Appendix A - Current Customer Rates 2017

MONTHLY WATER RATES & CHARGES Effective March 31, 2017

WATER RATES PER UNIT *(1 unit = 748 gallons)*

The rates include costs from San Diego County Water Authority (SDCWA) from which OMWD must purchase 100% of its potable water supply.

CUSTOMER TYPE	NON-SHORTAGE (BASE) RATES	WE ARE HERE ↓ WATER SUPPLY SHORTAGE *For updates, please visit www.olivenhain.com.* WATCH/LEVEL 1 Voluntary	ALERT/LEVEL 2 Mandatory	CRITICAL/LEVEL 3 Mandatory	EMERGENCY/LEVEL 4 Mandatory
Domestic					
0 - 6 Units	$2.53	$2.53	$2.66	$2.79	$3.04
7 - 25 Units	$4.21	$4.43	$4.63	$5.27	$6.11
26 - 80 Units	$4.77	$5.23	$5.96	$7.15	$8.34
Over 80 Units	$5.33	$6.13	$6.66	$8.00	$10.67
Agricultural	$4.21	$4.43	$4.53	$5.05	$5.91
Combined Agricultural / Domestic	First 26 Units per month: Follow Domestic rate structure. Over 26 Units per month: Follow Agricultural rate structure.				
Commercial	$3.61	$3.79	$3.87	$4.33	$5.04
Irrigation					
Tier 1	$3.86	$4.05	$4.24	$4.83	$5.60
Tier 2	$4.78	$5.50	$5.97	$7.17	$9.56
Construction	$6.45	$7.42	$8.06	$9.68	$12.90
Recycled	$3.59	SHORTAGE RATES NOT APPLICABLE			

Irrigation Unit Allotments

Tier 1 Allotment

Based upon water use by meter size.

Meter Size	Winter (Dec-May)	Summer (Jun-Nov)
5/8"	10	15
3/4"	20	30
1"	35	50
1 1/2"	50	110
2"	100	200
3"	200	500
4"	600	3,500
6"	3,100	11,800
8"	5,600	21,300

OMWD System Access Charge

The monthly system access charge is designed to recover a portion of the fixed costs of OMWD's operation. These costs include maintenance of meters, debt service, depreciation, and customer service costs for meter reading and billing.

Meter Size		Meter Size	
5/8"	$27.21	2 1/2"	$281.82
3/4"	$36.08	3"	$308.46
1"	$62.73	4"	$512.75
1 1/2"	$98.26	6"	$1,072.30
2"	$154.52	8"	$1,930.87

SDCWA Infrastructure Access Charge

SDCWA infrastructure access charge is a monthly charge assessed by SDCWA on all water meters except construction, fire, and recycled water meters. *The purpose of the charge is to cover a portion of the debt service costs associated with the construction of county-wide water infrastructure projects, and it is estimated to cost the typical customer $2.87 per month. For more information, call SDCWA at 858-522-6600.*

Meter Size		Meter Size	
5/8"	$2.87	2 1/2"	$26.62
3/4"	$2.87	3"	$29.27
1"	$5.45	4"	$49.08
1 1/2"	$8.90	6"	$103.32
2"	$14.35	8"	$186.55

Fire Meter Charges

Meters installed for automatic fire sprinkler services will be billed monthly according to the table below.

Meter Size	5/8"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"
	$3.64	$3.64	$4.29	$5.17	$6.55	$9.67	$10.33	$15.34	$29.05	$50.11

The Olivenhain Municipal Water District office is located at the intersection of Rancho Santa Fe Road/ Camino Alvaro and Olivenhain Road.

OLIVENHAIN
Municipal Water District
A Public Agency

1966 Olivenhain Road • Encinitas, CA 92024
760-753-6466

OlivenhainWater @omwd

YouTube

Olivenhain Municipal Water District is a public agency providing water, wastewater services, recycled water, hydroelectricity, and operation of Elfin Forest Recreational Reserve. Organized in 1959, OMWD currently serves approximately 84,000 customers over 48 square miles in northern San Diego County. For more information about OMWD, visit www.olivenhain.com.

OLIVENHAIN
Municipal Water District
A Public Agency

Rates and Rules

March 2017

Our Mission
Procedures for New Service
Shut-Off Valve
Payment of Water Bills
Delinquency Charge and Notice
48-Hour Shut-Off Notice and Fee
Monthly Water Rates and Charges

Our Mission

Olivenhain Municipal Water District is committed to serving present and future customers with a safe, high-quality water supply which meets or exceeds all regulatory requirements in a cost-effective and environmentally responsive manner.

Procedures for New Service

1. Effective July 1, 2010, all new water service accounts shall be established and held in the legal (record) owner's name as shown on the San Diego County Assessor's Tax Roll.

   WARNING: Some areas of OMWD have water pressures higher than desirable for domestic use (e.g., appliances and sprinkler systems); applicants are advised to check with OMWD to see if such a condition exists in their area. OMWD assumes neither liability nor responsibility for excess pressure. San Diego County Building Code requires homeowners to install a pressure regulator when pressures exceed 80 psi.

2. At the time application for water service is requested and submitted to OMWD, and at OMWD's discretion, the applicant shall provide all of the following:
   a) Proof of ownership of the parcel to be served;
   b) Assessor's plat map of parcel to be served (including meter location if there is one), or a Plot Plan, or set a stake showing the desired location of the meter (if there is none, the final location of the meter will be determined by the General Manager or his/her representative);
   c) A completed and signed application for water service by the owner of the property;
   d) Total payment of all costs for and related to meter service connection;
   e) If the applicant's property does not adjoin OMWD's right-of-way, proof of easement that may be utilized by the applicant to bring his/her water line to OMWD's right-of-way;
   f) If a meter is being purchased on behalf of the legal owner by another individual, written authorization to do so shall be provided.

3. Each applicant may be required to pay a separate "Reimbursement Fee" if service is to be connected to a line financed by a private proponent under the guidelines of Ordinance No. 6, as amended.

4. Application for service will be accepted only where adequate distribution systems have been installed. Cost of service assembly footage in excess of 55 feet from the center of the public roadway must be paid for by the customer.

5. When property upon which service is requested is located in an area where pipelines have not been installed, a meter shall be set at the nearest water main. If the distance from the meter to the service area is in excess of 500 feet, owner/applicant may be required to extend the pipeline or enter into a separate agreement for participation in a pipeline extension at a later date, at the sole discretion of OMWD.

6. Service to any property will be granted only when all connection fees, meter charges, water bills, and any other applicable charges due are paid by applicant.

7. All properties served by a single meter must be under one ownership.

8. OMWD makes no guarantee as to the amount of time that may elapse between the customer's application for service and the actual installation of the service, except that installation will be placed into OMWD's work schedule at the earliest practical time.

9. The Board of Directors may regulate the time of use of water in a manner that ensures an equitable supply for all customers.

10. OMWD retains ownership of meters and connecting service pipe assemblies.

11. A customer may have service temporarily discontinued and meter locked off by notifying OMWD. During the period of temporary discontinuance, customer will not be charged a monthly service access charge. In the event that a customer should wish to have water service restored, customer shall pay OMWD's standard fee or cost of restoration, whichever is greater.

12. The following fees shall be charged each time service has to be re-established:

During normal work hours:	$75.00
Outside normal work hours:	$120.00
Sunday or holiday:	$150.00

    These fees are required to be paid at the time the water service is re-established. If water service has been disconnected due to non-payment and service is not re-established prior to closure of the account, a $75.00 fee will be assessed on the final bill.

13. A transfer fee of $20.00 shall be charged and collected from each new customer at the time a new meter account is established and/or when an existing meter account is transferred into new ownership.

14. Backflow prevention devices are required on potable service connections when danger of contamination of OMWD's water supply exists. Installation shall be at the expense of the customer. As such, each commercial, industrial, and agricultural applicant shall sign a "Cross-Connection Control Questionnaire" before the application is processed. Backflow preventers shall be in compliance with California Administrative Code, Department of Public Health, and OMWD requirements. Customers must have an annual test by a certified tester of their backflow prevention devices to determine their effectiveness. OMWD will notify customers when tests are due. OMWD will charge an administrative fee of $4.50 per month per device, to cover monitoring of such devices as determined to be necessary by OMWD. Water service may be terminated when required backflow prevention devices have not been installed, have been removed, are inoperative, or have not been tested.

15. OMWD reserves the right to regulate the size, character, and location of each meter and service. Generally, requirements are as follows: 5/8" meter for apartments or attached dwellings (e.g., most condominiums and townhouses), 3/4" meter for single family detached dwellings, and 1" meter for large residential lots. Other requirements are available through OMWD's Engineering Department.

16. The decision of OMWD to require a new residential water service applicant to deposit a sum of money with OMWD prior to establishing an account and furnishing service shall be based solely upon the credit worthiness of the applicant as determined by OMWD, in accordance with Government Code Section 60375.5.

17. OMWD may require that tenants pay a deposit equal to $200.00. In lieu of a deposit, OMWD may require that the account be established in the property owner's name, or may require that the tenant demonstrate a satisfactory payment history, determined in OMWD's discretion, to his/her previous water supplier for the most recent 36-month period. If a deposit is required from the tenant, OMWD will apply the deposit to the tenant's water bill after receipt of 36 consecutive months of timely payments. If the tenant discontinues water service prior to application of their deposit to their water bill, the deposit will be applied against their closing bill. Resulting overpayments greater than $2.00 will be refunded to the tenant.

Shut-Off Valve

OMWD shall provide a shut-off valve on the customer's side of the meter. The shut-off valve is the property of OMWD and shall not be relocated by the customer, but may be operated by the customer.

Payment of Water Bills

1. Water bills are due and payable upon receipt. Bills may be paid at OMWD or by mailing to OMWD's lock box, the address for which is printed on the billing statement.

2. OMWD's office is the only authorized paying station. If paid elsewhere, OMWD is not responsible if receipt of payment is delayed.

3. All meters shall be read and billed monthly.

4. OMWD may, at its discretion, and for the convenience of the customer, accept an advance payment for a period of time.

5. OMWD shall make a charge to customers' accounts for any rejected payment not caused by OMWD.

6. OMWD accepts Visa, MasterCard, and Discover credit card payments. There is a fee associated with each credit card transaction. No part of this fee is retained by OMWD. To make a payment by credit card or to view current fees, please visit www.olivenhain.com.

7. OMWD offers online account access to its customers to check balances, view and pay bills, set up automatic payments, and view payment history. Customers may register for this service by visiting www.olivenhain.com/ebills.

These fees are subject to change with board approval. Please contact OMWD's Customer Service Representatives for further information at 760-753-6466.

Delinquency Charge and Notice

Water bill payments not received by the close of business on the tenth business day following the payment due date for balances exceeding $5.00 will be considered delinquent and will be subject to a 5% delinquent penalty. At least 15 days prior to discontinuance of service due to non-payment of water bills, OMWD will mail delinquent notices to customers with past due balances.

48-Hour Shut-Off Notice and Fee

1. At least 48 hours prior to discontinuance of service due to non-payment, or for any other reason, OMWD will deliver to the property a 48-hour shut-off notice.

2. A final attempt to contact the customer by telephone will be made within 24 hours prior to discontinuance of service.

3. Customers will incur a fee whenever OMWD is required to deliver a 48-hour notice to discontinue water service due to non-payment of a water bill. Current fees are available at www.olivenhain.com.

4. Service will not be terminated if there are any known life-threatening consequences or during payment negotiations when a customer has requested, within 5 days of receipt of bill, an extension of the normal payment period. Also, OMWD will not terminate service to a customer making payments under an amortization agreement (not to exceed 12 months), if payments under the agreement and subsequent charges for water use are both kept current.

For more details regarding the rules and regulations governing customer accounts, visit: www.olivenhain.com/code.

Appendix B - OMWD San Dieguito Valley Groundwater Desalination Feasibility Sustainable Yield Assessment

HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY

SUSTAINABLE YIELD ASSESSMENT

PREPARED FOR:

Olivenhain Municipal Water District

November 30, 2017

***GEOSCIENCE* Support Services, Inc. Groundwater Resources Development**

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HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY

SUSTAINABLE YIELD ASSESSMENT

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HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY

SUSTAINABLE YIELD ASSESSMENT

1.0 INTRODUCTION

Olivenhain Municipal Water District (OMWD) intends to develop local groundwater supplies in the San Dieguito Valley Groundwater Basin (DWR Basin No. 9-12; see Figure 1 for location) in an effort to become less dependent on imported water. Quantification and development of a sustainable groundwater supply from the San Dieguito Valley Groundwater Basin requires an accurate assessment of the water balance of the watershed, which contributes to the basin downstream of Lake Hodges Dam. This assessment includes evaluating potential hydrologic impacts from the San Diego County Water Authority's Emergency Storage Project (ESP) which will allow 20,000 acre-ft of storage in Lake Hodges. The focus of the hydrogeologic investigation is to determine if a sufficient increment of water remains from a sustainable supply, after a consideration of current groundwater users and other recharge sources in the basin (i.e., sustainable yield). To do so, a preliminary water balance was conducted. In addition, the existing groundwater model of the San Dieguito Valley Groundwater Basin prepared by Hargis and Associates (2004) and CH2Mhill (1995) was updated, recalibrated, and used to model project scenarios. This document summarizes the process used to conduct the sustainable yield assessment.

2.0 PRELIMINARY WATER BALANCE

A preliminary water balance was conducted to establish initial flux values for the groundwater flow model as well as to prepare an initial assessment of the potential available water supply. These estimated values were made over various time periods and were then verified or modified during model calibration. The following sections briefly describe the inflow and outflow terms used for the preliminary water balance. The preliminary water balance terms are also summarized in Figure 2.

2.1 Inflow Terms

2.1.1 Deep Percolation from Precipitation and Mountain Front Runoff

The rainfall in the watershed that contributes to the project area is that area below Hodges Dam. Rainfall that falls in the watershed above Hodges Dam only contributes to the project area as releases from the dam. Average rainfall from 1965 through 2016 in the watershed area below Hodges Dam was calculated to be 11.75 in/yr using PRISM precipitation data. Recharge from precipitation in the larger watershed area was assumed to become recharge in the San Dieguito Valley Groundwater Basin through mountain front runoff. Assuming a 5% recharge rate (Maxey and Eakin 1949, Eakin 1966), the average annual recharge from precipitation and mountain front runoff was estimated to be approximately 1,100 acre-ft/yr.

2.1.2 Streambed Percolation

Streamflow through the San Dieguito Valley Groundwater Basin includes various sources of runoff, including runoff from precipitation and releases from Lake Hodges. Streamflow in the San Dieguito River (minus contributions from Lake Hodges) was assumed to be 16% of the rainfall, based on data from DWR Bulletin 55 (1949). The recharge from streambed percolation in the basin was estimated to be 9% of the streamflow (SMC 2014). Average annual streambed percolation from natural precipitation (from 1965 through 2016) is approximately 230 acre-ft/yr.

Dam overflows or spill from Lake Hodges represent a source of surface runoff that contributes to streambed percolation. Historical spill records were analyzed by RMC (2016) and a streambed percolation of 9% was assumed. The average annual recharge to the aquifer from Lake Hodges spills from 1965 through 2013 was estimated to be approximately 1,600 acre-ft/yr. Total streambed percolation (from natural precipitation and Lake Hodges spill) averages 1,830 acre-ft/yr.

2.1.3 Recharge from Spreading

Water is discharged into spreading or percolation basins in several areas of the basin. These discharge values were reported in 2013 quarterly effluent monitoring reports for Rancho Santa Fe Community Services District, Fairbanks Ranch Community Services District, and Whispering Palms Community Services District. Discharge was also provided by the Farms Golf Club. A 14% loss to evapotranspiration was assumed. The average annual recharge from the spreading was estimated to be 270 acre-ft/yr for Rancho Santa Fe Community Services District, 160 acre-ft/yr for Fairbanks Ranch Community Services

District, 240 acre-ft/yr for Whispering Palms Community Services District, and 40 acre-ft/yr for the Farms Golf Club. Total annual recharge from spreading averages 710 acre-ft/yr based on 2013 data.

2.1.4 Return Flow

Return flow from applied water (from both pumped water and water delivered by municipalities) was determined by land use type and area. 2013 land use in the San Dieguito Valley Watershed from SANDAG was classified into seven main categories: agricultural, residential, commercial, multi, park, golf, and open (Figure 3). Return flow factors for the land use classifications were used from an analysis conducted by Stetson Engineers for the Temecula-Murrieta Groundwater Basin (2016). The average annual return flow for the watershed area based on 2013 land use type was estimated to be approximately 2,200 acre-ft/yr. Return flow recharged outside of the groundwater basin is assumed to contribute to recharge from mountain front runoff.

2.2 Outflow Terms

2.2.1 Groundwater Pumping

Groundwater pumping from the San Dieguito Valley Groundwater Basin was estimated by using a combination of 2013 land use, OMWD supply records, and previous estimates. The potential water use was first estimated by land use classification and water use factors from Stetson Engineers (2016). Pumping was assigned to parcels with known wells or assumed wells (not included in reported OMWD deliveries; see Figure 4 for areas with assigned pumping). The average annual pumping in the San Dieguito Valley Groundwater Basin based on 2013 land use was estimated to be approximately 2,100 acre-ft/yr.

2.2.2 Evapotranspiration

Evapotranspiration within the San Dieguito Valley Groundwater Basin was estimated by applying mean seasonal consumptive use values to 2013 land use. The average precipitation consumptive use values for various land types in the coastal area of the San Dieguito River Watershed were taken from Table H-5 of DWR Bulletin 72 (1959). Only the precipitation consumptive use values were used since the assumptions used to estimate return flow from applied water include evapotranspiration loss. Average evapotranspiration using the 2013 land use is approximately 2,830 acre-ft/yr.

2.2.3 Underflow Outflow

The subsurface underflow outflow from the groundwater basin was estimated using the average outflow to the ocean from the Hargis (2004) report (1.63 acre-ft/day for the period from 1965 through 1982 and an average rainfall of 12.31 inches/yr). This value was then adjusted to reflect an average annual rainfall of 11.75 inches/yr (1965 through 2016). Average annual underflow outflow was estimated to be approximately 570 acre-ft/yr.

3.0 GROUNDWATER FLOW MODEL OF THE SAN DIEGUITO VALLEY GROUNDWATER BASIN

The existing Hargis groundwater flow model (2004) was updated and calibrated to validate and refine the initial water balance terms. As part of the model update, the existing Hargis model was expanded to better represent the San Dieguito Valley Groundwater Basin (Figure 5). The calibrated San Dieguito Valley Groundwater Model was then used to assist well siting alternatives and run predictive scenarios.

3.1 Model Description

The groundwater flow model was developed using MODFLOW-NWT[1]. The San Dieguito Valley Groundwater Basin consists of an unconsolidated quaternary alluvial aquifer system flanked and underlain by low permeability Tertiary rocks. The San Dieguito Valley Groundwater Model is a five-layer model with a grid of 660 nodes (i.e., model cells) in the north-to-south direction (i-direction) and 920 nodes in the east-to-west direction (j-direction), for a total of 3,036,000 nodes (Figure 6). Each model cell of the San Dieguito Valley Groundwater Model represents an area of 50 ft by 50 ft.

For the purposes of this investigation, the Tertiary rocks surrounding the quaternary alluvial materials were assumed to be impermeable. As such, they were designated as no-flow boundaries in the groundwater model. The model boundary conditions are shown on Figure 7. Underflow outflow to the ocean was assigned through a general head boundary (GHB; shown as green on Figure 7). On Figure 7, the location of recharge from streambed percolation is shown in blue, and cells from which pumping was simulated are shown in red.

[1] MODFLOW-NWT is the Newton-Raphson formulation for MODFLOW-2005 which allows for an improved solution of unconfined groundwater flow problems (Niswonger, Panday, and Ibaraki 2011). MODFLOW-2005 a block-centered, finite-difference groundwater flow code developed by the USGS (Harbaugh 2005).

3.2 Aquifer Properties

3.2.1 Model Layers

The conceptual groundwater model consists of five layers: layers 1 and 3 represent the shallow and deep aquifer, respectively, while layers 2, 4, and 5 represent low permeability layers (e.g., aquitards). A three-dimensional representation of the model layers is shown on Figure 8.

3.2.2 Hydraulic Conductivity

Initial hydraulic conductivity values for the aquifer materials in the San Dieguito Valley Groundwater Basin were used from the existing groundwater flow model. These values were then adjusted during model calibration within the ranges of the HARGIS model. The calibrated horizontal hydraulic conductivity values are shown on Figure 9 and range from less than 5 ft/day to 900 ft/day. Vertical hydraulic conductivity was assumed to be 10% of the horizontal hydraulic conductivity.

3.2.3 Storativity

Both specific yield and specific storage values were used in the San Dieguito Valley Groundwater Model. The type of storativity value used depended on the nature of the model layer through time (i.e., unconfined or confined). Initial model storativity values were also adjusted during model calibration. The calibrated specific yield values are shown on Figure 10 and range from 0.01 to 0.2. Calibrated specific storage is shown on Figure 11 and ranges from 0.00001 ft^{-1} to 0.0001 ft^{-1}.

3.3 Recharge Terms

3.3.1 Deep Percolation from Precipitation and Mountain Front Runoff

The initial empirical estimates of deep percolation from precipitation and mountain front runoff from the preliminary water balance were used in the San Dieguito Valley Groundwater model and were iteratively adjusted during model calibration. The calibrated amount of recharge from the deep percolation of precipitation and mountain front runoff averages 1,020 acre-ft/yr during the model calibration period from 2001 through 2015, as shown on Figure 2.

3.3.2 Streambed Percolation

While the streambed percolation calculated during the preliminary water balance was also used as input for the groundwater flow model, the total modeled recharge from streambed percolation is slightly less. The model takes water levels and available storage into account and was not able to accommodate the full amount of recharge from streambed percolation. The modeled average recharge from streambed percolation is approximately 1,790 acre-ft/yr, as shown on Figure 2.

3.3.3 Recharge from Spreading

The recharge from spreading operations calculated from the preliminary water balance was assigned as recharge in the San Dieguito Valley Groundwater Model, excluding the recharge that occurred outside of the groundwater basin area. The total recharge from spreading, as shown on Figure 2, averages 570 acre-ft/yr over the model calibration period (2001 through 2015).

3.3.4 Return Flow

Prior to model calibration, the estimated return flow value from the preliminary water balance was reduced by approximately one-third to account for differences in rainfall between the Temecula-Murrieta Groundwater Basin (where the 2016 Stetson return flow analysis was conducted) and the San Dieguito Valley Groundwater Basin. This value was then further modified during model calibration. The calibrated return flow value averages 1,090 acre-ft/yr, as shown on Figure 2.

3.3.5 Underflow Inflow

Underflow inflow to the groundwater basin was calculated by the model using a general head boundary (GHB). The average annual model-calculated underflow inflow was approximately 30 acre-ft/yr, as shown on Figure 2.

3.4 Discharge Terms

3.4.1 Groundwater Pumping

Groundwater pumping from the preliminary water budget was assigned to the San Dieguito Valley Groundwater Model. As shown on Figure 2, annual pumping from the model calibration period averaged 2,090 acre-ft/yr.

3.4.2 Evapotranspiration

Evapotranspiration represents a model-calculated value. California Irrigation Management Information System (CIMIS) evapotranspiration rates were applied to the model area with an extinction depth of 15 ft. The model-calculated evapotranspiration averaged 2,180 acre-ft/yr for the calibration period, as shown on Figure 2.

3.4.3 Discharge to Streams

Discharge to streams also represents a model-calculated value. As shown on Figure 2, the average discharge to streamflow during the model calibration period is approximately 40 acre-ft/yr.

3.4.4 Underflow Outflow

Underflow outflow to the ocean was calculated by the model using a GHB. The average annual model-calculated underflow outflow was approximately 60 acre-ft/yr, as shown on Figure 2.

3.5 Model Calibration

Calibration is the process of adjusting the model parameters and flux terms to produce the best-fit between simulated and observed groundwater system responses. Properties adjusted during the model calibration include:

- Horizontal and vertical hydraulic conductivity,
- Storativity,
- Deep percolation from precipitation and mountain front runoff, and
- Return flow from applied water.

The San Dieguito Valley Groundwater Model was calibrated against observed water levels from 33 monitoring wells and San Diego County streamflow gage data (see Figure 12 for location) from January 2001 through December 2015 using monthly time steps. Water level residual[2] statistics from the model calibration are summarized in the following table.

[2] Measured minus model-calculated water levels.

Table 3-1. Model Calibration Water Level Statistics

Model Calibration Water Level Statistics	
Residual Mean, ft	0.11
Residual Standard Deviation, ft	4.26
Minimum Residual, ft	-43.07
Maximum Residual, ft	17.85
Relative Error, %	5.9

The relative error (standard deviation of the residuals divided by the range) for the calibration period was 5.9%. Common modeling practice is to consider a good fit between measured and model-calculated water levels if the relative error is below 10% (Spitz and Moreno 1996). Therefore, the San Dieguito Valley Groundwater Model performs within acceptable limits.

The lack of actual pumping record made it difficult to match upper and lower observed water level measurements since pumping estimates were primarily annual totals that were redistributed on a monthly basis using the method outlined in the HARGIS report. As such, one of the main focuses was to capture observed water level trends, and match average water levels between fluctuations while maintaining a relative error below 10%. As shown on Figure 13, the calibration hydrographs exhibit similar trends to the observed water level data. This indicates that the model is performing well and is able to simulate realistic hydrologic response in the San Dieguito Valley Groundwater Basin.

4.0 COMPARISON OF SUSTAINABLE YIELD ASSESSMENT

Flux terms for the San Dieguito Valley Groundwater Basin from the two methods used for the sustainable yield assessment are summarized in the following table and on Figure 2.

Table 4-1. Comparison of Water Budget Terms for Sustainable Yield Assessment

Term		Preliminary Water Balance[1]	Groundwater Model Calibration (2001-2015)
		[acre-ft/yr]	
INFLOW	Underflow Inflow	-	30
	Deep Percolation from Areal Precipitation and Mountain Front Runoff	1,100[2]	1,020
	Streambed Percolation	1,830[3]	1,790
	Recharge from Spreading	710[4]	570
	Return Flow	2,200[4]	1,090
OUTFLOW	Groundwater Pumping	2,100[4]	2,090
	Evapotranspiration	2,830[4]	2,180
	Rising Discharge to Streamflow	-	40
	Underflow Outflow to the Ocean	570[2]	60
	Change in Storage	**340**	**130**

[1] Flux terms for the preliminary water balance were estimated over various time periods, as indicated by the footnote next to the individual terms.
[2] 1965-2016
[3] Natural precipitation: 1965-2016, Lake Hodges spills: 1965-2013
[4] 2013

5.0 MODEL SCENARIOS

The calibrated San Dieguito Valley Groundwater Model was used to run several scenarios to evaluate well siting alternatives. Four potential well sites in two general areas were identified: 1/1A, and 2/2A (see Figure 14). Pumping from two wells in each area was proposed to provide redundancy for long-term operations. The model scenarios included:

- Pumping of 1,600 acre-ft/yr from wells at Sites 1 and 1A,
- Pumping of 1,985 acre-ft/yr from wells at Sites 1 and 1A,
- Pumping of 1,600 acre-ft/yr from wells at Sites 2 and 2A, and
- Pumping of 2,000 acre-ft/yr from wells at Sites 2 and 2A.

Pumping at 1,600 acre-ft/yr represents the project scenarios, while the pumping rates for the two higher pumping scenarios were based on a determination of the maximum amount of water available from the aquifer at each location. The same hydrology from the calibration period was used for the model scenarios. The results from the model scenarios are summarized in the following table and on Figure 15.

Table 5-1. Water Budget Terms for Model Scenarios

Term		Model Calibration (2001-2015)	Well Sites 1 and 1A (1,600 acre-ft/yr)	Well Sites 1 and 1A (1,985 acre-ft/yr)	Well Sites 2 and 2A (1,600 acre-ft/yr)	Well Sites 2 and 2A (2,000 acre-ft/yr)
		[acre-ft/yr]				
INFLOW	Underflow Inflow	30	40	50	50	70
	Deep Percolation from Areal Precipitation and Mountain Front Runoff	1,020	1,020	1,020	1,020	1,020
	Streambed Percolation	1,790	1,860	1,870	1,860	1,880
	Recharge from Spreading	570	570	570	570	570
	Return Flow	1,090	1,090	1,090	1,090	1,090
OUTFLOW	Groundwater Pumping	2,090	3,630	3,950	3,690	4,020
	Evapotranspiration	2,180	1,180	1,030	1,090	920
	Rising Discharge to Streamflow	40	30	30	30	30
	Underflow Outflow to the Ocean	60	50	40	40	30
	Change in Storage	**130**	**-310**	**-450**	**-260**	**-370**

Results from the model scenarios indicated that pumping 1,600 acre-ft/yr at Sites 2 and 2A would have the least impact on the groundwater basin.

6.0 FINDINGS

6.1 Summary of Water Balance Results

The preliminary water balance was used for much of the model input terms. As such, many of the flux terms are fairly consistent between the preliminary water balance and groundwater model calibration. The largest difference is for return flow from applied water, which was adjusted during model calibration. The preliminary water balance assumed that all return flow within the San Dieguito watershed area eventually becomes recharge in the groundwater basin through mountain front recharge. In reality, much of the return flow from outside of the groundwater basin is likely consumed through evapotranspiration. The lower return flow value from the model calibration reflects this.

Some of the other differences between the two sets of flux terms may also be attributed to the difference in hydrologic period. The preliminary water balance makes generalized assumptions that are not dependent on hydrology (i.e., wet, dry, or average hydrologic conditions), while groundwater levels and streamflow information for the hydrologic period from 2001 through 2015 were used to adjust some of the flux terms during the model calibration process.

6.2 Basin Water Balance with Project Pumping

The results of the model scenarios indicated that the model scenario for 1,600 acre-ft/yr of pumping at Sites 2 and 2A can produce the proposed project extraction volume with minimal change in storage (<1% of total water stored in the groundwater basin) based on the hydrology of the base period and current (2015) groundwater in storage. The water budgets for this scenario are also presented in Figure 15. The blue arrows in the figure indicate inflows into the groundwater basin. Yellow arrows indicate outflow from the basin. The yellow arrow for change in storage indicates a decrease in basin storage under Scenario 2 and 2A pumping, as stated above.

7.0 REFERENCES

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FIGURES

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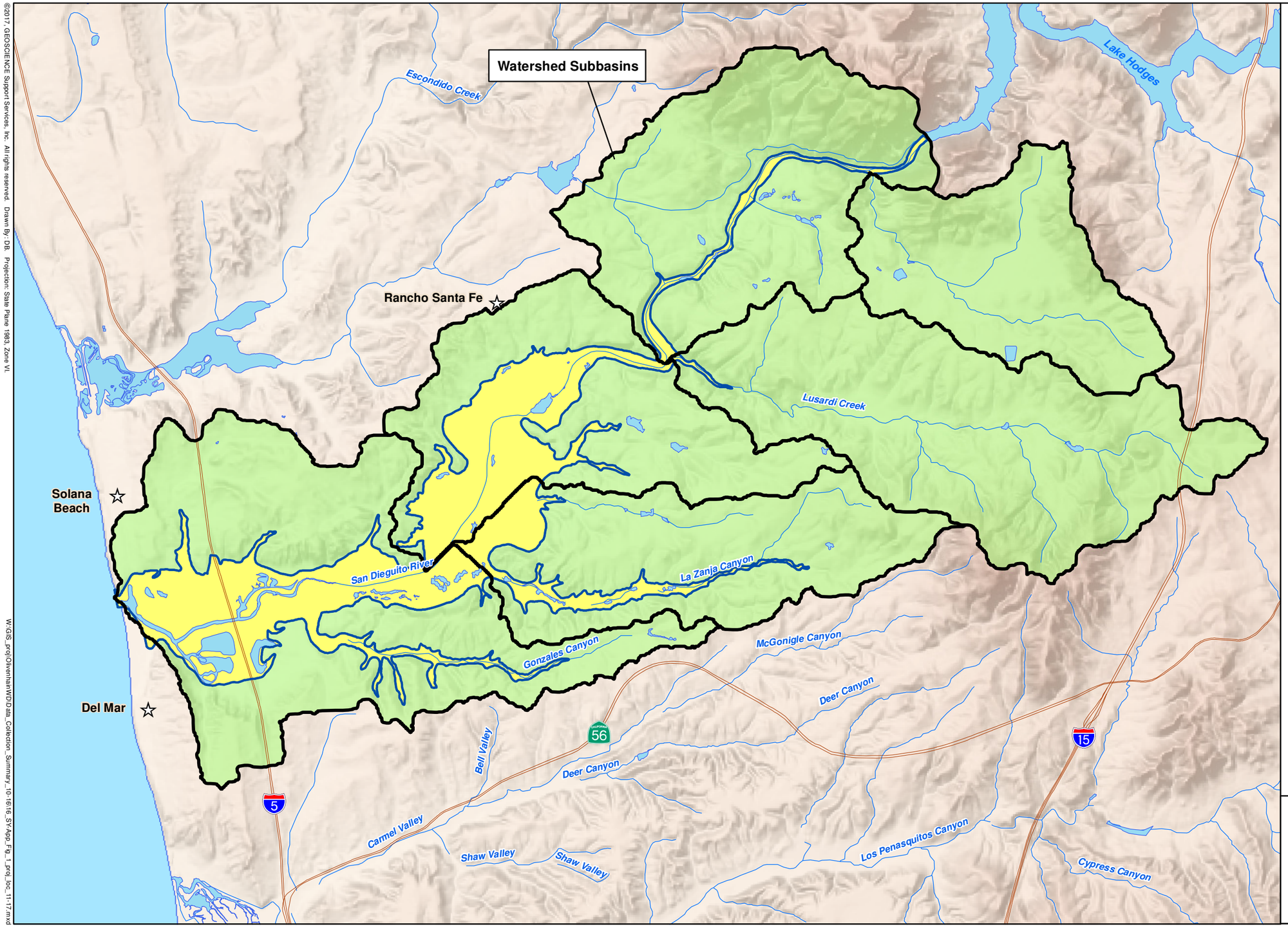

EXPLANATION

San Dieguito Groundwater Basin Boundary and Study Area (DWR SGMA boundary modified by GEOSCIENCE in 2016)

Study Area Sub-Watersheds

N

0 1 2

Miles

PROJECT LOCATION

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OLIVENHAIN MUNICIPAL WATER DISTRICT

HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY - SUSTAINABLE YIELD ASSESSMENT

FIGURE 1

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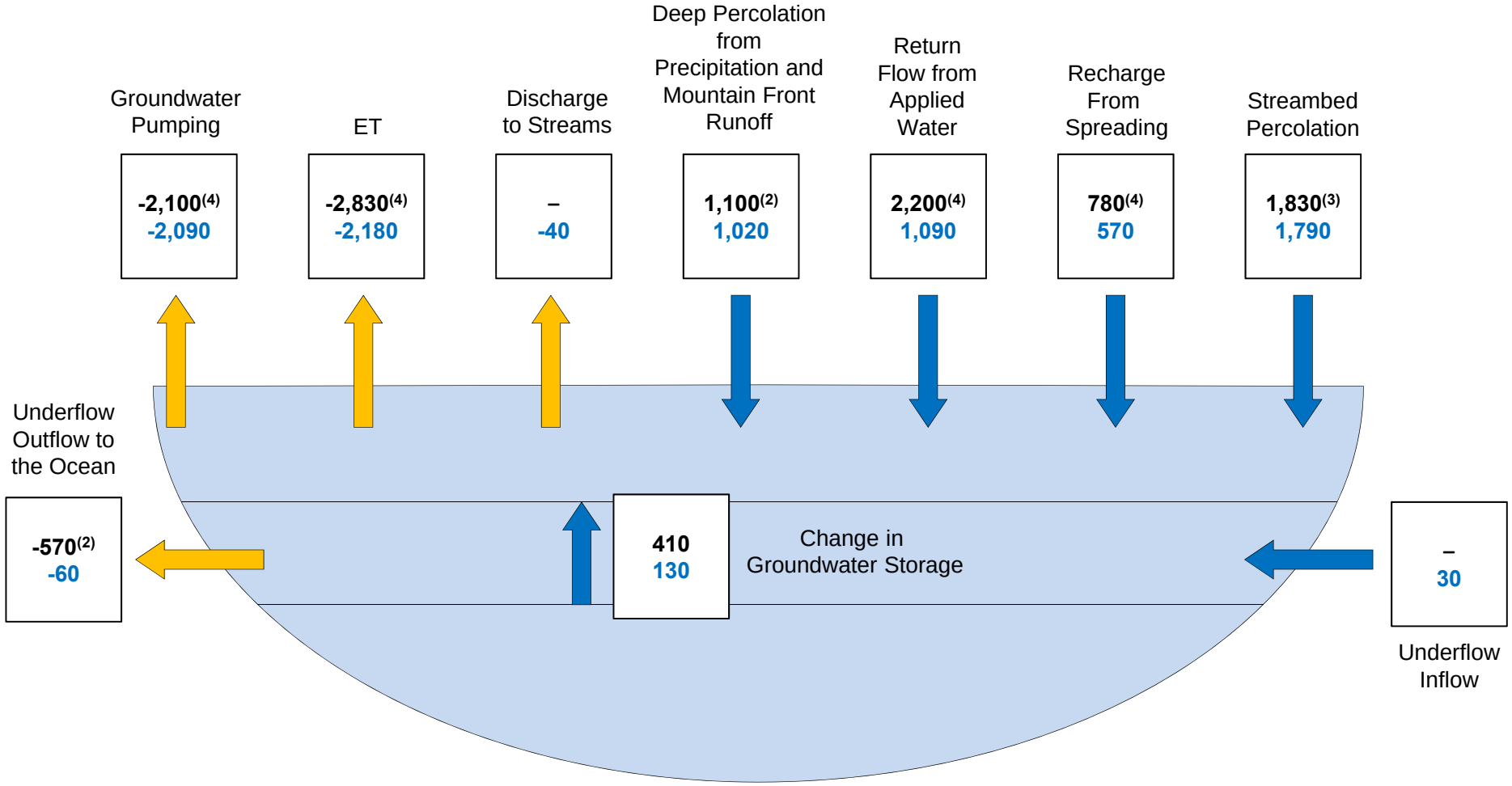

All values in acre-ft/yr
Note: Negative (-) denotes outflow/decrease
Positive (+) denotes inflow/increase
(1) Flux terms for the preliminary water balance were estimated over various time periods, as indicated by the footnote next to the individual terms.
(2) 1965-2016
(3) Natural precipitation: 1965-2016, Lake Hodges spills: 1965-2013
(4) 2013

KEY:

PRELIMINARY WATER BALANCE(1)
GROUNDWATER MODEL CALIBRATION (2001-2015)

SAN DIEGUITO VALLEY GROUNDWATER BASIN GROUNDWATER BUDGETS

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OLIVENHAIN MUNICIPAL WATER DISTRICT **FIGURE 2**

SAN DIEGUITO VALLEY GROUNDWATER DESALINATION STUDY – SUSTAINABLE YIELD ASSESSMENT

GEOSCIENCE

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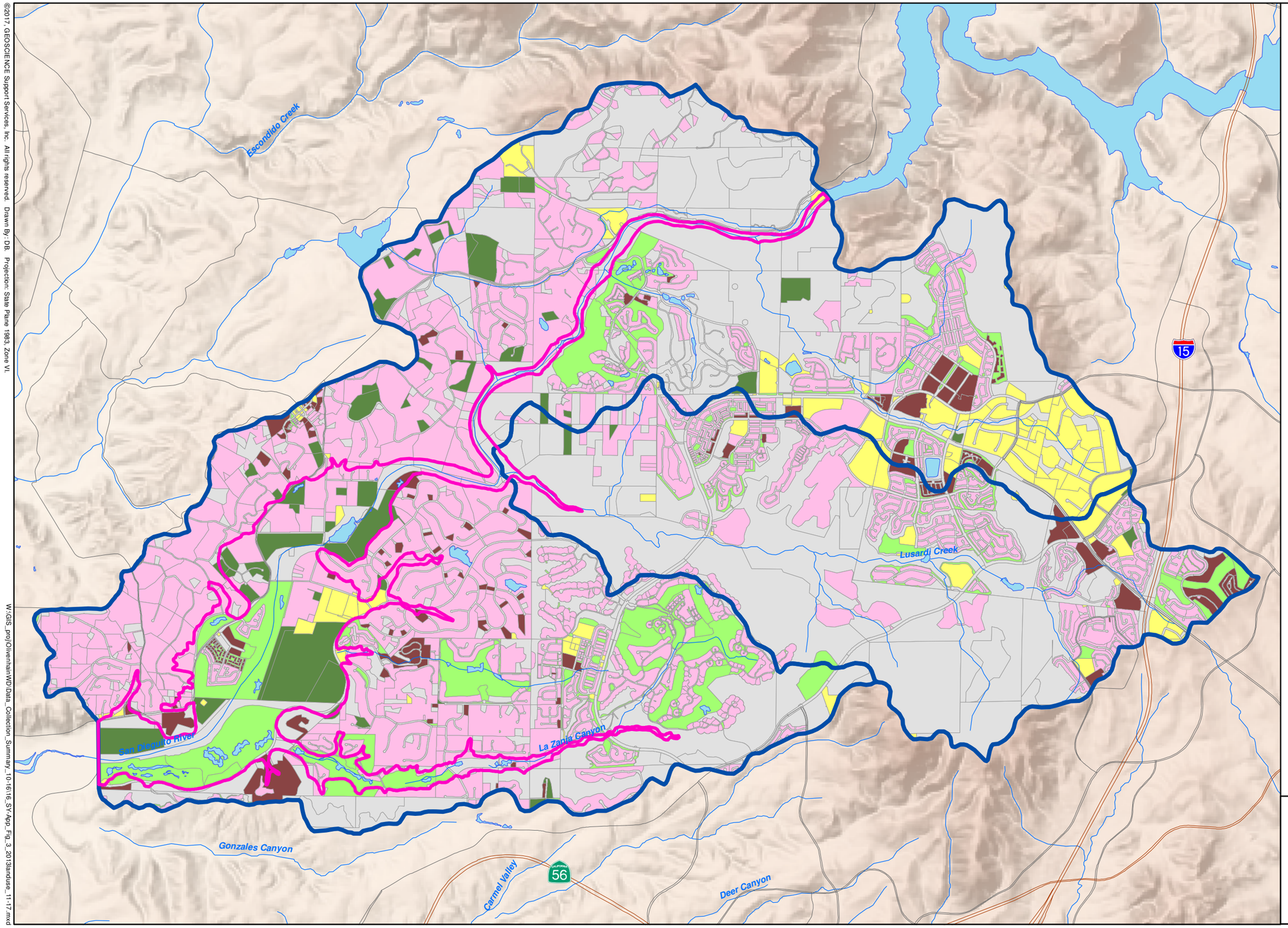

EXPLANATION

San Dieguito Groundwater Basin Boundary (DWR SGMA boundary modified by GEOSCIENCE in 2016)

San Dieguito Watershed Boundary

2013 SANDAG Land Use Categories

- Agriculture
- Commercial
- Park/Golf
- Multi
- Open
- Residential

N

0 4,000 8,000

Feet

SAN DIEGUITO GROUNDWATER BASIN WATERSHED LAND USE

OLIVENHAIN MUNICIPAL WATER DISTRICT

HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY - SUSTAINABLE YIELD ASSESSMENT

FIGURE 3

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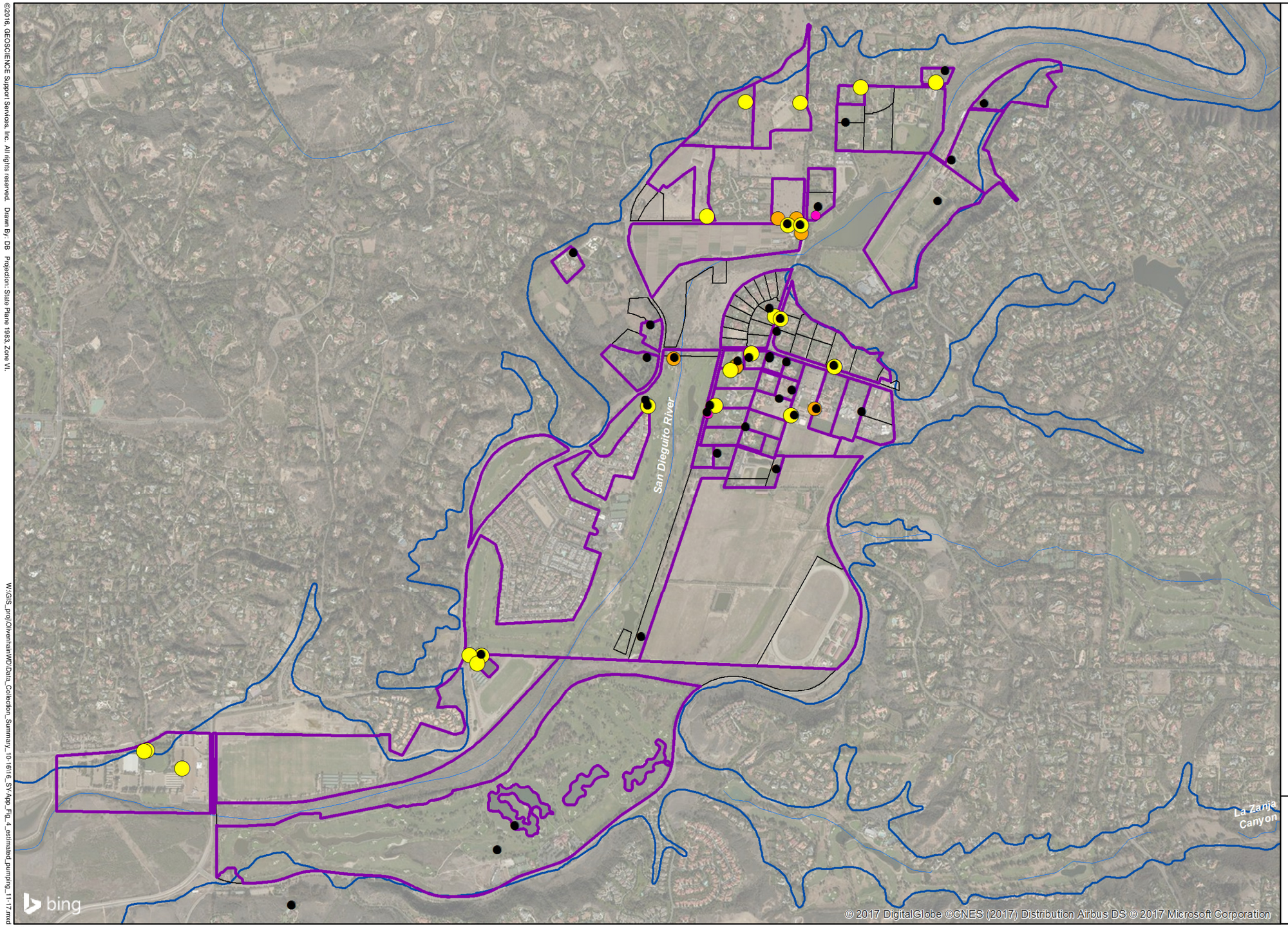

EXPLANATION

San Dieguito Groundwater Basin Boundary and Study Area (DWR SGMA boundary modified by GEOSCIENCE in 2016)

Well Status

- Active
- Inactive
- Unknown (Active/Inactive?)
- Hargis Groundwater Model Extraction Well

Individual Parcel

Parcel or Parcel Group

N

0 1,500 3,000

Feet

LOCATION OF ESTIMATED PUMPING

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OLIVENHAIN MUNICIPAL WATER DISTRICT

HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY - SUSTAINABLE YIELD ASSESSMENT

FIGURE 4

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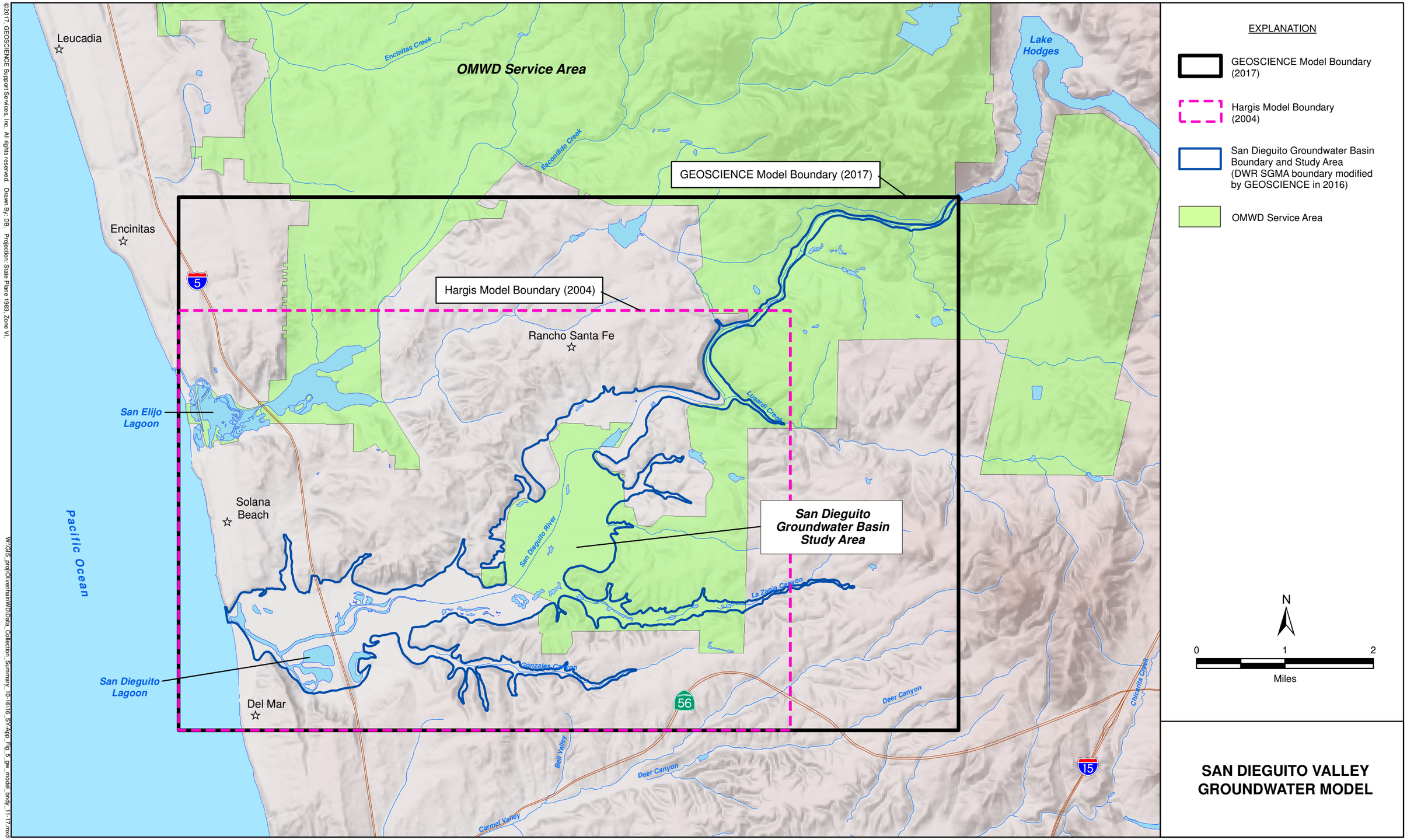

SAN DIEGUITO VALLEY GROUNDWATER MODEL

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OLIVENHAIN MUNICIPAL WATER DISTRICT

HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY - SUSTAINABLE YIELD ASSESSMENT

FIGURE 5

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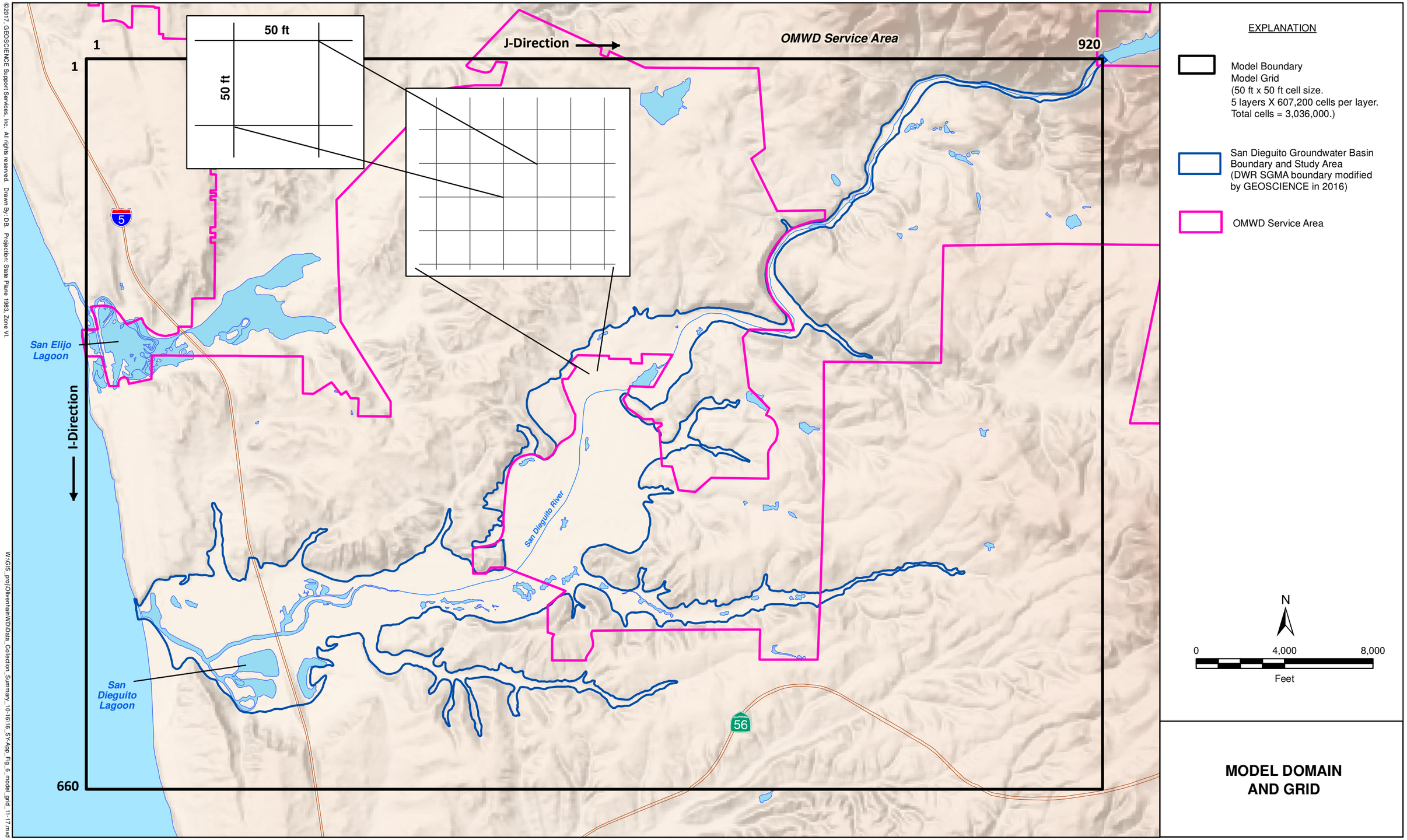

MODEL DOMAIN AND GRID

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OLIVENHAIN MUNICIPAL WATER DISTRICT

HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY - SUSTAINABLE YIELD ASSESSMENT

FIGURE 6

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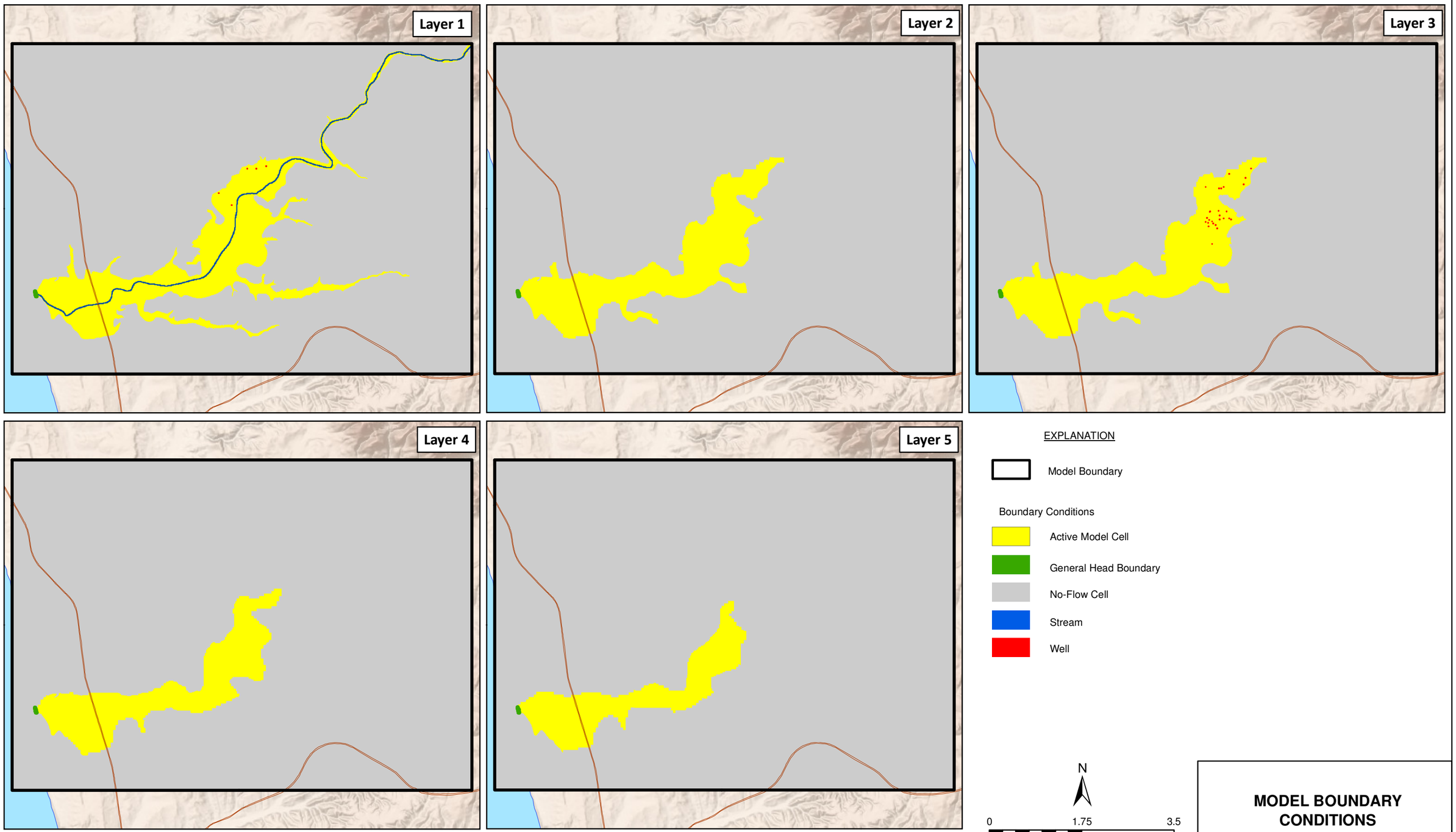

MODEL BOUNDARY CONDITIONS

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OLIVENHAIN MUNICIPAL WATER DISTRICT

HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY - SUSTAINABLE YIELD ASSESSMENT

FIGURE 7

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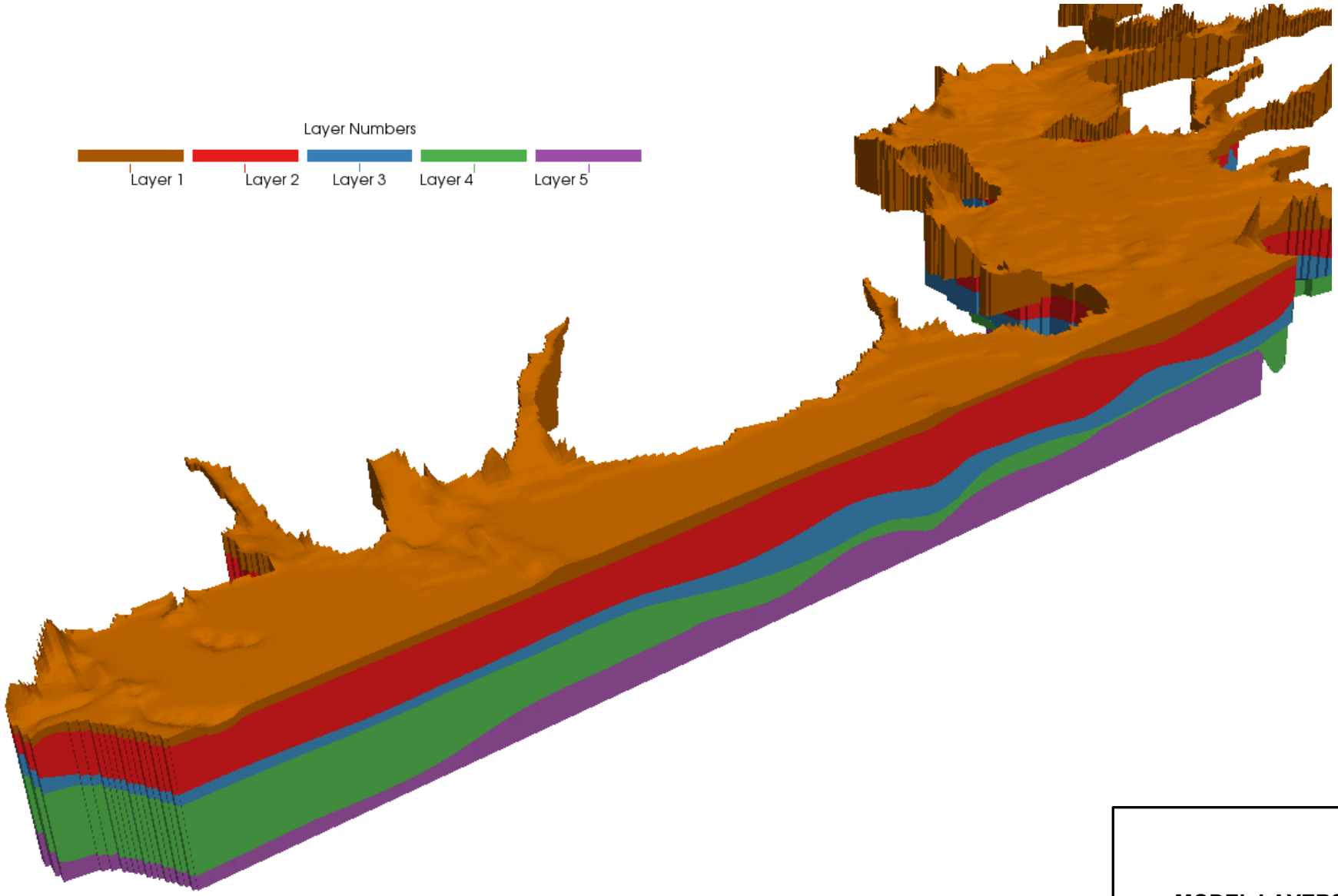

MODEL LAYERS

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OLIVENHAIN MUNICIPAL WATER DISTRICT **FIGURE 8**

SAN DIEGUITO VALLEY GROUNDWATER DESALINATION STUDY – SUSTAINABLE YIELD ASSESSMENT

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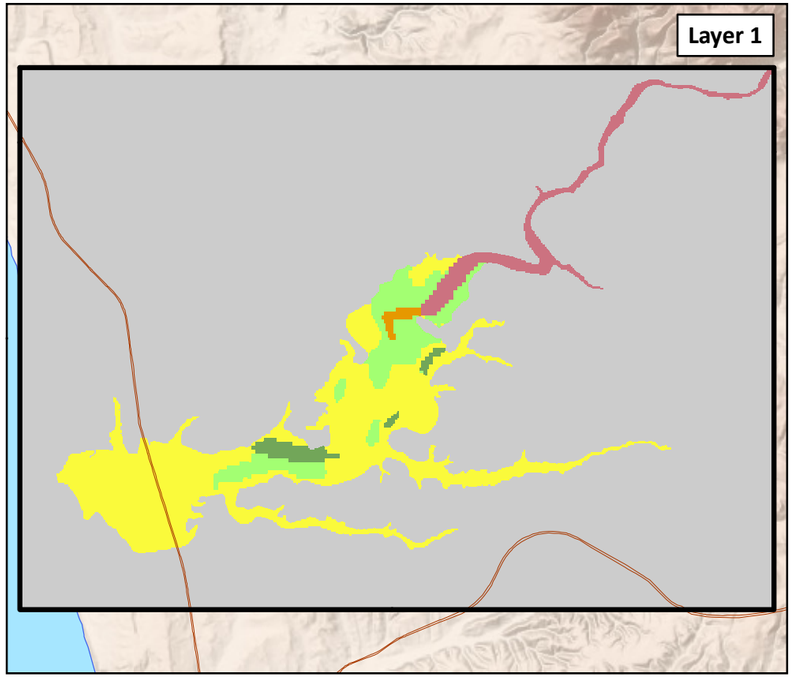

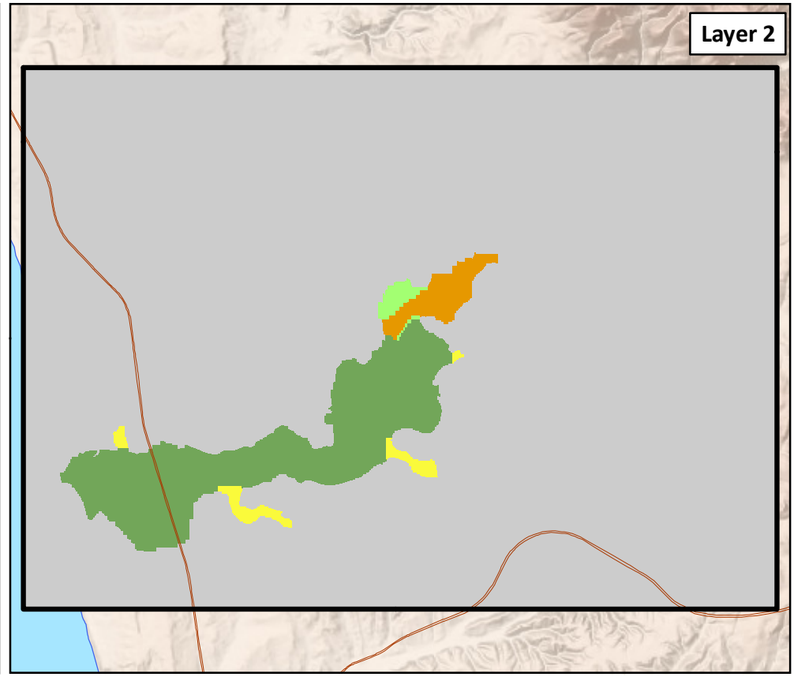

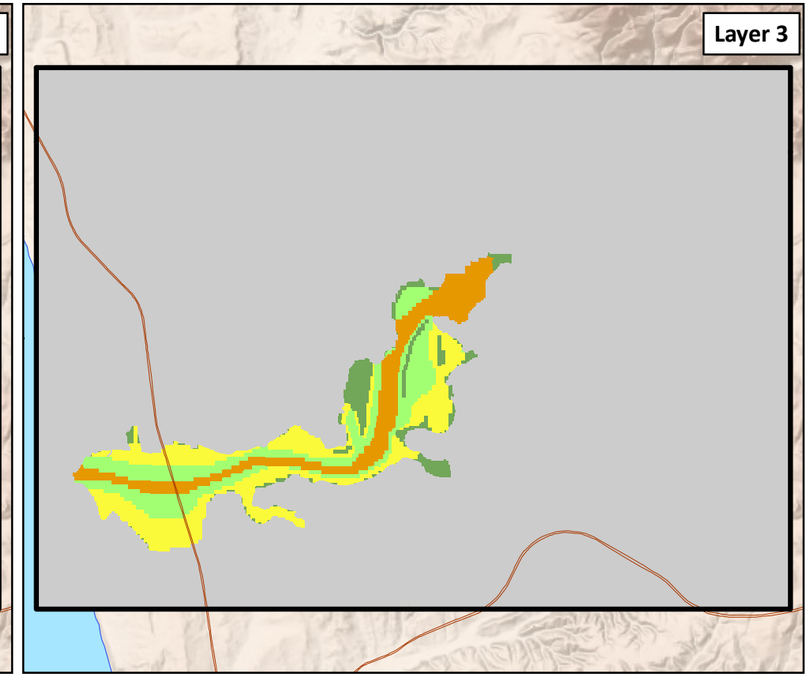

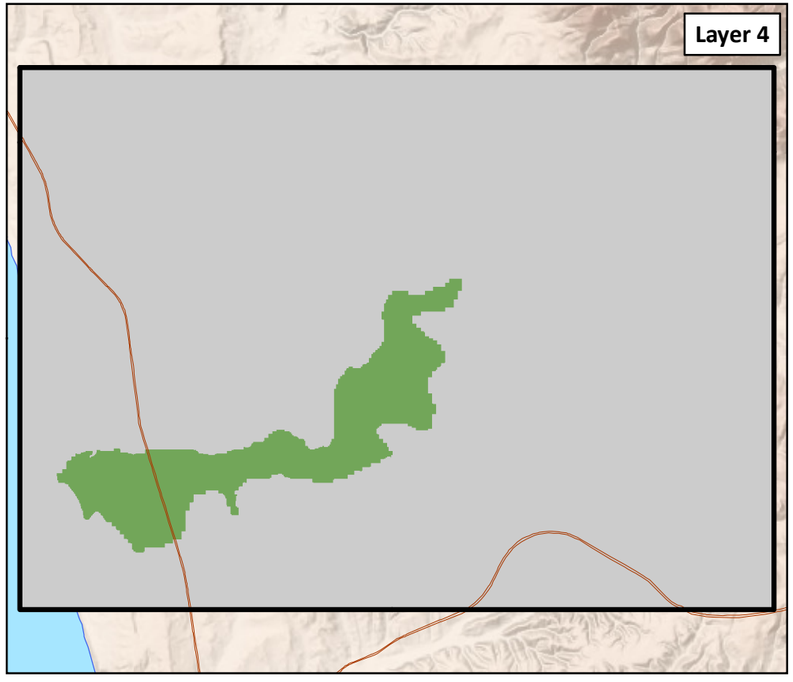

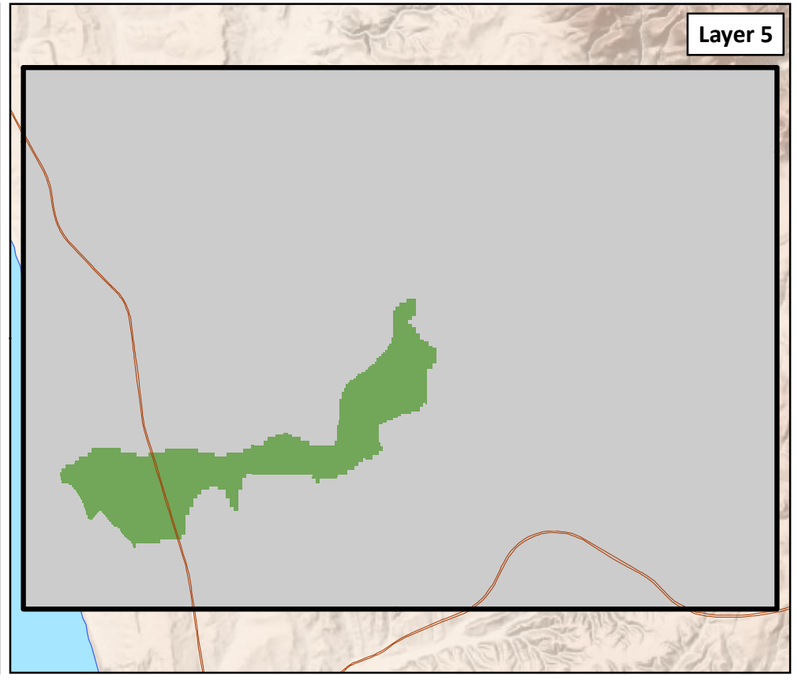

EXPLANATION

Model Boundary

No-Flow Cell

Horizontal Hydraulic Conductivity Values (ft/day)

- <5
- 5 - 50
- 50 - 250
- 250 - 500
- 900

N

0 1.75 3.5

Miles

MODEL HORIZONTAL HYDRAULIC CONDUCTIVITY

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OLIVENHAIN MUNICIPAL WATER DISTRICT

HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY - SUSTAINABLE YIELD ASSESSMENT

FIGURE 9

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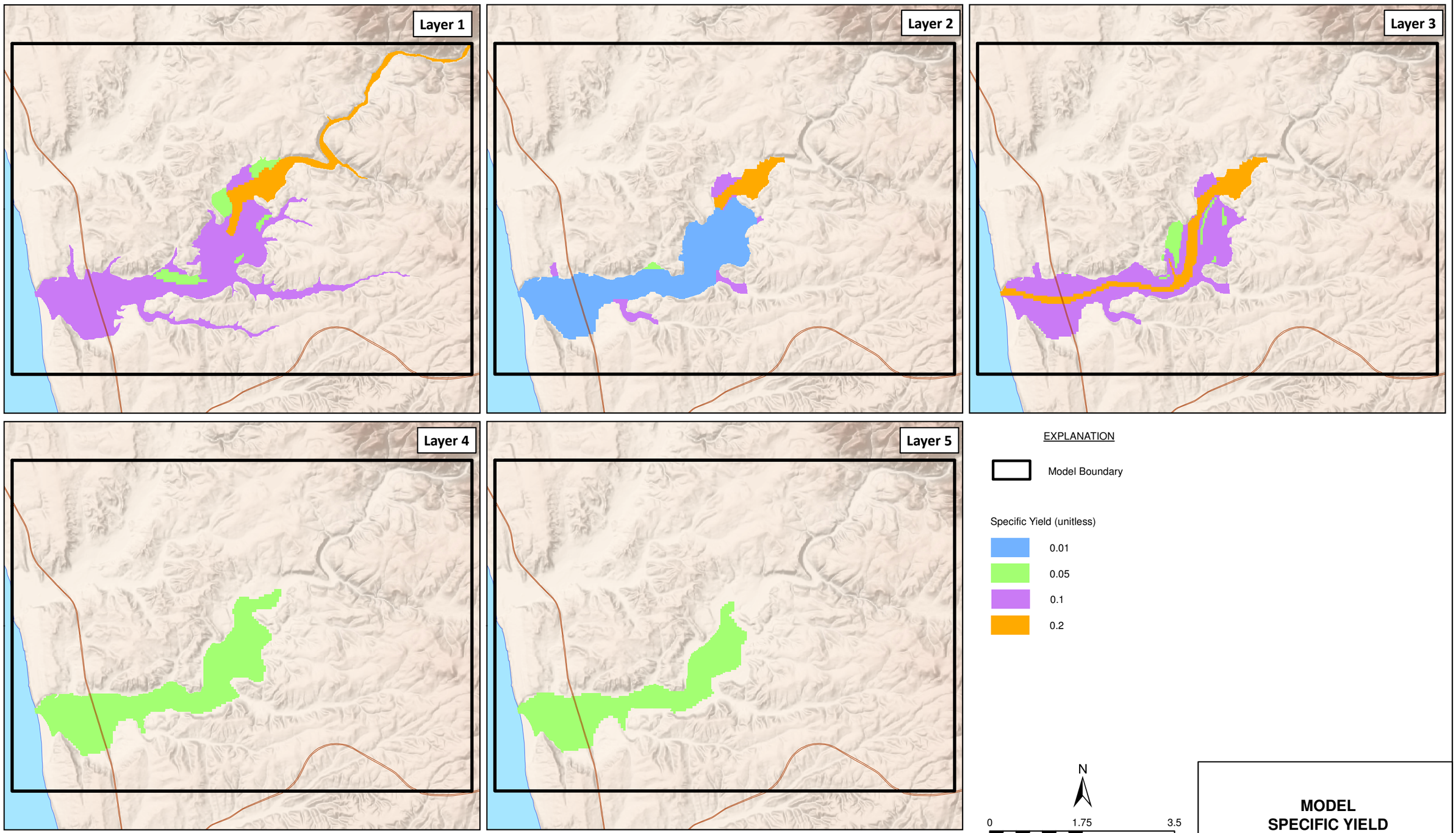

MODEL SPECIFIC YIELD

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OLIVENHAIN MUNICIPAL WATER DISTRICT

HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY - SUSTAINABLE YIELD ASSESSMENT

FIGURE 10

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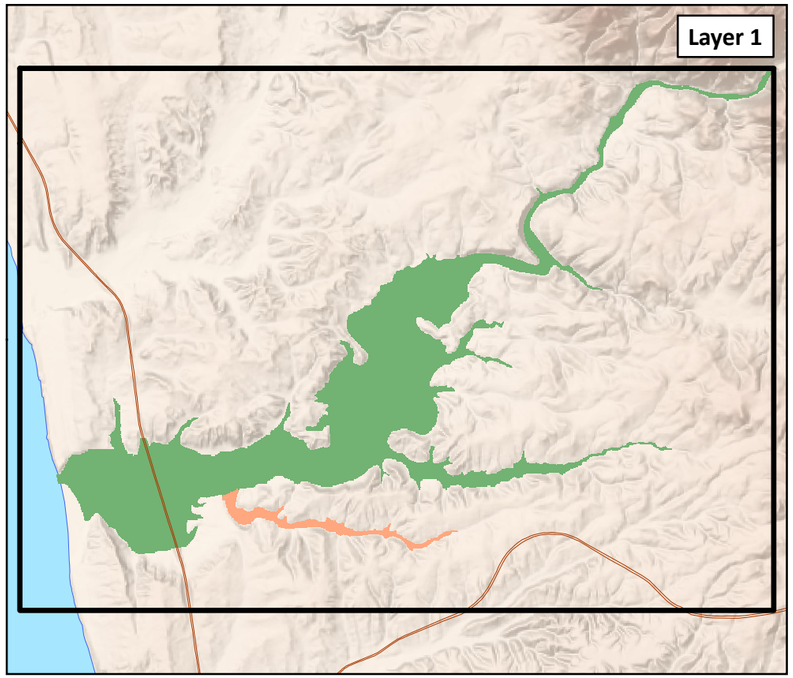

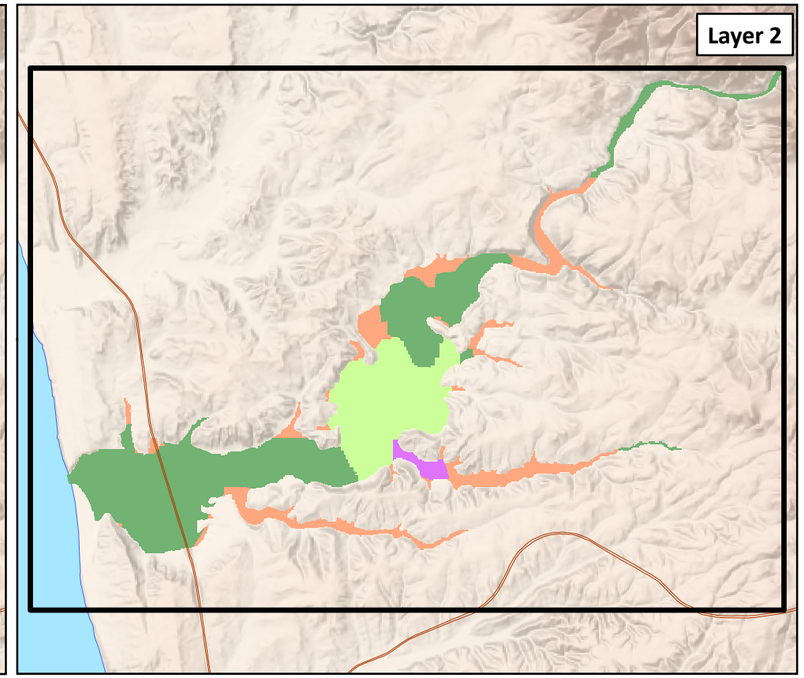

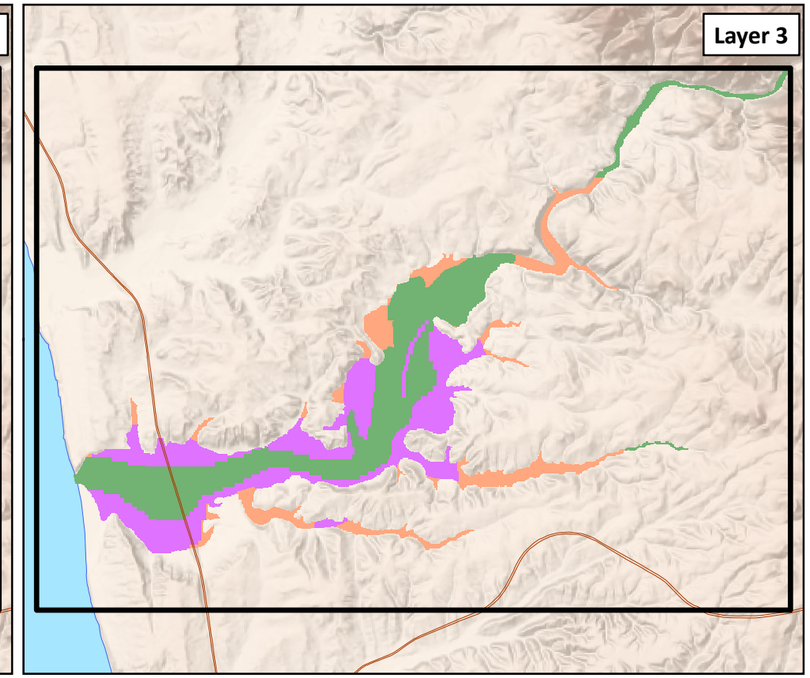

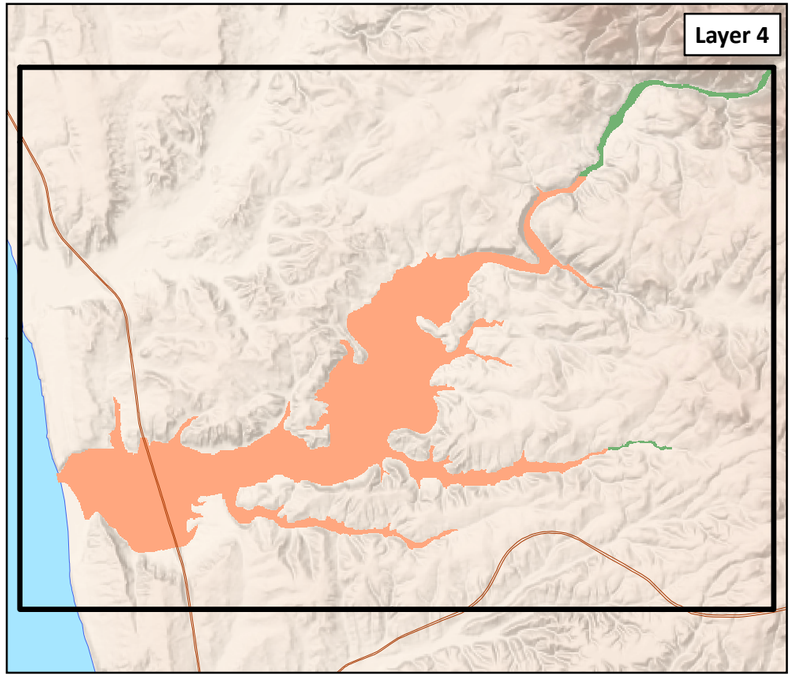

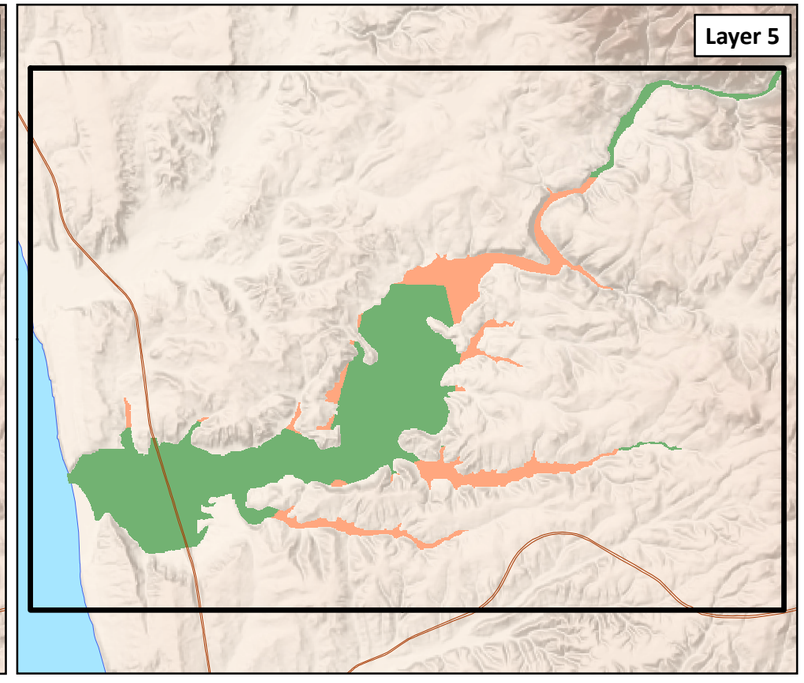

EXPLANATION

Model Boundary

Specific Storage (1/ft)

- 0.00001
- 0.00004
- 0.00005
- 0.0001

N

0 1.75 3.5

Miles

MODEL SPECIFIC STORAGE

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OLIVENHAIN MUNICIPAL WATER DISTRICT

HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY - SUSTAINABLE YIELD ASSESSMENT

FIGURE 11

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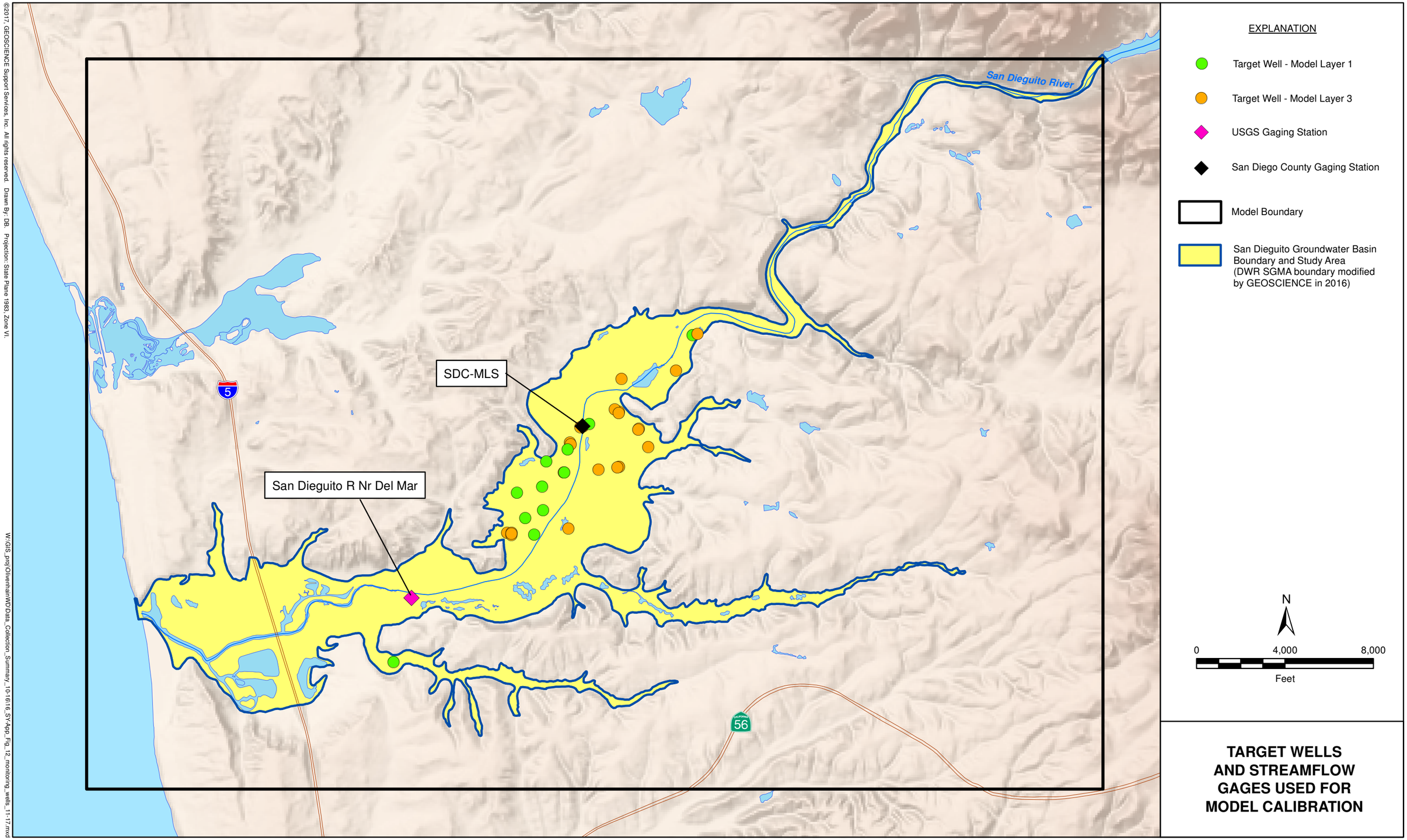

TARGET WELLS AND STREAMFLOW GAGES USED FOR MODEL CALIBRATION

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OLIVENHAIN MUNICIPAL WATER DISTRICT

HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY - SUSTAINABLE YIELD ASSESSMENT

FIGURE 12

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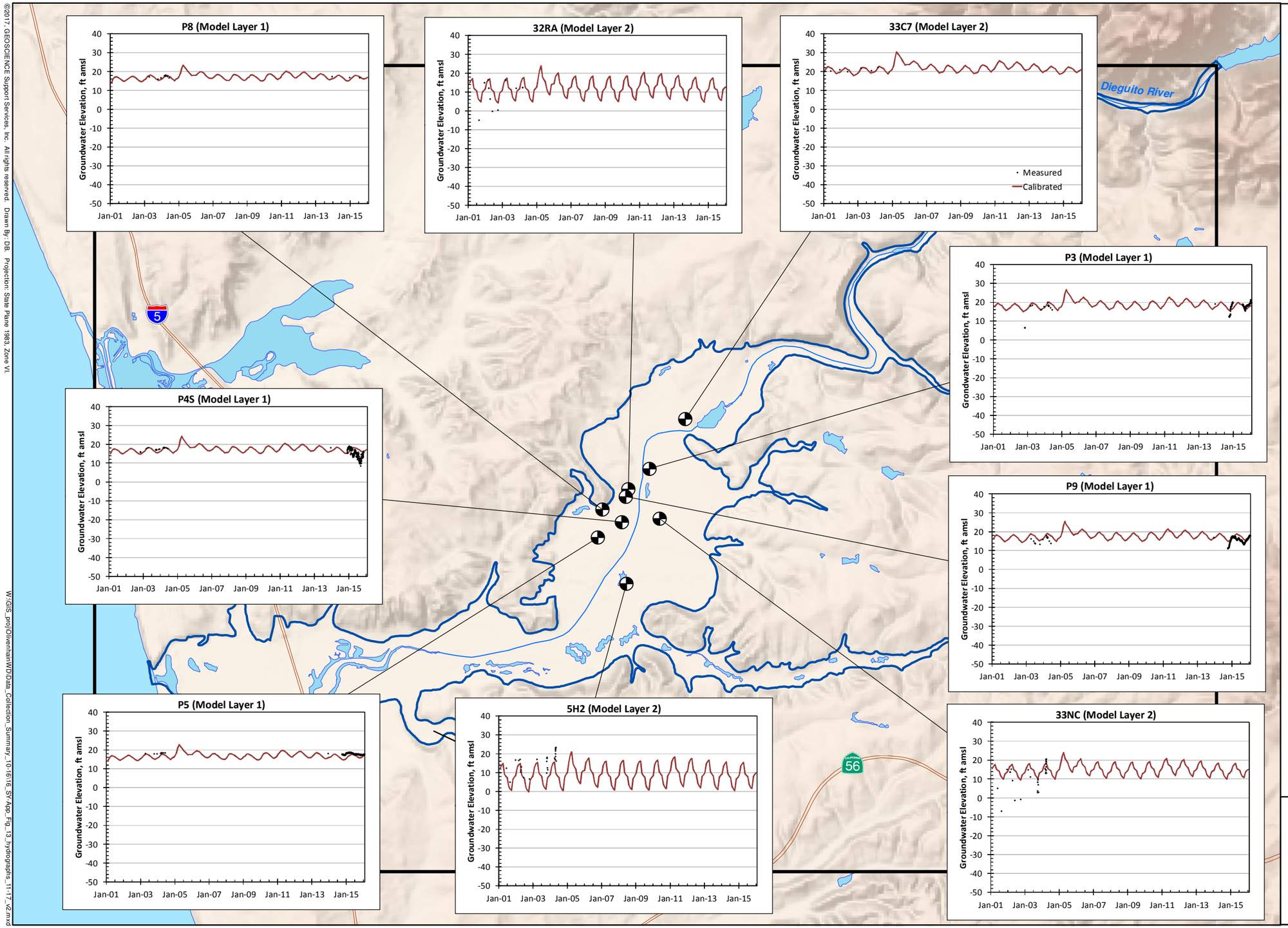

EXPLANATION

Model Boundary

San Dieguito Groundwater Basin Boundary and Study Area (DWR SGMA boundary modified by GEOSCIENCE in 2016)

Selected Well Location

Measured Water Level

Calibrated Water Level

Please refer to Table 3-1 in text for calibration statistics.

N

0 4,000 8,000

Feet

CALIBRATION HYDROGRAPHS

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OLIVENHAIN MUNICIPAL WATER DISTRICT

HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY - SUSTAINABLE YIELD ASSESSMENT

FIGURE 13

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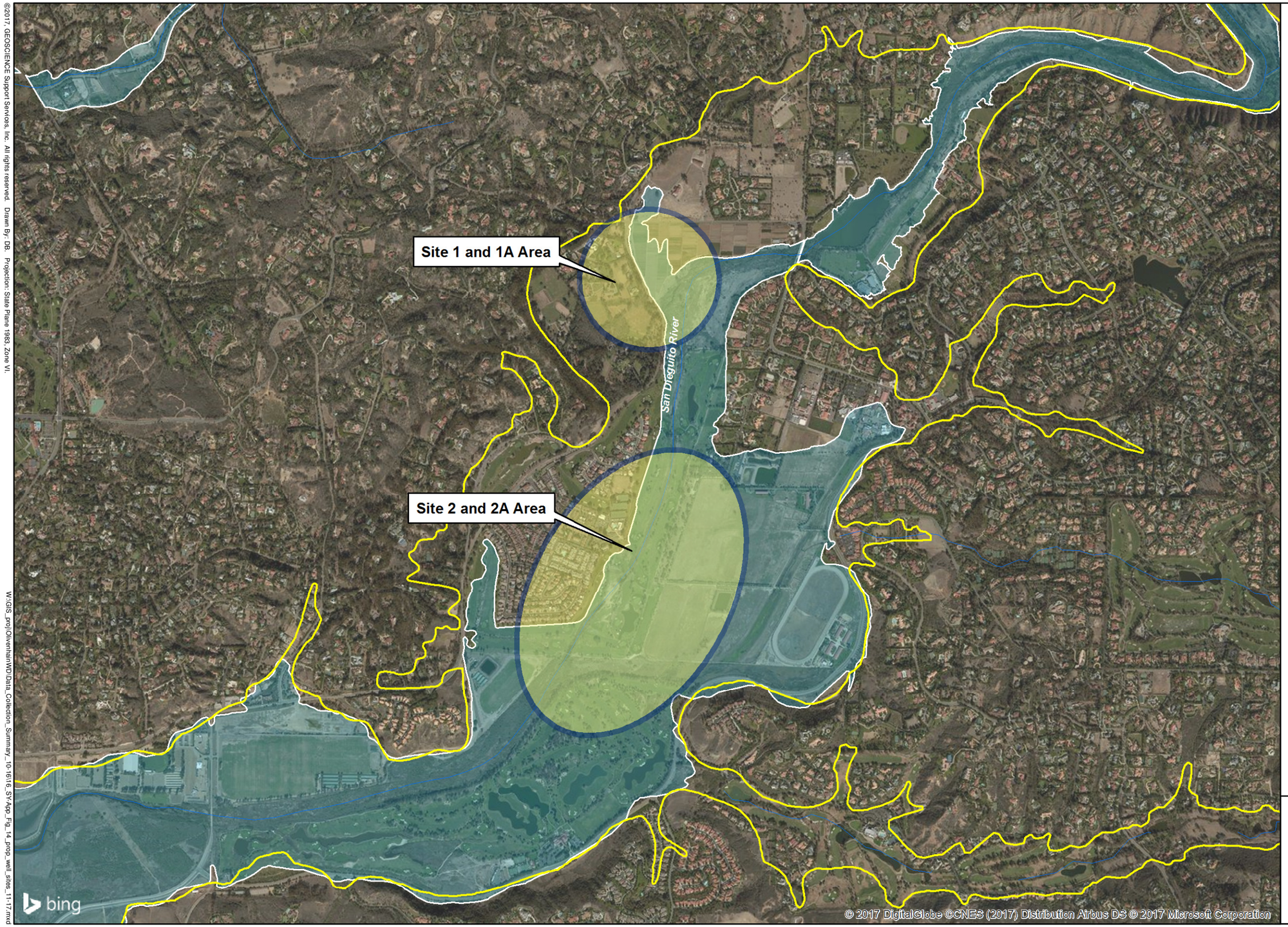

EXPLANATION

Proposed Well Site Area

FEMA 100-Year Floodplain

San Dieguito Groundwater Basin Boundary and Study Area (DWR SGMA boundary modified by GEOSCIENCE in 2016)

N

0 1,500 3,000

Feet

PROPOSED WELL SITES

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OLIVENHAIN MUNICIPAL WATER DISTRICT

HYDROGEOLOGIC STUDY OF THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY - SUSTAINABLE YIELD ASSESSMENT

FIGURE 14

GEOSCIENCE

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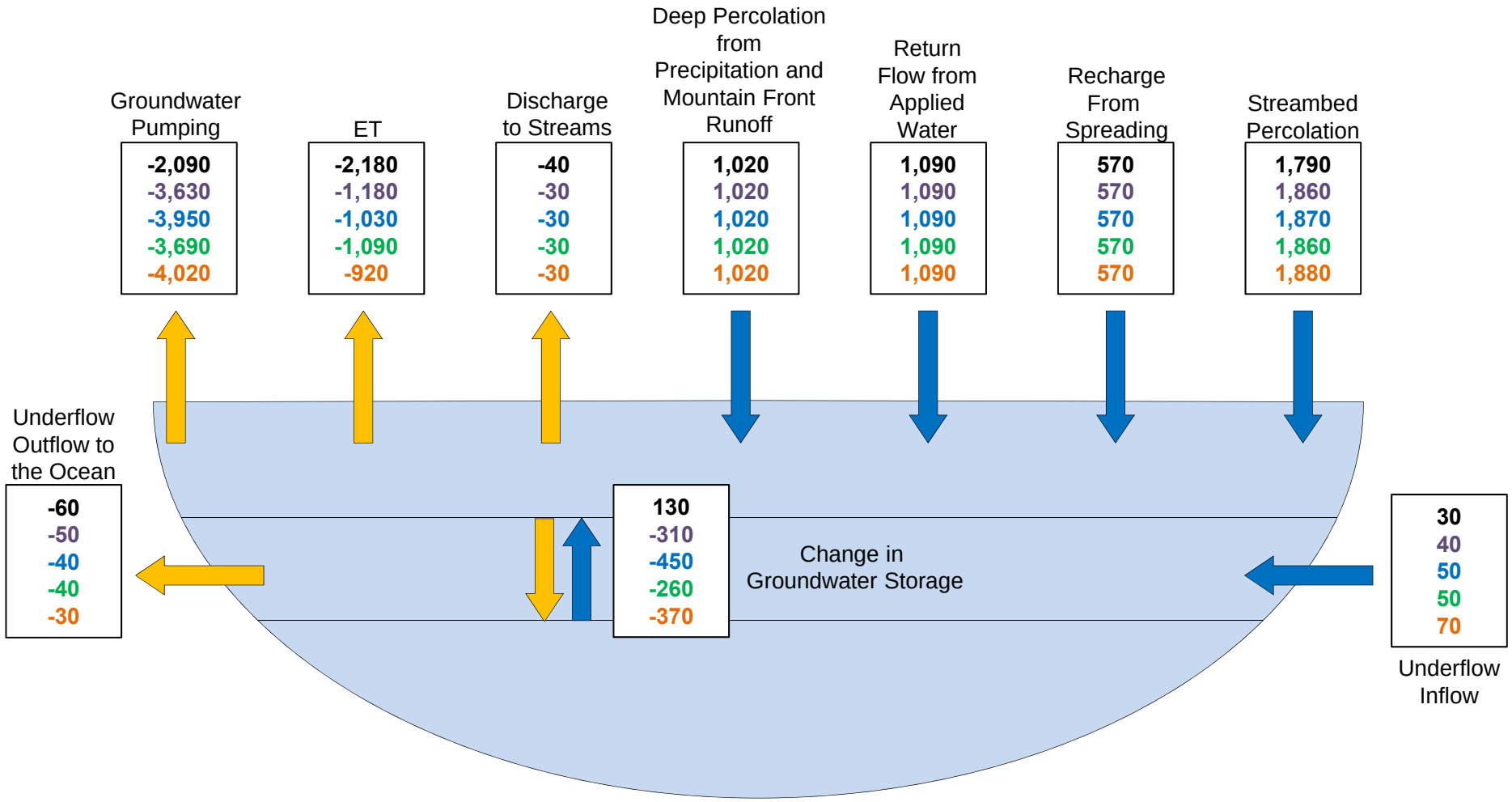

All values in acre-ft/yr
2001-2015 Hydrology
Note: Negative (-) denotes outflow/decrease
Positive (+) denotes inflow/increase

KEY:

GROUNDWATER MODEL CALIBRATION
SCENARIO 1 and 1A (1,600 ACRE-FT/YR)
SCENARIO 1 and 1A (1,985 ACRE-FT/YR)
SCENARIO 2 and 2A (1,600 ACRE-FT/YR)
SCENARIO 2 and 2A (2,000 ACRE-FT/YR)

GROUNDWATER BUDGETS FOR PREDICTIVE MODEL SCENARIOS

X:\Projects\Olivenhain\10) Feasibility Study\Modeling Appendix Drawn By: LW

30-Nov-17

OLIVENHAIN MUNICIPAL WATER DISTRICT **FIGURE 15**

SAN DIEGUITO VALLEY GROUNDWATER DESALINATION STUDY – SUSTAINABLE YIELD ASSESSMENT

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Appendix C - Hydrogeologic Investigation for the San Dieguito Valley Brackish Groundwater Desalination Study Technical Memorandum

HYDROGEOLOGIC INVESTIGATION FOR THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY

TECHNICAL MEMORANDUM

PREPARED FOR:

Olivenhain Municipal Water District

August 10, 2017

***GEOSCIENCE* Support Services, Inc. Groundwater Resources Development**

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HYDROGEOLOGIC INVESTIGATION FOR THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY

TECHNICAL MEMORANDUM

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A	Well Logs

HYDROGEOLOGIC INVESTIGATION FOR THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION STUDY

TECHNICAL MEMORANDUM

1.0 INTRODUCTION

Olivenhain Municipal Water District (OMWD) is investigating local groundwater supplies in an effort to become less dependent on imported water. OMWD boundaries overlie several groundwater basins including the San Dieguito Groundwater Basin, which OMWD is not currently pumping. Chronicled seawater intrusion along with recharge from marine sediments with elevated Total Dissolved Solids (TDS) has degraded the water quality in the basin. A reduction of TDS would be required for a potential new potable supply. Therefore, treatment of water to potable water quality and brine management are integral parts of this study.

Historically, groundwater recharge to the San Dieguito Groundwater Basin was primarily the result of infiltration of surface flow in the stream bottom during the wet season. Groundwater levels in the shallow, narrow groundwater basins in Southern California typically respond quickly to rainfall events. However, with the construction of Lake Hodges, recharge to the aquifer systems of the San Dieguito Groundwater Basin has occurred as the infiltration of occasional spills from the Lake Hodges dam.

Quantification and development of a sustainable groundwater supply from the San Dieguito Groundwater Basin requires an accurate assessment of the water balance of the watershed, which contributes to the basin downstream of Lake Hodges Dam. This assessment includes the potential hydrologic impacts from the San Diego County Water Authority's Emergency Storage Project (ESP), which is expected to provide 20,000 acre-ft of storage in Lake Hodges. Therefore, a key initial effort was to assess the impact of the ESP on the long-term water balance.

1.1 Purpose and Scope

GEOSCIENCE Support Services, Inc. (GEOSCIENCE) and RMC Water and Environment (RMC) have been tasked with conducting a hydrogeologic study of the San Dieguito Groundwater Basin.

This investigation includes the following tasks:

- Task 1 – Data Collection
- Task 2 – Hydrogeologic Investigation (including update of existing groundwater model)
- Task 3 – Preliminary Design of Brackish Water Wellfield and Raw Water Collection
- Task 4 – Treatment Plant Planning

- Task 5 – Development of Brine Management Alternatives
- Task 6 – Development of Preliminary Product Water Conveyance Alternatives
- Task 7 – Public Outreach and Community Involvement (to be conducted by OMWD)
- Task 8 – Evaluation of Project Regulatory and Permitting Requirements
- Task 9 – Preparation of a Brief Environmental Assessment
- Task 10 – Preparation of a Screening and Economic Analysis
- Task 11 – Preparation of the Feasibility Study Report
- Task 12 – Project Management Tasks

The purpose of the study is to determine if a sufficient increment of water remains from a sustainable supply after consideration of current groundwater users and other recharge sources in the basin (Task 1 and Task 2). If an increment exists, then locations for extraction wells, water quality treatment, and conveyance would follow-on (Task 3 through Task 12).

Therefore, the main goals of Task 1 and Task 2 of this project are to:

1. Determine the safe yield increment of water available in the San Dieguito Groundwater Basin, without impacting other users in the basin, and
2. Determine the locations for wellfields, treatment facilities, pipelines, and brine discharge needed to produce 1,600 acre-ft of water per year.

This Technical Memorandum (TM 1) is the first to be prepared for the geohydrologic investigation of the San Dieguito Groundwater Basin. The purpose of this TM is to summarize the results of Task 1 — namely, the collection of available data and additional data through site visits — and to provide our recommendation on including a geophysical investigation in the scope of work. Therefore, the deliverable for Task 1 is this summary letter which provides an updated geologic and hydrogeologic conceptual model, and includes a cost/benefit analysis for geophysical surveys.

2.0 TASK 1 – DATA COLLECTION

Data collection was completed to evaluate potential changes to the geologic conceptual model, prepare a preliminary water balance, and update/recalibrate the groundwater model (previously developed by Hargis).

2.1 Sources of Data

The data collection effort began with obtaining all available data and reports covering the San Dieguito Groundwater Basin. This included:

- Basin boundary from the California Department of Water Resources (DWR),
- Well logs and water levels from the U.S. Geological Survey (USGS), DWR, County of San Diego Department of Environmental Health (DEH), OMWD, Stoney-Miller Consultants, Inc. (SMC), California State Water Resources Control Board (SWRCB) GeoTracker website, and Department of Oil, Gas, and Geothermal Resources (DOGGR),
- Water quality data from OMWD, SMC, DWR, GeoTracker Groundwater Ambient Monitoring and Assessment Program (GAMA) website, and USGS,
- Geologic maps from the USGS,
- Precipitation records from the National Oceanographic and Atmospheric Administration (NOAA) website and PRISM Climate Group,
- Land use from the Santa Fe Irrigation District through DLM Engineering, Inc.,
- Recent water quality data provided by OMWD, and
- San Dieguito River surface water gage data provided by Weston Engineering.

A complete list of references is provided in Section 5.0 of this TM.

To define and quantify geohydrologic characteristics for the San Dieguito Groundwater Basin, additional information was required for several key items, as described in the following sections.

2.2 San Dieguito Groundwater Basin Boundary

The initial basin boundary for the San Dieguito Groundwater Basin, as published in the 2003 DWR Bulletin 118 Report, included the lower segment of San Dieguito Valley in central coastal San Diego County, and Osuna Valley. The groundwater basin boundaries were published again as a part of the Sustainable Groundwater Management Act (SGMA) in 2016. However, the groundwater basin boundaries published by DWR are not suitable for the current investigation as they do not fully consider

the relationship between the mapped geology and the extent of water-bearing materials that form the groundwater basin. Therefore, for the purposes of this investigation, GEOSCIENCE modified the San Dieguito Groundwater Basin boundary based on lithology and bedrock geology. This modification is shown in relation to the old basin boundary on Figure 2-1 below. We recommend that the revised groundwater boundaries be submitted during the next SGMA open period for basin boundary modification.

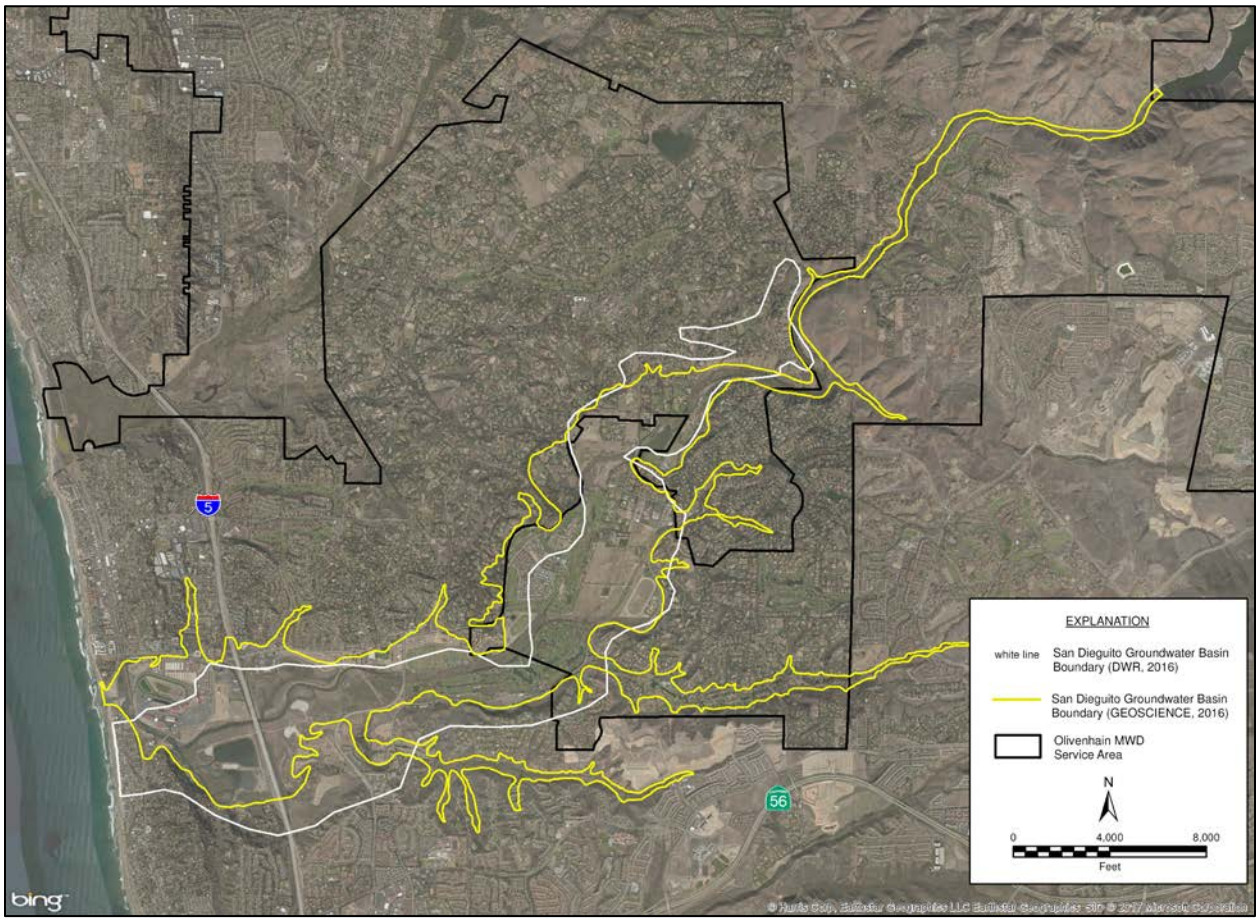

Figure 2-1 – DWR and GEOSCIENCE-modified Groundwater Basin Boundaries

2.3 Well Drilling Records

The initial data collection task (Task 1) was to obtain any well drilling logs for the area, specifically since the completion of the 2004 Hargis Report. Through contact with DWR, County of San Diego DEH, OMWD, SMC, DOGGR, SWRCB (GeoTracker), and the USGS, nearly 40 well sites were identified within and around the San Dieguito Groundwater Basin (See Table 1). The well depths range from 80 ft, below ground surface (bgs) to 1010 ft, bgs and most wells were around 120 ft deep. Nearly 170 monitoring wells, boreholes, and cone penetrometer tests (CPTs) were also identified within the San Dieguito Groundwater Basin (See Table 2). CPTs are a common in situ testing method used to determine

subsurface stratigraphy along with soil conditions and materials. The monitoring wells, boreholes, and CPTs have a depth range of less than 10 ft, bgs to just over 100 ft, bgs although most were 50 ft deep. Figure 2-2, below, shows the locations of the wells that were either drilled after 2004 or had locations confirmed in the field.

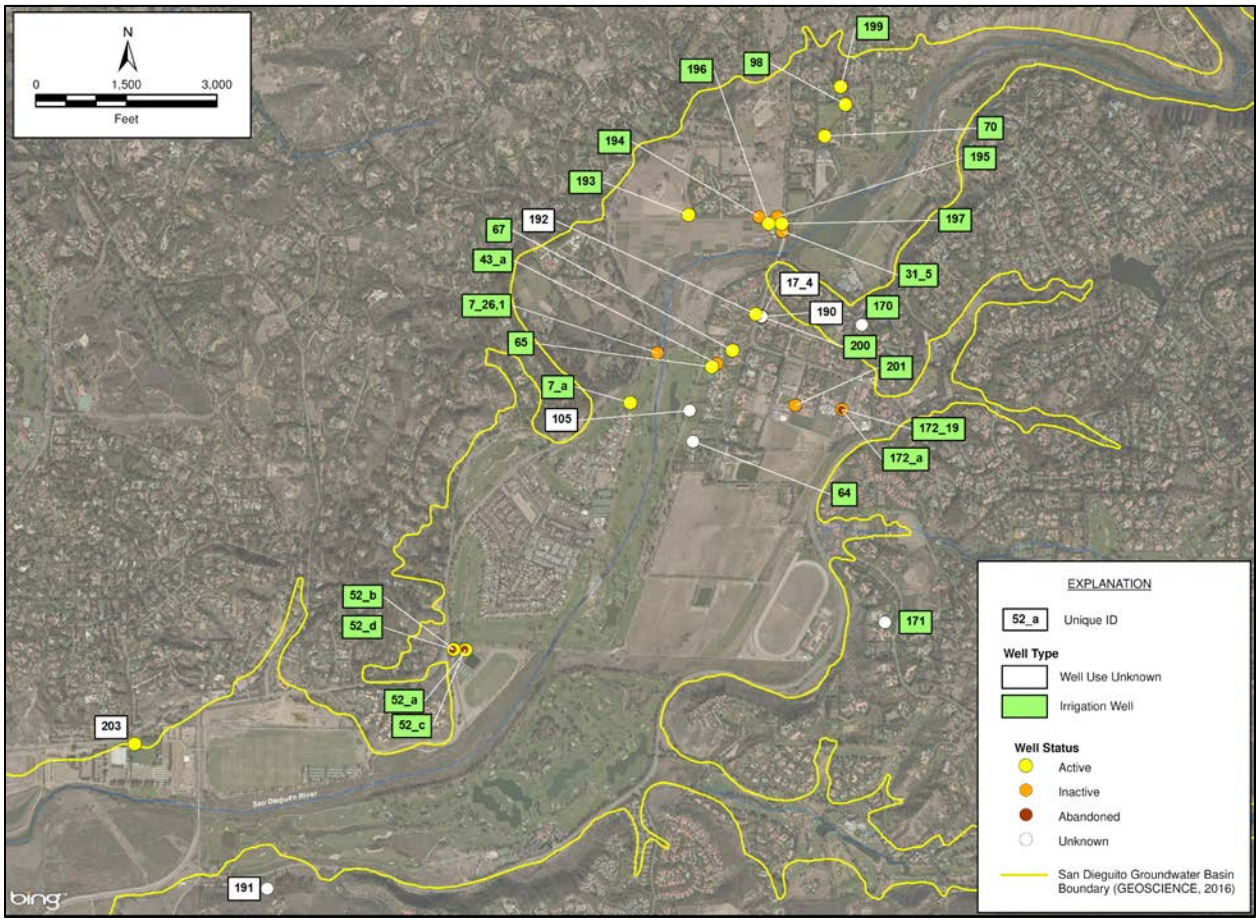

Figure 2-2 – Wells with Logs Recorded Since 2004 or Identified in Well Canvas
(See Table 1 for Well Details)

Figure 2-3, below, shows the well discharge rates for wells located within the study area and screen intervals, where reported. The production rates range from over 200 gallons per minute (gpm) to 1100 gpm while most of the wells were producing either 600 or 800 gpm. All of the known screened intervals fall between 50 ft, bgs and less than 140 ft, bgs. The rates and well details shown on Figure 2-3 were derived from the drilling logs collected during this task. The drilling logs are provided in Appendix A and all of the production well information is reported in Table 3.

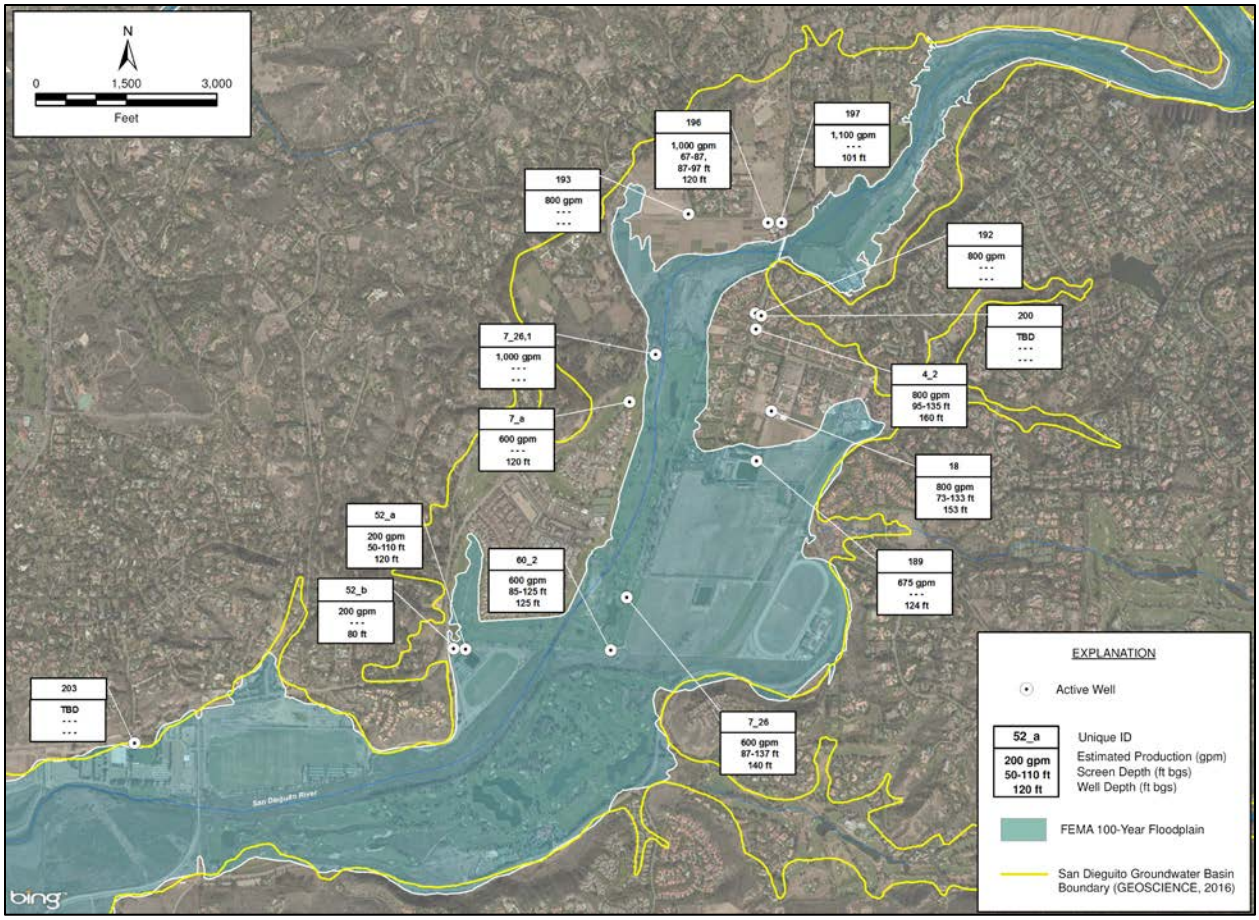

Figure 2-3 – Reported Discharge Rates for Wells in the Study Area
(See Table 3 for Production Well Details)

Figure 2-4, below, shows the locations of the monitoring wells, boreholes, and CPTs that were drilled from 2004 to 2016. Information on the monitoring wells, boreholes, and CPTs is provided in Table 2 and logs of the wells are included in Appendix A. Examination of drilling logs was focused in the forebay area to determine whether new data collected might indicate a change in distribution of aquifer units; specifically, whether or not the aquitard, which divides the upper and lower aquifers, extended further up the valley. The extent of the aquitard is important because it constrains the area within the San Dieguito River channel, which provides recharge from the infiltration of surface run-off to both the lower and the upper aquifers. Based on our review of the data collected for Task 1, the extent of the aquitard will remain as mapped by Hargis in 2004 and depicted by Stoney-Miller in 2014. The aquifer unit distribution will remain the same in the updated groundwater model with minor revisions at the basin boundary edges.

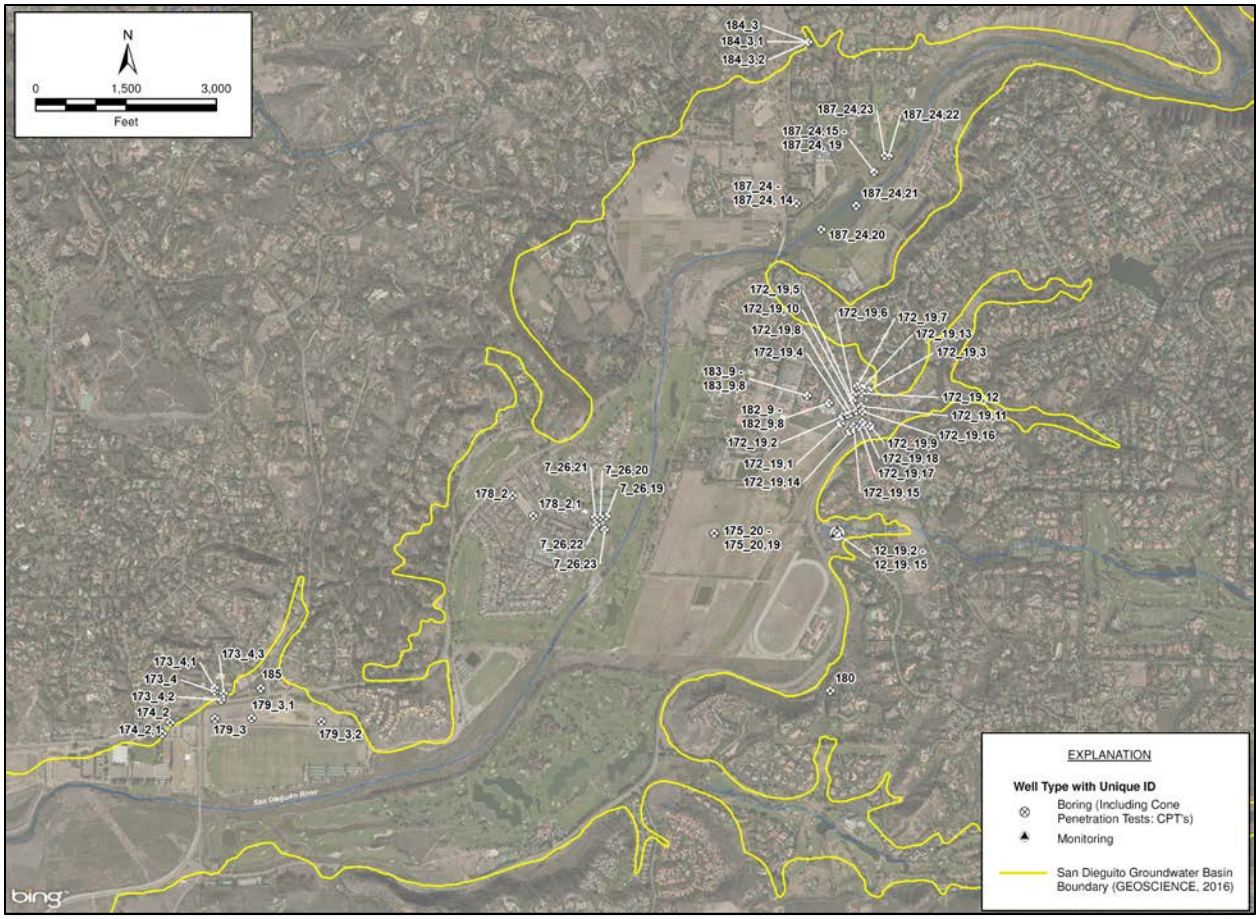

Figure 2-4 – Monitoring Wells, Soil Borings, or Cone Penetrometer Tests (CPTs) since 2004
(See Table 2 for details of items shown on map)

2.4 Precipitation Data

Precipitation data used in this study was obtained from the PRISM Climate Group at Oregon State University. The PRISM Climate Group gathers climate observations from a wide range of monitoring networks, applies sophisticated quality control measures, and develops spatial climate datasets to reveal short- and long-term climate patterns. The resulting datasets incorporate a variety of modeling techniques and are available at multiple spatial/temporal resolutions, covering the period from 1895 to the present. The annual precipitation ranged from 0 inches to 10.39 inches with an average of 1 inch. For this study, the following PRISM Time Series Data were downloaded:

Location: Lat: 33.0422 Lon: -117.1718 Elev: 407ft
Climate variable: ppt
Spatial resolution: 4km
Period: 2001-01 - 2015-12
Dataset: AN81m

PRISM day definition: 24 hours ending at 1200 UTC on the day shown
Grid Cell Interpolation: Off
Time series generated: 2017-Jan-17

2.5 Land Use Data

A shapefile of 2013 land use was downloaded from the San Diego Association of Governments (SANDAG)/ San Diego Geographic Information Source (SanGIS) Regional Data Warehouse. The shapefile contains a field for land use code/classification (e.g., residential, commercial, agricultural, park/golf, etc.) which will be used to help determine water usage and return flows for the groundwater flow model. Figure 2-5, below, shows land use within the watershed area (blue lines). The groundwater basin is also shown as the purple line, and different shading represents different land use categories.

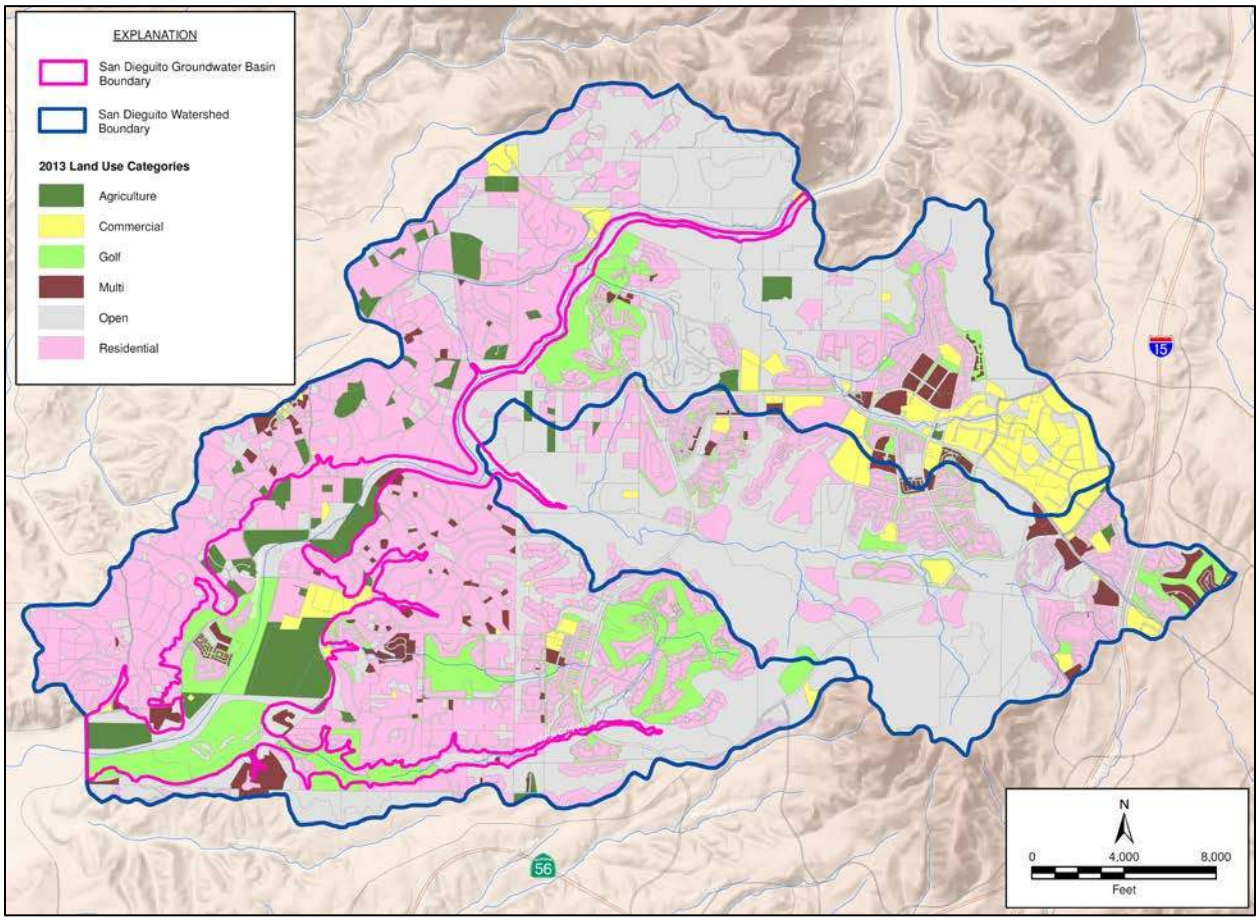

Figure 2-5 – Land Use Map – San Dieguito Groundwater Basin Watershed

2.6 Water Quality Data

The initial search for water quality data included the collection of data from OMWD, SMC, DWR, the GeoTracker GAMA website, and USGS. Water quality data are available for over 40 wells within the San Dieguito Groundwater Basin. Nearly all 40 wells have water quality dating back to the early 2000s and over 20 wells have current (2015 - 2017) water quality data. A summary of the wells with water quality data within the San Dieguito Groundwater Basin is provided in Table 4 and the complete water quality data are reported in Table 5. Figure 2-6 shows the well locations for water quality wells in the basin.

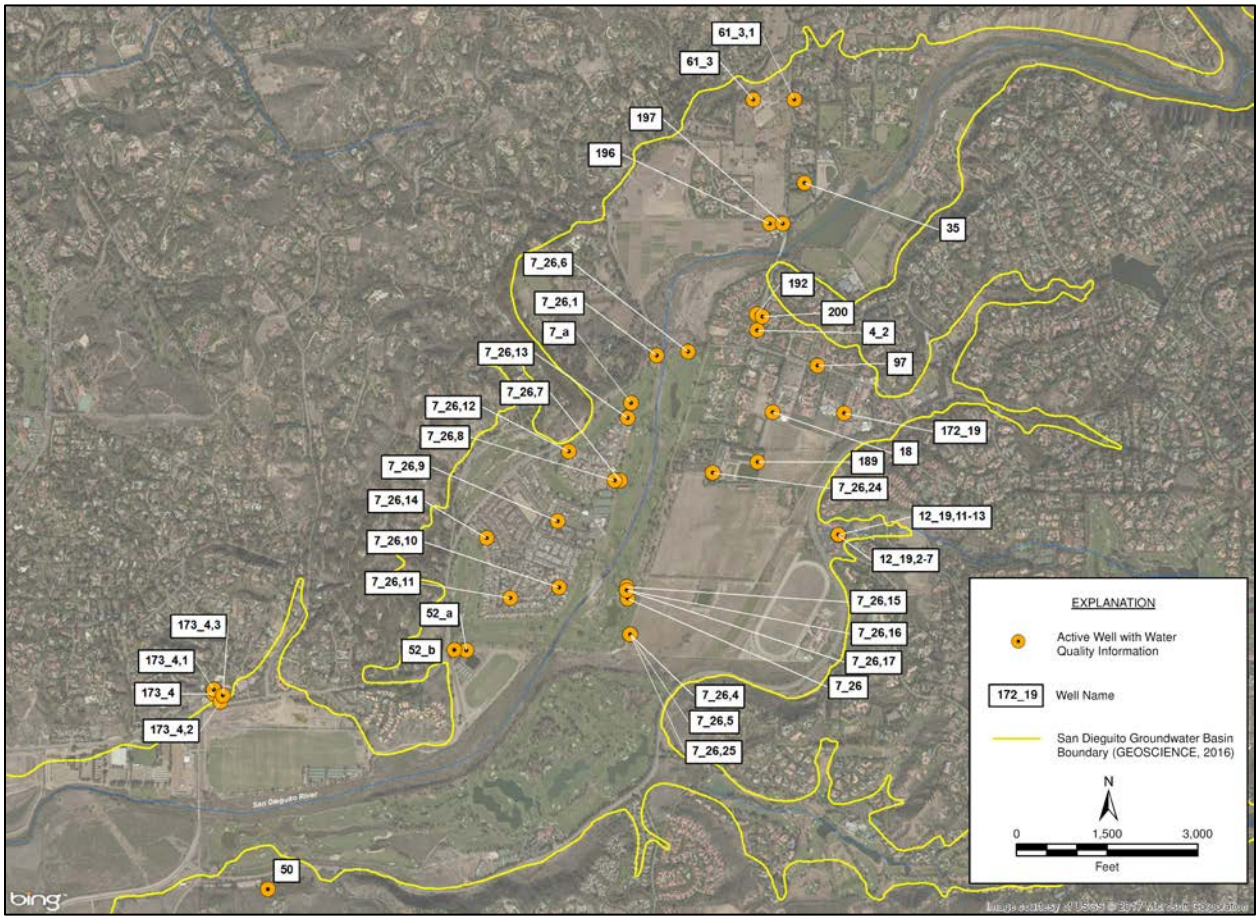

Figure 2-6 – Well Locations for Water Quality Wells in San Dieguito Groundwater Basin

During a field visit, GEOSIENCE was able to identify 9 wells to provide a representative sample of the groundwater within the San Dieguito Groundwater Basin. OMWD has overseen the sampling of these wells, which include Unique IDs: 7_a, 18, 52_a, 52_b, 189, 192, 196, 197, and 200. The water samples were analyzed for total metals (calcium, magnesium, sodium, etc.) and conventional chemistry parameters (alkalinity, specific conductance, hardness, etc.). The comprehensive results of the analyses are provided in Table 5. A summary of the water quality recently tested is below in Table 2-1.

Table 2-1 – Water Quality Summary for Nine Wells Identified During Geoscience Field Visit

Unique ID	Total Dissolved Solids	Specific Conductance	Chloride	Iron	Manganese	Nitrate as N	pH
	mg/L	umhos/cm	mg/L	mg/L	mg/L	mg/L	
7_a	2,500 (2001) 2,600 (2002) 3,000 (12/2016)	4,880 (1/2017) 5,000 (1/2017)	940 (2001) 860 (2002) 1,160 (1/2017)	0.05 (2001) <0.04 (2002) ND (1/2017)	1.0 (2001) 1.0 (2002) 1.7 (1/2017)	2.8 (2001) 1.4 (2002) 1.1 (1/2017)	7.0 (2001) 6.9 (2002) 7.3 (12/2016)
18	2,300 (2001) 631 (1/2017)	1,020 (1/2017) 1,000 (1/2017)	930 (2001) 100 (1/2017)	5.3 (2001) 0.02 (2/2017)	3.4 (2001) 0.004 (2/2017)	<0.55 (2001) 0.63 (1/2017)	6.9 (2001)
52_a	4,060 (11/2016)	6,400 (10/2016) 6,380 (11/2016) 6,600 (11/2016)	1,680 (11/2016)	1.9 (11/2016)	1.1 (11/2016)	0.03 (11/2016)	7.3 (11/2016)
52_b	4,600 (2001) 4,400 (2002) 4,030 (11/2016)	6,300 (10/2016) 6,230 (11/2016) 6,400 (11/2016)	2,300 (2001) 1,800 (2002) 1,550 (11/2016)	2.0 (2001) 0.21 (2002) ND (11/2016)	1.6 (2001) 1.4 (2002) 1.3 (11/2016)	<0.55 (2001) <1.1 (2002) 4.6 (11/2016)	6.9 (2001) 7.6 (2002) 7.0 (11/2016)
189	3,100 (2001) 2,800 (2002) 2,760 (2/2017)	4,510 (3/2017)	1,400 (2001) 1,100 (2002) 1,070 (3/2017)	2.6 (2001) <0.04 (2002) 2.6 (2/2017)	1.4 (2001) 1.3 (2002) 1.3 (2/2017)	<1.1 (2001) <0.55 (2002) ND (2/2017)	7.3 (2001) 7.3 (2002)
192	1,640 (9/2016) 1,610 (9/2016)	2,650 (9/2016) 2,600 (9/2016) 2,610 (9/2016)	530 (9/2016) 520 (9/2016)	2.8 (10/2016)	1.7 (10/2016)	ND (9/2016) ND (10/2016)	7.3 (9/2016) 7.3 (9/2016)
196	1,730 (1/2017)	2,940 (1/2017) 2,900 (1/2017)	630 (1/2017)	3.8 (2/2017)	2.2 (2/2017)	ND (1/2017)	7.3 (1/2017)
197	1,750 (2/2017)	2,980 (3/2017)	660 (3/2017)	2.9 (2/2017)	1.8 (2/2017)	ND (2/2017)	-
200	3,990 (2/2017)	6,350 (2/2017) 6,500 (2/2017)	1,660 (2/2017)	61.6 (3/2017)	4.1 (2/2017)	ND (2/2017)	-

2.7 Field Visit

From November 22, 2016 to November 23, 2016, a team from GEOSCIENCE performed a well canvas on the area within and surrounding San Dieguito Valley. The purpose was to identify the locations of wells in the Valley that show indications of current well use and to locate wells not currently in the database but showing indications of current use. During the well canvas, the GPS locations of the wells were confirmed and refined for the project database. The team confirmed 15 active production wells and located another 17 potentially active production wells for which field validated was not possible. Follow-up work lead to the sampling of nine spatially dispersed wells resulting in a broader coverage of current water quality information for the basin. Notes from this field investigation are included in Tables 1, 3, and 4.

3.0 TASK 3 – SUMMARIZE FINDINGS FROM THE DATA COLLECTION

3.1 Results of the Basin Boundary Modification

The new basin boundary prepared for this study is shown on Figure 3-1. The groundwater basin boundary was modified for this study from the basin boundary re-published by DWR for the SGMA program. The basin boundary was placed at the contact between older sedimentary geologic formations, which underlie the hills surrounding the groundwater basin, and Holocene or Pleistocene alluvium and alluvial fan deposits, which underlie the valley floor. The boundary was drawn based on the assumption that the groundwater basin aquifers are contained in the Quaternary sediments and that the older geologic units which underlie the surrounding hills are essentially non-watering bearing, with respect to yielding groundwater to wells. The contact between the older geologic units and Quaternary deposits was based upon geologic mapping published by California Geological Survey (CGS) and USGS.

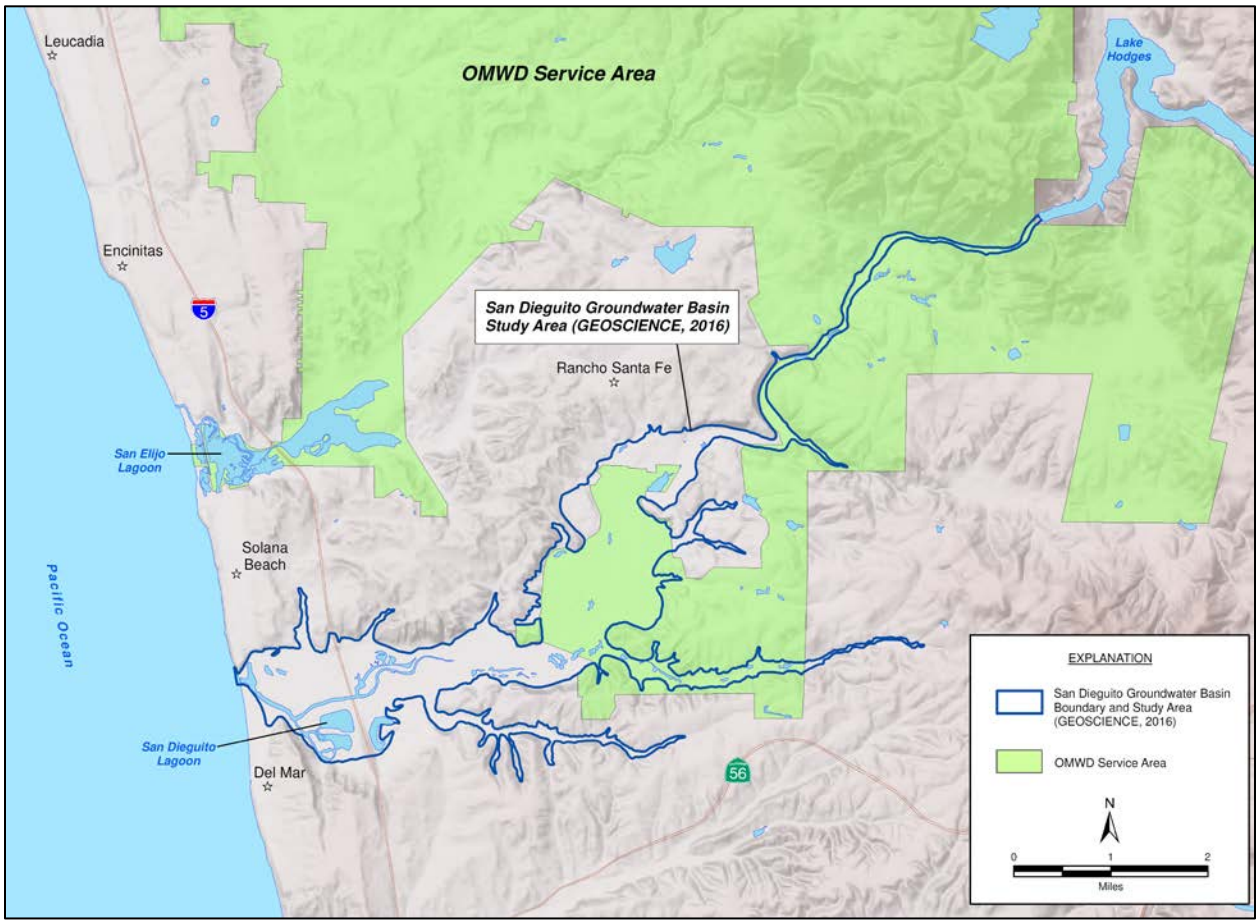

Figure 3-1 – Groundwater Basin Boundaries for Brackish Groundwater Desalination Study

3.2 Basin Depth

No new data was obtained that warranted a revision to groundwater basin depth determined by previous studies. The groundwater basin depth provided in the 2004 Hargis model will remain unchanged for the groundwater model update. Figure 3-2 shows the Hargis model bottom aquifer elevations ranging from -180 to -51 ft above mean sea level. However, the groundwater basin boundaries will be revised to match to modified basin boundaries described above.

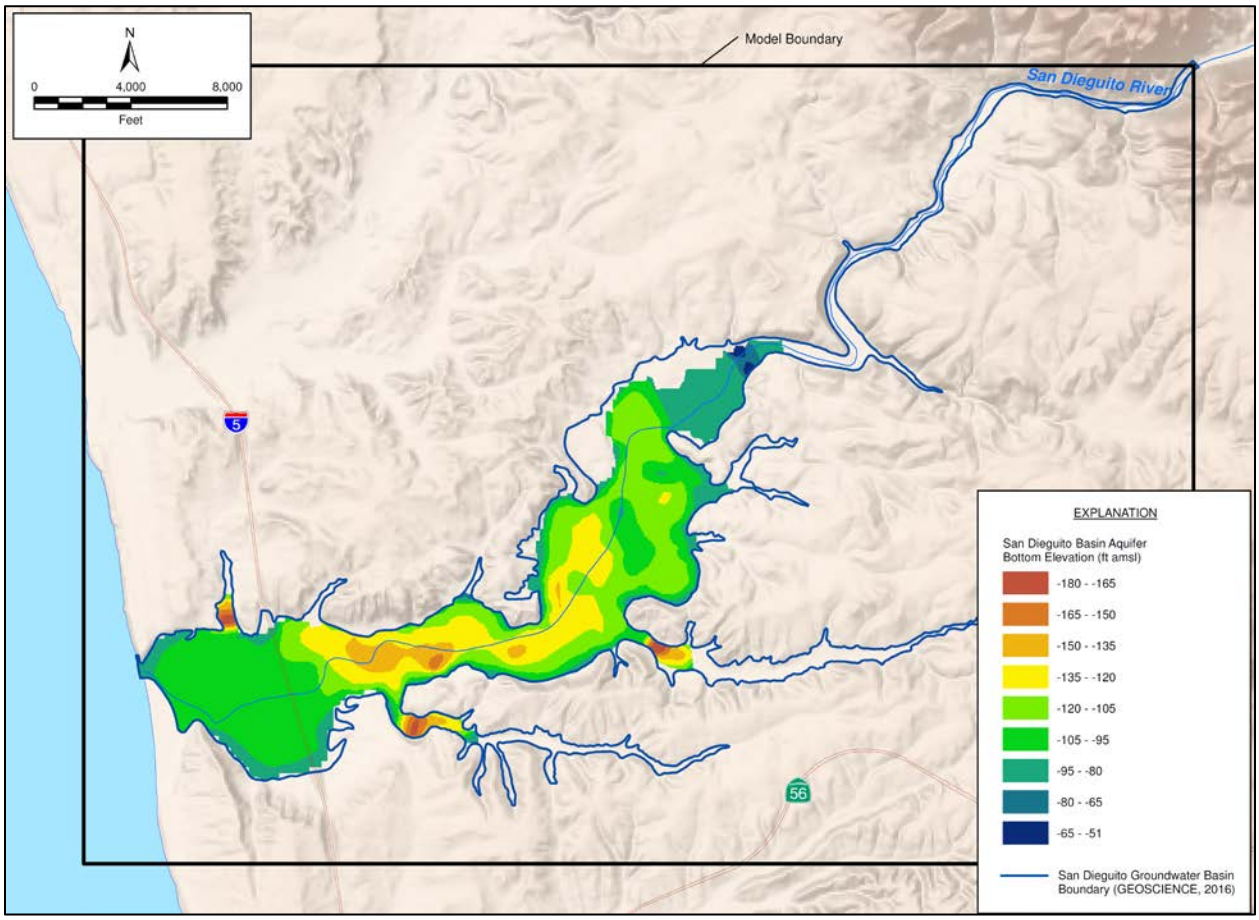

Figure 3-2 – 2004 Hargis Model Bottom Aquifer Elevations

4.0 CONCLUSIONS AND RECOMMENDATIONS FROM TASK 1 DATA COLLECTION AND ANALYSIS

4.1 Geologic Conceptual Model

Data collected for Task 1, including additional lithologic logs, confirm that the configuration of the San Dieguito Groundwater Basin has been sufficiently characterized to use for the current study. Few minor changes were made to the aquitard definition in the 2004 Hargis model after a review concluded it accurately reflected the San Dieguito Groundwater Basin.

4.2 Geophysical Survey

GEOSCIENCE's project proposal was responsive to the request to use geophysical survey methods to further characterize the groundwater basin. We provided tentative locations for surveys to use the method to further delineate the upstream terminus of the aquitard. However, we also recommended that data collection and analysis be completed in order to determine if conducting the geophysical surveys would represent a value to further understanding of the geologic conceptual model of the groundwater basin.

Based on review of previous reports, and lithologic and water quality data collected as a part of Task 1, we do not recommend moving forward with the geophysical survey as a part of Task 2. We recommend that budget allotted for the geophysical survey cost be held for additional data gathering. In discussions with the project team, we concur that re-instating data collection at the USGS surface water gage located on the San Dieguito River at El Camino Real would provide a strong benefit to the project going forward.

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TABLES

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Table 1

Wells within San Dieguito Groundwater Basin Installed Post 2004 or Active Field Validated November 2016

Data Source	Unique ID	State Well Number	Latitude [WGS 84]	Longitude [WGS 84]	Well Type	Status	Year Constructed	Recent Water Level Depth [ft]	Date of Water Level	Well Log	Well Depth [ft]	Pumping: Estimated Yield [gpm]	Pumping: Drawdown [ft]	Pumping: Test Length [hr]	Screen Intervals	Comments	Field Notes
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	13S 3W 32JD	32.9990064	-117.2058431	Irrigation	Inactive	2001										Two wells, one currently inactive [7_26,1] (has been video taped) other is active [7_a] (was pumping while on site), both wells have pumps used to fill seperate lakes on property with well and reclaimed recycled water (blended).
Hargis Vol. II, Appendix A / Well Canvas	7_a	13S 3W 32	32.9967290	-117.2072960	Irrigation	Active	1995				120	600					Two wells, one currently inactive [7_26,1] (has been video taped) other is active [7_a] (was pumping while on site), both wells have pumps used to fill seperate lakes on property with well and reclaimed recycled water (blended).
San Dieguito Basin Well Logs / Well Canvas	17_4	13S 3W 33E4	33.0006980	-117.2002460	Unknown Use	Inactive	1981										See 200: Pumphouse across from 192, seems to have telemetry system. Possibly 17 or 190.
San Dieguito Basin Well Logs / Well Canvas	31_5	13S 3W 33C5	33.0045864	-117.1991520	Irrigation	Inactive	1981	22	4-Nov-81	Lithology	130				40-130		Could be well 196.
San Dieguito Basin Well Logs / Well Canvas	43_a	13S 3W 33N	32.9985540	-117.2026270	Irrigation	Inactive	1981	11	22-Oct-81		122						Gated community-large property, two tanks visible from fence, likely active. Possibly 15, check owner.
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a		32.9854270	-117.2160740	Irrigation	Active	1986				80	200+					Two continuously running wells fill pond while pump station pulls water out of pond to irrigate. Fresh water only used if pond is low. Pumping about 120 gal/min total (estimated). Sample port present on both wells, told we could sample WQ. Well 1 thought to be about 100 ft deep and pump replaced around September.
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b		32.9854430	-117.2167130	Irrigation	Active	2001	12	1-Jun-01	DWR	120	200+	30	4	50-110		
Well Canvas	52_c		32.9854400	-117.2161200	Irrigation	Abandoned											First abandoned well next to Well 1 with iron build-up. This well is accessible with water present. Second abandoned well next to Well 2 is enclosed with metal casing and labeled "SF1." Swab tool with 2" diameter was near by, seemed rehab was tried at some time.
Well Canvas	52_d		32.9854500	-117.2167600	Irrigation	Abandoned											
All_Wells (excel file) / San Diego County	64	13S 3W 33C2	32.9950000	-117.2038890	Irrigation	Unknown	2012	16	4-Jun-12	Lithology	120	200			40-120		
All_Wells (excel file) / San Diego County / Well Canvas	65	13S 3W 33M9	32.9983950	-117.2028910	Irrigation	Active	2006	19	24-Aug-06	DWR	144	70	110	4	37-97 117-137		Gated community. Two wells, one potentially active, one outfitted, both look older.
All_Wells (excel file) / San Diego County / Well Canvas	67	13S 3W 33M6	32.9991570	-117.2017830	Irrigation	Active	2008	8	15-Feb-07	DWR	115				80-105		Newer well, active pumping-6" diameter well with filtration.
All_Wells (excel file) / San Diego County / Well Canvas	70	13S 3W 28P1	33.0089377	-117.1969135	Irrigation	Active	2005	20	19-Dec-05	DWR	90	600	6	8	30-70		Signage says well water used for irrigation but in gated community (no access). Well not found but likely active.
All_Wells (excel file) / San Diego County	88	13S 3W 22E4	33.0288670	-117.1829074	Irrigation	Unknown	2012	80	13-Dec-12	Lithology	620	43	90		360-560		
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	98		33.0103720	-117.1957960	Irrigation	Active											Signage says well water used for irrigation but in gated community.
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	105		32.9964160	-117.2040910	Unknown Use	Unknown											Possible domestic irrigation well on large property.
San Diego County	164		33.0025300	-117.1225300	Irrigation	Unknown	2012	22	21-Nov-07	DWR	100	800	60	8	60-100		
San Diego County	166	13S 3W 21	33.0221300	-117.1849400	Irrigation	Unknown	2012			DWR	810	15			135-810 (open)	Hard rock hole.	
San Diego County	167	13S 3W 22	33.0225333	-117.1822540	Irrigation	Unknown	2009	46	19-Oct-09	DWR	1010	5	430	8	500-1010 (open)	Hard rock hole.	

