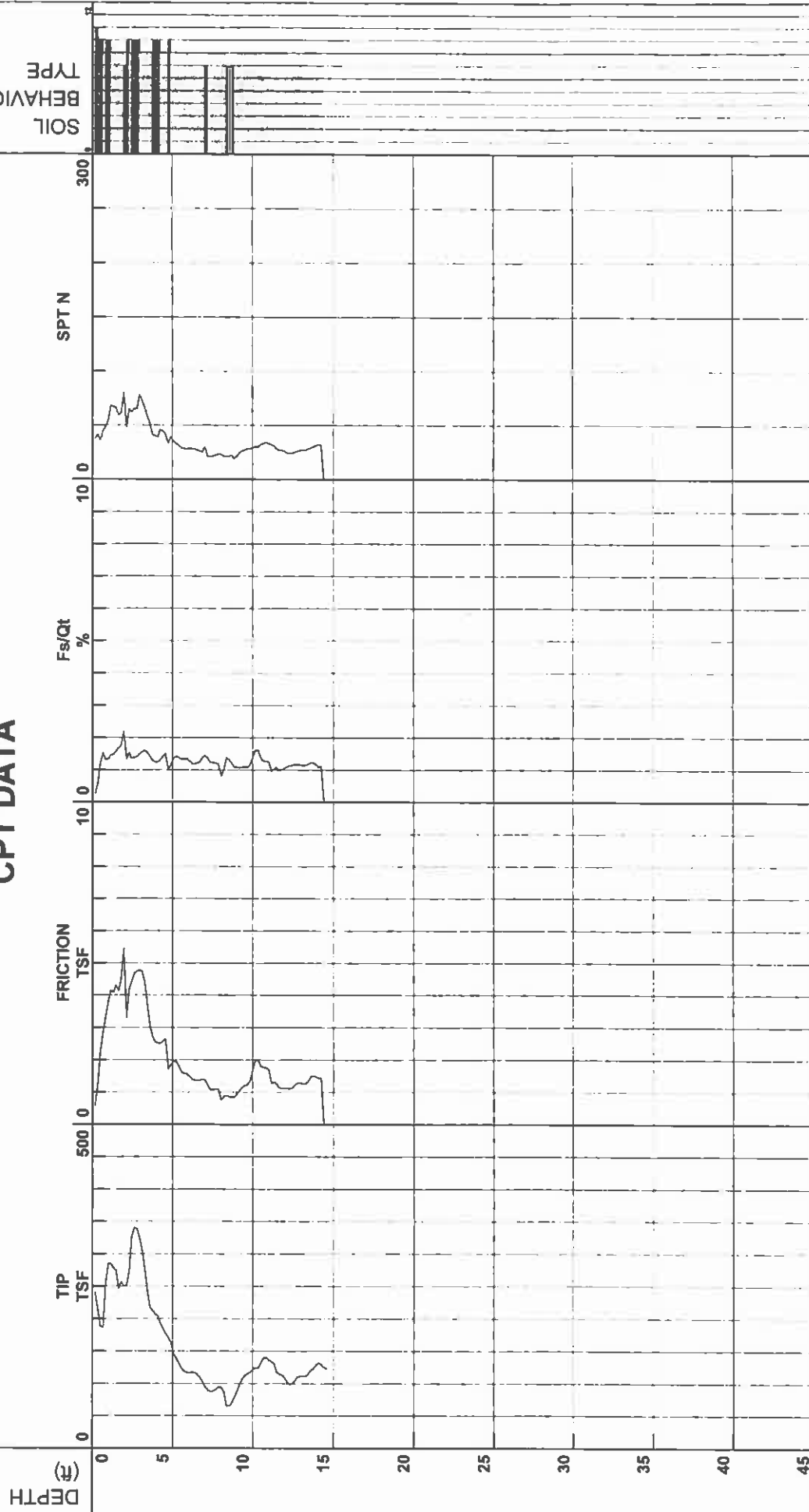
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |
|-------------------|-----------------|---------------|-----------------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 |
| Job Number        | 07-9487         | Cone Number   | DSG1023               |
| Hole Number       | CPT-45          | Date and Time | 11/30/2007 7:55:32 AM |
| Water Table Depth |                 | Maximum Depth | 14.60 ft              |
|                   |                 | Elevation     | 215.8                 |
|                   |                 | Filename      | SDF(438).cpt          |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

