

**PHASE III SUBSURFACE INVESTIGATION**  
**Montgomery Ward Auto Service Center**  
**and**  
**Enea Properties Sites**  
**Dublin, California**

October 14, 1994

Project No. 1233

---

**ENVIRONMENTAL AUDIT, INC. ®**

Planning, Environmental Analyses and Hazardous  
Substances Management and Remediation

1000-A ORTEGA WAY  
PLACENTIA, CA 92670-7125  
714/632-8521

**TABLE OF CONTENTS**

	PAGE
1.0 INTRODUCTION.....	1
2.0 FIELD WORK.....	1
2.1 DEPTH TO GROUND WATER.....	1
2.2 CONE PENETROMETER TESTING.....	1
2.3 PORE PRESSURE DISSIPATION TESTING.....	2
2.4 SOIL VAPOR SAMPLING.....	2
2.5 SOIL SAMPLING.....	3
2.6 GROUND WATER SAMPLING.....	3
2.7 GROUTING OF CPT SOUNDINGS AND SAMPLE HOLES.....	4
2.8 EQUIPMENT CLEANING PROTOCOLS.....	4
3.0 ANALYTICAL TESTING.....	4
3.1 SOIL SAMPLES.....	4
3.1.1 Total Petroleum Hydrocarbons and BTEX Testing.....	4
3.1.2 Soil Leachability Testing.....	4
3.2 GROUND WATER SAMPLES.....	5
4.0 DISCUSSION.....	5
4.1 CPT BASED LITHOLOGIES.....	5
4.2 PPDTs ANALYSES.....	5
4.3 ANALYTICAL TESTING RESULTS.....	5
5.0 LIMITATION.....	6
6.0 REFERENCES.....	7

TABLES:

TABLE 1: DEPTH TO GROUND WATER MEASUREMENTS  
TABLE 2: ANALYTICAL TESTING RESULTS

FIGURES:

FIGURE 1: LOCATION MAP  
FIGURE 2: SITE PLAN

APPENDICES:

APPENDIX A: CPT DATA  
APPENDIX B: PPDTs RESULTS  
APPENDIX C: SOIL VAPOR RESULTS

TABLE OF CONTENTS (Continued)

APPENDIX D:  
APPENDIX E:

CHAIN OF CUSTODY RECORD FORMS  
LABORATORY REPORTS

CHRIS WORD 1233-R3

**PHASE III SUBSURFACE INVESTIGATION  
MONTGOMERY WARD AUTO SERVICE CENTER  
AND  
Enea PROPERTIES SITES  
DUBLIN, CALIFORNIA**

**1.0 INTRODUCTION**

As requested by the Alameda County Health Care Services Agency, Department of Environmental Health (County Health), this document reports the results of the Phase III subsurface investigation activities completed in association with the Montgomery Ward Auto Service Center property, 7575 Dublin Boulevard, Dublin, California (Montgomery Ward Site) and at the Enea Properties Sites located at various addresses on Amador Plaza Road (see Figures 1 and 2). The subsurface investigation was completed to further investigate the lithology and extent of contamination on the sites.

The scope of the Phase III investigation was outlined in the Environmental Audit, Inc (EAI) Work Plan dated May 27, 1994 (see EAI, 1994) and consisted of conducting piezometric cone penetrometer tests (CPT) with pore pressure measurements (designated as CPTu), CPT soil and vapor sampling, and obtaining two Hydropunch ground water samples. Approval to proceed with the work was obtained from Ms. Eva Chu of the County Health in a letter dated June 13, 1994.

**2.0 FIELD WORK**

Between July 20 and July 21, 1994, eight CPTu soundings (CPT-1 through CPT-7 and CPT-4A) were conducted by Holguin, Fahan & Associates (HFA) under the supervision of EAI geologists at the locations shown on Figure 2. CPTu locations CPT-1, CPT-2, CPT-3, and CPT-6 were placed along the east-west axis of the dissolved hydrocarbon plume. CPT-4, CPT-4A, and CPT-5 were located immediately south and east of the former underground storage tanks (USTs) location, and CPT-7 was located up-gradient of the former USTs location. The depth of the CPTu soundings ranged from approximately 40 to 51 feet below ground surface (bgs). Due to equipment difficulties, the proposed CPTu location in the area of the former fuel island was not completed.

**2.1 DEPTH TO GROUND WATER**

On July 20, 1994, depth to ground water was measured by EAI staff in selected wells associated with the sites (see Table 1). These wells were gauged in order to determine the depth to ground water for wells in close proximity to the CPTu soundings.

**2.2 CONE PENETROMETER TESTING**

Procedurally, it was decided that the CPTu soundings would be first completed, followed by vapor and then soil sampling. This procedure was followed due to the fact that fouling of the vapor lines by ground water would occur once the CPTu entered ground water.

The CPTu involved pushing an instrumented cone penetrometer into the soil using a hydraulic/percussion ram assembly pressing against the dead weight of a 20-ton CPT rig. Soil parameters measured at five centimeter intervals include cone penetration resistance or tip resistance ( $q_c$ ), sleeve frictional stress ( $f_c$ ), and pore water pressure (see Appendix A). These measurements were transmitted via data transmission cable installed in the hollow CPT rods to an on-board data acquisition system.

Measurement of these parameters typically allows for identification of lithology, and the capillary fringe and ground water table based on the pore water pressures. However, due to the fine grained soils (clays and silty clays), clear identification of the capillary fringe and ground water was not possible with the CPTu data. CPTu data versus depth provide direct and continuous information on subsurface conditions. All data were processed in real time.

Advancement of the cone into the subsurface induces a complex field of stress and strains. The stress values are automatically referenced against an empirical soil classification chart which is part of the CPT computer data analysis package and the stress values are correlated into a soil type. This produces a lithologic log with a resolution of two to five centimeters allowing the interpreted soil classification to be automatically plotted in the field as a function of depth. The CPT system produces a borehole log without requiring sampling or visual inspection. The subsurface conditions encountered in the boreholes are presented in Appendix A and shows the soils encountered are predominantly composed of clay to silty clay.

### 2.3 PORE PRESSURE DISSIPATION TESTING

Measuring in-situ pore pressures provides information on the distribution of hydraulic head in the area of investigation. Pore pressures are the sum of the in-situ pore pressure and the excess pore pressure that is generated due to penetration of the CPT. Pore pressures are positive in saturated soils, and near zero (or slightly negative) for unsaturated materials. Fine-grained saturated soils exhibit higher pore pressure response than coarse-grained soils because of the difference in permeability. The drainage in coarse-grained deposits is sufficient to dissipate much of the excess pore pressure before it builds up, while fine-grained soils tend to build up a large amount of excess pore pressure. By keeping the probe stationary at a selected depth, pore pressure dissipation tests (PPDTs) can be conducted wherein the excess pore pressure dissipates until eventually only the equilibrium in-situ pore pressure is measured and these equilibrium in-situ pore pressures can be used to determine the hydraulic head at the point of measurement in the water bearing zone investigated.

PPDTs are usually conducted in zones of higher permeability so that equilibrium pore pressures can be reached in a relatively short time, i.e., less than five minutes. However, due to the fine grained nature of the soils encountered at the sites, only eight PPDTs were conducted. These were at location CPT-1 at depths of 18.2 feet, 30.5 feet, 38.9 feet; at location CPT-2 at 26.6 feet and 36.7 feet, and 39.7 feet; at location CPT-4A at 35.4 feet and 39.4 feet; and at location CPT-5 at 39.7 feet (see Appendix B). The duration of the PPDTs ranged from approximately 4 minutes to 22 minutes.

### 2.4 SOIL VAPOR SAMPLING

Continual downhole sampling of volatile organic vapors as the CPTu probe is advanced into the subsurface was accomplished using two-line vapor sampling design that allows for purging of the vapor collection lines between vapor samples. Purging of the lines

between samples allows continual collection of vapor samples with depth without having to withdraw the line for replacement or purging at the surface, as is the case with single-line samples.

Soil vapor samples were obtained at various depths at locations SV1 through SV3. These vapor sample locations are in close proximity to CPT locations CPT-4, CPT-3, and CPT-5, respectively (see Figure 2). The vapor samples were analyzed with a photoionization detector (ThermoAnalytical OVM, Model 580B). The results are contained in Appendix C.

## 2.5 SOIL SAMPLING

Soil samples were collected and analytically tested from locations SBCP-1 through SBCP-4 (see Figure 2). The soil samples were obtained from depths ranging between nine and 15 feet bgs. Soil samples were collected with a soil sampling probe mounted onto the end of the CPT rods. The interior of the soil sampling probe is lined with two one-inch outside diameter by three-inch long stainless steel rings. At the designated sampling point, the probe tip is retracted, and the probe is pushed into the undisturbed soil.

After sample recovery, the ends of the lowermost tubes were covered with aluminum foil and plastic caps taped over the ends. Prior to use, all tubes were washed in a solution of Alconox detergent and tap water, rinsed with tap water and then with distilled water. The samples were labeled with the sample point identification, EAI project number, depth interval, time and date, individually sealed in "Ziploc" plastic bags, and immediately placed into an ice chest chilled using crushed ice. The samples were kept chilled until delivered to the laboratory for analytical testing. All samples were logged on chain of custody record forms (see Appendix D).

## 2.6 GROUND WATER SAMPLING

On July 21, 1994, after completion of the CPTu soundings, two ground water sampling locations (HPCP-1 and HPCP-2) were installed using a QED Environmental HydroPunch II™ (Hydropunch) (see Figure 2). The Hydropunch is a discrete-depth ground water sampling device in which the screen is shielded by a retractable sleeve until the device is seated at a target depth. The sleeve is then retracted which exposes the screen and allows ground water to enter the sampling device.

The ground water sampling locations were selected to attempt to define the down-gradient extent of the dissolved hydrocarbon plume in the easterly direction on the Enea Properties Sites, and the westerly (up-gradient) directions on the Montgomery Ward Site (see Figure 2).

Using the CPT rig, each Hydropunch was pushed to a specified depth. The CPT rods were then retracted about three feet which exposed the screen of the Hydropunch. The base of HPCP-1 was set at approximately 11 feet bgs, and HPCP-2 was set at approximately 16 feet bgs. The depths of the Hydropunches were determined by gauging the fluid levels in still open CPT soundings in close proximity to the Hydropunches (see Table 1). Since ground water seepage into the screen of the Hydropunches was slow and since the CPT holes would stay open (i.e., not collapse upon withdrawal of the CPT rods as evident by other CPT soundings completed at the sites), it was decided that the CPT rods would be withdrawn and the CPT rig would be moved to another location so that field work could be continued. The Hydropunch locations were then secured. After allowing for ground water to fill the Hydropunches, a small diameter Teflon bailer was then lowered into the Hydropunch. A

ground water sample was obtained from HPCP-1 on July 21, 1994 on the day that this Hydropunch was installed. However, there was insufficient seepage of ground water into HPCP-2 for a representative sample to be obtained. Therefore, HPCP-2 was allowed to sit overnight to allow ground water to fill the Hydropunch. On July 22, 1994, a small diameter Teflon bailer was lowered into Hydropunch location HPCP-2. No water sample was obtained from HPCP-2 since an insufficient quantity of water was present in the Hydropunch. HPCP-1 was resampled on July 22, 1994.

The ground water samples obtained on July 21 and 22, 1994 were labeled as described in Section 2.2. The samples were logged on a chain of custody record form (see Appendix D).

## 2.7 GROUTING OF CPT SOUNDINGS AND SAMPLE HOLES

All CPT sounding and sample holes were grouted by pushing or vibrating a hollow uninstrumented CPT rod with a "knockout plug" down the test hole to termination depth or by dropping bentonite chips into the open hole and hydrating the bentonite. Bentonite grout was pumped into the hole as the CPT rods were being extracted. The holes were filled to within six inches of the surface with bentonite and capped with asphalt or concrete.

## 2.8 EQUIPMENT CLEANING PROTOCOL

All equipment that was inserted into the ground (rods, screens, cones, etc.) was cleaned between each CPT sounding or Hydropunch. The effluent collected and sealed in labeled 55-gallon drums, pending analytical test results at which time the appropriate disposal method will be determined.

# 3.0 ANALYTICAL TESTING

All samples were delivered for analytical testing to Sequoia Analytical (Sequoia), a state certified hazardous waste testing laboratory (Certificate #1271) located in Concord, California. The laboratory was instructed to use minimum detection limits for all tests. Sequoia is certified for all testing completed as part of this investigation.

## 3.1 SOIL SAMPLES

### 3.1.1 Total Petroleum Hydrocarbons and BTEX Testing

The soil samples collected from the four CPT sounding were tested for total petroleum hydrocarbons as gasoline (TPH-G) using modified EPA Method 8015, and benzene, toluene, ethylbenzene, and ethylbenzene (BTEX) using EPA Method 8020. The results of the testing are shown on Table 2. The laboratory reports are contained in Appendix E.

### 3.1.2 Soil Leachability Testing

Soil leachability testing was conducted to determine whether the BTEX in the two soil samples obtained during this investigation which contain the highest detected TPH-G concentrations will leach from the soil. The soil leachability testing was conducted using the Toxicity Characteristic Leaching Procedure (TCLP) with deionized water. Use of deionized

water was preferred over a citric acid buffer in order to simulate conditions which most likely will occur under natural conditions, i.e., the leaching effects of downward infiltrating water through soil containing petroleum hydrocarbons.

The results of the modified TCLP testing are contained in Appendix E.

### 3.2 GROUND WATER SAMPLES

The ground water samples obtained from HPCP-1 on July 21 and 22, 1994 were tested for TPH-G and BTEX. The results of the testing are shown on Table 2. The laboratory reports are contained in Appendix E.

## 4.0 DISCUSSION

### 4.1 CPT BASED LITHOLOGIES

Exploration of the soils down to approximately 52 feet bgs indicate that the predominant soil types at the sites are clayey silts, silty clays, and clays. Only in CPT-4 and CPT-6 were more coarser soils identified. These coarser soils were only about one foot thick. The low tip resistance ( $q_c$ ) values indicate that the soils are very soft. These CPT logs closely match the lithology represented on the boring logs previously completed for the sites, and confirms the subsurface conditions encountered at the two sites.

### 4.2 PPDTs ANALYSES

Analysis of the data obtained from the PPDT testing shows that slow pore pressure dissipation (>5 minutes) was encountered in all of the tests. Several of the tests were terminated prematurely due to extremely slow pore pressure dissipation (i.e., CPT-1 at 30.5 feet, CPT-2 at 26.6 feet, CPT-5 at 39.7 feet, and CPT-4A at 35.4 feet and 39.4 feet).

Based on the PPDT readings, EAI interprets that in-situ pore pressures near or at equilibrium were reached in dissipation tests from CPT-1 at 18.2 feet and at 38.9 feet and CPT-2 at 36.7 feet. These CPTu locations were at the Enea Properties Sites. Converting these pore pressures to hydraulic head equivalents indicates that vertical hydraulic gradients exist within the water bearing zone. The data from CPT-1 at 18.2 feet suggests that a downward vertical gradient of -1.17 feet/feet exist at this location. The data from CPT-1 at 38.9 feet and CPT-2 at 36.7 feet show a upward vertical hydraulic gradient of 1.45 feet/feet and 2.21 feet/feet, respectively.

The PPDTs from the Montgomery Ward Site (CPT-4A and CPT-5) show very slow pore pressure dissipation as compared to CPTs conducted at the Enea Properties Sites. The very slow pore pressure dissipation most likely is the function of differences in the permeability of the soils being measured.

### 4.3 ANALYTICAL TESTING RESULTS

TPH-G and BTEX were detected in all the soil samples collected except for sample SBCP-1 at 9-9.5 feet. The highest TPH-G concentrations were detected in samples SBCP-1 at 13-13.5 feet (290 milligrams per kilogram [mg/kg]) and SBCP-2 at 13-13.5 feet (230



mg/kg). Sample SBCP-1 at 13-13.5 feet also had the highest concentrations of benzene (2 mg/kg), toluene (6.2 mg/kg), ethylbenzene (7 mg/kg) and xylenes (37 mg/kg) (see Table 2).

The modified TCLP tests using deionized water show that no benzene was detected in the TCLP leachate. Toluene, ethylbenzene, and xylenes, however, were detected in the TCLP leachate, but at very low individual concentrations ranging from 0.016 to 0.56 micrograms/liter (see Appendix E).

No TPH-G or BTEX were detected in the HydroPunch ground water samples collected from HydroPunch location HPCP-1 (see Appendix E).

Soil sample SBCP-1 at 13-13.5 feet was analyzed for total organic carbon (TOC). The results of the testing showed that the sample contained 2,200 mg/kg (0.22 percent) of TOC (see Appendix E).

## 5.0 LIMITATION

Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in this or similar localities. No other warranty or representation, expressed or implied, is made as to the professional advice contained in this report.

## 6.0 REFERENCES CITED

Environmental Audit, Inc., "Status Report and Work Plan, Montgomery Ward Auto Service Center and Enea Properties Sites, Dublin, California," dated May 27, 1994 (EAI, 1994).

FSM:CPD:SAB:sh

CHRIS WORD.1233-R3

**TABLES**

**TABLE 1**  
**DEPTH TO GROUND WATER**  
**Montgomery Ward Auto Service Center and**  
**Enea Properties Sites**

Well I.D.#	Depth To Water (ft)*
B-5	12.09
B-10	12.62
B-15	13.58
B-16	12.94
MW-1	9.63
EW-1	9.78
MW-100	12.09
MW-102	12.62
CPT2	8.65

\* As measured from top of casing for monitoring wells and ground surface level for cone penetrometer test hole CPT2.

FSM:WORD:1233-R31.DOC

**TABLE 2**  
**ANALYTICAL TESTING RESULTS**  
**Montgomery Ward Auto Service Center**  
**and Enea Properties Sites**  
**Dublin, California**

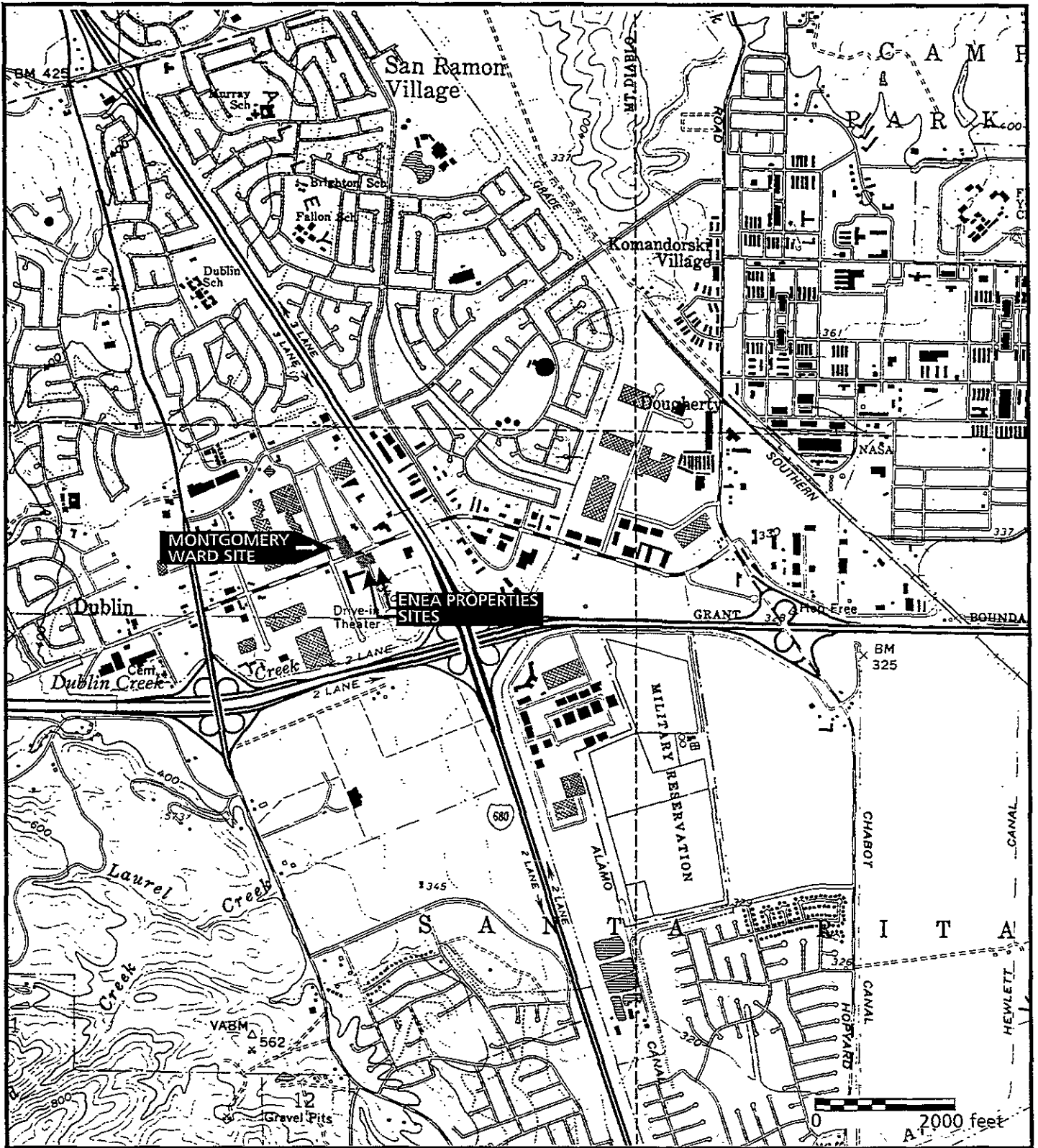
Parts per Million (ppm)

Sample ID	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes
<b>SOIL SAMPLES</b>					
SBCP-1 @ 9-9.5'	ND	ND	ND	ND	ND
SBCP-1 @ 13-13.5'	290	2.0	6.2	7.0	37
SBCP-2 @ 13-13.5'	230	1.7	1.1	4.4	23
SBCP-2 @ 15-15.5'	5.3	0.065	0.030	0.19	0.41
SBCP-3 @ 13-13.5'	71	0.68	4.8	1.7	8.9
SBCP-3 @ 15-15.5'	1.9	0.012	0.037	0.027	0.11
SBCP-4 @ 12'	81	0.29	0.20	0.91	4.3
<b>GROUND WATER SAMPLES HPCP-1</b>					
07/21/94	ND	ND	ND	ND	ND
07/22/94	ND	ND	ND	ND	ND

ND = Not Detected.

CHRIS-1233-R3T

**FIGURES**



**Environmental Audit, Inc.**

**LOCATION MAP**  
**Montgomery Ward Auto Service Center**  
**Enea Properties**  
**Dublin, California**



SOURCE: USGS TOPOGRAPHIC 7.5 MINUTE SERIES  
 DUBLIN, CALIFORNIA QUADRANGLE

Figure 1

Project No. 1233  
 KA1233\1233-LM.CDR

**APPENDICES**



**APPENDIX A**

**CPT Data**

SOUNDING DATA IN FILE CPT-46 07-20-94 08:21

OPERATOR : JHANCOCK

LOCATION : CPT-1

CONE ID : 409

JOB No. : DUBLIN, AUDIT

Holguin, Fahan & Associates  
 143 S Figueroa St. Ventura, CA 93001

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
0.05	0.2	702.6	702.6	1.459	0.0	1.5		?
0.10	0.3	558.5	558.5	1.332	0.0	0.1	gravelly sand to sand	90
0.15	0.5	436.8	436.8	2.012	-0.0	0.2	gravelly sand to sand	64
0.20	0.7	217.0	217.0	1.144	-0.1	0.1	sand	52
0.25	0.8	157.1	157.1	1.453	-0.2	0.0	sand	32
0.30	1.0	124.5	124.5	0.646	-0.0	0.0	sand to silty sand	30
0.35	1.1	88.5	88.5	0.974	-0.3	0.0	sand to silty sand	21
0.40	1.3	46.5	46.5	1.070	-0.3	0.0	sandy silt to clayey silt	20
0.45	1.5	20.1	20.1	1.069	-0.4	0.0	clayey silt to silty clay	13
0.50	1.6	12.4	12.4	0.618	0.2	0.0	clay	14
0.55	1.8	11.8	11.8	0.503	1.2	0.0	clay	14
0.60	2.0	18.4	18.4	0.698	0.6	0.0	silty clay to clay	11
0.65	2.1	22.6	22.6	0.802	-0.9	0.0	clayey silt to silty clay	11
0.70	2.3	26.7	26.7	0.607	-0.6	0.0	silty sand to sandy silt	17
0.75	2.5	106.4	106.4	0.555	-1.4	0.1	sand to silty sand	18
0.80	2.6	91.3	91.3	0.772	-3.0	0.0	sand to silty sand	20
0.85	2.8	59.1	59.1	1.244	-2.0	0.1	silty sand to sandy silt	20
0.90	3.0	37.5	37.5	1.285	-1.0	0.1	sandy silt to clayey silt	16
0.95	3.1	27.7	27.7	1.040	-2.1	0.1	clayey silt to silty clay	14
1.00	3.3	19.4	19.4	0.828	-0.5	0.1	silty clay to clay	14
1.05	3.4	17.4	17.4	0.696	-0.8	0.1	silty clay to clay	11
1.10	3.6	15.5	15.5	0.552	-0.4	0.1	silty clay to clay	10
1.15	3.8	12.3	12.3	0.367	-0.1	0.1	silty clay to clay	8
1.20	3.9	8.7	8.7	0.231	-0.5	0.1	silty clay to clay	6
1.25	4.1	5.2	5.2	0.132	-0.3	0.1	clay	6
1.30	4.3	4.5	4.5	0.134	-0.4	0.1	clay	5
1.35	4.4	4.8	4.8	0.152	-0.3	0.2	clay	5
1.40	4.6	5.4	5.4	0.195	-0.3	0.1	clay	5
1.45	4.8	7.0	7.0	0.291	-0.3	0.1	clay	7
1.50	4.9	8.8	8.7	0.362	-0.2	0.2	clay	9
1.55	5.1	11.3	11.3	0.430	-0.2	0.2	clay	10
1.60	5.2	12.6	12.6	0.458	-0.5	0.2	silty clay to clay	8
1.65	5.4	12.6	12.6	0.457	-0.2	0.2	silty clay to clay	8
1.70	5.6	12.8	12.8	0.508	-0.2	0.2	clay	12
1.75	5.7	13.7	13.7	0.537	0.0	0.2	silty clay to clay	9
1.80	5.9	14.9	14.9	0.563	0.2	0.2	silty clay to clay	10
1.85	6.1	16.0	16.0	0.581	0.3	0.2	silty clay to clay	10
1.90	6.2	16.1	16.2	0.589	0.5	0.2	silty clay to clay	10
1.95	6.4	15.6	15.6	0.576	0.3	0.2	silty clay to clay	10
2.00	6.6	15.1	15.1	0.562	0.5	0.2	silty clay to clay	10

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
2.05	6.7	14.8	14.8	0.543	0.4	0.2	silty clay to clay	9
2.10	6.9	12.6	12.6	0.458	0.5	0.2	silty clay to clay	8
2.15	7.1	11.8	11.8	0.427	0.8	0.2	silty clay to clay	8
2.20	7.2	11.3	11.3	0.364	0.8	0.2	silty clay to clay	7
2.25	7.4	11.3	11.4	0.353	1.1	0.2	silty clay to clay	7
2.30	7.5	11.5	11.6	0.393	1.3	0.2	silty clay to clay	7
2.35	7.7	11.4	11.4	0.377	1.3	0.2	silty clay to clay	7
2.40	7.9	10.8	10.9	0.380	1.4	0.2	silty clay to clay	7
2.45	8.0	10.9	11.0	0.319	1.4	0.2	silty clay to clay	7
2.50	8.2	10.7	10.8	0.315	1.6	0.2	silty clay to clay	7
2.55	8.4	11.3	11.3	0.360	1.7	0.3	silty clay to clay	7
2.60	8.5	12.1	12.2	0.441	1.9	0.2	silty clay to clay	8
2.65	8.7	12.5	12.5	0.492	1.8	0.2	clay	12
2.70	8.9	12.6	12.6	0.502	1.7	0.2	clay	12
2.75	9.0	11.5	11.5	0.474	1.6	0.2	clay	11
2.80	9.2	10.7	10.8	0.416	1.6	0.2	clay	10
2.85	9.4	10.5	10.5	0.400	1.6	0.2	clay	10
2.90	9.5	10.9	10.9	0.384	2.1	0.2	clay	11
2.95	9.7	11.6	11.6	0.405	2.3	0.2	silty clay to clay	7
3.00	9.8	12.3	12.4	0.444	2.3	0.2	clay	11
3.05	10.0	11.9	12.0	0.482	2.1	0.2	clay	11
3.10	10.2	10.7	10.8	0.482	1.8	0.2	clay	10
3.15	10.3	9.9	9.9	0.413	1.7	0.2	clay	10
3.20	10.5	9.5	9.5	0.387	1.7	0.2	clay	9
3.25	10.7	8.8	8.9	0.406	1.6	0.2	clay	8
3.30	10.8	7.7	7.7	0.370	1.3	0.3	clay	7
3.35	11.0	6.2	6.3	0.270	1.0	0.3	clay	6
3.40	11.2	5.4	5.4	0.225	1.0	0.3	clay	6
3.45	11.3	6.7	6.7	0.200	1.0	0.3	clay	6
3.50	11.5	7.5	7.5	0.197	0.5	0.3	silty clay to clay	5
3.55	11.6	8.3	8.3	0.183	-0.2	0.3	silty clay to clay	5
3.60	11.8	9.3	9.3	0.299	0.1	0.3	silty clay to clay	6
3.65	12.0	11.3	11.4	0.447	0.4	0.3	clay	11
3.70	12.1	12.6	12.6	0.531	0.3	0.3	clay	12
3.75	12.3	13.0	13.0	0.545	0.1	0.3	clay	13
3.80	12.5	13.6	13.6	0.561	0.1	0.3	clay	13
3.85	12.6	12.6	12.6	0.518	0.1	0.3	clay	12
3.90	12.8	11.2	11.2	0.468	-0.0	0.3	clay	11
3.95	13.0	10.0	10.0	0.425	-0.1	0.3	clay	10
4.00	13.1	9.6	9.6	0.395	-0.2	0.3	clay	9
4.05	13.3	9.5	9.5	0.383	-0.2	0.3	clay	9
4.10	13.5	9.6	9.6	0.386	-0.2	0.3	clay	9
4.15	13.6	9.7	9.7	0.406	-0.3	0.3	clay	9
4.20	13.8	9.4	9.4	0.415	-0.4	0.4	clay	9
4.25	13.9	8.9	8.9	0.397	-0.4	0.4	clay	8
4.30	14.1	8.0	8.0	0.368	-0.6	0.5	clay	8
4.35	14.3	7.7	7.7	0.357	-0.5	0.5	clay	8
4.40	14.4	8.4	8.4	0.364	-0.6	0.5	clay	8
4.45	14.6	9.3	9.3	0.398	-0.7	0.5	clay	9
4.50	14.8	9.5	9.5	0.401	-0.6	0.6	clay	9

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
4.55	14.9	9.5	9.5	0.411	-0.7	0.6	clay	9
4.60	15.1	8.9	8.9	0.413	-0.7	0.5	clay	9
4.65	15.3	8.4	8.4	0.380	-0.8	0.6	clay	8
4.70	15.4	8.9	8.9	0.327	-0.8	0.6	clay	9
4.75	15.6	10.3	10.3	0.355	-0.7	0.6	silty clay to clay	7
4.80	15.7	13.2	13.2	0.434	-0.5	0.6	silty clay to clay	8
4.85	15.9	13.6	13.6	0.499	0.0	0.6	silty clay to clay	8
4.90	16.1	12.1	12.1	0.477	0.0	0.6	clay	12
4.95	16.2	10.7	10.7	0.414	-0.1	0.6	clay	10
5.00	16.4	9.7	9.7	0.350	0.1	0.6	clay	10
5.05	16.6	9.5	9.5	0.314	0.0	0.6	clay	9
5.10	16.7	9.4	9.4	0.300	0.1	0.6	silty clay to clay	6
5.15	16.9	9.9	9.9	0.338	0.3	0.6	clay	9
5.20	17.1	9.7	9.7	0.342	0.3	0.6	silty clay to clay	6
5.25	17.2	9.9	9.9	0.262	0.5	0.6	silty clay to clay	6
5.30	17.4	10.6	10.6	0.286	0.7	0.6	silty clay to clay	7
5.35	17.6	13.0	13.0	0.457	0.8	0.6	silty clay to clay	8
5.40	17.7	15.6	15.6	0.622	1.0	0.6	silty clay to clay	10
5.45	17.9	16.6	16.6	0.645	1.0	0.6	silty clay to clay	11
5.50	18.0	17.8	17.9	0.721	1.0	0.6	silty clay to clay	11
5.55	18.2	17.6	17.6	0.712	1.1	0.6	silty clay to clay	12
5.60	18.4	19.3	19.4	0.677	3.2	0.7	silty clay to clay	12
5.65	18.5	18.5	18.5	0.639	3.2	0.7	silty clay to clay	12
5.70	18.7	18.4	18.5	0.644	3.3	0.7	silty clay to clay	12
5.75	18.9	18.1	18.2	0.685	3.2	0.7	silty clay to clay	12
5.80	19.0	17.7	17.8	0.744	3.2	0.7	silty clay to clay	11
5.85	19.2	17.5	17.6	0.679	3.2	0.7	silty clay to clay	11
5.90	19.4	16.9	17.0	0.632	3.4	0.7	silty clay to clay	11
5.95	19.5	15.1	15.2	0.570	3.2	0.7	silty clay to clay	10
6.00	19.7	14.7	14.7	0.508	3.4	0.7	silty clay to clay	10
6.05	19.8	15.3	15.4	0.533	3.5	0.7	silty clay to clay	10
6.10	20.0	17.3	17.4	0.565	3.6	0.7	silty clay to clay	11
6.15	20.2	18.0	18.0	0.638	3.7	0.7	silty clay to clay	12
6.20	20.3	19.6	19.6	0.679	3.9	0.7	silty clay to clay	12
6.25	20.5	20.8	20.9	0.752	3.9	0.7	silty clay to clay	13
6.30	20.7	21.1	21.2	0.819	4.0	0.7	silty clay to clay	13
6.35	20.8	21.5	21.5	0.860	4.0	0.7	silty clay to clay	14
6.40	21.0	21.2	21.3	0.845	3.9	0.7	silty clay to clay	13
6.45	21.2	20.1	20.1	0.726	3.9	0.7	silty clay to clay	13
6.50	21.3	18.9	18.9	0.650	3.9	0.7	silty clay to clay	12
6.55	21.5	17.9	18.0	0.610	3.9	0.7	silty clay to clay	12
6.60	21.7	18.0	18.0	0.636	3.9	0.7	silty clay to clay	12
6.65	21.8	18.5	18.5	0.667	4.0	0.7	silty clay to clay	12
6.70	22.0	19.0	19.0	0.699	4.1	0.7	silty clay to clay	12
6.75	22.1	18.8	18.8	0.719	4.1	0.7	silty clay to clay	12
6.80	22.3	18.8	18.9	0.766	4.0	0.7	silty clay to clay	12
6.85	22.5	19.5	19.6	0.747	4.0	0.8	silty clay to clay	12
6.90	22.6	19.9	20.0	0.760	4.2	0.8	silty clay to clay	13
6.95	22.8	20.2	20.2	0.730	4.3	0.8	silty clay to clay	13
7.00	23.0	19.6	19.7	0.716	4.3	0.8	silty clay to clay	13