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Table 1

Wells within San Dieguito Groundwater Basin Installed Post 2004 or Active Field Validated November 2016

Data Source	Unique ID	State Well Number	Latitude [WGS 84]	Longitude [WGS 84]	Well Type	Status	Year Constructed	Recent Water Level Depth [ft]	Date of Water Level	Well Log	Well Depth [ft]	Pumping: Estimated Yield [gpm]	Pumping: Drawdown [ft]	Pumping: Test Length [hr]	Screen Intervals	Comments	Field Notes
San Diego County	170	13S 3W 32	33.0003700	-117.1948100	Irrigation	Unknown	2010			DWR	760	45			224-760 (open)	Hard rock hole.	
San Diego County	171	14S 3W 4	32.9868600	-117.1934100	Irrigation	Unknown	2010	127	27-Apr-10	DWR	410	55			210-230 330-410	Hard rock hole.	
San Diego County / Well Canvas	172_19	13S 3W 33	32.9965160	-117.1958380	Irrigation	Inactive	2009			Lithology	130	150			20-130		Two wells present at location: new and old [172a]. New well has new pump (placed 15-20 ft deep) used to dewater parking lot after rain. Old well collapsed, 6" pipe, had filtration to remove hard minerals (not used for about 10 years). Original pipes 1968-69 construction.
Well Canvas	172_a	13S 3W 34	32.9964820	-117.1958570	Irrigation	Abandoned											Had filtration to remove hard minerals.
Well Canvas	190	13S 3W 33	33.0006980	-117.2002460	Unknown Use	Unknown	2001										See 200. Pumphouse across from 192, seems to have telemetry system. Possibly 190 or 17.
Hargis Vol. II, Appendix A / Well Canvas	191	14S 3W 7	32.9745140	-117.2266630	Unknown Use	Unknown	2001									Well same as 50.	Plots in same location as 50.
Well Canvas	192	13S 3W 33	33.0008190	-117.2005510	Unknown Use	Active						800				Well is currently being rehabbed.	Large diameter pipe covered with plastic at surface. Nearby vault with filtration and treatment tanks inside. Pump column (?) pulled out at surface. Need completion details.
Well Canvas	193		33.0052840	-117.2042200	Irrigation	Active	Unknown					800				Well water too brackish to use.	Previous active well, 800 gpm for 3-4 hrs, no longer used. Told we could sample WQ.
Well Canvas	194		33.0052300	-117.2004260	Irrigation	Inactive											1966 construction? Irrigation well unused. Pipe cap says "Kennedy 1966" - across from 196.
Well Canvas	195		33.0052450	-117.1994370	Irrigation	Inactive											Irrigation well, unused. Tank and pipe for dust control, truck filling. Across from 196.
Hargis Vol. II, Appendix A / Well Canvas	196		33.0049270	-117.1998790	Irrigation	Active						1000					Active well 280 gpm for about 3 hrs. each day. Pump at about 95 ft, blend about 1/3 well water with city water. Told we could sample WQ: well water is brackish with manganese problem.
Hargis Vol. II, Appendix A / Well Canvas	197		33.0049270	-117.1991770	Irrigation	Active	1983				101	1100				Very high turbidity due to inactivity of well and insufficient amount of time or capacity to purge well.	Actively pumping water for ranch down the street, better WQ in this area. Seems to have telemetry system here.
Well Canvas	199		33.0111800	-117.1960600	Irrigation	Active											Small well with treatment to irrigate small vineyard.
Well Canvas	200		33.0006980	-117.2002460	Irrigation	Active										Very high turbidity due to inactivity of well and insufficient amount of time or capacity to purge well.	Pumphouse across from 192, seems to have telemetry system. Possibly 190 or 17. Old piping close by, may or may not be from previous well.
Well Canvas	201		32.9966900	-117.1983600	Irrigation	Inactive											Inactive due to silting up of well.
Well Canvas	203		32.9810250	-117.2339280	Unknown Use	Active											Water tanks and plumbing visible near race track and office. Unknown if location has a well.

Hargis Vol. II, Appendix A = Hargis and Associates, Inc. 2004. Hydrogeologic Report Aquifer Storage and Recovery Project, San Dieguito Basin, San Diego County, California Volume II Appendix A, 556 p

San Diego County = Well logs received from GEOSCIENCE Support Services, Inc. (GSSI) request to San Diego County Department of Environmental Health

San Dieguito Basin Well Logs = Well logs received from OMWD

Well _loc-data (excel file) = Excel file containing well information, from GSSI database

All_Wells (excel file) = Excel file containing well information, received from Stoney-Miller Consultants, Inc.

Well Canvas = Survey of San Dieguito Groundwater Basin by GSSI, 11-22-16 to 11-23-16

Monitoring Wells and Boreholes Installed in San Dieguito Groundwater Basin 2004 - 2016

Data Source	Unique ID	State Well Number	Latitude [WGS 84]	Longitude [WGS 84]	Well Type	Year Constructed	Recent Water Level Depth [ft]	Date of Water Level	Well Log	Well Depth [ft]	Screen Intervals	Comments
GeoTracker GAMA/San Diego County	6_10,9	13S 3W 28	33.0204830	-117.2036350	Monitoring	2004	33	13-Apr-04	Lithology	41	26-41	Destroyed 10/11/07
San Diego County	7_26,19	14S 3W 5	32.9915200	-117.2085380	Boring	2006	18	14-Mar-06	Lithology	67		
San Diego County	7_26,20	14S 3W 5	32.9914790	-117.2088680	Boring	2006	16	14-Mar-06	Lithology	32		
San Diego County	7_26,21	14S 3W 5	32.9914690	-117.2091750	Boring	2006	16	14-Mar-06	Lithology	52		
San Diego County	7_26,22	14S 3W 5	32.9911100	-117.2090740	Boring	2006	16	14-Mar-06	Lithology	32		
San Diego County	7_26,23	14S 3W 5	32.9908950	-117.2086310	Boring	2006	12	17-Mar-06	Lithology	22		
GeoTracker GAMA/San Diego County	12_19,2	14S 3W 4	32.9908270	-117.1960380	Monitoring	2006	13	18-Dec-06	Lithology	26	16-26	Location based on address and location map.
GeoTracker GAMA/San Diego County	12_19,3	14S 3W 4	32.9908270	-117.1960380	Monitoring	2006	12	18-Dec-06	Lithology	26	16-26	Location based on address and location map.
GeoTracker GAMA/San Diego County	12_19,4	14S 3W 4	32.9908270	-117.1960380	Monitoring	2006	13	18-Dec-06	Lithology	26	16-26	Location based on address and location map.
GeoTracker GAMA/San Diego County	12_19,5	14S 3W 4	32.9908270	-117.1960380	Monitoring	2006	15	18-Dec-06	Lithology	21	11-21	Location based on address and location map.
GeoTracker GAMA/San Diego County	12_19,6	14S 3W 4	32.9908270	-117.1960380	Monitoring	2015	12	22-Jan-15	Lithology	19	9-19	Location based on address and location map.
GeoTracker GAMA	12_19,7	14S 3W 4	32.9908270	-117.1960380	Monitoring	2016	14	19-May-16	Lithology	26	9-25	Location based on address and location map.
San Diego County	12_19,11	14S 3W 4	32.9908430	-117.1960300	Boring	2004	15	20-Aug-04	Lithology	20		Location is center of dry cleaners.
San Diego County	12_19,12	14S 3W 4	32.9908430	-117.1960300	Boring	2004	13	20-Aug-04	Lithology	20		Location is center of dry cleaners.
San Diego County	12_19,13	14S 3W 4	32.9908430	-117.1960300	Boring	2004	15	20-Aug-04	Lithology	20		Location is center of dry cleaners.
San Diego County	12_19,14	14S 3W 4	32.9908430	-117.1960300	Boring	2004			Lithology	12		Location is center of dry cleaners.
San Diego County	12_19,15	14S 3W 4	32.9908430	-117.1960300	Boring	2004			Lithology	12		Location is center of dry cleaners.
GeoTracker GAMA/San Diego County	42_58,14	13S 3W 28	33.0193550	-117.2023760	Monitoring	2012	9	18-Sep-12	Lithology	13	3-13	
San Diego County	42_58,23	13S 3W 28	33.0189090	-117.2023160	Boring	2010			Lithology	40		
San Diego County	42_58,24	13S 3W 28	33.0190210	-117.2021100	Boring	2010			Lithology	40		
San Diego County	42_58,25	13S 3W 28	33.0191600	-117.2024220	Boring	2010			Lithology	24		
San Diego County	42_58,26	13S 3W 28	33.0193260	-117.2024930	Boring	2010			Lithology	40		
San Diego County	42_58,27	13S 3W 28	33.0192910	-117.2025680	Boring	2010			Lithology	40		
San Diego County	42_58,28	13S 3W 28	33.0195440	-117.2022750	Boring	2010			Lithology	40		
San Diego County	42_58,29	13S 3W 28	33.0194850	-117.2021850	Boring	2010			Lithology	40		
San Diego County	42_58,30	13S 3W 28	33.0194070	-117.2021790	Boring	2010			Lithology	40		
San Diego County	42_58,31	13S 3W 28	33.0197980	-117.2022980	Boring	2010			Lithology	40		
San Diego County	42_58,32	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				35		
San Diego County	42_58,33	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				30		
San Diego County	42_58,34	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				27		
San Diego County	42_58,35	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				30		
San Diego County	42_58,36	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				30		
San Diego County	42_58,37	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				40		
San Diego County	42_58,38	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				40		
San Diego County	42_58,39	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				25		
San Diego County	42_58,40	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				25		
San Diego County	42_58,41	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				23		
San Diego County	42_58,42	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				32		
San Diego County	42_58,43	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				24		

Monitoring Wells and Boreholes Installed in San Dieguito Groundwater Basin 2004 - 2016

Data Source	Unique ID	State Well Number	Latitude [WGS 84]	Longitude [WGS 84]	Well Type	Year Constructed	Recent Water Level Depth [ft]	Date of Water Level	Well Log	Well Depth [ft]	Screen Intervals	Comments
San Diego County	42_58,44	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				24		
San Diego County	42_58,45	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				29		
San Diego County	42_58,46	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				33		
San Diego County	42_58,47	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				25		
San Diego County	42_58,48	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				40		
San Diego County	42_58,49	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				7		
San Diego County	42_58,50	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				27		
San Diego County	42_58,51	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				35		
San Diego County	42_58,52	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				25		
San Diego County	42_58,53	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				30		
San Diego County	42_58,54	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				22		
San Diego County	42_58,55	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009						
San Diego County	42_58,56	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				40		
San Diego County	42_58,57	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				30		
San Diego County	42_58,58	13S 3W 28	33.0193550	-117.2023760	Boring - CPT*	2009				33		
San Diego County	172_19,1	13S 3W 33	32.9958520	-117.1959080	Boring	2004	8	18-Aug-04	Lithology	22		
San Diego County	172_19,2	13S 3W 33	32.9961650	-117.1958070	Boring	2004	6	18-Aug-04	Lithology	17		
San Diego County	172_19,3	13S 3W 33	32.9973580	-117.1943850	Boring	2004	5	19-Aug-04	Lithology	8		
San Diego County	172_19,4	13S 3W 33	32.9962620	-117.1955270	Boring	2004	8	17-Aug-04	Lithology	27		
San Diego County	172_19,5	13S 3W 33	32.9968830	-117.1952610	Boring	2004	6	19-Aug-04	Lithology	10		
San Diego County	172_19,6	13S 3W 33	32.9971660	-117.1952320	Boring	2004	6	19-Aug-04	Lithology	13		
San Diego County	172_19,7	13S 3W 33	32.9975580	-117.1950170	Boring	2004	8	17-Aug-04	Lithology	51		
San Diego County	172_19,8	13S 3W 33	32.9963160	-117.1953400	Boring	2004	10	18-Aug-04	Lithology	22		
San Diego County	172_19,9	13S 3W 33	32.9957430	-117.1942980	Boring	2004	15	18-Aug-04	Lithology	30		
San Diego County	172_19,10	13S 3W 33	32.9964310	-117.1950600	Boring	2004	10	18-Aug-04	Lithology	27		
San Diego County	172_19,11	13S 3W 33	32.9966360	-117.1947790	Boring	2004	7	19-Aug-04	Lithology	9		
San Diego County	172_19,12	13S 3W 33	32.9972310	-117.1947590	Boring	2004	8	17-Aug-04	Lithology	22		
San Diego County	172_19,13	13S 3W 33	32.9974670	-117.1947430	Boring	2004	6	17-Aug-04	Lithology	27		
San Diego County	172_19,14	13S 3W 33	32.9954840	-117.1953760	Boring	2004	6	18-Aug-04	Lithology	12		
San Diego County	172_19,15	13S 3W 33	32.9957100	-117.1951970	Boring	2004	14	18-Aug-04	Lithology	22		
San Diego County	172_19,16	13S 3W 33	32.9963940	-117.1947150	Boring	2004	5	18-Aug-04	Lithology	27		
San Diego County	172_19,17	13S 3W 33	32.9956880	-117.1948890	Boring	2004	8	18-Aug-04	Lithology	22		
San Diego County	172_19,18	13S 3W 33	32.9958960	-117.1946940	Boring	2004	13	18-Aug-04	Lithology	27		
San Diego County	173_4	14S 3W 6	32.9833540	-117.2297020	Boring	2004	16	14-Jul-04	Lithology	20		
San Diego County	173_4,1	14S 3W 6	32.9835390	-117.2296980	Boring	2004	20	14-Jul-04	Lithology	20		
San Diego County	173_4,2	14S 3W 6	32.9829960	-117.2293290	Boring	2004	10	14-Jul-04	Lithology	14		
San Diego County	173_4,3	14S 3W 6	32.9832810	-117.2291800	Boring	2004	16	14-Jul-04	Lithology	20		
San Diego County	174_2	14S 3W 6	32.9819280	-117.2320800	Boring	2013	20	14-Jun-13	Lithology	52		
San Diego County	174_2,1	14S 3W 6	32.9814390	-117.2324860	Boring	2013	18	14-Jun-13	Lithology	52		

Monitoring Wells and Boreholes Installed in San Dieguito Groundwater Basin 2004 - 2016

Data Source	Unique ID	State Well Number	Latitude [WGS 84]	Longitude [WGS 84]	Well Type	Year Constructed	Recent Water Level Depth [ft]	Date of Water Level	Well Log	Well Depth [ft]	Screen Intervals	Comments
San Diego County	175_20	14S 3W 4	32.9907860	-117.2026800	Boring	2012	5	9-May-12	Lithology	52		Location plotted in a field.
San Diego County	175_20,1	14S 3W 4	32.9907860	-117.2026800	Boring	2012	5	9-May-12	Lithology	32		Location plotted in a field.
San Diego County	175_20,2	14S 3W 4	32.9907860	-117.2026800	Boring	2012	5	9-May-12	Lithology	67		Location plotted in a field.
San Diego County	175_20,3	14S 3W 4	32.9907860	-117.2026800	Boring	2012	4	10-May-12	Lithology	32		Location plotted in a field.
San Diego County	175_20,4	14S 3W 4	32.9907860	-117.2026800	Boring	2012	4	10-May-12	Lithology	32		Location plotted in a field.
San Diego County	175_20,5	14S 3W 4	32.9907860	-117.2026800	Boring	2012	4	10-May-12	Lithology	32		Location plotted in a field.
San Diego County	175_20,6	14S 3W 4	32.9907860	-117.2026800	Boring	2012	4	10-May-12	Lithology	52		Location plotted in a field.
San Diego County	175_20,7	14S 3W 4	32.9907860	-117.2026800	Boring - CPT*	2012				100		Location plotted in a field.
San Diego County	175_20,8	14S 3W 4	32.9907860	-117.2026800	Boring - CPT*	2012				50		Location plotted in a field.
San Diego County	175_20,9	14S 3W 4	32.9907860	-117.2026800	Boring - CPT*	2012				51		Location plotted in a field.
San Diego County	175_20,10	14S 3W 4	32.9907860	-117.2026800	Boring - CPT*	2012				50		Location plotted in a field.
San Diego County	175_20,11	14S 3W 4	32.9907860	-117.2026800	Boring - CPT*	2012				50		Location plotted in a field.
San Diego County	175_20,12	14S 3W 4	32.9907860	-117.2026800	Boring - CPT*	2012				50		Location plotted in a field.
San Diego County	175_20,13	14S 3W 4	32.9907860	-117.2026800	Boring - CPT*	2012				51		Location plotted in a field.
San Diego County	175_20,14	14S 3W 4	32.9907860	-117.2026800	Boring - CPT*	2012				50		Location plotted in a field.
San Diego County	175_20,15	14S 3W 4	32.9907860	-117.2026800	Boring - CPT*	2012				50		Location plotted in a field.
San Diego County	175_20,16	14S 3W 4	32.9907860	-117.2026800	Boring - CPT*	2012				50		Location plotted in a field.
San Diego County	175_20,17	14S 3W 4	32.9907860	-117.2026800	Boring - CPT*	2012				51		Location plotted in a field.
San Diego County	175_20,18	14S 3W 4	32.9907860	-117.2026800	Boring - CPT*	2012				50		Location plotted in a field.
San Diego County	175_20,19	14S 3W 4	32.9907860	-117.2026800	Boring - CPT*	2012				50		Location plotted in a field.
San Diego County	176_7	13S 3W 22	33.0333790	-117.1831160	Boring	2011	3	8-Dec-11	Lithology	51		Location based on location map.
San Diego County	176_7,1	13S 3W 23	33.0333790	-117.1831160	Boring	2009	6	16-Jan-09	Lithology	22		Location based on location map.
San Diego County	176_7,2	13S 3W 24	33.0333790	-117.1831160	Boring	2009	6	16-Jan-09	Lithology	20		Location based on location map.
San Diego County	176_7,3	13S 3W 25	33.0333790	-117.1831160	Boring	2009	6	16-Jan-09	Lithology	27		Location based on location map.
San Diego County	176_7,4	13S 3W 26	33.0333790	-117.1831160	Boring	2009			Lithology	4		Location based on location map.
San Diego County	176_7,5	13S 3W 27	33.0333790	-117.1831160	Boring	2009			Lithology	15		Location based on location map.
San Diego County	176_7,6	13S 3W 28	33.0333790	-117.1831160	Boring	2009			Lithology	15		Location based on location map.
San Diego County	177_2	13S 3W 28	33.0333790	-117.1831160	Boring - CPT*	2011				12		
San Diego County	177_2,1	13S 3W 28	33.0333790	-117.1831160	Boring - CPT*	2011				13		
San Diego County	178_2	14S 3W 5	32.9924210	-117.2136430	Boring	2010	14	3-Sep-10	Lithology	50		
San Diego County	178_2,1	14S 3W 6	32.9914960	-117.2124950	Boring	2010	14	3-Sep-10	Lithology	50		
San Diego County	179_3	14S 3W 6	32.9821310	-117.2296370	Boring	2007	6	21-Jun-07	Lithology	51		Location based on location map.
San Diego County	179_3,1	14S 3W 7	32.9821640	-117.2276680	Boring	2007	8	21-Jun-07	Lithology	52		Location based on location map.
San Diego County	179_3,2	14S 3W 8	32.9820520	-117.2238880	Boring	2007	8	21-Jun-07	Lithology	52		Location based on location map.
San Diego County	180	14S 3W 4	32.9836780	-117.1963330	Boring	2007			Lithology	62		Installed an inclinometer.
San Diego County	181_5	13S 3W 28	33.0200790	-117.2039540	Boring	2007			Lithology	14		
San Diego County	181_5,1	13S 3W 29	33.0201020	-117.2039020	Boring	2007			Lithology	30		
San Diego County	181_5,2	13S 3W 30	33.0204010	-117.2039580	Boring	2007	18	26-Apr-07	Lithology	25		
San Diego County	181_5,3	13S 3W 31	33.0204530	-117.2038230	Boring	2007	22	26-Apr-07	Lithology	25		

Monitoring Wells and Boreholes Installed in San Dieguito Groundwater Basin 2004 - 2016

Data Source	Unique ID	State Well Number	Latitude [WGS 84]	Longitude [WGS 84]	Well Type	Year Constructed	Recent Water Level Depth [ft]	Date of Water Level	Well Log	Well Depth [ft]	Screen Intervals	Comments
San Diego County	181_5,4	13S 3W 32	33.0203120	-117.2036990	Boring	2007			Lithology	30		
San Diego County	182_9	13S 3W 21	32.9967830	-117.1965360	Boring - CPT*	2007				50		Location based on address.
San Diego County	182_9,1	13S 3W 22	32.9967830	-117.1965360	Boring - CPT*	2007				50		Location based on address.
San Diego County	182_9,2	13S 3W 23	32.9967830	-117.1965360	Boring - CPT*	2007				50		Location based on address.
San Diego County	182_9,3	13S 3W 24	32.9967830	-117.1965360	Boring - CPT*	2007				50		Location based on address.
San Diego County	182_9,4	13S 3W 25	32.9967830	-117.1965360	Boring - CPT*	2007				50		Location based on address.
San Diego County	182_9,5	13S 3W 26	32.9967830	-117.1965360	Boring - CPT*	2007				90		Location based on address.
San Diego County	182_9,6	13S 3W 27	32.9967830	-117.1965360	Boring - CPT*	2007				50		Location based on address.
San Diego County	182_9,7	13S 3W 28	32.9967830	-117.1965360	Boring - CPT*	2007				50		Location based on address.
San Diego County	182_9,8	13S 3W 29	32.9967830	-117.1965360	Boring - CPT*	2007				50		Location based on address.
San Diego County	183_9	13S 3W 33	32.9971020	-117.1977200	Boring - CPT*	2007				100		Location based on address.
San Diego County	183_9,1	13S 3W 34	32.9971020	-117.1977200	Boring - CPT*	2007				50		Location based on address.
San Diego County	183_9,2	13S 3W 35	32.9971020	-117.1977200	Boring - CPT*	2007				50		Location based on address.
San Diego County	183_9,3	13S 3W 36	32.9971020	-117.1977200	Boring - CPT*	2007				50		Location based on address.
San Diego County	183_9,4	13S 3W 37	32.9971020	-117.1977200	Boring	2008	8	25-Jul-08	Lithology	16		Location based on address.
San Diego County	183_9,5	13S 3W 38	32.9971020	-117.1977200	Boring	2008	8	25-Jul-08	Lithology	21		Location based on address.
San Diego County	183_9,6	13S 3W 39	32.9971020	-117.1977200	Boring	2008			Lithology	5		Location based on address.
San Diego County	183_9,7	13S 3W 40	32.9971020	-117.1977200	Boring	2008			Lithology	5		Location based on address.
San Diego County	183_9,8	13S 3W 41	32.9971020	-117.1977200	Boring	2008	6	25-Jul-08	Lithology	16		Location based on address.
San Diego County	184_3	13S 3W 28	33.0131800	-117.1978320	Boring	2005			Lithology	22		Location is center of parcel.
San Diego County	184_3,1	13S 3W 28	33.0131800	-117.1978320	Boring	2005	12	19-Jul-05	Lithology	20		Location is center of parcel.
San Diego County	184_3,2	13S 3W 28	33.0131800	-117.1978320	Boring	2005	14	19-Jul-05	Lithology	20		Location is center of parcel.
San Diego County	185	14S 3W 6	32.9835450	-117.2271920	Boring	2005	10	18-Aug-05	Lithology	87		Location based on address.
San Diego County	186_3	14S 3W 7	32.9700040	-117.2311130	Boring	2006	24	30-Nov-06	Lithology	25		Location based on address.
San Diego County	186_3,1	14S 3W 7	32.9708090	-117.2306740	Boring	2006	23	30-Nov-06	Lithology	25		Location based on address.
San Diego County	186_3,2	14S 3W 7	32.9698120	-117.2283940	Boring	2006	26	1-Dec-06	Lithology	40		Location based on address.
San Diego County	187_24	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	3	17-Oct-06		68		Location based on address.
San Diego County	187_24,1	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	3	17-Oct-06		91		Location based on address.
San Diego County	187_24,2	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	3	17-Oct-06		83		Location based on address.
San Diego County	187_24,3	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	3	17-Oct-06		89		Location based on address.
San Diego County	187_24,4	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	3	17-Oct-06		56		Location based on address.
San Diego County	187_24,5	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	12	17-Oct-06		56		Location based on address.
San Diego County	187_24,6	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	13	17-Oct-06		54		Location based on address.
San Diego County	187_24,7	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	4	17-Oct-06		45		Location based on address.
San Diego County	187_24,8	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	4	17-Oct-06		43		Location based on address.
San Diego County	187_24,9	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	4	17-Oct-06		42		Location based on address.
San Diego County	187_24,10	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	4	17-Oct-06		35		Location based on address.
San Diego County	187_24,11	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	7	17-Oct-06		37		Location based on address.
San Diego County	187_24,12	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	3	17-Oct-06		36		Location based on address.

Monitoring Wells and Boreholes Installed in San Dieguito Groundwater Basin 2004 - 2016

Data Source	Unique ID	State Well Number	Latitude [WGS 84]	Longitude [WGS 84]	Well Type	Year Constructed	Recent Water Level Depth [ft]	Date of Water Level	Well Log	Well Depth [ft]	Screen Intervals	Comments
San Diego County	187_24,13	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	16	17-Oct-06		102		Location based on address.
San Diego County	187_24,14	13S 3W 33	33.0058350	-117.1983870	Boring - CPT*	2006	3	17-Oct-06		88		Location based on address.
San Diego County	187_24,15	13S 3W 33	33.0073070	-117.1941980	Boring - CPT*	2006	16	3-Nov-06		60		Location center of parcel.
San Diego County	187_24,16	13S 3W 33	33.0073070	-117.1941980	Boring - CPT*	2006	16	3-Nov-06		56		Location center of parcel.
San Diego County	187_24,17	13S 3W 33	33.0073070	-117.1941980	Boring - CPT*	2006	16	3-Nov-06		52		Location center of parcel.
San Diego County	187_24,18	13S 3W 33	33.0073070	-117.1941980	Boring - CPT*	2006	12	3-Nov-06		60		Location center of parcel.
San Diego County	187_24,19	13S 3W 33	33.0073070	-117.1941980	Boring - CPT*	2006	9	3-Nov-06		54		Location center of parcel.
San Diego County	187_24,20	13S 3W 33	33.0046630	-117.1970550	Boring	2006	3	18-Oct-06	Lithology	80		Location based on address and location map.
San Diego County	187_24,21	13S 3W 33	33.0057570	-117.1951530	Boring	2006	3	18-Oct-06	Lithology	50		Location based on address and location map.
San Diego County	187_24,22	13S 3W 33	33.0080310	-117.1934270	Boring	2006	dry	18-Oct-06	Lithology	24		Location based on address and location map.
San Diego County	187_24,23	13S 3W 33	33.0080610	-117.1936280	Boring	2006	24	18-Oct-06	Lithology	31		Location based on address and location map.
Well Canvas	198		33.0062200	-117.1946780	Monitoring							

*CPT (Cone Penetrometer Soundings) is a specific type of borehole.

GeoTracker GAMA = GeoTracker Groundwater Ambient Monitoring and Assessment Program (GAMA)

San Diego County = Well logs received from GEOSCIENCE Support Services, Inc. (GSSI) request to San Diego County Department of Environmental Health

Well Canvas = Survey of San Dieguito Groundwater Basin by GSSI, 11-22-16 to 11-23-16

CONFIDENTIAL
Table 3

Active Wells in San Dieguito Groundwater Basin Field Validated November 2016

Data Source	Unique ID	State Well Number	Latitude [WGS 84]	Longitude [WGS 84]	Well Type	Status	Year Constructed	Recent Water Level Depth [ft]	Date of Water Level	Well Depth [ft]	Pumping: Estimated Yield [gpm]	Pumping: Drawdown [ft]	Pumping: Test Length [hr]	Pumping: Specific Capacity [gpm/ft]	Screen Intervals	Comments	Field Notes
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	13S 3W 33FA	33.0000740	-117.2005121	Irrigation	Unknown	1983	22	20-Jul-83	160	800	80	12	10.00	95-135	Has location map.	
Hargis Vol. II, Appendix A / Well Canvas	7_a	13S 3W 32	32.9967290	-117.2072960	Irrigation	Active	1995			120	600						Two wells, one currently inactive [7_26,1] (has been video taped) other is active [7_a] (was pumping while on site), both wells have pumps used to fill seperate lakes on property with well and reclaimed recycled water (blended).
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	14S 3W 5	32.9918330	-117.2130830	Unknown Use	Unknown	2003	19	17-Jul-03	140	600	17	6	34.48	87-117 117-137		
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	13S 3W 32JD	32.9990064	-117.2058431	Irrigation	Inactive	2001										Two wells, one currently inactive [7_26,1] (has been video taped) other is active [7_a] (was pumping while on site), both wells have pumps used to fill seperate lakes on property with well and reclaimed recycled water (blended).
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	13S 3W 33PB	32.9963670	-117.1996490	Irrigation	Active	1990	55	25-Jun-90	153	800				73-133	Location map attached.	Subterranean vault: 3 days a week irrigate at about 96 psi, only used for certain areas of landscaping. Told we could sample WQ.
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a		32.9854270	-117.2160740	Irrigation	Active	1986			80	200+						Two continuously running wells fill pond while pump station pulls water out of pond to irrigate. Fresh water only used if pond is low. Pumping about 120 gal/min total (estimated). Sample port present on both wells, told we could sample WQ. Well 1 thought to be about 100 ft deep and pump replaced around September.
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b		32.9854430	-117.2167130	Irrigation	Active	2001	12	1-Jun-01	120	200+	30	4	6.67	50-110		
San Dieguito Basin Well Logs	60_2	14S 3W 5H2	32.9854530	-117.2082140	Irrigation	Unknown	1978	16	27-Oct-78	125	600	54	8	11.11	85-125		
Hargis Vol. II, Appendix A	189	13S 3W 33	32.9940990	-117.2004250	Irrigation	Active	1984			124	675					Very high turbidity due to inactivity of well and insufficient amount of time or capacity to purge well.	
Well Canvas	192	13S 3W 33	33.0008190	-117.2005510	Unknown Use	Active					800					Well is currently being rehabbed.	Large diameter pipe covered with plastic at surface. Nearby vault with filtration and treatment tanks inside. Pump column (?) pulled out at surface. Need completion details.
Well Canvas	193		33.0052840	-117.2042200	Irrigation	Active	Unknown				800					Well water too brackish to use.	Previous active well, 800 gpm for 3-4 hrs, no longer used. Told we could sample WQ.
Hargis Vol. II, Appendix A / Well Canvas	196		33.0049270	-117.1998790	Irrigation	Active					1000						Active well 280 gpm for about 3 hrs. each day. Pump at about 95 ft, blend about 1/3 well water with city water. Told we could sample WQ: well water is brackish with manganese problem.
Hargis Vol. II, Appendix A / Well Canvas	197		33.0049270	-117.1991770	Irrigation	Active	1983			101	1100					Very high turbidity due to inactivity of well and insufficient amount of time or capacity to purge well.	Actively pumping water for ranch down the street, better WQ in this area. Seems to have telemetry system here.
Well Canvas	200		33.0006980	-117.2002460	Irrigation	Active										Very high turbidity due to inactivity of well and insufficient amount of time or capacity to purge well.	Pumphouse across from 192, seems to have telemetry system. Possibly 190 or 17. Old piping close by, may or may not be from previous well.
Well Canvas	203		32.9810250	-117.2339280	Unknown Use	Active											Water tanks and plumbing visible near race track and office. Unknown if location has a well.

Hargis Vol. II, Appendix A = Hargis and Associates, Inc. 2004. Hydrogeologic Report Aquifer Storage and Recovery Project, San Dieguito Basin, San Diego County, California Volume II Appendix A, 556 p

Test Well 1 OMWD Driller Log = Well log received by Olivenhain Municipal Water District (OMWD)

Well Logs-etc. = Well logs received by OMWD

San Dieguito Basin Well Logs = Well logs received from OMWD

Well _loc-data (excel file) = Excel file containing well information, from GSSI database

Well Canvas = Survey of San Dieguito Groundwater Basin by GSSI, 11-22-16 to 11-23-16

Well Information for Water Quality Wells in San Dieguito Groundwater Basin

Data Source	Unique ID	State Well Number	Latitude [WGS 84]	Longitude [WGS 84]	Well Type	Status	Year Constructed	Recent Water Level Depth [ft]	Date of Water Level	Well Depth [ft]	Pumping Estimated Yield [gpm]	Pumping Drawdown [ft]	Pumping Test Length [hr]	Screen Intervals	Comments	Field Notes
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	13S 3W 33FA	33.0000740	-117.2005121	Irrigation	Unknown	1983	22	20-Jul-83	160	800	80	12	95-135	Has location map.	
Hargis Vol. II, Appendix A / Well Canvas	7_a	13S 3W 32	32.9967290	-117.2072960	Irrigation	Active	1995			120	600					Two wells, one currently inactive [7_26,1] (has been video taped) other is active [7_a] (was pumping while on site), both wells have pumps used to fill seperate lakes on property with well and reclaimed recycled water (blended).
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	14S 3W 5	32.9918330	-117.2130830	Monitoring		2003	19	17-Jul-03	140	600	17	6	87-117 117-137		
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	13S 3W 32JD	32.9990064	-117.2058431	Irrigation	Inactive	2001									Two wells, one currently inactive [7_26,1] (has been video taped) other is active [7_a] (was pumping while on site), both wells have pumps used to fill seperate lakes on property with well and reclaimed recycled water (blended).
Hargis Vol. II, Appendix A	7_26,4	14S 3W 5	32.9862150	-117.2072220	Monitoring		2003			23				8-23		
Hargis Vol. II, Appendix A	7_26,5	14S 3W 5	32.986215	-117.207222	Monitoring		2003			23				8-23		
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	13S 3W 33	32.9990810	-117.2042450	Monitoring		2003			31				11-31		
Hargis Vol. II, Appendix A	7_26,7	13S 3W 32	32.9932010	-117.2078560	Monitoring		2003			26				11-26		
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	13S 3W 32	32.9932010	-117.2081400	Monitoring		2003			89				75-89		
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	14S 3W 5	32.9916000	-117.2115000	Monitoring		2003			31				10-30		
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	14S 3W 5	32.9886000	-117.2113000	Monitoring		2003			31				15-30		
San Diego County / Hargis Vol. II, Appendix A	7_26,11	14S 3W 5	32.9876000	-117.2139000	Monitoring		2003			36				15-35		
San Diego County / Hargis Vol. II, Appendix A	7_26,12	13S 3W 32	32.9947000	-117.2109000	Monitoring		2003			31				15-30		
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	13S 3W 32	32.9962000	-117.2077000	Monitoring		2003			26				15-25		
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	14S 3W 5	32.9908000	-117.2152000	Monitoring		2003			26				10-25		
San Diego County / Hargis Vol. II, Appendix A	7_26,15	14S 3W 5	32.9886000	-117.2078000	Monitoring		2003			27				17-27		
San Diego County / Hargis Vol. II, Appendix A	7_26,16	14S 3W 5	32.9886000	-117.2078000	Monitoring		2003			45				40-45		
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	14S 3W 5	32.9886000	-117.2078000	Monitoring		2003			99				84-99		
Hargis Vol. II, Appendix A	7_26,24	13S 3W 33	32.9935910	-117.2028390	Monitoring		1990			138						
Hargis Vol. II, Appendix A	7_26,25	14S 3W 5	32.9862150	-117.2072220	Monitoring		1978			125						
GeoTracker GAMA / San Diego County	12_19,2	14S 3W 4	32.9908270	-117.1960380	Monitoring		2006	13	18-Dec-06	26				16-26	Location based on address and location map.	
GeoTracker GAMA / San Diego County	12_19,3	14S 3W 4	32.9908270	-117.1960380	Monitoring		2006	12	18-Dec-06	26				16-26	Location based on address and location map.	

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Table 4

Well Information for Water Quality Wells in San Dieguito Groundwater Basin

Data Source	Unique ID	State Well Number	Latitude [WGS 84]	Longitude [WGS 84]	Well Type	Status	Year Constructed	Recent Water Level Depth [ft]	Date of Water Level	Well Depth [ft]	Pumping: Estimated Yield [gpm]	Pumping: Drawdown [ft]	Pumping: Test Length [hr]	Screen Intervals	Comments	Field Notes
GeoTracker GAMA / San Diego County	12_19,4	14S 3W 4	32.9908270	-117.1960380	Monitoring		2006	13	18-Dec-06	26				16-26	Location based on address and location map.	
GeoTracker GAMA / San Diego County	12_19,5	14S 3W 4	32.9908270	-117.1960380	Monitoring		2006	15	18-Dec-06	21				11-21	Location based on address and location map.	
GeoTracker GAMA / San Diego County	12_19,6	14S 3W 4	32.9908270	-117.1960380	Monitoring		2015	12	22-Jan-15	19				9-19	Location based on address and location map.	
GeoTracker GAMA	12_19,7	14S 3W 4	32.9908270	-117.1960380	Monitoring		2016	14	19-May-16	26				9-25	Location based on address and location map.	
San Diego County	12_19,11	14S 3W 4	32.9908430	-117.1960300	Boring		2004	15	20-Aug-04	20					Location is center of dry cleaners.	
San Diego County	12_19,12	14S 3W 4	32.9908430	-117.1960300	Boring		2004	13	20-Aug-04	20					Location is center of dry cleaners.	
San Diego County	12_19,13	14S 3W 4	32.9908430	-117.1960300	Boring		2004	15	20-Aug-04	20					Location is center of dry cleaners.	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	13S 3W 33PB	32.9963670	-117.1996490	Irrigation	Active	1990	55	25-Jun-90	153	800			73-133	Location map attached.	Subterranean vault: 3 days a week irrigate at about 96 psi, only used for certain areas of landscaping. Told we could sample WQ.
San Dieguito Basin Well Logs	35	13S 3W 33C1	33.0067810	-117.1980290	Unknown Use	Inactive	1981	75	Summer 1965	87					Well may have been redrilled.	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	14S 3W 7	32.9744639	-117.2260820	Industrial	Unknown	1985	46	14-Nov-85	332	75			149-174 195-214 268-322		Plots in same location as 191.
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a		32.9854270	-117.2160740	Irrigation	Active	1986			80	200+					Two continuously running wells fill pond while pump station pulls water out of pond to irrigate. Fresh water only used if pond is low. Pumping about 120 gal/min total (estimated). Sample port present on both wells, told we could sample WQ. Well 1 thought to be about 100 ft deep and pump replaced around September.
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b		32.9854430	-117.2167130	Irrigation	Active	2001	12	1-Jun-01	120	200+	30	4	50-110		
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	13S 3W 28N5	33.0104540	-117.1993080	Irrigation	Active	1980	13	20-Oct-81	97						Well located under pepper tree. Small well with treatment system-signage says well water being used.
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	13S 3W 28P1	33.0105560	-117.1986110	Irrigation	Unknown	1981	52	20-Oct-81	130						
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97		32.9989665	-117.1976194	Unknown Use	Unknown	1995									
San Diego County / Well Canvas	172_19	13S 3W 33	32.9965160	-117.1958380	Irrigation	Inactive	2009			130	150			20-130		Two wells present at location: new and old [172a]. New well has new pump (placed 15-20 ft deep) used to dewater parking lot after rain. Old well collapsed, 6" pipe, had filtration to remove hard minerals (not used for about 10 years). Original pipes 1968-69 construction.
San Diego County	173_4	14S 3W 6	32.9833540	-117.2297020	Boring		2004	16	14-Jul-04	20						
San Diego County	173_4,1	14S 3W 6	32.9835390	-117.2296980	Boring		2004	20	14-Jul-04	20						
San Diego County	173_4,2	14S 3W 6	32.9829960	-117.2293290	Boring		2004	10	14-Jul-04	14						

Well Information for Water Quality Wells in San Dieguito Groundwater Basin

Data Source	Unique ID	State Well Number	Latitude [WGS 84]	Longitude [WGS 84]	Well Type	Status	Year Constructed	Recent Water Level Depth [ft]	Date of Water Level	Well Depth [ft]	Pumping: Estimated Yield [gpm]	Pumping: Drawdown [ft]	Pumping: Test Length [hr]	Screen Intervals	Comments	Field Notes
San Diego County	173_4,3	14S 3W 6	32.9832810	-117.2291800	Boring		2004	16	14-Jul-04	20						
Hargis Vol. II, Appendix A	189	13S 3W 33	32.9940990	-117.2004250	Pumping	Active	1984			124	675				Very high turbidity due to inactivity of well and insufficient amount of time or capacity to purge well.	
Well Canvas	192	13S 3W 33	33.0008190	-117.2005510	Pumping	Active					800				Well is currently being rehabbed.	Large diameter pipe covered with plastic at surface. Nearby vault with filtration and treatment tanks inside. Pump column (?) pulled out at surface. Need completion details.
Hargis Vol. II, Appendix A / Well Canvas	196		33.0049270	-117.1998790	Irrigation	Active					1000					Active well 280 gpm for about 3 hrs. each day. Pump at about 95 ft, blend about 1/3 well water with city water. Told we could sample WQ: well water is brackish with manganese problem.
Hargis Vol. II, Appendix A / Well Canvas	197		33.0049270	-117.1991770	Irrigation	Active	1983			101	1100				Very high turbidity due to inactivity of well and insufficient amount of time or capacity to purge well.	Actively pumping water for ranch down the street, better WQ in this area. Seems to have telemetry system here.
Well Canvas	200		33.0006980	-117.2002460	Irrigation	Active									Very high turbidity due to inactivity of well and insufficient amount of time or capacity to purge well.	Pumphouse across from 192, seems to have telemetry system. Possibly 190 or 17. Old piping close by, may or may not be from previous well.

GeoTracker GAMA = GeoTracker Groundwater Ambient Monitoring and Assessment Program (GAMA)
Hargis Vol. II, Appendix A = Hargis and Associates, Inc. 2004. Hydrogeologic Report Aquifer Storage and Recovery Project, San Dieguito Basin, San Diego County, California Volume II Appendix A, 556 p
Test Well 1 OMWD Driller Log = Well log received by Olivenhain Municipal Water District (OMWD)
Well Logs-etc. = Well logs received by OMWD
San Diego County = Well logs received from GEOSCIENCE Support Services, Inc. (GSSI) request to San Diego County Department of Environmental Health
San Dieguito Basin Well Logs = Well logs received from OMWD
Well _loc-data (excel file) = Excel file containing well information, from GSSI database
Well Canvas = Survey of San Dieguito Groundwater Basin by GSSI, 11-22-16 to 11-23-16
17-C0593DS = Stoney-Miller Consultants, Inc. Quarterly Monitoring Report - Winter 2016-2017

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Table 5

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Boron	0.24		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Calcium	150		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Iron	2.5		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Magnesium	78		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Manganese	1.3		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Potassium	9.3		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Sodium	310		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Bromide	1		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Chloride	600		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Fluoride	<1.0		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Nitrate as N	<0.22		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Nitrite as N	<1.5		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Orthophosphate	<1.0		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Sulfate as SO4	410		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Total Dissolved Solids	1,600		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Electrical Conductivity	1,854		umhos/cm	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Dissolved Oxygen	6.17		mg/L	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	pH	7.37		pH Units	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Temperature	25.4		degree C	
Well Logs- etc. / Hargis Vol. II, Appendix A	4_2	33.0000740	-117.2005121	2001	Redox Potential	-130		mv	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Boron	0.25		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Calcium	220		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Iron	0.049		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Magnesium	130		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Manganese	0.97		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Potassium	11		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Sodium	460		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Bromide	<5.0		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Chloride	940		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Fluoride	<5.0		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Nitrate as N	2.8		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Nitrite as N	<3.0		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Orthophosphate	<5.0		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Sulfate as SO4	570		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Total Dissolved Solids	2,500		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Electrical Conductivity	3,880		umhos/cm	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Dissolved Oxygen	3.23		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	pH	7.03		pH Units	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Temperature	21.8		degree C	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2001	Redox Potential	100		mv	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Barium	0.15		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Calcium	240		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Iron	<0.04		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Magnesium	130		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Manganese	1		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Potassium	11		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Sodium	490		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Chloride	860		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Fluoride	<2.5		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Zinc	0.024		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Nitrate as N	1.4		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Nitrite as N	<0.75		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Orthophosphate	0.097		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Sulfate as SO4	510		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Total Dissolved Solids	2,600		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Electrical Conductivity	4,200		umhos/cm	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	pH	6.91		pH Units	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Turbidity	<1.0		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Silica	30		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Bicarbonate Alkalinity	340		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	2002	Hardness	1,100		mg/L	
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/6/2017	Calcium	299	5.00	mg/L	EPA 6010
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/6/2017	Magnesium	164	5.00	mg/L	EPA 6010
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/6/2017	Sodium	590	5.00	mg/L	EPA 6010
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/4/2017	Boron	ND	0.50	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/9/2017	Barium	0.08	0.010	mg/L	EPA 200.7

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/5/2017	Calcium	298	5.00	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/9/2017	Chromium	ND	0.050	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/5/2017	Copper	ND	0.050	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/5/2017	Iron	ND	0.10	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/5/2017	Potassium	ND	10.0	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/5/2017	Magnesium	165	5.00	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/5/2017	Manganese	1.69	0.030	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/4/2017	Sodium	687	5.00	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/5/2017	Strontium	ND	10.0	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/5/2017	Zinc	ND	0.050	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/4/2017	Bicarbonate Alkalinity	329	5.00	mg CaCO3/L	SM2320 B
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/4/2017	Carbonate Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/4/2017	Hydroxide Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/6/2017	Ammonia as N	ND	0.10	mg/L	SM4500 NH3 B,C
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/3/2017	Chloride	1,160	0.050	mg/L	SM4500 Cl C
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/4/2017	Specific Conductance	4,880	1.00	umhos/cm	SM2510 B
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/6/2017	Fluoride	0.334	0.10	mg/L	SM4500 F C
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/5/2017	Hardness	1,420	100	mg CaCO3/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/6/2017	Nitrate as N	1.08	0.10	mg/L	SM4500 NO3 E
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	12/22/2016	Nitrite as N	ND	0.050	mg/L	SM4500 NO2 B
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	12/22/2016	Orthophosphate	0.09	0.050	mg/L	SM4500 P E
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	12/22/2016	Phosphorus	0.1	0.050	mg/L	SM4500 P B, E

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Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	12/27/2016	Total Dissolved Solids	3,000	20.0	mg/L	SM2540 C
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/6/2017	Sulfate as SO4	794	125	mg/L	SM4500 SO4 E
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	12/22/2016	Turbidity	0.56	0.050	Nephalometric Turbidity Units	SM2130 B
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	12/22/2016	pH	7.32	0.10	pH Units	SM4500 HB
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/9/2017	adj-Sodium Adsorption Ration	8.46	0.10	Ratio	Suarez-1981
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/4/2017	Temperature (field)	20		degree C	Field
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/4/2017	Alkalinity, Total (as CaCO3)	340	5.00	mg/L	SM2320 B
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/4/2017	Langelier Index at Source Tmp	0.51		mg/L	SM203
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/4/2017	Langelier Index at 60 C	1.12		mg/L	SM203
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/4/2017	Aggressive Index	12.44		mg/L	SM203
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/4/2017	Specific Conductance	5,000	2.00	umhos/cm	SM2510 B
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	12/28/2016	pH	7		pH Units	SM4500 HB
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/10/2017	Calcium	300	5.00	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	12/30/2016	Chromium	ND	1.00	µg/L	EPA 218.6
Hargis Vol. II, Appendix A / Well Canvas	7_a	32.9967290	-117.2072960	1/11/2017	Silica	31	5.00	mg/L	EPA 200.7
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Aluminum	<0.05		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Boron	0.57		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Calcium	320		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Iron	0.28		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Magnesium	190		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Manganese	1.5		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Potassium	52		mg/L	

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Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Sodium	930		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Chloride	1,600		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Fluoride	<2.5		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Zinc	0.056		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Nitrate as N	<0.55		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Nitrite as N	<0.75		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Sulfate as SO4	610		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Total Dissolved Solids	4,400		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Electrical Conductivity	6,700		umhos/cm	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	pH	7.37		pH Units	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Temperature	21		degree C	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Odor	<1.0		Threshold Odor Number	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Silica	33		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Bicarbonate Alkalinity	380		mg/L	
Test Well 1 OMWD Driller Log / Hargis Vol. II, Appendix A	7_26	32.987842	-117.20739	2003	Hardness	1,600		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Boron	0.22		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Calcium	220		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Iron	<0.04		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Magnesium	110		mg/L	

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Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Manganese	0.89		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Potassium	12		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Sodium	410		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Bromide	<5.0		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Chloride	1,000		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Fluoride	<5.0		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Nitrate as N	1.7		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Nitrite as N	<3.0		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Orthophosphate	<5.0		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Sulfate as SO4	510		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Total Dissolved Solids	2,600		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Electrical Conductivity	3,700		umhos/cm	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Dissolved Oxygen	4.16		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	pH	6.84		pH Units	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Temperature	21.4		degree C	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2001	Redox Potential	87		mv	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Aluminum	<0.05		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Barium	0.32		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Calcium	240		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Iron	0.044		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Magnesium	130		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Manganese	0.99		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Potassium	13		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Sodium	400		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Chloride	880		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Fluoride	<2.5		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Zinc	0.084		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Nitrate as N	2		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Nitrite as N	<1.5		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Orthophosphate	<0.05		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Sulfate as SO4	440		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Total Dissolved Solids	2,400		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Electrical Conductivity	4,000		umhos/cm	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	pH	7.14		pH Units	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Turbidity	<1.0		Nephalometric Turbidity Units	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Silica	31		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Bicarbonate Alkalinity	260		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	7_26,1	32.9989040	-117.2059310	2002	Hardness	1,100		mg/L	
Hargis Vol. II, Appendix A	7_26,4	32.986215	-117.207222	12/26/2003	Conductivity	7		mS/cm	
Hargis Vol. II, Appendix A	7_26,4	32.986215	-117.207222	12/26/2003	Total Dissolved Solids	4,550		mg/L	
Hargis Vol. II, Appendix A	7_26,4	32.986215	-117.207222	7/23/2015	Temperature	71.44		degree F	
Hargis Vol. II, Appendix A	7_26,4	32.986215	-117.207222	7/23/2015	pH	6.99		pH Units	
Hargis Vol. II, Appendix A	7_26,4	32.986215	-117.207222	7/23/2015	Oxidation/Reduction Potential (ORP)	96		mV	
Hargis Vol. II, Appendix A	7_26,4	32.986215	-117.207222	7/23/2015	Conductivity	7.96		mS/cm	
Hargis Vol. II, Appendix A	7_26,4	32.986215	-117.207222	7/23/2015	Turbidity	279		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A	7_26,4	32.986215	-117.207222	7/23/2015	Dissolved Oxygen	8.04		mg/L	
Hargis Vol. II, Appendix A	7_26,4	32.986215	-117.207222	7/23/2015	Total Dissolved Solids	4,860		mg/L	
Hargis Vol. II, Appendix A	7_26,4	32.986215	-117.207222	7/23/2015	Salinity	4.4		ppt	
Hargis Vol. II, Appendix A	7_26,5	32.986215	-117.207222	7/23/2015	Temperature	70.93		degree F	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A	7_26,5	32.986215	-117.207222	7/23/2015	pH	6.87		pH Units	
Hargis Vol. II, Appendix A	7_26,5	32.986215	-117.207222	7/23/2015	Oxidation/Reduction Potential (ORP)	111		mV	
Hargis Vol. II, Appendix A	7_26,5	32.986215	-117.207222	7/23/2015	Conductivity	8.56		mS/cm	
Hargis Vol. II, Appendix A	7_26,5	32.986215	-117.207222	7/23/2015	Turbidity	23		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A	7_26,5	32.986215	-117.207222	7/23/2015	Dissolved Oxygen	2.24		mg/L	
Hargis Vol. II, Appendix A	7_26,5	32.986215	-117.207222	7/23/2015	Total Dissolved Solids	5,390		mg/L	
Hargis Vol. II, Appendix A	7_26,5	32.986215	-117.207222	7/23/2015	Salinity	4.8		ppt	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	12/23/2003	Conductivity	6.2		mS/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	12/23/2003	Total Dissolved Solids	4,030		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/23/2015	Temperature	70.72		degree F	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/23/2015	pH	6.48		pH Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/23/2015	Oxidation/Reduction Potential (ORP)	-5		mV	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/23/2015	Conductivity	3.68		mS/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/23/2015	Turbidity	0.6		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/23/2015	Dissolved Oxygen	1.45		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/23/2015	Total Dissolved Solids	2,350		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/23/2015	Salinity	1.9		ppt	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/19/2015	Temperature	68.83		degree F	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/19/2015	pH	6.69		pH Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/19/2015	Oxidation/Reduction Potential (ORP)	-73		mV	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/19/2015	Conductivity	2.72		mS/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/19/2015	Turbidity	0		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/19/2015	Dissolved Oxygen	1.27		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/19/2015	Total Dissolved Solids	1,740		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/19/2015	Salinity	1.4		ppt	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/16/2016	Temperature	64.08		degree F	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/16/2016	pH	6.94		pH Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/16/2016	Oxidation/Reduction Potential (ORP)	138		mV	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/16/2016	Conductivity	4.77		mS/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/16/2016	Turbidity	1.2		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/16/2016	Dissolved Oxygen	8.18		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/16/2016	Total Dissolved Solids	3,050		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/16/2016	Salinity	2.5		ppt	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/25/2016	Temperature	66.34		degree F	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/25/2016	pH	7.11		pH Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/25/2016	Oxidation/Reduction Potential (ORP)	102		mV	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/25/2016	Conductivity	3.23		mS/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/25/2016	Turbidity	0.9		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/25/2016	Dissolved Oxygen	2.34		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/25/2016	Total Dissolved Solids	2,100		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	7/25/2016	Salinity	1.7		ppt	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/30/2016	Temperature	66.2		degree F	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/30/2016	pH	6.86		pH Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/30/2016	Oxidation/Reduction Potential (ORP)	-166		mV	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/30/2016	Conductivity	3.24		mS/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/30/2016	Turbidity	2.6		Nephalometric Turbidity Units	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/30/2016	Dissolved Oxygen	0		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/30/2016	Total Dissolved Solids	2,070		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	11/30/2016	Salinity	1.7		ppt	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Temperature	65.9		degree F	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	pH	6.75		pH Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Oxidation/Reduction Potential (ORP)	119		mV	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Conductivity	5.93		mS/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Turbidity	0		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Dissolved Oxygen	0.8		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Total Dissolved Solids	3,740		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Salinity	3.2		ppt	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Silica	11		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Calcium	130		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Magnesium	90		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Potassium	30		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Sodium	520		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Manganese	0.48		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Iron	1.3		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Salinity	3.31		ppt	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Specific Conductance	6080		umhos/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Total Dissolved Solids	3300		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Fluoride	<0.5		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Chloride	1030		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Total Phosphate	<25.0		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Nitrite as NO2	0.539		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Nitrate as NO3	<25		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Nitrite as N	0.16		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,6	32.999081	-117.204245	3/15/2017	Nitrate as N	<5.65		mg/L	
Hargis Vol. II, Appendix A	7_26,7	32.993201	-117.207856	12/23/2003	Conductivity	6.6		mS/cm	
Hargis Vol. II, Appendix A	7_26,7	32.993201	-117.207856	12/23/2003	Total Dissolved Solids	4,290		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	12/23/2003	Conductivity	3.9		mS/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	12/23/2003	Total Dissolved Solids	2,535		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/23/2015	Temperature	70.54		degree F	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/23/2015	pH	6.73		pH Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/23/2015	Oxidation/Reduction Potential (ORP)	-79		mV	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/23/2015	Conductivity	3.58		mS/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/23/2015	Turbidity	264		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/23/2015	Dissolved Oxygen	1.87		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/23/2015	Total Dissolved Solids	2,290		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/23/2015	Salinity	1.9		ppt	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/19/2015	Temperature	68.11		degree F	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/19/2015	pH	6.94		pH Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/19/2015	Oxidation/Reduction Potential (ORP)	-96		mV	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/19/2015	Conductivity	3.14		mS/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/19/2015	Turbidity	623		Nephalometric Turbidity Units	

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Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/19/2015	Dissolved Oxygen	2.99		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/19/2015	Total Dissolved Solids	2,010		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/19/2015	Salinity	1.6		ppt	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/16/2016	Temperature	68.16		degree F	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/16/2016	pH	7.59		pH Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/16/2016	Oxidation/Reduction Potential (ORP)	-48		mV	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/16/2016	Conductivity	3.26		mS/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/16/2016	Turbidity	86.6		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/16/2016	Dissolved Oxygen	6.6		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/16/2016	Total Dissolved Solids	2,080		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/16/2016	Salinity	1.7		ppt	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/25/2016	Temperature	66.94		degree F	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/25/2016	pH	7.32		pH Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/25/2016	Oxidation/Reduction Potential (ORP)	-51		mV	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/25/2016	Conductivity	3.16		mS/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/25/2016	Turbidity	17.1		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/25/2016	Dissolved Oxygen	0.72		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/25/2016	Total Dissolved Solids	2,020		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	7/25/2016	Salinity	1.6		ppt	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/30/2016	Temperature	66.5		degree F	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/30/2016	pH	7.63		pH Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/30/2016	Oxidation/Reduction Potential (ORP)	-55		mV	

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Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/30/2016	Conductivity	3.6		mS/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/30/2016	Turbidity	103		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/30/2016	Dissolved Oxygen	1.68		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/30/2016	Total Dissolved Solids	2,300		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	11/30/2016	Salinity	1.9		ppt	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/15/2017	Temperature	68.3		degree F	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/15/2017	pH	7.02		pH Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/15/2017	Oxidation/Reduction Potential (ORP)	-34		mV	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/15/2017	Conductivity	3.18		mS/cm	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/15/2017	Turbidity	1.5		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/15/2017	Dissolved Oxygen	0.25		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/15/2017	Total Dissolved Solids	2,030		mg/L	
Hargis Vol. II, Appendix A / 17-C0593DS	7_26,8	32.993201	-117.20814	3/15/2017	Salinity	1.7		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	12/23/2003	Conductivity	3		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	12/23/2003	Total Dissolved Solids	1,950		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/23/2015	Temperature	77.31		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/23/2015	pH	6.35		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/23/2015	Oxidation/Reduction Potential (ORP)	205		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/23/2015	Conductivity	3.06		mS/cm	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/23/2015	Turbidity	4.2		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/23/2015	Dissolved Oxygen	0.67		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/23/2015	Total Dissolved Solids	1,960		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/23/2015	Salinity	1.6		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/19/2015	Temperature	75.76		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/19/2015	pH	6.96		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/19/2015	Oxidation/Reduction Potential (ORP)	72		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/19/2015	Conductivity	2.86		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/19/2015	Turbidity	15.7		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/19/2015	Dissolved Oxygen	6.03		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/19/2015	Total Dissolved Solids	1,830		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/19/2015	Salinity	1.5		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/16/2016	Temperature	75.09		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/16/2016	pH	7.41		pH Units	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/16/2016	Oxidation/Reduction Potential (ORP)	163		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/16/2016	Conductivity	2.96		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/16/2016	Turbidity	40.2		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/16/2016	Dissolved Oxygen	8.1		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/16/2016	Total Dissolved Solids	1,900		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/16/2016	Salinity	1.5		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/25/2016	Temperature	73.62		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/25/2016	pH	6.31		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/25/2016	Oxidation/Reduction Potential (ORP)	140		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/25/2016	Conductivity	2.89		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/25/2016	Turbidity	78.7		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/25/2016	Dissolved Oxygen	0.8		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/25/2016	Total Dissolved Solids	1,850		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	7/25/2016	Salinity	1.5		ppt	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/30/2016	Temperature	74.3		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/30/2016	pH	7.46		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/30/2016	Oxidation/Reduction Potential (ORP)	112		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/30/2016	Conductivity	3.1		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/30/2016	Turbidity	28.1		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/30/2016	Dissolved Oxygen	0		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/30/2016	Total Dissolved Solids	1,980		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	11/30/2016	Salinity	1.6		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/15/2017	Temperature	75.2		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/15/2017	pH	7.13		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/15/2017	Oxidation/Reduction Potential (ORP)	135		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/15/2017	Conductivity	3.08		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/15/2017	Turbidity	11.2		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/15/2017	Dissolved Oxygen	0.2		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/15/2017	Total Dissolved Solids	1,970		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,9	32.991347	-117.211194	3/15/2017	Salinity	1.6		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	12/23/2003	Conductivity	3.9		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	12/23/2003	Total Dissolved Solids	2,535		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/23/2015	Temperature	71.58		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/23/2015	pH	6.94		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/23/2015	Oxidation/Reduction Potential (ORP)	109		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/23/2015	Conductivity	2.14		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/23/2015	Turbidity	326		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/23/2015	Dissolved Oxygen	1.88		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/23/2015	Total Dissolved Solids	1,370		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/23/2015	Salinity	1.1		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/19/2015	Temperature	69.39		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/19/2015	pH	7.16		pH Units	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/19/2015	Oxidation/Reduction Potential (ORP)	99		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/19/2015	Conductivity	2.23		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/19/2015	Turbidity	41.3		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/19/2015	Dissolved Oxygen	9.59		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/19/2015	Total Dissolved Solids	1,430		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/19/2015	Salinity	1.1		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/16/2016	Temperature	69.67		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/16/2016	pH	7.72		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/16/2016	Oxidation/Reduction Potential (ORP)	151		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/16/2016	Conductivity	2.46		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/16/2016	Turbidity	13.1		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/16/2016	Dissolved Oxygen	7.14		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/16/2016	Total Dissolved Solids	1,580		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/16/2016	Salinity	1.3		ppt	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/25/2016	Temperature	67.93		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/25/2016	pH	6.84		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/25/2016	Oxidation/Reduction Potential (ORP)	160		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/25/2016	Conductivity	2.57		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/25/2016	Turbidity	8.7		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/25/2016	Dissolved Oxygen	9.58		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/25/2016	Total Dissolved Solids	1,650		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	7/25/2016	Salinity	1.3		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/30/2016	Temperature	68.1		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/30/2016	pH	7.33		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/30/2016	Oxidation/Reduction Potential (ORP)	66		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/30/2016	Conductivity	2.67		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/30/2016	Turbidity	33.5		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/30/2016	Dissolved Oxygen	0.35		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/30/2016	Total Dissolved Solids	1,710		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	11/30/2016	Salinity	1.4		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Temperature	69.6		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	pH	7.24		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Oxidation/Reduction Potential (ORP)	21		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Conductivity	2.86		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Turbidity	3.7		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Dissolved Oxygen	8.44		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Total Dissolved Solids	1,830		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Salinity	1.5		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Silica	6.6		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Calcium	120		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Magnesium	66		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Potassium	6.8		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Sodium	540		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Manganese	1.1		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Iron	<0.5		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Salinity	<2.0		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Specific Conductance	2880		umhos/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Total Dissolved Solids	1200		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Fluoride	<0.5		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Chloride	264		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Nitrite as NO2	<0.5		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Nitrate as NO3	<0.5		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Nitrite as N	<0.152		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,10	32.988335	-117.211087	3/15/2017	Nitrate as N	<0.113		mg/L	
San Diego County / Hargis Vol. II, Appendix A	7_26,11	32.98782	-117.213712	12/23/2003	Conductivity	3.3		mS/cm	
San Diego County / Hargis Vol. II, Appendix A	7_26,11	32.98782	-117.213712	12/23/2003	Total Dissolved Solids	2,145		mg/L	
San Diego County / Hargis Vol. II, Appendix A	7_26,12	32.994515	-117.210645	12/23/2003	Conductivity	6.8		mS/cm	
San Diego County / Hargis Vol. II, Appendix A	7_26,12	32.994515	-117.210645	12/23/2003	Total Dissolved Solids	4,420		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	12/23/2003	Conductivity	2.8		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	12/23/2003	Total Dissolved Solids	1,820		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/23/2015	Temperature	71.04		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/23/2015	pH	6.64		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/23/2015	Oxidation/Reduction Potential (ORP)	106		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/23/2015	Conductivity	3.23		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/23/2015	Turbidity	28.5		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/23/2015	Dissolved Oxygen	2.62		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/23/2015	Total Dissolved Solids	2,070		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/23/2015	Salinity	1.7		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/19/2015	Temperature	69.71		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/19/2015	pH	6.87		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/19/2015	Oxidation/Reduction Potential (ORP)	101		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/19/2015	Conductivity	3.03		mS/cm	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/19/2015	Turbidity	11.6		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/19/2015	Dissolved Oxygen	0.88		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/19/2015	Total Dissolved Solids	1,940		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/19/2015	Salinity	1.6		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/16/2016	Temperature	70.41		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/16/2016	pH	7.21		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/16/2016	Oxidation/Reduction Potential (ORP)	180		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/16/2016	Conductivity	3.13		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/16/2016	Turbidity	2.7		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/16/2016	Dissolved Oxygen	7.69		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/16/2016	Total Dissolved Solids	2,000		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/16/2016	Salinity	1.6		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/25/2016	Temperature	68.2		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/25/2016	pH	6.96		pH Units	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/25/2016	Oxidation/Reduction Potential (ORP)	153		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/25/2016	Conductivity	3.21		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/25/2016	Turbidity	6.4		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/25/2016	Dissolved Oxygen	1.04		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/25/2016	Total Dissolved Solids	2,050		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	7/25/2016	Salinity	1.7		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/30/2016	Temperature	68.1		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/30/2016	pH	7.19		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/30/2016	Oxidation/Reduction Potential (ORP)	133		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/30/2016	Conductivity	3.95		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/30/2016	Turbidity	9.1		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/30/2016	Dissolved Oxygen	2.2		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/30/2016	Total Dissolved Solids	2,530		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	11/30/2016	Salinity	2.1		ppt	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/15/2017	Temperature	69.8		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/15/2017	pH	6.79		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/15/2017	Oxidation/Reduction Potential (ORP)	138		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/15/2017	Conductivity	3.83		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/15/2017	Turbidity	0		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/15/2017	Dissolved Oxygen	1.34		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/15/2017	Total Dissolved Solids	2,450		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,13	32.99606	-117.207468	3/15/2017	Salinity	2		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	12/23/2003	Conductivity	2.6		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	12/23/2003	Total Dissolved Solids	1,690		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/23/2015	Temperature	73.76		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/23/2015	pH	6.83		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/23/2015	Oxidation/Reduction Potential (ORP)	121		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/23/2015	Conductivity	2.67		mS/cm	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/23/2015	Turbidity	65		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/23/2015	Dissolved Oxygen	2.26		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/23/2015	Total Dissolved Solids	1,710		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/23/2015	Salinity	1.4		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/19/2015	Temperature	72.48		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/19/2015	pH	6.96		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/19/2015	Oxidation/Reduction Potential (ORP)	119		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/19/2015	Conductivity	2.3		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/19/2015	Turbidity	74.6		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/19/2015	Dissolved Oxygen	1.66		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/19/2015	Total Dissolved Solids	1,470		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/19/2015	Salinity	1.2		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/16/2016	Temperature	71.91		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/16/2016	pH	7.48		pH Units	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/16/2016	Oxidation/Reduction Potential (ORP)	174		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/16/2016	Conductivity	2.69		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/16/2016	Turbidity	3.4		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/16/2016	Dissolved Oxygen	8.3		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/16/2016	Total Dissolved Solids	1,720		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/16/2016	Salinity	1.4		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/25/2016	Temperature	70.18		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/25/2016	pH	7.25		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/25/2016	Oxidation/Reduction Potential (ORP)	95		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/25/2016	Conductivity	2.58		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/25/2016	Turbidity	8.9		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/25/2016	Dissolved Oxygen	0.73		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/25/2016	Total Dissolved Solids	1,650		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	7/25/2016	Salinity	1.3		ppt	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/30/2016	Temperature	71.4		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/30/2016	pH	7.28		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/30/2016	Oxidation/Reduction Potential (ORP)	98		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/30/2016	Conductivity	2.86		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/30/2016	Turbidity	9.4		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/30/2016	Dissolved Oxygen	0.36		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/30/2016	Total Dissolved Solids	1,830		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	11/30/2016	Salinity	1.5		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/15/2017	Temperature	71.3		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/15/2017	pH	6.96		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/15/2017	Oxidation/Reduction Potential (ORP)	162		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/15/2017	Conductivity	2.77		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/15/2017	Turbidity	5.1		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/15/2017	Dissolved Oxygen	0		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/15/2017	Total Dissolved Solids	1,770		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,14	32.990534	-117.215026	3/15/2017	Salinity	1.4		ppt	
San Diego County / Hargis Vol. II, Appendix A	7_26,15	32.988368	-117.207446	12/23/2003	Conductivity	4.6		mS/cm	
San Diego County / Hargis Vol. II, Appendix A	7_26,15	32.988368	-117.207446	12/23/2003	Total Dissolved Solids	2,990		mg/L	
San Diego County / Hargis Vol. II, Appendix A	7_26,15	32.988368	-117.207446	7/23/2015	Temperature	69.4		degree F	
San Diego County / Hargis Vol. II, Appendix A	7_26,15	32.988368	-117.207446	7/23/2015	pH	7.33		pH Units	
San Diego County / Hargis Vol. II, Appendix A	7_26,15	32.988368	-117.207446	7/23/2015	Oxidation/Reduction Potential (ORP)	-107		mV	
San Diego County / Hargis Vol. II, Appendix A	7_26,15	32.988368	-117.207446	7/23/2015	Conductivity	3.38		mS/cm	
San Diego County / Hargis Vol. II, Appendix A	7_26,15	32.988368	-117.207446	7/23/2015	Turbidity	5.6		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A	7_26,15	32.988368	-117.207446	7/23/2015	Dissolved Oxygen	1.38		mg/L	
San Diego County / Hargis Vol. II, Appendix A	7_26,15	32.988368	-117.207446	7/23/2015	Total Dissolved Solids	2,170		mg/L	
San Diego County / Hargis Vol. II, Appendix A	7_26,15	32.988368	-117.207446	7/23/2015	Salinity	1.8		ppt	
San Diego County / Hargis Vol. II, Appendix A	7_26,16	32.988225	-117.207446	12/23/2003	Conductivity	3.4		mS/cm	
San Diego County / Hargis Vol. II, Appendix A	7_26,16	32.988225	-117.207446	12/23/2003	Total Dissolved Solids	2,210		mg/L	
San Diego County / Hargis Vol. II, Appendix A	7_26,16	32.988225	-117.207446	7/23/2015	Temperature	69.82		degree F	
San Diego County / Hargis Vol. II, Appendix A	7_26,16	32.988225	-117.207446	7/23/2015	pH	7.26		pH Units	
San Diego County / Hargis Vol. II, Appendix A	7_26,16	32.988225	-117.207446	7/23/2015	Oxidation/Reduction Potential (ORP)	-109		mV	
San Diego County / Hargis Vol. II, Appendix A	7_26,16	32.988225	-117.207446	7/23/2015	Conductivity	4.4		mS/cm	
San Diego County / Hargis Vol. II, Appendix A	7_26,16	32.988225	-117.207446	7/23/2015	Turbidity	293		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A	7_26,16	32.988225	-117.207446	7/23/2015	Dissolved Oxygen	1.21		mg/L	
San Diego County / Hargis Vol. II, Appendix A	7_26,16	32.988225	-117.207446	7/23/2015	Total Dissolved Solids	2,820		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A	7_26,16	32.988225	-117.207446	7/23/2015	Salinity	2.3		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/23/2015	Temperature	70.23		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/23/2015	pH	7.19		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/23/2015	Oxidation/Reduction Potential (ORP)	-128		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/23/2015	Conductivity	3.21		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/23/2015	Turbidity	6.2		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/23/2015	Dissolved Oxygen	1.36		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/23/2015	Total Dissolved Solids	2,050		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/23/2015	Salinity	1.7		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/19/2015	Temperature	67.42		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/19/2015	pH	7.36		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/19/2015	Oxidation/Reduction Potential (ORP)	-163		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/19/2015	Conductivity	3.21		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/19/2015	Turbidity	0.3		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/19/2015	Dissolved Oxygen	4.35		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/19/2015	Total Dissolved Solids	2,050		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/19/2015	Salinity	1.7		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/16/2016	Temperature	67.86		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/16/2016	pH	7.97		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/16/2016	Oxidation/Reduction Potential (ORP)	-136		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/16/2016	Conductivity	3.2		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/16/2016	Turbidity	0.9		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/16/2016	Dissolved Oxygen	6.35		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/16/2016	Total Dissolved Solids	2,050		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/16/2016	Salinity	1.7		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/25/2016	Temperature	66.02		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/25/2016	pH	7.39		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/25/2016	Oxidation/Reduction Potential (ORP)	-115		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/25/2016	Conductivity	3.19		mS/cm	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/25/2016	Turbidity	2.6		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/25/2016	Dissolved Oxygen	0.91		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/25/2016	Total Dissolved Solids	2,040		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	7/25/2016	Salinity	1.7		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/30/2016	Temperature	66.2		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/30/2016	pH	7.88		pH Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/30/2016	Oxidation/Reduction Potential (ORP)	-177		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/30/2016	Conductivity	3.61		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/30/2016	Turbidity	1.6		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/30/2016	Dissolved Oxygen	0		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/30/2016	Total Dissolved Solids	2,310		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	11/30/2016	Salinity	1.9		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Temperature	68.3		degree F	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	pH	7.42		pH Units	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Oxidation/Reduction Potential (ORP)	-156		mV	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Conductivity	3.5		mS/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Turbidity	2.5		Nephalometric Turbidity Units	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Dissolved Oxygen	0.1		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Total Dissolved Solids	2,240		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Salinity	1.8		ppt	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Silica	10		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Calcium	340		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Magnesium	170		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Potassium	11		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Sodium	760		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Manganese	<50		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Iron	<500		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Salinity	<2.0		ppt	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Specific Conductance	3570		umhos/cm	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Total Dissolved Solids	1800		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Fluoride	<0.5		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Chloride	675		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Nitrite as NO2	<.05		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Nitrate as NO3	<0.5		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Nitrite as N	<0.152		mg/L	
San Diego County / Hargis Vol. II, Appendix A / 17-C0593DS	7_26,17	32.988225	-117.207446	3/15/2017	Nitrate as N	<0.113		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Boron	0.41		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Calcium	96		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Iron	25		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Magnesium	61		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Manganese	0.96		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Potassium	14		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Sodium	390		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Bromide	<1.0		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Chloride	490		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Fluoride	<1.0		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Nitrate as N	0.22		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Nitrite as N	<0.75		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Orthophosphate	<1.0		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Sulfate as SO4	430		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Total Dissolved Solids	1,600		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Electrical Conductivity	1,891		umhos/cm	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Dissolved Oxygen	1.24		mg/L	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	pH	7.42		pH Units	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Temperature	21.9		degree C	
Hargis Vol. II, Appendix A	7_26,24	32.993591	-117.202839	2001	Redox Potential	-155		mv	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Boron	0.76		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Calcium	170		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Iron	18		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Magnesium	290		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Manganese	0.48		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Potassium	19		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Sodium	920		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Bromide	<2.5		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Chloride	1,700		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Fluoride	<2.5		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Nitrate as N	<0.55		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Nitrite as N	<3.0		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Orthophosphate	<2.5		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Sulfate as SO4	840		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Total Dissolved Solids	3,700		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Electrical Conductivity	5,905		umhos/cm	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Dissolved Oxygen	1.44		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	pH	7.7		pH Units	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Temperature	21.3		degree C	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Redox Potential	-190		mv	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Odor	<1.0		Threshold Odor Number	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Turbidity	180		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Methylene Blue - Activated Substance	<0.10		mg/L	
Hargis Vol. II, Appendix A	7_26,25	32.986215	-117.207222	2001	Color	20		Color Units	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,1,1,2-Tetrachloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,1,1-Trichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,1,2,2-Tetrachloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,1,2-Trichloro-1,2,2-trifluoroethane	ND		µg/L	

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Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,1,2-Trichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,1-Dichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,1-Dichloroethene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,1-Dichloropropene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,2,3-Trichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,2,3-Trichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,2,4-Trichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,2,4-Trimethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,2-Dibromo-3-chloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,2-Dibromoethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,2-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,2-Dichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,2-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,3,5-Trimethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,3-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,3-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	1,4-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	2,2-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	2-Butanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	2-Chlorotoluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	2-Hexanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	4-Chlorotoluene	ND		µg/L	

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GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	4-Isopropyltoluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	4-Methyl-2-pentanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Acetone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Benzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Bromobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Bromochloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Bromodichloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Bromoform	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Bromomethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Carbon disulfide	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Carbon tetrachloride	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Chlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Chloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Chloroform	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Chloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Dibromochloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Dibromomethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Dichlorodifluoromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Ethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Isopropylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Methyl-tert-butyl ether (MTBE)	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Methylene chloride	ND		µg/L	

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GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Naphthalene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Styrene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Tetrachloroethene	1.8		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Toluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Trichloroethene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Trichlorofluoromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Vinyl acetate	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Vinyl chloride	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	Xylene, Isomers m & p	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	cis-1,2-Dichloroethene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	cis-1,3-Dichloropropene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	n-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	n-Propylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	o-Xylene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	sec-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	tert-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	trans-1,2-Dichloroethene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,2	32.9908270	-117.1960380	1/28/2016	trans-1,3-Dichloropropene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,1,1,2-Tetrachloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,1,1-Trichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,1,2,2-Tetrachloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,1,2-Trichloro-1,2,2-trifluoroethane	ND		µg/L	

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GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,1,2-Trichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,1-Dichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,1-Dichloroethene	4.9		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,1-Dichloropropene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,2,3-Trichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,2,3-Trichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,2,4-Trichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,2,4-Trimethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,2-Dibromo-3-chloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,2-Dibromoethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,2-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,2-Dichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,2-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,3,5-Trimethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,3-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,3-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	1,4-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	2,2-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	2-Butanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	2-Chlorotoluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	2-Hexanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	4-Chlorotoluene	ND		µg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	4-Isopropyltoluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	4-Methyl-2-pentanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Acetone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Benzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Bromobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Bromochloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Bromodichloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Bromoform	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Bromomethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Carbon disulfide	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Carbon tetrachloride	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Chlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Chloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Chloroform	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Chloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Dibromochloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Dibromomethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Dichlorodifluoromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Ethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Isopropylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Methyl-tert-butyl ether (MTBE)	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Methylene chloride	ND		µg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Naphthalene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Styrene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Tetrachloroethene	7.2		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Toluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Trichloroethene	430		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Trichlorofluoromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Vinyl acetate	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Vinyl chloride	5.8		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	Xylene, Isomers m & p	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	cis-1,2-Dichloroethene	360		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	cis-1,3-Dichloropropene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	n-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	n-Propylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	o-Xylene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	sec-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	tert-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	trans-1,2-Dichloroethene	120		µg/L	
GeoTracker GAMA / San Diego County	12_19,3	32.9908270	-117.1960380	6/7/2016	trans-1,3-Dichloropropene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,1,1,2-Tetrachloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,1,1-Trichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,1,2,2-Tetrachloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,1,2-Trichloro-1,2,2-trifluoroethane	ND		µg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,1,2-Trichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,1-Dichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,1-Dichloroethene	15		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,1-Dichloropropene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,2,3-Trichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,2,3-Trichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,2,4-Trichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,2,4-Trimethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,2-Dibromo-3-chloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,2-Dibromoethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,2-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,2-Dichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,2-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,3,5-Trimethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,3-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,3-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	1,4-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	2,2-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	2-Butanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	2-Chlorotoluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	2-Hexanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	4-Chlorotoluene	ND		µg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	4-Isopropyltoluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	4-Methyl-2-pentanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Acetone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Benzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Bromobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Bromochloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Bromodichloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Bromoform	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Bromomethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Carbon disulfide	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Carbon tetrachloride	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Chlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Chloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Chloroform	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Chloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Dibromochloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Dibromomethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Dichlorodifluoromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Ethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Isopropylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Methyl-tert-butyl ether (MTBE)	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Methylene chloride	ND		µg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Naphthalene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Styrene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Tetrachloroethene	65		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Toluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Trichloroethene	600		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Trichlorofluoromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Vinyl acetate	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Vinyl chloride	4.8		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	Xylene, Isomers m & p	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	cis-1,2-Dichloroethene	75		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	cis-1,3-Dichloropropene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	n-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	n-Propylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	o-Xylene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	sec-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	tert-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	trans-1,2-Dichloroethene	14		µg/L	
GeoTracker GAMA / San Diego County	12_19,4	32.9908270	-117.1960380	6/7/2016	trans-1,3-Dichloropropene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,1,1,2-Tetrachloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,1,1-Trichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,1,2,2-Tetrachloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,1,2-Trichloro-1,2,2-trifluoroethane	ND		µg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,1,2-Trichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,1-Dichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,1-Dichloroethene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,1-Dichloropropene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,2,3-Trichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,2,3-Trichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,2,4-Trichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,2,4-Trimethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,2-Dibromo-3-chloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,2-Dibromoethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,2-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,2-Dichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,2-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,3,5-Trimethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,3-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,3-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	1,4-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	2,2-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	2-Butanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	2-Chlorotoluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	2-Hexanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	4-Chlorotoluene	ND		µg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	4-Isopropyltoluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	4-Methyl-2-pentanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Acetone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Benzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Bromobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Bromochloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Bromodichloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Bromoform	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Bromomethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Carbon disulfide	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Carbon tetrachloride	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Chlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Chloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Chloroform	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Chloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Dibromochloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Dibromomethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Dichlorodifluoromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Ethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Isopropylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Methyl-tert-butyl ether (MTBE)	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Methylene chloride	ND		µg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Naphthalene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Styrene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Tetrachloroethene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Toluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Trichloroethene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Trichlorofluoromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Vinyl acetate	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Vinyl chloride	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	Xylene, Isomers m & p	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	cis-1,2-Dichloroethene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	cis-1,3-Dichloropropene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	n-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	n-Propylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	o-Xylene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	sec-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	tert-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	trans-1,2-Dichloroethene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,5	32.9908270	-117.1960380	1/28/2016	trans-1,3-Dichloropropene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,1,1,2-Tetrachloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,1,1-Trichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,1,2,2-Tetrachloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,1,2-Trichloro-1,2,2-trifluoroethane	ND		µg/L	

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Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,1,2-Trichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,1-Dichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,1-Dichloroethene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,1-Dichloropropene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,2,3-Trichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,2,3-Trichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,2,4-Trichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,2,4-Trimethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,2-Dibromo-3-chloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,2-Dibromoethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,2-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,2-Dichloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,2-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,3,5-Trimethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,3-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,3-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	1,4-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	2,2-Dichloropropane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	2-Butanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	2-Chlorotoluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	2-Hexanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	4-Chlorotoluene	ND		µg/L	

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Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	4-Isopropyltoluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	4-Methyl-2-pentanone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Acetone	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Benzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Bromobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Bromochloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Bromodichloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Bromoform	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Bromomethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Carbon disulfide	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Carbon tetrachloride	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Chlorobenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Chloroethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Chloroform	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Chloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Dibromochloromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Dibromomethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Dichlorodifluoromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Ethylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Isopropylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Methyl-tert-butyl ether (MTBE)	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Methylene chloride	ND		µg/L	

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Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Naphthalene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Styrene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Tetrachloroethene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Toluene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Trichloroethene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Trichlorofluoromethane	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Vinyl acetate	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Vinyl chloride	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	Xylene, Isomers m & p	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	cis-1,2-Dichloroethene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	cis-1,3-Dichloropropene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	n-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	n-Propylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	o-Xylene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	sec-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	tert-Butylbenzene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	trans-1,2-Dichloroethene	ND		µg/L	
GeoTracker GAMA / San Diego County	12_19,6	32.9908270	-117.1960380	6/7/2016	trans-1,3-Dichloropropene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,1,1,2-Tetrachloroethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,1,1-Trichloroethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,1,2,2-Tetrachloroethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,1,2-Trichloro-1,2,2-trifluoroethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,1,2-Trichloroethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,1-Dichloroethane	ND		µg/L	

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Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,1-Dichloroethene	7.5		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,1-Dichloropropene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,2,3-Trichlorobenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,2,3-Trichloropropane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,2,4-Trichlorobenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,2,4-Trimethylbenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,2-Dibromo-3-chloropropane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,2-Dibromoethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,2-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,2-Dichloroethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,2-Dichloropropane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,3,5-Trimethylbenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,3-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,3-Dichloropropane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	1,4-Dichlorobenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	2,2-Dichloropropane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	2-Butanone	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	2-Chlorotoluene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	2-Hexanone	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	4-Chlorotoluene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	4-Isopropyltoluene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	4-Methyl-2-pentanone	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Acetone	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Benzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Bromobenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Bromochloromethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Bromodichloromethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Bromoform	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Bromomethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Carbon disulfide	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Carbon tetrachloride	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Chlorobenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Chloroethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Chloroform	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Chloromethane	ND		µg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Dibromochloromethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Dibromomethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Dichlorodifluoromethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Ethylbenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Isopropylbenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Methyl-tert-butyl ether (MTBE)	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Methylene chloride	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Naphthalene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Styrene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Tetrachloroethene	13		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Toluene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Trichloroethene	200		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Trichlorofluoromethane	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Vinyl acetate	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Vinyl chloride	2.8		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	Xylene, Isomers m & p	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	cis-1,2-Dichloroethene	33		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	cis-1,3-Dichloropropene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	n-Butylbenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	n-Propylbenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	o-Xylene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	sec-Butylbenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	tert-Butylbenzene	ND		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	trans-1,2-Dichloroethene	6.2		µg/L	
GeoTracker GAMA	12_19,7	32.9908270	-117.1960380	6/7/2016	trans-1,3-Dichloropropene	ND		µg/L	
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	Bromodichloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	Bromomethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	Carbon Tetrachloride	ND	0.50	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	Chlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	Chloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	Chloroform	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	Chloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	Dibromochloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	Dibromomethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	1,2-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	1,3-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	1,4-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	1,1-Dichloroethane	2.4	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	1,2-Dichloroethane	ND	0.50	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	1,1-Dichloroethene	2.4	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	cis-1,2-Dichloroethene	11	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	trans-1,2-Dichloroethene	2.4	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	1,2-Dichloropropane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	cis-1,3-Dichloropropene	ND	0.50	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	trans-1,3-Dichloropropene	ND	0.50	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	Methylene chloride	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	Styrene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	1,1,2,2-Tetrachloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	Tetrachloroethene	33	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	1,1,2-Teichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	1,1,1-Trichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	Trichloroethene	140	1.00	µg/L	EPA 8260 B
San Diego County	12_19,11	32.9908430	-117.1960300	8/26/2004	Vinyl chloride	1.2	0.50	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	Bromodichloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	Bromomethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	Carbon Tetrachloride	ND	0.50	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	Chlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	Chloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	Chloroform	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	Chloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	Dibromochloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	Dibromomethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	1,2-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	1,3-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	1,4-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	1,1-Dichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	1,2-Dichloroethane	ND	0.50	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	1,1-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	cis-1,2-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	trans-1,2-Dichloroethene	ND	1.00	µg/L	EPA 8260 B

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	1,2-Dichloropropane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	cis-1,3-Dichloropropene	ND	0.50	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	trans-1,3-Dichloropropene	ND	0.50	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	Methylene chloride	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	Styrene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	1,1,2,2-Tetrachloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	Tetrachloroethene	1.6	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	1,1,2-Teichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	1,1,1-Trichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	Trichloroethene	5.4	1.00	µg/L	EPA 8260 B
San Diego County	12_19,12	32.9908430	-117.1960300	8/26/2004	Vinyl chloride	ND	0.50	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	Bromodichloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	Bromomethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	Carbon Tetrachloride	ND	0.50	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	Chlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	Chloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	Chloroform	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	Chloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	Dibromochloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	Dibromomethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	1,2-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	1,3-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	1,4-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	1,1-Dichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	1,2-Dichloroethane	ND	0.50	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	1,1-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	cis-1,2-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	trans-1,2-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	1,2-Dichloropropane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	cis-1,3-Dichloropropene	ND	0.50	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	trans-1,3-Dichloropropene	ND	0.50	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	Methylene chloride	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	Styrene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	1,1,2,2-Tetrachloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	Tetrachloroethene	ND	1.00	µg/L	EPA 8260 B

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	1,1,2-Teichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	1,1,1-Trichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	Trichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	12_19,13	32.9908430	-117.1960300	8/26/2004	Vinyl chloride	ND	0.50	µg/L	EPA 8260 B
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Boron	0.2		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Calcium	230		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Iron	5.3		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Magnesium	120		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Manganese	3.4		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Potassium	17		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Sodium	350		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Bromide	<2.5		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Chloride	930		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Fluoride	<2.5		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Nitrate as N	<0.55		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Nitrite as N	<1.5		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Orthophosphate	<5.0		mg/L	

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Table 5

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Sulfate as SO4	470		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Total Dissolved Solids	2,300		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Electrical Conductivity	3,570		umhos/cm	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Dissolved Oxygen	1.76		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	pH	6.93		pH Units	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Temperature	25		degree C	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2001	Redox Potential	-105		mv	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2/10/2017	Boron	ND	0.50	mg/L	EPA 200.7
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2/10/2017	Calcium	75.7	0.50	mg/L	EPA 200.7
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2/10/2017	Potassium	5.25	1.00	mg/L	EPA 200.7
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2/10/2017	Magnesium	29.6	0.50	mg/L	EPA 200.7
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2/10/2017	Sodium	110	2.50	mg/L	EPA 200.7
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2/10/2017	Strontium	1.13	1.00	mg/L	EPA 200.7
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2/8/2017 14:57	Barium	130	0.50	µg/L	EPA 200.8

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2/8/2017 14:57	Chromium	0.1	0.20	µg/L	EPA 200.8
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2/8/2017 14:57	Copper	13	0.50	µg/L	EPA 200.8
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2/8/2017 14:57	Iron	24	20.0	µg/L	EPA 200.8
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2/8/2017 14:57	Manganese	3.7	0.20	µg/L	EPA 200.8
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2/8/2017 14:57	Zinc	220	5.00	µg/L	EPA 200.8
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/24/2017	Bicarbonate Alkalinity	123	5.00	mg CaCO3/L	SM2320 B
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/24/2017	Carbonate Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/24/2017	Hydroxide Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/19/2017	Ammonia as N	ND	0.10	mg/L	SM4500 NH3 B,C
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/24/2017	Chloride	100	0.050	mg/L	SM4500 Cl C
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/23/2017	Specific Conductance	1,020	1.00	umhos/cm	SM2510 B
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/16/2017	Fluoride	0.467	0.10	mg/L	SM4500 F C
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	2/9/2017	Hardness	311	10.0	mg CaCO3/L	EPA 200.7
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/31/2017	Nitrate as N	0.63	0.10	mg/L	SM4500 NO3 E

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Table 5

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/13/2017	Nitrite as N	0.1	0.050	mg/L	SM4500 NO2 B
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/13/2017	Orthophosphate	ND	0.050	mg/L	SM4500 P E
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/23/2017	Phosphorus	ND	0.050	mg/L	SM4500 P B, E
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/17/2017	Total Dissolved Solids	631	20.0	mg/L	SM2540 C
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/19/2017	Sulfate as SO4	274	50.0	mg/L	SM4500 SO4 E
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/13/2017	Turbidity	0.19	0.050	Nephalometric Turbidity Units	SM2130 B
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/26/2017	adj-Sodium Adsorption Ration	2.74	0.10	Ratio	Suarez-1981
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/20/2017	Temperature (field)	20		degree C	Field
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/23/2017	Alkalinity, Total (as CaCO3)	130	5.00	mg/L	SM2320 B
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/20/2017	Langelier Index at Source Tmp	0.49		mg/L	SM203
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/20/2017	Langelier Index at 60 C	1.1		mg/L	SM203
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/20/2017	Aggressive Index	12.35		mg/L	SM203
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/23/2017	Specific Conductance	1,000	2.00	umhos/cm	SM2510 B
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/18/2017	pH	8		pH Units	SM4500 HB

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/25/2017	Calcium	76	5.00	mg/L	EPA 200.7
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/19/2017	Chromium	ND	1.00	µg/L	EPA 218.6
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	18	32.9963670	-117.199649	1/25/2017	Silica	10	5.00	mg/L	EPA 200.7
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	Conductivity @ 25 degree C	1,150		umhos/cm	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	pH	7.9		pH Units	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	Total Alkalinity as CaCO3	227		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	HCO3 Ion	277		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	CO3 Ion	0		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	Total Hardness as CaCO3	358		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	Calcium	89		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	Magnesium	33		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	Sodium	83		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	Potassium	3		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	Chloride	176		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	Sulfate as SO4	44		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	Fluoride	0.1		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	Boron	50		µg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/27/1957	Nitrate	2.2		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	Conductivity @ 25 degree C	1,645		umhos/cm	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	pH	7.5		pH Units	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	Total Alkalinity as CaCO3	173		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	HCO3 Ion	211		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	CO3 Ion	0		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	Total Hardness as CaCO3	520		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	Calcium	98		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	Magnesium	67		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	Sodium	165		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	Potassium	5		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	Chloride	387		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	Sulfate as SO4	153		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	Fluoride	0.2		mg/L	

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Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	Boron	200		µg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/4/1965	Nitrate	0		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	Temperature	20		degree C	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	Temperature	68		degree F	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	Conductivity @ 25 degree C	1,460		umhos/cm	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	pH	8.3		pH Units	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	Total Alkalinity as CaCO3	217		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	HCO3 Ion	265		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	CO3 Ion	0		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	Total Hardness as CaCO3	438		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	Calcium	88		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	Magnesium	64		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	Sodium	100		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	Potassium	4		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	Chloride	251		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	Sulfate as SO4	116		mg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	Boron	0		µg/L	
San Dieguito Basin Well Logs	35	33.0067810	-117.1980290	3/28/1967	Nitrate	6.1		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Boron	2.7		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Calcium	390		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Iron	<0.080		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Magnesium	93		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Manganese	0.97		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Potassium	18		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Sodium	1,400		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Bromide	<5.0		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Chloride	2,400		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Fluoride	<5.0		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Nitrate as N	<1.1		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Nitrite as N	<7.5		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Orthophosphate	<5.0		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Sulfate as SO4	920		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Total Dissolved Solids	5,100		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Electrical Conductivity	7,540		umhos/cm	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Dissolved Oxygen	2.09		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	pH	7.1		pH Units	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Temperature	23.9		degree C	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	50	32.974514	-117.226663	2001	Redox Potential	45		mv	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/22/2016	Calcium	293	5.00	mg/L	EPA 6010

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/22/2016	Magnesium	146	5.00	mg/L	EPA 6010
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/22/2016	Sodium	1,060	10.0	mg/L	EPA 6010
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/22/2016	Boron	ND	5.00	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/23/2016	Barium	0.124	0.10	mg/L	EPA 200.8
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/22/2016	Calcium	264	5.00	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/23/2016	Chromium	ND	0.050	mg/L	EPA 200.8
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/23/2016	Copper	ND	0.10	mg/L	EPA 200.8
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/23/2016	Iron	1.94	0.50	mg/L	EPA 200.8
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/22/2016	Potassium	47.2	10.0	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/22/2016	Magnesium	130	5.00	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/23/2016	Manganese	1.1	0.050	mg/L	EPA 200.8
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/22/2016	Sodium	862	5.00	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/22/2016	Strontium	ND	10.0	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/23/2016	Zinc	ND	0.20	mg/L	EPA 200.8

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Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/17/2016	Bicarbonate Alkalinity	400	5.00	mg CaCO3/L	SM2320 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/17/2016	Carbonate Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/17/2016	Hydroxide Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/17/2016	Total Alkalinity as CaCO3	400	5.00	mg CaCO3/L	SM2320 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/22/2016	Ammonia as N	2.12	0.20	mg/L	SM4500 NH3 B,C
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/16/2016	Chloride	1,680	0.050	mg/L	SM4500 Cl C
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/22/2016	Specific Conductance	6,380	1.00	umhos/cm	SM2510 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/17/2016	Fluoride	0.396	0.10	mg/L	SM4500 F C
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/23/2016	Hardness	1,190	100	mg CaCO3/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/23/2016	Nitrate as N	0.03	0.050	mg/L	SM4500 NO3 E
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/16/2016	Nitrite as N	ND	0.050	mg/L	SM4500 NO2 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/15/2016	Orthophosphate	0.59	0.050	mg/L	SM4500 P E
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/17/2016	Phosphorus	0.61	0.050	mg/L	SM4500 P B, E
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/17/2016	Total Dissolved Solids	4,060	20.0	mg/L	SM2540 C

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Table 5

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/21/2016	Sulfate as SO4	709	125	mg/L	SM4500 SO4 E
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/15/2016	Turbidity	10.5	0.050	Nephalometric Turbidity Units	SM2130 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/15/2016	pH	7.3	0.10	pH Units	SM4500 HB
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/28/2016	adj-Sodium Adsorption Ration	16.1	0.10	Ratio	Suarez-1981
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	10/28/2016	Temperature (field)	20		degree C	Field
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	10/28/2016	Alkalinity, Total (as CaCO3)	420	5.00	mg/L	SM2320 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	10/28/2016	Langelier Index at Source Tmp	0.92		mg/L	SM203
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	10/28/2016	Langelier Index at 60 C	1.53		mg/L	SM203
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	10/28/2016	Aggressive Index	12.87		mg/L	SM203
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	10/28/2016	Specific Conductance	6,400	2.00	umhos/cm	SM2510 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	10/26/2016	pH	7.4		pH Units	SM4500 HB
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/2/2016	Calcium	280	5.00	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	10/28/2016	Chromium	ND	1.00	µg/L	EPA 218.6
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	10/31/2016	Silica	29	5.00	mg/L	EPA 200.7

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Table 5

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/21/2016	Temperature (field)	20		degree C	Field
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/21/2016	Alkalinity, Total (as CaCO3)	400	5.00	mg/L	SM2320 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/21/2016	Langelier Index at Source Tmp	0.77		mg/L	SM203
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/21/2016	Langelier Index at 60 C	1.37		mg/L	SM203
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/21/2016	Aggressive Index	12.71		mg/L	SM203
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/21/2016	Specific Conductance	6,600	2.00	umhos/cm	SM2510 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/17/2016	pH	7.3		pH Units	SM4500 HB
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/23/2016	Calcium	280	5.00	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/18/2016	Chromium	ND	1.00	µg/L	EPA 218.6
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_a	32.9854270	-117.2160740	11/22/2016	Silica	32	5.00	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/20/2016	Calcium	268	5.00	mg/L	EPA 6010
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/20/2016	Magnesium	195	5.00	mg/L	EPA 6010
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/20/2016	Sodium	850	5.00	mg/L	EPA 6010
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/22/2016	Boron	ND	5.00	mg/L	EPA 200.7

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Table 5

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/23/2016	Barium	ND	0.10	mg/L	EPA 200.8
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/22/2016	Calcium	252	5.00	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/23/2016	Chromium	ND	0.050	mg/L	EPA 200.8
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/23/2016	Copper	ND	0.10	mg/L	EPA 200.8
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/23/2016	Iron	ND	0.50	mg/L	EPA 200.8
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/22/2016	Potassium	32.8	10.0	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/22/2016	Magnesium	182	5.00	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/23/2016	Manganese	1.25	0.050	mg/L	EPA 200.8
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/22/2016	Sodium	806	5.00	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/22/2016	Strontium	ND	10.0	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/23/2016	Zinc	ND	0.20	mg/L	EPA 200.8
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/17/2016	Bicarbonate Alkalinity	410	5.00	mg CaCO3/L	SM2320 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/17/2016	Carbonate Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/17/2016	Hydroxide Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B

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Table 5

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/17/2016	Total Alkalinity as CaCO3	410	5.00	mg CaCO3/L	SM2320 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/22/2016	Ammonia as N	0.23	0.10	mg/L	SM4500 NH3 B,C
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/16/2016	Chloride	1,550	0.050	mg/L	SM4500 Cl C
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/22/2016	Specific Conductance	6,230	1.00	umhos/cm	SM2510 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/17/2016	Fluoride	0.523	0.10	mg/L	SM4500 F C
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/23/2016	Hardness	1,380	100	mg CaCO3/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/23/2016	Nitrate as N	4.63	0.50	mg/L	SM4500 NO3 E
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/16/2016	Nitrite as N	ND	0.050	mg/L	SM4500 NO2 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/15/2016	Orthophosphate	0.23	0.050	mg/L	SM4500 P E
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/17/2016	Phosphorus	0.29	0.050	mg/L	SM4500 P B, E
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/17/2016	Total Dissolved Solids	4,030	20.0	mg/L	SM2540 C
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/21/2016	Sulfate as SO4	826	125	mg/L	SM4500 SO4 E
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/15/2016	Turbidity	0.58	0.050	Nephalometric Turbidity Units	SM2130 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/15/2016	pH	7.02	0.10	pH Units	SM4500 HB

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/28/2016	adj-Sodium Adsorption Ration	11.6	0.10	Ratio	Suarez-1981
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	10/28/2016	Temperature (field)	20		degree C	Field
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	10/28/2016	Alkalinity, Total (as CaCO3)	480	5.00	mg/L	SM2320 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	10/28/2016	Langelier Index at Source Tmp	0.66		mg/L	SM203
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	10/28/2016	Langelier Index at 60 C	1.27		mg/L	SM203
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	10/28/2016	Aggressive Index	12.6		mg/L	SM203
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	10/28/2016	Specific Conductance	6,300	2.00	umhos/cm	SM2510 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	10/26/2016	pH	7.1		pH Units	SM4500 HB
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/2/2016	Calcium	250	5.00	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	10/28/2016	Chromium	ND	1.00	µg/L	EPA 218.6
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	10/31/2016	Silica	31	5.00	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/21/2016	Temperature (field)	20		degree C	Field
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/21/2016	Alkalinity, Total (as CaCO3)	480	5.00	mg/L	SM2320 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/21/2016	Langelier Index at Source Tmp	0.61		mg/L	SM203

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/21/2016	Langelier Index at 60 C	1.22		mg/L	SM203
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/21/2016	Aggressive Index	12.56		mg/L	SM203
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/21/2016	Specific Conductance	6,400	2.00	umhos/cm	SM2510 B
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/17/2016	pH	7.1		pH Units	SM4500 HB
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/23/2016	Calcium	270	5.00	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/18/2016	Chromium	ND	1.00	µg/L	EPA 218.6
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	11/22/2016	Silica	32	5.00	mg/L	EPA 200.7
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Boron	0.93		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Calcium	290		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Iron	2		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Magnesium	190		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Manganese	1.6		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Potassium	50		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Sodium	1,200		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Bromide	5		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Chloride	2,300		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Fluoride	<2.5		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Nitrate as N	<0.55		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Nitrite as N	<7.5		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Orthophosphate	<2.5		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Sulfate as SO4	770		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Total Dissolved Solids	4,600		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Electrical Conductivity	7,080		umhos/cm	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Dissolved Oxygen	3.35		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	pH	6.88		pH Units	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Temperature	23.7		degree C	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2001	Redox Potential	-80		mv	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Aluminum	<0.050		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Barium	0.27		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Calcium	290		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Iron	0.21		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Magnesium	140		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Manganese	1.4		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Potassium	53		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Sodium	1,000		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Chloride	1,800		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Fluoride	<5.0		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Zinc	0.14		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Nitrate as N	<1.1		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Nitrite as N	<1.50		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Orthophosphate	0.56		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Sulfate as SO4	610		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Total Dissolved Solids	4,400		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Electrical Conductivity	7,100		umhos/cm	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	pH	7.59		pH Units	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Turbidity	14		Nephalometric Turbidity Units	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Silica	32		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Bicarbonate Alkalinity	330		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A / Well Canvas	52_b	32.9854430	-117.2167130	2002	Hardness	1,300		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	Conductivity @ 25 degree C	1,525		umhos/cm	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	pH	7.5		pH Units	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	Total Alkalinity as CaCO3	226		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	HCO3 Ion	275		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	CO3 Ion	0		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	Total Hardness as CaCO3	505		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	Calcium	120		mg/L	

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Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	Magnesium	50		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	Sodium	150		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	Potassium	3		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	Chloride	314		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	Sulfate as SO4	167		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	Fluoride	0.2		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	Boron	150		µg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	3/26/1965	Nitrate	0		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	Temperature	20		degree C	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	Temperature	68		degree F	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	Conductivity @ 25 degree C	2,057		umhos/cm	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	pH	7.4		pH Units	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	Total Alkalinity as CaCO3	273		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	HCO3 Ion	333		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	CO3 Ion	0		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	Total Hardness as CaCO3	616		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	Calcium	133		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	Magnesium	69		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	Sodium	192		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	Potassium	6		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	Chloride	366		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	Sulfate as SO4	239		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	Fluoride	0.5		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	Boron	80		µg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A / Well Canvas	61_3	33.0105560	-117.2008330	4/10/1968	Nitrate	1.5		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	Conductivity @ 25 degree C	1,128		umhos/cm	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	pH	7.6		pH Units	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	Total Alkalinity as CaCO3	200		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	HCO3 Ion	244		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	CO3 Ion	0		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	Total Hardness as CaCO3	294		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	Calcium	60		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	Magnesium	35		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	Sodium	109		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	Potassium	0		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	Chloride	177		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	Sulfate as SO4	68		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	Fluoride	0.3		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	Boron	250		µg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/26/1957	Nitrate	15		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	Temperature	25.6		degree C	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	Temperature	78		degree F	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	Conductivity @ 25 degree C	2,000		umhos/cm	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	pH	8.2		pH Units	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	Total Alkalinity as CaCO3	239		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	HCO3 Ion	291		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	CO3 Ion	0		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	Total Hardness as CaCO3	490		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	Calcium	76		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	Magnesium	73		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	Sodium	287		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	Potassium	2		mg/L	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	Chloride	345		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	Sulfate as SO4	220		mg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	Boron	200		µg/L	
San Dieguito Basin Well Logs / Hargis Vol. II, Appendix A	61_3,1	33.0105560	-117.1986110	3/29/1967	Nitrate	15		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Boron	0.28		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Calcium	300		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Iron	1.3		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Magnesium	170		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Manganese	2.5		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Potassium	18		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Sodium	440		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Bromide	<5.0		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Chloride	1,400		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Fluoride	<5.0		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Nitrate as N	<1.1		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Nitrite as N	<3.0		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Orthophosphate	<5.0		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Sulfate as SO4	510		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Total Dissolved Solids	3,000		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Electrical Conductivity	4,690		umhos/cm	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Dissolved Oxygen	1.62		mg/L	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	pH	7.04		pH Units	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Temperature	21.6		degree C	
Well_loc-data (excel file) / Hargis Vol. II, Appendix A	97	32.998503	-117.197236	2001	Redox Potential	-52		mv	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Boron	1.3		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Calcium	220		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Iron	4.8		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Magnesium	170		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Manganese	1.5		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Potassium	62		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Sodium	1,100		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Bromide	<5.0		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Chloride	1,900		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Fluoride	<5.0		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Nitrate as N	<1.1		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Nitrite as N	<3.0		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Orthophosphate	<5.0		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Sulfate as SO4	650		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Total Dissolved Solids	4,200		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Electrical Conductivity	6,490		umhos/cm	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Dissolved Oxygen	1.79		mg/L	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	pH	7.22		pH Units	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Temperature	23.5		degree C	
San Diego County / Well Canvas	172_19	32.996362	-117.195778	2001	Redox Potential	118		mv	

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	Bromodichloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	Bromomethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	Carbon Tetrachloride	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	Chlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	Chloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	Chloroform	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	Chloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	Dibromochloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	Dibromomethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	1,2-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	1,3-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	1,4-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	1,1-Dichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	1,2-Dichloroethane	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	1,1-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	cis-1,2-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	trans-1,2-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	1,2-Dichloropropane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	cis-1,3-Dichloropropene	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	trans-1,3-Dichloropropene	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	Methylene chloride	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	Styrene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	1,1,2,2-Tetrachloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	Tetrachloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	1,1,2-Teichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	1,1,1-Trichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	Trichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4	32.9833540	-117.2297020	7/15/2004	Vinyl chloride	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	Bromodichloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	Bromomethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	Carbon Tetrachloride	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	Chlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	Chloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	Chloroform	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	Chloromethane	ND	1.00	µg/L	EPA 8260 B

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	Dibromochloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	Dibromomethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	1,2-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	1,3-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	1,4-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	1,1-Dichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	1,2-Dichloroethane	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	1,1-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	cis-1,2-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	trans-1,2-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	1,2-Dichloropropane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	cis-1,3-Dichloropropene	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	trans-1,3-Dichloropropene	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	Methylene chloride	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	Styrene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	1,1,2,2-Tetrachloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	Tetrachloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	1,1,2-Teichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	1,1,1-Trichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	Trichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,1	32.9835390	-117.2296980	7/15/2004	Vinyl chloride	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	Bromodichloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	Bromomethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	Carbon Tetrachloride	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	Chlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	Chloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	Chloroform	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	Chloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	Dibromochloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	Dibromomethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	1,2-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	1,3-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	1,4-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	1,1-Dichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	1,2-Dichloroethane	ND	0.50	µg/L	EPA 8260 B

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	1,1-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	cis-1,2-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	trans-1,2-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	1,2-Dichloropropane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	cis-1,3-Dichloropropene	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	trans-1,3-Dichloropropene	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	Methylene chloride	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	Styrene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	1,1,2,2-Tetrachloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	Tetrachloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	1,1,2-Teichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	1,1,1-Trichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	Trichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,2	32.9829960	-117.2293290	7/15/2004	Vinyl chloride	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	Bromodichloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	Bromomethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	Carbon Tetrachloride	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	Chlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	Chloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	Chloroform	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	Chloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	Dibromochloromethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	Dibromomethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	1,2-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	1,3-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	1,4-Dichlorobenzene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	1,1-Dichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	1,2-Dichloroethane	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	1,1-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	cis-1,2-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	trans-1,2-Dichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	1,2-Dichloropropane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	cis-1,3-Dichloropropene	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	trans-1,3-Dichloropropene	ND	0.50	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	Methylene chloride	ND	1.00	µg/L	EPA 8260 B

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	Styrene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	1,1,2,2-Tetrachloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	Tetrachloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	1,1,2-Teichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	1,1,1-Trichloroethane	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	Trichloroethene	ND	1.00	µg/L	EPA 8260 B
San Diego County	173_4,3	32.9832810	-117.2291800	7/15/2004	Vinyl chloride	ND	0.50	µg/L	EPA 8260 B
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Boron	0.38		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Calcium	200		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Iron	2.6		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Magnesium	120		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Manganese	1.4		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Potassium	24		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Sodium	660		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Bromide	<5.0		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Chloride	1,400		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Fluoride	<5.0		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Nitrate as N	<1.1		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Nitrite as N	<1.5		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Orthophosphate	<5.0		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Sulfate as SO4	580		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Total Dissolved Solids	3,100		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Electrical Conductivity	4,600		umhos/cm	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Dissolved Oxygen	1.4		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	pH	7.25		pH Units	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Temperature	20.6		degree C	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2001	Redox Potential	-15		mv	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Aluminum	0.056		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Barium	0.27		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Calcium	190		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Iron	<0.040		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Magnesium	110		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Manganese	1.3		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Potassium	28		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Sodium	660		mg/L	

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Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Chloride	1,100		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Fluoride	<2.5		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Zinc	0.033		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Nitrate as N	<0.55		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Nitrite as N	<0.75		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Orthophosphate	<0.050		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Sulfate as SO4	400		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Total Dissolved Solids	2,800		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Electrical Conductivity	4,800		umhos/cm	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	pH	7.29		pH Units	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Turbidity	26		Nephalometric Turbidity Units	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Silica	29		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Bicarbonate Alkalinity	420		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2002	Hardness	1,000		mg/L	
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/27/2017	Calcium	200	2.50	mg/L	EPA 6010
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/27/2017	Magnesium	122	0.50	mg/L	EPA 6010
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/27/2017	Sodium	652	12.5	mg/L	EPA 6010
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/28/2017	Boron	ND	0.50	mg/L	EPA 200.7
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/27/2017	Barium	0.256	0.050	mg/L	EPA 200.7
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/28/2017	Calcium	202	2.50	mg/L	EPA 200.7
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/27/2017	Chromium	ND	0.025	mg/L	EPA 200.7
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/27/2017	Copper	ND	0.050	mg/L	EPA 200.7
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/27/2017	Iron	2.62	0.25	mg/L	EPA 200.7
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/28/2017	Potassium	20.6	1.00	mg/L	EPA 200.7
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/28/2017	Magnesium	126	0.50	mg/L	EPA 200.7
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/27/2017	Manganese	1.27	0.025	mg/L	EPA 200.7
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/28/2017	Sodium	649	12.5	mg/L	EPA 200.7
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/28/2017	Strontium	1.39	1.00	mg/L	EPA 200.7
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/27/2017	Zinc	ND	0.10	mg/L	EPA 200.7
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/28/2017	Bicarbonate Alkalinity	470	5.00	mg CaCO3/L	SM2320 B
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/28/2017	Carbonate Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/28/2017	Hydroxide Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/28/2017	Ammonia as N	2.34	0.20	mg/L	SM4500 NH3 B,C
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	3/1/2017	Chloride	1,070	0.050	mg/L	SM4500 Cl C
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	3/1/2017	Specific Conductance	4,510	1.00	umhos/cm	SM2510 B

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/18/2017	Fluoride	3.21	0.10	mg/L	SM4500 F C
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/28/2017	Hardness	1,020	50.0	mg CaCO3/L	EPA 200.7
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/28/2017	Nitrate as N	ND	0.050	mg/L	SM4500 NO3 E
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/17/2017	Nitrite as N	ND	0.050	mg/L	SM4500 NO2 B
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/17/2017	Orthophosphate	0.34	0.050	mg/L	SM4500 P E
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/22/2017	Phosphorus	0.36	0.050	mg/L	SM4500 P B, E
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/22/2017	Total Dissolved Solids	2,760	20.0	mg/L	SM2540 C
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/23/2017	Sulfate as SO4	525	125	mg/L	SM4500 SO4 E
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	2/18/2017	Turbidity	30.6	0.050	Nephalometric Turbidity Units	SM2130 B
Hargis Vol. II, Appendix A	189	32.9940990	-117.2004250	3/1/2017	adj-Sodium Adsorption Ration	11.1	0.10	Ratio	Suarez-1981
Well Canvas	192	33.000819	-117.200551	10/12/2016	Calcium	155	5.00	mg/L	EPA 6010
Well Canvas	192	33.000819	-117.200551	9/27/2016	Magnesium	69.6	5.00	mg/L	EPA 6010
Well Canvas	192	33.000819	-117.200551	9/27/2016	Sodium	284	5.00	mg/L	EPA 6010
Well Canvas	192	33.000819	-117.200551	9/20/2016	Boron	ND	0.50	mg/L	EPA 200.7
Well Canvas	192	33.000819	-117.200551	9/20/2016	Calcium	156	5.00	mg/L	EPA 200.7
Well Canvas	192	33.000819	-117.200551	9/20/2016	Potassium	ND	1.00	mg/L	EPA 200.7
Well Canvas	192	33.000819	-117.200551	9/20/2016	Magnesium	73.3	5.00	mg/L	EPA 200.7
Well Canvas	192	33.000819	-117.200551	9/20/2016	Sodium	276	5.00	mg/L	EPA 200.7
Well Canvas	192	33.000819	-117.200551	9/20/2016	Strontium	ND	1.00	mg/L	EPA 200.7
Well Canvas	192	33.000819	-117.200551	9/27/2016	Calcium	168	5.00	mg/L	EPA 6010
Well Canvas	192	33.000819	-117.200551	9/27/2016	Magnesium	78.5	5.00	mg/L	EPA 6010
Well Canvas	192	33.000819	-117.200551	9/27/2016	Sodium	302	5.00	mg/L	EPA 6010
Well Canvas	192	33.000819	-117.200551	9/27/2016	Bicarbonate Alkalinity	249	5.00	mg CaCO3/L	SM2320 B
Well Canvas	192	33.000819	-117.200551	9/27/2016	Carbonate Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Well Canvas	192	33.000819	-117.200551	9/27/2016	Hydroxide Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Well Canvas	192	33.000819	-117.200551	9/29/2016	Ammonia as N	0.33	0.10	mg/L	SM4500 NH3 B,C
Well Canvas	192	33.000819	-117.200551	9/26/2016	Chloride	530	0.050	mg/L	SM4500 Cl C
Well Canvas	192	33.000819	-117.200551	9/29/2016	Specific Conductance	2,650	1.00	umhos/cm	SM2510 B
Well Canvas	192	33.000819	-117.200551	10/3/2016	Fluoride	0.228	0.10	mg/L	SM4500 F C
Well Canvas	192	33.000819	-117.200551	10/1/2016	Nitrate as N	ND	0.050	mg/L	SM4500 NO3 E
Well Canvas	192	33.000819	-117.200551	9/23/2016	Nitrite as N	ND	0.050	mg/L	SM4500 NO2 B
Well Canvas	192	33.000819	-117.200551	9/23/2016	pH	7.28	0.10	pH Units	SM4500 HB
Well Canvas	192	33.000819	-117.200551	9/23/2016	Orthophosphate	ND	0.050	mg/L	SM4500 P E
Well Canvas	192	33.000819	-117.200551	9/23/2016	Phosphorus	0.1	0.050	mg/L	SM4500 P B, E
Well Canvas	192	33.000819	-117.200551	9/30/2016	Total Dissolved Solids	1,640	20.0	mg/L	SM2540 C

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Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well Canvas	192	33.000819	-117.200551	10/3/2016	Sulfate as SO4	394	50.0	mg/L	SM4500 SO4 E
Well Canvas	192	33.000819	-117.200551	9/23/2016	Turbidity	32.5	0.050	Nephalometric Turbidity Units	SM2130 B
Well Canvas	192	33.000819	-117.200551	10/12/2016	adj-Sodium Adsorption Ration	5.68	0.10	Ratio	Suarez-1981
Well Canvas	192	33.000819	-117.200551	9/23/2016	Temperature (field)	20		degree C	Field
Well Canvas	192	33.000819	-117.200551	9/23/2016	Alkalinity, Total (as CaCO3)	270	5.00	mg/L	SM2320 B
Well Canvas	192	33.000819	-117.200551	9/23/2016	Langelier Index at Source Tmp	0.56		mg/L	SM203
Well Canvas	192	33.000819	-117.200551	9/23/2016	Langelier Index at 60 C	1.17		mg/L	SM203
Well Canvas	192	33.000819	-117.200551	9/23/2016	Aggressive Index	12.46		mg/L	SM203
Well Canvas	192	33.000819	-117.200551	9/23/2016	Specific Conductance	2,600	2.00	umhos/cm	SM2510 B
Well Canvas	192	33.000819	-117.200551	9/20/2016	pH	7.4		pH Units	SM4500 HB
Well Canvas	192	33.000819	-117.200551	9/23/2016	Calcium	160	2.00	mg/L	EPA 200.7
Well Canvas	192	33.000819	-117.200551	9/21/2016	Chromium	ND	1.00	µg/L	EPA 218.6
Well Canvas	192	33.000819	-117.200551	9/27/2016	Hardness	685	0.66	mg/L	SM 2340 B
Well Canvas	192	33.000819	-117.200551	10/6/2016	Barium	100	0.50	µg/L	EPA 200.8
Well Canvas	192	33.000819	-117.200551	10/6/2016	Chromium	0.12	0.20	µg/L	EPA 200.8
Well Canvas	192	33.000819	-117.200551	10/6/2016	Copper	3.5	0.50	µg/L	EPA 200.8
Well Canvas	192	33.000819	-117.200551	10/6/2016	Iron	2,800	20.0	µg/L	EPA 200.8
Well Canvas	192	33.000819	-117.200551	10/6/2016	Manganese	1,700	0.20	µg/L	EPA 200.8
Well Canvas	192	33.000819	-117.200551	10/6/2016	Zinc	8.6	5.00	µg/L	EPA 200.8
Well Canvas	192	33.000819	-117.200551	9/29/2016	Boron	230	10.0	µg/L	EPA 200.7
Well Canvas	192	33.000819	-117.200551	9/29/2016	Calcium	151	0.10	mg/L	EPA 200.7
Well Canvas	192	33.000819	-117.200551	9/29/2016	Magnesium	74.6	0.10	mg/L	EPA 200.7
Well Canvas	192	33.000819	-117.200551	9/29/2016	Potassium	7.8	0.10	mg/L	EPA 200.7
Well Canvas	192	33.000819	-117.200551	9/29/2016	Silica	11	0.040	mg/L	EPA 200.7
Well Canvas	192	33.000819	-117.200551	9/29/2016	Sodium	260	0.50	mg/L	EPA 200.7
Well Canvas	192	33.000819	-117.200551	9/29/2016	Strontium	0.73	0.002	mg/L	EPA 200.7
Well Canvas	192	33.000819	-117.200551	9/21/2016	Bicarbonate Alkalinity	236	5.00	mg CaCO3/L	SM2320 B
Well Canvas	192	33.000819	-117.200551	9/21/2016	Carbonate Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Well Canvas	192	33.000819	-117.200551	9/21/2016	Hydroxide Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Well Canvas	192	33.000819	-117.200551	9/21/2016	Ammonia as N	0.31	0.10	mg/L	SM4500 NH3 B,C
Well Canvas	192	33.000819	-117.200551	9/16/2016	Chloride	520	0.050	mg/L	SM4500 Cl C
Well Canvas	192	33.000819	-117.200551	9/16/2016	Specific Conductance	2,610	1.00	umhos/cm	SM2510 B
Well Canvas	192	33.000819	-117.200551	9/23/2016	Fluoride	0.179	0.10	mg/L	SM4500 F C
Well Canvas	192	33.000819	-117.200551	9/22/2016	Hardness	693	100	mg CaCO3/L	EPA 200.7

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well Canvas	192	33.000819	-117.200551	9/22/2016	Nitrate as N	ND	0.050	mg/L	SM4500 NO3 E
Well Canvas	192	33.000819	-117.200551	9/16/2016	Nitrite as N	ND	0.050	mg/L	SM4500 NO2 B
Well Canvas	192	33.000819	-117.200551	9/16/2016	pH	7.29	0.10	pH Units	SM4500 HB
Well Canvas	192	33.000819	-117.200551	9/16/2016	Orthophosphate	0.07	0.050	mg/L	SM4500 P E
Well Canvas	192	33.000819	-117.200551	9/23/2016	Phosphorus	0.1	0.050	mg/L	SM4500 P B, E
Well Canvas	192	33.000819	-117.200551	9/19/2016	Total Dissolved Solids	1,610	20.0	mg/L	SM2540 C
Well Canvas	192	33.000819	-117.200551	9/28/2016	Sulfate as SO4	320	50.0	mg/L	SM4500 SO4 E
Well Canvas	192	33.000819	-117.200551	9/16/2016	Turbidity	30.3	0.050	Nephalometric Turbidity Units	SM2130 B
Well Canvas	192	33.000819	-117.200551	9/27/2016	adj-Sodium Adsorption Ration	5.75	0.10	Ratio	Suarez-1981
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	2/10/2017	Calcium	181	2.50	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	2/10/2017	Magnesium	87.2	0.50	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	2/10/2017	Sodium	319	2.50	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	2/10/2017	Boron	ND	0.50	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	2/10/2017	Potassium	5.77	1.00	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	2/10/2017	Strontium	ND	1.00	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/24/2017	Bicarbonate Alkalinity	224	5.00	mg CaCO3/L	SM2320 B
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/24/2017	Carbonate Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/24/2017	Hydroxide Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/19/2017	Ammonia as N	0.43	0.10	mg/L	SM4500 NH3 B,C
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/24/2017	Chloride	630	0.050	mg/L	SM4500 Cl C
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/23/2017	Specific Conductance	2,940	1.00	umhos/cm	SM2510 B
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/16/2017	Fluoride	0.286	0.10	mg/L	SM4500 F C
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	2/10/2017	Hardness	164	10.0	mg CaCO3/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/31/2017	Nitrate as N	ND	0.050	mg/L	SM4500 NO3 E
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/13/2017	Nitrite as N	ND	0.050	mg/L	SM4500 NO2 B

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Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Table 5

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/13/2017	Orthophosphate	ND	0.050	mg/L	SM4500 P E
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/23/2017	Phosphorus	0.15	0.050	mg/L	SM4500 P B, E
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/18/2017	Total Dissolved Solids	1,730	20.0	mg/L	SM2540 C
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/19/2017	Sulfate as SO4	434	125	mg/L	SM4500 SO4 E
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/13/2017	Turbidity	21.6	0.050	Nephalometric Turbidity Units	SM2130 B
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/26/2017	adj-Sodium Adsorption Ration	5.78	0.10	Ratio	Suarez-1981
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/20/2017	Temperature (field)	20		degree C	Field
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/23/2017	Alkalinity, Total (as CaCO3)	210	5.00	mg/L	SM2320 B
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/20/2017	Langelier Index at Source Tmp	0.38		mg/L	SM203
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/20/2017	Langelier Index at 60 C	0.99		mg/L	SM203
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/20/2017	Aggressive Index	12.29		mg/L	SM203
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/23/2017	Specific Conductance	2,900	2.00	umhos/cm	SM2510 B
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/18/2017	pH	7.3		pH Units	SM4500 HB
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/26/2017	Calcium	180	2.00	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/12/2017	Chromium	ND	1.00	µg/L	EPA 218.6
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	1/25/2017	Silica	27	0.50	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	2/8/2017	Barium	96	0.50	µg/L	EPA 200.8
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	2/8/2017	Chromium	0.29	0.20	µg/L	EPA 200.8
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	2/8/2017	Copper	1.1	0.50	µg/L	EPA 200.8
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	2/8/2017	Iron	3,800	20.0	µg/L	EPA 200.8
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	2/8/2017	Manganese	2,200	0.20	µg/L	EPA 200.8
Hargis Vol. II, Appendix A / Well Canvas	196	33.0049270	-117.1998790	2/8/2017	Zinc	3	5.00	µg/L	EPA 200.8

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Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Table 5

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/27/2017	Calcium	172	2.50	mg/L	EPA 6010
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/27/2017	Magnesium	83.2	0.50	mg/L	EPA 6010
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/27/2017	Sodium	335	2.50	mg/L	EPA 6010
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/28/2017	Boron	ND	0.50	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/27/2017	Barium	0.113	0.050	mg/L	EPA 200.8
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/28/2017	Calcium	171	2.50	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/27/2017	Chromium	ND	0.025	mg/L	EPA 200.8
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/27/2017	Copper	ND	0.050	mg/L	EPA 200.8
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/27/2017	Iron	2.89	0.25	mg/L	EPA 200.8
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/28/2017	Potassium	4.96	1.00	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/28/2017	Magnesium	88.3	0.50	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/27/2017	Manganese	1.83	0.025	mg/L	EPA 200.8
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/28/2017	Sodium	330	2.50	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/28/2017	Strontium	ND	1.00	mg/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/27/2017	Zinc	ND	0.10	mg/L	EPA 200.8
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/28/2017	Bicarbonate Alkalinity	286	5.00	mg CaCO3/L	SM2320 B
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/28/2017	Carbonate Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/28/2017	Hydroxide Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/28/2017	Ammonia as N	0.62	0.10	mg/L	SM4500 NH3 B,C
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	3/1/2017	Chloride	660	0.050	mg/L	SM4500 Cl C
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	3/1/2017	Specific Conductance	2,980	1.00	umhos/cm	SM2510 B
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/18/2017	Fluoride	0.294	0.10	mg/L	SM4500 F C

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Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Table 5

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/28/2017	Hardness	774	50.0	mg CaCO3/L	EPA 200.7
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/28/2017	Nitrate as N	ND	0.050	mg/L	SM4500 NO3 E
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/17/2017	Nitrite as N	ND	0.050	mg/L	SM4500 NO2 B
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/17/2017	Orthophosphate	0.13	0.050	mg/L	SM4500 P E
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/22/2017	Phosphorus	0.16	0.050	mg/L	SM4500 P B, E
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/22/2017	Total Dissolved Solids	1,750	20.0	mg/L	SM2540 C
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/23/2017	Sulfate as SO4	372	125	mg/L	SM4500 SO4 E
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	2/18/2017	Turbidity	26.4	0.050	Nephalometric Turbidity Units	SM2130 B
Hargis Vol. II, Appendix A / Well Canvas	197	33.0049270	-117.1991770	3/1/2017	adj-Sodium Adsorption Ration	6.34	0.10	Ratio	Suarez-1981
Well Canvas	200	33.0006980	-117.2002460	2/21/2017	Calcium	415	2.50	mg/L	EPA 6010
Well Canvas	200	33.0006980	-117.2002460	2/21/2017	Magnesium	237	2.50	mg/L	EPA 6010
Well Canvas	200	33.0006980	-117.2002460	2/21/2017	Sodium	843	12.5	mg/L	EPA 6010
Well Canvas	200	33.0006980	-117.2002460	2/28/2017	Boron	ND	0.50	mg/L	EPA 200.7
Well Canvas	200	33.0006980	-117.2002460	2/28/2017	Barium	0.279	0.050	mg/L	EPA 200.8
Well Canvas	200	33.0006980	-117.2002460	2/28/2017	Calcium	418	2.50	mg/L	EPA 200.7
Well Canvas	200	33.0006980	-117.2002460	2/28/2017	Chromium	ND	0.025	mg/L	EPA 200.8
Well Canvas	200	33.0006980	-117.2002460	2/28/2017	Copper	ND	0.050	mg/L	EPA 200.8
Well Canvas	200	33.0006980	-117.2002460	3/2/2017	Iron	61.6	2.50	mg/L	EPA 200.8
Well Canvas	200	33.0006980	-117.2002460	2/28/2017	Potassium	21.2	1.00	mg/L	EPA 200.7
Well Canvas	200	33.0006980	-117.2002460	2/28/2017	Magnesium	231	2.50	mg/L	EPA 200.7
Well Canvas	200	33.0006980	-117.2002460	2/28/2017	Manganese	4.05	0.025	mg/L	EPA 200.8
Well Canvas	200	33.0006980	-117.2002460	2/28/2017	Sodium	708	12.5	mg/L	EPA 200.7
Well Canvas	200	33.0006980	-117.2002460	2/28/2017	Strontium	2.35	1.00	mg/L	EPA 200.7
Well Canvas	200	33.0006980	-117.2002460	2/28/2017	Zinc	0.123	0.10	mg/L	EPA 200.8
Well Canvas	200	33.0006980	-117.2002460	2/21/2017	Bicarbonate Alkalinity	467	5.00	mg CaCO3/L	SM2320 B
Well Canvas	200	33.0006980	-117.2002460	2/21/2017	Carbonate Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Well Canvas	200	33.0006980	-117.2002460	2/21/2017	Hydroxide Alkalinity	ND	5.00	mg CaCO3/L	SM2320 B
Well Canvas	200	33.0006980	-117.2002460	2/21/2017	Ammonia as N	0.33	0.10	mg/L	SM4500 NH3 B,C
Well Canvas	200	33.0006980	-117.2002460	2/15/2017	Chloride	1,660	0.050	mg/L	SM4500 Cl C
Well Canvas	200	33.0006980	-117.2002460	2/15/2017	Specific Conductance	6,350	1.00	umhos/cm	SM2510 B

Water Quality for Wells in San Dieguito Groundwater Basin (1957 - 2017)

Data Source	Unique ID	Latitude [WGS 84]	Longitude [WGS 84]	Analysis Date	Analyte	Result	Rpt Limit	Units	Method
Well Canvas	200	33.0006980	-117.2002460	2/18/2017	Fluoride	0.319	0.10	mg/L	SM4500 F C
Well Canvas	200	33.0006980	-117.2002460	2/27/2017	Hardness	2,000	50.0	mg CaCO3/L	EPA 200.7
Well Canvas	200	33.0006980	-117.2002460	2/23/2017	Nitrate as N	ND	0.050	mg/L	SM4500 NO3 E
Well Canvas	200	33.0006980	-117.2002460	2/14/2017	Nitrite as N	ND	0.050	mg/L	SM4500 NO2 B
Well Canvas	200	33.0006980	-117.2002460	2/14/2017	Orthophosphate	1.59	0.25	mg/L	SM4500 P E
Well Canvas	200	33.0006980	-117.2002460	2/17/2017	Phosphorus	2.94	0.25	mg/L	SM4500 P B, E
Well Canvas	200	33.0006980	-117.2002460	2/16/2017	Total Dissolved Solids	3,990	20.0	mg/L	SM2540 C
Well Canvas	200	33.0006980	-117.2002460	2/23/2017	Sulfate as SO4	814	125	mg/L	SM4500 SO4 E
Well Canvas	200	33.0006980	-117.2002460	2/15/2017	Turbidity	535	0.050	Nephalometric Turbidity Units	SM2130 B
Well Canvas	200	33.0006980	-117.2002460	2/22/2017	adj-Sodium Adsorption Ration	10.5	0.10	Ratio	Suarez-1981
Well Canvas	200	33.0006980	-117.2002460	2/22/2017	Temperature (field)	20		degree C	Field
Well Canvas	200	33.0006980	-117.2002460	2/22/2017	Alkalinity, Total (as CaCO3)	410	5.00	mg/L	SM2320 B
Well Canvas	200	33.0006980	-117.2002460	2/22/2017	Langelier Index at Source Tmp	0.72		mg/L	SM203
Well Canvas	200	33.0006980	-117.2002460	2/22/2017	Langelier Index at 60 C	1.33		mg/L	SM203
Well Canvas	200	33.0006980	-117.2002460	2/22/2017	Aggressive Index	12.67		mg/L	SM203
Well Canvas	200	33.0006980	-117.2002460	2/22/2017	Specific Conductance	6,500	2.00	umhos/cm	SM2510 B
Well Canvas	200	33.0006980	-117.2002460	2/16/2017	pH	7		pH Units	SM4500 HB
Well Canvas	200	33.0006980	-117.2002460	2/23/2017	Calcium	420	2.00	mg/L	EPA 200.7
Well Canvas	200	33.0006980	-117.2002460	2/17/2017	Chromium	ND	1.00	µg/L	EPA 218.6
Well Canvas	200	33.0006980	-117.2002460	2/27/2017	Silica	40	0.50	mg/L	EPA 200.7

APPENDIX A

Well Logs

GEOSCIENCE

PERMIT # W101186
A.P.N. # 302-163-01, 16, 302-240-17, 302-120-0741, 36, 302-140-38
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: **OLIVENHAIN WATER DIST PROJECT FOR SAN DIEGUITO VALLEY**

SITE ADDRESS: **AVENIDA FELIZ, AVENIDA CALMA, AVENIDA BRISA, CANCHA DE GOLF AND VIA VALLE VERDE, SAN DIGEO, CA**

PERMIT FOR: **INSTALL 7 MONITORING WELLS**

PERMIT APPROVAL DATE: **04/02/03**

PERMIT EXPIRES ON: **07/31/03**

PERMIT CONDITIONS:

1. Wells must have a **minimum 3-foot concrete surface seal**. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.

2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html)

3. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: Carol Spangenberg DATE: 04/02/03
CAROL SPANGENBERG

NOTIFIED: 4/3/03 faxed.

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

RECEIVED
2003 APR 2 PM 3 43
D.E.H.
MAILROOM

OFFICE USE ONLY	
PERMIT #W	101186
SAM CASE Y/N #H	NONE
DATE RECEIVED:	3-17-03
FEE PAID:	$970 CK 55235

A. RESPONSIBLE PARTY Olivenhain Municipal Water District Phone (760) 753-6466
Mailing Address 1966 Olivenhain Road City Encinitas State CA Zip 92024
Contact Person Harry Erhlich Phone (760) 753-6466 ext.

B. SITE ASSESSMENT PROJECT IF APPLICABLE #H N/A

C. CONSULTING FIRM Hargis + Associates, Inc.
Mailing Address 2365 Northside Drive, Ste C-100 City San Diego State CA Zip 92108
Registered Professional Mike Palmer Registration # RG 5915 (RG, RCE, CEG)
Contact Person Mike Palmer Phone (619) 521-0165 ext. 103

D. DRILLING COMPANY WEST HAZMAT DRILLING CORP. C57# 554979 Phone 619-686-5800
Mailing Address 3620 KURTZ STREET City SAN DIEGO State CA Zip 92110

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
[X] Groundwater	7
[ ] Vadose	
[ ] Boring	
[ ] Other	

NUMBER OF WELLS TO BE DESTROYED #

MATERIALS TO BE USED

CASING
Type PVC
Gauge SCH 40
Diameter 2 inch
Well Screen Size 0.020"
Filter Pack (Specify) #2/12 sand

SEAL
[X] Neat Cement
[ ] Cement & Bentonite
[ ] Sand-Cement
[ ] Bentonite
[ ] Other

Drilling Method
[X] Auger [ ] Air Rotor
[ ] Mud Rotary
[ ] Percussion [ ] Other

PROPOSED CONSTRUCTION
Estimated ground water depth 20 ft.

CEMENT SEAL	0	to	10
BENTONITE SEAL	10	to	13
FILTER PACK	13	to	36
PERFORATION	15	to	35

PROPOSED DRILLING DATE 4/14/03

NOTE: (Figure 2)
For wells with multiple completion attach a well construction diagram

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE April 1, 2003

Within 30 days of completion, I will furnish the Monitoring Well Permit Clerk with a complete and accurate well/boring log. I will certify the design and construction/or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE _____ DATE April 1, 2003

4/2/03 Note: revised const. resubmitted. VT
All well are to be located on city right of way VT

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

Mission City Corporate Center
2365 Northside Drive, Suite C-100
San Diego, CA 92108
Phone: 619.521.0165
Fax: 619.521.8580

RECEIVED
2003 APR 2 PM 3 43
D. E. H.
MAILROOM

Transmittal

VIA: Hand Delivery

DATE: Wednesday, April 2, 2003

TO:
Veronica Tavizon
County of San Diego, Department of Environmental Health
1255 Imperial Avenue, 3rd Floor
San Diego, California 92186

CC:

FROM:
Greg T. Cranham, RG, CEG

CLIENT NAME: Olivenhain Municipal Water District

PROJECT NUMBER: 689.23

ENCLOSED:
AMENDED MONITOR WELL PERMIT APPLICATION, RANCHO SANTA FE, CALIFORNIA

☐ URGENT ☐ FOR REVIEW/PLEASE COMMENT ☐ FYI

☐ PLEASE REPLY ☑ AS REQUESTED

NOTES/COMMENTS:

Enclosed please find the following revised Sections to the Application for Well Construction Permit submitted by Hargis + Associates, Inc., to your office on March 14, 2003, for construction of seven observation wells in the San Dieguito Valley, Rancho Santa Fe:

- Original signed Page 1 of permit application form, revised to reflect change in drilling contractor to West Hazmat, change to hollow stem auger drilling method, and change to 2-inch diameter well casing.

- Figure 2, schematic well construction diagram, revised to reflect change to 2-inch diameter well casing and change to 8-inch diameter borehole.

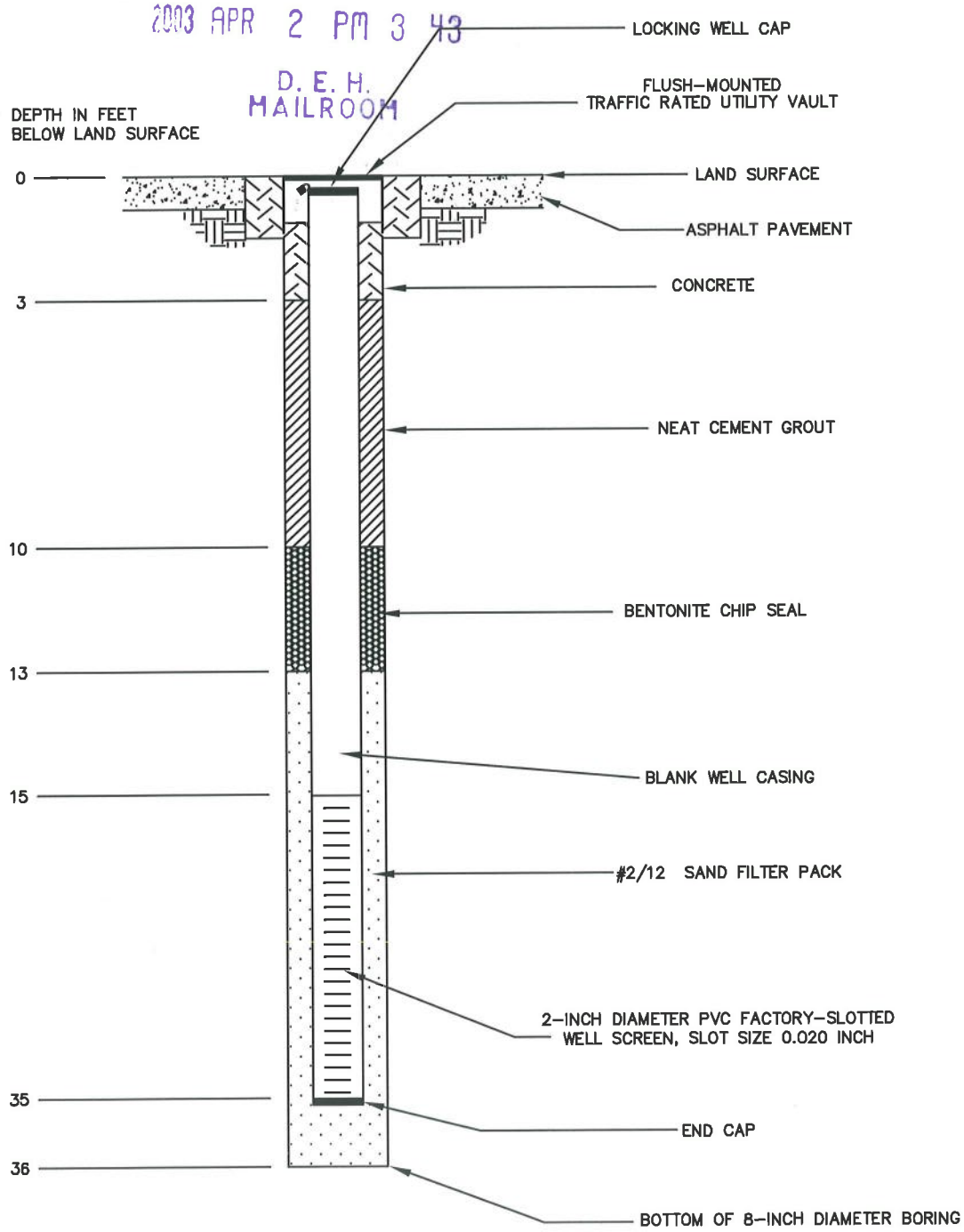
Please replace the appropriate Sections of the original March 14 permit application. Other Sections of the original application will remain unchanged.

It is anticipated that drilling will begin on Monday, April 14, 2003. If the permit application cannot be reviewed in sufficient time to allow drilling to commence on that date, please contact me as soon as possible. Please also contact me with any questions. Thanks very much for your assistance,

- GTC

SD Std

RECEIVED
2003 APR 2 PM 3 43
D. E. H.
MAILROOM



1 OF 7 WELLS WILL BE INSTALLED WITH A SCREEN INTERVAL OF 75-85 FEET, USING 2-INCH DIAMETER PVC. WELL CONSTRUCTION OTHERWISE SIMILAR TO THIS FIGURE.

NOT TO SCALE

HARGIS + ASSOCIATES, INC.

03/03	RPT NO. 689.13	710-0363	B

FIGURE 2. SCHEMATIC CONSTRUCTION DIAGRAM OBSERVATION WELLS

CLS 3/24

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

RECEIVED
2003 MAR 17 AM 9 56
D. E. H.
MAILROOM

OFFICE USE ONLY
PERMIT#: W 101186
SAM CASE Y/N H NONE
DATE RECEIVED: 3-17-03
FEE PAID: $970-
CK 55235

A. RESPONSIBLE PARTY Olivenhain Municipal Water District Phone (760) 753-6466
Mailing Address 1966 Olivenhain Road City Encinitas State CA Zip 92024
Contact Person Harry Erhlich Phone (760) 753-6466 ext.

B. SITE ASSESSMENT PROJECT IF APPLICABLE #H N/A

REG 03-25-03 10:08 EDMA 70290
CHK $970.00

C. CONSULTING FIRM Hargis + Associates, Inc. 619 521-8580
Mailing Address 2365 Northside Drive, Suite C-100 City San Diego State CA Zip 92108
Registered Professional Mike Palmer Registration # RG 5915 (RG, RCE, CEG)
Contact Person Mike Palmer Phone (619) 521-0165 ext. 103

D. DRILLING COMPANY Gregg In Situ, Inc. C57# 656407 Phone (562)427-6899
Mailing Address 2726 Walnut Avenue City Signal Hill State CA Zip 90806

revised submittal 4/2/03

E. CONSTRUCTION INFORMATION

Add in concrete surface seal 0-3

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
[X] Groundwater	7
[ ] Vadose	
[ ] Boring	
[ ] Other	

NUMBER OF WELLS TO BE DESTROYED #

MATERIALS TO BE USED

CASING
Type PVC
Gauge SCH 40
Diameter 1 inch
Well Screen Size 0.020"
Filter Pack (Specify) #2/12 sand

SEAL
[X] Neat Cement
[ ] Cement & Bentonite
[ ] Sand-Cement
[ ] Bentonite
[ ] Other

Drilling Method
[ ] Auger
[ ] Air Rotor
[ ] Mud Rotary
[ ] Percussion
[X] Other CPT Direct Push

PROPOSED CONSTRUCTION
Estimated ground water depth 20 ft.
CEMENT SEAL 0 to 10
BENTONITE SEAL 10 to 13
FILTER PACK 13 to 36
PERFORATION 15 to 35
PROPOSED DRILLING DATE 4/7/03

NOTE:
(Figure 2)
For wells with multiple completion attach a well construction diagram

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

[signature] March 14, 2003
DRILLER'S SIGNATURE DATE

Within 30 days of completion, I will furnish the Monitoring Well Permit Clerk with a complete and accurate well/boring log. I will certify the design and construction/or destruction of the well/borings in accordance with the permit application.

[signature] March 14, 2003
RG/RCE/CEG SIGNATURE DATE

Rcvd 3/19/03

✓ Send agacent APN #1s & site map for each location. 3/19 LM/VTay

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** N/A (County Highway, public right-of-way)
Site Name north side Avenida Feliz, ~100 feet east of Via de las Palmas (Figure 1)
Site Address Avenida Feliz City Rancho Santa Fe Zip 92101

PROPERTY OWNER County of San Diego, Dept. Public Works Phone (858) 694-3275
Mailing Address 5201 Ruffin Rd. City San Diego State CA Zip 92123

NUMBER OF WELLS 1 **TYPE OF WELLS** Groundwater Observation

2. **ASSESSOR'S PARCEL NUMBER** N/A (County Highway, public right-of-way)
Site Name northeast side Avenida Calma, ~350 feet north of Via Vuelta (Figure 1)
Site Address Avenida Calma City Rancho Santa Fe Zip 92101

PROPERTY OWNER County of San Diego, Dept. Public Works Phone (858) 694-3275
Mailing Address 5201 Ruffin Rd. City San Diego State CA Zip 92123

NUMBER OF WELLS 1 **TYPE OF WELLS** Groundwater Observation

3. **ASSESSOR'S PARCEL NUMBER** N/A (County Highway, public right-of-way)
Site Name northwest side Avenida Brisa, ~50 feet north of Via Reposo (Figure 1)
Site Address Avenida Brisa City Rancho Santa Fe Zip 92101

PROPERTY OWNER County of San Diego, Dept. Public Works Phone (858) 694-3275
Mailing Address 5201 Ruffin Rd. City San Diego State CA Zip 92123

NUMBER OF WELLS 2 **TYPE OF WELLS** Groundwater Observation

4. **ASSESSOR'S PARCEL NUMBER** N/A (County Highway, public right-of-way)
Site Name center divider Cancha de Golf, ~150 feet east of Via de las Palmas (Figure 1)
Site Address Cancha de Golf City Rancho Santa Fe Zip 92101

PROPERTY OWNER County of San Diego, Dept. Public Works Phone (858) 694-3275
Mailing Address 5201 Ruffin Rd. City San Diego State CA Zip 92123

NUMBER OF WELLS 1 **TYPE OF WELLS** Groundwater Observation

F. SITE INFORMATION

NEAR APN 302 163 0100

1. ASSESSOR'S PARCEL NUMBER N/A (County Highway, public right-of-way)
Site Name north side Avenida Feliz, ~100 feet east of Via de las Palmas (Figure 1)
Site Address Avenida Feliz City Rancho Santa Fe Zip 92101

PROPERTY OWNER County of San Diego, Dept. Public Works Phone (858) 694-3275
Mailing Address 5201 Ruffin Rd. City San Diego State CA Zip 92123

NUMBER OF WELLS 1 TYPE OF WELLS Groundwater Observation

NEAR APN 302 240 1700

2. ASSESSOR'S PARCEL NUMBER N/A (County Highway, public right-of-way)
Site Name southwest side Avenida Calma, ~350 feet north of Via Vuelta (Figure 2)
Site Address Avenida Calma City Rancho Santa Fe Zip 92101

PROPERTY OWNER County of San Diego, Dept. Public Works Phone (858) 694-3275
Mailing Address 5201 Ruffin Rd. City San Diego State CA Zip 92123

NUMBER OF WELLS 1 TYPE OF WELLS Groundwater Observation

NEAR APN 302 163 1600

3. ASSESSOR'S PARCEL NUMBER N/A (County Highway, public right-of-way)
Site Name northwest side Avenida Brisa, ~50 feet south of Via Reposo (Figure 3)
Site Address Avenida Brisa City Rancho Santa Fe Zip 92101

PROPERTY OWNER County of San Diego, Dept. Public Works Phone (858) 694-3275
Mailing Address 5201 Ruffin Rd. City San Diego State CA Zip 92123

NUMBER OF WELLS 2 TYPE OF WELLS Groundwater Observation

NEAR APN 302 120 0741

4. ASSESSOR'S PARCEL NUMBER N/A (County Highway, public right-of-way)
Site Name center divider Cancha de Golf, ~150 feet east of Via de las Palmas (Figure 4)
Site Address Cancha de Golf City Rancho Santa Fe Zip 92101

PROPERTY OWNER County of San Diego, Dept. Public Works Phone (858) 694-3275
Mailing Address 5201 Ruffin Rd. City San Diego State CA Zip 92123

NUMBER OF WELLS 1 TYPE OF WELLS Groundwater Observation

F. SITE INFORMATION

5. **ASSESSOR'S PARCEL NUMBER** NEAR APN 302 120 3600 N/A (County Highway, public right-of-way)
Site Name south side Via Valle Verde, ~450 feet northeast of Via Coronado (Figure 5)
Site Address Via Valle Verde City Rancho Santa Fe Zip 92101

PROPERTY OWNER County of San Diego, Dept. Public Works Phone (858) 694-3275
Mailing Address 5201 Ruffin Rd. City San Diego State CA Zip 92123

NUMBER OF WELLS 1 **TYPE OF WELLS** Groundwater Observation

6. **ASSESSOR'S PARCEL NUMBER** NEAR ~~APN 302 120 3600~~ 302140380 0 N/A (County Highway, public right-of-way)
Site Name end of cul-de-sac, Via Valle Verde (Figure 5)
Site Address Via Valle Verde City Rancho Santa Fe Zip 92101

PROPERTY OWNER County of San Diego, Dept. Public Works Phone (858) 694-3275
Mailing Address 5201 Ruffin Rd. City San Diego State CA Zip 92123

NUMBER OF WELLS 1 **TYPE OF WELLS** Groundwater Observation

7. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____ Phone _____
Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

8. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____ Phone _____
Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

F. SITE INFORMATION

5. **ASSESSOR'S PARCEL NUMBER** N/A (County Highway, public right-of-way)
Site Name south side Via Valle Verde, ~450 feet northeast of Via Coronado (Figure 1)
Site Address Via Valle Verde City Rancho Santa Fe Zip 92101

PROPERTY OWNER County of San Diego, Dept. Public Works Phone (858) 694-3275
Mailing Address 5201 Ruffin Rd. City San Diego State CA Zip 92123

NUMBER OF WELLS 1 **TYPE OF WELLS** Groundwater Observation

6. **ASSESSOR'S PARCEL NUMBER** N/A (County Highway, public right-of-way)
Site Name end of cul-de-sac, Via Valle Verde (Figure 1)
Site Address Via Valle Verde City Rancho Santa Fe Zip 92101

PROPERTY OWNER County of San Diego, Dept. Public Works Phone (858) 694-3275
Mailing Address 5201 Ruffin Rd. City San Diego State CA Zip 92123

NUMBER OF WELLS 1 **TYPE OF WELLS** Groundwater Observation

7. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____ Phone _____
Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

8. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____ Phone _____
Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning Jan. 10, 2003, through June 30, 2003):

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells Vadose, Vapor Extraction Wells)	**$160.00 for the first well** **$135.00 for each additional well**	1 x $160.00 $ 160.00 6 x $135.00 $ 810.00
Permit for Borings Only (CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)	**$160.00 for the first boring** **$40.00 for each additional boring**	1 x $160.00 $_____ ____ x $ 40.00 $_____
Permit for **Well Destructions Only**	**$160.00 for the first destruction** **$105.00 for each additional destruction**	1 x $160.00 $_____ ____ x $105.00 $_____
Permit for any Combination of Well Installations, Borings & Destructions ***(except UST backfill permit)***	**The first activity (of any type) will be $160.00.** **Additional activities will be as follows:** **$135.00 for each well** **$ 40.00 for each boring** **$105.00 for each well destruction**	1 x $160.00 $_____ ____ x $135.00 $_____ ____ x $ 40.00 $_____ ____ x $105.00 $_____
Permit for Underground Storage Tank Monitoring System in Backfill ***(i.e. enhanced leak detection)***	**$300.00** **(Flat Fee)**	**$300.00**
	TOTAL COST OF PERMIT	**$ 970.00**

H. APPLICATION SUBMITTAL, PLAN APPROVAL, PERMIT ISSUANCE, AND REQUIRED INSPECTIONS

Submit one (1) original and two (2) copies of this application package, including plan drawings with the required fee to the Monitoring Well Permit Desk, Department of Environmental Health, Site Assessment and Mitigation Program (SAM). 1255 Imperial Avenue, San Diego, CA 92101. Or mail to P. O. Box 129261, San Diego, CA 92112-9261. **Checks should be made payable to the County of San Diego.**

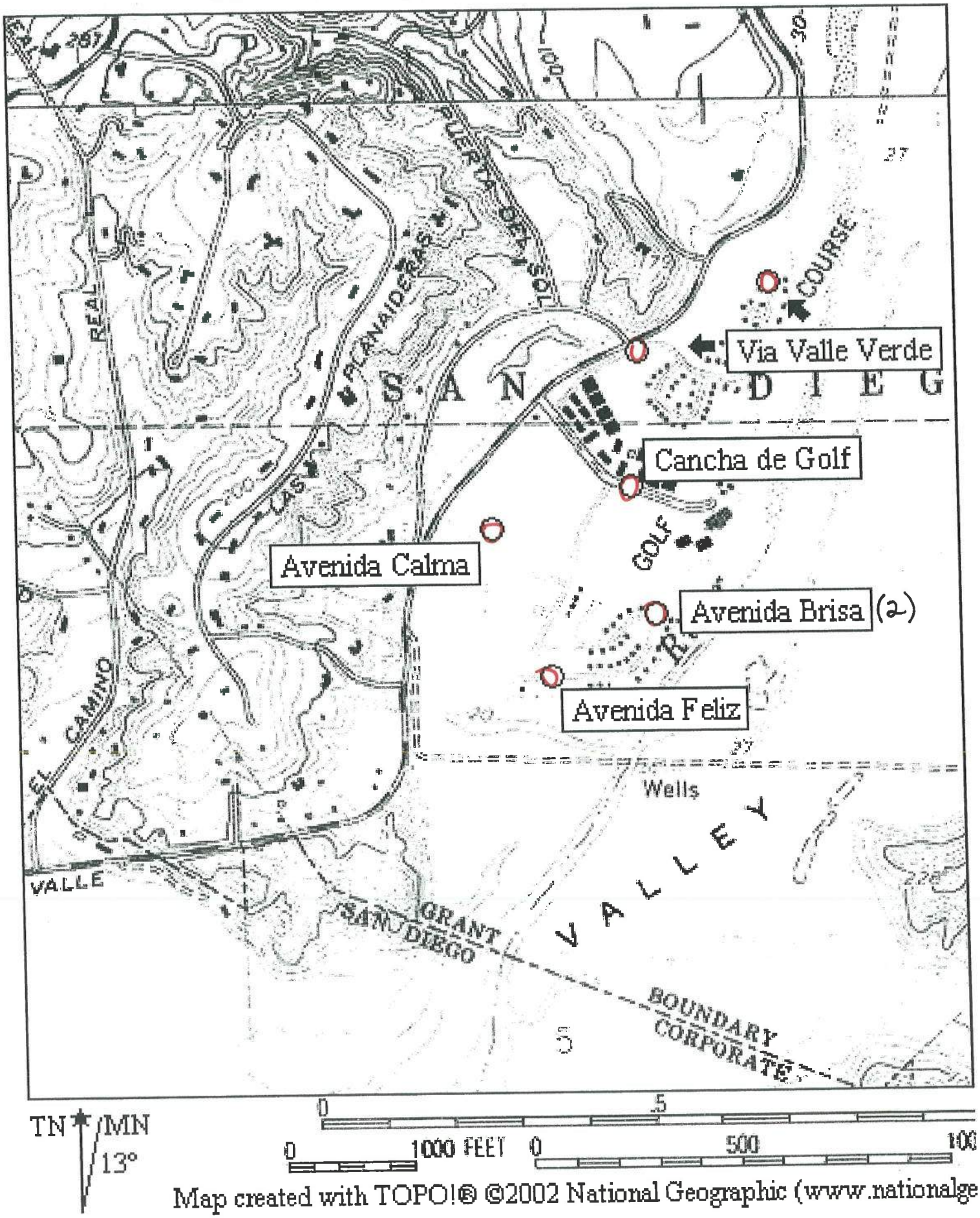
A permit will be issued by SAM upon review and approval of the application and plans. The required fees must be submitted with the application package. Information in addition to that presented in the application package may be needed in order to obtain final approval. No work is to begin on the proposed project until a permit has been issued. The required inspections cannot be scheduled until a permit is issued.