\*Soil behavior type and SPT based on data from UBC-1983

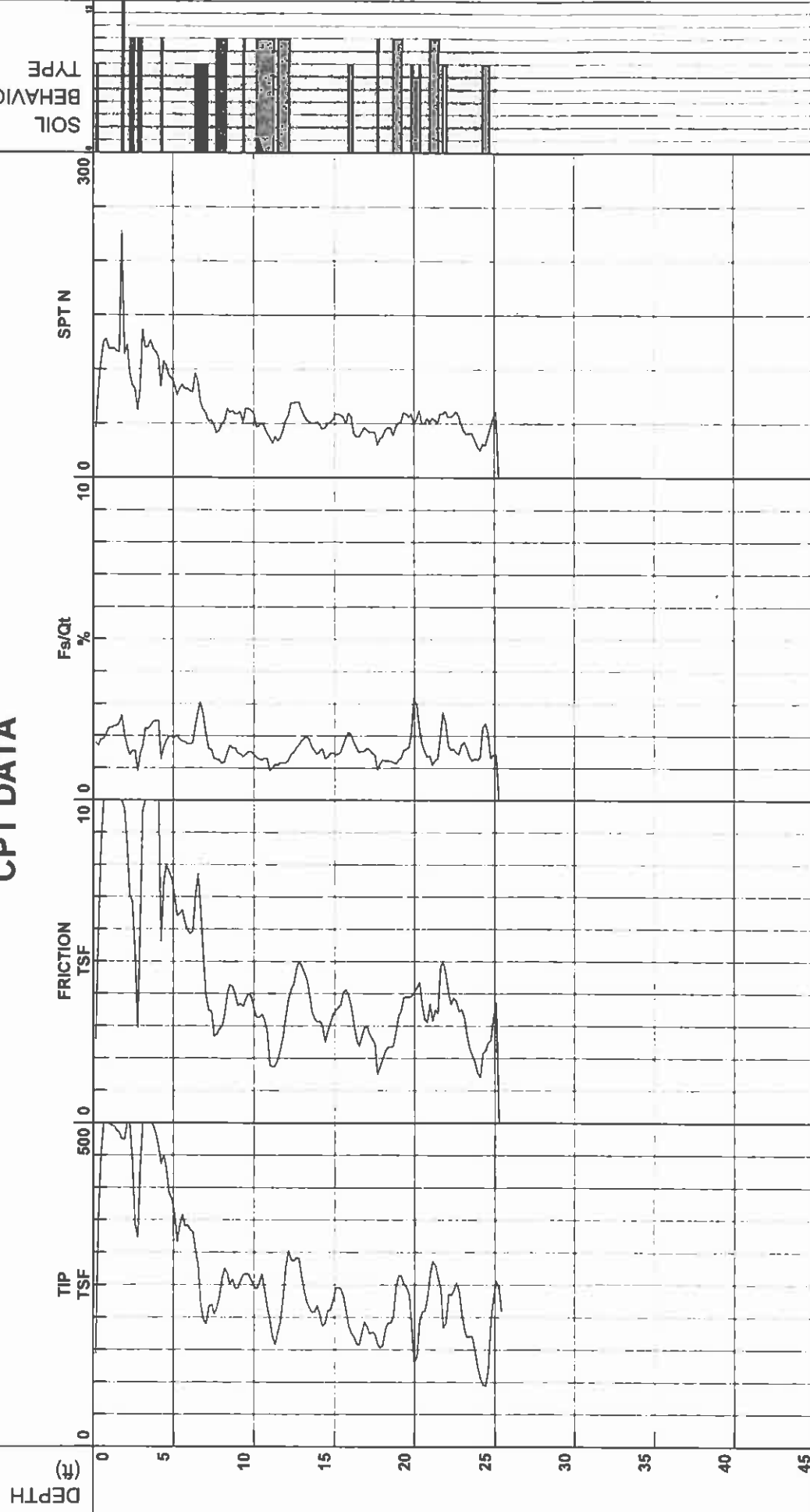
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 | Filename      | SDF(439).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-46          | Date and Time | 11/30/2007 8:16:25 AM | Maximum Depth | 25.43 ft     |
| Water Table Depth | 0.00 ft         |               |                       | Elevation     | 214.0        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

\*Soil behavior type and SPT based on data from UBC-1983

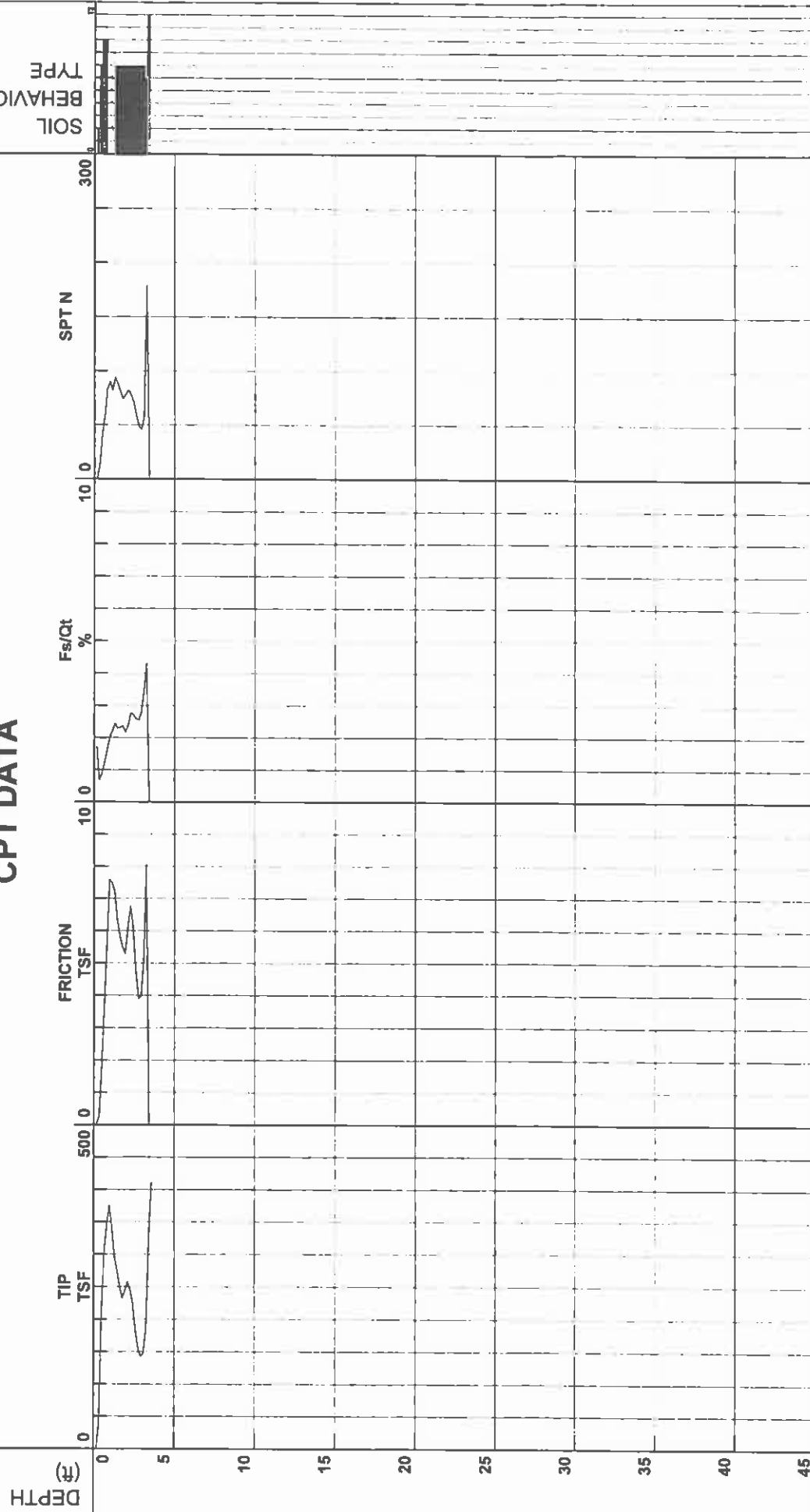
Depth Increment



# Geotechnical Exploration

|                   |                 |               |                       |
|-------------------|-----------------|---------------|-----------------------|
| Location          | Del Mar Heights | Operator      | ML/CW                 |
| Job Number        | 07-9487         | Cone Number   | DSG1023               |
| Site Number       | CPT-47          | Date and Time | 11/28/2007 3:17:36 PM |
| Water Table Depth |                 | Maximum Depth | 3.61 ft               |
|                   |                 | Elevation     | 191.2                 |
|                   |                 | Filename      | SDF(420).cpt          |