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 s sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
7.05	23.1	19.0	19.0	0.677	4.3	0.8	silty clay to clay	12
7.10	23.3	17.5	17.5	0.660	4.3	0.8	silty clay to clay	11
7.15	23.5	16.9	16.9	0.622	4.3	0.8	silty clay to clay	11
7.20	23.6	16.7	16.8	0.631	4.4	0.8	silty clay to clay	11
7.25	23.8	17.8	17.9	0.686	4.5	0.8	silty clay to clay	11
7.30	23.9	19.4	19.4	0.716	4.6	0.8	silty clay to clay	12
7.35	24.1	19.6	19.6	0.735	4.6	0.8	silty clay to clay	12
7.40	24.3	18.9	18.9	0.695	4.7	0.9	silty clay to clay	12
7.45	24.4	18.6	18.7	0.664	4.8	0.9	silty clay to clay	12
7.50	24.6	19.8	19.9	0.662	4.9	0.9	clayey silt to silty clay	9
7.55	24.8	21.0	21.0	0.721	4.9	0.9	clayey silt to silty clay	10
7.60	24.9	21.2	21.2	0.782	4.9	0.9	silty clay to clay	14
7.65	25.1	21.6	21.6	0.782	5.0	1.1	silty clay to clay	14
7.70	25.3	21.9	22.0	0.774	5.0	1.1	clayey silt to silty clay	10
7.75	25.4	21.8	21.9	0.774	5.0	1.1	silty clay to clay	14
7.80	25.6	21.6	21.6	0.836	5.0	1.1	silty clay to clay	14
7.85	25.8	21.4	21.5	0.778	5.0	1.1	silty clay to clay	14
7.90	25.9	21.2	21.2	0.782	5.3	1.1	silty clay to clay	14
7.95	26.1	21.5	21.6	0.822	5.3	1.1	silty clay to clay	14
8.00	26.2	21.4	21.4	0.861	5.3	1.1	silty clay to clay	14
8.05	26.4	21.2	21.3	0.836	5.3	1.1	silty clay to clay	13
8.10	26.6	20.8	20.9	0.810	5.3	1.1	silty clay to clay	13
8.15	26.7	20.7	20.8	0.779	5.3	1.1	silty clay to clay	13
8.20	26.9	20.7	20.7	0.796	5.3	1.1	silty clay to clay	13
8.25	27.1	20.9	21.0	0.833	5.3	1.5	silty clay to clay	13
8.30	27.2	21.1	21.2	0.815	5.3	1.5	silty clay to clay	13
8.35	27.4	21.2	21.2	0.765	5.4	1.6	silty clay to clay	14
8.40	27.6	21.8	21.9	0.779	5.4	1.6	clayey silt to silty clay	11
8.45	27.7	23.2	23.2	0.786	5.4	1.6	clayey silt to silty clay	11
8.50	27.9	24.3	24.4	0.802	5.6	1.6	clayey silt to silty clay	12
8.55	28.1	25.7	25.8	0.811	5.7	1.6	clayey silt to silty clay	12
8.60	28.2	27.5	27.6	0.839	5.8	1.6	clayey silt to silty clay	13
8.65	28.4	27.3	27.4	0.845	5.8	1.7	clayey silt to silty clay	13
8.70	28.5	26.6	26.7	0.807	5.9	1.7	clayey silt to silty clay	13
8.75	28.7	26.2	26.3	0.757	6.1	1.7	clayey silt to silty clay	12
8.80	28.9	25.4	25.5	0.790	6.1	1.7	clayey silt to silty clay	12
8.85	29.0	25.3	25.3	0.784	6.2	1.8	clayey silt to silty clay	12
8.90	29.2	25.2	25.3	0.788	6.7	1.8	clayey silt to silty clay	12
8.95	29.4	23.1	23.2	0.800	6.7	1.8	clayey silt to silty clay	11
9.00	29.5	23.3	23.4	0.738	6.8	1.8	clayey silt to silty clay	11
9.05	29.7	23.8	23.9	0.692	6.9	1.8	clayey silt to silty clay	11
9.10	29.9	24.3	24.4	0.593	7.0	1.8	clayey silt to silty clay	12
9.15	30.0	25.4	25.5	0.709	7.2	1.8	clayey silt to silty clay	12
9.20	30.2	26.9	27.0	0.656	7.3	1.8	clayey silt to silty clay	12
9.25	30.3	24.4	24.5	0.908	7.4	1.8	clayey silt to silty clay	11
9.30	30.5	17.5	17.6	0.688	7.0	1.8	silty clay to clay	13
9.35	30.7	17.7	17.8	0.553	6.9	2.0	clayey silt to silty clay	9
9.40	30.8	19.0	19.1	0.492	7.0	2.0	clayey silt to silty clay	9
9.45	31.0	19.0	19.1	0.578	6.9	2.0	clayey silt to silty clay	9
9.50	31.2	18.9	19.0	0.601	6.8	2.0	clayey silt to silty clay	9

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
9.55	31.3	18.1	18.2	0.614	6.6	2.0	clayey silt to silty clay	9
9.60	31.5	18.3	18.4	0.584	6.6	2.0	clayey silt to silty clay	9
9.65	31.7	17.6	17.7	0.547	6.4	2.0	clayey silt to silty clay	9
9.70	31.8	17.4	17.5	0.553	6.3	2.1	clayey silt to silty clay	8
9.75	32.0	16.7	16.8	0.530	6.1	2.1	clayey silt to silty clay	8
9.80	32.2	16.0	16.1	0.519	6.1	2.1	clayey silt to silty clay	8
9.85	32.3	15.3	15.4	0.441	6.1	2.1	clayey silt to silty clay	7
9.90	32.5	15.3	15.4	0.378	5.5	2.1	clayey silt to silty clay	7
9.95	32.6	14.5	14.6	0.340	5.5	2.1	clayey silt to silty clay	7
10.00	32.8	14.6	14.6	0.265	5.5	2.1	clayey silt to silty clay	7
10.05	33.0	15.0	15.1	0.270	5.6	2.1	clayey silt to silty clay	7
10.10	33.1	17.2	17.2	0.278	5.6	2.1	sandy silt to clayey silt	6
10.15	33.3	16.9	16.9	0.258	5.6	2.1	sandy silt to clayey silt	6
10.20	33.5	16.0	16.1	0.229	5.7	2.1	sandy silt to clayey silt	6
10.25	33.6	15.0	15.0	0.188	5.7	2.1	sandy silt to clayey silt	6
10.30	33.8	13.3	13.4	0.150	5.7	2.1	sandy silt to clayey silt	5
10.35	34.0	13.1	13.2	0.170	5.8	2.1	sandy silt to clayey silt	5
10.40	34.1	15.4	15.5	0.229	6.0	2.1	clayey silt to silty clay	8
10.45	34.3	19.5	19.6	0.502	6.0	2.3	clayey silt to silty clay	10
10.50	34.4	27.1	27.2	0.633	5.9	2.3	sandy silt to clayey silt	9
10.55	34.6	27.5	27.6	0.643	5.7	2.3	sandy silt to clayey silt	10
10.60	34.8	23.6	23.7	0.611	5.5	2.3	clayey silt to silty clay	12
10.65	34.9	21.6	21.7	0.595	5.4	2.3	clayey silt to silty clay	11
10.70	35.1	20.8	20.9	0.495	5.4	2.3	clayey silt to silty clay	10
10.75	35.3	19.2	19.3	0.540	5.3	2.3	clayey silt to silty clay	10
10.80	35.4	21.5	21.6	0.553	5.4	2.3	clayey silt to silty clay	10
10.85	35.6	25.0	25.0	0.598	5.4	2.3	clayey silt to silty clay	11
10.90	35.8	22.1	22.2	0.533	5.3	2.4	clayey silt to silty clay	11
10.95	35.9	21.0	21.1	0.532	5.7	2.4	clayey silt to silty clay	10
11.00	36.1	19.8	19.9	0.412	5.7	2.5	clayey silt to silty clay	10
11.05	36.3	19.9	20.0	0.332	5.8	2.5	sandy silt to clayey silt	8
11.10	36.4	20.9	20.9	0.447	5.9	2.5	clayey silt to silty clay	11
11.15	36.6	27.3	27.4	0.795	6.1	2.5	clayey silt to silty clay	12
11.20	36.7	28.2	28.3	0.897	5.5	2.5	clayey silt to silty clay	13
11.25	36.9	27.1	27.2	1.008	5.7	2.5	clayey silt to silty clay	13
11.30	37.1	25.0	25.1	0.787	5.6	2.6	clayey silt to silty clay	12
11.35	37.2	22.2	22.3	0.712	5.6	2.6	clayey silt to silty clay	11
11.40	37.4	20.3	20.4	0.537	5.7	2.7	clayey silt to silty clay	10
11.45	37.6	19.6	19.7	0.508	5.9	2.7	clayey silt to silty clay	9
11.50	37.7	18.3	18.4	0.426	5.9	2.7	clayey silt to silty clay	9
11.55	37.9	18.4	18.5	0.377	6.1	2.7	clayey silt to silty clay	9
11.60	38.1	19.3	19.4	0.426	6.1	2.7	clayey silt to silty clay	9
11.65	38.2	19.4	19.5	0.487	6.1	2.7	clayey silt to silty clay	9
11.70	38.4	17.9	18.0	0.423	6.1	2.7	clayey silt to silty clay	8
11.75	38.5	14.2	14.3	0.362	6.1	2.8	clayey silt to silty clay	7
11.80	38.7	12.5	12.6	0.388	6.2	2.8	silty clay to clay	8
11.85	38.9	11.1	11.2	0.559	6.4	2.8	silty clay to clay	9
11.90	39.0	17.7	17.8	0.439	11.9	3.0	clayey silt to silty clay	8
11.95	39.2	24.2	24.4	0.349	12.9	3.0	sandy silt to clayey silt	8
12.00	39.4	22.1	22.3	0.422	14.3	3.0	sandy silt to clayey silt	8

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
12.05	39.5	17.7	17.9	0.351	14.7	3.0	clayey silt to silty clay	9
12.10	39.7	13.8	14.1	0.374	15.8	3.1	clayey silt to silty clay	7
12.15	39.9	15.2	15.4	0.268	17.4	3.1	clayey silt to silty clay	7
12.20	40.0	16.3	16.5	0.324	18.5	3.1	clayey silt to silty clay	7
12.25	40.2	15.0	15.3	0.287	19.4	3.1	clayey silt to silty clay	7
12.30	40.4	14.6	14.9	0.201	20.5	3.1	clayey silt to silty clay	7
12.35	40.5	15.0	15.3	0.255	21.3	3.1	clayey silt to silty clay	7
12.40	40.7	13.3	13.7	0.296	21.8	3.3	clayey silt to silty clay	7
12.45	40.8	14.0	14.3	0.307	22.7	3.3		?
12.50	41.0	15.2	15.5	?	23.3	3.3		?
12.55	41.2	15.7	16.1	?	23.6	3.3		?

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 a sliding data average

SOUNDING DATA IN FILE CPT-48 07-20-94 11:35

OPERATOR : JHANCOCK

LOCATION : CPT-2

CONE ID : 409

JOB No. : DUBLIN, AUDIT

Holguin, Fahan & Associates  
 143 S Figueroa St. Ventura, CA 93001

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
0.05	0.2	0.0	0.0	0.023	-0.0	0.1	?	?
0.10	0.3	0.2	0.2	0.233	0.0	0.5	?	?
0.15	0.5	2.2	2.2	0.826	-0.1	1.5	clay	8
0.20	0.7	21.4	21.4	1.096	-0.2	0.0	clay	21
0.25	0.8	42.4	42.4	1.152	-0.0	0.0	clayey silt to silty clay	12
0.30	1.0	10.5	10.5	0.449	-0.2	0.0	clayey silt to silty clay	9
0.35	1.1	1.6	1.5	0.238	-0.2	0.0	clay	4
0.40	1.3	0.9	0.9	-0.006	-0.2	0.0	?	?
0.45	1.5	-0.1	-0.1	-0.008	-0.1	0.0	?	?
0.50	1.6	0.4	0.4	0.002	-0.2	0.0	?	?
0.55	1.8	0.5	0.5	0.068	-0.3	0.0	?	?
0.60	2.0	1.0	1.0	0.043	-0.2	0.0	?	?
0.65	2.1	0.1	0.1	0.038	-0.2	0.0	?	?
0.70	2.3	0.1	0.1	0.001	-0.1	0.0	?	?
0.75	2.5	0.5	0.5	0.082	-0.2	0.0	?	?
0.80	2.6	0.7	0.7	0.204	-0.2	0.0	clay	4
0.85	2.8	10.0	10.0	0.546	-0.3	0.1	clay	10
0.90	3.0	20.6	20.6	0.845	-0.2	0.0	clay	15
0.95	3.1	15.2	15.2	0.981	-0.1	0.0	clay	16
1.00	3.3	13.1	13.1	0.788	-0.0	0.0	clay	14
1.05	3.4	14.0	14.0	0.705	0.2	0.0	clay	13
1.10	3.6	13.7	13.7	0.707	0.0	0.0	clay	13
1.15	3.8	12.8	12.8	0.668	-0.3	0.0	clay	12
1.20	3.9	10.9	10.9	0.608	-1.1	0.0	clay	11
1.25	4.1	9.4	9.3	0.509	-1.5	0.0	clay	10
1.30	4.3	9.5	9.5	0.510	-1.4	0.0	clay	10
1.35	4.4	12.0	12.0	0.540	-1.5	0.0	clay	11
1.40	4.6	14.3	14.3	0.576	-1.3	0.0	clay	12
1.45	4.8	12.5	12.4	0.566	-1.9	0.0	clay	12
1.50	4.9	9.7	9.6	0.543	-3.6	0.0	clay	10
1.55	5.1	8.4	8.3	0.461	-3.5	0.0	clay	9
1.60	5.2	9.0	8.9	0.424	-2.7	0.0	clay	8
1.65	5.4	9.2	9.2	0.421	-2.6	0.0	clay	9
1.70	5.6	8.7	8.7	0.362	-2.5	0.0	clay	8
1.75	5.7	8.6	8.6	0.339	-2.4	0.0	clay	8
1.80	5.9	8.1	8.0	0.331	-2.4	0.0	clay	8
1.85	6.1	7.6	7.5	0.317	-2.4	0.0	clay	7
1.90	6.2	7.6	7.6	0.302	-2.3	0.0	clay	7
1.95	6.4	7.8	7.8	0.316	-2.3	0.0	clay	7
2.00	6.6	7.3	7.3	0.295	-2.3	0.0	clay	7

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average



DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
2.05	6.7	7.2	7.1	0.291	-2.3	0.0	clay	7
2.10	6.9	6.8	6.7	0.272	-2.2	0.0	clay	7
2.15	7.1	6.5	6.4	0.251	-2.2	0.0	clay	6
2.20	7.2	5.7	5.6	0.231	-2.2	0.0	clay	6
2.25	7.4	5.5	5.5	0.166	-2.0	0.0	clay	5
2.30	7.5	5.0	4.9	0.112	-2.0	0.0	clay	5
2.35	7.7	5.0	5.0	0.117	-1.9	0.0	clay	5
2.40	7.9	5.6	5.5	0.166	-1.7	0.0	clay	5
2.45	8.0	6.6	6.6	0.257	-1.6	0.0	clay	6
2.50	8.2	7.4	7.3	0.326	-1.6	0.0	clay	7
2.55	8.4	7.2	7.1	0.362	-1.9	0.0	clay	7
2.60	8.5	6.9	6.9	0.357	-2.0	0.0	clay	7
2.65	8.7	6.9	6.9	0.354	-2.2	0.0	clay	7
2.70	8.9	6.8	6.7	0.349	-2.3	0.0	clay	6
2.75	9.0	6.5	6.5	0.334	-2.5	0.0	clay	6
2.80	9.2	6.8	6.7	0.338	-2.5	0.0	clay	6
2.85	9.4	6.2	6.2	0.327	-2.6	0.0	clay	6
2.90	9.5	5.4	5.4	0.262	-2.8	0.0	clay	5
2.95	9.7	5.1	5.1	0.193	-2.7	0.0	clay	5
3.00	9.8	5.1	5.1	0.139	-2.6	0.0	clay	5
3.05	10.0	5.4	5.3	0.146	-2.6	0.0	clay	5
3.10	10.2	6.7	6.6	0.214	-2.4	0.0	clay	7
3.15	10.3	9.3	9.2	0.381	-2.3	0.0	clay	9
3.20	10.5	12.4	12.4	0.540	-2.2	0.0	clay	11
3.25	10.7	13.8	13.8	0.622	-2.2	0.0	clay	13
3.30	10.8	13.9	13.9	0.629	-2.3	0.0	clay	14
3.35	11.0	14.6	14.5	0.635	-2.4	0.0	clay	14
3.40	11.2	14.7	14.7	0.624	-2.4	0.0	clay	14
3.45	11.3	14.9	14.8	0.613	-2.6	0.0	clay	14
3.50	11.5	14.1	14.1	0.593	-2.6	0.0	clay	14
3.55	11.6	14.0	14.0	0.554	-2.7	0.0	clay	14
3.60	11.8	14.4	14.3	0.542	-2.6	0.0	silty clay to clay	9
3.65	12.0	14.1	14.1	0.559	-2.7	0.0	silty clay to clay	9
3.70	12.1	14.0	13.9	0.529	-2.7	0.0	silty clay to clay	9
3.75	12.3	13.6	13.6	0.536	-2.7	0.0	silty clay to clay	9
3.80	12.5	14.1	14.0	0.513	-2.6	0.0	silty clay to clay	9
3.85	12.6	14.0	14.0	0.550	-2.6	0.0	silty clay to clay	9
3.90	12.8	14.1	14.1	0.566	-2.5	0.0	clay	13
3.95	13.0	12.7	12.7	0.532	-2.7	0.0	clay	12
4.00	13.1	11.3	11.2	0.463	-2.6	0.0	clay	11
4.05	13.3	9.6	9.6	0.414	-2.6	0.0	clay	9
4.10	13.5	8.6	8.5	0.351	-2.6	0.0	clay	8
4.15	13.6	8.3	8.2	0.296	-2.7	0.0	clay	9
4.20	13.8	9.9	9.9	0.349	-2.6	0.0	silty clay to clay	7
4.25	13.9	13.2	13.2	0.406	-1.8	0.0	silty clay to clay	8
4.30	14.1	13.9	13.9	0.471	-1.7	0.0	silty clay to clay	9
4.35	14.3	14.5	14.4	0.516	-1.5	0.0	silty clay to clay	9
4.40	14.4	14.1	14.1	0.539	-1.5	0.0	clay	13
4.45	14.6	12.8	12.7	0.564	-1.5	0.0	clay	13
4.50	14.8	12.3	12.3	0.518	-1.6	0.0	clay	12

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
4.55	14.9	12.5	12.5	0.492	-1.5	0.0	clay	12
4.60	15.1	13.3	13.3	0.495	-1.4	0.0	clay	12
4.65	15.3	13.3	13.3	0.543	-1.4	0.0	clay	13
4.70	15.4	14.4	14.3	0.583	-1.3	0.0	clay	14
4.75	15.6	15.9	15.9	0.622	-1.3	0.0	silty clay to clay	10
4.80	15.7	16.4	16.4	0.628	-1.2	0.0	silty clay to clay	10
4.85	15.9	16.3	16.2	0.648	-1.2	0.0	silty clay to clay	10
4.90	16.1	16.3	16.3	0.604	-1.2	0.0	silty clay to clay	10
4.95	16.2	15.5	15.5	0.591	-1.2	0.0	silty clay to clay	10
5.00	16.4	15.2	15.2	0.560	-1.1	0.0	silty clay to clay	10
5.05	16.6	15.5	15.5	0.564	-1.1	0.0	silty clay to clay	10
5.10	16.7	15.3	15.3	0.576	-1.1	0.0	silty clay to clay	10
5.15	16.9	14.1	14.1	0.582	-1.0	0.0	clay	14
5.20	17.1	13.5	13.5	0.539	-0.2	0.0	clay	13
5.25	17.2	12.1	12.1	0.469	-0.1	0.0	silty clay to clay	8
5.30	17.4	13.3	13.3	0.456	-0.1	0.0	silty clay to clay	8
5.35	17.6	14.1	14.1	0.429	-0.0	0.0	silty clay to clay	9
5.40	17.7	15.0	15.0	0.464	0.1	0.0	silty clay to clay	10
5.45	17.9	17.0	17.0	0.559	0.2	0.0	silty clay to clay	10
5.50	18.0	17.3	17.3	0.696	0.3	0.0	silty clay to clay	11
5.55	18.2	17.0	17.0	0.793	0.3	0.0	clay	17
5.60	18.4	19.1	19.1	0.775	0.3	0.0	silty clay to clay	12
5.65	18.5	20.0	20.0	0.749	0.4	0.0	silty clay to clay	12
5.70	18.7	19.1	19.1	0.726	0.4	0.0	silty clay to clay	12
5.75	18.9	18.9	18.9	0.767	0.4	0.0	silty clay to clay	12
5.80	19.0	18.8	18.8	0.801	0.5	0.0	clay	18
5.85	19.2	17.9	17.9	0.766	0.5	0.0	clay	17
5.90	19.4	17.4	17.4	0.714	0.5	0.0	clay	17
5.95	19.5	17.0	17.0	0.720	0.5	0.0	clay	17
6.00	19.7	17.5	17.6	0.745	0.6	0.0	clay	17
6.05	19.8	17.5	17.5	0.760	0.5	0.0	clay	17
6.10	20.0	18.3	18.3	0.766	0.6	0.0	clay	17
6.15	20.2	18.5	18.5	0.829	0.6	0.0	clay	18
6.20	20.3	18.9	18.9	0.875	0.7	0.0	clay	18
6.25	20.5	19.5	19.5	0.885	0.8	0.0	clay	18
6.30	20.7	19.5	19.5	0.871	1.0	0.0	clay	19
6.35	20.8	20.0	20.0	0.818	0.9	0.0	silty clay to clay	13
6.40	21.0	19.6	19.6	0.770	1.0	0.0	silty clay to clay	13
6.45	21.2	19.7	19.7	0.770	1.1	0.0	silty clay to clay	13
6.50	21.3	20.8	20.8	0.813	1.2	0.0	silty clay to clay	13
6.55	21.5	20.2	20.2	0.943	1.1	0.0	clay	19
6.60	21.7	20.0	20.0	0.874	1.1	0.0	clay	19
6.65	21.8	19.6	19.6	0.856	1.2	0.0	clay	19
6.70	22.0	20.0	20.0	0.849	1.3	0.0	clay	19
6.75	22.1	19.6	19.6	0.837	1.3	0.0	clay	19
6.80	22.3	19.4	19.4	0.832	1.5	0.0	silty clay to clay	12
6.85	22.5	19.4	19.5	0.777	1.4	0.0	silty clay to clay	12
6.90	22.6	18.7	18.7	0.734	1.4	0.0	silty clay to clay	12
6.95	22.8	18.5	18.5	0.755	1.4	0.0	silty clay to clay	12
7.00	23.0	18.5	18.5	0.813	1.4	0.0	clay	18

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 s sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
7.05	23.1	18.4	18.5	0.806	1.4	0.0	clay	18
7.10	23.3	18.4	18.4	0.805	1.5	0.0	clay	18
7.15	23.5	18.4	18.4	0.842	1.4	0.0	clay	18
7.20	23.6	18.4	18.4	0.823	1.5	0.0	clay	18
7.25	23.8	19.0	19.1	0.817	1.6	0.0	clay	18
7.30	23.9	19.2	19.2	0.811	1.7	0.0	clay	18
7.35	24.1	19.0	19.0	0.810	1.7	0.0	clay	18
7.40	24.3	19.1	19.2	0.809	1.7	0.0	clay	18
7.45	24.4	19.5	19.5	0.841	1.7	0.0	clay	19
7.50	24.6	20.2	20.2	0.843	1.7	0.0	clay	19
7.55	24.8	19.7	19.7	0.840	1.8	0.0	silty clay to clay	13
7.60	24.9	19.9	19.9	0.821	1.8	0.0	silty clay to clay	13
7.65	25.1	20.6	20.6	0.820	1.8	0.0	silty clay to clay	13
7.70	25.3	22.2	22.3	0.816	1.9	0.0	clayey silt to silty clay	11
7.75	25.4	25.9	25.9	0.821	2.0	0.0	clayey silt to silty clay	12
7.80	25.6	24.8	24.8	0.796	2.2	0.0	clayey silt to silty clay	12
7.85	25.8	24.0	24.1	0.763	2.2	0.0	clayey silt to silty clay	11
7.90	25.9	20.4	20.4	0.731	2.0	0.0	clayey silt to silty clay	10
7.95	26.1	19.8	19.9	0.641	2.2	0.0	clayey silt to silty clay	10
8.00	26.2	25.0	25.1	0.596	2.3	0.0	clayey silt to silty clay	11
8.05	26.4	23.1	23.2	0.903	2.3	0.0	clayey silt to silty clay	11
8.10	26.6	21.3	21.3	0.925	2.7	0.0	silty clay to clay	15
8.15	26.7	27.0	27.1	1.033	5.2	0.0	silty clay to clay	15
8.20	26.9	24.1	24.2	0.789	5.4	0.0	clayey silt to silty clay	12
8.25	27.1	21.1	21.1	0.653	5.6	0.0	clayey silt to silty clay	11
8.30	27.2	21.0	21.1	0.675	5.8	0.0	clayey silt to silty clay	10
8.35	27.4	21.2	21.3	0.762	5.8	0.0	silty clay to clay	13
8.40	27.6	20.9	20.9	0.833	6.0	0.0	silty clay to clay	13
8.45	27.7	20.7	20.8	0.847	5.9	0.0	silty clay to clay	13
8.50	27.9	20.5	20.6	0.820	6.0	0.0	silty clay to clay	13
8.55	28.1	20.0	20.1	0.776	6.2	0.0	silty clay to clay	13
8.60	28.2	20.0	20.1	0.761	6.1	0.0	silty clay to clay	13
8.65	28.4	19.8	19.9	0.727	5.2	0.0	silty clay to clay	12
8.70	28.5	18.8	18.9	0.689	5.1	0.0	silty clay to clay	12
8.75	28.7	17.7	17.8	0.658	5.1	0.0	silty clay to clay	11
8.80	28.9	16.9	17.0	0.604	5.2	0.0	silty clay to clay	11
8.85	29.0	15.8	15.9	0.572	5.2	0.0	silty clay to clay	10
8.90	29.2	15.1	15.2	0.526	5.1	0.0	silty clay to clay	10
8.95	29.4	14.8	14.9	0.486	5.2	0.0	silty clay to clay	10
9.00	29.5	14.8	14.9	0.474	5.2	0.0	silty clay to clay	9
9.05	29.7	14.3	14.4	0.424	5.3	0.0	clayey silt to silty clay	7
9.10	29.9	14.2	14.3	0.350	5.5	0.0	clayey silt to silty clay	7
9.15	30.0	15.7	15.8	0.307	5.6	0.0	clayey silt to silty clay	8
9.20	30.2	18.6	18.7	0.324	5.9	0.0	clayey silt to silty clay	9
9.25	30.3	19.5	19.6	0.421	6.3	0.0	sandy silt to clayey silt	8
9.30	30.5	22.6	22.8	0.382	7.6	0.0	sandy silt to clayey silt	8
9.35	30.7	18.8	18.9	0.361	7.6	0.0	sandy silt to clayey silt	7
9.40	30.8	16.3	16.5	0.292	7.9	0.0	clayey silt to silty clay	8
9.45	31.0	16.6	16.7	0.307	8.1	0.0	sandy silt to clayey silt	7
9.50	31.2	18.3	18.4	0.269	8.4	0.0	sandy silt to clayey silt	7

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
9.55	31.3	18.0	18.1	0.274	8.5	0.0	sandy silt to clayey silt	7
9.60	31.5	15.2	15.3	0.338	8.9	0.0	clayey silt to silty clay	8
9.65	31.7	19.3	19.4	0.399	9.2	0.0	clayey silt to silty clay	9
9.70	31.8	19.4	19.5	0.356	9.1	0.0	clayey silt to silty clay	9
9.75	32.0	15.5	15.6	0.409	9.3	0.0	clayey silt to silty clay	8
9.80	32.2	16.5	16.7	0.655	9.4	0.0	clayey silt to silty clay	9
9.85	32.3	24.7	24.9	0.827	9.7	0.0	clayey silt to silty clay	12
9.90	32.5	33.3	33.4	0.892	7.6	0.0	sandy silt to clayey silt	13
9.95	32.6	42.1	42.1	0.973	1.2	0.0	sandy silt to clayey silt	13
10.00	32.8	25.2	25.2	0.797	-4.8	0.0	clayey silt to silty clay	14
10.05	33.0	18.5	18.5	0.529	-4.6	0.0	clayey silt to silty clay	9
10.10	33.1	14.3	14.2	0.365	-4.5	0.0	clayey silt to silty clay	7
10.15	33.3	11.1	11.0	0.307	-4.3	0.0	clayey silt to silty clay	6
10.20	33.5	10.2	10.1	0.214	-4.1	0.0	clayey silt to silty clay	5
10.25	33.6	10.9	10.8	0.233	-3.3	0.0	clayey silt to silty clay	5
10.30	33.8	12.7	12.7	0.286	-3.1	0.0	clayey silt to silty clay	6
10.35	34.0	15.2	15.2	0.327	-3.1	0.0	clayey silt to silty clay	7
10.40	34.1	17.5	17.4	0.447	-2.9	0.0	clayey silt to silty clay	8
10.45	34.3	17.1	17.0	0.492	-2.8	0.0	clayey silt to silty clay	8
10.50	34.4	15.9	15.9	0.488	-2.8	0.0	clayey silt to silty clay	8
10.55	34.6	15.2	15.2	0.411	-2.7	0.0	clayey silt to silty clay	7
10.60	34.8	14.4	14.3	0.351	-2.6	0.0	clayey silt to silty clay	7
10.65	34.9	13.6	13.6	0.292	-2.6	0.0	clayey silt to silty clay	7
10.70	35.1	13.5	13.5	0.246	-2.4	0.0	clayey silt to silty clay	7
10.75	35.3	14.7	14.6	0.244	-2.3	0.0	clayey silt to silty clay	7
10.80	35.4	15.9	15.8	0.248	-2.2	0.0	clayey silt to silty clay	7
10.85	35.6	15.9	15.8	0.493	-2.2	0.0	clayey silt to silty clay	9
10.90	35.8	25.7	25.7	0.473	-1.9	0.0	clayey silt to silty clay	11
10.95	35.9	29.0	29.0	1.129	-1.7	0.1	sandy silt to clayey silt	13
11.00	36.1	47.0	47.0	1.206	-1.4	0.0	sandy silt to clayey silt	17
11.05	36.3	58.1	58.1	0.775	-2.8	0.0	silty sand to sandy silt	16
11.10	36.4	43.7	43.6	0.713	-3.9	0.0	sandy silt to clayey silt	16
11.15	36.6	22.0	21.9	0.723	-4.7	0.0	clayey silt to silty clay	13
11.20	36.7	15.7	15.6	0.747	-4.3	0.0	clayey silt to silty clay	10
11.25	36.9	23.8	24.0	0.652	9.5	0.0	silty clay to clay	12
11.30	37.1	17.9	18.0	0.748	9.2	0.0	clayey silt to silty clay	10
11.35	37.2	22.3	22.5	0.797	10.4	0.0	clayey silt to silty clay	11
11.40	37.4	27.7	27.9	0.690	11.1	0.0	clayey silt to silty clay	12
11.45	37.6	22.7	22.8	0.321	7.8	0.0	sandy silt to clayey silt	8
11.50	37.7	14.7	14.8	0.373	7.9	0.0	clayey silt to silty clay	8
11.55	37.9	13.1	13.2	0.368	9.6	0.0	clayey silt to silty clay	7
11.60	38.1	14.6	14.7	0.431	10.2	0.0	clayey silt to silty clay	7
11.65	38.2	15.5	15.6	0.471	10.6	0.0	clayey silt to silty clay	7
11.70	38.4	15.7	15.9	0.526	11.0	0.0	silty clay to clay	10
11.75	38.5	16.3	16.4	0.522	11.3	0.0	silty clay to clay	10
11.80	38.7	16.4	16.6	0.542	11.6	0.0	clayey silt to silty clay	8
11.85	38.9	16.6	16.8	0.538	11.9	0.0	clayey silt to silty clay	8
11.90	39.0	16.9	17.1	0.541	12.2	0.0	clayey silt to silty clay	8
11.95	39.2	16.5	16.7	0.539	12.3	0.1	clayey silt to silty clay	8
12.00	39.4	16.2	16.4	0.504	12.7	0.1	clayey silt to silty clay	8

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 x sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
12.05	39.5	15.7	15.9	0.489	12.9	0.1	clayey silt to silty clay	8
12.10	39.7	15.7	15.9	0.498	13.1	0.1	clayey silt to silty clay	7
12.15	39.9	15.4	15.6	0.466	13.4	0.1	?	?
12.20	40.0	15.3	15.5	?	15.0	0.1	?	?
12.25	40.2	16.1	16.3	?	15.6	0.1	?	?