Once the permit has been issued, it is the responsibility of the permittee to notify SAM at least two (2) working days in advance to schedule each required inspection.

USE ONE APPLICATION PACKAGE FOR A SINGLE SITE PROJECT. A SINGLE PERMIT WILL BE ISSUED FOR A SINGLE SITE PROJECT, EVEN IF WELLS/BORINGS ARE COMPLETED ON MORE THAN ONE PROPERTY. PLEASE USE SEPARATE APPLICATIONS FOR MULTIPLE SITE PROJECTS.

FIGURE 1

OBSERVATION WELL LOCATIONS



Map created with TOPO!® ©2002 National Geographic (www.nationalge

PERMIT APPLICATION FOR
GROUND WATER AND VADOSE MONITORING WELLS
EXPLORATORY OR TEST BORINGS

- For well destruction, complete only #1 below.
- Well design, logging and construction must be supervised by a Geologist, Engineering Geologist or Civil Engineer who is registered or certified by the State of California.
- Well driller must have an active C-57 License and current $7,500 bond with the County. (Attached)
- Provide a plot plan giving location of property lines, existing improvements such as structures, underground tanks, underground utilities, underground piping, and the proposed monitoring and/or observation wells.
- If applicable, provide a signed copy of the Property Owner Responsibility form for each property listed in Section "F."
- If applicable, provide a signed copy of the Property Owner Responsibility form for each property listed in Section "F." Provide encroachment/excavation permit and/or traffic control permit for work to be done in street or public right of way. (County DPW Encroachment and Excavation Permits Attached)

1. If wells are to be destroyed, provide a description of method of destruction. N/A

2. What is the proposed purpose of the well/boring? Periodic measurement of groundwater levels. Observation wells for hydraulic testing in vicinity of golf course as part of aquifer study.

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction?

   All downhole equipment will be steam cleaned prior to use. An annular seal will be installed above the water table during well construction.

4. What field procedures will be utilized to determine if contamination exists?

   This is a hydraulic study for a groundwater resource evaluation project. No contamination is suspected.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving?

   No groundwater samples will be collected.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)?

None.

7. How will samples be transported and preserved? N/A

8. What sampling methods will be used? N/A

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction of Vadose and Ground Water Monitoring Wells (Current SAM Manual Requirements). If yes, specify these variations.

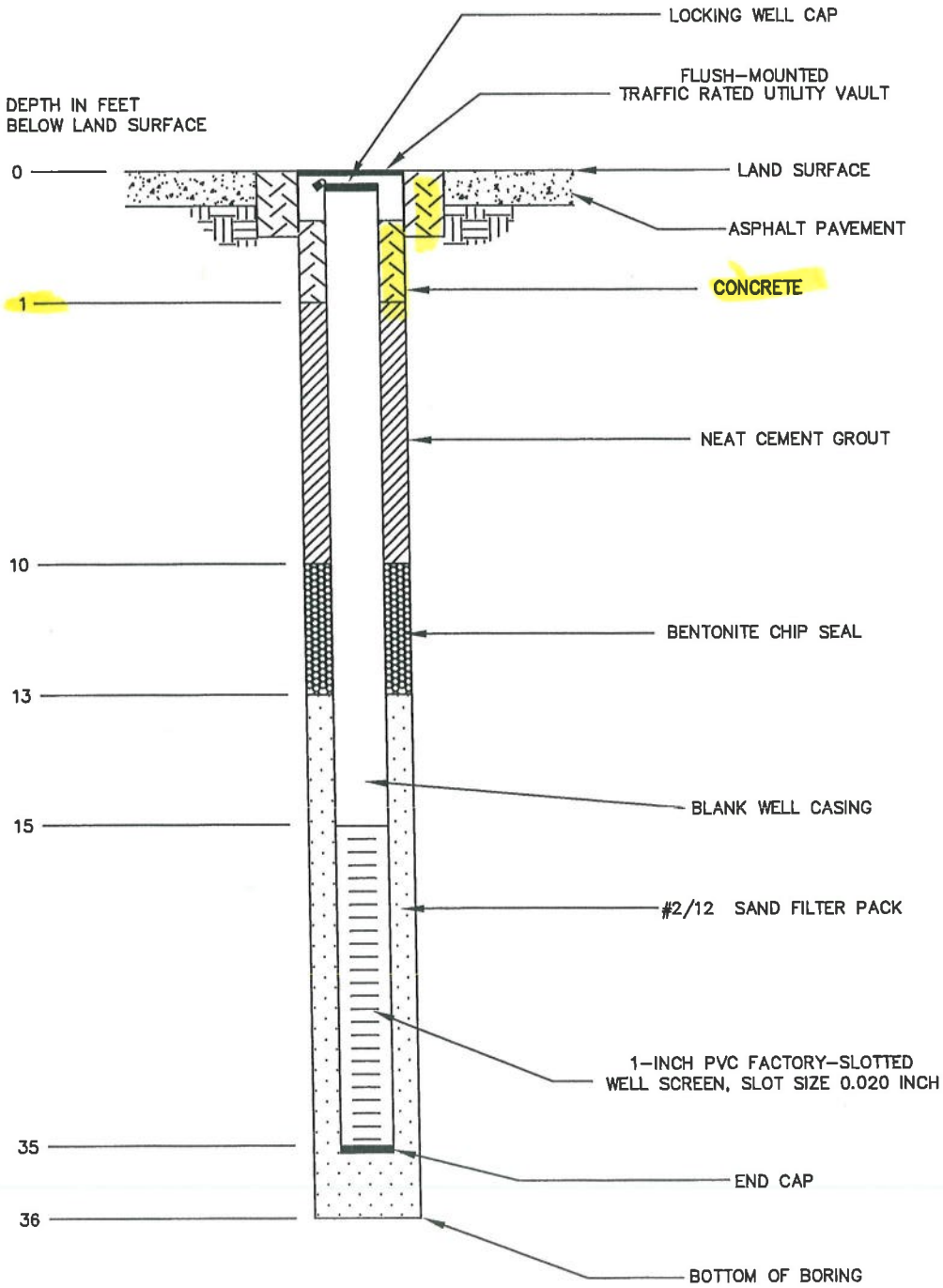
No.

10. What procedures will be used to ensure no contamination will be introduced by the drilling equipment?

All downhole equipment will be steam cleaned prior to use.

11. What methods will be used to clean sampling equipment? All downhole equipment will be steam cleaned prior to use.

12. What cleaning method will be used to clean casing and screen prior to installation? Casing and screen will be cleaned by the supplier and wrapped in plastic sheeting prior to delivery.



1 of the 7 wells will be installed with a screen interval of 75-85 feet, using 2-inch diameter PVC. Well construction otherwise similar to this figure.

NOT TO SCALE

HARGIS+ASSOCIATES, INC

03/03	RPT NO. 689.13	710-0363	A

FIGURE 2. **SCHEMATIC CONSTRUCTION DIAGRAM DIRECT-PUSH OBSERVATION WELLS**

State of California

Contractors State License Board

Pursuant to Chapter 9 of Division 3 of the Business and Professions Code
and the Rules and Regulations of the Contractors State License Board,
the Registrar of Contractors does hereby issue this license to:

GREGG IN SITU INC

to engage in the business or act in the capacity of a contractor
in the following classification(s):

C57 - WELL DRILLING (WATER)

State of California Department of Consumer Affairs

Witness my hand and seal this day,
October 15, 1992

Issued October 14, 1992

David R Phillips
Registrar of Contractors

656407
License Number

Signature of Licensee

Signature of License Qualifier

This license is the property of the Registrar of Contractors, is not transferrable, and shall be returned to the Registrar upon demand when suspended, revoked, or invalidated for any reason. It becomes void if not renewed.

COUNTY OF SAN DIEGO

DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION
5201 Ruffin Road, Suite D
San Diego, CA 92123-4310
(858)694-3275

Permit Number
E 84045
(KIVA Code: 4930)

Issued: 14-MAR-2003
Expires: 13-MAY-2003

EXCAVATION PERMIT

Charge to: YH4045

APPLICANT
OLIVENHAIN MWD (# 118300)
1966 OLIVENHAIN RD

ENCINITAS, CA 92024
Res: 760.753.6466

OWNER
HARGIS & ASSOCIATES
2365 NORTHSIE DR - STE C-100

SAN DIEGO CA 92108
Phone: 619-521-0165

SITE ADDRESS: **THOMAS BROS**

AVENIDA FELIZ, AVENIDA CALMA, AVENIDA BRISA, CANCHA DE GOLF, VIA VALLE VERDE. RSF TB 1168

APN:

QUANTITIES:

Excavation Length (feet):	Excavation Width (feet):	Excavation Depth (feet):
1	1	1

SCOPE OF WORK
Existing Surface:ASPHALT Purpose of Permit:TRENCH TO INSTALL SIX (6) OBSERVATION WELLS Pipe Size:1" Material:SCH 40 PVC - REF: N-3764 - NOTE:BMP'S TO BE ENFORCED. WELLS TO BE FLUSH W/SURFACE OF ROAD.

Before you dig, call UNDERGROUND SERVICE ALERT at 1-800-422-4133.

Enter UNDERGROUND SERVICE ALERT Inquiry Identification Number here: _____

THIS PERMIT IS NOT VALID UNTIL AN INQUIRY NUMBER IS OBTAINED.

NOTIFY CONSTRUCTION INSPECTION at (858)694-3165 24 HOURS IN ADVANCE OF BEGINNING OF ANY PORTION OF WORK, COMPLETION OF WORK, BACK FILL OR CONCRETE POUR, AND OTHERWISE AS REQUIRED BY THE DIRECTOR OF PUBLIC WORKS.

Work to be performed in accordance with San Diego County Department of Public Works "Special Provisions for Work Done Under Excavation Permit".

Issuance of this permit does not authorize any work to be performed until the permission of the property owner has been obtained.

This permit is granted under provisions of Title 7 of the San Diego County Code of Regulatory Ordinances. It is understood and agreed upon that if this location is under construction, the consent of the contractor must be obtained. This installation is granted with the strict understanding that same is subject to relocation, change of grade, or removal at the Request of the Director, Department of Public Works. Permittee shall be responsible for any liability due to any accident, loss or damage resulting from the design or performance of work involved.

County of San Diego, Director of Public Works by: _____

Date Completed: _____ Inspector: _____

THIS PERMIT MUST BE KEPT ON THE WORK TO BE SHOWN TO ANY AUTHORIZED AGENT OF THE COUNTY UPON REQUEST.

COUNTY OF SAN DIEGO

DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION
5201 Ruffin Road. Suite D
San Diego, CA 92123-4310
(858)694-3275

Permit Number
N 3764
(KIVA Code: 4940)

Issued: 11-MAR-2003

ENCROACHMENT PERMIT

Charge to:

APPLICANT	OWNER
OLIVENHAIN MWD (# 118300) 1966 OLIVENHAIN RD ENCINITAS, CA 92024 Res: 760.753.6466	HARGIS & ASSOCIATES. 9365 NORTHSIDE DR-STE C-100 SAN DIEGO CA 92108 Phone: 619.521.0165

SITE ADDRESS: **THOMAS BROS**

AVENIDA FELIZ, AVENIDA CALMA, AVENIDA BRISA, CANCHA DE GOLF, VIA VALLE VERDE. RSF TB 1168

APN:

Project: UNASSIGNED

SCOPE OF WORK

Encroachment Description:OBSERVATION WELLS SIX (6), PLACED IN VARIOUS STREETS (SEE ADDRESS DESCRIPTION), FOR WATER LEVEL MEASUREMENT. REF: E84045

Encroachment will not interfere with the public use & maintenance of:T/W, SHOULDER OR PARKING LN, SIDE PATH OR SIDEWALK, DRAINAGE STRUCTURE OR WATERCOURSE.

Permit Justification:WELLS WILL BE ACCESSED ON AN OCCASIONAL BASIS FOR MEASUREMENT. HYDROGEOLOGIC STUDY OF SUBSURFACE SOILS & GROUNDWATER FOR OLIVENHAIN MWD.

NOTE: WELLS TO BE FLUSH MOUNT W/SURFACE OF ROAD.

This permit is governed by Chapter 6, Division 1, Title 7 of the San Diego County Code of Regulatory Ordinances.

In consideration of the granting of this permit, the permittee agrees:

1. **To save harmless the County of San Diego and any officer or employee thereof for any accident, loss or damage to persons or property, happening or occurring as the proximate result of any placement, change or renewal of an encroachment under the terms of this permit, and to assume all of said liabilities.**
2. **To comply with all applicable laws in the establishment, maintenance and removal of the encroachment.**
3. **That he and any other persons engaged in any work authorized by this permit shall conform to all due safety precautions for the protection of persons and property.**
4. **To remove or relocate any encroachment placed, changed or renewed under the authority of this permit; prior to its expiration or within 24 hours of notification to remove, if the duration is 10 days or less; or within 5 days of notification to remove, if the permit is of indefinite duration.**
5. **After removing or relocating the encroachment to restore the highway to the equivalent or better condition than it was prior to the date this permit became effective, or prior to the date the encroachment was first placed, whichever is earlier.**

In consideration of the above agreement the permit is granted.

County of San Diego,
Director of Public Works by: _____ Date: 3/14/03

The highway is in acceptable conditionthe permit and agreement are terminated.

County of San Diego,
Director of Public Works by: _____ Date: _____

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

Mission City Corporate Center
2365 Northside Drive, Suite C-100
San Diego, CA 92108
Phone: 619.521.0165
Fax: 619.521.8580

RECEIVED
2003 MAR 17 AM 9 56
D. E. H.
MAILROOM

March 14, 2003

VIA COURIER

Ms Marisue Crystal
Monitoring Well Permitting Clerk
COUNTY OF SAN DIEGO
Department of Environmental Health
Site Assessment and Mitigation Division
1255 Imperial Avenue, 3rd Floor
San Diego, CA 92186-5261

Re: Application for Well Construction Permit, San Dieguito Valley, Rancho Santa Fe, California

Dear Ms. Crystal:

In accordance with the requirements of the San Diego County Department of Environmental Health (DEH), enclosed are the original and two copies of the Permit Application package for the permitting of 7 proposed groundwater observation wells to be installed at the above-referenced site. The information provided in this Permit Application package has been prepared in accordance with the County of San Diego 2003 Site Assessment and Mitigation Manual. Enclosed with this Permit Application is a copy of the San Diego County Department of Public Works Excavation and Encroachment Permits and a check for $970.00 for the permitting fees for the proposed wells.

If you have any questions or comments, please contact me.

Sincerely,

HARGIS + ASSOCIATES, INC.

Michael A. Palmer, RG 5915, CHG 146
Principal Hydrogeologist

MAP/GTC/ama

Enclosure

cc w/encl: Pat Keating, Gregg In-Situ, Inc.

689 Permit Apps well const 03-14-03 crystal01.ama

Other Offices:
Mesa, AZ
Tucson, AZ
Dallas, TX

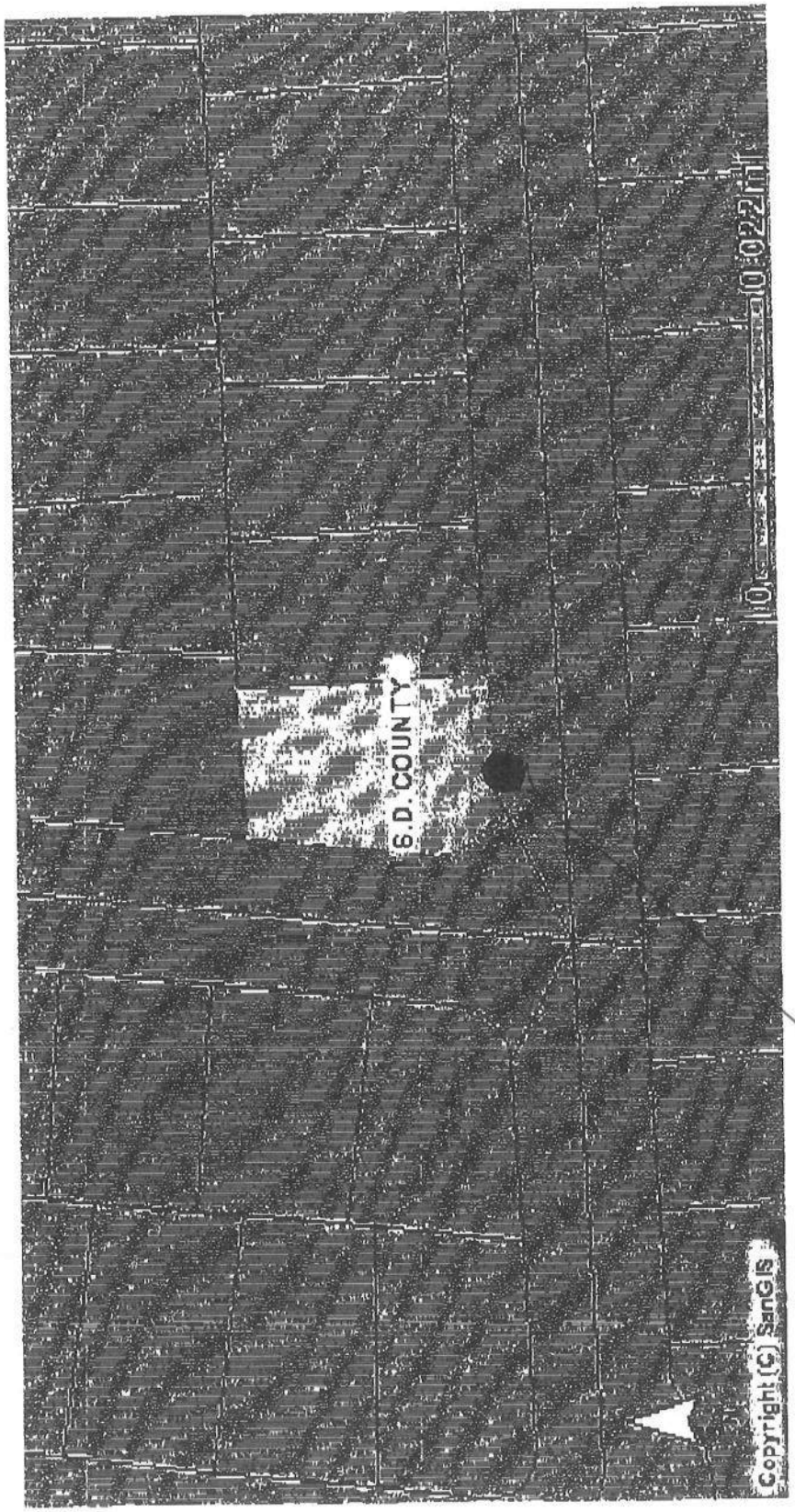
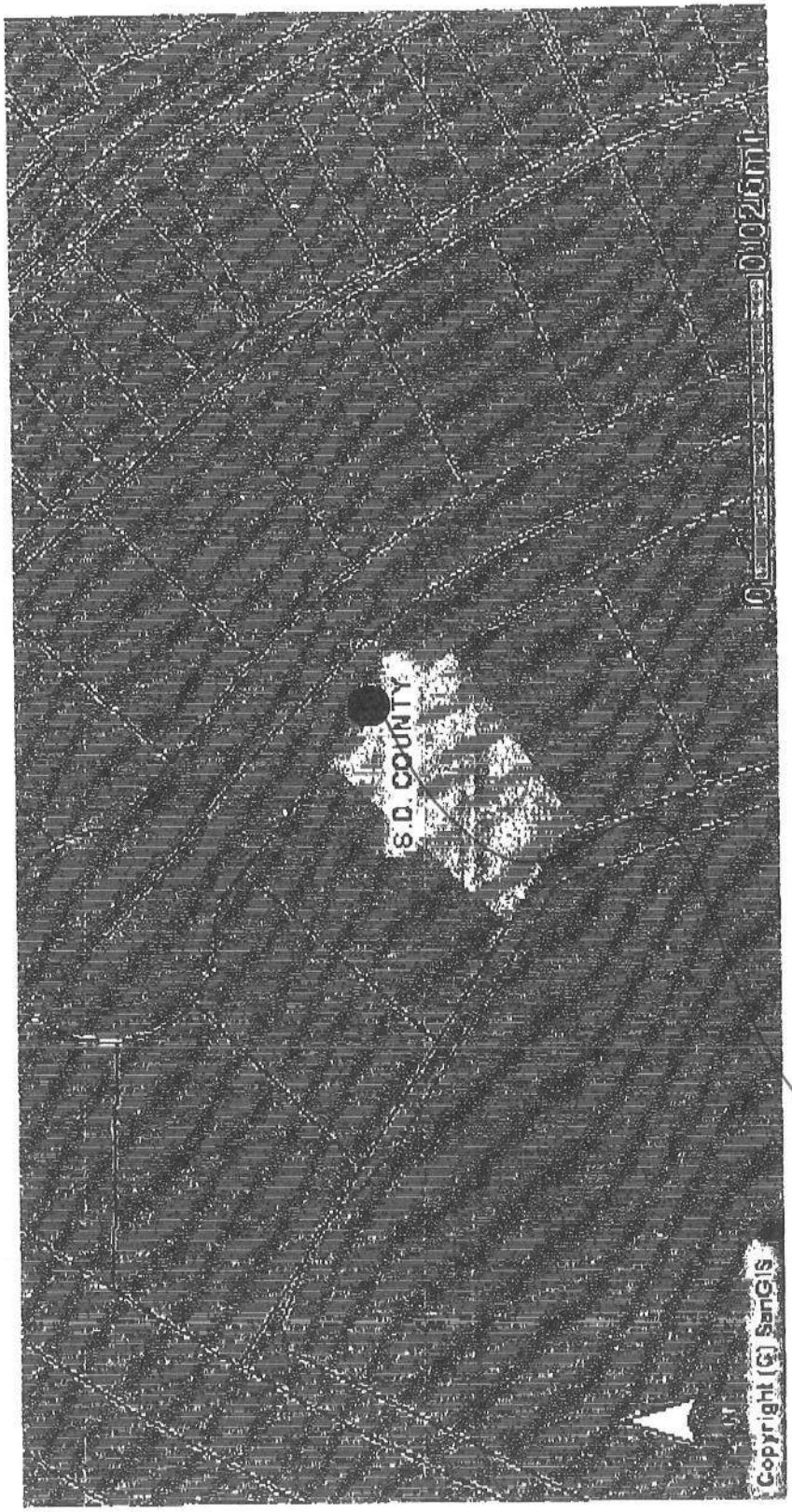


FIGURE 1. PROPOSED WELL LOCATION 1

302-240-17



PROPOSED WELL LOCATION 2

302-120-07-41

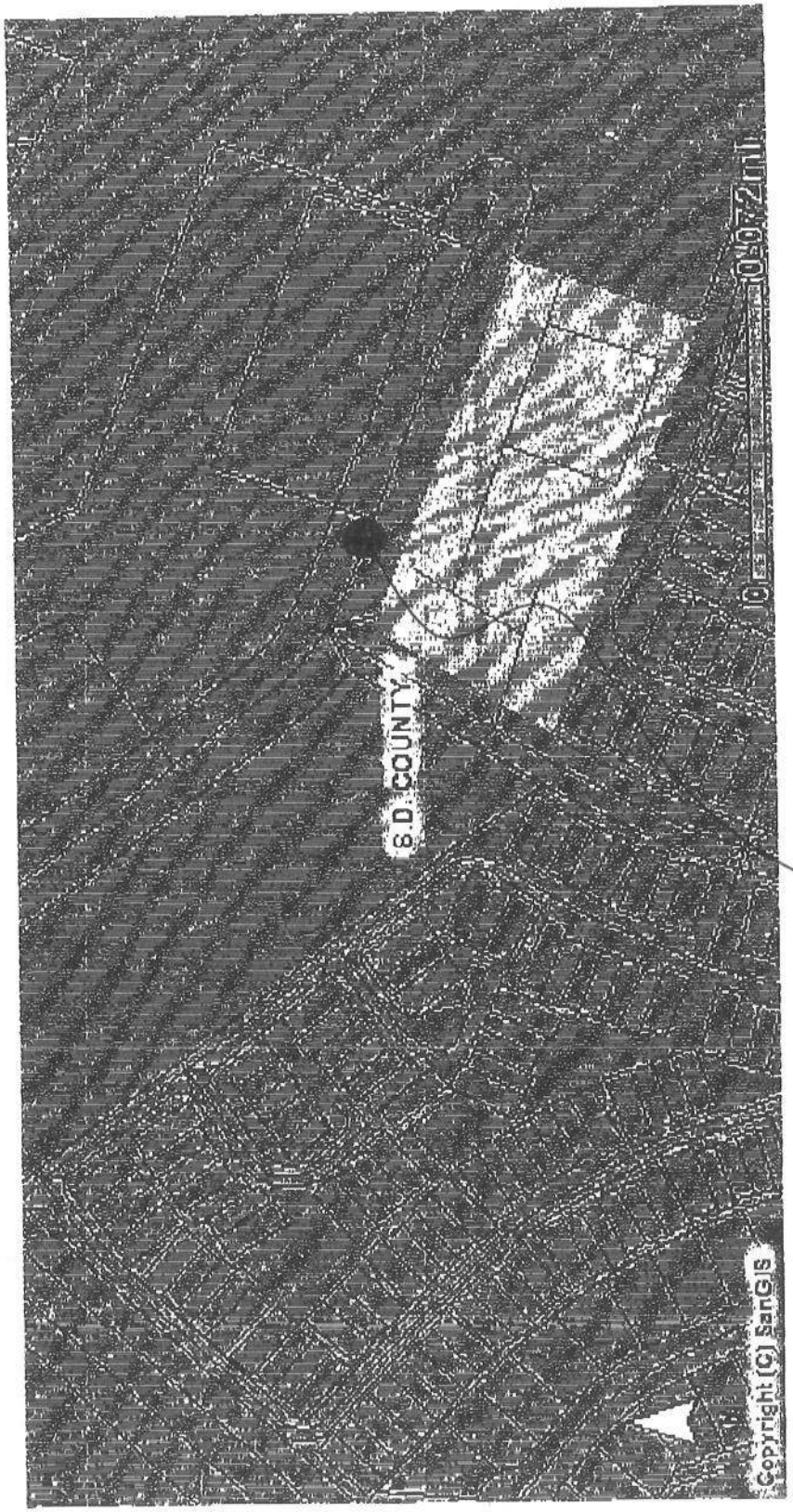
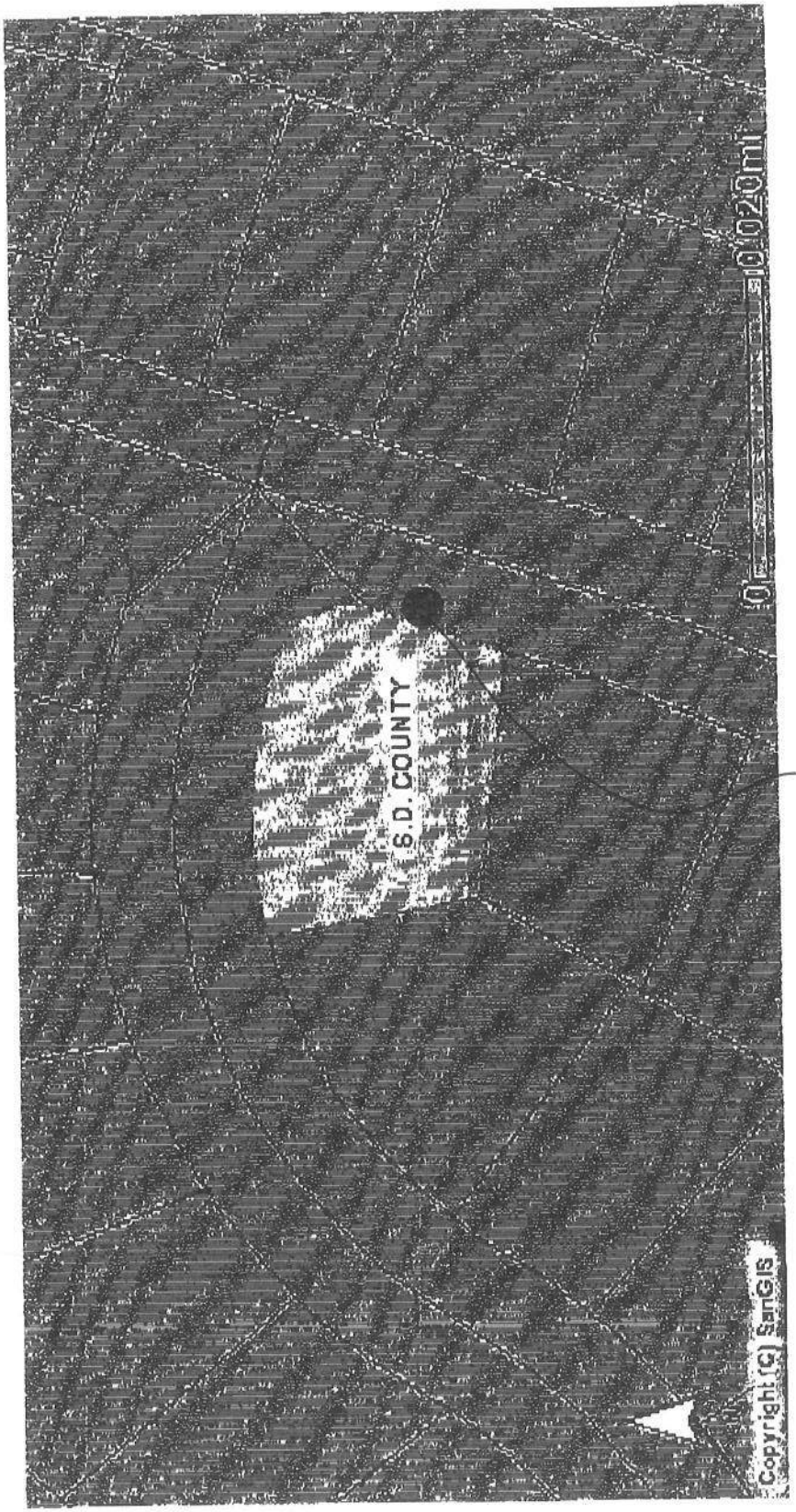


FIGURE 4. PROPOSED WELL LOCATION 4

302-163-16-00



PROPOSED WELL LOCATION 3

302-120-36-00

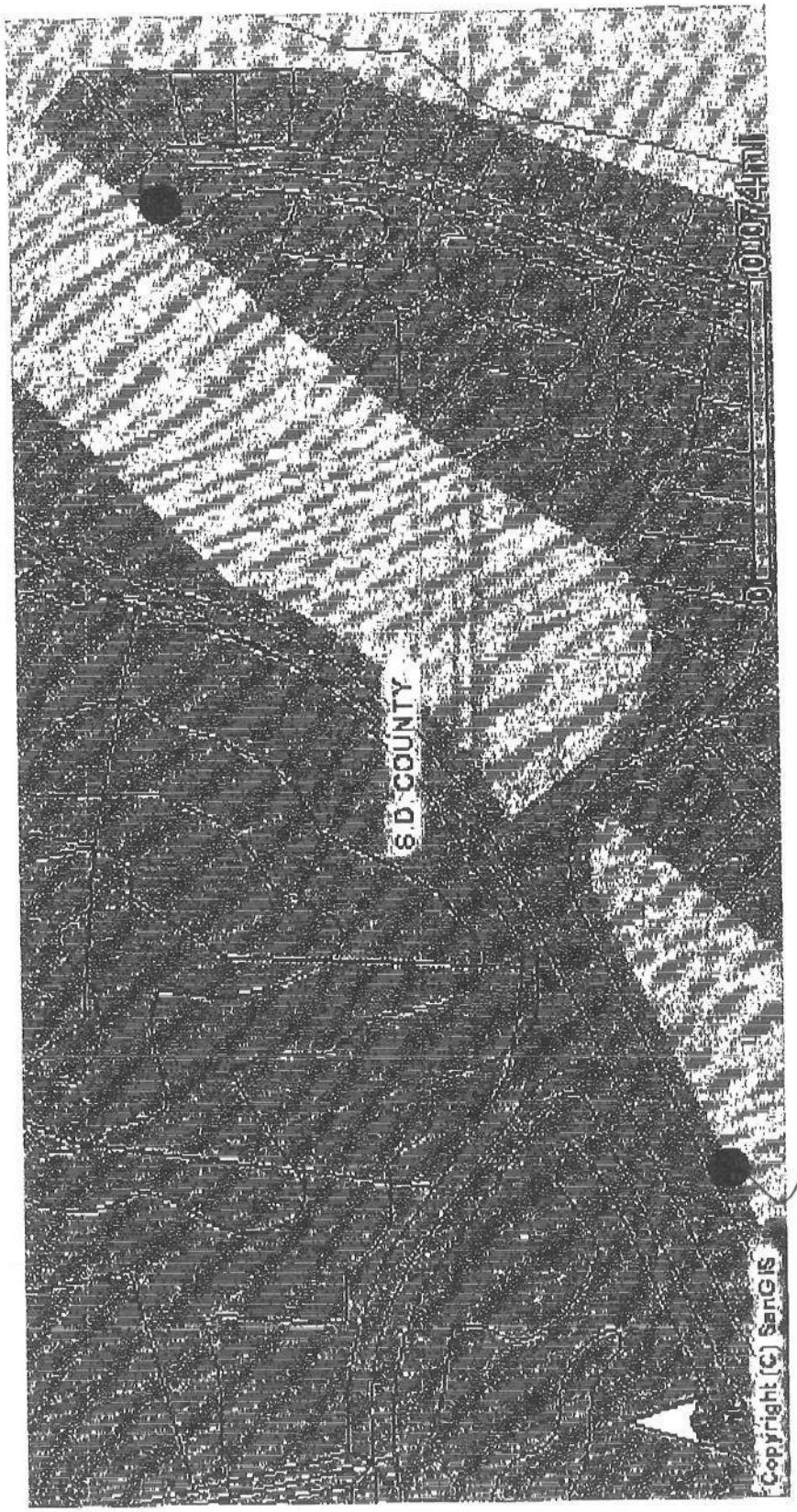


FIGURE 5. PROPOSED WELL LOCATIONS 5 AND 6

302-120-36-00

MODIFICATION
PERMIT #W101186
A.P.N. #302-163-01, -16, 302-240-17, 302-120-07, -41, -36, 302-140-38
EST #NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION

MONITORING WELL CONSTRUCTION PERMIT

SITE NAME: OLIVENHAIN WATER DIST PROJECT FOR SAN DIEGUITO VALLEY

SITE ADDRESS: AVENIDA FELIZ, AVENIDA CALMA, AVENIDA BRISA, CANCHA DE GOLF AND VIA VALLE VERDE, SAN DIEGO, CA

PERMIT TO: **INSTALL 7 MONITORING WELLS, 2 ADDITIONAL WELLS & 1 BORING**

PERMIT MODIFICATION DATE: MAY 29, 2003

PERMIT EXPIRES ON: JULY 31, 2003

PERMIT CONDITIONS:

1. **Proposed well constructions have been modified as follows:**
   - **Nested well: cement seal shall be from 3-13' bgs.**
   - **Deep well: cement seal shall be from 3-75' bgs.**

2. Wells must have a **minimum 3-foot concrete surface seal**. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.

3. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

4. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

5. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: Carol Spangenberg
CAROL SPANGENBERG

DATE: 05/29/2003

NOTIFIED: 5/30/03 FAX copy
MSL

DEH:SAM-9075 (4/03)

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

RECEIVED
2003 MAY 20 AM 10 58
D. E. H.
MAILROOM

OFFICE USE ONLY
PERMIT #W 101 184
SAM CASE Y/N #H NONE
DATE RECEIVED: 5-20-03
FEE PAID: $310. - #555777

A. RESPONSIBLE PARTY Olivenhain Municipal Water District Phone (760) 753-6466
Mailing Address 1966 Olivenhain Road City Encinitas State CA Zip 92024
Contact Person Harry Erhlich Phone (760) 753-6466 ext.

B. SITE ASSESSMENT PROJECT IF APPLICABLE #H N/A

C. CONSULTING FIRM HARGIS + ASSOCIATES, INC.
Mailing Address 2365 Northside Dr., Suite 108 City San Diego State California Zip 92108
Registered Professional Mike Palmer Registration # RG 5915 (RG, RCE, CEG)
Contact Person Mike Palmer Phone 619 521-0165 ext. 103

D. DRILLING COMPANY WEST HAZMAT DRILLING CORP. C57# 554979 Phone (619) 686-5800
Mailing Address 3620 KURTZ STREET City SAN DIEGO State CALIF. Zip 92110

REG 05-29-03 15:17 EDNA 77793
CHK $310.00

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
[X] Groundwater	2
[ ] Vadose	
[X] Boring	1
[ ] Other	

NUMBER OF WELLS TO BE DESTROYED #
[ ] _____

MATERIALS TO BE USED

CASING
Not Applicable
Type PVC
Gauge SCH 40
Diameter 2 inch
Well Screen Size 0.020"
Filter Pack Lonestar 1c
(Specify)

SEAL
[X] Neat Cement
[ ] Cement & Bentonite
[ ] Sand-Cement
[ ] Bentonite
[ ] Other

diameter for nested well?

Drilling Method
[X] Auger [ ] Air Rotor
[ ] Mud Rotary
[ ] Percussion [ ] Other

PROPOSED CONSTRUCTION
Estimated ground water depth 20 ft.
CONCRETE SURFACE
SEAL See table diagrams in cover ltr. to
BENTONITE SEAL to
FILTER PACK to
PERFORATION to

PROPOSED DRILLING DATE 6/2/03
(See table in cover letter)

NOTE:
Attach a well construction diagram for wells with multiple completion

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE May 19, 2003

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction/or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE _____ DATE May 19, 2003

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 302-120-36

Site Name Morgan Run Resort

Site Address 5690 Cancha de Golf City Rancho Santa Fe Zip 92101

PROPERTY OWNER Clubcorp Golf of California, LLC, c/o Alliance Tax Advisors Phone (760) 759-2155

Mailing Address Plaza of the Americas, 700 N. Pearl St., #385 City Dallas State TX Zip 75201

NUMBER OF WELLS 3 **TYPE OF WELLS** 1 Soil Boring, 2 Groundwater Observation

2. **ASSESSOR'S PARCEL NUMBER** _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____ Phone _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____ Phone _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____

Site Name _____

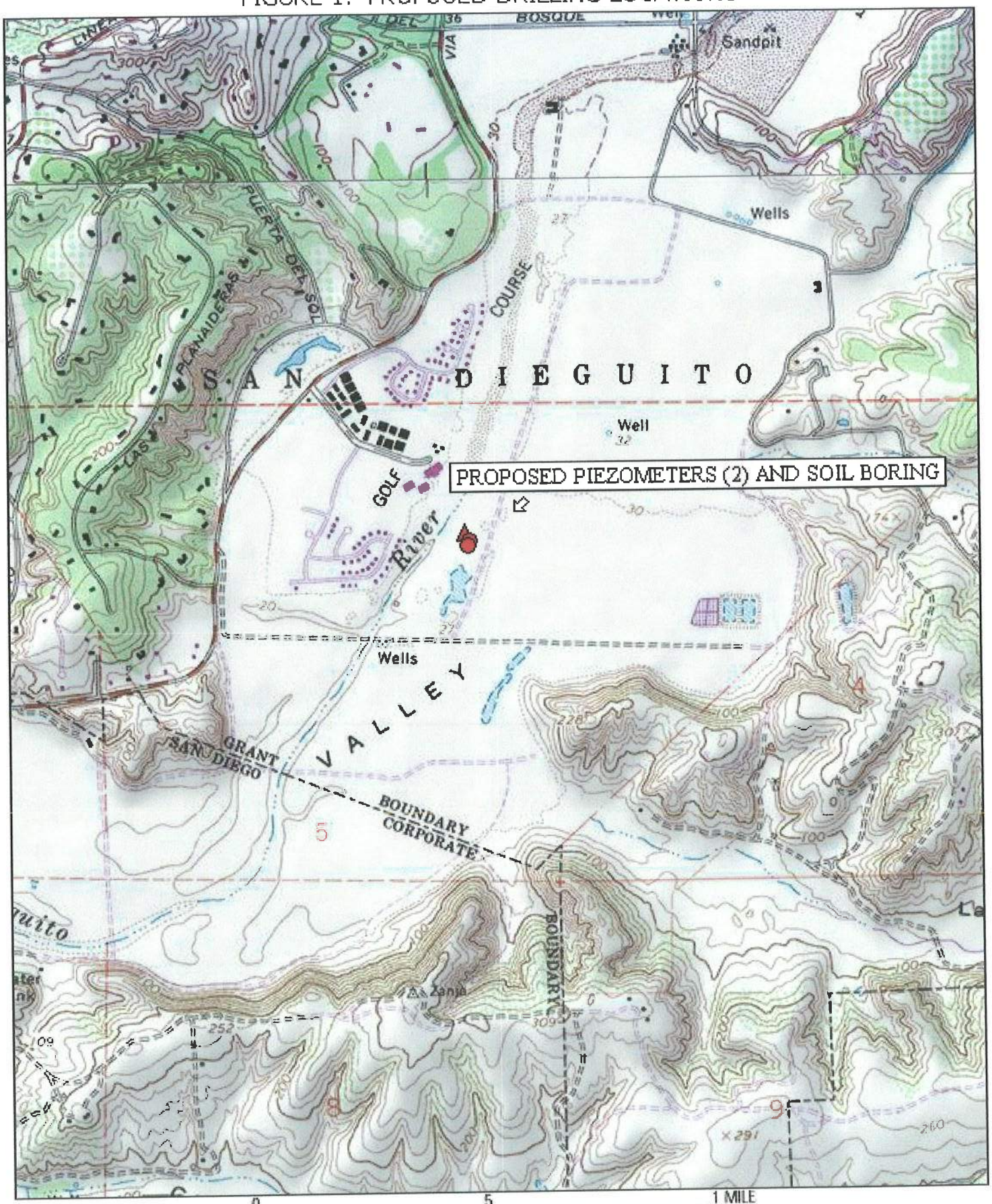
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____ Phone _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

FIGURE 1. PROPOSED DRILLING LOCATIONS



TN MN 13°

0 .5 1 MILE

0 1000 FEET 0 500 1000 METERS

Map created with TOPO!® ©2002 National Geographic (www.nationalgeographic.com/topo)

County of San Diego

GARY ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2377

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY AGREEMENT

Proposed Location of Well(s):

See attached map

Property Address: MORGAN RUN RESORT
5690 CANCHA DE GOLF
RANCHO SANTA FE, CA 92091

Dear Property Owner:

This letter is to inform you of the responsibilities for the proposed drilling activities on your property. The scope of work covered by this letter will expire one year from the date you sign this form. Any proposed drilling activities beyond this expiration date will require a new Property Owner Responsibility Agreement.

Please place a check mark next to the activity which applies to your property:

- [x] Install one or more monitoring wells
- [ ] Destroy one or more monitoring wells
- [ ] Drill one or more soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on your property is defined as the "Responsible Party." Section 67.424 of San Diego County Code states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards the Responsible Party must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the Responsible Party, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego SA/M Manual and the State of California Well Standards Bulletin 74-90.

If you have any questions or would like additional information, please contact the Monitoring Well Program at (619) 338-2339.

I understand the maintenance and construction/destruction responsibilities for monitoring wells and borings under the San Diego County Code.

Property Owner Signature: [signature] Date: 2-8-02

Print Name: Patrick Lombellaire Title: General Manager.

Mailing Address: 5690 CANCHA DE GOLF
RANCHO SANTA FE, CA 92091

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

Mission City Corporate Center
2365 Northside Drive, Suite C-100
San Diego, CA 92108
Phone: 619.521.0165
Fax: 619.521.8580

RECEIVED
2003 MAY 20 AM 10 58
D. E. H.
MAILROOM

May 20, 2003

VIA COURIER

Ms. Marisue Crystal
Monitoring Well Permitting Clerk
COUNTY OF SAN DIEGO
Department of Environmental Health
Site Assessment and Mitigation Division
1255 Imperial Avenue, 3rd Floor
San Diego, California 92186-5261

Re: Addendum to Well Construction Permit W101186, San Dieguito Valley, Rancho Santa Fe, California

Dear Ms. Crystal:

Permit No. W101186, issued on April 2, 2003, was received for the construction of seven groundwater observation wells in the San Dieguito River valley, near Rancho Santa Fe, California (the Site). This work is being conducted on behalf of the Olivenhain Municipal Water District.

This letter has been prepared to submit a modification to Permit No. W101186, for the permitting of one additional deep observation well, one shallow nested observation well, and one soil boring, to be installed at the Site. The proposed boring and wells will be located on the Morgan Run Resort golf course property, just north of the South Lake (Figure 1).

The exploratory soil boring will be drilled to a total depth of 140 feet below land surface (bls). Two observation wells will be installed within approximately 50 feet of the proposed soil boring described above (Figure 1). Construction details for the observation wells have been provided (Table, below). These wells will be drilled and installed by West Hazmat Drilling Corp., San Diego, California, the same driller designated for the other permitted wells. A modified Permit Application "Page 1" has been provided for these additional wells.

Well or Borehole	Total Depth, feet bls	Cement Seal, ft. bls	Bentonite Seal, ft. bls	Filter Pack, feet bls	Perforated Interval(s)
Exploratory Soil Boring	140	0 – 140	none	none	none
Nested Observation Well	45	0 – 13 ~~0-3~~ 3-13	13 – 16 28 – 39	16 – 28 39 – 45	17 – 27 40 – 45
Deep Observation Well	100	~~0-30~~ – 75	75 – 80	80 – 100	85 – 100

w/CS6

w/CS5

To provide you with complete well location information, a supplementary "Page 2" to the Permit Application has been attached, covering this new work. In addition, a copy of the Property Owner

Other Offices:
Mesa, AZ
Tucson, AZ
Dallas, TX

Responsibility Agreement signed by the property owner, Morgan Run Resort, has been attached. Remaining sections of the original Well Permit Application remain unchanged.

Enclosed please find a check for $310.00 for the permitting of these additional wells and boring at the Site. If you have any questions or comments, please contact me.

Sincerely,

HARGIS + ASSOCIATES, INC.

Michael A. Palmer, RG 5915, CHG 146
Principal Hydrogeologist

MAP/GTC/ama

Enclosure

689 I crystal02.ama

APN: 266-283-03
PERMIT# LMON103947 / LMON102161
EST.# H36819-002
INSPECTION DATE: 10/11/07

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND & WATER QUALITY DIVISION

MONITORING WELL COMPLIANCE INSPECTION REPORT

RESPONSIBLE PARTY: Chevron Environmental Mgmt.
ATTN: Dana Thurman
6001 Bollinger Canyon Rd
San Ramon CA 94583

SITE NAME: FORMER CHEVRON STA. #9-2795
SITE ADDRESS: 6051 EL TORDO & OFF-SITE
RANCHO SANTA FE CA 92067

CONSULTANT: Secor International

DRILLER: Test America

NUMBER OF WELLS INSTALLED UNDER THESE PERMITS:

NUMBER OF BORINGS DRILLED/PROPERLY DESTROYED UNDER THIS PERMIT: 10 MW destroyed

COMMENTS:

No major violations at time of inspection.

Amelia Ceseña, Environmental Health Technician
Phone: (619) 338-2497
Fax: 619) 338-2315
amelia.cesena@sdcounty.ca.gov

Originating department must file claim with the County Auditor and Controller, Accounts Payable Division, San Diego County Administration Center, 1600 Pacific Highway, San Diego, California 92101 (Gov't. Code 915)

CLAIM AND VOUCHER FOR REFUND OF MONEY

(Government Code Section 26906)

CLAIM NO. RM 48868

FILE

NAME OF PAYEE: ATC ASSOCIATES
ATTN: MICHAEL DAVIS
(Last) (First) (Initial) [redacted] (Tax or Soc. Sec. No.)

ADDRESS: 9620 CHESAPEAKE DR. #203 SAN DIEGO, CA 92123
(Street) (City) (State) (Zip Code)

TO COUNTY OF SAN DIEGO FOR: DEPARTMENT OF ENVIRONMENTAL HEALTH

PREPARED BY: MMALONZO:ra PHONE: 619-338-2248

CLAIMANT WILL NOT WRITE IN SPACES BELOW THIS LINE

FUND NO: 5401 00
ACCOUNT: 0830
CURRENT FISCAL YEAR ☐
PRIOR FISCAL YEAR ☐
AUTHORITY: B of S 10-22-70 #62
RT CD ..... TAX CD ..... P/C .....
VENDOR NO. .....

Request is hereby made that under the authority of section 26906 of the Government Code and Board of Supervisor Resolution No. 62 dated October 22, 1970, the County Auditor and Controller draw his Warrant on the County Treasurer refunding the sum of $ 60.00 erroneously deposited in the County Treasury. The following are the facts constituting the erroneous payment:

On the 12TH date of JULY 2004 the sum of $ 400.00 was paid to DEH, COUNTY OF SAN DIEGO for APPLICATION FEES (LMON102393)FOR 3702 & 3790 VIA DE LA VALLE, S.D. Receipt number 128955 was issued to me.

The refund is hereby requested for the reason that ONLY 4 OF 6 PERMITTED BORINGS WERE DRILLED, THE FEES SHOULD BE $310.00, DEH WILL RETAIN $30.00 FOR PROCESSING COSTS. THE AMOUNT TO BE REFUNDED IS $60.00.

RECEIVED 2004 SEP 20 PM 2 49 D.E.H. MAILROOM

The undersigned states: That the above claim and the items as set out are true and correct; and that the amount claimed is justly due.

EXECUTED on Sept. 13, 2004 at SAN DIEGO COUNTY, CALIFORNIA

I declare under penalty of perjury that the foregoing is true and correct.

Claimant Sign Here: [signature]

CATHY MARTINEZ, CHIEF ENVIRONMENTAL HEALTH 9/16/04

FOR VALUE RECEIVED, I hereby sell, assign, transfer and set over all my rights, title and interest in the above claim.

TO .....

Signed .....

Dated .....

- BELOW HEAVY LINE FOR COUNTY US

Please (1) Complete the Hi-Lited items.
(2) Return both copies.

Thanks!

Processor: RA *Date:* 9/8/04

FOR DEPARTMENT USE

I certify that the above facts are true and correct, and that the sum claimed is due and owing to said claimant and was deposited by me as follows:

FUND/ORG. UNIT: 6230
ACCOUNT: 9141 ACT. 428W26
TASK: 141 OPTION:
by Deposit Permit No. ..... Dated .....

DEPARTMENT HEAD

BY .....

CASH TRANS

Claim Allowed and Ordered Paid by Auditor and Controller.

WILLIAM J. KELLY
Chief Financial Officer

By .....

Date ..... Amount $ .....

AUD 116 (Rev. 5/99) ORIGINAL – Auditor and Controller / YELLOW – Department

ATC ASSOCIATES INC.

9620 Chesapeake Drive, Suite 203
San Diego, CA 92123
http://www.atcassociates.com
(858) 569-0692
Fax (858) 569-0695

RECEIVED

2004 AUG 5 AM 8 39

D. E. H.
MAILROOM

August 3, 2004

Ernie Profeta
County of San Diego
Department of Environmental Health
Land and Water Quality Division
P.O. Box 129261
San Diego, California 92112-9261

RE: Soil Boring Report
Polo Plaza
3702 and 3790 Via De La Valle
Del Mar, California 92014
Permit # LMON102393 **EST #** None **A.P.N. #** 302-210-30 and -40

Dear Mr. Profeta:

On July 14, 2004, ATC Associates Incorporated (ATC) supervised the advancement of four soil borings (SB-1 through SB-4) in the approximate locations illustrated on Figure 1. The soil borings were advanced utilizing a direct-push Strataprobe drill-rig equipped with 2-inch diameter rods operated by H&P Mobile Geochemistry. Soil borings SB-1, SB-2, SB-3, and SB-4 were drilled to maximum explored depth of approximately 20, 24, 14, and 20 feet below ground surface (bgs), respectively. Soils encountered were logged and samples were collected from each boring for laboratory analysis. Groundwater was encountered at depths ranging from approximately 10 feet bgs in SB-3 to 20 feet bgs in SB-4.

Each soil boring (SB-1 through SB-4) was backfilled with hydrated granular bentonite from the bottom of the borehole to approximately 3.5 feet bgs, capped with concrete from 0.5 to 3.5 feet bgs and covered to the surface to match the existing grade. The approximate volumes of bentonite and concrete used during destruction of the soil borings are provided in Table 1. Soil encountered in the field and backfill details are provided on the enclosed Soil Boring Log. Soil analytical results are enclosed.

It was the attention of ATC to complete six soil borings to complete the scope of work, however ATC only drilled four soil borings on behalf of our client PNC Bank, N.A. (PNC). ATC submitted permit fees of $400.00 for six soil borings, therefore ATC anticipates a refund of $90 for the two soil borings that were not completed on behalf of PNC.

If any additional information is required, please contact our office.

Respectfully,

ATC Associates Incorporated

REGISTERED GEOLOGIST
MICHAEL T DAVIS
Exp. 5/31/05
No. 7400
STATE OF CALIFORNIA

Scott D. Levin
Project Manager

Michael T. Davis, RG #7400
Senior Geologist

PERMIT# LMON102393
A.P.N. # 302-210-30; -40
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: POLO PLAZA

SITE ADDRESS: 3702 & 3790 VIA DE LA VALLE, SAN DIEGO, CA 92014

PERMIT FOR: 6 SOIL BORINGS

PERMIT APPROVAL DATE: July 12, 2004

PERMIT EXPIRES ON: November 9, 2004

RESPONSIBLE PARTY: PNC BANK, NA

PERMIT CONDITIONS:

1. All borings must be destroyed in accordance with Department of Water Resources Bulletin 74-81 and 74-90. Borings must be sealed from the bottom of the boring to ground surface with an approved sealing material. **Drill cuttings are not acceptable fill material.**

2. Placement of sealing material at a depth greater than 30 feet must be done using the tremie method.

3. All borings must be properly destroyed within 24 hours of drilling.

4. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

APPROVED BY: Ernesto L. Profeta DATE: 07/12/2004
ERNESTO L. PROFETA

NOTIFIED: by vmay 7/12/04 EP

DEH:SAM-9075 (4/03)

7/13 Faxed copy of permit.

T102393
Rec'd 7/6/04

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # LMON 102393
SAM CASE YES/NO# NONE
DATE RECEIVED: 7/6/04
FEE PAID: $400.00
CHECK # 1196

A. RESPONSIBLE PARTY PNC Bank, N.A. Phone 913-253-9000
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 10851 Mastin City Overland Park State KS Zip 66210
Contact Person Mr. Binh Phan Phone 913-253-9000 Ext. Fax 913-253-9717

REC 07-12-04 10:06 ROSE 128955
CHK $400.00

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM ATC Associates Inc.
Mailing Address 9620 Chesapeake Dr., Suite 203 City San Diego State CA Zip 92123
Registered Professional Michael T. Davis Registration # 7400 (RG)
Contact Person Mike Davis Phone (858) 569-0692 Ext. _____ Fax (858) 569-0695

D. DRILLING COMPANY H&P Mobile GeoChemistry C57# 769131
Contact Name Dr. Blayne Hartman
Mailing Address 432 N. Cedros Ave. City Solana Beach State CA Zip 92075-
Phone 858-793-0401 Fax 858-793-0404

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	6
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☒ 6

MATERIALS TO BE USED

CASING
Not Applicable ☒
Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL
☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other

Borehole diameter 1½"

Drilling Method
☐ Auger ☐ Air Rotary
☐ Mud Rotary ☒ Other Direct Push
☐ Percussion

PROPOSED CONSTRUCTION
Estimated groundwater depth: 25 ft.
Estimated depth of boring 35 ft.

Concrete surface seal	0 to 3
Annular seal	___ to ___
Bentonite transition seal	3 to 35
Filter Pack	___ to ___
Perforation	___ to ___

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE Blayne Hartman DATE 7/6/04

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE [signature] DATE 7/6/04

7/7 Rcvd faxed info re: Transfer of property to Polo Plaza, LLC. from Dr. Davis, ATC.
7/7 Talked to Mike Davis. PORA signature is diff. than owners name in assessors record. [illegible]

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 302-210-4000
   Site Name Polo Plaza
   Site Address 3790 Via De La Valle City San Diego Zip 92014-

   PROPERTY OWNER Polo Plaza, LLC
   Phone 858-272-1245 Ext. Fax 858-272-1563
   Mailing Address 810 Emerald St. City San Diego State CA Zip 92109-

   NUMBER OF WELLS 6 **TYPE OF WELLS** Soil Borings

2. **ASSESSOR'S PARCEL NUMBER** 302-210-3000
   Site Name Polo Plaza
   Site Address 3702 Via De La Valle City San Diego Zip 92014-

   PROPERTY OWNER Polo Plaza, LLC
   Phone 858-272-1245 Ext. _____ Fax 858-272-1563
   Mailing Address 810 Emerald St. City San Diego State CA Zip 92109-

   NUMBER OF WELLS see above **TYPE OF WELLS** see above

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2004, through June 30, 2005)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$175.00 for the first monitoring well	**$175.00**
Permit for Well Maintenance Inspection (Valid for three years)	$ 95.00 for first well maintenance inspection	**$95.00**
Each Additional New Well	$150.00 for each additional well installation	___ x **$150.00** _____
	$30.00 for each additional well maintenance inspection	___ x **$30.00** _____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$175.00 for the first boring	1 x **$175.00** 175.00
	$45.00 for each additional boring	5 x **$45.00** 225.00
Permit for Well Destructions Only	$175.00 for the first destruction	___ x **$175.00**
	$115.00 for each additional destruction ...	___ x **$115.00**
Permit for any Combination of Well Installations, Borings, & Destructions (*except UST backfill permit*)	The first activity will be $175.00	___ x **$175.00** _____
	Additional activities will be as follows:	
	$150.00 for each additional well	___ x **$150.00** _____
	$ 95.00 for first well maintenance inspection	___ x **$ 95.00** _____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** _____
	$ 45.00 for each additional boring	___ x **$ 45.00** _____
	$115.00 for each well destruction	___ x **$115.00** _____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$310.00 (Flat Fee)**	**$310.00**
	TOTAL COST OF PERMIT	$ 400.00

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction Direct Push Borings will be back-filled with bentonite from 3-35 ft., and filled with concrete from 0-3 feet.

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☒ d. Other: Phase II Environmental Site Assessment

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Borings will be drilled and backfilled on the same day to prevent contamination.

4. What field procedures will be utilized to determine if contamination exists? Soil will be samples every 5-feet and scanned with a PID. Samples will be sent to a laboratory for additional analysis. If groundwater is encountered, it will be sampled and sent to a laboratory for analysis.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? Soil: visual, olfacotry, and PID screening.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? groundwater/soil - volatile organic compounds by EPA 8021/8010 compounds

7. How will samples be transported and preserved? Samples will be transported in a cooler with ice.

8. What sampling methods will be used? California split-spoon sampler, stainless stell, or brass sleeves.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :N/A

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? steam cleaning prior to drilling of each borehole.

12. What methods will be used to clean sampling equipment? Three bucket wash: 1) Alconox Solution 2) Tap water rinse 3) DI water rinse

13. What cleaning method will be used to clean casing and screen prior to installation? N/A

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
1255 IMPERIAL AVE., SAN DIEGO, CA 92101-7493
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2377
1-800-253-9933

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY AGREEMENT

Proposed Location of Well(s):

Property Address: 3790 VIA DE LA VALLE
SAN DIEGO, CA. 92014

Dear Property Owner:

This letter is to inform you of the responsibilities for the proposed drilling activities on your property. The scope of work covered by this letter will expire one year from the date you sign this form. Any proposed drilling activities beyond this expiration date will require a new Property Owner Responsibility Agreement.

Please place a check mark next to the activity which applies to your property:

- [ ] Install one or more monitoring wells
- [ ] Destroy one or more monitoring wells
- [x] Drill one or more soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on your property is defined as the "Responsible Party." Section 67.424 of San Diego County Code states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards the Responsible Party must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the Responsible Party, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego SAM Manual and the State of California Well Standards Bulletin 74-90.

If you have any questions or would like additional information, please contact the Monitoring Well Program at (619) 338-2339.

I understand the maintenance and construction/destruction responsibilities for monitoring wells and borings under the San Diego County Code.

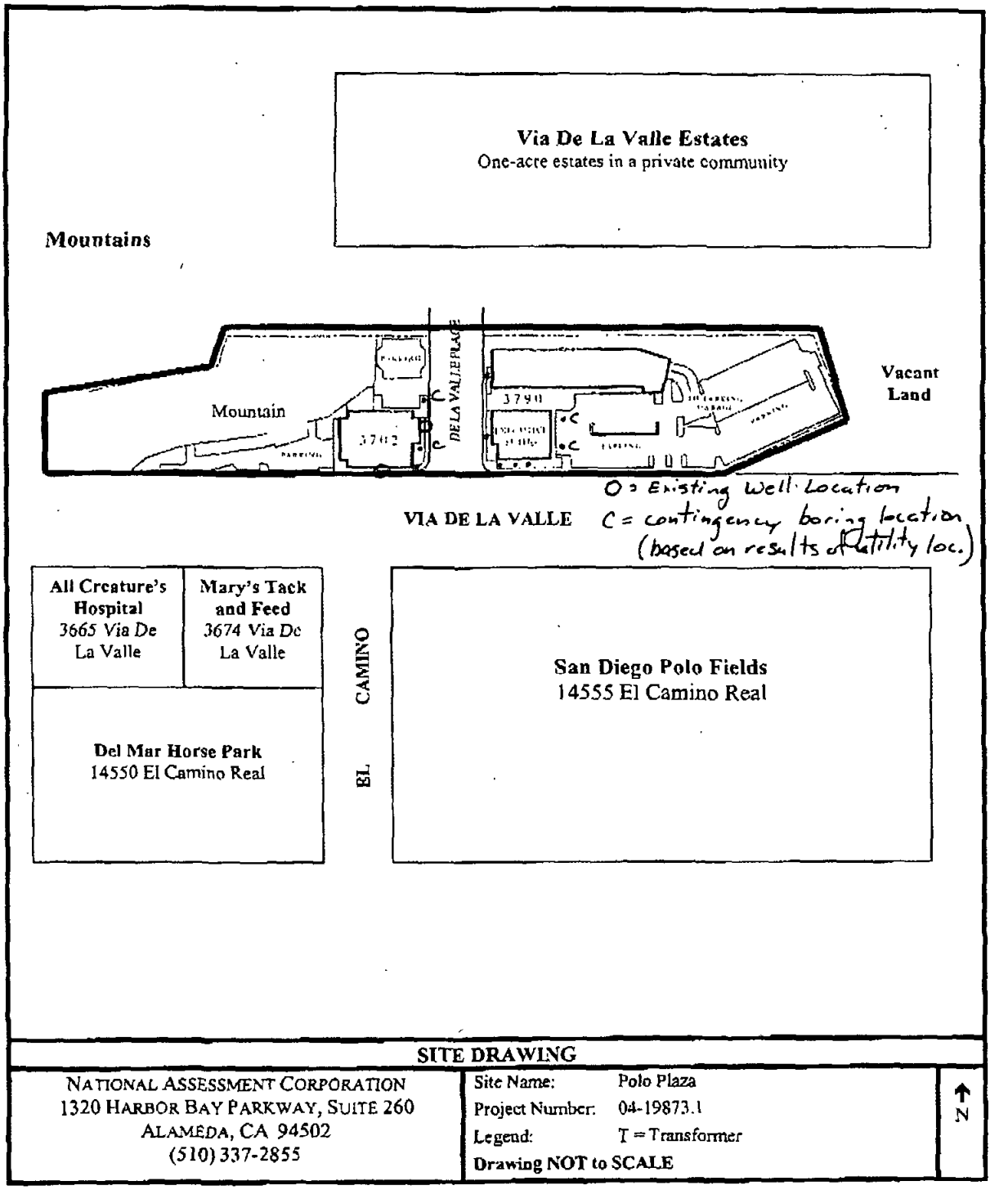
Property Owner Signature: DOHO PLAZA, LLC — RB General, LLC, General Partner; RB General, Inc., Its Manager; Roger Boesky, President — Date: 7/02/04

Print Name: Roger Boesky — Title: Pres. RB Gen. Inc

Mailing Address: 610 Emerald, S.D. CA. 92109 — Company:

DEH-SAM-9503 (Rev. 7/00)

M. Davis sent this-email.
Revised Site Map
7/7/04



SITE DRAWING

NATIONAL ASSESSMENT CORPORATION 1320 HARBOR BAY PARKWAY, SUITE 260 ALAMEDA, CA 94502 (510) 337-2855	Site Name: Polo Plaza Project Number: 04-19873.1 Legend: T = Transformer **Drawing NOT to SCALE**	↑ N

DEPARTMENT OF ENVIRONMENTAL HEALTH
MONITORING WELL COMPLIANCE/DRILLING INSPECTION REPORT

APN: 269-080-05, 09

PERMIT# LMON102461

EST.# H20754

INSPECTION DATE: 8/17/04

RESPONSIBLE PARTY:
Helen Woodward Animal Center
ATTN: Michael Arms
6461 El Apajo Rd. PO Box 64
Rancho Santa Fe CA 92067

SITE NAME: Heln Woodward Animal Center
SITE ADDRESS: 6461 El Apajo Rd. & 6525 Calle Del Nido
Rancho Santa Fe CA 92067

MONITORING WELL	VADOSE WELL	BORING	DRILLING	AIR SPARGE WELL
		20		

CONSULTANT: GeoTek Inc.

DRILLING CO: Southcoast Drilling/Scotts Drilling

WELL LOCATION NUMBER					
COMPLETED					

G = Good P = Poor B = Bentonite Y = Yes M = Missing V = Visual Inspection Only
F = Fair C = Concrete S = Soil N = No U = Unable to Locate * = Other

DRILLING EQUIPMENT DECONTAMINATED? Not observed

SOIL CUTTINGS PROPERLY CONTAINED AND LABELED?

WELL /BORING PERMIT ON SITE? Yes

SAMPLING TUBES WASHED AND RINSED BETWEEN USES? Not observed

CONSULTANTS ON-SITE REPRESENTATIVE: Yes

HEALTH/SAFETY: BOOTS ✓ HARD HATS ✓ TRAFFIC_____ OTHER_____

REMARKS:

Advised consultant to make sure drums are properly labeled and in a secure place.

OFFICIAL NOTICE ISSUED
NO

AMELIA CESEÑA 619) 338-2497
ENVIRONMENTAL HEALTH TECHNICIAN

Land and Water Quality Division, Site Assessment & Mitigation Program, P.O. Box 129261, San Diego, CA 92112-9261

PERMIT #LMON102461
A.P.N. #269-080-05, 09
EST #H20754

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION

GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: HELEN WOODWARD ANIMAL CENTER

SITE ADDRESS: 6461 EL APAJO RD & 6525 CALLE DEL NIDO, RANCHO SANTA FE, CA 92067

PERMIT FOR: **20 GEOTECHNICAL BORINGS**

PERMIT APPROVAL DATE: August 11, 2004

PERMIT EXPIRES ON: December 9, 2004

RESPONSIBLE PARTY: HELEN WOODWARD ANIMAL CENTER

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. **(http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html).** In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. **This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH.** Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at (619) 338-2339.

APPROVED BY: _____ DATE: 08/11/2004
ERNESTO L. PROFETA

NOTIFIED: 8/12/04 EP

T102461 GTB

RECEIVED AUG 2 AM 7 3 D.E.H. MAILROOM

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # LMON102461
SAM CASE Y/N# H20754
DATE RECEIVED: H39394 8/2/04
FEE PAID: $1,030.
CHECK # 6762

A. RESPONSIBLE PARTY Helen Woodward Animal Center — Phone (858) 756-4117 x
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 6461 El Apajo Rd. - PO Box 64 — City Rancho Santa Fe — State CA — Zip 92067-
Contact Person Michael Arms — Phone 858-756-4117 — Ext. 1 — Fax 756-1466

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM GeoTek Inc. — REG 08-11-04 11:13 CHK ROSE 133226 $1030.00
Mailing Address 1384 Poinsettia Ave. Suite A — City Vista — State CA — Zip 92081-8030
Registered Professional Jeffrey Blake — Registration # 2248 (CEG)
Contact Person Todd Schmitz — Phone 760-497-1791 — Ext. _____ — Fax 760-599-0593

D. DRILLING COMPANY Southcoast Drilling — C57# 715574 — REG 08-11-04 11:13 CHK ROSE 133226 $1030.00
Contact Name Roger
Mailing Address 2202 Valley Rd — City Oceanside — State CA — Zip 92056-
Phone 760-433-2000 — Fax _____

2 drills

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	10
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED
☐ ___

MATERIALS TO BE USED

CASING	SEAL/BORING BACKFILL
Not Applicable XXX	☐ Neat Cement
Type _____	☐ Cement & Bentonite
Gauge _____	☐ Sand-Cement
Diameter _____	☒ Bentonite
Well Screen Size _____	☐ Other
Filter Pack _____	Borehole diameter 8.5"

Drilling Method
☒ Auger ☐ Air Rotary
☐ Mud Rotary ☐ Other
☐ Percussion

PROPOSED CONSTRUCTION
Estimated groundwater depth: 10 ft.
Estimated depth of boring 15-50' ft.

Concrete surface seal	0 to 3
Annular seal	____ to ____
Bentonite transition seal	____ to ____
Filter Pack	____ to ____
Perforation	____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] DATE 7/30/04

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE [signature], CEG 2248 DATE 7/29/04

8/4 Talked to Todd Schmitz, Southcoast Drilling bond expired 5/21/04. GP.
8/10 Talked to Todd Schmitz, copy received current bond w/ County. GP

PERMIT APPLICATION T102461
GROUNDWATER
AND
VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT #W LMDN102461
SAM CASE Y/N #H H20754 H39394
DATE RECEIVED: _____
FEE PAID: _____

A. RESPONSIBLE PARTY Helen Woodward Animal Center Phone 858 756 4117
Mailing Address 6461 El Apajo Rd Po Box 64 City Rancho Santa Fe State CA Zip 92067
Contact Person Michael Arms Phone 858 756 4117 ext. 1 (Fax) 756 1466

B. SITE ASSESSMENT PROJECT IF APPLICABLE #H _____

C. CONSULTING FIRM
Mailing Address GeoTek Inc 1384 Poinsettia Ave Suite A City Vista State CA Zip 92081
Registered Professional Jeffrey Blake Registration # 2248 (RG, RCE, CEG)
Contact Person Todd Schmitz Phone 760 497 1791 ext. (Fax) 760 599 0593

D. DRILLING COMPANY Scott's Drilling Services C57# 713741 Phone 760-966 7613
Mailing Address 271 "D" Roymar Rd City Oceanside State CA Zip 92054

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED	MATERIALS TO BE USED	PROPOSED CONSTRUCTION
#	CASING / SEAL	Estimated ground water depth _____ ft.
☐ Groundwater _____	Not Applicable ☒	CONCRETE SURFACE
☐ Vadose _____	Type _____ / ☐ Neat Cement	SEAL _____ to _____
☒ Boring Geotab. 10	Gauge _____ / ☐ Cement & Bentonite	BENTONITE SEAL _____ to _____
☐ Other _____	Diameter _____ / ☐ Sand-Cement	FILTER PACK _____ to _____
NUMBER OF WELLS TO BE DESTROYED #	Well Screen Size _____ / ☒ Bentonite	PERFORATION _____ to _____
☐ _____	Filter Pack _____ / ☐ Other	PROPOSED DRILLING DATE _____
	(Specify) 8.5" Dia.	
	Drilling Method	**NOTE:**
	☒ Auger ☐ Air Rotor	**Attach a well construction diagram for wells with multiple completion**
	☐ Mud Rotary	
	☐ Percussion ☐ Other	

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and withall ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 7/30/04

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction/or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE _____, CEG 2248 DATE 7/29/04

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 2690800900
   Site Name Helen Woodward Animal Center
   Site Address 6461 El Apajo Rd. - PO Box 64 City Rancho Santa Fe
   Zip 92067

   PROPERTY OWNER Michael Arms
   Phone 858-756-4117 Ext. 1 Fax 858-756-1466
   Mailing Address 6461 El Apajo Rd. - PO Box 64 City Rancho Santa Fe State CA
   Zip 92067-

   NUMBER OF WELLS 10 **TYPE OF WELLS** Geotechnical Borings

2. **ASSESSOR'S PARCEL NUMBER** 2690800500
   Site Name Helen Woodward Animal Center
   Site Address 6525 Calle Del Nido City Rancho Santa Fe Zip 92067-

   PROPERTY OWNER Michael Arms
   Phone 858-756-4117 Ext. _____ Fax 92067
   Mailing Address 6461 El Apajo Rd. - PO Box 64 City Rancho Santa Fe State CA
   Zip 92067-

   NUMBER OF WELLS 10 **TYPE OF WELLS** Geotechnical Borings

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2004, through June 30, 2005)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$175.00 for the first monitoring well	**$175.00**
Permit for Well Maintenance Inspection (Valid for three years)	$ 95.00 for first well maintenance inspection	**$95.00**
Each Additional New Well	$150.00 for each additional well installation	___ x **$150.00** _____
	$30.00 for each additional well maintenance inspection	___ x **$30.00** _____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$175.00 for the first boring	1 x **$175.00** 175.00
	$45.00 for each additional boring	19 x **$45.00** 855.00
Permit for Well Destructions Only	$175.00 for the first destruction	___ x **$175.00**
	$115.00 for each additional destruction	___ x **$115.00**
Permit for any Combination of Well Installations, Borings, & Destructions (*except UST backfill permit*)	The first activity will be $175.00	___ x **$175.00** _____
	Additional activities will be as follows:	
	$150.00 for each additional well	___ x **$150.00** _____
	$ 95.00 for first well maintenance inspection	___ x **$ 95.00** _____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** _____
	$ 45.00 for each additional boring	___ x **$ 45.00** _____
	$115.00 for each well destruction	___ x **$115.00** _____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$310.00 (Flat Fee)**	**$310.00**
	TOTAL COST OF PERMIT	$ 1030

H. **QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.**

1. If wells are to be destroyed, provide a description of method of destruction N/A

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Continuous Auger drilling and cuttings will be monitored continuously

4. What field procedures will be utilized to determine if contamination exists? N/A - Geotechnical

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? N/A - Geotechnical

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? N/A Geotechnical

7. How will samples be transported and preserved? N/A - Geotechnical

8. What sampling methods will be used? Modified split-barrel sampler and standard penetration sampler

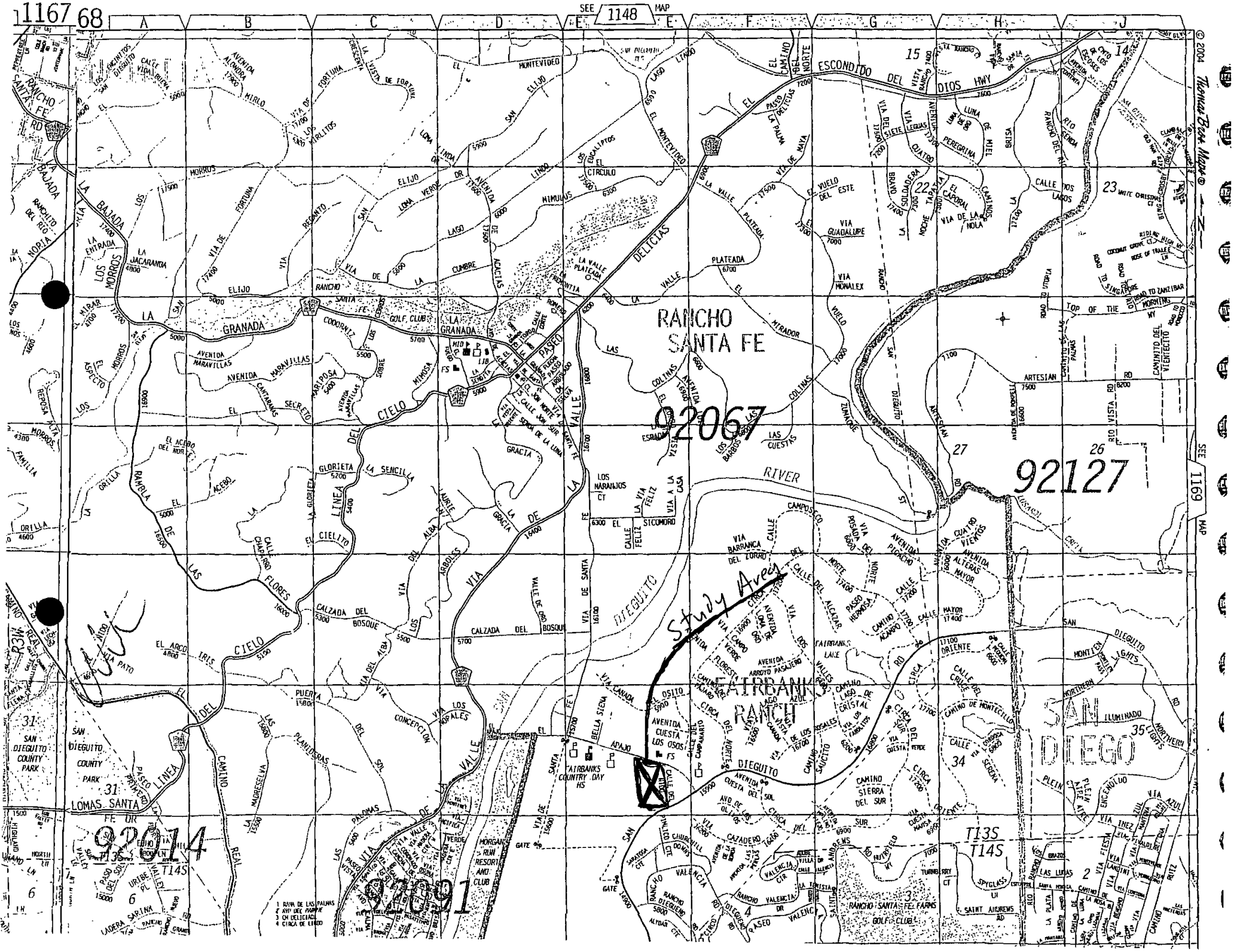
9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :N/A - Geotechnical

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. N/A - Geotechnical

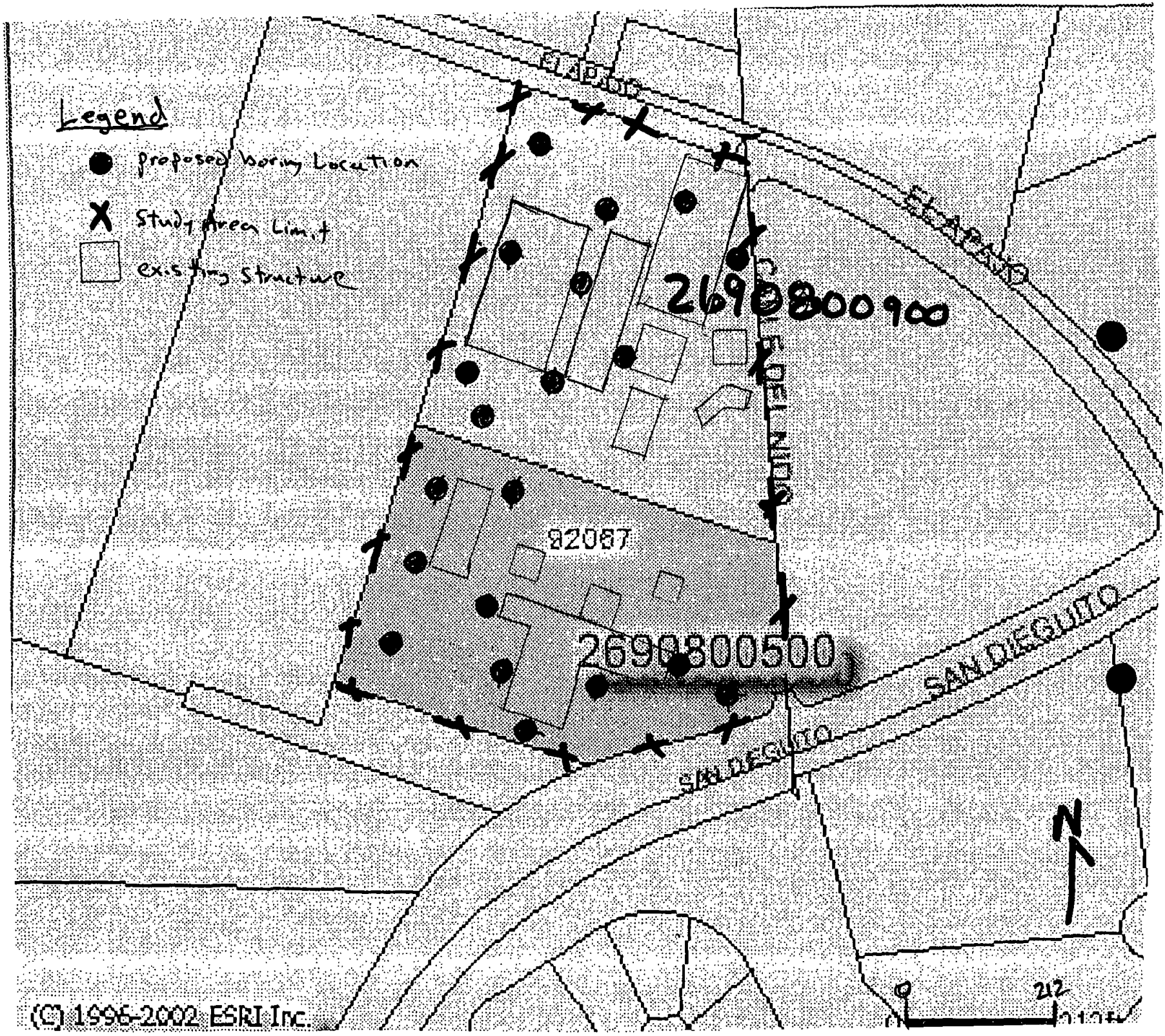
11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Decon proir to and after drilling and between locations

12. What methods will be used to clean sampling equipment? TSP Wash - 3 bucket wash

13. What cleaning method will be used to clean casing and screen prior to installation? N/A - Geotechnical



1167 68
SEE 1148 MAP
A B C D E F G H J
RANCHO SANTA FE
92067
92127
92014
92091
FAIRBANKS RANCH
SAN DIEGO
Study Area
SAN DIEGUITO COUNTY PARK
FAIRBANKS COUNTRY DAY HS
MORGAN RUN RESORT AND CLUB
RANCHO SANTA FE FARMS GOLF CLUB
SAN DIEGUITO RIVER
ESCONDIDO DEL DIOS HWY
EL CAMINO DEL NORTE
VIA DE LA VALLE
LINEA DEL CIELO
LOMAS SANTA FE DR
T13S
T14S
SEE 1169 MAP
© 2004 Thomas Bros. Maps



Legend
proposed boring Location
Study Area Limit
existing Structure
ELAPAJO
ELAPAJO
2690800900
92067
2690800500
SAN DIEGUITO
SAN DIEGUITO
N
0
212
(C) 1996-2002 ESRI Inc.

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2377
1-800-253-9933

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address:	Assessor's Parcel Number (APN):
6461 El Apajo Rd	2690800900
6525 Calle Del Nido	2690800500

I, Michael Arms, owner of the property/properties listed above, give my permission to GeoTek Inc (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 20 soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Jeff Blake (registered professional) of GeoTek (consulting company) and authorized signer for Scotts Drilling (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company (and) South Coast Drilling should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: [signature] Date: 7/27/04

Print Name: Michael M. Arms Title: President

Company: Helen Woodward Animal Center

DEH:SAM-9503 (Rev. 1-04)

Mailing Address: 6461 El Apajo Rd - PO Box 64
Rancho Santa Fe, CA 92067

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

RICHARD HAAS
ASSISTANT DIRECTOR

November 29, 2004

Mr. Charles Covello
Del Rayo Village Owners, LLC
P.O. Box 675451
Rancho Santa Fe, CA 92067-5451

Dear Mr. Covello:

ASSESSOR'S PARCEL NUMBERS #302-301-10-00
BORING/WELL PERMIT #LMON 102471
SITE ADDRESS: 16077-91 SAN DIEGUITO ROAD, RANCHO SANTA FE, CA 92067

The County of San Diego, Department of Environmental Health (DEH), Monitoring Well Program (MWP) has received and reviewed the analytical data report submitted as a condition of the Boring/Well Permit #LMON102471 by (ATC Associates, Inc.). Based on the information provided in this report, contamination has been detected in the soil/groundwater samples taken during installation of the borings at this property.

Please be advised that as the property owner, you have obligations under the California Health and Safety Code of the Porter Cologne Water Quality Act for reporting, investigating the extent of the contamination and conducting cleanup of the contamination if necessary.

DEH has a program, where we can provide timely regulatory oversight and review of reports of environmental investigations. This program, the Voluntary Assistance Program (VAP) charges an hourly fee to cover this oversight and review. Attached are an informational brochure and an application form for your reference, in case you decide to use the services of the VAP to pursue your investigation. Please contact Nasser Sionit, Voluntary Assistance Program Coordinator, DEH, at 619-338-2239 and inform him of your intention within thirty days of receipt of this letter.

If we do not hear from you within this period, we will refer your case to the San Diego Regional Water Quality Control Board for their oversight under the Spills, Leaks, Investigation and Cleanup Program (SLIC).

If you have any questions or require further information about this issue please call me at 619-338-2257 or Nasser Sionit at 619 338-2239.

Sincerely,

Carol Spangenberg

CAROL SPANGENBERG, Environmental Health Specialist
Site Assessment and Mitigation Program (SAM)

CS:kd

Enclosures

cc: Nasser Sionit, VAP
Michael T. Davis, ATC Associates, Inc.

WP/LMON102471-1104

PERMIT #LMON102471
A.P.N. # 302-301-10-00
EST #H33970

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION

SOIL BORING CONSTRUCTION PERMIT

SITE NAME: DEL RAYO VILLAGE CENTER

SITE ADDRESS: 16077-91 SAN DIEGUITO RD., RANCHO SANTA FE, CA 92067

PERMIT FOR: **5 SOIL BORINGS**

PERMIT APPROVAL DATE: August 17, 2004

PERMIT EXPIRES ON: December 15, 2004

RESPONSIBLE PARTY: DEL RAYO VILLAGE OWNERS, LLC

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

APPROVED BY: _____ DATE: 08/17/2004
ERNESTO L. PROFETA

NOTIFIED: 8/18/04 EP
DEH: SAM-9075 (4/03)

Faxed copy

T102471

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

RECEIVED
2004 AUG 6 AM 8 35
D.E.H.
MAILROOM

OFFICE USE ONLY
PERMIT LMON # 102471
SAM CASE Y/N # H33970
DATE RECEIVED: 8/6/04
FEE PAID: $355.
CHECK # 1202

A. RESPONSIBLE PARTY DEL RAYO VILLAGE OWNERS, LLC Phone (858)756-0080
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address PO BOX 675451 City RANCHO SANTA FE State CA Zip 92067-5451
Contact Person CHARLES COVELLO Phone (858)756-0080 Ext. ____ Fax (858)756-1304

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # NONE

C. CONSULTING FIRM ATC ASSOCIATES INC.
Mailing Address 9620 CHESAPEAKE DR., SUITE 203 City SAN DIEGO State CA Zip 92123
Registered Professional MICHAEL T. DAVIS Registration # 7400 (RG)
Contact Person SCOTT LEVIN Phone (858)569-0692 Ext. 109 Fax (858)569-0695

REG 04-17-04 15:33 FDNO 134133
CHK $355.00

D. DRILLING COMPANY H&P Mobile GeoChemistry C57# 769131
Contact Name Dr. Blayne Hartman
Mailing Address 432 N. Cedros Ave. City Solana Beach State CA Zip 92075-
Phone 858-793-0401 Fax 858-793-0404

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	
☐ Vadose	
☒ Boring	5
☐ Other	

NUMBER OF ~~WELLS~~ BORINGS TO BE DESTROYED
~~☒~~ ~~5~~

MATERIALS TO BE USED

CASING
Not Applicable X
Type ____
Gauge ____
Diameter ____
Well Screen Size ____
Filter Pack ____

SEAL/BORING BACKFILL
☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
Borehole diameter 2"

Drilling Method
☐ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☒ Other DIRECT-PUSH STRATAPROBE

PROPOSED CONSTRUCTION
Estimated groundwater depth: 10 ft.
Estimated depth of boring 2@12 3@20 ft.
Concrete surface seal 0 to 3
Annular seal ____ to ____
Bentonite transition seal 2@ 2 3@ 3 to 12 20
Filter Pack ____ to ____
Perforation ____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE Blayne Hartman DATE 8/3/04

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE [signature] DATE 8/4/04

8/6 Left vmsg. to Scott Levine, App. not dated. EP
Returned call fm. Scott Levine - date entered. EP

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 302-301-10-00
   Site Name Del Rayo Village Center
   Site Address 16077-91 San Dieguito Road City Rancho Santa Fe
   Zip 92067-

   PROPERTY OWNER Del Rayo Village Owners, LLC
   Phone 858/756.0080 Ext. Fax 858/756.1304
   Mailing Address PO Box 675451 City Rancho Santa Fe State CA Zip 92067-5451

   NUMBER OF WELLS **TYPE OF WELLS** _____

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2004, through June 30, 2005)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$175.00 for the first monitoring well	**$175.00**
Permit for Well Maintenance Inspection (Valid for three years)	$ 95.00 for first well maintenance inspection	**$95.00**
Each Additional New Well	$150.00 for each additional well installation	___ x **$150.00** _____
	$30.00 for each additional well maintenance inspection	___ x **$30.00** _____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$175.00 for the first boring	1 x **$175.00** $175.00
	$45.00 for each additional boring	4 x **$45.00** $180.00
Permit for Well Destructions Only	$175.00 for the first destruction	___ x **$175.00**
	$115.00 for each additional destruction ...	___ x **$115.00**
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $175.00	___ x **$175.00** _____
	Additional activities will be as follows:	
	$150.00 for each additional well	___ x **$150.00** _____
	$ 95.00 for first well maintenance inspection	___ x **$ 95.00** _____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** _____
	$ 45.00 for each additional boring	___ x **$ 45.00** _____
	$115.00 for each well destruction	___ x **$115.00** _____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$310.00 (Flat Fee)**	**$310.00**
	TOTAL COST OF PERMIT	$ 355.00

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction Direct-push borings will be backfilled with bentonite from the bottom of each borehole to 3 feet below ground surface (bgs), and filled with concrete from 3 feet bgs to the surface.

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☒ d. Other: Property owner refinancing.

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Each boring will be drilled and backfilled on the same day to prevent contamination.

4. What field procedures will be utilized to determine if contamination exists? Soil will be sampled and screened with a PID approximatley every 2-feet. Select samples will be sent to a laboraotory for additional analysis. If groundwater is encountered, it will be sampled and sent to a laboroatory for analysis.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? Soil: visual, olfactory, and PID screening.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? Soil and groundwater samples will be analyzed for halogenated volatile organic compounds (EPA 8010 List) by EPA Test Method 8260.

7. How will samples be transported and preserved? Samples will be transported in a thermal insulated cooler containing ice.

8. What sampling methods will be used? Soil samples will be collected utilizing a California split-spoon sampler containing acetate sample tubes. Groundwater samples will be collected utilizing hydropunch technologies.

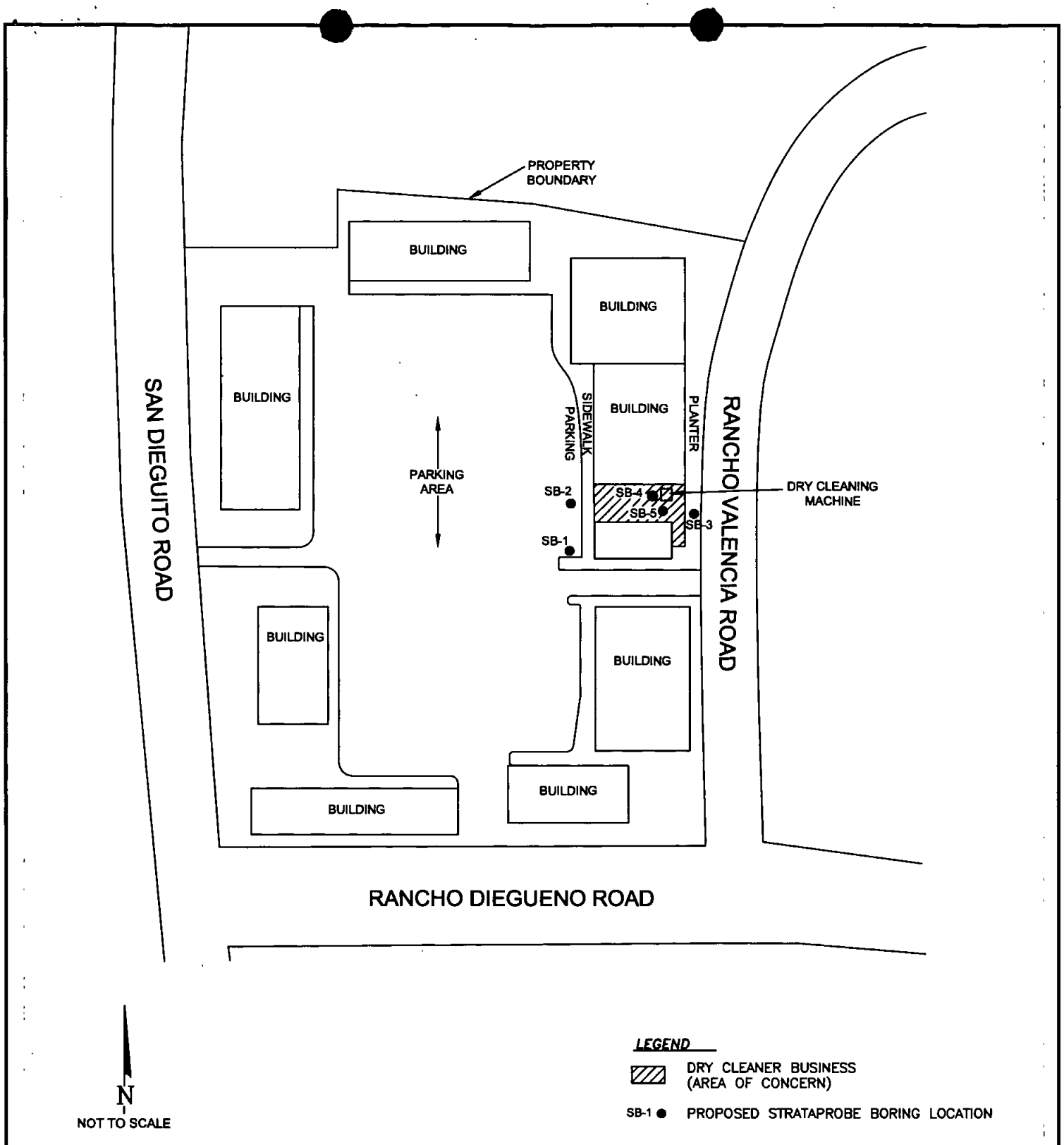
9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :Non applicable.

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No.

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Direct-push rods will be washed in liquidnox (or equivalent) solution and rinsed in a tap water and deionized water rinse.

12. What methods will be used to clean sampling equipment? Three bucket decontamination: 1) liquidnox wash solution (or equivalent); 2) tap-water rinse; and 3) deionized-water rinse.

13. What cleaning method will be used to clean casing and screen prior to installation? Non applicable.



SITE PLAN

PROPOSED SOIL BORINGS (SB-1 THROUGH SB-5) LOCATION MAP
DEL RAYO VILLAGE CENTER
16077-91 SAN DIEGUITO ROAD
RANCHO SANTA FE, CALIFORNIA 92067

PROJECT NO. 43.27517.0002	FIGURE 1
FILE NO. h:projects2/del rayo village/FIG1	

ATC ASSOCIATES INC.
9620 Chesapeake Drive, Suite 203
San Diego, California 92123

County of San Diego

RECEIVED
2004 AUG 16 AM 7 18
D. E. H.
MAILROOM

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2377
1-800-253-9933

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address: 16077-91 San Dieguito Road, Rancho Santa Fe, CA

Assessor's Parcel Number (APN): 302-301-10-00

I, Charles Covello, owner of the property/properties listed above, give my permission to ATC Associates Inc. (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 5 soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Michael Davis (registered professional) of ATC Associates Inc. (consulting company) and authorized signer for H&P Mobile Geochemistry (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: [signature] Date: 8/4/04

Print Name: Charles Covello Title: President

Company: Del Rayo Village Center
Del Rayo Village Owners, LLC

DEH:SAM-9503 (Rev. 1-04)

Property Owner Responsibility Acknowledgement
Page 2

Mailing Address: PO Box 675451, Rancho Santa Fe, CA 92067-5451

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

RICHARD HAAS
ASSISTANT DIRECTOR

PAST DUE NOTICE

May 4, 2005

BRYAN MILLER-HICKS
SHEPARDSON ENGINEERING ASSOCIATES
10035 PROSPECT AVENUE
SANTEE, CA 92071

PERMIT: LMON-102580 -- APPROVED: September 24, 2004 -- EXPIRED: January 22, 2005
VIA DE LA VALLE AND EL CAMINO REAL, DEL MAR, CA 92104

The Department of Environmental Health (DEH), Monitoring Well Program has no record of receiving a report for work completed under this permit as required by San Diego County Code, Section 67.447.

A complete and accurate well/boring report must be submitted within sixty days of completing the work covered by the permit. This requirement was stated as a condition on the permit. Submit the Sixty-Day report to the Well Permit Desk at the address shown above by **May 19, 2005**

A checklist is enclosed to assist you in providing the data that must be included in a complete report. Please be advised that incomplete reports will be returned.

Please contact the Well Permit Desk at (619) 338-2339 if you wish to discuss this letter.

Thank you for your cooperation.

Sincerely,

Amelia Cesena, Environmental Health Technician
Monitoring Well Program
Site Assessment and Mitigation Program

Enclosure

cc: **KERRY BENTON, GATLIN DEVELOPMENT**
GREGG IN SITU

PERMIT #LMON102580
A.P.N. # 302-090-28-00
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION

GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: GATLIN CORPORATE OFFICE BUILDING, VILLA PARAISO

SITE ADDRESS: 3840 VIA DE LA VALLE, DEL MAR, CA 92014

PERMIT FOR: **2 GEOTECHNICAL BORINGS**

PERMIT APPROVAL DATE: SEPTEMBER 24, 2004

PERMIT EXPIRES ON: JANUARY 22, 2005

RESPONSIBLE PARTY: GATLIN DEVELOPMENT

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. ***Drill cuttings are not an acceptable fill material.***

2. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

3. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

4. **This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH.** Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

5. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

APPROVED BY: M Crystal DATE: 09/24/2004
MARISUE CRYSTAL

NOTIFIED: 9/24/04 MSC

DEH:SAM-9075 (4/03)

102580

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

RECEIVED 2004 SEP 17 AM 10 08

D. E. H. MAILROOM

OFFICE USE ONLY
PERMIT LMON # 102580
SAM CASE Y/N # NONE
DATE RECEIVED: 5-17-04
FEE PAID: ~~5822~~ 8220.
CHECK # 5822

A. RESPONSIBLE PARTY Gatlin Development Phone (858) 793-2850 x
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 12625 High Bluff Drive, suite 304 City San Diego State CA Zip 92130-
Contact Person Kerry Benton Phone 858-793-2850 Ext. ____ Fax 858-793-0810

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # ____

C. CONSULTING FIRM Shepardson Engineering Associates
Mailing Address 10035 Prospect Avenue City Santee State CA Zip 92071-
Registered Professional Bryan Miller-Hicks Registration # 4130 (RG)
Contact Person Bryan Miller-Hicks Phone 619-449-9830 Ext. ____ Fax 619-449-5824

D. DRILLING COMPANY Gregg In Situ C57# 656407
Contact Name Joanna
Mailing Address 2726 Walnut Avenue City Signal Hill State CA Zip 90755-
Phone 562-427-6899 Fax 562-424-2329

E. CONSTRUCTION INFORMATION REC 09-24-04 13:15 ROSE CHK 137833 $220.00

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED	#	MATERIALS TO BE USED: CASING	MATERIALS TO BE USED: SEAL/BORING BACKFILL	PROPOSED CONSTRUCTION
☐ Groundwater	___	Not Applicable x	☐ Neat Cement	Estimated groundwater depth: 10 ft.
☐ Vadose	___	Type ____	☐ Cement & Bentonite	Estimated depth of boring 45 ft.
☒ Boring	2	Gauge ____	☐ Sand-Cement	Concrete surface seal: 0 to 3
☐ Other	___	Diameter ____	☒ Bentonite	Annular seal: ____ to ____
		Well Screen Size ____	☐ Other	Bentonite transition seal: 0 to 45
NUMBER OF WELLS TO BE DESTROYED		Filter Pack ____	Borehole diameter 2"	Filter Pack: ____ to ____
☐	___	**Drilling Method**		Perforation: ____ to ____
		☐ Auger	☐ Air Rotary	**NOTE:** Attach a well construction diagram for wells with multiple completions
		☐ Mud Rotary	☒ Other	
		☐ Percussion		

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE Joanna Hickechan DATE 9-14-04

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE [signature] CEG 1323 DATE 9/16/04

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 302-090-28-00
   Site Name Gatlin Corporate Office Building , Villa Paraiso
   Site Address Via de la Valle and El Camino Real City Del Mar Zip 92014-

   PROPERTY OWNER Gatlin Development
   Phone 858-793-2850 Ext. Fax 858-793-0810
   Mailing Address 12625 High Bluff Dr suite 304 City Del Mar State CA
   Zip 92130

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2004, through June 30, 2005)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$175.00 for the first monitoring well	**$175.00**
Permit for Well Maintenance Inspection (Valid for three years)	$ 95.00 for first well maintenance inspection	**$95.00**
Each Additional New Well	$150.00 for each additional well installation	___ x **$150.00** _____
	$30.00 for each additional well maintenance inspection	___ x **$30.00** _____

Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$175.00 for the first boring ..... $45.00 for each additional boring	1 x **$175.00** 1 x **$45.00**	175 45
Permit for Well Destructions Only	$175.00 for the first destruction ..... $115.00 for each additional destruction ...	___ x **$175.00** ___ x **$115.00**	
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $175.00 **Additional activities will be as follows:** $150.00 for each additional well ..... $ 95.00 for first well maintenance inspection $ 30.00 for each additional well maintenance inspection $ 45.00 for each additional boring $115.00 for each well destruction	___ x **$175.00** ___ x **$150.00** ___ x **$ 95.00** ___ x **$ 30.00** ___ x **$ 45.00** ___ x **$115.00**	_____ _____ _____ _____ _____ _____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$310.00** **(Flat Fee)**		**$310.00**
	TOTAL COST OF PERMIT		$ 220

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction N/A

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? steam cleaning before drilling and between borings

4. What field procedures will be utilized to determine if contamination exists? odor, gas detector

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? NA

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? NA

7. How will samples be transported and preserved? NA

8. What sampling methods will be used? NA

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :NO

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. no

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? steam clean all equipment before drilling

12. What methods will be used to clean sampling equipment? steam cleanr

13. What cleaning method will be used to clean casing and screen prior to installation? N/A

A PORTION OF NW 1/4 OF
SE 1/4 OF SECTION 6

CPT 1

CPT 2

2" PVC PIPE 1'-1.5' HIGH

CRIB WALL

6" WALL

SD CB 20.03 TC 16.93 FL 4"N, 12"S

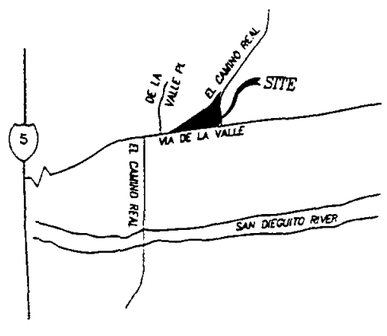
EL CAMINO REAL

VIA DE LA VALLE

25.00'

5.00'

10.00'



VICINITY MAP

NO SCALE

LEGEND

	ASPHALT PAVING
— — —	CENTERLINE
FS	FINISH SURFACE
— - - —	PROPERTY LINE
SD CB	STORM DRAIN CATCH BASIN
TB	TOP OF BERM
TC	TOP OF CURB

CPT- BORING LOCATION

NORTH

Scale: 1" = 30'

Base map reproduced from Topographic Survey prepared by Nasland Engineering and dated 11/26/2001 APN 302-090-28-00

SHEPARDSON ENGINEERING ASSOCIATES INC.

Geotechnical Consultants:
Engineers-Geologists

Job Number: 201165-01 **Date:** December, 2001

SITE PLAN
Gatlin Plaza
Via De La Valle
San Diego, California

Plate
A1

SEA R-171 Rev 4/88

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2377
1-800-253-9933

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work

Property Address:	**Assessor's Parcel Number (APN):**
Via de la Valle and	302-090-28-00
El Camino Real	
Del Mar, CA 92104	

I, _____, owner of the property/properties listed above, give my permission to Shepardson Engineering (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 2 soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the *County of San Diego Site Assessment and Mitigation (SAM) Manual* and the State of California Well Standards Bulletin 74-90.

I understand that Bryan Miller-Hicks (registered professional) of Shepardson Engineering (consulting company) and authorized signer for Gregg In Situ (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: _____ Date: 9/13/04

Print Name: KERRY R. GENTIN Title: VICE PRESIDENT

Company: GATLIN DEVELOPMENT CO. INC
12625 HIGH BLUFF DRIVE, SUITE 304
SAN DIEGO, CA 92130

Mailing Address: 12625 High Bluff Dr., Ste. 304, San Diego, CA 92130

SHEPARDSON
ENGINEERING ASSOCIATES INC.

Geotechnical Consultants:
Engineers-Geologists

10035 Prospect Ave., Suite 101
Santee, CA 92071-4398
619 / 449-9830 FAX 619 / 449-5824
email@shepardson.com

RECEIVED
2005 MAY 11 AM 8 50
D. E. H.
MAILROOM

May 10, 2005

S.E.A. 201165-02

County of San Diego Dept. of Environmental Health
Land and Water Quality Division
Monitoring Well Program
Site Assessment and Mitigation Program
P.O. Box 129261
San Diego, CA 92112-9261

ATTENTION: Ms. Amelia Cesena
Environmental Health Technician

SUBJECT: Cancellation of Borings
Permit #LMON-102580
Via de la Valle and El Camino Real
Del Mar, CA 92104

Dear Ms. Cesena:

This is to serve as an official notice that the borings planned to be drilled at the above location, per permit LMON-102580, approved on September 24, 2004, were cancelled. It was determined that we had adequate data from previous drilling done several years before.

We apologize for the inconvenience; we will be certain to notify you of any cancellations on future projects.

Respectfully submitted,

SHEPARDSON ENGINEERING ASSOCIATES, INC.

Bryan Miller-Hicks, CEG
Project Geologist

cc: (1) Addressee

PERMIT #LMON103244
A.P.N. #269-020-08-00
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION

GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: BAGLEY PROPERTY

SITE ADDRESS: 6224 LOS NARANJOS CT., RANCHO SANTA FE, CA 92067

PERMIT FOR: **3 GEOTECHNICAL BORINGS**

PERMIT APPROVAL DATE: JUNE 29, 2005

PERMIT EXPIRES ON: OCTOBER 27, 2005

RESPONSIBLE PARTY: MR. WORTH BAGLEY

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. **This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH.** Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

APPROVED BY: _____ DATE: 06/29/2005
ERNIE L. PROFETA

NOTIFIED: by vmay 6/29/05 EP

DEH:SAM-9075 (4/03)

103244 ①

RECEIVED 2005 JUN 27 AM 8:08 D.E.H. MAILROOM

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 103244
SAM CASE Y/N # NONE
DATE RECEIVED: 6/27/05
FEE PAID: $265.00
CHECK # 15842

A. RESPONSIBLE PARTY ~~HETHERINGTON ENGINEERING, INC.~~ MR. WORTH BAGLEY Phone (760) 931-1917 x
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address ~~5205 Avenida Encinas, Suite A~~ P.O. BOX 722 City ~~Carlsbad~~ RANCHO SANTA FE State CA Zip ~~92008-~~ 92067
Contact Person ~~Jason Geldert~~ WORTH BAGLEY Phone ~~760.931.1917~~ 858-756-1913 Ext. ____ Fax ~~760.931.0545~~

REG 06-27-05 13:27 EDMA 173110
CHK $265.00

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # NA

C. CONSULTING FIRM HETHERINGTON ENGINEERING, INC.
Mailing Address 5205 Avendia Encinas, Suite A City Carlsbad State CA Zip 92008-
Registered Professional Jason Geldert Registration # 63912 (RCE)
Contact Person Jason Geldert Phone 760.931.1917 Ext. ____ Fax 760.931.5205

D. DRILLING COMPANY F & C Drilling C57# 520586
Contact Name Don Dibel
Mailing Address 7716 Clairmont Mesa Blvd. City San Diego State CA Zip 92111-
Phone 858.279.7005 Fax 858.279.7468

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	3
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable X
Type ____
Gauge ____
Diameter ____
Well Screen Size ____
Filter Pack ____

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 8-inch

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 100 ft.
Estimated depth of boring 40 ft.

Concrete surface seal	0 to 3
Annular seal	____ to ____
Bentonite transition seal	____ to ____
Filter Pack	____ to ____
Perforation	____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE Don Dibel DATE 6/13/05

6/27 left vmsg. to Mike Vanconcellos, re: RP information.
6/27 Mike V. called – RP info is the same as owner information.

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 103244
SAM CASE Y/N # _____
DATE RECEIVED: _____
FEE PAID: _____
CHECK # _____

A. RESPONSIBLE PARTY Mr. Worth Bagley Phone (858) 756-1913 x
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 6224 Los Naranjos Court City Rancho Santa Fe State CA Zip 92067-
Contact Person Mr. Bagley Phone above Ext. _____ Fax

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # NA

C. CONSULTING FIRM HETHERINGTON ENGINEERING, INC.
Mailing Address 5205 Avendia Encinas, Suite A City Carlsbad State CA Zip 92008-
Registered Professional Jason Geldert Registration # 63912 (RCE)
Contact Person Jason Geldert Phone 760.931.1917 Ext. _____ Fax 760.931.5205

D. DRILLING COMPANY Limited Access Unlimited INc. C57# 681380
Contact Name Tod Clark
Mailing Address POB 84627 City San Diego State CA Zip 92138-
Phone 6192943682 Fax 6192943283

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	
☐ Vadose	
☒ Boring	3
☐ Other	

NUMBER OF WELLS TO BE DESTROYED
☐

MATERIALS TO BE USED

CASING	SEAL/BORING BACKFILL
Not Applicable X	☐ Neat Cement
Type	☐ Cement & Bentonite
Gauge	☐ Sand-Cement
Diameter	☒ Bentonite
Well Screen Size	☐ Other
Filter Pack	Borehole diameter 8-inch

Drilling Method
☒ Auger ☐ Air Rotary
☐ Mud Rotary ☐ Other
☐ Percussion

PROPOSED CONSTRUCTION
Estimated groundwater depth: 100 ft.
Estimated depth of boring 40 ft.

Concrete surface seal	0 to 3
Annular seal	_____ to
Bentonite transition seal	_____ to
Filter Pack	_____ to
Perforation	_____ to

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 7.12.05

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE _____ DATE 7.13.05

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 103244
SAM CASE Y/N # _____
DATE RECEIVED: _____
FEE PAID: _____
CHECK # _____

A. RESPONSIBLE PARTY Mr. Worth Bagley Phone (858) 756-1913 x
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 6224 Los Naranjos Court City Rancho Santa Fe State CA Zip 92067-
Contact Person Mr. Bagley Phone above Ext. _____ Fax _____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # NA

C. CONSULTING FIRM HETHERINGTON ENGINEERING, INC.
Mailing Address 5205 Avendia Encinas, Suite A City Carlsbad State CA Zip 92008-
Registered Professional Jason Geldert Registration # 63912 (RCE)
Contact Person Jason Geldert Phone 760.931.1917 Ext. _____ Fax 760.931.5205

D. DRILLING COMPANY F & C Drilling C57# 520586
Contact Name Don Dibel
Mailing Address 7716 Clairmont Mesa Blvd. City San Diego State CA Zip 92111-
Phone 858.279.7005 Fax 858.279.7468

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	3
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable X
Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 8-inch

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 100 ft.
Estimated depth of boring 40 ft.

Concrete surface seal	0 to 3
Annular seal	____ to ____
Bentonite transition seal	____ to ____
Filter Pack	____ to ____
Perforation	____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE _____

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE _____ DATE _____

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE _____ DATE 6/7/05

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 2690200800
   Site Name _____
   Site Address 6224 Los Naranjos Court City Rancho Santa Fe Zip 92067-

   PROPERTY OWNER Mr. Worth Bagley
   Phone 858.756.1913 Ext. Fax _____
   Mailing Address P.O. Box 722 City Rancho Santa Fe State CA Zip 92067-

   NUMBER OF WELLS 3- **TYPE OF WELLS** Borings

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2004, through June 30, 2005)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$175.00 for the first monitoring well	**$175.00**
Permit for Well Maintenance Inspection (Valid for three years)	$ 95.00 for first well maintenance inspection	**$95.00**
Each Additional New Well	$150.00 for each additional well installation	___ x **$150.00** _____
	$30.00 for each additional well maintenance inspection	___ x **$30.00** _____

Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$175.00 for the first boring ..... $45.00 for each additional boring	1 x **$175.00** 2 x **$45.00**	$175.00 $90.00
Permit for Well Destructions Only	$175.00 for the first destruction ..... $115.00 for each additional destruction ...	___ x **$175.00** ___ x **$115.00**	
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $175.00 **Additional activities will be as follows:** $150.00 for each additional well ..... $ 95.00 for first well maintenance inspection $ 30.00 for each additional well maintenance inspection $ 45.00 for each additional boring $115.00 for each well destruction	___ x **$175.00** ___ x **$150.00** ___ x **$ 95.00** ___ x **$ 30.00** ___ x **$ 45.00** ___ x **$115.00**	_____ _____ _____ _____ _____ _____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$310.00** **(Flat Fee)**		**$310.00**
	TOTAL COST OF PERMIT		$ 265.00

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction _____

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? NA

4. What field procedures will be utilized to determine if contamination exists? NA

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? All Samples will be sent to our laboratory for testing

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? NA

7. How will samples be transported and preserved? Samples will be bagged and placed in plastic containers for transport

8. What sampling methods will be used? California Split Barrel and Bulk Sampling

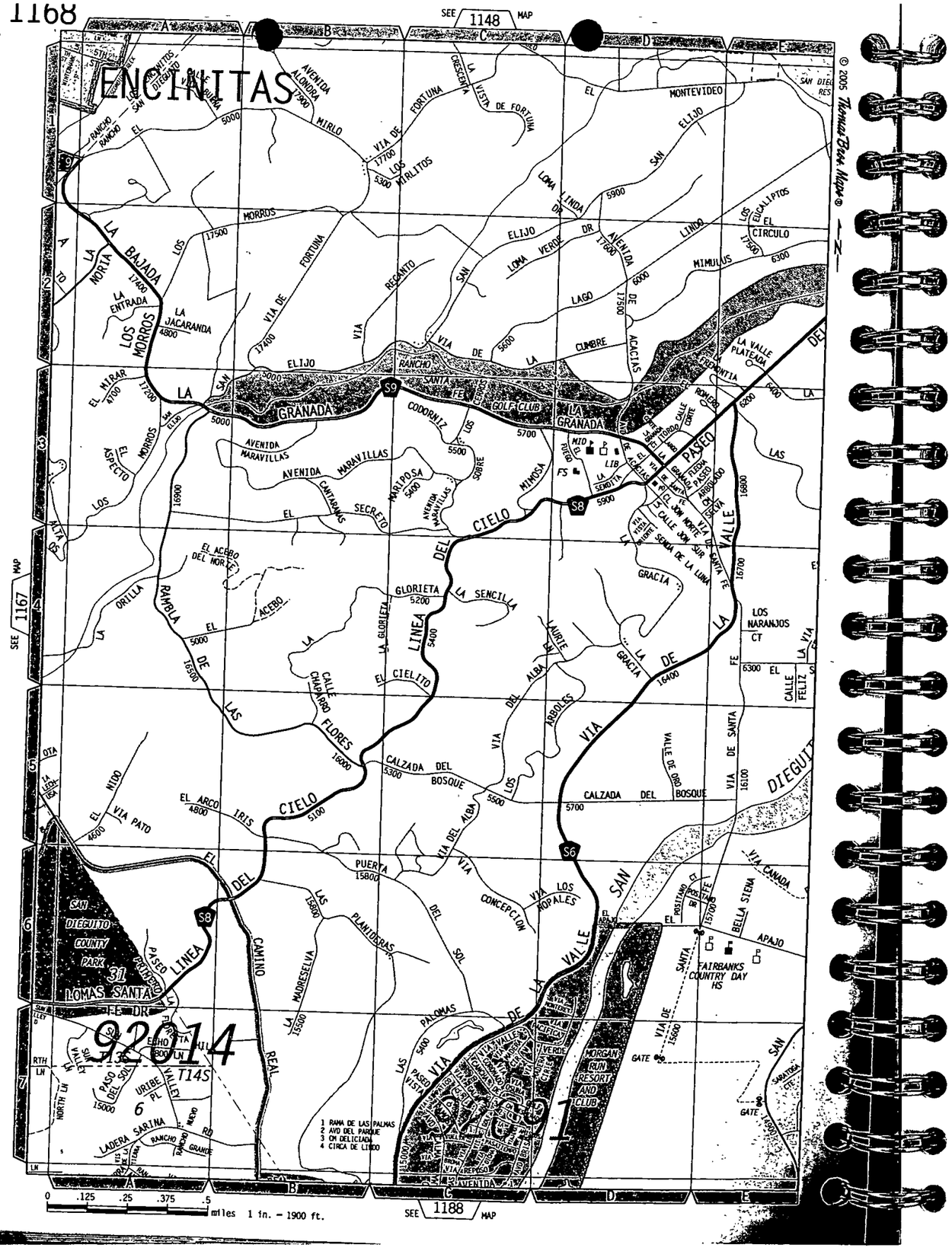
9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :No

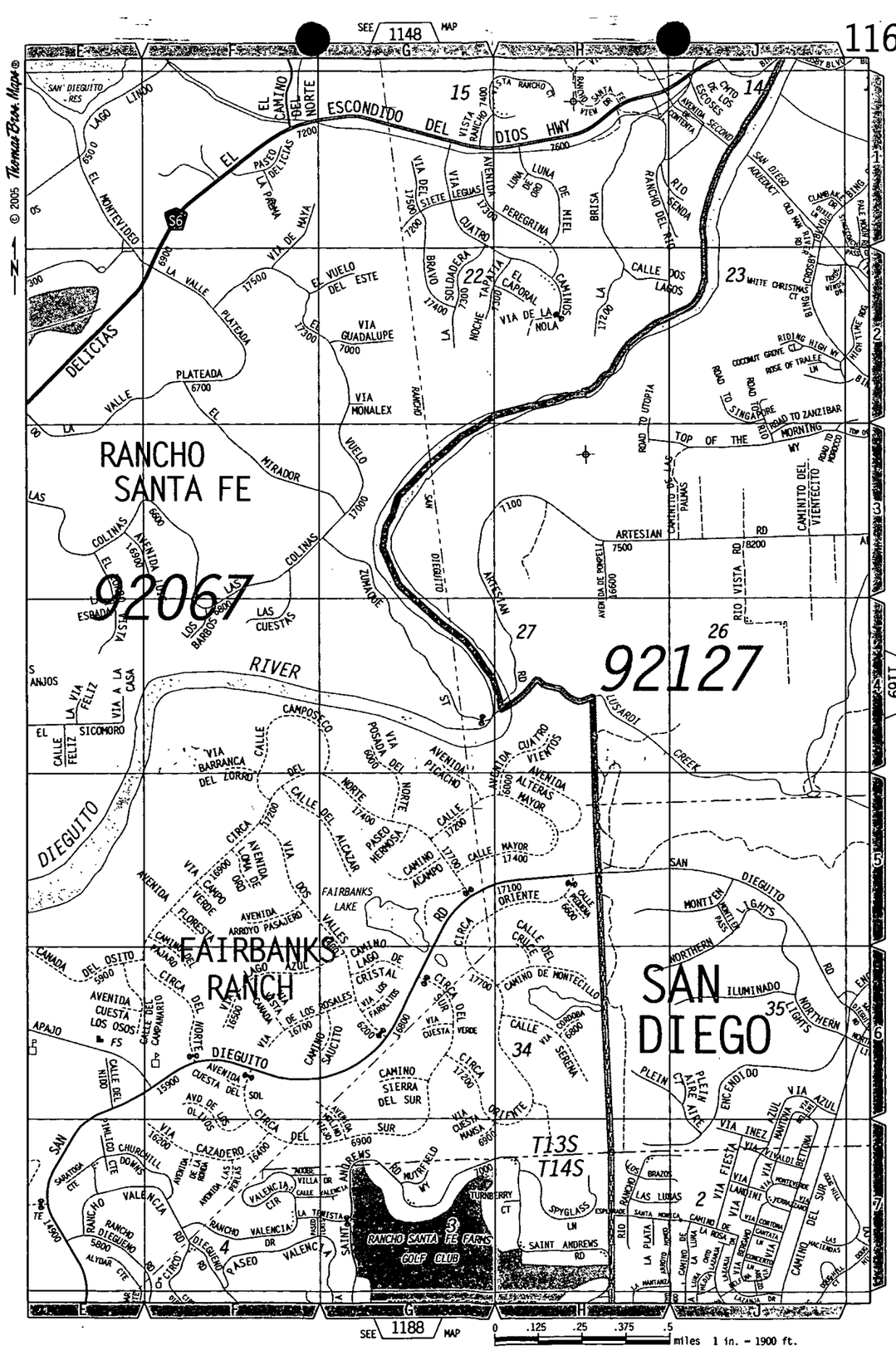
10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? NA

12. What methods will be used to clean sampling equipment? NA

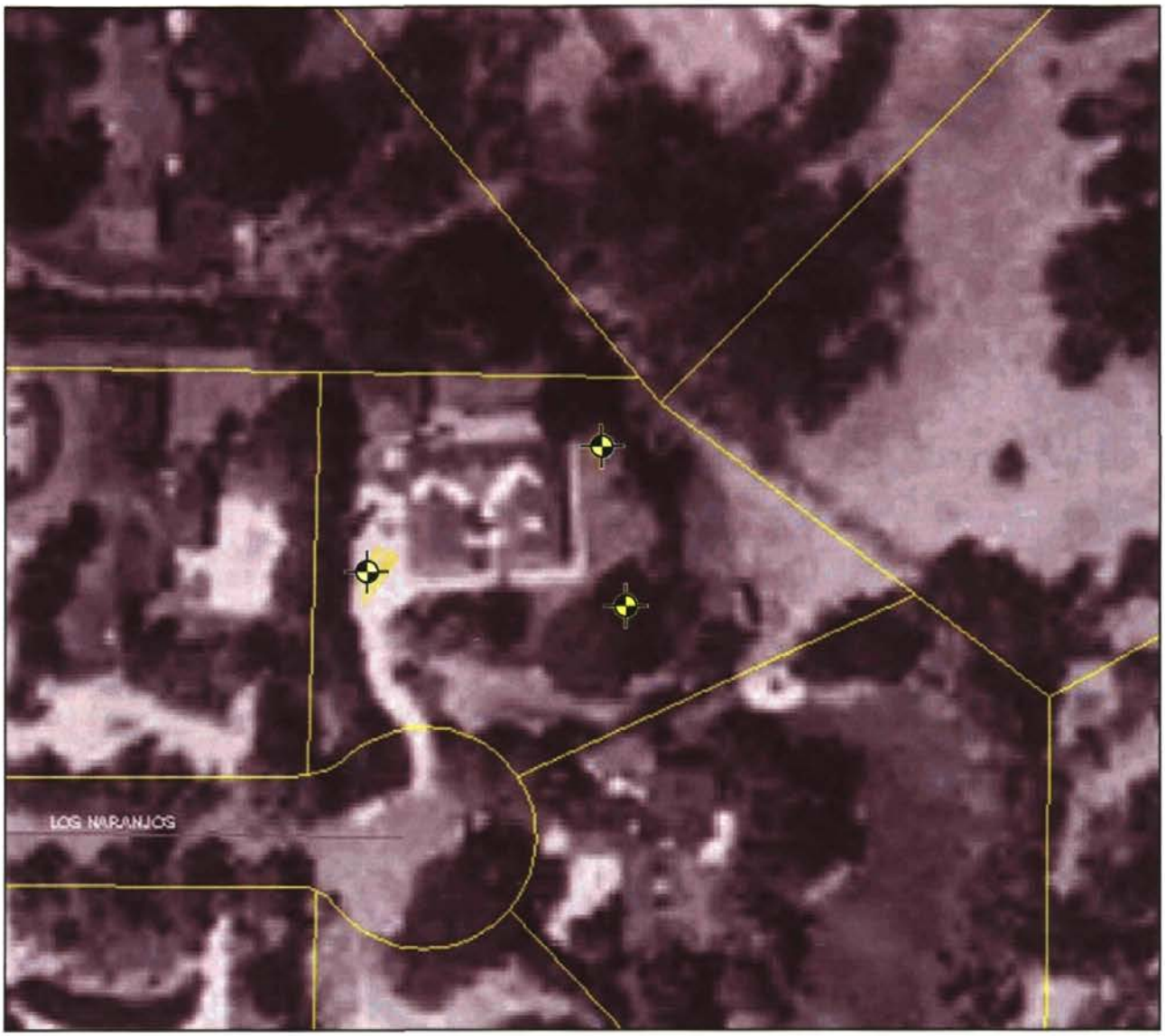
13. What cleaning method will be used to clean casing and screen prior to installation? NA





SAN DIEGO CO.

1168



ADAPTED FROM: REDI (c) SANDAG/SanGIS 2005 (http://cart.sandag.org/redi)

LEGEND

APPROXIMATE LOCATION OF PROPOSED BORING

N

SCALE: 1" - 300'

APN LOCATION MAP

HETHERINGTON ENGINEERING, INC.
GEOTECHNICAL CONSULTANTS

APN 2690200800
6224 Los Naranjas Court, San Diego, California

PROJECT NO. 5120.1 | FIGURE NO. 1

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2377
1-800-253-9933

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address: 6224 Los Naranjos Court, Rancho Santa Fe, California 92067

Assessor's Parcel Number (APN): 2690200800

I, Worth Bagley, owner of the property/properties listed above, give my permission to Hetherington Engineering, Inc. (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 3 soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Jason Geldert (registered professional) of Hetherington Engineering, Inc. (consulting company) and authorized signer for F & C Drilling (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: Worth Bagley Date: 6/20/05

Print Name: 6224 Los Naranjos Court Title: Property Owner

Company: _____

DEH:SAM-9503 (Rev. 1-04)

Mailing Address: P.O. Box 722, Rancho Santa Fe, CA 92067

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELLS
P.O BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2339/FAX 619-338-2315
www.sdcounty.ca.gov/deh/lwq

REQUEST FOR RESUBMITTAL OF YOUR MONITORING WELL/BORING PERMIT 60 DAY DRILLING REPORT

DATE RETURNED: 10-11-05

The Monitoring Well Program (MWP)is returning your 60-day drilling report for the above-referenced permit because some necessary items were missing.

Please resubmit the complete drilling report with the information checked below to the MWP within fourteen (14) working days. *If you have any questions regarding this request, please* contact the Monitoring Well Program desk at (619) 338-2339, or by email at: deh.monitoringwells@sdcounty.ca.gov.

- ☐ A detailed plot plan drawn to scale showing the location of the site, nearest cross streets, property boundary lines, existing improvements (such as USTs, piping, and/or utilities), and the location of all wells and borings.
- ☐ A detailed log for each well/boring describing the density, moisture content, color, grain size distribution, and character of all lithologic units penetrated. The log must include depth of first groundwater, static water level in the completed well(s), date of measurement, field vapor readings.
- ☐ A detailed "as built" well construction diagram with the type of casing, screened interval, screen slot size, type of filter pack, depth, location and type of seals, and volumes of materials (cubic feet) used, and surveyed well elevations and locations.
- ☐ The types and amounts, in cubic feet, of sealing materials used to backfill each borehole.
- ☐ A grain-size analysis of the lithologic unit or units that represent soils adjacent to the perforated portion of the well, if performed.
- ☐ All laboratory analysis data and chain of custody for the soil and/or groundwater sampling that accompanied the work under this permit.
- ☑ A properly signed copy of the well construction and boring report, as legally required by the California Business and Professions Code. The professional geologist may indicate his or her responsibility for the accuracy and completeness of the logs and accompanying data included in the report by providing an original ('wet') signature or by stamping the report with his or her seal. A civil engineer must indicate his or her responsibility for the accuracy and completeness of the logs and accompanying data included in the report by providing all of the following items: an original signature ('wet'), his or her seal/stamp, the date of signing and sealing/stamping, and the expiration date of the certificate or authority.
- ☐ Documentation of well destruction which includes the method used to destroy the monitoring well/boring(s), the type of sealing materials and volumes used (in cubic feet), and the dates the work was started and completed.
- ☐ Description of the surface seal construction, which does not comply with the permit conditions.
- ☐ Submit a letter of explanation stating why the well construction was not completed in accordance with the permit conditions or submit a corrected well construction diagram with a letter signed by the registered professional describing the corrections made to a revised well construction diagram.
- ☐ Other _____.

Processed by: AC

DEH:MWP-(08/05)

PERMIT #LMON103305
A.P.N. #302-090-28-00
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION

GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: GATLIN CORPORATE OFFICE BLDG

SITE ADDRESS: 3840 VIA DE LA VALLE, SAN DIEGO, CA

PERMIT FOR: **1 GEOTECHNICAL BORING**

PERMIT APPROVAL DATE: AUGUST 8, 2005

PERMIT EXPIRES ON: DECEMBER 6, 2005

RESPONSIBLE PARTY: GATLIN DEVELOPMENT

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. **This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH.** Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

APPROVED BY: V. Tavizon DATE: 08/08/2005
VERONICA TAVIZON

NOTIFIED: 8/9/05 EP

DEH:SAM-9075 (4/03)

GB

T103305

Rcvd 7/29/05

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 103305
SAM CASE Y/N# NONE
DATE RECEIVED: 7/29/05
FEE PAID: $166.50
CHECK # 22306

A. RESPONSIBLE PARTY Gatlin Development Phone (858) 793-2850 x
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 12625 High Bluff Dr. Suite 304 City San Diego State CA Zip 92130-
Contact Person Kenny Benton Phone 858 793 2850 Ext. _____ Fax 858 793 0810

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____ REG 07-29-05 15:53 EDNA 177677 CHK $166.50

C. CONSULTING FIRM Shepardson Engineering
Mailing Address 10035 Prospect Ave. City Santee State CA Zip 92071-
Registered Professional Ken Sherrod Registration # 3263 (PG)
Contact Person Ken Sherrod Phone 619 449 9830 Ext. _____ Fax 619 449 5824

D. DRILLING COMPANY F&A & C Drilling C57# 520586
Contact Name Pat Ferguson
Mailing Address 7716 Clairemont Mesa Blvd.. City SD State CA Zip 92111-
Phone _____ Fax _____

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	1
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable X
Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL
☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
X Borehole diameter 6"

X Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 10 ft.
Estimated depth of boring 40 ft.

Concrete surface seal	0 to 3
Annular seal	_____ to _____
Bentonite transition seal	_____ to _____
Filter Pack	_____ to _____
Perforation	_____ to _____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE Don Dikl DATE 7/25/05

J 7/29 Left vmsg. to Ken Sherrod - info re: borehole diameter + drilling method. EP

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE SIGNATURE _____ DATE 7-22-05

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 302-090-28-00
   Site Name Gatlin Corporate Office Building, Villa Paraiso
   Site Address Via DE LA Valle and El Camino Real City SD Zip _____

   PROPERTY OWNER Gatlin Development
   Phone 858 793 2850 Ext. Fax 858 793 0810
   Mailing Address 12625 High Bluff Dr., Suite 304 City SD State CA Zip 92130-

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

Permit Fees In Effect for July 1, 2005 - June 30, 2006

G. FEES (in effect beginning July 1, 2005, through June 30, 2006)

The County Board of Supervisors authorized a *one-time 10% credit* to be applied to the Department of Environmental Health customers. This credit is being provided to qualified fee-based programs that have contributed to the cost reduction/cost containment/cost avoidance efforts initiated by the Department. This is a *one-time fee adjustment* and is applicable to fees and permits due and/or obtained during the period of July 1, 2005 through June 30, 2006. The 10% is not applicable to enforcement fees or fees relating to non-compliance of permit regulations.

ACTIVITY	FEE SCHEDULE FEE -- ONE-TIME FISCAL YEAR 10% CREDIT	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well $185.00 – 10% <$18.50> =	__1__ x $166.50 $_____
Permit for Well Maintenance Inspection (Valid for three years)	$100.00 for first well maintenance inspection $100.00 – 10% <$10.00> =	__1__ x $ 90.00 $_____
Each Additional New Well	$160.00 for each additional well installation $160.00 – 10% <$16.00> = $ 30.00 for each additional well maintenance inspection $ 30.00 – 10% <$ 3.00> =	_____ x $144.00 $_____ _____ x $ 27.00 $_____

Permit for Borings Only *(CPT's, Hydropunch, Geoprobes,* Temporary Well Points, etc.)	**$1[illegible].00 for the first boring** **$185.00 – 10% <$18.50> =** **$ 50.00 for each additional boring** **$ 50.00 – 10% <$ 5.00> =**	**1 x $166.50 $____** **____ x $ 45.00 $____**
Permit for **Well Destructions Only**	**$185.00 for the first destruction** **$185.00 – 10% <$18.50> =** **$120.00 for each additional destruction** **$120.00 – 10% <$12.00> =**	**1 x $166.50 $____** **____ x $108.00 $____**
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)*** **Permit for any Combination of Well Installations, Borings, & Destructions** ***(except UST backfill permit)***	**The first activity will be $185.00.** **$185.00 – 10% <$18.50> =** **Additional activities will be as follows:** **$160.00 for each additional well** **$160.00 – 10% <$16.00> =** **$100.00 for first well maintenance inspection** **$100.00 – 10% <$10.00> =** **$ 30.00 for each additional well maintenance inspection** **$ 30.00 – 10% <$ 3.00> =** **$ 50.00 for each additional boring** **$ 50.00 – 10% <$ 5.00> =** **$120.00 for each well destruction** **$120.00 – 10% <$12.00> =**	**1 x $166.50 $ 166 50** **____ x $144.00 $____** **1 x $ 90.00$____** **____ x $ 27.00 $____** **____ x $ 45.00 $____** **____ x $108.00 $____**
	TOTAL COST OF PERMIT	**$ 166.50**
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	(Flat Fee) **$320.00 – 10% <$32.00> =**	**$288.00**

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction _____

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? NA

4. What field procedures will be utilized to determine if contamination exists? NA

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? NA

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? NA

7. How will samples be transported and preserved? NA

8. What sampling methods will be used? NA

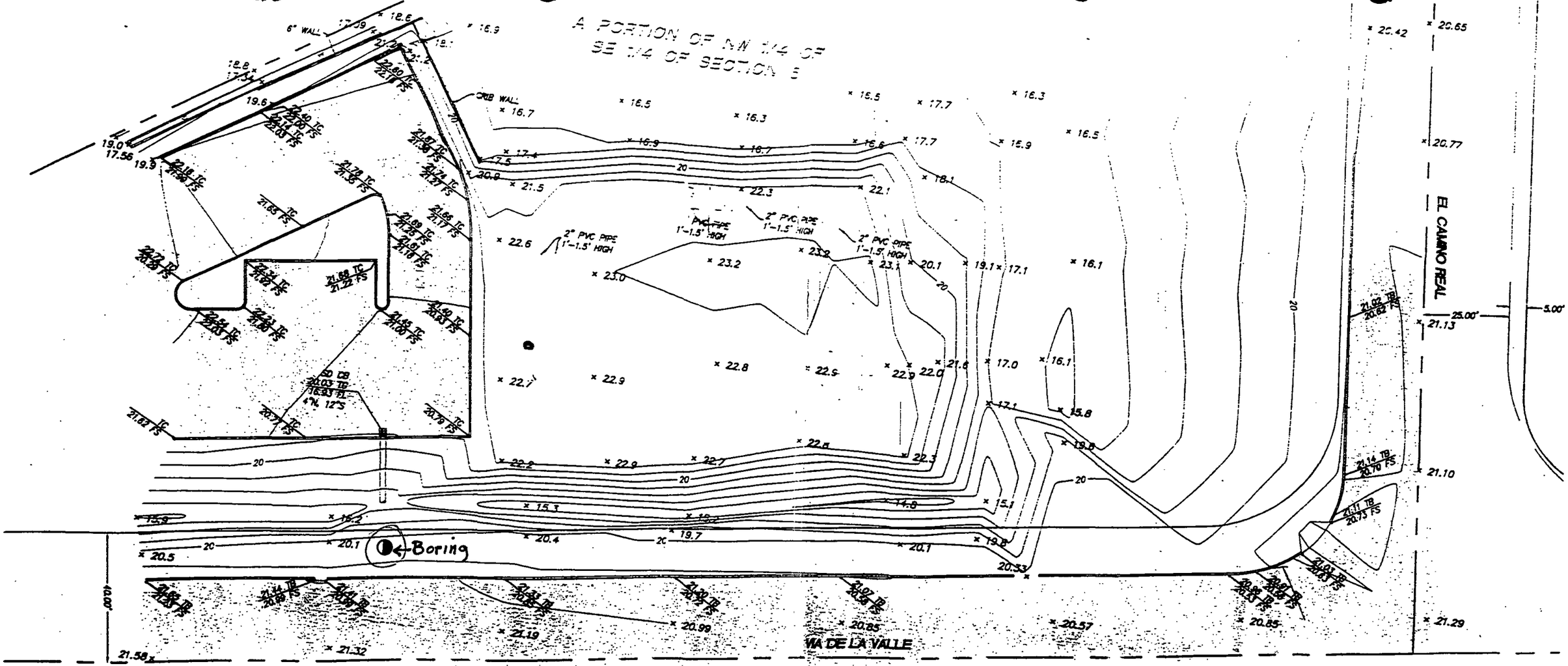
9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :NO

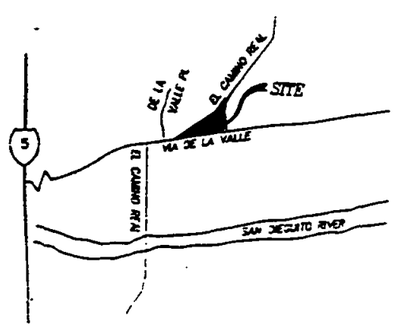
10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. NO

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Steam clean equipment before drilling

12. What methods will be used to clean sampling equipment? steam cleaner

13. What cleaning method will be used to clean casing and screen prior to installation? NA





VICINITY MAP

NO SCALE

LEGEND

	ASPHALT PAVING
	CENTERLINE
FS	FINISH SURFACE
	PROPERTY LINE
SD CB	STORM DRAIN CATCH BASIN
TB	TOP OF BERM
TC	TOP OF CURB

◐ = BORING LOCATION

NORTH

Scale: 1" = 30'

Base map reproduced from Topographic Survey prepared by Nasland Engineering and dated 11/26/2001 APN 302-090-28-00

SHEPARDSON ENGINEERING ASSOCIATES INC.

Geotechnical Consultants: Engineers-Geologists

Job Number: 201165-01	Date: December, 2001	Plate
SITE PLAN Gatlin Plaza Via De La Valle San Diego, California		A1

SEA R-171 Rev 4/88

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address: Via de la Valle and El Camino Real, Del Mar, CA 92104

Assessor's Parcel Number (APN): 302-090-28-00

I, _____, owner of the property/properties listed above, give my permission to Shepardson Engineering (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 1 soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Ken Sherrod (registered professional) of Shepardson Engineering (consulting company) and an authorized signer for F & C (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: [signature] Date: 7/25/05

Print Name: Loren K. Van Der Slik Title: Senior V.P.

Company: Gatlin Development Co., Inc.

Mailing Address: 12625 High Bluff Dr., Ste. 304

DEH:SAM-9503 (DV Rev. 5-05)

PERMIT #LMON103818
A.P.N. # 302-120-36-00
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: MORGAN RUN-GOLF & TENNIS

SITE ADDRESS: 5690 CANCHA DE GOLF, RANCHO SANTA FE, CA 92091

PERMIT FOR: **5 GEOTECHNICAL SOIL BORINGS**

PERMIT APPROVAL DATE: MARCH 9, 2006

PERMIT EXPIRES ON: JULY 7, 2006

RESPONSIBLE PARTY: MORGAN RUN RESORT CLUBHOUSE

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.**

APPROVED BY: _____ DATE: 03/09/2006
ERNIE L. PROFETA

NOTIFIED: 03/09/06 v. message

DEH:SAM-9075 (4/03)

2/27/06 GB

2 Drillers

T103818 Rec'd 2/27/06

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 103818
SAM CASE Y/N # NONE
DATE RECEIVED: 2-27-06
FEE PAID: $346.50
CHECK # 861

A. RESPONSIBLE PARTY Morgan Run Resort + Clubcorp of Cal LLC Phone 972 888 7490
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 3030 LBJ Freeway, Ste 300 City DALLAS State TX Zip 75234
Contact Person DAVID L carson Phone 972 888 7759 Ext. ____ Fax 972 888 7490

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # ____

C. CONSULTING FIRM GeoTek, Inc
Mailing Address 1394 Poinsettia Ave, Ste D City Vista State CA Zip 92081
Registered Professional Jeff Blake Registration # 2248 (RG)
Contact Person Todd Schmitz Phone 7608221464 Ext. ____ Fax 7609990593

D. DRILLING COMPANY CALPAC C57# 766402
Contact Name CASE
Mailing Address 526 West Ave, L City Calimesa State CA Zip 92320
Phone 9097957500 Fax 9097957006

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	____
☐ Vadose	____
☒ Boring	3 ~~8~~
☐ Other	____

NUMBER OF WELLS TO BE DESTROYED

☐ ____

MATERIALS TO BE USED

CASING
Not Applicable X
Type ____
Gauge ____
Diameter ____
Well Screen Size ____
Filter Pack ____

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 8"

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 30 ft.
Estimated depth of boring 50 ft.

Concrete surface seal	0 to 3
Annular seal	____ to ____
Bentonite transition seal	____ to ____
Filter Pack	____ to ____
Perforation	____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] DATE 2-24-06

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE [signature], CEG 2248 DATE 2-24-06

2 Drillers

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

T103818 Rec'd 2/27/06

OFFICE USE ONLY
PERMIT LMON # 103818
SAM CASE Y/N # _____
DATE RECEIVED: _____
FEE PAID: _____
CHECK # _____

A. RESPONSIBLE PARTY Morgan Run Resort · Club Corp of California LLC Phone 0.00 972 888 7490
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 3030 LBJ Freeway Ste 300 City Dallas State TX Zip 75234
Contact Person David L Carlson Phone 972 888 7759 Ext. ____ Fax 972 888 7490

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM GeoTek
Mailing Address _____ City _____ State __ Zip
Registered Professional See attached Registration # _____ (PG)
Contact Person _____ Phone _____ Ext. ____ Fax _____

D. DRILLING COMPANY Pacific Drilling Co. C57# 681380
Contact Name Tod Clark
Mailing Address PO Box 84627 City San Diego State CA Zip 92138-4627
Phone 619-294-3682 Fax 619-294-3283

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

#
- ☐ Groundwater
- ☐ Vadose
- ☒ Boring
- ☐ Other

NUMBER OF WELLS TO BE DESTROYED

☐

MATERIALS TO BE USED

CASING	SEAL/BORING BACKFILL
Not Applicable X	☐ Neat Cement
Type	☐ Cement & Bentonite
Gauge	☐ Sand-Cement
Diameter	☐ Bentonite
Well Screen Size	☐ Other
Filter Pack	Borehole diameter 8"

Drilling Method
- ☒ Auger
- ☐ Mud Rotary
- ☐ Percussion
- ☐ Air Rotary
- ☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 30 ft.
Estimated depth of boring 50 ft.

Concrete surface seal	0 to 3
Annular seal	____ to
Bentonite transition seal	____ to
Filter Pack	____ to
Perforation	____ to

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 2/24/06

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE SIGNATURE See Attached DATE _____

PERMIT APPLICATION
GROUNDWATER
AND VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # _____
SAM CASE Y/N # _____
DATE RECEIVED: _____
FEE PAID: _____
CHECK # _____

A. RESPONSIBLE PARTY Morgan Run Resort - Club Corp of California LLC Phone 972 888 7490
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 3030 LBJ Freeway, Ste 300 City Dallas State TX Zip 75234
Contact Person David L Carlson Phone 972 888 7759 Ext. _____ Fax 972 888 7490

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM GeoTek
Mailing Address 1384 Poinsettia Ave Ste A City Vista State CA Zip 92081
Registered Professional Jeff Blake Registration # 2248 (PG, RCE) CEG
Circle if applicable
Contact Person Todd Schmitz Phone 760 8 221464 Ext. _____ Fax 760 599 0593

D. DRILLING COMPANY Pacific Drilling C57# 681380
Contact Name Todd Park
Mailing Address PO Box 84627 City San Diego State CA Zip 92138 4627
Phone 619 294 3682 Ext. _____ Fax 619 294 3283

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	25
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable X
Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other

Borehole diameter 8"

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 30 ft.
Estimated depth of boring 50 ft.

Concrete surface seal	0 to 3
Annular seal	___ to ___
Bentonite transition seal	___ to ___
Filter Pack	___ to ___
Perforation	___ to ___

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE _____

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE SIGNATURE [signature] CEG 2248 DATE 2-24-06

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 3021203600
   Site Name Morgan Run - Golf and Tennis
   Site Address 5690 Cancha De Golf City Rancho Santa Fe Zip 92091

   PROPERTY OWNER Club Corp Golf of California, LLC
   Phone 9728887759 Ext. Fax 9728887490
   Mailing Address 3030 LBJ Freeway, Suite 300, City Dallas State TX
   Zip 75234-

   NUMBER OF WELLS 5- **TYPE OF WELLS** Geotechnical

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2005, through June 30, 2006)

The County Board of Supervisors authorized a *10% credit, for the Fiscal Year ending June 30, 2006,* to be applied to the Department of Environmental Health customers. This credit is being provided to qualified fee-based programs that have contributed to the cost reduction/cost containment/cost avoidance efforts initiated by the Department. This *fee adjustment, for the Fiscal Year ending June 30, 2006,* is applicable to fees and permits due and/or obtained during this period. The 10% is not applicable to enforcement fees or fees relating to non-compliance of permit regulations.

ACTIVITY	FEE SCHEDULE FEE -- ONE-TIME FISCAL YEAR 10% CREDIT	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well $185.00 – 10% <$18.50> =	1 x $166.50 $ ~~166.50~~
Permit for Well Maintenance Inspection (Valid for three years)	$100.00 for first well maintenance inspection $100.00 – 10% <$10.00> =	1 x $ 90.00 $ ~~90.00~~
Each Additional New Well	$160.00 for each additional well installation $160.00 – 10% <$16.00> = $ 30.00 for each additional well maintenance inspection $ 30.00 – 10% <$ 3.00> =	1 x $144.00 $ 144.00 _____ x $ 27.00 $_____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$185.00 for the first boring $185.00 – 10% <$18.50> = $ 50.00 for each additional boring $ 50.00 – 10% <$ 5.00> =	1 x $166.50 $ 166.50 4 x $ 45.00 $ ~~45~~ 180
Permit for Well Destructions Only	$185.00 for the first destruction $185.00 – 10% <$18.50> = $120.00 for each additional destruction $120.00 – 10% <$12.00> =	1 x $166.50 $_____ _____ x $108.00 $_____
Permit for any Combination of Well Installations, Borings, & Destructions *(except UST backfill permit)* **Permit for any Combination of Well Installations, Borings, & Destructions** *(except UST backfill permit)*	The first activity will be $185.00. $185.00 – 10% <$18.50>= Additional activities will be as follows: $160.00 for each additional well $160.00 – 10% <$16.00> = $100.00 for first well maintenance inspection $100.00 – 10% <$10.00> = $ 30.00 for each additional well maintenance inspection $ 30.00 – 10% <$ 3.00> = $ 50.00 for each additional boring $ 50.00 – 10% <$ 5.00> = $120.00 for each well destruction $120.00 – 10% <$12.00> =	1 x $166.50 $_____ _____ x $144.00 $_____ 1 x $ 90.00$_____ _____ x $ 27.00 $_____ _____ x $ 45.00 $_____ _____ x $108.00 $_____
	TOTAL COST OF PERMIT	$ ~~526.50~~ 346.50
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	(Flat Fee) $320.00 – 10% <$32.00> =	$288.00

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction N/A

2. What is the purpose of the well/boring investigation? The geotechnical Borings will be back filled using Bentonite And if greater than 30 feet. The Borings will be backfilled with Bentonite using the Tremie Method.

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Continuous Auger Drilling and Cuttings will be monitored

4. What field procedures will be utilized to determine if contamination exists? N/A Geotechnical

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? N/A Geotechnical

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? N/A Geotechnical

7. How will samples be transported and preserved? N/A Geotechnical

8. What sampling methods will be used? Modified Split-barrel sampler and standard penetration sampler

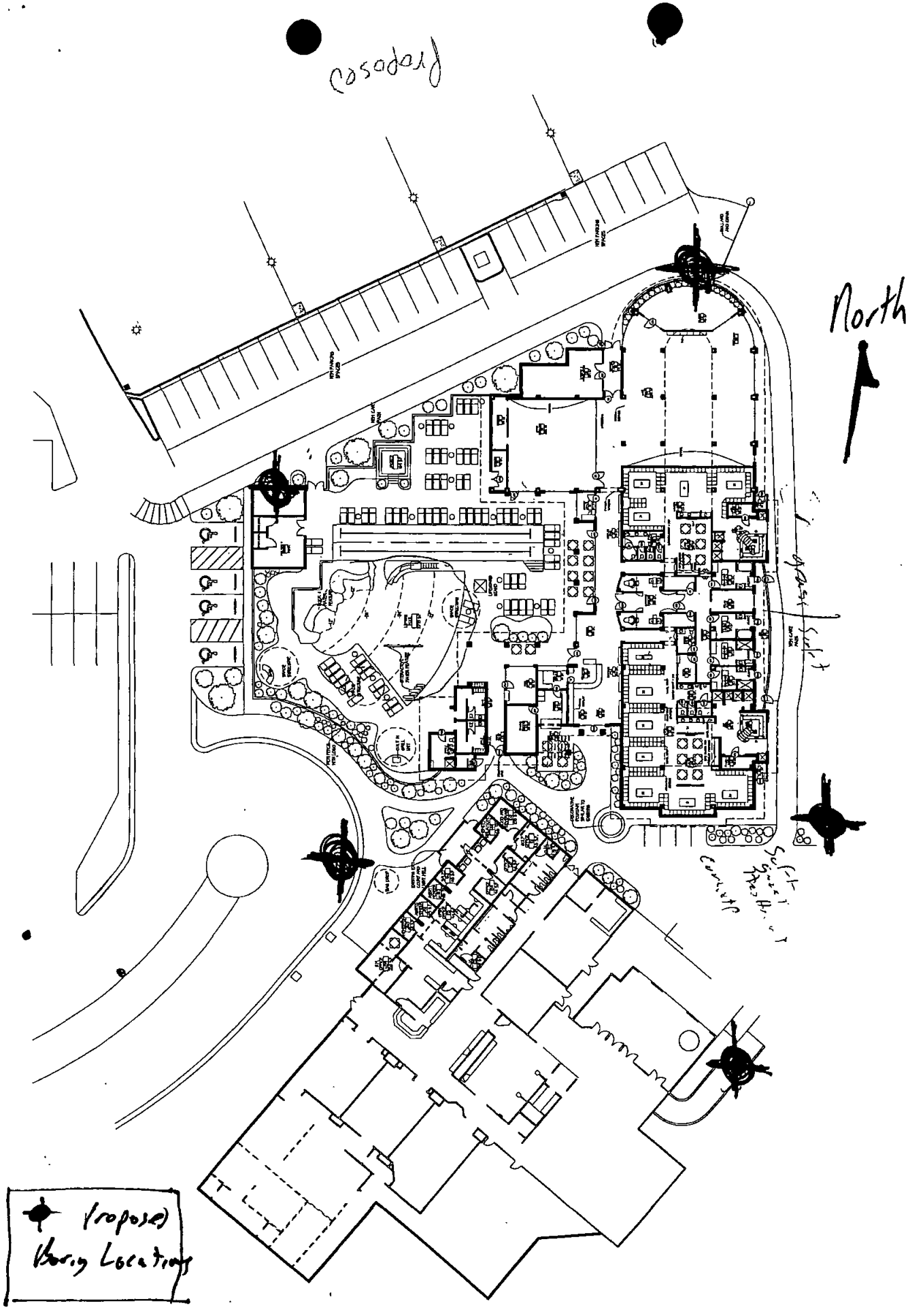
9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :N/A Geotechnical

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. N/A Geotechnical

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? N/A Geotechnical

12. What methods will be used to clean sampling equipment? TSP Wash - 3 bucket wash

13. What cleaning method will be used to clean casing and screen prior to installation? N/A Geotechnical


Proposed
North
Proposed
Boring Locations

RECEIVED
2006 FEB 27 AM 8:08

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address: X 5690 CANADA DE GOLF, RANCHO SANTA FE, CA 92091

Assessor's Parcel Number (APN): X 302.120.3600

I, X DAVID L. CARLSON (FOR MORGAN RUN RESORT & CLUB - CLUB CORP GOLF OF CALIFORNIA, L.L.C), owner of the property/properties listed above, give my permission to GEOTEK, INC (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 5 soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Jeff Blake (registered professional) of GeoTek, Inc. (consulting company) and an authorized signer for Cal Pac / Pacific Drilling (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: X David L. Carlson Date: X 2-19-06

Print Name: X DAVID L. CARLSON Title: X Senior Vice President

Company: X MORGAN RUN RESORT & CLUB - CLUB CORP GOLF OF CALIFORNIA, L.L.C.

Mailing Address: X 3030 LBJ FREEWAY, SUITE 300 DALLAS, TX 75234

PN: 266-283-03
PERMIT# LMON103947 / LMON102161
EST.# H36819-002
INSPECTION DATE: 10/11/07

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND & WATER QUALITY DIVISION

MONITORING WELL COMPLIANCE INSPECTION REPORT

RESPONSIBLE PARTY: Chevron Environmental Mgmt.
ATTN: Dana Thurman
6001 Bollinger Canyon Rd
San Ramon CA 94583

SITE NAME: FORMER CHEVRON STA. #9-2795
SITE ADDRESS: 6051 EL TORDO & OFF-SITE
RANCHO SANTA FE CA 92067

CONSULTANT: Secor International

DRILLER: Test America

NUMBER OF WELLS INSTALLED UNDER THESE PERMITS:

NUMBER OF BORINGS DRILLED/PROPERLY DESTROYED UNDER THIS PERMIT: 10 MW destroyed

COMMENTS:

No major violations at time of inspection.