## CPT DATA



- |                            |                               |                              |                                  |
|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1 - sensitive fine grained | 4 - silty clay to clay        | 7 - silty sand to sandy silt | 10 - gravelly sand to sand       |
| 2 - organic material       | 5 - clayey silt to silty clay | 8 - sand to silty sand       | 11 - very stiff fine grained (*) |
| 3 - clay                   | 6 - sandy silt to clayey silt | 9 - sand                     | 12 - sand to clayey sand (*)     |

Depth Increment

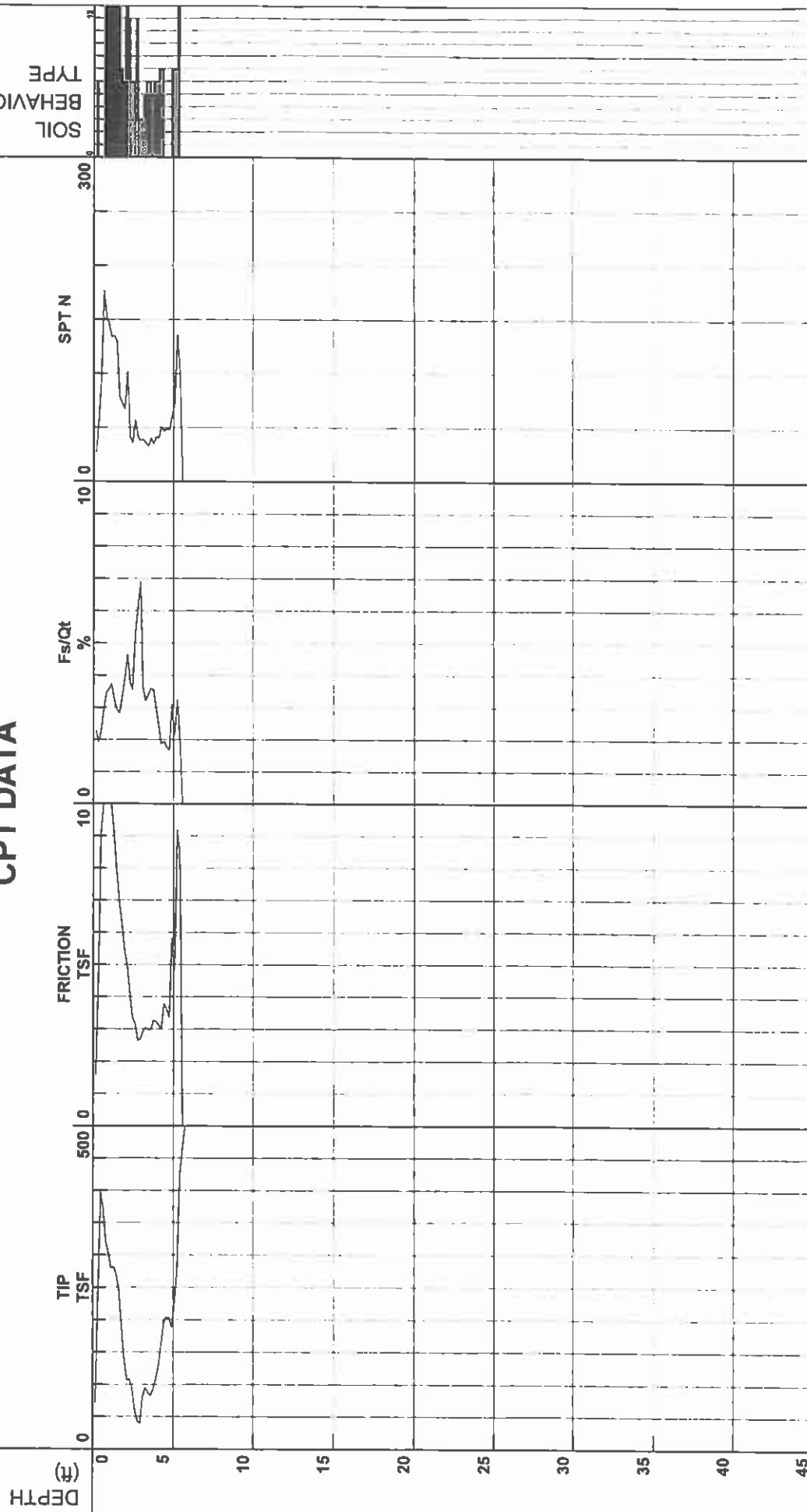
\*Soil behavior type and SPT based on data from UBC-1983



# Geotechnical Exploration

|                   |                 |               |                       |               |              |
|-------------------|-----------------|---------------|-----------------------|---------------|--------------|
| Location          | De! Mar Heights | Operator      | ML/CW                 | Filename      | SDF(421).cpt |
| Job Number        | 07-9487         | Cone Number   | DSG1023               | GPS           |              |
| Hole Number       | CPT-48          | Date and Time | 11/28/2007 3:38:43 PM | Maximum Depth | 5.74 ft      |
| Water Table Depth | 0.00 ft         |               |                       | Elevation     | 184.6        |

## CPT DATA



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (\*)
- 12 - sand to clayey sand (\*)