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

SOUNDING DATA IN FILE CPT-50 07-20-94 13:04

OPERATOR : JHANCOCK

LOCATION : CPT-3

CONE ID : 409

JOB No. : DUBLIN, AUDIT

Holguin, Fahan & Associates  
143 S Figueroa St. Ventura, CA 93001

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
0.05	0.2	586.1	586.1	1.400	0.1	0.1	?	?
0.10	0.3	376.0	376.0	1.714	-0.2	0.1	gravelly sand to sand	67
0.15	0.5	297.2	297.2	2.592	-0.3	0.1	gravelly sand to sand	55
0.20	0.7	357.0	357.0	1.739	-0.3	0.1	gravelly sand to sand	54
0.25	0.8	363.2	363.2	1.476	-0.2	0.1	gravelly sand to sand	52
0.30	1.0	266.3	266.3	1.467	-0.3	0.0	sand	50
0.35	1.1	152.4	152.4	2.246	-0.3	0.0	sand to silty sand	39
0.40	1.3	69.9	69.9	1.978	-0.4	0.0	silty sand to sandy silt	28
0.45	1.5	36.5	36.4	1.905	-0.6	0.0	clayey silt to silty clay	22
0.50	1.6	30.7	30.7	1.351	-0.8	0.0	silty clay to clay	20
0.55	1.8	27.8	27.7	1.113	-3.1	0.0	silty clay to clay	18
0.60	2.0	26.2	26.2	1.064	-5.7	0.0	silty clay to clay	17
0.65	2.1	23.8	23.7	0.974	-6.5	0.0	silty clay to clay	15
0.70	2.3	21.6	21.5	0.899	-7.4	0.0	silty clay to clay	14
0.75	2.5	19.2	19.1	0.817	-9.2	0.0	clay	19
0.80	2.6	18.1	18.0	0.803	-8.9	0.0	clay	18
0.85	2.8	17.6	17.5	0.740	-9.2	0.0	silty clay to clay	13
0.90	3.0	23.9	23.8	0.758	-8.8	0.0	clayey silt to silty clay	12
0.95	3.1	31.4	31.4	0.828	-0.3	0.0	clayey silt to silty clay	13
1.00	3.3	26.3	26.3	0.818	-0.3	0.0	clayey silt to silty clay	13
1.05	3.4	22.1	22.1	0.888	-0.2	0.0	silty clay to clay	15
1.10	3.6	20.8	20.8	0.938	-1.2	0.0	clay	20
1.15	3.8	20.4	20.4	0.971	-2.9	0.0	clay	20
1.20	3.9	21.4	21.4	0.952	-2.3	0.0	clay	21
1.25	4.1	25.0	25.0	1.004	-2.1	0.0	clay	23
1.30	4.3	24.2	24.2	1.144	0.0	0.0	clay	23
1.35	4.4	21.4	21.4	1.096	-0.4	0.0	clay	21
1.40	4.6	20.4	20.4	1.005	-0.2	0.0	clay	19
1.45	4.8	19.1	19.1	0.891	-0.2	0.0	clay	18
1.50	4.9	18.1	18.1	0.822	0.3	0.0	clay	17
1.55	5.1	17.2	17.2	0.803	0.1	0.0	clay	17
1.60	5.2	17.3	17.3	0.762	0.1	0.0	clay	17
1.65	5.4	17.1	17.1	0.748	-0.0	0.0	clay	16
1.70	5.6	14.6	14.6	0.694	-0.3	0.0	clay	15
1.75	5.7	13.8	13.8	0.672	-0.2	0.0	clay	14
1.80	5.9	14.5	14.5	0.668	-0.2	0.0	clay	14
1.85	6.1	15.1	15.1	0.669	-0.6	0.0	clay	14
1.90	6.2	15.1	15.1	0.695	-0.4	0.0	clay	14
1.95	6.4	15.0	15.0	0.700	-0.4	0.0	clay	14
2.00	6.6	14.6	14.6	0.681	-0.2	0.0	clay	14

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
2.05	6.7	14.6	14.6	0.632	-0.1	0.0	clay	14
2.10	6.9	15.0	15.0	0.669	0.1	0.0	clay	14
2.15	7.1	15.7	15.7	0.753	-0.0	0.0	clay	15
2.20	7.2	15.1	15.1	0.774	0.2	0.0	clay	14
2.25	7.4	14.3	14.3	0.684	0.2	0.0	clay	14
2.30	7.5	13.6	13.6	0.645	0.3	0.0	clay	13
2.35	7.7	13.2	13.2	0.621	0.7	0.0	clay	12
2.40	7.9	12.3	12.3	0.580	0.7	0.0	clay	12
2.45	8.0	11.6	11.6	0.512	0.8	0.0	clay	11
2.50	8.2	12.0	12.0	0.454	0.9	0.0	clay	11
2.55	8.4	12.0	12.0	0.455	1.0	0.0	clay	12
2.60	8.5	12.1	12.1	0.463	1.0	0.0	clay	12
2.65	8.7	12.9	12.9	0.572	1.1	0.0	clay	12
2.70	8.9	13.7	13.7	0.534	1.1	0.0	clay	13
2.75	9.0	13.7	13.8	0.522	1.3	0.0	clay	13
2.80	9.2	12.4	12.4	0.485	1.2	0.0	clay	12
2.85	9.4	11.5	11.6	0.463	1.2	0.0	clay	11
2.90	9.5	11.7	11.7	0.448	1.4	0.0	clay	11
2.95	9.7	11.8	11.8	0.484	1.4	0.0	clay	11
3.00	9.8	12.4	12.5	0.486	1.5	0.0	clay	12
3.05	10.0	12.7	12.7	0.505	1.5	0.0	clay	12
3.10	10.2	13.9	13.9	0.519	1.7	0.0	clay	13
3.15	10.3	14.1	14.1	0.567	1.6	0.0	silty clay to clay	9
3.20	10.5	14.6	14.6	0.563	1.6	0.0	silty clay to clay	10
3.25	10.7	16.1	16.1	0.621	1.9	0.0	silty clay to clay	10
3.30	10.8	17.4	17.4	0.671	1.9	0.0	silty clay to clay	11
3.35	11.0	18.8	18.8	0.723	2.0	0.0	silty clay to clay	12
3.40	11.2	19.7	19.7	0.776	2.1	0.0	silty clay to clay	12
3.45	11.3	19.1	19.1	0.800	2.0	0.0	silty clay to clay	12
3.50	11.5	18.8	18.8	0.743	2.1	0.0	silty clay to clay	12
3.55	11.6	19.6	19.7	0.702	2.1	0.0	silty clay to clay	12
3.60	11.8	20.1	20.1	0.696	2.1	0.0	silty clay to clay	13
3.65	12.0	20.5	20.5	0.724	2.1	0.0	silty clay to clay	13
3.70	12.1	20.3	20.3	0.787	2.1	0.0	silty clay to clay	13
3.75	12.3	20.9	20.9	0.757	2.1	0.0	silty clay to clay	13
3.80	12.5	21.0	21.0	0.752	2.1	0.0	silty clay to clay	13
3.85	12.6	21.0	21.0	0.751	2.1	0.0	silty clay to clay	13
3.90	12.8	21.1	21.1	0.762	2.2	0.0	silty clay to clay	13
3.95	13.0	20.6	20.7	0.764	2.2	0.0	silty clay to clay	13
4.00	13.1	20.4	20.4	0.740	2.2	0.0	silty clay to clay	13
4.05	13.3	19.9	20.0	0.743	2.2	0.0	silty clay to clay	13
4.10	13.5	20.2	20.2	0.697	2.2	0.0	silty clay to clay	13
4.15	13.6	20.1	20.1	0.689	2.2	0.0	silty clay to clay	13
4.20	13.8	19.1	19.1	0.694	2.2	0.0	silty clay to clay	12
4.25	13.9	19.0	19.0	0.701	2.2	0.0	silty clay to clay	12
4.30	14.1	17.7	17.7	0.671	2.1	0.0	silty clay to clay	11
4.35	14.3	16.2	16.2	0.628	2.1	0.0	silty clay to clay	11
4.40	14.4	15.5	15.6	0.594	2.1	0.0	silty clay to clay	10
4.45	14.6	15.6	15.6	0.563	2.1	0.0	silty clay to clay	10
4.50	14.8	16.2	16.2	0.608	2.2	0.0	silty clay to clay	10

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
4.55	14.9	17.0	17.0	0.716	2.2	0.0	clay	16
4.60	15.1	17.0	17.0	0.754	2.1	0.0	clay	16
4.65	15.3	16.2	16.2	0.740	2.0	0.0	clay	16
4.70	15.4	15.6	15.6	0.665	2.0	0.0	clay	15
4.75	15.6	14.3	14.3	0.629	2.1	0.0	clay	13
4.80	15.7	11.4	11.4	0.538	1.7	0.0	clay	11
4.85	15.9	9.4	9.4	0.371	1.7	0.0	clay	9
4.90	16.1	8.7	8.8	0.243	1.7	0.0	silty clay to clay	6
4.95	16.2	8.7	8.8	0.200	1.8	0.0	silty clay to clay	6
5.00	16.4	9.4	9.4	0.203	2.0	0.0	silty clay to clay	6
5.05	16.6	9.9	10.0	0.272	2.2	0.0	silty clay to clay	6
5.10	16.7	11.1	11.1	0.357	2.4	0.0	silty clay to clay	7
5.15	16.9	11.9	12.0	0.401	2.5	0.0	silty clay to clay	7
5.20	17.1	12.1	12.2	0.479	2.5	0.0	silty clay to clay	8
5.25	17.2	13.2	13.3	0.487	2.5	0.0	clay	12
5.30	17.4	13.2	13.3	0.515	2.5	0.0	silty clay to clay	9
5.35	17.6	14.0	14.0	0.514	2.5	0.0	silty clay to clay	9
5.40	17.7	15.2	15.2	0.538	2.6	0.0	silty clay to clay	10
5.45	17.9	16.5	16.5	0.594	2.7	0.0	silty clay to clay	10
5.50	18.0	17.3	17.3	0.653	2.7	0.0	silty clay to clay	11
5.55	18.2	17.5	17.5	0.662	2.8	0.0	silty clay to clay	11
5.60	18.4	17.0	17.0	0.631	2.7	0.0	silty clay to clay	11
5.65	18.5	15.6	15.6	0.630	2.7	0.0	silty clay to clay	10
5.70	18.7	14.4	14.4	0.561	2.7	0.0	silty clay to clay	9
5.75	18.9	14.4	14.5	0.525	2.9	0.0	silty clay to clay	9
5.80	19.0	14.5	14.5	0.539	3.0	0.0	silty clay to clay	9
5.85	19.2	14.5	14.5	0.543	3.0	0.0	silty clay to clay	9
5.90	19.4	14.8	14.9	0.550	3.0	0.0	silty clay to clay	9
5.95	19.5	15.0	15.1	0.577	2.9	0.0	silty clay to clay	10
6.00	19.7	15.6	15.6	0.606	2.9	0.0	silty clay to clay	10
6.05	19.8	16.9	16.9	0.663	2.9	0.0	silty clay to clay	11
6.10	20.0	17.2	17.2	0.672	3.0	0.0	silty clay to clay	11
6.15	20.2	17.3	17.3	0.664	3.0	0.0	silty clay to clay	11
6.20	20.3	17.9	17.9	0.634	3.0	0.0	silty clay to clay	11
6.25	20.5	17.9	18.0	0.631	3.0	0.0	silty clay to clay	11
6.30	20.7	18.0	18.0	0.638	3.1	0.0	silty clay to clay	11
6.35	20.8	17.8	17.8	0.679	3.0	0.0	silty clay to clay	11
6.40	21.0	17.4	17.5	0.653	3.1	0.0	silty clay to clay	11
6.45	21.2	16.1	16.1	0.625	3.0	0.0	silty clay to clay	11
6.50	21.3	16.4	16.5	0.636	3.1	0.0	silty clay to clay	10
6.55	21.5	15.8	15.8	0.629	3.0	0.0	silty clay to clay	10
6.60	21.7	14.5	14.5	0.544	3.0	0.0	silty clay to clay	9
6.65	21.8	14.1	14.2	0.560	3.0	0.0	silty clay to clay	9
6.70	22.0	13.6	13.6	0.549	3.0	0.0	clay	13
6.75	22.1	13.3	13.3	0.522	3.2	0.0	clay	13
6.80	22.3	13.3	13.4	0.490	3.2	0.0	silty clay to clay	9
6.85	22.5	14.3	14.4	0.495	3.3	0.0	silty clay to clay	9
6.90	22.6	16.4	16.4	0.596	3.4	0.0	silty clay to clay	10
6.95	22.8	17.7	17.7	0.658	3.4	0.0	silty clay to clay	11
7.00	23.0	18.4	18.5	0.658	3.5	0.0	silty clay to clay	12

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average



DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
7.05	23.1	18.7	18.7	0.730	3.5	0.0	silty clay to clay	12
7.10	23.3	19.7	19.7	0.714	3.5	0.0	silty clay to clay	12
7.15	23.5	18.7	18.7	0.716	3.6	0.0	silty clay to clay	12
7.20	23.6	19.0	19.0	0.681	3.6	0.0	silty clay to clay	12
7.25	23.8	19.4	19.4	0.679	3.6	0.0	silty clay to clay	12
7.30	23.9	19.6	19.6	0.710	3.6	0.0	silty clay to clay	12
7.35	24.1	17.3	17.3	0.659	3.5	0.0	silty clay to clay	11
7.40	24.3	14.3	14.3	0.551	3.5	0.0	silty clay to clay	9
7.45	24.4	11.9	11.9	0.414	3.5	0.0	silty clay to clay	8
7.50	24.6	11.0	11.0	0.343	3.5	0.0	silty clay to clay	7
7.55	24.8	11.2	11.2	0.278	3.5	0.0	silty clay to clay	7
7.60	24.9	11.8	11.8	0.310	3.7	0.0	silty clay to clay	8
7.65	25.1	13.9	14.0	0.411	3.8	0.0	silty clay to clay	9
7.70	25.3	16.0	16.1	0.566	3.9	0.0	silty clay to clay	10
7.75	25.4	16.7	16.8	0.635	3.9	0.0	silty clay to clay	11
7.80	25.6	17.6	17.7	0.666	4.2	0.0	silty clay to clay	11
7.85	25.8	18.7	18.7	0.676	4.2	0.0	silty clay to clay	12
7.90	25.9	19.3	19.4	0.712	4.3	0.0	silty clay to clay	12
7.95	26.1	19.9	20.0	0.734	4.3	0.0	silty clay to clay	13
8.00	26.2	20.0	20.0	0.744	4.3	0.0	silty clay to clay	13
8.05	26.4	19.9	20.0	0.732	4.3	0.0	silty clay to clay	13
8.10	26.6	19.1	19.1	0.711	4.4	0.0	silty clay to clay	12
8.15	26.7	19.2	19.3	0.675	4.4	0.0	silty clay to clay	12
8.20	26.9	19.8	19.8	0.701	4.4	0.0	silty clay to clay	13
8.25	27.1	21.1	21.2	0.748	4.5	0.0	silty clay to clay	13
8.30	27.2	21.0	21.0	0.831	4.5	0.0	silty clay to clay	14
8.35	27.4	22.6	22.7	0.881	4.6	0.0	silty clay to clay	14
8.40	27.6	22.2	22.3	0.890	4.5	0.0	silty clay to clay	14
8.45	27.7	22.3	22.3	0.906	4.5	0.0	silty clay to clay	14
8.50	27.9	22.7	22.8	0.926	4.5	0.0	silty clay to clay	15
8.55	28.1	23.3	23.4	0.922	4.6	0.0	silty clay to clay	15
8.60	28.2	23.1	23.2	0.945	4.5	0.0	silty clay to clay	15
8.65	28.4	23.7	23.8	0.952	4.5	0.0	silty clay to clay	15
8.70	28.5	23.8	23.8	0.964	4.5	0.0	silty clay to clay	15
8.75	28.7	23.9	24.0	1.029	4.5	0.0	silty clay to clay	15
8.80	28.9	24.3	24.4	0.966	4.6	0.0	silty clay to clay	15
8.85	29.0	24.1	24.2	0.915	4.6	0.0	silty clay to clay	16
8.90	29.2	24.6	24.7	0.891	4.7	0.0	silty clay to clay	16
8.95	29.4	24.7	24.8	0.888	4.8	0.0	clayey silt to silty clay	12
9.00	29.5	25.0	25.1	0.822	4.8	0.0	clayey silt to silty clay	12
9.05	29.7	24.7	24.8	0.818	4.8	0.0	clayey silt to silty clay	12
9.10	29.9	25.2	25.2	0.790	4.9	0.0	clayey silt to silty clay	12
9.15	30.0	25.1	25.2	0.811	4.9	0.0	clayey silt to silty clay	12
9.20	30.2	26.1	26.2	0.781	4.9	0.0	clayey silt to silty clay	12
9.25	30.3	25.5	25.6	0.788	5.0	0.0	clayey silt to silty clay	12
9.30	30.5	25.2	25.2	0.780	5.0	0.0	clayey silt to silty clay	12
9.35	30.7	24.7	24.7	0.732	5.1	0.0	clayey silt to silty clay	12
9.40	30.8	24.1	24.2	0.753	5.1	0.0	clayey silt to silty clay	12
9.45	31.0	24.7	24.8	0.724	5.2	0.0	clayey silt to silty clay	12
9.50	31.2	24.5	24.6	0.721	5.4	0.0	clayey silt to silty clay	12

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 s sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
9.55	31.3	23.8	23.9	0.697	5.4	0.0	clayey silt to silty clay	11
9.60	31.5	22.9	23.0	0.745	5.3	0.0	clayey silt to silty clay	11
9.65	31.7	21.1	21.1	0.734	5.2	0.0	clayey silt to silty clay	10
9.70	31.8	19.4	19.5	0.707	5.3	0.0	clayey silt to silty clay	9
9.75	32.0	19.0	19.1	0.625	5.4	0.0	clayey silt to silty clay	10
9.80	32.2	22.1	22.1	0.653	5.5	0.0	clayey silt to silty clay	10
9.85	32.3	23.7	23.8	0.654	5.6	0.0	clayey silt to silty clay	11
9.90	32.5	25.0	25.0	0.644	5.7	0.0	clayey silt to silty clay	12
9.95	32.6	23.8	23.9	0.593	5.8	0.0	clayey silt to silty clay	11
10.00	32.8	21.1	21.2	0.545	5.9	0.0	clayey silt to silty clay	10
10.05	33.0	19.7	19.7	0.495	5.8	0.0	clayey silt to silty clay	9
10.10	33.1	17.8	17.9	0.431	5.9	0.0	clayey silt to silty clay	8
10.15	33.3	15.6	15.7	0.378	6.0	0.0	clayey silt to silty clay	8
10.20	33.5	13.6	13.7	0.223	6.1	0.0	clayey silt to silty clay	7
10.25	33.6	11.6	11.7	0.184	6.2	0.0	clayey silt to silty clay	6
10.30	33.8	11.6	11.7	0.298	6.4	0.0	clayey silt to silty clay	6
10.35	34.0	15.6	15.7	0.345	6.6	0.0	clayey silt to silty clay	7
10.40	34.1	15.4	15.5	0.367	6.7	0.0	clayey silt to silty clay	7
10.45	34.3	14.3	14.4	0.376	6.7	0.0	clayey silt to silty clay	7
10.50	34.4	13.2	13.3	0.383	6.7	0.0	clayey silt to silty clay	6
10.55	34.6	13.2	13.3	0.327	6.7	0.0	clayey silt to silty clay	6
10.60	34.8	13.6	13.7	0.339	6.5	0.0	clayey silt to silty clay	6
10.65	34.9	13.9	14.0	0.380	6.4	0.0	clayey silt to silty clay	7
10.70	35.1	13.6	13.7	0.375	6.2	0.0	clayey silt to silty clay	6
10.75	35.3	13.3	13.4	0.333	6.2	0.0	clayey silt to silty clay	6
10.80	35.4	13.5	13.6	0.317	5.6	0.0	clayey silt to silty clay	6
10.85	35.6	13.5	13.6	0.300	5.5	0.0	clayey silt to silty clay	6
10.90	35.8	13.6	13.7	0.306	5.6	0.0	clayey silt to silty clay	6
10.95	35.9	13.1	13.1	0.271	5.5	0.0	clayey silt to silty clay	6
11.00	36.1	12.0	12.1	0.229	5.5	0.0	clayey silt to silty clay	6
11.05	36.3	11.3	11.4	0.217	5.5	0.0	clayey silt to silty clay	6
11.10	36.4	13.6	13.7	0.284	5.4	0.0	clayey silt to silty clay	7
11.15	36.6	16.5	16.5	0.304	5.5	0.0	clayey silt to silty clay	7
11.20	36.7	16.1	16.1	0.429	5.3	0.0	clayey silt to silty clay	8
11.25	36.9	19.2	19.3	0.340	5.3	0.0	clayey silt to silty clay	8
11.30	37.1	17.4	17.5	0.386	5.2	0.0	clayey silt to silty clay	8
11.35	37.2	16.6	16.6	0.342	5.2	0.0	clayey silt to silty clay	8
11.40	37.4	17.1	17.1	0.350	5.3	0.0	clayey silt to silty clay	8
11.45	37.6	16.3	16.4	0.319	5.0	0.0	clayey silt to silty clay	8
11.50	37.7	14.7	14.7	0.355	5.1	0.0	clayey silt to silty clay	7
11.55	37.9	14.4	14.5	0.342	5.1	0.0	clayey silt to silty clay	7
11.60	38.1	13.7	13.8	0.338	5.1	0.0	clayey silt to silty clay	7
11.65	38.2	13.3	13.4	0.381	5.1	0.0	clayey silt to silty clay	7
11.70	38.4	15.4	15.4	0.412	5.1	0.0	clayey silt to silty clay	7
11.75	38.5	16.1	16.1	0.481	5.1	0.0	clayey silt to silty clay	8
11.80	38.7	16.4	16.5	0.467	5.1	0.0	clayey silt to silty clay	8
11.85	38.9	16.6	16.7	0.465	5.2	0.0	clayey silt to silty clay	8
11.90	39.0	16.5	16.6	0.470	5.2	0.0	clayey silt to silty clay	8
11.95	39.2	15.8	15.9	0.440	5.3	0.0	clayey silt to silty clay	8
12.00	39.4	14.6	14.7	0.382	5.4	0.0	clayey silt to silty clay	7

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
12.05	39.5	14.2	14.3	0.283	5.5	0.0	clayey silt to silty clay	7
12.10	39.7	14.7	14.8	0.220	5.4	0.0	clayey silt to silty clay	7
12.15	39.9	15.1	15.2	0.235	5.5	0.0	clayey silt to silty clay	7
12.20	40.0	16.5	16.6	0.354	5.7	0.0	clayey silt to silty clay	8
12.25	40.2	19.9	19.9	0.635	5.9	0.0	clayey silt to silty clay	10
12.30	40.4	25.6	25.7	0.749	6.0	0.0	clayey silt to silty clay	12
12.35	40.5	29.2	29.3	0.506	5.9	0.0	sandy silt to clayey silt	10
12.40	40.7	20.5	20.5	0.394	5.7	0.0	sandy silt to clayey silt	8
12.45	40.8	15.2	15.3	0.373	6.1	0.1	?	?
12.50	41.0	15.4	15.5	?	6.3	0.1	?	?
12.55	41.2	14.3	14.4	?	6.4	0.1	?	?

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15  $\alpha$  sliding data average

SOUNDING DATA IN FILE CPT-52 07-20-94 13:56

OPERATOR : JHANCOCK

LOCATION : CPT-4

CONE ID : 409

JOB No. : DUBLIN, AUDIT

Holguin, Fahan & Associates  
 143 S Figueroa St. Ventura, CA 93001

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
0.05	0.2	356.7	356.7	1.434	-0.0	0.3	?	?
0.10	0.3	621.2	621.2	1.311	-0.1	0.2	gravelly sand to sand	67
0.15	0.5	275.9	275.9	2.366	-0.1	0.1	gravelly sand to sand	61
0.20	0.7	255.1	255.1	1.930	-0.0	0.0	sand	49
0.25	0.8	237.7	237.7	1.261	-0.0	0.0	sand	45
0.30	1.0	219.4	219.4	1.765	-0.1	0.1	sand	41
0.35	1.1	181.0	181.0	1.849	-0.2	0.1	sand	36
0.40	1.3	162.3	162.3	1.506	-0.2	0.2	sand to silty sand	35
0.45	1.5	101.3	101.3	0.732	-0.3	0.2	sand to silty sand	26
0.50	1.6	68.4	68.4	0.831	-0.3	0.2	sand to silty sand	18
0.55	1.8	56.3	56.3	1.000	-0.3	0.3	silty sand to sandy silt	17
0.60	2.0	35.6	35.6	0.914	-0.3	0.2	sandy silt to clayey silt	15
0.65	2.1	21.9	21.9	0.846	-0.4	0.3	clayey silt to silty clay	11
0.70	2.3	14.3	14.3	0.667	0.1	0.2	clay	15
0.75	2.5	12.0	12.0	0.501	0.2	0.2	clay	12
0.80	2.6	11.5	11.5	0.462	-0.4	0.2	clayey silt to silty clay	8
0.85	2.8	23.5	23.5	0.494	0.0	0.2	clayey silt to silty clay	9
0.90	3.0	22.4	22.4	0.383	0.1	0.3	sandy silt to clayey silt	9
0.95	3.1	22.7	22.7	0.289	-0.1	0.3	sandy silt to clayey silt	9
1.00	3.3	24.1	24.1	0.313	0.1	0.3	sandy silt to clayey silt	8
1.05	3.4	17.1	17.1	0.360	0.1	0.3	sandy silt to clayey silt	8
1.10	3.6	20.4	20.4	0.460	0.1	0.3	sandy silt to clayey silt	9
1.15	3.8	36.5	36.5	0.474	0.1	0.3	sandy silt to clayey silt	11
1.20	3.9	31.3	31.3	0.541	0.1	0.3	sandy silt to clayey silt	11
1.25	4.1	20.8	20.8	0.582	0.1	0.3	clayey silt to silty clay	11
1.30	4.3	14.1	14.1	0.593	0.1	0.3	silty clay to clay	10
1.35	4.4	14.1	14.1	0.519	-0.5	0.3	clay	12
1.40	4.6	10.7	10.7	0.520	-1.5	0.3	clay	11
1.45	4.8	9.3	9.3	0.447	-1.9	0.3	clay	9
1.50	4.9	9.1	9.1	0.434	-1.9	0.3	clay	9
1.55	5.1	8.8	8.7	0.439	-1.9	0.3	clay	8
1.60	5.2	8.7	8.7	0.400	-1.8	0.4	clay	8
1.65	5.4	9.0	8.9	0.391	-1.8	0.4	clay	9
1.70	5.6	9.5	9.5	0.405	-1.7	0.4	clay	9
1.75	5.7	10.2	10.1	0.488	-1.7	0.4	clay	10
1.80	5.9	10.7	10.7	0.518	-1.7	0.4	clay	10
1.85	6.1	10.4	10.4	0.546	-1.7	0.4	clay	10
1.90	6.2	10.7	10.7	0.523	-1.7	0.4	clay	10
1.95	6.4	11.1	11.0	0.551	-1.6	0.4	clay	11
2.00	6.6	11.3	11.3	0.569	-1.6	0.4	clay	10

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
2.05	6.7	10.0	10.0	0.548	-1.6	0.4	clay	10
2.10	6.9	9.8	9.8	0.494	-1.6	0.4	clay	9
2.15	7.1	9.1	9.0	0.441	-1.6	0.4	clay	9
2.20	7.2	8.9	8.9	0.408	-1.5	0.4	clay	9
2.25	7.4	9.5	9.4	0.390	-1.5	0.4	clay	9
2.30	7.5	9.6	9.5	0.396	-1.4	0.5	clay	9
2.35	7.7	10.2	10.2	0.413	-1.4	0.5	clay	10
2.40	7.9	11.2	11.2	0.437	-1.3	0.5	clay	10
2.45	8.0	10.8	10.8	0.440	-1.3	0.5	clay	10
2.50	8.2	10.2	10.2	0.439	-1.3	0.5	clay	10
2.55	8.4	10.5	10.5	0.431	-1.2	0.5	clay	10
2.60	8.5	9.5	9.5	0.409	-1.2	0.5	clay	9
2.65	8.7	9.2	9.1	0.394	-1.1	0.6	clay	9
2.70	8.9	9.0	8.9	0.383	-1.1	0.6	clay	9
2.75	9.0	8.7	8.7	0.391	-1.1	0.6	clay	8
2.80	9.2	8.7	8.7	0.380	-1.1	0.6	clay	8
2.85	9.4	9.0	9.0	0.375	-1.0	0.6	clay	9
2.90	9.5	9.6	9.6	0.376	-1.0	0.6	clay	9
2.95	9.7	9.5	9.5	0.421	-0.9	0.6	clay	9
3.00	9.8	9.5	9.5	0.437	-0.9	0.6	clay	9
3.05	10.0	10.0	10.0	0.447	-0.9	0.6	clay	9
3.10	10.2	9.6	9.6	0.433	-0.9	0.6	clay	9
3.15	10.3	8.7	8.7	0.396	-1.0	0.6	clay	9
3.20	10.5	8.8	8.8	0.356	-0.9	0.7	clay	8
3.25	10.7	8.6	8.6	0.329	-0.9	0.6	clay	9
3.30	10.8	9.4	9.4	0.345	-0.8	0.7	clay	10
3.35	11.0	11.8	11.8	0.435	-0.8	0.7	clay	11
3.40	11.2	13.5	13.5	0.527	-0.8	0.7	clay	12
3.45	11.3	13.4	13.4	0.610	-0.8	0.7	clay	13
3.50	11.5	13.5	13.5	0.593	-0.8	0.7	clay	13
3.55	11.6	14.1	14.1	0.579	-0.8	0.7	clay	14
3.60	11.8	15.6	15.6	0.621	-0.7	0.7	clay	15
3.65	12.0	16.2	16.2	0.686	-0.7	0.7	clay	15
3.70	12.1	15.7	15.7	0.700	-0.8	0.7	clay	15
3.75	12.3	15.5	15.5	0.687	-0.7	0.7	clay	15
3.80	12.5	15.3	15.3	0.658	-0.8	0.7	clay	15
3.85	12.6	15.3	15.3	0.609	-0.8	0.7	clay	14
3.90	12.8	14.2	14.2	0.559	-0.8	0.7	clay	14
3.95	13.0	13.5	13.5	0.549	-0.7	0.7	clay	13
4.00	13.1	14.0	14.0	0.561	-0.7	0.7	clay	14
4.05	13.3	14.8	14.8	0.612	-0.7	0.7	clay	14
4.10	13.5	15.6	15.6	0.634	-0.7	0.7	clay	15
4.15	13.6	16.2	16.2	0.639	-0.7	0.7	clay	15
4.20	13.8	17.0	17.0	0.640	-0.7	0.7	silty clay to clay	10
4.25	13.9	17.9	17.9	0.710	-0.7	0.7	silty clay to clay	11
4.30	14.1	17.5	17.5	0.751	-0.6	0.7	silty clay to clay	11
4.35	14.3	17.1	17.1	0.740	-0.7	0.7	clay	17
4.40	14.4	16.4	16.4	0.716	-0.7	0.9	clay	16
4.45	14.6	16.0	15.9	0.696	-0.6	0.8	clay	16
4.50	14.8	15.6	15.6	0.684	-0.7	0.8	clay	15

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Gc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
4.55	14.9	15.5	15.5	0.653	-0.7	0.8	clay	15
4.60	15.1	15.5	15.5	0.645	-0.7	0.8	clay	15
4.65	15.3	15.6	15.5	0.647	-0.6	0.9	clay	15
4.70	15.4	14.8	14.8	0.644	-0.6	0.9	clay	14
4.75	15.6	14.4	14.4	0.639	-0.6	0.9	clay	13
4.80	15.7	11.6	11.6	0.542	-0.8	0.9	clay	12
4.85	15.9	10.6	10.6	0.339	-0.7	1.0	clay	10
4.90	16.1	9.4	9.4	0.275	-0.6	1.0	silty clay to clay	6
4.95	16.2	9.8	9.8	0.313	-0.5	1.0	silty clay to clay	6
5.00	16.4	10.2	10.2	0.351	-0.5	1.0	clay	10
5.05	16.6	10.8	10.8	0.400	-0.4	1.0	silty clay to clay	7
5.10	16.7	12.5	12.5	0.432	-0.4	1.0	silty clay to clay	8
5.15	16.9	13.1	13.1	0.449	-0.4	1.0	silty clay to clay	8
5.20	17.1	12.3	12.3	0.455	-0.3	1.0	silty clay to clay	8
5.25	17.2	12.4	12.4	0.476	-0.3	1.0	clay	12
5.30	17.4	13.0	13.0	0.501	-0.3	1.3	clay	12
5.35	17.6	13.3	13.3	0.525	-0.3	1.3	clay	13
5.40	17.7	13.6	13.6	0.561	-0.2	1.3	clay	13
5.45	17.9	14.9	14.9	0.598	-0.2	1.3	clay	14
5.50	18.0	15.3	15.3	0.630	-0.2	1.3	clay	14
5.55	18.2	14.9	14.8	0.600	-0.2	1.3	clay	14
5.60	18.4	14.2	14.2	0.584	-0.2	1.3	clay	14
5.65	18.5	13.9	13.9	0.571	-0.3	1.3	clay	13
5.70	18.7	13.4	13.4	0.559	-0.2	1.3	clay	13
5.75	18.9	13.2	13.2	0.570	-0.2	1.3	clay	13
5.80	19.0	12.7	12.7	0.529	-0.2	1.3	clay	12
5.85	19.2	11.6	11.6	0.494	-0.1	1.3	clay	11
5.90	19.4	10.7	10.7	0.466	-0.1	1.3	clay	11
5.95	19.5	10.7	10.7	0.473	-0.1	1.3	clay	10
6.00	19.7	10.6	10.6	0.457	-0.2	1.3	clay	10
6.05	19.8	10.9	10.9	0.485	-0.1	1.3	clay	11
6.10	20.0	13.0	13.0	0.565	-0.1	1.3	clay	12
6.15	20.2	13.6	13.6	0.588	-0.1	1.3	clay	13
6.20	20.3	12.9	12.9	0.597	-0.2	1.3	clay	13
6.25	20.5	13.8	13.8	0.601	-0.1	1.3	clay	13
6.30	20.7	15.4	15.4	0.630	-0.0	1.3	clay	14
6.35	20.8	15.8	15.8	0.647	-0.0	1.3	clay	15
6.40	21.0	16.0	16.0	0.655	-0.0	1.3	clay	15
6.45	21.2	15.9	15.9	0.653	-0.0	1.3	clay	15
6.50	21.3	15.2	15.2	0.682	0.0	1.3	clay	15
6.55	21.5	14.6	14.6	0.627	-0.0	1.3	clay	14
6.60	21.7	14.0	14.0	0.595	0.0	1.3	clay	13
6.65	21.8	13.3	13.3	0.571	-0.0	1.3	clay	13
6.70	22.0	12.7	12.7	0.559	-0.0	1.4	clay	12
6.75	22.1	12.5	12.5	0.554	0.0	1.4	clay	12
6.80	22.3	12.3	12.3	0.531	-0.1	1.4	clay	12
6.85	22.5	11.9	11.9	0.472	0.1	1.4	clay	11
6.90	22.6	10.7	10.8	0.487	0.1	1.4	clay	10
6.95	22.8	10.2	10.2	0.394	0.1	1.4	clay	10
7.00	23.0	11.3	11.3	0.392	0.2	1.4	silty clay to clay	7