Amelia Ceseña, Environmental Health Technician
Phone: (619) 338-2497
Fax: 619) 338-2315
amelia.cesena@sdcounty.ca.gov

PERMIT #LMON103947
A.P.N. #266-283-03
EST #H36819-002

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

MONITORING WELL DESTRUCTION PERMIT

SITE NAME: FORMER CHEVRON STATION #9-2795

SITE ADDRESS: 6051 EL TORDO RANCHO SANTA FE CA 92067

PERMIT TO: **DESTROY 10 GROUNDWATER MONITORING WELLS**

PERMIT APPROVAL DATE: MAY 2, 2006

PERMIT EXPIRES ON: AUGUST 30, 2006

RESPONSIBLE PARTY: CHEVRON ENVIRONMENTAL MGMT. CO.

PERMIT CONDITIONS:

1. **All material within the original borehole, which includes the casing, filterpack and annular seal must be removed. The borehole must be completely filled with an approved sealing material as specified in Department of Water Resources Bulletin 74-90.**

2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

3. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: Amelia Cesena AMELIA CESENA DATE: 5.2.2006

NOTIFIED: 5-2-06 AC

DEH:SAM-9075

4-22-06

T103947

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

Tony 4-20-04

RECEIVED

2006 APR 19 PM 4 06 4-30-04

OFFICE USE ONLY	
PERMIT LMON #	103947
SAM CASE (YN) #	H36819-002
DATE RECEIVED:	4-19-04
FEE PAID:	$1138.50
CHECK #	651475

Tony S.

Pop

A. RESPONSIBLE PARTY Chevron Environmental Management Company Phone (925) 842-1589
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 6001 Bollinger Canyon Rd K2236 City San Ramon State CA Zip 94583
Contact Person Mr. Dana Thurman Phone (925) 842-1589 Ext. N/A Fax (925) 842-8370

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # H36819-002

C. CONSULTING FIRM SECOR International Incorporated
Mailing Address 2655 Camino Del Rio N. Ste 302 City San Diego State CA Zip 92108
Registered Professional Clifford R. Pollock Registration # 514 (PG, RCE) CHG
Circle if applicable
Contact Person Reed Thornberry Phone (619) 296-6195 Ext. 291 Fax (619) 296-6199

D. DRILLING COMPANY Test America C57# 819548
Contact Name Manuel Marquez
Mailing Address 3620 Kurtz Street City San Diego State CA Zip 92110
Phone (619) 686-5800 Ext. N/A Fax (619) 686-5809

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☐ Boring	___
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☑ 10

MATERIALS TO BE USED

CASING	SEAL/BORING BACKFILL
Not Applicable ___	☐ Neat Cement
Type ___	☑ Cement & Bentonite
Gauge ___	☐ Sand-Cement
Diameter ___	☐ Bentonite
Well Screen Size ___	☐ Other
Filter Pack ___	Borehole diameter ___

Drilling Method

☑ Auger ☐ Air Rotary
☐ Mud Rotary ☐ Other
☐ Percussion

PROPOSED CONSTRUCTION

Estimated groundwater depth: ___ ft.
Estimated depth of boring ___ ft.

Concrete surface seal	0 to 3
Annular seal	___ to ___
Bentonite transition seal	___ to ___
Filter Pack	___ to ___
Perforation	___ to ___

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] DATE 4/19/06

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE SIGNATURE Clifford R. Pollock DATE 4/19/06

4-20-06 T/C Reed Thornberry needs to submit construction diagram & permit #. OK

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 266-283-03-00
   Site Name Former Chevron Station #9-2795
   Site Address 6051 El Tordo City Rancho Santa Fe Zip 92067
   PROPERTY OWNER Peter H. + Ronda D. Dutton Revocable Trust
   Phone NA Ext. NA Fax NA
   Mailing Address 38325 Highway 190 City Springville State CA Zip 92365
   NUMBER OF WELLS 10 **TYPE OF WELLS** Groundwater Monitoring

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____
   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State _____ Zip _____
   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____
   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State _____ Zip _____
   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____
   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State _____ Zip _____
   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

Permit Fees In Effect for July 1, 2005 - June 30, 2006

G. FEES (in effect beginning July 1, 2005, through June 30, 2006)

The County Board of Supervisors authorized a *10% credit, for the Fiscal Year ending June 30, 2006,* to be applied to the Department of Environmental Health customers. This credit is being provided to qualified fee-based programs that have contributed to the cost reduction/cost containment/cost avoidance efforts initiated by the Department. This *fee adjustment, for the Fiscal Year ending June 30, 2006,* is applicable to fees and permits due and/or obtained during this period. The 10% is not applicable to enforcement fees or fees relating to non-compliance of permit regulations.

ACTIVITY	FEE SCHEDULE FEE – ONE-TIME FISCAL YEAR 10% CREDIT	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	**$185.00 for the first monitoring well** **$185.00 – 10% <$18.50> =**	1 x $166.50 $_____
Permit for Well Maintenance Inspection **(Valid for three years)**	**$100.00 for first well maintenance inspection** **$100.00 – 10% <$10.00> =**	1 x $ 90.00 $_____
Each Additional New Well	**$160.00 for each additional well installation** **$160.00 – 10% <$16.00> =** **$ 30.00 *for each additional well maintenance* inspection** **$ 30.00 – 10% <$ 3.00> =**	_____ x $144.00 $_____ _____ x $ 27.00 $_____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes,* Temporary Well Points, etc.)	**$185.00 for the first boring** **$185.00 – 10% <$18.50> =** **$ 50.00 for each additional boring** **$ 50.00 – 10% <$ 5.00> =**	1 x $166.50 $_____ _____ x $ 45.00 $_____
Permit for **Well Destructions Only**	**$185.00 for the first destruction** **$185.00 – 10% <$18.50> =** **$120.00 for each additional destruction** **$120.00 – 10% <$12.00> =**	1 x $166.50 $ 166.50 9 x $108.00 $ 972.00
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)*** **Permit for any Combination of Well Installations, Borings, & Destructions** ***(except UST backfill permit)***	**The first activity will be $185.00.** **$185.00 – 10% <$18.50> =** **Additional activities will be as follows:** **$160.00 for each additional well** **$160.00 – 10% <$16.00> =** **$100.00 for first well maintenance inspection** **$100.00 – 10% <$10.00> =** **$ 30.00 for each additional well maintenance inspection** **$ 30.00 – 10% <$ 3.00> =** **$ 50.00 for each additional boring** **$ 50.00 – 10% <$ 5.00> =** **$120.00 for each well destruction** **$120.00 – 10% <$12.00> =**	1 x $166.50 $_____ _____ x $144.00 $_____ 1 x $ 90.00$_____ _____ x $ 27.00 $_____ _____ x $ 45.00 $_____ _____ x $108.00 $_____
	TOTAL COST OF PERMIT	$ 1,138.50 ✓
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	(Flat Fee) **$320.00 – 10% <$32.00> =**	**$288.00**

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction All monitoring wells will be overdrilled using continuous flight hollow stem augers to remove the filter pack and seal materials from the borehole annulus. After the removal of the well casings, the boreholes will be backfilled with cement-bentonite grout from the total depth of the borings to ground surface.

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? _____

4. What field procedures will be utilized to determine if contamination exists? _____

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? _____

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? _____

7. How will samples be transported and preserved? _____

8. What sampling methods will be used? _____

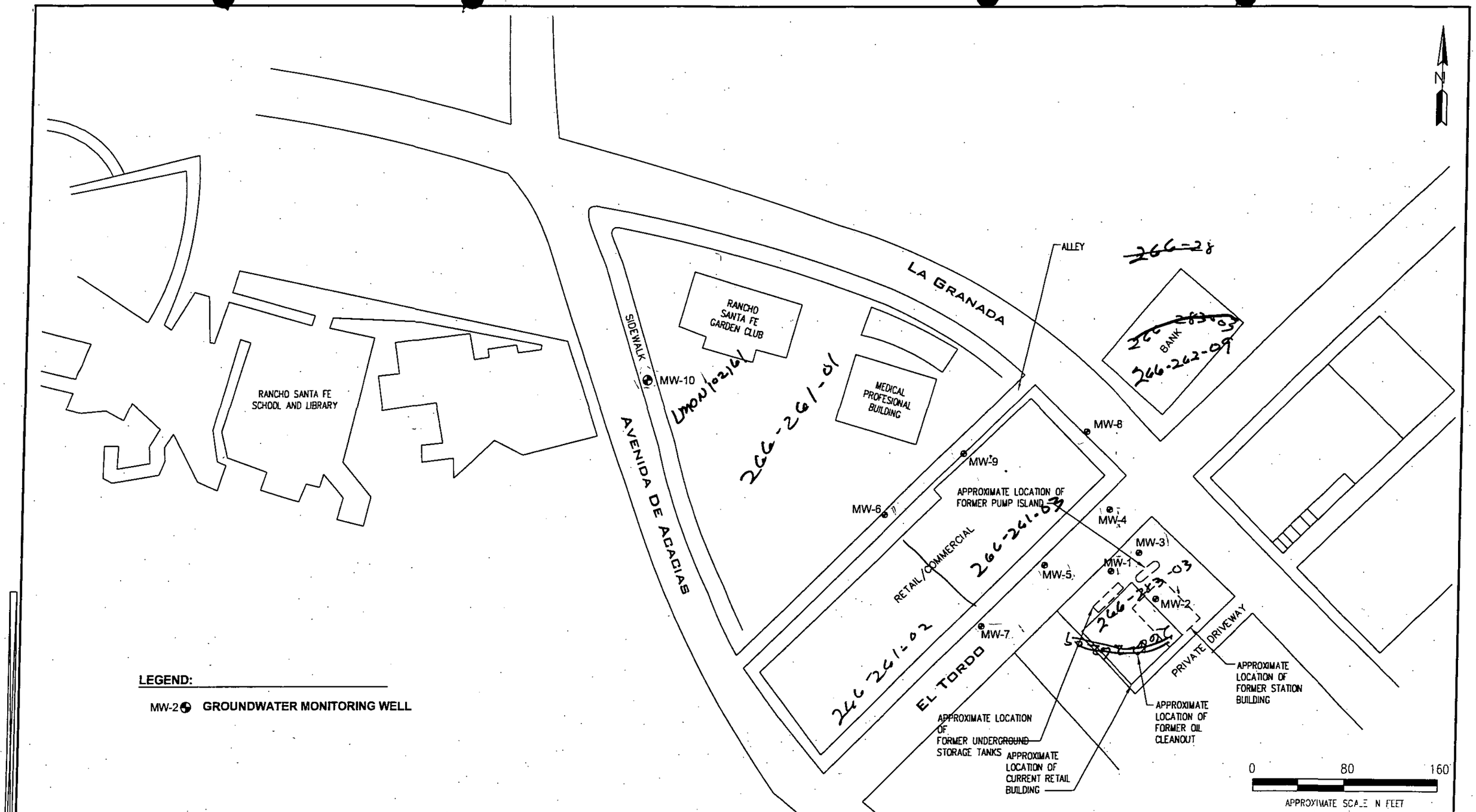
9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :_____

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. _____

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? _____

12. What methods will be used to clean sampling equipment? _____

13. What cleaning method will be used to clean casing and screen prior to installation? _____



LEGEND:

MW-2 **GROUNDWATER MONITORING WELL**

REFERENCE: Alton Geoscience, Site Assessment Report, November 5, 1998

DRAWN BY: LGH CHECKED: APPROVED: DATE: 3/28/05 JOB No.: MTCH.92795.08 CAD FILE: 92795SP3-05	PREPARED BY: SECOR 2655 Camino del Rio North, Suite 302 San Diego, California	PREPARED FOR: FORMER CHEVRON STATION #9-2795 6051 EL TORDO RANCHO SANTA FE, CALIFORNIA	FIGURE: 1 Site Plan

COUNTY OF SAN DIEGO

DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION
5201 Ruffin Road. Suite D
San Diego, CA 92123-4310
(858)694-2055

Permit Number
E 86076
(KIVA Code: 4930)

Issued: 10-MAR-2006
Expires: 31-JUL-2006
Kiva Project #: 06-0059045

EXCAVATION PERMIT

APPLICANT
SECOR INTERNATIONAL INC
2655 CAMINO DEL RIO NORTH
STE 302
SAN DIEGO, CA 92108
Res: 619-296-6195

OWNER
SECOR INTERNATIONAL INC
2655 CAMINO DEL RIO NORTH
STE 302

SAN DIEGO CA 92108
Phone: 619-296-6195

SITE ADDRESS: **THOMAS BROS**

ALONG EL TORDO, LA GRANADA, AVENIDA ACACIAS TB 1168 D3

APN:

QUANTITIES:

Excavation Length (feet):	Excavation Width (feet):	Excavation Depth (feet):
0.75	0.75	40

SCOPE OF WORK
Area: RANCHO SANTA FE Existing Surface: CONCRETE, ASPHALT
Purpose of Permit: TO ABANDON SIX GROUNDWATER MONITORING WELLS ALONG EL TORDO (MW-1, MW-4, MW-5 & MW-7), ALONG LA GRANADA (MW-8), & ALONG AVENIDA DE ACACIAS (MW-10) RANCHO SANTA FE
NOTES:
a) BMP'S TO BE ENFORCED AT ALL TIMES.
b) PERMITTEE SHALL OBTAIN TRAFFIC CONTROL PERMIT PRIOR TO START OF EXCAVATION. PLEASE CALL TRAFFIC ENGINEERING @ (858) 874-4025 FOR MORE INFORMATION.
c) COMPACTION REPORT REQUIRED
d) ALL ROAD REPAIRS AFFECTED BY THE WORK PERFORMED UNDER THIS EXCAVATION PERMIT SHALL BE TO THE SATISFACTION OF THE DPW CONSTRUCTION INSPECTION SECTION AND ROAD DIVISION.
e) IF TRENCH EXCEEDS FIVE (5) FEET IN VERTICAL DEPTH A CAL-OSHA PERMIT IS REQUIRED. PLEASE CALL CAL-OSHA @ (619) 767-2280.

Before you dig, call UNDERGROUND SERVICE ALERT at 1-800-422-4133.

Enter UNDERGROUND SERVICE ALERT Inquiry Identification Number here: _____

THIS PERMIT IS NOT VALID UNTIL AN INQUIRY NUMBER IS OBTAINED.

NOTIFY CONSTRUCTION INSPECTION at (858)694-3165 24 HOURS IN ADVANCE OF BEGINNING OF ANY PORTION OF WORK, COMPLETION OF WORK, BACK FILL OR CONCRETE POUR, AND OTHERWISE AS REQUIRED BY THE DIRECTOR OF PUBLIC WORKS.

Work to be performed in accordance with San Diego County Department of Public Works "Special Provisions for Work Done Under Excavation Permit".

Issuance of this permit does not authorize any work to be performed until the permission of the property owner has been obtained.

This permit is granted under provisions of Title 7 of the San Diego County Code of Regulatory Ordinances. It is understood and agreed upon that if this location is under construction, the consent of the contractor must be obtained. This installation is granted with the strict understanding that same is subject to relocation, change of grade, or removal at the Request of the Director, Department of Public Works. Permittee shall be responsible for any liability due to any accident, loss or damage resulting from the design or performance of work involved.

County of San Diego, Director of Public Works by: _____

Date Completed: _____ Inspector: _____

THIS PERMIT MUST BE KEPT ON THE WORK TO BE SHOWN TO ANY AUTHORIZED AGENT OF THE COUNTY UPON REQUEST.

County of San Diego

DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING SECTION

APPLICATION FOR TRAFFIC CONTROL PERMIT – Shoulder Closure / Alley Closure
(type of traffic control: flag, shift, etc.)

County of San Diego
DPW/Traffic Engineering Section
Traffic Control Permits, Mailstop O338
5469 Kearny Villa Road, Suite #201
San Diego, CA 92123-1159

TC # 0406-34

telephone/voice mail: (858) 874-4025
secretary: (858) 874-4040
fax: (858) 874-4028
e-mail: lisa.lonsdale@sdcounty.ca.gov

ENCROACHMENT/EXCAVATION/CONSTRUCTION PERMIT # E 860760

Applicant Information

Company: SECOR International Incorporated

Agent/Applicant: Reed Thornberry

Agent Phone Number: (619) 296-6195 x 291 Agent Fax Number: (619) 296-6199

Agent Mailing Address: 2655 Camino del Rio N. Ste 302

City San Diego State CA Zip Code 92108

Reason for Traffic Control: To abandon eight groundwater monitoring wells.

Start Date: Approx. 5/1/06 Start Time: 7:00 (*) a.m. / p.m.

Finish Date: Approx. 5/4/06 End Time: 3:30 (*) a.m. / p.m.

(*) LA GRANADA SHALL BE 8:30AM TO 5:30PM

It is requested that a permit be granted for traffic control on the following street/streets:

STREET 1 El Tordo (MW-1, MW-4, MW-5, + MW-7) From Street La Granada To Avenida de Acacias

STREET 2 La Granda (MW-8) From Street NW of El Tordo To

STREET 3 Avenida de Acacias (MW-10) El Tordo To La Granada

COMMUNITY Rancho Santa Fe Thomas Bros. Map Page and Grid # 1168 D3

STREET 4 Alleyway - NW of El Tordo + SW of La Granada (MW-6 + MW-9

Reed Thornberry 3/28/06
(Agent's or Applicant's Signature) (Date)

See Attached Plan (s) and Traffic Control Notes

This request is / ~~is not~~ approved.

Director, Department of Public Works

By Karel Shaffer 4/18/06
(For Road Commissioner)

CC: Construction Inspection
Ref: Sec 72.75. County Code of Regulatory Ordinances

WORK HOURS_____TO_____

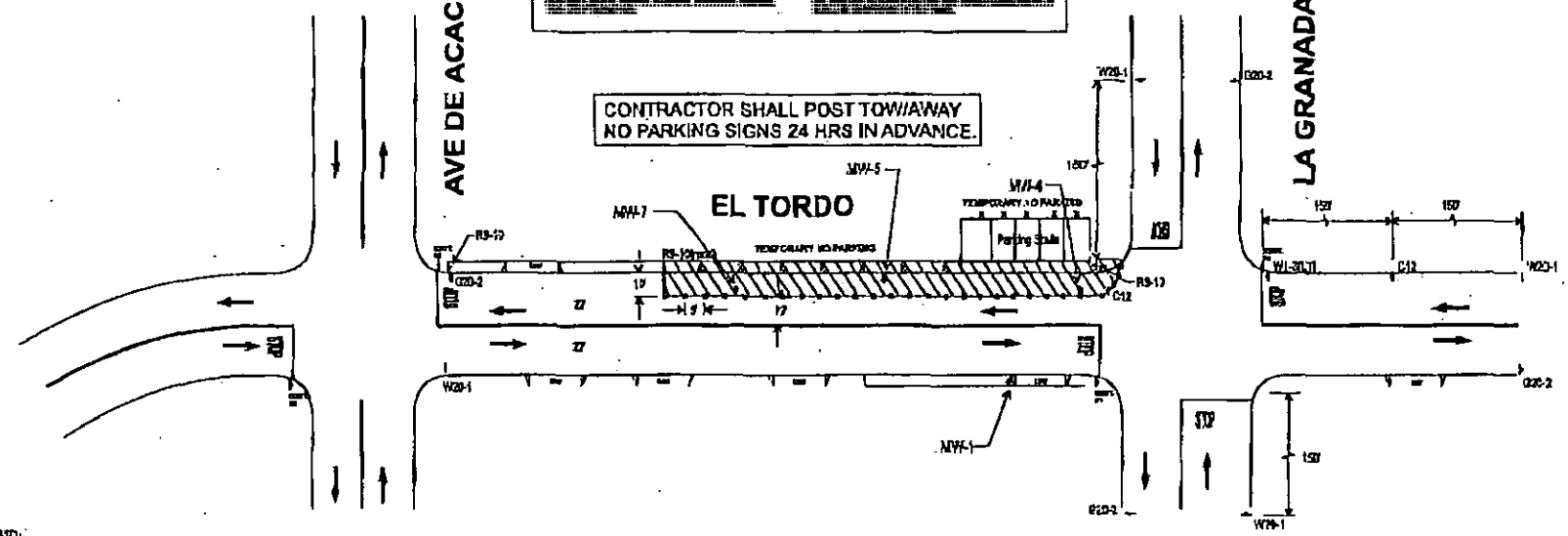
WORK DATES_____TO_____

STANDARD MUNICIPAL TRAFFIC CONTROL NOTES

[redacted]

NORTH

NO SCALE



LEGEND:

- WORK AREA
- CONE/DELINEATOR
- SIGN
- DIRECTION OF TRAVEL
- TYPE I BARRICADE
- NO PARK BARRICADE (POSTED 24 HRS IN ADVANCE)
- DRIVEWAY
- MONITORING WELL LOCATION

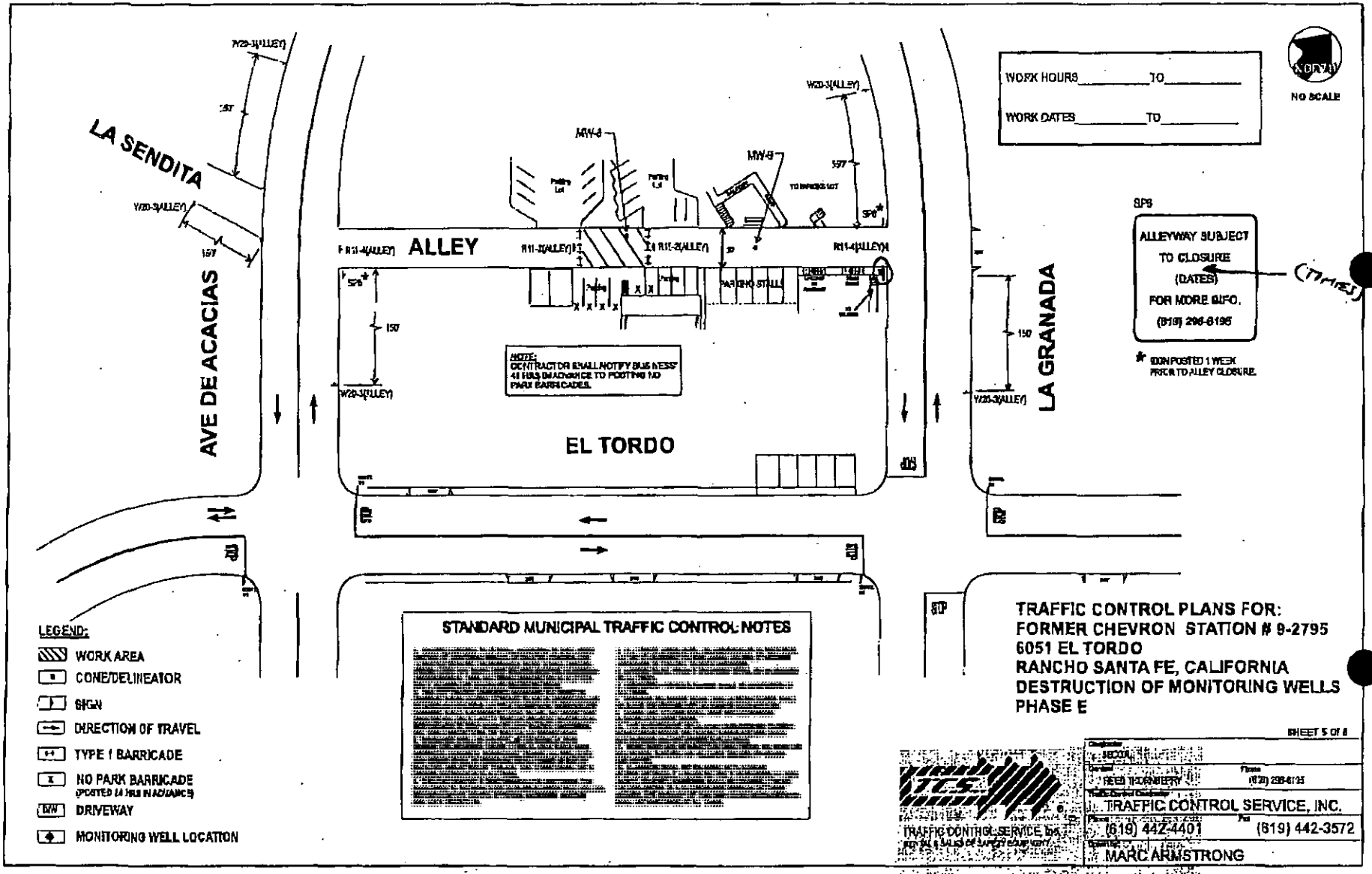
TRAFFIC CONTROL PLANS FOR:
FORMER CHEVRON STATION # 9-2795
6051 EL TORDO
RANCHO SANTA FE, CALIFORNIA
DESTRUCTION OF MONITORING WELLS
PHASE A

SHEET 1 OF 1

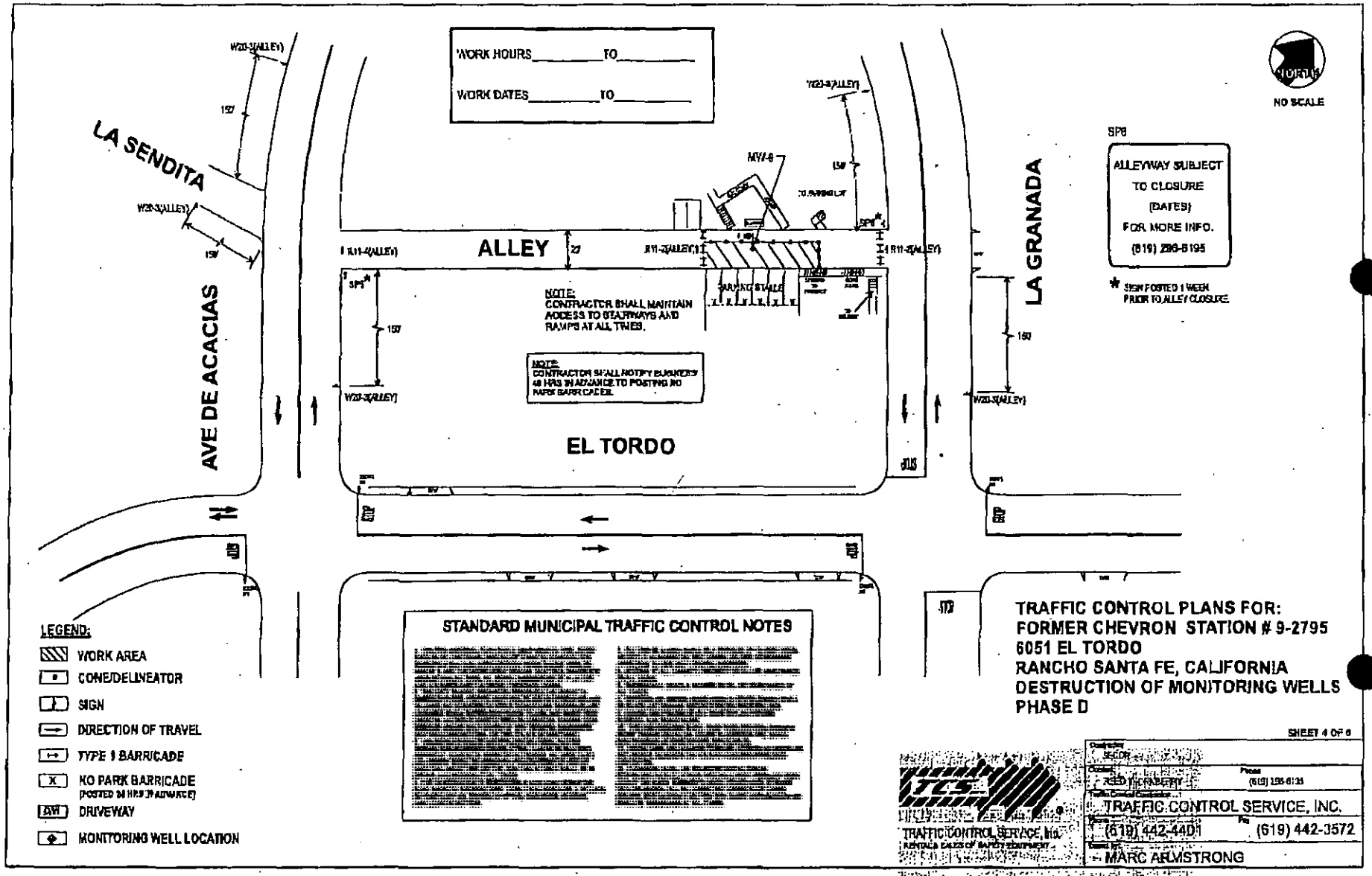
TRAFFIC CONTROL SERVICE, INC.

Phone (619) 442-4301 Fax (619) 442-3572

Drawn by MARC ARMSTRONG



LA SENDITA
AVE DE ACACIAS
ALLEY
EL TORDO
LA GRANADA
MW-8
MW-9
PARKING STALLS
NOTE:
CONTRACTOR SHALL NOTIFY BUSINESS 48 HRS IN ADVANCE TO POSTING NO PARK BARRICADES.
WORK HOURS _____ TO _____
WORK DATES _____ TO _____
NO SCALE
SP6
ALLEYWAY SUBJECT TO CLOSURE (DATES) FOR MORE INFO. (619) 296-6195
(TIMES)
* SIGN POSTED 1 WEEK PRIOR TO ALLEY CLOSURE.
STANDARD MUNICIPAL TRAFFIC CONTROL NOTES
LEGEND:
WORK AREA
CONE/DELINEATOR
SIGN
DIRECTION OF TRAVEL
TYPE 1 BARRICADE
NO PARK BARRICADE (POSTED 24 HRS IN ADVANCE)
DRIVEWAY
MONITORING WELL LOCATION
TRAFFIC CONTROL PLANS FOR:
FORMER CHEVRON STATION # 9-2795
6051 EL TORDO
RANCHO SANTA FE, CALIFORNIA
DESTRUCTION OF MONITORING WELLS
PHASE E
SHEET 5 OF 8
TRAFFIC CONTROL SERVICE, INC.
(619) 442-4401
(619) 442-3572
MARC ARMSTRONG

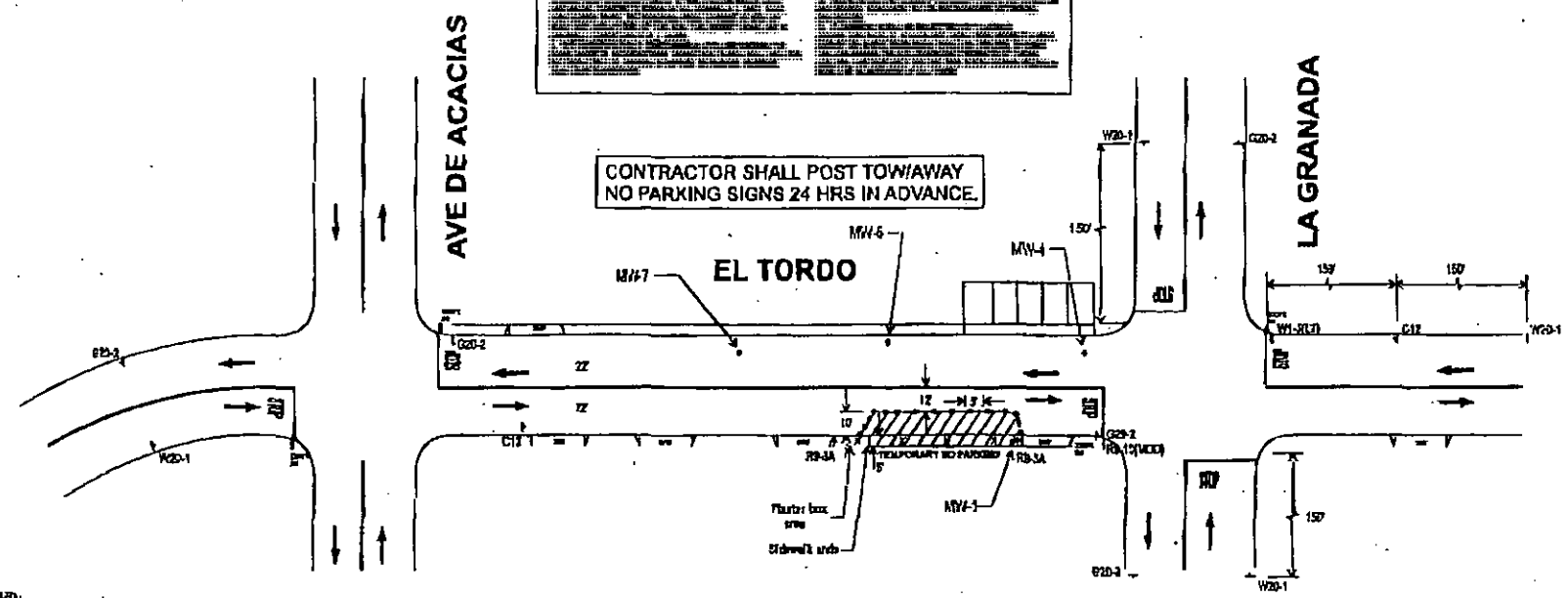

WORK HOURS _____ TO _____
WORK DATES _____ TO _____
NORTH
NO SCALE
LA SENDITA
AVE DE ACACIAS
ALLEY
EL TORDO
LA GRANADA
W20-3(ALLEY)
R11-4(ALLEY)
R11-2(ALLEY)
MW-8
SP6
ALLEYWAY SUBJECT TO CLOSURE (DATES) FOR MORE INFO. (619) 296-6195
* SIGN POSTED 1 WEEK PRIOR TO ALLEY CLOSURE
NOTE: CONTRACTOR SHALL MAINTAIN ACCESS TO STAIRWAYS AND RAMPS AT ALL TIMES.
NOTE: CONTRACTOR SHALL NOTIFY BUSINESS 48 HRS IN ADVANCE TO POSTING NO PARK BARRICADES.
LEGEND:
WORK AREA
CONE/DELINEATOR
SIGN
DIRECTION OF TRAVEL
TYPE 1 BARRICADE
NO PARK BARRICADE (POSTED 24 HRS IN ADVANCE)
DRIVEWAY
MONITORING WELL LOCATION
STANDARD MUNICIPAL TRAFFIC CONTROL NOTES
TRAFFIC CONTROL PLANS FOR:
FORMER CHEVRON STATION # 9-2795
6051 EL TORDO
RANCHO SANTA FE, CALIFORNIA
DESTRUCTION OF MONITORING WELLS
PHASE D
SHEET 4 OF 6
TCS
TRAFFIC CONTROL SERVICE, Inc.
RENTAL & SALES OF SAFETY EQUIPMENT
SECOR
REED THORNBERRY
(619) 296-6135
TRAFFIC CONTROL SERVICE, INC.
(619) 442-4401
(619) 442-3572
MARC ARMSTRONG

WORK HOURS_____TO_____

WORK DATES_____TO_____

STANDARD MUNICIPAL TRAFFIC CONTROL NOTES

NO SCALE



LEGEND:

- WORK AREA
- CONE/DELINEATOR
- SIGN
- DIRECTION OF TRAVEL
- TYPE 1 BARRICADE
- NO PARK BARRICADE (POSTED 24 HRS IN ADVANCE)
- DRIVEWAY
- MONITORING WELL LOCATION

TRAFFIC CONTROL PLANS FOR:
FORMER CHEVRON STATION # 9-2795
6051 EL TORDO
RANCHO SANTA FE, CALIFORNIA
DESTRUCTION OF MONITORING WELLS
PHASE B

SHEET 2 OF 8

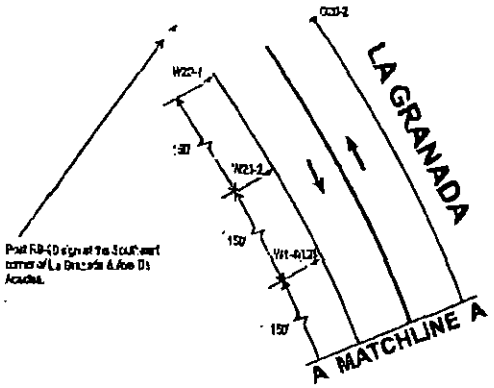
TCS
TRAFFIC CONTROL SERVICE, Inc.

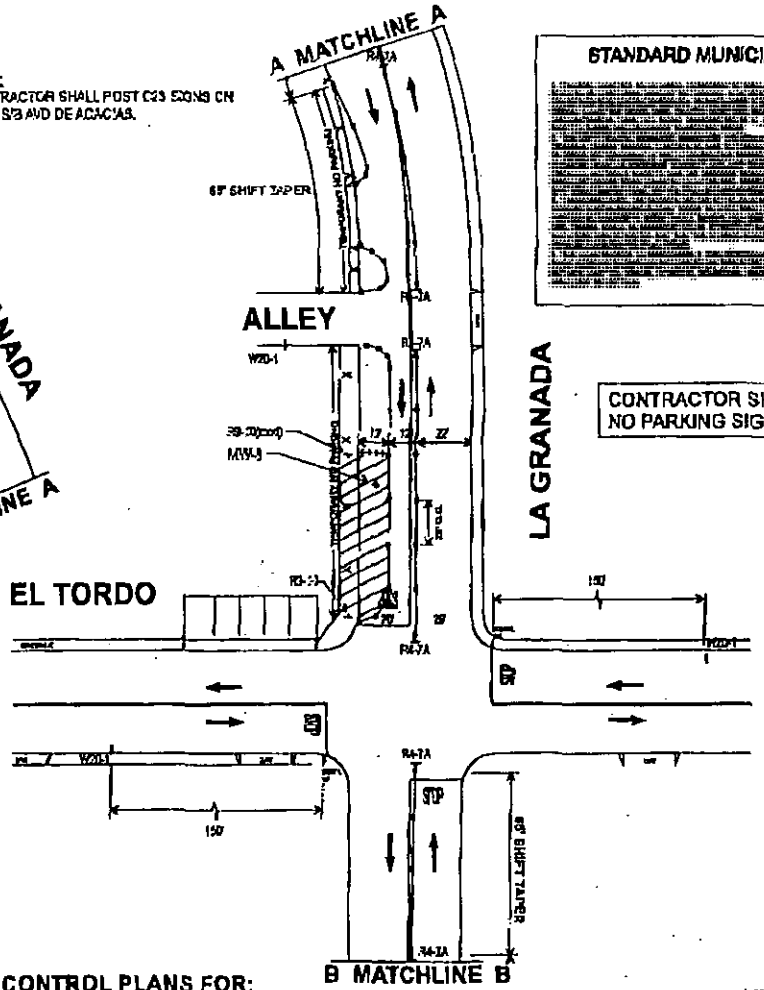
Contractor: SECOR	
Contact: SEED THORNBERRY	Phone: (619) 225-6195
Traffic Control Contractor: TRAFFIC CONTROL SERVICE, INC.	
Phone: (619) 442-4401	Fax: (619) 442-3572
Drawn by: MARC ARMSTRONG	

WORK HOURS_____TO_____

WORK DATES_____TO_____

NOTE:
CONTRACTOR SHALL POST C23 SIGNS ON NB & SB AVD DE ACACIAS.

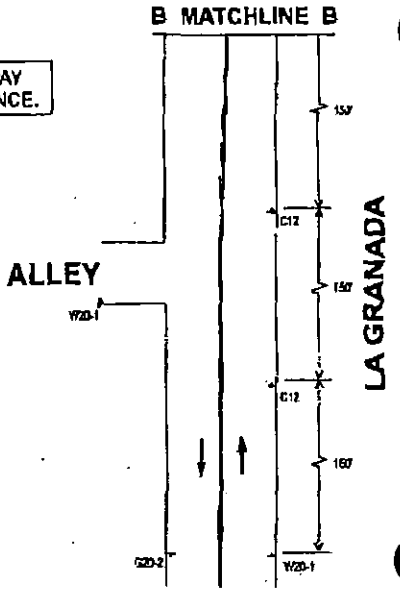




STANDARD MUNICIPAL TRAFFIC CONTROL NOTES

NO SCALE

CONTRACTOR SHALL POST TOW/AWAY
NO PARKING SIGNS 24 HRS IN ADVANCE.



LEGEND:

- WORK AREA
- CONE/DELINEATOR
- SIGN
- DIRECTION OF TRAVEL
- TYPE I BARRICADE
- NO PARK BARRICADE (POSTED 24 HRS IN ADVANCE)
- DRIVEWAY
- MONITORING WELL LOCATION

TRAFFIC CONTROL PLANS FOR:
FORMER CHEVRON STATION # 9-2795
6051 EL TORDO
RANCHO SANTA FE, CALIFORNIA
DESTRUCTION OF MONITORING WELLS
PHASE C

SHEET 3 OF 6

TRAFFIC CONTROL SERVICE, INC.
RENTAL & SALES OF SAFETY EQUIPMENT

Contractor: LECOR
Contact: REED THORNBERRY
Phone: (619) 298-6195
Traffic Control Contractor: TRAFFIC CONTROL SERVICE, INC.
Phone: (619) 442-4401
Fax: (619) 442-3572
Drawn by: MARC ARMSTRONG

STANDARD MUNICIPAL TRAFFIC CONTROL NOTES

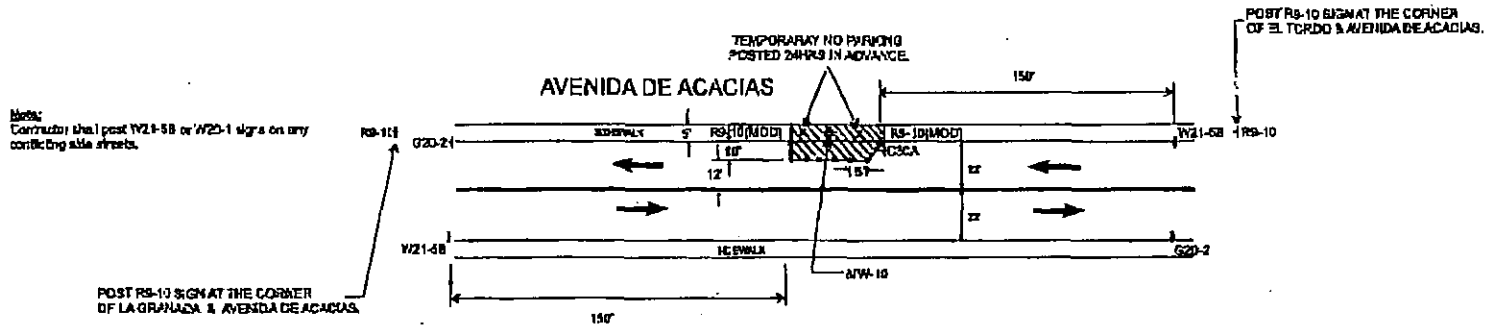
WORK HOURS _____ TO _____

WORK DATES _____ TO _____

NO SCALE

TYPICAL SHOULDER CLOSURE

TO BE USED AT THE FOLLOWING LOCATION:
- AVENIDA DE ACACIAS BTWN & EL TORDO & LA GRANADA.



LEGEND:

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- CONE/DELINEATOR
- SIGN
- DIRECTION OF TRAVEL
- TYPE 1 BARRICADE
- NO PARK BARRICADE (POSTED 24 HRS IN ADVANCE)
- DRIVEWAY
- MONITORING WELL LOCATION

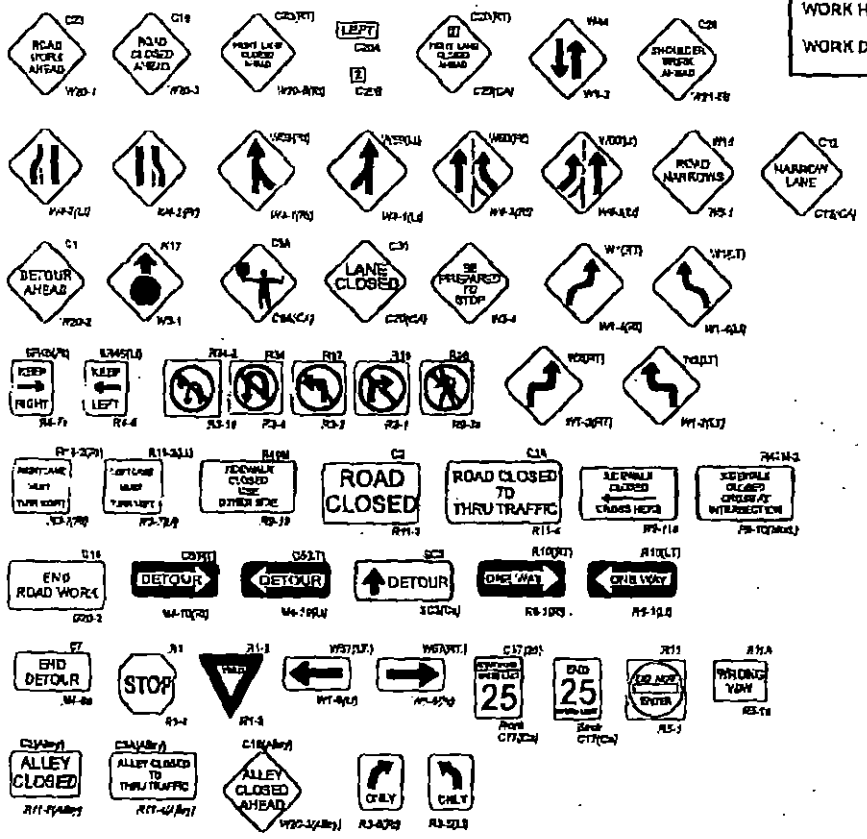
TRAFFIC CONTROL PLANS FOR:
FORMER CHEVRON STATION # 9-2795
6051 EL TORDO
RANCHO SANTA FE, CALIFORNIA
DESTRUCTION OF MONITORING WELLS
PHASE F

TCS
TRAFFIC CONTROL SERVICE, Inc.
RENTAL & SALES OF SAFETY EQUIPMENT

SHEET 1 OF 8

Contractor: SECOR	
Contact: REED THORNBERRY	Phone: (619) 296-3195
Traffic Control Contractor: TRAFFIC CONTROL SERVICE, INC.	
Phone: (619) 442-4401	Fax: (619) 442-3572
Drawn by: MARC ARMSTRONG	

SIGN LEGEND



WORK HOURS_____TO_____

WORK DATES_____TO_____

STANDARD MUNICIPAL TRAFFIC CONTROL NOTES

All plans must be checked and approved by the governmental agency, or agencies, having jurisdiction over the roadways shown on this plan prior to the plan being put into effect. All plans are intended to conform to the Manual on Uniform Traffic Control Devices. The customer / contractor is responsible for ascertaining additional agency requirements for work hours allowed, noise abatement, and other rules and regulations.

The temporary traffic controls must be installed per the agency approved plan to be effective. Field changes, other than minor adjustment, must be authorized in writing by a representative of the governmental agency, or agencies, having jurisdiction over the roadway.

Plan implantation and device placement should be performed by experienced / trained personnel.

Temporary traffic controls must be monitored and maintained by the customer contractor to remain effective. Monitoring and maintenance frequency is dictated by field conditions, but not less than daily.

Traffic Control Service, Inc has no control over, or responsibility for, traffic control plan implementation and inspections performed by others. Users agree to indemnify Traffic Control Service, Inc for claims made regarding failure to install, maintain or remove controls per approved traffic control plans.

TRAFFIC CONTROL PLANS FOR:
FORMER CHEVRON STATION # 9-2795
6051 EL TORDO
RANCHO SANTA FE, CALIFORNIA
DESTRUCTION OF MONITORING WELLS

TRAFFIC CONTROL SERVICE, Inc.

TRAFFIC CONTROL SERVICE,INC.

(619) 296-6195

(619) 442-4401

MARC ARMSTRONG

PERMIT #LMON104020
A.P.N. #269-060-01
EST #NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: WILLOW GLEN CREEK

SITE ADDRESS: 16107 VIA DE SANTA FE RANCHO SANTA FE CA 92067

PERMIT FOR: **15 GEOTECHNICAL SOIL BORINGS**

PERMIT APPROVAL DATE: JUNE 2, 2006

PERMIT EXPIRES ON: SEPTEMBER 30, 2006

RESPONSIBLE PARTY: ART AND CATHERINE NICHOLAS

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

3. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. **(http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html).** In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

4. **This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH.** Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

5. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

APPROVED BY Amelia C. Seña Date: 6.2.2006
AMELIA CESEÑA

NOTIFIED: 6-2-06

DEH:SAM-9075

5-23-06

T104020

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

9-30-06

RECEIVED 2006 MAY 23 AM 8 47

OFFICE USE ONLY
PERMIT LMON # 104020
SAM CASE Y/N # None
DATE RECEIVED: 5-23-06
FEE PAID: $896.50
CHECK # 56904

A. RESPONSIBLE PARTY Art and Catherine Nicholas E. H. Phone 858-735-6875
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address P.O. Box 641 City Solana Beach State Ca Zip 92075
Contact Person Tom Nelson Phone 858-735-6875 Ext. ____ Fax 858-756-9060

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # N/A

C. CONSULTING FIRM Southern California Soil & Testing, Inc.
Mailing Address P.O. Box 600627 City San Diego State Ca Zip 92160
Registered Professional Garrett Fountain Registration # 63885 (PG, RCE) Circle if applicable
Contact Person Amanda Silverstrom Phone 619-280-4321 Ext. 214 Fax ____

D. DRILLING COMPANY Grego Drilling & Testing, Inc. C57# 485165
Contact Name Joanna McKeehan
Mailing Address 2726 Walnut Avenue City Signal Hill State CA Zip 90755
Phone 562-427-6899 Ext. ____ Fax 562-424-2329

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	15
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable X
Type ____
Gauge ____
Diameter ____
Well Screen Size ____
Filter Pack ____

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
Borehole diameter 8" - 2" - 60'

Drilling Method
☐ Auger
☒ Mud Rotary
☐ Percussion
☐ Air Rotary
☒ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 5 ft.
Estimated depth of boring 100 ft.
Concrete surface seal 0 to 3
Annular seal ____ to ____
Bentonite transition seal Surface to Bottom
Filter Pack ____ to ____
Perforation ____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] Joanna McKeehan DATE 5/22/06

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE SIGNATURE [signature] DATE 5/22/06

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 269-06-01 & 269-06-02
   Site Name Willow Glen Creek
   Site Address 16107 Via De Santa Fe City Rancho Santa Fe Zip 92067
   PROPERTY OWNER Art and Catherine Nicholas
   Phone 858-755-6875 Ext. _____ Fax 858-756-9040
   Mailing Address P.O. Box 641 City Solana Beach State Ca Zip 92075
   NUMBER OF ~~WELLS~~ Borings **TYPE OF ~~WELLS~~** Geotechnical Borings

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____
   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State _____ Zip _____
   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____
   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State _____ Zip _____
   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____
   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State _____ Zip _____
   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2005, through June 30, 2006)

The County Board of Supervisors authorized a *one-time 10% credit* to be applied to the Department of Environmental Health customers. This credit is being provided to qualified fee-based programs that have contributed to the cost reduction/cost containment/cost avoidance efforts initiated by the Department. This is a *one-time fee adjustment* and is applicable to fees and permits due and/or obtained during the period of July 1, 2005 through June 30, 2006. The 10% is not applicable to enforcement fees or fees relating to non-compliance of permit regulations.

ACTIVITY	FEE SCHEDULE FEE – ONE-TIME FISCAL YEAR 10% CREDIT	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	**$185.00 for the first monitoring well** **$185.00 – 10% <$18.50> =**	1 x $166.50 $_____
Permit for Well Maintenance Inspection **(Valid for three years)**	**$100.00 for first well maintenance inspection** **$100.00 – 10% <$10.00> =**	1 x $ 90.00 $_____
Each Additional New Well	**$160.00 for each additional well installation** **$160.00 – 10% <$16.00> =** **$ 30.00 for each additional well maintenance inspection** **$ 30.00 – 10% <$ 3.00> =**	_____ x $144.00 $_____ _____ x $ 27.00 $_____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes,* Temporary Well Points, etc.)	**$185.00 for the first boring** **$185.00 – 10% <$18.50> =** **$ 50.00 for each additional boring** **$ 50.00 – 10% <$ 5.00> =**	1 x $166.50 $ 166.50 14 x $ 45.00 $ 630.00
Permit for Well Destructions Only	**$185.00 for the first destruction** **$185.00 – 10% <$18.50> =** **$120.00 for each additional destruction** **$120.00 – 10% <$12.00> =**	1 x $166.50 $_____ _____ x $108.00 $_____
Permit for any Combination of Well Installations, Borings, & Destructions (*except UST backfill permit*) **Permit for any Combination of Well Installations, Borings, & Destructions (*except UST backfill permit*)**	**The first activity will be $185.00.** **$185.00 – 10% <$18.50> =** **Additional activities will be as follows:** **$160.00 for each additional well** **$160.00 – 10% <$16.00> =** **$100.00 for first well maintenance inspection** **$100.00 – 10% <$10.00> =** **$ 30.00 for each additional well maintenance inspection** **$ 30.00 – 10% <$ 3.00> =** **$ 50.00 for each additional boring** **$ 50.00 – 10% <$ 5.00> =** **$120.00 for each well destruction** **$120.00 – 10% <$12.00> =**	1 x $166.50 $_____ _____ x $144.00 $_____ 1 x $ 90.00$_____ _____ x $ 27.00 $_____ _____ x $ 45.00 $_____ _____ x $108.00 $_____
	TOTAL COST OF PERMIT	$796.50
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	(Flat Fee) **$320.00 – 10% <$32.00> =**	**$288.00**

H. **QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.**

1. If wells are to be destroyed, provide a description of method of destruction N/A

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Seal Boring

4. What field procedures will be utilized to determine if contamination exists? Visual

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? N/A

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? N/A

7. How will samples be transported and preserved? Plastic bags and cloth bags transported in truck

8. What sampling methods will be used? Cal pen and standard pen drive samples and shovel for bulk samples

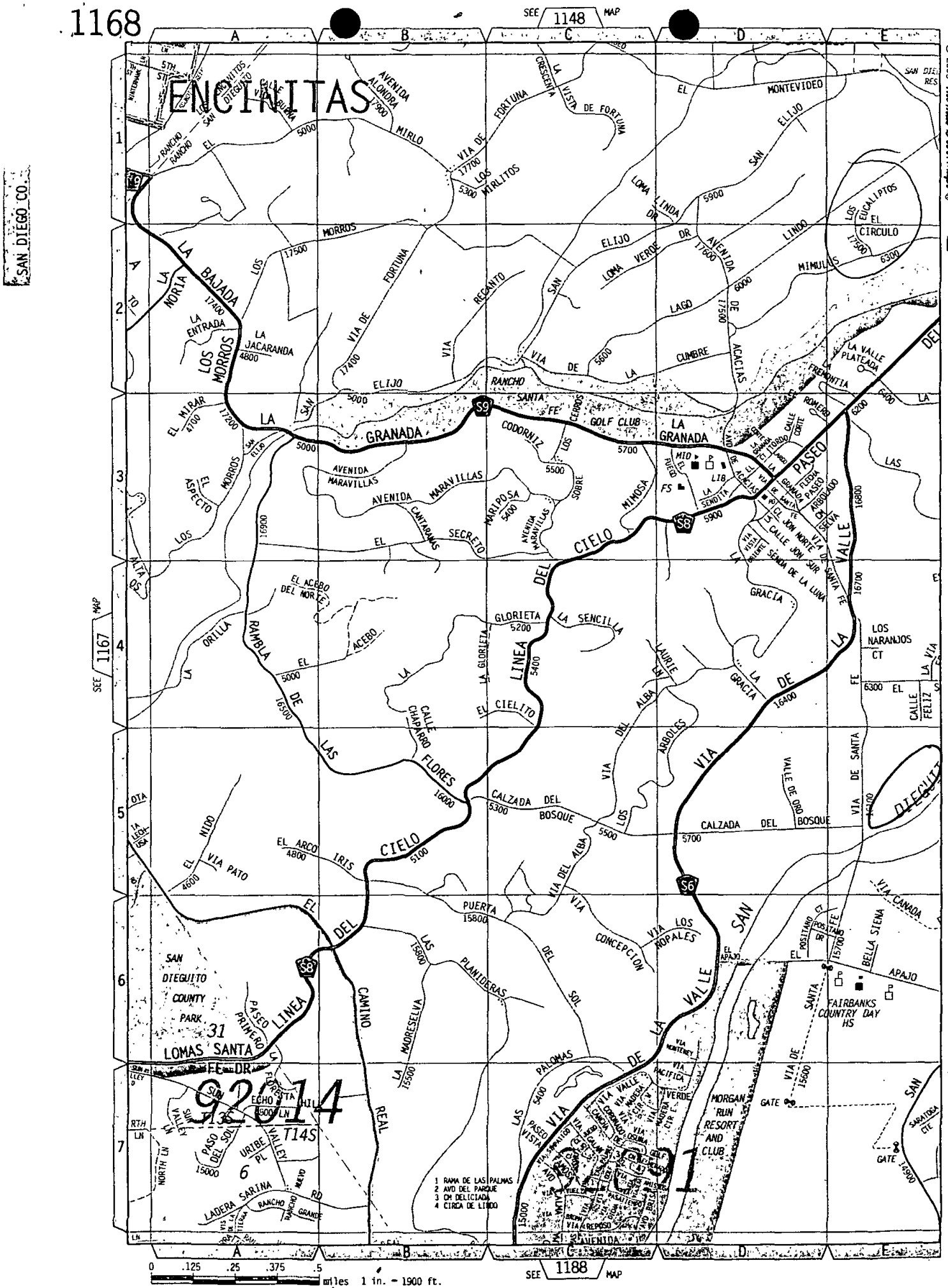
9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Grouridwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :N/A

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. N/A

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Visual observation of drilling equipment

12. What methods will be used to clean sampling equipment? Wash with water

13. What cleaning method will be used to clean casing and screen prior to installation? N/A


SEE 1148 MAP
ENCINITAS
SAN DIEGO CO.
LA BAJADA
LA NORIA
LOS MORROS
LA GRANADA
RANCHO SANTA FE GOLF CLUB
PASEO DEL VALLE
LINEA DEL CIELO
RAMBLA DE LAS FLORES
VIA DE LA VALLE
SAN DIEGUITO COUNTY PARK
LOMAS SANTA FE DR
CAMINO REAL
MORGAN RUN RESORT AND CLUB
FAIRBANKS COUNTRY DAY HS
SEE 1167 MAP
SEE 1188 MAP
92014
92091
1 RAMA DE LAS PALMAS
2 AVD DEL PARQUE
3 CM DELICIADA
4 CIRCA DE LINDO
0 .125 .25 .375 .5 miles 1 in. - 1900 ft.
© 2005 Thomas Bros. Maps®

Calle Feliz
Valle De Oro
16107 Via de Santa Fe, Rancho Santa Fe, California
Calzada Del Bosque
Calle Del Campanero
Bella Sierra
El Apajo
© 2006 Europa Technologies
© 2006 Navteq
Google

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2377
1-800-253-9933

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address: 16107 VIA DE SANTA FE
Rancho Santa Fe, Ca 92067

Assessor's Parcel Number (APN): 269-06-01
269-06-02

I, _____ owner of the property/properties listed above, give my permission to Southern California Soil & Testing (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 14 soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Dan Adler (registered professional) of SCS&T (consulting company) and authorized signer for Greg Drilling & Testing (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: _____ Date: 5-19-06

Print Name: ART NICHOLAS Title: ~~OWNER~~ Authorized agent for Wagonhound Land & Livestock West, LLC

Company: _____

DEH:SAM-8503 (Rev. 1-04)

Mailing Address: P.O. Box 2828 DEL MAR, CA, 4. 92014

05/19/2006 11:48 FAX 8587569060 WCR Construction Office 003

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

JACK MILLER
ASSISTANT DIRECTOR

PAST DUE NOTICE

December 2, 2007

Mark Bryant
Bryant GeoEnvironmental, Inc
562 Kristen Court
Encinitas, CA 92024

Dear Mr. Bryant:

MONITORING WELL PERMIT #LMON 104140	**ESTAB. # H33970-001**	**A.P.N. 302-301-10-00**

Fairbank Cleaners, 16087 San Dieguito Rd., Rancho Santa Fe, CA 92067

The Department of Environmental Health (DEH), Monitoring Well Program (MWP) has no record of receiving a report for work completed under this permit as required by San Diego County Code, Section 67.447.

A complete and accurate well/boring report must be submitted within **sixty days** of completing the work covered by the permit. Submit the sixty-day report to the Well Permit Desk at the address shown above **December 27, 2007.**

A checklist is enclosed to assist you in providing the data that must be included in a complete report. Please be advised that incomplete reports will be returned.

Please call me at 619-338-2013 if have any questions regarding this letter.

Thank you for your cooperation.

Sincerely,

M Crystal

Marisue Crystal, Environmental Health Technician
Monitoring Well Program
Site Assessment and Mitigation Program

Enclosure

cc: **Charles Covella, Del Rayo Village Owners, LLC**

PERMIT #LMON104140
A.P.N. # 302-301-10-00
EST # H33970-001

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
SOIL BORING CONSTRUCTION PERMIT

SITE NAME: FAIRBANK CLEANERS

SITE ADDRESS: 16087 SAN DIEGUITO RD., RANCHO SANTA FE, CA 92067

PERMIT FOR: **12 SOIL BORINGS**

PERMIT APPROVAL DATE: JULY 27, 2006

PERMIT EXPIRES ON: NOVEMBER 24, 2006

RESPONSIBLE PARTY: DEL RAYO VILLAGE OWNER, LLC

PERMIT CONDITIONS:

1. **Note that direct push borings are not exempt from MWP requirements to submit a detailed log for each boring as described in the SAM manual Section 5.3(3).**

2. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

3. All borings must be properly destroyed within 24 hours of drilling.

4. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

5. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

6. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

7. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: _____ DATE: 07/27/2006
ERNIE L. PROFETA

NOTIFIED: ley v may 7/27/06 EP

DEH: SAM-9075 (1/06)

dk 7/14

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH

PRIVATE VAP **MEMORANDUM** H33970-001

TO: DAVID Felix **DATE:** 7/14/06

FROM: **ERNIE PROFETA**

RE: **ATTACHED WELL/BORING PERMIT APPLICATION (S)**

Would you please review the attached application(s) and return to me with your comments?
Thank you. Drill 12 Direct Push Borings.

7/24/06
SAM Project Mgr Date

Refer to James Clay : yes ____ no X

TEXT TO BE INSERTED IN PERMIT AS A NOTE OR CONDITION (CIRCLE ONE)

James Clay

ok 7/14

T104140

DAVE Felix 7/14

OFFICE USE ONLY
PERMIT LMON # 104140
SAM CASE/YN # H33970-001
DATE RECEIVED: 7-14-06
FEE PAID: $735.00
CHECK # 2490

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

RECEIVED
2006 JUL 14 AM 9 44
D. E. H.
MAILROOM

PRIVATE VAP

A. RESPONSIBLE PARTY Del Rayo Village Owner, LLC Phone 858-756-0080
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address P.O. Box 675451 City Rancho Santa Fe State CA Zip 92067
Contact Person Charles Covello Phone 858-756-0080 Ext. ___ Fax 858-756-1304

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # H33970-001 – D. Felix

C. CONSULTING FIRM Bryant GeoEnvironmental Inc.
Mailing Address 562 Kristen Court City Encinitas State CA Zip 92024
Registered Professional Mark E. Bryant Registration # 3569 (RG)
Contact Person Mark Bryant Phone 760-942-4455 Ext. ___ Fax 760-942-4485

D. DRILLING COMPANY H&P mobile C57# 769131
Contact Name ___
Mailing Address 2470 Impala Drive City Carlsbad State CA Zip 92010
Phone 760-804-9678 Fax 760-804-9159

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	12
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable ✓
Type ___
Gauge ___
Diameter ___
Well Screen Size ___
Filter Pack ___

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 2"

Drilling Method
☐ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☒ Other Direct-Push

PROPOSED CONSTRUCTION
Estimated groundwater depth: 15 ft.
Estimated depth of boring 20 ft.

Concrete surface seal	0 to 3
Annular seal	___ to ___
Bentonite transition seal	___ to ___
Filter Pack	___ to ___
Perforation	___ to ___

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] DATE 7-12-06

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE [signature] DATE July 12, 2006

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 302-301-10
Site Name Del Rayo Village (Fairbank Cleaners)
Site Address 16087 San Dieguito Rd. City Rancho Santa Fe Zip 92067

PROPERTY OWNER Del Rayo Village Owners, LLC
Phone 858-756-0080 Ext. Fax 858-756-1304
Mailing Address P.O. Box 675451 City Rancho Santa Fe State CA Zip 92067

NUMBER OF WELLS NA **TYPE OF WELLS** _____
12 borings

2. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2006, through June 30, 2007)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well	**$185.00**
Permit for Well Maintenance Inspection (Valid for three years)	$100.00 for first well maintenance inspection	**$100.00**
Each Additional New Well	$160.00 for each additional well installation	___ x **$160.00** _____
	$ 30.00 for each additional well maintenance inspection	___ x **$30.00** _____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$185.00 for the first boring	1 x **$185.00** 185.00
	$ 50.00 for each additional boring	11 x **$50.00** 550.00
Permit for Well Destructions Only	$185.00 for the first destruction	___ x **$185.00**
	$120.00 for each additional destruction ...	___ x **$120.00**
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $185.00	___ x **$185.00** _____
	Additional activities will be as follows:	
	$160.00 for each additional well	___ x **$160.00** _____
	$100.00 for first well maintenance inspection	___ x **$100.00** _____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** _____
	$ 50.00 for each additional boring	___ x **$ 50.00** _____
	$120.00 for each well destruction	___ x **$120.00** _____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	**$320.00**
	TOTAL COST OF PERMIT	$735.00

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction _____

2. What is the purpose of the well/boring investigation?

   ☒ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? boring back filled/sealed immediately following completion of boring.

4. What field procedures will be utilized to determine if contamination exists? collection of vapor, soil and groundwater samples.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? all samples to be analyzed.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? _____ chlorinated compounds (dry cleaning solvent) 8260B

7. How will samples be transported and preserved? mobile lab

8. What sampling methods will be used? Direct push and Hydropunch

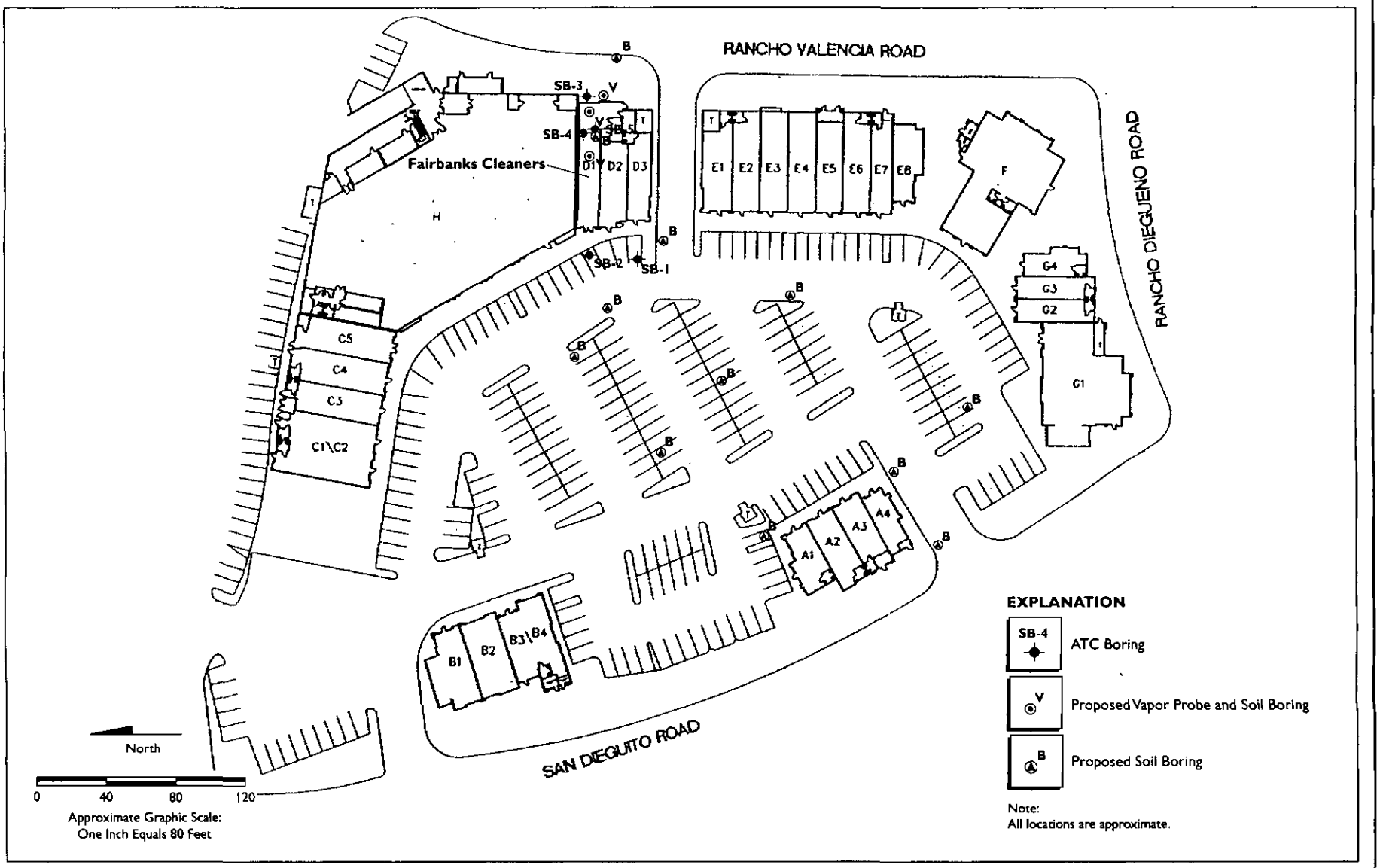
9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). : NO

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. NO

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? pre-cleaned equipment & sampling devices, plus

12. What methods will be used to clean sampling equipment? _____ normal protocol using alconox & rinsing of equipment

13. What cleaning method will be used to clean casing and screen prior to installation? NA



BRYANT GEOENVIRONMENTAL INC.

Geoscience Services • Project Management • Environmental Assessment

Project Name: Del Rayo Village

Project No.: 06-1880P | Date: May 21, 2006

BORING LOCATION MAP

Figure 1

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

RICHARD HAAS
ASSISTANT DIRECTOR

RECEIVED
2006 JUL 14 AM 9 26
D.E.H.
MAILROOM

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address: 16087 San Dieguito Rd. Rancho Santa Fe, CA 92067

Assessor's Parcel Number (APN): 302-301-10

I, Charles Covello for Del Rayo Village Owners, LLC, owner of the property/properties listed above, give my permission to Bryant GeoEnvironmental (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 12 soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Mark Bryant (registered professional) of Bryant GeoEnvironmental, Inc. (consulting company) and an authorized signer for H & P Mobile (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: [signature] Date: 7/13/06

Print Name: Charles Covello Title: President

Company: Del Rayo Village Owners, LLC (owner)

Mailing Address: P.O. Box 675451 Rancho Santa Fe, CA 92067

BRYANT GEOENVIRONMENTAL INC.

562 Kristen Court
Encinitas, California 92024
Telephone: 760.942.4455 Fax: 760.942.4485
Web: www.geoh2o.com
E-mail: mark@geoh2o.com

RECEIVED
JAN 02 2008
ENVIRONMENTAL HEALTH

December 22, 2007

Ms. Marisue Crystal
Environmental Health Technician
Monitoring Well Program
Site Assessment and Mitigation Division
Department of Environmental Health
P.O. Box 129261
San Diego, CA 92112-9261

RE: DIRECT-PUSH BORINGS COMPLETED
PERMIT INFORMATION
FAIRBANKS CLEANERS
DEL RAYO VILLAGE
16087 SAN DIEGUITO ROAD, SUITE D1
RANCHO SANTA FE, CALIFORNIA 92067
APN 302-301-10
BGI PROJECT NO. 06-1880A
PERMIT NO. LMON104140
DEH ESTAB. NO. H33970-001

Dear Marisue:

This is in response to the additional information requested on December 13, 2007 (form attached). As indicated in the "60-day drilling report" (permit information) dated December 10, 2007 (also attached), 12 borings were drilled to depths of about 20 feet at the referenced location. Soil samples were collected from only three of the boreholes; and, therefore, logs were prepared and attached to the report. Actually, only one of the logged boreholes was advanced to 20 feet. The other nine borings were advanced to the desired depths of about 20 feet to collect groundwater samples only. No soil samples were obtained from these additional borings. With the direct-push technique, no soil cuttings are generated; and, therefore, there is no soil extracted to enable logging of the subsoils encountered. In other words, if no soil samples are collected, it is impossible to log the subsoils, and therefore no log can be created. Logs were provided for only the three borings where soil was extracted and appropriately logged in the field.

In closing, no logs were prepared, and no logs for the other borings will be provided. If you have any additional concerns or questions, or need further information, do not hesitate to call me at (760) 942-4455.

Respectfully submitted,

BRYANT GEOENVIRONMENTAL INC.

Mark E. Bryant
Principal
PG 3569, CEG 1046,
CHG 501, REA II 20079

MEB:meb
Dist: 1/Addressee

PERMIT #LMON104197
A.P.N. #269-06-01, 269-05-02
EST #H129955

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: WILLOW GLEN CREEK

SITE ADDRESS: 16107, 16025 VIA DE SANTA FE, RANCHO SANTA FE, 92067

PERMIT FOR: 4 GEOTECHNICAL BORINGS

PERMIT APPROVAL DATE: 08/16/06

PERMIT EXPIRES ON: 12/14/06

RESPONSIBLE PARTY: ART AND CATHERINE NICHOLAS

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.**

APPROVED BY: V. Tauzon DATE: 08/15/06
VERONICA TAUZON-HITCHNER

NOTIFIED: faxed 8/16/06

DEH:SAM-9075 (4/03)

T104197

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

RECEIVED 2006 AUG 4 AM 8:49

OFFICE USE ONLY
PERMIT LMON # 104197
SAM CASE Y/N# H129955
DATE RECEIVED:
FEE PAID: $ 335.00
CHECK # 57512

A. RESPONSIBLE PARTY Art and Catherine Nicholas Phone _____
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address P. O. Box 641 City Solana Beach State Ca Zip 92075
Contact Person Tom Nelson Phone 858-735-6875 Ext. _____ Fax 858-756-9060

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # N/A

C. CONSULTING FIRM Southern California Soil & Testing, Inc.
Mailing Address P.O. Box 600627 City San Diego State CA Zip 92160-0627
Registered Professional Garrett Fountain Registration # 63885 (RCE)
Contact Person ~~Jamie Hubbard~~ Amanda Phone 619.280.4321 Ext. 214 Fax 619.280.4717

D. DRILLING COMPANY Scott's Drill Service C57# 713741
Contact Name Scott Ball
Mailing Address 271 #D Roymar Road City Oceanside State CA Zip 92054-
Phone 760.966.1613 Fax _____

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	4
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable X
Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other

Borehole diameter 8"

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 15' ft.
Estimated depth of boring 100 ft.

Concrete surface seal	0 to 3
Annular seal	____ to ____
Bentonite transition seal	Surface to Bottom
Filter Pack	____ to ____
Perforation	____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 8/3/06

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE _____ DATE 8/3/06

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 269-06-01 & 269-05-02
   Site Name Willow Glen Creek
   Site Address 16107 Via De Santa Fe City Rancho Santa Fe Zip 92067
   PROPERTY OWNER Art and Catherine Nicholas
   Phone 858-735-0075 Ext. _____ Fax 858-756-9060
   Mailing Address P.O. Box 641 City Solana Beach State Ca Zip 92075
   NUMBER OF ~~WELLS~~ Borings 4 **TYPE OF ~~WELLS~~** Geotechnical Borings

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____
   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State _____ Zip _____
   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____
   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State _____ Zip _____
   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____
   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State _____ Zip _____
   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

Fees Shown In The Application Format
Permit Fees In Effect for July 1, 2006 - June 30, 2007

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	**$185.00 for the first monitoring well**	1 x $185.00 $_____
Permit for Well Maintenance Inspection (Valid for three years)	**$ 100.00 for first well maintenance inspection**	1 x $ 100.00 _____
Each Additional New Well	**$160.00 for each additional well installation**	_____ x $160.00 $_____
	$ 30.00 for each additional well maintenance inspection	_____ x $ 30.00 $_____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes*, Temporary Well Points, etc.)	**$185.00 for the first boring** **$50.00 for each additional boring**	1 x $185.00 $ 185.00 3 x $ 50.00 $ 150.00
Permit for Well Destructions Only	**$185.00 for the first destruction** **$120.00 for each additional destruction**	1 x $185.00 $_____ _____ x $120.00 $_____
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	**The first activity will be $185.00.** **Additional activities will be as follows:** **$160.00 for each additional well** **$ 100.00 for first well maintenance inspection** **$ 30.00 for each additional well maintenance inspection** **$ 50.00 for each additional boring** **$120.00 for each well destruction**	1 x $185.00 $_____ _____ x $160.00 $_____ 1 x $ 100.00$_____ _____ x $ 30.00 $_____ _____ x $ 50.00 $_____ _____ x $120.00 $_____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	**$320.00**
	TOTAL COST OF PERMIT	$ 335.00

H. **QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.**

1. If wells are to be destroyed, provide a description of method of destruction N/A

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Seal Boring

4. What field procedures will be utilized to determine if contamination exists? Visual

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? N/A

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? N/A

7. How will samples be transported and preserved? Plastic bags and cloth bags transported in truck

8. What sampling methods will be used? Cal pen and standard pen drive samples and shovel for bulk samples

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :N/A

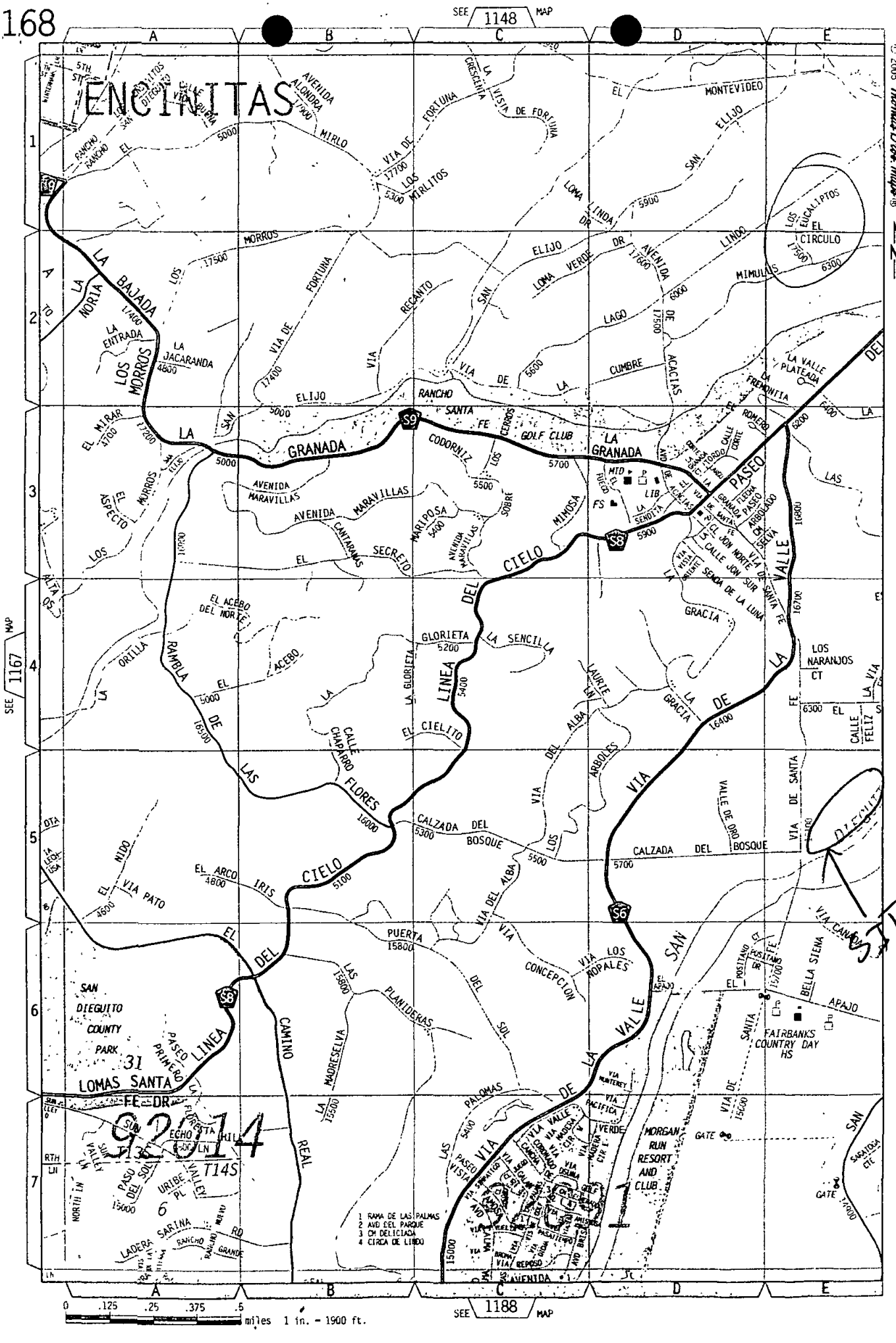
10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. N/A

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Visual observation of drilling equipment

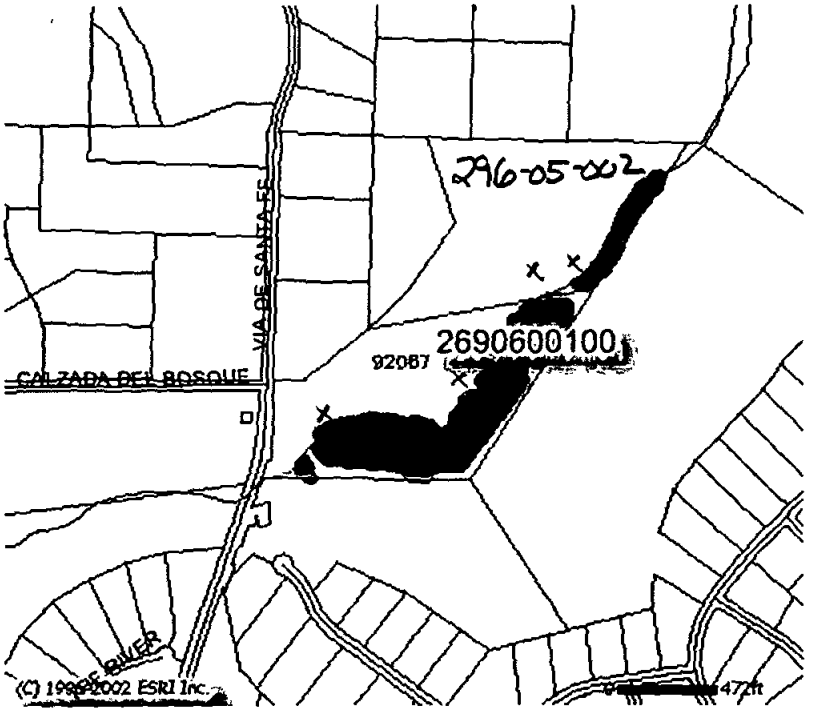
12. What methods will be used to clean sampling equipment? Wash with water

13. What cleaning method will be used to clean casing and screen prior to installation? N/A

SAN DIEGO CO.



© 2005 Thomas Bros. Maps®


296-05-002
2690600100
92087
VIA DE SANTA FE
CALZADA DEL BOSQUE
(C) 1998-2002 ESRI Inc.

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2377
1-800-253-9933

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address: 16107 VIA DE SANTA FE
Rancho Santa Fe, Ca 92067

Assessor's Parcel Number (APN): 269-06-01
269-05-02

I, _____, owner of the property/properties listed above, give my permission to Southern California Soil & Testing (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 4 soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Garrett Fountain (registered professional) of SCS&T (consulting company) and authorized signer for Scott's Drilling Service (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: _____ Date: 5-19-06

Print Name: ART NICHOLAS Title: OWNER

Company: _____

Mailing Address: P.O. Box 2828 DEL MAR, CA., A. 92014

09/19/2006 11:48 FAX 5587569060 MCR Construction Office 003

PERMIT #LMON104367
A.P.N. # 269-050-01, 02
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: WILLOW GLEN CREEK

SITE ADDRESS: 16107-16025 VIA DE SANTA FE, RANCHO SANTA FE, CA 92067

PERMIT FOR: **FIVE GEOTECHNICAL SOIL BORINGS**

PERMIT APPROVAL DATE: OCTOBER 26, 2006

PERMIT EXPIRES ON: FEBRUARY 23, 2007

RESPONSIBLE PARTY: ART AND CATHERINE NICHOLAS

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.**

APPROVED BY: _____ DATE: 10.26.2006
ERNIE L. PROFETA

NOTIFIED: 10/26/06 EP

DEH:SAM-9075 (4/03)

dw 10/18

Rcvd 10/17 T104367

PERMIT APPLICATION
GROUNDWATER
AND VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 104367
SAM CASE YN# NONE
DATE RECEIVED: 10/18/06
FEE PAID: $385.00
CHECK # 58326

A. RESPONSIBLE PARTY Art and Catherine Nicholas Phone 858-735-6875
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address P.O. Box 641 City Solana Beach State CA Zip 92075
Contact Person Tom Nelson Phone 858-735-6875 Ext. ____ Fax 858-756-9060

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # ____

C. CONSULTING FIRM Southern California Soil & Testing, Inc.
Mailing Address P.O. Box 600627 City San Diego State CA Zip 92160
Registered Professional Garrett Fountain Registration # 63885 (PG, RCE) Circle if applicable
Contact Person Eddie Liang Phone 619-944-4016 Ext. ____ Fax 619-280-4717

D. DRILLING COMPANY Grego Drilling & Testing, Inc. C57# 485165
Contact Name Joanna McKeehan
Mailing Address 2726 Walnut Avenue City Signal Hill State CA Zip 90755
Phone 562-427-6899 Ext. ____ Fax 562-424-2329

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	____
☐ Vadose	____
☒ Boring	5
☐ Other	____

NUMBER OF WELLS TO BE DESTROYED

☐ ____

MATERIALS TO BE USED

CASING
Not Applicable X
Type ____
Gauge ____
Diameter ____
Well Screen Size ____
Filter Pack ____

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 2"-CPT

Drilling Method
☐ Auger ☐ Air Rotary
☐ Mud Rotary ☒ Other
☐ Percussion

PROPOSED CONSTRUCTION
Estimated groundwater depth: 5' ft.
Estimated depth of boring 100 ft.
Concrete surface seal 0 to 3
Annular seal ____ to ____
Bentonite transition seal surface to bottom.
Filter Pack ____ to ____
Perforation ____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] Joanna McKeehan DATE 10/17/06

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE SIGNATURE [signature] DATE 10/17/06

dw 10/18 T/K to Eddie Liang, need to submit 3 copies of permit app. & verify ownership. Ten working day processing will not start until app. submitted/ Rcvd

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 2690600100 & 2690500200
   Site Name Willow Glen Creek
   Site Address 16107 Via De Santa Fe City Rancho Santa Fe Zip 92067

   PROPERTY OWNER Art and Catherine Nicholas
   Phone 858-735-6875 Ext. Fax 858-756-9060
   Mailing Address P.O. Box 641 City Solana Beach State CA Zip 92075
   NUMBER OF ~~WELLS~~ borings 5 **TYPE OF ~~WELLS~~** Geotechnical Borings (CPT)

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2006, through June 30, 2007)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well	**$185.00**
Permit for Well Maintenance Inspection (Valid for three years)	$100.00 for first well maintenance inspection	**$100.00**
Each Additional New Well	$160.00 for each additional well installation	___ x **$160.00** $_____
	$ 30.00 for each additional well maintenance inspection	___ x **$30.00** $_____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$185.00 for the first boring	1 x **$185.00** $185.00
	$ 50.00 for each additional boring	4 x **$50.00** $200.00
Permit for Well Destructions Only	$185.00 for the first destruction	___ x **$185.00** $_____
	$120.00 for each additional destruction ...	___ x **$120.00** $_____
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $185.00	___ x **$185.00** $_____
	Additional activities will be as follows:	
	$160.00 for each additional well	___ x **$160.00** $_____
	$100.00 for first well maintenance inspection	___ x **$100.00** $_____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** $_____
	$120.00 for each well destruction	___ x **$120.00** $_____
	$ 50.00 for each additional boring	___ x **$ 50.00** $_____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	$_____
	TOTAL COST OF PERMIT	$385.00

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction _____

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Seal boring

4. What field procedures will be utilized to determine if contamination exists? Visual.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? N/A

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? N/A

7. How will samples be transported and preserved? Plastic bags and cloth bags transported in truck

8. What sampling methods will be used? Cal pen and standard pen drive samples and shovel for bulk samples

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). : N/A

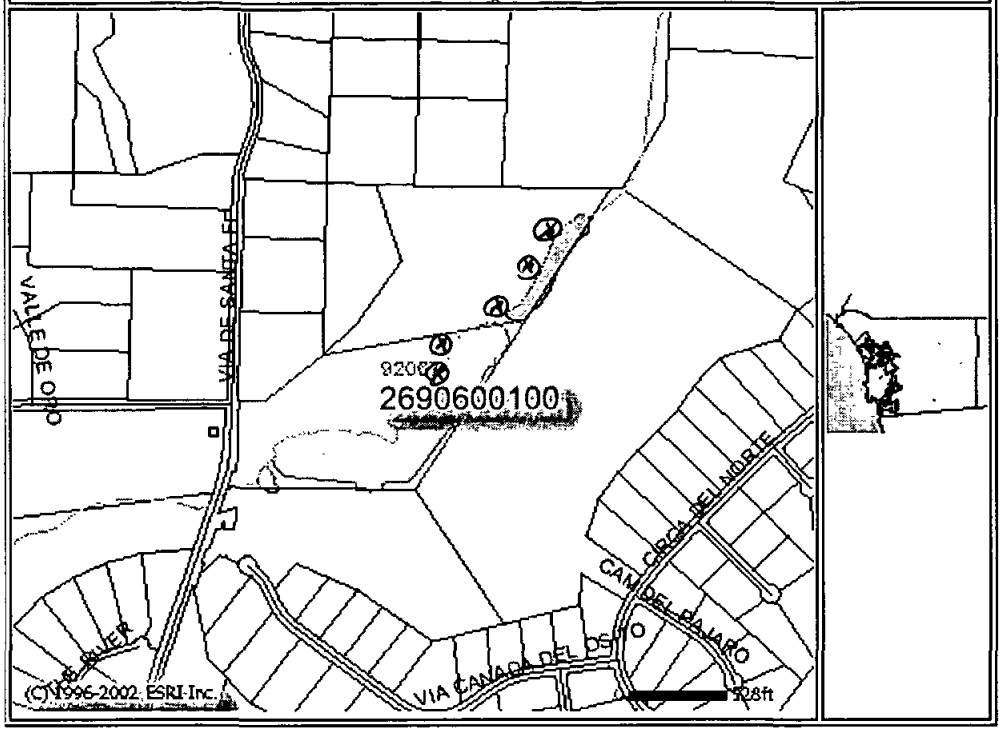
10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. N/A

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Visual observation of drilling equipment.

12. What methods will be used to clean sampling equipment? Wash w/ water

13. What cleaning method will be used to clean casing and screen prior to installation? N/A

Parcel Map and Data



(X) boring locations.

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2377
1-800-253-9933

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address: 16107 VIA DE SANTA FE
Rancho Santa Fe, Ca 92067

Assessor's Parcel Number (APN): 269-06-01
269-06-02

I, _____, owner of the property/properties listed above, give my permission to Southern California Soil & Testing (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 14 soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Dan Adler (registered professional) of SCS&T (consulting company) and authorized signer for Greg Drilling & Testing (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: [signature] Date: 5-19-06

Print Name: ART NICHOLAS Title: OWNER

Company: _____

DEH:SAM-9503 (Rev. 1-04)

Mailing Address: P.O. Box 2828 DEL MAR, CA, 4. 92014

03/18/2006 11:48 FAX 8587569060 WCR Construction Office 003

PERMIT #LMON104443
A.P.N. # 304-021-10-00
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: CAVALLO FARMS

SITE ADDRESS: 13985 OLD CAMINO REAL, SAN DIEGO, CA 92130

PERMIT FOR: **EIGHT GEOTECHNICAL SOIL BORINGS**

PERMIT APPROVAL DATE: NOVEMBER 22, 2006

PERMIT EXPIRES ON: MARCH 22, 2007

RESPONSIBLE PARTY: CAVALLO FARMS LLC C/O LAW OFFICE OF R. MARTIN BOHL

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.**

APPROVED BY: _____ DATE: 11.22.2006
ERNIE L. PROFETA

NOTIFIED: 11/22/06 Faxed

DEH:SAM-9075 (4/03)

ok 11/15

RECEIVED NOV 15 2006 ENVIRONMENTAL HEALTH

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

T104443

OFFICE USE ONLY
PERMIT LMON # 104443
SAM CASE Y/N# NONE
DATE RECEIVED: 11/15/06
FEE PAID: $535.00
CHECK # 12637

A. RESPONSIBLE PARTY Cavallo Farms LLC c/o Law Offices of R. Martin Bohl Phone _____
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 13985 Old El Camino Real City San Diego State CA Zip 92130
Contact Person Josie Bowman Phone (858) 259-3633 Ext. _____ Fax _____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # 304-021-10

C. CONSULTING FIRM Christian Wheeler Engineering
Mailing Address 4925 Mercury Street City San Diego State CA Zip 92111-
Registered Professional Troy Wilson Registration # 8000 (PG)
Contact Person Daniel Flowers Phone (858) 496-9760 Ext. 41 Fax (858) 496-9758

D. DRILLING COMPANY Scott's Drilling C57# 713741
Contact Name Scott Ball
Mailing Address 271-D Roymar Road City Oceanside State CA Zip 92054-
Phone (760) 966-1631 Fax _____

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	8
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable X
Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 8"

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 20 ft.
Estimated depth of boring 35 ft.

Concrete surface seal	0 to 3
Annular seal	___ to ___
Bentonite transition seal	3 to 35
Filter Pack	___ to ___
Perforation	___ to ___

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 11/14/06

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE SIGNATURE _____ DATE 11/14/06

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 304-021-10
   Site Name Cavallo Farms
   Site Address 13985 Old El Camino Real City San Diego Zip 92130-

   PROPERTY OWNER Cavallo Farms LCC
   Phone _____ Ext. Fax _____
   Mailing Address 11100 Santa Monica Blvd Suite 1900 City LA State CA
   Zip 90025-

   NUMBER OF ~~WELLS~~ Borings 8 **TYPE OF WELLS** _____

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2006, through June 30, 2007)

ACTIVITY	FEE SCHEDULE	AMOUNT	
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well		**$185.00**
Permit for Well Maintenance Inspection (Valid for three years)	$100.00 for first well maintenance inspection		**$100.00**
Each Additional New Well	$160.00 for each additional well installation	___ x **$160.00**	_____
	$ 30.00 for each additional well maintenance inspection	___ x **$30.00**	_____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$185.00 for the first boring	1 x **$185.00**	185.00
	$ 50.00 for each additional boring	7 x **$50.00**	350.00
Permit for Well Destructions Only	$185.00 for the first destruction	___ x **$185.00**	
	$120.00 for each additional destruction ...	___ x **$120.00**	
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $185.00	___ x **$185.00**	_____
	Additional activities will be as follows:		
	$160.00 for each additional well	___ x **$160.00**	_____
	$100.00 for first well maintenance inspection	___ x **$100.00**	_____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00**	_____
	$ 50.00 for each additional boring	___ x **$ 50.00**	_____
	$120.00 for each well destruction	___ x **$120.00**	_____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**		**$320.00**
	TOTAL COST OF PERMIT		$ 535.00

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction N/A

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? PROPER BACKFILL OF BORING.

4. What field procedures will be utilized to determine if contamination exists? VISUAL AND OLIFACTORY EXAMINATION.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? NO SAMPLES SENT TO LABORATORY, GEOTECHNICAL ONLY.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? N/A

7. How will samples be transported and preserved? TO CWE FACILITIES.

8. What sampling methods will be used? SPLIT SPOON/BARREL SAMPLING.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :NO.

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. NO.

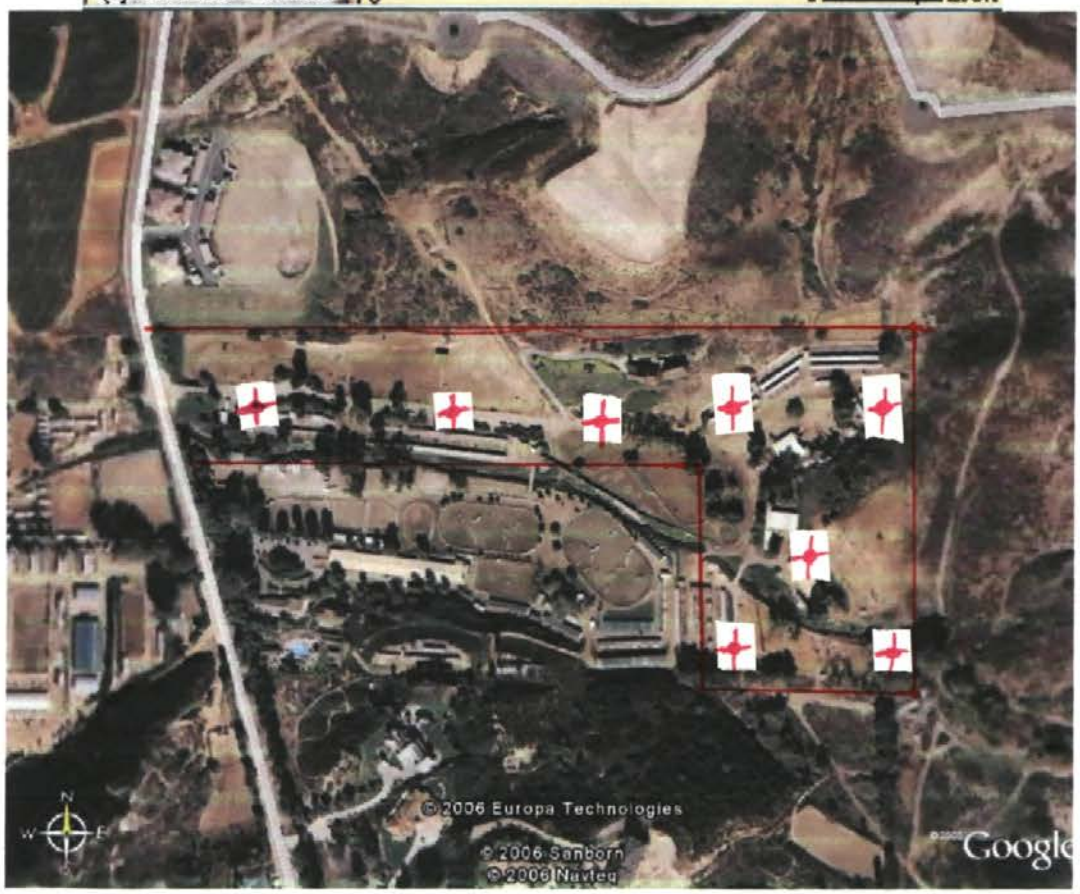
11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? ALL EQUIPMENT WILL BE STEAMED CLEANED PRIOR TO ARRIVAL.

12. What methods will be used to clean sampling equipment? ON-SITE WASH AND RINSE.

13. What cleaning method will be used to clean casing and screen prior to installation? N/A

Cavallo Farms Project

13985 Old El Camino Real, SD, CA



+ Proposed Boring Locations

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address: Cavallo Farms
13985 Old El Camino Real
San Diego, CA 92130

Assessor's Parcel Number (APN): 304-021-10

I, Cavallo Farms LLC, owner of the property/properties listed above, give my permission to Christian Wheeler Engineering (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 8 soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Troy Wilson (registered professional) of Christian Wheeler Eng (consulting company) and an authorized signer for Scott's Drilling (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: Georgia Spogli Date: November 6, 2006

Print Name: Georgia Spogli Title: Manager

Company: Cavallo Farms LLC

Mailing Address: 13985 Old El Camino Real, SD CA 92130

DEH:SAM-9503 (DV Rev. 8-05)

PERMIT # LMON104484
A.P.N. # 302-301-10-00
EST # H33970-001

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: DEL RAYO VILLAGE

SITE ADDRESS: 16077-91 SAN DIEGUITO RD, RANCHO SANTA FE, CA 92067

PERMIT FOR: **FOUR GROUNDWATER MONITORING WELLS**

PERMIT APPROVAL DATE: DECEMBER 20, 2006

PERMIT EXPIRES ON: APRIL 19, 2007

RESPONSIBLE PARTY: DEL RAYO VILLAGE OWNER LLC

PERMIT CONDITIONS:

1. Wells must have a **minimum 3-foot concrete surface seal**. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.

2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

3. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: Mike Vermeth for JAMES CLAY DATE: 12.20.2006
JAMES CLAY

NOTIFIED: 12/20/06 Faxed

DEH:SAM-9075 (3/05)

T104484 TO DAVID 12/7

RECEIVED DEC 06 2006 ENVIRONMENTAL HEALTH

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 104484
SAM CASE Y/N # H33970-001 DWF
DATE RECEIVED: 12.6.06
FEE PAID: $765 + $90.00
CHECK # 2130 / 2143
VAP

A. RESPONSIBLE PARTY Del Rayo Village Owners, LLC Phone 858-756-0080
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address P.O. Box 675451 City Rancho Santa Fe State CA Zip 92067
Contact Person Charles Covello Phone 858-756-0080 Ext. ____ Fax 858-756-1304

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # H33970-001

C. CONSULTING FIRM Bryant GeoEnvironmental Inc.
Mailing Address 562 Kristen Court City Encinitas State CA Zip 92024
Registered Professional Mark E. Bryant Registration # 3569 (RG/RCE, CEG, PG) Circle if applicable
E-mail mark@geohzo.com
Contact Person Mark Bryant Phone 760-942-4485 Ext. ____ Fax 760-942-4485

D. DRILLING COMPANY Test America Drilling Corp. C57# 819548
Contact Name Manny Marquez
Mailing Address 3620 Kurtz Street City San Diego State CA Zip 92110
Phone 619-686-5800 Ext. ____ Fax 619-686-5809

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☒ Groundwater	4
☐ Vadose	
☐ Boring	
☐ Other	

NUMBER OF WELLS TO BE DESTROYED
☐ ____

MATERIALS TO BE USED

CASING
Not Applicable ____
Type PVC
Gauge 40
Diameter 2"
Well Screen Size 0.020 in.
Filter Pack #3 Monterey

SEAL/BORING BACKFILL
☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
Borehole diameter 8"

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 15 ft.
Estimated depth of boring 2 ft.

Concrete surface seal	0 to 3
Annular seal	3 to 9
Bentonite transition seal	9 to 12
Filter Pack	12 to 25
Perforation	15 to 25

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] DATE 12/4/06

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE [signature] DATE 11/26/06

DEH:SAM-9060 (Rev. 10/06) Page 1 of 5 County of San Diego Department of Environmental Health

12/6/06 - spoke to M. Bryant on phone. he will be in office tomorrow - will drop off for bal of $90 (maint. fees for 3 add'l wells). MSC
12/7 Bal of fee rcv'd MSC

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 302-301-10

Site Name Del Rayo Village

Site Address 16087 San Dieguito Rd. City Rancho Santa Fe Zip 92067

PROPERTY OWNER Del Rayo Village Owners, LLC

Phone 858-756-0080 Ext. _____ Fax 858-756-1304

Mailing Address P.O. Box 675451 City Rancho Santa Fe State CA Zip 92067

NUMBER OF WELLS 4 **TYPE OF WELLS** monitoring

2. **ASSESSOR'S PARCEL NUMBER** _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2006, through June 30, 2007)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well	$185.00
Permit for Well Maintenance Inspection (Valid for three years)	$100.00 for first well maintenance inspection	$100.00
Each Additional New Well	$160.00 for each additional well installation	3 x $160.00 480.00
	$30.00 for each additional well maintenance inspection	3 x $30.00 96.00
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$185.00 for the first boring	___ x $185.00 _____
	$50.00 for each additional boring	___ x $50.00 _____
Permit for Well Destructions Only	$185.00 for the first destruction	___ x $185.00
	$120.00 for each additional destruction ...	___ x $120.00
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $185.00	___ x $185.00 _____
	Additional activities will be as follows:	
	$160.00 for each additional well	___ x $160.00 _____
	$100.00 for first well maintenance inspection	___ x $100.00 _____
	$ 30.00 for each additional well maintenance inspection	___ x $ 30.00 _____
	$120.00 for each well destruction	___ x $120.00 _____
	$ 50.00 for each additional boring	___ x $ 50.00 _____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	$_____ S/B 855.00
	TOTAL COST OF PERMIT	$765.00 BAL DUE $90.00

H. QUESTIONNAIRE: Please answer all applicable questions completely. ***For well destructions, complete only #1 below and submit any required supportive documentation.***

1. If wells are to be destroyed, provide a description of method of destruction _____

2. What is the purpose of the well/boring investigation?

   ☒ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction?
   standard procedures - immediately construct well after boring completion and secure well head.

4. What field procedures will be utilized to determine if contamination exists?
   none, area has already been assessed; well installation only.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving?
   only groundwater samples to be collected & analyzed.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)?
   chlorinated compounds - VOCs, 8260B

7. How will samples be transported and preserved? chilled on 'blue ice' cooler
   vials preserved with HCL

8. What sampling methods will be used? low-flow purging + sampling after well construction.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :Yes ☐ No ☒

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and *include a destruction diagram.*
    Yes ☐ No ☒

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination?
    clean equipment and well materials (new) to be used.

12. What methods will be used to clean sampling equipment? steam cleaning and alconox & rinsing - normal protocol.

13. What cleaning method will be used to clean casing and screen prior to installation? pre-cleaned & wrapped in plastic upon arrival.

14. If the responsible party is different than the property owner, how has the property owner been notified of the proposed work? NA

A. ☒ The attached Property Owner Consent Letter.

B. ☐ The attached consent agreement between the responsible party and the property owner with a cover letter signed by a registered professional.

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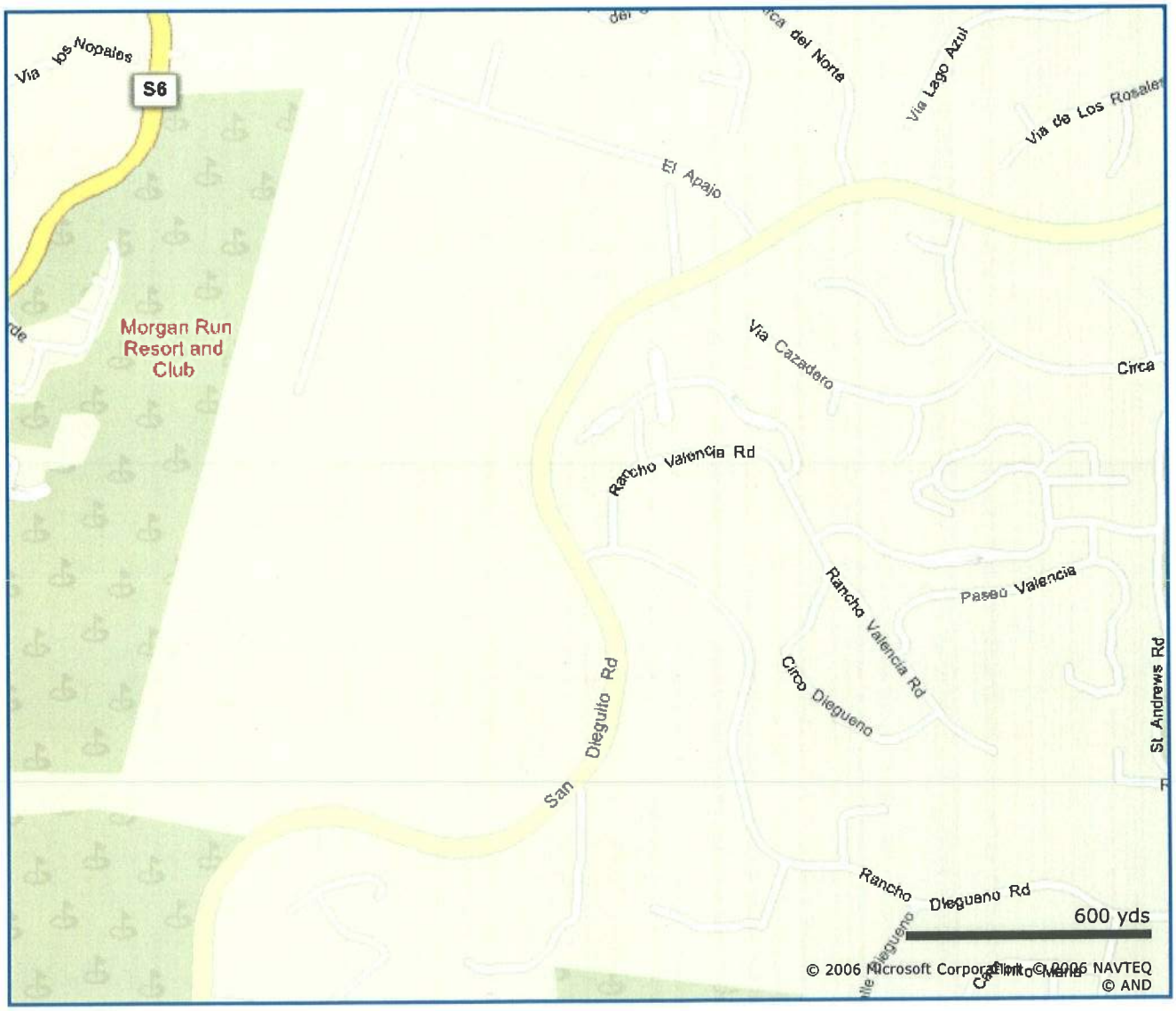

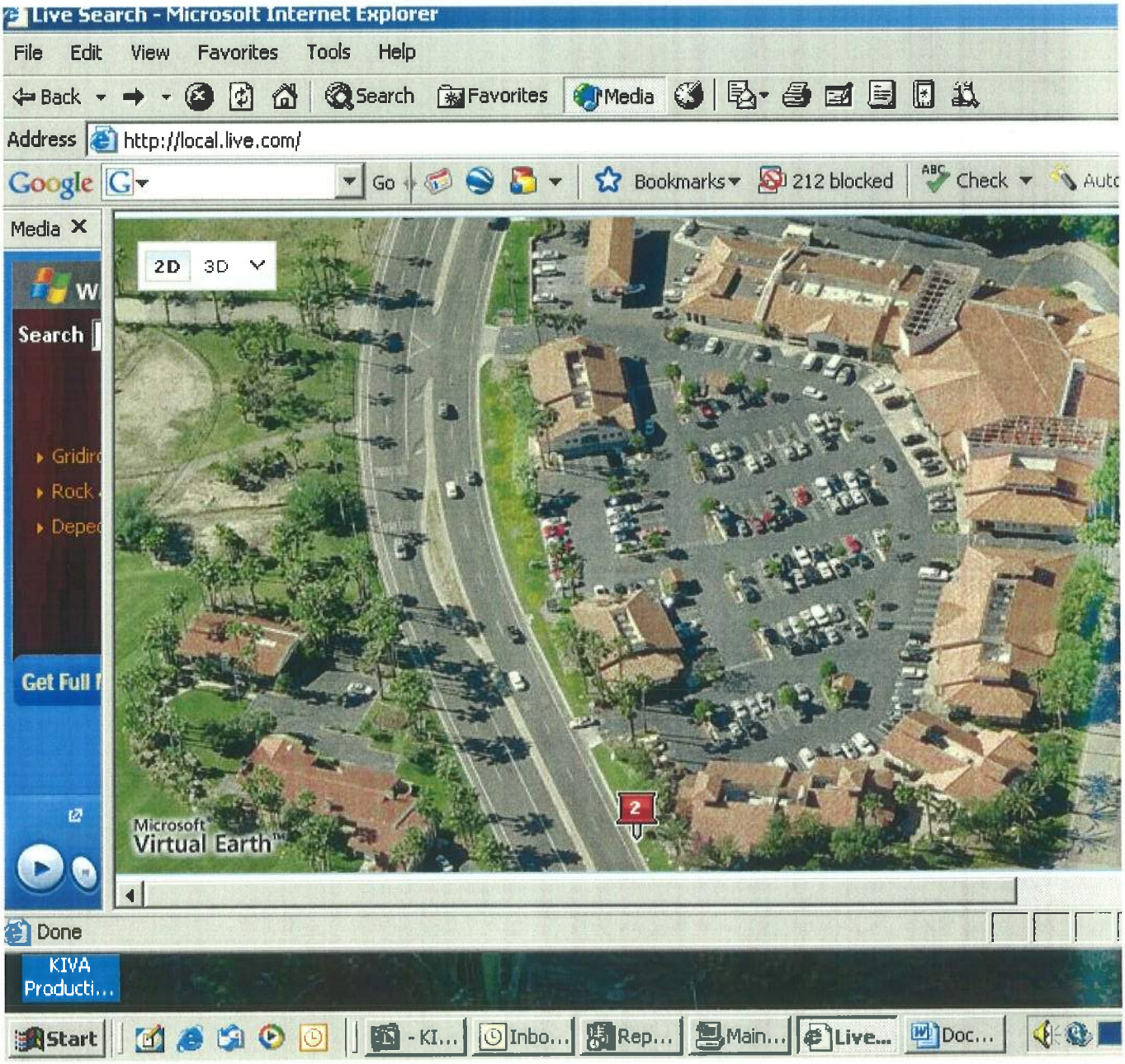
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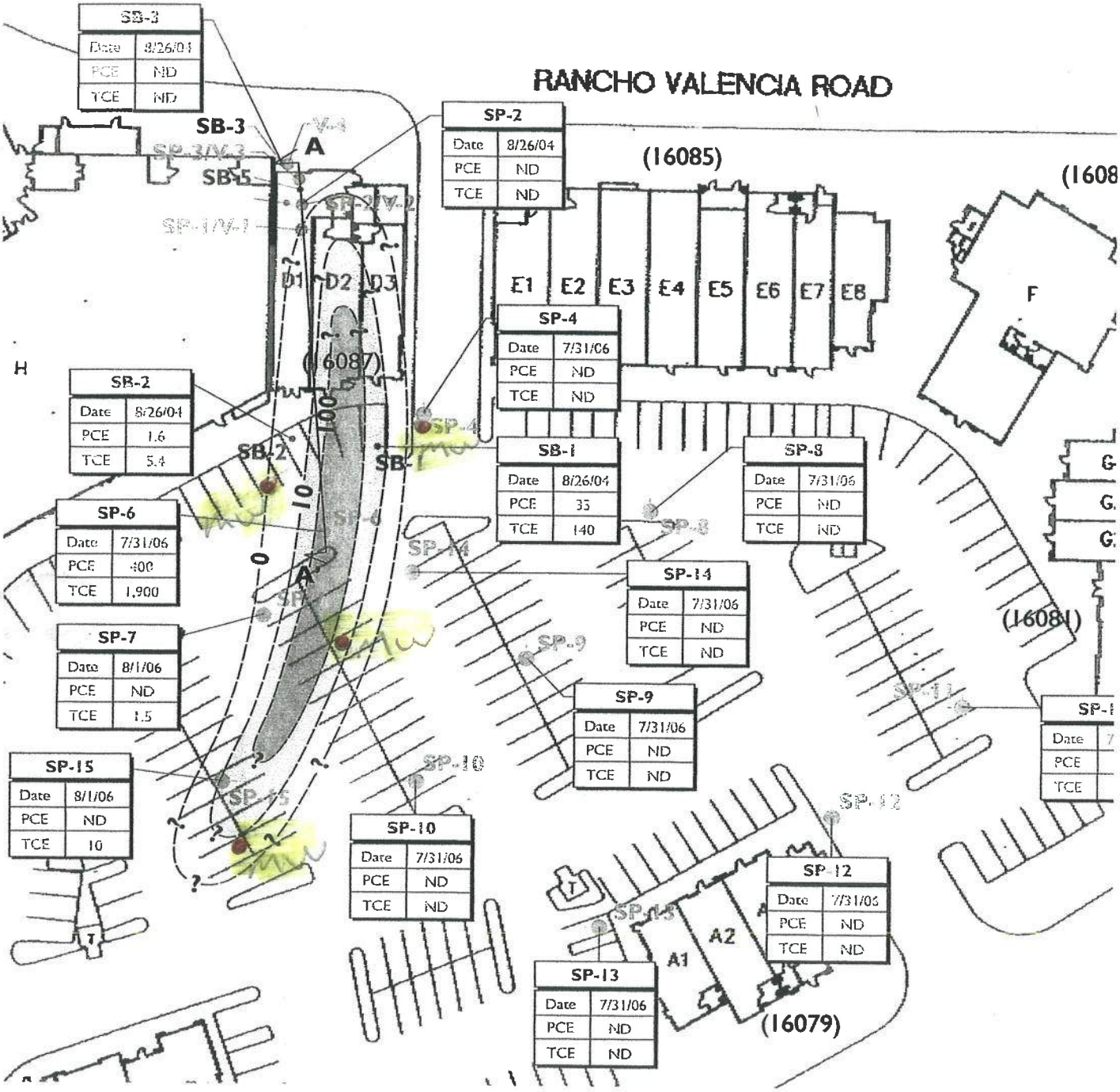

MW Proposed Groundwater Monitoring Well

water
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Dashed

BRYANT GEOENVIRONMENTAL INC.
Geoscience Services • Project Management • Environmental Assessment

Project Name: Del Rayo Village/Fairbanks Ranch

Project No.: 06-1880A | Date: July 31, 2006

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2216/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:
Property Address: 16087 San Dieguito Rd. Rancho Santa Fe, CA 92067

Assessor's Parcel Number (APN): 302-301-10

I, Del Rayo Village Owners, LLC, owner of the property/properties listed above, give my permission to Bryant GeoEnvironmental (consulting company, contractor) to conduct the following work at the locations stated above.

☒ Install 4 monitoring wells ☐ Destroy _____ monitoring wells ☐ Drill _____ soil borings

I understand that Mark Bryant (registered professional) of Bryant GeoEnvironmental Inc. (consulting company) and an authorized signer for Test America (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: [signature] Date: 11/26/06

Print Name: Charles Covello Title: President

Company: Del Rayo Village Owners, LLC (owner)

Mailing Address: P.O. Box 675451, Rancho Santa Fe, CA 92067

DEH:SAM-0503 (Rev. 9-06)

Crystal, Marisue

From: Adam.Sabet@CH2M.com
Sent: Thursday, December 07, 2006 12:09 PM
To: Crystal, Marisue
Cc: Karen.Selleck@CH2M.com
Subject: Geologist Oversight Letter
Attachments: Geologist Notification-Responsibility Letter.pdf

Hi Marisue,

As per our conversation earlier today, attached please find a scanned copy of a letter indicating agents, including registered geologist Edward Steiner, acting on behalf of Saddleback Constructors. If you have any questions, concerns, or would like a hard copy of this letter, please feel free to contact me. Also, if there is any information that is or would be needed to expedite this process, please let me know as we hope to acquire the permit before the end of next week. Please know that your patience and efforts are appreciated.

Thank you,

Adam Sabet

Assistant Project Coordinator - Permits Management

Saddleback Constructors

23456 Madero, Suite 150

Mission Viejo, CA 92691-2701

(949) 544-7092

Saddleback
CONSTRUCTORS

DCN: FS01543
CT NO.: EA 12-111021.210

December 7, 2006

County of San Diego
Department of Environmental Health
Land and Water Quality Division
Monitoring Well Program
1255 Imperial Avenue
San Diego, CA 92101

Attention: Marisue Crystal

Subject: **CONTRACT NO. 97-001**
FOOTHILL TRANSPORTATION CORRIDOR – SOUTH
AGENT AUTHORIZATION LETTER

Dear Marisue:

As you are aware, Saddleback Constructors is conducting geotechnical investigations within Marine Corps Base Camp Pendleton for the proposed Foothill Transportation Corridor – South toll road extension. For the record, the following companies are Saddleback Constructors' agents acting on our behalf:

CH2M Hill
Kleinfelder
Leighton & Associates
RBF
BonTerra
Tetratech

Saddleback Constructors takes full liability for the work of their agents within Camp Pendleton property in the County of San Diego. Saddleback Constructors' Certificate of Liability Insurance is on file with the Marine Corps Base Real Estate Office, and a copy is attached for your use.

Furthermore, Edward A. Steiner is Saddleback Constructors' supervising geologist and will be overseeing the borings specified in the Permit Application sent on December 1, 2006.

Please contact me with any questions at (949) 544-7010.

Sincerely,

Robert M. Schraeder, P.E.
Project Manager

cc: Tom Schroeder, CDMG

bcc: Lee VanderLinden, SBC*
Karen Selleck, SBC
Houman Makarechi, SBC
Ed Steiner, SBC*
Harley Martin, SBC
Jeff McClure, SBC*
SBC_DCM
Read File
Design File

(* without attachments)

Client#: 21233 SADDCON

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 08/08/06

PRODUCER
HRH of Colorado
720 S. Colorado Blvd Ste 600-N
P.O. Box 469025
Denver, CO 80246-9025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED
Saddleback Constructors
23456 Madero, Ste. 150
Mission Viejo, CA 92691

INSURERS AFFORDING COVERAGE	NAIC #
INSURER A: Zurich-American Ins. Co.	16535
INSURER B: National Union Fire	B6787
INSURER C:	
INSURER D:	
INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A		GENERAL LIABILITY	GLO298849406	06/01/06	06/01/07	EACH OCCURRENCE	$1,000,000
		X COMMERCIAL GENERAL LIABILITY				DAMAGE TO RENTED PREMISES (Ea occurrence)	$500,000
		CLAIMS MADE X OCCUR				MED EXP (Any one person)	$10,000
						PERSONAL & ADV INJURY	$1,000,000
						GENERAL AGGREGATE	$2,000,000
		GEN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COMP/OP AGG	$2,000,000
		POLICY X PRO-JECT LOC					
A		AUTOMOBILE LIABILITY	BAP298849406	06/01/06	06/01/07	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
		X ANY AUTO					
		ALL OWNED AUTOS				BODILY INJURY (Per person)	$
		SCHEDULED AUTOS					
		HIRED AUTOS				BODILY INJURY (Per accident)	$
		NON-OWNED AUTOS					
						PROPERTY DAMAGE (Per accident)	$
		GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
		ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	$
						AGG	$
B		EXCESS/UMBRELLA LIABILITY	BE7227831	06/01/06	06/01/07	EACH OCCURRENCE	$1,000,000
		X OCCUR CLAIMS MADE				AGGREGATE	$1,000,000
							$
		DEDUCTIBLE					$
		X RETENTION $10,000					$
A		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	WC298849306	06/01/06	06/01/07	X WC STATU-TORY LIMITS / OTH-ER	
		ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED?				E.L. EACH ACCIDENT	$1,000,000
		If yes, describe under SPECIAL PROVISIONS below				E.L. DISEASE - EA EMPLOYEE	$1,000,000
						E.L. DISEASE - POLICY LIMIT	$1,000,000
B		OTHER Professional	4692234	06/01/06	06/01/07	$5,000,000 $500,000 Ded.	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

This insurance certificate is for use of facilities, land and property at Marine Corps Base, Camp Pendleton.

The United States of America (Department of the Navy) is added as an
(See Attached Descriptions)

CERTIFICATE HOLDER

Commanding General
Marine Corps Base, Box 555010
Camp Pendleton, CA 92055-5013

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30+ DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE
William T Cambron

© ACORD CORPORATION 1988

LIC. #0B83803

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

DESCRIPTIONS (Continued from Page 1)

additional insured in operations of the policyholder at or from the premises licensed from the United States.

The General Liability Insurer waives any right of subrogation against the United States of America which might arise by reason of any payment made under this policy.

All coverage terms, conditions and exclusions of the policy apply.

The Comanding Officer, Marine Corps Base, Camp Pendleton, shall be given thirty (30) days written notice prior to making any material change in or cancellation of the policy.

* The following cancellation conditions always apply:
  - 10 days for non-payment of premium
  - If policy shown, 10 days for Workers' Compensation for fraud; material misrepresentation; non-payment of premium; other reasons approved by the Commissioner of Insurance

PERMIT #LMON104613
A.P.N. #269-080-11
EST #H104613

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: CHURCH OF NATIVITY

SITE ADDRESS: 6309 EL APAJO RD., RANCHO SANTA FE CA 92067

PERMIT FOR: **4 CPTs**

PERMIT APPROVAL DATE: FEBRUARY 22, 2007

PERMIT EXPIRES ON: JUNE 22, 2007

RESPONSIBLE PARTY: CHURCH OF NATIVITY

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

3. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

4. **This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH.** Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

5. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

APPROVED BY _____ Date: 2.22.2007
AMELIA CESENA

NOTIFIED: 2-22-07
email

DEH:SAM-9075

T104613

RECEIVED
FEB 13 2007
ENVIRONMENTAL HEALTH

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

6-22-07

G.T.

OFFICE USE ONLY
PERMIT LMON # 104613
SAM CASE Y/N # None
DATE RECEIVED: 2-13-07
FEE PAID: $335.-
CHECK # 14414

A. RESPONSIBLE PARTY Church of the Nativity — E-mail tom@springline.org
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)

Mailing Address P.O. Box 9180 — City Rancho Santa Fe — State CA — Zip 92067-
Contact Person Mr. Tom Delaney — Phone 619-997-3452 — Ext. ____ — Fax 858-720-1793

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # ____

C. CONSULTING FIRM Geotechnics Incorporated

Mailing Address 9245 Activity Road, Suite 103 — City San Diego — State CA — Zip 92126-
Registered Professional Matthew A. Fagan — Registration # 57248 — (RCE) — E-mail mfagan@geotechnicsinc.com
Contact Person Matthew A. Fagan — Phone 858-536-1000 — Ext. ____ — Fax 858-536-8311

D. DRILLING COMPANY Kehoe Testing and Engineering — C57# 786163
Contact Name Mr. Steve Kehoe — E-mail ____
Mailing Address 15571 Industry Lane (skehoe@msn.com) — City Huntington Beach — State CA — Zip 92649-
Phone 714-901-7270 — Fax 714-901-7289

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	____
☐ Vadose	____
☐ Boring	____
☒ Other	4

CPT Soundings

NUMBER OF WELLS TO BE DESTROYED

☐ ____

MATERIALS TO BE USED

CASING

Not Applicable N/A
Type ____
Gauge ____
Diameter ____
Well Screen Size ____
Filter Pack ____

SEAL/BORING BACKFILL

☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 1 Inch

Drilling Method

☐ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☒ Other

PROPOSED CONSTRUCTION

Estimated groundwater depth: 5 ft.
Estimated depth of boring 50 ft.

Concrete surface seal	0 to 3
Annular seal	____ to ____
Bentonite transition seal	____ to ____
Filter Pack	____ to ____
Perforation	____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] DATE 02/09/07

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE Matthew A. Fagan DATE 2/12/07

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 269-080-1100
   Site Name Church of the Nativity
   Site Address 6309 El Apajo Road City Rancho Santa Fe Zip 92067-

   PROPERTY OWNER Church of the Nativity - Msgr. Lawrence Purcell
   Phone 858-756-6763 Ext. Fax _____
   Mailing Address P.O. Box 9180 City Rancho Santa Fe State CA Zip 92067-

   NUMBER OF WELLS 4- **TYPE OF WELLS** CPT Soundings

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2006, through June 30, 2007)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well	**$185.00**
Permit for Well Maintenance Inspection (Valid for three years)	$ 100.00 for first well maintenance inspection	**$100.00**
Each Additional New Well	$160.00 for each additional well installation	___ x **$160.00** $_____
	$30.00 for each additional well maintenance inspection	___ x **$30.00** $_____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$185.00 for the first boring	1 x **$185.00** $185
	$50.00 for each additional boring	3 x **$50.00** $150
Permit for Well Destructions Only	$185.00 for the first destruction	___ x **$185.00** $_____
	$120.00 for each additional destruction ...	___ x **$120.00** $_____
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $185.00	___ x **$185.00** $_____
	Additional activities will be as follows:	
	$160.00 for each additional well	___ x **$160.00** $_____
	$100.00 for first well maintenance inspection	___ x **$100.00** $_____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** $_____
	$120.00 for each well destruction	___ x **$120.00** $_____
	$ 50.00 for each additional boring	___ x **$ 50.00** $_____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	$_____
	TOTAL COST OF PERMIT	$335

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction N/A

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? The equipment and tools will be cleaned prior to use.

4. What field procedures will be utilized to determine if contamination exists? N/A

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? N/A

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? N/A

7. How will samples be transported and preserved? N/A

8. What sampling methods will be used? N/A

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :No

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Equipment will be cleaned prior to use.

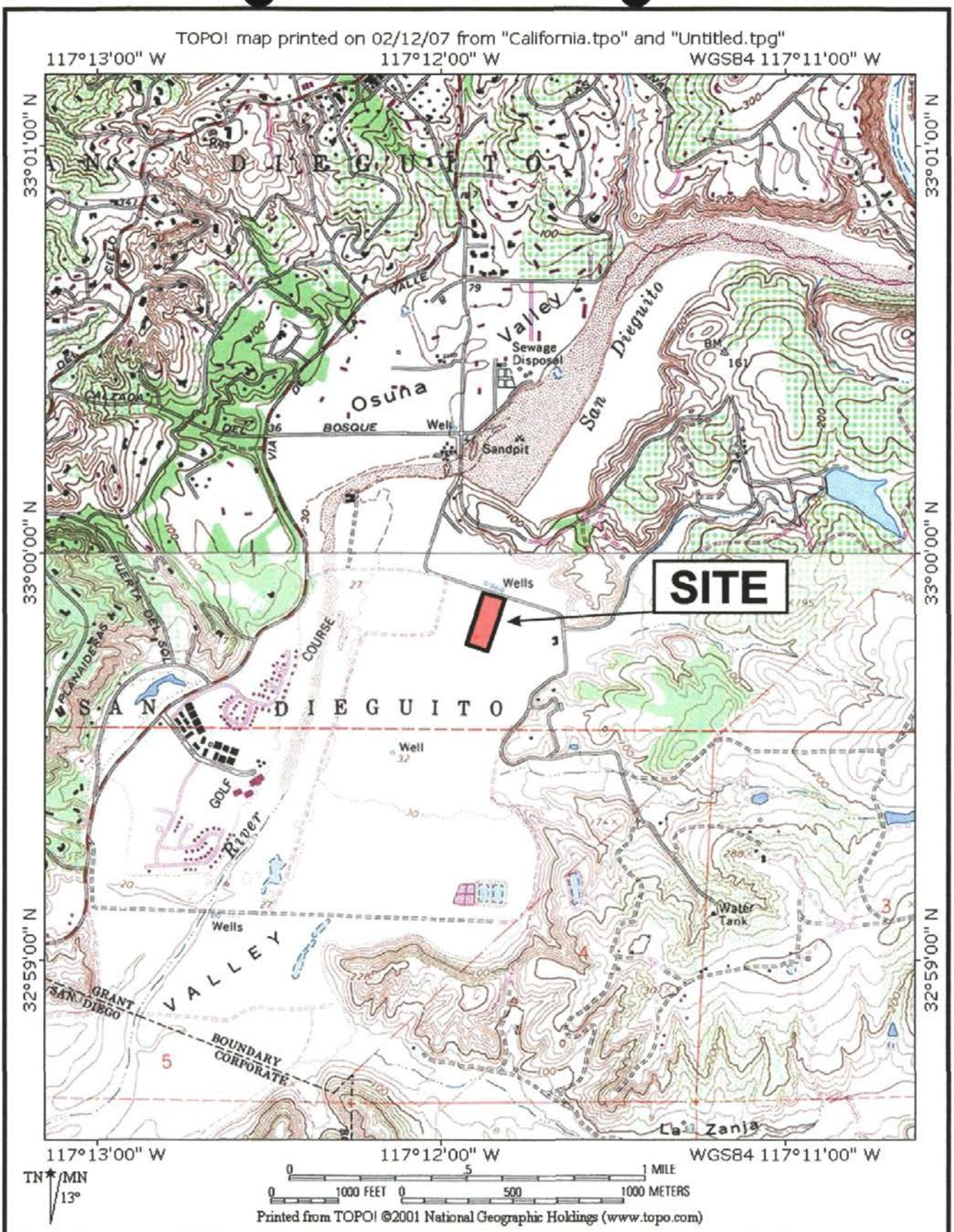
12. What methods will be used to clean sampling equipment? N/A

13. What cleaning method will be used to clean casing and screen prior to installation? N/A

14. If the responsible party is different than the property owner, how has the property owner been notified of the proposed work? Verbal communication.

    A. ☒ The attached Property Owner Consent letter..

    B. ☐ The attached consent agreement between the responsible party and the property owner with a cover letter signed by a registered professional.

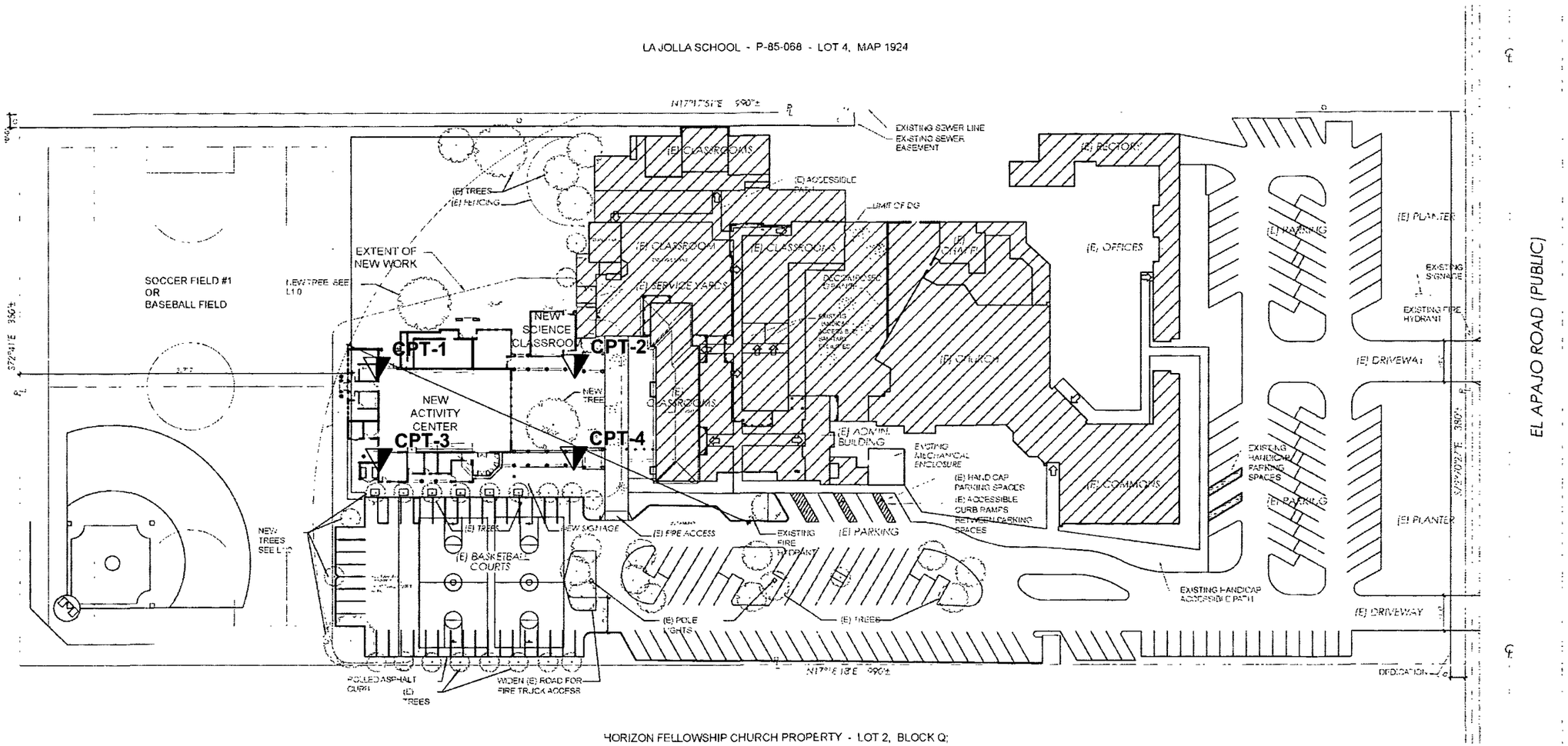


Geotechnics Incorporated

SITE LOCATION MAP

Project No. 0636-002-00
Document No. 07-0097

FIGURE 1



SCALE: 1" = 80'

EXPLANATION

CPT-4 — Approximate location of cone penetrometer test

Reference: Nativiy Activity Center site plan 5 FEB 2007.pdf, provided by Hodges and Hodges Architects.

Project No. 0636-002-00
Document No. 07-0097

FIGURE 2

EXPLORATION PLAN

Geotechnics Incorporated

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:	**Assessor's Parcel Number (APN):**
Church of the Nativity	269-080-1100
6309 El Apajo Road	
Rancho Santa Fe, CA 92067	

I, **Msgr. Lawrence Purcell**, owner of the property/properties listed above, give my permission to **Geotechnics Incorporated** (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 4 soil borings

I understand that **Matthew A. Fagan** (registered professional) of **Geotechnics Incorporated** (consulting company) and an authorized signer for **Kehoe Testing and Engineering** (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: Lawrence M. Purcell Date: 02-09-07

Print Name: Msgr. Lawrence Purcell Title: Pastor

Company: Church of the Nativity

Mailing Address: 6309 El Apajo Road, Rancho Santa Fe, CA 92067

PERMIT #LMON104638
A.P.N. #269-080-25
EST #NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: HORIZON CHRISITAN FELLOWSHIP

SITE ADDRESS: 6233 EL APAJO RD., RANCHO SANTA FE CA 92067

PERMIT FOR: **9 CPTs**

PERMIT APPROVAL DATE: MARCH 7, 2007

PERMIT EXPIRES ON: JULY 5, 2007

RESPONSIBLE PARTY: HORIZON CHRISTIAN FELLOWSHIP

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

3. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

4. **This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH.** Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

5. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

APPROVED BY _____ Date: 3.7.2007
AMELIA CESENA

NOTIFIED: 3-7-07

DEH:SAM-9075

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

T104638

RECEIVED FEB 22 2007 ENVIRONMENTAL HEALTH

OFFICE USE ONLY
PERMIT LMON # 104638
SAM CASE Y/N # None
DATE RECEIVED: 2-22-07
FEE PAID: $585
CHECK # 14421

A. RESPONSIBLE PARTY Horizon Christian Fellowship E-mail ____
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 5151 Mount Alifan Drive City San Diego State CA Zip 92111-
Contact Person Pastor Josh Grant Phone 858-277-4991 Ext. ____ Fax ____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # ____

C. CONSULTING FIRM Geotechnics Incorporated
Mailing Address 9245 Activity Road, Suite 103 City San Diego State CA Zip 92126-
Registered Professional Matthew A. Fagan Registration # 57248 (RCE) E-mail mfagan@geotechnicsinc.com
Contact Person Matthew A. Fagan Phone 858-536-1000 Ext. ____ Fax 858-536-8311

D. DRILLING COMPANY Kehoe Testing and Engineering C57# 786163
Contact Name Mr. Steve Kehoe E-mail ____
Mailing Address 15571 Industry Lane (skehoe@msn.com) City Huntington Beach State CA Zip 92649-
Phone 714-901-7270 Fax 714-901-7289

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☐ Boring	___
☒ Other	9

CPT Soundings

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable N/A
Type ____
Gauge ____
Diameter ____
Well Screen Size ____
Filter Pack ____

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 1 Inch

Drilling Method
☐ Auger ☐ Air Rotary
☐ Mud Rotary ☒ Other
☐ Percussion

PROPOSED CONSTRUCTION
Estimated groundwater depth: 10 ft.
Estimated depth of boring 50 ft.

Concrete surface seal	0 to 3
Annular seal	____ to ____
Bentonite transition seal	____ to ____
Filter Pack	____ to ____
Perforation	____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] DATE 02/19/07

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE [signature] DATE 2/22/07

F. SITE INFORMATION

TLC per M. Fagan confirmed with Assessor's

1. **ASSESSOR'S PARCEL NUMBER** 269-080-~~1~~25200
   Site Name Horizon Chrisitan Fellowship
   Site Address 6233 El Apajo Road City Rancho Santa Fe Zip 92067-

   PROPERTY OWNER Horizon Chrisitan Fellowship - Pastor Josh Grant
   Phone 858-277-4991 Ext. Fax _____
   Mailing Address 5151 Mount Alifan Drive City San Diego State CA Zip 92111-

   NUMBER OF WELLS 9 **TYPE OF WELLS** CPT Soundings

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2006, through June 30, 2007)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well	**$185.00**
Permit for Well Maintenance Inspection (Valid for three years)	$ 100.00 for first well maintenance inspection	**$100.00**
Each Additional New Well	$160.00 for each additional well installation	___ x **$160.00** $_____
	$30.00 for each additional well maintenance inspection	___ x **$30.00** $_____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$185.00 for the first boring	1 x **$185.00** $185
	$50.00 for each additional boring	8 x **$50.00** $400
Permit for Well Destructions Only	$185.00 for the first destruction	___ x **$185.00** $_____
	$120.00 for each additional destruction ...	___ x **$120.00** $_____
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $185.00	___ x **$185.00** $_____
	Additional activities will be as follows:	
	$160.00 for each additional well	___ x **$160.00** $_____
	$100.00 for first well maintenance inspection	___ x **$100.00** $_____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** $_____
	$120.00 for each well destruction	___ x **$120.00** $_____
	$ 50.00 for each additional boring	___ x **$ 50.00** $_____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	$_____
	TOTAL COST OF PERMIT	$585

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction N/A

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? The equipment and tools will be cleaned prior to use.

4. What field procedures will be utilized to determine if contamination exists? N/A

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? N/A

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? N/A

7. How will samples be transported and preserved? N/A

8. What sampling methods will be used? N/A

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :No

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Equipment will be cleaned prior to use.

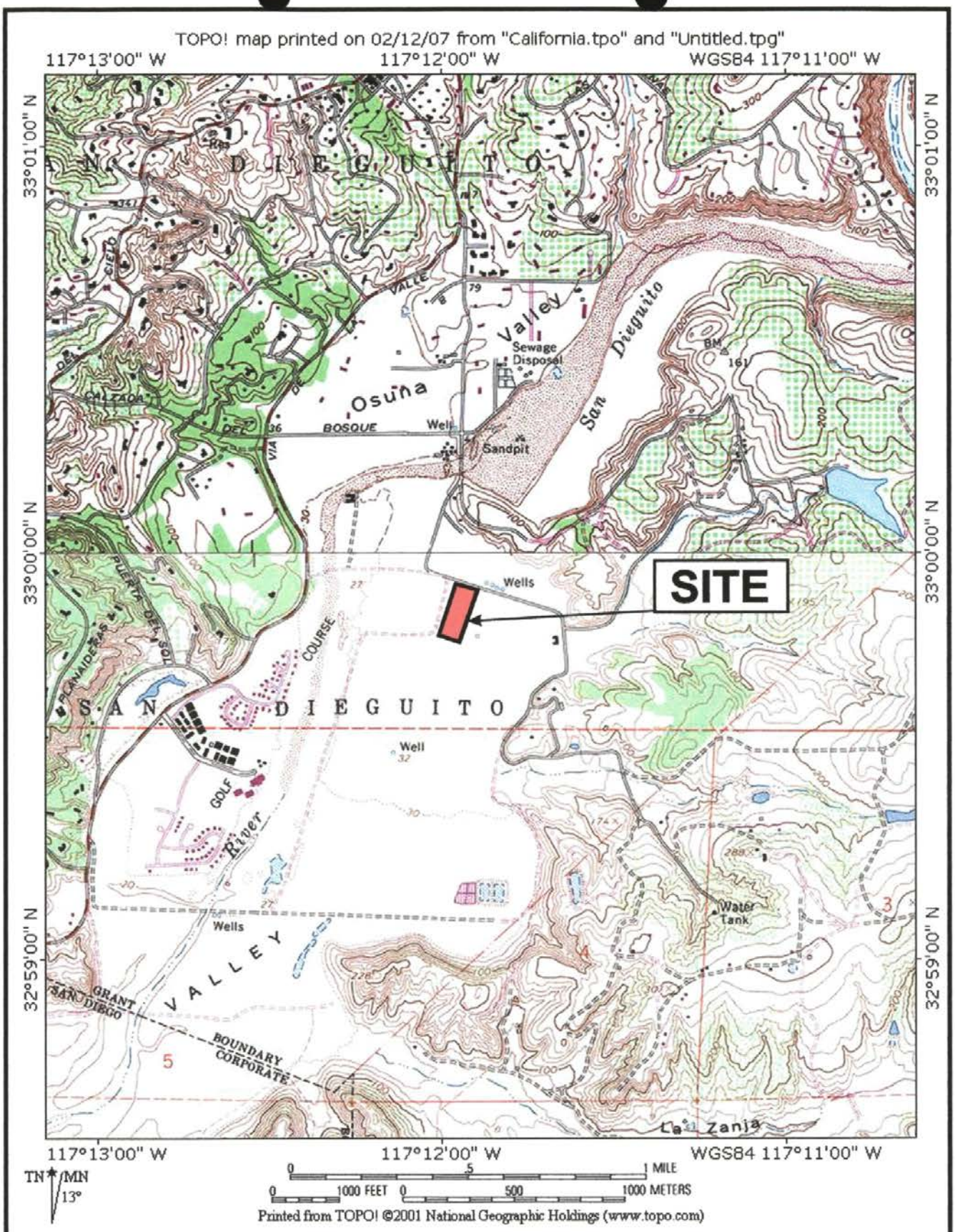
12. What methods will be used to clean sampling equipment? N/A

13. What cleaning method will be used to clean casing and screen prior to installation? N/A

14. If the responsible party is different than the property owner, how has the property owner been notified of the proposed work? Verbal communication.

    A. ☒ The attached Property Owner Consent letter..

    B. ☐ The attached consent agreement between the responsible party and the property owner with a cover letter signed by a registered professional.

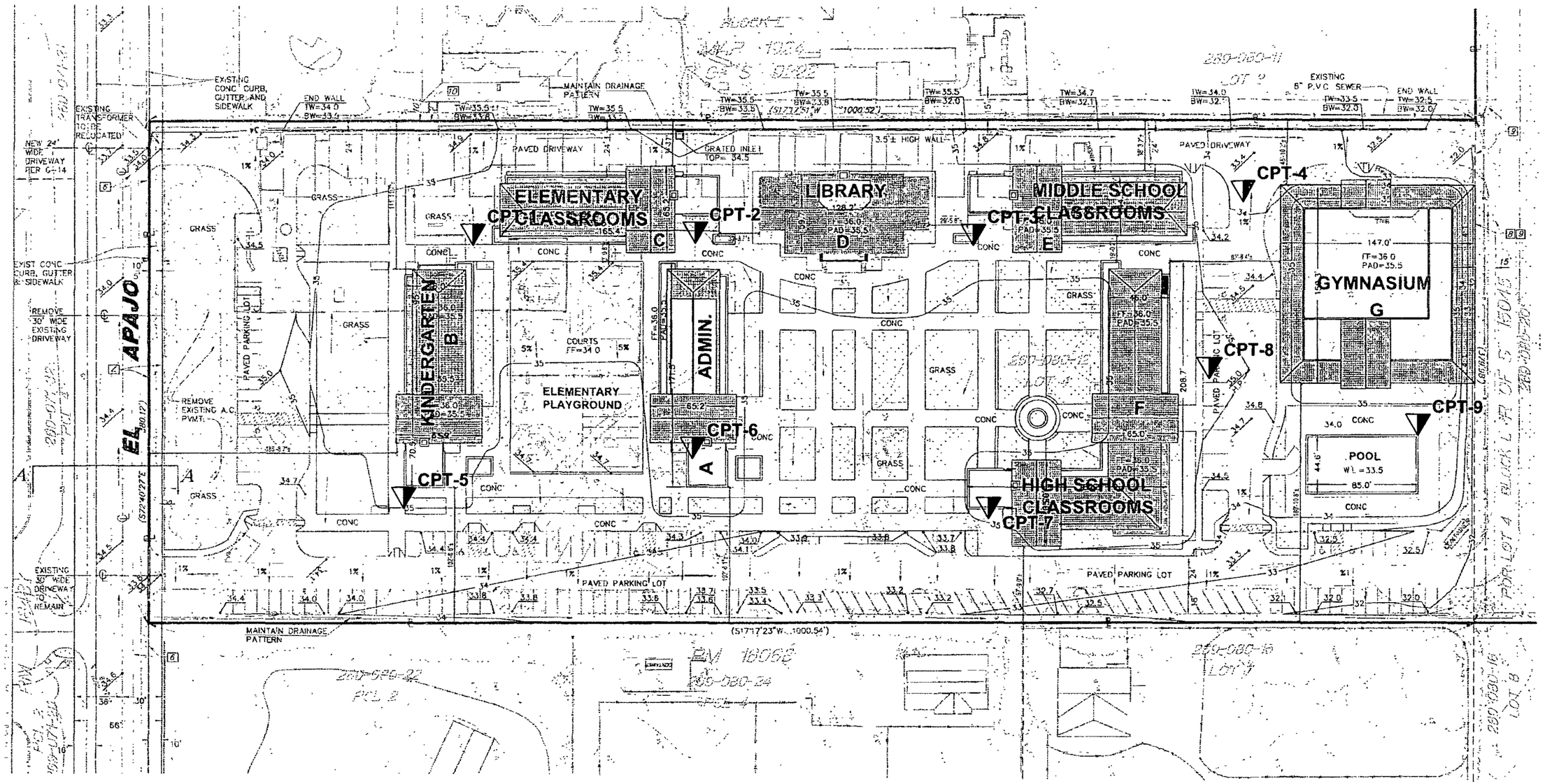


Geotechnics Incorporated

SITE LOCATION MAP

Project No. 1154-002-00
Document No. 07-0127

FIGURE 1



EXPLANATION

CPT-9 — Approximate location of cone penetrometer test

SCALE: 1" = 80'

Reference: Plot Plan Mod Sheet 1 MUP 40 SCALE SHEET 1 (1).pdf, provided by Laret Engineering Company

Project No. 1154-002-00
Document No. 07-0127

FIGURE 2

EXPLORATION PLAN

Geotechnics Incorporated

RECEIVED
FEB 21 2007
BY:

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:	**Assessor's Parcel Number (APN):**
Horizon Christian Fellowship	269-080-1200
6233 El Apajo Road	
Rancho Santa Fe, CA 92067	

I, **Pastor Josh Grant**, owner of the property/properties listed above, give my permission to **Geotechnics Incorporated** (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 9 soil borings

I understand that **Matthew A. Fagan** (registered professional) of **Geotechnics Incorporated** (consulting company) and an authorized signer for **Kehoe Testing and Engineering** (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: _____ Date: 2/20/07

Print Name: Mr. Josh Grant Title: Assistant Pastor

Company: Horizon Christian Fellowship

Mailing Address: 6233 El Apajo Road, Rancho Santa Fe, CA 92067

JC

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

JACK MILLER
ASSISTANT DIRECTOR

October 1, 2007

Mr. Joe Pinsonneault
The Lilian RSF, LLC
1330 Orange Avenue, Suite 335
Coronado, CA 92118

Dear Mr. Pinsonneault:

ASSESSOR'S PARCEL NUMBERS #266-283-07-00
BORING/WELL PERMIT #LMON104741
THE LILIAN RSF, LLC
6010 PASEO DELICIAS, RANCHO SANTA FE, CA 92067

The Monitoring Well Program (MWP) of the County of San Diego, Department of Environmental Health (DEH), received and reviewed the analytical data report submitted as a condition of the Boring/Well Permit #LMON104741 by Rincon Consultants, Inc. The information provided indicates that hydrocarbon contamination has been detected in soil and groundwater samples taken during the drilling of borings on this property.

DEH has a program providing timely regulatory oversight and review of reports of environmental investigations. This program, the Voluntary Assistance Program (VAP), charges an hourly fee to cover this oversight and review. Please contact Nasser Sionit, the VAP Coordinator, at 619-338-2239, and inform him of your intention within 60 days of receipt of this letter.

If we do not hear from you within the 60-day period, we will refer your case to the San Diego Regional Water Quality Control Board for their oversight under the Spills, Leaks, Investigation and Cleanup Program (SLIC).

If you have any questions or require further information about this issue please call me, at 619-338-2205, or Nasser Sionit, at 619-338-2239, for questions about the VAP.

Sincerely,

JAMES CLAY, Environmental Health Specialist III
Site Assessment and Mitigation Program

JC:ae:kd

CERTIFIED MAIL

cc: Nasser Sionit, VAP Coordinator
Stephanie Vasconcellos, Rincon Consultants, Inc.