Depth Increment

\*Soil behavior type and SPT based on data from UBC-1983

## **APPENDIX C**

### **GEOPHYSICAL SURVEY REPORT SOUTHWEST GEOPHYSICS, INC.**



**GEOPHYSICAL SURVEY  
SAN DIEGO CORPORATE CENTER  
LOTS 1 & 2, PHASE I  
SAN DIEGO, CALIFORNIA**

**PREPARED FOR:**  
Geotechnical Exploration, Inc.  
7420 Trade Street  
San Diego, CA 92121

**PREPARED BY:**  
Southwest Geophysics, Inc.  
8057 Raytheon Road, Suite 9  
San Diego, CA 92111

April 29, 2011  
Project No. 111120

April 29, 2011  
Project No. 111120

Mr. Dave Hespeler  
Geotechnical Exploration, Inc.  
7420 Trade Street  
San Diego, CA 92121

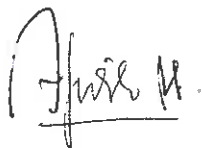
Subject: Geophysical Survey  
San Diego Corporate Center  
Lots 1 & 2, Phase I  
San Diego, California

Dear Mr. Hespeler:

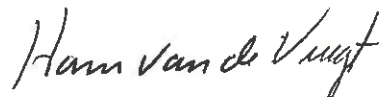
In accordance with your authorization, we have performed a geophysical evaluation pertaining to the proposed San Diego Corporate Center located near the southwest corner of Del Mar Heights Road and El Camino Real in San Diego, California. Specifically, our services consisted of performing two seismic P-wave refraction profiles and two refraction microtremor (ReMi) profiles at the site. The purpose of the seismic study was to characterize the subsurface conditions at pre-selected locations in the project area.

We appreciate the opportunity to be of service on this project. Should you have any questions related to this report, please contact the undersigned at your convenience.

Sincerely,  
**SOUTHWEST GEOPHYSICS, INC.**



Afrildo Iko Syahrial  
Senior Staff Geophysicist



Hans van de Vrugt, C.E.G., R.Gp.  
Principal Geologist/Geophysicist

AIS/HV/hv  
Distribution: Addressee (electronic)



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**TABLE OF CONTENTS**

|                                             | <b>Page</b> |
|---------------------------------------------|-------------|
| 1. INTRODUCTION .....                       | 1           |
| 2. SCOPE OF SERVICES .....                  | 1           |
| 3. SITE AND PROJECT DESCRIPTION .....       | 1           |
| 4. SURVEY METHODOLOGY .....                 | 2           |
| 4.1. Seismic P-wave Refraction Survey ..... | 2           |
| 4.2. ReMi Survey .....                      | 2           |
| 5. RESULTS AND CONCLUSIONS .....            | 2           |
| 5.1. Seismic P-wave Refraction Survey ..... | 2           |
| 5.2. ReMi Survey .....                      | 3           |
| 6. LIMITATIONS.....                         | 3           |
| 7. SELECTED REFERENCES .....                | 4           |

**Figures**

- Figure 1 – Site Location Map
- Figure 2 – Line Location Map
- Figure 3 – Site Photographs
- Figure 4 – Seismic P-Wave Profiles, SL-1 and SL-2
- Figure 5a – ReMi Results, RL-1
- Figure 5b – ReMi Results, RL-2

## **1. INTRODUCTION**

In accordance with your authorization, we have performed a geophysical evaluation pertaining to the proposed San Diego Corporate Center located near the southwest corner of Del Mar Heights Road and El Camino Real in San Diego, California (Figure 1). Specifically, our services consisted of performing two seismic P-wave refraction profiles and two refraction microtremor (ReMi) profiles at the site. The purpose of the seismic study was to characterize the subsurface conditions at pre-selected locations in the project area.

## **2. SCOPE OF SERVICES**

Our scope of services included:

- Performance of two seismic P-wave refraction profiles, SL-1 and SL-2.
- Performance of two ReMi profiles, RL-1 and RL-2
- Compilation and analysis of the data collected.
- Preparation of this report presenting our findings and conclusions.

## **3. SITE AND PROJECT DESCRIPTION**

The project site consists of relatively flat rough graded pads located along the west side of El Camino Real, south of Del Mar Heights Road (Figures 1, 2 and 3). Annual grass covers much of the site. The general site conditions in the area of the seismic lines are depicted on Figures 2 and 3.

Based on our conversations with you, it is our understanding that your office is conducting a geotechnical evaluation for the site. Information acquired during our study are to be used in the design and construction of the proposed improvements.

#### **4. SURVEY METHODOLOGY**

As previously indicated, the primary purpose of our services was to characterize the subsurface site conditions at pre-selected locations through the collection of seismic data. The following sections provide an overview of the methodologies used during our study.

##### **4.1. Seismic P-wave Refraction Survey**

Two seismic P-wave refraction lines (SL-1 and SL-2) were conducted at the site, the locations of which were selected by your office. Shot points were conducted at each end of the lines, and at the midpoint. Shots consisted of impacting an aluminum plate, placed on the ground surface, with a 20-pound hammer in order to generate a seismic P-wave. The vibrations were recorded with 24 vertical component geophones. Each line was 240 feet in length. As a general rule, the effective depth of evaluation for a seismic refraction traverse is approximately one-third to one-fifth the length of the refraction line, depending on the site conditions. The locations of the profiles are depicted on Figure 2. The collected data were processed and analyzed using SIPwin (Rimrock Geophysics, 2003), a layer based refraction interpretation program.

##### **4.2. ReMi Survey**

ReMi profiles were conducted in the same location as the seismic refraction spreads, and utilized the same geophone setup. The lines were approximately 230 feet long (excludes end shot locations). Fifteen records, 24 seconds long, were recorded. The data were downloaded and later processed using the SeisOpt® ReMi™ software (© Optim LLC, 2005), which uses the refraction microtremor method (Louie, 2001). The refraction microtremor technique uses the recorded surface waves (specifically Rayleigh waves) which are contained in the background noise to develop a shear wave velocity profile of the site down to a depth, in this case, of approximately 100 feet. Unlike the refraction method, described above, the ReMi method does not require an increase of material velocity with depth. Therefore, low velocity zones (velocity inversions) are detectable with ReMi. The results of the ReMi method are displayed as a one dimensional sounding.

#### **5. RESULTS AND CONCLUSIONS**

The following is a summary of our findings:

##### **5.1. Seismic P-wave Refraction Survey**

The results of the P-wave refraction survey indicate three distinct layers down to the depth explored (approximately 80 feet). Figure 4 presents the results from both SL-1 and SL-2. The velocities and depths calculated for these layers are generally consistent along the two profiles. Both profiles reveal a high velocity layer at a depth of roughly 55 to 60 feet below the ground surface.