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
7.05	23.1	12.9	12.9	0.425	0.0	1.4	silty clay to clay	8
7.10	23.3	14.7	14.7	0.498	0.3	1.4	silty clay to clay	9
7.15	23.5	16.4	16.4	0.574	0.3	1.4	silty clay to clay	10
7.20	23.6	16.2	16.2	0.659	0.3	1.6	silty clay to clay	10
7.25	23.8	16.3	16.3	0.646	0.3	1.6	silty clay to clay	10
7.30	23.9	16.1	16.1	0.660	0.3	1.6	silty clay to clay	10
7.35	24.1	16.1	16.1	0.643	0.2	1.6	clay	15
7.40	24.3	14.8	14.8	0.604	0.3	1.7	clay	14
7.45	24.4	13.6	13.6	0.527	0.3	1.7	clay	13
7.50	24.6	12.0	12.0	0.491	0.3	1.7	clay	12
7.55	24.8	11.0	11.0	0.432	0.4	1.7	clay	11
7.60	24.9	11.1	11.1	0.435	0.4	1.7	clay	11
7.65	25.1	11.3	11.3	0.441	0.4	1.7	clay	10
7.70	25.3	10.1	10.1	0.417	0.4	1.7	clay	10
7.75	25.4	10.1	10.1	0.389	0.4	1.7	clay	10
7.80	25.6	11.9	11.9	0.443	0.4	1.7	clay	11
7.85	25.8	13.9	13.9	0.543	0.6	2.0	clay	13
7.90	25.9	14.4	14.5	0.574	0.6	2.0	clay	14
7.95	26.1	14.4	14.5	0.604	0.6	2.0	clay	14
8.00	26.2	14.6	14.6	0.612	0.6	2.0	clay	14
8.05	26.4	14.6	14.6	0.595	0.7	2.0	clay	14
8.10	26.6	14.1	14.1	0.595	0.6	2.0	clay	13
8.15	26.7	13.4	13.4	0.582	0.6	2.0	clay	13
8.20	26.9	14.3	14.3	0.607	0.7	2.1	clay	14
8.25	27.1	16.8	16.8	0.640	0.7	2.1	silty clay to clay	10
8.30	27.2	17.5	17.5	0.696	0.7	2.1	silty clay to clay	11
8.35	27.4	17.1	17.1	0.689	0.7	2.1	silty clay to clay	11
8.40	27.6	16.8	16.9	0.682	0.8	2.1	silty clay to clay	11
8.45	27.7	17.3	17.3	0.676	0.8	2.1	silty clay to clay	11
8.50	27.9	17.5	17.5	0.664	0.8	2.1	silty clay to clay	11
8.55	28.1	18.6	18.6	0.734	0.8	2.1	silty clay to clay	12
8.60	28.2	19.9	19.9	0.859	0.9	2.1	silty clay to clay	13
8.65	28.4	20.8	20.9	0.885	0.9	2.1	clay	20
8.70	28.5	21.0	21.0	0.944	1.0	2.1	clay	20
8.75	28.7	21.6	21.6	0.943	0.9	2.1	clay	21
8.80	28.9	21.9	21.9	0.944	0.9	2.3	silty clay to clay	14
8.85	29.0	21.9	21.9	0.931	1.0	2.3	clay	21
8.90	29.2	21.1	21.1	0.938	1.0	2.3	clay	20
8.95	29.4	20.6	20.6	0.917	1.0	2.3	clay	20
9.00	29.5	19.9	20.0	0.846	1.0	2.3	silty clay to clay	13
9.05	29.7	20.7	20.7	0.812	1.0	2.4	silty clay to clay	13
9.10	29.9	20.7	20.7	0.798	1.0	2.4	silty clay to clay	13
9.15	30.0	20.9	20.9	0.791	1.0	2.4	silty clay to clay	13
9.20	30.2	20.2	20.2	0.778	1.0	2.4	silty clay to clay	13
9.25	30.3	19.6	19.6	0.799	1.0	2.4	silty clay to clay	13
9.30	30.5	19.3	19.3	0.791	1.0	2.4	silty clay to clay	12
9.35	30.7	19.8	19.8	0.786	1.0	2.4	silty clay to clay	13
9.40	30.8	20.0	20.0	0.753	1.0	2.4	silty clay to clay	13
9.45	31.0	19.1	19.2	0.764	1.0	2.4	silty clay to clay	12
9.50	31.2	18.6	18.6	0.729	1.0	2.4	silty clay to clay	12

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH seters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
9.55	31.3	18.0	18.0	0.701	1.0	2.4	silty clay to clay	12
9.60	31.5	18.3	18.3	0.729	1.0	2.4	silty clay to clay	12
9.65	31.7	19.5	19.6	0.776	1.1	2.4	silty clay to clay	12
9.70	31.8	18.8	18.8	0.774	1.0	2.4	silty clay to clay	12
9.75	32.0	18.7	18.7	0.781	1.1	2.4	silty clay to clay	12
9.80	32.2	20.6	20.6	0.693	1.1	2.4	silty clay to clay	13
9.85	32.3	20.9	21.0	0.642	1.1	2.4	clayey silt to silty clay	10
9.90	32.5	20.1	20.1	0.557	1.2	2.4	clayey silt to silty clay	10
9.95	32.6	20.8	20.8	0.547	1.2	2.4	clayey silt to silty clay	10
10.00	32.8	21.0	21.1	0.508	1.3	2.4	clayey silt to silty clay	10
10.05	33.0	20.7	20.7	0.480	1.3	2.4	clayey silt to silty clay	10
10.10	33.1	21.1	21.1	0.477	1.4	2.4	clayey silt to silty clay	10
10.15	33.3	21.9	21.9	0.539	1.5	2.4	clayey silt to silty clay	10
10.20	33.5	22.8	22.8	0.508	1.5	2.4	clayey silt to silty clay	11
10.25	33.6	23.4	23.4	0.691	1.6	2.4	clayey silt to silty clay	12
10.30	33.8	31.7	31.8	1.227	1.7	2.4	sandy silt to clayey silt	16
10.35	34.0	73.2	73.2	1.722	1.3	2.4	silty sand to sandy silt	24
10.40	34.1	116.8	116.7	1.661	-4.7	2.4	silty sand to sandy silt	34
10.45	34.3	132.8	132.7	1.737	-7.2	2.5	sand to silty sand	31
10.50	34.4	135.0	134.9	1.729	-9.0	2.5	sand to silty sand	31
10.55	34.6	124.0	123.8	2.034	-9.5	2.5	silty sand to sandy silt	36
10.60	34.8	76.0	75.8	1.877	-9.7	3.0	sandy silt to clayey silt	31
10.65	34.9	45.4	45.3	1.962	-9.7	3.0	clayey silt to silty clay	26
10.70	35.1	39.9	39.8	1.391	-9.5	3.0	clayey silt to silty clay	18
10.75	35.3	27.1	27.0	0.990	-9.5	3.1	clayey silt to silty clay	15
10.80	35.4	25.3	25.1	1.078	-9.2	3.1	silty clay to clay	17
10.85	35.6	29.2	29.1	1.088	-9.2	3.1	silty clay to clay	18
10.90	35.8	30.2	30.1	1.024	-9.1	3.1	clayey silt to silty clay	13
10.95	35.9	22.4	22.3	0.814	-9.1	3.1	clayey silt to silty clay	11
11.00	36.1	16.3	16.1	0.619	-9.1	3.1	silty clay to clay	11
11.05	36.3	13.9	13.8	0.475	-9.1	3.1	silty clay to clay	9
11.10	36.4	14.3	14.1	0.404	-9.1	3.1	silty clay to clay	9
11.15	36.6	14.2	14.1	0.403	-9.1	3.1	clayey silt to silty clay	7
11.20	36.7	13.6	13.5	0.375	-9.1	3.1	clayey silt to silty clay	6
11.25	36.9	12.5	12.3	0.317	-9.0	3.1	clayey silt to silty clay	6
11.30	37.1	13.2	13.0	0.372	-9.0	3.1	clayey silt to silty clay	7
11.35	37.2	17.4	17.3	0.435	-9.0	3.1	clayey silt to silty clay	8
11.40	37.4	16.6	16.5	0.422	-9.0	3.3	clayey silt to silty clay	8
11.45	37.6	15.1	15.0	0.460	-9.0	3.3	clayey silt to silty clay	8
11.50	37.7	17.5	17.4	0.443	-9.0	3.3	clayey silt to silty clay	8
11.55	37.9	16.9	16.8	0.471	-8.9	3.3	clayey silt to silty clay	8
11.60	38.1	15.8	15.7	0.479	-8.9	3.3	clayey silt to silty clay	8
11.65	38.2	14.4	14.3	0.433	-8.9	3.3	silty clay to clay	9
11.70	38.4	13.0	12.9	0.373	-8.9	3.3	silty clay to clay	8
11.75	38.5	12.0	11.9	0.362	-8.7	3.3	silty clay to clay	8
11.80	38.7	11.9	11.8	0.403	-8.7	3.3	silty clay to clay	8
11.85	38.9	11.9	11.8	0.411	-8.7	3.3	silty clay to clay	8
11.90	39.0	13.1	12.9	0.428	-8.7	3.3	silty clay to clay	9
11.95	39.2	15.1	15.0	0.476	-8.5	3.3	silty clay to clay	9
12.00	39.4	15.8	15.7	0.533	-8.6	3.3	silty clay to clay	10

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average



DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
12.05	39.5	14.6	14.5	0.462	-8.5	3.3	silty clay to clay	9
12.10	39.7	13.0	12.9	0.448	-8.6	3.3	silty clay to clay	8
12.15	39.9	12.2	12.0	0.353	-8.6	3.3	silty clay to clay	8
12.20	40.0	11.7	11.6	0.279	-8.5	3.3	clayey silt to silty clay	6
12.25	40.2	12.2	12.0	0.260	-8.6	3.3	?	?
12.30	40.4	15.6	15.5	?	-8.5	3.3	?	?
12.35	40.5	17.5	17.4	?	-8.5	3.3	?	?

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

SOUNDING DATA IN FILE CPT-54 07-20-94 14:48

OPERATOR : JHANCOCK

LOCATION : CPT-5

CONE ID : 409

JOB No. : DUBLIN, AUDIT

Holguin, Fahan & Associates  
143 S Figueroa St. Ventura, CA 93001

DEPTH meters	DEPTH feet	TIP Qt tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
0.05	0.2	145.2	145.2	0.790	0.1	0.1	?	?
0.10	0.3	587.0	587.0	1.072	-0.1	0.9	gravelly sand to sand	54
0.15	0.5	274.2	274.2	1.113	0.1	0.1	gravelly sand to sand	60
0.20	0.7	261.5	261.5	0.754	-0.2	0.1	gravelly sand to sand	41
0.25	0.8	243.5	243.5	0.787	-0.5	0.1	sand	44
0.30	1.0	188.6	188.6	1.017	-0.5	0.2	sand	37
0.35	1.1	147.9	147.9	0.571	-0.5	0.1	sand	27
0.40	1.3	90.9	90.9	0.820	-0.6	0.1	sand to silty sand	23
0.45	1.5	52.7	52.7	0.625	-0.5	0.1	silty sand to sandy silt	19
0.50	1.6	32.9	32.9	0.477	-0.4	0.1	silty sand to sandy silt	13
0.55	1.8	39.5	39.5	0.441	-0.5	0.2	silty sand to sandy silt	12
0.60	2.0	41.2	41.2	0.237	-0.4	0.2	silty sand to sandy silt	12
0.65	2.1	31.5	31.5	0.250	-0.4	0.3	silty sand to sandy silt	11
0.70	2.3	33.9	33.9	0.217	-0.4	0.3	silty sand to sandy silt	10
0.75	2.5	33.2	33.2	0.205	-0.4	0.2	silty sand to sandy silt	10
0.80	2.6	30.5	30.5	0.173	-0.4	0.3	silty sand to sandy silt	10
0.85	2.8	31.6	31.6	0.055	-0.3	0.3	silty sand to sandy silt	9
0.90	3.0	26.2	26.2	0.097	-0.3	0.3	silty sand to sandy silt	8
0.95	3.1	19.0	19.0	0.109	-0.2	0.3	sandy silt to clayey silt	8
1.00	3.3	16.6	16.6	0.254	-0.2	0.2	sandy silt to clayey silt	6
1.05	3.4	11.3	11.3	0.268	-0.1	0.2	clayey silt to silty clay	6
1.10	3.6	9.1	9.1	0.349	0.0	0.2	silty clay to clay	7
1.15	3.8	12.3	12.2	0.382	-1.1	0.2	silty clay to clay	7
1.20	3.9	11.0	11.0	0.378	-1.8	0.2	silty clay to clay	7
1.25	4.1	11.2	11.1	0.416	-2.1	0.2	clay	11
1.30	4.3	11.9	11.9	0.448	-2.0	0.2	clay	11
1.35	4.4	12.6	12.6	0.485	-2.3	0.2	clay	12
1.40	4.6	12.4	12.4	0.518	-2.4	0.2	clay	12
1.45	4.8	12.1	12.1	0.484	-2.2	0.2	clay	11
1.50	4.9	11.3	11.3	0.476	-2.0	0.2	clay	11
1.55	5.1	11.3	11.3	0.478	-1.9	0.2	clay	11
1.60	5.2	11.5	11.5	0.523	-1.9	0.2	clay	11
1.65	5.4	11.4	11.4	0.556	-1.9	0.2	clay	11
1.70	5.6	11.9	11.8	0.574	-1.6	0.2	clay	11
1.75	5.7	12.5	12.5	0.562	-1.6	0.2	clay	12
1.80	5.9	13.0	13.0	0.563	-1.5	0.2	clay	12
1.85	6.1	13.6	13.5	0.603	-1.3	0.2	clay	13
1.90	6.2	14.1	14.0	0.643	-1.3	0.2	clay	13
1.95	6.4	13.9	13.8	0.637	-1.3	0.2	clay	13
2.00	6.6	13.6	13.5	0.639	-1.2	0.2	clay	13

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
2.05	6.7	13.5	13.5	0.627	-1.1	0.2	clay	13
2.10	6.9	13.4	13.4	0.623	-1.0	0.2	clay	13
2.15	7.1	14.0	13.9	0.653	-1.0	0.2	clay	13
2.20	7.2	13.9	13.9	0.661	-0.8	0.2	clay	13
2.25	7.4	12.2	12.2	0.632	-0.7	0.2	clay	12
2.30	7.5	10.5	10.5	0.513	-0.6	0.2	clay	10
2.35	7.7	10.0	10.0	0.464	-0.5	0.2	clay	10
2.40	7.9	10.0	10.0	0.453	-0.5	0.2	clay	10
2.45	8.0	9.7	9.7	0.437	-0.4	0.2	clay	9
2.50	8.2	9.7	9.7	0.411	-0.4	0.2	clay	9
2.55	8.4	9.5	9.5	0.433	-0.2	0.2	clay	9
2.60	8.5	10.0	10.0	0.439	-0.2	0.2	clay	10
2.65	8.7	10.8	10.8	0.444	0.0	0.2	clay	10
2.70	8.9	10.4	10.4	0.509	0.1	0.2	clay	10
2.75	9.0	9.9	9.9	0.469	0.0	0.2	clay	9
2.80	9.2	9.4	9.4	0.413	0.1	0.2	clay	9
2.85	9.4	10.0	10.0	0.422	0.2	0.2	clay	10
2.90	9.5	10.4	10.4	0.419	0.2	0.2	clay	10
2.95	9.7	10.5	10.5	0.419	0.4	0.2	clay	10
3.00	9.8	11.2	11.2	0.433	0.5	0.2	clay	11
3.05	10.0	11.4	11.4	0.452	0.5	0.2	clay	11
3.10	10.2	12.0	12.0	0.474	0.6	0.2	clay	11
3.15	10.3	12.3	12.3	0.504	0.5	0.2	clay	11
3.20	10.5	11.1	11.1	0.492	0.6	0.2	clay	11
3.25	10.7	10.7	10.7	0.478	0.7	0.2	clay	10
3.30	10.8	10.9	10.9	0.476	0.6	0.2	clay	10
3.35	11.0	10.8	10.8	0.488	0.7	0.1	clay	11
3.40	11.2	12.5	12.5	0.500	0.7	0.1	clay	12
3.45	11.3	13.6	13.6	0.541	0.7	0.1	clay	13
3.50	11.5	14.5	14.5	0.556	0.9	0.1	silty clay to clay	9
3.55	11.6	15.2	15.2	0.608	0.8	0.1	silty clay to clay	10
3.60	11.8	15.5	15.5	0.618	0.8	0.1	clay	15
3.65	12.0	16.9	16.9	0.698	0.7	0.1	clay	16
3.70	12.1	17.7	17.7	0.744	0.7	0.1	silty clay to clay	11
3.75	12.3	18.2	18.2	0.731	0.7	0.1	silty clay to clay	12
3.80	12.5	18.2	18.2	0.714	0.7	0.1	silty clay to clay	12
3.85	12.6	17.9	17.9	0.708	0.6	0.1	silty clay to clay	11
3.90	12.8	17.4	17.4	0.698	0.5	0.1	silty clay to clay	11
3.95	13.0	17.7	17.7	0.717	0.6	0.1	silty clay to clay	11
4.00	13.1	17.5	17.5	0.727	0.5	0.1	silty clay to clay	11
4.05	13.3	17.3	17.3	0.716	0.4	0.1	clay	16
4.10	13.5	16.6	16.6	0.688	0.5	0.1	silty clay to clay	11
4.15	13.6	17.4	17.4	0.692	0.5	0.1	silty clay to clay	11
4.20	13.8	17.3	17.3	0.710	0.4	0.1	silty clay to clay	11
4.25	13.9	17.0	17.0	0.716	0.4	0.1	clay	16
4.30	14.1	17.4	17.4	0.717	0.4	0.1	clay	17
4.35	14.3	17.5	17.5	0.718	0.4	0.1	clay	16
4.40	14.4	16.8	16.8	0.697	0.3	0.1	clay	16
4.45	14.6	15.4	15.4	0.643	0.3	0.1	clay	15
4.50	14.8	13.7	13.8	0.570	0.3	0.1	clay	14

Soil interpretation reference: Robertson & Campanella-1983, based on 50% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
4.55	14.9	13.5	13.5	0.561	0.4	0.1	clay	13
4.60	15.1	14.9	14.9	0.624	0.4	0.1	clay	14
4.65	15.3	15.4	15.4	0.674	0.4	0.1	clay	14
4.70	15.4	14.7	14.7	0.626	0.3	0.1	clay	14
4.75	15.6	14.5	14.5	0.591	0.4	0.1	clay	14
4.80	15.7	14.3	14.3	0.566	0.7	0.1	clay	13
4.85	15.9	12.9	12.9	0.542	0.6	0.1	clay	12
4.90	16.1	10.7	10.7	0.518	0.5	0.1	clay	10
4.95	16.2	8.8	8.8	0.390	0.4	0.1	clay	9
5.00	16.4	8.1	8.1	0.290	0.4	0.1	clay	8
5.05	16.6	9.0	9.0	0.291	0.5	0.1	clay	9
5.10	16.7	9.8	9.8	0.344	0.7	0.1	clay	9
5.15	16.9	10.4	10.4	0.383	0.8	0.1	clay	10
5.20	17.1	11.2	11.2	0.441	0.8	0.1	clay	11
5.25	17.2	13.0	13.1	0.464	0.9	0.2	silty clay to clay	8
5.30	17.4	15.7	15.7	0.546	1.0	0.1	silty clay to clay	10
5.35	17.6	16.1	16.2	0.597	1.0	0.2	silty clay to clay	10
5.40	17.7	16.1	16.1	0.600	1.1	0.1	silty clay to clay	11
5.45	17.9	17.3	17.3	0.620	1.1	0.2	silty clay to clay	11
5.50	18.0	17.1	17.1	0.615	1.1	0.2	silty clay to clay	11
5.55	18.2	15.6	15.6	0.568	1.1	0.2	silty clay to clay	10
5.60	18.4	15.6	15.6	0.552	1.2	0.2	silty clay to clay	10
5.65	18.5	15.6	15.6	0.549	1.2	0.2	silty clay to clay	10
5.70	18.7	15.1	15.2	0.544	1.2	0.2	silty clay to clay	10
5.75	18.9	15.1	15.1	0.571	1.2	0.2	silty clay to clay	10
5.80	19.0	14.9	14.9	0.577	1.2	0.2	silty clay to clay	10
5.85	19.2	14.8	14.8	0.584	1.3	0.2	silty clay to clay	9
5.90	19.4	14.5	14.6	0.568	1.3	0.2	silty clay to clay	9
5.95	19.5	14.5	14.5	0.563	1.3	0.2	silty clay to clay	9
6.00	19.7	15.0	15.0	0.579	1.3	0.2	silty clay to clay	10
6.05	19.8	15.7	15.8	0.626	1.3	0.2	silty clay to clay	10
6.10	20.0	15.1	15.2	0.612	1.3	0.2	silty clay to clay	10
6.15	20.2	15.2	15.3	0.568	1.3	0.2	silty clay to clay	10
6.20	20.3	15.8	15.9	0.609	1.3	0.2	silty clay to clay	10
6.25	20.5	16.7	16.8	0.648	1.4	0.2	silty clay to clay	11
6.30	20.7	17.9	17.9	0.677	1.4	0.2	silty clay to clay	11
6.35	20.8	17.5	17.5	0.679	1.4	0.2	silty clay to clay	11
6.40	21.0	16.9	16.9	0.679	1.5	0.3	silty clay to clay	11
6.45	21.2	17.1	17.1	0.677	1.4	0.3	silty clay to clay	11
6.50	21.3	16.2	16.2	0.634	1.5	0.3	silty clay to clay	10
6.55	21.5	15.6	15.7	0.550	1.5	0.3	silty clay to clay	10
6.60	21.7	14.5	14.6	0.567	1.5	0.3	silty clay to clay	9
6.65	21.8	14.0	14.0	0.554	1.5	0.3	clay	13
6.70	22.0	13.3	13.3	0.540	1.5	0.3	clay	13
6.75	22.1	12.8	12.8	0.531	1.5	0.3	clay	12
6.80	22.3	12.6	12.6	0.510	1.5	0.3	clay	12
6.85	22.5	13.0	13.0	0.481	1.7	0.3	silty clay to clay	8
6.90	22.6	12.9	12.9	0.455	1.8	0.3	silty clay to clay	8
6.95	22.8	13.3	13.3	0.475	1.8	0.5	silty clay to clay	9
7.00	23.0	14.3	14.3	0.490	1.9	0.5	silty clay to clay	9

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
7.05	23.1	15.1	15.2	0.545	2.1	0.5	silty clay to clay	10
7.10	23.3	15.6	15.6	0.570	2.0	0.5	silty clay to clay	10
7.15	23.5	16.3	16.3	0.639	2.1	0.5	silty clay to clay	10
7.20	23.6	17.1	17.2	0.672	2.2	0.5	silty clay to clay	11
7.25	23.8	17.5	17.5	0.690	2.1	0.5	silty clay to clay	11
7.30	23.9	17.4	17.5	0.625	2.1	0.5	silty clay to clay	11
7.35	24.1	16.4	16.4	0.579	2.2	0.5	silty clay to clay	11
7.40	24.3	15.8	15.9	0.515	2.2	0.5	silty clay to clay	10
7.45	24.4	14.7	14.8	0.558	2.1	0.5	silty clay to clay	9
7.50	24.6	13.6	13.6	0.533	2.1	0.5	clay	13
7.55	24.8	11.7	11.8	0.484	2.0	0.5	clay	11
7.60	24.9	10.3	10.4	0.412	2.0	0.5	clay	10
7.65	25.1	9.5	9.5	0.364	2.0	0.5	clay	10
7.70	25.3	9.9	10.0	0.349	2.1	0.5	clay	10
7.75	25.4	11.4	11.4	0.414	2.2	0.5	silty clay to clay	8
7.80	25.6	14.1	14.1	0.520	2.2	0.5	silty clay to clay	9
7.85	25.8	16.5	16.6	0.638	2.5	0.5	silty clay to clay	10
7.90	25.9	18.2	18.3	0.718	2.3	0.5	silty clay to clay	11
7.95	26.1	18.1	18.2	0.716	2.3	0.5	silty clay to clay	11
8.00	26.2	17.1	17.1	0.670	2.3	0.5	silty clay to clay	11
8.05	26.4	16.5	16.5	0.645	2.3	0.5	silty clay to clay	11
8.10	26.6	15.8	15.9	0.628	2.2	0.5	silty clay to clay	10
8.15	26.7	14.9	15.0	0.594	2.1	0.5	silty clay to clay	10
8.20	26.9	15.0	15.1	0.588	2.2	0.5	silty clay to clay	10
8.25	27.1	17.2	17.2	0.650	2.2	0.5	silty clay to clay	11
8.30	27.2	18.5	18.6	0.743	2.3	0.5	silty clay to clay	12
8.35	27.4	19.6	19.6	0.811	2.3	0.5	silty clay to clay	12
8.40	27.6	19.8	19.9	0.813	2.3	0.5	silty clay to clay	13
8.45	27.7	19.9	20.0	0.782	2.3	0.5	silty clay to clay	13
8.50	27.9	19.8	19.8	0.778	2.4	0.5	silty clay to clay	13
8.55	28.1	20.1	20.1	0.807	2.4	0.5	silty clay to clay	13
8.60	28.2	20.1	20.1	0.818	2.4	0.5	silty clay to clay	13
8.65	28.4	20.4	20.5	0.833	2.4	0.5	silty clay to clay	13
8.70	28.5	20.2	20.3	0.824	2.4	0.5	silty clay to clay	13
8.75	28.7	20.5	20.5	0.885	2.4	0.5	silty clay to clay	13
8.80	28.9	20.9	21.0	0.879	2.5	0.5	silty clay to clay	13
8.85	29.0	21.3	21.3	0.885	2.5	0.5	silty clay to clay	14
8.90	29.2	21.3	21.3	0.854	2.6	0.5	silty clay to clay	14
8.95	29.4	21.3	21.3	0.845	2.5	0.5	silty clay to clay	14
9.00	29.5	21.3	21.3	0.868	2.6	0.5	silty clay to clay	14
9.05	29.7	21.1	21.1	0.833	2.6	0.5	silty clay to clay	13
9.10	29.9	21.1	21.1	0.806	2.7	0.5	silty clay to clay	13
9.15	30.0	21.3	21.3	0.764	2.7	0.5	silty clay to clay	14
9.20	30.2	22.0	22.0	0.752	2.6	0.5	clayey silt to silty clay	11
9.25	30.3	22.6	22.6	0.720	2.7	0.5	clayey silt to silty clay	11
9.30	30.5	22.8	22.8	0.737	2.7	0.5	clayey silt to silty clay	11
9.35	30.7	23.5	23.5	0.754	2.7	0.5	clayey silt to silty clay	11
9.40	30.8	23.9	23.9	0.714	2.7	0.5	clayey silt to silty clay	12
9.45	31.0	25.1	25.1	0.676	2.8	0.5	clayey silt to silty clay	12
9.50	31.2	25.9	25.9	0.601	2.9	0.5	clayey silt to silty clay	12

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
9.55	31.3	27.0	27.1	0.702	3.2	0.5	clayey silt to silty clay	13
9.60	31.5	28.3	28.4	0.793	3.2	0.5	clayey silt to silty clay	13
9.65	31.7	26.0	26.0	0.793	3.3	0.5	clayey silt to silty clay	12
9.70	31.8	21.9	21.9	0.757	3.2	0.5	clayey silt to silty clay	11
9.75	32.0	19.6	19.7	0.628	3.2	0.5	clayey silt to silty clay	9
9.80	32.2	17.3	17.3	0.553	3.3	0.5	clayey silt to silty clay	9
9.85	32.3	18.0	18.0	0.477	3.9	0.5	clayey silt to silty clay	8
9.90	32.5	17.8	17.9	0.425	3.9	0.5	clayey silt to silty clay	8
9.95	32.6	16.3	16.3	0.427	4.1	0.5	clayey silt to silty clay	8
10.00	32.8	16.5	16.5	0.406	4.1	0.5	clayey silt to silty clay	8
10.05	33.0	18.5	18.5	0.473	4.3	0.5	clayey silt to silty clay	9
10.10	33.1	19.7	19.7	0.556	4.4	0.5	clayey silt to silty clay	10
10.15	33.3	21.6	21.7	0.579	4.4	0.5	clayey silt to silty clay	10
10.20	33.5	20.0	20.1	0.567	4.5	0.5	clayey silt to silty clay	9
10.25	33.6	17.2	17.3	0.519	4.5	0.5	clayey silt to silty clay	8
10.30	33.8	15.6	15.6	0.467	4.5	0.5	clayey silt to silty clay	8
10.35	34.0	15.5	15.6	0.406	4.6	0.5	clayey silt to silty clay	8
10.40	34.1	17.3	17.4	0.420	4.7	0.5	clayey silt to silty clay	8
10.45	34.3	20.2	20.3	0.468	4.9	0.5	clayey silt to silty clay	9
10.50	34.4	21.0	21.1	0.510	5.0	0.5	clayey silt to silty clay	10
10.55	34.6	20.2	20.3	0.525	5.1	0.5	clayey silt to silty clay	10
10.60	34.8	19.5	19.5	0.474	5.1	0.5	clayey silt to silty clay	9
10.65	34.9	18.7	18.7	0.469	5.2	0.5	clayey silt to silty clay	9
10.70	35.1	20.0	20.1	0.449	5.2	0.5	clayey silt to silty clay	9
10.75	35.3	19.5	19.6	0.405	5.3	0.5	clayey silt to silty clay	9
10.80	35.4	17.7	17.8	0.410	5.4	0.5	clayey silt to silty clay	9
10.85	35.6	16.9	17.0	0.440	5.5	0.5	clayey silt to silty clay	8
10.90	35.8	18.1	18.2	0.448	5.8	0.5	clayey silt to silty clay	8
10.95	35.9	17.2	17.3	0.378	5.9	0.5	clayey silt to silty clay	8
11.00	36.1	16.6	16.7	0.291	6.0	0.5	clayey silt to silty clay	8
11.05	36.3	14.3	14.4	0.312	6.1	0.5	clayey silt to silty clay	7
11.10	36.4	14.4	14.5	0.341	6.3	0.5	clayey silt to silty clay	7
11.15	36.6	15.2	15.3	0.379	6.4	0.5	clayey silt to silty clay	7
11.20	36.7	15.2	15.3	0.387	6.5	0.5	clayey silt to silty clay	7
11.25	36.9	13.9	13.9	0.321	6.5	0.5	clayey silt to silty clay	7
11.30	37.1	12.8	12.9	0.321	6.5	0.5	clayey silt to silty clay	7
11.35	37.2	15.6	15.7	0.351	6.6	0.5	clayey silt to silty clay	7
11.40	37.4	17.2	17.3	0.590	6.6	0.5	clayey silt to silty clay	9
11.45	37.6	24.0	24.1	0.527	6.7	0.5	clayey silt to silty clay	10
11.50	37.7	20.5	20.6	0.630	6.4	0.5	clayey silt to silty clay	10
11.55	37.9	19.2	19.3	0.450	6.5	0.5	clayey silt to silty clay	10
11.60	38.1	21.4	21.5	0.433	6.7	0.5	clayey silt to silty clay	9
11.65	38.2	16.8	16.9	0.399	6.4	0.5	clayey silt to silty clay	9
11.70	38.4	15.6	15.7	0.424	6.5	0.5	clayey silt to silty clay	7
11.75	38.5	14.4	14.5	0.468	6.5	0.5	silty clay to clay	9
11.80	38.7	14.5	14.6	0.487	6.5	0.5	silty clay to clay	10
11.85	38.9	16.1	16.2	0.514	6.4	0.5	silty clay to clay	10
11.90	39.0	16.6	16.7	0.506	6.5	0.5	clayey silt to silty clay	8
11.95	39.2	16.9	17.0	0.508	6.5	0.5	clayey silt to silty clay	8
12.00	39.4	16.8	16.9	0.522	6.5	0.5	clayey silt to silty clay	8

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
12.05	39.5	16.7	16.8	0.612	6.5	0.5	silty clay to clay	10
12.10	39.7	15.3	15.4	0.574	6.4	0.5	silty clay to clay	10
12.15	39.9	16.9	16.9	0.482	5.5	0.5	clayey silt to silty clay	8
12.20	40.0	14.9	14.9	0.359	5.7	0.5	clayey silt to silty clay	7
12.25	40.2	13.5	13.6	0.258	5.9	0.5	clayey silt to silty clay	7
12.30	40.4	13.2	13.3	0.299	6.1	0.5	clayey silt to silty clay	7
12.35	40.5	15.5	15.6	0.301	6.3	0.5	clayey silt to silty clay	7
12.40	40.7	15.6	15.7	0.287	6.5	0.5	clayey silt to silty clay	7
12.45	40.8	15.0	15.1	0.240	6.7	0.5	clayey silt to silty clay	7
12.50	41.0	13.8	13.9	0.296	6.9	0.5	clayey silt to silty clay	7
12.55	41.2	14.1	14.2	0.388	7.0	0.5	?	?
12.60	41.3	17.7	17.8	?	7.1	0.5	?	?
12.65	41.5	15.8	15.9	?	7.3	0.5	?	?