WP/LMON104741-1007

Order #: 795977 **Client:** Rincon Consultants, Inc.
Matrix: WATER **Client Sample ID:** B3-GW
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Bromodichloromethane	ND	1	5	ug/L	05/01/07	AM
Bromoform	ND	1	5	ug/L	05/01/07	AM
Bromomethane	ND	1	5	ug/L	05/01/07	AM
Carbon tetrachloride	ND	1	5	ug/L	05/01/07	AM
Chlorobenzene	ND	1	5	ug/L	05/01/07	AM
Chloroethane	ND	1	5	ug/L	05/01/07	AM
Chloroform	ND	1	5	ug/L	05/01/07	AM
Chloromethane	ND	1	5	ug/L	05/01/07	AM
cis-1,2-Dichloroethene	ND	1	5	ug/L	05/01/07	AM
cis-1,3-Dichloropropene	ND	1	5	ug/L	05/01/07	AM
cis-1,4-Dichloro-2-butene	ND	1	20	ug/L	05/01/07	AM
Dibromochloromethane	ND	1	5	ug/L	05/01/07	AM
Dibromomethane	ND	1	5	ug/L	05/01/07	AM
Dichlorodifluoromethane	ND	1	5	ug/L	05/01/07	AM
Ethyl benzene	ND	1	5	ug/L	05/01/07	AM
Hexachlorobutadiene	ND	1	5	ug/L	05/01/07	AM
Isopropylbenzene (Cumene)	ND	1	5	ug/L	05/01/07	AM
Methyl-tert-butylether (MTBE)	ND	1	1	ug/L	05/01/07	AM
Methylene chloride	ND	1	5	ug/L	05/01/07	AM
n-Butylbenzene	ND	1	5	ug/L	05/01/07	AM
n-Propylbenzene	ND	1	5	ug/L	05/01/07	AM
Naphthalene	ND	1	5	ug/L	05/01/07	AM
p-Isopropyltoluene	ND	1	5	ug/L	05/01/07	AM
sec-Butylbenzene	ND	1	5	ug/L	05/01/07	AM
Styrene	ND	1	5	ug/L	05/01/07	AM
tert-Butylbenzene	ND	1	5	ug/L	05/01/07	AM
Tetrachloroethene	ND	1	5	ug/L	05/01/07	AM
Toluene	7.3	1	5	ug/L	05/01/07	AM
trans-1,2-Dichloroethene	ND	1	5	ug/L	05/01/07	AM
trans-1,3-Dichloropropene	ND	1	5	ug/L	05/01/07	AM
trans-1,4-Dichloro-2-butene	ND	1	20	ug/L	05/01/07	AM
Trichloroethene	ND	1	5	ug/L	05/01/07	AM
Trichlorofluoromethane	ND	1	5	ug/L	05/01/07	AM

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795977
Matrix: WATER
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B3-GW

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Vinyl chloride	ND	1	5	ug/L	05/01/07	AM
Xylenes, total	13	1	5	ug/L	05/01/07	AM
Di-isopropyl ether (DIPE)	9.4	1	1	ug/L	05/01/07	AM
Ethyl-tertbutylether (ETBE)	ND	1	1	ug/L	05/01/07	AM
Tert-amylmethylether (TAME)	1.7	1	1	ug/L	05/01/07	AM
Tertiary butyl alcohol (TBA)	39	1	10	ug/L	05/01/07	AM
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	101			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	109			%	70 - 135	
Surr3 - Toluene-d8	105			%	70 - 135	
Surr4 - p-Bromofluorobenzene	103			%	70 - 135	

8015B - Gasoline

Gasoline	405	1	50	ug/L	04/30/07	LT
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	172			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795978
Matrix: SOLID
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B4-3'

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	5.71	1	0.5	mg/Kg	05/02/07	KN

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795979
Matrix: SOLID
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B4-5'

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	4.31	1	0.5	mg/Kg	05/02/07	KN
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	88			%	55 - 200	
8015B - Gasoline						
Gasoline	ND	1	3	mg/Kg	04/30/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	131			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795980
Client: Rincon Consultants, Inc.
Matrix: SOLID
Client Sample ID: B4-10'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	85			%	55 - 200	
8015B - Gasoline						
Gasoline	ND	1	3	mg/Kg	05/01/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	123			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795981 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B4-15'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	6.06	1	0.5	mg/Kg	05/10/07	KN
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	96			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1,1-Trichloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1,2-Trichloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1-Dichloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1-Dichloroethene	ND	1	5	ug/Kg	04/30/07	YL
1,1-Dichloropropene	ND	1	5	ug/Kg	04/30/07	YL
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
1,2,3-Trichloropropane	ND	1	5	ug/Kg	04/30/07	YL
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dibromoethane	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dichloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	YL
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	YL
1,3-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
1,3-Dichloropropane	ND	1	5	ug/Kg	04/30/07	YL

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795981 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B4-15'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,4-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
2,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	YL
2-Butanone (MEK)	ND	1	100	ug/Kg	04/30/07	YL
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	04/30/07	YL
2-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	YL
4-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	YL
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	04/30/07	YL
Acetone	ND	1	50	ug/Kg	04/30/07	YL
Allyl chloride	ND	1	5	ug/Kg	04/30/07	YL
Benzene	ND	1	5	ug/Kg	04/30/07	YL
Bromobenzene	ND	1	5	ug/Kg	04/30/07	YL
Bromochloromethane	ND	1	5	ug/Kg	04/30/07	YL
Bromodichloromethane	ND	1	5	ug/Kg	04/30/07	YL
Bromoform	ND	1	5	ug/Kg	04/30/07	YL
Bromomethane	ND	1	5	ug/Kg	04/30/07	YL
Carbon tetrachloride	ND	1	5	ug/Kg	04/30/07	YL
Chlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
Chloroethane	ND	1	5	ug/Kg	04/30/07	YL
Chloroform	ND	1	5	ug/Kg	04/30/07	YL
Chloromethane	ND	1	5	ug/Kg	04/30/07	YL
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	YL
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	YL
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	YL
Dibromochloromethane	ND	1	5	ug/Kg	04/30/07	YL
Dibromomethane	ND	1	5	ug/Kg	04/30/07	YL
Dichlorodifluoromethane	ND	1	5	ug/Kg	04/30/07	YL
Ethyl benzene	ND	1	5	ug/Kg	04/30/07	YL
Hexachlorobutadiene	ND	1	5	ug/Kg	04/30/07	YL
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	04/30/07	YL
m and p-Xylene	ND	1	5	ug/Kg	04/30/07	YL
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	04/30/07	YL
Methylene chloride	ND	1	5	ug/Kg	04/30/07	YL
n-Butylbenzene	ND	1	5	ug/Kg	04/30/07	YL

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795981 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B4-15'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
n-Propylbenzene	ND	1	5	ug/Kg	04/30/07	YL
Naphthalene	ND	1	5	ug/Kg	04/30/07	YL
o-Xylene	ND	1	5	ug/Kg	04/30/07	YL
p-Isopropyltoluene	ND	1	5	ug/Kg	04/30/07	YL
sec-Butylbenzene	ND	1	5	ug/Kg	04/30/07	YL
Styrene	ND	1	5	ug/Kg	04/30/07	YL
tert-Butylbenzene	ND	1	5	ug/Kg	04/30/07	YL
Tetrachloroethene	ND	1	5	ug/Kg	04/30/07	YL
Toluene	ND	1	5	ug/Kg	04/30/07	YL
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	YL
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	YL
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	YL
Trichloroethene	ND	1	5	ug/Kg	04/30/07	YL
Trichlorofluoromethane	ND	1	5	ug/Kg	04/30/07	YL
Vinyl chloride	ND	1	5	ug/Kg	04/30/07	YL
Xylenes, total	ND	1	5	ug/Kg	04/30/07	YL
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	04/30/07	YL
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	04/30/07	YL
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	04/30/07	YL
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	04/30/07	YL
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	108			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	122			%	70 - 135	
Surr3 - Toluene-d8	103			%	70 - 135	
Surr4 - p-Bromofluorobenzene	93			%	70 - 135	

8015B - Gasoline

Gasoline	ND	1	3	mg/Kg	05/01/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	121			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795982 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B4-20'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	0.803	1	0.5	mg/Kg	05/04/07	KN
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	87			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1,1-Trichloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1,2-Trichloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1-Dichloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1-Dichloroethene	ND	1	5	ug/Kg	04/30/07	YL
1,1-Dichloropropene	ND	1	5	ug/Kg	04/30/07	YL
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
1,2,3-Trichloropropane	ND	1	5	ug/Kg	04/30/07	YL
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dibromoethane	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dichloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	YL
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	YL
1,3-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
1,3-Dichloropropane	ND	1	5	ug/Kg	04/30/07	YL

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795982
Matrix: SOLID
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B4-20'

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,4-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
2,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	YL
2-Butanone (MEK)	ND	1	100	ug/Kg	04/30/07	YL
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	04/30/07	YL
2-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	YL
4-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	YL
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	04/30/07	YL
Acetone	ND	1	50	ug/Kg	04/30/07	YL
Allyl chloride	ND	1	5	ug/Kg	04/30/07	YL
Benzene	ND	1	5	ug/Kg	04/30/07	YL
Bromobenzene	ND	1	5	ug/Kg	04/30/07	YL
Bromochloromethane	ND	1	5	ug/Kg	04/30/07	YL
Bromodichloromethane	ND	1	5	ug/Kg	04/30/07	YL
Bromoform	ND	1	5	ug/Kg	04/30/07	YL
Bromomethane	ND	1	5	ug/Kg	04/30/07	YL
Carbon tetrachloride	ND	1	5	ug/Kg	04/30/07	YL
Chlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
Chloroethane	ND	1	5	ug/Kg	04/30/07	YL
Chloroform	ND	1	5	ug/Kg	04/30/07	YL
Chloromethane	ND	1	5	ug/Kg	04/30/07	YL
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	YL
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	YL
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	YL
Dibromochloromethane	ND	1	5	ug/Kg	04/30/07	YL
Dibromomethane	ND	1	5	ug/Kg	04/30/07	YL
Dichlorodifluoromethane	ND	1	5	ug/Kg	04/30/07	YL
Ethyl benzene	ND	1	5	ug/Kg	04/30/07	YL
Hexachlorobutadiene	ND	1	5	ug/Kg	04/30/07	YL
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	04/30/07	YL
m and p-Xylene	ND	1	5	ug/Kg	04/30/07	YL
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	04/30/07	YL
Methylene chloride	ND	1	5	ug/Kg	04/30/07	YL
n-Butylbenzene	ND	1	5	ug/Kg	04/30/07	YL

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795982 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B4-20'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
n-Propylbenzene	ND	1	5	ug/Kg	04/30/07	YL
Naphthalene	ND	1	5	ug/Kg	04/30/07	YL
o-Xylene	ND	1	5	ug/Kg	04/30/07	YL
p-Isopropyltoluene	ND	1	5	ug/Kg	04/30/07	YL
sec-Butylbenzene	ND	1	5	ug/Kg	04/30/07	YL
Styrene	ND	1	5	ug/Kg	04/30/07	YL
tert-Butylbenzene	ND	1	5	ug/Kg	04/30/07	YL
Tetrachloroethene	ND	1	5	ug/Kg	04/30/07	YL
Toluene	ND	1	5	ug/Kg	04/30/07	YL
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	YL
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	YL
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	YL
Trichloroethene	ND	1	5	ug/Kg	04/30/07	YL
Trichlorofluoromethane	ND	1	5	ug/Kg	04/30/07	YL
Vinyl chloride	ND	1	5	ug/Kg	04/30/07	YL
Xylenes, total	ND	1	5	ug/Kg	04/30/07	YL
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	04/30/07	YL
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	04/30/07	YL
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	04/30/07	YL
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	04/30/07	YL
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	108			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	120			%	70 - 135	
Surr3 - Toluene-d8	102			%	70 - 135	
Surr4 - p-Bromofluorobenzene	86			%	70 - 135	

8015B - Gasoline

Gasoline	ND	1	3	mg/Kg	04/30/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	183			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795983
Matrix: SOLID
Date Sampled: 04/26/2007
Time Sampled: 14:00
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B4-25'

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	2.90	1	0.5	mg/Kg	05/10/07	KN
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,1-Trichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,4-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	05/09/07	LZ
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	05/09/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	05/09/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	05/09/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	05/09/07	LZ
Acetone	ND	1	50	ug/Kg	05/09/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795983 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B4-25'
Date Sampled: 04/26/2007
Time Sampled: 14:00
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Allyl chloride	ND	1	5	ug/Kg	05/09/07	LZ
Benzene	ND	1	5	ug/Kg	05/09/07	LZ
Bromobenzene	ND	1	5	ug/Kg	05/09/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Bromoform	ND	1	5	ug/Kg	05/09/07	LZ
Bromomethane	ND	1	5	ug/Kg	05/09/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	05/09/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
Chloroethane	ND	1	5	ug/Kg	05/09/07	LZ
Chloroform	ND	1	5	ug/Kg	05/09/07	LZ
Chloromethane	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/09/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Dibromomethane	ND	1	5	ug/Kg	05/09/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	05/09/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	05/09/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	05/09/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	05/09/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	05/09/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	05/09/07	LZ
Methylene chloride	ND	1	5	ug/Kg	05/09/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
n-Propylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Naphthalene	ND	1	5	ug/Kg	05/09/07	LZ
o-Xylene	ND	1	5	ug/Kg	05/09/07	LZ
p-Isopropyltoluene	ND	1	5	ug/Kg	05/09/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Styrene	ND	1	5	ug/Kg	05/09/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	05/09/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795983 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B4-25'
Date Sampled: 04/26/2007
Time Sampled: 14:00
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Toluene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/09/07	LZ
Trichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	05/09/07	LZ
Vinyl chloride	ND	1	5	ug/Kg	05/09/07	LZ
Xylenes, total	ND	1	5	ug/Kg	05/09/07	LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	05/09/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	05/09/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	05/09/07	LZ
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	05/09/07	LZ
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	104			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	115			%	70 - 135	
Surr3 - Toluene-d8	96			%	70 - 135	
Surr4 - p-Bromofluorobenzene	106			%	70 - 135	

8015B - Gasoline

Gasoline	ND	1	3	mg/Kg	05/09/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	99			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795984 **Client:** Rincon Consultants, Inc.
Matrix: WATER **Client Sample ID:** B4-GW
Date Sampled: 04/26/2007
Time Sampled: 14:10
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,1-Trichloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,2,2-Tetrachloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,2-Trichloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/L	05/01/07	AM
1,1-Dichloroethane	ND	1	5	ug/L	05/01/07	AM
1,1-Dichloroethene	ND	1	5	ug/L	05/01/07	AM
1,1-Dichloropropene	ND	1	5	ug/L	05/01/07	AM
1,2,3-Trichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,2,3-Trichloropropane	ND	1	5	ug/L	05/01/07	AM
1,2,4-Trichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,2,4-Trimethylbenzene	ND	1	5	ug/L	05/01/07	AM
1,2-Dibromo-3-chloropropane	ND	1	5	ug/L	05/01/07	AM
1,2-Dibromoethane	ND	1	5	ug/L	05/01/07	AM
1,2-Dichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,2-Dichloroethane	ND	1	5	ug/L	05/01/07	AM
1,2-Dichloropropane	ND	1	5	ug/L	05/01/07	AM
1,3,5-Trimethylbenzene	ND	1	5	ug/L	05/01/07	AM
1,3-Dichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,3-Dichloropropane	ND	1	5	ug/L	05/01/07	AM
1,4-Dichlorobenzene	ND	1	5	ug/L	05/01/07	AM
2,2-Dichloropropane	ND	1	5	ug/L	05/01/07	AM
2-Butanone (MEK)	ND	1	100	ug/L	05/01/07	AM
2-Chloroethyl vinyl ether	ND	1	5	ug/L	05/01/07	AM
2-Chlorotoluene	ND	1	5	ug/L	05/01/07	AM
4-Chlorotoluene	ND	1	5	ug/L	05/01/07	AM
4-Methyl -2- Pentanone (MIBK)	ND	1	10	ug/L	05/01/07	AM
Acetone	ND	1	100	ug/L	05/01/07	AM
Allyl chloride	ND	1	5	ug/L	05/01/07	AM
Benzene	<4.6	1	1	ug/L	05/01/07	AM
Bromobenzene	ND	1	5	ug/L	05/01/07	AM
Bromochloromethane	ND	1	5	ug/L	05/01/07	AM

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795984 **Client:** Rincon Consultants, Inc.
Matrix: WATER **Client Sample ID:** B4-GW
Date Sampled: 04/26/2007
Time Sampled: 14:10
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Bromodichloromethane	ND	1	5	ug/L	05/01/07	AM
Bromoform	ND	1	5	ug/L	05/01/07	AM
Bromomethane	ND	1	5	ug/L	05/01/07	AM
Carbon tetrachloride	ND	1	5	ug/L	05/01/07	AM
Chlorobenzene	ND	1	5	ug/L	05/01/07	AM
Chloroethane	ND	1	5	ug/L	05/01/07	AM
Chloroform	ND	1	5	ug/L	05/01/07	AM
Chloromethane	ND	1	5	ug/L	05/01/07	AM
cis-1,2-Dichloroethene	ND	1	5	ug/L	05/01/07	AM
cis-1,3-Dichloropropene	ND	1	5	ug/L	05/01/07	AM
cis-1,4-Dichloro-2-butene	ND	1	20	ug/L	05/01/07	AM
Dibromochloromethane	ND	1	5	ug/L	05/01/07	AM
Dibromomethane	ND	1	5	ug/L	05/01/07	AM
Dichlorodifluoromethane	ND	1	5	ug/L	05/01/07	AM
Ethyl benzene	ND	1	5	ug/L	05/01/07	AM
Hexachlorobutadiene	ND	1	5	ug/L	05/01/07	AM
Isopropylbenzene (Cumene)	ND	1	5	ug/L	05/01/07	AM
Methyl-tert-butylether (MTBE)	ND	1	1	ug/L	05/01/07	AM
Methylene chloride	ND	1	5	ug/L	05/01/07	AM
n-Butylbenzene	ND	1	5	ug/L	05/01/07	AM
n-Propylbenzene	ND	1	5	ug/L	05/01/07	AM
Naphthalene	ND	1	5	ug/L	05/01/07	AM
p-Isopropyltoluene	ND	1	5	ug/L	05/01/07	AM
sec-Butylbenzene	ND	1	5	ug/L	05/01/07	AM
Styrene	ND	1	5	ug/L	05/01/07	AM
tert-Butylbenzene	ND	1	5	ug/L	05/01/07	AM
Tetrachloroethene	ND	1	5	ug/L	05/01/07	AM
Toluene	7.0	1	5	ug/L	05/01/07	AM
trans-1,2-Dichloroethene	ND	1	5	ug/L	05/01/07	AM
trans-1,3-Dichloropropene	ND	1	5	ug/L	05/01/07	AM
trans-1,4-Dichloro-2-butene	ND	1	20	ug/L	05/01/07	AM
Trichloroethene	ND	1	5	ug/L	05/01/07	AM
Trichlorofluoromethane	ND	1	5	ug/L	05/01/07	AM

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795984 **Client:** Rincon Consultants, Inc.
Matrix: WATER **Client Sample ID:** B4-GW
Date Sampled: 04/26/2007
Time Sampled: 14:10
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Vinyl chloride	ND	1	5	ug/L	05/01/07	AM
Xylenes, total	9.9	1	5	ug/L	05/01/07	AM
Di-isopropyl ether (DIPE)	ND	1	1	ug/L	05/01/07	AM
Ethyl-tertbutylether (ETBE)	ND	1	1	ug/L	05/01/07	AM
Tert-amylmethylether (TAME)	ND	1	1	ug/L	05/01/07	AM
Tertiary butyl alcohol (TBA)	16	1	10	ug/L	05/01/07	AM
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	103			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	109			%	70 - 135	
Surr3 - Toluene-d8	104			%	70 - 135	
Surr4 - p-Bromofluorobenzene	104			%	70 - 135	
8015B - Gasoline						
Gasoline	<274	1	50	ug/L	04/30/07	LT
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	117			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795985
Matrix: SOLID
Date Sampled: 04/26/2007
Time Sampled: 14:30
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B5-3'

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	3.63	1	0.5	mg/Kg	05/02/07	KN

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795986
Matrix: SOLID
Date Sampled: 04/26/2007
Time Sampled: 14:40
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B5-5'

Analyte	Result	DF	DLR	Units	Date/Analyst	
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	86			%	55 - 200	
8015B - Gasoline						
Gasoline	ND	1	3	mg/Kg	04/30/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	145			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795987 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B5-10'
Date Sampled: 04/26/2007
Time Sampled: 14:50
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	76			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1,1-Trichloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1,2-Trichloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1-Dichloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,1-Dichloroethene	ND	1	5	ug/Kg	04/30/07	YL
1,1-Dichloropropene	ND	1	5	ug/Kg	04/30/07	YL
* 1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
1,2,3-Trichloropropane	ND	1	5	ug/Kg	04/30/07	YL
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dibromoethane	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dichloroethane	ND	1	5	ug/Kg	04/30/07	YL
1,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	YL
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	YL
1,3-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
1,3-Dichloropropane	ND	1	5	ug/Kg	04/30/07	YL
1,4-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
2,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	YL
2-Butanone (MEK)	ND	1	100	ug/Kg	04/30/07	YL

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795987 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B5-10'
Date Sampled: 04/26/2007
Time Sampled: 14:50
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	04/30/07	YL
2-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	YL
4-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	YL
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	04/30/07	YL
Acetone	ND	1	50	ug/Kg	04/30/07	YL
Allyl chloride	ND	1	5	ug/Kg	04/30/07	YL
Benzene	ND	1	5	ug/Kg	04/30/07	YL
Bromobenzene	ND	1	5	ug/Kg	04/30/07	YL
Bromochloromethane	ND	1	5	ug/Kg	04/30/07	YL
Bromodichloromethane	ND	1	5	ug/Kg	04/30/07	YL
Bromoform	ND	1	5	ug/Kg	04/30/07	YL
Bromomethane	ND	1	5	ug/Kg	04/30/07	YL
Carbon tetrachloride	ND	1	5	ug/Kg	04/30/07	YL
Chlorobenzene	ND	1	5	ug/Kg	04/30/07	YL
Chloroethane	ND	1	5	ug/Kg	04/30/07	YL
Chloroform	ND	1	5	ug/Kg	04/30/07	YL
Chloromethane	ND	1	5	ug/Kg	04/30/07	YL
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	YL
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	YL
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	YL
Dibromochloromethane	ND	1	5	ug/Kg	04/30/07	YL
Dibromomethane	ND	1	5	ug/Kg	04/30/07	YL
Dichlorodifluoromethane	ND	1	5	ug/Kg	04/30/07	YL
Ethyl benzene	ND	1	5	ug/Kg	04/30/07	YL
Hexachlorobutadiene	ND	1	5	ug/Kg	04/30/07	YL
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	04/30/07	YL
m and p-Xylene	ND	1	5	ug/Kg	04/30/07	YL
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	04/30/07	YL
Methylene chloride	ND	1	5	ug/Kg	04/30/07	YL
n-Butylbenzene	ND	1	5	ug/Kg	04/30/07	YL
n-Propylbenzene	ND	1	5	ug/Kg	04/30/07	YL
Naphthalene	ND	1	5	ug/Kg	04/30/07	YL
o-Xylene	ND	1	5	ug/Kg	04/30/07	YL

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795987 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B5-10'
Date Sampled: 04/26/2007
Time Sampled: 14:50
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
p-Isopropyltoluene	ND	1	5	ug/Kg	04/30/07	YL
sec-Butylbenzene	ND	1	5	ug/Kg	04/30/07	YL
Styrene	ND	1	5	ug/Kg	04/30/07	YL
tert-Butylbenzene	ND	1	5	ug/Kg	04/30/07	YL
Tetrachloroethene	ND	1	5	ug/Kg	04/30/07	YL
Toluene	ND	1	5	ug/Kg	04/30/07	YL
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	YL
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	YL
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	YL
Trichloroethene	ND	1	5	ug/Kg	04/30/07	YL
Trichlorofluoromethane	ND	1	5	ug/Kg	04/30/07	YL
Vinyl chloride	ND	1	5	ug/Kg	04/30/07	YL
Xylenes, total	ND	1	5	ug/Kg	04/30/07	YL
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	04/30/07	YL
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	04/30/07	YL
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	04/30/07	YL
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	04/30/07	YL
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	104			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	118			%	70 - 135	
Surr3 - Toluene-d8	100			%	70 - 135	
Surr4 - p-Bromofluorobenzene	93			%	70 - 135	

8015B - Gasoline

Gasoline	ND	1	3	mg/Kg	04/30/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	148			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795988
Matrix: SOLID
Date Sampled: 04/26/2007
Time Sampled: 15:00
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B5-15'

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	9.24	1	0.5	mg/Kg	05/02/07	KN
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	88			%	55 - 200	
8015B - Gasoline						
Gasoline	ND	1	3	mg/Kg	04/30/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	151			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795989 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B5-20'
Date Sampled: 04/26/2007
Time Sampled: 15:10
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	25.8	1	0.5	mg/Kg	05/10/07	KN
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	60			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,1-Trichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795989 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B5-20'
Date Sampled: 04/26/2007
Time Sampled: 15:10
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,4-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	04/30/07	LZ
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	04/30/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	04/30/07	LZ
Acetone	ND	1	50	ug/Kg	04/30/07	LZ
Allyl chloride	ND	1	5	ug/Kg	04/30/07	LZ
Benzene	ND	1	5	ug/Kg	04/30/07	LZ
Bromobenzene	ND	1	5	ug/Kg	04/30/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Bromoform	ND	1	5	ug/Kg	04/30/07	LZ
Bromomethane	ND	1	5	ug/Kg	04/30/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	04/30/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
Chloroethane	ND	1	5	ug/Kg	04/30/07	LZ
Chloroform	ND	1	5	ug/Kg	04/30/07	LZ
Chloromethane	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Dibromomethane	ND	1	5	ug/Kg	04/30/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	04/30/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	04/30/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	04/30/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	04/30/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	04/30/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	04/30/07	LZ
Methylene chloride	ND	1	5	ug/Kg	04/30/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795989 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B5-20'
Date Sampled: 04/26/2007
Time Sampled: 15:10
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
n-Propylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Naphthalene	ND	1	5	ug/Kg	04/30/07	LZ
o-Xylene	ND	1	5	ug/Kg	04/30/07	LZ
p-Isopropyltoluene	ND	1	5	ug/Kg	04/30/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Styrene	ND	1	5	ug/Kg	04/30/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	04/30/07	LZ
Toluene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	LZ
Trichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	04/30/07	LZ
Vinyl chloride	ND	1	5	ug/Kg	04/30/07	LZ
Xylenes, total	ND	1	5	ug/Kg	04/30/07	LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	04/30/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	04/30/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	04/30/07	LZ
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	04/30/07	LZ
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	102			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	118			%	70 - 135	
Surr3 - Toluene-d8	102			%	70 - 135	
Surr4 - p-Bromofluorobenzene	91			%	70 - 135	
8015B - Gasoline						
Gasoline	ND	1	3	mg/Kg	04/30/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	152			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795990 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B5-25'
Date Sampled: 04/26/2007
Time Sampled: 15:20
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP Metals - All						
Lead	17.6	1	0.50	mg/Kg	05/04/07	KN
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,1-Trichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,4-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	05/09/07	LZ
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	05/09/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	05/09/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	05/09/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	05/09/07	LZ
Acetone	ND	1	50	ug/Kg	05/09/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795990 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B5-25'
Date Sampled: 04/26/2007
Time Sampled: 15:20
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Allyl chloride	ND	1	5	ug/Kg	05/09/07	LZ
Benzene	ND	1	5	ug/Kg	05/09/07	LZ
Bromobenzene	ND	1	5	ug/Kg	05/09/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Bromoform	ND	1	5	ug/Kg	05/09/07	LZ
Bromomethane	ND	1	5	ug/Kg	05/09/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	05/09/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
Chloroethane	ND	1	5	ug/Kg	05/09/07	LZ
Chloroform	ND	1	5	ug/Kg	05/09/07	LZ
Chloromethane	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/09/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Dibromomethane	ND	1	5	ug/Kg	05/09/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	05/09/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	05/09/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	05/09/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	05/09/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	05/09/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	05/09/07	LZ
Methylene chloride	ND	1	5	ug/Kg	05/09/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
n-Propylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Naphthalene	ND	1	5	ug/Kg	05/09/07	LZ
o-Xylene	ND	1	5	ug/Kg	05/09/07	LZ
p-Isopropyltoluene	ND	1	5	ug/Kg	05/09/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Styrene	ND	1	5	ug/Kg	05/09/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	05/09/07	LZ

DLR = Detection limit for reporting purposes. ND = Not Detected below indicated detection limit. DF = Dilution Factor

Order #: 795990 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B5-25'
Date Sampled: 04/26/2007
Time Sampled: 15:20
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst
8260B Volatile Organic Compounds					
Toluene	ND	1	5	ug/Kg	05/09/07 LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	05/09/07 LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	05/09/07 LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/09/07 LZ
Trichloroethene	ND	1	5	ug/Kg	05/09/07 LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	05/09/07 LZ
Vinyl chloride	ND	1	5	ug/Kg	05/09/07 LZ
Xylenes, total	ND	1	5	ug/Kg	05/09/07 LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	05/09/07 LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	05/09/07 LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	05/09/07 LZ
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	05/09/07 LZ
Surrogates				**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	105			%	70 - 135
Surr2 - 1,2-Dichloroethane-d4	112			%	70 - 135
Surr3 - Toluene-d8	105			%	70 - 135
Surr4 - p-Bromofluorobenzene	102			%	70 - 135
8015B - Gasoline					
Gasoline	ND	1	3	mg/Kg	05/09/07 YL
Surrogates				**Units**	**Control Limits**
a,a,a-Trifluorotoluene	99			%	55 - 200

DLR – Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF – Dilution Factor

Order #: 795991 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B5-30'
Date Sampled: 04/26/2007
Time Sampled: 15:30
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	5.18	1	0.5	mg/Kg	05/10/07	KN
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,1-Trichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,4-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	05/09/07	LZ
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	05/09/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	05/09/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	05/09/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	05/09/07	LZ
Acetone	ND	1	50	ug/Kg	05/09/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795991 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B5-30'
Date Sampled: 04/26/2007
Time Sampled: 15:30
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Allyl chloride	ND	1	5	ug/Kg	05/09/07	LZ
Benzene	ND	1	5	ug/Kg	05/09/07	LZ
Bromobenzene	ND	1	5	ug/Kg	05/09/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Bromoform	ND	1	5	ug/Kg	05/09/07	LZ
Bromomethane	ND	1	5	ug/Kg	05/09/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	05/09/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
Chloroethane	ND	1	5	ug/Kg	05/09/07	LZ
Chloroform	ND	1	5	ug/Kg	05/09/07	LZ
Chloromethane	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/09/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Dibromomethane	ND	1	5	ug/Kg	05/09/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	05/09/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	05/09/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	05/09/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	05/09/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	05/09/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	05/09/07	LZ
Methylene chloride	ND	1	5	ug/Kg	05/09/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
n-Propylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Naphthalene	ND	1	5	ug/Kg	05/09/07	LZ
o-Xylene	ND	1	5	ug/Kg	05/09/07	LZ
p-Isopropyltoluene	ND	1	5	ug/Kg	05/09/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Styrene	ND	1	5	ug/Kg	05/09/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	05/09/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795991 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B5-30'
Date Sampled: 04/26/2007
Time Sampled: 15:30
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Toluene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/09/07	LZ
Trichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	05/09/07	LZ
Vinyl chloride	ND	1	5	ug/Kg	05/09/07	LZ
Xylenes, total	ND	1	5	ug/Kg	05/09/07	LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	05/09/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	05/09/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	05/09/07	LZ
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	05/09/07	LZ
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	106			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	119			%	70 - 135	
Surr3 - Toluene-d8	100			%	70 - 135	
Surr4 - p-Bromofluorobenzene	102			%	70 - 135	

8015B - Gasoline

Gasoline	ND	1	3	mg/Kg	05/09/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	97			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795992 **Client:** Rincon Consultants, Inc.
Matrix: WATER **Client Sample ID:** B5-GW
Date Sampled: 04/26/2007
Time Sampled: 16:00
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,1-Trichloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,2,2-Tetrachloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,2-Trichloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/L	05/01/07	AM
1,1-Dichloroethane	ND	1	5	ug/L	05/01/07	AM
1,1-Dichloroethene	ND	1	5	ug/L	05/01/07	AM
1,1-Dichloropropene	ND	1	5	ug/L	05/01/07	AM
1,2,3-Trichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,2,3-Trichloropropane	ND	1	5	ug/L	05/01/07	AM
1,2,4-Trichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,2,4-Trimethylbenzene	ND	1	5	ug/L	05/01/07	AM
1,2-Dibromo-3-chloropropane	ND	1	5	ug/L	05/01/07	AM
1,2-Dibromoethane	ND	1	5	ug/L	05/01/07	AM
1,2-Dichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,2-Dichloroethane	ND	1	5	ug/L	05/01/07	AM
1,2-Dichloropropane	ND	1	5	ug/L	05/01/07	AM
1,3,5-Trimethylbenzene	ND	1	5	ug/L	05/01/07	AM
1,3-Dichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,3-Dichloropropane	ND	1	5	ug/L	05/01/07	AM
1,4-Dichlorobenzene	ND	1	5	ug/L	05/01/07	AM
2,2-Dichloropropane	ND	1	5	ug/L	05/01/07	AM
2-Butanone (MEK)	ND	1	100	ug/L	05/01/07	AM
2-Chloroethyl vinyl ether	ND	1	5	ug/L	05/01/07	AM
2-Chlorotoluene	ND	1	5	ug/L	05/01/07	AM
4-Chlorotoluene	ND	1	5	ug/L	05/01/07	AM
4-Methyl -2- Pentanone (MIBK)	ND	1	10	ug/L	05/01/07	AM
Acetone	ND	1	100	ug/L	05/01/07	AM
Allyl chloride	ND	1	5	ug/L	05/01/07	AM
Benzene	1.4	1	1	ug/L	05/01/07	AM
Bromobenzene	ND	1	5	ug/L	05/01/07	AM
Bromochloromethane	ND	1	5	ug/L	05/01/07	AM

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795992
Matrix: WATER
Date Sampled: 04/26/2007
Time Sampled: 16:00
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B5-GW

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Bromodichloromethane	ND	1	5	ug/L	05/01/07	AM
Bromoform	ND	1	5	ug/L	05/01/07	AM
Bromomethane	ND	1	5	ug/L	05/01/07	AM
Carbon tetrachloride	ND	1	5	ug/L	05/01/07	AM
Chlorobenzene	ND	1	5	ug/L	05/01/07	AM
Chloroethane	ND	1	5	ug/L	05/01/07	AM
Chloroform	ND	1	5	ug/L	05/01/07	AM
Chloromethane	ND	1	5	ug/L	05/01/07	AM
cis-1,2-Dichloroethene	ND	1	5	ug/L	05/01/07	AM
cis-1,3-Dichloropropene	ND	1	5	ug/L	05/01/07	AM
cis-1,4-Dichloro-2-butene	ND	1	20	ug/L	05/01/07	AM
Dibromochloromethane	ND	1	5	ug/L	05/01/07	AM
Dibromomethane	ND	1	5	ug/L	05/01/07	AM
Dichlorodifluoromethane	ND	1	5	ug/L	05/01/07	AM
Ethyl benzene	ND	1	5	ug/L	05/01/07	AM
Hexachlorobutadiene	ND	1	5	ug/L	05/01/07	AM
Isopropylbenzene (Cumene)	ND	1	5	ug/L	05/01/07	AM
Methyl-tert-butylether (MTBE)	ND	1	1	ug/L	05/01/07	AM
Methylene chloride	ND	1	5	ug/L	05/01/07	AM
n-Butylbenzene	ND	1	5	ug/L	05/01/07	AM
n-Propylbenzene	ND	1	5	ug/L	05/01/07	AM
Naphthalene	ND	1	5	ug/L	05/01/07	AM
p-Isopropyltoluene	ND	1	5	ug/L	05/01/07	AM
sec-Butylbenzene	ND	1	5	ug/L	05/01/07	AM
Styrene	ND	1	5	ug/L	05/01/07	AM
tert-Butylbenzene	ND	1	5	ug/L	05/01/07	AM
Tetrachloroethene	ND	1	5	ug/L	05/01/07	AM
Toluene	ND	1	5	ug/L	05/01/07	AM
trans-1,2-Dichloroethene	ND	1	5	ug/L	05/01/07	AM
trans-1,3-Dichloropropene	ND	1	5	ug/L	05/01/07	AM
trans-1,4-Dichloro-2-butene	ND	1	20	ug/L	05/01/07	AM
Trichloroethene	ND	1	5	ug/L	05/01/07	AM
Trichlorofluoromethane	ND	1	5	ug/L	05/01/07	AM

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795992
Matrix: WATER
Date Sampled: 04/26/2007
Time Sampled: 16:00
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B5-GW

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Vinyl chloride	ND	1	5	ug/L	05/01/07	AM
Xylenes, total	ND	1	5	ug/L	05/01/07	AM
Di-isopropyl ether (DIPE)	6.8	1	1	ug/L	05/01/07	AM
Ethyl-tertbutylether (ETBE)	ND	1	1	ug/L	05/01/07	AM
Tert-amylmethylether (TAME)	1.5	1	1	ug/L	05/01/07	AM
Tertiary-butyl alcohol (TBA)	32	1	10	ug/L	05/01/07	AM
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	103			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	114			%	70 - 135	
Surr3 - Toluene-d8	104			%	70 - 135	
Surr4 - p-Bromofluorobenzene	105			%	70 - 135	

8015B - Gasoline

Gasoline	61	1	50	ug/L	04/30/07	LT
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	98			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795993 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** Laboratory Method Blank
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Antimony	ND	1	3.00	mg/Kg	05/02/07	KN
Arsenic	ND	1	1.00	mg/Kg	05/02/07	KN
Barium	ND	1	1.00	mg/Kg	05/02/07	KN
Beryllium	ND	1	0.50	mg/Kg	05/02/07	KN
Cadmium	ND	1	0.50	mg/Kg	05/02/07	KN
Chromium	ND	1	1.00	mg/Kg	05/02/07	KN
Cobalt	ND	1	0.50	mg/Kg	05/02/07	KN
Copper	ND	1	1.00	mg/Kg	05/02/07	KN
Lead	ND	1	0.50	mg/Kg	05/02/07	KN
Molybdenum	ND	1	1.00	mg/Kg	05/02/07	KN
Nickel	ND	1	1.50	mg/Kg	05/02/07	KN
Selenium	ND	1	1.00	mg/Kg	05/02/07	KN
Silver	ND	1	0.50	mg/Kg	05/02/07	KN
Thallium	ND	1	1.00	mg/Kg	05/02/07	KN
Vanadium	ND	1	0.50	mg/Kg	05/02/07	KN
Zinc	ND	1	5.00	mg/Kg	05/02/07	KN
7471A Mercury in Solid/Wipe						
Mercury	ND	1	0.14	mg/Kg	05/01/07	MDJ
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	167			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795993 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** Laboratory Method Blank
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,1,1-Trichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,2,4-Tricblorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,4-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	04/30/07	LZ
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	04/30/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	04/30/07	LZ
Acetone	ND	1	50	ug/Kg	04/30/07	LZ
Allyl chloride	ND	1	5	ug/Kg	04/30/07	LZ
Benzene	ND	1	5	ug/Kg	04/30/07	LZ
Bromobenzene	ND	1	5	ug/Kg	04/30/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Bromoform	ND	1	5	ug/Kg	04/30/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795993 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** Laboratory Method Blank
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Bromomethane	ND	1	5	ug/Kg	04/30/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	04/30/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
Chloroethane	ND	1	5	ug/Kg	04/30/07	LZ
Chloroform	ND	1	5	ug/Kg	04/30/07	LZ
Chloromethane	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Dibromomethane	ND	1	5	ug/Kg	04/30/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	04/30/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	04/30/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	04/30/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	04/30/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	04/30/07	LZ
Methylene chloride	ND	1	5	ug/Kg	04/30/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
n-Propylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Naphthalene	ND	1	5	ug/Kg	04/30/07	LZ
p-Isopropyltoluene	ND	1	5	ug/Kg	04/30/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Styrene	ND	1	5	ug/Kg	04/30/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	04/30/07	LZ
Toluene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	LZ
Trichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	04/30/07	LZ
Vinyl chloride	ND	1	5	ug/Kg	04/30/07	LZ
Xylenes, total	ND	1	5	ug/Kg	04/30/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795993 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** Laboratory Method Blank
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B VOC OXYgenates						
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	04/30/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	04/30/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	04/30/07	LZ
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	04/30/07	LZ
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	103			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	112			%	70 - 135	
Surr3 - Toluene-d8	104			%	70 - 135	
Surr4 - p-Bromofluorobenzene	97			%	70 - 135	

8015B - Gasoline

Gasoline	ND	1	3	mg/Kg	04/30/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	99			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795994 **Client:** Rincon Consultants, Inc.
Matrix: WATER **Client Sample ID:** Laboratory Method Blank
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8015B Carbon Chain I						
C06 - C10	ND	1	0.2	mg/L	05/01/07	AF
C10 - C22	ND	1	0.2	mg/L	05/01/07	AF
C22 - C36	ND	1	0.3	mg/L	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	175			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,1-Trichloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,2,2-Tetrachloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,2-Trichloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/L	05/01/07	AM
1,1-Dichloroethane	ND	1	5	ug/L	05/01/07	AM
1,1-Dichloroethene	ND	1	5	ug/L	05/01/07	AM
1,1-Dichloropropene	ND	1	5	ug/L	05/01/07	AM
1,2,3-Trichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,2,3-Trichloropropane	ND	1	5	ug/L	05/01/07	AM
1,2,4-Trichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,2,4-Trimethylbenzene	ND	1	5	ug/L	05/01/07	AM
1,2-Dibromo-3-chloropropane	ND	1	5	ug/L	05/01/07	AM
1,2-Dibromoethane	ND	1	5	ug/L	05/01/07	AM
1,2-Dichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,2-Dichloroethane	ND	1	5	ug/L	05/01/07	AM
1,2-Dichloropropane	ND	1	5	ug/L	05/01/07	AM
1,3,5-Trimethylbenzene	ND	1	5	ug/L	05/01/07	AM
1,3-Dichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,3-Dichloropropane	ND	1	5	ug/L	05/01/07	AM
1,4-Dichlorobenzene	ND	1	5	ug/L	05/01/07	AM
2,2-Dichloropropane	ND	1	5	ug/L	05/01/07	AM
2-Butanone (MEK)	ND	1	100	ug/L	05/01/07	AM

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795994 **Client:** Rincon Consultants, Inc.
Matrix: WATER **Client Sample ID:** Laboratory Method Blank
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
2-Chloroethyl vinyl ether	ND	1	5	ug/L	05/01/07	AM
2-Chlorotoluene	ND	1	5	ug/L	05/01/07	AM
4-Chlorotoluene	ND	1	5	ug/L	05/01/07	AM
4-Methyl -2- Pentanone (MIBK)	ND	1	10	ug/L	05/01/07	AM
Acetone	ND	1	100	ug/L	05/01/07	AM
Allyl chloride	ND	1	5	ug/L	05/01/07	AM
Benzene	ND	1	1	ug/L	05/01/07	AM
Bromobenzene	ND	1	5	ug/L	05/01/07	AM
Bromochloromethane	ND	1	5	ug/L	05/01/07	AM
Bromodichloromethane	ND	1	5	ug/L	05/01/07	AM
Bromoform	ND	1	5	ug/L	05/01/07	AM
Bromomethane	ND	1	5	ug/L	05/01/07	AM
Carbon tetrachloride	ND	1	5	ug/L	05/01/07	AM
Chlorobenzene	ND	1	5	ug/L	05/01/07	AM
Chloroethane	ND	1	5	ug/L	05/01/07	AM
Chloroform	ND	1	5	ug/L	05/01/07	AM
Chloromethane	ND	1	5	ug/L	05/01/07	AM
cis-1,2-Dichloroethene	ND	1	5	ug/L	05/01/07	AM
cis-1,3-Dichloropropene	ND	1	5	ug/L	05/01/07	AM
cis-1,4-Dichloro-2-butene	ND	1	20	ug/L	05/01/07	AM
Dibromochloromethane	ND	1	5	ug/L	05/01/07	AM
Dibromomethane	ND	1	5	ug/L	05/01/07	AM
Dichlorodifluoromethane	ND	1	5	ug/L	05/01/07	AM
Ethyl benzene	ND	1	5	ug/L	05/01/07	AM
Hexachlorobutadiene	ND	1	5	ug/L	05/01/07	AM
Isopropylbenzene (Cumene)	ND	1	5	ug/L	05/01/07	AM
m and p-Xylene	ND	1	5	ug/L	05/01/07	AM
Methyl-tert-butylether (MTBE)	ND	1	1	ug/L	05/01/07	AM
Methylene chloride	ND	1	5	ug/L	05/01/07	AM
n-Butylbenzene	ND	1	5	ug/L	05/01/07	AM
n-Propylbenzene	ND	1	5	ug/L	05/01/07	AM
Naphthalene	ND	1	5	ug/L	05/01/07	AM
o-Xylene	ND	1	5	ug/L	05/01/07	AM

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795994 **Client:** Rincon Consultants, Inc.
Matrix: WATER **Client Sample ID:** Laboratory Method Blank
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst
8260B Volatile Organic Compounds					
p-Isopropyltoluene	ND	1	5	ug/L	05/01/07 AM
sec-Butylbenzene	ND	1	5	ug/L	05/01/07 AM
Styrene	ND	1	5	ug/L	05/01/07 AM
tert-Butylbenzene	ND	1	5	ug/L	05/01/07 AM
Tetrachloroethene	ND	1	5	ug/L	05/01/07 AM
Toluene	ND	1	5	ug/L	05/01/07 AM
trans-1,2-Dichloroethene	ND	1	5	ug/L	05/01/07 AM
trans-1,3-Dichloropropene	ND	1	5	ug/L	05/01/07 AM
trans-1,4-Dichloro-2-butene	ND	1	20	ug/L	05/01/07 AM
Trichloroethene	ND	1	5	ug/L	05/01/07 AM
Trichlorofluoromethane	ND	1	5	ug/L	05/01/07 AM
Vinyl chloride	ND	1	5	ug/L	05/01/07 AM
Xylenes, total	ND	1	5	ug/L	05/01/07 AM
Di-isopropyl ether (DIPE)	ND	1	1	ug/L	05/01/07 AM
Ethyl-tertbutylether (ETBE)	ND	1	1	ug/L	05/01/07 AM
Tert-amylmethylether (TAME)	ND	1	1	ug/L	05/01/07 AM
Tertiary butyl alcohol (TBA)	ND	1	10	ug/L	05/01/07 AM
Surrogates				**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	100			%	70 - 135
Surr2 - 1,2-Dichloroethane-d4	104			%	70 - 135
Surr3 - Toluene-d8	107			%	70 - 135
Surr4 - p-Bromofluorobenzene	100			%	70 - 135

8015B - Gasoline

Gasoline	ND	1	50	ug/L	04/30/07 LT
Surrogates				**Units**	**Control Limits**
a,a,a-Trifluorotoluene	93			%	55 - 200

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868
714/771-6900 FAX 714/538-1209

CHAIN OF CUSTODY RECORD

Date 4/26/07 Page 1 of 1

Assigned LR# 189391

CLIENT: RINCON CONSULTANTS, INC

ADDRESS: 5355 AVENIDA ENCINAS, SUITE 103
CARLSBAD, CA 92008

Is this the address the final report is to be sent to? Yes X No ___
If "No" list mailing address in "Special Instructions" section at the bottom of this Chain of Custody.

PROJECT IDENTIFICATION/LOCATION:

PURCHASE ORDER #: 07-23350

SAMPLER: (Print AND Sign)
KONEIL

SAMPLE TURNAROUND TIME:
Requested Turnaround Time (CIRCLE ONE)*
Priority Charges Apply to Rush Turn Around Times
RUSH: Same Day 24 Hr 48 Hr (72 Hr)
STANDARD: Standard TAT **(5 to 10 Working Days)
Other ___
* Availability of Same Day/24/48/72 Hr TAT Varies Based Upon Test Method Requirements.
**Standard TAT Varies According to Analyses.

CONTACT PERSON: KO'NEIL

SAMPLED BY (Circle One): (Client) Assoc. Lab Personnel

PHONE #: 760) 918-9444

FAX #: 760) 918-9449

SAMPLE CONDITION INFO - *FOR LAB USE ONLY:*
Samples Intact: Yes ✓ No ___
Sample Seals Intact: Yes ___ No ___ N/A ✓
Cooler Seals Intact: Yes ___ No ___ N/A ✓

	SAMPLE ID	SAMPLE OR LOCATION DESCRIPTION	DATE	TIME	MATRIX (See Codes Below)	# OF CONTAINERS	TEST REQUIRED
1	B2-3'	BORING B2	4/26/07	8:15	SOIL	1	TEPHcc 8015, CAM METALS
2	B2-5'	BORING B2	4/26/07		SOIL	1	TEPHcc 8015, CAM METALS
3	B2-10'		4/26/07		SOIL	1	TEPHcc 8015, VOCs +OXY 8260B
4	B2-15'		4/26/07		SOIL	1	TEPHcc 8015,
5	B2-20'		4/26/07		SOIL	1	HOLD
6	B2-25'		4/26/07		SOIL	1	TEPHcc 8015, VOCs +OXY 8260B
7	B2-30'		4/26/07		SOIL	1	HOLD
8	B2-GW X	↓	4/26/07	9:10	WATER	7	~~TEPHcc~~, VOCs +OXY 8260B
9	B3-3'	BORING B3	4/26/07	10:22	SOIL	~~SOIL~~ 1	8015 LEAD 6010B
10	B3-5'		4/26/07		SOIL	1	HOLD

MATRIX: GW=Ground Water DW=Drinking Water WW=Waste Water SW=Storm Water S=Solid/Soil A=Air L=Liquid F=Food (Use the codes shown here to identify the matrix above)

Relinquished by: (Print AND Sign)***	Received By: (Print AND Sign)	Date/Time:
KONEIL	Ken Mahio Ken Mahio	10:30 4-27-07
Ken Mahio Ken Mahio 1:35 4-27-07	Juan Montoya	14:35 4/27/07
Relinquished by: (Print AND Sign)***	Received by Lab for Analysis: (Print AND Sign)	Date/Time:

Special Instructions: Please note sample B2-GW was collected on 4/26/2007 The date on the VOA's is wrong.

***By signing this Chain of Custody you are authorizing the analyses shown above. KONEIL (Print AND Sign)

COC DISTRIBUTION: White with report. Yellow to AL. Pink to Client's Courier.

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868
714/771-6900 FAX 714/538-1209

CHAIN OF CUSTODY RECORD

Date 4/26/07 Page 2 of 3

Assigned LR# 189391

CLIENT: Lincon Consultants, Inc

ADDRESS: 5355 Avenida Encinas, Suite 103
Carlsbad, CA 92008

Is this the address the final report is to be sent to? Yes X No ___
If "No" list mailing address in "Special Instructions" section at the bottom of this Chain of Custody.

PROJECT IDENTIFICATION/LOCATION:

PURCHASE ORDER #: 07-23350

SAMPLER: (Print AND Sign) KO'NEIL

SAMPLE TURNAROUND TIME:

Requested Turnaround Time (CIRCLE ONE)*
Priority Charges Apply to Rush Turn Around Times
RUSH: Same Day 24 Hr 48 Hr 72 Hr
STANDARD: Standard TAT **(5 to 10 Working Days)
Other ___
* Availability of Same Day/24/48/72 Hr TAT Varies Based Upon Test Method Requirements.
**Standard TAT Varies According to Analyses.

CONTACT PERSON: KO'NEIL

SAMPLED BY (Circle One): Client Assoc. Lab Personnel

PHONE #: 760 918-9444

FAX #: 760 918-9449

SAMPLE CONDITION INFO - *FOR LAB USE ONLY:*
Samples Intact: Yes ___ No ___
Sample Seals Intact: Yes ___ No ___ N/A ___
Cooler Seals Intact: Yes ___ No ___ N/A ___

	SAMPLE ID	SAMPLE OR LOCATION DESCRIPTION	DATE	TIME	MATRIX (See Codes Below)	# OF CONTAINERS	TEST REQUIRED
1	B3-10	Boring B3	4/26/07		SOIL	1	TEPHcc & TPHg 8015, VOCs+OXY 8260B, LEAD 6010B
2	B3-15	Boring B3	4/26/07		SOIL	1	TEPHcc & TPHg 8015
3	B3-20	Boring B3	4/26/07		SOIL	1	TEPHcc & TPHg 8015, VOCs+OXY 8260B
4	B3-25	Boring B3	4/26/07		SOIL	1	TEPHcc & TPHg 8015
5	B3-GW	Boring B3	4/26/07		WATER	~~3~~ 6	TEPHcc & TPHg by 8015, 8260B+OXY
6	B4-3	Boring B4	4/26/07		SOIL	1	Lead 6010B
7	B4-5	" "	4/26/07		SOIL	1	TEPHcc & TPHg (8015), Lead 6010B
8	B4-10	" "	4/26/07		SOIL	1	TEPHcc & TPHg (8015)
9	B4-15	" "	4/26/07		SOIL	1	TEPHcc & TPHg (8015), 8260B+OXY
10	B4-20	" "	4/26/07		SOIL	1	TEPHcc & TPHg (8015), 8260B+OXY

MATRIX: GW=Ground Water DW=Drinking Water WW=Waste Water SW=Storm Water S=Solid/Soil A=Air L=Liquid F=Food (Use the codes shown here to identify the matrix above)

Relinquished by: (Print AND Sign)**	Received By: (Print AND Sign)	Date/Time:
KO'NEIL	Ken Makro	4-27-07 10:30
Relinquished by: (Print AND Sign)*** Ken Makro 4-27-07 1:25	Received By: (Print AND Sign) Andrew Juan Martinez	Date/Time: 4/27/07 1:25
Relinquished by: (Print AND Sign)***	Received by Lab for Analysis: (Print AND Sign)	Date/Time:

Special Instructions:

***By signing this Chain of Custody you are authorizing the analyses shown above. KO'NEIL (Print AND Sign)

COC DISTRIBUTION: White with report. Yellow to AL. Pink to Client's Courier.

SSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868
714/771-6900 FAX 714/538-1209

CHAIN OF CUSTODY RECORD

Date 4/26/07 Page 3 of 3

Assigned LR# 189391

CLIENT: RINCON CONSULTANTS INC
ADDRESS: 5355 AVENIDA ENCINAS, SUITE 103
CARLSBAD, CA 92008
Is this the address the final report is to be sent to? Yes X No ___
If "No" list mailing address in "Special Instructions" section at the bottom of this Chain of Custody.

PROJECT IDENTIFICATION/LOCATION:

PURCHASE ORDER #: 07-23350
SAMPLER: (Print AND Sign) Stephanie Vasconcellos
K O'NEIL Stephanie Vasconcellos

SAMPLE TURNAROUND TIME:
Requested Turnaround Time (CIRCLE ONE)*
Priority Charges Apply to Rush Turn Around Times
RUSH: Same Day 24 Hr 48 Hr (72 Hr)
STANDARD: Standard TAT **(5 to 10 Working Days)
Other ___
* Availability of Same Day/24/48/72 Hr TAT Varies Based Upon Test Method Requirements.
** Standard TAT Varies According to Analyses.

CONTACT PERSON: KO'NEIL
SAMPLED BY (Circle One): (Client) Assoc. Lab Personnel

PHONE #: 760) 918-9444
FAX #: 760) 918-9449

SAMPLE CONDITION INFO - *FOR LAB USE ONLY:*
Samples Intact: Yes ___ No ___
Sample Seals Intact: Yes ___ No ___ N/A ___
Cooler Seals Intact: Yes ___ No ___ N/A ___

	SAMPLE ID	SAMPLE OR LOCATION DESCRIPTION	DATE	TIME	MATRIX (See Codes Below)	# OF CONTAINERS	TEST REQUIRED
1	B4-25	Boring B4	4/26/07	2:00	SOIL	1	HOLD
2	B4-GW	" "	4/26/07	2:10	Water	7	~~TEPH cc & TPHg~~ (8015), 8260B+OXY
3	B5-3'	Boring B5	4/26/07	2:30	SOIL	1	Lead 6010B
4	B5-5'	" "	4/26/07	2:40	SOIL	1	~~TEPH cc & TPHg~~ (8015)
5	B5-10'	"	4/26/07	2:50	SOIL	1	~~TEPH cc & TPHg~~ (8015), 8260B+OXY
6	B5-15'	"	4/26/07	3:00	SOIL	1	~~TEPH cc & TPHg~~ (8015), Lead 6010B
7	B5-20'	"	4/26/07	3:10	SOIL	1	~~TEPH cc & TPHg~~ (8015), 8260B+OXY
8	B5-25'	"	4/26/07	3:20	SOIL	1	HOLD
9	B5-30'	"	4/26/07	3:30	SOIL	1	HOLD
10	B5-GW	"	4/26/07	4:00	Water	7	~~TEPH cc & TPHg~~ (8015), 8260B+OXY

MATRIX: GW=Ground Water DW=Drinking Water WW=Waste Water SW=Storm Water S=Solid/Soil A=Air L=Liquid F=Food (Use the codes shown here to identify the matrix above)

Relinquished By: (Print AND Sign)*** Stephanie Vasconcellos	Received By: (Print AND Sign) Ken Malvo Ken Malvo	Date/Time: 10:30 4-27-07
Relinquished by: (Print AND Sign)*** Ken Malvo Ken Malvo 4-27-07 1:25	Received By: (Print AND Sign) [illegible]	Date/Time: 4/27/07 1:25
Relinquished by: (Print AND Sign)***	Received by Lab for Analysis: (Print AND Sign)	Date/Time:

Special Instructions:

***By signing this Chain of Custody you are authorizing the analyses shown above.
Stephanie Vasconcellos Stephanie Vasconcellos
(Print AND Sign)

COC DISTRIBUTION: White with report. Yellow to AL. Pink to Client's Courier.

05220701

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone NRC/800-337-7455	4. Waste Tracking Number

5. Generator's Name and Mailing Address
LILIAN RSF, LLC
1335 ORANGE AVE, # 335
CORONADO CA 92118
Generator's Phone:

Att: LILIAN RSF, LLC

Generator's Site Address (if different than mailing address)
LILIAN RSF, LLC
6010 PASEO DELICIAS
RANCHO SANTE FE CA 92009

6. Transporter 1 Company Name: NRC ENVIRONMENTAL SERVICES INC.
U.S. EPA ID Number: CAD082699562

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Crosby & Overton, Inc.
1630 W. 17th Street
Long Beach CA 90813
Facility's Phone: 562 432-5445
U.S. EPA ID Number: CAD028408019

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non-Hazardous Waste Solid, (soil borings)	010	DM	06000	P	NONE
	2. Non-Hazardous Waste Liquid, (boring, purge water)	002	DM	00096	G	NONE
	3.					
	4.					

13. Special Handling Instructions and Additional Information
WEAR PROPER PPE AT ALL TIMES. JOB # 28727, P.O. # 221303
PROFILE # (9b1/~~62422~~ 62810, 9b2/~~62302~~ 62809)

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: OSCAR L. RODRIGUEZ
Signature:
Month Day Year: 05 21 07

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: ~~JOE SEPULVEDA~~ OSCAR L. RODRIGUEZ
Signature:
Month Day Year: 05 21 07
Transporter 2 Printed/Typed Name
Signature:
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

1 1 41 | 1 1 35

18. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 17a
Printed/Typed Name:
Signature:
Month Day Year: 5 22 07

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

169-BLC-O 6 10498 TRANSPORTER #1

PERMIT #LMON104741
A.P.N. #266-283-07-00
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
SOIL BORING CONSTRUCTION PERMIT

SITE NAME: THE LILLIAN RSF, LLC

SITE ADDRESS: 6010 PASEO LAS DELICIAS, RANCHO SANTA FE 92067

PERMIT FOR: 5 SOIL BORINGS

PERMIT APPROVAL DATE: 04/11/2007

PERMIT EXPIRES ON: 08/09/2007

RESPONSIBLE PARTY: THE LILLIAN RSF, LLC

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: _____ DATE: 04/11/2007
VERONICA TAVIZON-HITCHNER

NOTIFIED: e-mailed 04/11/07

DEH: SAM-9075 (1/06)

● Change of Driller ●

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 104741
SAM CASE Y/N #
DATE RECEIVED:
FEE PAID:
CHECK #

A. RESPONSIBLE PARTY The Lillian RSF, LLC. Phone (619) 708-4446
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 1330 Orange Avenue, Suite 335 City Coronado State CA Zip 92118
Contact Person Joe Pinsonneault Phone 619-708-4446 Ext. Fax 619-435-3135

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE #

C. CONSULTING FIRM Rincon Consultants, Inc.
Mailing Address 5355 Avenida Encinas #103 City Carlsbad State CA Zip 92008
Registered Professional Stephanie Vasconcellos Registration # 7691 (PG) RCE) Circle if applicable
Email: sv@rinconconsultants.com
Contact Person Stephanie Vasconcellos Phone 760-918-9444 Ext. Fax 760-918-9449

D. DRILLING COMPANY Test America Drilling C57# 819548
Contact Name Manuel Marquez
Mailing Address 3620 Kurtz Street City San Diego State CA Zip 92110
Phone 619-686-5800 Ext. Fax 619-686-5809

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	
☐ Vadose	
☒ Boring	5
☐ Other	

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable X
Type
Gauge
Diameter
Well Screen Size
Filter Pack

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
Borehole diameter

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 10-15 ft.
Estimated depth of boring 20 ft.

Concrete surface seal	0 to 3
Annular seal	___ to ___
Bentonite transition seal	___ to ___
Filter Pack	___ to ___
Perforation	___ to ___

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] DATE 4/24/07

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE SIGNATURE Stephanie Vasconcellos DATE 4/24/07

RECEIVED
APR 02 2007
ENVIRONMENTAL HEALTH

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

T104741

OFFICE USE ONLY
PERMIT LMQN # 104741
SAM CASE (N)# NONE
DATE RECEIVED: 4-2-07
FEE PAID: $ 385-
CHECK # 17071

A. RESPONSIBLE PARTY The Lillian RSF, LLC.

Managing Member : Joe Pinsonneault — Phone (619) 708-4446 x
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)

Mailing Address 1330 Orange Avenue, Suite 335 — City Coronado — State CA — Zip 92118-
Contact Person Joe Pinsonneault — Phone 619-708-4446 — Ext. ____ — Fax 619-435-3135

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # ____

C. CONSULTING FIRM Rincon Consultants, Inc.

Mailing Address 5355 Avenida Encinas, Suite 103 — City Carlsbad — State CA — Zip 92008-
Registered Professional Stephanie Vasconcellos — Registration # 7691 (RG) — E-mail svasconcellos@rinconconsultants.com
Contact Person Stephanie Vasconcellos — Phone 760-918-9444 — Ext. 110
Fax 760-918-9449

D. DRILLING COMPANY Vironex — C57# 705927

Contact Name Todd Hanna

Mailing Address 1225 E. McFadden — City Santa Ana — State CA — Zip 92705-
Phone 714-647-6290 — Fax 714-647-6291

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	5
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING

Not Applicable X
Type ____
Gauge ____
Diameter ____
Well Screen Size ____
Filter Pack ____

SEAL/BORING BACKFILL

☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other

Borehole diameter 2"

Drilling Method

☐ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☒ Other

PROPOSED CONSTRUCTION

Estimated groundwater depth: 10 ft.
Estimated depth of boring 20 ft.

Concrete surface seal	0 to 3
Annular seal	____ to ____
Bentonite transition seal	____ to ____
Filter Pack	____ to ____
Perforation	____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 3/26/07

Mar 26 2007 12:25PM RINCON CARLSBAD 7609189449 p.2

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE Stephanie Vasconcellos DATE 3/29/07

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 266-283-07-00
   Site Name The Lillian RSF, LLC
   Site Address 6010 Paseo Delicias City Rancho Sante Fe Zip 92067

   PROPERTY OWNER Joe Pinsonneault
   Phone 619-708-4446 Ext. Fax 619-435-3135
   Mailing Address 1330 Orange Avenue, Suite 335 City Coronado State CA
   Zip 92118-

   NUMBER OF WELLS 0- **TYPE OF WELLS** N/A

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

Mar 26 2007 12:25PM RINCON CARLSBAD 7609189449 p.3

4. ASSESSOR'S PARCEL NUMBER _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2006, through June 30, 2007)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well	**$185.00**
Permit for Well Maintenance Inspection (Valid for three years)	$100.00 for first well maintenance inspection	**$100.00**
Each Additional New Well	$160.00 for each additional well installation	___ x **$160.00** $_____
	$ 30.00 for each additional well maintenance inspection	___ x **$30.00** $_____

Mar 26 2007 12:25PM RINCON CARLSBAD 7609189449 p.4

Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$185.00 for the first boring ..... $ 50.00 for each additional boring	1 x $185.00 4 x $50.00	$185.00 $200.00
Permit for Well Destructions Only	$185.00 for the first destruction $120.00 for each additional destruction	___ x $185.00 ___ x $120.00	$_____ $_____
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $185.00 **Additional activities will be as follows:** $160.00 for each additional well $100.00 for first well maintenance inspection $ 30.00 for each additional well maintenance inspection $120.00 for each well destruction $ 50.00 for each additional boring	___ x $185.00 ___ x $160.00 ___ x $100.00 ___ x $ 30.00 ___ x $120.00 ___ x $ 50.00	$_____ $_____ $_____ $_____ $_____ $_____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	$320.00 (Flat Fee)		$_____
	TOTAL COST OF PERMIT		**$385.00**

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction N/A

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. *Geotechnical investigation for proposed construction, land stabilization or:*

   ☒ d. Other: Phase II ESA requested by the client due to former presence of a gas station on the northeast adjacent property.

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? All drilling equipment will be decontaminated using a soap solution and triple rinsed before drilling each boring. A Staff Scientist under the oversight of a Professional Geologist, will log each boring as it is drilled. Once soil and groundwater samples are collected, the borings will be immediately backfilled with bentonite chips that are subsequently hydrated. However, should subsurface conditions at the Site require a change to our permit, Rincon will immediately notify the County of San Diego.

4. What field procedures will be utilized to determine if contamination exists? A Photo Ionization Detector (PID) will be utilized along with continuous logging by a Staff Scientist to evaluate the soil for the presence of contaminants. Soil samples will be collected at approximately 2 feet, 5 feet, and 10 feet below grade, as well as from just above the capillary fringe. Additional soil samples may be collected if contamination is suspected at depth intervals different from those proposed for sampling. Soil samples will be collected in acetate tubing pushed into the soil by the Geoprobe direct push drill rig. Groundwater samples will also be collected from each boring using the geoprobe water sampling tool.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? All soil and groundwater samples will be analyzed.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? Total Extractable Petroleum Hydrocarbons (TEPH) carbon chain including gasoline by modified EPA Method 8015, Volatile Organic Compunds (VOCs) including oxygenates by EPA Method 8260B, and total lead by EPA Method 6010B.

7. How will samples be transported and preserved? Samples will be stored in a chilled cooler and shipped to the laboratory under proper chain of custody documentation.

8. What sampling methods will be used? Undisturbed soil samples will be collected in acetate tubing pushed into the soil by the Geoprobe direct push drill rig. The onsite Staff Scientist will collect soil samples from desired depths by cutting an approximately 6-inches of the acetate tube. Each soil sample in acetate tubing will be covered with Teflon tape at each end, each end will be covered with plastic end caps, and the entire acetate tube sample will be placed in a sealable plastic bag which will then be subsequently placed in a cooler with ice or blue ice. Groundwater samples will be collected from each boring using a geoprobe water sampling tool. This equipment obtains groundwater samples by advancing a split barrel tube containing a shielded stainless steel well screen with an expendable point. The sampler is threaded onto the probe rod and advanced directly into the aquifer in the shielded position. Groundwater samples will be collected utilizing 1/4-inch plastic tubing that is vascillated to draw groundwater through the tube and into the sampling

.containers. The sampling containers for groundwater will be clean containers obtained directly from the State Certified laboratory pre-prepared with any necessary preservatives based on the types of analyses to be peformed.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :No

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? All drilling equipment and sampling equipment will be washed in a soap solution and triple rinsed prior to use in each boring location.

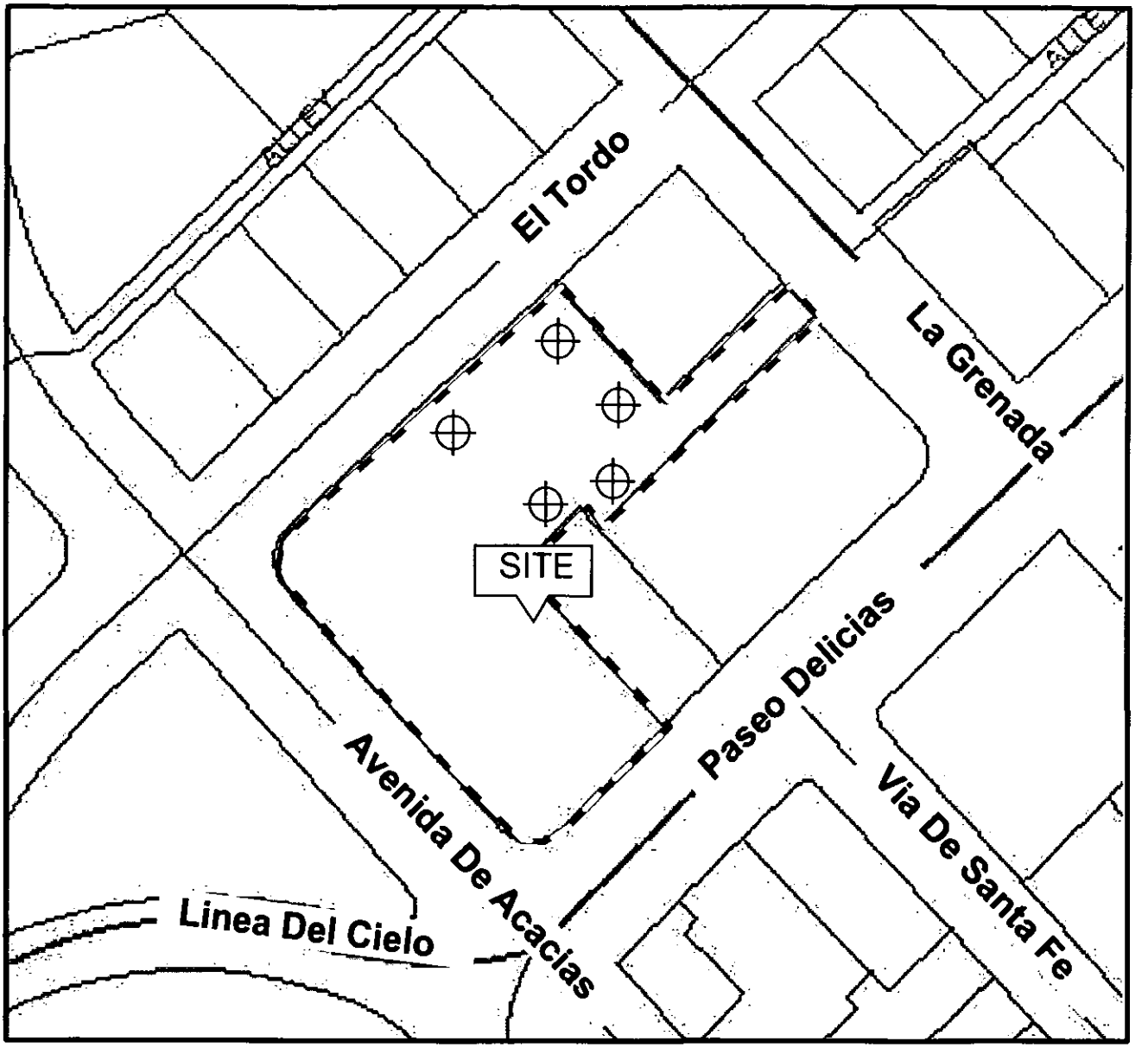
12. What methods will be used to clean sampling equipment? All sampling equipment will be washed in a soap solution and triple rinsed.

13. What cleaning method will be used to clean casing and screen prior to installation? Not Applicable.

14. If the responsible party is different than the property owner, how has the property owner been notified of the proposed work? _____

    A. ☒ The attached Property Owner Consent letter.

    B. ☐ The attached consent agreement between the responsible party and the property owner with a cover letter signed by a registered professional.



Source: SanGIS Interactive Map Frame, 1996-2002 ESRI Inc.

Subject property - The Lillian RSF, LLC Property

Proposed Boring location

0 100 200
approximate scale in feet

NORTH

rincon

Proposed Boring Location Map

The Lillian RSF, LLC
6010 Paseo Delicias
Rancho Santa Fe, California

Figure 1

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2310/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:
Property Address: 6010 PASEO DELICIAS
RANCHO SANTA FE, CA 92067

Assessor's Parcel Number (APN): 2666-283-07-00

I, JOE PINSONNEAULT, owner of the property/properties listed above, give my permission to RINCON CONSULTANTS, INC (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 5 soil borings

I understand that STEPHANIE PALMICELLOS (registered professional) of RINCON CONSULTANTS, INC (consulting company) and an authorized signer for VIRONEX (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: [signature] Date: MAR 26/07

Print Name: JOE PINSONNEAULT Title: MANAGING MEMBER

Company: THE LILIAN AT RANCHO SANTA FE LLC

Mailing Address: 1335 ORANGE AVE #335 CORONADO CA 92118

OEH:SAM-9503 (Rev. 9-08)

PERMIT #LMON104743
A.P.N. #330-030-07-00
EST #NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: SILVERWOOD RESIDENCE

SITE ADDRESS: 5816 WINLAND HILLS DR., RANCHO SANTA FE, 92067

PERMIT FOR: INSTALL 1 INCLINOMETER

PERMIT APPROVAL DATE: 04/11/2007

PERMIT EXPIRES ON: 08/09/2007

RESPONSIBLE PARTY:JAMES SILVERWOOD

PERMIT CONDITIONS:

1. Wells must have a **minimum 3-foot concrete surface seal**. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.

2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

3. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: _____ DATE: 04/11/2007
JAMES CLAY

NOTIFIED: emailed 05/09/07

DEH:SAM-9075 (3/05)

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

T104743

RECEIVED APR 02 2007 ENVIRONMENTAL HEALTH

OFFICE USE ONLY
PERMIT LMON # 104743
SAM CASE Y/N # NONE
DATE RECEIVED: 4-2-07
FEE PAID: $ 285 -
CHECK # 10788

A. RESPONSIBLE PARTY James Silverwood E-mail jim@affirmedhousing.com
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 13520 Evening Creek Dr N., Suite 360 City San Diego State CA Zip 92128
Contact Person James Silverwood Phone 858-679-2828 Ext. ____ Fax ____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # ____

C. CONSULTING FIRM TerraCosta Consulting Group, Inc.
Mailing Address 4455 Murphy Canyon Road, Suite 100 City San Diego State CA Zip 92123
Registered Professional Gregory A. Spaulding Registration # 1863 (RG, RCE, CEG, PG) Circle if applicable
E-mail gspaulding@terracosta.com
Contact Person Gregory A. Spaulding Phone 858-573-6900 Ext. ____ Fax 858-573-8900

D. DRILLING COMPANY Pacific Drilling Co. C57# 681380
Contact Name Tod Clark E-mail tod@pacdrill.com
Mailing Address PO. Box 84627 City San Diego State CA Zip 92138
Phone 619-294-3682 Ext. ____ Fax 619-294-3283

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☐ Boring	___
☒ Other	1

inclinometer

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable ____
Type PVC
Gauge 80
Diameter 2.75
Well Screen Size N/A
Filter Pack N/A

SEAL/BORING BACKFILL
☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other

Borehole diameter 8"

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 60 ft.
Estimated depth of boring 50 ft.

Concrete surface seal	0 to 3
Annular seal	3 to 50
Bentonite transition seal	____ to ____
Filter Pack	____ to ____
Perforation	____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE ____ DATE 3/28/07

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE ____ DATE 3/29/07

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 303-030-07-00

Site Name Silverwood Residence

Site Address 5816 Winland Hills Drive City Rancho Santa Fe Zip 92067

PROPERTY OWNER Silverwood Family Trust 05-04-04

Phone 858-679-2828 Ext. _____ Fax _____

Mailing Address P.O. Box 3291 City Rancho Santa Fe State CA Zip 92067

NUMBER OF WELLS 1 **TYPE OF WELLS** Inclinometer

2. **ASSESSOR'S PARCEL NUMBER** _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2006, through June 30, 2007)		
ACTIVITY	**FEE SCHEDULE**	**AMOUNT**
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells) **Permit for Well Maintenance Inspection (Valid for three years)**	$185.00 for the first monitoring well ..... $100.00 for first well maintenance inspection	**$185.00** **$100.00**
Each Additional New Well	$160.00 for each additional well installation $30.00 for each additional well maintenance inspection	___ x **$160.00** _____ ___ x **$30.00** _____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$185.00 for the first boring ..... $50.00 for each additional boring	___ x **$185.00** _____ ___ x **$50.00** _____
Permit for Well Destructions Only	$185.00 for the first destruction ..... $120.00 for each additional destruction ...	___ x **$185.00** ___ x **$120.00**
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $185.00 **Additional activities will be as follows:** $160.00 for each additional well ..... $100.00 for first well maintenance inspection $ 30.00 for each additional well maintenance inspection $120.00 for each well destruction $ 50.00 for each additional boring	___ x **$185.00** _____ ___ x **$160.00** _____ ___ x **$100.00** _____ ___ x **$ 30.00** _____ ___ x **$120.00** _____ ___ x **$ 50.00** _____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	**$**_____
	TOTAL COST OF PERMIT	**$** 285.00

H. **QUESTIONNAIRE: Please answer all applicable questions completely.** ***For well destructions, complete only #1 below and submit any required supportive documentation.***

1. If wells are to be destroyed, provide a description of method of destruction N/A

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical Investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction?

   Prior to commencing drilling, area and equipment will be inspected for leaks or other sources of contaminants and repaired or cleaned.

4. What field procedures will be utilized to determine if contamination exists?

   N/A - Geotechnical

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving?

   N/A - Geotechnical

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)?

   N/A - Geotechnical

7. How will samples be transported and preserved? N/A - Geotechnical

8. What sampling methods will be used? SPT, Grab

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and Include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :Yes ☐ No ☒

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and *Include a destruction diagram.*
    Yes ☐ No ☒

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination?

    Equipment will be Inspected, cleaned, and repaired (If necessary) prior to and during drilling operations.

12. What methods will be used to clean sampling equipment? N/A - Geotechnical

13. What cleaning method will be used to clean casing and screen prior to installation? N/A - Geotechnical

14. If the responsible party is different than the property owner, how has the property owner been notified of the proposed work?

_____

A. ☒ The attached Property Owner Consent Letter.

B. ☐ The attached consent agreement between the responsible party and the property owner with a cover letter signed by a registered professional.

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address: 5816 Winland Hills Drive, Rancho Santa Fe, CA 92067

Assessor's Parcel Number (APN): 303-030-07-00

I, James Silverwood, owner of the property/properties listed above, give my permission to TerraCosta Consulting Group, Inc. (consulting company, contractor) to conduct the following work at the locations stated above.

☒ Install 1 monitoring wells ☐ Destroy _____ monitoring wells ☐ Drill _____ soil borings

I understand that Greg Spaulding (registered professional) of TerraCosta Consulting Group (consulting company) and an authorized signer for Pacific Drilling Co. (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: _____ Date: 3.26.07

Print Name: James Silverwood Title: Owner

Company: _____

Mailing Address: 13520 Evening Creek Drive, Suite 360, San Diego, CA 92128

SEE 1168 MAP

© 2004 Thomas Bros. Maps

SAN DIEGO CO.

FAIRBANKS RANCH

92091

92014

FAIRBANKS RANCH COUNTRY CLUB

FAIRBANKS COUNTRY CLUB

SITE LOCATION

TORREY HIGHLANDS PARK

TORREY PINES HS

CARMEL VALLEY

TED WILLIAMS FRWY

SEE 1187 MAP

SEE 1208 MAP

0 .125 .25 .375 .5 miles 1 in. = 1900 ft.

303-03

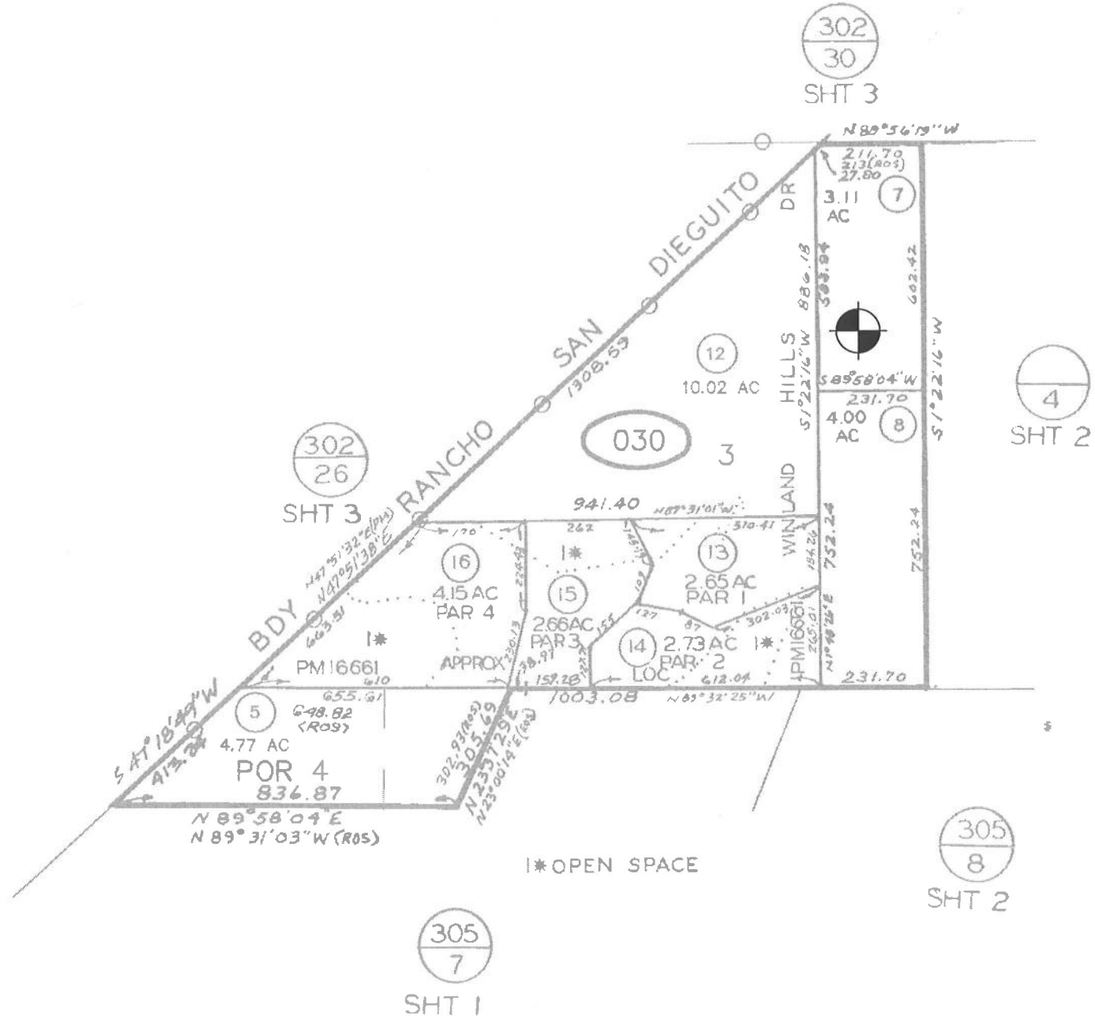
1" = 400'

N

12/27/00 MAS ✓

CHANGES

BLK	OLD	NEW	YR	CUT	
030	3	6-8	73	3641	C.C.
	5	AC. CHNG	83	6145	
	4	9 & 10	84	3427	T.R.A.
	6	11 & 12	84	3361	
	9	POR. BK. 302-27	85	69	
	11	SAME & AC. CHG.	88	5677	
	10	SAME & B/L CHNG.	90	5642	
	10	305 PG 748	91	10	
	11	SAME & B/L CHG.	91	5627	
	11	13-16	92	1876	

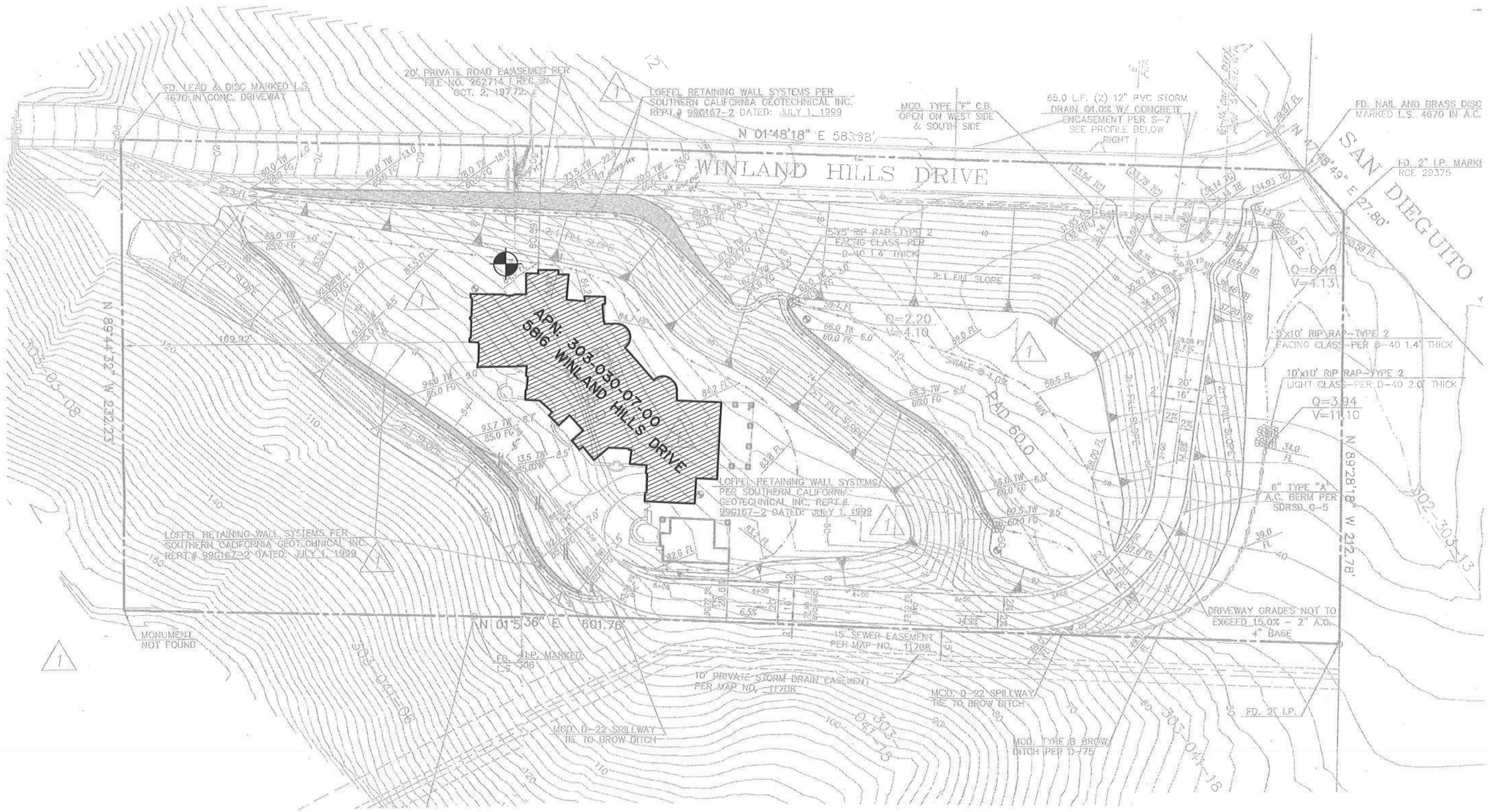


APN: 303-030-07-00
5816 WINLAND HILLS DRIVE
THOMAS GUIDE 1188-E1

LEGEND

PROPOSED BORING/INCLINOMETER LOCATION

TerraCosta Consulting Group	TERRACOSTA CONSULTING GROUP ENGINEERS AND GEOLOGISTS 4465 MURPHY CANYON ROAD, SUITE 100 SAN DIEGO, CA 92123 (858) 573-5900	FIGURE NUMBER 1
	PROJECT NAME SILVERWOOD RESIDENCE 5816 WINLAND HILLS DRIVE	PROJECT NUMBER 2396
	PARCEL MAP	



SCALE: 1"=50'

0 25 50 100

LEGEND

PROPOSED BORING/INCLINOMETER LOCATION

TerraCosta Consulting Group

TERRACOSTA CONSULTING GROUP
ENGINEERS AND GEOLOGISTS
4465 MURPHY CANYON ROAD, SUITE 100
SAN DIEGO, CA 92123 (858) 573-6900

FIGURE NUMBER: 2

PROJECT NAME: SILVERWOOD RESIDENCE
5816 WINLAND HILLS DRIVE

PROJECT NUMBER: 2396

BORING LOCATION MAP

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

JACK MILLER
ASSISTANT DIRECTOR

PAST DUE NOTICE

January 7, 2008

SHAWN WEEDON

PERMIT: LMON-104893 -- APPROVED: June 20, 2007 -- EXPIRED: October 18, 2007
3975 VIA DE LA VALLE, SAN DIEGO, CA 92067

The Department of Environmental Health (DEH), Monitoring Well Program has no record of receiving a report for work completed under this permit as required by San Diego County Code, Section 67.447.

A complete and accurate well/boring report must be submitted within sixty daysof completing the work covered by the permit. This requirement was stated as a condition on the permit. Submit the Sixty-Day report to the Well Permit Desk at the address shown above by**January 22, 2008**

A checklist is enclosed to assist you in providing the data that must be included in a complete report. Please be advised that incomplete reports will be returned.

Please contact the Well Permit Desk at (619) 338-2339 if you wish to discuss this letter.

Thank you for your cooperation.

Sincerely,

Amelia Cesena, Environmental Health Technician
Monitoring Well Program
Site Assessment and Mitigation Program

Enclosure

cc: **LANDON WRIGHT, MILAN PROPERTIES, LLC**
SCOTT'S DRILLING SERVICE

PERMIT #LMON104893
A.P.N. # 302-090-31-00
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: DEL MAR CCRC

SITE ADDRESS: 3975 VIA DE LA VALLE, SAN DIEGO, CA 92067

PERMIT FOR: **THREE GEOTECHNICAL SOIL BORINGS**

PERMIT APPROVAL DATE: JUNE 20, 2007

PERMIT EXPIRES ON: OCTOBER 18, 2007

RESPONSIBLE PARTY: MILAN PROPERTIES, LLC

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.**

APPROVED BY: _____ DATE: 06/20/2007
ERNIE L. PROFETA

NOTIFIED: emailed 6/20/2007

DEH:SAM-9075 (4/03)

ok 6/13/07 GB's

T104[illegible]93 Geotech

EXP 10/18/07 3721

RECEIVED 6/13/07

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 104893
SAM CASE Y/N # NONE
DATE RECEIVED: 6/13/07
FEE PAID: $285.00
CHECK # 081769

A. RESPONSIBLE PARTY MILAN PROPERTIES, LLC E-mail LANDON@MILANPROP.com
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 8885 S. DISNEYLAND DR. #61 City ANAHEIM State CA Zip 92802
Contact Person LANDON WRIGHT Phone (714) 687-0000 Ext. 103 Fax

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE #

C. CONSULTING FIRM GEOCON INCORPORATED
Mailing Address 6960 FLANDERS DRIVE City SAN DIEGO State CA Zip 92121
Registered Professional SHAWN WEEDON Registration # GE 2714 (RG, RCE, CEG, PG)
E-mail WEEDON@GEOCONINC.COM
Contact Person SHAWN WEEDON Phone (858)558-6900 Ext. 208 Fax (858)558-6159 Circle if applicable

D. DRILLING COMPANY Tri-County Drilling C57# 547737
Contact Name Tim Duddie E-mail timd@tcdrilling.com
Mailing Address 9631 Candida St City San Diego State CA Zip 92126
Phone 858-271-0099 Ext. 106 Fax 271-0233

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	
☐ Vadose	
☒ Boring	3
☐ Other	

NUMBER OF WELLS TO BE DESTROYED

☐

MATERIALS TO BE USED

CASING
Not Applicable X
Type
Gauge
Diameter
Well Screen Size
Filter Pack

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other
Borehole diameter 8"

Drilling Method
☐ Auger
☒ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 10 ft.
Estimated depth of boring 50 ft.
Concrete surface seal 0 to 3
Annular seal ___ to ___
Bentonite transition seal ___ to ___
Filter Pack ___ to ___
Perforation ___ to ___

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] DATE 6-13-07

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE [signature] DATE 6/13/07

6/13/07 Rcvd new page 1 w/ driller sig. EP

T104893

RECEIVED JUN 08 2007 ENVIRONMENTAL HEALTH

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 104893
SAM CASE Y/N# NONE
DATE RECEIVED: 6/8/07
FEE PAID: $285.00
CHECK # 081769

A. RESPONSIBLE PARTY MILAN PROPERTIES, LLC E-mail ____
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 888 S. DISNEYLAND DR. #101 City ANAHEIM State CA. Zip 92802
Contact Person LANDON WRIGHT Phone (714) 687-0000 Ext. 103 Fax ____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # ____

C. CONSULTING FIRM GEOCON INCORPORATED
Mailing Address 6960 FLANDERS DR. City SAN DIEGO State CA Zip 92121
Registered Professional ENGINEER Registration # 63773 (RG) RCE E-mail MYERS@GEOCONINC.COM
E-mail ____
Contact Person TREVOR MYERS Phone 858 558-6900 Ext. 210 Fax 858 558 6159

D. DRILLING COMPANY SCOTT'S DRILLING C57# 713741
Contact Name SCOTT BALL E-mail ____
Mailing Address 271 #D ROYMAR RD. City OCEANSIDE State CA. Zip 92054
Phone (760) 966-1613 Fax (760) 966-1613

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	3
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable ____
Type ____
Gauge ____
Diameter ____
Well Screen Size ____
Filter Pack ____

SEAL/BORING BACKFILL
☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other

Borehole diameter 8"

Drilling Method
☐ Auger
☒ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 10 ft.
Estimated depth of boring 50 ft.

Concrete surface seal	0 to 1
Annular seal	____ to ____
Bentonite transition seal	____ to ____
Filter Pack	____ to ____
Perforation	____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] DATE 6-7-07

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE Trevor Myers DATE 6-8-07

6/11 left vmsg to T. Myers – need info on Drilling method + Site Name. EP
6/12 Talked to Trevor Myers – changing Driller to Tri-County + drilling method to Mud Rotary. →

shawn weedon will re-submit NEW page 1 -
10 days will start once additional paperwork is received.

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 302-090-31-00
Site Name _____
Site Address 3975 Via De La Valle City San Diego Zip 92067-

PROPERTY OWNER Hu Family
Phone _____ Ext. Fax _____
Mailing Address 8775 Costa Verde Blvd Apt 604 City San Diego State CA
Zip 92122-

NUMBER OF WELLS 3- **TYPE OF WELLS** Hollow-Stem Auger

2. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2006, through June 30, 2007)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well	**$185.00**
Permit for Well Maintenance Inspection (Valid for three years)	$100.00 for first well maintenance inspection	**$100.00**
Each Additional New Well	$160.00 for each additional well installation	___ x **$160.00** ___
	$ 30.00 for each additional well maintenance inspection	___ x **$30.00** ___
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$185.00 for the first boring	1 x **$185.00** 185.00
	$ 50.00 for each additional boring	2 x **$50.00** 100.00
Permit for Well Destructions Only	$185.00 for the first destruction	___ x **$185.00**
	$120.00 for each additional destruction ...	___ x **$120.00**
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $185.00	___ x **$185.00** ___
	Additional activities will be as follows:	
	$160.00 for each additional well	___ x **$160.00** ___
	$100.00 for first well maintenance inspection	___ x **$100.00** ___
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** ___
	$ 50.00 for each additional boring	___ x **$ 50.00** ___
	$120.00 for each well destruction	___ x **$120.00** ___
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	**$320.00**
	TOTAL COST OF PERMIT	$ 285.00

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction No wells will be constructed or destroyed.

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Borings will be immediately backfilled with cement-bentonite slurry after completion of drilling.

4. What field procedures will be utilized to determine if contamination exists? A waste determination consisting of smelling the soil cuttings will be performed. If contamination is suspected, the soils will be placed in drums and sent to an authorized facility.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? No contamination testing will be performed. All samples collected will be sent to the laboratory. The project engineer will review the boring logs and samples to determine which samples will be tested for their physical engineering properties.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? Samples will be tested for physical engineering properties only. No contamination testing will be performed.

7. How will samples be transported and preserved? Undisurbed, in-situ soil samples are driven into brass rings and placed in air-tight plastic containers and sealed with plastic lids and taped closed. Bulk soil samples will be collected in large bags and sealed with tape or wire prior to transportation to the laboratory.

8. What sampling methods will be used? A CME-55 drill rig equipped with 140 lb hammer falling 18 inches will drive the California split spoon sampler into the ground at 5 foot intervals. The soil sample will be extracted from the sampler and placed into the plastic tubes and sealed.

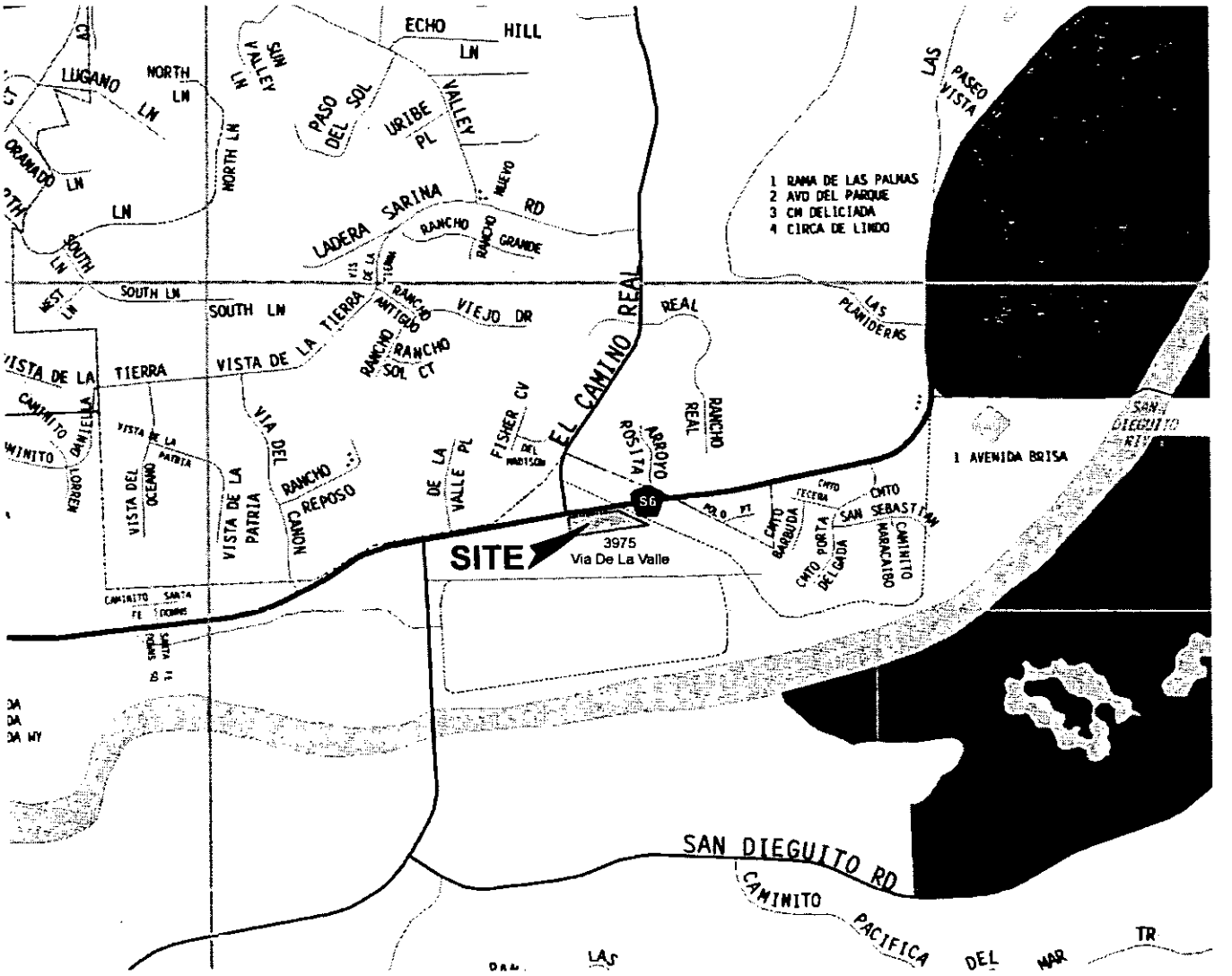
9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :No

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Immediately following drilling and sampling, the boring will be backfilled with cement-bentonite slurry. No drilling fluids will be used.

12. What methods will be used to clean sampling equipment? A wire brush and water will be used.

13. What cleaning method will be used to clean casing and screen prior to installation? Screens or casing will not be used during the drilling operation.



SOURCE: 2007 THOMAS BROTHERS MAP
SAN DIEGO COUNTY, CALIFORNIA

THIS MAP IS COPYRIGHTED BY Rand McNally, R.L.07-S-62, REPRODUCED WITH PERMISSION.
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OR RESALE, WITHOUT PERMISSION

N
NO SCALE

GEOCON
INCORPORATED
GEOTECHNICAL CONSULTANTS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121-2974
PHONE 858 558-6900 - FAX 858 558-6159

EAH / RSS		DSK / D000D

VICINITY MAP

DEL MAR, CCRC
SAN DIEGO, CALIFORNIA

DATE 06-08-2007	PROJECT NO. 07859 - 32 - 01	FIG. 1

07859-32-01_VICMAP_FIG1 / RSS

08

302-9,10

7/21/2000 1349

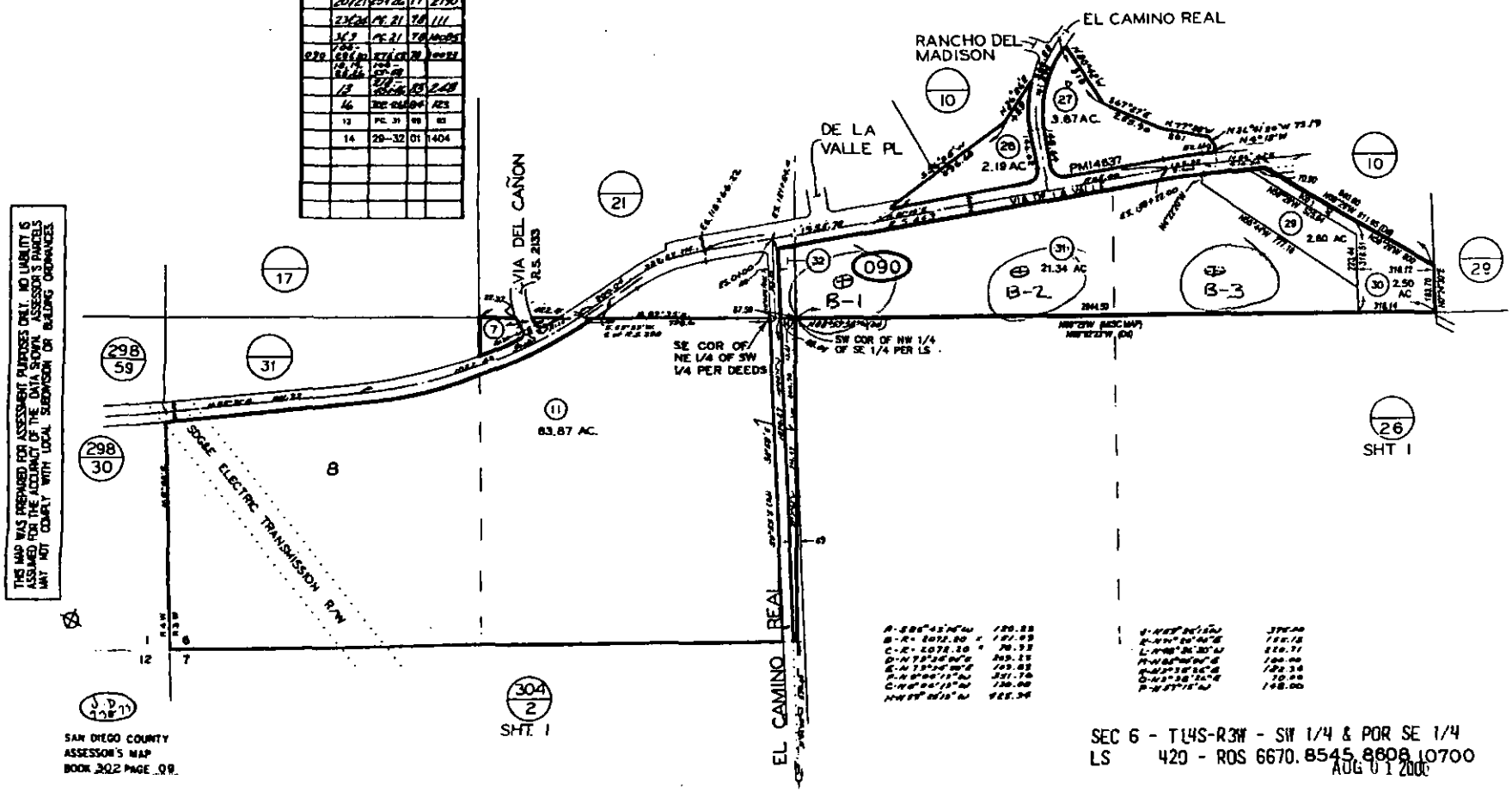
CHANGES

BLK	OLD	NEW	YR	CUT
PAGE	MAP	14-16	76	10051
	15	[illegible]	76	10006
	17	18-21	76	5987
	8	PG 23 COMM	75	1451 CONC.
	7	SEE 8 COM	76	2015 CONC.
	1	PG 8	77	40
	22	29-32	76	184
	20/21	25/26	77	2190
	23/26	PG. 21	78	111
	3/9	PG. 21	78	10051
090	28/29	27/28	78	10021
	18, 19, 28, 26	28/29 CH-18		
	13	27/28 ASSOC	83	2.48
	16	SEE 6	84	123
	13	PG. 31	99	83
	14	29-32	01	1404

302-09

1"=400'

N



THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL SUBDIVISION OR BUILDING ORDINANCES.

SEC 6 - T14S-R3W - SW 1/4 & POR SE 1/4
LS 420 - ROS 6670, 8545, 8608, 10700
AUG 01 2000

⊕ Proposed Boring Locations

Fig. 2

GEOCON
INCORPORATED

GEOTECHNICAL CONSULTANTS

Project No. 07859-32-01
June 8, 2007

RECEIVED
JUN 08 2007
ENVIRONMENTAL HEALTH

Well Permitting Clerk
Site Assessment and Mitigation Division
County of San Diego
Department of Environmental Health
1255 Imperial Avenue, Third Floor
San Diego, California 92101

Subject: DEL MAR, CCRC
A.P.N. 302-090-31-00
3975 VIA DE LA VALLE
SAN DIEGO, CALIFORNIA
TRANSMITTAL – PERMIT APPLICATION

To Whom It May Concern:

On behalf of Mr. Landon Wright with Milan Properties LLC, Geocon Incorporated has prepared the attached application for a permit to advance three geotechnical borings at the subject site. The property is composed of approximately 22 acres of undeveloped land located at 3975 Via De La Valle in San Diego, California (see *Vicinity Map*, Figure 1). Land use of the surrounding properties appears to be commercial, residential and recreational (Polo Grounds). The geologic conditions are anticipated to consist of alluvial materials. The approximate location of the site is depicted on the *Vicinity Map,* Figure 1. It consists of the parcel of land as depicted on the *Parcel Map,* Figure 2. The approximate locations of the proposed borings are depicted on the *Parcel Map,* Figure 2. Borings will be 8 inches in diameter and up to approximately 50 feet deep. We will backfill the excavation with a bentonite-sand-cement material after completion of drilling, sampling and logging. The permit application is attached and a check for the permit fees of $285.00 is enclosed. We have also included the *Property Owner Responsibility Agreement* executed by the property owner. Please call us if you have any questions.

Very truly yours,

GEOCON INCORPORATED

Trevor E. Myers
RCE 63773

REGISTERED PROFESSIONAL ENGINEER
TREVOR E. MYERS
No. RCE63773
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

TEM:dmc

Enclosures: Figure 1, Vicinity Map
Figure 2, Parcel Map
Property Owner Responsibility Agreement
Permit Application
$285.00 Check (Addressee only)

(3/del) Addressee
(1) Milan Properties, LLC
Attention: Mr. Landon Wright

County of San Diego

GARY M. ERDECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2232/FAX 619-338-2215/1-800-363-6000
www.sdcounty.ca.gov/deh/lwq

JACK MILLER
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:	Assessor's Parcel Number (APN):
3975 VIA DE LA VALLE	302-090-31-00
RANCHO SANTA FE, CALIFORNIA	

I, TE C. HU + JANE P. HU, owner of the property/properties listed above, give my permission to GEOCON INC. & SCOTT'S DRILLING (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 3 soil borings

I understand that TREVOR MYERS (registered professional) of GEOCON INC. (consulting company) and an authorized signer for SCOTT'S DRILLING (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: Te C. Hu [signature] Date: 6-1-07

Print Name: Te C. Hu Jane P. Hu Title: _____

Company: _____

Mailing Address: _____

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

JACK MILLER
ASSISTANT DIRECTOR

PAST DUE NOTICE

February 11, 2009

MATTHEW A. FAGAN
GEOTECHNICS, INC
9245 ACTIVITY RD, #103
SAN DIEGO, CA 92126-4442

PERMIT: LMON-105861 -- APPROVED: July 21, 2008 -- EXPIRED: November 18, 2008
6309 EL APAJO RD., RANCHO SANTA FE, CA 92067

The Department of Environmental Health (DEH), Monitoring Well Program has no record of receiving a report for work completed under this permit as required by San Diego County Code, Section 67.447.

A complete and accurate well/boring report must be submitted within sixty daysof completing the work covered by the permit. This requirement was stated as a condition on the permit. Submit the Sixty-Day report to the Well Permit Desk at the address shown above by**February 26, 2009**.

A checklist is enclosed to assist you in providing the data that must be included in a complete report. Please be advised that incomplete reports will be returned.

Please contact the Well Permit Desk at (619) 338-2339 if you wish to discuss this letter.

Thank you for your cooperation.

Sincerely,

M Crystal

Marisue Crystal, Environmental Health Technician
Monitoring Well Program
Site Assessment and Mitigation Program

Enclosure

cc: **DAVE ARMSTRONG, SPRINGLINE ASSOCIATES, INC.**
TESTAMERICA DRILLING CORP DBA: WEST HAZMAT DRILLING

PERMIT #LMON105861
A.P.N. #269-080-11-00
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: CHURCH OF THE NATIVITY

SITE ADDRESS: 6309 APAJO ROAD, RANCHO SANTA FE, CA 92067

PERMIT FOR: **FIVE GEOTECHNICAL SOIL BORINGS**

PERMIT APPROVAL DATE: JULY 21, 2008

PERMIT EXPIRES ON: NOVEMBER 18, 2008

RESPONSIBLE PARTY: SPRINGLINE ASSOCIATES, INC.

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.**

APPROVED BY: Ernie Profeta — ERNIE L. PROFETA DATE: 07/21/2008

NOTIFIED: emailed 7/21/08 EP

DEH:SAM-9075 (4/03)

T105861

EXPEDITE
Geotechnical Boring
Date: 7/17/08

RECEIVED
JUL 17 2008
ENVIRONMENTAL HEALTH

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 105861
SAM CASE YN# NONE
DATE RECEIVED: 7/17/08
FEE PAID: $393
CHECK # 16779

A. RESPONSIBLE PARTY Springline Associates, Inc. E-mail _____
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 515 North Highway 101 City Solana Beach State CA Zip 92075-
Contact Person Mr. Dave Armstrong Phone 858-679-0679 Ext. __ Fax 858-748-384

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM Geotechnics Incorporated
Mailing Address 9245 Activity Road, Suite 103 City San Diego State CA Zip 92126-
Registered Professional Matthew A. Fagan Registration # 57248 (RCE)
E-mail mfagan@geotechnicsinc.com
Contact Person Matthew A. Fagan Phone 858-536-1000 Ext. _ Fax 536-8311

D. DRILLING COMPANY Test America Drilling Corporation C57# 819548
Contact Name Mr. Manual Marquez E-mail mmarquez@testamericainc.com
Mailing Address ~~3620 Kurtz Street~~ 7888 OTHELLO AV City San Diego State CA Zip ~~92110~~ 92111
Phone 619-686-5800 Fax 619-686-5809

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	5
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable _____
Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 8 Inch

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 5 ft.
Estimated depth of boring 20 ft.

Concrete surface seal	0 to 3
Annular seal	____ to ____
Bentonite transition seal	____ to ____
Filter Pack	____ to ____
Perforation	____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 7/15/08

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE Matthew A. Fagan DATE 7/15/08

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 269-080-1100
   Site Name Church of the Nativity
   Site Address 6309 El Apajo Road City Rancho Santa Fe Zip 92067-

   PROPERTY OWNER Church of the Nativity - Msgr. Lawrence Purcell
   Phone 858-756-6763 Ext. Fax _____
   Mailing Address P.O. Box 9180 City Rancho Santa Fe State CA Zip 92067

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2008, through June 30, 2009)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$193.00 for the first monitoring well	**$193.00**
Permit for Well Maintenance Inspection (Valid for three years)	$100.00 for first well maintenance inspection	**$100.00**
Each Additional New Well	$160.00 for each additional well installation	___ x **$160.00** **$**_____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** **$**_____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$193.00 for the first boring ..... $ 50.00 for each additional boring	1 x **$193.00** **$193.00** 4 x **$ 50.00** **$200.00**
Permit for Well Destructions Only	$193.00 for the first destruction ..... $120.00 for each additional destruction ...	___ x **$193.00** **$**_____ ___ x **$120.00** **$**_____
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $193.00	___ x **$193.00** **$**_____
	Additional activities will be as follows:	
	$160.00 for each additional well $100.00 for first well maintenance inspection	___ x **$160.00** **$**_____ ___ x **$100.00** **$**_____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** **$**_____
	$120.00 for each well destruction $ 50.00 for each additional boring	___ x **$120.00** **$**_____ ___ x **$ 50.00** **$**_____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	**$**_____
	TOTAL COST OF PERMIT	**$393.00**

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction N/A

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which a government regulator is the lead agency. If yes, indicate which government regulator is the lead agency and the case number.

   _____ DEH _____ RWQCB _____ DTSC

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? The equipment will be cleaned. The borings will be backfilled and sealed

4. What field procedures will be utilized to determine if contamination exists? Olfactory and visual.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? Samples will be taken for geotechnical testing purposes.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? N/A

7. How will samples be transported and preserved? N/A

8. What sampling methods will be used? Driven and bulk soil samples for geotechnical testing.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (www.sdcdeh.org). Yes ☐ No ☒ _____

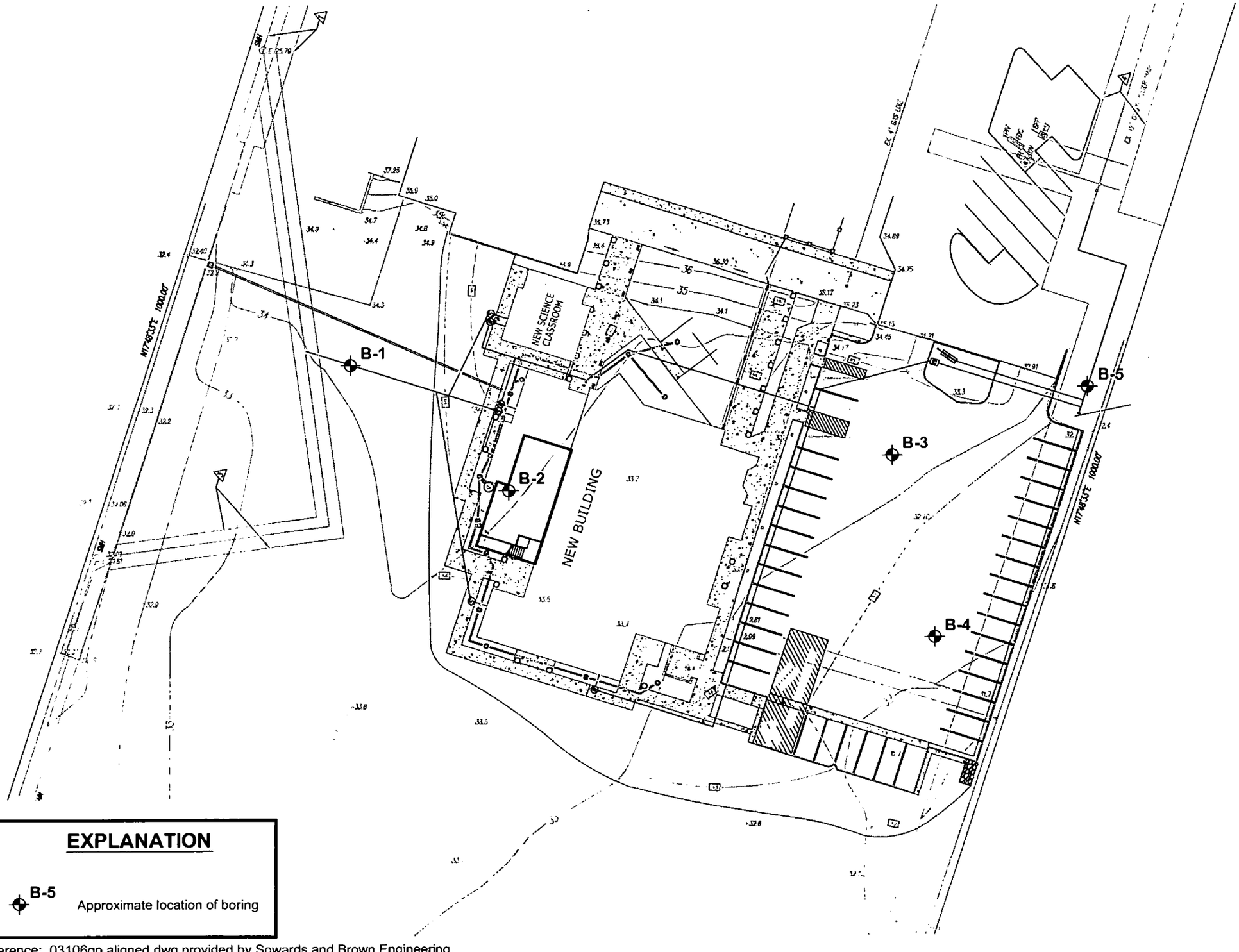
10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. Yes ☐ No ☒ _____

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Drilling equipment will be cleaned with pressure washer prior to use

12. What methods will be used to clean sampling equipment? Sampling equipment will be cleaned with tap water and non-phosphate detergent, and rinsed prior to use.

13. What cleaning method will be used to clean casing and screen prior to installation? N/A

14. A Property Owner Consent (POC) agreement is required for all applications, except for onsite, open LOP/SAM site assessment cases, Caltrans properties and military properties.



Reference: 03106gp aligned.dwg provided by Sowards and Brown Engineering.

SCALE: 1" = 40'

Project No. 0636-002-01
Document No. 07-0057

FIGURE 2

EXPLORATION PLAN

Geotechnics Incorporated

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:	**Assessor's Parcel Number (APN):**
Church of the Nativity	269-080-1100
6309 El Apajo Road	
Rancho Santa Fe, CA 92067	

I, **Msgr. Lawrence Purcell**, owner of the property/properties listed above, give my permission to **Geotechnics Incorporated** (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 5 soil borings

I understand that **Matthew A. Fagan** (registered professional) of **Geotechnics Incorporated** (consulting company) and an authorized signer for **Test America Drilling Corporation** (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: Lawrence M. Purcell Date: 07-15-08

Print Name: Msgr Lawrence Purcell Title: Monsignor

Company: Church of the Nativity

Mailing Address: 6309 El Apajo Road, Rancho Santa Fe, CA 92067

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

JACK MILLER
ASSISTANT DIRECTOR

OFFICIAL NOTICE

August 3, 2009

JAMES C. SANDERS
GEOTECHNICS INCORPORATED
9245 ACTIVITY RD STE 103
SAN DIEGO, CA 92126

FIRST PAST DUE NOTICE -- PERMIT: LMON-106182
APPROVED: January 6, 2009 -- EXPIRED: May 6, 2009
VACANT LOT AT PASEO DELICIAS RANCHO SANTA FE CA 92067

The Department of Environmental Health (DEH), Monitoring Well Program (MWP) has not received the required 60-day report for work completed under this permit.

Failure to submit a properly completed well/boring log report is a violation of the San Diego County Code, Section 67.447 and can result in a complaint being filed with the appropriate State Board. In addition, the San Diego County Code Section 67.441 states that permits may be denied *if the applicant is delinquent with submitting well drilling logs to the MWP.*

Submit the 60-day report to the Well Permit Desk to the address shown above by **August 18, 2009**. If the report is not submitted, you will receive a notice to attend an Administrative Conference. Please contact the Well Permit Desk at (619) 338-2339 if you wish to discuss this letter.

Thank you for your cooperation.

Sincerely,

Amelia Cesena, Environmental Health Technician
Monitoring Well Program
Site Assessment and Mitigation Program

cc: **GEORGE MCGILL, QUANTUM ESTATES II**
SCOTT'S DRILLING SERVICE

PERMIT #LMON106182
A.P.N. #267-031-10, 12, 13
EST #NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: QUANTUM ESTATES II

SITE ADDRESS: VACANT LOT AT PASEO DELICIAS RANCHO SANTA FE CA 92067

PERMIT FOR: **SIX GEOTECHNICAL SOIL BORINGS**

PERMIT APPROVAL DATE: JANUARY 6, 2009

PERMIT EXPIRES ON: MAY 6, 2009

RESPONSIBLE PARTY: QUANTUM ESTATES II

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

3. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

4. **This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH.** Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

5. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

APPROVED BY _____ Date: 1.6.2009
AMELIA CESENA

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

5. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

NOTIFIED emailed 1/12

DEH:SAM-9075

T106182

DEC 30 2008

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

5-6-09

OFFICE USE ONLY
PERMIT LMON# 106182
SAM CASE Y/N# None
DATE RECEIVED: 12-30-08
FEE PAID: $443
CHECK # 17561

A. RESPONSIBLE PARTY Quantum Estates II — E-mail ____
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 1328 Sun Valley Road — City Solana Beach — State CA — Zip 92075-
Contact Person George McGill — Phone 858-481-8446 — Ext. ____ — Fax ____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # ____

C. CONSULTING FIRM Geotechnics Incorporated
Mailing Address 9245 Activity Road, Suite 103 — City San Diego — State CA — Zip 92126-
Registered Professional James C. Sanders — Registration # 2258 — (CEG)
E-mail jsanders@geotechnicsinc.com
Contact Person ____ — Phone 858-536-1000 — Ext. __ — Fax 858-536-8311

D. DRILLING COMPANY Scotts Drilling — C57# 713741
Contact Name Scott Ball — E-mail ____
Mailing Address 271 #D roymar Road — City Oceanside — State CA — Zip 92058-
Phone 760-966-1613 — Fax 760-433-1614

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	6
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable XX
Type ____
Gauge ____
Diameter ____
Well Screen Size ____
Filter Pack ____

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 8"

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 20 ft.
Estimated depth of boring 30 ft.

Concrete surface seal	0 to 3
Annular seal	____ to ____
Bentonite transition seal	____ to ____
Filter Pack	____ to ____
Perforation	____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE ____ DATE 12/22/2008

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE ____ DATE 12/22/08

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 267031100; 2670311200; 2670311300
   Site Name Quantum Estates II
   Site Address See Location Map Pasco Delicias City Rancho Santa Fe Zip 92067
   PROPERTY OWNER Quantum Estates II, Inc.
   Phone 858-481-8446 Ext. Fax _____
   Mailing Address 1328 Sun Valley Road City Solana Beach State CA
   Zip 92075-1647

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2008, through June 30, 2009)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$193.00 for the first monitoring well	**$193.00**
Permit for Well Maintenance Inspection (Valid for three years)	$100.00 for first well maintenance inspection	**$100.00**
Each Additional New Well	$160.00 for each additional well installation $ 30.00 for each additional well maintenance inspection	___ x $160.00 $____ ___ x $ 30.00 $____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$193.00 for the first boring ..... $ 50.00 for each additional boring	1 x $193.00 $193.00 5 x $ 50.00 $250.00
Permit for Well Destructions Only	$193.00 for the first destruction $120.00 for each additional destruction	___ x $193.00 $____ ___ x $120.00 $____
Permit for any Combination of Well Installations, Borings, & Destructions (*except UST backfill permit*)	The first activity will be $193.00 **Additional activities will be as follows:** $160.00 for each additional well $100.00 for first well maintenance inspection $ 30.00 for each additional well maintenance inspection $120.00 for each well destruction $ 50.00 for each additional boring	___ x $193.00 $____ ___ x $160.00 $____ ___ x $100.00 $____ ___ x $ 30.00 $____ ___ x $120.00 $____ ___ x $ 50.00 $____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	$320.00 (Flat Fee)	$____
	TOTAL COST OF PERMIT	**$443.00**

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction N/A

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which a government regulator is the lead agency. If yes, indicate which government regulator is the lead agency and the case number.

   ____ DEH ____ RWQCB ____ DTSC

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or: ✓

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Drilling equipment will be steam cleaned prior to use and borings will be backfilled immediately upon completion of drilling.

4. What field procedures will be utilized to determine if contamination exists? Olfactory.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? No environmental lab testing is planned.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? N/A

7. How will samples be transported and preserved? Plastic bags.

8. What sampling methods will be used? Split spoon CAL and SPT

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (www.sdcdeh.org). Yes ☐ No ☒ _____

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. Yes ☐ No ☒ _____

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Equipment will be cleaned prior to use.

12. What methods will be used to clean sampling equipment? Equipment will be cleaned prior to use.

13. What cleaning method will be used to clean casing and screen prior to installation? N/A

14. A Property Owner Consent (POC) agreement is required for all applications, except for onsite, open LOP/SAM site assessment cases, Caltrans properties and military properties.

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

JACK MILLER
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:	**Assessor's Parcel Number (APN):**
Undeveloped lot east of Paseo	267031100 2670311200
Delicias and La Palma	2670311300

I, GEORGE McGILL, owner of the property/properties listed above, give my permission to Geotechnics incorporated (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 6 soil borings

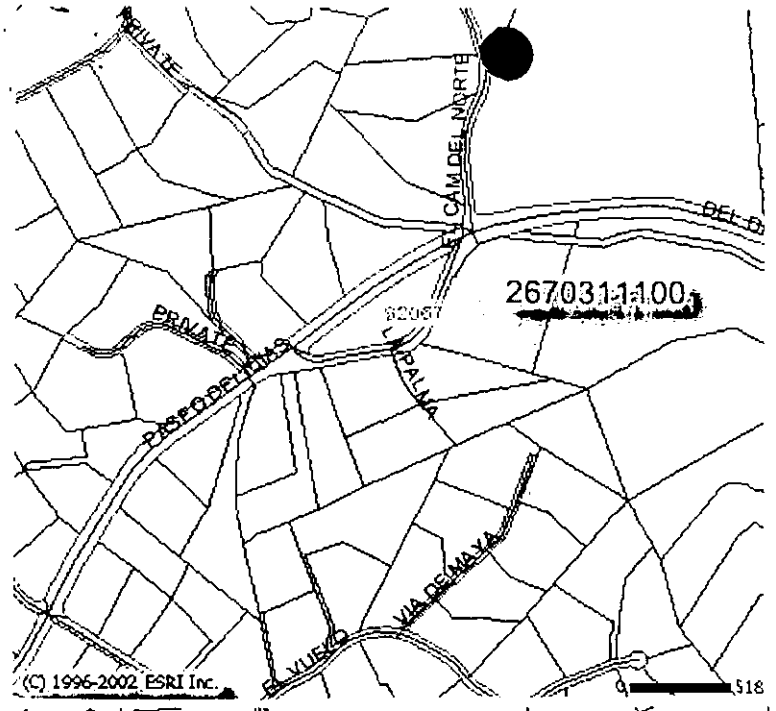
I understand that Jim Sanders (registered professional) of Geotechnics Inc. (consulting company) and an authorized signer for Scotts Drilling (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

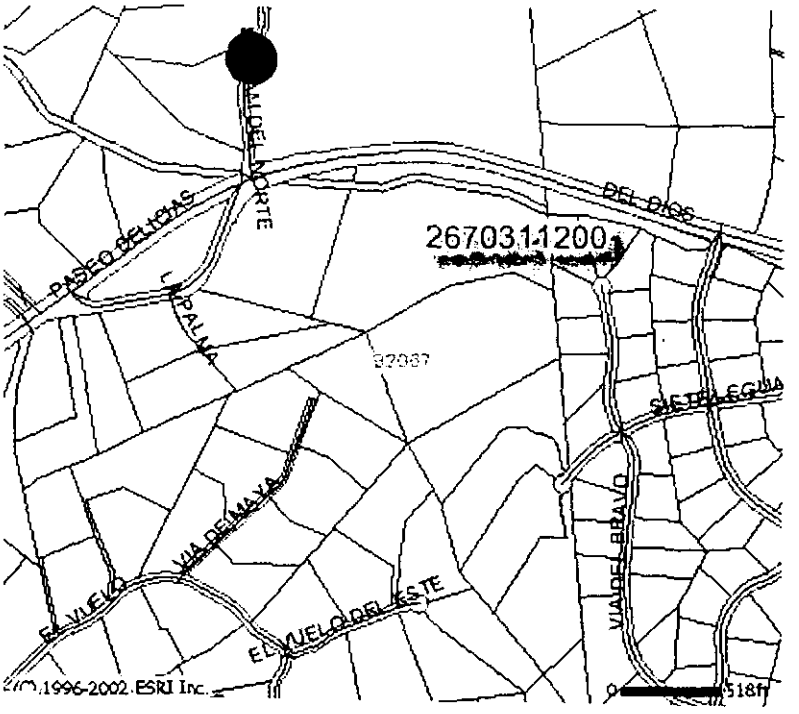
Property Owner Signature: G. McGill Date: 12/22/08

Print Name: George McGill Title: President

Company: Quantum Estates II, Inc.

Mailing Address: 1328 Sun Valley Road, Solana Beach, CA 92075-1647


PRIVATE
EL CAM DEL NORTE
DEL D
2670311100
92067
PRIVATE
PASEO DEL IGIAS
LA PALMA
VIA DE MAYA
EL VUELO
(C) 1996-2002 ESRI Inc.
0
518


DEL DIOS
2670311200
PASEO DEL IGIAS
LA PALMA
92067
SIETE LEGUA
VIA DE MAYA
EL VUELO
EL VUELO DEL ESTE
VIA DEL BRAVO
(C) 1996-2002 ESRI Inc.
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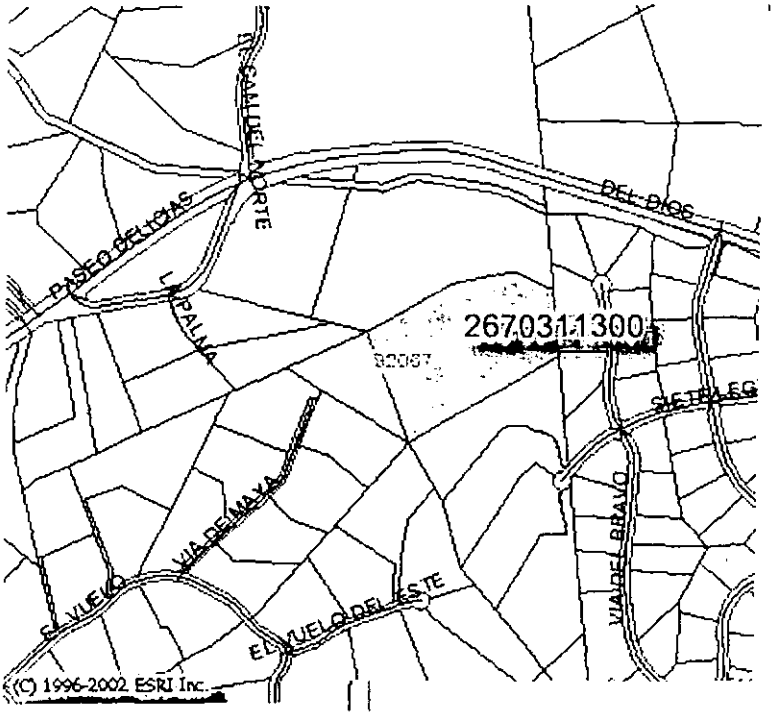
518ft


EL CAM DEL NORTE
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PASEO DEL IGIAS
LA PALMA
2670311300
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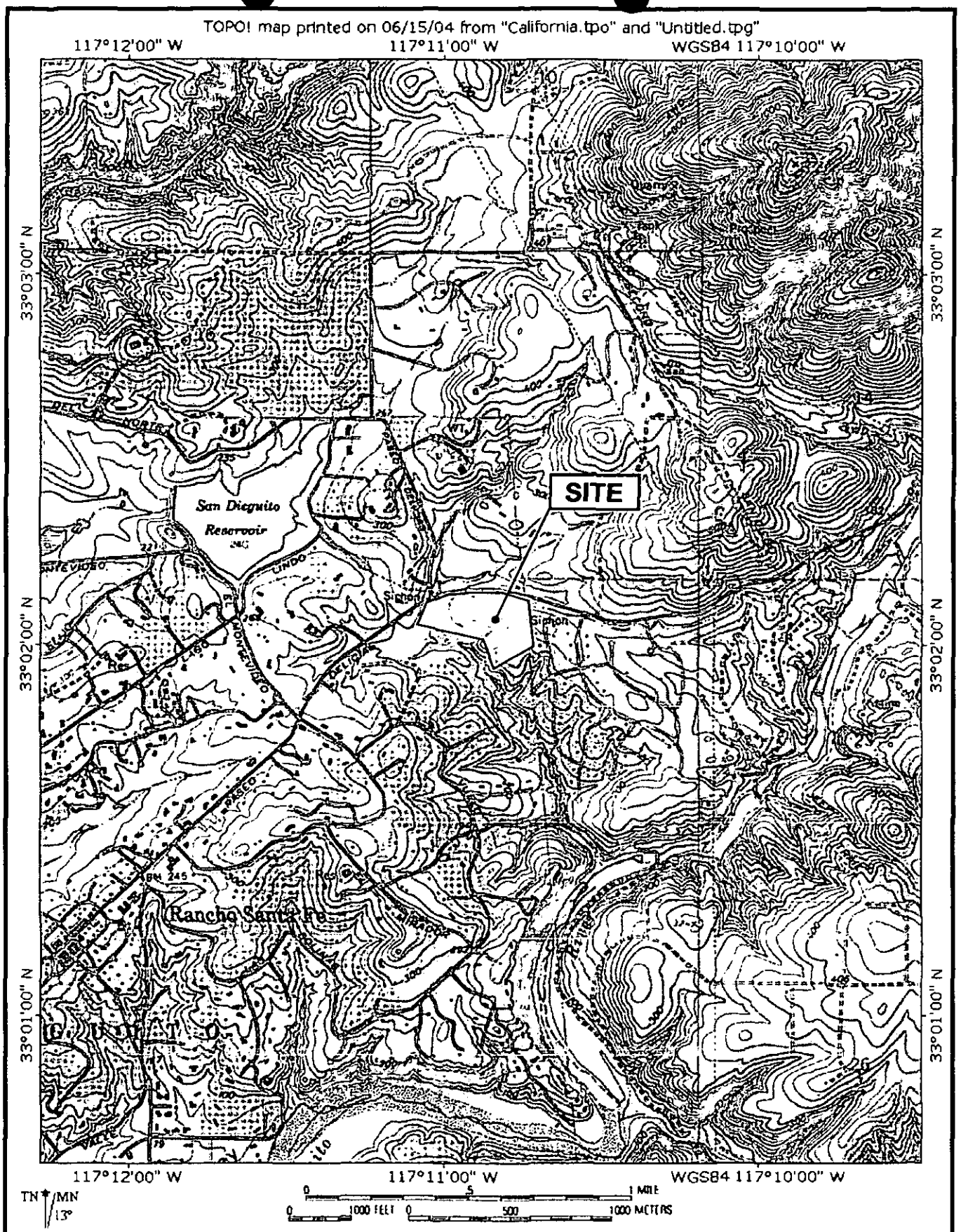
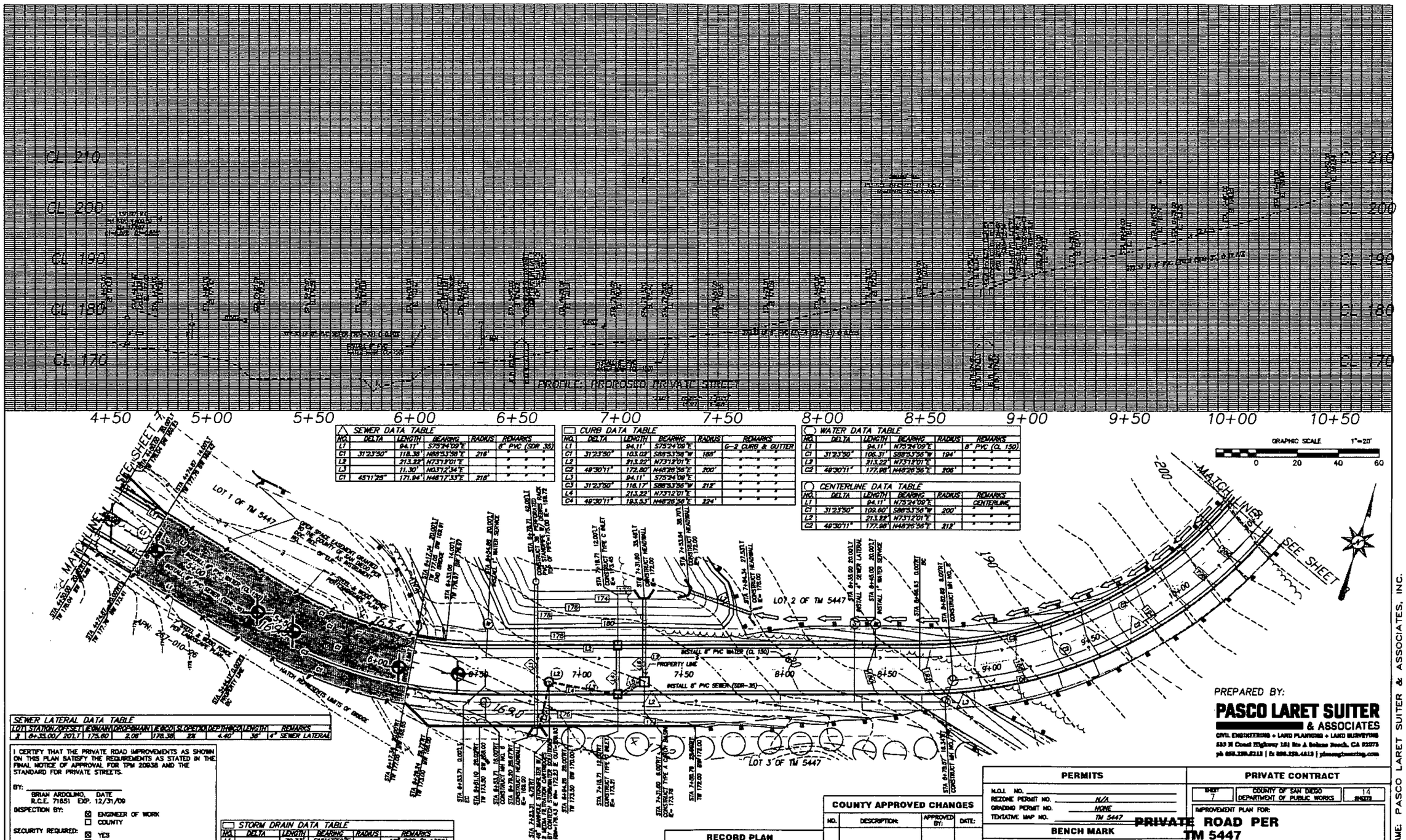
VIA DE MAYA
EL VUELO
EL VUELO DEL ESTE
VIA DEL BRAVO
(C) 1996-2002 ESRI Inc.



Geotechnics Incorporated

SITE LOCATION MAP



SEWER DATA TABLE					
NO.	DELTA	LENGTH	BEARING	RADIUS	REMARKS
L1		94.11'	S75°24'09"E		8" PVC (SDR 35)
C1	31°23'50"	118.38'	N88°53'56"E	216'	" " "
L2		213.22'	N73°12'01"E		" " "
L3		11.30'	N03°12'34"E		" " "
C1	45°11'25"	171.94'	N46°17'33"E	218'	" " "

CURB DATA TABLE					
NO.	DELTA	LENGTH	BEARING	RADIUS	REMARKS
L1		94.11'	S75°24'09"E		
C1	31°23'50"	103.02'	S88°53'56"W	188'	" " "
L2		213.22'	N73°12'01"E		" " "
C2	49°30'11"	172.80'	N48°26'56"E	200'	" " "
L3		94.11'	S75°24'09"E		
C3	31°23'50"	118.17'	S88°53'56"W	212'	" " "
L4		213.22'	N73°12'01"E		" " "
C4	49°30'11"	183.53'	N48°26'56"E	224'	" " "

WATER DATA TABLE					
NO.	DELTA	LENGTH	BEARING	RADIUS	REMARKS
L1		94.11'	N75°24'09"E		8" PVC (CL 150)
C1	31°23'50"	106.31'	S88°53'56"W	194'	" " "
L2		213.22'	N73°12'01"E		" " "
C2	49°30'11"	177.98'	N48°26'56"E	206'	" " "

CENTERLINE DATA TABLE					
NO.	DELTA	LENGTH	BEARING	RADIUS	REMARKS
L1		94.11'	N75°24'09"E		CENTERLINE
C1	31°23'50"	109.60'	S88°53'56"W	200'	" " "
L2		213.22'	N73°12'01"E		" " "
C2	49°30'11"	177.98'	N48°26'56"E	212'	" " "

SEWER LATERAL DATA TABLE									
LOT	STATION	OFFSET	ELEVATION	DROP MAIN	ELBOW	SLOPE	TO DEPTH	ELBOW	LENGTH	REMARKS
2	6+35.00	20'LT	175.60	2.08'	178.38	2%	4.40'	36"	4" SEWER LATERAL

I CERTIFY THAT THE PRIVATE ROAD IMPROVEMENTS AS SHOWN ON THIS PLAN SATISFY THE REQUIREMENTS AS STATED IN THE FINAL NOTICE OF APPROVAL FOR TPM 20838 AND THE STANDARD FOR PRIVATE STREETS.

BY: _____
BRIAN ARDOLINO, DATE
R.C.E. 71651 EXP. 12/31/09

INSPECTION BY: ☒ ENGINEER OF WORK ☐ COUNTY

SECURITY REQUIRED: ☒ YES ☐ NO

THE COUNTY IS NOT LIABLE FOR THE DESIGN IN ANY WAY, REVIEWED FOR CLARITY ONLY.

BY: _____ DATE _____
FOR: MOHAMAD K. FAKHRIDDINE

STORM DRAIN DATA TABLE					
NO.	DELTA	LENGTH	BEARING	RADIUS	REMARKS
L1		70.73'	S16°47'59"E		18" RCP (D 1350)
L3		20.70'	N04°16'06"W		6" PVC (SDR 35)
L3		30.28'	N83°45'09"E		" " "
L4		20.50'	N16°47'59"E		18" RCP (D 1350)
L5		10.84'	S43°12'01"W		" " "
L6		39.46'	S16°47'59"W		" " "
L7		32.67'	N86°47'59"W		" " "

PROPOSED BORING LOCATIONS

RECORD PLAN

BY: _____ DATE: _____
BRIAN ARDOLINO
R.C.E. 71651
EXPIRES: 12-31-09

COUNTY APPROVED CHANGES

NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS

N.O.I. NO. _____
REZONE PERMIT NO. N/A
GRADING PERMIT NO. NONE
TENTATIVE MAP NO. TM 5447

BENCH MARK

DESCRIPTION: COUNTY B.M. H 0026
LOCATION: STD. TAB N'XD 1838-H28-148
1.1 MI S.W. HODGES DAM, 13' N C HWY. BENEATH CONC. FLUME, HDWL CONC. CULVERT
RECORD FROM: COUNTY OF SAN DIEGO
ELEVATION: 148.221 DATUM: A.M.S.L.

PRIVATE CONTRACT

SHEET 7 | COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS | 14 | 8162B

IMPROVEMENT PLAN FOR:

PRIVATE ROAD PER TM 5447

CALIFORNIA COORDINATE INDEX 314-1713

PRIVATE ROAD - SEE ABOVE

TM 5447

PREPARED BY:

PASCO LARET SUITER & ASSOCIATES
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING
535 N Coast Highway 101 Ste A Solana Beach, CA 92075
ph 858.259.8212 | fx 858.259.4812 | plsaengineering.com

ENGINEERS NAME: PASCO LARET SUITER & ASSOCIATES, INC.
PHONE NO. (858) 259-8212

PERMIT #LMON106379
A.P.N. #266-291-01, 02, 266-300-34, 36, 266-272-16-, 266-284-06
EST #H13190-001
MODIFICATION

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
SOIL BORING CONSTRUCTION PERMIT

SITE NAME: RANCHO SANTA FE MOBIL (AND OFF-SITE)

SITE ADDRESS: 6089 LA FLECHA, RANCHO SANTA FE, CA 92067

PERMIT FOR: **26 SOIL BORINGS**

PERMIT APPROVAL DATE: APRIL 16, 2009

PERMIT EXPIRES ON: AUGUST 14, 2009

RESPONSIBLE PARTY: MR. TONY RABABY

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: V. Tavizon DATE: 05/12/2009
VERONICA TAVIZON-HITCHNER

NOTIFIED: 5/3/

DEH: SAM-9075 (7/07)

BBC ENVIRONMENTAL, INC.

Modification

3593 Adams Avenue, San Diego, CA 92116

MAY 12 2009
ENVIRONMENTAL HEALTH

May 11, 2009

County of San Diego
Department of Environmental Health
Site Assessment and Mitigation Program
Monitoring Well Permit Desk
P.O. Box 129261
San Diego, CA. 92112-9261

RE: CPT/LIF BORING PERMIT REVISIONS FOR THE RANCHO SANTA FE MOBIL STATION LOCATED AT 6089 LA FLECHA IN RANCHO SANTA FE, CALIFORNIA (SAM CASE No. H#13190-0001; Permit No. LMON106379)

Monitoring Well Permit Desk:

Please find enclosed one original copy of the Permit Revisions request for the installation of 26 CPT/LIF investigation points. The original 18 boring installations were authorized under County of San Diego Permit No. LMON106379 on April 16, 2009. This revision request is being submitted for the installation of 8 additional CPT/LIF points as outlined in the County of San Diego, DEH Workplan Authorization dated February 10, 2009.

The approved workplan proposed a minimum of 18 CPT/LIF installation points and a maximum of 27 CPT/LIF installation points. In accordance with the SAM Program guidance the additional fees and a revised site plan are herein submitted to the Well Permit Desk.

Should you have any questions or require additional information with regards to this submittal, please contact Mr. Walter Craig of BBC Environmental, Inc. at (619) 546-7165.

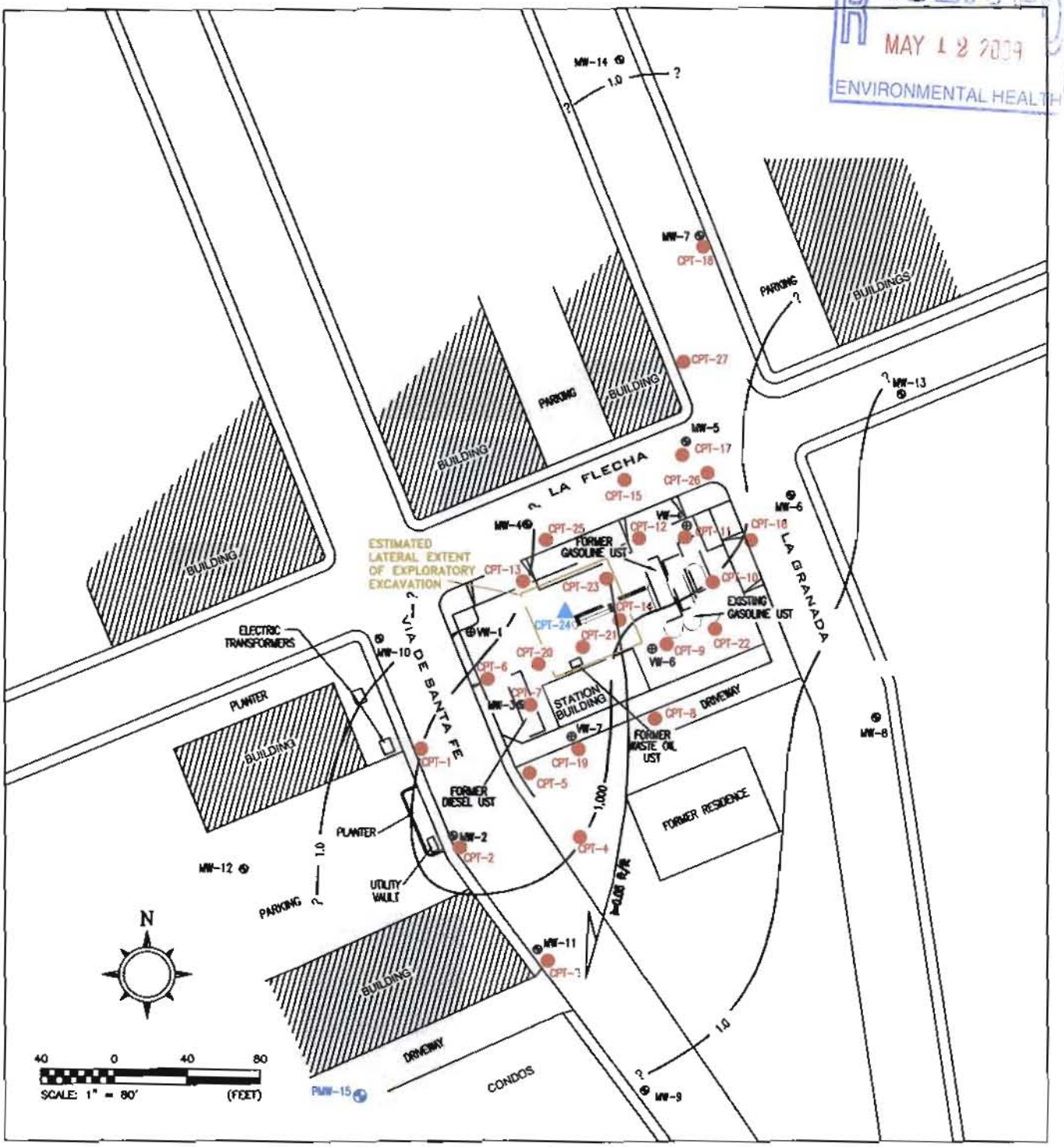
Thank You,
BBC Environmental, Inc.

W. B. Craig, Pres.

Mr. Walter B. Craig, R.E.A
Principal Engineer

Attachments (5):
- CPT/LIF Boring Permit No. LMON106379
- SAM Program Workplan Approval Letter dated 2-10-09
- CPT-LIF Sampling Location Map
- Notification Correspondence dated 5-6-09 & 5-7-09
- BBC Environmental, Inc. Check No. 7907

RECEIVED
MAY 1 8 2009
ENVIRONMENTAL HEALTH



LEGEND

- CPT-1 CPT/LIF SAMPLING LOCATIONS INSTALLED APRIL 2009
- CPT-20 PROPOSED CPT/LIF SAMPLING LOCATION NOT INSTALLED
- PMW-15 PROPOSED MONITORING WELL LOCATION NOT INSTALLED
- MW-8 GROUNDWATER MONITORING WELL
- VW-4 VAPOR WELL
- 1.0 ESTIMATED CONTOURS OF EQUAL BENZENE CONCENTRATIONS IN GROUNDWATER (ug/L)
- ESTIMATED GROUNDWATER FLOW DIRECTION
- i=0.05 ft/ft ESTIMATED GROUNDWATER GRADIENT

CPT-LIF SAMPLING LOCATIONS

RANCHO SANTA FE MOBIL
6089 LA FLECHA
RANCHO SANTA FE, CALIFORNIA

FIGURE No. 7 | PROJECT No. RSF MOBIL

BBC ENVIRONMENTAL, INC.

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
http://www.sdcdeh.org

JACK MILLER
ASSISTANT DIRECTOR

February 10, 2009

Tony and Adelle Rababy
Rancho Santa Fe Mobil
P.O. Box 476
Rancho Santa Fe, CA 92076

Dear Mr. and Mrs. Rababy:

UNAUTHORIZED RELEASE #H13190-001
RANCHO SANTA FE MOBIL
LOCATED AT LA FLECHA AND LA GRANADA, RANCHO SANTA FE, CA 92076
WORK PLAN APPROVAL

This letter has been prepared in accordance with the requirements set forth in Title 23 (State Underground Storage Tank Regulations), Division 3, Chapter 16, Article 11, Section 2722. The purpose of this letter is to notify the Responsible Party of the status of the Work Plan received by the County of San Diego, Site Assessment and Mitigation Program (SAM), on January 2, 2009.

The Work Plan, dated December 29, 2008, prepared by BBC Environmental, Inc., covers one of the following phases of corrective action:

Preliminary Site Assessment	( )
Soil and Water Investigation	(X)
Corrective Action Plan	( )
Verification Monitoring	( )
Interim Remedial Action	( )

The scope of proposed work includes:

- Review historical records for surrounding site uses to fill data gaps.
- Place 18 to 27 borings using direct-push equipment equipped with cone penetrometer testing (CPT) and light induced florescence (LIF) detection instrumentation.
- Collect soil samples from significant changes in lithology to verify LIF responses.
- Install a groundwater monitoring well west-southwest of well MW-11 using hollow-stem auger drilling methods.

- Collect and analyze soil samples from the saturated zone for specific physical properties, such as porosity, permeability and hydraulic conductivity.
- Collect a groundwater sample from each borehole using a Hydropunch sampler.
- Analyze soil and groundwater samples using EPA methods 8015M, 8260B and 418.1.

The Work Plan has been:

( ) approved.
( ) disapproved-call the undersigned for further instructions.
(X) approved with the following changes or conditions:

1) Collect and chemically analyze soil samples from at least 3 borings from which CPT/LIF data has been obtained. Sample selection should be based on significant changes in lithology based on the CPT, and more importantly, from depths that show strong LIF response. Chemical analysis should include EPA Methods 8015M and 8260B as described in the Work Plan.

2) The Work Plan states that soil samples will be collected to verify the LIF responses at significant changes in lithology, at the capillary fringe and below the water table. Be sure that samples are collected from depths that correlate with high LIF responses, not just changes in lithology.

3) Submit a comprehensive site assessment report, by July 30, 2009, documenting the current work in the context of all the previous work conducted to present a current site conceptual model.

This approval is valid for 6 months from the date of this letter. *Keep this letter for your records as it may be required for corrective action cost reimbursement under Senate Bill 2004 (California Health and Safety Code, Division 20, Chapter 6.75, Article 6).*

Please have your consultant upload all monitoring well laboratory data collected on or after September 1, 2001, and location information (location, elevation, depth to water, and site map) generated after January 1, 2002, and complete reports and boring data prepared after January 1, 2005, to the State Water Resources Control Board's GeoTracker geographic information system.

The need for further site characterization and mitigation actions will be determined following evaluation of the written report. If you have any questions, please call me at (619) 338-2244.

Sincerely,

DONN A. LIPERA, Project Manager
Site Assessment and Mitigation Program

DAL:kd

cc: Walter Craig, BBC Environmental
Diana Conkle, Cleanup Fund

WP/H13190-001-209WPA

Walter B. Craig Notification

From: Tavizon, Veronica [Veronica.Tavizon@sdcounty.ca.gov] on behalf of DEH, Monitoring Wells [MonitoringWells.DEH@sdcounty.ca.gov]

Sent: Thursday, May 07, 2009 8:26 AM

To: w.craig@bbcenvironmental.com

Subject: RE: LMON 106379, Rancho Santa Fe, CA

Hi Walt,

Thank you for the notification. Please submit additional fees and documents to the permit desk by May 13, 2009. I will modify your permit for a total of 26 borings and email you a modified permit when the additional fees and documents are received.

In the future please contact the permit desk during drilling activities. Leave a message if no one answers. Also, email the permit desk at MonitoringWells.DEH@sdcounty.ca.gov or have your office staff email the permit desk the same day to ensure all MWP staff are aware of the additional activities. Additional fees and documents are to be received within five days. If proper notification is not provided and/or fees and documents are not received within five days investigative fees may apply. A permit can only be modified prior to drilling activities or during drilling activities and is limited to the parcels that have already been approved. Wells require construction review and approval prior to installation. Please contact the permit desk at 619 338-2339 if you have any questions.