## **5.2. ReMi Survey**

The ReMi results are depicted on Figures 5a and 5b. The results of the ReMi survey are fairly similar with slight variations in layer depths and velocities. The results are also generally consistent with the results of the P-wave refraction profiles, especially for the depth to the high velocity layer. It should be noted that the ReMi results tend to provide average velocities and depths along the survey area.

Based on our analysis, the average characteristic site S-wave velocity down to a depth of 100 feet is 1,430 and 1,565 feet/second for lines RL-1 and RL-2, respectively. This results in a site classification of **C** (IBC, 2000).

## **6. LIMITATIONS**

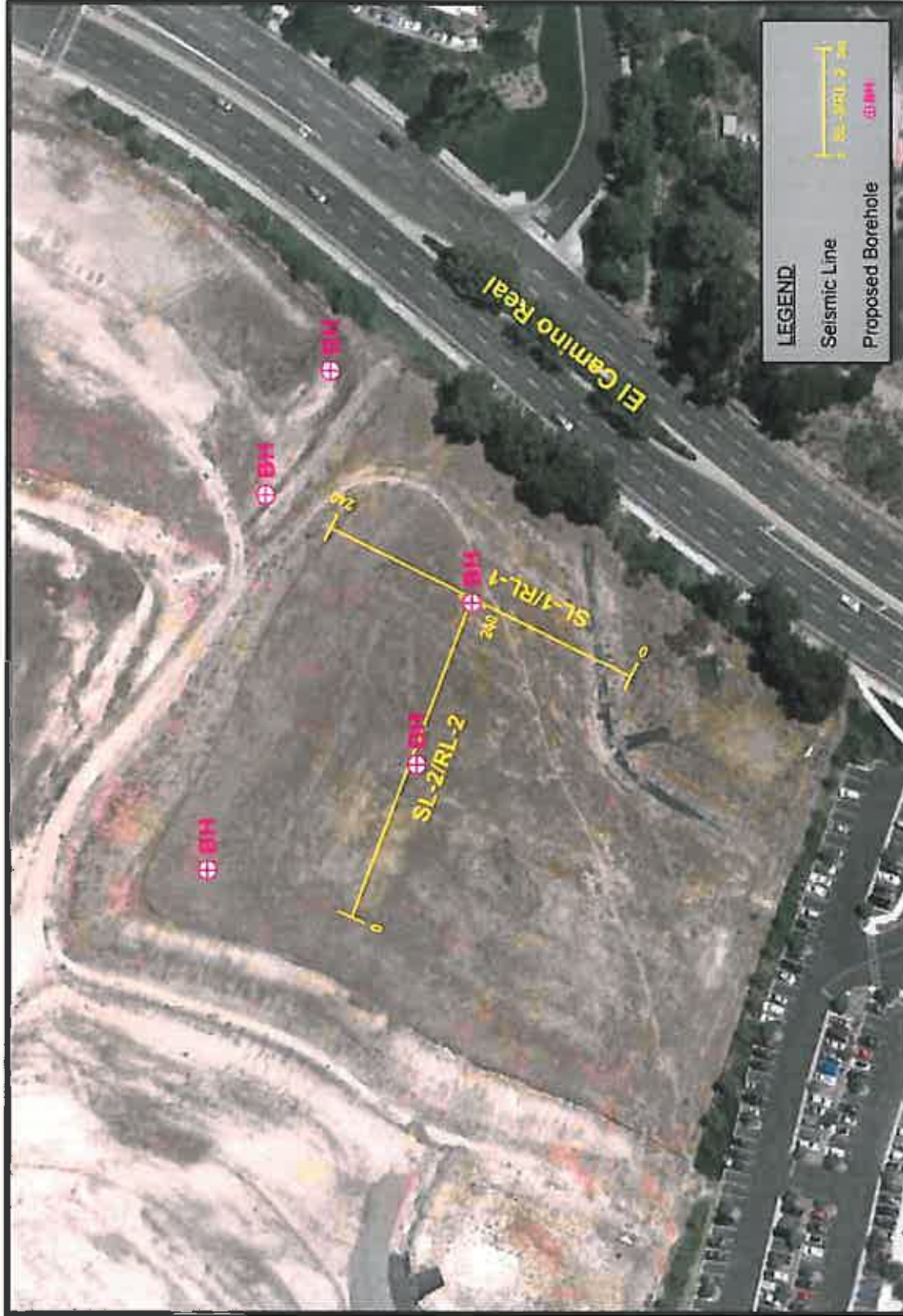
The field evaluation and geophysical analyses presented in this report have been conducted in general accordance with current practice and the standard of care exercised by consultants performing similar tasks in the project area. No warranty, expressed or implied, is made regarding the conclusions and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be present. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface surveying will be performed upon request.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Southwest Geophysics, Inc. should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document. This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