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

SOUNDING DATA IN FILE CPT-57 07-20-94 16:15

OPERATOR : JHANCOCK

LOCATION : CPT-6

CONE ID : 409

JOB No. : DUBLIN, AUDIT

Holguin, Fahan & Associates  
 143 S Figueroa St. Ventura, CA 93001

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
0.05	0.2	775.6	775.6	0.885	0.3	0.1	?	?
0.10	0.3	432.2	432.2	1.281	0.0	0.0	gravelly sand to sand	80
0.15	0.5	301.4	301.4	1.543	-0.2	0.0	gravelly sand to sand	56
0.20	0.7	312.7	312.7	1.580	-0.5	0.1	sand	54
0.25	0.8	224.0	224.0	2.454	-0.5	0.1	sand	43
0.30	1.0	136.1	136.1	2.328	-0.5	0.1	sand to silty sand	35
0.35	1.1	77.9	77.9	2.919	-0.4	0.1	sandy silt to clayey silt	35
0.40	1.3	57.3	57.2	2.525	-0.6	0.1	clayey silt to silty clay	31
0.45	1.5	56.2	56.2	2.379	-1.0	0.1	clayey silt to silty clay	26
0.50	1.6	52.2	52.0	2.273	-0.7	0.1	clayey silt to silty clay	25
0.55	1.8	48.9	48.8	2.105	-9.2	0.1	silty clay to clay	31
0.60	2.0	45.0	44.8	2.026	-10.6	0.1	silty clay to clay	29
0.65	2.1	43.0	42.9	1.764	-10.4	0.1	silty clay to clay	28
0.70	2.3	41.8	41.6	1.664	-10.1	0.1	clayey silt to silty clay	20
0.75	2.5	38.9	38.8	1.559	-11.1	0.1	silty clay to clay	24
0.80	2.6	32.6	32.4	1.449	-9.7	0.1	silty clay to clay	22
0.85	2.8	30.9	30.8	1.296	-9.6	0.1	silty clay to clay	20
0.90	3.0	30.3	30.2	1.099	-9.4	0.1	clayey silt to silty clay	17
0.95	3.1	46.5	46.4	0.935	-9.0	0.1	sandy silt to clayey silt	20
1.00	3.3	80.5	80.5	1.475	-0.2	0.1	sandy silt to clayey silt	25
1.05	3.4	65.6	65.6	1.761	-0.0	0.1	sandy silt to clayey silt	26
1.10	3.6	55.8	55.8	1.498	-0.1	0.2	sandy silt to clayey silt	22
1.15	3.8	48.7	48.7	1.267	0.4	0.2	sandy silt to clayey silt	19
1.20	3.9	40.6	40.6	1.138	0.4	0.2	sandy silt to clayey silt	16
1.25	4.1	37.2	37.2	1.233	0.3	0.2	clayey silt to silty clay	18
1.30	4.3	32.6	32.6	1.368	0.3	0.2	silty clay to clay	21
1.35	4.4	27.7	27.7	1.397	-1.2	0.3	clay	27
1.40	4.6	25.5	25.5	1.270	-0.3	0.3	clay	25
1.45	4.8	24.6	24.6	1.128	-0.3	0.3	clay	23
1.50	4.9	23.5	23.5	1.105	-0.5	0.3	clay	23
1.55	5.1	23.8	23.8	1.081	-0.8	0.3	clay	23
1.60	5.2	23.9	23.9	1.087	-1.1	0.3	clay	23
1.65	5.4	24.6	24.6	1.187	-1.0	0.3	clay	23
1.70	5.6	24.8	24.7	1.243	-1.0	0.3	clay	23
1.75	5.7	22.7	22.7	1.163	-0.8	0.3	clay	22
1.80	5.9	20.9	20.9	1.010	-0.6	0.3	clay	20
1.85	6.1	19.8	19.8	0.905	-0.5	0.3	clay	19
1.90	6.2	20.0	20.0	0.900	-0.4	0.3	clay	19
1.95	6.4	19.7	19.7	0.874	-0.3	0.4	clay	19
2.00	6.6	19.1	19.1	0.869	-0.3	0.4	clay	19

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average



DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
2.05	6.7	19.2	19.2	0.831	-0.1	0.4	clay	18
2.10	6.9	18.3	18.3	0.808	-0.1	0.4	clay	17
2.15	7.1	17.2	17.2	0.789	-0.1	0.4	clay	17
2.20	7.2	16.6	16.6	0.731	0.2	0.4	clay	16
2.25	7.4	15.8	15.8	0.690	0.2	0.4	clay	15
2.30	7.5	14.5	14.5	0.665	0.3	0.4	clay	14
2.35	7.7	14.5	14.5	0.642	0.5	0.4	clay	14
2.40	7.9	15.5	15.5	0.608	0.6	0.4	clay	15
2.45	8.0	15.7	15.7	0.601	0.7	0.4	silty clay to clay	10
2.50	8.2	15.5	15.5	0.628	0.8	0.4	silty clay to clay	10
2.55	8.4	15.8	15.8	0.603	0.9	0.4	silty clay to clay	10
2.60	8.5	15.4	15.5	0.605	1.0	0.4	silty clay to clay	10
2.65	8.7	15.1	15.1	0.590	1.0	0.5	silty clay to clay	10
2.70	8.9	14.4	14.5	0.563	1.0	0.5	silty clay to clay	9
2.75	9.0	14.5	14.5	0.534	1.0	0.5	silty clay to clay	9
2.80	9.2	14.8	14.8	0.535	1.2	0.5	silty clay to clay	9
2.85	9.4	14.9	14.9	0.573	1.3	0.5	silty clay to clay	9
2.90	9.5	14.4	14.5	0.613	1.2	0.5	clay	14
2.95	9.7	13.6	13.6	0.607	1.1	0.5	clay	14
3.00	9.8	14.6	14.7	0.562	1.4	0.5	clay	14
3.05	10.0	14.3	14.4	0.589	1.4	0.5	clay	14
3.10	10.2	14.3	14.3	0.635	1.4	0.5	clay	14
3.15	10.3	14.2	14.3	0.611	1.5	0.5	clay	14
3.20	10.5	14.2	14.3	0.591	1.5	0.5	clay	14
3.25	10.7	14.6	14.6	0.567	1.5	0.6	silty clay to clay	9
3.30	10.8	15.1	15.2	0.559	1.6	0.6	silty clay to clay	10
3.35	11.0	15.0	15.1	0.616	1.5	0.6	silty clay to clay	10
3.40	11.2	14.7	14.7	0.554	1.4	0.6	silty clay to clay	10
3.45	11.3	15.3	15.4	0.528	1.6	0.6	silty clay to clay	10
3.50	11.5	16.4	16.4	0.562	1.6	0.6	silty clay to clay	10
3.55	11.6	16.9	16.9	0.599	1.6	0.6	silty clay to clay	11
3.60	11.8	17.1	17.1	0.615	1.6	0.6	silty clay to clay	11
3.65	12.0	17.1	17.1	0.617	1.6	0.6	silty clay to clay	11
3.70	12.1	17.5	17.5	0.603	1.6	0.6	silty clay to clay	11
3.75	12.3	17.2	17.2	0.563	1.6	0.6	silty clay to clay	11
3.80	12.5	17.0	17.1	0.566	1.5	0.6	silty clay to clay	11
3.85	12.6	17.3	17.3	0.584	1.5	0.6	silty clay to clay	11
3.90	12.8	16.8	16.8	0.588	1.5	0.6	silty clay to clay	11
3.95	13.0	16.5	16.6	0.618	1.4	0.6	silty clay to clay	11
4.00	13.1	17.1	17.1	0.647	1.4	0.6	silty clay to clay	11
4.05	13.3	16.8	16.8	0.649	1.3	0.6	silty clay to clay	11
4.10	13.5	16.2	16.2	0.615	1.3	0.6	silty clay to clay	10
4.15	13.6	16.0	16.1	0.569	1.2	0.6	silty clay to clay	10
4.20	13.8	15.2	15.2	0.539	1.2	0.6	silty clay to clay	10
4.25	13.9	14.5	14.5	0.502	1.2	0.6	silty clay to clay	9
4.30	14.1	13.7	13.7	0.500	1.1	0.6	silty clay to clay	9
4.35	14.3	12.9	12.9	0.483	0.6	0.6	silty clay to clay	8
4.40	14.4	11.9	11.9	0.426	0.6	0.6	silty clay to clay	8
4.45	14.6	12.2	12.2	0.412	0.7	0.6	silty clay to clay	8
4.50	14.8	12.5	12.5	0.441	0.7	0.5	silty clay to clay	8

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Gc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
4.55	14.9	12.4	12.4	0.454	0.7	0.5	silty clay to clay	8
4.60	15.1	12.4	12.4	0.465	0.7	0.5	clay	12
4.65	15.3	12.3	12.4	0.468	0.7	0.5	silty clay to clay	8
4.70	15.4	12.7	12.8	0.455	0.8	0.5	silty clay to clay	8
4.75	15.6	13.0	13.0	0.442	0.9	0.5	silty clay to clay	8
4.80	15.7	12.6	12.6	0.474	0.8	0.5	clay	12
4.85	15.9	11.7	11.7	0.481	0.8	0.5	clay	12
4.90	16.1	12.4	12.4	0.454	0.9	0.5	clay	12
4.95	16.2	13.2	13.2	0.490	1.1	0.4	silty clay to clay	8
5.00	16.4	13.6	13.6	0.498	1.0	0.4	silty clay to clay	8
5.05	16.6	12.4	12.4	0.480	1.0	0.4	silty clay to clay	8
5.10	16.7	11.3	11.3	0.411	0.8	0.4	clay	11
5.15	16.9	10.7	10.7	0.367	0.9	0.4	silty clay to clay	7
5.20	17.1	11.2	11.2	0.363	0.9	0.4	silty clay to clay	7
5.25	17.2	11.9	11.9	0.412	1.0	0.4	silty clay to clay	7
5.30	17.4	12.0	12.1	0.454	1.0	0.4	silty clay to clay	8
5.35	17.6	12.4	12.5	0.463	1.1	0.4	silty clay to clay	8
5.40	17.7	13.9	13.9	0.483	1.0	0.4	silty clay to clay	9
5.45	17.9	15.0	15.0	0.528	1.1	0.4	silty clay to clay	9
5.50	18.0	15.5	15.5	0.531	1.1	0.4	silty clay to clay	10
5.55	18.2	15.4	15.4	0.506	1.1	0.4	silty clay to clay	10
5.60	18.4	14.8	14.8	0.542	1.3	0.4	silty clay to clay	10
5.65	18.5	15.2	15.2	0.529	1.1	0.4	silty clay to clay	10
5.70	18.7	15.6	15.6	0.529	1.2	0.4	silty clay to clay	10
5.75	18.9	15.4	15.4	0.530	1.3	0.4	silty clay to clay	10
5.80	19.0	15.2	15.2	0.513	1.2	0.4	silty clay to clay	10
5.85	19.2	15.3	15.3	0.524	1.3	0.4	silty clay to clay	10
5.90	19.4	16.8	16.8	0.547	1.4	0.4	silty clay to clay	10
5.95	19.5	17.1	17.1	0.597	1.2	0.4	silty clay to clay	11
6.00	19.7	16.8	16.8	0.564	1.2	0.4	silty clay to clay	11
6.05	19.8	16.5	16.6	0.528	1.4	0.4	clayey silt to silty clay	8
6.10	20.0	16.5	16.5	0.518	1.4	0.4	clayey silt to silty clay	8
6.15	20.2	17.3	17.4	0.554	1.4	0.4	clayey silt to silty clay	8
6.20	20.3	17.4	17.4	0.591	1.3	0.4	silty clay to clay	11
6.25	20.5	17.1	17.1	0.591	1.4	0.4	silty clay to clay	11
6.30	20.7	16.6	16.6	0.559	1.4	0.4	silty clay to clay	11
6.35	20.8	16.1	16.1	0.555	1.4	0.4	silty clay to clay	10
6.40	21.0	15.1	15.1	0.519	1.4	0.4	silty clay to clay	10
6.45	21.2	13.9	13.9	0.467	1.4	0.4	silty clay to clay	9
6.50	21.3	13.4	13.4	0.469	1.4	0.4	silty clay to clay	9
6.55	21.5	13.2	13.2	0.463	1.5	0.4	silty clay to clay	8
6.60	21.7	13.2	13.2	0.522	1.5	0.4	silty clay to clay	8
6.65	21.8	12.7	12.7	0.485	1.4	0.4	clay	12
6.70	22.0	12.3	12.3	0.440	1.7	0.4	silty clay to clay	8
6.75	22.1	10.7	10.8	0.355	1.7	0.4	silty clay to clay	7
6.80	22.3	10.6	10.6	0.316	1.8	0.4	silty clay to clay	7
6.85	22.5	12.3	12.3	0.355	1.8	0.4	silty clay to clay	8
6.90	22.6	14.5	14.5	0.463	1.9	0.4	silty clay to clay	9
6.95	22.8	16.6	16.6	0.551	1.9	0.4	silty clay to clay	10
7.00	23.0	17.1	17.2	0.651	1.9	0.4	silty clay to clay	11

Soil interpretation reference: Robertson & Caspanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
7.05	23.1	16.5	16.6	0.617	1.9	0.4	silty clay to clay	11
7.10	23.3	15.8	15.9	0.601	1.8	0.4	silty clay to clay	10
7.15	23.5	16.5	16.5	0.588	1.8	0.4	silty clay to clay	11
7.20	23.6	17.0	17.1	0.621	1.8	0.4	silty clay to clay	11
7.25	23.8	17.3	17.3	0.613	1.9	0.4	silty clay to clay	11
7.30	23.9	17.4	17.4	0.607	1.9	0.4	silty clay to clay	11
7.35	24.1	16.4	16.5	0.585	1.9	0.4	silty clay to clay	10
7.40	24.3	14.7	14.7	0.536	1.8	0.4	silty clay to clay	10
7.45	24.4	14.2	14.3	0.506	1.9	0.4	silty clay to clay	9
7.50	24.6	13.7	13.8	0.461	1.8	0.4	silty clay to clay	9
7.55	24.8	13.5	13.6	0.451	1.9	0.4	silty clay to clay	9
7.60	24.9	15.2	15.2	0.477	2.0	0.4	silty clay to clay	10
7.65	25.1	17.1	17.2	0.572	2.1	0.4	silty clay to clay	11
7.70	25.3	18.5	18.5	0.669	2.4	0.6	silty clay to clay	12
7.75	25.4	19.3	19.3	0.691	2.5	0.6	silty clay to clay	12
7.80	25.6	19.5	19.5	0.715	2.5	0.6	silty clay to clay	12
7.85	25.8	18.5	18.5	0.694	2.4	0.6	silty clay to clay	12
7.90	25.9	16.7	16.7	0.601	2.3	0.6	silty clay to clay	11
7.95	26.1	15.5	15.5	0.509	2.3	0.6	silty clay to clay	10
8.00	26.2	14.4	14.5	0.461	2.4	0.6	silty clay to clay	10
8.05	26.4	16.2	16.3	0.544	2.4	0.6	silty clay to clay	11
8.10	26.6	19.5	19.6	0.655	2.5	0.6	silty clay to clay	12
8.15	26.7	21.2	21.3	0.811	2.7	0.6	silty clay to clay	13
8.20	26.9	22.5	22.6	0.867	2.6	0.6	silty clay to clay	14
8.25	27.1	22.6	22.7	0.898	2.6	0.6	silty clay to clay	15
8.30	27.2	23.0	23.0	0.914	2.6	0.6	silty clay to clay	15
8.35	27.4	23.1	23.2	0.927	2.7	0.6	silty clay to clay	15
8.40	27.6	23.1	23.2	0.905	2.7	0.6	silty clay to clay	15
8.45	27.7	23.1	23.2	0.886	2.6	0.6	silty clay to clay	15
8.50	27.9	23.3	23.3	0.887	2.6	0.6	silty clay to clay	15
8.55	28.1	23.2	23.3	0.957	2.6	0.6	silty clay to clay	15
8.60	28.2	23.5	23.5	0.902	2.7	0.6	silty clay to clay	15
8.65	28.4	23.6	23.6	0.901	2.8	0.6	silty clay to clay	15
8.70	28.5	23.7	23.8	0.901	2.8	0.6	silty clay to clay	15
8.75	28.7	23.5	23.5	0.878	2.8	0.6	silty clay to clay	15
8.80	28.9	21.7	21.7	0.833	2.8	0.6	silty clay to clay	14
8.85	29.0	20.2	20.3	0.757	2.8	0.6	silty clay to clay	13
8.90	29.2	19.9	19.9	0.729	2.8	0.6	silty clay to clay	13
8.95	29.4	21.0	21.0	0.740	2.9	0.6	silty clay to clay	13
9.00	29.5	22.3	22.3	0.793	3.0	0.6	clayey silt to silty clay	11
9.05	29.7	22.8	22.8	0.769	3.0	0.6	clayey silt to silty clay	11
9.10	29.9	23.2	23.2	0.745	3.1	0.6	clayey silt to silty clay	11
9.15	30.0	23.6	23.6	0.720	3.0	0.5	clayey silt to silty clay	11
9.20	30.2	22.6	22.7	0.721	3.0	0.5	clayey silt to silty clay	11
9.25	30.3	21.6	21.7	0.685	3.1	0.5	clayey silt to silty clay	11
9.30	30.5	21.6	21.6	0.678	3.1	0.5	clayey silt to silty clay	10
9.35	30.7	21.9	22.0	0.659	3.1	0.5	clayey silt to silty clay	10
9.40	30.8	21.3	21.4	0.663	3.1	0.5	clayey silt to silty clay	10
9.45	31.0	20.5	20.6	0.660	3.1	0.5	clayey silt to silty clay	10
9.50	31.2	19.2	19.3	0.604	3.2	0.5	clayey silt to silty clay	9

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
9.55	31.3	18.4	18.4	0.607	3.1	0.5	clayey silt to silty clay	9
9.60	31.5	17.9	18.0	0.563	3.1	0.5	clayey silt to silty clay	9
9.65	31.7	17.9	17.9	0.548	3.3	0.5	clayey silt to silty clay	9
9.70	31.8	17.9	17.9	0.534	3.4	0.5	clayey silt to silty clay	9
9.75	32.0	17.6	17.7	0.535	3.4	0.5	clayey silt to silty clay	9
9.80	32.2	18.0	18.1	0.559	3.4	0.5	clayey silt to silty clay	9
9.85	32.3	18.7	18.7	0.595	3.5	0.5	clayey silt to silty clay	9
9.90	32.5	19.0	19.1	0.635	3.5	0.5	clayey silt to silty clay	9
9.95	32.6	19.0	19.0	0.668	3.5	0.5	silty clay to clay	12
10.00	32.8	19.2	19.2	0.697	3.5	0.5	silty clay to clay	12
10.05	33.0	18.8	18.9	0.708	3.5	0.5	silty clay to clay	12
10.10	33.1	18.4	18.4	0.697	3.5	0.5	silty clay to clay	12
10.15	33.3	18.4	18.4	0.635	3.5	0.5	silty clay to clay	12
10.20	33.5	18.2	18.3	0.602	3.6	0.5	clayey silt to silty clay	9
10.25	33.6	18.3	18.3	0.599	3.6	0.5	clayey silt to silty clay	9
10.30	33.8	18.7	18.8	0.580	3.6	0.5	clayey silt to silty clay	9
10.35	34.0	18.7	18.7	0.565	3.6	0.5	clayey silt to silty clay	9
10.40	34.1	18.1	18.1	0.587	3.7	0.5	clayey silt to silty clay	9
10.45	34.3	17.3	17.3	0.569	3.6	0.5	clayey silt to silty clay	8
10.50	34.4	16.8	16.8	0.537	3.6	0.5	clayey silt to silty clay	8
10.55	34.6	16.4	16.5	0.525	3.7	0.5	silty clay to clay	10
10.60	34.8	16.1	16.1	0.556	3.6	0.5	silty clay to clay	10
10.65	34.9	16.3	16.3	0.569	3.7	0.5	silty clay to clay	10
10.70	35.1	16.9	17.0	0.629	3.7	0.5	silty clay to clay	11
10.75	35.3	17.7	17.7	0.699	3.7	0.5	silty clay to clay	11
10.80	35.4	16.3	16.4	0.717	3.5	0.5	clay	16
10.85	35.6	15.5	15.5	0.645	3.3	0.5	clay	15
10.90	35.8	16.0	16.0	0.577	3.4	0.5	silty clay to clay	11
10.95	35.9	19.2	19.3	0.692	3.5	0.5	silty clay to clay	14
11.00	36.1	28.8	28.9	1.147	3.6	0.5	clayey silt to silty clay	18
11.05	36.3	62.5	62.5	1.614	3.3	0.5	clayey silt to silty clay	23
11.10	36.4	53.5	53.4	2.461	-2.1	0.5	clayey silt to silty clay	30
11.15	36.6	74.1	74.1	2.504	-2.3	0.5	clayey silt to silty clay	31
11.20	36.7	63.6	63.5	2.537	-6.5	0.5	clayey silt to silty clay	27
11.25	36.9	33.8	33.7	1.830	-11.2	0.5	silty clay to clay	26
11.30	37.1	24.3	24.1	1.080	-11.5	0.5	clay	25
11.35	37.2	19.6	19.4	0.897	-11.5	0.5	clay	20
11.40	37.4	18.4	18.3	0.775	-11.5	0.6	clay	18
11.45	37.6	16.9	16.7	0.760	-11.4	0.6	clay	17
11.50	37.7	17.3	17.2	0.810	-11.4	0.6	clay	17
11.55	37.9	19.6	19.5	0.739	-11.3	0.6	silty clay to clay	13
11.60	38.1	22.6	22.5	0.758	-11.3	0.6	clayey silt to silty clay	11
11.65	38.2	25.7	25.6	0.805	-11.3	0.6	clayey silt to silty clay	12
11.70	38.4	23.9	23.8	0.791	-11.3	0.6	clayey silt to silty clay	12
11.75	38.5	22.9	22.7	0.660	-10.6	0.6	clayey silt to silty clay	11
11.80	38.7	20.6	20.5	0.564	-10.6	0.6	clayey silt to silty clay	10
11.85	38.9	20.9	20.8	0.536	-10.5	0.6	clayey silt to silty clay	10
11.90	39.0	21.2	21.1	0.439	-10.5	0.6	clayey silt to silty clay	10
11.95	39.2	22.6	22.5	0.453	-10.4	0.6	sandy silt to clayey silt	9
12.00	39.4	24.2	24.0	0.525	-10.4	0.6	sandy silt to clayey silt	9

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
12.05	39.5	25.5	25.4	0.610	-10.3	0.6	sandy silt to clayey silt	10
12.10	39.7	27.0	26.9	0.679	-10.3	0.6	clayey silt to silty clay	12
12.15	39.9	25.3	25.2	0.707	-10.2	0.6	clayey silt to silty clay	12
12.20	40.0	25.4	25.3	0.546	-10.2	0.6	clayey silt to silty clay	12
12.25	40.2	22.6	22.5	0.798	-10.1	0.6	clayey silt to silty clay	11
12.30	40.4	22.6	22.4	0.889	-10.1	0.6	clayey silt to silty clay	12
12.35	40.5	27.1	26.9	0.909	-9.2	0.6	clayey silt to silty clay	12
12.40	40.7	23.6	23.5	0.746	-9.1	0.6	clayey silt to silty clay	12
12.45	40.8	21.9	21.8	0.567	-9.0	0.6	clayey silt to silty clay	11
12.50	41.0	21.9	21.7	0.805	-9.0	0.6	silty clay to clay	16
12.55	41.2	30.1	30.0	1.577	-8.9	0.6	clayey silt to silty clay	20
12.60	41.3	70.3	70.2	2.474	-8.9	0.6	clayey silt to silty clay	27
12.65	41.5	71.8	71.7	2.640	-9.9	0.6	clayey silt to silty clay	35
12.70	41.7	76.7	76.5	2.953	-11.3	0.6	clayey silt to silty clay	38
12.75	41.8	90.8	90.6	3.229	-11.7	0.6	clayey silt to silty clay	42
12.80	42.0	92.8	92.7	3.971	-12.1	0.6	clayey silt to silty clay	49
12.85	42.2	122.0	121.8	4.410	-12.4	0.6	sandy silt to clayey silt	50
12.90	42.3	174.7	174.5	5.797	-12.5	0.6	sandy silt to clayey silt	57
12.95	42.5	147.2	147.0	5.551	-12.6	0.6	sand to clayey sand (*)	76
13.00	42.7	151.3	151.1	6.034	-12.8	0.7	sandy silt to clayey silt	56
13.05	42.8	138.7	138.5	4.457	-12.9	0.7	sandy silt to clayey silt	51
13.10	43.0	113.1	112.9	2.643	-13.0	0.7	sandy silt to clayey silt	43
13.15	43.1	88.8	88.6	2.596	-13.3	0.7	sandy silt to clayey silt	36
13.20	43.3	83.0	82.8	3.290	-12.6	0.7	clayey silt to silty clay	38
13.25	43.5	68.9	68.7	3.196	-12.9	0.7	clayey silt to silty clay	33
13.30	43.6	54.3	54.2	2.301	-12.9	0.7	clayey silt to silty clay	29
13.35	43.8	61.1	61.0	1.361	-12.8	0.8	sandy silt to clayey silt	20
13.40	44.0	40.9	40.8	0.994	-12.9	0.8	sandy silt to clayey silt	17
13.45	44.1	29.8	29.6	0.866	-12.8	0.8	sandy silt to clayey silt	12
13.50	44.3	27.2	27.0	0.645	-12.9	0.8	clayey silt to silty clay	13
13.55	44.5	24.5	24.3	0.708	-12.9	0.8	clayey silt to silty clay	12
13.60	44.6	22.6	22.4	0.716	-12.9	0.8	clayey silt to silty clay	11
13.65	44.8	22.5	22.4	0.685	-12.9	0.8	clayey silt to silty clay	11
13.70	44.9	22.3	22.1	0.611	-12.5	0.9	clayey silt to silty clay	11
13.75	45.1	22.8	22.6	0.673	-12.6	0.9	clayey silt to silty clay	11
13.80	45.3	25.0	24.9	0.942	-12.6	0.9	clayey silt to silty clay	13
13.85	45.4	33.2	33.1	0.716	-12.5	0.9	sandy silt to clayey silt	11
13.90	45.6	24.0	23.9	0.443	-12.5	0.9	sandy silt to clayey silt	10
13.95	45.8	18.6	18.4	0.417	-12.5	0.9	clayey silt to silty clay	10
14.00	45.9	18.0	17.8	0.372	-12.5	0.9	clayey silt to silty clay	9
14.05	46.1	18.4	18.2	0.390	-12.5	0.9	clayey silt to silty clay	8
14.10	46.3	15.6	15.5	0.394	-12.5	0.9	clayey silt to silty clay	8
14.15	46.4	14.7	14.5	0.376	-12.5	0.9	clayey silt to silty clay	7
14.20	46.6	15.5	15.3	0.356	-12.5	0.9	clayey silt to silty clay	7
14.25	46.8	15.7	15.6	0.421	-12.5	0.9	clayey silt to silty clay	8
14.30	46.9	16.1	16.0	0.404	-12.5	0.9	clayey silt to silty clay	8
14.35	47.1	16.5	16.3	0.447	-12.5	1.0	clayey silt to silty clay	8
14.40	47.2	18.2	18.0	0.469	-12.4	1.0	clayey silt to silty clay	9
14.45	47.4	19.8	19.6	0.525	-12.4	1.0	clayey silt to silty clay	9
14.50	47.6	19.1	18.9	0.522	-12.4	1.0	clayey silt to silty clay	9

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
14.55	47.7	17.6	17.4	0.478	-12.4	1.0	clayey silt to silty clay	9
14.60	47.9	17.5	17.3	0.488	-12.4	1.0	clayey silt to silty clay	9
14.65	48.1	18.5	18.3	0.505	-12.4	1.0	clayey silt to silty clay	9
14.70	48.2	20.7	20.6	0.590	-12.4	1.0	clayey silt to silty clay	10
14.75	48.4	21.9	21.8	0.586	-12.3	1.1	clayey silt to silty clay	10
14.80	48.6	19.8	19.7	0.603	-12.3	1.1	clayey silt to silty clay	10
14.85	48.7	18.2	18.0	0.508	-12.3	1.1	clayey silt to silty clay	9
14.90	48.9	17.8	17.6	0.461	-12.1	1.2	clayey silt to silty clay	9
14.95	49.0	17.4	17.2	0.448	-12.3	1.2	clayey silt to silty clay	8
15.00	49.2	17.5	17.4	0.462	-12.3	1.2	clayey silt to silty clay	8
15.05	49.4	16.8	16.6	0.400	-12.3	1.2	clayey silt to silty clay	8
15.10	49.5	15.8	15.7	0.342	-12.3	1.2	clayey silt to silty clay	8
15.15	49.7	15.0	14.8	0.289	-12.2	1.2	clayey silt to silty clay	7
15.20	49.9	14.5	14.3	0.275	-12.2	1.2	clayey silt to silty clay	7
15.25	50.0	15.1	14.9	0.279	-12.2	1.2	clayey silt to silty clay	8
15.30	50.2	17.7	17.5	0.283	-12.2	1.2	sandy silt to clayey silt	7
15.35	50.4	18.3	18.2	0.313	-12.2	1.2	sandy silt to clayey silt	7
15.40	50.5	19.1	18.9	0.347	-12.2	1.2	sandy silt to clayey silt	7
15.45	50.7	19.2	19.0	0.376	-12.2	1.2	sandy silt to clayey silt	7
15.50	50.9	19.1	18.9	0.367	-12.2	1.3	clayey silt to silty clay	9
15.55	51.0	16.4	16.2	0.291	-12.2	1.3	clayey silt to silty clay	8
15.60	51.2	15.3	15.1	0.253	-12.1	1.3	clayey silt to silty clay	8
15.65	51.3	15.8	15.6	0.260	-12.2	1.3	?	?
15.70	51.5	16.2	16.0	?	-12.2	1.3	?	?
15.75	51.7	16.9	16.7	?	-12.2	1.4	?	?

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

SOUNDING DATA IN FILE CPT-59 07-20-94 18:08

OPERATOR : JHANCOCK

LOCATION : CPT-7

CONE ID : 409

JOB No. : DUBLIN, AUDIT

Holguin, Fahan & Associates  
143 S Figueroa St. Ventura, CA 93001

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
0.05	0.2	261.9	261.9	0.901	0.4	2.0	?	?
0.10	0.3	350.8	350.8	1.014	-0.1	0.3	gravelly sand to sand	44
0.15	0.5	210.6	210.6	0.832	-0.1	0.1	sand	47
0.20	0.7	160.2	160.2	1.083	-0.1	0.1	sand	31
0.25	0.8	99.8	99.8	0.913	0.0	0.1	sand to silty sand	27
0.30	1.0	70.0	70.0	1.298	-0.1	0.1	silty sand to sandy silt	22
0.35	1.1	35.1	35.1	1.175	0.1	0.1	sandy silt to clayey silt	17
0.40	1.3	28.9	28.8	0.810	-0.1	0.1	clayey silt to silty clay	15
0.45	1.5	32.2	32.1	0.937	-3.1	0.1	clayey silt to silty clay	15
0.50	1.6	35.5	35.5	0.993	-0.2	0.2	sandy silt to clayey silt	13
0.55	1.8	33.7	33.7	0.818	-0.3	0.2	clayey silt to silty clay	15
0.60	2.0	22.8	22.8	0.773	-0.2	0.2	sandy silt to clayey silt	11
0.65	2.1	28.2	28.2	0.534	-0.2	0.2	sandy silt to clayey silt	12
0.70	2.3	42.2	42.2	0.499	-0.2	0.2	silty sand to sandy silt	12
0.75	2.5	45.6	45.6	0.424	-0.1	0.2	silty sand to sandy silt	14
0.80	2.6	41.2	41.2	0.379	-0.2	0.2	silty sand to sandy silt	13
0.85	2.8	35.2	35.2	0.458	-0.1	0.2	silty sand to sandy silt	11
0.90	3.0	28.7	28.7	0.455	-0.1	0.2	sandy silt to clayey silt	12
0.95	3.1	28.2	28.2	0.438	-0.1	0.2	sandy silt to clayey silt	11
1.00	3.3	32.1	32.1	0.390	-0.2	0.2	sandy silt to clayey silt	12
1.05	3.4	33.5	33.5	0.447	-0.1	0.2	sandy silt to clayey silt	13
1.10	3.6	32.8	32.8	0.498	-0.1	0.2	silty sand to sandy silt	11
1.15	3.8	38.7	38.7	0.496	-0.1	0.2	silty sand to sandy silt	13
1.20	3.9	46.3	46.3	0.401	-0.1	0.2	silty sand to sandy silt	14
1.25	4.1	47.0	47.0	0.377	-0.1	0.2	silty sand to sandy silt	14
1.30	4.3	37.9	37.9	0.407	-0.1	0.2	silty sand to sandy silt	12
1.35	4.4	30.6	30.6	0.523	-0.1	0.2	sandy silt to clayey silt	12
1.40	4.6	25.3	25.3	0.531	-0.1	0.2	sandy silt to clayey silt	10
1.45	4.8	23.3	23.3	0.430	-0.1	0.2	sandy silt to clayey silt	10
1.50	4.9	27.4	27.4	0.351	-0.2	0.2	sandy silt to clayey silt	10
1.55	5.1	26.9	26.9	0.396	-0.1	0.2	sandy silt to clayey silt	9
1.60	5.2	17.9	17.9	0.596	-0.1	0.2	clayey silt to silty clay	9
1.65	5.4	12.7	12.7	0.631	-0.0	0.2	clay	14
1.70	5.6	12.3	12.3	0.631	-0.1	0.2	clay	12
1.75	5.7	11.2	11.2	0.516	-0.4	0.2	clay	11
1.80	5.9	10.3	10.3	0.441	-0.6	0.2	clay	10
1.85	6.1	10.2	10.1	0.432	-0.6	0.2	clay	10
1.90	6.2	10.3	10.3	0.467	-0.5	0.2	clay	10
1.95	6.4	11.5	11.4	0.477	-0.5	0.2	clay	11
2.00	6.6	11.6	11.6	0.497	-0.5	0.2	clay	11