Thank You,

Veronica Tavizon-Hitchner, EHT
Monitoring Well Program
Department of Environmental Health
County of San Diego

(619) 338-2223
veronica.tavizon@sdcounty.ca.gov

From: Walter B. Craig [mailto:w.craig@bbcenvironmental.com]
Sent: Wednesday, May 06, 2009 3:30 PM
To: DEH, Monitoring Wells
Cc: Tavizon, Veronica
Subject: LMON 106379, Rancho Santa Fe, CA

Monitoring Well Desk:

Please allow this correspondence to stand as formal written notification for additional boring installations associated with Soil Boring Construction Permit No. LMON106379 for the Rancho Santa Fe Mobil Station located at 6089 La Flecha, Rancho Santa Fe, CA (Site). Verbal notification of the installation of additional borings was completed previously.

In summary, BBC Environmental, Inc. (BBC) received approval of our workplan which incorporated the installation of CPT/LIF borings at the Site. The workplan approval letter from the County of San Diego was dated February 10, 2009 (H13190-001). The workplan scope of work proposed a minimum of 18 locations and as many as 27 locations to be investigated. The number of final points installed would be determined by field data collected during the proposed field event. In preparation for the field event, BBC submitted payment for the minimum number (18) of boring locations.

This email is to formally inform the County of San Diego that a total of 26 locations were completed during the field event performed between April 27th and April 30th, 2009. All 8 alternative locations were installed on the final day of the field event. BBC shall submit the additional fees associated with the installation of the alternative points prior fo weeks end. The fees are estimated to be $400.00 (8x$50/boring). Please find a revised site plan with sampling locations in .pdf

format attached to this email.

Please contact me with any questions regarding this project.

Thank you, -w.
Mr. Walter B. Craig, R.E.A.
BBC Environmental, Inc.
3593 Adams Avenue
San Diego, CA. 92116
Tel: (619) 546-7165
Fax: (619) 546-7175

PERMIT #LMON106379
A.P.N. #266-291-01, 02, 266-300-34, 36, 266-272-16-, 266-284-06
EST #H13190-001

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
SOIL BORING CONSTRUCTION PERMIT

SITE NAME: RANCHO SANTA FE MOBIL (AND OFF-SITE)

SITE ADDRESS: 6089 LA FLECHA, RANCHO SANTA FE, CA 92067

PERMIT FOR: 18 SOIL BORINGS

PERMIT APPROVAL DATE: APRIL 16, 2009

PERMIT EXPIRES ON: AUGUST 14, 2009

RESPONSIBLE PARTY: MR. TONY RABABY

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: _____ DATE: 04/16/2009
VERONICA TAVIZON-HITCHNER

NOTIFIED: 4/16/09

DEH: SAM-9075 (7/07)

T1063 PS

RECEIVED APR 9 2009 ENVIRONMENTAL HEALTH

OFFICE USE ONLY
PERMIT LMON # 637
SAM CASE Y/N # T 92-61
DATE RECEIVED: 9-59
FEE PAID: 614
CHECK # 8116

PERMIT APPLICATION GROUNDWATER, VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

To Computer LCP

A. RESPONSIBLE PARTY Mr. Tony Rababy E-mail N/A
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)

Mailing Address P.O. Box 476 City Rancho Santa Fe State CA Zip 92067-0151
Contact Person Mrs Adele Rababy Phone 858-756-1975 Ext. __ Fax 858-756-

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # H13190-001

C. CONSULTING FIRM BBC Environmental, Inc.

Mailing Address 3593 Adams Avenue City San Diego State CA Zip 92116-
Registered Professional Mr. Gerald I Shiller Registration # 4558 (RG)
E-mail idogeology@cox.net
Contact Person Mr. Walter Craig Phone 619-546-7165 Ext. _ Fax 619-546-7175

D. DRILLING COMPANY Fugro Consultants, Inc. C57# 909719

Contact Name Mr. Gerry Boehm E-mail gboehm@fugro.com

Mailing Address 13049 E. Florence Avenue City Santa Fe Springs State CA Zip 90670-
Phone 562-903-0055 Fax 562-903-9005

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☐ Boring	___
☒ Other	18

CPT/LIF

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING

Not Applicable X
Type ____
Gauge ____
Diameter ____
Well Screen Size ____
Filter Pack ____

SEAL/BORING BACKFILL

☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 1.5"

Drilling Method

☐ Auger ☐ Air Rotary
☐ Mud Rotary ☒ Other CPT
☐ Percussion

PROPOSED CONSTRUCTION

Estimated groundwater depth: 12 ft
Estimated depth of boring 25 ft.

Concrete surface seal	0 to 3
Annular seal	____ to ____
Bentonite transition seal	____ to ____
Filter Pack	____ to ____
Perforation	____ to ____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] DATE 4/8/09

Copy updated with 4/14/09 ✓
✓ 4/9/09 Plot Drawing [illegible] attached

Within 60 days of completion, I will fu[illegible]sh the Monitoring Well Permit Desk with a [illegible]mplete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE [signature] DATE 4/8/09

PROFESSIONAL GEOLOGIST GERALD L. SHILLER PG-4558 Exp. 2/28/11 STATE OF CALIFORNIA

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 266-291-01
   Site Name Rancho Santa Fe Mobil
   Site Address 6089 La Flecha City Rancho Santa Fe Zip 92067-

   PROPERTY OWNER Mr. Tony Rababy dba ATR Rancho Santa Fe, LLC
   Phone 858-756-1975 Ext. Fax 858-756-0151
   Mailing Address P.O. Box 476 City Rancho Santa Fe State CA Zip 92067-

   NUMBER OF WELLS 8 **TYPE OF WELLS** CPT Borings

2. **ASSESSOR'S PARCEL NUMBER** 266-291-02
   Site Name Vacant Parcel
   Site Address 16941 Via de Santa Fe City Rancho Santa Fe Zip 92067-

   PROPERTY OWNER Mr. Tony Rababy dba ATR Rancho Santa Fe, LLC
   Phone 858-756-1975 Ext. Fax 858-756-0151
   Mailing Address P.O. Box 476 City Rancho Santa Fe State CA Zip 92067-

   NUMBER OF WELLS 3- **TYPE OF WELLS** CPT Borings

3. **ASSESSOR'S PARCEL NUMBER** None
   Site Name County of San Diego Right of Way
   Site Address Via deSanta Fe/La Flecha/La Granada City Rancho Santa Fe Zip 92067-

   PROPERTY OWNER County of San Diego
   Phone 858-694-2055 Ext. Fax
   Mailing Address 5201 Ruffin Road City San Diego State CA Zip 92123-

   NUMBER OF WELLS 7- **TYPE OF WELLS** CPT Borings

4. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2008, through June 30, 2009)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$193.00 for the first monitoring well	**$193.00**
Permit for Well Maintenance Inspection (Valid for three years)	$100.00 for first well maintenance inspection	**$100.00**
Each Additional New Well	$160.00 for each additional well installation	___ x **$160.00** $_____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** $_____

Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$193.00 for the first boring ..... $ 50.00 for each additional boring	1 x $193.00 17 x $ 50.00	$193.00 $850.00
Permit for Well Destructions Only	$193.00 for the first destruction ..... $120.00 for each additional destruction ...	___ x $193.00 ___ x $120.00	$_____ $_____
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $193.00 **Additional activities will be as follows:** $160.00 for each additional well $100.00 for first well maintenance inspection $ 30.00 for each additional well maintenance inspection $120.00 for each well destruction $ 50.00 for each additional boring	___ x $193.00 ___ x $160.00 ___ x $100.00 ___ x $ 30.00 ___ x $120.00 ___ x $ 50.00	$_____ $_____ $_____ $_____ $_____ $_____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00** **(Flat Fee)**		$_____
	TOTAL COST OF PERMIT		**$1043.00**

H. **QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.**

1. If wells are to be destroyed, provide a description of method of destruction _____

2. What is the purpose of the well/boring investigation?

   ☒ a. Part of an ongoing site assessment case in which a government regulator is the lead agency. If yes, indicate which government regulator is the lead agency and the case number.

   H13190-001
   DEH RWQCB _____ DTSC _____

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Backfilling of the boring will be performed immediately following the CPT/LIF direct push assessment. Backfilling will be completed using a bentonite slurry

4. What field procedures will be utilized to determine if contamination exists? LIF (Light Induced Fluorescence) analysis in situ.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? No soil or groundwater sampling will take place during this event.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? Presence or absence of hydrocarbons in the formation.

7. How will samples be transported and preserved? N/A

8. What sampling methods will be used? N/A

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (www.sdcdeh.org). Yes ☐ No ☒ _____

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. Yes ☐ No ☒ _____

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Decontamination of direct push rods using triple rinse methodology. First rinse to include the use of a non-phophate soap (Liquinox) followed by two tap water rinses. All downhole equipment will undergo decontamiantion procedures prior to first use during investigation. All downhole equipment will then undergo decontamination procedures upon retrieval from the boring and before being used on a subsequent bore hole.

12. What methods will be used to clean sampling equipment? No sampling to be conducted.

13. What cleaning method will be used to clean casing and screen prior to installation? N/A

14. A Property Owner Consent (POC) agreement is required for all applications, except for onsite, open LOP/SAM site assessment cases, Caltrans properties and military properties.

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

JACK MILLER
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:	**Assessor's Parcel Number (APN):**
16089 La Flecha, R.S.F., CA	266-231-01
16941 Via de Santa Fe, R.S.F., CA	266-231-02

I, Tony & Adele Rababy, owner of the property/properties listed above, give my permission to BBC Environmental, Inc. (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☑ Drill 18 soil borings

I understand that G. Shiller (registered professional) of BBC Environmental (consulting company) and an authorized signer for Fugro Consultants (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

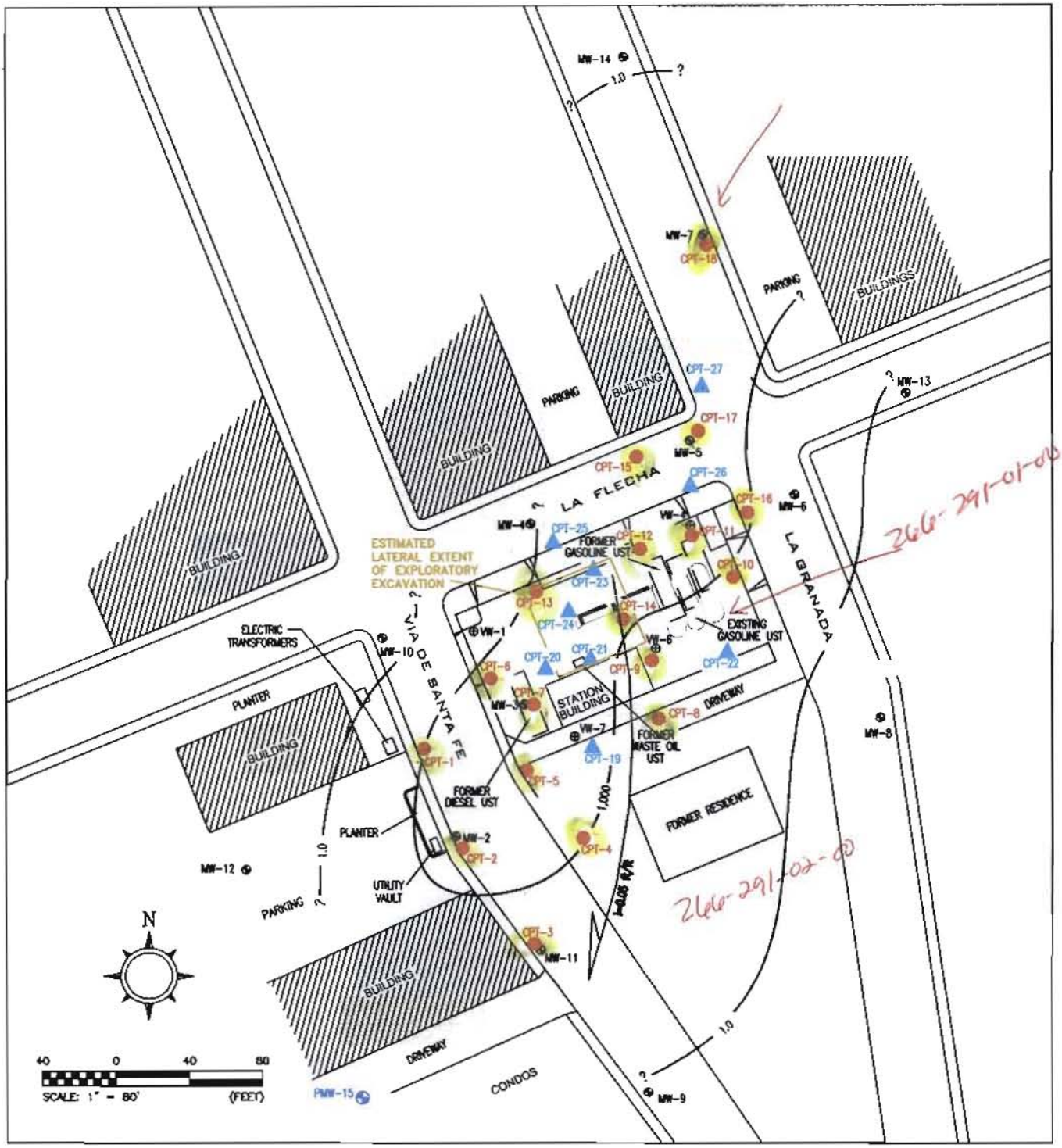
Property Owner Signature: Adele Rababy Tony Rababy Date: 3-28-09

Print Name: ADELE RABABY - TONY RABABY Title: Manager

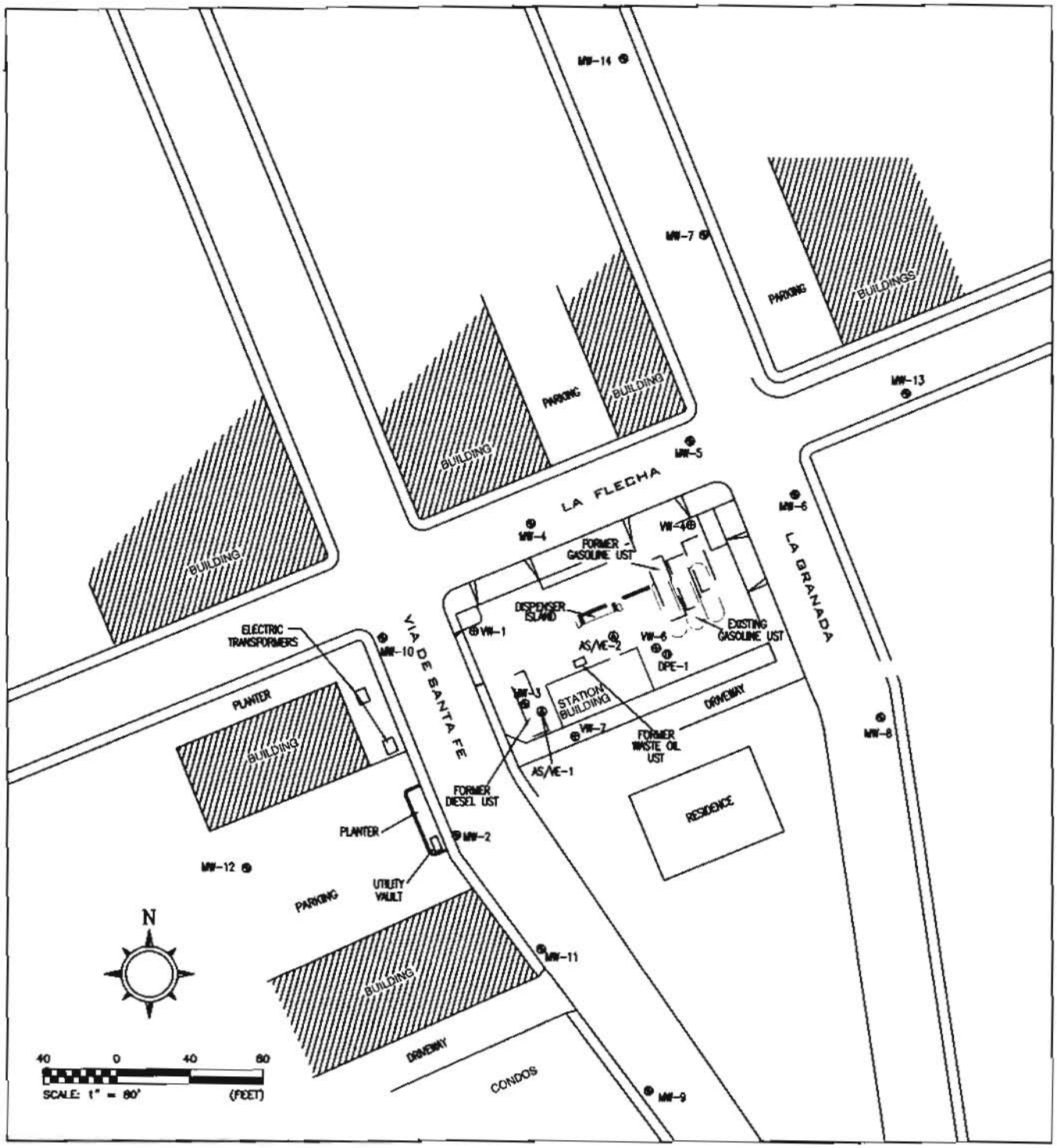
Company: ATR RANCHO SANTA FE, LLC

Mailing Address: P.O 476 - RSF CA 92067

LEGEND	SITE VICINITY MAP
REFERENCE: TERRASERVER-USA.COM 01 JULY 1983 COUNTY OF SAN DIEGO RANCHO SANTA FE N 547 0 547 1094 SCALE: 1" = 1,094' (FEET)	RANCHO SANTA FE MOBIL 6089 LA FLECHA RANCHO SANTA FE, CALIFORNIA
	FIGURE No. 1 — PROJECT No: RSF MOBIL
	BBC ENVIRONMENTAL, INC.



LEGEND	PROPOSED SAMPLING LOCATIONS
● CPT-1 PROPOSED PRIMARY CPT/LIF SAMPLING LOCATION ▲ CPT-20 PROPOSED SECONDARY CPT/LIF SAMPLING LOCATION PMW-15 PROPOSED MONITORING WELL LOCATION MW-8 GROUNDWATER MONITORING WELL VW-4 VAPOR WELL — 1.0 — ESTIMATED CONTOURS OF EQUAL BENZENE CONCENTRATIONS IN GROUNDWATER (ug/L) ESTIMATED GROUNDWATER FLOW DIRECTION i=0.05 ft/ft ESTIMATED GROUNDWATER GRADIENT	RANCHO SANTA FE MOBIL 6089 LA FLECHA RANCHO SANTA FE, CALIFORNIA FIGURE No. 7 — PROJECT No. RSF MOBIL BBC ENVIRONMENTAL, INC.



LEGEND

- MW-8 GROUNDWATER MONITORING WELL
- MW-1 ABANDONED GROUNDWATER MONITORING WELL
- VW-4 VAPOR WELL
- DPE-1 DUAL PHASE EXTRACTION WELL
- AS/VE-1 AIR SPARGE/VAPOR EXTRACTION WELL
- NEW UNDERGROUND STORAGE TANK
- FORMER UNDERGROUND STORAGE TANK

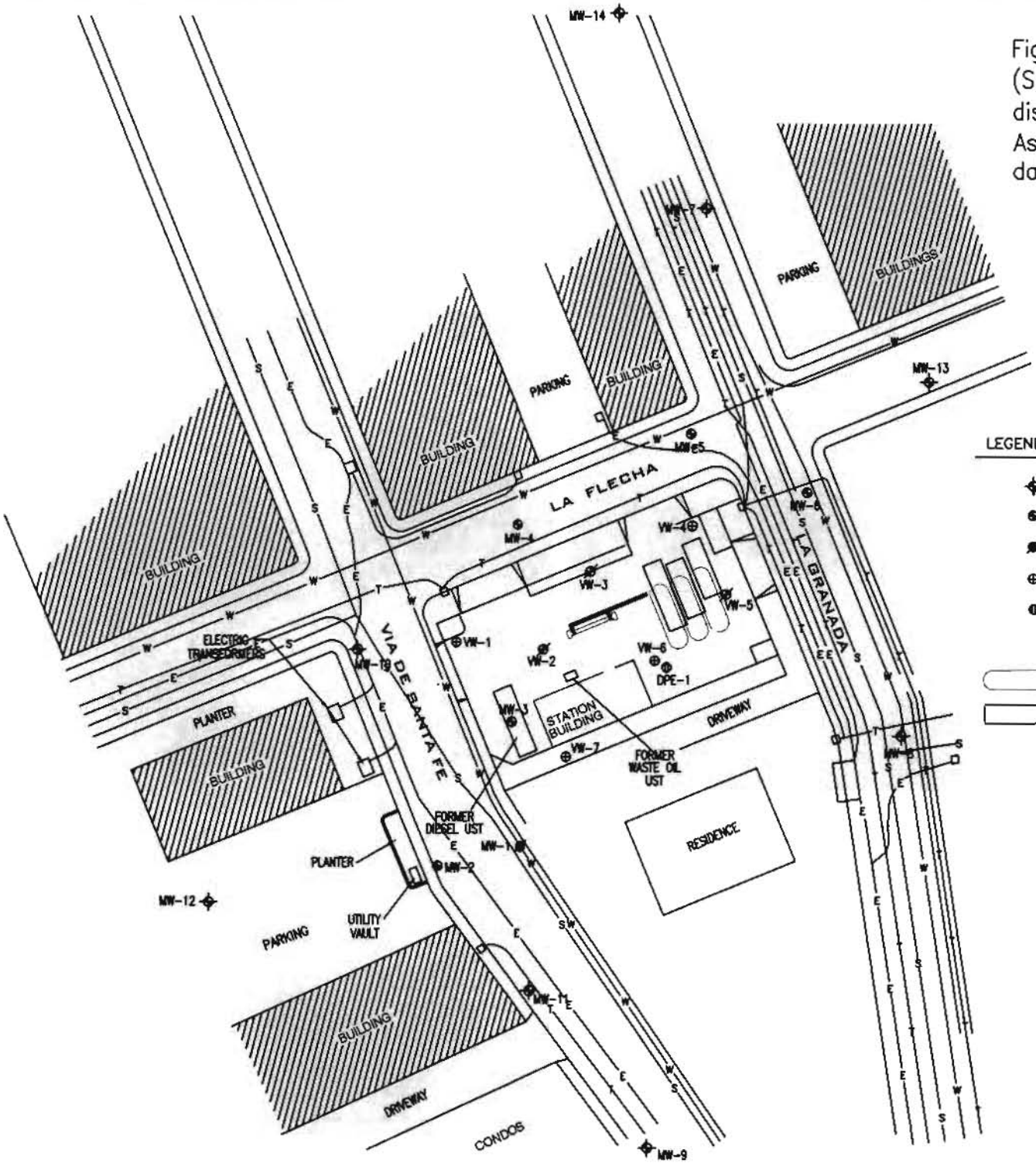
SITE MAP

RANCHO SANTA FE MOBIL
6089 LA FLECHA
RANCHO SANTA FE, CALIFORNIA

FIGURE No. 2	PROJECT No. RSF MOBIL

BBC ENVIRONMENTAL, INC.

Figure provided by Secor International, Inc. (Secor) on February 13, 2007. Original figure displayed in Secor report titled, "Additional. Site Assessment Report for Rancho Santa Fe Mobil" dated July 22, 2005.



LEGEND:

- GROUNDWATER MONITORING WELL (SECOR)
- GROUNDWATER MONITORING WELL (CERTIFIED ENGINEERING/RECON)
- ABANDONED GROUNDWATER MONITORING WELL
- VAPOR WELL (VAPOR EXTRACTION TECHNOLOGY)
- DUAL PHASE EXTRACTION WELL
- AIR SPARGE/VAPOR EXTRACTION WELL
- NEW UNDERGROUND STORAGE TANK
- FORMER UNDERGROUND STORAGE TANK

ALL UTILITY LINES ARE ESTIMATED TO BE FIVE FEET OR LESS BELOW GROUND SURFACE.

- SEWER UTILITY LINE
- WATER UTILITY LINE
- ELECTRIC UTILITY LINE
- TELEPHONE UTILITY LINE

0 60 120

APPROXIMATE SCALE IN FEET

N

County of San Diego

JACK MILLER
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcdeh.org

ELIZABETH POZZEBON
ASSISTANT DIRECTOR

OFFICIAL NOTICE

August 9, 2010

DOUGLAS SKINNER
SOUTHERN CAL SOIL & TESTING
P. O. BOX 600627
SAN DIEGO, CA 92160-0627

FIRST PAST DUE NOTICE -- PERMIT: LMON-106912
APPROVED: January 25, 2010 -- EXPIRED: May 25, 2010
16066 VIA DE LAS PALMS, RANCHO SANTA FE, 92091

The Department of Environmental Health (DEH), Monitoring Well Program (MWP) has not received the required 60-day report for work completed under this permit.

Failure to submit the 60-day drilling report is a violation of the San Diego County Code, Section 67.447 and can result in a complaint being filed with the appropriate State Board. In addition, the San Diego County Code Section 67.441 states that permits may be denied if the applicant is delinquent with submitting 60-day drilling reports to the MWP.

Submit the 60-day report to the Well Permit Desk to the address shown above by **August 24, 2010**. If the report is not submitted, you will receive a notice to attend an Administrative Conference. Please contact the Well Permit Desk at (619) 338-2339 if you wish to discuss this letter.

Thank you for your cooperation.

Sincerely,

Marisue Crystal, Environmental Health Technician
Monitoring Well Program
Site Assessment and Mitigation Program

cc: **, MR. RICHARD CAVANAUGH**
PACIFIC DRILLING CO

PERMIT # LMON106912
A.P.N. # 302-120-32-00
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: NEWPORT PACIFIC PROPERTY

SITE ADDRESS: 16066 VIA DE LAS PALMAS, RANCHO SANTA FE, 92091

PERMIT FOR: 2 GEOTECHNICAL BORINGS

PERMIT APPROVAL DATE: JANUARY 25, 2010

PERMIT EXPIRES ON: MAY 25, 2010

RESPONSIBLE PARTY: RICHARD CAVANAUGH

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.**

APPROVED BY: _____ DATE: 1/25/2010
VERONICA TAVIZON

NOTIFIED: 1/25/10

DEH:SAM-9075 (4/03)

RECEIVED
JAN 21 2010
ENVIRONMENTAL HEALTH

EXPEDITE
Geotechnical Boring
Date:

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 106912
SAM CASE Y/N # NONE
DATE RECEIVED: 1-21-10
FEE PAID: $243-
CHECK # MC/credit

A. RESPONSIBLE PARTY MR. RICHARD CAVANAUGH E-mail —
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address P.O. BOX 841 City RANCHO SANTA FE State CA Zip 92067
Contact Person RICHARD CAVANAUGH Phone 858 756-3771 Ext. — Fax —

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM SOUTHERN CALIFORNIA SOIL & TESTING, INC
Mailing Address P.O. BOX 600627 City SAN DIEGO State CA Zip 92120
Registered Professional DOUG SKINNER Registration # 2472 (RG, RCE, CEG, PG) Circle if applicable
E-mail DSKINNER @ SCST.COM
Contact Person DOUG SKINNER Phone (619) 280-4321 Ext. _____ Fax 619 280 4717

D. DRILLING COMPANY Pacific Drilling C57# 681380
Contact Name Todd Clark E-mail _____
Mailing Address P.O. Box 84627 City San Diego State CA Zip 92138
Phone (619) 294-3682 Ext. _____ Fax _____

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	2
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable X
Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
Borehole diameter 8"

Drilling Method
☐ Auger
☒ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 15 ft.
Estimated depth of boring 50 ft.

Concrete surface seal	0 to 3
Annular seal	___ to ___
Bentonite transition seal	___ to ___
Filter Pack	___ to ___
Perforation	___ to ___

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 1/20/10

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE _____ DATE 1/20/10

F. SITE INFORMATION

1. ASSESSOR'S PARCEL NUMBER 302-120-32-00

Site Name VACANT LOT

Site Address 16066 VIA DE LAS PALMAS City RANCHO SANTA FE Zip 92091

PROPERTY OWNER Newport Pacific, Inc.

Phone _____ Ext. _____ Fax _____

Mailing Address PO Box 841 City Rancho Santa Fe State CA Zip _____

NUMBER OF ~~WELLS~~ BORINGS 2 **TYPE OF WELLS** GEOTECHNICAL

2. ASSESSOR'S PARCEL NUMBER _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. ASSESSOR'S PARCEL NUMBER _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. ASSESSOR'S PARCEL NUMBER _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2009, through June 30, 2010)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$193.00 for the first monitoring well	**$193.00**
New Well Inspection	$100.00 for first new well inspection	**$100.00**
Each Additional New Well	$160.00 for each additional well installation	___ x **$160.00** _____
	$30.00 for each additional new well inspection	___ x **$ 30.00** _____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$193.00 for the first boring	1 x **$193.00** 193.00
	$50.00 for each additional boring	1 x **$ 50.00** 243-00
Permit for Well Destructions Only	$193.00 for the first destruction	___ x **$193.00**
	$120.00 for each additional destruction ...	___ x **$120.00**
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $193.00	___ x **$193.00** _____
	Additional activities will be as follows:	
	$160.00 for each additional well	___ x **$160.00** _____
	$100.00 for first well maintenance inspection	___ x **$100.00** _____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** _____
	$120.00 for each well destruction	___ x **$120.00** _____
	$ 50.00 for each additional boring	___ x **$ 50.00** _____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	**$**_____
	TOTAL COST OF PERMIT	$ 243-00

H. QUESTIONNAIRE: Please answer all applicable questions completely. ***For well destructions, complete only #1 below and submit any required supportive documentation.***

1. If wells are to be destroyed, provide a description of method of destruction N/A

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which a government regulator is the lead agency. If yes, indicate which government regulator is the lead agency and the case number.

   _____ DEH _____ RWQCB _____ DTSC

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction?
   PRE-CLEANING OF AUGERS, AUGERS LEFT IN PLACE UNTIL GROUT IS PLACED

4. What field procedures will be utilized to determine if contamination exists?
   VISUAL, ODOR

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving?
   GEOTECH SAMPLES ONLY

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)?
   GEOTECH SAMPLES ONLY

7. How will samples be transported and preserved? VIA TRUCK IN PLASTIC BAG

8. What sampling methods will be used? CAL SPLIT SPOON, SPT

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (www.sdcdeh.org). Yes ☐ No ☒

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and *include a destruction diagram*. Yes ☐ No ☒

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination?
    PRECLEANING OF EQUIPMENT

12. What methods will be used to clean sampling equipment? WATER / TRIPLE RINSE.

13. What cleaning method will be used to clean casing and screen prior to installation? N/A

14. A Property Owner Consent (POC) agreement is required for all applications, except for onsite, open LOP/SAM site assessment cases, Caltrans properties and military properties.

SEE ATTACHED

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
http://www.sdcdeh.org

JACK MILLER
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address: 16066 VIA DE LAS PALMAS

Assessor's Parcel Number (APN): 302-120-32-00

I, _____, owner of the property/properties listed above, give my permission to SCS&T (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 2 soil borings

I understand that DOUG SKINNER (registered professional) of SCS&T (consulting company) and an authorized signer for SCOTTS DRILLING (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

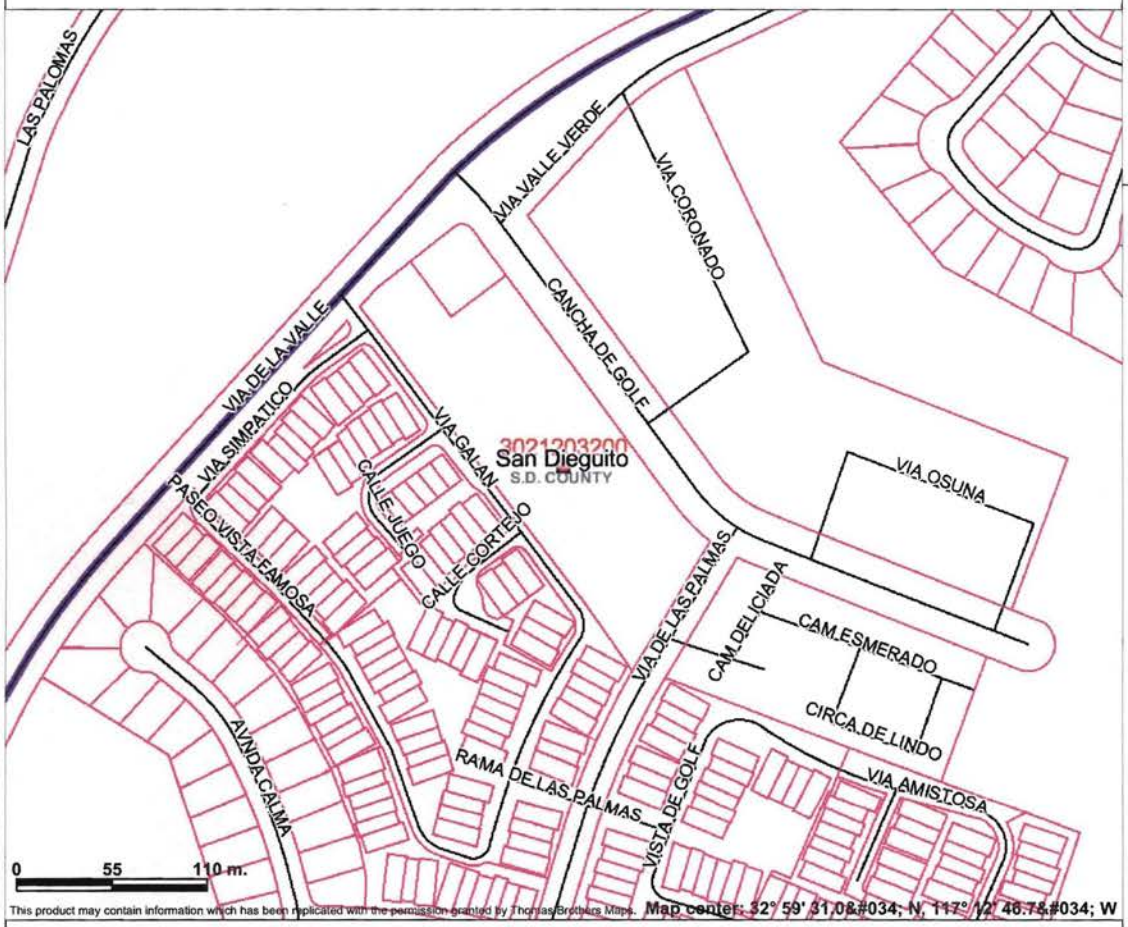
Property Owner Signature: [signature] Date: 1/20/2010

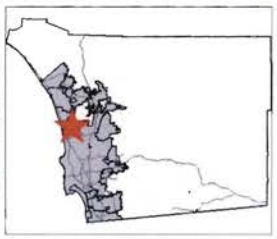
Print Name: Richard Cavanaugh Title: PRESIDENT

Company: NEWPORT PACIFIC, INC.

Mailing Address: P.O. BOX 841, RANCHO SANTA FE, CA 92067

LUEG-GIS Mapping Application





Legend

- Parcels w/out labels
- Highways
- Freeways
- Streets
- Water Bodies
- Water Bodies
- Community Planning Area
- ZIP Codes
- Incorporated Areas
- S.D. COUNTY
- Other

Scale: 1:3,223

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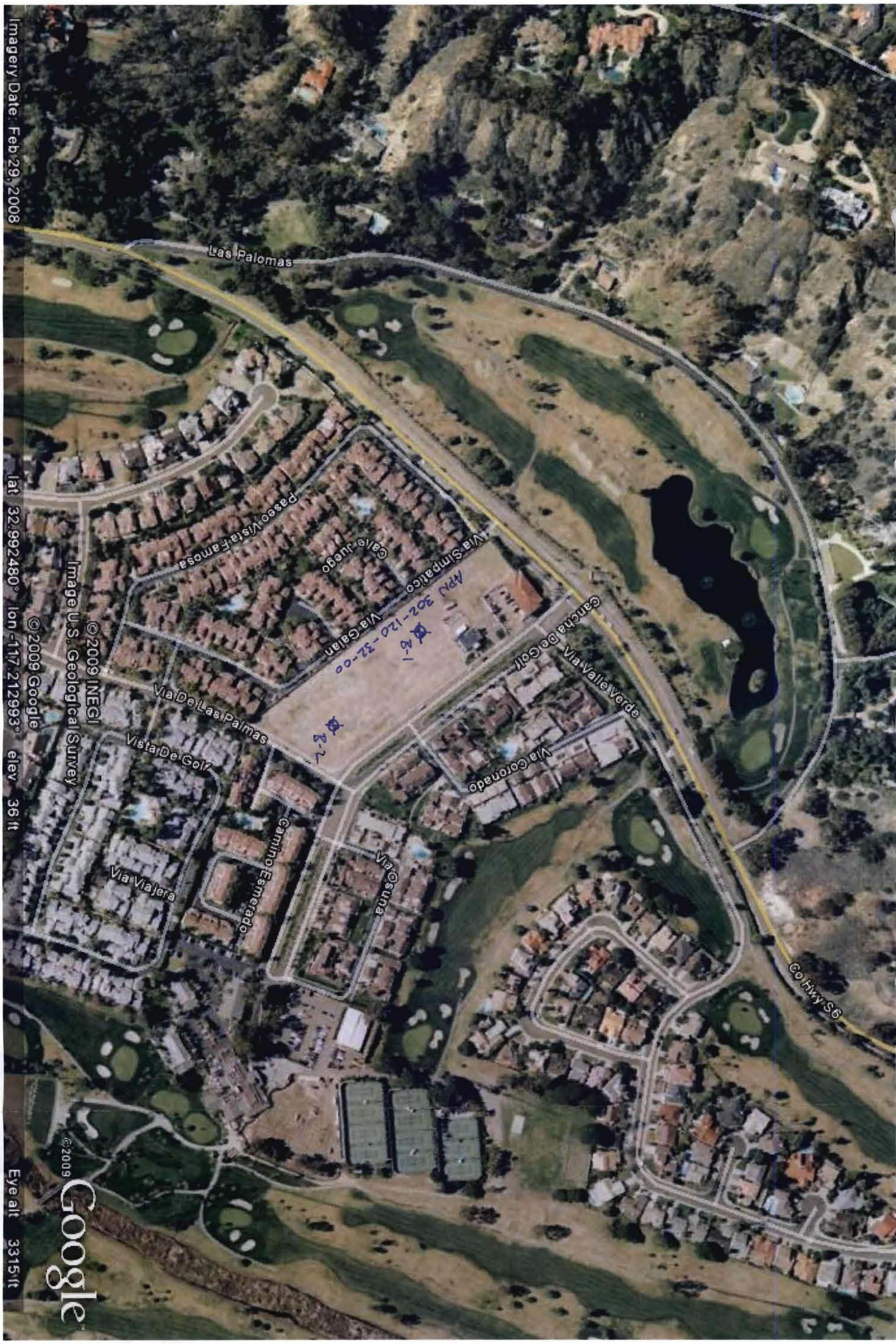


PROPOSED BORING LOCATIONS

2 →

County of San Diego

JACK MILLER
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcdeh.org

ELIZABETH POZZEBON
ASSISTANT DIRECTOR

OFFICIAL NOTICE

January 5, 2011

GERALD I. SHILLER
BBC ENVIRONMENTAL, INC.
3593 ADAMS AV
SAN DIEGO, CA 92116

FIRST PAST DUE NOTICE -- PERMIT: LMON-107181
APPROVED: June 24, 2010 -- EXPIRED: October 22, 2010
6089 LA FLECHA, 16951 VIA DE SANTA FE & IN THE STREET ADJACENT TO 6089 & 6106 LA FLECHA & 16950 VIA DE SANTA FE, RANCHO SANTA FE, CA 92067

The Department of Environmental Health (DEH), Monitoring Well Program (MWP) has not received the required 60-day report for work completed under this permit.

Failure to submit the 60-day drilling report is a violation of the San Diego County Code, Section 67.447 and can result in a complaint being filed with the appropriate State Board. In addition, the San Diego County Code Section 67.441 states that permits may be denied if the applicant is delinquent with submitting 60-day drilling reports to the MWP.

Submit the 60-day report to the Well Permit Desk to the address shown above by **January 20, 2011**. If the report is not submitted, you will receive a notice to attend an Administrative Conference. Please contact the Well Permit Desk at (619) 338-2339 if you wish to discuss this letter.

Thank you for your cooperation.

Sincerely,

Amelia Cesena, Environmental Health Technician
Monitoring Well Program
Site Assessment and Mitigation Program

cc: **MR TONY RABABY**
CASCADE DRILLING, LP (CA)

PERMIT #LMON107181
A.P.N. # 266-291-01, -02; 266-272-16-00; 266-300-36-00
EST # H13190-001

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
SOIL BORING CONSTRUCTION PERMIT

SITE NAME: RANCHO SANTA FE MOBIL & OFF-SITE LOCATIONS

SITE ADDRESS: 6089 LA FLECHA, 16951 VIA DE SANTA FE & IN THE STREET ADJACENT TO 6089 & 6106 LA FLECHA & 16950 VIA DE SANTA FE, RANCHO SANTA FE, CA 92067

PERMIT FOR: **NINE SOIL BORINGS**

PERMIT APPROVAL DATE: JUNE 24, 2010

PERMIT EXPIRES ON: OCTOBER 22, 2010

RESPONSIBLE PARTY: MR. TONY RABABY

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

3. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

4. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

5. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: M Crystal MARISUE CRYSTAL DATE: 06/24/2010

NOTIFIED: 6-24-10 – KLD

DEH: SAM-9075 (1/06)

BBC ENVIRONMENTAL, INC.

3593 Adams Avenue, San Diego, CA 92116

June 11, 2010

County of San Diego
Department of Environmental Health
Site Assessment and Mitigation Program
Monitoring Well Permit Desk
P.O. Box 129261
San Diego, CA. 92112-9261

RE: SOIL BORING PERMIT APPLICATION FOR THE RANCHO SANTA FE MOBIL STATION LOCATED AT 6089 LA FLECHA IN RANCHO SANTA FE, CALIFORNIA (SAM CASE No. H#13190-0001)

Monitoring Well Permit Desk:

Please find enclosed one copy of the Permit Application for Groundwater Wells, Vadose Monitoring Wells, and Exploratory or Test Borings. This Soil Boring Installation application is being submitted in association with the County of San Diego approved workplan for the above referenced location.

The workplan proposes confirmation soil sampling of select CPT/LIF installation points. BBC is submitting this permit application for a total of 9 confirmation borings. Field based observations will determine if more than the 9 points are required for site assessment purposes. Should additional installation points above the minimum number be required the Well Permit Desk shall be notified during the same day of installation. The fees and a revised site plan shall be submitted to the Well Permit Desk within the requisite 5 day period.

Should you have any questions or require additional information with regards to this submittal, please contact Mr. Walter Craig of BBC Environmental, Inc. at (619) 546-7165.

Thank You,
BBC Environmental, Inc.

W.B. Craig

Mr. Walter B. Craig, R.E.A
Principal Engineer

Attachments (8):
- Soil Boring Permit Application
- Property Owner Consent Form
- SAM Program Workplan Approval Letter dated 2-10-09
- Site Vicinity Map; Site Map; Site Boring Location Map
- Underground Utility Location Map
- County of San Diego-DPW Encroachment Permit No. N3317
- County of San Diego-DPW Traffic Control Permit Application
- BBC Environmental, Inc. Check No. 8281

RECEIVED JUN 15 2010 ENVIRONMENTAL HEALTH

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # ____
SAM CASE ON # H13190-001 KK
DATE RECEIVED: 6-15-10
FEE PAID: $523.—
CHECK # 8281
LOP & off site

A. RESPONSIBLE PARTY _Mr. Tony Rababy_ E-mail N/A
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address _P.O. Box 476_ City _Rancho Santa Fe_ State _CA_ Zip _92067_
Contact Person_Mrs. Adele Rababy_ Phone _858-756-1975_ Ext.__ Fax _858-756-0151

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _H13190-001_

C. CONSULTING FIRM _BBC Environmental, Inc._
Mailing Address _3593 Adams Avenue_ City _San Diego_ State _CA_ Zip _92116_
Registered Professional _Mr. Gerald I Shiller_ Registration #_4558_ (RG)
E-mail _idogeology@cox.net_ Circle if applicable
Contact Person_Mr. Walter B. Craig_ Phone _619-546-7165_ Ext.__ Fax _619-546-7175

D. DRILLING COMPANY _Cascade Drilling, L.P._ C57# _938110_
Contact Name _Manuel Marquez_ E-mail mmarquez@cascadedrilling.com
Mailing Address _P.O. Box 710850_ City _Santee_ State _CA_ Zip _92072_
Phone _619-616-9862_ Ext.__ Fax _562-863-9534

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	9
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable X
Type ____
Gauge ____
Diameter ____
Well Screen Size ____
Filter Pack ____

SEAL/BORING BACKFILL
☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
Borehole diameter _8"_

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 12 ft.
Estimated depth of boring 40 ft.

Concrete surface seal	0 to 3
Annular seal	3 to 40
Bentonite transition seal	___ to ___
Filter Pack	___ to ___
Perforation	___ to ___

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE ____ DATE 6/11/2010

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE ____ DATE 6/11/2010

PROFESSIONAL GEOLOGIST GERALD I. SHILLER PG-4558 Expires 2/28/11 STATE OF CALIFORNIA

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** _266-291-01_ ✓

Site Name _Rancho Santa Fe Mobil_

Site Address _6089 La Flecha_ ✓ City __Rancho Santa Fe_ Zip _92067_

PROPERTY OWNER _Mr. Tony Rababy dba **ATR** Rancho Santa Fe, LLC_ ✓

Phone _858-756-1975_ Ext. _____ Fax _858-756-0151_

Mailing Address _P.O. Box 476_ City _Rancho Santa Fe State _CA_ Zip _92067_

NUMBER OF WELLS_3_ **TYPE OF WELLS _Borings_** SB12, 13, 17 (SB14, 15 + 16 in st. adjacent to)

2. **ASSESSOR'S PARCEL NUMBER** _266-291-02_ ✓

Site Name _Vacant Parcel_

Site Address _16941 Via de Santa Fe_ ✓ City _Rancho Santa Fe_ Zip _92067_

PROPERTY OWNER _Mr. Tony Rababy dbs ATR Rancho Santa Fe, LLC_ ✓

Phone _858-756-1975_ Ext. _____ Fax _858-756-0151_

Mailing Address _P.O. Box 756_ City _Rancho Santa Fe State _CA_ Zip _92067

NUMBER OF WELLS_1_ **TYPE OF WELLS _Boring_** SB-11

3. **ASSESSOR'S PARCEL NUMBER** ~~None~~ 266-300-~~4~~36 in st. adj. to

Site Name _County of San Diego Right of Way_ 16950 Via de Santa Fe

Site Address _Via de Santa Fe / La Flecha / La Granada City _Rancho Santa Fe_ Zip _92067_

PROPERTY OWNER _County of San Diego – approved encroachment permit is attached_

Phone _858-694-2055_ Ext. _____ Fax _____

Mailing Address _5201 Ruffin Road_ City _San Diego_ State _CA_ Zip _92123_

NUMBER OF WELLS_~~5~~ 1_ **TYPE OF WELLS _Borings_** SB-10

4. **ASSESSOR'S PARCEL NUMBER** 266-272-16

Site Name in street adjacent to

Site Address 6106 La Flecha City Rch Sta Fe Zip 92067

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS 1 **TYPE OF WELLS** SB-18

G. FEES (in effect beginning July 1, 2009, through June 30, 2010)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$193.00 for the first monitoring well	**$193.00**
New Well Inspection	$100.00 for first new well inspection	**$100.00**
Each Additional New Well	$160.00 for each additional well installation	___ x **$160.00** _____
	$30.00 for each additional new well inspection	___ x **$ 30.00** _____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$193.00 for the first boring	_1_ x **$193.00** _193.00
	$50.00 for each additional boring	_8_ x **$ 50.00** _400.00
Permit for Well Destructions Only	$193.00 for the first destruction	___ x **$193.00**
	$120.00 for each additional destruction ...	___ x **$120.00**
Permit for any Combination of Well Installations, Borings, & Destructions (*except UST backfill permit*)	The first activity will be $193.00	___ x **$193.00** _____
	Additional activities will be as follows:	
	$160.00 for each additional well	___ x **$160.00** _____
	$100.00 for first well maintenance inspection	___ x **$100.00** _____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** _____
	$120.00 for each well destruction	___ x **$120.00** _____
	$ 50.00 for each additional boring	___ x **$ 50.00** _____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	$_____
	TOTAL COST OF PERMIT	**$ _593.00_**

QUESTIONNAIRE: Please answer all applicable questions completely. *For well destructions, complete only #1 below and submit any required supportive documentation.*

1. If wells are to be destroyed, provide a description of method of destruction _____

_____

2. What is the purpose of the well/boring investigation?

   ☒ a. Part of an ongoing site assessment case in which a government regulator is the lead agency. If yes, indicate which government regulator is the lead agency and the case number.

   _H13190-001___ DEH _____ RWQCB _____ DTSC

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction?

   Backfilling of the boring will be performed immediately following the soil sampling assessment. Backfilling will be completed using bentonite slurry.

4. What field procedures will be utilized to determine if contamination exists?

   PID soil vapor screening and laboratory soil sampling analysis._____

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving?

   Soil sampling is being performed in order to verify LIF responses previously observed. It is anticipated that all soil samples collected will be sent to the lab for analysis.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)?

   Soil samples will be analyzed for TPH in the gasoline and diesel fuel ranges by EPA Method 8015M including a carbon chain analysis (C4-C36); and VOC's and Halogenated Hydrocarbons by EPA Method 8260B. No lead sampling is proposed as historic organic lead analyses have indicated non-detectable levels.

7. How will samples be transported and preserved? **Samples will be collected and transported under COC protocols. Samples will be labeled with a unique sample ID, date, and time and be stored in a cooler chilled with ice to approximately 4 degrees Celsius until relinquishment to the analytical laboratory representative.**

8. What sampling methods will be used? **Sampling will be performed through a hollow-stem auger using a split-spoon sampler driven into soils. Sampling depths will be selected from prior LIF responses and onsite conditions observed during drilling activities.**

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (www.sdcdeh.org). Yes ☐ No ☒

   _____

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and *include a destruction diagram.*
    Yes ☐ No ☒

    _____

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination?

    Drilling augers and equipment will be decontaminated by steam cleaning. All downhole equipment will undergo decontamination procedures prior to first use during investigation. All downhole equipment will then undergo decontamination procedures upon retrieval from the boring and before being used on a subsequent bore hole.

12. What methods will be used to clean sampling equipment? **Decontamination of sampling equipment will be performed either by steam cleaning or by using the triple rinse methodology. When triple rinse is used, the first rinse will include the use of a non-phosphate soap (Liquinox) followed by two tap water rinses. All downhole equipment will undergo decontamination procedures prior to first use during investigation. All downhole sampling equipment will then undergo decontamination procedures upon retrieval from the boring and before being used on a subsequent soil sample.**

13. What cleaning method will be used to clean casing and screen prior to installation?_**N/A**_____

    _____

14. A Property Owner Consent (POC) agreement is required for all applications, except for onsite, open LOP/SAM site assessment cases, Caltrans properties and military properties.

    Property Owner Consent form and County of San Diego DPW approved encroachment permit are attached.

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2216/1-888-269-9933
www.sdcounty.ca.gov/deh/lwq

JACK MILLER
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:	Assessor's Parcel Number (APN):
16089 La Fuente, R.S.F., CA	266-291-01
16941 Via de Santa Fe, R.S.F., CA	266-291-02

I, Tony & Adele Rababy, owner of the property/properties listed above, give my permission to BBC Environmental, Inc. (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☑ Drill 4 soil borings

I understand that G. Shuller (registered professional) of BBC Environmental (consulting company) and an authorized signer for Cascade Specialties (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: Adele Rababy Date: 6-10-10

Print Name: ADELE RABABY Title: Manager

Company: ATR Rancho Santa Fe, LLC

Mailing Address: P.O. Box 476, Rancho Santa Fe, CA 92067

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
http://www.sdcdeh.org

JACK MILLER
ASSISTANT DIRECTOR

February 10, 2009

Tony and Adelle Rababy
Rancho Santa Fe Mobil
P.O. Box 476
Rancho Santa Fe, CA 92076

Dear Mr. and Mrs. Rababy:

UNAUTHORIZED RELEASE #H13190-001
RANCHO SANTA FE MOBIL
LOCATED AT LA FLECHA AND LA GRANADA, RANCHO SANTA FE, CA 92076
WORK PLAN APPROVAL

This letter has been prepared in accordance with the requirements set forth in Title 23 (State Underground Storage Tank Regulations), Division 3, Chapter 16, Article 11, Section 2722. The purpose of this letter is to notify the Responsible Party of the status of the Work Plan received by the County of San Diego, Site Assessment and Mitigation Program (SAM), on January 2, 2009.

The Work Plan, dated December 29, 2008, prepared by BBC Environmental, Inc., covers one of the following phases of corrective action:

Preliminary Site Assessment	( )
Soil and Water Investigation	(X)
Corrective Action Plan	( )
Verification Monitoring	( )
Interim Remedial Action	( )

The scope of proposed work includes:

- Review historical records for surrounding site uses to fill data gaps.
- Place 18 to 27 borings using direct-push equipment equipped with cone penetrometer testing (CPT) and light induced florescence (LIF) detection instrumentation.
- Collect soil samples from significant changes in lithology to verify LIF responses.
- Install a groundwater monitoring well west-southwest of well MW-11 using hollow-stem auger drilling methods.

- Collect and analyze soil samples from the saturated zone for specific physical properties, such as porosity, permeability and hydraulic conductivity.
- Collect a groundwater sample from each borehole using a Hydropunch sampler.
- Analyze soil and groundwater samples using EPA methods 8015M, 8260B and 418.1.

The Work Plan has been:

( ) approved.
( ) disapproved-call the undersigned for further instructions.
(X) approved with the following changes or conditions:

1) Collect and chemically analyze soil samples from at least 3 borings from which CPT/LIF data has been obtained. Sample selection should be based on significant changes in lithology based on the CPT, and more importantly, from depths that show strong LIF response. Chemical analysis should include EPA Methods 8015M and 8260B as described in the Work Plan.

2) The Work Plan states that soil samples will be collected to verify the LIF responses at significant changes in lithology, at the capillary fringe and below the water table. Be sure that samples are collected from depths that correlate with high LIF responses, not just changes in lithology.

3) Submit a comprehensive site assessment report, by July 30, 2009, documenting the current work in the context of all the previous work conducted to present a current site conceptual model.

This approval is valid for 6 months from the date of this letter. *Keep this letter for your records as it may be required for corrective action cost reimbursement under Senate Bill 2004 (California Health and Safety Code, Division 20, Chapter 6.75, Article 6).*

Please have your consultant upload all monitoring well laboratory data collected on or after September 1, 2001, and location information (location, elevation, depth to water, and site map) generated after January 1, 2002, and complete reports and boring data prepared after January 1, 2005, to the State Water Resources Control Board's GeoTracker geographic information system.

The need for further site characterization and mitigation actions will be determined following evaluation of the written report. If you have any questions, please call me at (619) 338-2244.

Sincerely,

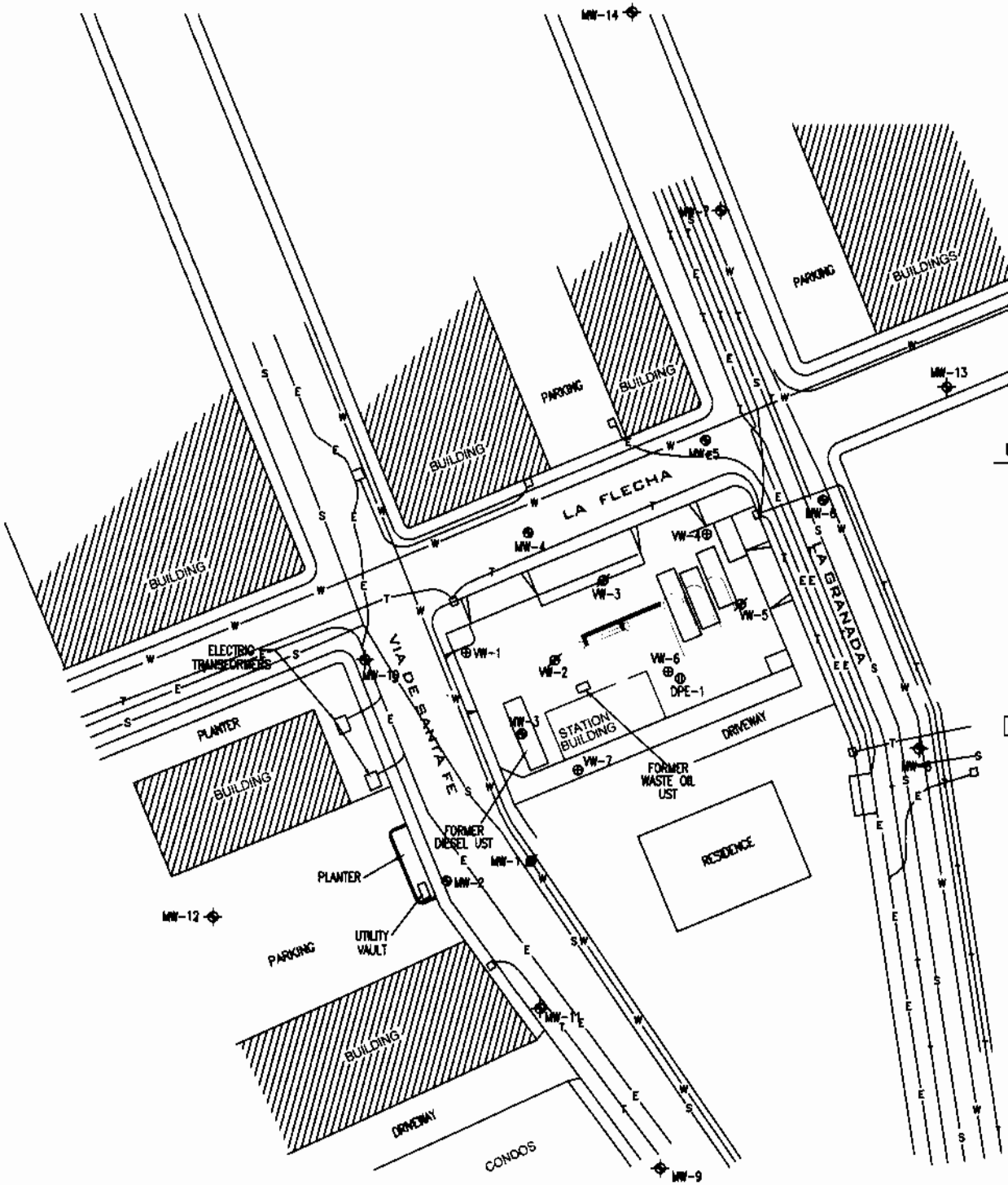
DONN A. LiPERA, Project Manager
Site Assessment and Mitigation Program

DAL:kd

cc: Walter Craig, BBC Environmental
Diana Conkle, Cleanup Fund

WP/H13190-001-209WPA

Figure provided by Secor International, Inc. (Secor) on February 13, 2007. Original figure displayed in Secor report titled, "Additional Site Assessment Report for Rancho Santa Fe Mobil" dated July 22, 2005.



LEGEND:

- GROUNDWATER MONITORING WELL (SECOR)
- GROUNDWATER MONITORING WELL (CERTIFIED ENGINEERING/RECON)
- ABANDONED GROUNDWATER MONITORING WELL
- VAPOR WELL (VAPOR EXTRACTION TECHNOLOGY)
- DUAL PHASE EXTRACTION WELL
- AIR SPARGE/VAPOR EXTRACTION WELL
- NEW UNDERGROUND STORAGE TANK
- FORMER UNDERGROUND STORAGE TANK

ALL UTILITY LINES ARE ESTIMATED TO BE FIVE FEET OR LESS BELOW GROUND SURFACE.

- SEWER UTILITY LINE
- WATER UTILITY LINE
- ELECTRIC UTILITY LINE
- TELEPHONE UTILITY LINE

0 60 120

APPROXIMATE SCALE IN FEET

N

BBC ENVIRONMENTAL, INC.

3593 Adams Avenue, San Diego, CA 92116

June 9, 2010

Ms. Yosmia Johnson
County of San Diego – DPW
Traffic Control Section
Traffic Control Permits / Mailstop O334
5469 Kearny Villa Road, Suite #201
San Diego, CA 92123-1159
Via Email: Ms. Yosmia Johnson < Yosmia.Johnson@sdcounty.ca.gov >

RE: SUBMITTAL OF TRAFFIC CONTROL PERMIT APPLICATION FOR ENVIRONMENTAL ASSESSMENT SERVICES AT THE RANCHO SANTA FE MOBIL STATION LOCATED AT 6089 LA FLECHA IN RANCHO SANTA FE, CALIFORNIA

Ms. Johnson:

Please find enclosed within in this electronic document submittal the completed County of San Diego Application for Traffic Control Permit and associated documents for your review.

BBC Environmental, Inc. (BBC) is requesting that a traffic control permit be issued in support of environmental assessment services to take place in the public rights-of-way surrounding the referenced location. BBC anticipates that two implementations will be required; once during the week of June 21st for hand augering and clearing of utilities, and once during the week of June 28th for the boring installations. In both cases, BBC estimates that each location will require traffic control for no more than approximately 1 hour.

Should you have any questions with regards to this project, please do not hesitate to contact me directly at (619) 546-7165.

Thank You,
BBC ENVIRONMENTAL, INC.

Mr. Walter B. Craig, R.E.A.
Principal Engineer

Enclosures (4)
- Application for Traffic Control Permit
- Encroachment Permit No. N3317
- Site Vicinity Plan and Site Plan with Boring Locations
- Traffic Control Plans

County of San Diego

DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING SECTION

APPLICATION FOR TRAFFIC CONTROL PERMIT -- FLAGGING/LANE CLOSURE/LANE SHIFT
(type of traffic control: flag, shift, etc.)

County of San Diego
DPW/Traffic Engineering Section
Traffic Control Permits, Mailstop O334
5469 Kearny Villa Road, Suite #201
San Diego, CA 92123-1159

telephone/voice mail: (858) 874-4025
secretary: (858) 874-4040
fax: (858) 874-4028
e-mail: Yosmia.johnson@sdcounty.ca.gov

ENCROACHMENT/EXCAVATION/CONSTRUCTION PERMIT # N3317

Applicant Information

Company: BBC ENVIRONMENTAL, INC.

Agent/Applicant: WALTER B. CAREY

Agent Phone Number: 6195467165 Agent Fax Number: 6195467175

Agent Mailing Address: 3593 ADAMS AVE

City SAN DIEGO State CA Zip Code 92116

Reason for Traffic Control: GROUNDWATER WELL SAMPLING / BORING INSTALL

Start Date: 6-21-10 Start Time: 0500 (a.m.) / p.m.

Finish Date: 7-2-10 End Time: 1530 a.m. / (p.m.)

It is requested that a permit be granted for traffic control on the following street/streets:

STREET 1 LA FLECHA From Street Via de Santa Fe To LA GRANADA

STREET 2 LA GRANADA From Street LA FLECHA To PASEO DELICIAS

COMMUNITY RANCHO SANTA FE Thomas Bros. Map Page and Grid # 1168/D3

W. B. Carey for BBC Env. 6/9/10
(Agent's or Applicant's Signature) (Date)

See Attached Plan (s) and Traffic Control Notes

This request is / is not approved.

Director, Department of Public Works

By _____
(For Road Commissioner)

CC: Construction Inspection
Ref: Sec 72.75. County Code of Regulatory Ordinances

COUNTY OF SAN DIEGO

DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION
5201 Ruffin Road. Suite D
San Diego, CA 92123-4310
(858)694-2055

Permit Number
N 3317
(KIVA Code: 4940)

Issued: 15-JUN-2001
Kiva Project #:

ENCROACHMENT PERMIT

APPLICANT	OWNER
BBC ENVIRONMENTAL 6089 LA FLECHA RHO SANTA FE, CA 92067 Res: 619.296.6195	BBC ENVIRONMENTAL 6089 LA FLECHA RHO SANTA FE CA 92067 Phone: 619.296.6195

SITE ADDRESS: **THOMAS BROS**

LA GRANADA, NW/O LA FLECHA, RANCHO SANTA FE; TB PG 1168/D3

APN:

Project:

SCOPE OF WORK
REF: E82725
Area: LA GRANADA, NORTHWEST OF LA FLECHA RANCHO SANTA FE
Existing Surface: ASPHALT
Purpose of Permit: INSTALL ONE GROUNDWATER MONITORING WELL
Pipe to be placed - Size: 4 INCH Material: PVC
Cal OSHA Permit #:

SPECIAL CONDITIONS THAT ARE MADE A PART OF THIS PERMIT
1. THE PERMITTEE SHALL OBTAIN A TRAFFIC CONTROL PERMIT FROM THE DPW TRAFFIC ENGINEERING SECTION PRIOR TO START OF CONSTRUCTION. CALL (858) 874-4025 FOR MORE INFORMATION.

2. THE CONDITIONS OF THIS PERMIT MAY BE MODIFIED AT ANY TIME BY THE DEPARTMENT OF PUBLIC WORKS AS REQUIRED

EXPIRATION: INDEFINITE EFFECTIVE: 6-15-2001

This permit is governed by Chapter 6, Division 1, Title 7 of the San Diego County Code of Regulatory Ordinances.

In consideration of the granting of this permit, the permittee agrees:

1. **To save harmless the County of San Diego and any officer or employee thereof for any accident, loss or damage to persons or property, happening or occurring as the proximate result of any placement, change or renewal of an encroachment under the terms of this permit, and to assume all of said liabilities.**
2. **To comply with all applicable laws in the establishment, maintenance and removal of the encroachment.**
3. **That he and any other persons engaged in any work authorized by this permit shall conform to all due safety precautions for the protection of persons and property.**
4. **To remove or relocate any encroachment placed, changed or renewed under the authority of this permit; prior to its expiration or within 24 hours of notification to remove, if the duration is 10 days or less; or within 5 days of notification to remove, if the permit is of indefinite duration.**

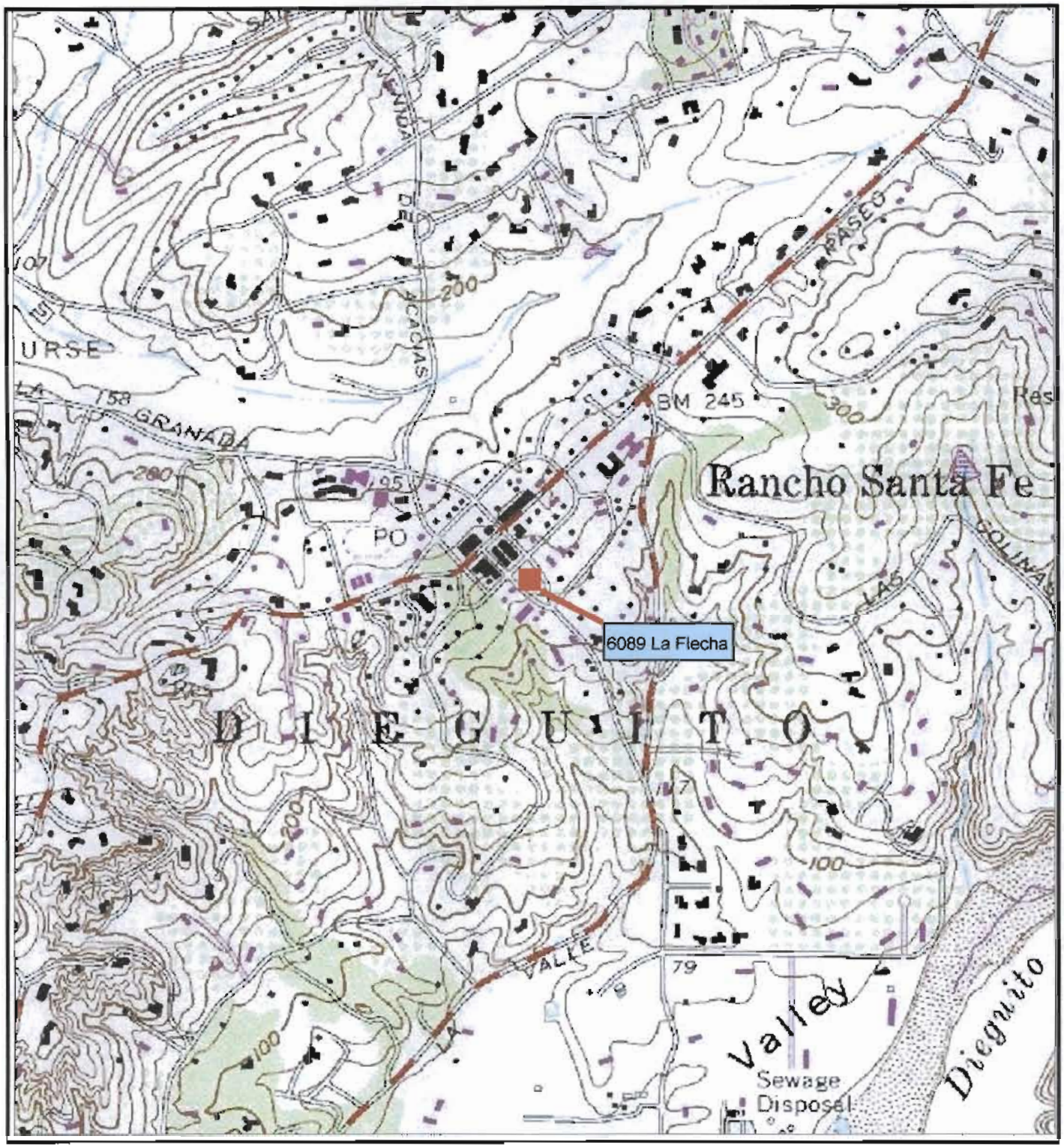
5. After removing or relocating the encroachment to restore the highway to the equivalent or better condition than it was prior to the date this permit became effective, or prior to the date the encroachment was first placed, whichever is earlier.

In consideration of the above agreement the permit is granted.

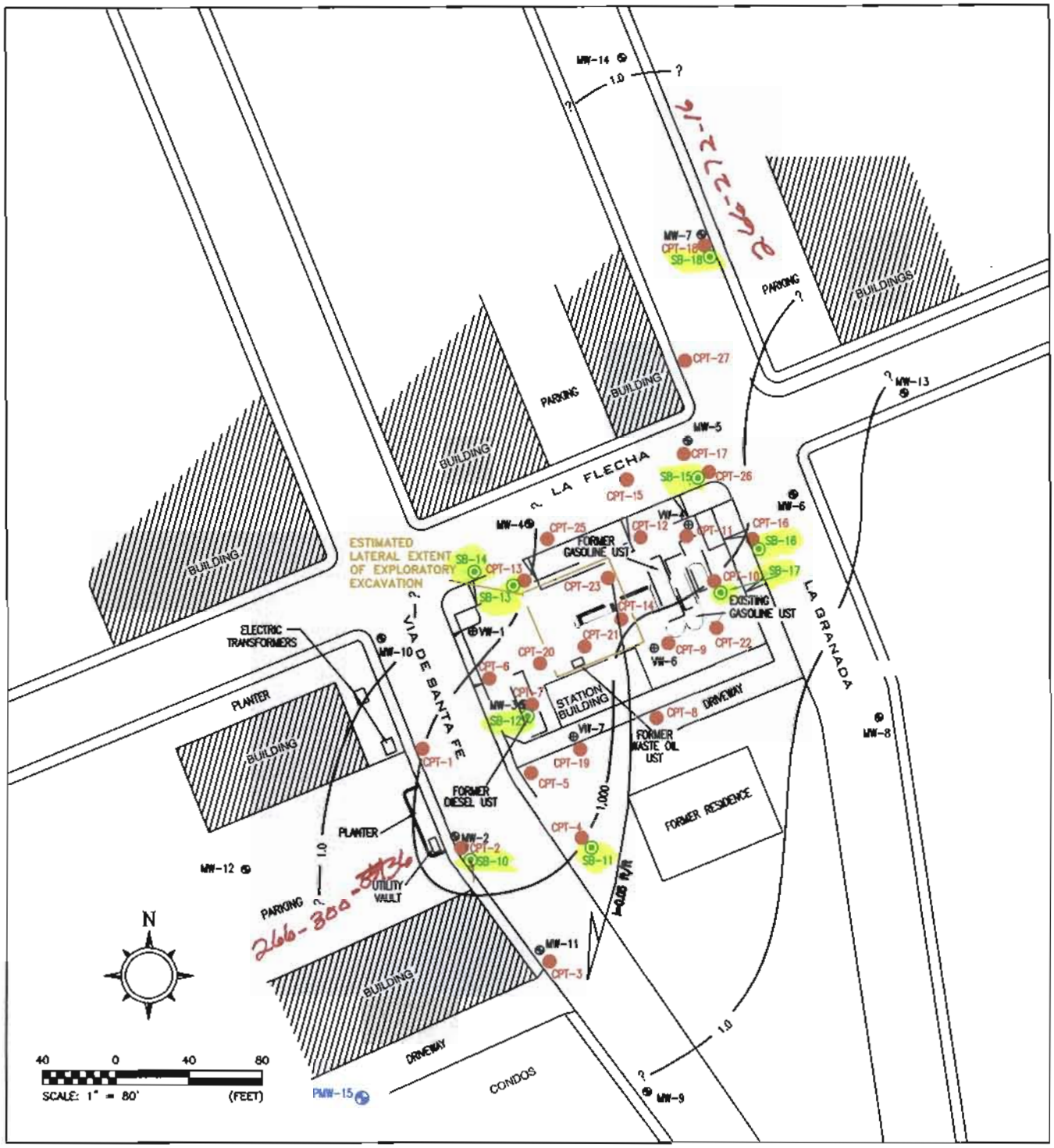
County of San Diego,
Director of Public Works by: _____ Date: 09-16-04

The highway is in acceptable conditionthe permit and agreement are terminated.

County of San Diego,
Director of Public Works by: _____ Date: _____



LEGEND	SITE VICINITY MAP
REFERENCE: TERRASERVER-USA.COM 01 JULY 1983 COUNTY OF SAN DIEGO RANCHO SANTA FE N 547 0 547 1094 SCALE: 1" = 1,094' (FEET)	RANCHO SANTA FE MOBIL 6089 LA FLECHA RANCHO SANTA FE, CALIFORNIA
	FIGURE No. 1 — PROJECT No: RSF MOBIL
	BBC ENVIRONMENTAL, INC.



LEGEND	PROPOSED BORING LOCATIONS
CPT-1 CPT/LIF SAMPLING LOCATIONS INSTALLED APRIL 2009	RANCHO SANTA FE MOBIL
SB-10 PROPOSED BORING/SAMPLING LOCATION	6089 LA FLECHA
PMW-15 PROPOSED MONITORING WELL LOCATION NOT INSTALLED	RANCHO SANTA FE, CALIFORNIA
MW-8 GROUNDWATER MONITORING WELL	
VW-4 VAPOR WELL	
1.0 ESTIMATED CONTOURS OF EQUAL BENZENE CONCENTRATIONS IN GROUNDWATER (ug/L)	FIGURE No. 3 — PROJECT No. RSF MOBIL
ESTIMATED GROUNDWATER FLOW DIRECTION	
i=0.05 ft/ft ESTIMATED GROUNDWATER GRADIENT	BBC ENVIRONMENTAL, INC.

elect. rept.

County of San Diego

JACK MILLER
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
858-505-6700/FAX (858) 505-6891/1-800-253-9933
www.sdcdeh.org

ELIZABETH POZZEBON
ASSISTANT DIRECTOR

OFFICIAL NOTICE

July 11, 2012

MATTHEW A. FAGAN
GROUP DELTA CONSULTANTS (S.D.)
9245 ACTIVITY RD, SUITE 103
SAN DIEGO, CA 92126

FIRST PAST DUE NOTICE -- PERMIT: LMON-108199
APPROVED: December 5, 2011 -- EXPIRED: April 3, 2012
7003 DEL DIOS HY, RANCHO SANTA FE, CA 92067

The Department of Environmental Health (DEH), Monitoring Well Program (MWP) has not received the required 60-day report for work completed under this permit.

Failure to submit the 60-day drilling report is a violation of the San Diego County Code, Section 67.447 and can result in a complaint being filed with the appropriate State Board. In addition, the San Diego County Code Section 67.441 states that permits may be denied if the applicant is delinquent with submitting 60-day drilling reports to the MWP.

Submit the 60-day report to the Well Permit Desk to the address shown above by **July 26, 2012**. If the report is not submitted, you will receive a notice to attend an Administrative Conference. Please contact the Well Permit Desk at (858) 505-6688 if you wish to discuss this letter.

Thank you for your cooperation.

Sincerely,

M Crystal

Marisue Crystal, Environmental Health Technician
Monitoring Well Program
Site Assessment and Mitigation Program

cc: **ANDREW PARKINSON, QUANTUM ESTATES II, INC.**
KEHOE TESTING & ENGINEERING, INC

PERMIT #LMON108199
A.P.N. # 267-031-11-00
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: QUANTUM ESTATES II

SITE ADDRESS: 7003 DEL DIOS HY, RANCHO SANTA FE, CA 92067

PERMIT FOR: **THREE GEOTECHNICAL BORINGS**

PERMIT APPROVAL DATE: DECEMBER 5, 2011

PERMIT EXPIRES ON: APRIL 3, 2012

RESPONSIBLE PARTY: QUANTUM ESTATES II, INC.

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at (858) 505-6688.**

Digitally signed by Marisue Crystal
DN: cn=Marisue Crystal, o=Department of Environmental Health, ou=Monitoring Well Program, email=marisue.crystal@sdcounty.ca.gov, c=US
Date: 2011.12.05 08:56:51 -08'00'

APPROVED BY: _____ DATE: 12/05/2011
MARISUE CRYSTAL

NOTIFIED: _____

DEH:SAM-9075 (6/11)

72-HR Expedited process

PERMIT APPLICATION
GROUNDWATER
AND VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 108199
SAM CASE Y/N #
DATE RECEIVED: 12-1-11
FEE PAID: $298.--
CHECK # CK 4822

A. RESPONSIBLE PARTY Quantum Estates II, Inc. E-mail Andrewp@scestoneanddesign.co.nz
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)

Mailing Address 1328 Sun Valley Road City Solana Beach State CA Zip 92075

Contact Person Mr. Andrew Parkinson Phone +64 9 526 4580 Fax +64 9 579 0583

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM Group Delta Consultants, Inc.

Mailing Address 9245 Activity Road, Suite 103 City San Diego State CA Zip 92126

Registered Professional Matthew A. Fagan, PE Registration # 57248 (RCE)
E-mail mattf@groupdelta.com
Contact Person Matthew A. Fagan Phone (858) 536-1000 Ext. _____ Fax (858) 536-8311

D. DRILLING COMPANY Pacific Drilling Co. C57# 681380

Contact Name Tod Clark E-mail tod@pacdrill.com

Mailing Address P.O. Box 84627 City San Diego State CA Zip 92138

Phone (619) 294-3682 Fax (619) 294-3283

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	3
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING

Not Applicable X
Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL

☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 6"

Drilling Method

☒ Auger ☐ Air Rotary
☐ Mud Rotary ☐ Other
☐ Percussion

PROPOSED CONSTRUCTION

Estimated groundwater depth: 50+ ft.
Estimated depth of boring 100 ft.

Concrete surface seal		
Annular seal	_____	to _____
Bentonite transition seal	_____	to _____
Filter Pack	_____	to _____
Perforation	_____	to _____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 11/30/11

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE Matthew A. Fagan DATE 11/30/11

PERMIT APPLICATION
GROUNDWATER
AND VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # _____
SAM CASE Y/N # _____
DATE RECEIVED: _____
FEE PAID: _____
CHECK # _____

A. RESPONSIBLE PARTY Quantum Estates II, Inc. E-mail Andrewp@scestoneanddesign.co.nz
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)

Mailing Address 1328 Sun Valley Road City Solana Beach State CA Zip 92075

Contact Person Mr. Andrew Parkinson Phone +64 9 526 4580 Fax +64 9 579 0583

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM Group Delta Consultants, Inc.

Mailing Address 9245 Activity Road, Suite 103 City San Diego State CA Zip 92126

Registered Professional Matthew A. Fagan, PE Registration # 57248 (RCE)
E-mail mattf@groupdelta.com
Contact Person Matthew A. Fagan Phone (858) 536-1000 Ext. _____ Fax (858) 536-8311

D. DRILLING COMPANY Kehoe Testing and Engineering C57# 786163

Contact Name Rich Koester E-mail rich@kehoetesting.com

Mailing Address 5415 Industrial Drive City Huntington Beach State CA Zip 92649

Phone (714) 901-7270 Fax (714) 901-7289

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☐ Boring	___
☒ Other	3

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING

Not Applicable X
Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL

☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 2"

Drilling Method

☐ Auger ☐ Air Rotary
☐ Mud Rotary ☒ Other-CPT
☐ Percussion

PROPOSED CONSTRUCTION

Estimated groundwater depth: 50+ ft.
Estimated depth of boring 100 ft.

Concrete surface seal		
Annular seal	_____	to _____
Bentonite transition seal	_____	to _____
Filter Pack	_____	to _____
Perforation	_____	to _____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] DATE 11-30-11

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE [signature] DATE 11-30-11

Only 3 borehole – CPT's will be drilled in same boreholes

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 2670311100; ~~2670311200; 2670311300~~

   Site Name Quantum Estates II

   Site Address See Location Map City Rancho Santa Fe Zip 92067

   PROPERTY OWNER Quantum Estates II, Inc.

   Phone +64 9 526 4580 Ext. _____ Fax +64 9 579 0583

   Mailing Address 1328 Sun Valley Road City Solana Beach State CA Zip 92075

   NUMBER OF WELLS 3 **TYPE OF WELLS** Geotechnical Borings

2. **ASSESSOR'S PARCEL NUMBER** _____

   Site Name _____

   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____

   Phone _____ Ext. _____ Fax _____

   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____

   Site Name _____

   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____

   Phone _____ Ext. _____ Fax _____

   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____

   Site Name _____

   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____

   Phone _____ Ext. _____ Fax _____

   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning September 1, 2010, through June 30, 2011)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$200.00 for the first monitoring well	**$200.00**
Permit for Well Maintenance Inspection (Valid for three years)	$99.00 for first well maintenance inspection	**$99.00**
Each Additional New Well	$161.00 for each additional well installation	__ x **$161.00** ____
	$ 30.00 for each additional well maintenance inspection	__ x **$ 30.00** ____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$200.00 for the first boring	1 x **$200.00** **$200.00**
	$49.00 for each additional boring	2 x **$ 49.00** **$98.00**
Permit for Well Destructions Only	$200.00 for the first destruction	__ x **$200.00** ____
	$123.00 for each additional destruction ...	__ x **$123.00** ____
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $200.00	__ x **$200.00** ____
	Additional activities will be as follows:	
	$161.00 for each additional well	__ x **$161.00** ____
	$ 99.00 for first well maintenance inspection	__ x **$ 99.00** ____
	$ 30.00 for each additional well maintenance inspection	__ x **$ 30.00** ____
	$123.00 for each well destruction	__ x **$123.00** ____
	$ 49.00 for each additional boring	__ x **$ 49.00** ____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	**$**____
	TOTAL COST OF PERMIT	**$298.00**

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction N/A

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which a government regulator is the lead agency. If yes, indicate which government regulator is the lead agency and the case number.

   _____ DEH _____ RWQCB _____ DTSC

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Borings will be backfilled and sealed immediately after completion of drilling

4. What field procedures will be utilized to determine if contamination exists? Visual and olfactory

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? N/A

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? N/A

7. How will samples be transported and preserved? Geotechnical samples will be sealed in plastic bags or jars, and driven to our San Diego laboratory for testing.

8. What sampling methods will be used? CAL, SPT, and bulk

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (www.sdcdeh.org). Yes ☐ No ☐ N/A

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. Yes ☐ No ☒ _____

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Drilling equipment will be cleaned prior to arrival on site

12. What methods will be used to clean sampling equipment? Sampling equipment will be washed with tap water and a non-phospate detergent and rinsed with tap water.

13. What cleaning method will be used to clean casing and screen prior to installation? N/A

14. A Property Owner Consent (POC) agreement is required for all applications, except for onsite, open LOP/SAM site assessment cases, Caltrans properties and military properties.

County of San Diego

JACK MILLER
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcdeh.org

ELIZABETH POZZEBON
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:

Quantum Estates II

Via De Sinnard (TM 5447)
Rancho Santa Fe, CA 92067
(South of Del Dios and Paseo Delicias)

Assessor's Parcel Number (APN):

2670311100; 2670311200; 2670311300

_____

I, Andrew Parkinson, owner of the property/properties listed above, give my permission to Group Delta Consultants (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 3 soil borings

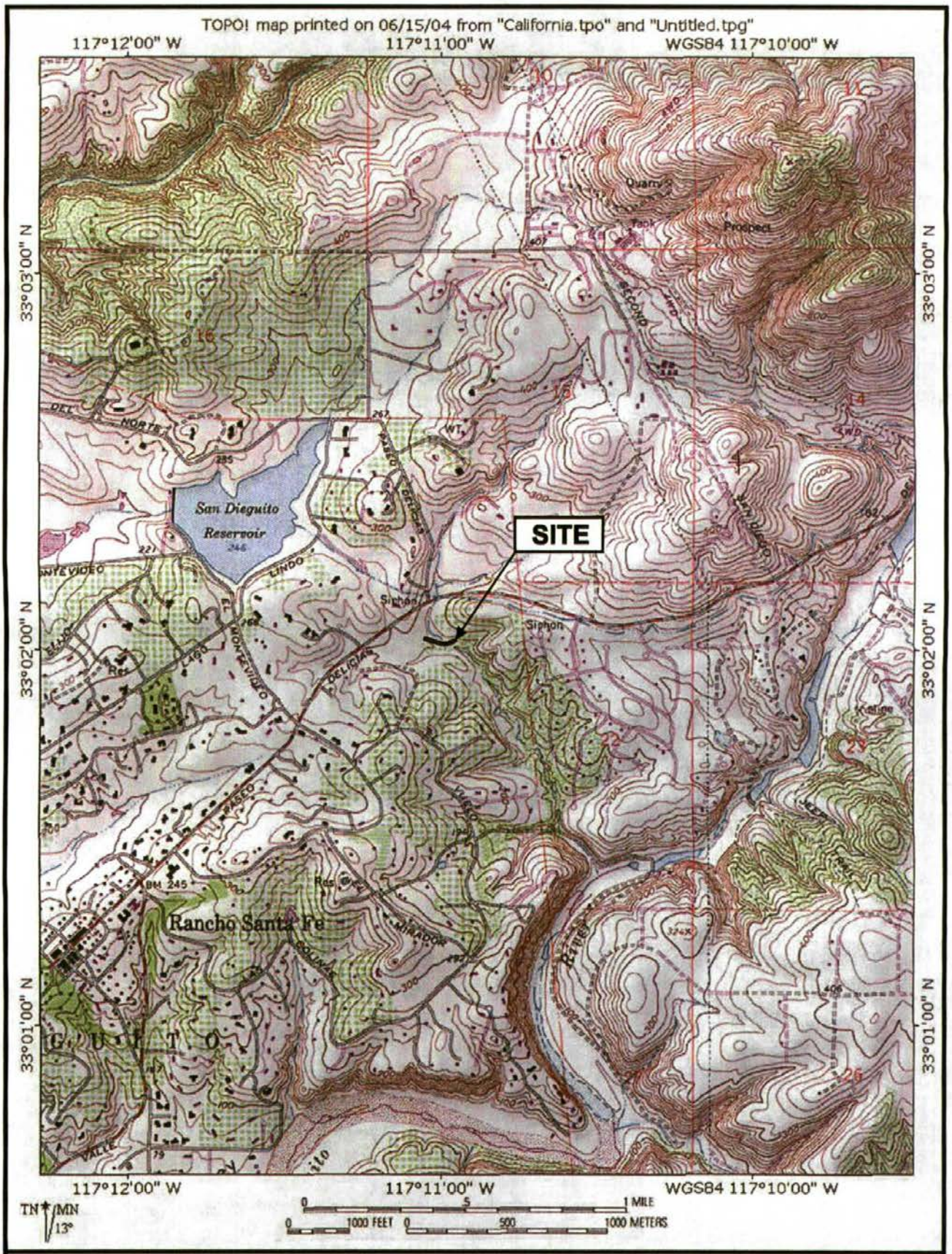
I understand that Matthew A. Fagan, PE (registered professional) of Group Delta Consultants (consulting company) and an authorized signer for Pacific Drilling (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this ~~property, to ensure~~ proper closure of the monitoring wells/borings.

Property Owner Signature: _____ Date: 29. Nov 2011

Print Name: Mr. Andrew Parkinson Title: ~~Managing~~ Director

Company: Quantum Estates II, Inc.

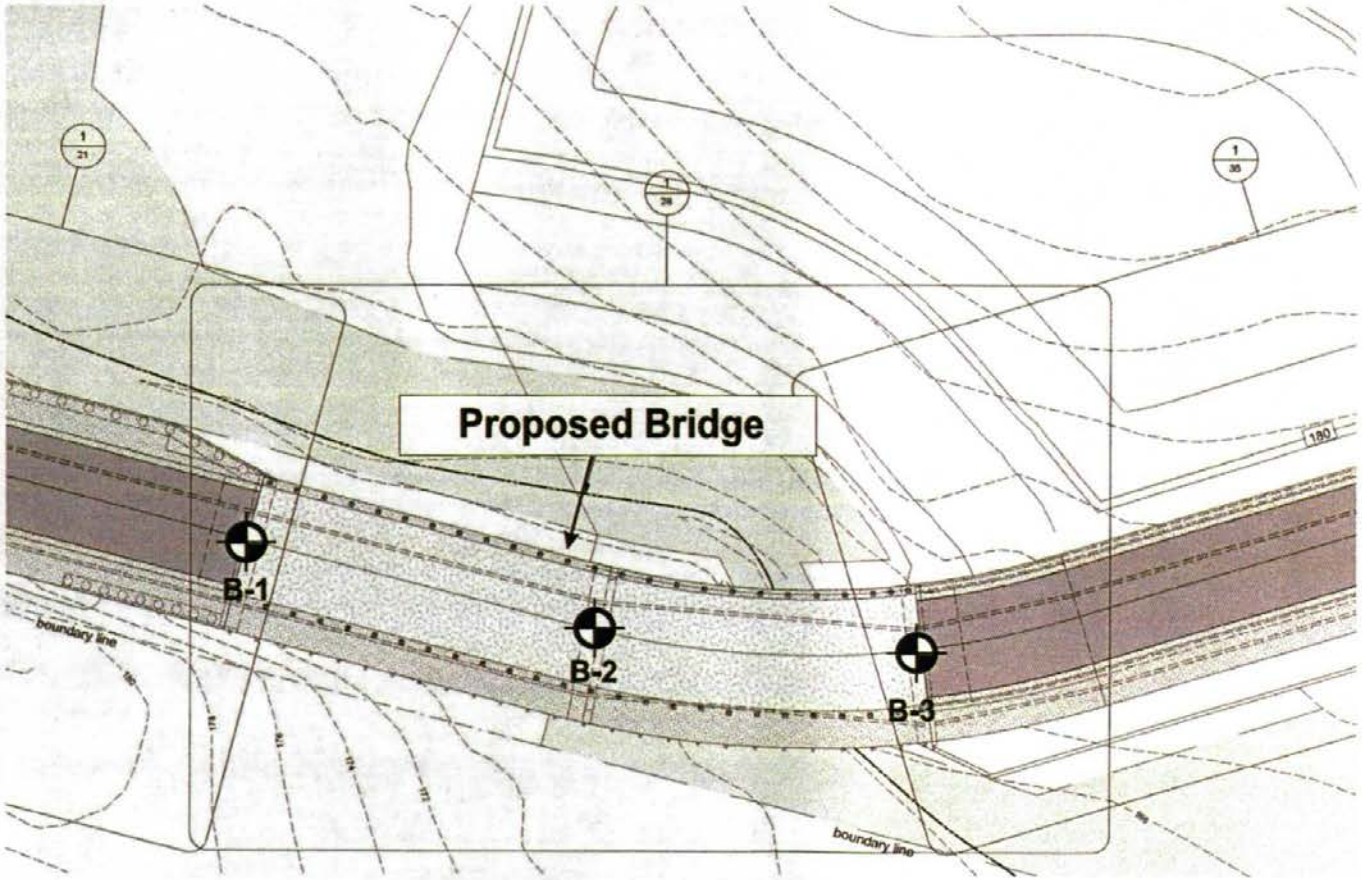
Mailing Address: ~~189 Marua Road, Ellersile, New Zealand~~
1328 Sun Valley Rd, Solana Beach, Ca 92075.



370 Amapola Avenue, Suite 212, Torrence, CA 90501
32 Mauchly, Suite B, Irvine, CA 92618
4201 Santa Ana St., Suite F, Ontario, CA 91761
9245 Activity Road, Suite 103, San Diego, CA 92126

SITE LOCATION MAP

Document No. 11-0454
Project No. SD-260
FIGURE 1



N

EXPLANATION:

B-3 Approximate location of proposed explorations.

GROUP DELTA CONSULTANTS

GROUP DELTA CONSULTANTS, INC.
ENGINEERS AND GEOLOGISTS
9245 ACTIVITY ROAD, SUITE 103
SAN DIEGO, CA 92126 (858) 536-1000

PROJECT NAME
QUANTUM ESTATES II, INC.
VIA DE SINNARD BRIDGE

PROJECT NUMBER SD-260
DOCUMENT NUMBER 11-0454
FIGURE NUMBER 2

EXPLORATION PLAN

Base map Quantum Pile Drawings.pdf provided by Holmes Consulting Group, 2011

PERMIT #LMON108291
A.P.N. #266-291-01-00, 266-300-27-00
EST #H13190-001

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: RANCHO SANTA FE MOBIL

SITE ADDRESS: 6011 LA FLECHA, RANCHO SANTA FE, CA 92067

PERMIT FOR: INSTALL ONE OFF-SITE GROUNDWATER MONITORING WELL

PERMIT APPROVAL DATE: FEBRUARY 15, 2012

PERMIT EXPIRES ON: JUNE 14, 2012

RESPONSIBLE PARTY: MR. TONY RABABY

PERMIT CONDITIONS:

1. Wells must have a **minimum 3-foot concrete surface seal**. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.

2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

3. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at (858) 505-6688.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: _____ DATE: 02/15/2012

JAMES CLAY

OKay, LSA 1/30/12 JC 1/31/12

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 108291
SAM CASE Y/N # H13190-001 LSA
DATE RECEIVED: 1/27/2012
FEE PAID: $299.00
CHECK # online

A. RESPONSIBLE PARTY Mr. Tony Rababy E-mail N/A
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address P.O. Box 476 City Rancho Santa Fe State CA Zip 92067-
Contact Person Mrs. Adele Rababy Phone 858-756-1975 Ext. _ Fax 8587560151

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # H13190-001

C. CONSULTING FIRM BBC Environmental, Inc.
Mailing Address 3593 Adams Avenue City San Diego State CA Zip 92116-
Registered Professional Mr. Gerald I. Shiller Registration # 4558 (RG)
E-mail idogeology@cox.net
Contact Person Mr. Walter B. Craig Phone 619-546-7165 Ext. __ Fax 6195467175

D. DRILLING COMPANY Hargrave Environmental Consulting C57# 686780
Contact Name Chuck Hargrave E-mail chuck@hargraveenvironmental.com
Mailing Address 8360 Clairemont Mesa Blvd #107 City San Diego State CA Zip 92111-
Phone 858-268-4248 Fax 858-268-4528

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☒ Groundwater	1
☐ Vadose	___
☐ Boring	___
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable _____
Type PVC
Gauge sch 40
Diameter 2"
Well Screen Size 0.02"
Filter Pack #3 sand

SEAL/BOR NG BACKFILL
☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
Borehole diameter 8"

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 12 ft.
Estimated depth of boring 20 ft.

Concrete surface seal	0 to 3
Annular seal	_____ to _____
Bentoni e transition seal	3 to 4
Filter Pack	4 to 5
Perforation	5 to 20

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 1/26/12

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE Gerald I. Shiller DATE 1-26-12

PROFESSIONAL GEOLOGIST GERALD I. SHILLER PG-4558 exp 2/28/13 STATE OF CALIFORNIA

F. SITE INFORMATION

off site from Rancho Santa Fe Mobil - SAM master
APN: 266-291-01-00

1. **ASSESSOR'S PARCEL NUMBER** 266-300-27-00
   Site Name Schrader Property
   Site Address 6011 La Flecha City Rancho Santa Fe Zip 92067-

   PROPERTY OWNER Schrader Family Trust
   Phone 619-851-0288 Ext. Fax _____
   Mailing Address 6011 La Flecha City Rancho Santa Fe State CA Zip 92067-

   NUMBER OF WELLS **TYPE OF WELLS** 1GW Monitoring Well

2. **ASSESSOR'S PARCEL NUMBER**
   Site Name
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS **TYPE OF WELLS**

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning September 1, 2010, through June 30, 2011)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$200.00 for the first monitoring well ……	**$200.00**
Permit for Well Maintenance Inspection (Valid for three years)	$99.00 for first well maintenance inspection	**$99.00**
Each Additional New Well	$161.00 for each additional well installation	**0 x $161.00 $0.00**
	$ 30.00 for each additional well maintenance inspection ……..	**0 x $ 30.00 $0.00**
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$200.00 for the first boring …….	**___ x $200.00 $_____**
	$ 49.00 for each additional boring ……	**___ x $ 49.00 $_____**
Permit for Well Destructions Only	$200.00 for the first destruction …….	**___ x $200.00 $_____**
	$123.00 for each additional destruction …	**___ x $123.00 $_____**
Permit for any Combination of Well Installations, Borings, & Destructions (*except UST backfill permit)*	The first activity will be $200.00	**___ x $200.00 $_____**
	Additional activities will be as follows:	
	$161.00 for each additional well	**___ x $161.00 $_____**
	$99.00 for first well maintenance inspection	**___ x $ 99.00 $_____**
	$ 30.00 for each additional well maintenance inspection	**___ x $ 30.00 $_____**
	$123.00 for each well destruction	**___ x $123.00 $_____**
	$ 49.00 for each additional boring	**___ x $ 49.00 $_____**
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	**$_____**
	TOTAL COST OF PERMIT	**$299.00**

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction NA

2. What is the purpose of the well/boring investigation?

   ☒ a. Part of an ongoing site assessment case in which a government regulator is the lead agency. If yes, indicate which government regulator is the lead agency and the case number.

   H13190-001 DEH _____ RWQCB _____ DTSC

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Well to be constructed through center of hollow stem auger. Groundwater well will be completed with a bentonite transition seal, concrete surface seal, and a traffic rated well box. The top of casing shall be completed with a water-tight well cap secured with a keyed padlock.

4. What field procedures will be utilized to determine if contamination exists? PID soil vapor screening and laboratory soil and groundwater sample analyses.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? At a minimum, all soil samples collected will be submitted for laboratory analysis for Total Petroleum Hydrocarbons (TPH) in the extended range (C6-C36) by DHS Modified EPA Method 8015M. Additionally, one groundwater sample will be collected in accordance with SAM guidelines from the completed groundwater well. More specific details regarding laboratory analysis are provided in the following section.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? All soil samples collected will be submitted for laboratory analysis for Total Petroleum Hydrocarbons (TPH) in the extended range (C6-C36) by DHS Modified EPA Method 8015M. All soil samples will also be analyzed for Volatile Organic Compounds (VOCs) by EPA Method 8260B. The soil sample with the highest TPH concentration will be analyzed for Total Lead by EPA 6010 or 7000 Series. Should all soil samples from the one proposed well be reported as ND for TPH then the soil sample collected closest to the capillary fringe shall be run for Total Lead. Groundwater samples will be submitted for laboratory analysis for TPH in the extended range (C6-C36) by DHS Modified EPA Method 8015M; for VOCs by EPA Method 8260B; and for Total Lead by EPA Method 6010 or 7000 Series.

7. How will samples be transported and preserved? Samples will be collected and transported under COC protocols. Samples will be labeled with a unique sample ID, date, and time and be stored in a cooler chilled with ice to approximately 4 degrees celsius until relinquishment to the analytical laboratory representative.

8. What sampling methods will be used? Sampling will be performed through a hollow-stem auger using a split-spoon sampler driven into soils. Sampling depths will be selected from field observations, PID soil vapor readings, and onsite conditions observed during drilling activities. Groundwater will be sampled per SA/M Manual guidelines with a new disposable bailer.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (www.sdcdeh.org). Yes ☐ No ☒ _____

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. Yes ☐ No ☒ _____

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Drilling augers and equipment will be decontaminated by steam cleaning. All downhole equipment will undergo decontamination procedures prior to first use during investigation. All downhole equipment will then undergo decontamination procedures upon retrieval from the boring and before being used on a subsequent bore hole.

12. What methods will be used to clean sampling equipment? Decontamination of soil sampling equipment will be performed either by steam cleaning or by using the triple rinse methodology. When triple rinse is used, the first rinse will include the use of a non-phosphate soap (Liquinox or equivalent) followed by two tap water rinses. All downhole equipment will undergo decontamination procedures prior to first use during investigation. All downhole sampling equipment will then undergo decontamination procedures upon retrieval from the boring and before being used on a subsequent soil sample. Groundwater samples will be collected using new, factory-packaged disposable bailers for each well.

13. What cleaning method will be used to clean casing and screen prior to installation? Casing and screen installed during well construction will be first use, pre-packaged materials as received from the manufacturer.

14. A Property Owner Consent (POC) agreement is required for all applications, except for onsite, open LOP/SAM site assessment cases, Caltrans properties and military properties.

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

JACK MILLER
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address: 16011 LA FLECHA, RANCHO SANTA FE, CA

Assessor's Parcel Number (APN): 266-300-27-00

I, WILLIAM R SHRADER, owner of the property/properties listed above, give my permission to BBC ENVIRONMENTAL, INC (consulting company, contractor) to conduct the following work at the locations stated above.

☑ Install 1 monitoring wells ☐ Destroy _____ monitoring wells ☐ Drill _____ soil borings

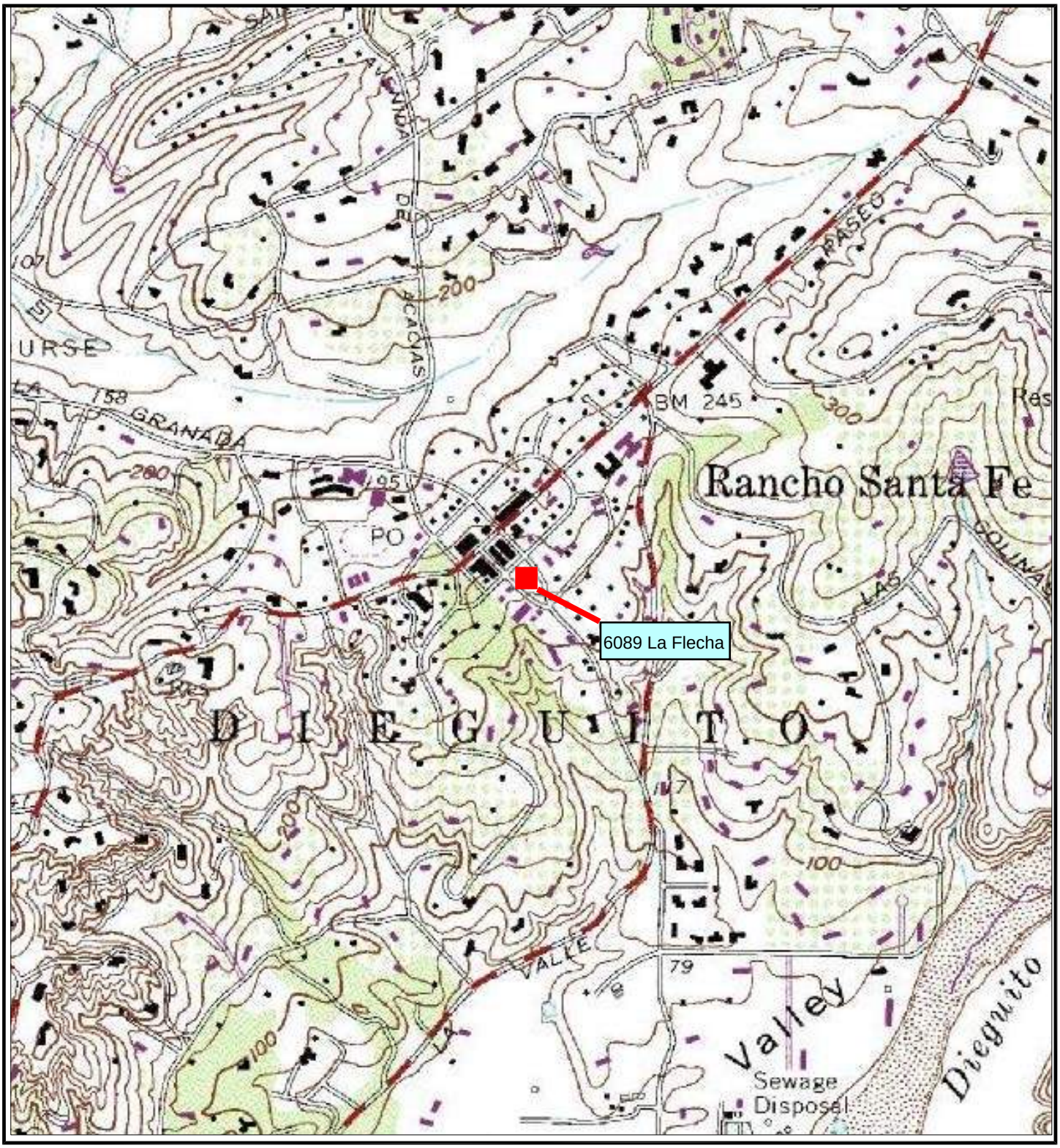
I understand that G. SHILLER (registered professional) of BBC ENV. INC. (consulting company) and an authorized signer for HARGRAVE ENV. (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: William R Shrader Date: 12/14/11

Print Name: _____ Title: _____

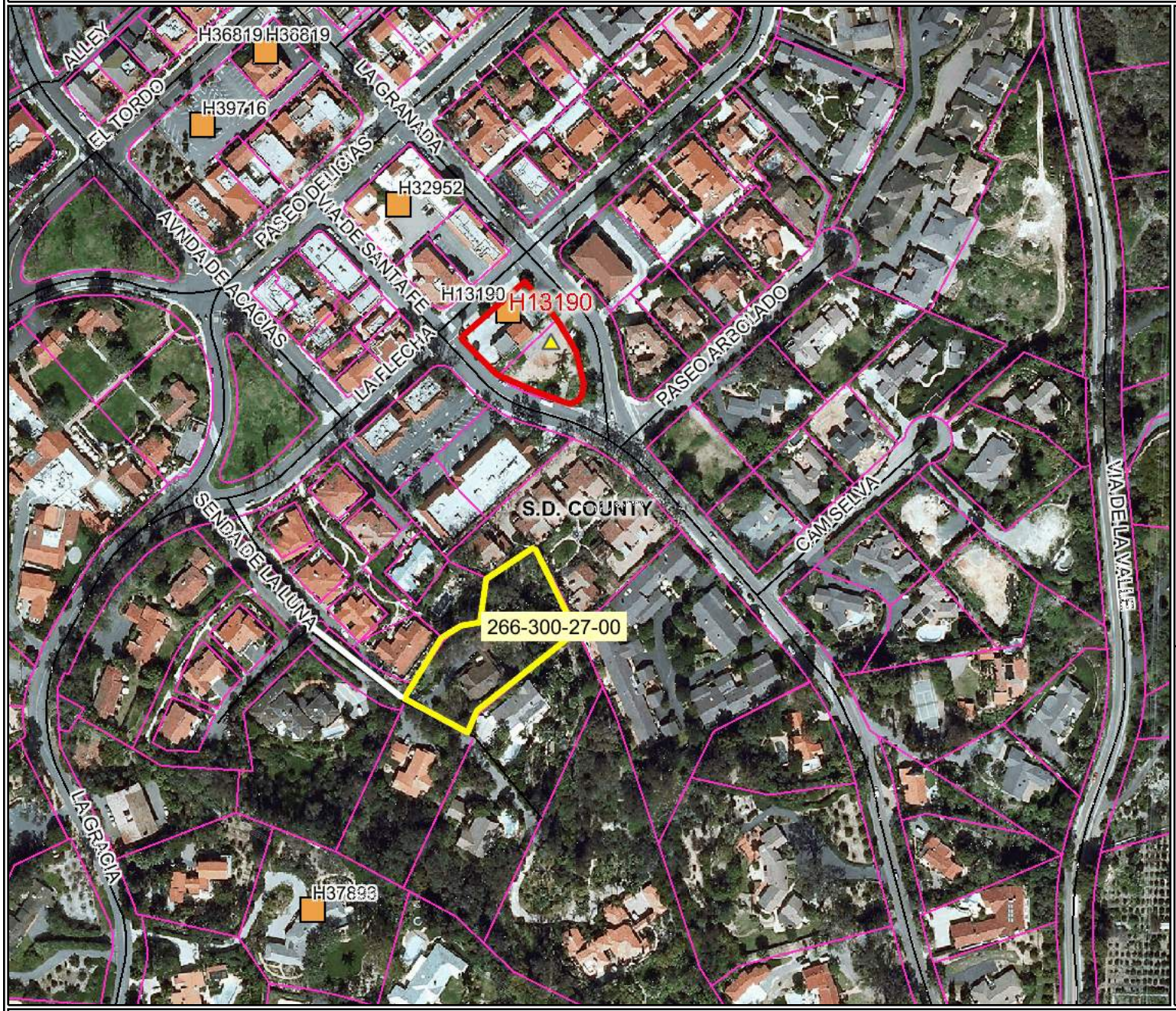
Company: _____

Mailing Address: _____



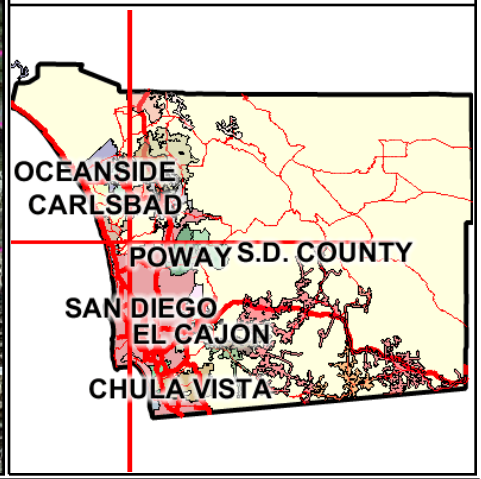
LEGEND	SITE VICINITY MAP
REFERENCE: TERRASERVER-USA.COM 01 JULY 1983 COUNTY OF SAN DIEGO RANCHO SANTA FE N 547 0 547 1094 SCALE: 1" = 1,094' (FEET)	RANCHO SANTA FE MOBIL 6089 LA FLECHA RANCHO SANTA FE, CALIFORNIA
	FIGURE No. 1 — PROJECT No: RSF MOBIL
	BBC ENVIRONMENTAL, INC.

proposed off site well for H13190



Legend

- SAM Environmental Listing
- Streets
- Highways
- Freeways
- Parcels
- County Boundary
- Cities



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Scale 1:2,964

San Diego County Department of Environmental Health

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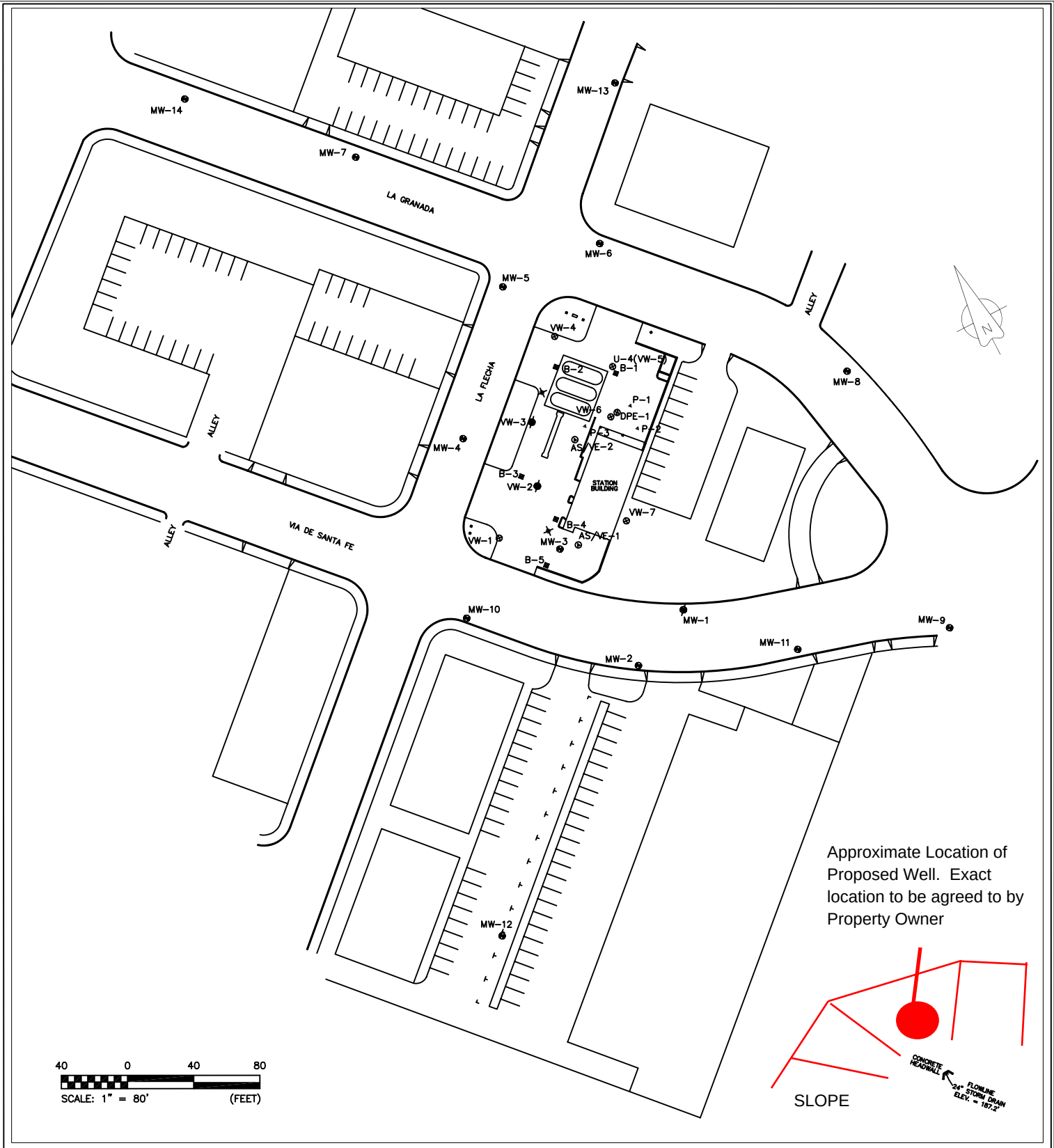
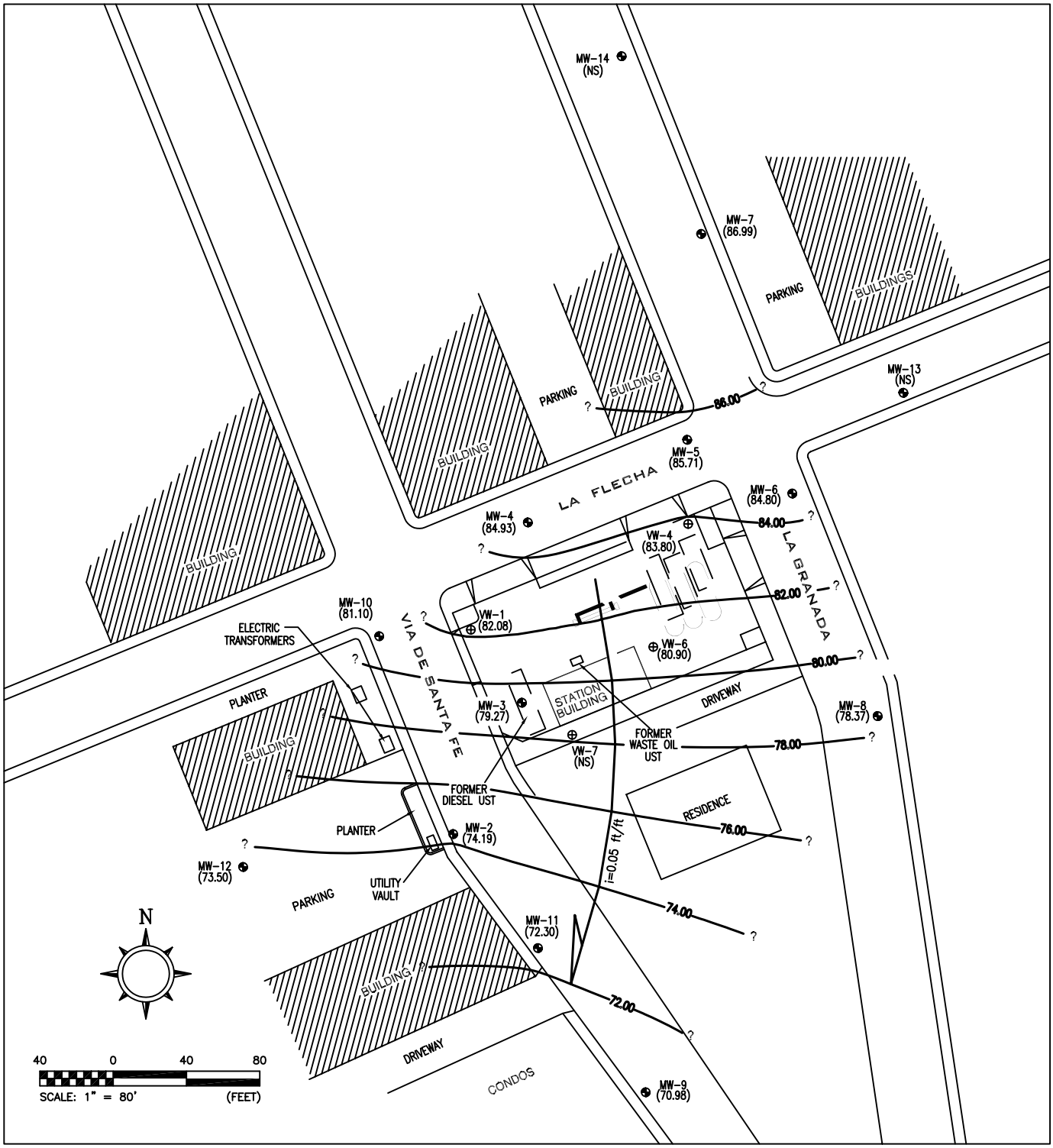
Printed: Jan 30, 2012 8:54:47 AM



LEGEND	DRAFT SITE MAP
MW-8 GROUNDWATER MONITORING WELL MW-1 ABANDONED GROUNDWATER MONITORING WELL VW-4 VAPOR WELL DPE-1 DUAL PHASE EXTRACTION WELL AS/VE-1 AIR SPARGE/VAPOR EXTRACTION WELL P-2 PIEZOMETER CPT-3 GROUNDWATER MONITORING WELL NEW UNDERGROUND STORAGE TANK FORMER UNDERGROUND STORAGE TANK	RANCHO SANTA FE MOBIL 6089 LA FLECHA RANCHO SANTA FE, CALIFORNIA
	FIGURE No. 2 — PROJECT No. RSF MOBIL
	BBC ENVIRONMENTAL, INC.

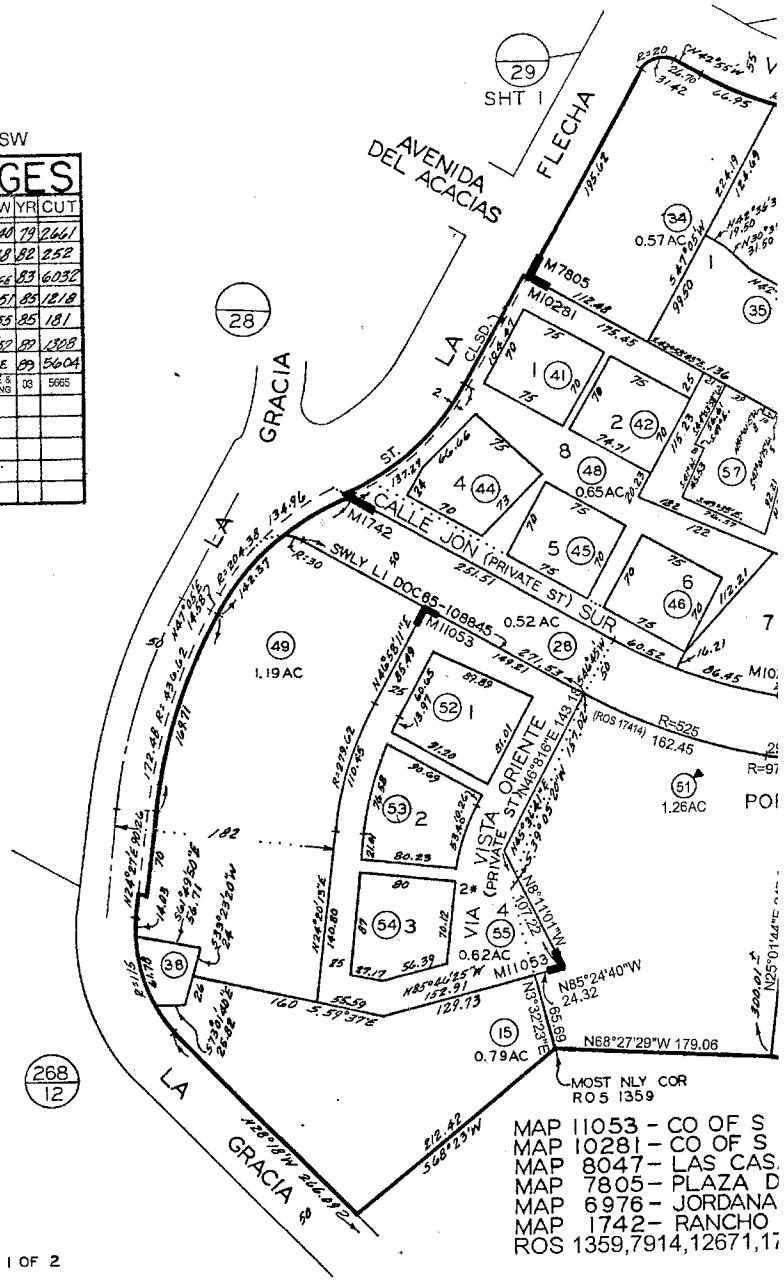


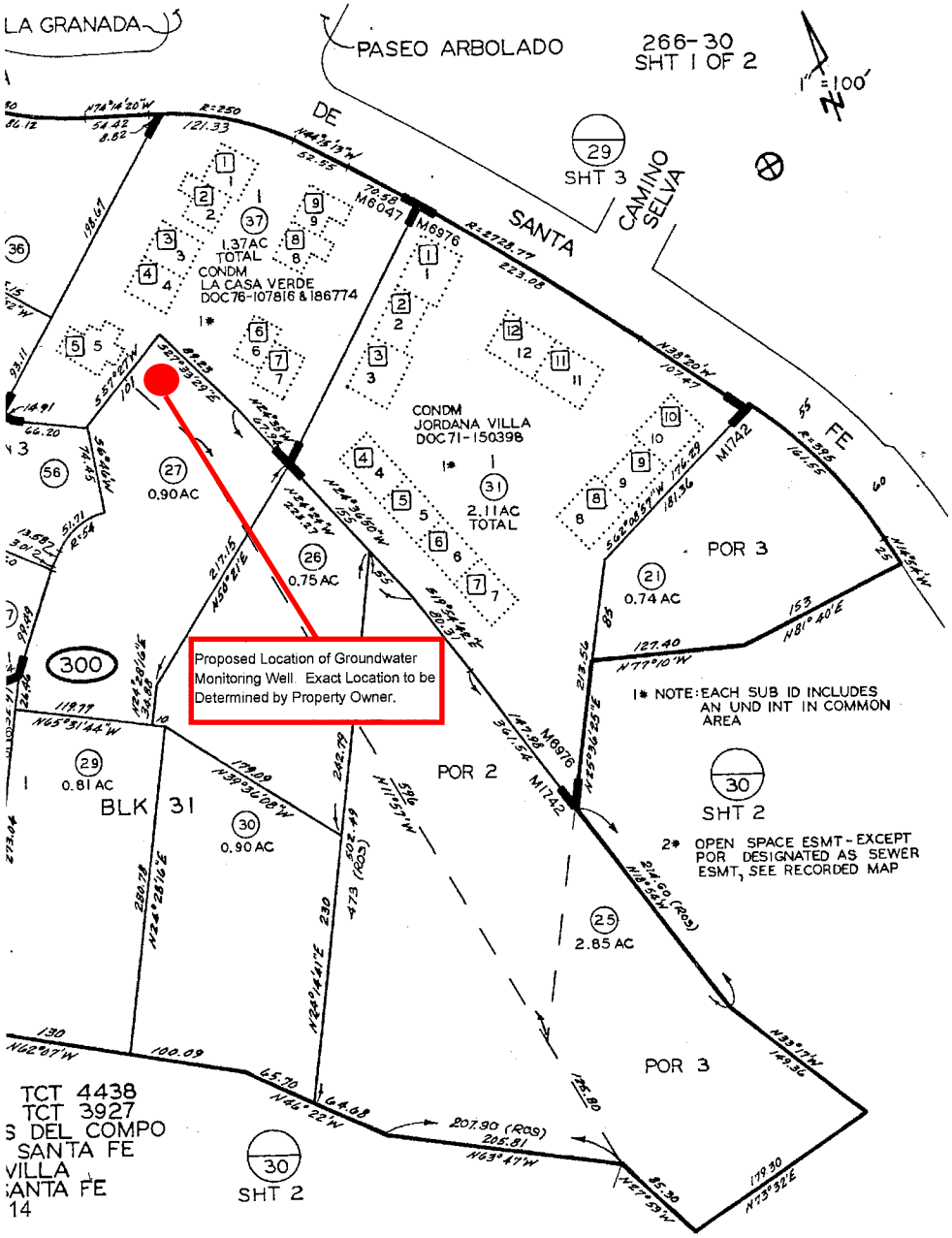
LEGEND	GROUNDWATER GRADIENT MAP
MW-8 (78.37) GROUNDWATER MONITORING WELL GROUNDWATER ELEVATION IN FEET ABOVE AN ARBITRARY DATUM, MEASURED 03-26-08	RANCHO SANTA FE MOBIL 6089 LA FLECHA RANCHO SANTA FE, CALIFORNIA
VW-4 VAPOR WELL	
78.00 ESTIMATED CONTOURS OF EQUAL GROUNDWATER ELEVATION	
NS NOT SURVEYED	FIGURE No. 3 / PROJECT No. RSF MOBIL
ESTIMATED GROUNDWATER FLOW DIRECTION i = 0.05 ft/ft ESTIMATED GROUNDWATER GRADIENT	BBC ENVIRONMENTAL, INC.

1/28/2003 ESW

CHANGES

BLK	OLD	NEW	YR	CUT
300	11	39&40	79	2661
	12,39,40	41-48	82	252
	17,21,24	AC CHANGES	83	6032
	16,17,24	49-51	85	1218
	50	52-55	85	181
	43	56&57	89	1308
	481 ST. C.S.D.	SAME	89	5604
	51	SAME & AC CHNG	03	5665





THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL SUBDIVISION OR BUILDING ORDINANCES.

10-19-82 SALAS

SAN DIEGO COUNTY
ASSESSOR'S MAP
BOOK 266 PAGE 30 SHT 1 OF 2

TYPICAL SHALLOW MONITORING WELL CONSTRUCTION DETAIL

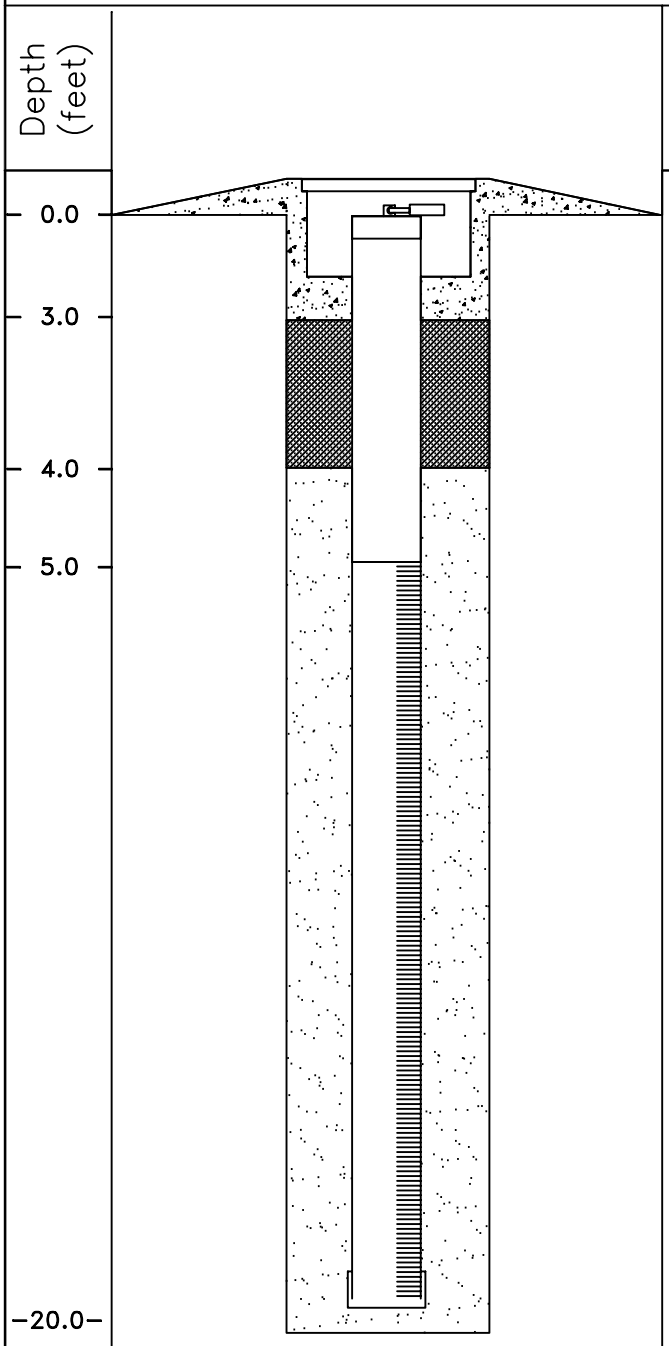


*FIGURE NOT TO SCALE

Description

- SECURITY WELL BOX INSTALLED IN STRUCTURAL CONCRETE SURFACE SEAL (0-3'). SLOPE OF SEAL CONSTRUCTED IN ACCORDANCE WITH SAM MANUAL REQUIREMENTS. WATER TIGHT LOCKING CAP PLACED IN TOP OF CASING.

- BENTONITE TRANSITION SEAL. HYDRATED BENTONITE CHIPS (3-4').

- FILTER PACK. # 3 SAND (4-20').

-WELL SCREEN. 2" SCHEDULE 40 PVC WELL CASING. SCREEN SLOT SIZE IS 0.020" (5-20').

- BOTTOM WELL PLUG.

NOTES:

PROPOSED MONITORING WELL PMW-15

Borehole to be terminated at approximately 20 feet below ground surface (bgs). Well to be completed as a 2-inch groundwater monitoring well screened from 5-20 feet bgs with 0.020" slotted schedule 40 pvc. Well annulus completed with #3 sand from 20-4 feet bgs, hydrated bentonite chips to 3 feet bgs, and concrete to ground surface. Well to be finished with traffic rated well box set in concrete.

PROPOSED WELL INSTALLATION FOR PMW-15

RANCHO SANTA FE MOBIL STATION
6089 LA FLECHA
RANCHO SANTA FE, CALIFORNIA

BBC ENVIRONMENTAL, INC.

County of San Diego

JACK MILLER
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
858-505-6700/FAX (858) 505-6891/1-800-253-9933
www.sdcdeh.org

ELIZABETH POZZEBON
ASSISTANT DIRECTOR

OFFICIAL NOTICE

November 8, 2012

JOHN FRANKLIN
GEOSOILS, INCORPORATED(SD)
5741 PALMER WAY
CARLSBAD, CA 92008

FIRST PAST DUE NOTICE -- PERMIT: LMON-108461
APPROVED: April 24, 2012 -- EXPIRED: August 22, 2012
16092 SAN DIEGUITO RD, SAN DIEGO 92067

The Department of Environmental Health (DEH), Monitoring Well Program (MWP) has not received the required 60-day report for work completed under this permit.

Failure to submit the 60-day drilling report is a violation of the San Diego County Code, Section 67.447 and can result in a complaint being filed with the appropriate State Board. In addition, the San Diego County Code Section 67.441 states that permits may be denied if the applicant is delinquent with submitting 60-day drilling reports to the MWP.

Submit the 60-day report to the Well Permit Desk to the address shown above by **November 26, 2012**. If the report is not submitted, you will receive a notice to attend an Administrative Conference. Please contact the Well Permit Desk at (858) 505-6688 if you wish to discuss this letter.

Thank you for your cooperation.

Sincerely,

Marisue Crystal, **Environmental Health Technician**
Monitoring Well Program
Site Assessment and Mitigation Program

cc: **GAIL KILLEEN, CRAIG RANCH INC**
SCOTT'S DRILLING SERVICE

PERMIT #LMON108461
A.P.N. # 302-082-22-00
EST #06498-HMD

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: RANCHO PASENA

SITE ADDRESS: 16090-92 SAN DIEGUITO RD., RANCHO SANTA FE, CA 92091

PERMIT FOR: **7 GEOTECHNICAL BORINGS**

PERMIT APPROVAL DATE: APRIL 24, 2012

PERMIT EXPIRES ON: AUGUST 22, 2012

RESPONSIBLE PARTY: CRAIG RANCH, INC.

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E. 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at (858) 505-6688.**

APPROVED BY: _____ DATE: 4/25/2012
VERONICA TAVIZON

4/26/12 VT emailed

DEH:SAM-9075 (6/11)

RECEIVED
APR 24 2012
ENVIRONMENTAL HEALTH

EXPEDITE

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 1128461
SAM CASE Y/N# H06498-LMON
DATE RECEIVED: 4-24-12
FEE PAID: $494-
CHECK # 33575

A. RESPONSIBLE PARTY Craig Ranch, Inc. E-mail craigent@mac.com
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address P.O. Box 675532 City Rancho Santa Fe State CA Zip 92067-
Contact Person Ms. Gail Killeen Phone 858-756-6981 Ext. _____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM GeoSoils, Inc.
Mailing Address 5741 Palmer Way City Carlsbad State CA Zip 92010-
Registered Professional John P. Franklin Phone 760-438-3155 Registration # 1340 (CEG)
E-mail jfranklin@geosoilsinc.com
Contact Person Ryan Boehmer
Phone 760-438-3155 Ext. _____ E-mail rboehmer@geosoilsinc.com

D. DRILLING COMPANY Scotts Drilling Service C57# 713741
Contact Name Scott Ball E-mail scottsdrilling@cox.net
Mailing Address 271 Roymar Rd, Suite D City Oceanside State CA Zip 92058-
Phone 760-966-1613

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	7
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable _____
Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 8"

Drilling Method
☐ Auger
☒ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 5 ft.
Estimated depth of boring 50 ft.

Concrete surface seal	0 to 3
Annular seal	_____ to _____
Bentonite transitio seal	_____ to _____
Filter Pack	_____ to _____
Perforation	_____ to _____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 19 April 12

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE John P. Franklin CEG 1340 DATE 4/20/12

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 302-082-22
   Site Name Rancho Pasena / Fair Banks Ranch County Club
   Site Address 16090-92 San Dieguito Rd City Rancho Sante Fe Zip 92091-

   PROPERTY OWNER Craig Ranch, Inc.
   Phone 858-756-6981 Ext. Fax 858-756-0641
   Mailing Address P.O. Box 675532 City Rancho Santa Fe State CA Zip 92067-

   NUMBER OF WELLS 7- **TYPE OF WELLS** Mud Rotary

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2011, through June 30, 2012)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$200.00 for the first monitoring well	**$200.00**
Permit for Well Maintenance Inspection (Valid for three years)	$99.00 for first well maintenance inspection	**$99.00**
Each Additional New Well	$161.00 for each additional well installation	___ x **$161.00** $_____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** $_____

Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$200.00 for the first boring ..... $ 49.00 for each additional boring	1 6	x $200.00 x $ 49.00	$200.00 $294.00
Permit for Well Destructions Only	$200.00 for the first destruction ..... $123.00 for each additional destruction ...	___ ___	x $200.00 x $123.00	$_____ $_____
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $200.00 **Additional activities will be as follows:** $161.00 for each additional well $99.00 for first well maintenance inspection $ 30.00 for each additional well maintenance inspection $123.00 for each well destruction $ 49.00 for each additional boring	___ ___ ___ ___ ___ ___	x $200.00 x $161.00 x $ 99.00 x $ 30.00 x $123.00 x $ 49.00	$_____ $_____ $_____ $_____ $_____ $_____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00** **(Flat Fee)**			$_____
	TOTAL COST OF PERMIT			**$494.00**

H. **QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.**

1. If wells are to be destroyed, provide a description of method of destruction No wells proposed.

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which a government regulator is the lead agency. If yes, indicate which government regulator is the lead agency and the case number.

   DEH RWQCB DTSC

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? All borings are to be backfilled with bentonite. No prevention methods are planned at this time. However, if physical signs of contamination are detected, drilling operations would cease and the scope of work would be re-evaluated with the Client. The DEH would be notified.

4. What field procedures will be utilized to determine if contamination exists? Physical observations, discoloration, odor, etc.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? No procedures are proposed. However, if physical signs of contamination are detected, drilling operations would cease, and the scope of work would be re-evaluated with the Client.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? None proposed. See #5

7. How will samples be transported and preserved? N/A

8. What sampling methods will be used? Modified California Sampler and Standard Penetration (SPT)

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (www.sdcdeh.org). Yes ☐ No ☒ Monitoring wells are not proposed.

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. Yes ☐ No ☒ _____

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? No cleaning of equipment is proposed. However, if physical signs of contamination are detected, drilling operations would cease until the equipment is properly cleaned.

12. What methods will be used to clean sampling equipment? No decontamination planned. See #11.

13. What cleaning method will be used to clean casing and screen prior to installation? Well installation is not planned.

14. A Property Owner Consent (POC) agreement is required for all applications, except for onsite, open LOP/SAM site assessment cases, Caltrans properties and military properties.

County of San Diego

JACK MILLER
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
858-505-6700/1-800-253-9933 FAX: 858-505-6891
www.sdcdeh.org

ELIZABETH POZZEBON
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:
16090 THROUGH 16092

Rancho Santa Fe, California 92091

Assessor's Parcel Number (APN):
302-082-22

I, Jenny Craig, owner of the property/properties listed above, give my permission to GeoSoils, Inc. (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 7 soil borings

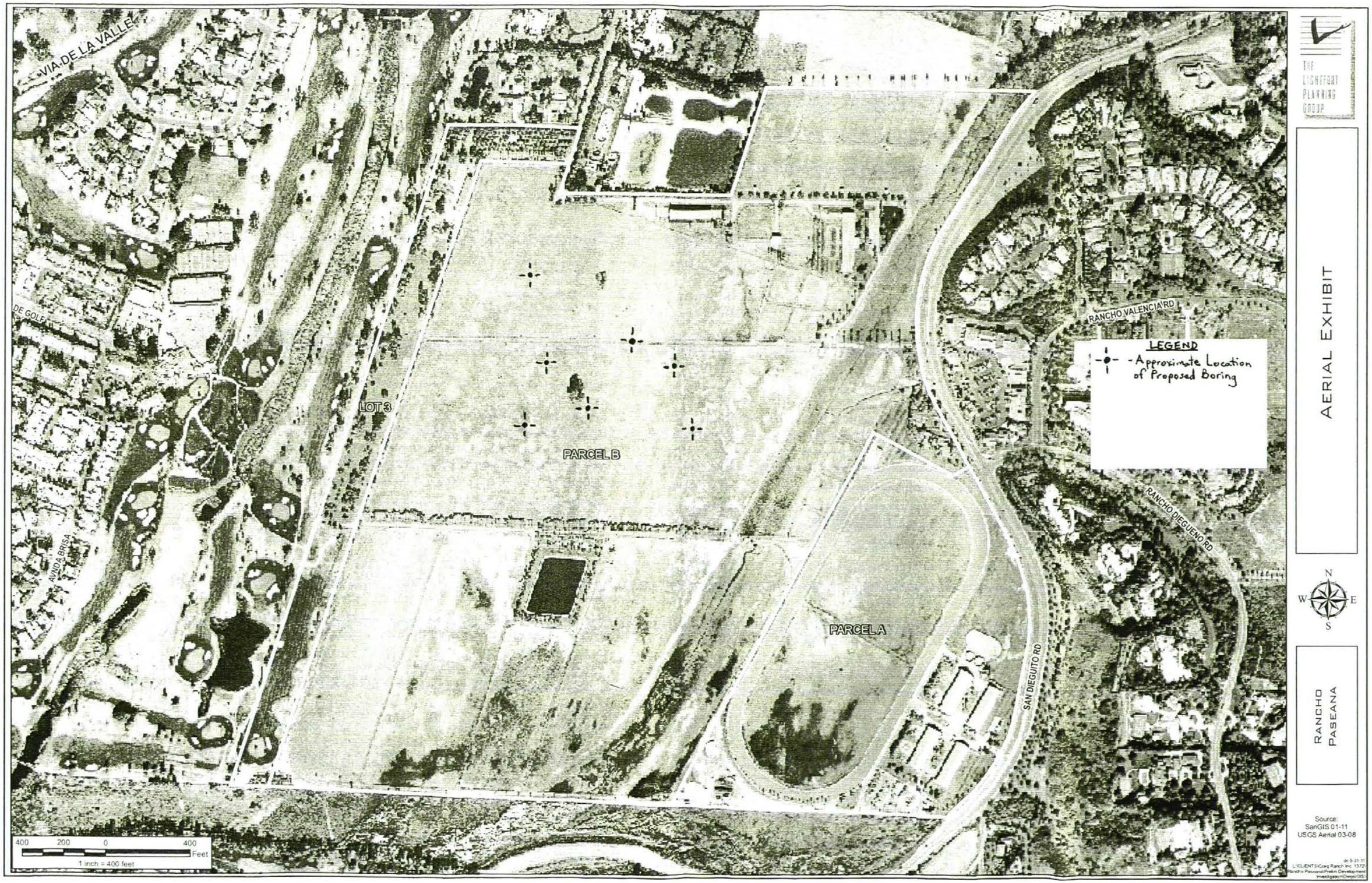
I understand that John P. Franklin (registered professional) of GeoSoils, Inc. (consulting company) and an authorized signer for Scotts Drilling Service (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: Jenny Craig Date: 4/16/12

Print Name: Jenny Craig Title: Owner

Company: Craig Ranch, Inc.

Mailing Address: P.O. Box 675532 Rancho Santa Fe, CA 92067



THE LIGHTFOOT PLANNING GROUP

AERIAL EXHIBIT

RANCHO PASEANA

Source:
SanGIS 01-11
USGS Aerial 03-08

dc 5-31-11
L:\CLIENTS\Craig Ranch Inc 1372\Rancho Pasevana\Prelim Development Investigation\Dwgs\GIS

PERMIT #LMON108686
A.P.N. #302-082-22
EST #NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: RANCHO PASENA

SITE ADDRESS: 16092 SAN DIEGUITO RD., RANCHO SANTA FE CA 92091

PERMIT FOR: **14 BORINGS**

PERMIT APPROVAL DATE: AUGUST 22, 2012

PERMIT EXPIRES ON: DECEMBER 20, 2012

RESPONSIBLE PARTY: CRAIG RANCH INC.

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at (858) 505-6688.**

APPROVED BY: Amelia C. AMELIA CESENA DATE: 8/22/12

T108684

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 108686
SAM CASE Y/N# None
DATE RECEIVED: 4-16-12
FEE PAID: $837
CHECK # 33881

A. RESPONSIBLE PARTY Craig Ranch, Inc. E-mail craigent@mac.com
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address P.O. Box 675532 City Rancho Santa Fe State CA Zip 92067-
Contact Person Ms. Gail Killeen Phone 858-756-6981 Ext. _____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM GeoSoils, Inc.
Mailing Address 5741 Palmer Way City Carlsbad State CA Zip 92010-
Registered Professional John P. Franklin Phone 760-438-3155 Registration # 1340 (CEG)
E-mail jfranklin@geosoilsinc.com
Contact Person Ryan Boehmer
Phone 760-438-3155 Ext. _____ E-mail rboehmer@geosoilsinc.com

D. DRILLING COMPANY Middle Earth Geo-Testing C57# 899451
Contact Name Bobby Hancock E-mail Bobby_Hancock@MiddleEarthGeo.com
Mailing Address 954 N. Lemon Street City Orange State CA Zip 92867-
Phone 714-633-5025

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☐ Boring	___
☒ Other	14

CPT

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING

Not Applicable _____
Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL

☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter ~2"

Drilling Method

☐ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☒ Other

PROPOSED CONSTRUCTION

Estimated groundwater depth: 5 ft.
Estimated depth of boring 50 ft.

Concrete surface seal	0 to 3
Annular seal	_____ to _____
Bentonite transitio seal	_____ to _____
Filter Pack	_____ to _____
Perforation	_____ to _____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 6/20/12

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE _____ DATE 7/2/12

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 302-082-22
   Site Name Rancho Pasena
   Site Address San Dieguito Rd. San Diego, Ca. City Rancho Sante Fe Zip 92091-
   PROPERTY OWNER Craig Ranch, Inc.
   Phone 858-756-6981 Ext. Fax 858-756-0641
   Mailing Address P.O. Box 675532 City Rancho Santa Fe State CA Zip 92067-
   NUMBER OF ~~WELLS~~ SOUNDING 14 **TYPE OF ~~WELLS~~ SOUNDING** CPT

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____
   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State _____ Zip _____
   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____
   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State _____ Zip _____
   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2011, through June 30, 2012)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$200.00 for the first monitoring well	**$200.00**
Permit for Well Maintenance Inspection (Valid for three years)	$99.00 for first well maintenance inspection	**$99.00**
Each Additional New Well	$161.00 for each additional well installation $ 30.00 for each additional well maintenance inspection	___ x $161.00 $_____ ___ x $ 30.00 $_____

Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$200.00 for the first boring ..... $ 49.00 for each additional boring	1 x $200.00 13 x $ 49.00		$200.00 $637.00
Permit for Well Destructions Only	$200.00 for the first destruction ..... $123.00 for each additional destruction	___ x $200.00 ___ x $123.00		$_____ $_____
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $200.00 **Additional activities will be as follows:** $161.00 for each additional well $99.00 for first well maintenance inspection $ 30.00 for each additional well maintenance inspection $123.00 for each well destruction $ 49.00 for each additional boring	___ x $200.00 ___ x $161.00 ___ x $ 99.00 ___ x $ 30.00 ___ x $123.00 ___ x $ 49.00		$_____ $_____ $_____ $_____ $_____ $_____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00** **(Flat Fee)**			$_____
	TOTAL COST OF PERMIT			**$837.00**

H. **QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.**

1. If wells are to be destroyed, provide a description of method of destruction No wells proposed.

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which a government regulator is the lead agency. If yes, indicate which government regulator is the lead agency and the case number.

   _____ DEH _____ RWQCB _____ DTSC

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? All CPTs are to be backfilled with bentonite. No prevention methods are planned at this time. However, if physical signs of contamination are detected, operations would cease and the scope of work would be re-evaluated with the Client. The DEH would be notified.

4. What field procedures will be utilized to determine if contamination exists? Physical observations, discoloration, odor, etc.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? No procedures are proposed. However, if physical signs of contamination are detected, operations would cease, and the scope of work would be re-evaluated with the Client.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? None proposed. See #5

7. How will samples be transported and preserved? N/A

8. What sampling methods will be used? Sampling is not proposed.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (www.sdcdeh.org). Yes ☐ No ☒ Monitoring wells are not proposed.

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. Yes ☐ No ☒ _____

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? No cleaning of equipment is proposed. However, if physical signs of contamination are detected, operations would cease until the equipment is properly cleaned.

12. What methods will be used to clean sampling equipment? No decontamination planned. See #11.

13. What cleaning method will be used to clean casing and screen prior to installation? Well installation is not planned.

14. A Property Owner Consent (POC) agreement is required for all applications, except for onsite, open LOP/SAM site assessment cases, Caltrans properties and military properties.

County of San Diego

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(858)505-6700/(800)263-9933 FAX (858)505-6891
www.sdcdeh.org

JACK MILLER
DIRECTOR

ELIZABETH POZZEBON
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address: 16092 and 16094 San Dieguito Rd. Rancho Santa Fe, Ca. 92091

Assessor's Parcel Number (APN): 302-082-22, -23

I, Jenny Craig, owner of the property/properties listed above, give my permission to Geo Soils, Inc. (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 14 ~~soil~~ CPT borings

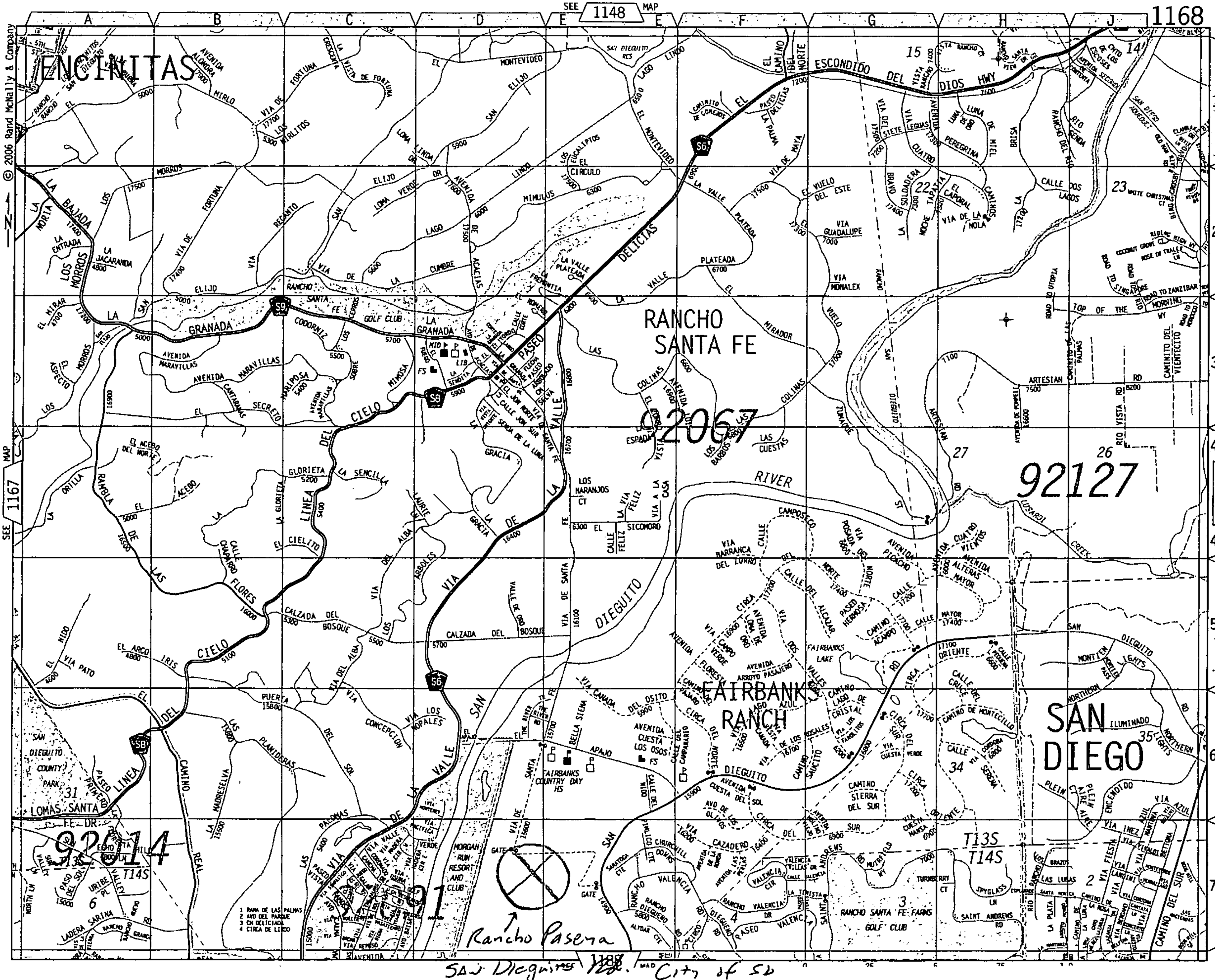
I understand that John Franklin (registered professional) of Geo Soils, Inc. (consulting company) and an authorized signer for Scott's Drilling (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: Jenny Craig Date: 8/16/12

Print Name: Jenny Craig Title: Owner

Company: Craig Ranch, Inc.

Mailing Address: P.O. Box 675532 Rancho Santa Fe, Ca. 92067



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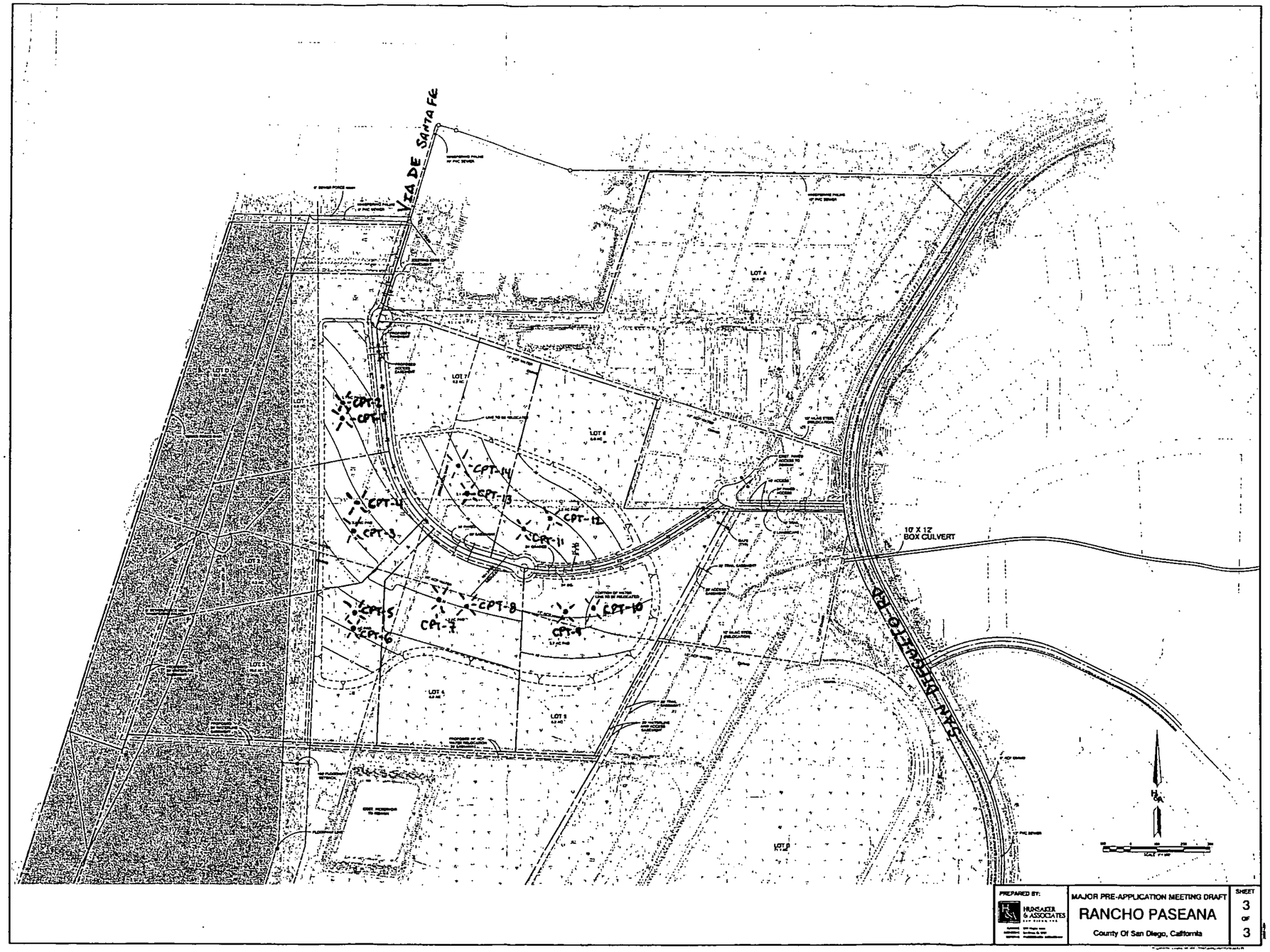
Legend

CPT-14 - Approximate Location of Proposed CPT



BBC ENVIRONMENTAL, INC.