## 7. SELECTED REFERENCES

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# LINE LOCATION MAP



San Diego Corporate Center  
Lots 1 & 2, Phase I  
San Diego, California

Project No.: 1111020 Date: 04/11



Figure 2



## SITE PHOTOGRAPHS

San Diego Corporate Center  
Lots 1 & 2, Phase I  
San Diego, California

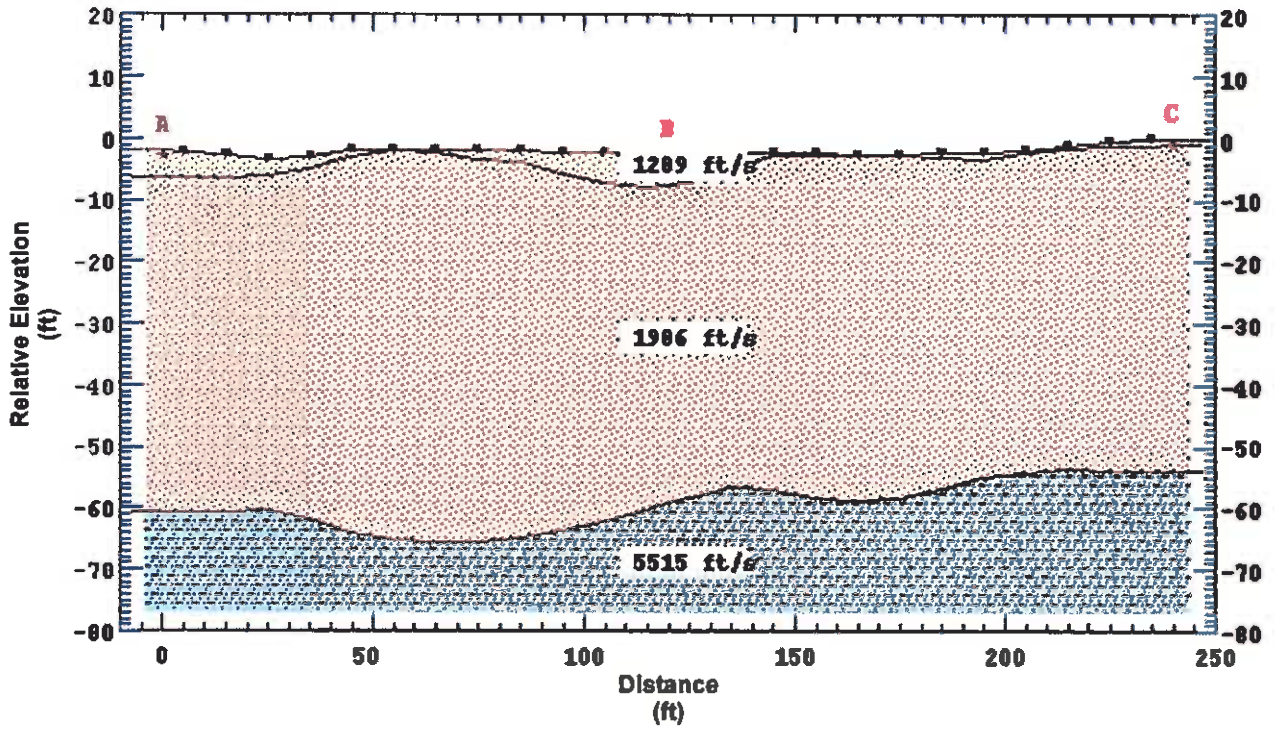
Project No.: 111120

Date: 04/11