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
2.05	6.7	10.9	10.9	0.497	-0.6	0.2	clay	11
2.10	6.9	10.6	10.6	0.472	-0.4	0.2	clay	10
2.15	7.1	10.8	10.8	0.477	-0.4	0.2	clay	10
2.20	7.2	11.1	11.1	0.455	-0.3	0.2	clay	11
2.25	7.4	11.8	11.8	0.445	-0.2	0.2	clay	11
2.30	7.5	12.1	12.1	0.470	-0.1	0.2	clay	11
2.35	7.7	12.0	12.0	0.488	-0.0	0.2	clay	11
2.40	7.9	11.6	11.6	0.486	0.0	0.2	clay	11
2.45	8.0	10.7	10.7	0.439	0.1	0.2	clay	10
2.50	8.2	10.3	10.3	0.378	0.2	0.2	clay	10
2.55	8.4	11.2	11.2	0.368	0.0	0.2	clay	10
2.60	8.5	10.7	10.6	0.393	-1.1	0.2	clay	10
2.65	8.7	10.5	10.5	0.373	-1.0	0.2	clay	10
2.70	8.9	10.4	10.4	0.381	-1.0	0.2	clay	10
2.75	9.0	10.1	10.1	0.415	-0.7	0.3	clay	10
2.80	9.2	11.1	11.1	0.428	-0.5	0.3	clay	11
2.85	9.4	14.1	14.1	0.468	-0.5	0.3	silty clay to clay	8
2.90	9.5	14.1	14.1	0.528	-0.5	0.3	silty clay to clay	9
2.95	9.7	12.9	12.9	0.531	-0.5	0.3	clay	12
3.00	9.8	11.2	11.2	0.476	-0.5	0.3	clay	11
3.05	10.0	11.5	11.5	0.442	-0.5	0.3	clay	11
3.10	10.2	11.3	11.3	0.452	-0.5	0.3	clay	11
3.15	10.3	11.7	11.7	0.436	-0.5	0.3	clay	11
3.20	10.5	11.0	11.0	0.436	-0.4	0.3	clay	11
3.25	10.7	10.7	10.7	0.396	-0.4	0.3	clay	11
3.30	10.8	11.7	11.7	0.405	-0.4	0.3	silty clay to clay	8
3.35	11.0	13.1	13.1	0.460	-0.3	0.3	silty clay to clay	8
3.40	11.2	14.0	14.0	0.502	-0.3	0.3	silty clay to clay	9
3.45	11.3	14.7	14.7	0.533	-0.3	0.3	silty clay to clay	9
3.50	11.5	14.7	14.7	0.555	-0.3	0.3	silty clay to clay	9
3.55	11.6	15.2	15.2	0.586	-0.2	0.3	silty clay to clay	10
3.60	11.8	15.0	15.0	0.639	-0.3	0.3	silty clay to clay	10
3.65	12.0	17.1	17.1	0.634	-0.4	0.3	silty clay to clay	10
3.70	12.1	16.3	16.3	0.640	-0.3	0.3	silty clay to clay	11
3.75	12.3	16.2	16.2	0.615	-0.3	0.3	silty clay to clay	10
3.80	12.5	15.9	15.9	0.611	-0.2	0.3	silty clay to clay	10
3.85	12.6	16.3	16.3	0.610	-0.2	0.3	silty clay to clay	10
3.90	12.8	15.9	15.9	0.642	-0.2	0.3	silty clay to clay	10
3.95	13.0	14.8	14.8	0.608	-0.3	0.3	clay	14
4.00	13.1	14.6	14.6	0.604	-0.2	0.3	silty clay to clay	10
4.05	13.3	17.4	17.4	0.600	-0.4	0.3	silty clay to clay	10
4.10	13.5	15.6	15.6	0.581	-2.4	0.3	silty clay to clay	10
4.15	13.6	14.7	14.7	0.565	-2.4	0.3	silty clay to clay	9
4.20	13.8	14.0	14.0	0.551	-2.5	0.3	clay	13
4.25	13.9	13.0	13.0	0.517	-2.4	0.3	clay	13
4.30	14.1	13.1	13.1	0.543	-2.4	0.3	clay	13
4.35	14.3	13.5	13.5	0.549	-2.4	0.3	clay	13
4.40	14.4	13.5	13.5	0.583	-2.4	0.3	clay	13
4.45	14.6	13.5	13.4	0.561	-2.4	0.3	clay	13
4.50	14.8	12.7	12.6	0.466	-2.6	0.3	clay	12

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average



DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
4.55	14.9	12.4	12.4	0.438	-2.5	0.3	silty clay to clay	8
4.60	15.1	12.5	12.5	0.454	-2.5	0.3	clay	12
4.65	15.3	11.4	11.4	0.493	-2.6	0.3	clay	11
4.70	15.4	11.3	11.3	0.482	-2.6	0.3	clay	11
4.75	15.6	10.7	10.6	0.431	-2.6	0.3	clay	10
4.80	15.7	10.0	10.0	0.384	-2.4	0.3	clay	10
4.85	15.9	9.1	9.1	0.332	-2.4	0.3	clay	9
4.90	16.1	9.1	9.1	0.243	-2.3	0.3	silty clay to clay	6
4.95	16.2	8.8	8.7	0.214	-2.3	0.3	silty clay to clay	6
5.00	16.4	8.5	8.5	0.222	-2.2	0.3	silty clay to clay	5
5.05	16.6	8.6	8.5	0.254	-2.2	0.3	silty clay to clay	6
5.10	16.7	9.6	9.6	0.299	-2.1	0.3	silty clay to clay	6
5.15	16.9	10.0	10.0	0.323	-2.1	0.3	silty clay to clay	6
5.20	17.1	10.0	10.0	0.334	-2.1	0.3	silty clay to clay	7
5.25	17.2	10.7	10.6	0.327	-2.1	0.3	silty clay to clay	7
5.30	17.4	11.6	11.6	0.359	-2.0	0.3	silty clay to clay	7
5.35	17.6	12.5	12.5	0.420	-1.9	0.3	silty clay to clay	8
5.40	17.7	13.7	13.7	0.454	-1.7	0.3	silty clay to clay	9
5.45	17.9	14.6	14.6	0.495	-1.8	0.3	silty clay to clay	9
5.50	18.0	15.7	15.6	0.539	-1.7	0.3	silty clay to clay	10
5.55	18.2	16.2	16.2	0.561	-1.7	0.3	silty clay to clay	10
5.60	18.4	15.4	15.4	0.540	-1.5	0.3	silty clay to clay	10
5.65	18.5	15.0	15.0	0.512	-1.7	0.3	silty clay to clay	10
5.70	18.7	14.5	14.4	0.493	-1.8	0.3	silty clay to clay	9
5.75	18.9	13.4	13.4	0.505	-1.7	0.3	silty clay to clay	9
5.80	19.0	13.1	13.1	0.493	-1.7	0.3	silty clay to clay	9
5.85	19.2	13.7	13.7	0.529	-1.5	0.3	clay	13
5.90	19.4	12.9	12.9	0.536	-1.4	0.3	clay	12
5.95	19.5	12.1	12.1	0.450	-1.5	0.3	clay	12
6.00	19.7	11.1	11.0	0.382	-1.5	0.3	silty clay to clay	8
6.05	19.8	12.3	12.3	0.372	-1.4	0.3	silty clay to clay	8
6.10	20.0	12.9	12.8	0.407	-1.4	0.3	silty clay to clay	8
6.15	20.2	13.6	13.6	0.454	-1.3	0.3	silty clay to clay	9
6.20	20.3	15.2	15.2	0.532	-1.3	0.4	silty clay to clay	9
6.25	20.5	15.8	15.8	0.603	-1.4	0.4	silty clay to clay	10
6.30	20.7	16.1	16.1	0.625	-1.3	0.4	silty clay to clay	10
6.35	20.8	15.6	15.6	0.612	-1.2	0.4	silty clay to clay	10
6.40	21.0	14.6	14.5	0.532	-1.2	0.4	silty clay to clay	9
6.45	21.2	13.7	13.6	0.472	-1.1	0.5	silty clay to clay	9
6.50	21.3	13.3	13.3	0.444	-1.1	0.5	silty clay to clay	8
6.55	21.5	12.6	12.6	0.456	-1.1	0.5	silty clay to clay	8
6.60	21.7	11.3	11.3	0.416	-1.1	0.5	clay	11
6.65	21.8	9.9	9.8	0.379	-1.1	0.5	clay	10
6.70	22.0	9.1	9.0	0.325	-1.1	0.5	clay	9
6.75	22.1	9.5	9.5	0.262	-1.1	0.5	silty clay to clay	6
6.80	22.3	10.0	10.0	0.262	-1.1	0.5	silty clay to clay	7
6.85	22.5	11.3	11.3	0.328	-0.8	0.5	silty clay to clay	7
6.90	22.6	13.4	13.4	0.437	-0.7	0.5	silty clay to clay	9
6.95	22.8	15.4	15.4	0.513	-0.6	0.5	silty clay to clay	10
7.00	23.0	16.4	16.4	0.571	-0.4	0.5	silty clay to clay	10

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
7.05	23.1	17.4	17.4	0.615	-0.3	0.5	silty clay to clay	11
7.10	23.3	17.6	17.6	0.653	-0.3	0.5	silty clay to clay	11
7.15	23.5	16.9	16.9	0.647	-0.3	0.5	silty clay to clay	11
7.20	23.6	16.6	16.6	0.636	-0.4	0.5	silty clay to clay	11
7.25	23.8	17.1	17.1	0.654	-0.3	0.5	silty clay to clay	11
7.30	23.9	18.2	18.2	0.653	-0.3	0.5	silty clay to clay	11
7.35	24.1	18.2	18.2	0.632	-0.3	0.5	silty clay to clay	12
7.40	24.3	17.8	17.8	0.594	-0.2	0.5	silty clay to clay	11
7.45	24.4	16.2	16.2	0.547	-0.2	0.5	silty clay to clay	10
7.50	24.6	14.0	14.0	0.483	-0.3	0.5	silty clay to clay	9
7.55	24.8	12.4	12.4	0.409	-0.3	0.5	silty clay to clay	8
7.60	24.9	10.8	10.8	0.336	-0.3	0.5	silty clay to clay	7
7.65	25.1	9.9	9.9	0.264	-0.3	0.5	silty clay to clay	7
7.70	25.3	10.3	10.0	0.279	-0.2	0.5	silty clay to clay	7
7.75	25.4	12.7	12.7	0.341	-0.1	0.5	silty clay to clay	8
7.80	25.6	14.0	14.0	0.439	0.3	0.6	silty clay to clay	9
7.85	25.8	15.1	15.1	0.498	0.3	0.6	silty clay to clay	10
7.90	25.9	16.8	16.8	0.567	0.4	0.6	silty clay to clay	10
7.95	26.1	17.2	17.2	0.605	0.4	0.6	silty clay to clay	11
8.00	26.2	18.2	18.2	0.641	0.5	0.6	silty clay to clay	12
8.05	26.4	19.4	19.4	0.680	0.5	0.6	silty clay to clay	12
8.10	26.6	19.9	19.9	0.712	0.5	0.6	silty clay to clay	13
8.15	26.7	20.2	20.2	0.710	0.6	0.6	silty clay to clay	13
8.20	26.9	19.8	19.9	0.680	0.6	0.6	clayey silt to silty clay	10
8.25	27.1	19.8	19.9	0.691	0.6	0.6	silty clay to clay	13
8.30	27.2	20.4	20.4	0.739	0.7	0.6	silty clay to clay	13
8.35	27.4	21.3	21.3	0.800	0.7	0.6	silty clay to clay	14
8.40	27.6	22.9	22.9	0.837	0.8	0.6	silty clay to clay	14
8.45	27.7	23.3	23.4	0.887	0.8	0.6	silty clay to clay	15
8.50	27.9	24.0	24.0	0.894	0.9	0.6	silty clay to clay	15
8.55	28.1	23.5	23.5	0.850	0.9	0.6	silty clay to clay	15
8.60	28.2	23.2	23.3	0.827	0.9	0.6	clayey silt to silty clay	11
8.65	28.4	23.8	23.8	0.847	0.9	0.6	clayey silt to silty clay	11
8.70	28.5	24.1	24.1	0.891	1.0	0.6	silty clay to clay	15
8.75	28.7	24.3	24.3	0.952	0.9	0.6	silty clay to clay	15
8.80	28.9	23.9	23.9	0.936	1.0	0.6	silty clay to clay	15
8.85	29.0	24.4	24.4	0.948	1.1	0.6	silty clay to clay	16
8.90	29.2	25.1	25.1	0.939	1.0	0.6	silty clay to clay	16
8.95	29.4	25.2	25.3	0.932	1.1	0.6	clayey silt to silty clay	12
9.00	29.5	25.8	25.8	0.899	1.2	0.6	clayey silt to silty clay	12
9.05	29.7	25.4	25.4	0.875	1.1	0.6	clayey silt to silty clay	12
9.10	29.9	25.3	25.3	0.875	1.2	0.6	clayey silt to silty clay	12
9.15	30.0	26.0	26.1	0.897	1.3	0.6	clayey silt to silty clay	12
9.20	30.2	26.5	26.5	0.881	1.2	0.6	clayey silt to silty clay	12
9.25	30.3	25.7	25.7	0.833	1.3	0.6	clayey silt to silty clay	12
9.30	30.5	23.6	23.6	0.747	1.3	0.6	clayey silt to silty clay	11
9.35	30.7	20.3	20.3	0.719	1.1	0.6	clayey silt to silty clay	10
9.40	30.8	17.3	17.3	0.605	1.1	0.6	silty clay to clay	11
9.45	31.0	16.4	16.4	0.611	1.1	0.6	silty clay to clay	11
9.50	31.2	17.0	17.0	0.589	1.1	0.6	silty clay to clay	11

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
9.55	31.3	18.0	18.0	0.571	1.2	0.6	clayey silt to silty clay	9
9.60	31.5	18.7	18.7	0.528	1.3	0.6	clayey silt to silty clay	9
9.65	31.7	20.4	20.4	0.587	1.3	0.6	clayey silt to silty clay	10
9.70	31.8	23.0	23.0	0.669	1.4	0.6	clayey silt to silty clay	11
9.75	32.0	24.0	24.0	0.726	1.5	0.6	clayey silt to silty clay	11
9.80	32.2	23.2	23.2	0.743	1.6	0.7	clayey silt to silty clay	11
9.85	32.3	23.6	23.6	0.705	1.7	0.8	clayey silt to silty clay	11
9.90	32.5	21.2	21.2	0.651	1.7	0.8	clayey silt to silty clay	10
9.95	32.6	18.0	18.0	0.572	1.7	0.7	clayey silt to silty clay	9
10.00	32.8	15.7	15.7	0.478	1.8	0.7	clayey silt to silty clay	8
10.05	33.0	14.7	14.7	0.397	1.8	0.7	clayey silt to silty clay	7
10.10	33.1	14.5	14.5	0.389	1.9	0.7	clayey silt to silty clay	7
10.15	33.3	14.1	14.2	0.392	1.9	0.7	clayey silt to silty clay	7
10.20	33.5	13.4	13.4	0.366	1.9	0.7	clayey silt to silty clay	7
10.25	33.6	13.3	13.3	0.326	2.0	0.7	clayey silt to silty clay	7
10.30	33.8	14.2	14.3	0.356	2.1	0.7	clayey silt to silty clay	7
10.35	34.0	16.1	16.1	0.410	2.1	0.7	clayey silt to silty clay	7
10.40	34.1	15.7	15.8	0.430	2.2	0.7	clayey silt to silty clay	7
10.45	34.3	14.8	14.8	0.402	2.2	0.7	clayey silt to silty clay	7
10.50	34.4	12.8	12.9	0.286	2.2	0.7	clayey silt to silty clay	6
10.55	34.6	11.0	11.0	0.195	2.3	0.7	clayey silt to silty clay	5
10.60	34.8	10.6	10.6	0.173	2.4	0.7	clayey silt to silty clay	5
10.65	34.9	11.2	11.2	0.164	2.5	0.7	clayey silt to silty clay	5
10.70	35.1	11.3	11.4	0.232	2.7	0.7	clayey silt to silty clay	6
10.75	35.3	12.9	12.9	0.299	2.8	0.7	clayey silt to silty clay	6
10.80	35.4	12.3	12.4	0.267	2.9	0.7	clayey silt to silty clay	6
10.85	35.6	11.4	11.5	0.251	3.4	0.7	clayey silt to silty clay	6
10.90	35.8	11.6	11.7	0.273	3.6	0.8	clayey silt to silty clay	6
10.95	35.9	13.0	13.0	0.262	3.7	0.7	clayey silt to silty clay	6
11.00	36.1	13.5	13.5	0.313	3.7	0.8	clayey silt to silty clay	7
11.05	36.3	14.3	14.4	0.320	3.8	0.8	clayey silt to silty clay	7
11.10	36.4	14.7	14.8	0.314	3.9	0.8	clayey silt to silty clay	7
11.15	36.6	13.9	14.0	0.281	4.0	0.8	clayey silt to silty clay	7
11.20	36.7	13.2	13.2	0.244	4.1	0.8	clayey silt to silty clay	6
11.25	36.9	12.1	12.1	0.219	4.1	0.8	clayey silt to silty clay	6
11.30	37.1	11.6	11.7	0.209	4.2	0.8	clayey silt to silty clay	6
11.35	37.2	11.5	11.5	0.192	4.4	0.8	clayey silt to silty clay	5
11.40	37.4	11.1	11.1	0.183	4.4	0.8	clayey silt to silty clay	5
11.45	37.6	11.3	11.3	0.168	4.5	0.8	clayey silt to silty clay	6
11.50	37.7	12.3	12.4	0.183	4.7	0.8	clayey silt to silty clay	6
11.55	37.9	13.1	13.2	0.229	4.7	0.8	clayey silt to silty clay	7
11.60	38.1	16.2	16.3	0.425	4.9	0.8	clayey silt to silty clay	8
11.65	38.2	22.5	22.6	0.475	5.0	0.8	clayey silt to silty clay	9
11.70	38.4	20.6	20.7	0.404	5.1	0.8	sandy silt to clayey silt	8
11.75	38.5	17.7	17.8	0.361	5.3	0.8	clayey silt to silty clay	9
11.80	38.7	17.4	17.5	0.351	5.4	0.8	clayey silt to silty clay	8
11.85	38.9	17.4	17.5	0.376	7.1	0.8	clayey silt to silty clay	8
11.90	39.0	16.0	16.1	0.395	7.1	0.8	clayey silt to silty clay	8
11.95	39.2	17.6	17.7	0.414	7.3	0.8	clayey silt to silty clay	8
12.00	39.4	14.4	14.5	0.324	7.0	0.8	clayey silt to silty clay	7

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
12.05	39.5	12.3	12.4	0.280	7.0	0.8	clayey silt to silty clay	6
12.10	39.7	13.0	13.1	0.293	7.0	0.8	clayey silt to silty clay	6
12.15	39.9	14.4	14.5	0.342	7.0	0.8	clayey silt to silty clay	7
12.20	40.0	14.9	15.0	0.353	6.8	0.8	clayey silt to silty clay	7
12.25	40.2	14.8	14.9	0.310	6.9	0.8	?	?
12.30	40.4	15.1	15.2	?	6.8	0.8	?	?
12.35	40.5	14.8	14.9	?	6.8	0.8	?	?

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

SOUNDING DATA IN FILE CPT-61 07-20-94 19:28

OPERATOR : JHANCOCK

LOCATION : CPT-4A

CONE ID : 409

JOB No. : DUBLIN, AUDIT

Holguin, Fahan & Associates  
 143 S Figueroa St. Ventura, CA 93001

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
0.05	0.2	418.0	418.0	0.970	0.2	0.1		?
0.10	0.3	641.2	641.2	0.997	-0.1	0.1	gravelly sand to sand	71
0.15	0.5	278.0	278.0	1.587	-0.2	0.1	gravelly sand to sand	61
0.20	0.7	236.5	236.4	1.811	-0.3	0.0	sand	48
0.25	0.8	233.6	233.6	2.496	-0.3	0.0	sand	41
0.30	1.0	173.9	173.9	1.826	-0.5	0.0	sand	36
0.35	1.1	160.1	160.1	1.023	-0.6	0.0	sand	31
0.40	1.3	144.8	144.8	0.607	-0.6	0.0	sand	27
0.45	1.5	123.5	123.5	0.440	-0.6	0.0	sand	24
0.50	1.6	105.7	105.7	0.197	-0.7	0.0	sand	21
0.55	1.8	93.9	93.9	0.105	-0.7	0.0	sand	18
0.60	2.0	84.6	84.6	0.082	-0.7	0.0	sand	16
0.65	2.1	79.8	79.8	0.090	-0.7	0.0	sand	15
0.70	2.3	77.7	77.7	0.055	-0.7	0.0	sand to silty sand	18
0.75	2.5	67.8	67.8	0.104	-0.7	0.0	sand to silty sand	15
0.80	2.6	48.2	48.2	0.270	-0.6	0.0	sand to silty sand	12
0.85	2.8	28.8	28.8	0.421	-0.4	0.0	sandy silt to clayey silt	12
0.90	3.0	16.9	16.9	0.514	-0.3	0.0	clayey silt to silty clay	9
0.95	3.1	12.9	12.9	0.497	-0.3	0.0	silty clay to clay	9
1.00	3.3	12.2	12.1	0.456	-3.5	0.0	clay	12
1.05	3.4	11.0	10.9	0.388	-3.9	0.0	silty clay to clay	7
1.10	3.6	10.9	10.8	0.303	-3.7	0.0	silty clay to clay	7
1.15	3.8	11.3	11.2	0.281	-5.7	0.0	silty clay to clay	7
1.20	3.9	10.6	10.6	0.286	-0.1	0.0	silty clay to clay	7
1.25	4.1	9.0	9.0	0.285	-0.1	0.0	silty clay to clay	6
1.30	4.3	9.3	9.3	0.292	-0.5	0.0	clay	9
1.35	4.4	8.6	8.6	0.312	-0.0	0.0	clay	8
1.40	4.6	8.6	8.6	0.319	-0.0	0.0	clay	8
1.45	4.8	9.2	9.2	0.308	0.0	0.0	clay	9
1.50	4.9	10.0	10.0	0.338	-0.0	0.0	silty clay to clay	6
1.55	5.1	11.2	11.1	0.378	-1.8	0.0	clay	10
1.60	5.2	10.3	10.2	0.411	-3.5	0.0	clay	10
1.65	5.4	10.3	10.3	0.406	-3.4	0.0	clay	10
1.70	5.6	11.5	11.5	0.433	-3.3	0.0	clay	11
1.75	5.7	11.9	11.9	0.463	-3.3	0.0	clay	11
1.80	5.9	11.3	11.3	0.465	-3.2	0.0	clay	11
1.85	6.1	11.8	11.7	0.476	-3.2	0.0	clay	11
1.90	6.2	11.6	11.6	0.508	-3.2	0.0	clay	11
1.95	6.4	11.2	11.1	0.520	-3.1	0.0	clay	11
2.00	6.6	11.0	11.0	0.500	-3.1	0.0	clay	11

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
2.05	6.7	11.2	11.2	0.466	-3.0	0.0	clay	10
2.10	6.9	10.6	10.5	0.478	-2.9	0.0	clay	10
2.15	7.1	9.9	9.9	0.465	-2.9	0.0	clay	10
2.20	7.2	9.8	9.8	0.440	-2.8	0.0	clay	10
2.25	7.4	10.1	10.1	0.465	-2.8	0.0	clay	9
2.30	7.5	9.3	9.2	0.427	-2.8	0.0	clay	9
2.35	7.7	8.8	8.8	0.403	-2.8	0.0	clay	9
2.40	7.9	9.6	9.5	0.396	-2.7	0.0	clay	9
2.45	8.0	9.5	9.5	0.374	-2.6	0.0	clay	9
2.50	8.2	10.2	10.2	0.403	-2.6	0.0	clay	9
2.55	8.4	10.0	10.0	0.411	-2.6	0.0	clay	10
2.60	8.5	10.0	10.0	0.425	-2.5	0.0	clay	10
2.65	8.7	11.4	11.4	0.434	-2.5	0.0	clay	10
2.70	8.9	10.9	10.9	0.447	-2.4	0.0	clay	11
2.75	9.0	10.6	10.6	0.444	-2.5	0.0	clay	10
2.80	9.2	10.5	10.5	0.438	-2.4	0.0	clay	10
2.85	9.4	10.6	10.6	0.432	-2.3	0.0	clay	10
2.90	9.5	11.0	11.0	0.436	-2.1	0.0	clay	11
2.95	9.7	11.8	11.8	0.486	-2.1	0.0	clay	11
3.00	9.8	12.3	12.3	0.527	-2.2	0.0	clay	11
3.05	10.0	11.6	11.6	0.494	-2.2	0.0	clay	11
3.10	10.2	11.0	11.0	0.450	-2.2	0.0	clay	11
3.15	10.3	10.3	10.3	0.415	-2.0	0.0	clay	10
3.20	10.5	10.3	10.3	0.390	-1.9	0.1	clay	10
3.25	10.7	10.4	10.4	0.409	-1.9	0.1	clay	10
3.30	10.8	11.2	11.2	0.405	-1.9	0.1	clay	11
3.35	11.0	12.8	12.8	0.462	-1.9	0.1	silty clay to clay	8
3.40	11.2	14.4	14.4	0.515	-1.8	0.1	silty clay to clay	9
3.45	11.3	14.6	14.6	0.550	-1.8	0.1	silty clay to clay	9
3.50	11.5	14.7	14.7	0.580	-1.8	0.1	silty clay to clay	10
3.55	11.6	15.9	15.9	0.596	-1.7	0.1	silty clay to clay	10
3.60	11.8	16.3	16.3	0.652	-1.6	0.1	silty clay to clay	10
3.65	12.0	16.9	16.8	0.666	-1.7	0.1	silty clay to clay	11
3.70	12.1	17.3	17.3	0.676	-1.7	0.1	silty clay to clay	11
3.75	12.3	17.6	17.6	0.707	-1.7	0.1	silty clay to clay	11
3.80	12.5	17.5	17.5	0.702	-1.7	0.1	silty clay to clay	11
3.85	12.6	16.3	16.2	0.657	-1.7	0.1	silty clay to clay	11
3.90	12.8	15.7	15.7	0.592	-1.7	0.1	silty clay to clay	10
3.95	13.0	15.1	15.0	0.553	-1.8	0.1	silty clay to clay	10
4.00	13.1	15.0	15.0	0.538	-1.7	0.1	silty clay to clay	10
4.05	13.3	15.7	15.7	0.568	-1.6	0.1	silty clay to clay	10
4.10	13.5	16.7	16.7	0.607	-1.6	0.1	silty clay to clay	11
4.15	13.6	18.1	18.1	0.640	-1.5	0.1	silty clay to clay	11
4.20	13.8	18.5	18.5	0.636	-1.6	0.1	silty clay to clay	11
4.25	13.9	17.4	17.3	0.655	-1.5	0.1	silty clay to clay	11
4.30	14.1	17.9	17.9	0.677	-1.5	0.1	silty clay to clay	11
4.35	14.3	18.6	18.6	0.700	-1.5	0.1	silty clay to clay	12
4.40	14.4	18.1	18.1	0.698	-1.5	0.1	silty clay to clay	12
4.45	14.6	17.3	17.3	0.668	-1.5	0.1	silty clay to clay	11
4.50	14.8	17.7	17.7	0.677	-1.5	0.1	silty clay to clay	11

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
4.55	14.9	16.7	16.7	0.687	-1.6	0.1	silty clay to clay	11
4.60	15.1	15.6	15.6	0.646	-1.5	0.1	clay	15
4.65	15.3	15.2	15.2	0.628	-1.6	0.1	clay	15
4.70	15.4	14.7	14.7	0.608	-1.5	0.1	clay	14
4.75	15.6	12.9	12.9	0.584	-1.6	0.1	clay	12
4.80	15.7	11.2	11.2	0.473	-1.5	0.1	clay	11
4.85	15.9	9.2	9.2	0.397	-1.7	0.1	clay	9
4.90	16.1	8.6	8.6	0.304	-1.3	0.1	clay	8
4.95	16.2	8.1	8.0	0.274	-1.1	0.1	clay	8
5.00	16.4	8.5	8.5	0.270	-1.0	0.1	clay	8
5.05	16.6	8.9	8.9	0.316	-0.9	0.1	clay	9
5.10	16.7	10.0	10.0	0.363	-0.8	0.1	clay	9
5.15	16.9	10.2	10.1	0.401	-0.8	0.1	clay	10
5.20	17.1	10.9	10.8	0.406	-0.7	0.1	clay	10
5.25	17.2	11.3	11.3	0.425	-0.6	0.1	clay	11
5.30	17.4	12.4	12.4	0.447	-0.6	0.1	silty clay to clay	8
5.35	17.6	13.6	13.5	0.478	-0.6	0.1	silty clay to clay	9
5.40	17.7	14.6	14.6	0.518	-0.4	0.1	silty clay to clay	9
5.45	17.9	15.4	15.4	0.548	-0.5	0.2	silty clay to clay	10
5.50	18.0	15.5	15.5	0.576	-0.4	0.2	silty clay to clay	10
5.55	18.2	15.1	15.1	0.576	-0.4	0.2	silty clay to clay	10
5.60	18.4	14.9	14.9	0.565	-0.4	0.2	silty clay to clay	9
5.65	18.5	14.5	14.5	0.541	-0.4	0.2	silty clay to clay	9
5.70	18.7	14.2	14.2	0.536	-0.3	0.2	silty clay to clay	9
5.75	18.9	13.8	13.8	0.536	-0.3	0.2	silty clay to clay	9
5.80	19.0	13.5	13.5	0.520	-0.3	0.2	silty clay to clay	9
5.85	19.2	13.1	13.1	0.487	-0.2	0.2	clay	12
5.90	19.4	12.0	12.0	0.471	-0.2	0.2	clay	12
5.95	19.5	12.1	12.1	0.492	-0.2	0.2	clay	12
6.00	19.7	12.6	12.6	0.513	-0.2	0.2	clay	12
6.05	19.8	12.5	12.5	0.510	-0.3	0.2	clay	12
6.10	20.0	12.3	12.3	0.483	-0.2	0.2	clay	12
6.15	20.2	12.8	12.8	0.450	-0.2	0.2	silty clay to clay	8
6.20	20.3	13.1	13.1	0.469	-0.1	0.2	silty clay to clay	8
6.25	20.5	13.3	13.3	0.481	-0.1	0.2	silty clay to clay	9
6.30	20.7	14.2	14.2	0.530	-0.1	0.2	silty clay to clay	9
6.35	20.8	14.9	14.9	0.569	0.1	0.2	silty clay to clay	9
6.40	21.0	15.3	15.3	0.601	0.0	0.2	silty clay to clay	9
6.45	21.2	14.4	14.4	0.586	0.0	0.2	clay	14
6.50	21.3	12.7	12.7	0.527	0.1	0.2	clay	12
6.55	21.5	11.7	11.7	0.437	0.1	0.2	clay	11
6.60	21.7	11.3	11.3	0.407	0.1	0.2	silty clay to clay	7
6.65	21.8	12.0	12.0	0.410	0.1	0.3	silty clay to clay	7
6.70	22.0	11.8	11.8	0.436	0.1	0.3	silty clay to clay	8
6.75	22.1	12.1	12.1	0.454	0.1	0.3	clay	12
6.80	22.3	12.1	12.1	0.447	0.2	0.3	clay	12
6.85	22.5	12.1	12.1	0.457	0.3	0.3	clay	11
6.90	22.6	11.5	11.5	0.419	0.3	0.3	clay	11
6.95	22.8	10.9	10.9	0.387	0.4	0.3	silty clay to clay	7
7.00	23.0	11.4	11.4	0.368	0.5	0.3	silty clay to clay	8

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICTION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
7.05	23.1	14.2	14.2	0.455	0.6	0.3	silty clay to clay	9
7.10	23.3	15.2	15.2	0.567	0.5	0.3	silty clay to clay	10
7.15	23.5	15.4	15.5	0.598	0.5	0.3	silty clay to clay	10
7.20	23.6	15.1	15.1	0.589	0.5	0.3	silty clay to clay	10
7.25	23.8	15.0	15.0	0.576	0.6	0.3	silty clay to clay	10
7.30	23.9	15.5	15.5	0.574	0.6	0.3	silty clay to clay	10
7.35	24.1	15.5	15.5	0.585	0.6	0.3	silty clay to clay	10
7.40	24.3	15.2	15.2	0.561	0.6	0.3	silty clay to clay	10
7.45	24.4	14.4	14.4	0.544	0.6	0.3	silty clay to clay	9
7.50	24.6	13.1	13.1	0.525	0.6	0.3	clay	13
7.55	24.8	11.8	11.8	0.468	0.6	0.3	clay	11
7.60	24.9	10.7	10.7	0.402	0.5	0.3	clay	10
7.65	25.1	10.3	10.3	0.367	0.7	0.3	clay	10
7.70	25.3	10.2	10.2	0.359	0.7	0.3	clay	10
7.75	25.4	10.3	10.3	0.364	0.7	0.3	silty clay to clay	7
7.80	25.6	11.7	11.7	0.388	0.8	0.3	silty clay to clay	8
7.85	25.8	13.4	13.4	0.476	0.8	0.3	silty clay to clay	9
7.90	25.9	15.3	15.3	0.562	1.0	0.3	silty clay to clay	10
7.95	26.1	16.0	16.0	0.553	1.0	0.3	silty clay to clay	10
8.00	26.2	16.2	16.2	0.574	1.1	0.5	silty clay to clay	10
8.05	26.4	15.9	15.9	0.579	1.1	0.4	silty clay to clay	10
8.10	26.6	14.8	14.8	0.539	1.1	0.4	silty clay to clay	10
8.15	26.7	14.3	14.3	0.491	1.2	0.4	silty clay to clay	9
8.20	26.9	14.3	14.3	0.526	1.2	0.4	silty clay to clay	9
8.25	27.1	16.0	16.0	0.592	1.3	0.4	silty clay to clay	10
8.30	27.2	17.9	17.9	0.683	1.3	0.4	silty clay to clay	11
8.35	27.4	19.1	19.2	0.711	1.3	0.5	silty clay to clay	12
8.40	27.6	20.1	20.1	0.744	1.4	0.5	silty clay to clay	13
8.45	27.7	20.1	20.1	0.712	1.4	0.6	silty clay to clay	13
8.50	27.9	20.1	20.1	0.717	1.5	0.6	silty clay to clay	13
8.55	28.1	20.3	20.3	0.758	1.5	0.6	silty clay to clay	13
8.60	28.2	20.5	20.5	0.806	1.4	0.6	silty clay to clay	13
8.65	28.4	20.5	20.6	0.795	1.4	0.6	silty clay to clay	13
8.70	28.5	20.5	20.5	0.819	1.5	0.6	silty clay to clay	13
8.75	28.7	21.1	21.1	0.869	1.4	0.6	silty clay to clay	13
8.80	28.9	21.1	21.1	0.872	1.5	0.6	silty clay to clay	14
8.85	29.0	21.6	21.6	0.899	1.6	0.6	silty clay to clay	14
8.90	29.2	21.8	21.8	0.899	1.6	0.6	silty clay to clay	14
8.95	29.4	21.4	21.4	0.885	1.6	0.6	silty clay to clay	14
9.00	29.5	21.4	21.4	0.832	1.6	0.6	silty clay to clay	14
9.05	29.7	21.5	21.5	0.769	1.6	0.6	silty clay to clay	14
9.10	29.9	20.9	20.9	0.735	1.7	0.6	clayey silt to silty clay	10
9.15	30.0	20.8	20.8	0.691	1.7	0.8	clayey silt to silty clay	10
9.20	30.2	20.6	20.7	0.685	1.7	1.0	clayey silt to silty clay	10
9.25	30.3	20.2	20.2	0.669	1.7	1.0	clayey silt to silty clay	10
9.30	30.5	19.7	19.7	0.655	1.8	1.0	clayey silt to silty clay	9
9.35	30.7	19.2	19.2	0.632	1.8	1.0	clayey silt to silty clay	9
9.40	30.8	19.3	19.3	0.621	1.8	1.0	clayey silt to silty clay	9
9.45	31.0	19.2	19.2	0.619	1.8	1.0	clayey silt to silty clay	9
9.50	31.2	18.7	18.8	0.657	1.8	1.0	silty clay to clay	12