3593 Adams Avenue, San Diego, CA92116

June 28, 2012

Mr. James Clay<james.clay@sdcounty.ca.gov>
Mr. Tony Sawyer<tony.sawyer@sdcounty.ca.gov>
Ms. Laurie Apecechea<laurie.apecechea@sdcounty.ca.gov>
County of San Diego, DEH
SAM Program
Via Email

RE: RANCHO SANTA FE MOBIL, H13190-001, PROPOSED DOWN GRADIENT WELL INSTALLATION

Based on DEH/SAM's recent comments, it seems that everyone is not on the same page regarding the proposed down gradient well installation and construction. The following is a complete summary of what we want to do and why. Hopefully this discussion will answer all of the outstanding questions, and clear up some apparent misunderstanding.

The proposed well is in a down gradient location that is needed to complete the lateral assessment of fuel impacts to groundwater that originated from one or more releases from the Rancho Santa Fe Mobil station located at 6089 La Flecha, Rancho Santa Fe 92067, SAM case H13190-001. BBC Environmental, Inc. (BBC) has been proposing a down gradient well for several years, but negotiations to secure off site access have been time consuming and until recently, unproductive. And although permission has been granted for the location of the well, a neighboring property owner has been unwilling to allow passage of standard limited access drilling equipment across their property to access the proposed well location. The proposed well has been permitted under Permit LMON108291, issued February 15, 2012. The only change being discussed is drilling using a 6-inch diameter hand auger instead of Hargrave Environmental Consulting's Little Beaver Limited Access Rig.

In the interest of getting the well installed so that delineation can be completed, BBC proposed installation of the well by hand. BBC has proposed to drill the well boring using a 6-inch hand auger. It is our opinion based on our observations of near surface materials down gradient from the site, as well as boring logs from wells installed by others that 1) the formational material is not too well lithified as to preclude drilling by hand, and 2) the formational materials have enough competency so that the borehole will remain open while drilling and subsequent well construction take place. This includes at and below the water table. If the well boring does not stay open to a sufficient depth to allow collection of representative groundwater samples, the well will not be completed. Also of note, the boring drilled by the 6-inch diameter hand auger will be larger than the core of a standard 8-inch hollow stem auger flight.

Based on current groundwater levels in the existing monitoring wells located along the west side of Via de Santa Fe, we expect that groundwater will be found at approximately 12-15 feet below grade in the proposed well. With this depth of water, the new well is proposed to be no deeper than 20 feet (this information is the same as is contained in the well permit application).

Care will be taken to remove as much slough as possible from the boring prior to construction of the well. We expect little or no problem with this as the hand auger is designed to remove loose material and effectively sample undisturbed material at the bottom of a boring. In the event that loose surficial material begins to fall into the open boring, a circular cardboard concrete form (aka sonatube) will be placed around the open hole to contain the loose surficial material and prevent it from falling into the hole.

BBC ENVIRONMENTAL, INC.
3593 Adams Avenue, San Diego, CA92116

The boring and well installation will be completed in less than one day. The boring will not be a conduit for contamination from the surface because there is no potential source of contamination in the area around the proposed boring location – it is a landscaped slope on private property with limited access to it. Further, since there will be no machinery involved with the drilling, there will be no potential source of contamination associated with the drilling and well installation. Clean municipal water from a nearby hose bib will be the only liquid present.

One last point - We find no restriction in the SAM Manual, either in Section 5 or Appendix B, that requires placement of well construction materials via tremie pipe in a well 20 feet or less in total depth.

If you have any additional concerns, we would be happy to have a meeting, either on site, or in your office.

Thank you,
BBC ENVIRONMENTAL, INC.

GERALD I. SHILLER, P.G. 4558

PROFESSIONAL GEOLOGIST
GERALD I. SHILLER
PG-4558
Expires 2/28/23
STATE OF CALIFORNIA

Telephone (619) 546-7165 Fax (619) 546-7175

From: Crystal, Marisue
To: "Walter B. Craig"
Subject: Time Extension granted for permit LMON108291
Date: Tuesday, June 19, 2012 5:12:30 PM

Dear Mr. Craig:

The permit extension fee of $25.00 was received and posted to the above permit and an extension has been granted. The new expiration date for permit LMON108291 is October 12, 2012. We are no longer creating separate extension documents, so please retain this email as confirmation of your permit extension.

Sincerely,

Marisue Crystal,
Environmental Health Technician
on behalf of the Monitoring Well Program Permit Desk
email: deh.monitoringwells@sdcounty.ca.gov
(858) 505-6688

From: DEH, Monitoring Wells
Sent: Friday, June 15, 2012 1:37 PM
To: 'w.craig@bbcenvironmental.com'
Subject: RE: Request for Permit Extension - LMON108291

Dear Mr. Craig:

Your request for a permit extension has been received. When the permit fee is paid, an extension will be processed.

Sincerely,

Marisue Crystal,
Environmental Health Technician
on behalf of the Monitoring Well Program Permit Desk
email: deh.monitoringwells@sdcounty.ca.gov
(858) 505-6688

From: Walter B. Craig [mailto:w.craig@bbcenvironmental.com]
Sent: Friday, June 15, 2012 9:14 AM
To: DEH, Monitoring Wells

Subject: Request for Permit Extension - LMON108291

MWP Permit Desk:

Please allow this email to stand as a written request to extend well installation permit LMON108291. should you have any questions with regards to this extension, please contact BBC Environmental, Inc. at 619-546-7165.

Thank you for your assistance in this matter.

Walter B. Craig, R.E.A.
BBC Environmental, Inc.
3593 Adams Avenue
San Diego, CA 92116
Tel: (619) 546-7165
Fax: (619) 546-7175

ATC ASSOCIATES INC.

9620 Chesapeake Drive, Suite 203
San Diego, CA 92123
http://www.atcassociates.com
(858) 569-0692
Fax (858) 569-0695

04 OCT 29 AM 8:44

October 26, 2004

copy made for VAP case

Ernie Profeta
County of San Diego
Department of Environmental Health
Land and Water Quality Division
P.O. Box 129261
San Diego, California 92112-9261

RE: Soil Boring Report
Del Rayo Village Center
16077-91 San Dieguito Road
Rancho Santa Fe, California 92067
Permit # LMON102471 **EST #** None **A.P.N. #** 302-301-10-00

Dear Mr. Profeta:

On August 20, 2004, ATC Associates Incorporated (ATC) supervised the advancement of five soil borings (SB1 through SB5) in the approximate locations illustrated on Figure 1. The soil borings were advanced utilizing a direct-push Strataprobe drill-rig equipped with 2-inch diameter rods operated by H&P Mobile Geochemistry. Soil borings SB1 through SB3 were drilled to a maximum explored depth of approximately 20 feet below ground surface (bgs); and soil borings SB4 and SB5 were drilled to a depth of approximately 12 feet below ground surface (bgs). Soils encountered were logged and samples were collected from each boring for laboratory analysis. Groundwater was first encountered at a depth of approximately 19 feet bgs in borings SB1 through SB3. Groundwater was not encountered in borings SB4 and SB5 to a maximum explored depth of approximately 12 feet bgs. ATC respectfully requests a refund of any unused permit fees associates with SB4 and SB5. Static groundwater was measured in borings SB1 through SB3 at approximately depths ranging between 13 and 15 feet bgs.

Each soil boring (SB1 through SB5) was backfilled with hydrated granular bentonite from the bottom of the borehole to approximately 3.5 feet bgs, capped with concrete from 0.5 to 3.5 feet bgs and covered to the surface to match the existing grade. The approximate volumes of bentonite and concrete used during destruction of the soil borings are provided in Table 1. Soil encountered in the field and backfill details are provided on the enclosed Soil Boring Log. Soil analytical results are enclosed.

If any additional information is required, please contact our office.

Respectfully,

ATC Associates Incorporated

for

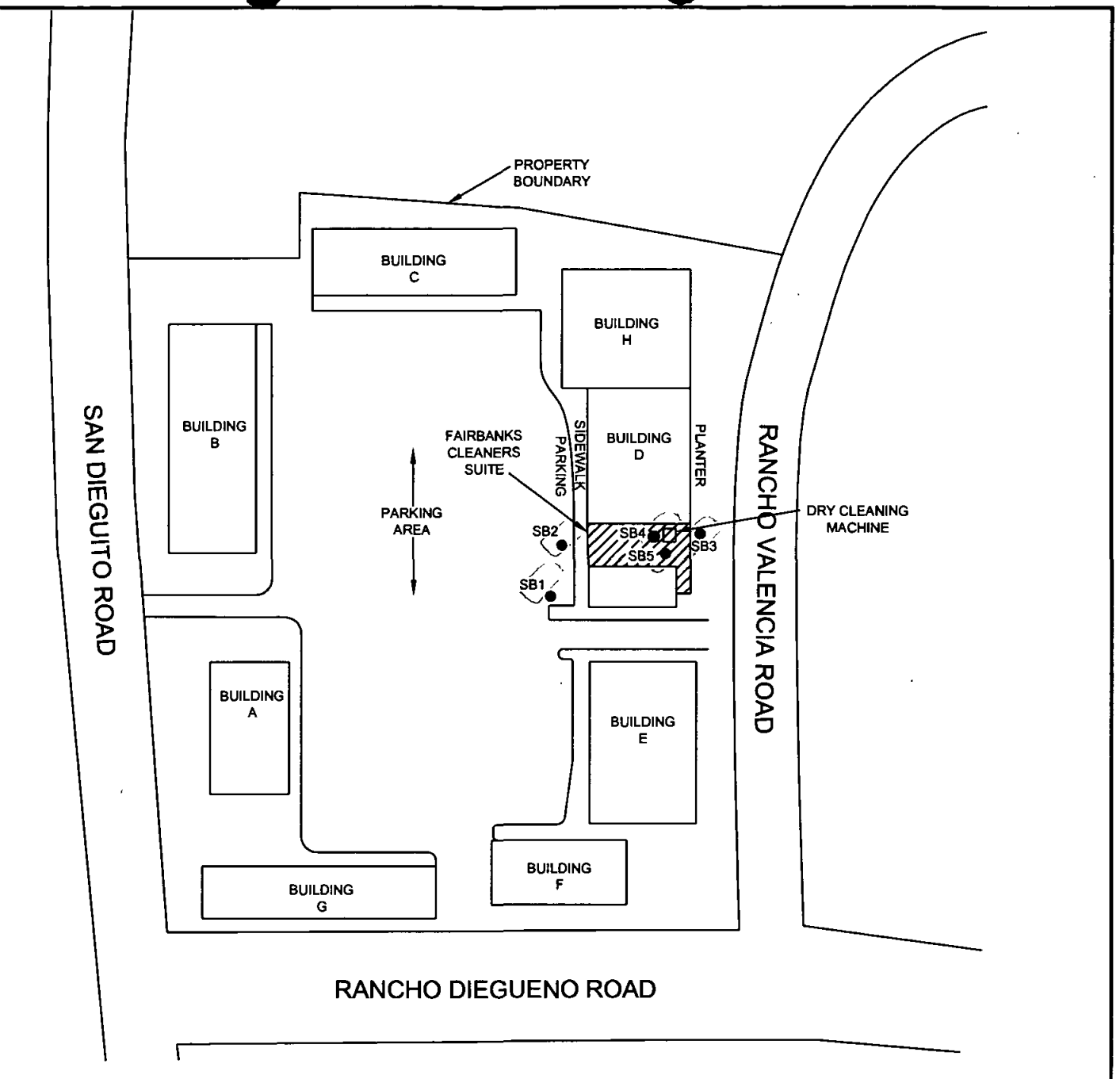
Scott D. Levin
Project Manager

REGISTERED GEOLOGIST
MICHAEL T DAVIS
Exp. 5/31/05
No. 7400
STATE OF CALIFORNIA

Michael T. Davis, RG #7400
Senior Geologist

Enclosures: Figure 1 - Site Map (with soil boring locations)
Table 1 – Soil Boring Destruction Materials
Approved Soil Boring Construction Permit
Borehole/Well Logs & Legend
Laboratory Analytical Report and Chain-of-Custody

cc: Charles Covello, Del Rayo Village Owners, LLC
Louise Adams, H&P Mobile Geochemistry



N

NOT TO SCALE

LEGEND

DRY CLEANER BUSINESS (AREA OF CONCERN)

SB1 ● PROPOSED STRATAPROBE BORING LOCATION

SITE PLAN

SOIL BORINGS (SB1 THROUGH SB5) LOCATION MAP
DEL RAYO VILLAGE CENTER
16077-91 SAN DIEGUITO ROAD
RANCHO SANTA FE, CALIFORNIA 92067

PROJECT NO. 43.27517.0002	FIGURE 1
FILE NO. h:projects2/del rayo village/FIG2	

ATC ASSOCIATES INC.
9620 Chesapeake Drive, Suite 203
San Diego, California 92123

TABLE 1

SOIL BORING DESTRUCTION MATERIALS

Del Rayo Village Center

16077-91 San Dieguito Road, Rancho Santa Fe, California

Well I.D.	Borehole Size (inches)	Casing Size (inches)	Screen Interval (feet bgs)	Screen Slot Size (inches)	#3 Sand (cu. ft.)	Medium Bentonite Chips (cu. ft.)	Bentonite Grout (cu. ft.)	Concrete (cu. ft)
SB1	2	NA	NA	NA	NA	NA	0.363	0.066
SB2	2	NA	NA	NA	NA	NA	0.363	0.066
SB3	2	NA	NA	NA	NA	NA	0.363	0.066
SB4	2	NA	NA	NA	NA	NA	0.198	0.066
SB5	2	NA	NA	NA	NA	NA	0.198	0.066

Notes: Calculations are approximate

I.D. = Identification

NA = Not Applicable

cu. ft. = Cubic Feet

DEFINITION OF TERMS

PRIMARY DIVISIONS			GRAPHIC SYMBOL	GROUP SYMBOL	SECONDARY DIVISONS
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN No. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OR COARSE FRACTION IS LARGER THAN No. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)		GW	WELL GRADED GRAVELS, GRAVEL SAND MIXTURES, LITTLE OR NO FINES.
				GP	POORLY GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES.
		GRAVEL WITH FINES		GM	SILTY GRAVELS, GRAVEL-SAND-CLAY MIXTURES, NON-PLASTIC FINES.
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES, PLASTIC FINES.
	SANDS MORE THAN HALF OR COARSE FRACTION IS SMALLER THAN No. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)		SW	WELL GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES.
				SP	POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES.
		SANDS WITH FINES		SM	SILTY SANDS, SAND-SILT MIXTURES, PLASTIC FINES.
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES, PLASTIC FINES.
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN No. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50%			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY.
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN.
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY.
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50%			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OF SILTY SOILS, ELASTIC SILTS.
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS.
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS.
HIGHLY ORGANIC SOILS				Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS.

ATC ASSOCIATES INC.

BOREHOLE/WELL LOG LEGEND

COARSE-GRAINED SOILS
LESS THAN 50% FINES*

GROUP SYMBOLS	DESCRIPTION	MAJOR DIVISIONS
GW	WELL-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LESS THAN 5% FINES	GRAVELS More than half of coarse fraction is larger than No. 4 sieve size
GP	POORLY-GRADED GRAVELS OR GRAVEL-SAND MIXTURES LESS THAN 5% FINES	
GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES, MORE THAN 15% FINES	
GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES, MORE THAN 15% FINES	
SW	WELL-GRADED SANDS OR GRAVELLY SANDS, LESS THAN 5% FINES	SANDS More than half of coarse fraction is smaller than No. 4 sieve size
SP	POORLY-GRADED SANDS OR GRAVELLY SANDS, LESS THAN 5% FINES	
SM	SILTY SANDS, SAND-SILT MIXTURES, MORE THAN 15% FINES	
SC	CLAYEY SANDS, SAND-CLAY MIXTURES, MORE THAN 15% FINES	

NOTE: Coarse-grained soils receive dual symbols if they contain 5 to 15% fines (e.g. SW-SM, GP-GC, etc.) (ASTM Standard D 2488-90)

FINE-GRAINED SOILS
MORE THAN 50% FINES

GROUP SYMBOLS	DESCRIPTION	MAJOR DIVISIONS
ML	INORGANIC SILTS, VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS	SILTS AND CLAYS Liquid limits less than 50
CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY; CAN BE GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
OL	ORGANIC SILTS OR ORGANIC SILT-CLAY MIXTURES OF LOW PLASTICITY	
MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDS OR SILTS, ELASTIC SILTS	SILTS AND CLAYS Liquid limit more than 50
CH	INORGANIC CLAYS OF HIGH PLASTICITY; CAN BE GRAVELLY CLAYS, SANDY CLAYS, FAT CLAYS	
OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY	
PT	PEAT, MUCK, AND OTHER HIGHLY ORGANIC SOILS	HIGHLY ORGANIC SOILS

NOTE: Fine-grained soils may receive dual classification based upon plasticity characteristics

SOIL SIZES

COMPONENT	SIZE RANGE
BOULDERS	12 in.
COBBLES	3 in. to 12 in.
GRAVEL	No. 4 to 3 in.
Coarse	3/4 in. to 3 in.
Fine	No. 4 to 3/4 in.
SAND	No. 200 to No. 4
Coarse	No. 10 to No. 4
Medium	No. 40 to No. 10
Fine	No. 200 to No.40
*Fines (Silt or Clay)	No. 200

NOTE: Only sizes smaller than 3 inches are used to classify soils

PLASTICITY OF FINE-GRAINED SOILS

TERMS	DEFINITIONS
Non-Plastic	1/8-inch (3-mm) thread can not be rolled
Low	Thread can be rolled once with difficulty
Medium	Thread can be rolled once or twice
High	Thread easy to roll and reknead repeatedly

DILATANCY

DILATANCY	CRITERIA
None	No visible change
Slow	Water appears slowly on surface during shaking; disappears slowly upon squeezing
Rapid	Water appears quickly during shaking; disappears quickly upon squeezing

CONSISTENCY

CLAYS & SILTS	BLOWS/FOOT*
VERY SOFT	0-2
SOFT	2-4
FIRM	4-8
STIFF	8-15
VERY STIFF	16-32
HARD	Over 32

RELATIVE DENSITY

SANDS & GRAVELS	BLOWS/FOOT*
VERY LOOSE	0-4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	Over 50

*Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1 3/8-inch ID) split-spoon sampler (ASTM Standard D 1586-84)

MOISTURE CONDITION

DRY	No moisture present, dry to touch
SLIGHTLY DAMP	No discemable moisture
DAMP	Sufficient moisture present to darken the appearance but not adhere to the hand
MOIST	Adheres to and moistens the hand
VERY MOIST	Wets the hand but can not be squeezed out
WET	Visible free water is present

Method of Soil Classification	Plate: C-2
ATC Associates Inc.	

PROJECT: DEL RAYO VILLAGE CENTER
LOCATION: SB1
BORING DATE: 08-20-04

SOIL BORING / WELL LOG

DRILLER H&P MOBILE GEOCHEMISTRY

DATUM: GROUND SURFACE

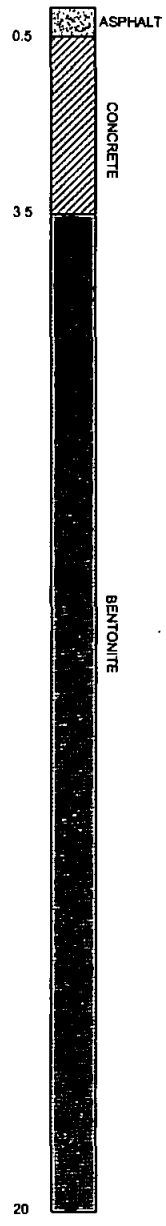
DIP: VERTICAL

LOGGED: SCOTT LEVIN

43.27517.0002 / 2006

VATC ASSOCIATES INC.

DEPTH SCALE (FEET)	DIRECT-PUSH	SOIL PROFILE: DESCRIPTION	STRATA PLOT	DEPTH	SAMPLE: ID	SOIL TYPE	BLOWS / FOOT	CONCENTRATION: OVA (PPM) / VOCs (ug/kg)
0		ASPHALT SURFACE						
1								
2		SANDY CLAY (CL), BROWN (10YR 4/3), MEDIUM PLASTIC CLAY, FINE TO MEDIUM GRAINED SAND, MOIST, NO ODOR OR STAIN.			SB1-/2'	CL	NA	1.2 / NA
3								
4		BECOMES GRAYISH BROWN, MOIST, NO HC ODOR.						
5		CLAYEY SAND(SC), GRAYISH BROWN (10YR 5/2), FINE GRAINED SAND, LOW TO MEDIUM PLASTICITY CLAY, MOIST, NO ODOR OR STAIN.						
6		SANDY CLAY (CL), BROWN (10YR 5/3) TO GRAYISH BROWN (10YR 5/2), MEDIUM PLASTIC CLAY, FINE GRAINED SAND, MOIST TO DRY, NO ODOR OR STAIN.						
7								
8		CLAYEY SAND(SC), YELLOWISH BROWN (10YR 5/4) TO BROWN (10YR 4/3), FINE GRAINED SAND, LOW TO MEDIUM PLASTICITY CLAY, DRY, NO ODOR OR STAIN.			SB1-8'	SC	NA	1.2 / NA
9								
10		BECOMES BROWN (10YR 5/3), SOME SILT, MEDIUM TO COARSE GRAINED SAND, LOW PLASTICITY CLAY, SAND, DRY, NO ODOR OR STAIN.						
11								
12		SANDY CLAY (CL), DARK BROWN (10YR 3/3), MEDIUM TO HIGH PLASTIC CLAY, FINE TO MEDIUM GRAINED SAND, TRACE SILT, SLIGHT MOIST, NO ODOR OR STAIN.						
13								
14		CLAY (CL), BROWN (10YR 4/3), MEDIUM TO HIGH PLASTIC CLAY, FINE TO MEDIUM GRAINED SAND, TRACE SILT, MOIST, NO ODOR OR STAIN.						
15				▽				
16		POORLY GRADED SAND(SP), YELLOWISH BROWN (10YR 5/4), FINE GRAINED SAND, TRACE FINES, MOIST, NO ODOR OR STAIN.			SB1-16'	CL	NA	0.8 / NA
17		CLAYEY SAND(SC) WITH SILT, BROWN (10YR 4/3), FINE TO MEDIUM GRAINED SAND, MEDIUM PLASTICITY CLAY, SILT, VERY MOIST, NO ODOR OR STAIN.						
18								
19				▼				
20		TOTAL DRILLING DEPTH = 20 FEET BGS.			SB1-20'	SC	NA	1.3 / <2.0
21		BOREHOLE BACKFILLED WITH BENTONITE GROUT AND CAPPED WITH CONCRETE AND ASPHALT.						
22								
23								
24								
25								



PROJECT: DEL RAYO VILLAGE CENTER
LOCATION: SB2
BORING DATE: 08-20-04

SOIL BORING / WELL LOG

DRILLER H&P MOBILE GEOCHEMISTRY

DATUM: GROUND SURFACE

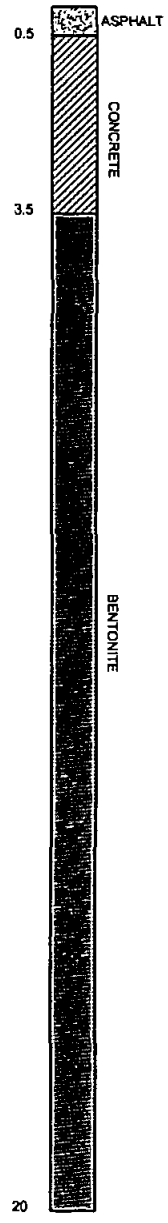
DIP: VERTICAL

LOGGED: SCOTT LEVIN

43.27517.0002 / 2006

VATC ASSOCIATES INC.

DEPTH SCALE FEET	DIRECT-PUSH	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH	SAMPLE ID	SOIL TYPE	BLOWS / FOOT	CONCENTRATION OVA (PPM) / VOCs (ug/kg)
0		ASPHALT SURFACE						
1								
2		SANDY CLAY (CL), BROWN (10YR 4/3), MEDIUM PLASTIC CLAY, FINE TO MEDIUM GRAINED SAND, MOIST, NO ODOR OR STAIN.						
3								
4		BECOMES LIGHT GRAY (10YR 7/1) TO GRAYISH BROWN (10YR 5/2), LESS SAND, SLIGHTLY MOIST, NO ODOR OR STAIN.			SB2-4'	CL	NA	1.9 / NA
5		CLAYEY SAND(SC), GRAYISH BROWN (10YR 5/2), FINE GRAINED SAND, LOW TO MEDIUM PLASTICITY CLAY, MOIST, NO ODOR OR STAIN.						
6		SANDY CLAY (CL), GRAYISH BROWN (10YR 5/2), MEDIUM PLASTIC CLAY, FINE GRAINED SAND, MOIST, NO ODOR OR STAIN.						
7								
8		CLAYEY SAND(SC), YELLOWISH BROWN (10YR 5/4) TO BROWN (10YR 4/3), FINE GRAINED SAND, LOW TO MEDIUM PLASTICITY CLAY, DRY, NO ODOR OR STAIN.			SB2-8'	SC	NA	2.1 / NA
9								
10		BECOMES DARK BROWN (10YR 3/3), SOME SILT, MEDIUM TO COARSE GRAINED SAND WITH SILT, LOW PLASTICITY CLAY, SILT, DRY, NO ODOR OR STAIN.						
11								
12					SB2-12'	SC	NA	2.1 / NA
13		SANDY CLAY (CL), DARK BROWN (10YR 3/3), MEDIUM TO HIGH PLASTIC CLAY, FINE TO MEDIUM GRAINED SAND, TRACE SILT, DRY, NO ODOR OR STAIN.		▽				
14								
15								
16		POORLY GRADED SAND(SP), YELLOWISH BROWN (10YR 5/4), FINE GRAINED SAND, TRACE FINES, DRY, NO ODOR OR STAIN.			SB2-16'	SP	NA	0.8 / NA
17								
18		CLAYEY SAND(SC) WITH SILT, BROWN (10YR 4/3), FINE TO MEDIUM GRAINED SAND, LOW TO MEDIUM PLASTICITY CLAY, SILT, VERY MOIST, NO ODOR OR STAIN.						
19				▼				
20		TOTAL DRILLING DEPTH = 20 FEET BGS.			SB2-20'	SC	NA	2.8 / 34 (PCE) 35 (TCE)
21		BOREHOLE BACKFILLED WITH BENTONITE GROUT AND CAPPED WITH CONCRETE AND ASPHALT.						
22								
23								
24								
25								



PROJECT: DEL RAYO VILLAGE CENTER
LOCATION: SB3
BORING DATE: 08-20-04

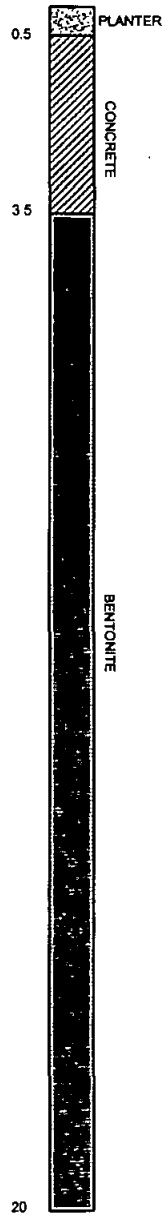
SOIL BORING / WELL LOG

DRILLER H&P MOBILE GEOCHEMISTRY
DATUM: GROUND SURFACE
DIP: VERTICAL
LOGGED: SCOTT LEVIN

43.27517.0002 / 2006

VATC ASSOCIATES INC.

DEPTH SCALE FEET	DIRECT-PUSH	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH	SAMPLE ID	SOIL TYPE	BLOWS / FOOT	CONCENTRATION OVA (PPM) / VOCs (ug/kg)
0		PLANTER						
1								
2		SANDY CLAY (CL), BROWN (10YR 4/3), MEDIUM PLASTIC CLAY, FINE TO MEDIUM GRAINED SAND, MOIST, NO ODOR OR STAIN.			SB3-2'	CL	NA	1.0 / NA
3								
4		BECOMES LIGHT GRAY (10YR 7/1) TO GRAYISH BROWN (10YR 5/2), MOIST, NO ODOR OR STAIN.						
5		CLAYEY SAND(SC), GRAYISH BROWN (10YR 5/3), FINE GRAINED SAND, LOW TO MEDIUM PLASTICITY CLAY, MOIST, NO ODOR OR STAIN.						
6								
7		SANDY CLAY (CL), GRAYISH BROWN (10YR 5/3), MEDIUM PLASTIC CLAY, FINE GRAINED SAND, MOIST TO DRY, NO ODOR OR STAIN.						
8					SB3-8'	SC	NA	1.1 / NA
9		CLAYEY SAND(SC), YELLOWISH BROWN (10YR 5/4) TO BROWN (10YR 4/3), FINE GRAINED SAND, LOW TO MEDIUM PLASTICITY CLAY, DRY, NO ODOR OR STAIN.						
10		BECOMES BROWN (10YR 4/3), SOME SILT, MEDIUM TO COARSE GRAINED SAND, LOW PLASTICITY CLAY, SAND, DRY, NO ODOR OR STAIN.						
11								
12		SANDY CLAY (CL), DARK BROWN (10YR 3/3), MEDIUM TO HIGH PLASTIC CLAY, FINE TO MEDIUM GRAINED SAND, TRACE SILT, SLIGHT MOIST, NO ODOR OR STAIN.						
13								
14		CLAY (CL), BROWN (10YR 3/3), MEDIUM TO HIGH PLASTIC CLAY, FINE TO MEDIUM GRAINED SAND, TRACE SILT, MOIST, NO ODOR OR STAIN.		▽				
15								
16					SB3-16'	CL	NA	1.0 / NA
17		SANDY CLAY (CL), BROWN (10Y 4/3), MEDIUM PLASTICITY CLAY, FINE TO MEDIUM GRAINED SAND, SILT, VERY MOIST, NO ODOR OR STAIN.						
18								
19				▼				
20		TOTAL DRILLING DEPTH = 20 FEET BGS.			SB3-20'	CL	NA	1.7 / <2.0
21		BOREHOLE BACKFILLED WITH BENTONITE GROUT AND CAPPED WITH CONCRETE AND ASPHALT.						
22								
23								
24								
25								



PROJECT: DEL RAYO VILLAGE CENTER
LOCATION: SB4
BORING DATE: 08-20-04

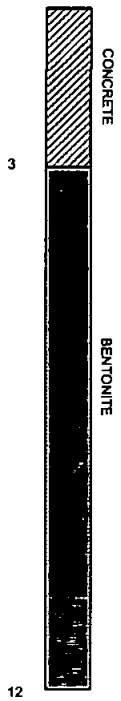
SOIL BORING / WELL LOG

DRILLER H&P MOBILE GEOCHEMISTRY
DATUM: GROUND SURFACE
DIP: VERTICAL
LOGGED: SCOTT LEVIN

43.27517.0002 / 2006

ATC ASSOCIATES INC.

DEPTH SCALE (FEET)	LAR DIRECT-PUSH	SOIL PROFILE: DESCRIPTION	STRATA PLOT	DEPTH	SAMPLE: ID	SOIL TYPE	BLOWS / FOOT	CONCENTRATION: OVA (PPM) / VOCs (ug/kg)
0		CONCRETE						
1								
2								
3								
4		SANDY CLAY (CL), GRAYISH BROWN (10YR 5/2), LOW TO MEDIUM PLASTIC CLAY, FINE GRAINED SAND, SLIGHTLY MOIST, NO ODOR OR STAIN.			SB4-4'	CL	NA	1.6 / 7.2 (PCE) <2.0 (TCE)
5								
6								
7								
8		CLAYEY SAND(SC), GRAYISH BROWN (10YR 5/4) TO YELLOWISH BROWN (10YR 5/2), VERY FINE GRAINED SAND, LOW PLASTICITY CLAY, DRY, NO ODOR OR STAIN.			SB4-8'	CL	NA	0.9 / NA
9								
10								
11		SANDY CLAY (CL), DARK BROWN (10YR 3/3), MEDIUM PLASTIC CLAY, FINE GRAINED SAND, DRY, NO ODOR OR STAIN.						
12		TOTAL DRILLING DEPTH = 12 FEET BGS.			SB4-12'	CL	NA	0.8 / NA
13		GROUNDWATER NOT ENCOUNTERED						
14		BOREHOLE BACKFILLED WITH BENTONITE GROUT AND CAPPED WITH CONCRETE						
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								



PROJECT: DEL RAYO VILLAGE CENTER
LOCATION: SB5
BORING DATE: 08-20-04

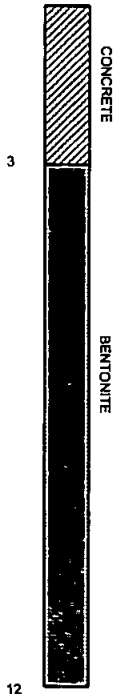
SOIL BORING / WELL LOG

DRILLER H&P MOBILE GEOCHEMISTRY
DATUM: GROUND SURFACE
DIP: VERTICAL
LOGGED: SCOTT LEVIN

43.27517.0002 / 2006

ATC ASSOCIATES INC

DEPTH SCALE FEET	LAR DIRECT-PUSH	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH	SAMPLE ID	SOIL TYPE	BLOWS / FOOT	CONCENTRATION OVA (PPM) / VOCs (ug/kg)
0		CONCRETE						
1								
2								
3		SANDY CLAY (CL), GRAYISH BROWN (10YR 5/2), LOW TO MEDIUM PLASTIC CLAY, FINE GRAINED SAND, SLIGHTLY MOIST, NO ODOR OR STAIN.						
4					SB5-4'	CL	NA	1.0 / <2.0
5								
6								
7								
8		CLAYEY SAND(SC), GRAYISH BROWN (10YR 5/2) TO YELLOWISH BROWN (10YR 5/4), VERY FINE GRAINED SAND, LOW PLASTICITY CLAY, DRY, NO ODOR OR STAIN.			SB5-8'	SC	NA	0.6 / NA
9								
10								
11		SANDY CLAY (CL), DARK BROWN (10YR 3/3), MEDIUM PLASTIC CLAY, FINE GRAINED SAND, DRY, NO ODOR OR STAIN.						
12					SB5-12'	CL	NA	0.9 / NA
13		TOTAL DRILLING DEPTH = 12 FEET BGS. GROUNDWATER NOT ENCOUNTERED						
14		BOREHOLE BACKFILLED WITH BENTONITE GROUT AND CAPPED WITH CONCRETE						
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								



24 September 2004

Scott Levin
ATC Associates, San Diego
9620 Chesapeake Dr #203
San Diego, CA 92123
RE: Del Rayo Village Center

Enclosed are the results of analyses for samples received by the laboratory on 08/23/04 11:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ben Beauchaine
Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB2-20'	T400931-01	Soil	08/20/04 10:15	08/23/04 11:40
SB2	T400931-02	Water	08/20/04 10:20	08/23/04 11:40
SB1-20'	T400931-03	Soil	08/20/04 10:55	08/23/04 11:40
SB1	T400931-04	Water	08/20/04 11:00	08/23/04 11:40
SB3-20'	T400931-05	Soil	08/20/04 11:55	08/23/04 11:40
SB3	T400931-06	Water	08/20/04 12:00	08/23/04 11:40
SB4-4'	T400931-07	Soil	08/20/04 14:00	08/23/04 11:40
SB5-4'	T400931-10	Soil	08/20/04 14:40	08/23/04 11:40
SB4	T400931-12	Air	08/20/04 15:30	08/23/04 11:40
SB5	T400931-13	Air	08/20/04 15:35	08/23/04 11:40

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego 9620 Chesapeake Dr #203 San Diego CA, 92123	Project: Del Rayo Village Center Project Number: 43.27517.0002 Project Manager: Scott Levin	**Reported:** 09/24/04 09:23

SB2-20'
T400931-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Halogenated Volatile Compounds (8010 List) by EPA 8260									
Bromodichloromethane	ND	2.0	ug/kg	1	4082405	08/24/04	08/26/04	EPA 8260B	
Bromomethane	ND	2.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.0	"	"	"	"	"	"	
Chlorobenzene	ND	2.0	"	"	"	"	"	"	
Chloroethane	ND	2.0	"	"	"	"	"	"	
Chloroform	ND	2.0	"	"	"	"	"	"	
Chloromethane	ND	2.0	"	"	"	"	"	"	
Dibromochloromethane	ND	2.0	"	"	"	"	"	"	
Dibromomethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
Methylene chloride	ND	2.0	"	"	"	"	"	"	
Styrene	ND	2.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.0	"	"	"	"	"	"	
Tetrachloroethene	**34**	2.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.0	"	"	"	"	"	"	
Trichloroethene	**35**	2.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		*100 %*	*81-117*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.6 %*	*74-121*		"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*	*80-120*		"	"	"	"	

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

SB2
T400931-02 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Halogenated Volatile Compounds (8010 List) by EPA 8260									
Bromodichloromethane	ND	1.0	ug/l	1	4082406	08/24/04	08/26/04	EPA 8260B	
Bromomethane	ND	1.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
Chloromethane	ND	1.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
Dibromomethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	1.0	"	"	"	"	"	"	
Styrene	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethene	**1.6**	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethene	**5.4**	1.0	"	"	"	"	"	"	
Vinyl chloride	ND	0.50	"	"	"	"	"	"	
Surrogate: Toluene-d8		*104 %*	*86-115*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.2 %*	*86-115*		"	"	"	"	
Surrogate: Dibromofluoromethane		*105 %*	*86-118*		"	"	"	"	

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

SB1-20'
T400931-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Halogenated Volatile Compounds (8010 List) by EPA 8260									
Bromodichloromethane	ND	2.0	ug/kg	1	4082405	08/24/04	08/26/04	EPA 8260B	
Bromomethane	ND	2.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.0	"	"	"	"	"	"	
Chlorobenzene	ND	2.0	"	"	"	"	"	"	
Chloroethane	ND	2.0	"	"	"	"	"	"	
Chloroform	ND	2.0	"	"	"	"	"	"	
Chloromethane	ND	2.0	"	"	"	"	"	"	
Dibromochloromethane	ND	2.0	"	"	"	"	"	"	
Dibromomethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
Methylene chloride	ND	2.0	"	"	"	"	"	"	
Styrene	ND	2.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.0	"	"	"	"	"	"	
Tetrachloroethene	ND	2.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.0	"	"	"	"	"	"	
Trichloroethene	ND	2.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		*99.6 %*	*81-117*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.6 %*	*74-121*		"	"	"	"	
Surrogate: Dibromofluoromethane		*105 %*	*80-120*		"	"	"	"	

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego 9620 Chesapeake Dr #203 San Diego CA, 92123	Project: Del Rayo Village Center Project Number: 43.27517.0002 Project Manager: Scott Levin	**Reported:** 09/24/04 09:23

SB1
T400931-04 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			SunStar Laboratories, Inc.						
Halogenated Volatile Compounds (8010 List) by EPA 8260									
Bromodichloromethane	ND	1.0	ug/l	1	4082406	08/24/04	08/26/04	EPA 8260B	
Bromomethane	ND	1.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
Chloromethane	ND	1.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
Dibromomethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethane	**2.4**	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	**2.4**	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**11**	1.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	**2.4**	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	1.0	"	"	"	"	"	"	
Styrene	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethene	**33**	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethene	**140**	1.0	"	"	"	"	"	"	
Vinyl chloride	**1.2**	0.50	"	"	"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*86-115*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.2 %*	*86-115*		"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*	*86-118*		"	"	"	"	

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

SB3-20'
T400931-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Halogenated Volatile Compounds (8010 List) by EPA 8260									
Bromodichloromethane	ND	2.0	ug/kg	1	4082405	08/24/04	08/26/04	EPA 8260B	
Bromomethane	ND	2.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.0	"	"	"	"	"	"	
Chlorobenzene	ND	2.0	"	"	"	"	"	"	
Chloroethane	ND	2.0	"	"	"	"	"	"	
Chloroform	ND	2.0	"	"	"	"	"	"	
Chloromethane	ND	2.0	"	"	"	"	"	"	
Dibromochloromethane	ND	2.0	"	"	"	"	"	"	
Dibromomethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
Methylene chloride	ND	2.0	"	"	"	"	"	"	
Styrene	ND	2.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.0	"	"	"	"	"	"	
Tetrachloroethene	ND	2.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.0	"	"	"	"	"	"	
Trichloroethene	ND	2.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*81-117*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.0 %*	*74-121*		"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*	*80-120*		"	"	"	"	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

SB3
T400931-06 (Water)

SunStar Laboratories, Inc.

Halogenated Volatile Compounds (8010 List) by EPA 8260

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromodichloromethane	ND	1.0	ug/l	1	4082406	08/24/04	08/26/04	EPA 8260B	
Bromomethane	ND	1.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
Chloromethane	ND	1.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
Dibromomethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	1.0	"	"	"	"	"	"	
Styrene	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Vinyl chloride	ND	0.50	"	"	"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*86-115*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.8 %*	*86-115*		"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*	*86-118*		"	"	"	"	

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

SB4-4'
T400931-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		SunStar Laboratories, Inc.							
Perchlorate by LC/MS									
Perchlorate	ND	2.0	ug/kg	1	4091408	09/14/04	09/16/04	EPA 8321	
Halogenated Volatile Compounds (8010 List) by EPA 8260									
Bromodichloromethane	ND	2.0	ug/kg	1	4082405	08/24/04	08/26/04	EPA 8260B	
Bromomethane	ND	2.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.0	"	"	"	"	"	"	
Chlorobenzene	**4.2**	2.0	"	"	"	"	"	"	
Chloroethane	ND	2.0	"	"	"	"	"	"	
Chloroform	ND	2.0	"	"	"	"	"	"	
Chloromethane	ND	2.0	"	"	"	"	"	"	
Dibromochloromethane	ND	2.0	"	"	"	"	"	"	
Dibromomethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
Methylene chloride	ND	2.0	"	"	"	"	"	"	
Styrene	ND	2.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.0	"	"	"	"	"	"	
Tetrachloroethene	**7.2**	2.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.0	"	"	"	"	"	"	
Trichloroethene	ND	2.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*81-117*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.8 %*	*74-121*		"	"	"	"	
Surrogate: Dibromofluoromethane		*109 %*	*80-120*		"	"	"	"	

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego 9620 Chesapeake Dr #203 San Diego CA, 92123	Project: Del Rayo Village Center Project Number: 43.27517.0002 Project Manager: Scott Levin	**Reported:** 09/24/04 09:23

SB5-4'
T400931-10 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			SunStar Laboratories, Inc.						
Perchlorate by LC/MS									
Perchlorate	ND	2.0	ug/kg	1	4091408	09/14/04	09/16/04	EPA 8321	
Halogenated Volatile Compounds (8010 List) by EPA 8260									
Bromodichloromethane	ND	2.0	ug/kg	1	4082405	08/24/04	08/26/04	EPA 8260B	
Bromomethane	ND	2.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.0	"	"	"	"	"	"	
Chlorobenzene	ND	2.0	"	"	"	"	"	"	
Chloroethane	ND	2.0	"	"	"	"	"	"	
Chloroform	ND	2.0	"	"	"	"	"	"	
Chloromethane	ND	2.0	"	"	"	"	"	"	
Dibromochloromethane	ND	2.0	"	"	"	"	"	"	
Dibromomethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
Methylene chloride	ND	2.0	"	"	"	"	"	"	
Styrene	ND	2.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.0	"	"	"	"	"	"	
Tetrachloroethene	ND	2.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.0	"	"	"	"	"	"	
Trichloroethene	ND	2.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		*98.5 %*	*81-117*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*94.0 %*	*74-121*		"	"	"	"	
Surrogate: Dibromofluoromethane		*107 %*	*80-120*		"	"	"	"	

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego 9620 Chesapeake Dr #203 San Diego CA, 92123	Project: Del Rayo Village Center Project Number: 43.27517.0002 Project Manager: Scott Levin	**Reported:** 09/24/04 09:23

SB4
T400931-12 (Air)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		SunStar Rocky Mountain							
Volatile Organic Compounds by TO-15									**H-1**
1,1,1-Trichloroethane	**15.8**	1.00	ppbv	1	RH42703	08/27/04	08/31/04	TO-15	
1,1,2 trichlorotrifluorothane	ND	1.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethane	**6.90**	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	**14.3**	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,3-butadiene	ND	2.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dioxane	ND	1.00	"	"	"	"	"	"	
2,2,4-Trimethylpentane	ND	1.00	"	"	"	"	"	"	
2-Butanone	ND	1.00	"	"	"	"	"	"	
4-ethyltoluene	ND	1.00	"	"	"	"	"	"	
Acetone	ND	1.00	"	"	"	"	"	"	
Acrylonitrile	ND	1.00	"	"	"	"	"	"	
Allyl chloride	ND	2.00	"	"	"	"	"	"	
Benzene	ND	1.00	"	"	"	"	"	"	
Benzyl chloride	ND	1.00	"	"	"	"	"	"	
Bromodichloromethane	ND	1.00	"	"	"	"	"	"	
Bromoform	ND	1.00	"	"	"	"	"	"	
Bromomethane	ND	1.00	"	"	"	"	"	"	
Carbon disulfide	ND	1.00	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**23.8**	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
cyclohexane	ND	1.00	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

SB4
T400931-12 (Air)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		SunStar Rocky Mountain							
Volatile Organic Compounds by TO-15									**H-1**
Dibromochloromethane	ND	1.00	ppbv	1	RH42703	08/27/04	08/31/04	TO-15	
Dichlorodifluoromethane	ND	1.00	"	"	"	"	"	"	
Ethyl acetate	ND	1.00	"	"	"	"	"	"	
Ethylbenzene	ND	1.00	"	"	"	"	"	"	
Freon 113	**68.6**	1.00	"	"	"	"	"	"	
Freon 114	ND	1.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	5.00	"	"	"	"	"	"	
heptane	ND	1.00	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1.00	"	"	"	"	"	"	
hexane	ND	1.00	"	"	"	"	"	"	
Isopropyl alcohol	ND	1.00	"	"	"	"	"	"	
m,p-Xylene	**11.2**	2.00	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	1.00	"	"	"	"	"	"	
o-Xylene	**3.90**	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	**3190**	64.8	"	64.83	"	"	"	"	
Tetrahydrofuran	ND	1.00	"	1	"	"	"	"	
Toluene	**6.80**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**551**	64.8	"	64.83	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	1	"	"	"	"	
Vinyl acetate	ND	1.00	"	"	"	"	"	"	
vinyl bromide	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
Bromochloromethane	**20.0**		"	"	"	"	"	"	
1,4-Difluorobenzene	0.00		"	"	"	"	"	"	
Chlorobenzene-d5	0.00		"	"	"	"	"	"	
2-Hexanone	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*113 %*		*70-120*	"	"	"	"	

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

SB5
T400931-13 (Air)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			SunStar Rocky Mountain						
Volatile Organic Compounds by TO-15									**H-1**
1,1,1-Trichloroethane	ND	1.00	ppbv	1	RH42703	08/27/04	08/31/04	TO-15	
1,1,2 trichlorotrifluorothane	ND	1.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,3-butadiene	ND	2.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dioxane	ND	1.00	"	"	"	"	"	"	
2,2,4-Trimethylpentane	ND	1.00	"	"	"	"	"	"	
2-Butanone	ND	1.00	"	"	"	"	"	"	
4-ethyltoluene	ND	1.00	"	"	"	"	"	"	
Acetone	ND	1.00	"	"	"	"	"	"	
Acrylonitrile	ND	1.00	"	"	"	"	"	"	
Allyl chloride	ND	2.00	"	"	"	"	"	"	
Benzene	ND	1.00	"	"	"	"	"	"	
Benzyl chloride	ND	1.00	"	"	"	"	"	"	
Bromodichloromethane	ND	1.00	"	"	"	"	"	"	
Bromoform	ND	1.00	"	"	"	"	"	"	
Bromomethane	ND	1.00	"	"	"	"	"	"	
Carbon disulfide	ND	1.00	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
cyclohexane	ND	1.00	"	"	"	"	"	"	

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

SB5
T400931-13 (Air)

SunStar Rocky Mountain

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by TO-15									**H-1**
Dibromochloromethane	ND	1.00	ppbv	1	RH42703	08/27/04	08/31/04	TO-15	
Dichlorodifluoromethane	ND	1.00	"	"	"	"	"	"	
Ethyl acetate	ND	1.00	"	"	"	"	"	"	
Ethylbenzene	ND	1.00	"	"	"	"	"	"	
Freon 113	ND	1.00	"	"	"	"	"	"	
Freon 114	ND	1.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	5.00	"	"	"	"	"	"	
heptane	ND	1.00	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1.00	"	"	"	"	"	"	
hexane	ND	1.00	"	"	"	"	"	"	
Isopropyl alcohol	ND	1.00	"	"	"	"	"	"	
m,p-Xylene	ND	2.00	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	1.00	"	"	"	"	"	"	
o-Xylene	ND	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	**113**	1.00	"	"	"	"	"	"	
Tetrahydrofuran	ND	1.00	"	"	"	"	"	"	
Toluene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**6.20**	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
Vinyl acetate	ND	1.00	"	"	"	"	"	"	
vinyl bromide	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
Bromochloromethane	**20.0**		"	"	"	"	"	"	
1,4-Difluorobenzene	0.00		"	"	"	"	"	"	
Chlorobenzene-d5	0.00		"	"	"	"	"	"	
2-Hexanone	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*		*70-120*	"	"	"	"	

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

Perchlorate by LC/MS - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4091408 - General Preparation										
Blank (4091408-BLK1)				Prepared: 09/14/04 Analyzed: 09/16/04						
Perchlorate	ND	2.0	ug/kg							

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

Perchlorate by LC/MS - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4091408 - General Preparation										
LCS (4091408-BS1)				Prepared: 09/14/04 Analyzed: 09/16/04						
Perchlorate	43.8	2.0	ug/kg	50.0		87.6	75-125			

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego 9620 Chesapeake Dr #203 San Diego CA, 92123	Project: Del Rayo Village Center Project Number: 43.27517.0002 Project Manager: Scott Levin	**Reported:** 09/24/04 09:23

Perchlorate by LC/MS - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4091408 - General Preparation										
LCS Dup (4091408-BSD1)				Prepared: 09/14/04 Analyzed: 09/16/04						
Perchlorate	44.2	2.0	ug/kg	50.0		88.4	75-125	0.909	20	

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

Perchlorate by LC/MS - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Halogenated Volatile Compounds (8010 List) by EPA 8260 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4082405 - EPA 5030 Soil MS										
Blank (4082405-BLK1)				Prepared: 08/24/04 Analyzed: 08/26/04						
Bromodichloromethane	ND	2.0	ug/kg							
Bromomethane	ND	2.0	"							
Carbon tetrachloride	ND	2.0	"							
Chlorobenzene	ND	2.0	"							
Chloroethane	ND	2.0	"							
Chloroform	ND	2.0	"							
Chloromethane	ND	2.0	"							
Dibromochloromethane	ND	2.0	"							
Dibromomethane	ND	2.0	"							
1,2-Dichlorobenzene	ND	2.0	"							
1,3-Dichlorobenzene	ND	2.0	"							
1,4-Dichlorobenzene	ND	2.0	"							
1,1-Dichloroethane	ND	2.0	"							
1,2-Dichloroethane	ND	2.0	"							
1,1-Dichloroethene	ND	2.0	"							
cis-1,2-Dichloroethene	ND	2.0	"							
trans-1,2-Dichloroethene	ND	2.0	"							
1,2-Dichloropropane	ND	2.0	"							
cis-1,3-Dichloropropene	ND	2.0	"							
trans-1,3-Dichloropropene	ND	2.0	"							
Methylene chloride	ND	2.0	"							
Styrene	ND	2.0	"							
1,1,2,2-Tetrachloroethane	ND	2.0	"							
Tetrachloroethene	ND	2.0	"							
1,1,2-Trichloroethane	ND	2.0	"							
1,1,1-Trichloroethane	ND	2.0	"							
Trichloroethene	ND	2.0	"							
Vinyl chloride	ND	2.0	"							
Surrogate: Toluene-d8	*102*		"	*100*		*102*	*81-117*			
Surrogate: 4-Bromofluorobenzene	*96.4*		"	*100*		*96.4*	*74-121*			
Surrogate: Dibromofluoromethane	*104*		"	*100*		*104*	*80-120*			

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

Halogenated Volatile Compounds (8010 List) by EPA 8260 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4082405 - EPA 5030 Soil MS										
LCS (4082405-BS1)				Prepared: 08/24/04 Analyzed: 08/26/04						
Chlorobenzene	213	2.0	ug/kg	250		85.2	75-125			
1,1-Dichloroethene	202	2.0	"	250		80.8	15-125			
Trichloroethene	218	2.0	"	250		87.2	75-125			
Surrogate: Toluene-d8	*100*		"	*100*		*100*	*81-117*			
Surrogate: 4-Bromofluorobenzene	*92.8*		"	*100*		*92.8*	*74-121*			
Surrogate: Dibromofluoromethane	*105*		"	*100*		*105*	*80-120*			
Matrix Spike (4082405-MS1)		Source: T400931-01		Prepared: 08/24/04 Analyzed: 08/26/04						
Chlorobenzene	202	2.0	ug/kg	250	ND	80.8	75-125			
1,1-Dichloroethene	212	2.0	"	250	ND	84.8	75-125			
Trichloroethene	245	2.0	"	250	35	84.0	75-125			
Surrogate: Toluene-d8	*102*		"	*100*		*102*	*81-117*			
Surrogate: 4-Bromofluorobenzene	*93.3*		"	*100*		*93.3*	*74-121*			
Surrogate: Dibromofluoromethane	*106*		"	*100*		*106*	*80-120*			
Matrix Spike Dup (4082405-MSD1)		Source: T400931-01		Prepared: 08/24/04 Analyzed: 08/26/04						
Chlorobenzene	207	2.0	ug/kg	250	ND	82.8	75-125	2.44	20	
1,1-Dichloroethene	208	2.0	"	250	ND	83.2	75-125	1.90	20	
Trichloroethene	237	2.0	"	250	35	80.8	75-125	3.32	20	
Surrogate: Toluene-d8	*100*		"	*100*		*100*	*81-117*			
Surrogate: 4-Bromofluorobenzene	*97.0*		"	*100*		*97.0*	*74-121*			
Surrogate: Dibromofluoromethane	*104*		"	*100*		*104*	*80-120*			
Batch 4082406 - EPA 5030 Water MS										
Blank (4082406-BLK1)				Prepared: 08/24/04 Analyzed: 08/26/04						
Bromodichloromethane	ND	1.0	ug/l							
Bromomethane	ND	1.0	"							
Carbon tetrachloride	ND	0.50	"							
Chlorobenzene	ND	1.0	"							
Chloroethane	ND	1.0	"							
Chloroform	ND	1.0	"							
Chloromethane	ND	1.0	"							
Dibromochloromethane	ND	1.0	"							
Dibromomethane	ND	1.0	"							
1,2-Dichlorobenzene	ND	1.0	"							
1,3-Dichlorobenzene	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
1,1-Dichloroethane	ND	1.0	"							
1,2-Dichloroethane	ND	0.50	"							
1,1-Dichloroethene	ND	1.0	"							

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

Halogenated Volatile Compounds (8010 List) by EPA 8260 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4082406 - EPA 5030 Water MS										
Blank (4082406-BLK1)				Prepared: 08/24/04 Analyzed: 08/26/04						
cis-1,2-Dichloroethene	ND	1.0	ug/l							
trans-1,2-Dichloroethene	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
cis-1,3-Dichloropropene	ND	0.50	"							
trans-1,3-Dichloropropene	ND	0.50	"							
Methylene chloride	ND	1.0	"							
Styrene	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
Tetrachloroethene	ND	1.0	"							
1,1,2-Trichloroethane	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
Trichloroethene	ND	1.0	"							
Vinyl chloride	ND	0.50	"							
Surrogate: Toluene-d8	*41.2*		"	*40.0*		*103*	*86-115*			
Surrogate: 4-Bromofluorobenzene	*39.3*		"	*40.0*		*98.2*	*86-115*			
Surrogate: Dibromofluoromethane	*41.0*		"	*40.0*		*102*	*86-118*			
LCS (4082406-BS1)				Prepared: 08/24/04 Analyzed: 08/26/04						
Chlorobenzene	85.1	1.0	ug/l	100		85.1	75-125			
1,1-Dichloroethene	83.5	1.0	"	100		83.5	15-125			
Trichloroethene	87.8	1.0	"	100		87.8	75-125			
Surrogate: Toluene-d8	*40.2*		"	*40.0*		*100*	*86-115*			
Surrogate: 4-Bromofluorobenzene	*38.0*		"	*40.0*		*95.0*	*86-115*			
Surrogate: Dibromofluoromethane	*41.8*		"	*40.0*		*104*	*86-118*			
Matrix Spike (4082406-MS1)		**Source: T400931-02**		Prepared: 08/24/04 Analyzed: 08/26/04						
Chlorobenzene	88.4	1.0	ug/l	100	ND	88.4	75-125			
1,1-Dichloroethene	85.6	1.0	"	100	ND	85.6	75-125			
Trichloroethene	92.9	1.0	"	100	5.4	87.5	75-125			
Surrogate: Toluene-d8	*38.9*		"	*40.0*		*97.2*	*86-115*			
Surrogate: 4-Bromofluorobenzene	*37.2*		"	*40.0*		*93.0*	*86-115*			
Surrogate: Dibromofluoromethane	*41.4*		"	*40.0*		*104*	*86-118*			

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

Halogenated Volatile Compounds (8010 List) by EPA 8260 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4082406 - EPA 5030 Water MS										
Matrix Spike Dup (4082406-MSD1)		**Source: T400931-02**		Prepared: 08/24/04 Analyzed: 08/26/04						
Chlorobenzene	87.0	1.0	ug/l	100	ND	87.0	75-125	1.60	20	
1,1-Dichloroethene	82.7	1.0	"	100	ND	82.7	75-125	3.45	20	
Trichloroethene	92.4	1.0	"	100	5.4	87.0	75-125	0.540	20	
Surrogate: Toluene-d8	*40.5*		"	*40.0*		*101*	*86-115*			
Surrogate: 4-Bromofluorobenzene	*38.4*		"	*40.0*		*96.0*	*86-115*			
Surrogate: Dibromofluoromethane	*41.7*		"	*40.0*		*104*	*86-118*			

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

Volatile Organic Compounds by TO-15 - Quality Control

SunStar Rocky Mountain

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch RH42703 - * DEFAULT PREP *****										
Blank (RH42703-BLK1)				Prepared: 08/27/04 Analyzed: 08/31/04						**H-1**
1,1,1-Trichloroethane	ND	1.00	ppbv							
1,1,2 trichlorotrifluorothane	ND	1.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
1,1,2-Trichloroethane	ND	1.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
1,2,4-Trichlorobenzene	ND	1.00	"							
1,2,4-Trimethylbenzene	ND	1.00	"							
1,2-Dibromoethane (EDB)	ND	1.00	"							
1,2-Dichlorobenzene	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
1,3,5-Trimethylbenzene	ND	1.00	"							
1,3-butadiene	ND	2.00	"							
1,3-Dichlorobenzene	ND	1.00	"							
1,4-Dichlorobenzene	ND	1.00	"							
1,4-Dioxane	ND	1.00	"							
2,2,4-Trimethylpentane	ND	1.00	"							
2-Butanone	ND	1.00	"							
4-ethyltoluene	ND	1.00	"							
Acetone	ND	1.00	"							
Acrylonitrile	ND	1.00	"							
Allyl chloride	ND	2.00	"							
Benzene	ND	1.00	"							
Benzyl chloride	ND	1.00	"							
Bromodichloromethane	ND	1.00	"							
Bromoform	ND	1.00	"							
Bromomethane	ND	1.00	"							
Carbon disulfide	ND	1.00	"							
Carbon tetrachloride	ND	1.00	"							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloroform	ND	1.00	"							
Chloromethane	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
cis-1,3-Dichloropropene	ND	1.00	"							
cyclohexane	ND	1.00	"							
Dibromochloromethane	ND	1.00	"							
Dichlorodifluoromethane	ND	1.00	"							
Ethyl acetate	ND	1.00	"							
Ethylbenzene	ND	1.00	"							

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Del Rayo Village Center	
9620 Chesapeake Dr #203	Project Number: 43.27517.0002	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	09/24/04 09:23

Volatile Organic Compounds by TO-15 - Quality Control

SunStar Rocky Mountain

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch RH42703 - * DEFAULT PREP *****										
Blank (RH42703-BLK1)				Prepared: 08/27/04 Analyzed: 08/31/04						**H-1**
Freon 113	ND	1.00	ppbv							
Freon 114	ND	1.00	"							
Gasoline Range Hydrocarbons	ND	5.00	"							
heptane	ND	1.00	"							
Hexachlorobutadiene	ND	1.00	"							
hexane	ND	1.00	"							
Isopropyl alcohol	ND	1.00	"							
m,p-Xylene	ND	2.00	"							
Methyl isobutyl ketone	ND	1.00	"							
Methyl tert-butyl ether	ND	1.00	"							
Methylene chloride	ND	1.00	"							
o-Xylene	ND	1 00	"							
Styrene	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
Tetrahydrofuran	ND	1.00	"							
Toluene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
trans-1,3-Dichloropropene	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Trichlorofluoromethane	ND	1.00	"							
Vinyl acetate	ND	1.00	"							
vinyl bromide	ND	1.00	"							
Vinyl chloride	ND	1.00	"							
Bromochloromethane	20.0		"				0-200			
1,4-Difluorobenzene	0.00		"				50-200			
Chlorobenzene-d5	0.00		"				50-200			
2-Hexanone	ND	1.00	"							
Surrogate: 4-Bromofluorobenzene	*19.2*		"	*20.0*		*96.0*	*70-120*			

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

Notes and Definitions

H-1	Results reported as ppb\V Hexane
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

SunStar Laboratories, Inc.
326 Encinitas Blvd, Ste. 150
Encinitas, CA 92024
1-800-900-9333

Chain of Custody Record

Client: ATC Associates Inc.
Address: 9620 Chesapeake Dr. Suite 203, SD CA 92123
Phone: 858/569-0692 Fax: 858/569-0695
Project Manager: Scott Levin

Date: 8-20-2004 Page: 1 Of
Project Name: Del Rayo Village Center
Collector: Scott Levin Client Project #: 43.27512.0002
Batch #: T400931 Proposal #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	EPA ~~8010~~ 8021 VOCs	EPA 8020	EPA 8260	EPA 8270	EPA 418.1	EPA 8015M (gasoline)	EPA 8015M (diesel)	EPA 6010/7000 RCRA (8) Metals	EPA 6010/7000 Title 22 Metals	8010 LIST			Laboratory ID #	Preservative	Comments	Total # of containers
SB2-20'	08-20-2004	1015	SOIL	SLEEVE										X			01			1
SB2		1020	AQ	4x40mL										X			02			4
SB1-20'		1055	SOIL	SLEEVE										X			03			1
SB1		1100	AQ	40mL										X			04			4
SB3-20'		1155	SOIL	SLEEVE										X			05			1
SB3		1200	AQ	40mL										X			06			4
SB4-4'		1400	SOIL	SLEEVE										X			07			1
SB4-8'		1410	↓	↓			H	O	L	D							08		HOLD	1
SB4-12'		1425					H	O	L	D							09			1
SB5-4'		1440												X			10			1
SB5-12'		1500	↓	↓			H	O	L	D							11		HOLD	1
SB4		1530	Vapor	SS canister										X			12			1
SB5		1535	Vapor	SS canister										X			13			1

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
[signature]		[signature]	8/23/04 11:40
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers	22
Chain of Custody seals Y/N/NA	[illegible]
Seals intact? Y/N/NA	[illegible]
Received good condition/cold	[illegible]

Turn around time: STD

Notes
*NEED VAPOR TSL CANISTER RETURNED ASAP to ATC...

ATC CUSTOM PRICE

Sample disposal Instructions: Disposal @ $2.00 each ____ Return to client ____ Pickup ____

BRYANT GEOENVIRONMENTAL INC.

562 Kristen Court
Encinitas, California 92024
Telephone: 760.942.4455 Fax: 760.942.4485
Web: www.geoh2o.com
E-mail: mark@geoh2o.com

RECEIVED
JAN 02 2008
ENVIRONMENTAL HEALTH

RECEIVED
DEC 12 2007
ENVIRONMENTAL HEALTH

December 10, 2007

Ms. Marisue Crystal
Environmental Health Technician
Monitoring Well Program
Site Assessment and Mitigation Division
Department of Environmental Health
P.O. Box 129261
San Diego, CA 92112-9261

RE: DIRECT-PUSH BORINGS COMPLETED
PERMIT INFORMATION
FAIRBANKS CLEANERS
DEL RAYO VILLAGE
16087 SAN DIEGUITO ROAD, SUITE D1
RANCHO SANTA FE, CALIFORNIA 92067
APN 302-301-10
BGI PROJECT NO. 06-1880A
PERMIT NO. LMON104140
DEH ESTAB. NO. H33970-001

Dear Marisue:

Bryant GeoEnvironmental Inc. (BGI) is pleased to submit applicable information related to 12 Strataprobe (direct-push) borings inside the subject facility and in the parking lot near the subject dry cleaners. Attached for your records is a detailed site plan showing the boring locations and other site features, and the boring logs showing the required information. These borings were advanced/sampled by H&P Mobile Geochemistry under my direct supervision on the date shown on the logs. Two of the original 14 borings were advanced to only 10 feet instead of the planned 20 feet. The other borings were advanced to depths of about 20 feet each.

In addition, as shown on the attached logs, approximately 1.7 cubic feet of bentonite pellets were used to backfill the boreholes (20-foot deep borings). The bentonite was hydrated with water to create a good seal. The upper approximately four inches of each borehole was backfilled with asphalt cold patch flush to the surface. As shown on the boring logs, groundwater was initially encountered at depths of about 18 feet below grade, which later rose to depths of about 15 feet below grade.

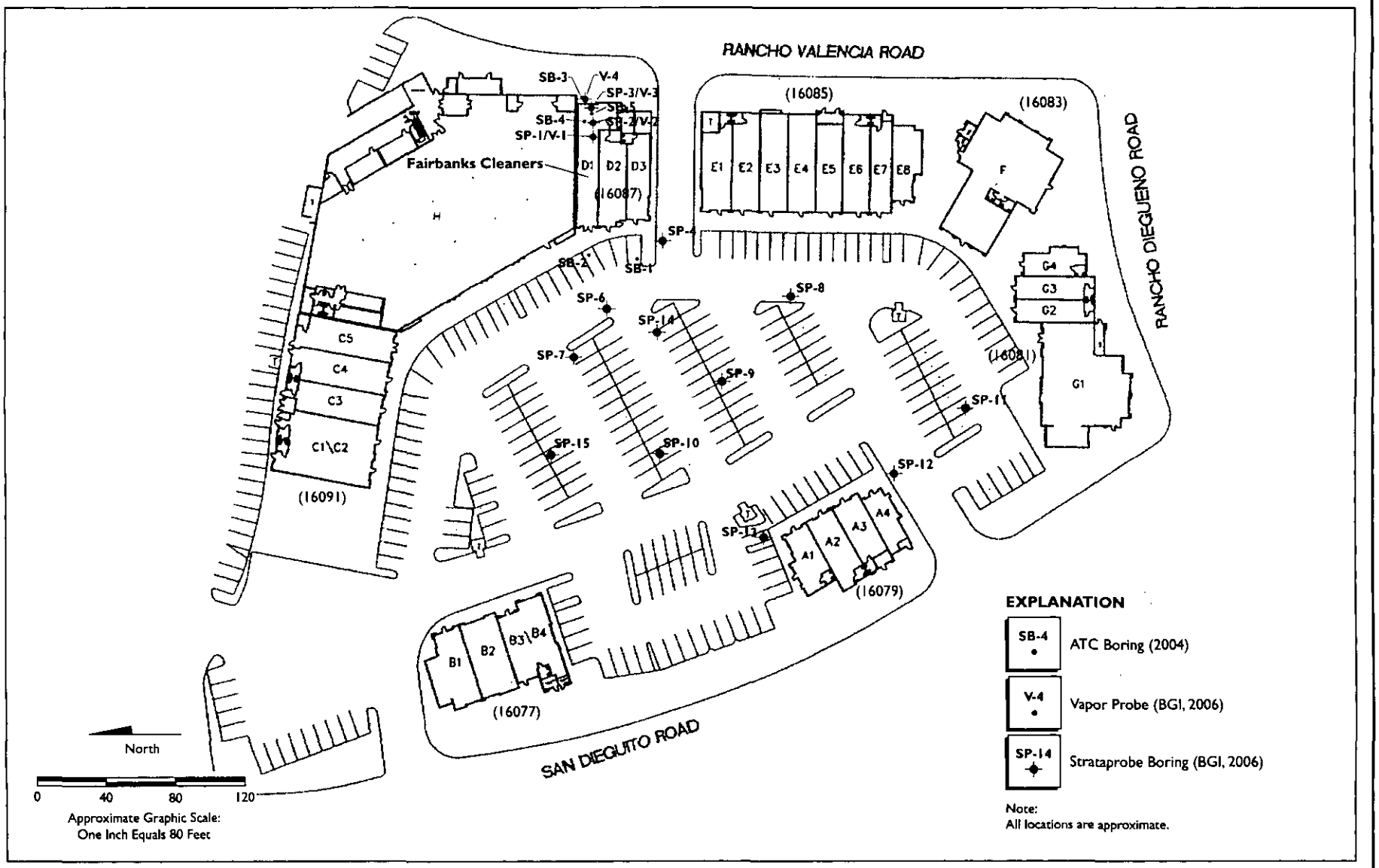
There were no drill cuttings generated with the direct-push borings. If you have any questions, or need further information, do not hesitate to call me at (760) 942-4455.

Respectfully submitted,

BRYANT GEOENVIRONMENTAL INC.

Mark E. Bryant
Principal
PG 3569, CEG 1046,
CHG 501, REA II 20079

MEB:meb
Dist: 1/Addressee
Attachments: Appendices A and B



BRYANT GEOENVIRONMENTAL INC.

Geoscience Services • Project Management • Environmental Assessment

Project Name: Del Rayo Village/Fairbanks Ranch

Project No.: 06-1880A | Date: July 31, 2006

BORING LOCATION MAP
FAIRBANKS RANCH

Figure 2

BRYANT GEOENVIRONMENTAL INC.
Geoscience Services • Project Management • Environmental Assessment

BORING/WELL COMPLETION LOG
Identification: SP-1

Client: Del Rayo Village	Date: July 31, 2006
Project Name: Del Rayo/Fairbanks	Location: Inside Dry Cleaners
Project Number: 06-1880A	Logged By: Mark E. Bryant
Drilled By: H&P	Method: Strataprobe (Direct-Push)
Surface Elevation: 45± Feet	Total Depth: 10.5 Feet

Sample Number	PID/FID Reading (ppm)	Test Data	Blow Count	Depth (Feet)	Graphic Log	Soil Type	Geologic Description: Formation, grain size, texture, color, moisture, sorting/grading, density, other lithologic features, staining odor, etc.	Backfill Log
SP-1-1		ND					**4 Inches of Concrete**	
SP-1-3		ND				ML	**Sandy/Clayey Silt,** with layers or pockets of fine sand, clay <20%, sand < 20%, firm, slightly moist, no stains or odors.	
SP-1-6		ND		5		CL/ SC	**Clayey Silt and Clayey Sand (Interbedded),** clay <40%, moderately well sorted, firm, no stains.	
SP-1-10		ND		10		ML	**Sandy/Clayey Silt at 10 feet,** firm, moist to very moist, moderately well sorted, no stains or odors, some pockets/layers of very fine sand to fine sand, dark yellow brown (10YR 4/4).	
				15			**Boring Terminated at 10.5 Feet Below Ground Surface.** No Groundwater encountered. Backfilled with bentonite pellets, finished upper 4 inches with concrete.	
				20				
				25				
				30				

SYMBOLS

- Groundwater First Encountered
- Static Groundwater Level
- ND Not Detected

Drafted By: Harvey Lee

Reviewed By: Mark Bryant

Date: August 5, 2006

BRYANT GEOENVIRONMENTAL INC.
Geoscience Services • Project Management • Environmental Assessment

BORING/WELL COMPLETION LOG
Identification: SP-2

Client: Del Rayo Village	Date: July 31, 2006
Project Name: Del Rayo/Fairbanks	Location: Inside Dry Cleaners
Project Number: 06-1880A	Logged By: Mark E. Bryant
Drilled By: H&P	Method: Strataprobe (Direct-Push)
Surface Elevation: 45± Feet	Total Depth: 20.0 Feet

Sample Number	PID/FID Reading (ppm)	Test Data	Blow Count	Depth (Feet)	Graphic Log	Soil Type	Geologic Description: Formation, grain size, texture, color, moisture, sorting/grading, density, other lithologic features, staining odor, etc.	Backfill Log
SP-2-1		ND					**5 Inches of Concrete**	
SP-2-3		ND				ML	**Sandy/Clayey Silt,** firm, well sorted, trace very fine sand, clay <20%, sand <10% light olive gray to pale olive (5Y 6/2-6/3), slightly moist.	
SP-2-6		ND		5		CL/SC	**Clayey Silt and Clayey Sand (Interbedded) at 6 feet,** clay <40%, moderately well sorted, firm, no stains or odors, dark yellow brown to dark grayish brown (10YR 4/3-4/4).	
SP-2-10		ND		10		ML	**Clayey Silt at 10 feet,** trace very fine sand (<10%), clay <30%, firm, moderate to well sorted, no stains or odors, dark yellow brown to dark grayish brown (10YR 4/3-4/4).	
SP-2-W		ND		15				
				20			**Boring Terminated at 20.0 Feet Below Ground Surface.** Groundwater encountered at 15.5 feet. Backfilled with bentonite pellets, finished upper 4 inches with concrete.	
				25				
				30				

SYMBOLS

- Groundwater First Encountered
- Static Groundwater Level
- ND — Not Detected (VOC)

Drafted By: Harvey Lee

Reviewed By: Mark Bryant

Date: August 5, 2006

BRYANT GEOENVIRONMENTAL INC.
Geoscience Services • Project Management • Environmental Assessment

BORING/WELL COMPLETION LOG
Identification: SP-3

Client: Del Rayo Village	Date: July 31, 2006
Project Name: Del Rayo/Fairbanks	Location: Inside Dry Cleaners
Project Number: 06-1880A	Logged By: Mark E. Bryant
Drilled By: H&P	Method: Strataprobe (Direct-Push)
Surface Elevation: 45± Feet	Total Depth: 10.5 Feet

Sample Number	PID/FID Reading (ppm)	Test Data	Blow Count	Depth (Feet)	Graphic Log	Soil Type	Geologic Description: Formation, grain size, texture, color, moisture, sorting/grading, density, other lithologic features, staining odor, etc.	Backfill Log
SP-3-1		ND					**5 Inches of Concrete**	
SP-3-3		ND				ML	**Sandy/Clayey Silt,** firm, well sorted, clay <10%, very fine sand, light olive gray to pale olive (5Y 6/2-6/3), slightly moist.	
SP-3-6		8.3		5		CL/SC	**Silty Clay,** with occasional very fine sand layers/lenses, clay >30%, moderately well sorted, no stains or odors, olive brown (2.5Y 4/3), moist.	
SP-3-10		ND		10		ML	**Silty clay and Clayey Sand Interbedded at 10 feet,** mottled, firm, poorly to moderately well sorted, no stains or odors, light olive brown (2.5Y 5/3-5/4).	
				15			**Boring Terminated at 10.5 Feet Below Ground Surface.** No Groundwater encountered. Backfilled with bentonite pellets, finished upper 4 inches with concrete.	
				20				
				25				
				30				

SYMBOLS

- Groundwater First Encountered
- Static Groundwater Level
- ND — Not Detected (VOC)
- 8.3 — PCE Concentration in Milligrams Per Kilogram (µg/kg)

Drafted By: Harvey Lee

Reviewed By: Mark Bryant

Date: August 5, 2006

BRYANT GEOENVIRONMENTAL INC.

562 Kristen Court
Encinitas, California 92024
Telephone: 760.942.4455 Fax: 760.942.4485
Web: www.geoh2o.com
E-mail: mark@geoh2o.com

RECEIVED
AUG 1 2007
ENVIRONMENTAL HEALTH

July 20, 2007

Mr. Ernesto Profeta
Environmental Health Technician
Monitoring Well Program
Site Assessment and Mitigation Division
Department of Environmental Health
P.O. Box 129261
San Diego, CA 92112-9261

RE: GROUNDWATER MONITORING WELLS COMPLETED
PERMIT INFORMATION
FAIRBANKS CLEANERS
DEL RAYO VILLAGE
16087 SAN DIEGUITO ROAD, SUITE D1
RANCHO SANTA FE, CALIFORNIA 92067
APN 302-301-10
BGI PROJECT NO. 06-1880A
PERMIT NO. LMON104484
DEH FILE NO. H33970-001

Dear Mr. Profeta:

Bryant GeoEnvironmental Inc. (BGI) is pleased to submit applicable information related to four groundwater monitoring wells installed at the subject location. Attached for your records is a detailed site plan showing the well locations and other site features, and the boring/well logs showing the required information. These wells were drilled/installed by Test America Drilling Corporation under my direct supervision on the date shown on the logs.

In addition, as shown on the attached logs, approximately two cubic feet of bentonite grout were used in the upper borehole seals of MW-1 through MW-3 and approximately one cubic foot in MW-4, approximately one cubic foot of bentonite chips were used in the transition seal in MW-1 through MW-4, and approximately three cubic feet of filter sand were used in the lower portions of MW-1 through MW-4. The four monitoring well installations were finished with approximately one cubic foot of concrete in the upper parts of each borehole. As shown on the boring logs, groundwater was initially encountered at depths of about 15 feet below grade, which later rose to depths of about 12 feet below grade.

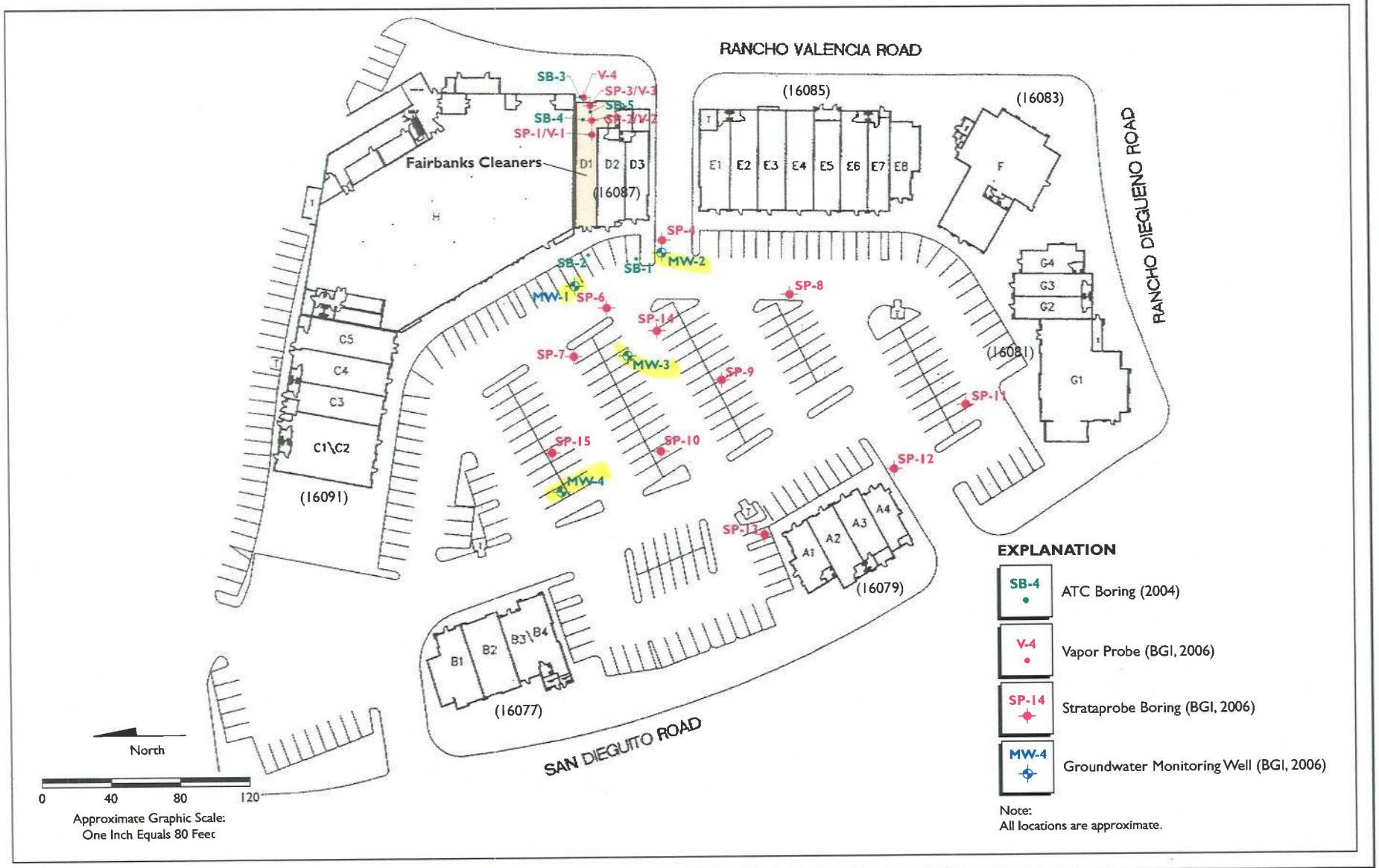
The drill cuttings and wash water were containerized on-site as required. If you have any questions, or need further information, do not hesitate to call me at (760) 942-4455.

Respectfully submitted,

BRYANT GEOENVIRONMENTAL INC.

Mark E. Bryant
Principal
PG 3569, CEG 1046,
CHG 501, REA II 20079

MEB:meb
Dist: 1/Addressee
Attachments: Appendices A and B



BRYANT GEOENVIRONMENTAL INC.

Geoscience Services • Project Management • Environmental Assessment

Project Name: Del Rayo Village/Fairbanks Ranch

Project No.: 06-1880A | Date: December 18, 2006

BORING AND WELL LOCATION MAP

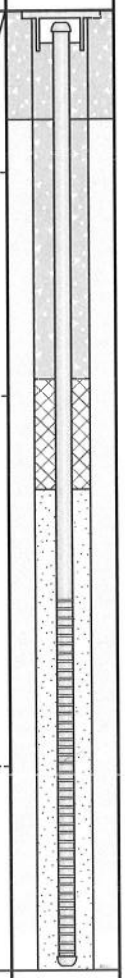
Figure 1

BRYANT GEOENVIRONMENTAL INC.
Geoscience Services • Project Management • Environmental Assessment

BORING/WELL COMPLETION LOG
Identification: MW-1

Client: Del Rayo Village	Date: December 18, 2006
Project Name: Del Rayo/R5F	Location: Near Dry Cleaners
Project Number: 06-1880A	Logged By: Mark E. Bryant
Drilled By: Test America	Method: Hollow-Stem Auger (HSA)
Surface Elevation: 43.4 Feet ±	Total Depth: 26.0 Feet

Sample Number	PID/FID Reading (ppm)	Test Data	Blow Count	Depth (Feet)	Graphic Log	Soil Type	Geologic Description: Formation, grain size, texture, color, moisture, sorting/grading, density, other lithologic features, staining odor, etc.	Well Completion
						ML	**4 Inches of Asphalt** **Sandy/Clayey Silt,** firm, well sorted, very fine sand <10%, light olive gray to pale olive (5Y 6/2-6/3), moist.	
				5		CL/ 5C	**Sandy Silt** with layers of clay, clay <30%, very fine to fine sand in silt matrix, firm, well sorted, occasional clayey sand, slightly moist.	
				10		ML	**Clayey Silt,** occasional very fine sand, sand <5%, clay <40%, firm, dark yellow brown (10YR 4/3-4/4).	
				15				
				20		ML	**Sandy/Clayey Silt,** firm, more sand, moderately well sorted, mostly very fine to fine sand in silt matrix with clay, dark grayish brown (10YR 4/2-4/3), wet.	
				25				
				30			**Total Depth 26 Feet** Groundwater encountered at 19 feet. Installed 2-inch diameter PVC well screen at 16-26 feet, filter sand (Monterey No.3) at 13-26 feet, bentonite chips at 10-13 feet, well grout at 3-10 feet, installed well box and concrete at 0-3 feet.	



SYMBOLS

▼ Groundwater First Encountered

▽ Static Groundwater Level

Drafted By: Harvey Lee

Reviewed By: Mark Bryant

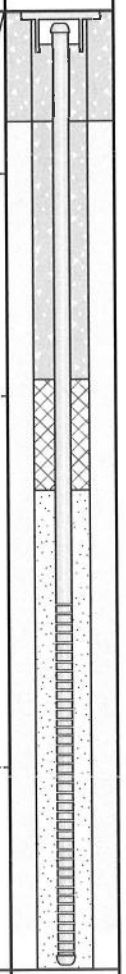
Date: December 24, 2006

BRYANT GEOENVIRONMENTAL INC.
Geoscience Services • Project Management • Environmental Assessment

BORING/WELL COMPLETION LOG
Identification: MW-2

Client: Del Rayo Village	Date: December 18, 2006
Project Name: Del Rayo/RSF	Location: Driveway Near Dry Cleaners
Project Number: 06-1880A	Logged By: Mark E. Bryant
Drilled By: Test America	Method: Hollow-Stem Auger (HSA)
Surface Elevation: 43.7 Feet±	Total Depth: 26.0 Feet

Sample Number	PID/FID Reading (ppm)	Test Data	Blow Count	Depth (Feet)	Graphic Log	Soil Type	Geologic Description: Formation, grain size, texture, color, moisture, sorting/grading, density, other lithologic features, staining odor, etc.	Well Completion
						ML	**4 Inches of Asphalt** **Sandy/Clayey Silt,** firm, well sorted, very fine sand with clay in silt matrix, light olive gray to pale olive (5Y 6/2-6/3).	
				5		CL/SC	**Sandy Silt and Sandy/Silty Clay,** very fine to fine sand, moist, well sorted, firm, some clayey sand.	
				10		ML	**Clayey Silt,** with sandy clay, sand <5%, clay <30%, firm, very moist to wet, dark yellow brown (10YR 4/3-4/4).	
				15				
				20		ML	**Sandy/Clayey Silt,** more sand, very fine to fine-grained, mostly silt, clay <20%, firm, dark grayish brown (10YR 4/1-4/2).	
				25				
				30			**Total Depth 26 Feet** Groundwater encountered at 14.5 feet. Installed 2-inch diameter PVC well screen at 16-26 feet, filter sand (Monterey No.3) at 13-26 feet, bentonite chips at 10-13 feet, well grout at 3-10 feet, installed well box and concrete at 0-3 feet.	



SYMBOLS

▼ Groundwater First Encountered

▽ Static Groundwater Level

Drafted By: Harvey Lee

Reviewed By: Mark Bryant

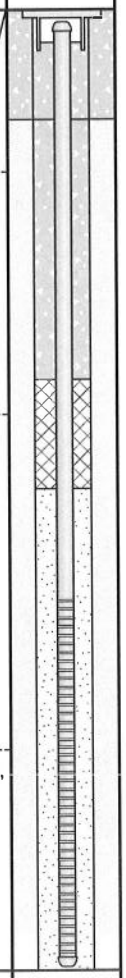
Date: December 24, 2006

BRYANT GEOENVIRONMENTAL INC.
Geoscience Services • Project Management • Environmental Assessment

BORING/WELL COMPLETION LOG
Identification: MW-3

Client: Del Rayo Village	Date: December 18, 2006
Project Name: Del Rayo/R5F	Location: Parking Lot West of Dry Cleaners
Project Number: 06-1880A	Logged By: Mark E. Bryant
Drilled By: Test America	Method: Hollow-Stem Auger (H5A)
Surface Elevation: 42.2 Feet ±	Total Depth: 26.0 Feet

Sample Number	PID/FID Reading (ppm)	Test Data	Blow Count	Depth (Feet)	Graphic Log	Soil Type	Geologic Description: Formation, grain size, texture, color, moisture, sorting/grading, density, other lithologic features, staining odor, etc.	Well Completion
							4 Inches of Asphalt	
						ML	**Sandy/Clayey Silt,** firm, moist, moderately well sorted, some very fine to fine sand, mostly clayey silt, pale olive to olive brown (2.5Y 4/3-5Y 4/3).	
				5		CL/SC	**Sandy Silt and Sandy Clay,** firm, very moist, well sorted, very dark grayish brown (2.5Y 3/2).	
				10		ML	**Sandy Silt/Clayey Silt,** sand approximately 10%, clay approximately 30%, mostly silt, firm, wet, at 15 feet, dark yellow brown (10YR 4/3-4/4).	
				15				
				20		ML	**Sand and Silt,** some clay, very fine to fine sand, more sand, moderately well sorted, firm, dark grayish brown (10YR 4/1-4/2).	
				25				
							Total Depth 26 Feet Groundwater encountered at 15.5 feet. Installed 2-inch diameter PVC well screen at 16-26 feet, filter sand (Monterey No.3) at 13-26 feet, bentonite chips at 10-13 feet, well grout at 3-10 feet, installed well box and concrete at 0-3 feet.	
				30				



SYMBOLS

▼ Groundwater First Encountered

▽ Static Groundwater Level

Drafted By: Harvey Lee

Reviewed By: Mark Bryant

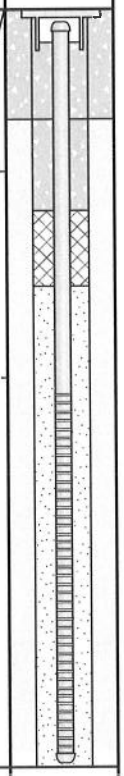
Date: December 24, 2006

BRYANT GEOENVIRONMENTAL INC.
Geoscience Services • Project Management • Environmental Assessment

BORING/WELL COMPLETION LOG
Identification: MW-4

Client: Del Rayo Village	Date: December 18, 2006
Project Name: Del Rayo/RSF	Location: Parking Lot West of Dry Cleaners
Project Number: 06-1880A	Logged By: Mark E. Bryant
Drilled By: Test America	Method: Hollow-Stem Auger (HSA)
Surface Elevation: 40.9 Feet ±	Total Depth: 20.5 Feet

Sample Number	PID/FID Reading (ppm)	Test Data	Blow Count	Depth (Feet)	Graphic Log	Soil Type	Geologic Description: Formation, grain size, texture, color, moisture, sorting/grading, density, other lithologic features, staining odor, etc.	Well Completion
						ML	**4 Inches of Asphalt** **Clayey/Sandy Silt,** firm, moist, well sorted, some very fine to fine sand, dark olive gray (5Y 3/2).	
				5		CL/SC	**Sandy Silt/Clayey Silt,** some sandy clay with silt, very fine to fine sand, firm, moist, well sorted.	
				10		ML	**Sandy Silt,** some Clayey Silt, sand <10%, clay <30%, mostly silt, firm, moderately well sorted, firm, dark yellow brown (10YR 4/3-4/4).	
				15				
				20			**Total Depth 20.5 Feet** Groundwater encountered at 14.5 feet. Installed 2-inch diameter PVC well screen at 10.5-20.5 feet, filter sand (Monterey) No.3) at 7.5-20.5 feet, bentonite chips at 5.5-7.5 feet, well grout at 3-5.5 feet, installed well box and concrete at 0-3 feet.	
				25				
				30				



SYMBOLS

▼ Groundwater First Encountered

▽ Static Groundwater Level

Drafted By: Harvey Lee

Reviewed By: Mark Bryant

Date: December 24, 2006

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELLS
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2339/FAX 619-338-2315
www.sdcounty.ca.gov/deh/lwq

REQUEST FOR RESUBMITTAL OF YOUR MONITORING WELL/BORING PERMIT

60 DAY DRILLING REPORT
LMON104484

DATE RETURNED: 07/23/2007

The Monitoring Well Program (MWP) is returning your 60-day drilling report for the above-referenced permit because some necessary items were missing.

Please resubmit the complete drilling report with the information checked below to the MWP within fourteen (14) working days. If you have any questions regarding this request, please contact the Monitoring Well Program desk at (619) 338-2339, or by email at: deh.monitoringwells@sdcounty.ca.gov.

- ☐ A detailed plot plan drawn to scale showing the location of the site, nearest cross streets, property boundary lines, existing improvements (such as USTs, piping, and/or utilities), and the location of all wells and borings.
- ☐ A detailed log for each well/boring describing the density, moisture content, color, grain size distribution, and character of all lithologic units penetrated. The log must include depth of first groundwater, static water level in the completed well(s), date of measurement, field vapor readings.
- ☒ A detailed "as built" well construction diagram with the type of casing, screened interval, screen slot size, type of filter pack, depth, location and **type of seals, and volumes of materials (cubic feet) used**, and surveyed well elevations and locations.
- ☐ The types and amounts, in cubic feet, of sealing materials used to backfill each borehole.
- ☐ A grain-size analysis of the lithologic unit or units that represent soils adjacent to the perforated portion of the well, if performed.
- ☐ All laboratory analysis data and chain of custody for the soil and/or groundwater sampling that accompanied the work under this permit.
- ☐ A properly signed copy of the well construction and boring report, as legally required by the California Business and Professions Code. The professional geologist may indicate his or her responsibility for the accuracy and completeness of the logs and accompanying data included in the report by providing an original ('wet') signature or by stamping the report with his or her seal. A civil engineer must indicate his or her responsibility for the accuracy and completeness of the logs and accompanying data included in the report by providing all of the following items: an original signature ('wet'), his or her seal/stamp, the date of signing and sealing/stamping, and the expiration date of the certificate or authority.
- ☐ Documentation of well destruction which includes the method used to destroy the monitoring well/boring(s), the type of sealing materials and volumes used (in cubic feet), and the dates the work was started and completed.
- ☐ Description of the surface seal construction, which does not comply with the permit conditions.
- ☐ Submit a letter of explanation stating why the well construction was not completed in accordance with the permit conditions or submit a corrected well construction diagram with a letter signed by the registered professional describing the corrections made to a revised well construction diagram.
- ☒ Other: The types of seals and volumes of materials used must be submitted for each well installed. Nothing was mentioned about the volumes of concrete used each wells. **Please respond by 8/10/2007.**

Processed by: ERNIE L. PROFETA (619) 338-2492

DEH:MWP-(08/05)

BBC ENVIRONMENTAL, INC.

3593 Adams Avenue, San Diego, CA 92116

June 9, 2009

County of San Diego
Department of Environmental Health
Site Assessment and Mitigation Program
Monitoring Well Permit Desk
P.O. Box 129261
San Diego, CA. 92112-9261

RE: WELL LOG REPORT SUBMITTAL FOR BORING INSTALLATIONS PERFORMED AT THE RANCHO SANTA FE MOBIL FACILITY, 6089 LA FLECHA, RANCHO SANTA FE, CALIFORNIA (Permit #LMON106379)

Monitoring Well Permit Desk:

In accordance with SAM Manual 2004 guidelines, BBC Environmental, Inc. is submitting the attached boring logs, construction information, and analytical data for twenty-six borings installed at the Rancho Santa Fe Mobil facility on April 28-30, 2009.

Site Identification:	Rancho Santa Fe Mobil Facility 6089 La Flecha Rancho Santa Fe, CA 92091
Assessor's Parcel Number:	266-291-01-00
SAM Program Est. Number:	H13190-001
Boring Permit Number:	LMON106379
Date of Installation:	April 28-30, 2009
Drilling Company: C57 License No.:	Fugro Consultants, Inc. 909719

A total of twenty six borings (CPT-1 through CPT-23 and CPT-25 through CPT-27) were installed on- and off-site at the project location (Figure 1). Boring completion depths are provided in Table 1. Cone Penetrometer Testing (CPT) and Laser-Induced Fluorescence (LIF) testing were performed at all locations.

The outside diameter of the probe rod used during this direct-push investigation was 1.5 inches. Upon reaching total depth of the boring, the probe rod was retracted and the boring was backfilled from total depth to 1.5 feet bgs with hydrated bentonite, from 1.5 feet bgs to 0.5 feet bgs with granulated bentonite and finished from 0.5 feet bgs to ground surface with a concrete seal. The volume of hydrated bentonite ranged between 0.3 and 2.0 cubic feet per boring depending upon the completion depth.

A total of twenty-six borings were completed in the same manner. A total of approximately 37.4 cubic feet of bentonite and approximately 0.6 cubic feet of concrete

seal were place in the boring holes as backfill material at the site. No permanent well locations were installed during this event. Survey coordinates of the borings are presented in Table 2.

No samples were collected during this event. Detailed CPT and LIF logs for each of the twenty-six borings have also been included in this report submittal. A site plan with the locations of the twenty-six borings is also presented for your review.

Should you have any questions or require additional information with regards to this submittal, please contact Mr. Walter Craig of BBC Environmental, Inc. at (619) 546-7165.

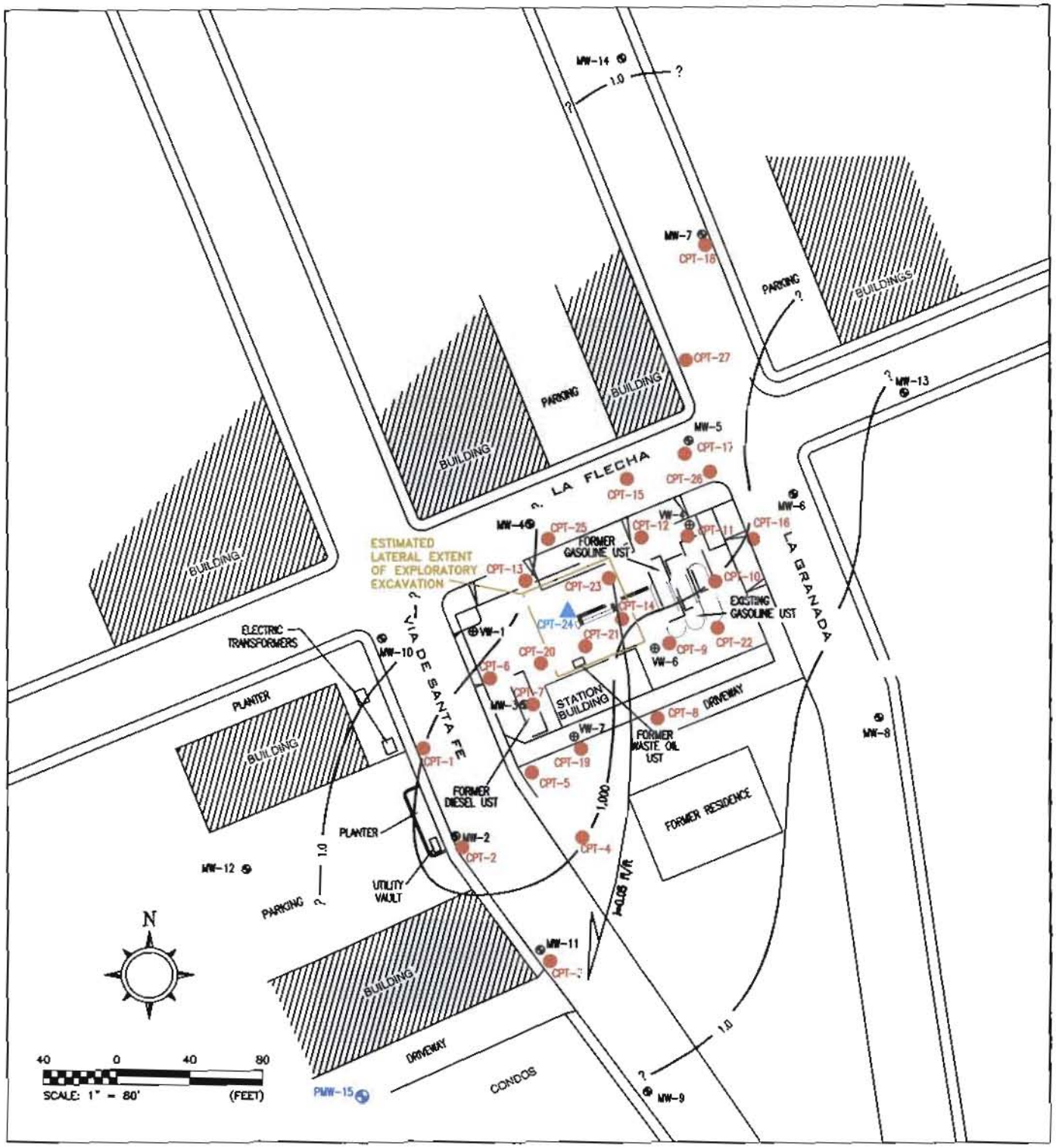
Thank You,
BBC Environmental, Inc.

Mr. Walter B. Craig, R.E.A
Principal Engineer

Mr. Gerald Shiller, PG
California Professional Geologist No. 4558

PROFESSIONAL GEOLOGIST
GERALD L. SHILLER
PG-4558
STATE OF CALIFORNIA

Attachments (5):
- Soil Boring Construction Permit No. LMON106378
- Sampling Location Map – Figure 1
- Boring Completion Depths – Table 1
- Survey Coordinates of Boring Locations – Table 2
- CPT and LIF Logs for CPT-1 through CPT-23 and CPT-25 through CPT-27 (Figures CPT-1 through CPT-23 and CPT-25 through CPT-27)



LEGEND	CPT-LIF SAMPLING LOCATIONS
● CPT-1 CPT/LIF SAMPLING LOCATIONS INSTALLED APRIL 2009 ▲ CPT-20 PROPOSED CPT/LIF SAMPLING LOCATION NOT INSTALLED PMW-15 PROPOSED MONITORING WELL LOCATION NOT INSTALLED MW-8 GROUNDWATER MONITORING WELL ⊕ VW-4 VAPOR WELL — 1.0 — ESTIMATED CONTOURS OF EQUAL BENZENE CONCENTRATIONS IN GROUNDWATER (ug/L) ESTIMATED GROUNDWATER FLOW DIRECTION i=0.05 ft/ft ESTIMATED GROUNDWATER GRADIENT	RANCHO SANTA FE MOBIL 6089 LA FLECHA RANCHO SANTA FE, CALIFORNIA FIGURE No. 1 — PROJECT No. RSF MOBIL BBC ENVIRONMENTAL, INC.

60 Day Drilling Completion Report
6/9/2009
Permit # LMON106379

Consultant: BBC Environmental, Inc.

Driller: Fugro Consultants, Inc.

Rancho Santa Fe Mobil
6089 La Flecha
Rancho Santa Fe, CA 92091

Table 1 - Borehole Completion Depths

Field Point Name	Completion Depth
CPT-1	36.81
CPT-2	31.69
CPT-3	28.15
CPT-4	31.36
CPT-5	28.87
CPT-6	40.49
CPT-7	41.34
CPT-8	26.57
CPT-9	24.21
CPT-10	23.03
CPT-11	32.15
CPT-12	24.02
CPT-13	23.69
CPT-14	29.07
CPT-15	32.74
CPT-16	25.98
CPT-17	41.40
CPT-18	7.22
CPT-19	28.41
CPT-20	37.01
CPT-21	25.39
CPT-22	29.79
CPT-23	21.78
CPT-25	41.08
CPT-26	30.58
CPT-27	33.07
Total	**775.90**

60 Day Drilling Completion Report
6/9/2009
Permit # LMON106379

Consultant: BBC Environmental, Inc.

Driller: Fugro Consultants, Inc.

Rancho Santa Fe Mobil
6089 La Flecha
Rancho Santa Fe, CA 92091

Table 2 - Borehole Survey Locations

Field Point Name	Suvey Date	Latitude	Longitude	XY Datum	Elevation	Elevation Datum
CPT-1	5/7/2009	33.0190681	-117.2025410	NAD83	231.71	29
CPT-2	5/7/2009	33.0189522	-117.2023758	NAD83	228.44	29
CPT-3	5/7/2009	33.0188513	-117.2020886	NAD83	224.07	29
CPT-4	5/7/2009	33.0190350	-117.2022180	NAD83	228.10	29
CPT-5	5/7/2009	33.0190699	-117.2023178	NAD83	229.77	29
CPT-6	5/7/2009	33.0191991	-117.2024692	NAD83	233.51	29
CPT-7	5/7/2009	33.0191665	-117.2024106	NAD83	234.71	29
CPT-8	5/7/2009	33.0192221	-117.2021630	NAD83	230.94	29
CPT-9	5/7/2009	33.0193456	-117.2022106	NAD83	235.32	29
CPT-10	5/7/2009	33.0194341	-117.2021966	NAD83	235.57	29
CPT-11	5/7/2009	33.0194845	-117.2022519	NAD83	236.74	29
CPT-12	5/7/2009	33.0194542	-117.2023100	NAD83	236.39	29
CPT-13	5/7/2009	33.0193184	-117.2024642	NAD83	235.34	29
CPT-14	5/7/2009	33.0193354	-117.2023094	NAD83	234.94	29
CPT-15	5/7/2009	33.0195410	-117.2023534	NAD83	236.89	29
CPT-16	5/7/2009	33.0195005	-117.2021308	NAD83	235.69	29
CPT-17	5/7/2009	33.0195966	-117.2022951	NAD83	237.37	29
CPT-18	5/7/2009	33.0199006	-117.2024231	NAD83	241.58	29
CPT-19	5/7/2009	33.0191472	-117.2022668	NAD83	231.27	29
CPT-20	5/7/2009	33.0192463	-117.2024236	NAD83	234.39	29
CPT-21	5/7/2009	33.0192839	-117.2023714	NAD83	234.68	29
CPT-22	5/7/2009	33.0193867	-117.2021621	NAD83	235.62	29
CPT-23	5/7/2009	33.0193842	-117.2023480	NAD83	235.66	29
CPT-25	5/7/2009	33.0193995	-117.2024589	NAD83	235.55	29
CPT-26	5/7/2009	33.0195546	-117.2022656	NAD83	236.78	29
CPT-27	5/7/2009	33.0197112	-117.2023520	NAD83	239.40	29

FUGRO CONSULTANTS, INC.

13049 East Florence Avenue
Santa Fe Springs, California 90670
Tel: 562-903-0055
Fax: 562-903-9005

May 21, 2009
Report Number 04.09090023

BBC Environmental, Inc.
3593 Adams Avenue
San Diego, CA 92116

Attention: Mr. Walter B. Craig, R.E.A.

REPORT FOR
PIEZOCONE PENETRATION TESTING,
RAPID OPTICAL SCREENING TOOL (CPT/ROST™) TESTING
AND RELATED SERVICES
FORMER MOBIL STATION
RANCHO SANTA FE, CALIFORNIA
WORK ORDER NO: RSF MOBIL.1

Dear Mr. Craig:

Fugro Consultants (Fugro) is pleased to present this data report for Cone Penetration (CPT) and Rapid Optical Screening Tool (ROST™) testing at the above-referenced site. CPT/ROST™ provided continuous characterization of stratigraphy and petroleum hydrocarbon distribution at the testing locations. A description of the CPT and ROST™ technologies and a discussion of general ROST™ data interpretation follows. CPT and ROST™ logs and electronic data CD are included as attachments. The final data has been reviewed and has undergone the appropriate QA/QC process.

Cone Penetration Testing

CPT was performed simultaneously with each ROST™ sounding and yielded real-time stratigraphic data. CPT is a proven method for rapidly evaluating the physical characteristics of unconsolidated soils. It is based on the resistance to penetration of an electronically-instrumented cone which is continuously advanced into the subsurface. In accordance with ASTM Standard D5778-95, the cone was advanced at a rate of two centimeters per second with the driving force provided by hydraulic rams.

The CPT cone used at this site had an apex angle of 60 degrees with a base area of 15 square centimeters (cm^2), and friction sleeve with a surface area of 200 cm^2. The standard geotechnical sensors within the cone measure tip resistance and sleeve friction in tons per square foot (TSF). The combined data from the tip resistance and sleeve friction form the basis of the soil classification (e.g., sand, silt, clay, etc.).

Soil stratigraphy was identified using Campanella and Robertson's Simplified Soil Behavior Chart. Please note that because of the empirical nature of the soil behavior chart, the soil identification should be verified locally. Some soils, such as glacial till, cemented soils and calcareous soils are outside the scope of these soil behavior charts."

ROST™ Testing

Fugro Consultants' ROST™ Laser-Induced Fluorescence system was used for this investigation to screen soils for petroleum hydrocarbon materials containing aromatic hydrocarbon constituents. The system consists of a tunable laser mounted in the CPT truck that is connected to a down-hole sensor. The down-hole sensor consists of a small diameter sapphire window mounted flush with the side of the cone penetrometer probe.

The laser and associated equipment transmit 50 pulses of light per second to the sensor through a fiber optic cable. The wavelength of the pulsed excitation light is tunable and can be set to wavelengths of 266 nanometers (nm) or to wavelengths between 280 and 300 nm. An excitation wavelength of 290 nm was used for each test during this project.

The laser light passes through the sapphire window and is absorbed by aromatic hydrocarbon molecules in contact with the window, as the probe is advanced. This addition of energy (photons) to the aromatic hydrocarbons causes them to fluoresce. A portion of the fluorescence emitted from any encountered aromatic constituents is returned through the sapphire window and conveyed by a second fiber optic cable to a detection system within the CPT rig. The emission data resulting from the pulsed laser light is averaged into one reading per one second interval (approximately one reading per 2 cm vertical interval) and is recorded continuously. ROST™ may be operated in single or multi-wavelength mode, depending on project objectives. For this project, ROST™ was operated in multi-wavelength mode (MWL).

Multi-Wavelength Mode (MWL). In MWL mode, several characteristics of the emitted fluorescence are measured and recorded simultaneously at four (4) specific wavelengths (340, 390, 440, and 490 nm). These four wavelengths represent the spectrum of fluorescence typically produced by aromatic hydrocarbons ranging from light fuels through heavy contaminants such as coal tar and creosote. The recorded data is then presented as a color graph of fluorescence intensity (the combined fluorescence of all four monitored wavelengths) versus depth (FVD).

On the FVD graph, each of the four monitored wavelengths is assigned a color. These colors are combined based on the proportional fluorescence intensity of each of the individual wavelengths. The combined color is then used on the FVD graph. Changes in color on the FVD graph typically represent changes in product type. Similarly, like colors on the FVD graph typically represent the same product, regardless of the total fluorescence intensity. Changes in the total fluorescence intensity typically indicate changes in contaminant concentration, with higher fluorescence intensities representing proportionally higher concentrations when compared to lower fluorescence intensities.

In addition to the FVD graph, depth specific waveforms are presented at four (4) selected depths throughout the sounding. These waveform graphs are presented to the right of the FVD graph on each plot. In the waveform graphs, the fluorescence intensity and duration of fluorescence of each of the monitored wavelengths is represented by an individual peak, starting at 340 nm and increasing in 50 nm wavelengths as you move to the right. The intensity of each wavelength is represented by the height of the peaks, and the duration of fluorescence is represented by the width of each peak. For general interpretation purposes, lighter aromatic hydrocarbon molecules will emit fluorescence at the shorter wavelengths, and heavier, longer chained hydrocarbons will emit fluorescence at the longer wavelengths. The presented waveforms can be compared to waveforms typical of common hydrocarbon products to determine the likely product type that has been encountered. Please note that the waveforms are available at every two centimeter interval throughout the entire sounding. Additional waveforms can be generated at any time during or after testing is complete.

Reference Solution. The fluorescence intensity of a reference solution placed on the sapphire window was measured immediately prior to conducting each test. This reference solution measurement serves two purposes. First, as a quality control check, the solution is used to ensure that the performance of the system is within specifications. Second, it allows for normalization of the data from different test locations for variation in laser power, operating conditions, and monitored emission wavelength. The reference solution used for this project was the standard M1 reference, which is a proprietary PHC containing solution. M1 provides consistent fluorescence response across the portion of the spectrum analyzed by ROST and therefore, allows the fluorescence data collected to be consistently normalized to intensities recorded as a percentage of M1.

LIMITATIONS OF ENVIRONMENTAL SUBSURFACE WORK

Fugro Consultants' report is based upon our observations made during field work, the information provided to Fugro and the results of the ROST/CPT survey. Given the inherent limitation of environmental subsurface work, Fugro cannot guarantee that the site is free of hazardous or potentially hazardous materials or conditions or that latent or undiscovered conditions will not become evident in the future. Fugro's report was prepared in accordance with our proposal and the General Conditions agreed to between Fugro and Client and no warranties, representations, or certifications are made.

Fugro Consultants, Inc. appreciates the opportunity to be of service to your organization. Please do not hesitate to contact us if we can be of further assistance. We look forward to working with you in the future.

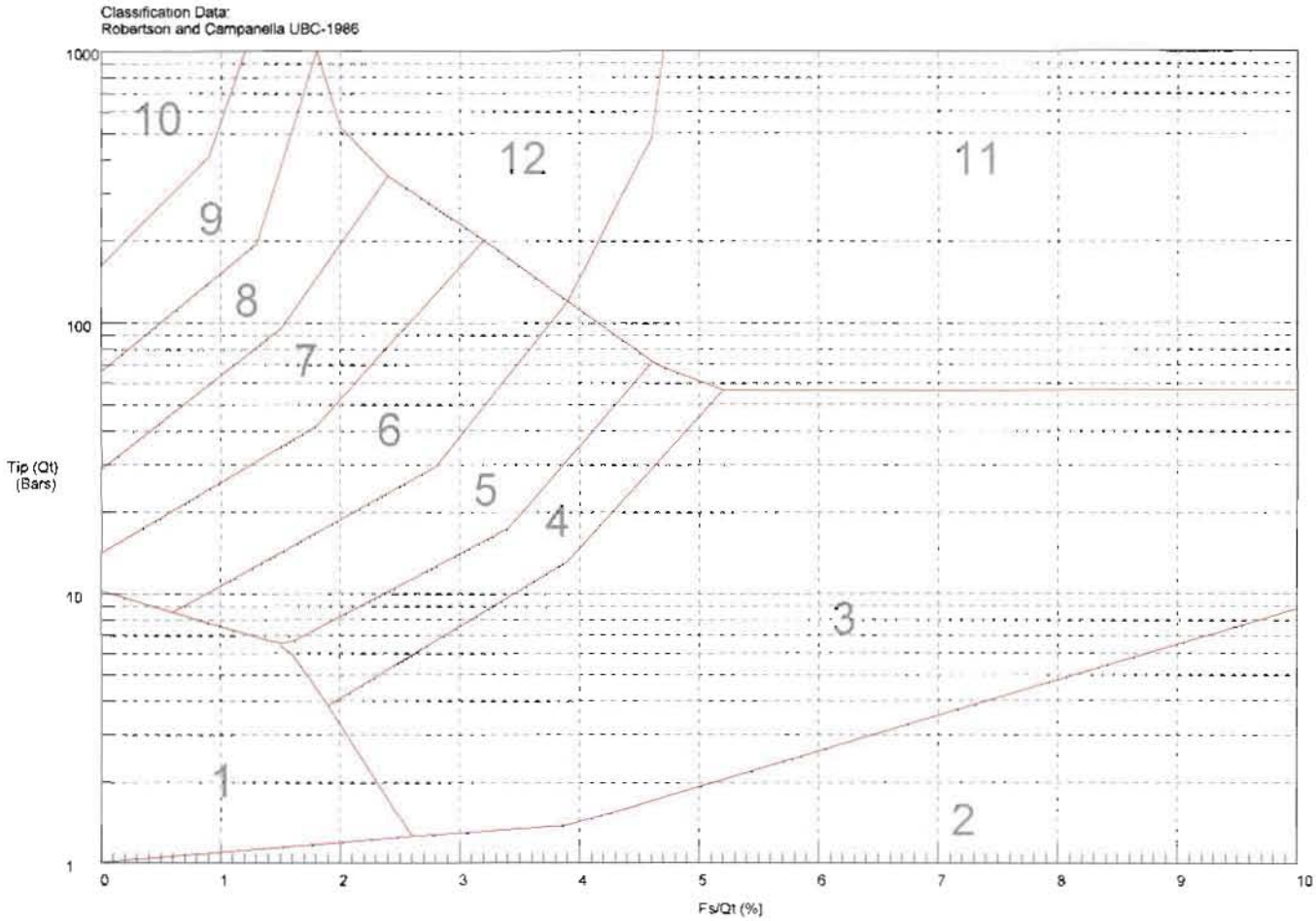
Sincerely,
FUGRO CONSULTANTS, INC.

Recep Yilmaz
Senior Vice President

RY/jm

Enclosure: - 1 CD

12 Zone Soil Behavior Chart



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

* Overconsolidated or cemented

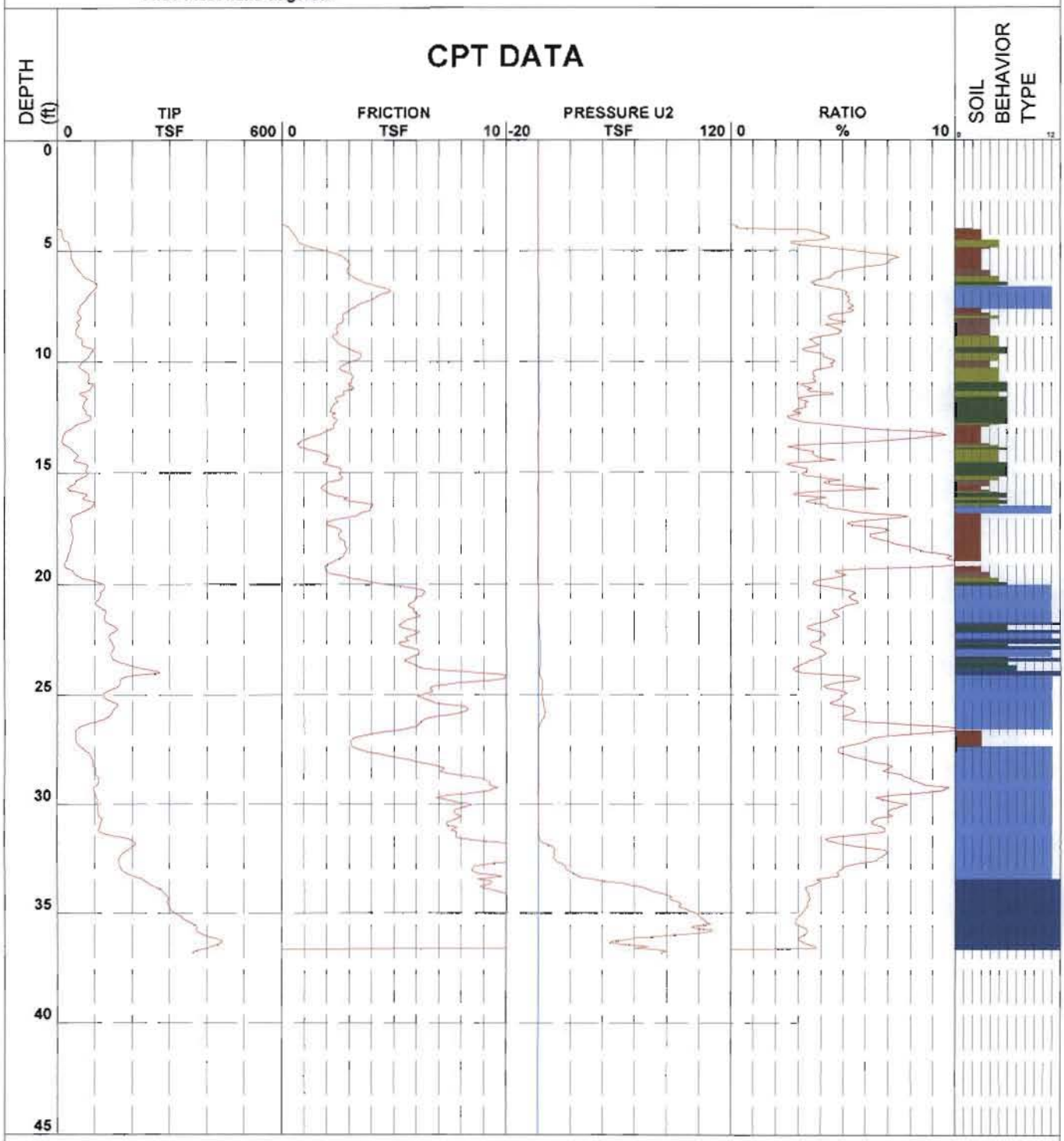
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-01 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 28-Apr-2009 13:53:47 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

First 4 feet hand-augered.



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

Robertson et al. 1986 * Overconsolidated or Cemented

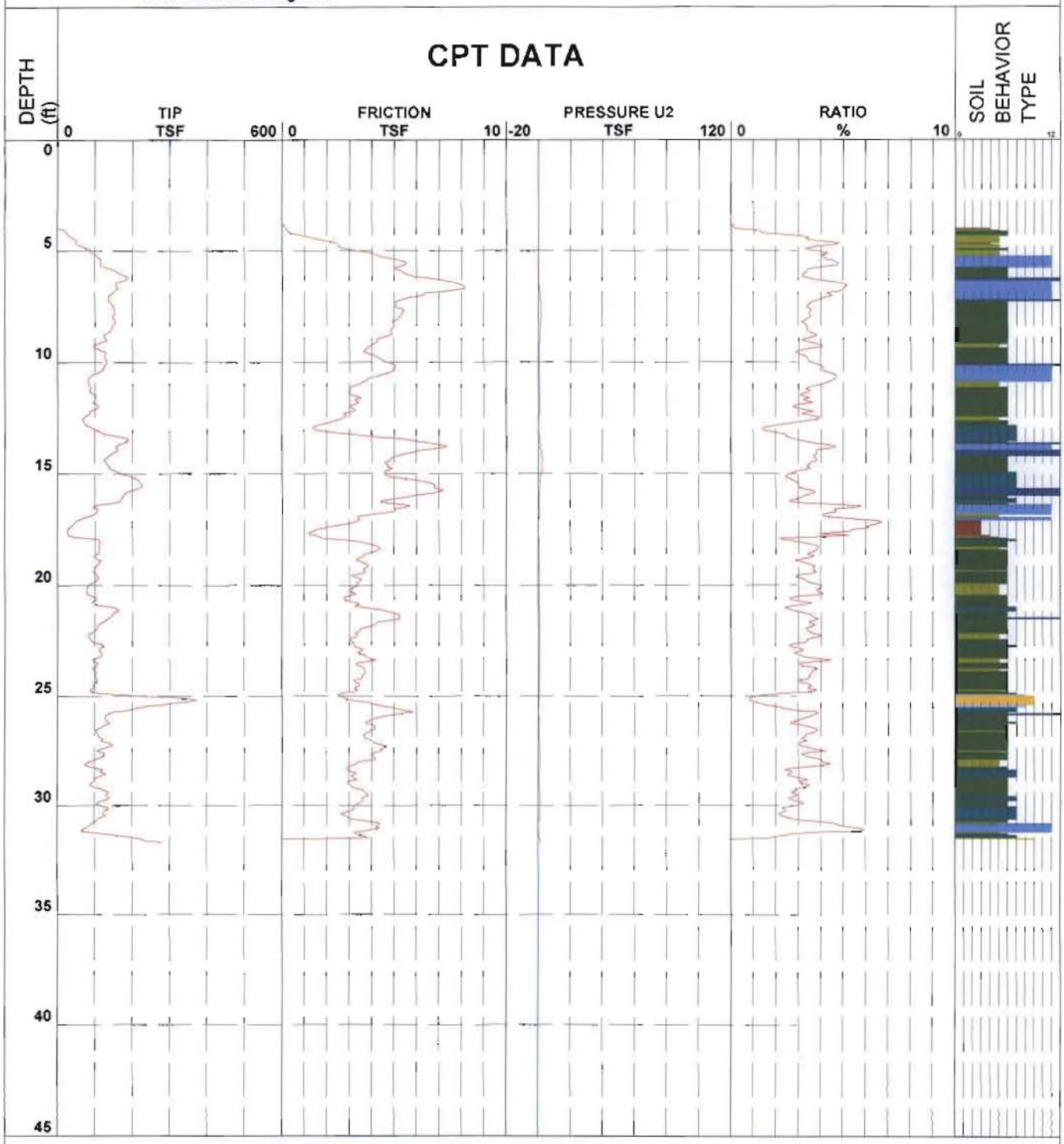
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-02 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 28-Apr-2009 14:45:51 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

First 4 feet hand-augered.



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

Robertson et al. 1986 * Overconsolidated or Cemented

CPT Data

Job Number 04.0909-0023 | CPT Number CPT-03 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 28-Apr-2009 15:26:27 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

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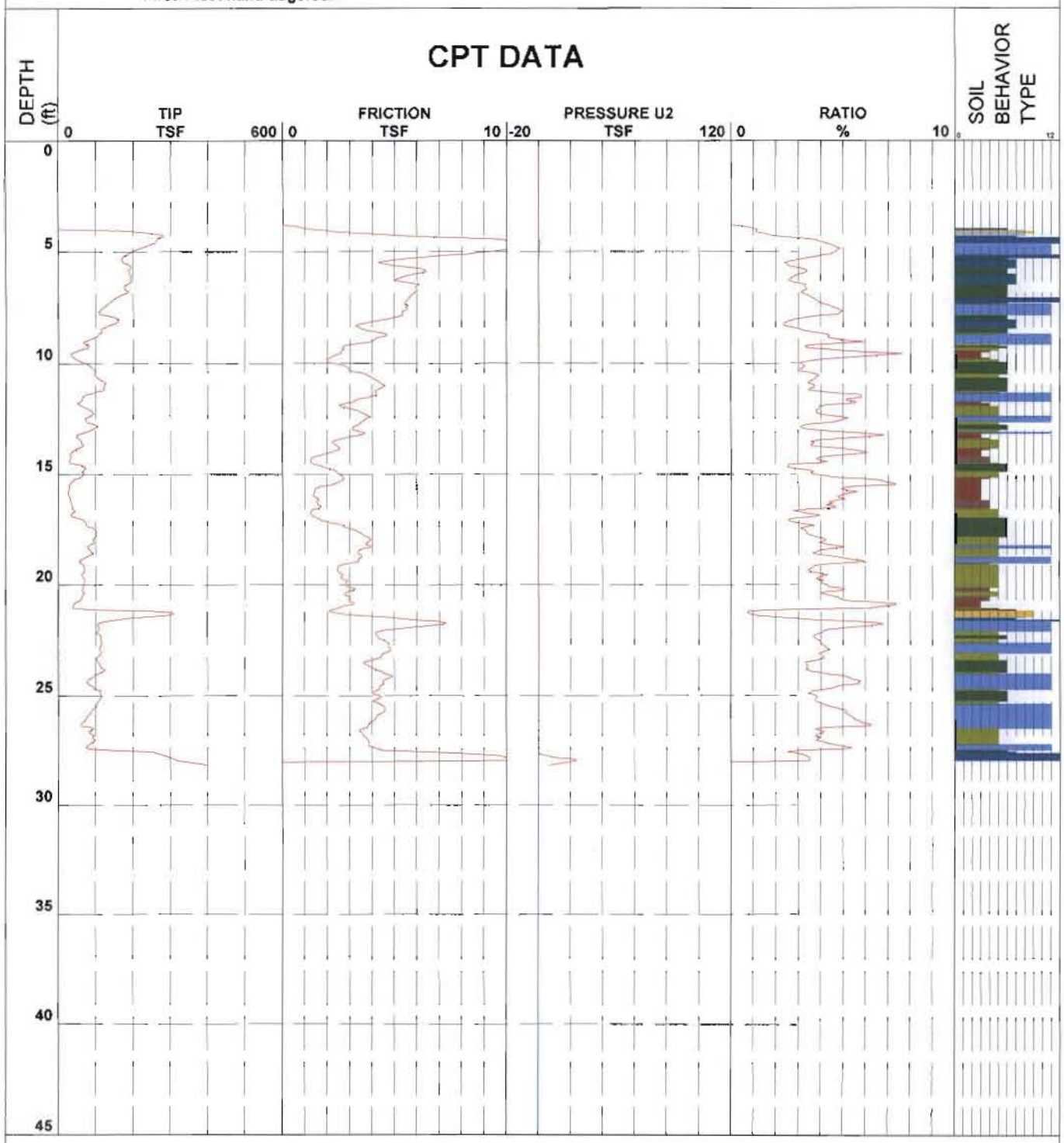


1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Robertson et al. 1986 * Overconsolidated or Cemented

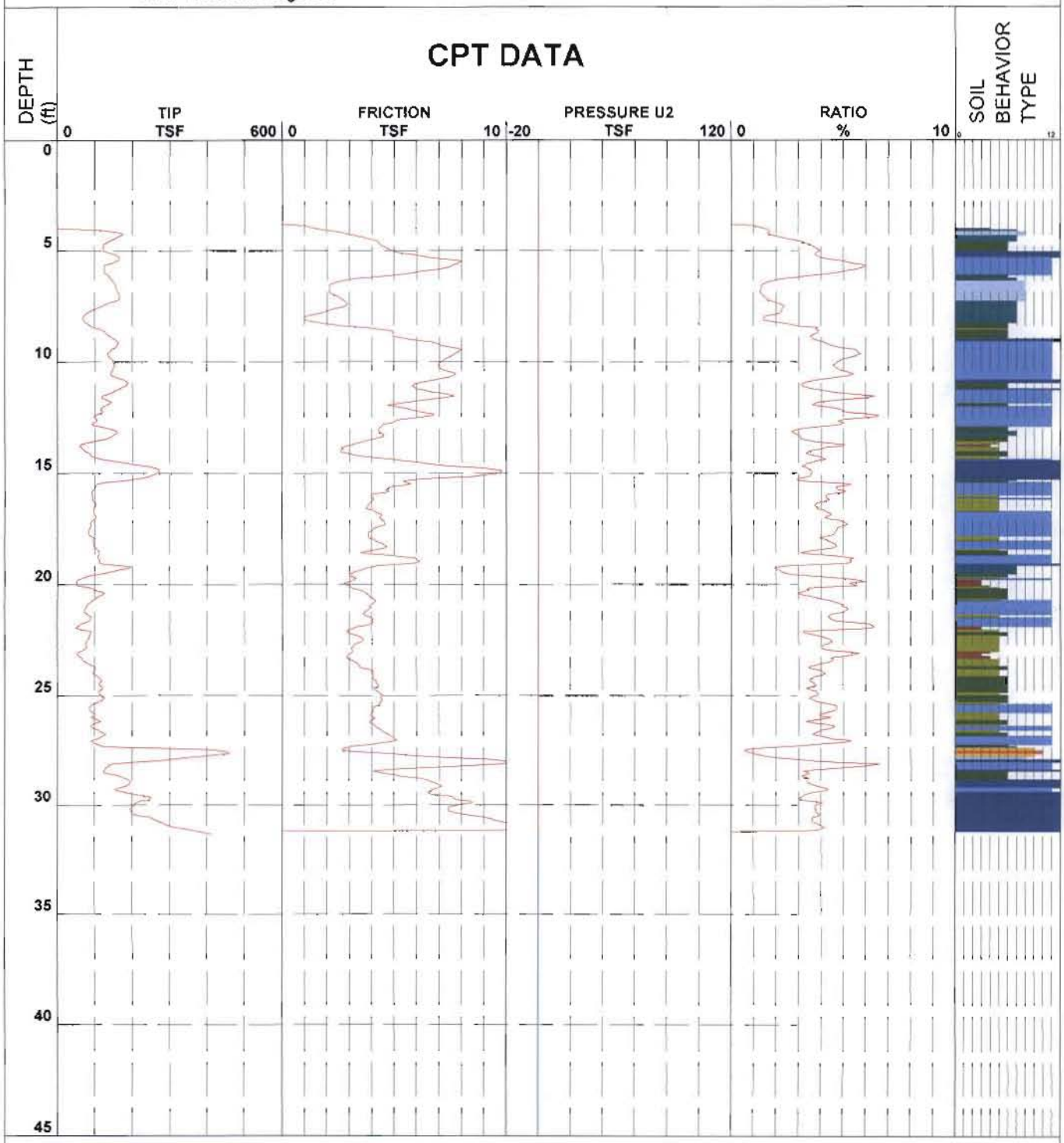
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-04 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 30-Apr-2009 12:58:48 | Cone Number F2.5CKE2HAW21832

Client BBC Environmental, Inc.

First 4 feet hand-augered.



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

Robertson et al. 1986 * Overconsolidated or Cemented

CPT Data

Job Number 04.0909-0023 | CPT Number CPT-05 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 28-Apr-2009 16:06:07 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

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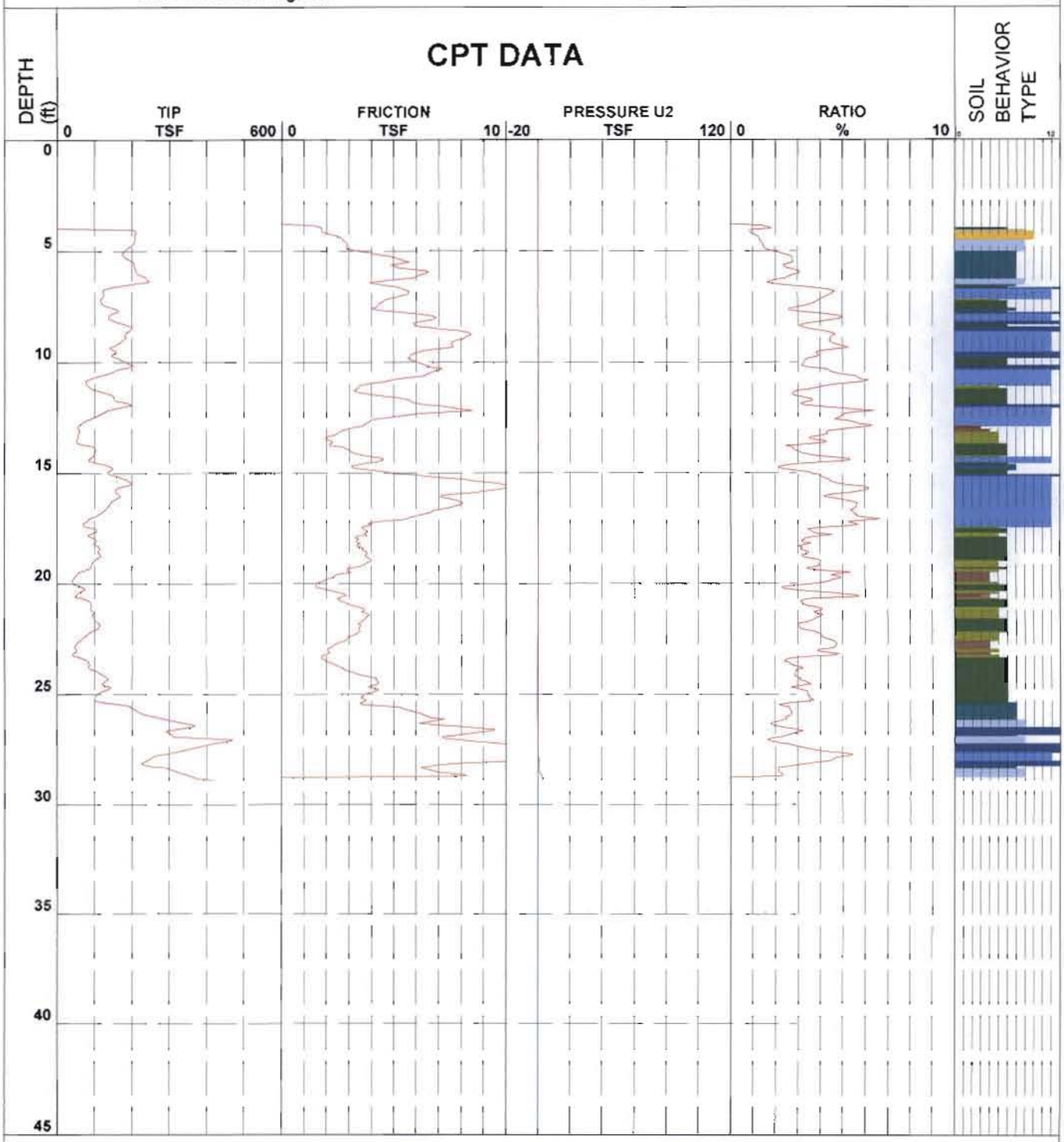

1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Robertson et al. 1986 * Overconsolidated or Cemented

CPT Data

Job Number 04.0909-0023 | CPT Number CPT-06 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 28-Apr-2009 10:58:16 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

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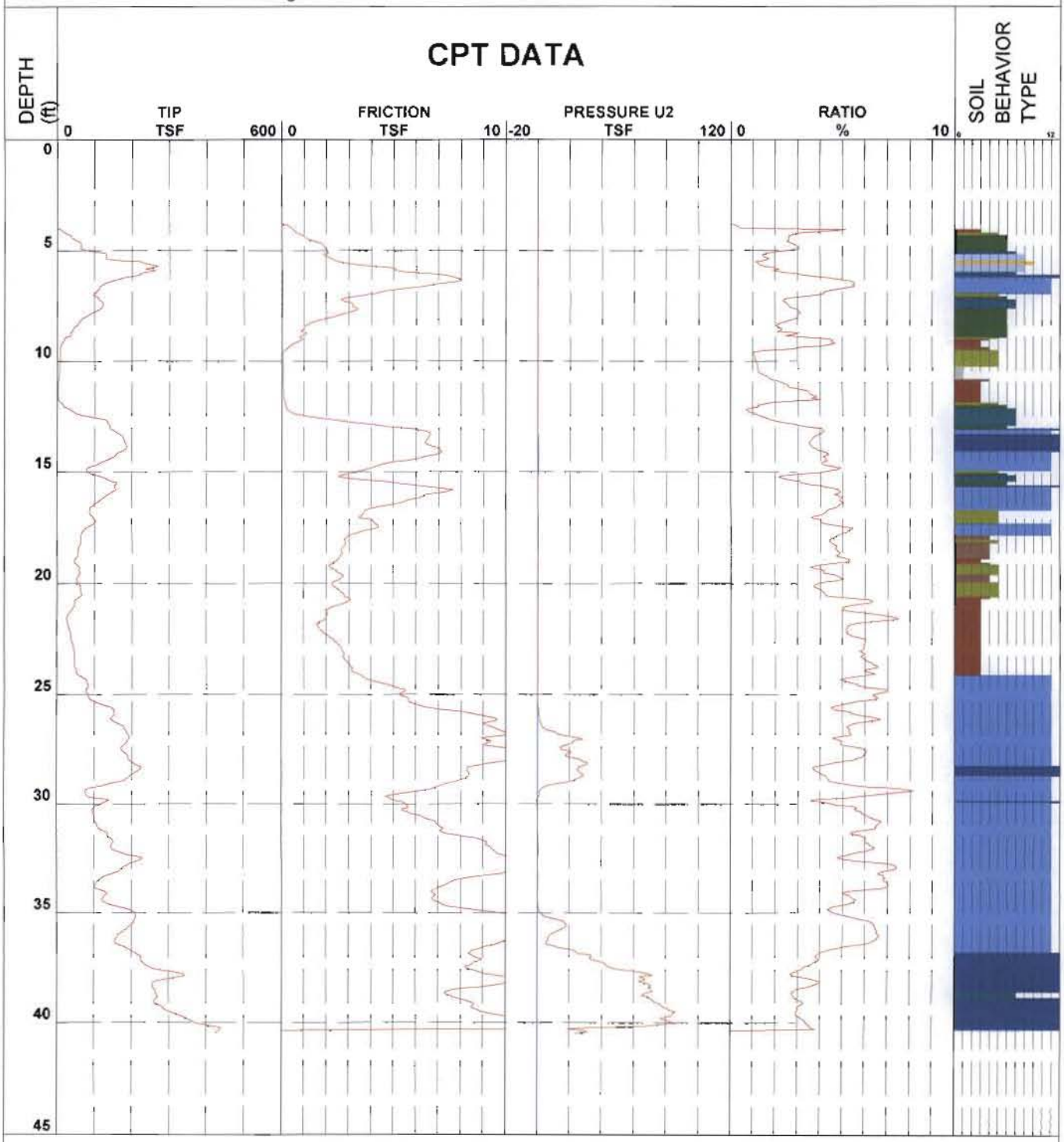

1 - sensitive fine grained
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3 - clay
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7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Robertson et al. 1986 * Overconsolidated or Cemented

CPT Data

Job Number 04.0909-0023 | CPT Number CPT-07 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 28-Apr-2009 08:47:56 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

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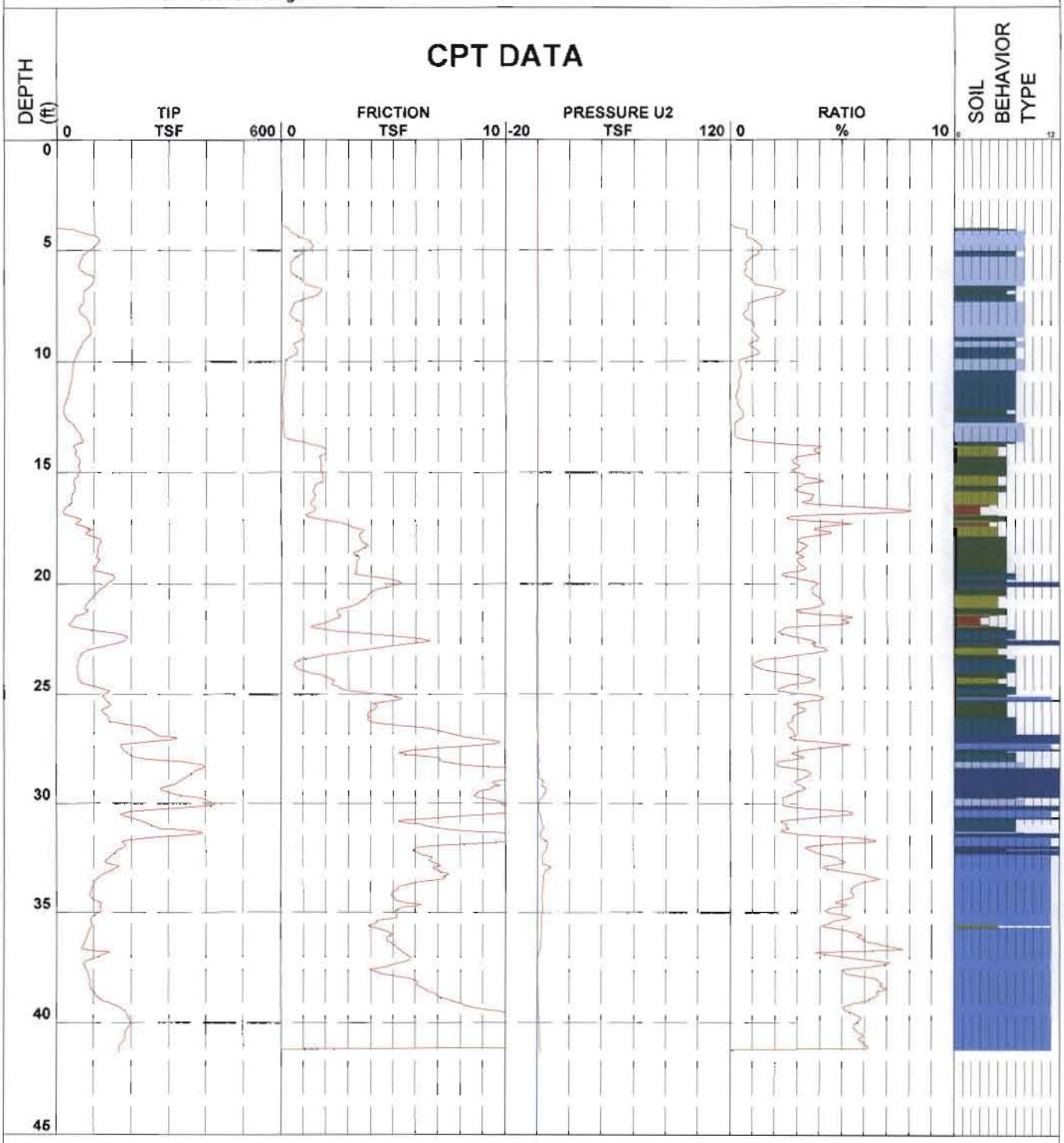

1 - sensitive fine grained
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3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
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7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine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

Robertson et al. 1986 * Overconsolidated or Cemented

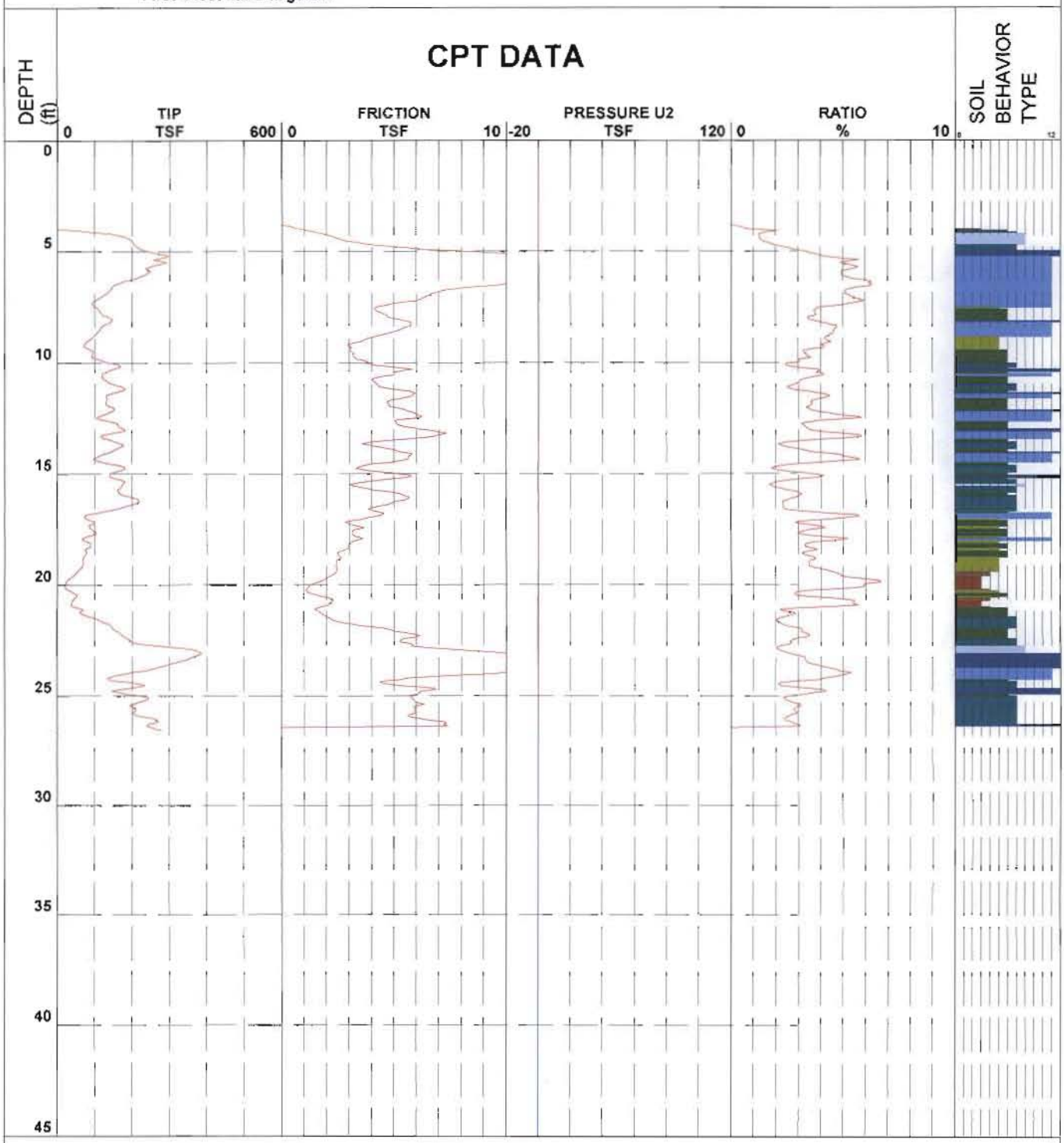
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-08 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 28-Apr-2009 16:50:35 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

First 4 feet hand-augered.



1 - sensitive fine grained
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8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Robertson et al. 1986 * Overconsolidated or Cemented

CPT Data

Job Number 04.0909-0023 | CPT Number CPT-09 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 29-Apr-2009 07:21:51 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

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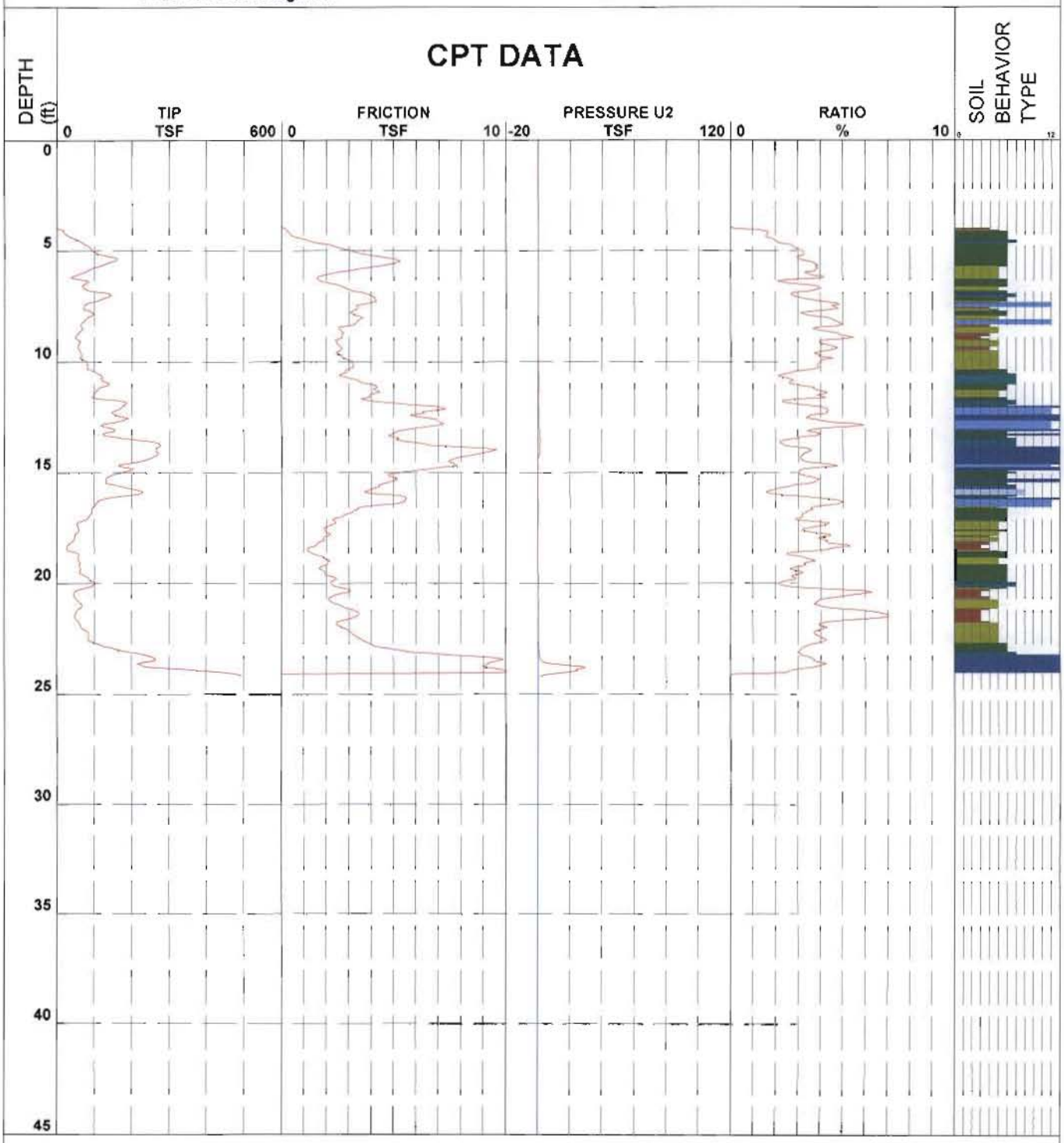

1 - sensitive fine grained
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4 - silty clay to clay
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11 - very stiff fine grained (*)
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Robertson et al. 1986 * Overconsolidated or Cemented

CPT Data

Job Number 04.0909-0023 | CPT Number CPT-10 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 30-Apr-2009 07:38:44 | Cone Number F2.5CKE2HAW21832

Client BBC Environmental, Inc.