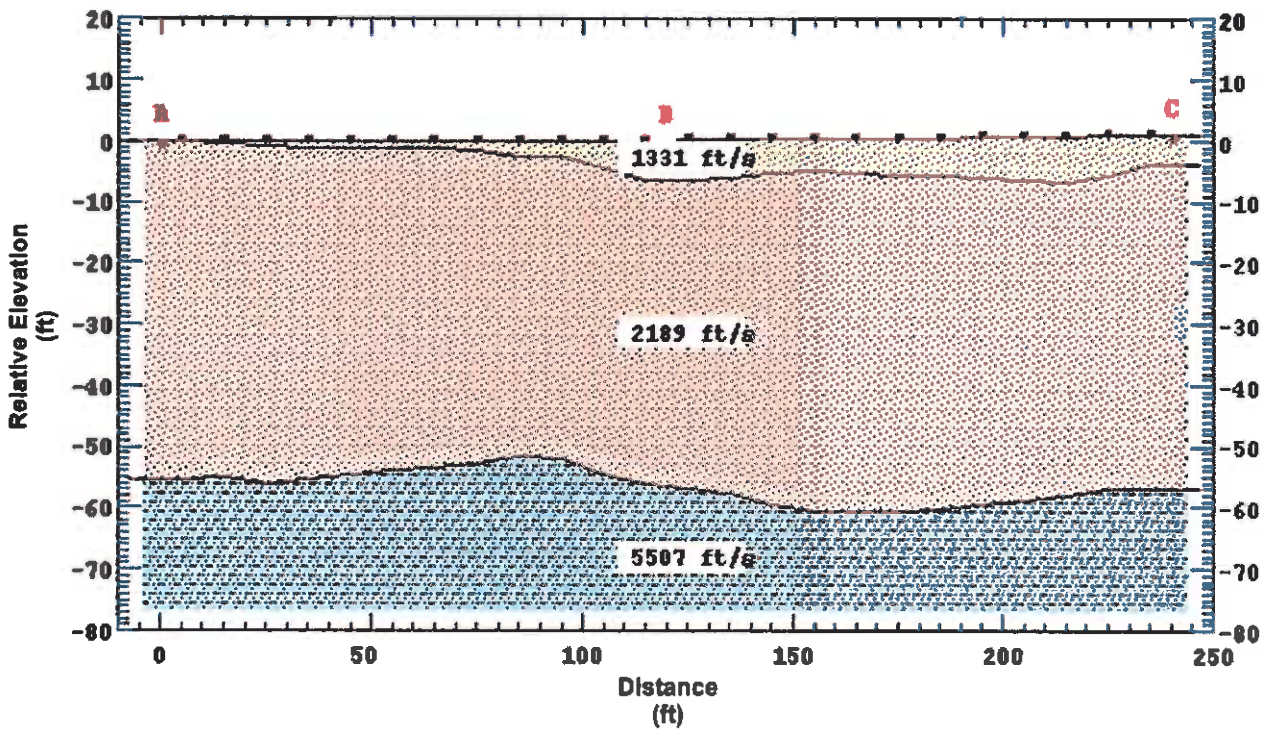


Figure 3

# SL-1



# SL-2



## SEISMIC P-WAVE PROFILES SL-1 AND SL-2

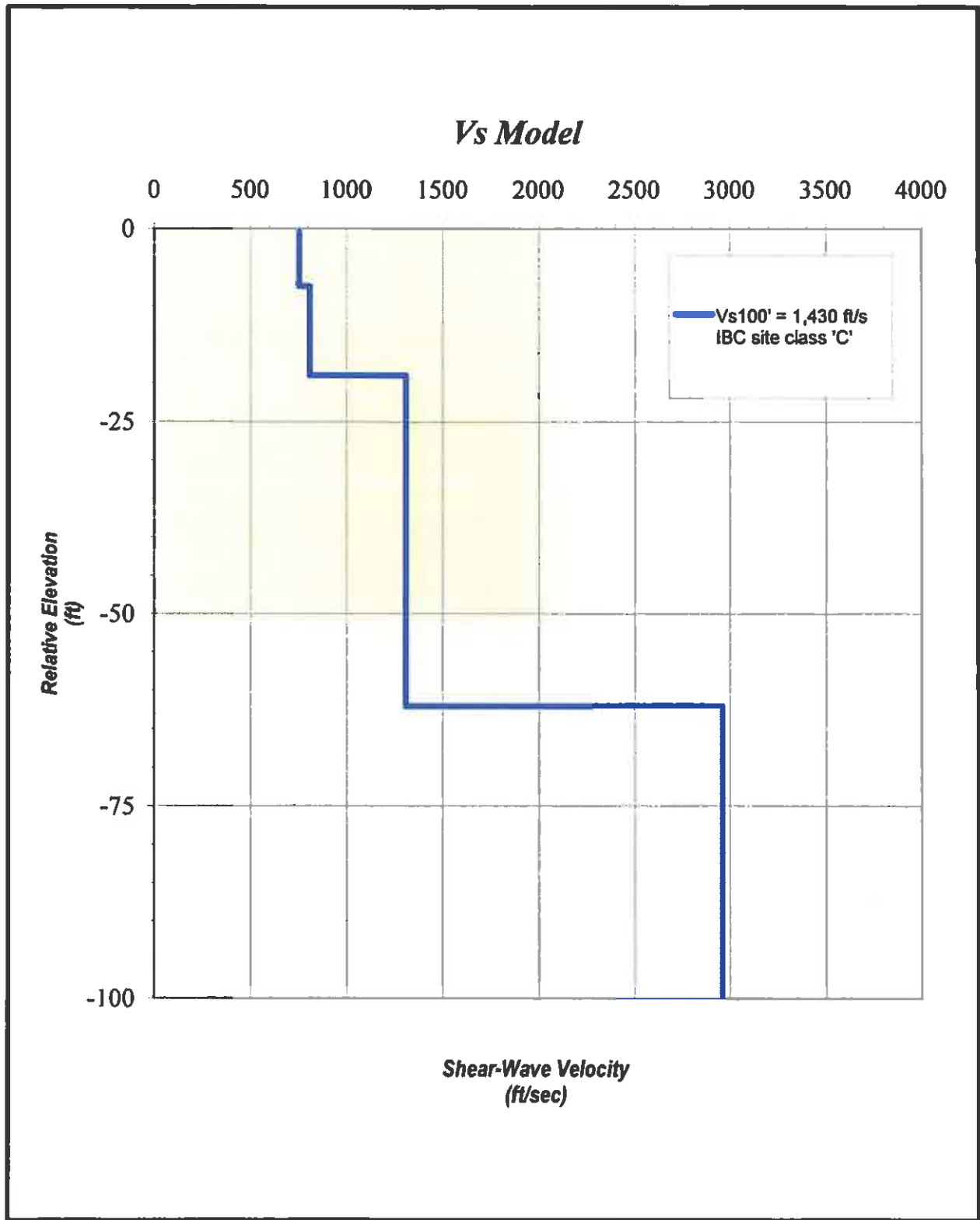
San Diego Corporate Center  
Lots 1 & 2, Phase I  
San Diego, California

Project No.: 111120

Date: 04/11



Figure 4



**ReMi RESULTS  
RL-1**

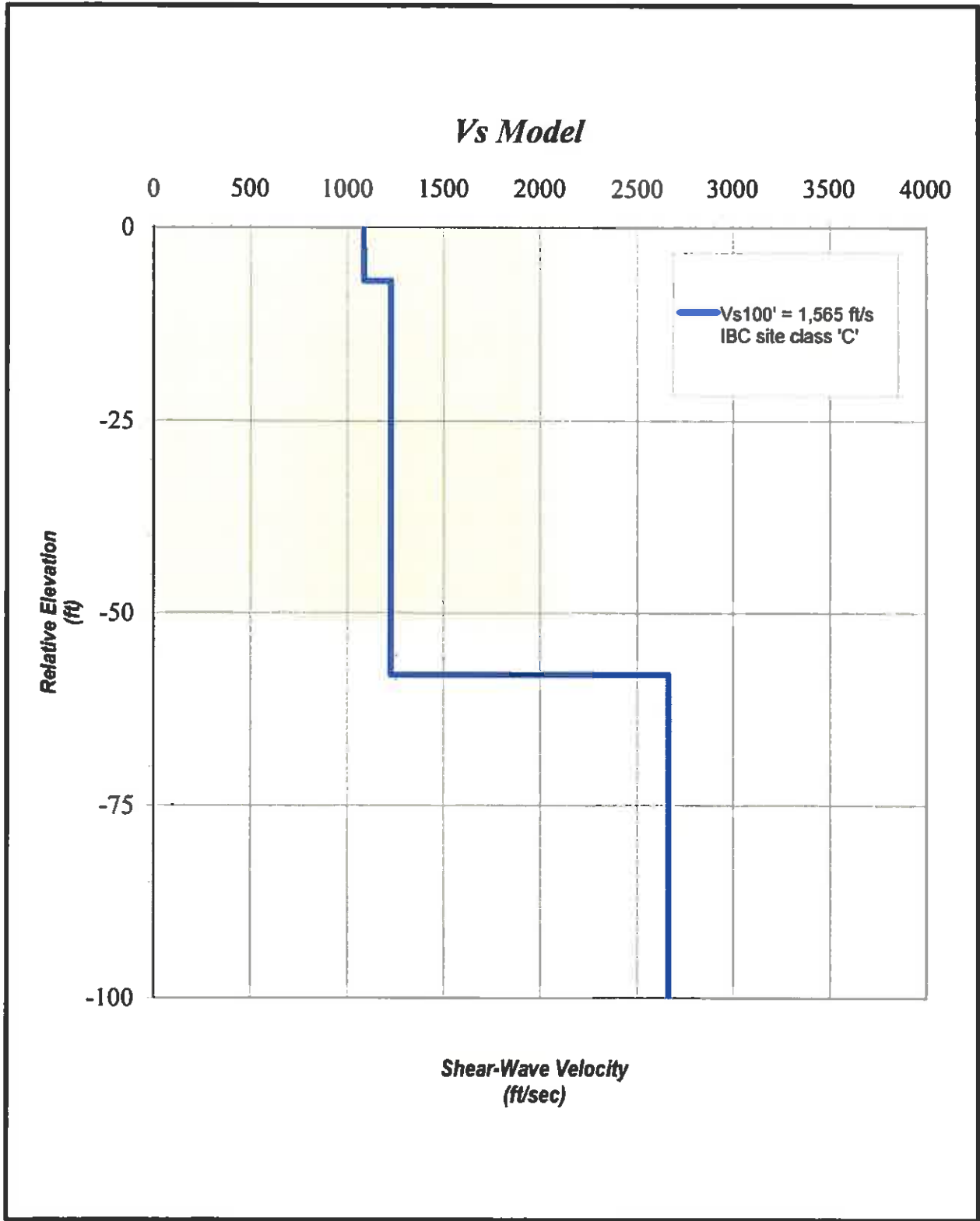
San Diego Corporate Center  
Lots 1 & 2, Phase I  
San Diego, California