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average



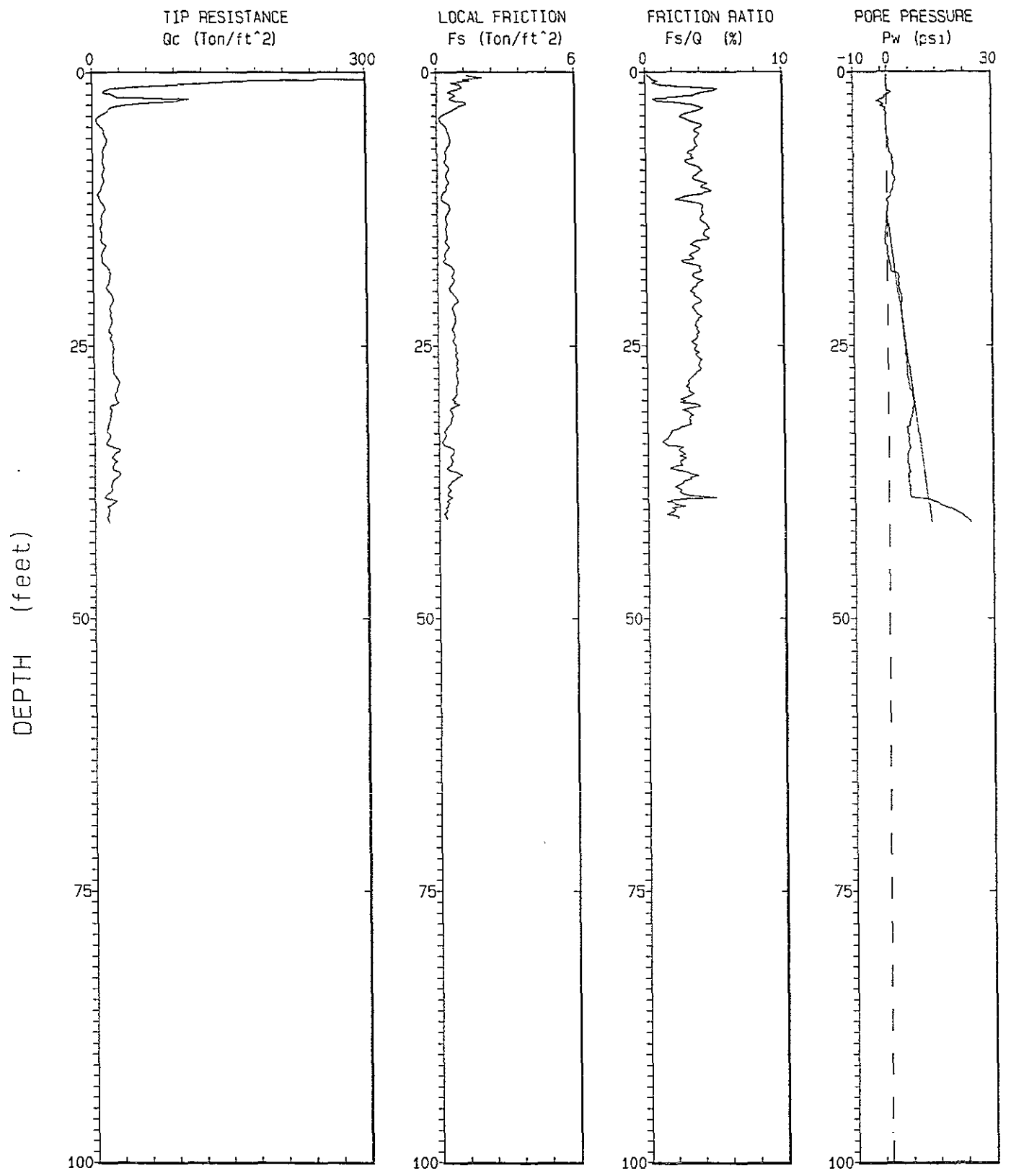
DEPTH meters	DEPTH feet	TIP Qc tsf	CORR TIP Qt tsf	FRICITION Fs tsf	PORE PR Pw psi	INC I deg	INTERPRETED SOIL TYPE	N SPT
9.55	31.3	19.2	19.2	0.694	1.8	1.0	silty clay to clay	12
9.60	31.5	19.8	19.8	0.762	1.8	1.0	silty clay to clay	12
9.65	31.7	19.7	19.7	0.758	1.8	1.0	silty clay to clay	12
9.70	31.8	18.7	18.7	0.703	1.8	1.0	silty clay to clay	12
9.75	32.0	17.0	17.0	0.632	1.8	1.0	silty clay to clay	11
9.80	32.2	15.8	15.8	0.593	1.8	1.0	silty clay to clay	10
9.85	32.3	15.1	15.2	0.521	1.7	1.0	silty clay to clay	10
9.90	32.5	15.0	15.1	0.472	2.0	1.0	silty clay to clay	9
9.95	32.6	13.6	13.6	0.417	2.0	1.0	silty clay to clay	9
10.00	32.8	14.1	14.2	0.447	2.2	1.0	silty clay to clay	9
10.05	33.0	16.0	16.1	0.582	2.3	1.0	silty clay to clay	10
10.10	33.1	16.3	16.4	0.627	2.3	1.0	silty clay to clay	10
10.15	33.3	17.0	17.0	0.631	2.4	1.0	silty clay to clay	11
10.20	33.5	18.2	18.3	0.593	2.4	1.2	silty clay to clay	12
10.25	33.6	18.9	18.9	0.616	2.5	1.1	clayey silt to silty clay	9
10.30	33.8	19.2	19.2	0.569	2.6	1.1	clayey silt to silty clay	9
10.35	34.0	19.8	19.9	0.551	2.6	1.1	clayey silt to silty clay	10
10.40	34.1	20.9	20.9	0.526	2.8	1.1	clayey silt to silty clay	10
10.45	34.3	21.2	21.2	0.526	2.8	1.1	clayey silt to silty clay	11
10.50	34.4	24.0	24.0	0.658	3.0	1.1	clayey silt to silty clay	12
10.55	34.6	29.0	29.1	0.732	3.1	1.2	clayey silt to silty clay	13
10.60	34.8	29.8	29.9	1.001	3.1	1.2	sandy silt to clayey silt	12
10.65	34.9	33.3	33.4	0.753	3.3	1.2	clayey silt to silty clay	15
10.70	35.1	30.9	30.9	0.963	3.3	1.2	clayey silt to silty clay	15
10.75	35.3	31.6	31.7	1.198	3.4	1.2	clayey silt to silty clay	15
10.80	35.4	30.4	30.4	1.120	3.6	1.2	clayey silt to silty clay	15
10.85	35.6	33.4	33.5	1.097	4.8	1.2	clayey silt to silty clay	14
10.90	35.8	24.4	24.5	0.786	4.5	1.2	clayey silt to silty clay	12
10.95	35.9	19.1	19.1	0.563	4.6	1.2	clayey silt to silty clay	10
11.00	36.1	16.2	16.2	0.436	4.7	1.2	clayey silt to silty clay	8
11.05	36.3	17.4	17.4	0.436	4.8	1.2	clayey silt to silty clay	8
11.10	36.4	15.6	15.7	0.421	4.9	1.5	clayey silt to silty clay	8
11.15	36.6	15.6	15.6	0.415	4.9	1.5	clayey silt to silty clay	7
11.20	36.7	14.9	15.0	0.379	5.0	1.5	clayey silt to silty clay	7
11.25	36.9	13.9	13.9	0.330	5.1	1.5	clayey silt to silty clay	7
11.30	37.1	12.0	12.1	0.286	5.1	1.5	clayey silt to silty clay	6
11.35	37.2	12.3	12.4	0.330	5.3	1.5	clayey silt to silty clay	6
11.40	37.4	13.6	13.7	0.271	5.4	1.5	clayey silt to silty clay	6
11.45	37.6	13.2	13.2	0.295	5.5	1.5	clayey silt to silty clay	6
11.50	37.7	13.6	13.7	0.333	5.7	1.5	clayey silt to silty clay	7
11.55	37.9	14.8	14.9	0.382	5.7	1.5	clayey silt to silty clay	7
11.60	38.1	16.0	16.1	0.418	5.9	1.5	clayey silt to silty clay	8
11.65	38.2	16.3	16.3	0.417	6.0	1.5	clayey silt to silty clay	7
11.70	38.4	14.3	14.4	0.415	6.0	1.5	clayey silt to silty clay	7
11.75	38.5	13.3	13.4	0.363	6.3	1.5	clayey silt to silty clay	6
11.80	38.7	12.5	12.6	0.371	6.4	1.5	silty clay to clay	8
11.85	38.9	13.0	13.1	0.381	6.6	1.5	silty clay to clay	8
11.90	39.0	13.7	13.8	0.413	6.7	1.6		?
11.95	39.2	15.7	15.8	?	6.9	1.6		?
12.00	39.4	18.3	18.4	?	7.0	1.6		?

Soil interpretation reference: Robertson & Campanella-1983, based on 60% hammer efficiency and .15 m sliding data average

H F A

Operator : JHANCOCK  
Sounding : CPT-46 Pg 1 / 1  
Cone Used : 409

CPT Date : 07-20-94 08: 21  
Location : CPT-1  
Job No. : DUBLIN, AUDIT



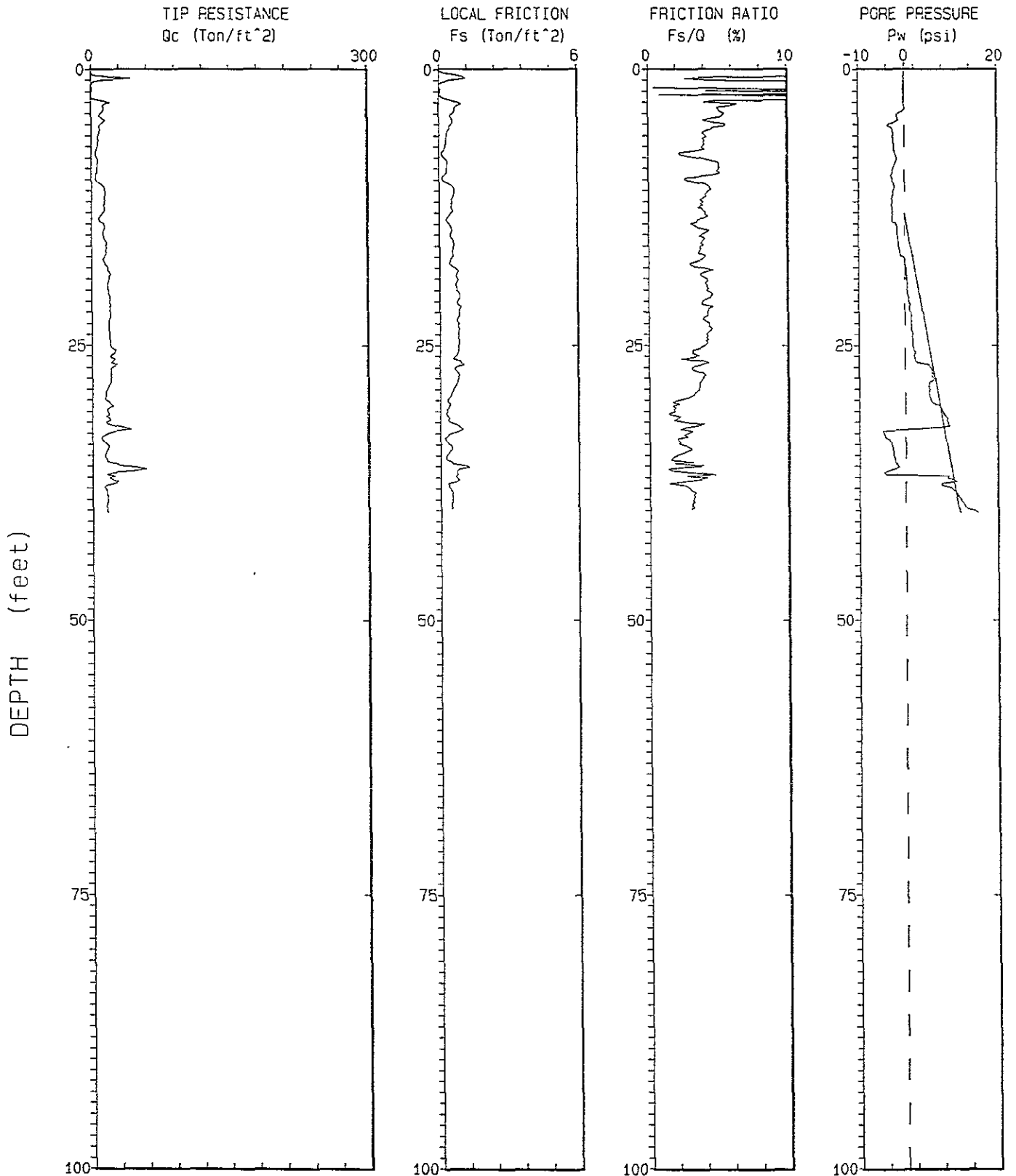
Depth Increment : .05 m

Max Depth : 41.17 ft

# H F A

Operator : JHANCOCK  
Sounding : CPT-48 Pg 1 / 1  
Cone Used : 409

CPT Date : 07-20-94 11:35  
Location : CPT-2  
Job No. : DUBLIN, AUDIT



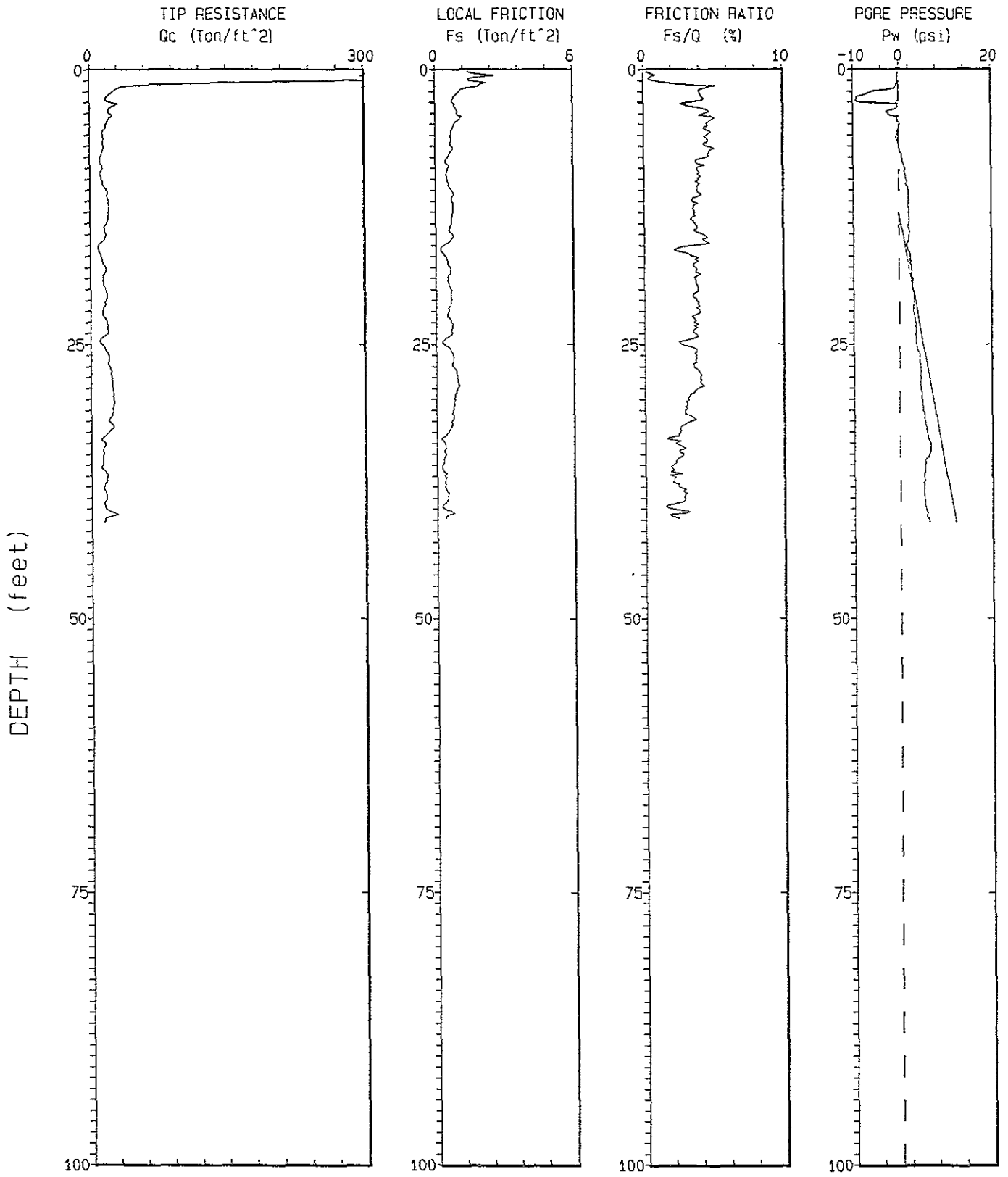
Depth Increment : .05 m

Max Depth : 40.19 ft

H F A

Operator : JHANCOCK  
Sounding : CPT-50 Pg 1 / 1  
Cone Used : 409

CPT Date : 07-20-94 13:04  
Location : CPT-3  
Job No. : DUBLIN, AUDIT



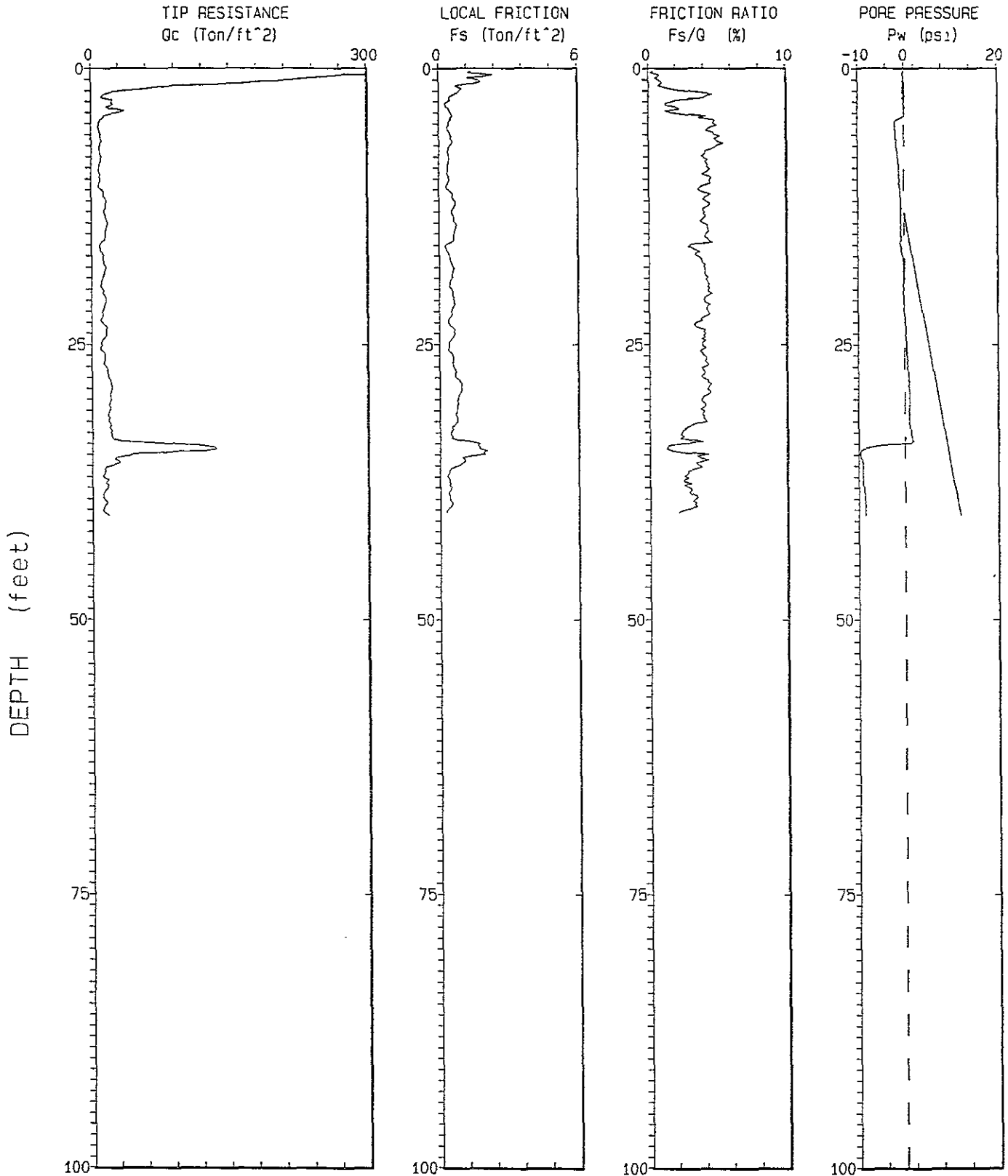
Depth Increment : .05 m

Max Depth : 41.17 ft

# H F A

Operator : JHANCOCK  
Sounding : CPT-52 Pg 1 / 1  
Cone Used : 409

CPT Date : 07-20-94 13:56  
Location : CPT-4  
Job No. : DUBLIN, AUDIT



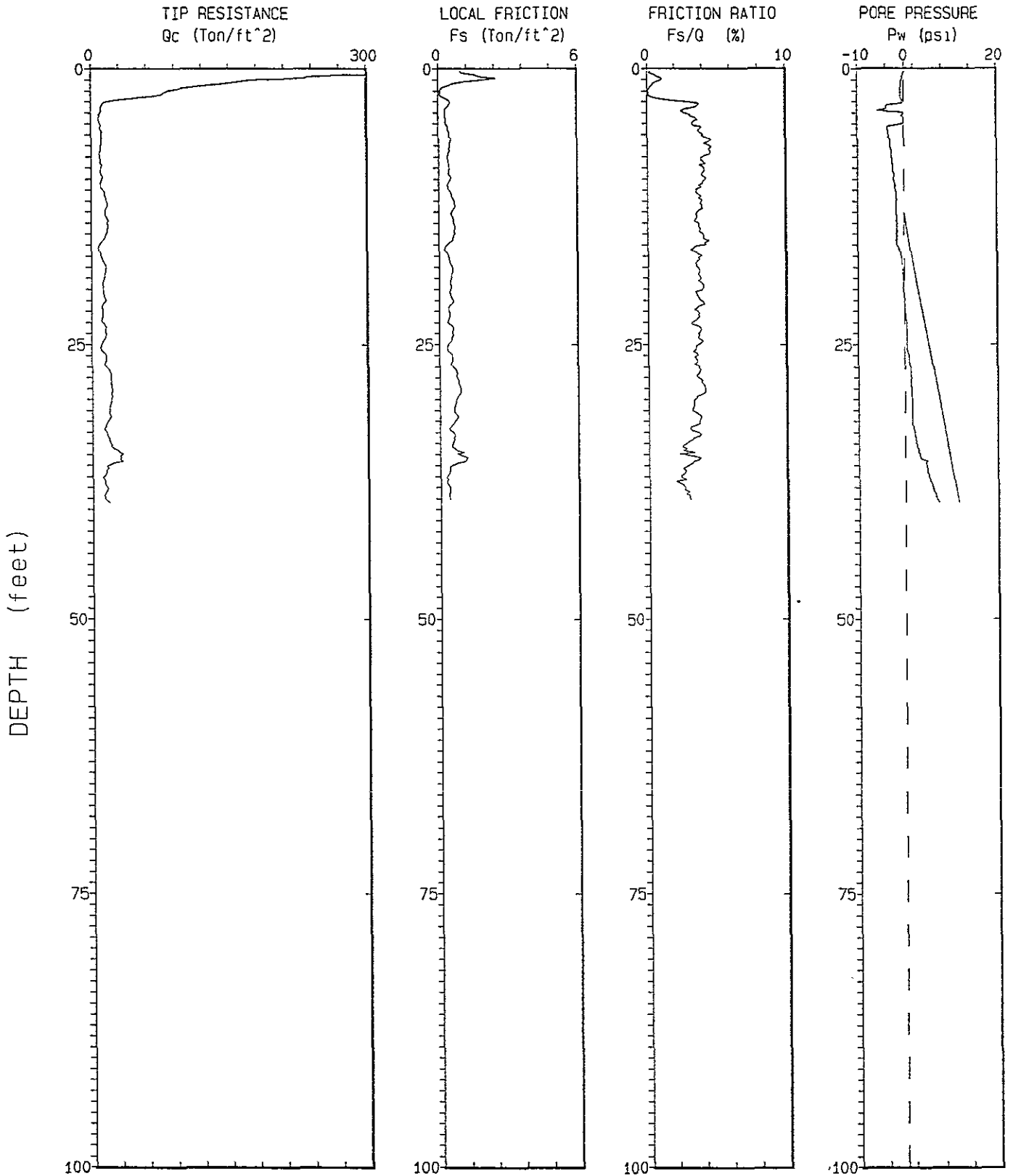
Depth Increment : .05 m

Max Depth : 40.52 ft

# H F A

Operator : JHANCOCK  
Sounding : CPT-61 Pg 1 / 1  
Cone Used : 409

CPT Date : 07-20-94 19:28  
Location : CPT-4A  
Job No. : DUBLIN, AUDIT



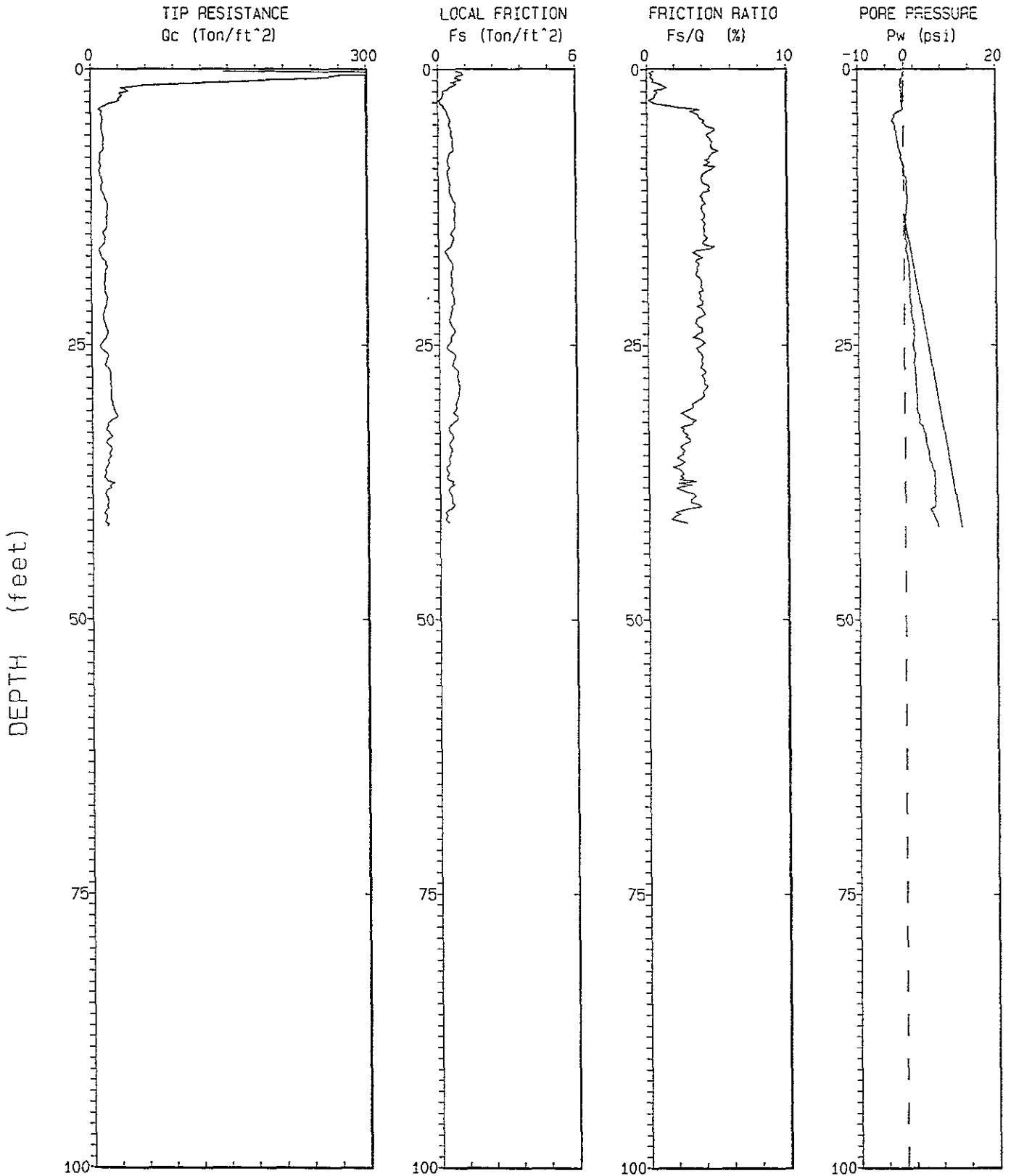
Depth Increment : .05 m

Max Depth : 39.37 ft

H F A

Operator : JHANCOCK  
Sounding : CPT-54 Pg 1 / 1  
Cone Used : 409

CPT Date : 07-20-94 14:48  
Location : CPT-5  
Job No. : DUBLIN, AUDIT



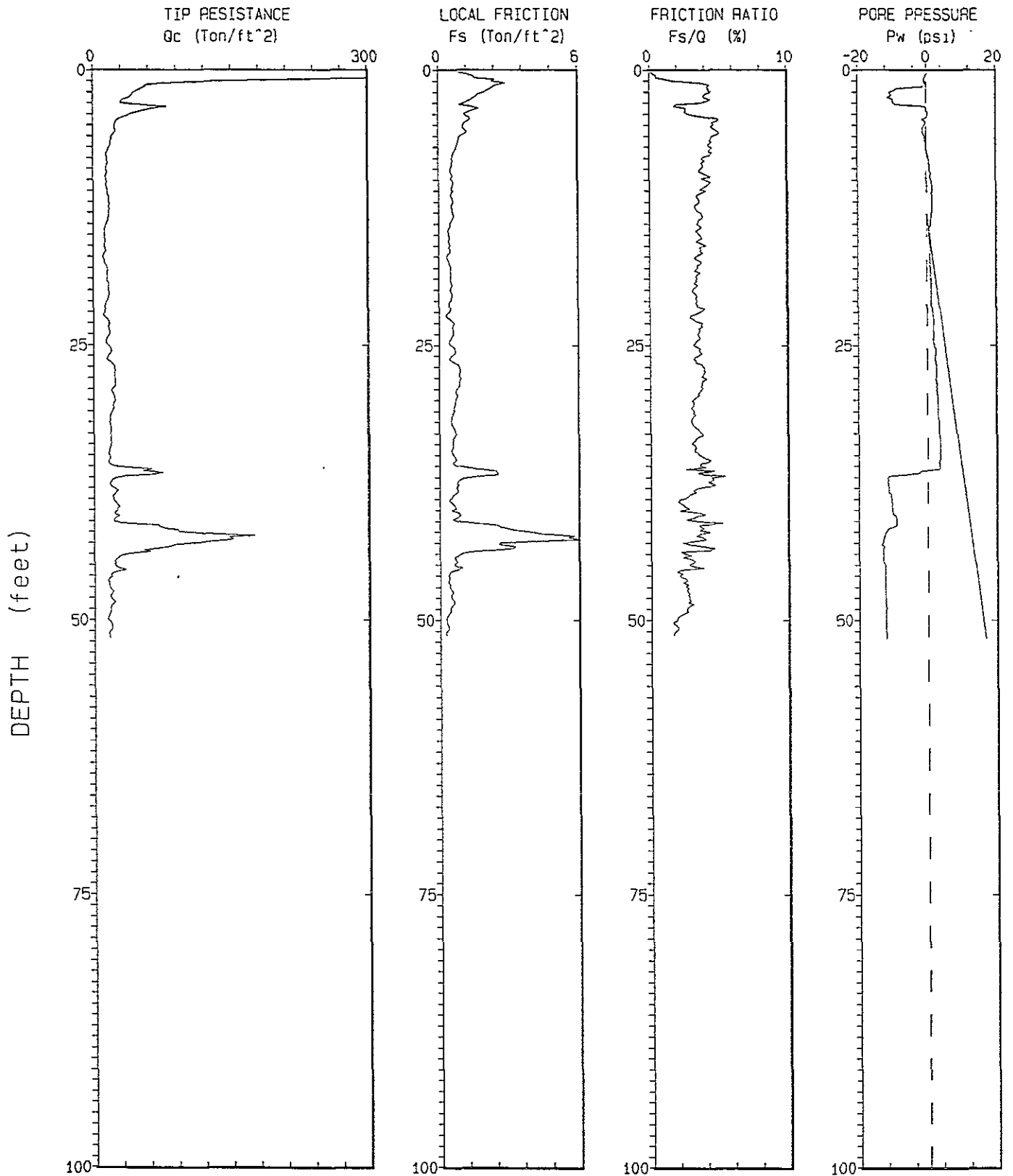
Depth Increment : .05 m

Max Depth : 41.50 ft

# H F A

Operator : JHANCOCK  
Sounding : CPT-57 Pg 1 / 1  
Cone Used : 409

CPT Date : 07-20-94 16:15  
Location : CPT-6  
Job No. : DUBLIN, AUDIT



Depth Increment : .05 m

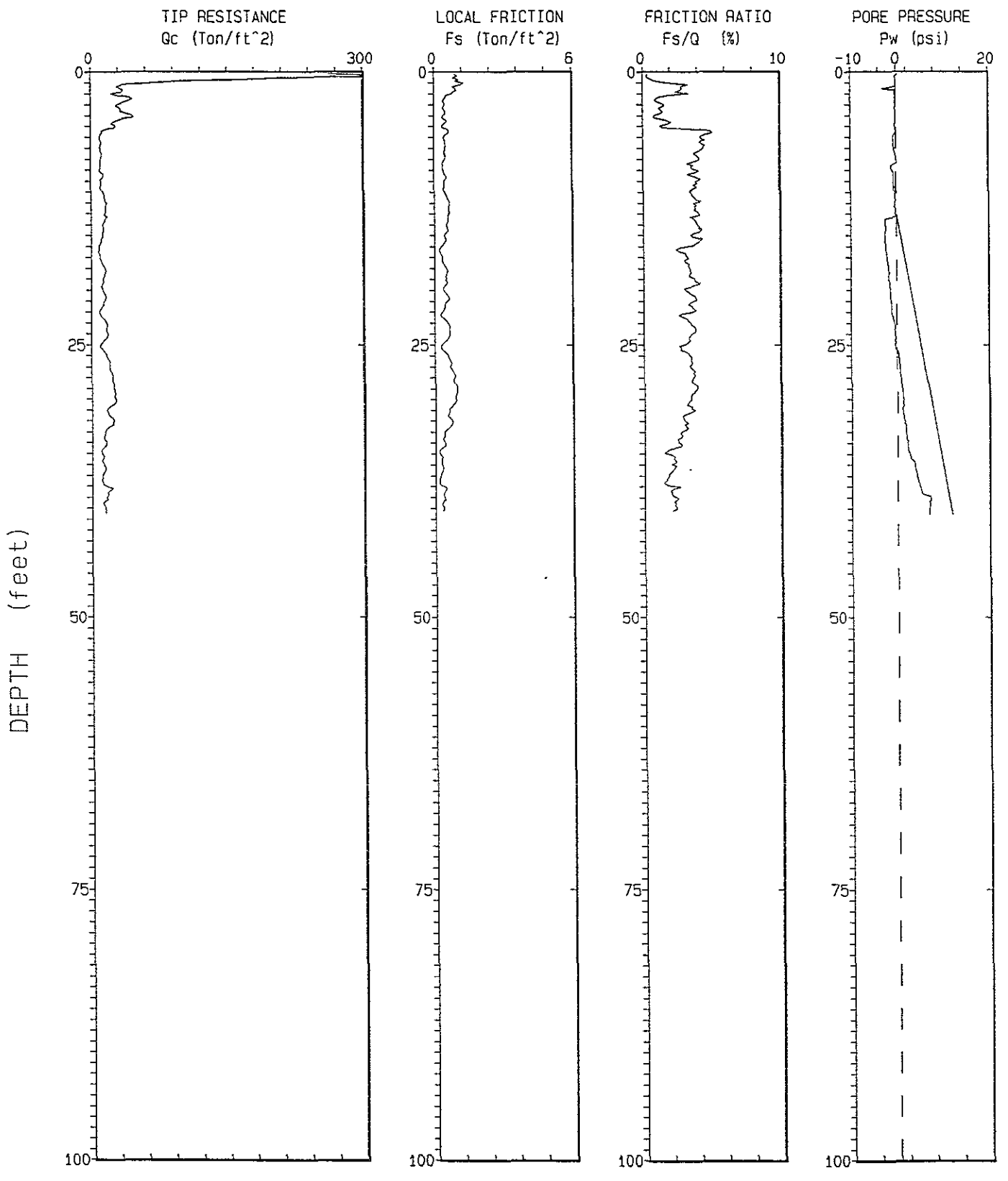
Max Depth : 51.67 ft



H F A

Operator : JHANCOCK  
Sounding : CPT-59 Pg 1 / 1  
Cone Used : 409

CPT Date : 07-20-94 18:08  
Location : CPT-7  
Job No. : DUBLIN, AUDIT



Depth Increment : .05 m

Max Depth : 40.52 ft

**APPENDIX B**  
**PPDTs Results**

SOUNDING DATA IN FILE CPT-46 07-20-94 08:21

OPERATOR : JHANCOCK

LOCATION : CPT-1

CONE ID : 409

JOB No. : DUBLIN, AUDIT

Holguin, Fahan & Associates  
143 S Figueroa St. Ventura, CA 93001

DEPTH	DEPTH	TIME	DISSIPATION OF Pw psi AT INTERVAL 5 sec											
meters	feet	sec												
5.55	18.2	0.0	1.1	1.1	1.2	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.4
		60.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5
		120.0	1.6	1.5	1.6	1.6	1.5	1.6	1.6	1.6	1.6	1.7	1.6	1.7
		180.0	1.7	1.7	1.7	1.8	1.9	1.7	1.8	1.8	1.8	1.9	1.8	1.9
		240.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.1	2.0
		300.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2
		360.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.3	2.3
		420.0	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.4	2.4	2.5
		480.0	2.4	2.4	2.5	2.4	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6
		540.0	2.6	2.6	2.7	2.6	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2.7
		600.0	2.7	2.7	2.8	2.7	2.7	2.8	2.8	2.8	2.8	2.9	2.9	2.8
		660.0	2.8	2.8	2.9	2.8	2.9	2.9	2.9	2.9	3.0	3.0	2.9	2.9
		720.0	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.1
		780.0	3.0	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.1	3.1	3.2	3.2
		840.0	3.2	3.2	3.2	3.2								
9.30	30.5	0.0	7.2	7.3	7.4	7.6	7.8	8.0	8.0	8.1	8.3	8.4	8.5	8.6
		60.0	8.7	8.8	8.8	8.9	9.0	9.1	9.3	9.3	9.4	9.4	9.6	9.5
		120.0	9.7	9.6	9.6	9.5	9.5	9.4	9.3	9.1	9.0	8.8	8.7	8.6
		180.0	8.5	8.4	8.1	7.9	7.8	7.6	7.4	7.2	7.0	6.9	6.8	