Project No.: 111120

Date: 04/11



**Figure 5a**



**ReMi RESULTS  
RL-2**

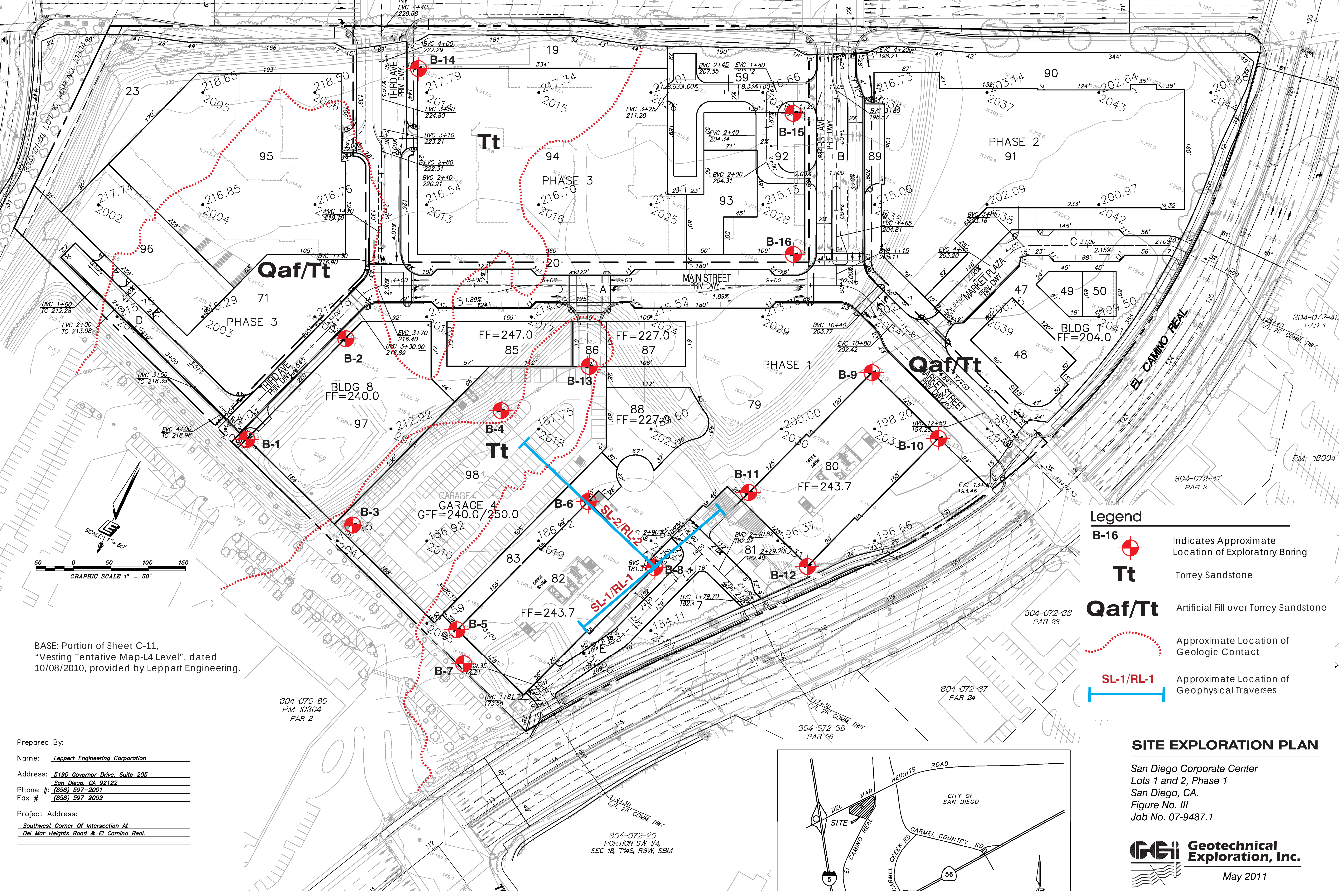
San Diego Corporate Center  
Lots 1 & 2, Phase I  
San Diego, California

Project No.: 111120

Date: 04/11



**Figure 5b**



BASE: Portion of Sheet C-11,  
"Vesting Tentative Map-L4 Level", dated  
10/08/2010, provided by Leppart Engineering.

Prepared By:  
Name: Leppart Engineering Corporation  
Address: 5190 Governor Drive, Suite 205  
San Diego, CA 92122  
Phone #: (858) 597-2001  
Fax #: (858) 597-2009  
Project Address:  
Southwest Corner Of Intersection At  
Del Mar Heights Road & El Camino Real.

- Legend**
- B-16** Indicates Approximate Location of Exploratory Boring
  - Tt** Torrey Sandstone
  - Qaf/Tt** Artificial Fill over Torrey Sandstone
  - Approximate Location of Geologic Contact
  - SL-1/RL-1** Approximate Location of Geophysical Traverses

**SITE EXPLORATION PLAN**

San Diego Corporate Center  
Lots 1 and 2, Phase 1  
San Diego, CA.  
Figure No. III  
Job No. 07-9487.1