DEPTH meters	DEPTH feet	TIME sec	DISSIPATION OF Pw psi AT INTERVAL 5 sec											
11.85	28.9	0.0	6.5	6.8	7.1	7.7	8.1	8.9	9.8	10.8	11.6	12.6	13.5	14.3
		50.0	15.0	15.6	16.1	14.6	15.0	15.3	15.7	16.1	15.4	16.7	17.1	17.4
		120.0	17.8	18.0	18.3	18.5	18.8	19.0	19.1	19.3	19.5	19.8	19.9	20.0
		180.0	20.2	20.2	20.2	20.2	20.3	20.3	20.2	20.3	20.3	20.3	20.2	20.3
		240.0	20.1	20.0	20.1	19.9	19.9	19.8	19.7	19.7	19.7	19.6	19.6	19.5
		300.0	19.4	19.3	19.3	19.2	19.2	19.1	19.0	19.9	18.9	18.8	18.7	18.6
		360.0	18.6	18.5	18.4	18.3	18.3	18.2	18.1	18.0	18.0	17.9	17.8	17.8
		420.0	17.8	17.7	17.6	17.5	17.4	17.3	17.3	17.1	17.1	17.1	17.0	17.0
		480.0	15.9	15.9	16.8	16.7	16.7	16.6	16.6	16.5	16.5	16.4	16.4	16.3
		540.0	16.3	16.2	15.1	16.2	16.1	16.1	16.0	16.0	15.9	15.9	15.8	15.8
		600.0	15.8	15.7	15.7	15.6	15.6	15.6	15.5	15.5	15.5	15.4	15.4	15.4
		660.0	15.3	15.3	15.3	15.2	15.2	15.2	15.1	15.1	15.1	15.0	15.0	15.0
		720.0	14.9	14.8	14.9	14.9	14.8	14.8	14.8	14.7	14.7	14.7	14.7	14.6
		780.0	14.6	14.6	14.6	14.6	14.5	14.5	14.4	14.5	14.5	14.4	14.4	14.4
		840.0	14.4	14.4	14.4	14.3	14.3	14.3	14.3	14.3	14.2	14.2	14.2	14.2
		900.0	14.2	14.2	14.1	14.0	14.1	14.1	14.1	14.0	14.0	14.0	14.1	13.9
		960.0	14.0	14.0	13.9	14.0	14.0	13.9	13.9	13.8	13.9	13.9	13.8	13.8
		1020.0	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.7	13.7	13.7	13.7
		1080.0	13.7	13.6	13.7	13.7	13.7	13.6	13.6	13.6	13.6	13.5	13.6	13.6
		1140.0	13.6	13.5	13.6	13.5	13.6	13.6	13.5	13.5	13.5	13.5	13.5	13.4
		1200.0	13.5	13.5	13.4	13.4	13.5	13.4	13.4	13.4	13.4	13.4	13.4	13.4
		1260.0	13.3	13.4	13.4	13.4	13.4	13.3	13.3	13.3				

SOUNDING DATA IN FILE CPT-48 07-20-94 11:35

OPERATOR : JHANCOCK

LOCATION : CPT-2

CONE ID : 409

JOB No. : DUBLIN, AUDIT

Holguin, Fahan & Associates  
143 S Figueroa St. Ventura, CA 93001

DEPTH		TIME	DISSIPATION OF Pw psi AT INTERVAL 5 sec												
meters	feet	sec													
3.10	26.6	0.0	2.7	2.8	3.0	3.0	3.1	3.2	3.3	3.3	3.4	3.5	3.5	3.6	
		60.0	3.7	3.8	3.8	3.9	4.0	4.0	4.1	4.2	4.3	4.3	4.3	4.4	
		120.0	4.4	4.4	4.5	4.6	4.6	4.6	4.6	4.7	4.8	4.8	4.8	4.8	
		180.0	4.9	4.9	4.9	5.0	4.9	5.0	5.0	5.1	5.0	5.1	5.0	5.0	
		240.0	5.1	5.0	5.1	5.1	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.0	
		300.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
		360.0	5.1	5.0	5.1	5.1	5.1	5.0	5.0	5.0	5.1	5.0	5.1	5.0	
		420.0	5.1	5.0	5.1	5.0	5.0	5.1	5.1	5.1	5.1	5.2	5.2	5.2	
		480.0	5.3	4.8											
		11.20	36.7	0.0	-4.0	-3.3	-2.5	-2.0	-1.4	-0.8	-0.1	0.4	1.0	1.5	2.0
60.0	3.1			3.6	4.2	4.7	5.1	5.5	6.1	6.6	7.2	7.7	8.1	8.4	
120.0	8.5			8.1	7.3	6.7	6.1	5.6	5.4	5.2	5.1	5.0	4.8	4.7	
180.0	4.8			4.7	4.7	4.8	4.9	4.9	5.0	5.1	5.2	5.3	5.4	5.5	
240.0	5.7			5.5	5.5	5.5	5.6	5.6	5.7	5.8	6.0	5.9	5.8	5.8	
300.0	5.9			6.0	6.0	6.1	6.0	6.0	6.1	6.1	6.1	6.1	6.2	6.2	
360.0	6.2			6.2	6.2	6.3	6.3	6.2	6.2	6.3	6.3	6.4	6.3	6.4	
420.0	6.4			6.5	6.6	6.6	6.7	6.8	6.9	7.0	6.9	6.9	6.8	6.9	
480.0	6.9			7.2	7.2	7.4	7.4	7.5	7.7	7.8	7.9	7.9	8.0	8.2	
540.0	8.2			8.3	8.3	8.4	8.5	8.6	8.8	8.8	8.9	9.0	9.1	9.2	
600.0	9.3			9.4	9.5	9.6	9.7	9.7	9.8	9.9	10.0	10.1	10.2	10.2	
660.0	10.3			10.3	10.5	10.5	10.5	10.6	10.7	10.8	10.8	10.8	10.9	10.9	
720.0	11.0			11.1	11.2	11.3	11.3	11.3	11.3	11.4	11.5	11.5	11.5	11.6	
780.0	11.6			11.7	11.7	11.7	11.8	11.8	11.9	11.9	11.9	12.0	12.0	12.0	
840.0	12.0			12.1	12.1	12.1	12.2	12.2	12.2	12.2	12.2	12.3	12.3	12.3	
900.0	12.3			12.3	12.4	12.4	12.5	12.5	12.5	12.6	12.5	12.5	12.6	12.6	
960.0	12.6			12.7	12.6	12.6	12.7	12.7	12.8	12.7	12.7	12.7	12.7	12.7	
1020.0	12.8			12.7	12.8	12.8	12.9	12.8	12.8	12.8	12.8	12.9	12.9	12.9	
1080.0	12.9			12.9	12.9	13.0	13.1								

SOUNDING DATA IN FILE CPT-54 07-20-94 14:48

OPERATOR : JHANCOCK

LOCATION : CPT-5

CONE ID : 409

JOB No. : DUBLIN, AUDIT

Holguin, Fahan & Associates  
143 S Figueroa St. Ventura, CA 93001

DEPTH	DEPTH	TIME	DISSIPATION OF Pw psi AT INTERVAL 5 sec											
meters	feet	sec												
12.10	39.7	0.0	6.4	6.5	6.5	6.4	6.3	6.2	6.1	6.1	5.9	5.9	5.8	5.7
		60.0	5.7	5.7	5.6	5.5	5.5	5.5	5.5	5.6	5.5	5.5	5.5	5.5
		120.0	5.5	5.5	5.5	5.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
		180.0	5.4	5.4	5.4	5.3	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
		240.0	5.4	5.5	5.5	5.5	5.5	5.4	5.5	5.5	5.5	5.5	5.5	5.5
		300.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.6	5.5	5.5	5.5
		360.0	5.5	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.5
		420.0	5.5	5.6	5.6	5.5	5.6	5.7	5.6	5.6	5.6	5.6	5.6	5.6
		480.0	5.6	5.6	5.6	5.7	5.6	5.6	5.6	5.7	5.6	5.3		



**APPENDIX C**  
**Soil Vapor Results**





**APPENDIX D**

**Chain of Custody Record Forms**



# Environmental Audit, Inc.®

Planning, Environmental Analyses and Hazardous Substances Management and Remediation

1000 ORTEGA WAY, SUITE A (714) 632 - 8521  
 PLACENTIA, CA 92670-7125 FAX (714) 632 - 6754

## Chain of Custody Record

SAMPLING REQUIREMENTS: RCRA  NPDES  SDWA  \_\_\_\_\_

WRITTEN QC REPORT: ROUTINE QC  RWQCB QC  TURNAROUND TIME: SAME DAY  24hr  48hr  NORMAL

PROJECT NO. 1233		PROJECT NAME Montgomery Ward, Dublin			CONTR TYPE	ANALYSES REQUESTED												REMARKS		
SAMPLER: (Signature) <i>[Signature]</i>		PROJECT MANAGER: Frank Muramoto				GLASS	PLASTIC	BRASSY CS TUBE	TPH-D 8015M	TPH-G 8015M	TRPH 418.1	BTEX (802) (802)	VOC 624 8240	EOC 625 8270	OIL & GREASE	CAM METALS TOT WET	LEAD		HVOC 601 8010	NUMBER OF CONTAINERS
SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION															
SBCP-1 @ 9-9.5'	7/21/94	1120			<del>Water</del> SOIL 4071022														1	
SBCP-1 @ 13-13.5'	"	1135			↓ 4071023														1	
SBCP-2 @ 13-13.5'	"	11:58 hrs			↓ 4071024														1	Dark grey green clay. Plastic
SBCP-2 @ 15-15.5'	"	1215 hrs			SOIL 4071025														1	"
SBCP-3 @ 13-13.5'	"	1242 hrs			↓ 4071026														1	
SBCP-3 @ 15-15.5'	"	1251 hrs			↓ 4071027														1	
SBCP-4 @ 12'	"	1340			↓ 4071028														1	Sampler Refusal
TOTAL NUMBER OF CONTAINERS																			7	
RELINQUISHED BY: (Signature) <i>[Signature]</i>		DATE/TIME 7/21/94 1810		RECEIVED BY: (Signature) <i>[Signature]</i> 932			RELINQUISHED BY: (Signature)			DATE/TIME			RECEIVED BY: (Signature)							
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)			RELINQUISHED BY: (Signature) <i>[Signature]</i>			DATE/TIME 7/21/94			RECEIVED BY: (Signature)							
SAMPLES SHIPPED VIA: FEDEX <input type="checkbox"/> UPS <input type="checkbox"/> AIRBORNE <input type="checkbox"/> BUS <input type="checkbox"/> HAND <input checked="" type="checkbox"/>				SHIPPED BY: (Signature)			COURIER: (Signature) <i>[Signature]</i> 932			RECEIVED FOR BY: (Signature) <i>[Signature]</i>			DATE/TIME 7/31/94 7:00pm							
										LAB: Sequoia Analytical										







# SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520  
(510) 686-9600 • FAX (510) 686-9689

## REQUEST TO RELOG SAMPLES

(Please submit to sample control with a copy of the COC)

CLIENT: Environmental Audit

MATRIX: Soil

PREVIOUSLY LOGGED SAMPLES

TAT Change status to: 10 days  
Change status as of Day: 7/29/94 Time: 1500

CHANGE ANALYSES

Add Analyses



Cancel Analyses



Sample Number

Analyses

Sample Number

Analyses

4071023

\* TCLP BTEX; TOC

4071024

\* TCLP BTEX

SAMPLES ON HOLD

\* TCLP BTEX USING D.I. WATER  
only

Sample Description

Analyses

TOC Subbed to North Creek

Client Authorization (Person/Date/Time): Frank Muramoto 7/29/94 1500

Project Manager:

[Signature]



# Environmental Audit, Inc.®

Planning, Environmental Analyses and Hazardous Substances Management and Remediation

1000 ORTEGA WAY, SUITE A PLACENTIA, CA 92670-7125  
 (714) 632-8521  
 FAX (714) 632-6754

# Chain of Custody Record

SAMPLING REQUIREMENTS: RCRA  NPDES  SDWA

WRITTEN OC REPORT ROUTINE OC  RWQCB OC  TURNAROUND TIME: SAME DAY  24hr  48hr  NORMAL

PROJECT NO. 1233		PROJECT NAME Montgomery Ward, Dublin		CONTR TYPE		ANALYSES REQUESTED										NUMBER OF CONTAINERS	REMARKS		
SAMPLER: (Signature) 				PROJECT MANAGER: Frank Muramoto		GLASS	PLASTIC	BRASS TUBE	TPH-D 8015M	TPH-G 8015M	TPH 418.1	BTEX 802 (8020)	VOC 624 8240	EOC 625 8270	OIL & GREASE			CAM METALS TOT WET	LEAD
SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION														
SBCP-1 @ 9-9.5'	7/21/94	11:20			Water SOIL 4071022	/	/	/	/	/	/	/	/	/	/	/	/	1	
SBCP-1 @ 13-13.5'	"	11:35			4071023	/	/	/	/	/	/	/	/	/	/	/	/	1	
SBCP-2 @ 13-13.5'	"	11:58 hr			4071024	/	/	/	/	/	/	/	/	/	/	/	/	1	Dark gray green clay. Plastic
SBCP-2 @ 15-15.5'	"	12:15 hr			Soil 4071025	/	/	/	/	/	/	/	/	/	/	/	/	1	"
SBCP-3 @ 13-13.5'	"	12:42 hr			4071026	/	/	/	/	/	/	/	/	/	/	/	/	1	
SBCP-3 @ 15-15.5'	"	12:51 hr			4071027	/	/	/	/	/	/	/	/	/	/	/	/	1	
SBCP-4 @ 12'	"	13:40			4071028	/	/	/	/	/	/	/	/	/	/	/	/	1	Sampler Refusal
																	TOTAL NUMBER OF CONTAINERS	7	

RELINQUISHED BY: (Signature) 	DATE/TIME 7/21/94 18:10	RECEIVED BY: (Signature) James Farmer 932	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature) James Farmer	DATE/TIME 7/21/94	RECEIVED BY: (Signature)	
SAMPLES SHIPPED VIA: FEDEX <input type="checkbox"/> UPS <input type="checkbox"/> AIRBORNE <input type="checkbox"/> BUS <input type="checkbox"/> HAND <input checked="" type="checkbox"/>		SHIPPED BY: (Signature)	COURIER: (Signature) James Farmer 932	RECEIVED FOR BY: (Signature) RH Kelley	DATE/TIME 7/21/94 7:00pm	LAB: Sequoia Analytical

**APPENDIX E**  
**Laboratory Reports**





**Sequoia  
Analytical**

680 Chesapeake Drive Redwood City, CA 94063 (415) 364-9600  
 1900 Bates Avenue, Suite L Concord, CA 94520 (510) 686-9600  
 819 Striker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600

FAX (415) 364-9233  
 FAX (510) 686-9689  
 FAX (916) 921-0100

**RECEIVED**  
 AUG - 5 1994  
 ENVIRONMENTAL  
 Sampled: Jul 23, 1994  
 Received: Jul 22, 1994  
 Reported: Jul 28, 1994

Environmental Audit Client Project ID: 1233, Montgomery Ward  
 000-A Ortega Way Sample Matrix: Soil  
 Placentia, CA 92670 Analysis Method: EPA 5030/8015/8020  
 Attention: Frank Muramoto First Sample #: 407-1022

**TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION**

Analyte	Reporting Limit mg/kg	Sample I.D. 407-1022 SBCP-1 @ 9-9.5'	Sample I.D. 407-1023 SBCP-1@ 13-13.5'	Sample I.D. 407-1024 SBCP-2@ 13-13.5'	Sample I.D. 407-1025 SBCP-2@ 15-15.5'	Sample I.D. 407-1026 SBCP-3@ 13-13.5'	Sample I.D. 407-1027 SBCP-3@ 15-15.5'
Purgeable Hydrocarbons	1.0	N.D.	290	230	5.3	71	1.9
Benzene	0.005	N.D.	2.0	1.7	0.065	0.68	0.012
Toluene	0.005	N.D.	6.2	1.1	0.030	4.8	0.037
Ethyl Benzene	0.005	N.D.	7.0	4.4	0.19	1.7	0.027
Total Xylenes	0.005	N.D.	37	23	0.41	8.9	0.11
Chromatogram Pattern:		--	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline

**Quality Control Data**

Report Limit Multiplication Factor:	1.0	50	50	2.5	50	1.0
Date Analyzed:	7/26/94	7/26/94	7/26/94	7/27/94	7/26/94	7/27/94
Instrument Identification:	HP-2	HP-2	HP-2	HP-4	HP-2	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	102	111	110	92	101	94

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
 Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

*Karen L. Enstrom*  
 Karen L. Enstrom  
 Project Manager



# Sequoia Analytical

680 Chesapeake Drive  
1900 Bates Avenue, Suite L  
819 Striker Avenue, Suite 8

Redwood City, CA 94063  
Concord, CA 94520  
Sacramento, CA 95834

(415) 364-9600  
(510) 686-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 686-9689  
FAX (916) 921-0100

Environmental Audit  
1000-A Ortega Way  
Placentia, CA 92670  
Attention: Frank Muramoto

Client Project ID: 1233, Montgomery Ward  
Sample Matrix: Soil  
Analysis Method: EPA 5030/8015/8020  
First Sample #: 407-1028

Sampled: Jul 21, 1994  
Received: Jul 22, 1994  
Reported: Jul 28, 1994

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 407-1028 SBCP-4 @12
Purgeable Hydrocarbons	1.0	81
Benzene	0.005	0.29
Toluene	0.005	0.20
Ethyl Benzene	0.005	0.91
Total Xylenes	0.005	4.3
Chromatogram Pattern:		Gasoline

### Quality Control Data

Report Limit Multiplication Factor:	20
Date Analyzed:	7/26/94
Instrument Identification:	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	103

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Karen L. Enstrom  
Project Manager



Environmental Audit  
1000-A Ortega Way  
Placentia, CA 92670

Client Project ID: 1233, Montgomery Ward  
Matrix: Solid

Attention: Frank Muramoto

QC Sample Group: 4071022-28

Reported: Jul 28, 1994

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analytst:	J. Fontecha	J. Fontecha	J. Fontecha	J. Fontecha

**MS/MSD**

Batch#:	4071022	4071022	4071022	4071022
Date Prepared:	7/26/94	7/26/94	7/26/94	7/26/94
Date Analyzed:	7/26/94	7/26/94	7/26/94	7/26/94
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	0.40 mg/kg	0.40 mg/kg	0.40 mg/kg	1.2 mg/kg
Matrix Spike % Recovery:	90	93	95	95
Matrix Spike Duplicate % Recovery:	95	98	98	100
Relative % Difference:	5.4	5.2	3.1	5.1

LCS Batch#:	1LCS072694	1LCS072694	1LCS072694	1LCS072694
Date Prepared:	7/26/94	7/26/94	7/26/94	7/26/94
Date Analyzed:	7/26/94	7/26/94	7/26/94	7/26/94
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	100	100	100	103

% Recovery Control Limits:	55-145	47-149	47-155	56-140
-------------------------------	--------	--------	--------	--------

**Please Note:**

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL, #1271

  
Karen L. Enstrom  
Project Manager



# Sequoia Analytical

680 Chesapeake Drive  
1900 Bates Avenue, Suite L  
819 Striker Avenue, Suite 8

Redwood City, CA 94063  
Concord, CA 94520  
Sacramento, CA 95834

(415) 364-9600  
(510) 686-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 686-9689  
FAX (916) 921-0100

Environmental Audit	Client Project ID: 1233, Montgomery Ward	Sampled: Jul 21, 1994
1000-A Ortega Way	Sample Matrix: TCLP DI Extract of Soil	Relogged: Jul 29, 1994
Placentia, CA 92670	Analysis Method: EPA 5030/8020	Reported: Aug 12, 1994
Attention: Frank Muramoto	First Sample #: 407-1023	

## TCLP BTEX (DI EXTRACTION)

Analyte	Reporting Limit µg/L	Sample I.D. 407-1023 SBCP-1 @13-13.5	Sample I.D. 407-1024 2 @13-13.5
---------	-------------------------	--	---------------------------------------

Benzene	0.010	N.D.	N.D.
Toluene	0.010	0.062	0.016
Ethyl Benzene	0.010	0.096	0.061
Total Xylenes	0.010	0.56	0.34

**RECEIVED**

AUG 24 1994

ENVIRONMENTAL AUDIT

### Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	8/5/94	8/5/94
Instrument Identification:	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	107	104

Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

  
Karen L. Enstrom  
Project Manager



Environmental Audit  
1000-A Ortega Way  
Placentia, CA 92670

Client Project ID: 1233, Montgomery Ward  
Matrix: Liquid

Attention: Frank Muramoto

QC Sample Group: 4071023-24

Reported: Aug 12, 1994

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J. Fontecha	J. Fontecha	J. Fontecha	J. Fontecha

MS/MSD Batch#:	4071375	4071375	4071375	4071375
Date Prepared:	8/4/94	8/4/94	8/4/94	8/4/94
Date Analyzed:	8/4/94	8/4/94	8/4/94	8/4/94
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	95	100	105	105
Matrix Spike Duplicate % Recovery:	90	100	100	100
Relative % Difference:	5.4	0.0	4.9	4.9

LCS Batch#:	1LCS080594	1LCS080594	1LCS080594	1LCS080594
Date Prepared:	8/5/94	8/5/94	8/5/94	8/5/94
Date Analyzed:	8/5/94	8/5/94	8/5/94	8/5/94
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	95	105	105	108

% Recovery Control Limits:	71-133	72-128	72-130	71-120
----------------------------	--------	--------	--------	--------

**Please Note:**  
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL, #1271

*Karen L. Enstrom*  
Karen L. Enstrom  
Project Manager





Sequoia  
Analytical

680 Chesapeake Drive  
1900 Bates Avenue, Suite L  
819 Striker Avenue, Suite 8

Redwood City, CA 94063  
Concord, CA 94520  
Sacramento, CA 95834

(415) 364-9600  
(510) 686-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 686-9689  
FAX (916) 921-0100

Environmental Audit  
1000-A Ortega Way  
Placentia, CA 92670

Attention: Frank Muramoto

Client Project ID: 1233, Montgomery Ward

Sample Descript: Soil  
Analysis for: TOC

First Sample #: 407-1023

Sampled: Jul 21, 1994

Relogged: Jul 29, 1994

Analyzed: Aug 9, 1994

Reported: Aug 12, 1994

### TOTAL ORGANIC CARBON

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
407-1023	SBCP-1 @13-13.5	50	2,200

SEQUOIA ANALYTICAL, #1267

  
Karen L. Enstrom  
Project Manager

4071023.ENI <2>



# Sequoia Analytical

680 Chesapeake Drive  
1900 Bates Avenue, Suite L  
819 Striker Avenue, Suite 8

Redwood City, CA 94063  
Concord, CA 94520  
Sacramento, CA 95834

(415) 364-9600  
(510) 686-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 686-9689  
FAX (916) 921-0100

Environmental Audit  
1000-A Ortega Way  
Placentia, CA 92670  
Attention: Frank Muramoto

Client Project ID: 1233, Montgomery Ward  
Sample Matrix: Soil  
Units: mg/kg (ppm)  
QC Sample Group: 407-1023

Analyst: R. Davies  
J. Wright  
Reported: Aug 12, 1994

## QUALITY CONTROL DATA REPORT

**ANALYTE** Total Organic Carbon

Method: EPA 9060 Modified  
Date Analyzed: 8/9/94

### ACCURACY ASSESSMENT

LCS Spike  
Conc. Added: 2,500

LCS Spike  
Result: 2,500

LCS Spike  
% Recovery: 100

Upper Control  
Limit: 111

Lower Control  
Limit: 88

### PRECISION ASSESSMENT

Sample #: 408-0108

Original: 2,200

Duplicate: 2,300

Relative %  
Difference: 4.4

Maximum  
RPD: 14

SEQUOIA ANALYTICAL, #1267

  
Karen L. Enstrom  
Project Manager



# Sequoia Analytical

680 Chesapeake Drive  
1900 Bates Avenue, Suite L  
819 Striker Avenue, Suite 8

Redwood City, CA 94063  
Concord, CA 94520  
Sacramento, CA 95834

(415) 364-9600  
(510) 686-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 686-9689  
FAX (916) 921-0100

Environmental Audit  
1000-A Ortega Way  
Placentia, CA 92670  
Attention: Frank Muramoto

Client Project ID: #1233/Montgomery Ward, Dublin  
Sample Matrix: Water  
Analysis Method: EPA 5030/8015/8020  
First Sample #: 407-1088

Sampled: Jul 21, 1994  
Received: Jul 21, 1994  
Reported: Aug 5, 1994

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 407-1088 HPCP-1
Purgeable Hydrocarbons	50	N.D.
Benzene	0.5	N.D.
Toluene	0.5	N.D.
Ethyl Benzene	0.5	N.D.
Total Xylenes	0.5	N.D.

**RECEIVED**  
AUG 10 1994  
ENVIRONMENTAL AUDIT

Chromatogram Pattern: --

### Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Analyzed:	8/2/94
Instrument Identification:	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	93

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

  
Karen L. Enstrom  
Project Manager





Environmental Audit  
 1000-A Ortega Way  
 Placentia, CA 92670  
 Attention: Frank Muramoto

Client Project ID: #1233/Montgomery Ward, Dublin  
 Matrix: Liquid

QC Sample Group: 407-1088

Reported: Aug 5, 1994

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J. Fontecha	J. Fontecha	J. Fontecha	J. Fontecha

MS/MSD Batch#:	4080033	4080033	4080033	4080033
Date Prepared:	8/2/94	8/2/94	8/2/94	8/2/94
Date Analyzed:	8/2/94	8/2/94	8/2/94	8/2/94
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	90	100	100	100
Matrix Spike Duplicate % Recovery:	90	100	100	103
Relative % Difference:	0.0	0.0	0.0	2.9

LCS Batch#:	1LCS080294	1LCS080294	1LCS080294	1LCS080294
Date Prepared:	8/2/94	8/2/94	8/2/94	8/2/94
Date Analyzed:	8/2/94	8/2/94	8/2/94	8/2/94
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	99	108	109	112

% Recovery Control Limits:	71-133	72-128	72-130	71-120
----------------------------	--------	--------	--------	--------

**Please Note:**  
 The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL, #1271

Karen L. Enstrom  
 Project Manager



Environmental Audit, Inc.  
1000-A Ortega Way  
Placentia, CA 92670-7125

Date Sampled: 07/22/94  
Date Received: 07/23/94  
Date Extracted: P/T  
Date Analyzed: 07/25/94  
Work Order No.: 94-07-337  
Method: EPA 8015M  
Page 1 of 1

Attn: Frank Muramoto  
RE: 1233/Montgomery Ward, Dublin

All total petroleum hydrocarbon concentrations are reported in mg/L (ppm) using gasoline as a standard.

<u>Sample Number</u>	<u>Concentration</u>	<u>Reportable Limit</u>
HPCP-1	ND	0.2
Method Blank	ND	0.2

Reviewed and Approved

  
William H. Christensen  
Deliverables Manager

on 07/29/1994

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

**ANALYTICAL REPORT**

Environmental Audit, Inc.  
 1000-A Ortega Way  
 Placentia, CA 92670-7125

Date Sampled: 07/22/94  
 Date Received: 07/23/94  
 Date Extracted: P/T  
 Date Analyzed: 07/25/94  
 Work Order No.: 94-07-337  
 Method: EPA 602  
 Page 1 of 1

Attn: Frank Muramoto  
 RE: 1233/Montgomery Ward, Dublin

All concentrations are reported in µg/L (ppb).

<u>Analyte</u>	<u>Concentration</u>	<u>Reportable Limit</u>
<b>Sample Number: HPCP-1</b>		
Benzene	ND	0.3
Toluene	ND	0.3
Ethylbenzene	ND	0.3
Total Xylenes	ND	0.6
<b>Sample Number: Method Blank</b>		
Benzene	ND	0.3
Toluene	ND	0.3
Ethylbenzene	ND	0.3
Total Xylenes	ND	0.6

Reviewed and Approved William H. Christensen on 07/29/1994  
 William H. Christensen  
 Deliverables Manager

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

**QUALITY ASSURANCE SUMMARY**  
Method EPA 8015M-G

Environmental Audit, Inc.  
Page 1 of 1

Work Order No.: 94-07-337  
Date Analyzed: 07/25/94

**Blank Spike/Blank Spike Duplicate**

Sample Spiked: Method Blank

<u>Analyte</u>	<u>BS%REC</u>	<u>BSD%REC</u>	<u>Control Limits</u>	<u>%RPD</u>	<u>Control Limits</u>
Total Petroleum Hydrocarbons	110	105	65 - 130	5	0 - 20

Reviewed and approved: William H. Christensen on 07/29/1994.  
William H. Christensen  
Deliverables Manager

**QUALITY ASSURANCE SUMMARY**  
 Method EPA 602

Environmental Audit, Inc.  
 Page 1 of 1

Work Order No.: 94-07-337  
 Date Analyzed: 07/25/94

**Blank Spike/Blank Spike Duplicate**

Sample Spiked: Method Blank

Analyte	BS%REC	BSD%REC	Control Limits	%RPD	Control Limits
Benzene	100	105	65 - 120	5	0 - 20
Chlorobenzene	100	105	65 - 120	5	0 - 20
Ethylbenzene	100	105	65 - 120	5	0 - 20

**Surrogate Recoveries (in %)**

	S1
94-07-337-1	91

S1 > 1,4-Bromofluorobenzene

Acceptable Limits  
 65 - 135

Reviewed and approved:  on 07/29/1994.  
 William H. Christensen  
 Deliverables Manager