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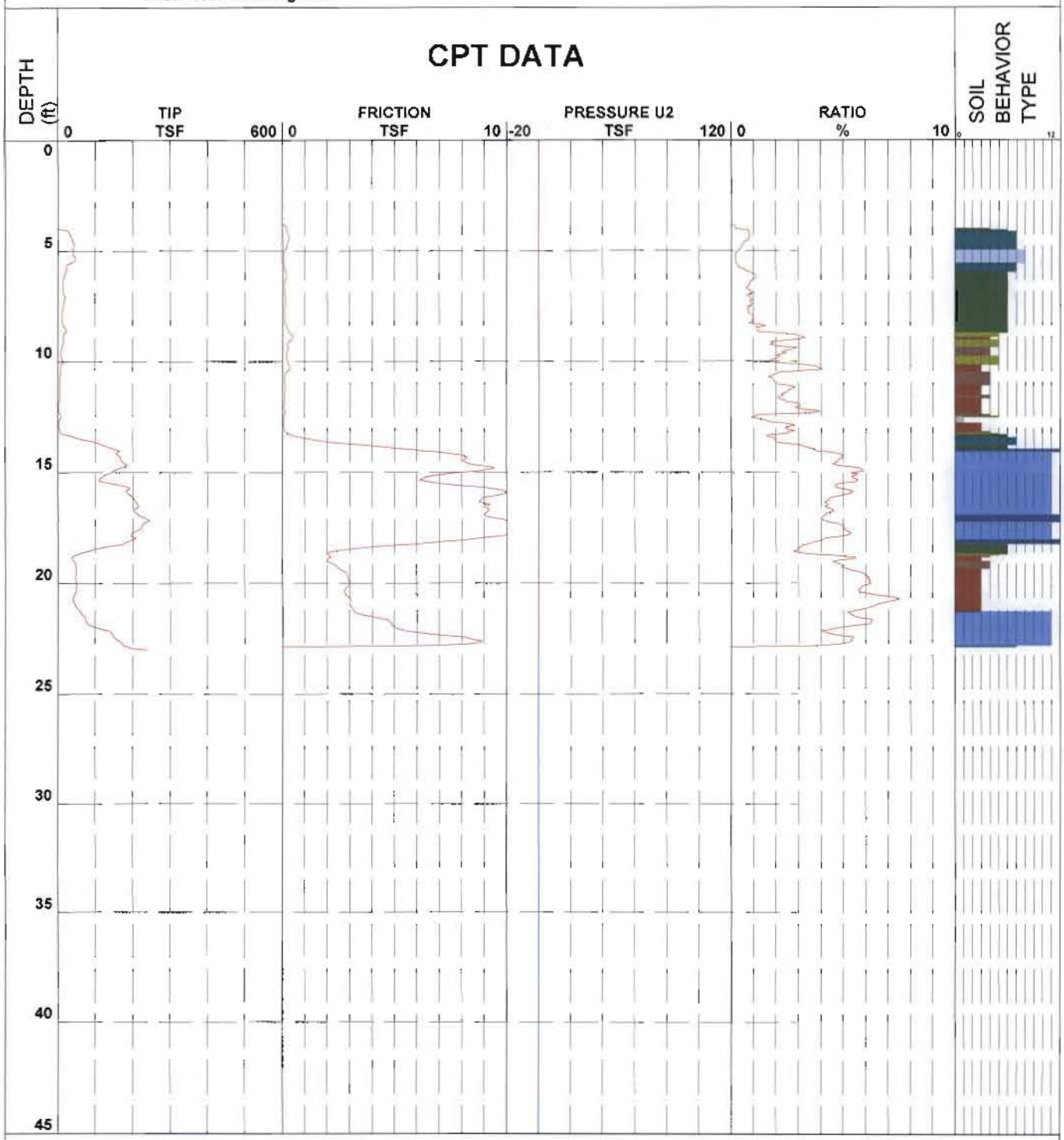

1 - sensitive fine grained
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3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
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8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Robertson et al. 1986 * Overconsolidated or Cemented

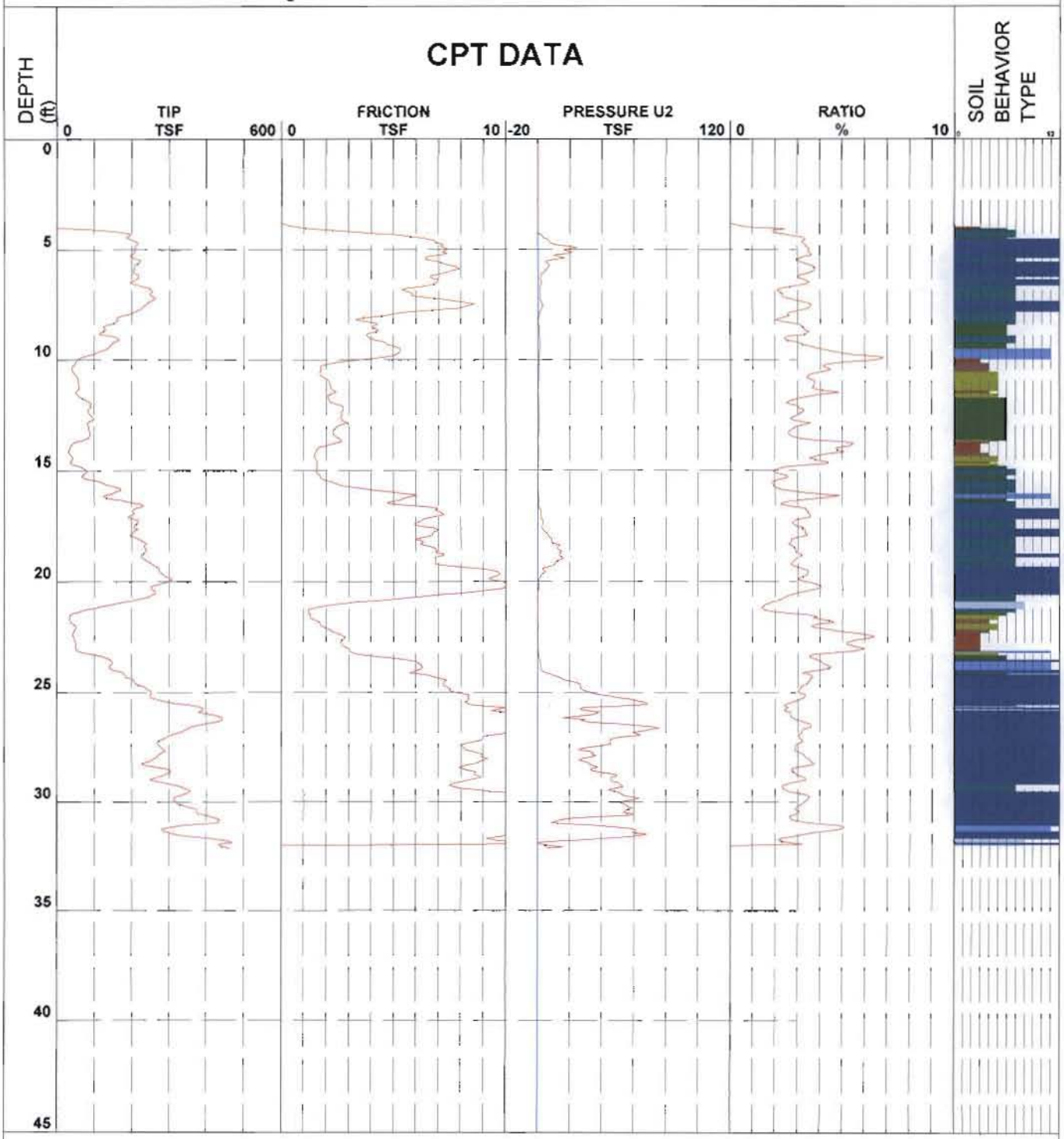
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-11 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 28-Apr-2009 13:01:30 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

First 4 feet hand-augered.



1 - sensitive fine grained
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4 - silty clay to clay
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10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Robertson et al. 1986 * Overconsolidated or Cemented

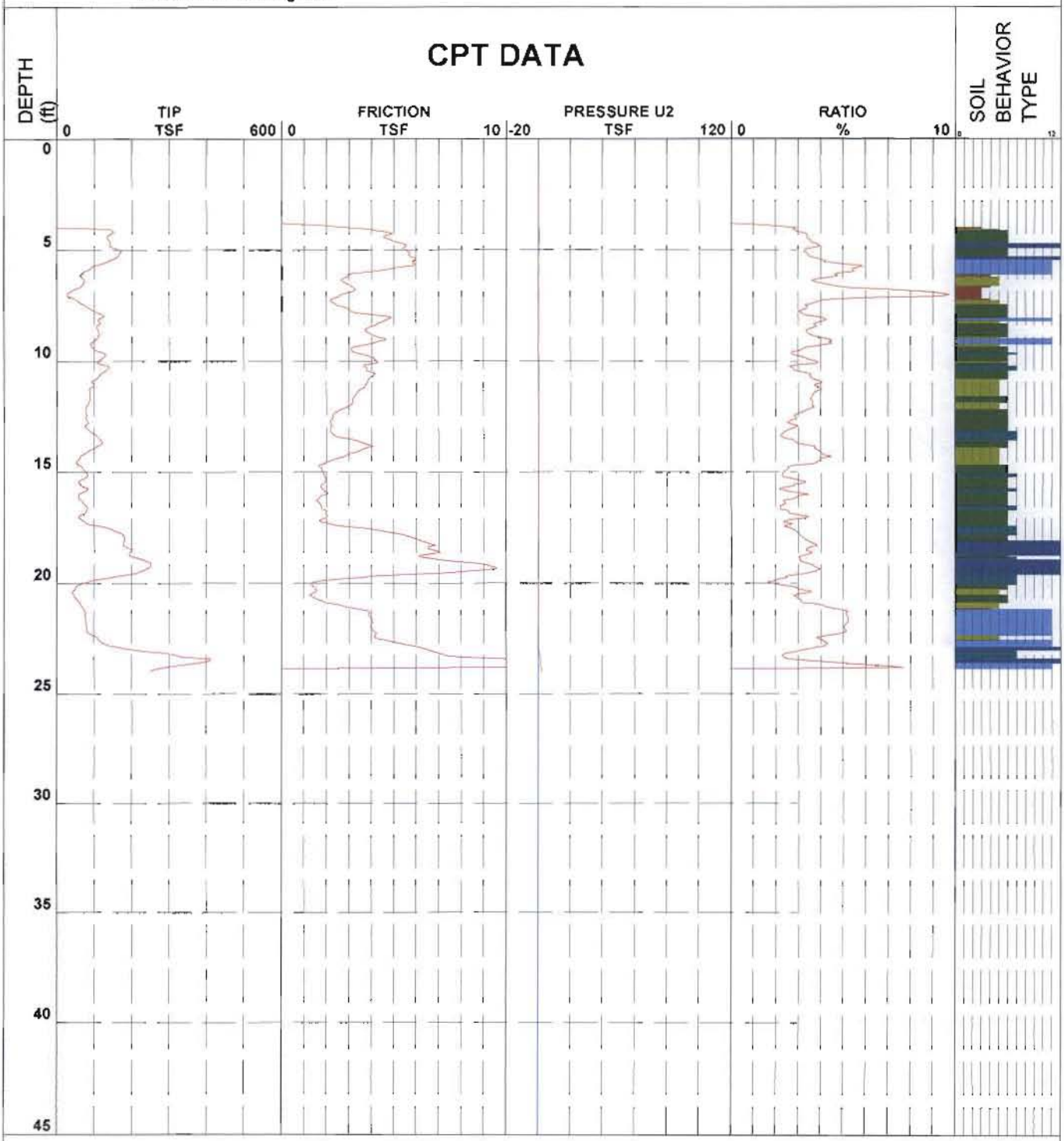
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-12 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 29-Apr-2009 08:14:51 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

First 4 feet hand-augered.



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

Robertson et al. 1986 * Overconsolidated or Cemented

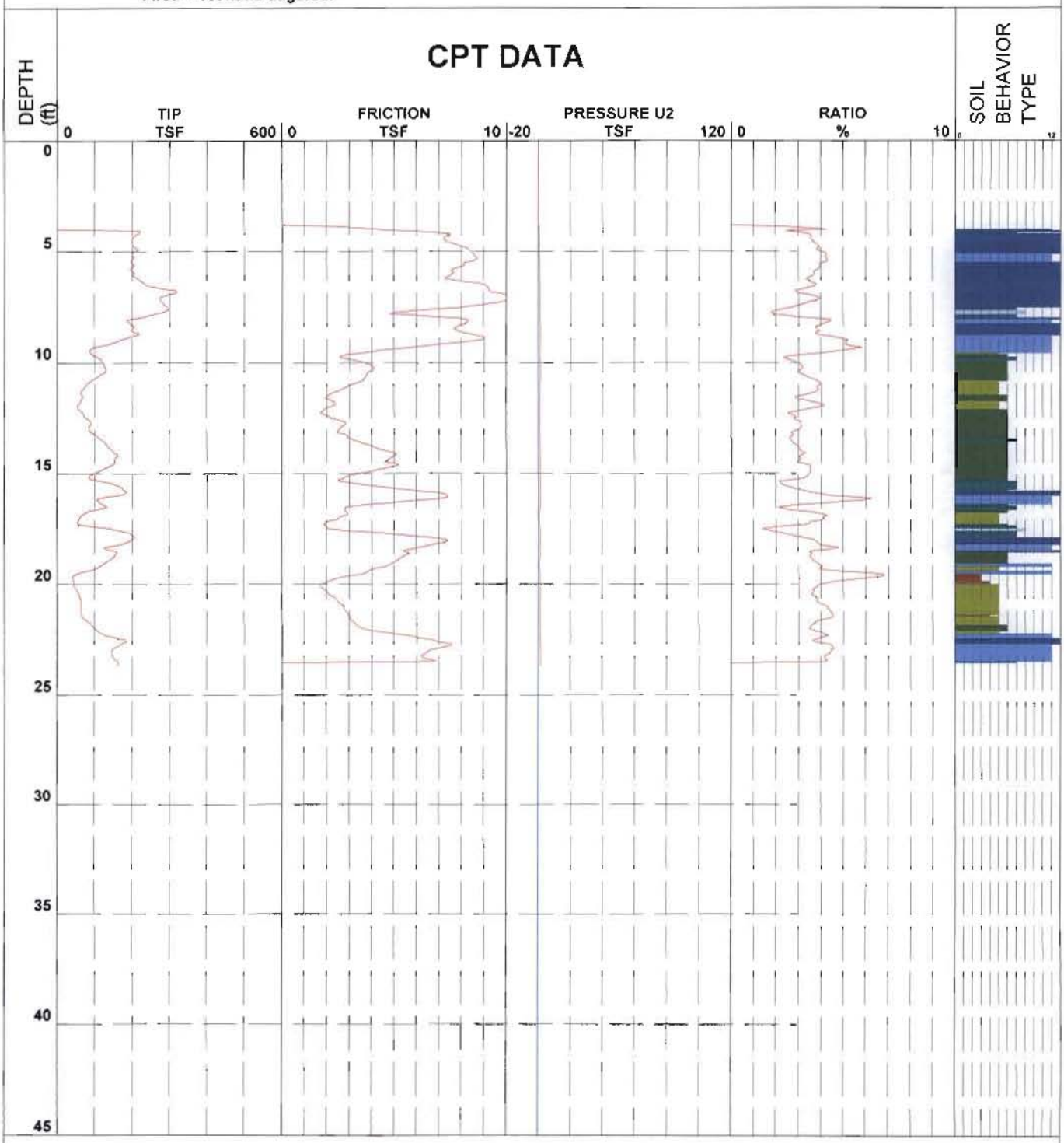
CPT Data

Job Number 040.0909-0023 | CPT Number CPT-13 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tin 29-Apr-2009 09:43:17 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

First 4 feet hand-augered.



1 - sensitive fine grained
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5 - clayey silt to silty clay
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9 - sand
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Robertson et al. 1986 * Overconsolidated or Cemented

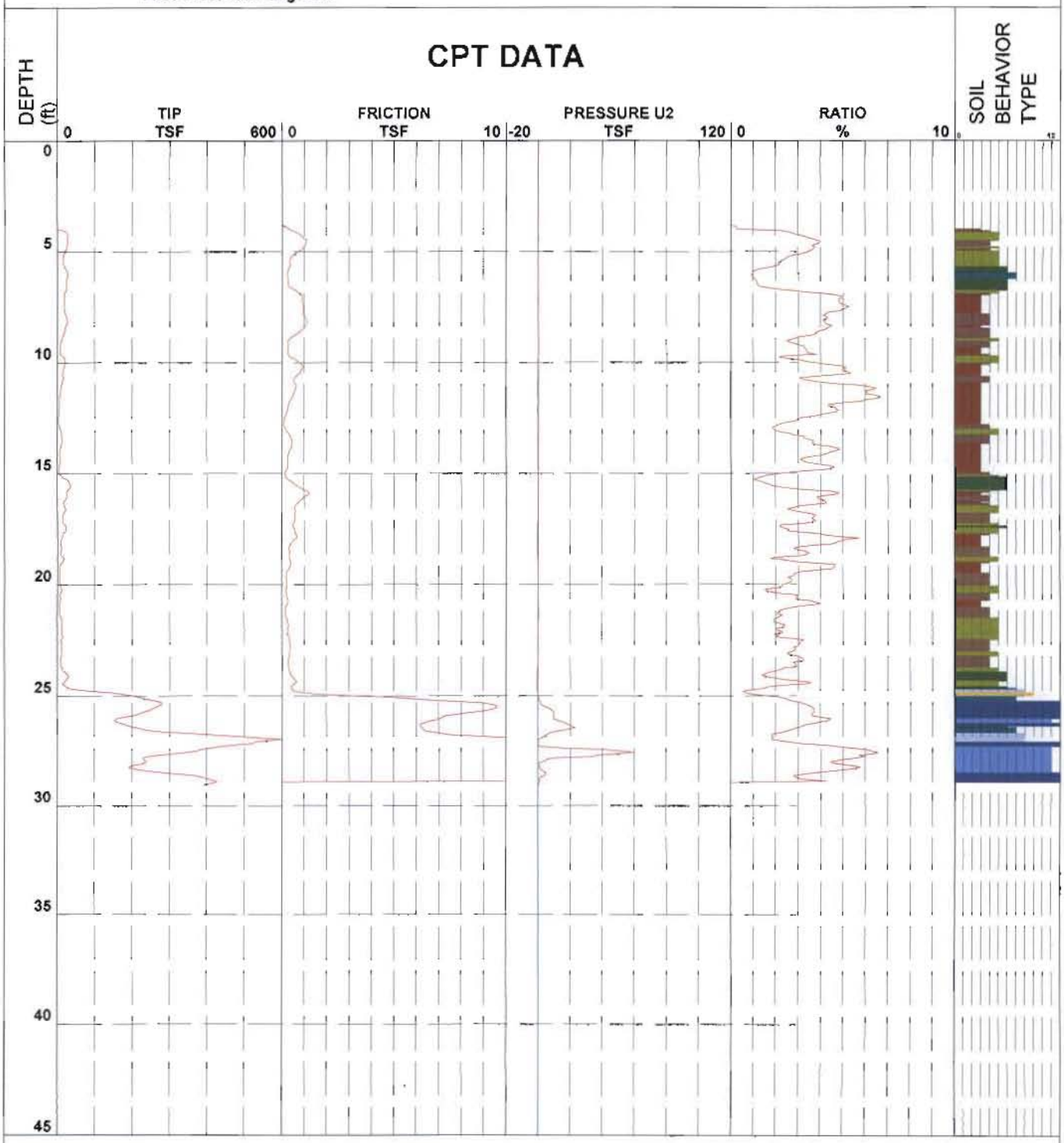
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-14 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 28-Apr-2009 09:35:32 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

First 4 feet hand-augered.



1 - sensitive fine grained
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10 - gravelly sand to sand
11 - very stiff fine grained (*)
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Robertson et al. 1986 * Overconsolidated or Cemented

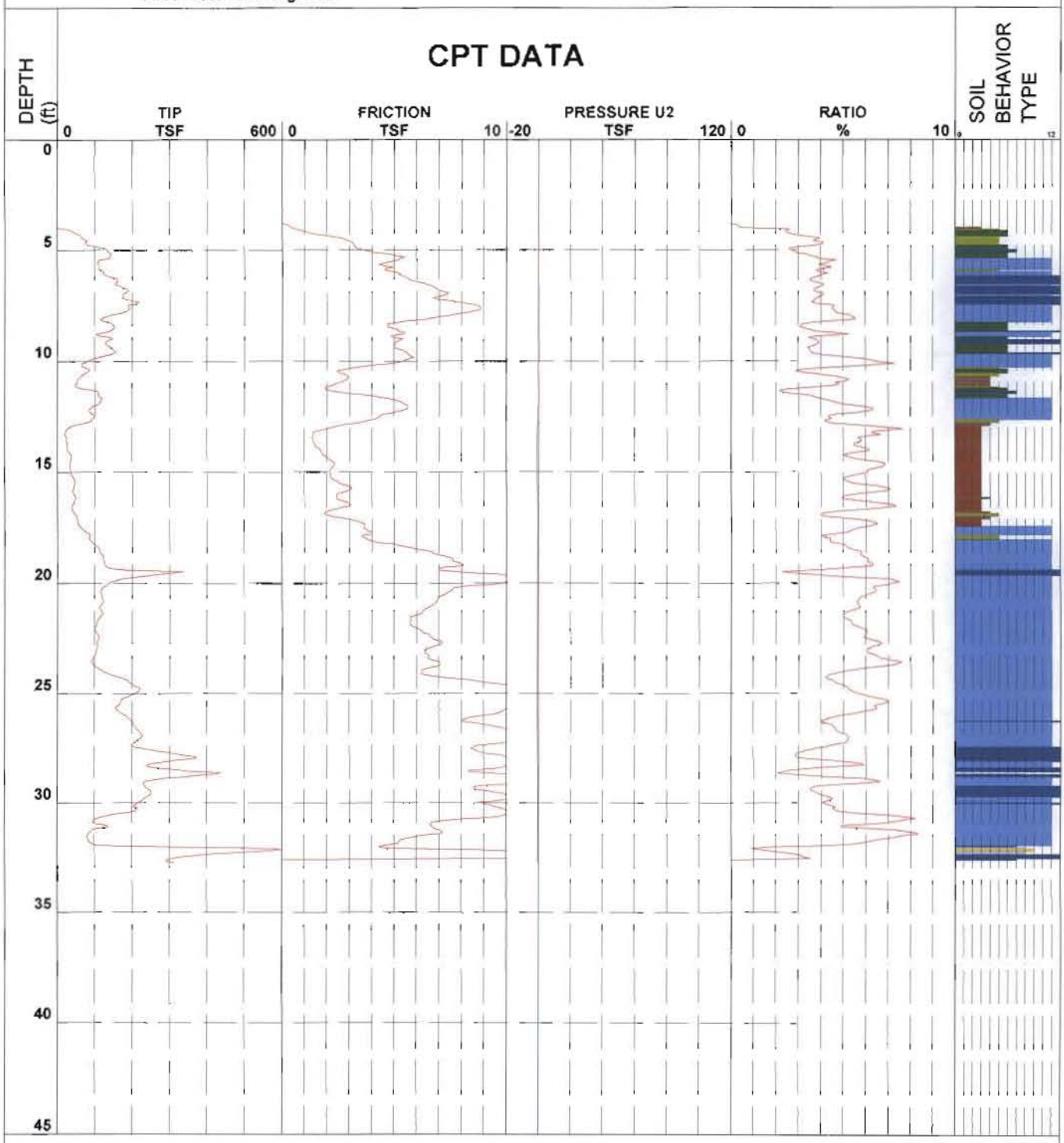
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-15 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 29-Apr-2009 10:53:03 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

First 4 feet hand-augered.



1 - sensitive fine grained
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5 - clayey silt to silty clay
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8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Robertson et al. 1986 * Overconsolidated or Cemented

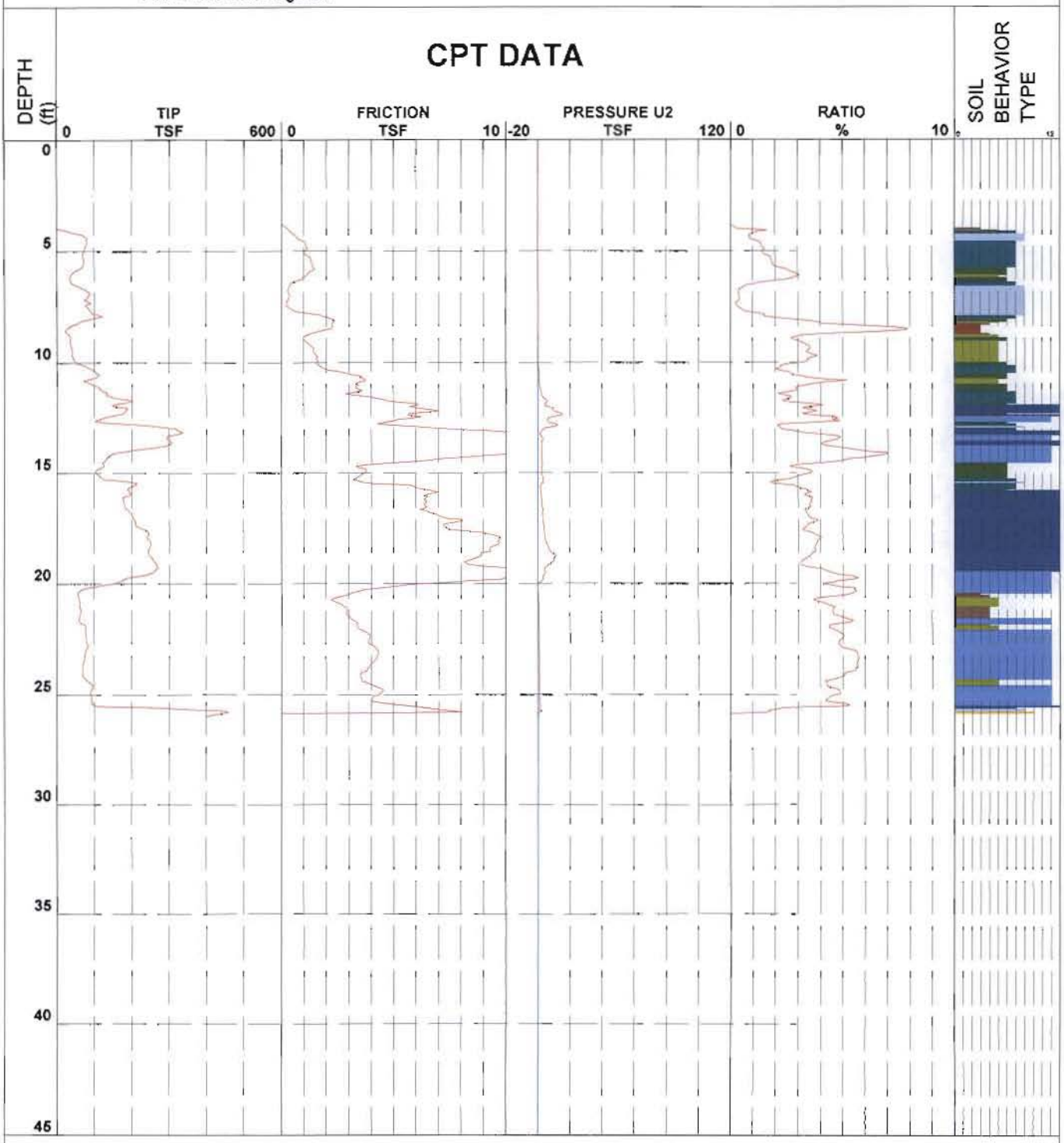
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-16 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 29-Apr-2009 14:19:59 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

First 4 feet hand-augered.



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

Robertson et al. 1986 * Overconsolidated or Cemented

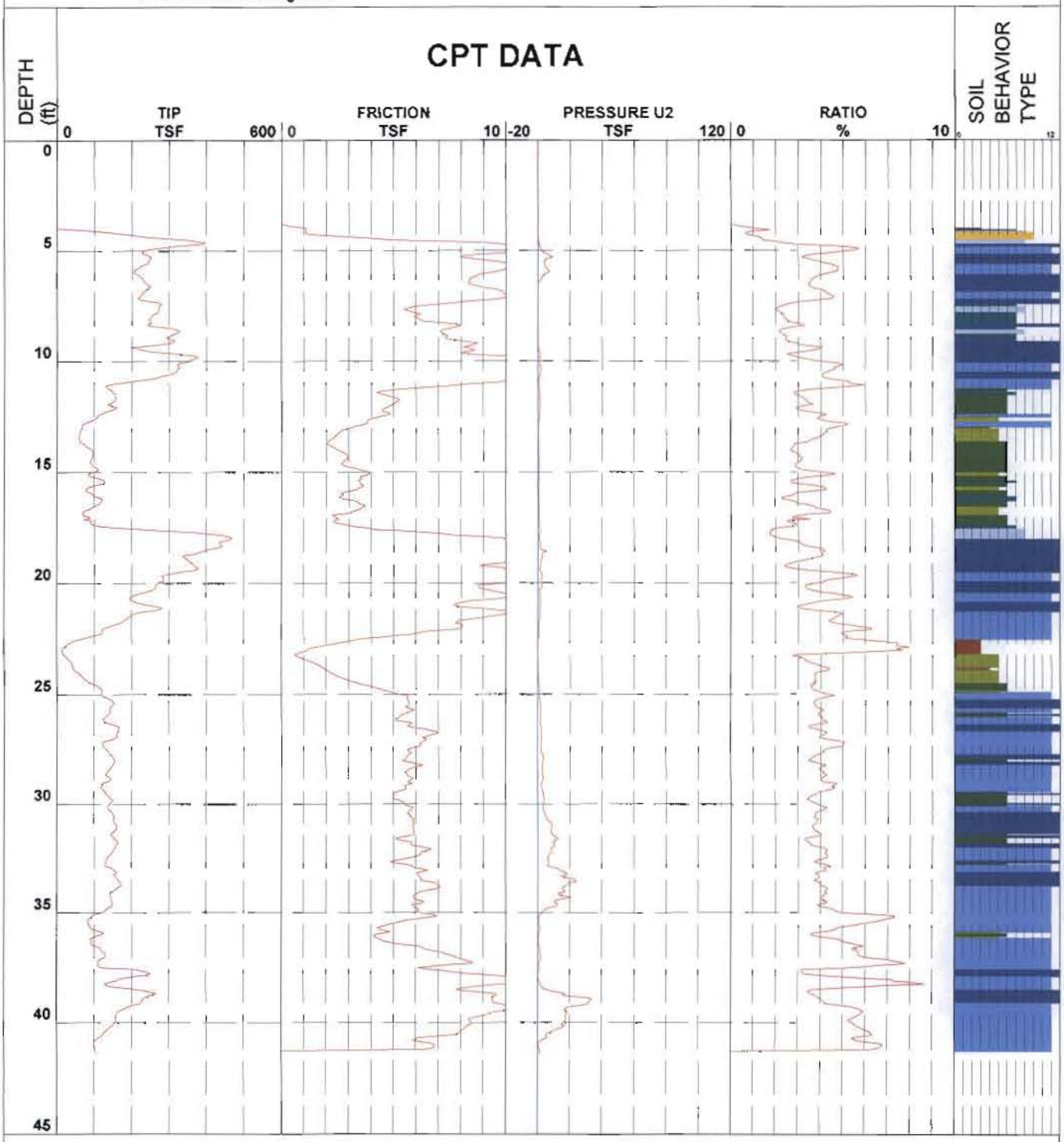
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-17 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 29-Apr-2009 08:50:37 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

First 4 feet hand-augered.



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

Robertson et al. 1986 * Overconsolidated or Cemented

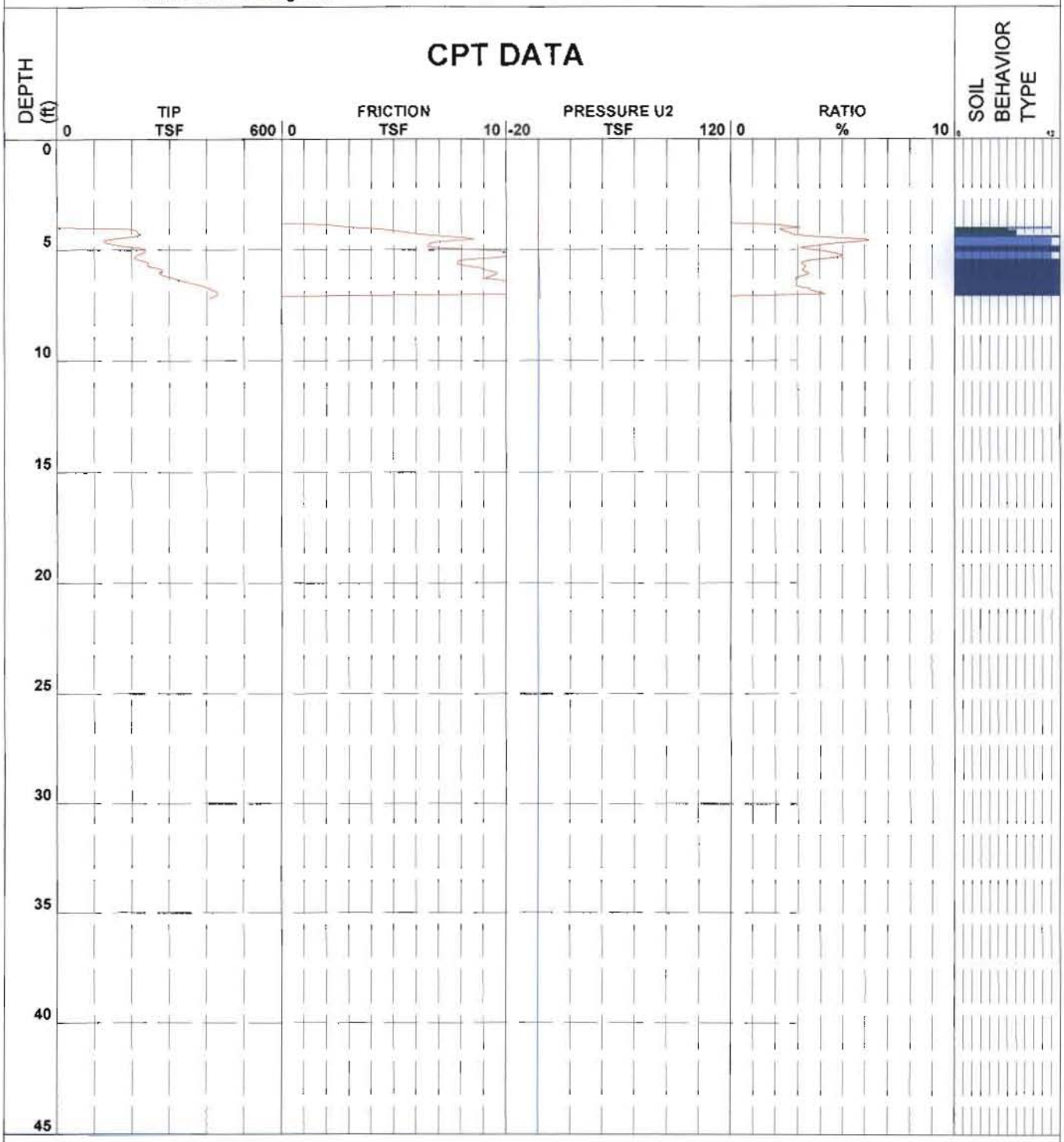
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-18 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 29-Apr-2009 10:23:39 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

First 4 feet hand-augered.



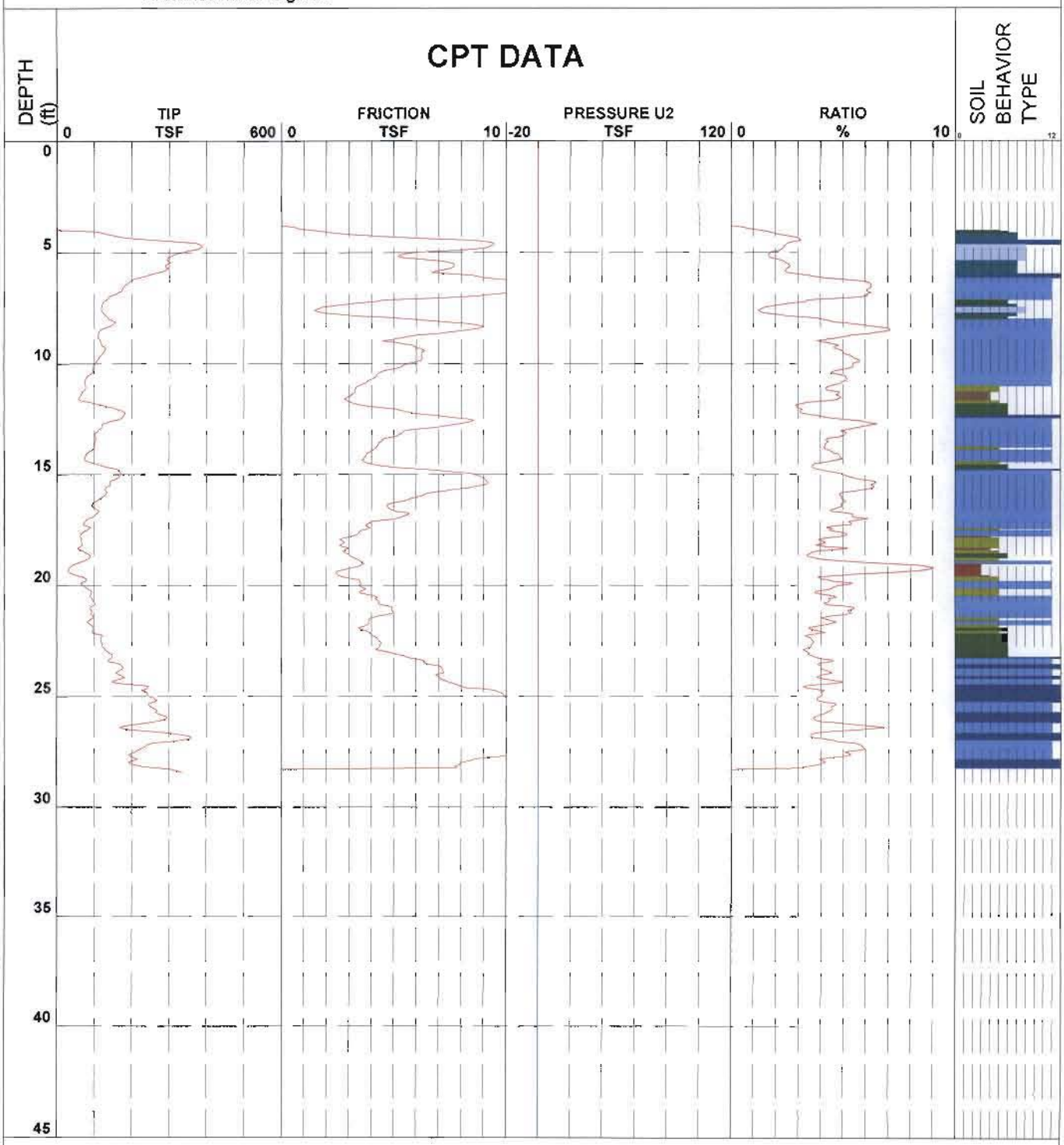
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Robertson et al. 1986 * Overconsolidated or Cemented

CPT Data

Job Number	04.0909-0023	CPT Number	CPT-19	Location	Rancho Santa Fe-CA
Operator	DANIEL GARZA	Date and Tim	30-Apr-2009 13:34:25	Cone Number	F2.5CKE2HAW21832
Client	BBC Environmental, Inc.				

First 4 feet hand-augered.



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

Robertson et al. 1986 * Overconsolidated or Cemented

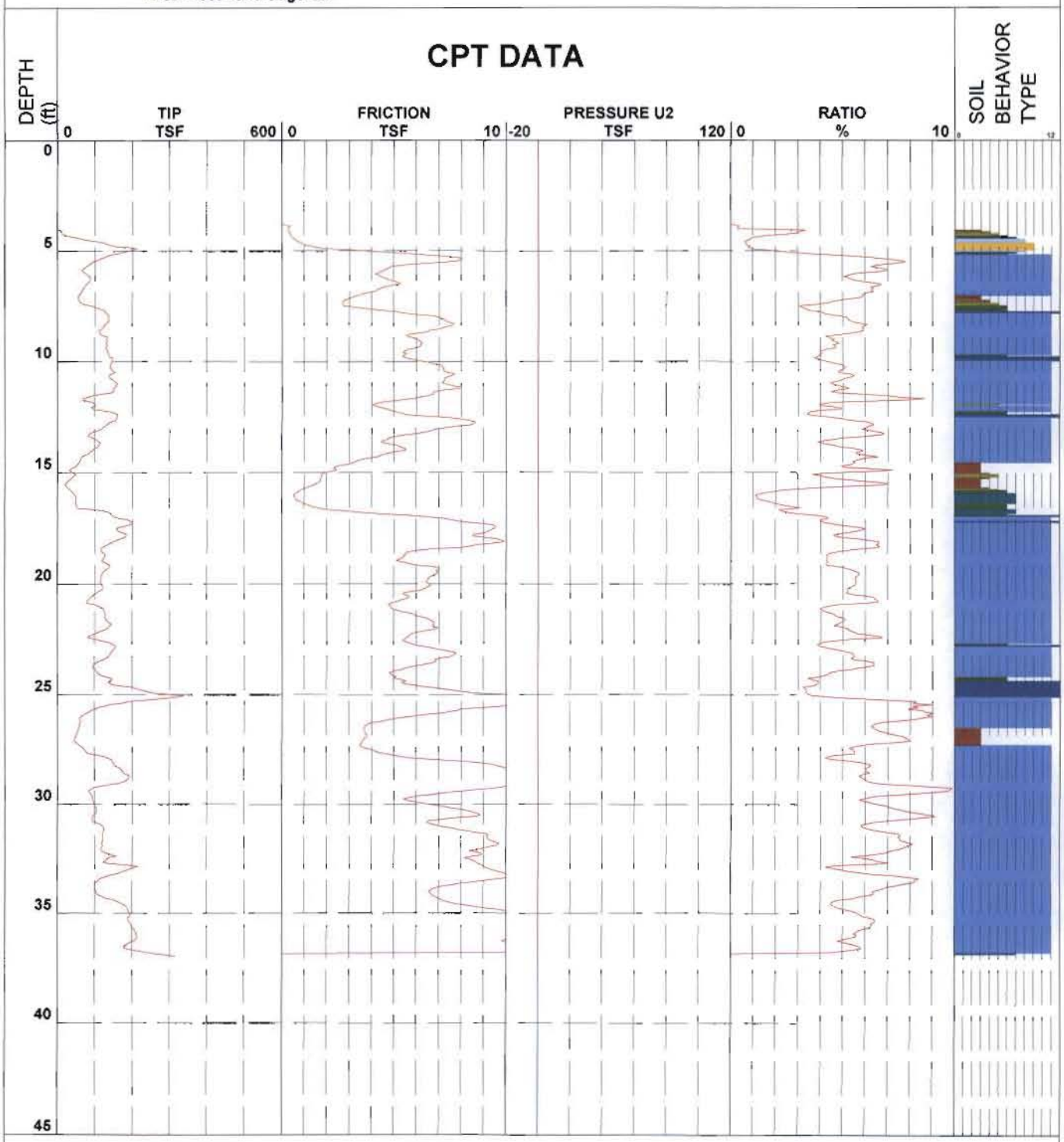
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-20 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 30-Apr-2009 09:48:19 | Cone Number F2.5CKE2HAW21832

Client BBC Environmental, Inc.

First 4 feet hand-augered.



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

Robertson et al. 1986 * Overconsolidated or Cemented

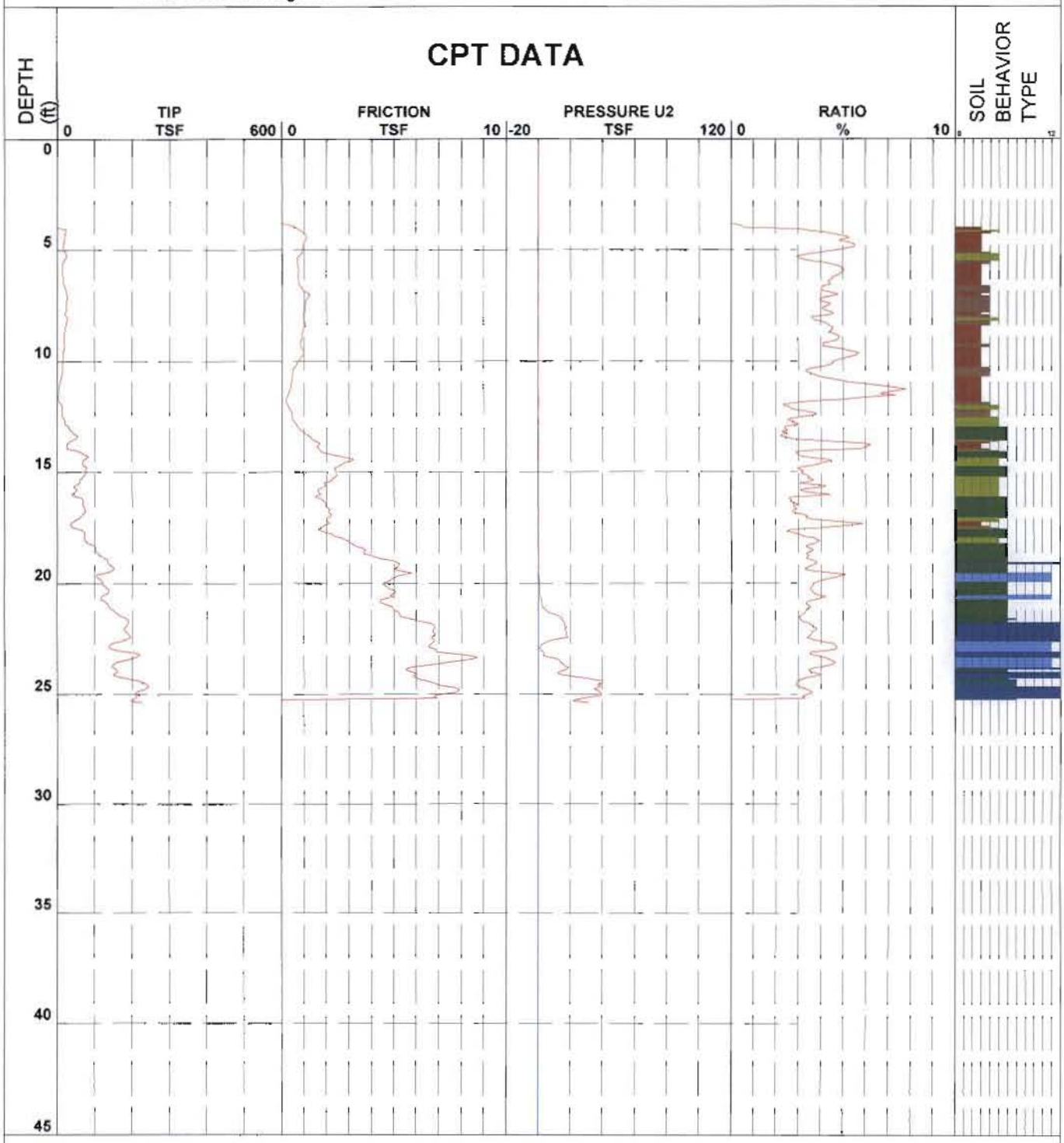
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-21 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 28-Apr-2009 10:19:25 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

First 4 feet hand-augered.



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

Robertson et al. 1986 * Overconsolidated or Cemented

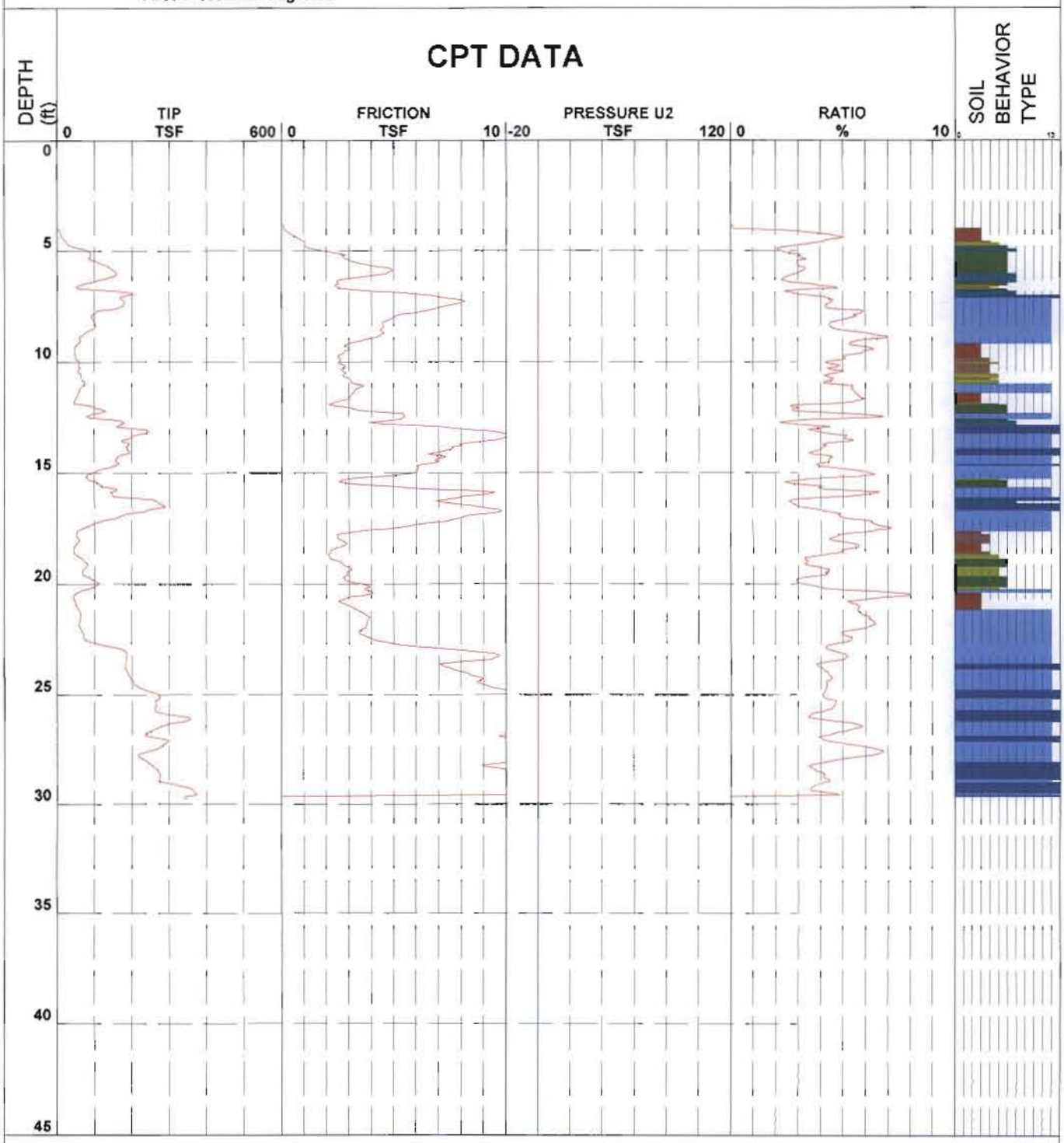
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-22 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 30-Apr-2009 09:00:40 | Cone Number F2.5CKE2HAW21832

Client BBC Environmental, Inc.

First 4 feet hand-augered.



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

Robertson et al. 1986 * Overconsolidated or Cemented

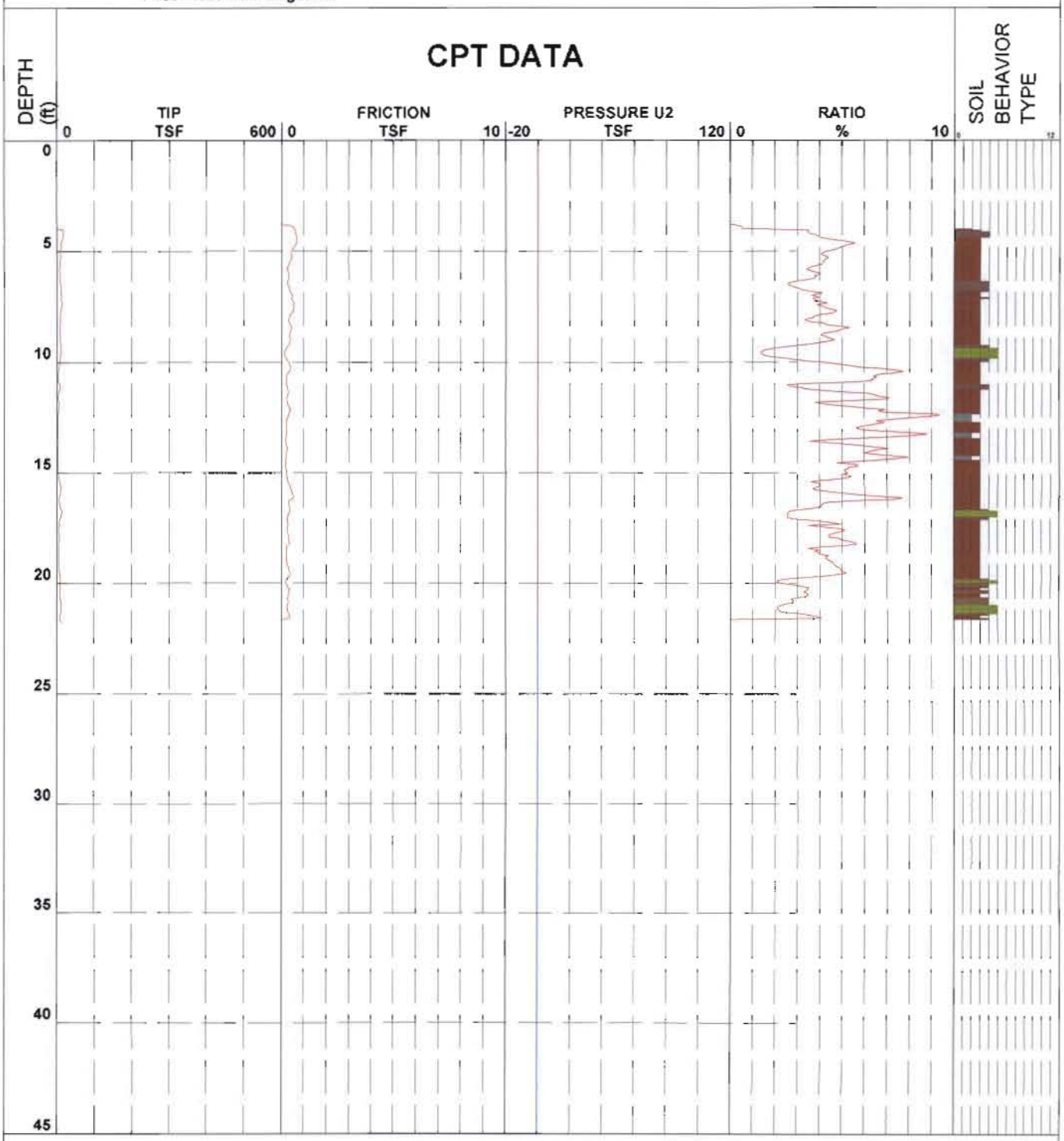
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-23 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 30-Apr-2009 08:18:03 | Cone Number F2.5CKE2HAW21832

Client BBC Environmental, Inc.

First 4 feet hand-augered.



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

Robertson et al. 1986 * Overconsolidated or Cemented

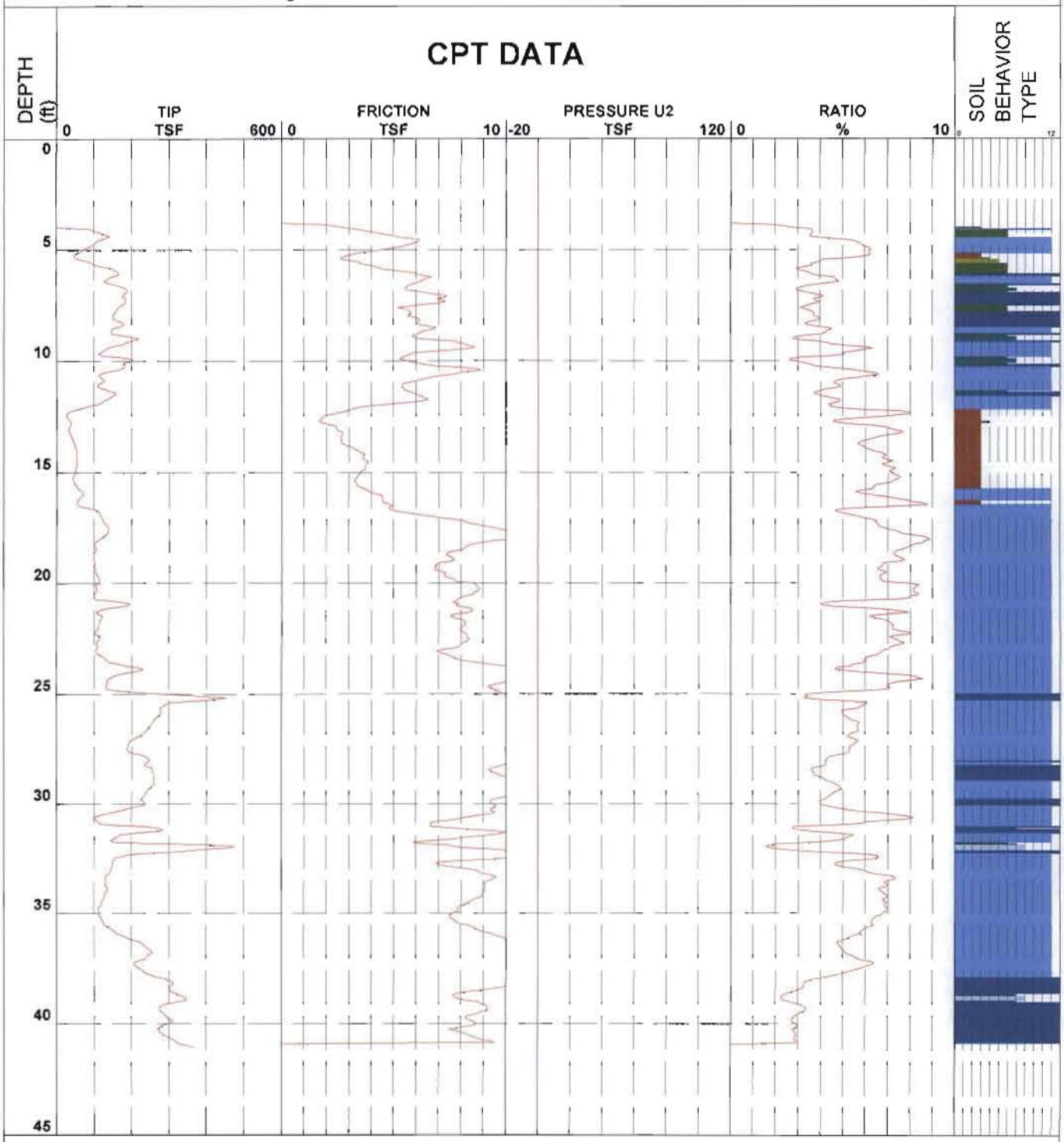
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-25 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 30-Apr-2009 10:28:33 | Cone Number F2.5CKE2HAW21832

Client BBC Environmental, Inc.

First 4 feet hand-augered.



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

Robertson et al. 1986 * Overconsolidated or Cemented

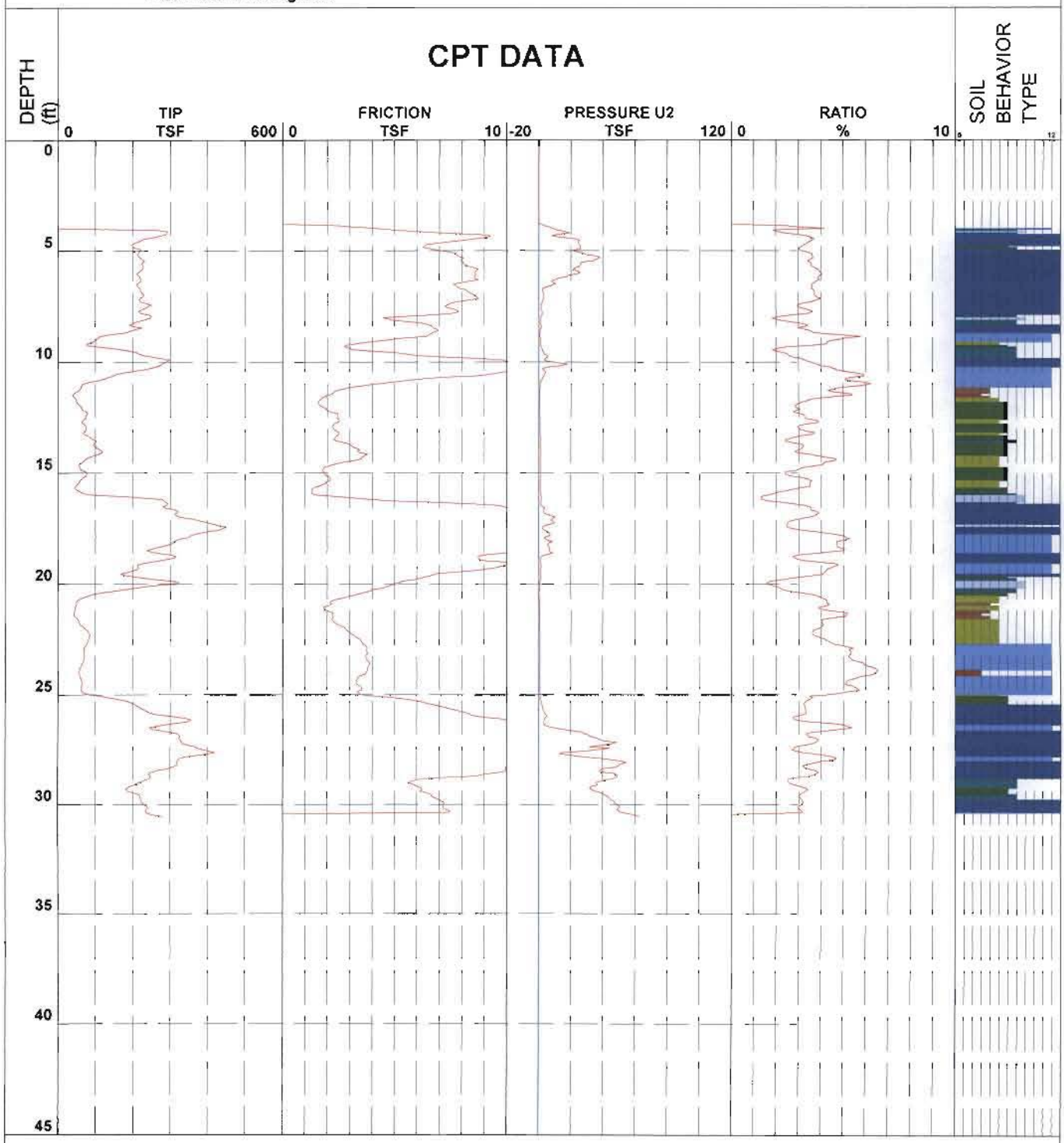
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-26 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 29-Apr-2009 13:26:08 | Cone Number F7.5CKE2HAW21165

Client BBC Environmental, Inc.

First 4 feet hand-augered.



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

Robertson et al. 1986 * Overconsolidated or Cemented

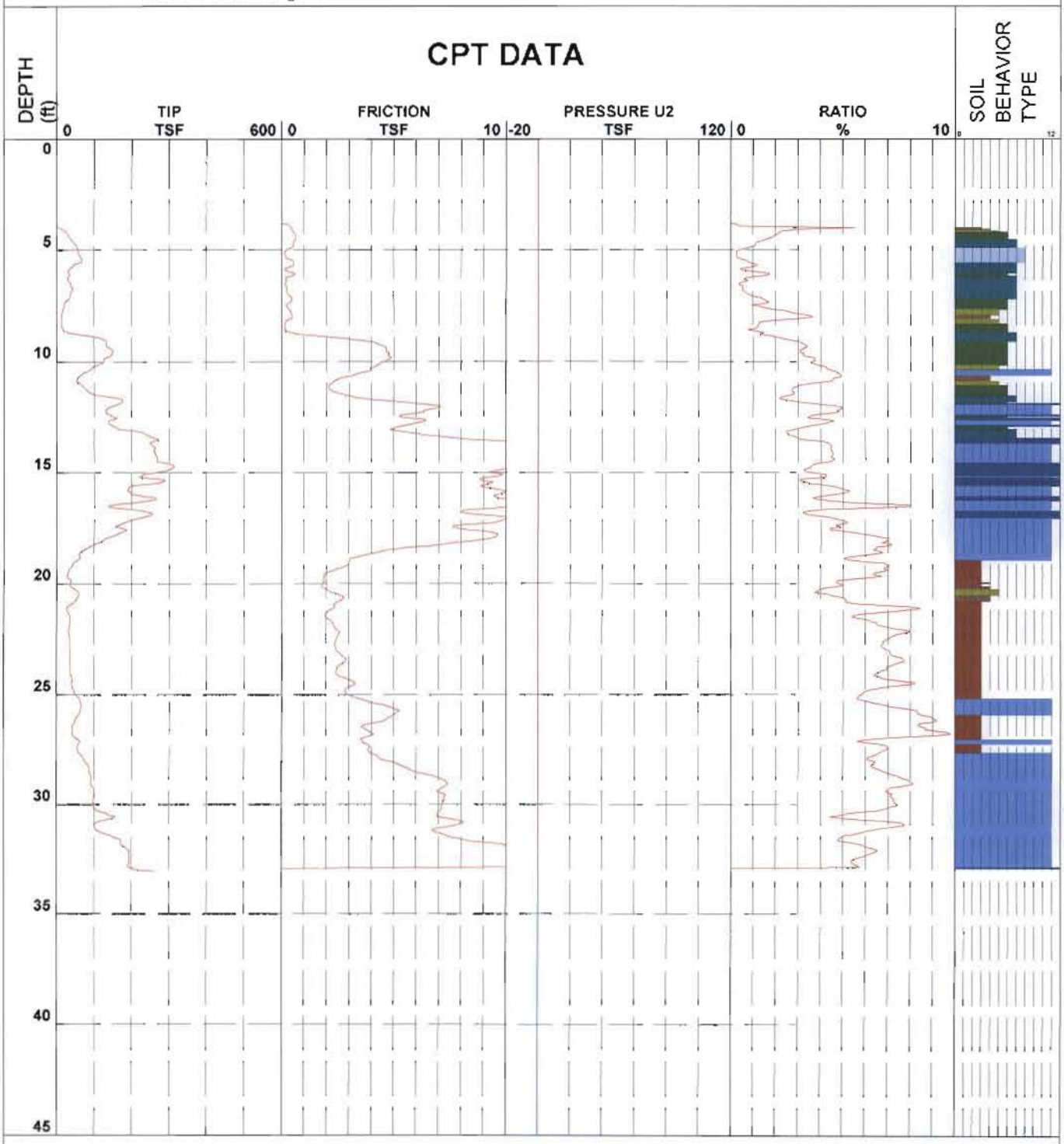
CPT Data

Job Number 04.0909-0023 | CPT Number CPT-27 | Location Rancho Santa Fe-CA

Operator DANIEL GARZA | Date and Tim 30-Apr-2009 12:16:05 | Cone Number F2.5CKE2HAW21832

Client BBC Environmental, Inc.

First 4 feet hand-augered.

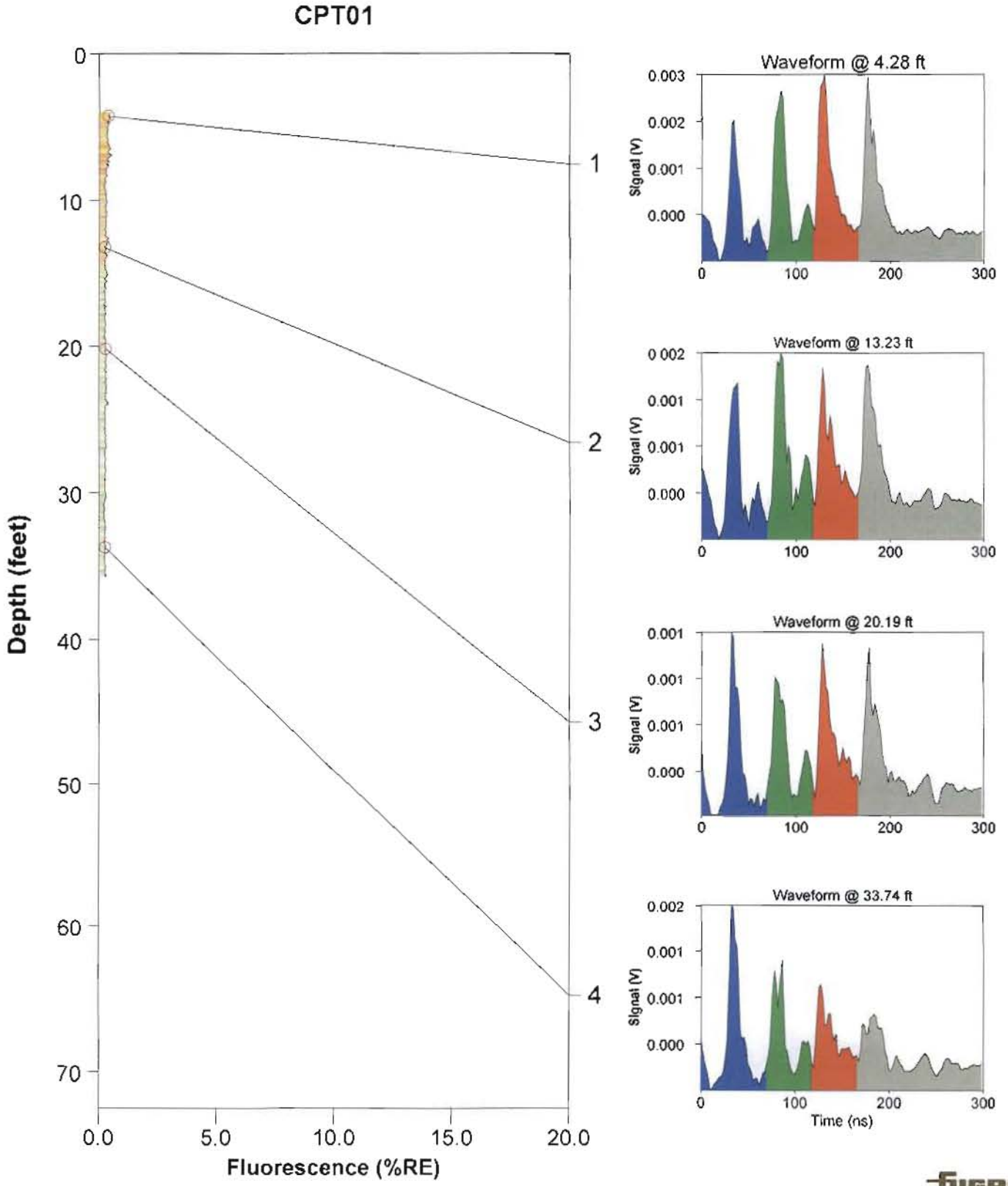


1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Robertson et al. 1986 * Overconsolidated or Cemented

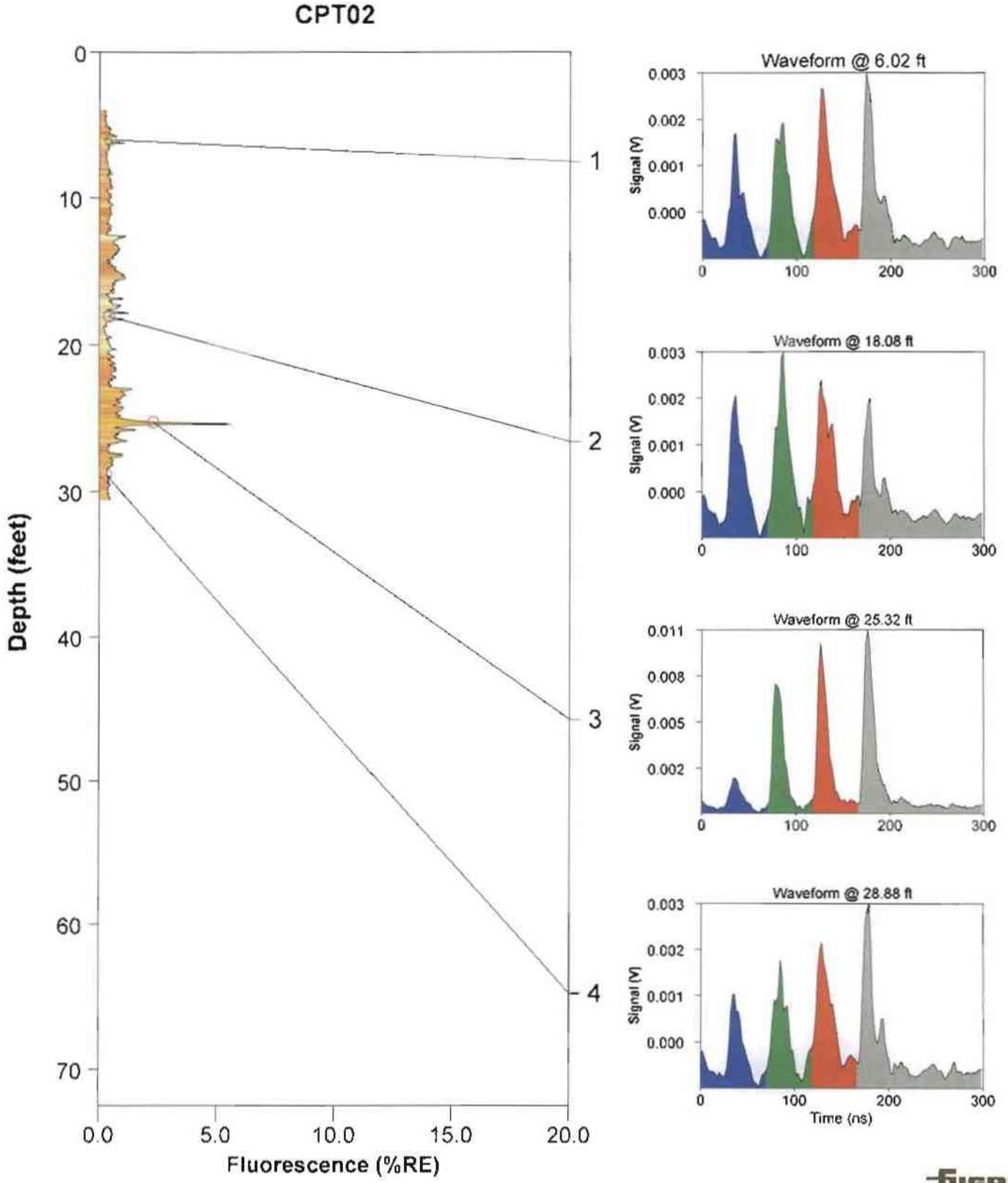
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/28/2009 @ 1:52:10 PM	Max fluorescence: 0.53% @ 6.94 ft
ROST Unit: 1	Final depth BGS: 35.72 ft



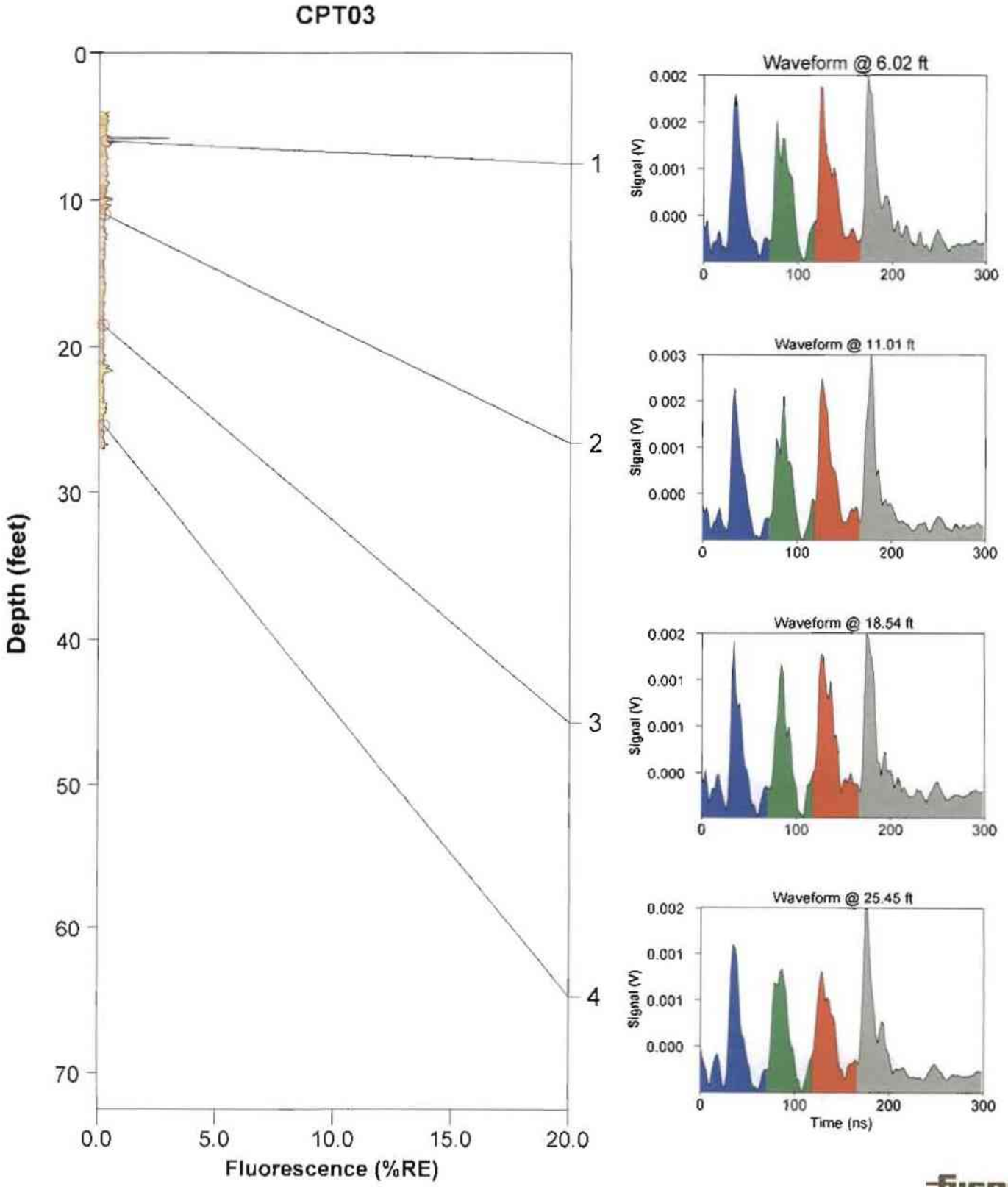
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/28/2009 @ 2:43:30 PM	Max fluorescence: 5.65% @ 25.43 ft
ROST Unit: 1	Final depth BGS: 30.59 ft



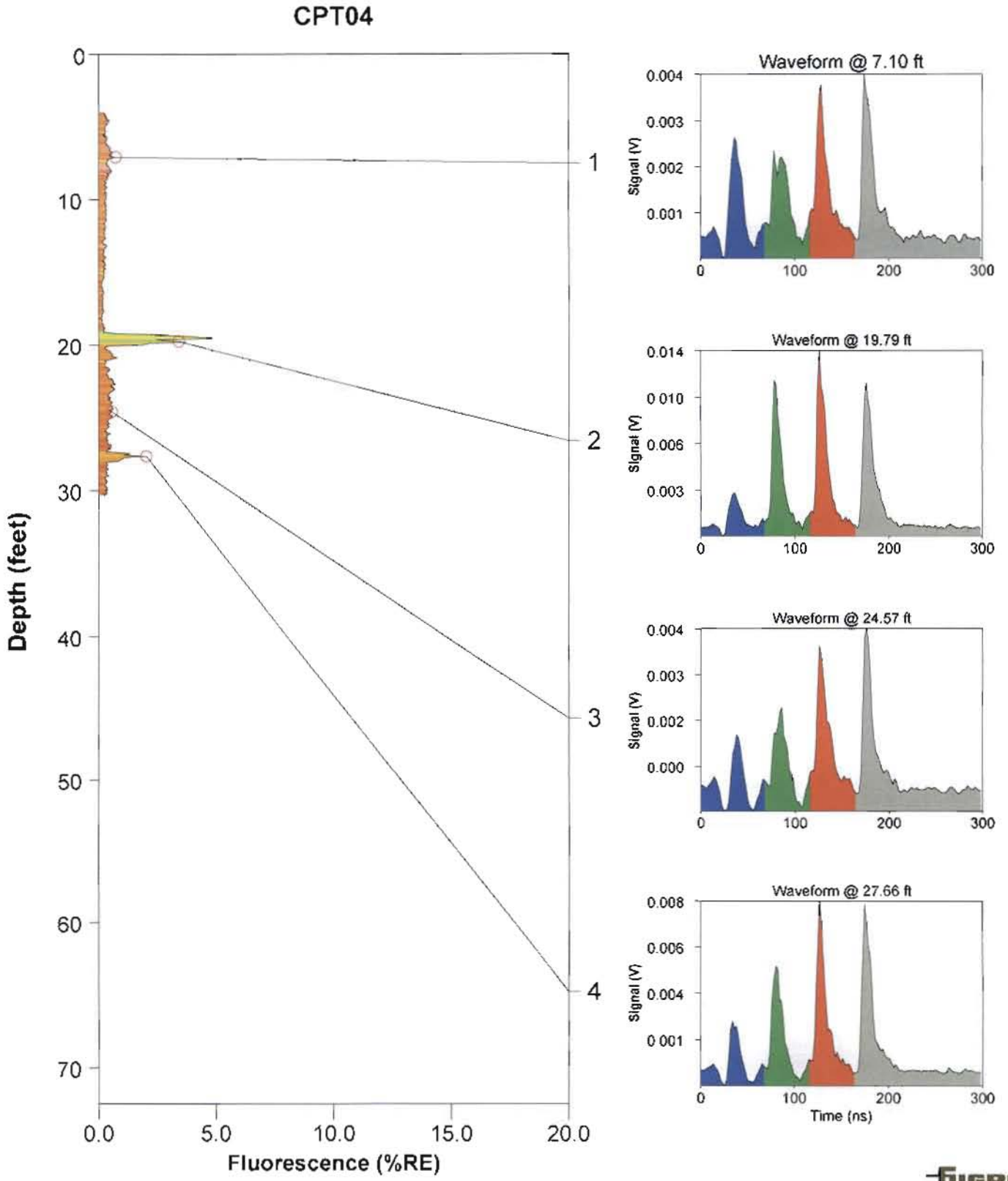
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/28/2009 @ 3:24:08 PM	Max fluorescence: 2.98% @ 5.82 ft
ROST Unit: 1	Final depth BGS: 27.07 ft



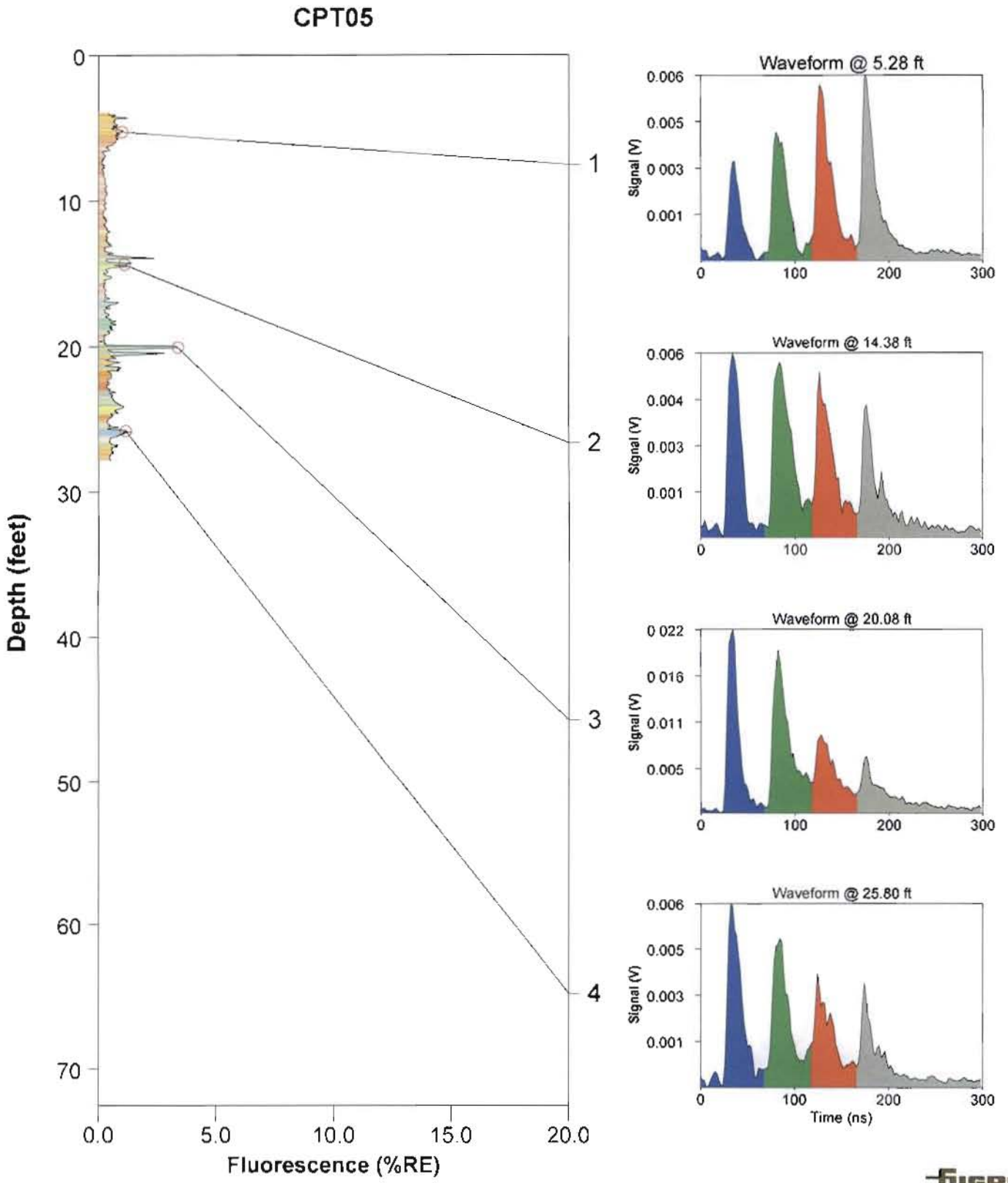
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/30/2009 @ 12:56:31 PM	Max fluorescence: 4.85% @ 19.56 ft
ROST Unit: 1	Final depth BGS: 30.30 ft



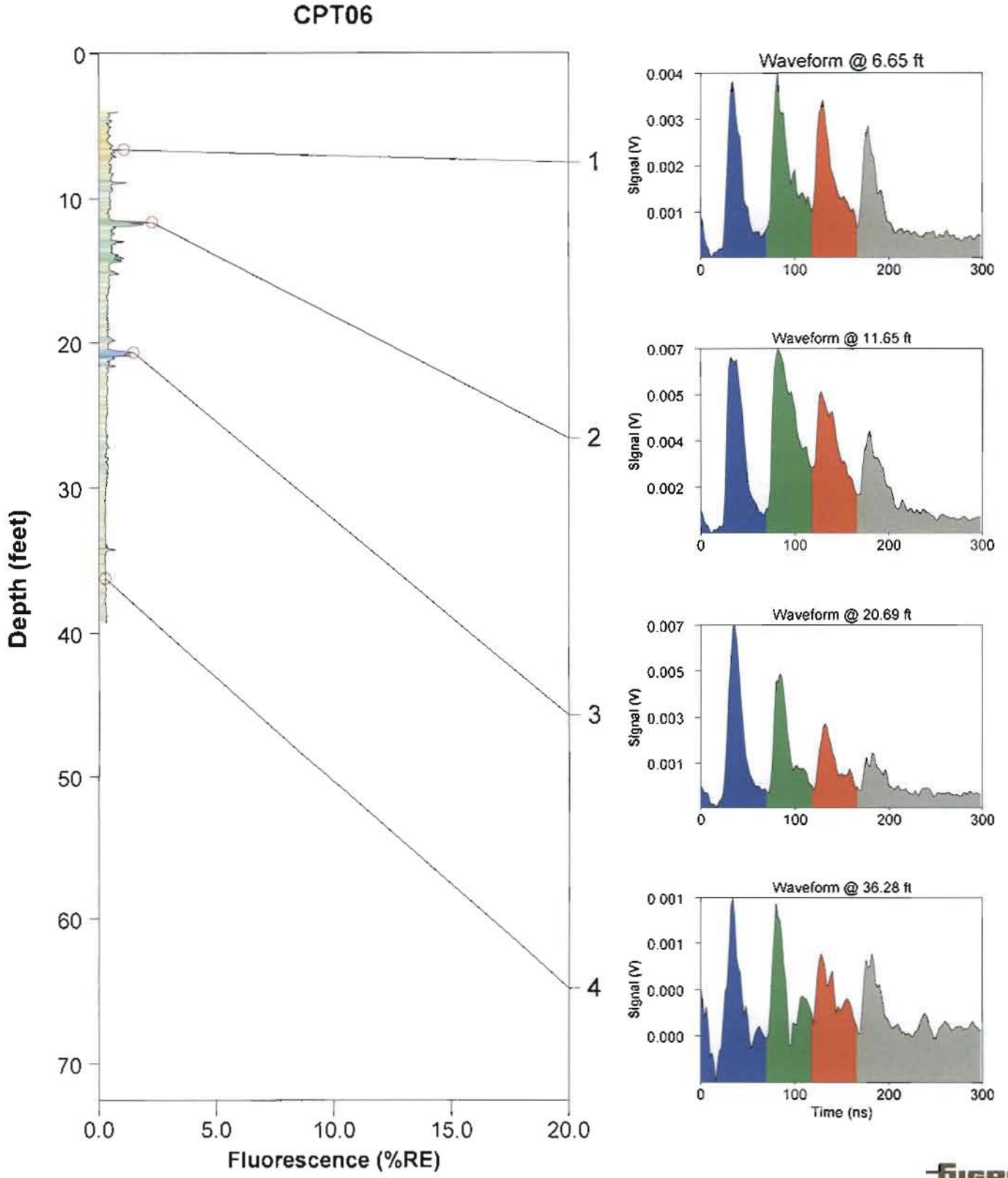
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/28/2009 @ 4:03:49 PM	Max fluorescence: 3.39% @ 20.08 ft
ROST Unit: 1	Final depth BGS: 27.80 ft



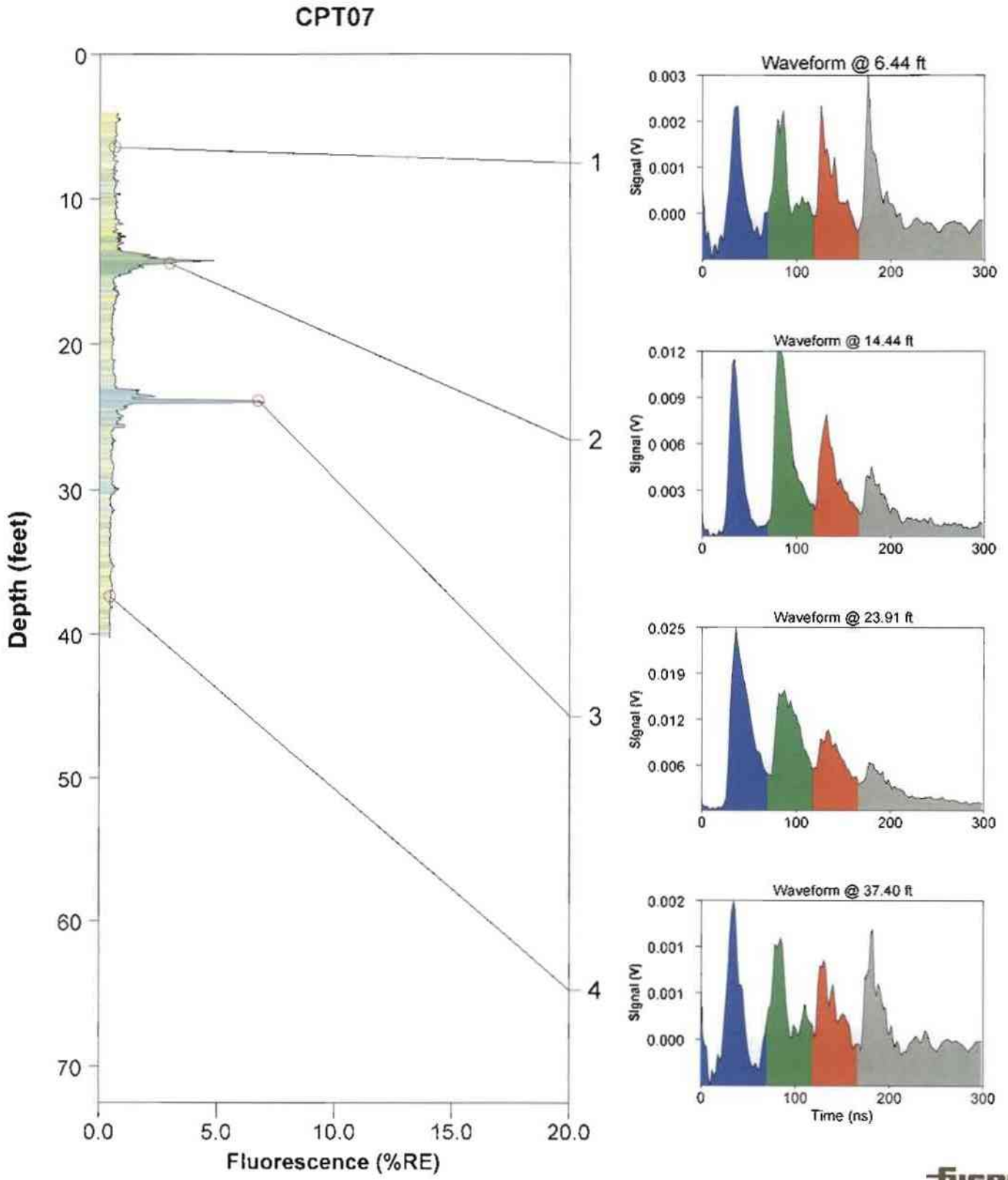
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/28/2009 @ 10:56:02 AM	Max fluorescence: 2.27% @ 11.65 ft
ROST Unit: 1	Final depth BGS: 39.33 ft



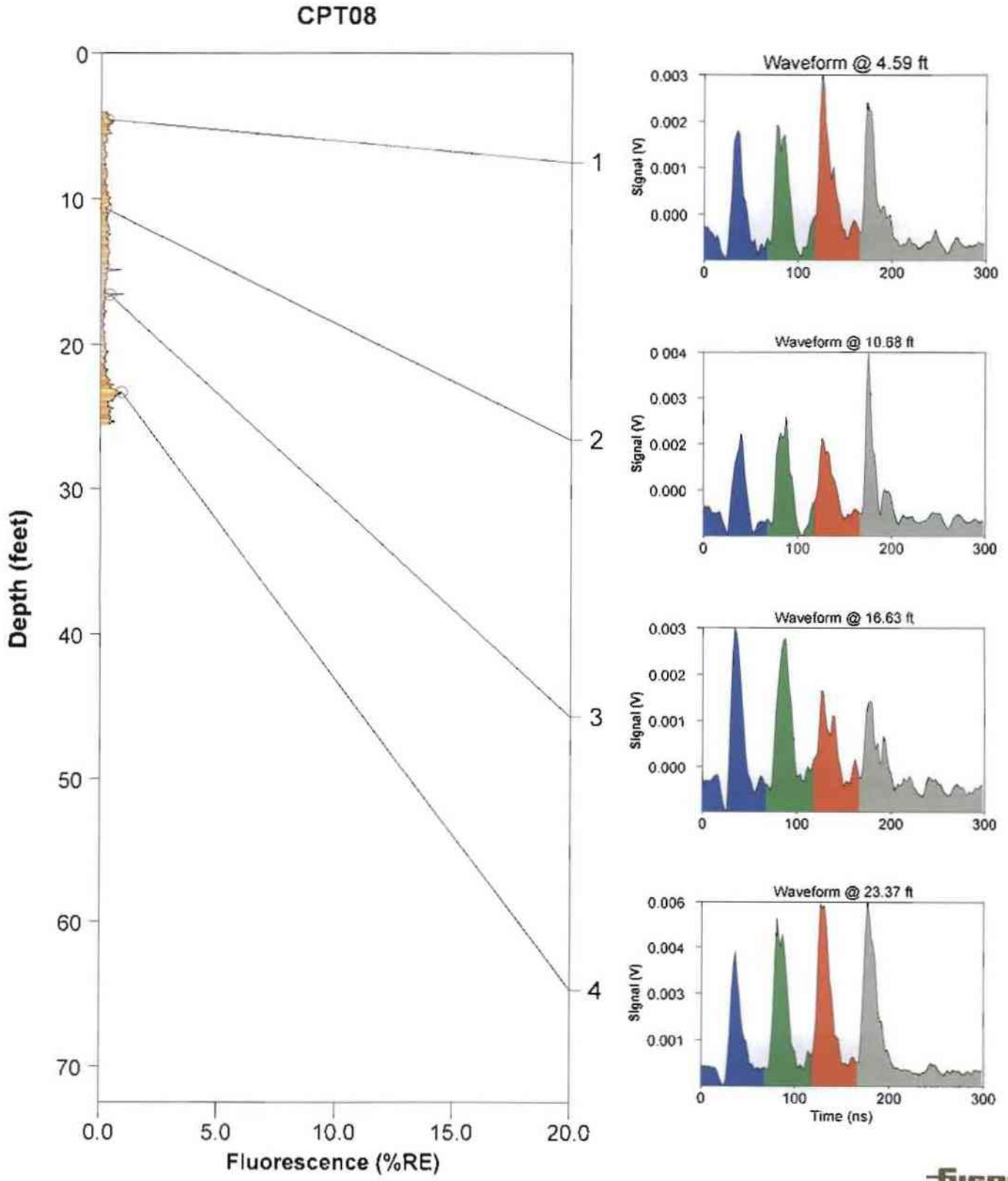
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/28/2009 @ 8:45:57 AM	Max fluorescence: 7.03% @ 24.03 ft
ROST Unit: 1	Final depth BGS: 40.26 ft



ROST Fluorescence Response Data

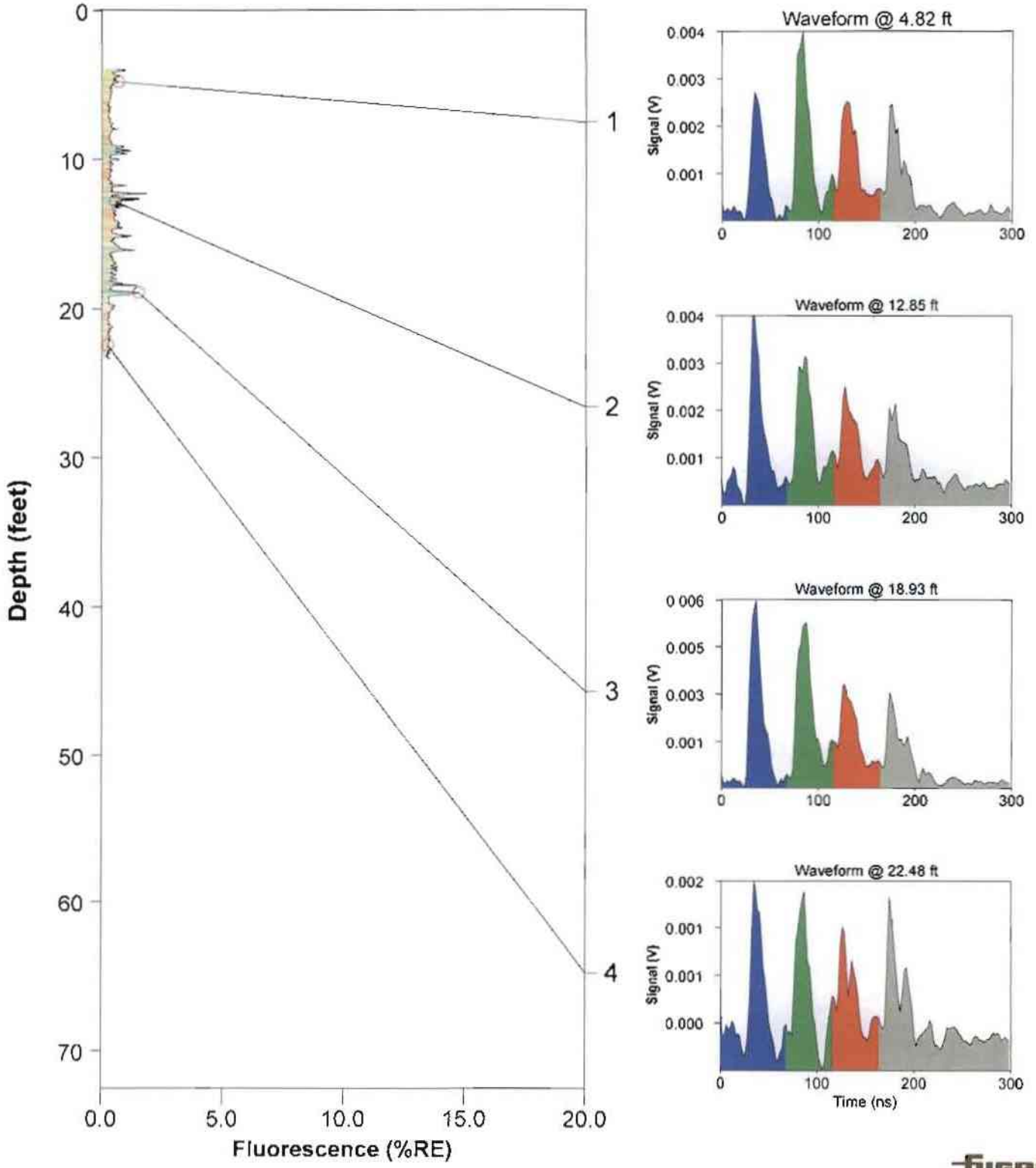
Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/28/2009 @ 4:48:13 PM	Max fluorescence: 0.99% @ 16.56 ft
ROST Unit: 1	Final depth BGS: 25.59 ft



ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/29/2009 @ 7:20:38 AM	Max fluorescence: 1.86% @ 12.32 ft
ROST Unit: 1	Final depth BGS: 23.35 ft

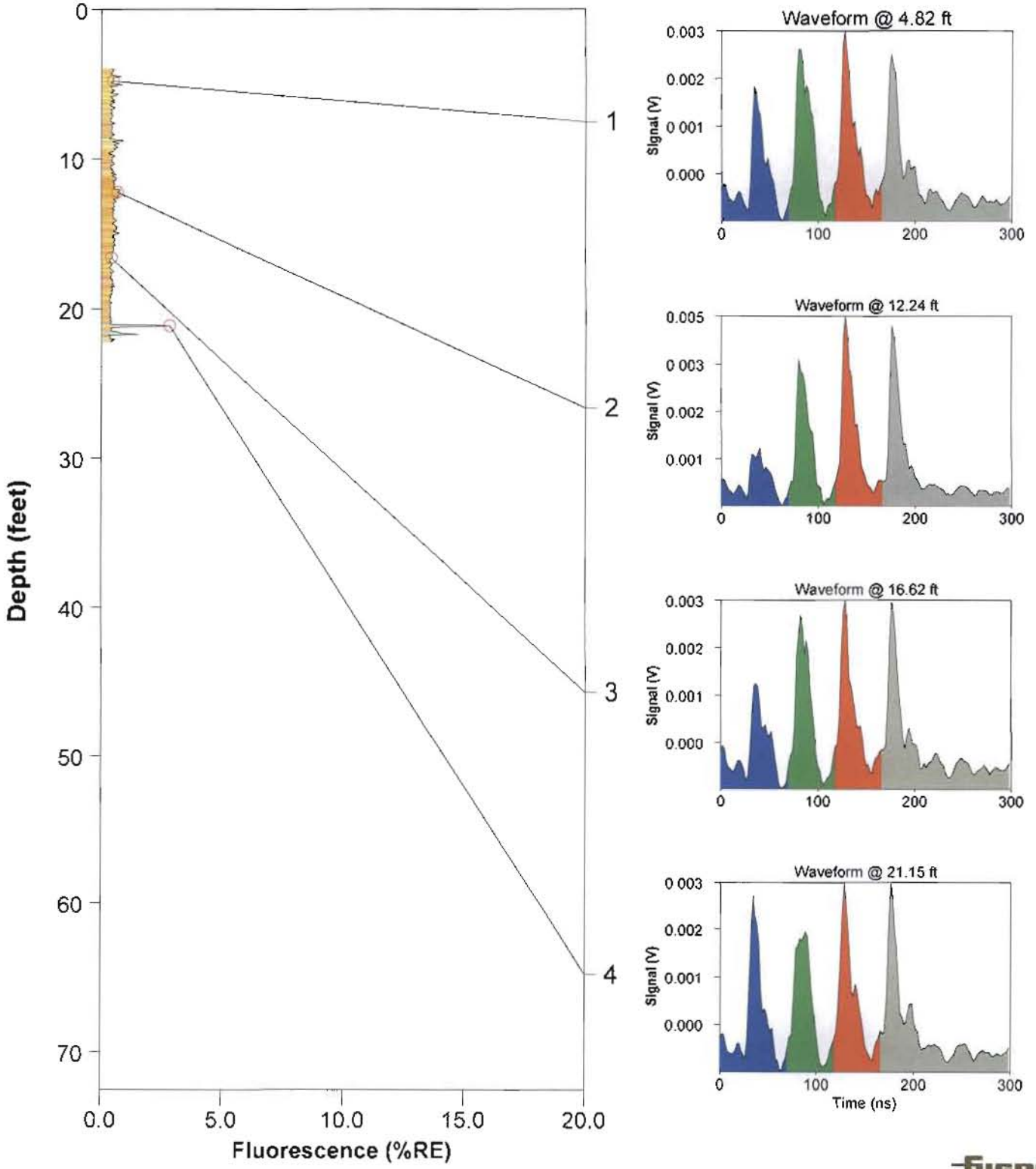
CPT09



ROST Fluorescence Response Data

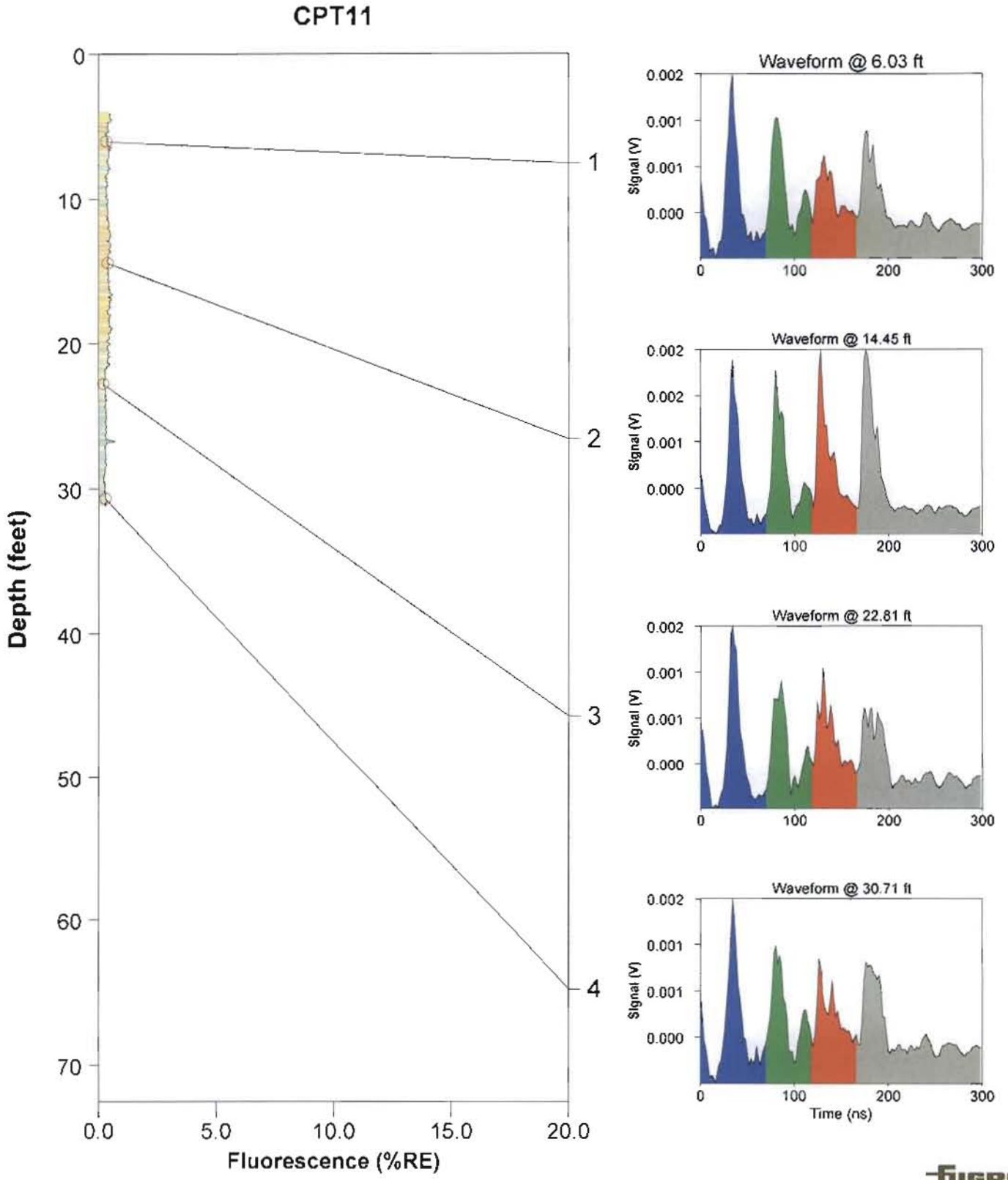
Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/30/2009 @ 7:37:00 AM	Max fluorescence: 2.84% @ 21.15 ft
ROST Unit: 1	Final depth BGS: 22.21 ft

CPT10



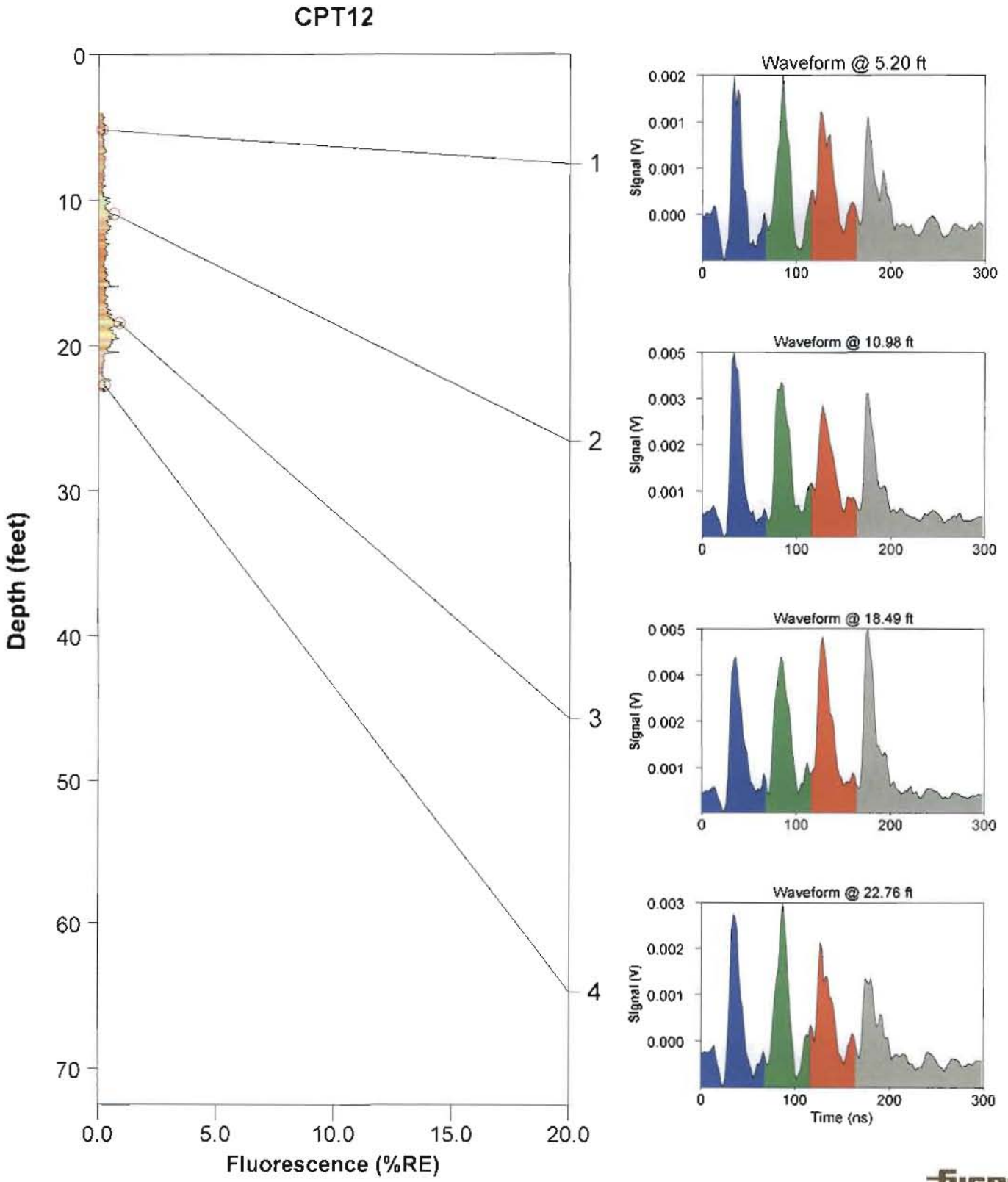
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/28/2009 @ 12:59:30 PM	Max fluorescence: 0.72% @ 26.79 ft
ROST Unit: 1	Final depth BGS: 31.21 ft



ROST Fluorescence Response Data

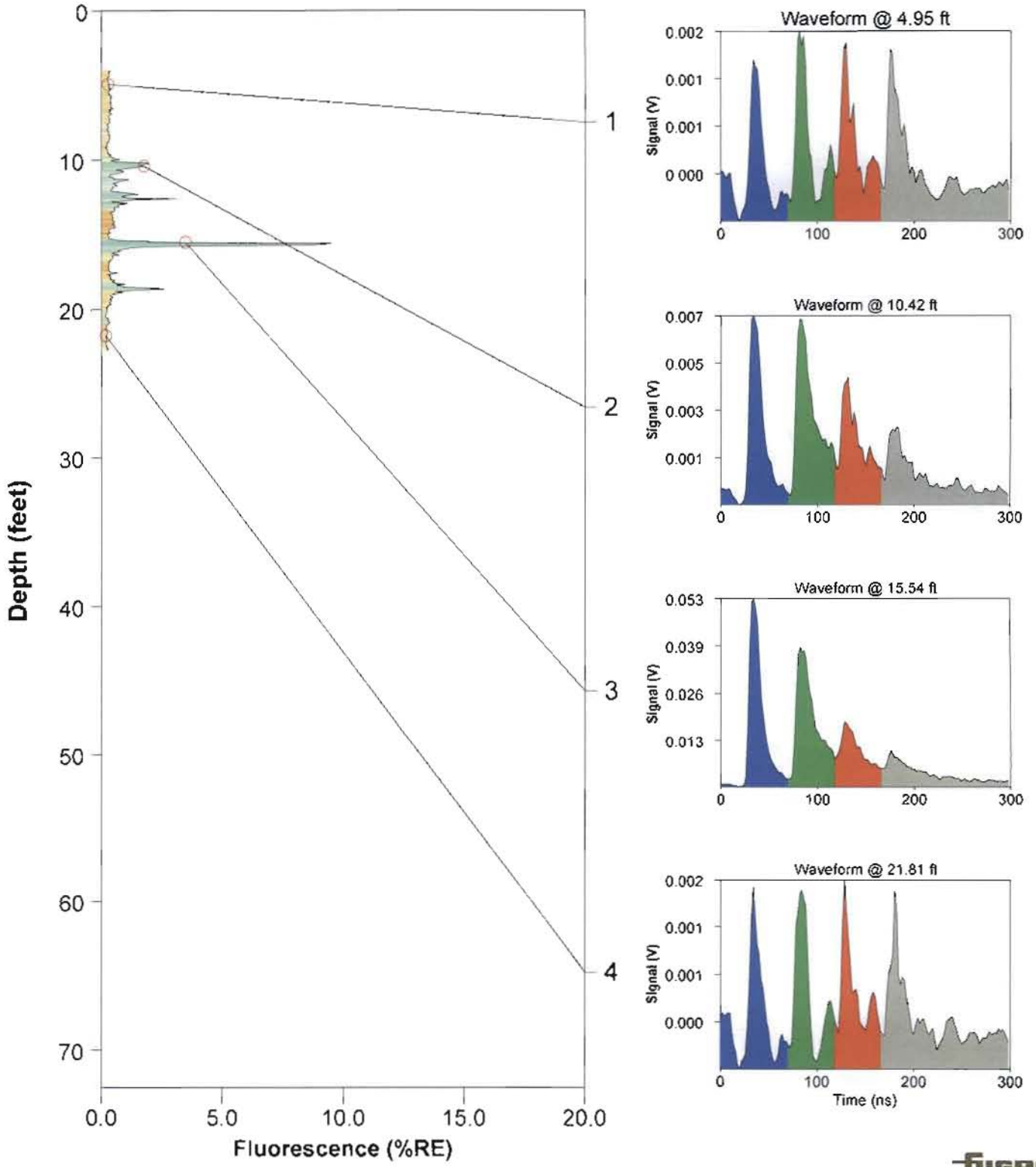
Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/29/2009 @ 8:13:10 AM	Max fluorescence: 1.05% @ 18.44 ft
ROST Unit: 1	Final depth BGS: 23.26 ft



ROST Fluorescence Response Data

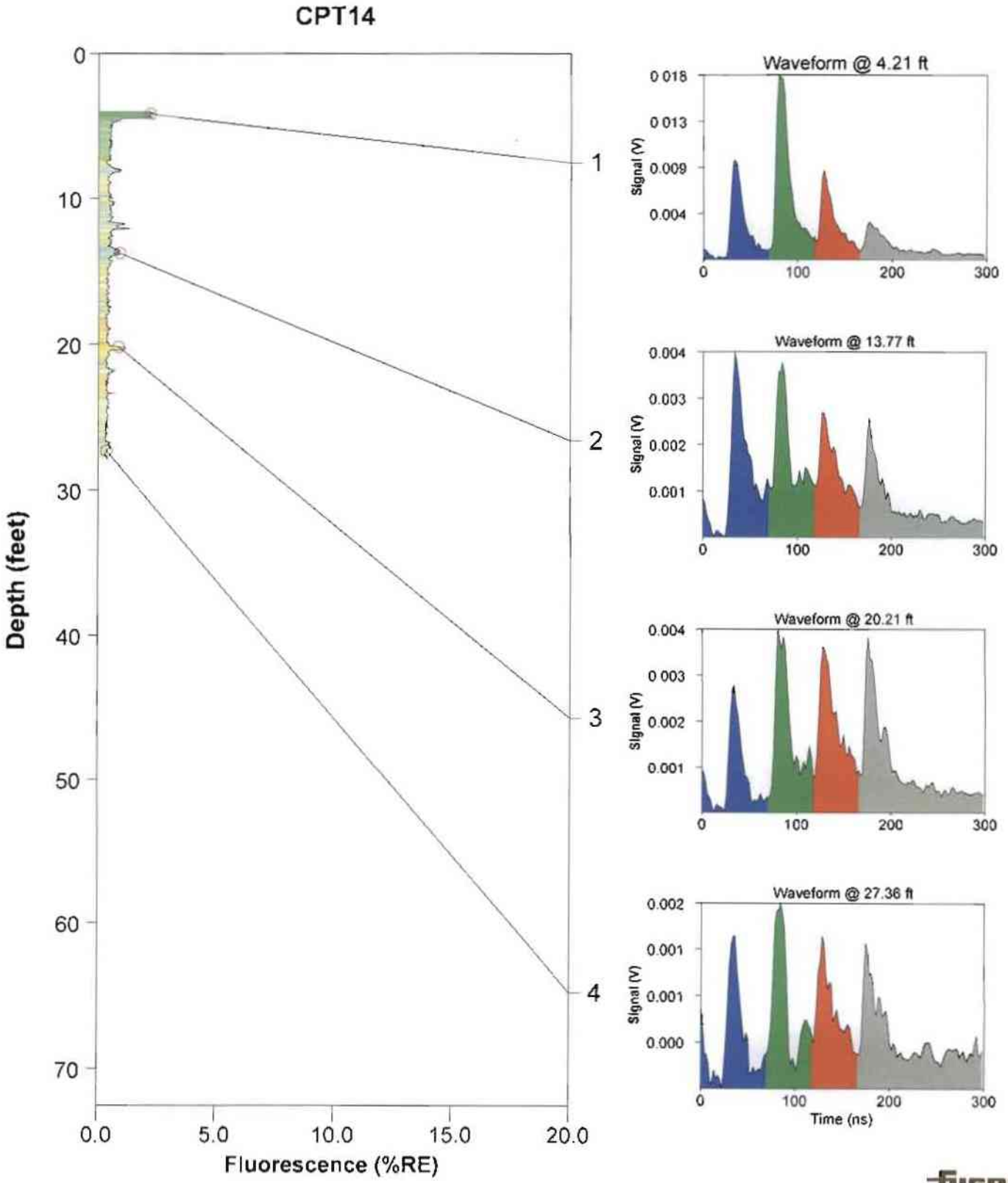
Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/29/2009 @ 9:41:38 AM	Max fluorescence: 9.50% @ 15.59 ft
ROST Unit: 1	Final depth BGS: 22.79 ft

CPT13



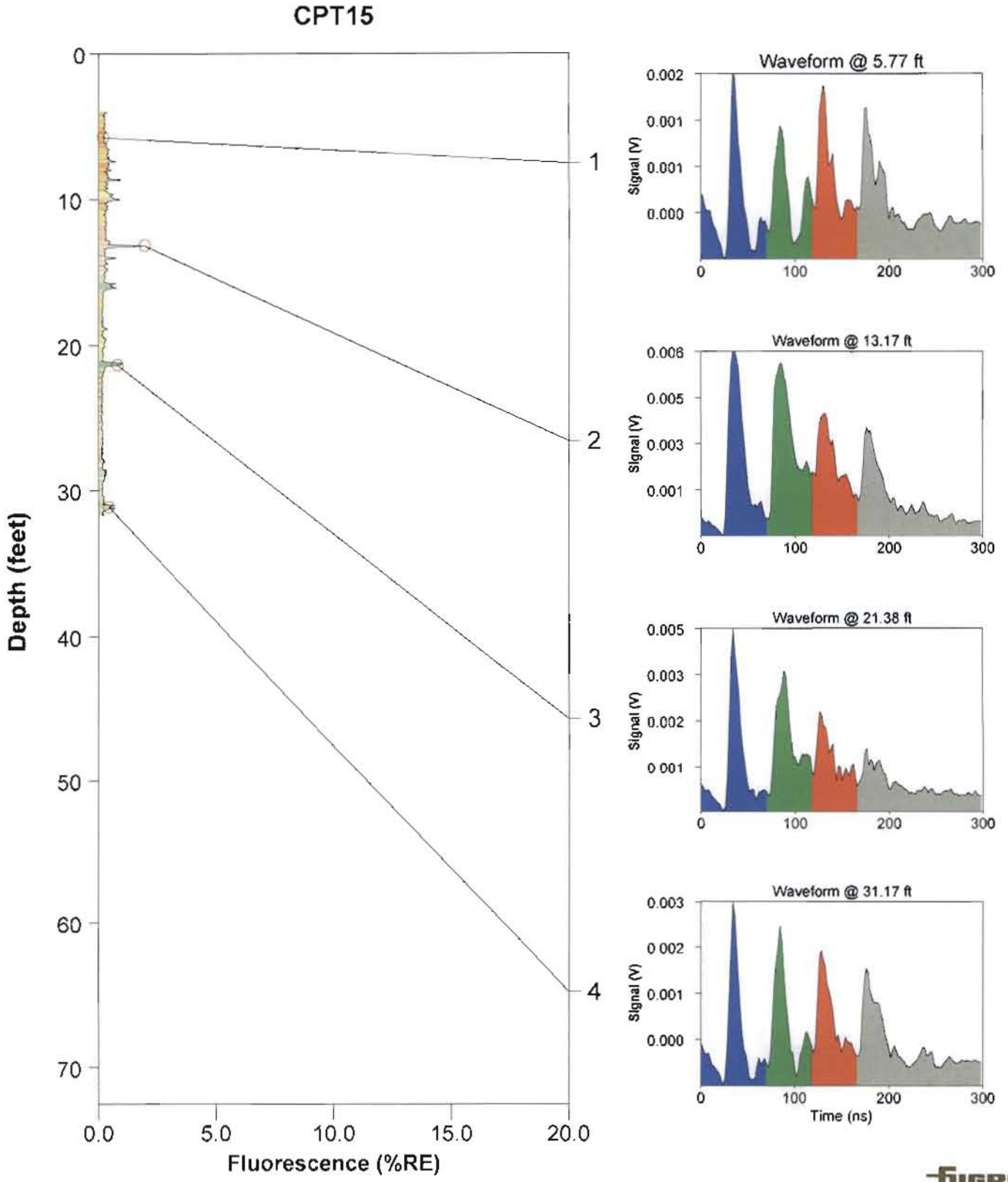
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/28/2009 @ 9:33:15 AM	Max fluorescence: 2.37% @ 4.14 ft
ROST Unit: 1	Final depth BGS: 27.93 ft



ROST Fluorescence Response Data

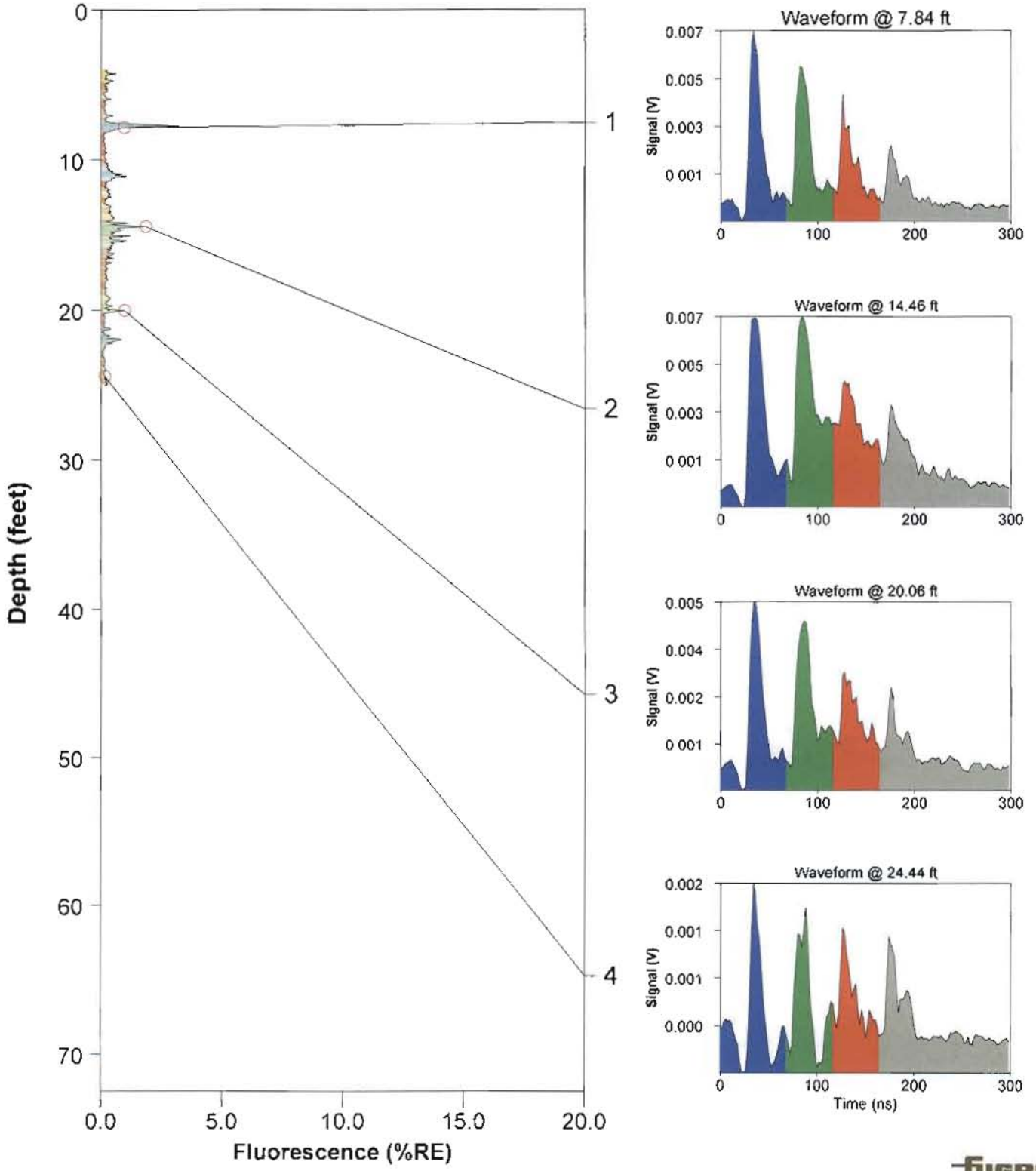
Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/29/2009 @ 10:51:23 AM	Max fluorescence: 1.96% @ 13.17 ft
ROST Unit: 1	Final depth BGS: 31.71 ft



ROST Fluorescence Response Data

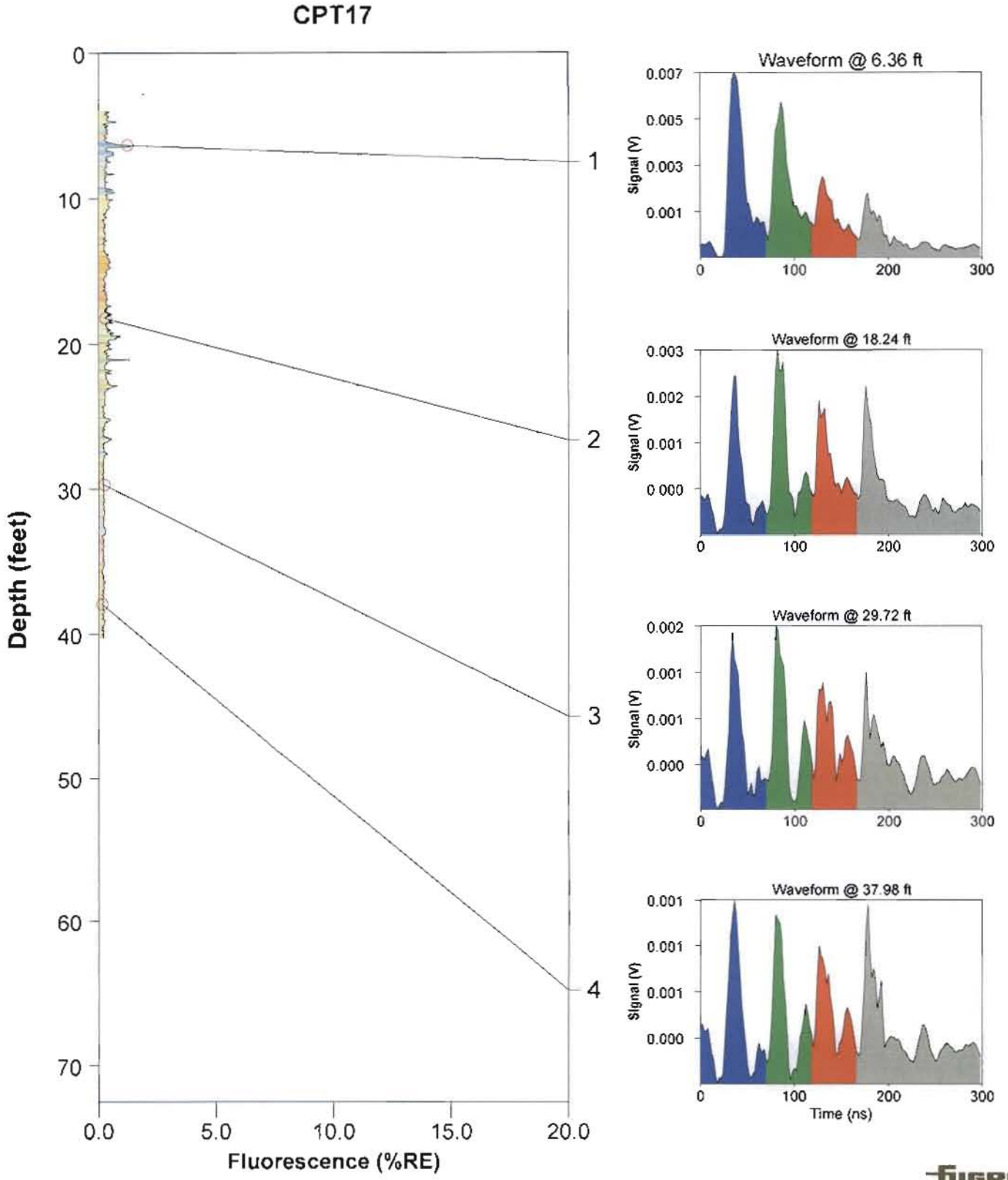
Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/29/2009 @ 2:18:34 PM	Max fluorescence: 3.20% @ 7.73 ft
ROST Unit: 1	Final depth BGS: 25.02 ft

CPT16



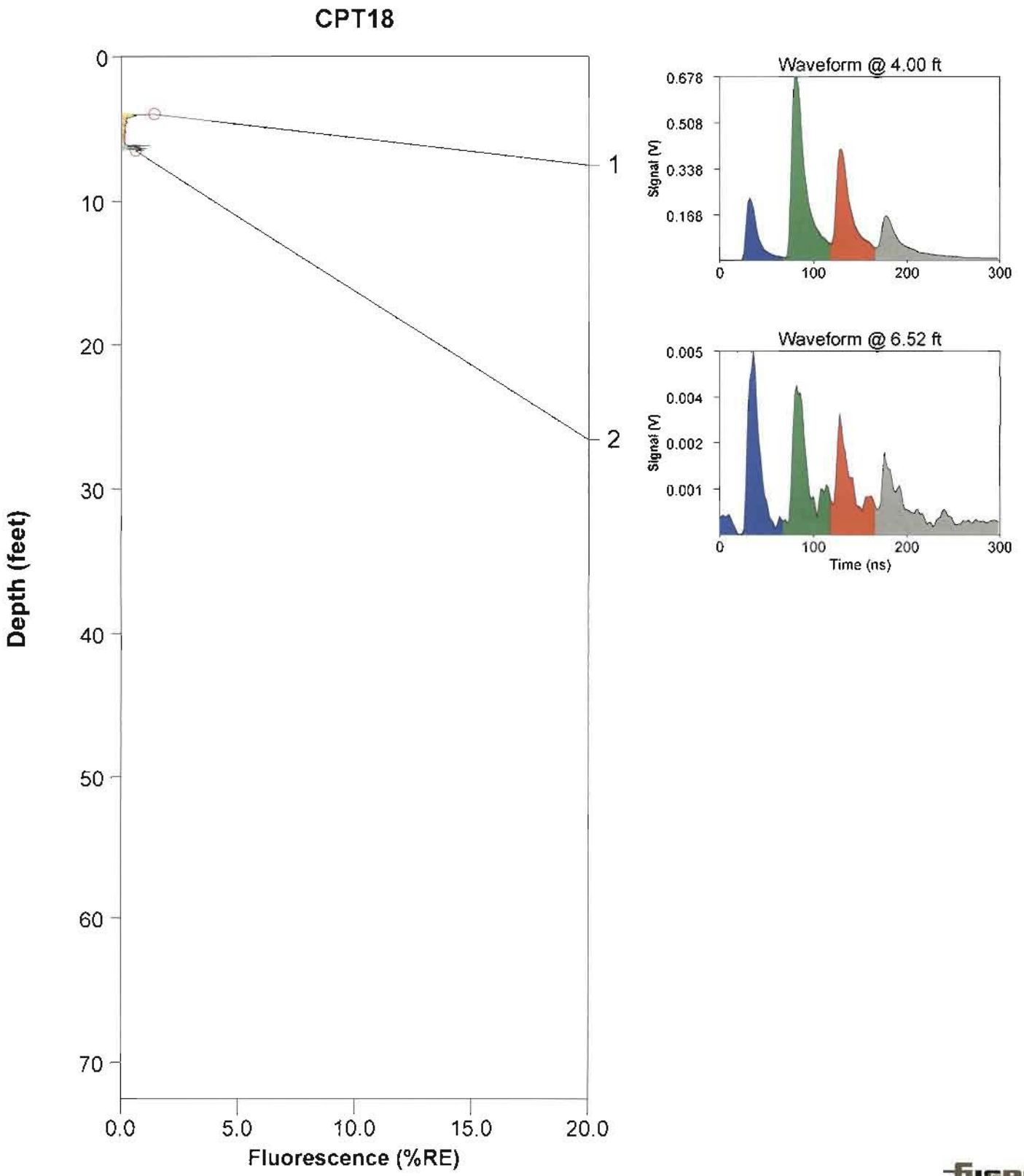
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/29/2009 @ 8:49:48 AM	Max fluorescence: 1.39% @ 6.46 ft
ROST Unit: 1	Final depth BGS: 40.29 ft



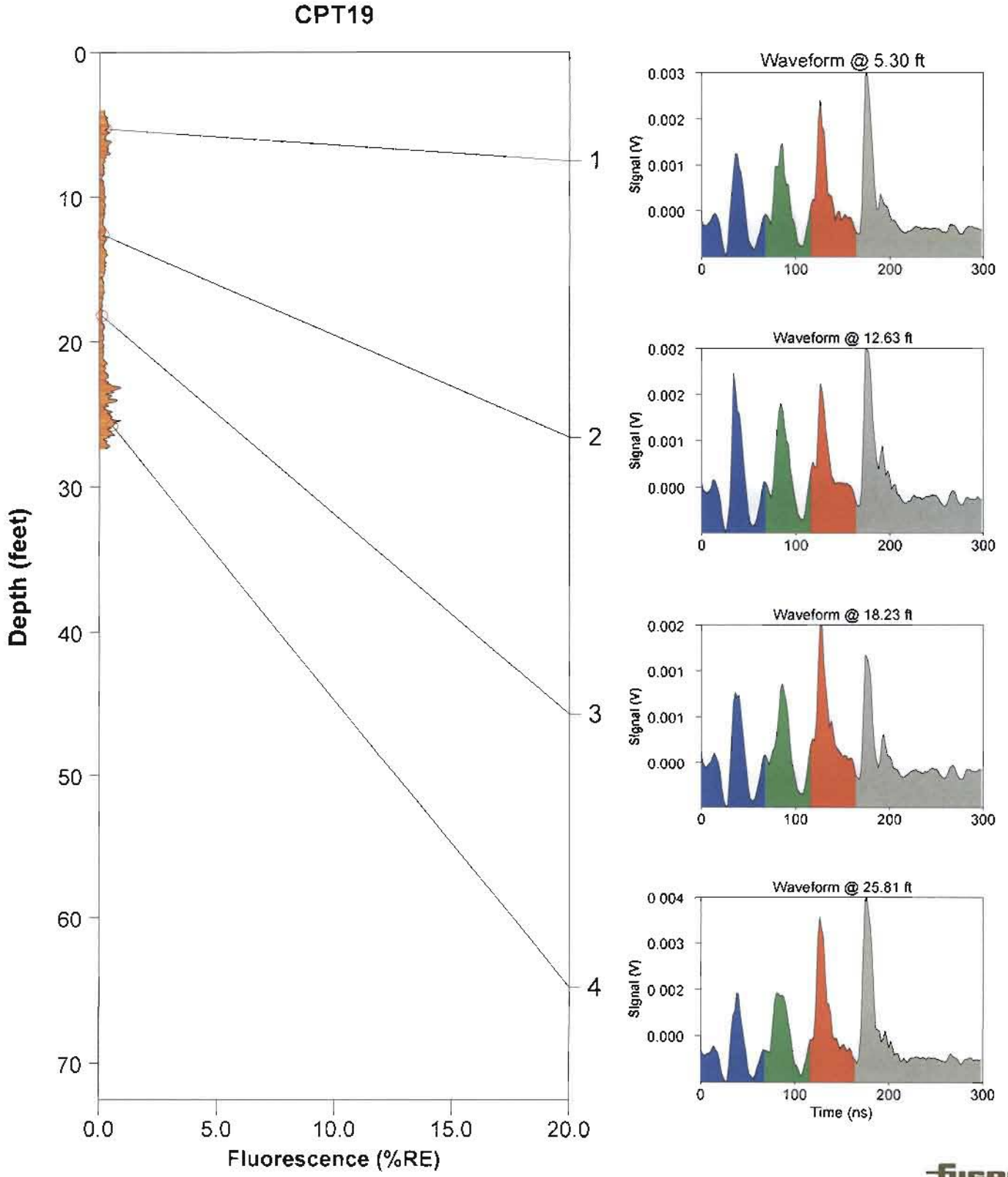
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/29/2009 @ 10:22:00 AM	Max fluorescence: 1.42% @ 4.00 ft
ROST Unit: 1	Final depth BGS: 6.52 ft



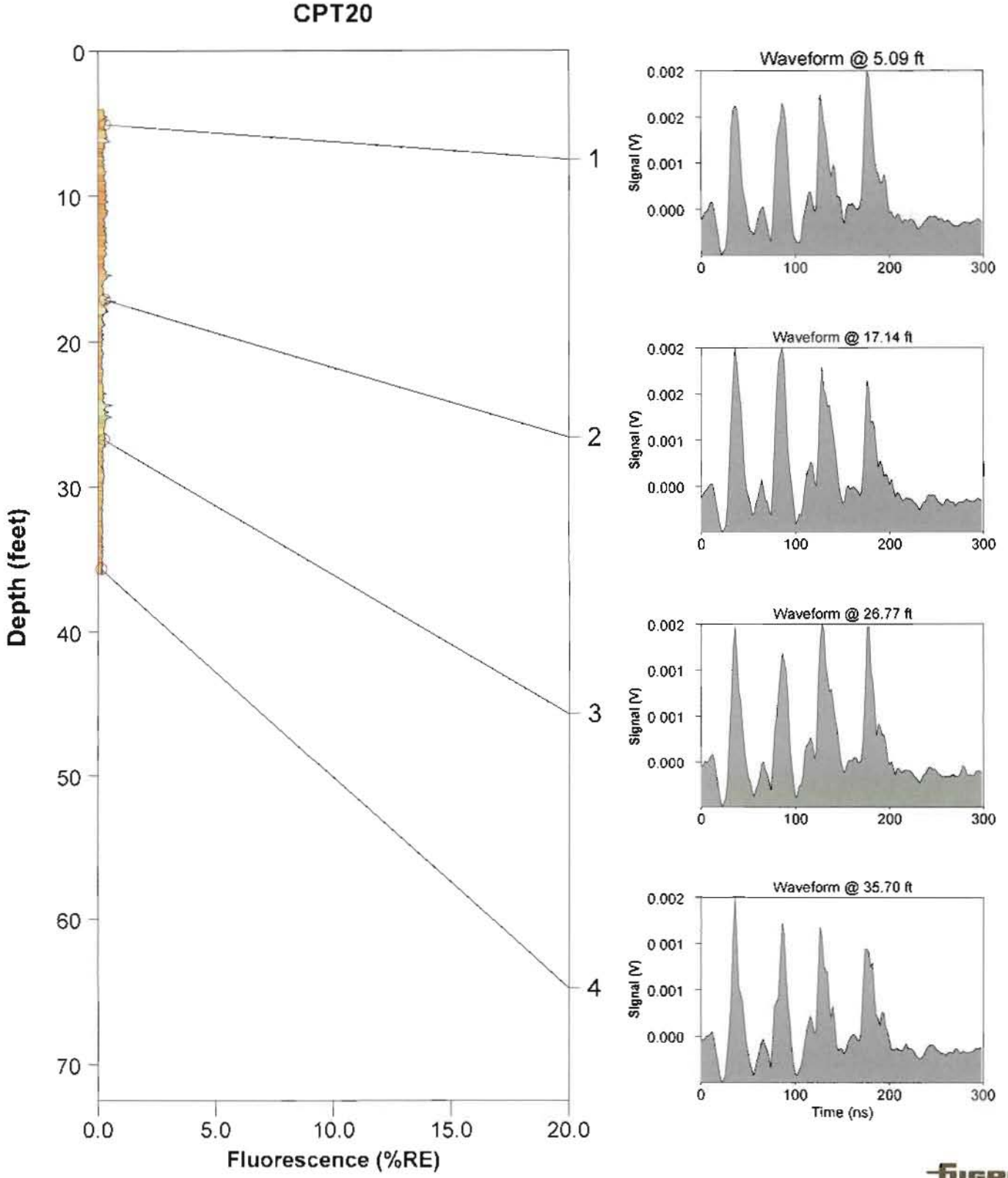
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/30/2009 @ 1:32:39 PM	Max fluorescence: 0.93% @ 25.48 ft
ROST Unit: 1	Final depth BGS: 27.41 ft



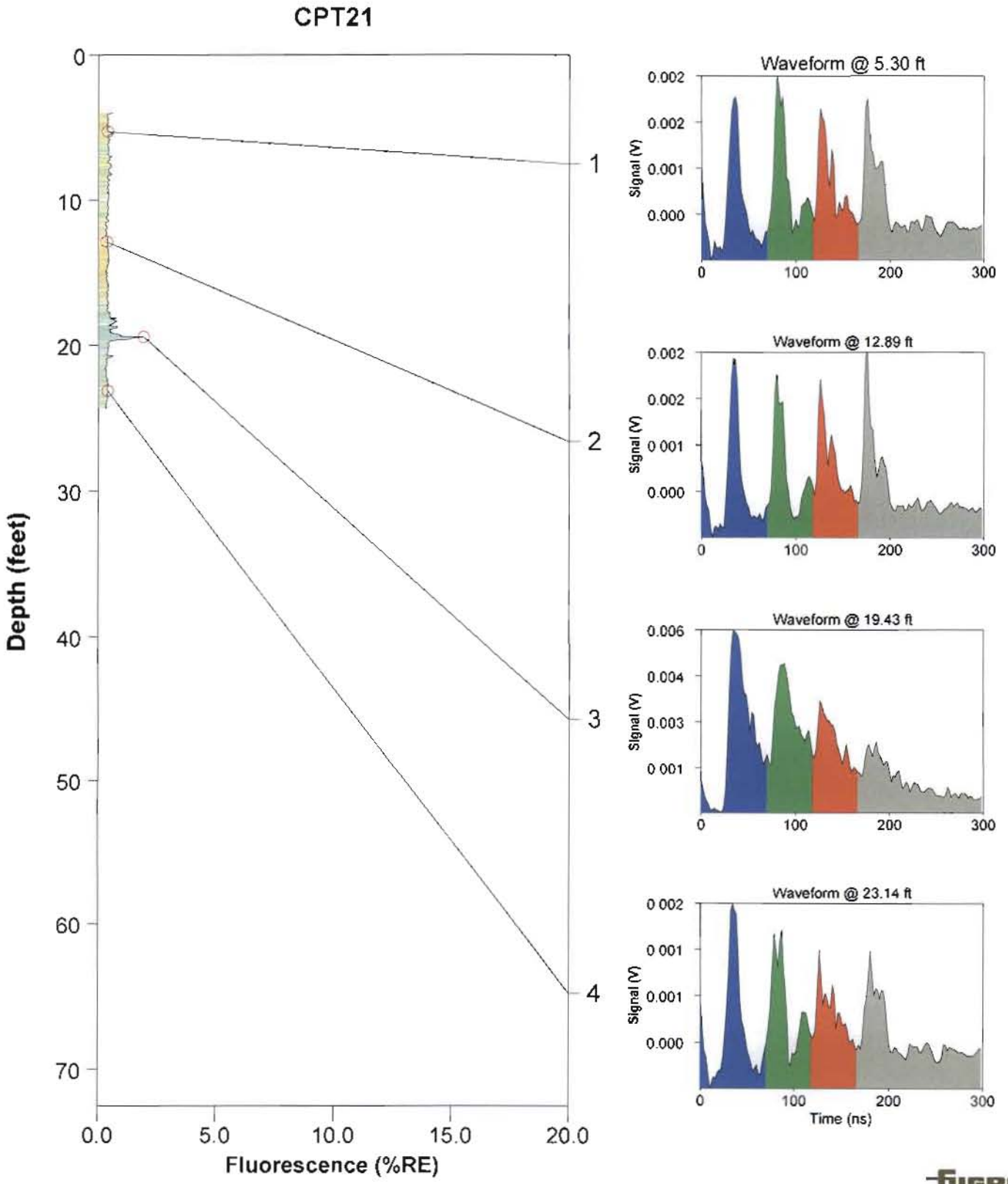
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/30/2009 @ 9:46:21 AM	Max fluorescence: 0.78% @ 17.25 ft
ROST Unit: 1	Final depth BGS: 36.03 ft



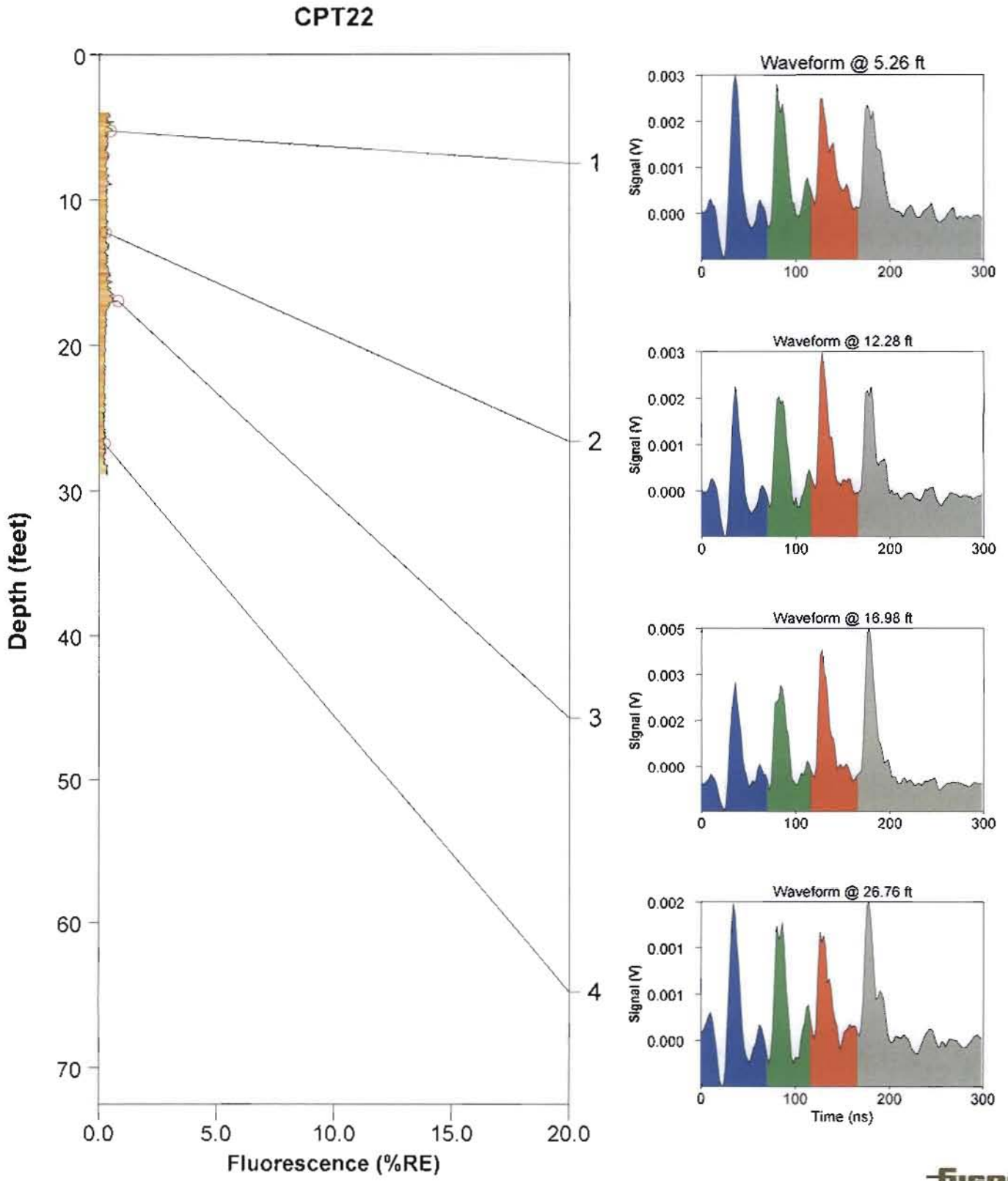
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/28/2009 @ 10:17:11 AM	Max fluorescence: 1.93% @ 19.43 ft
ROST Unit: 1	Final depth BGS: 24.37 ft



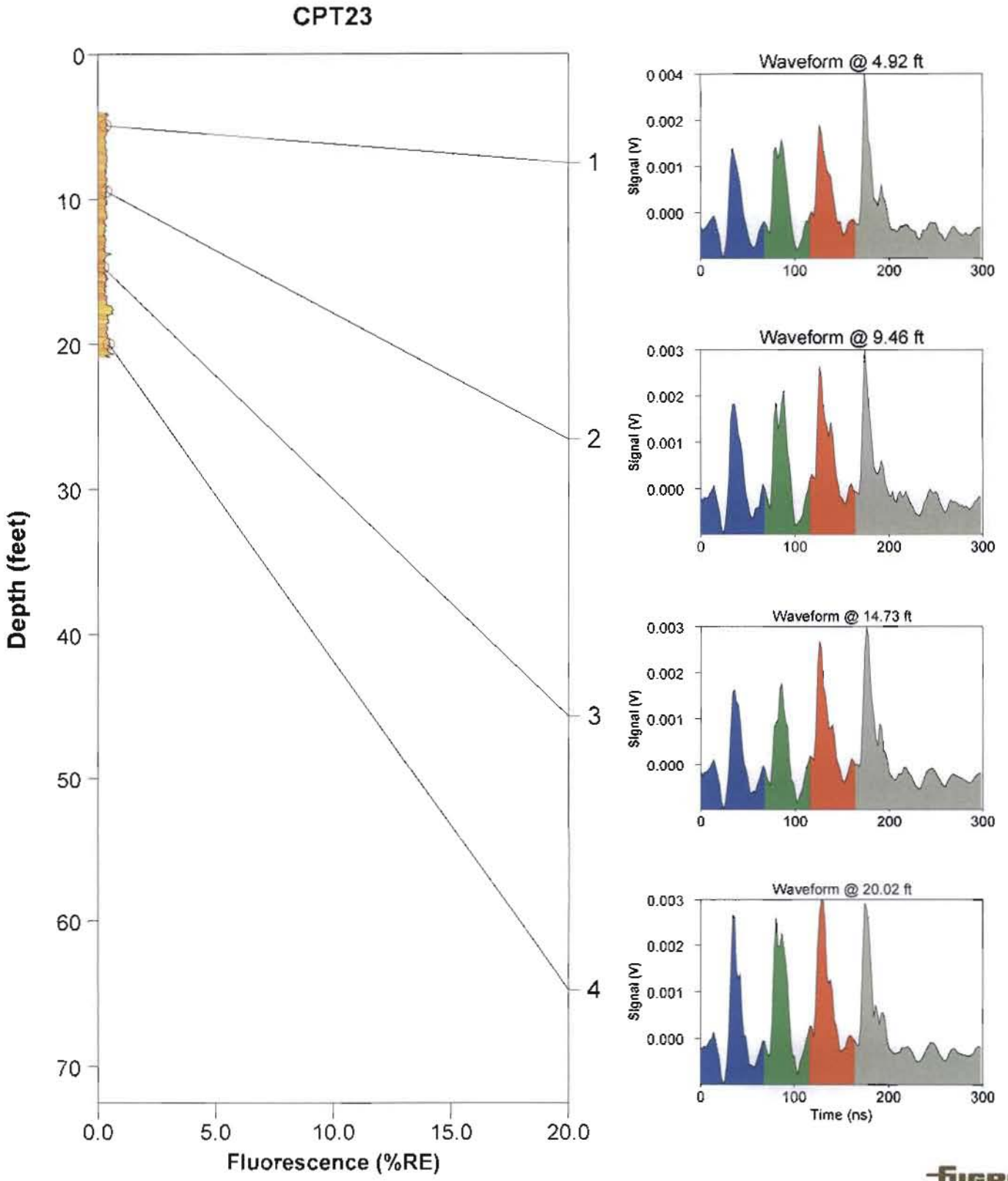
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/30/2009 @ 9:02:39 AM	Max fluorescence: 0.82% @ 16.98 ft
ROST Unit: 1	Final depth BGS: 28.87 ft



ROST Fluorescence Response Data

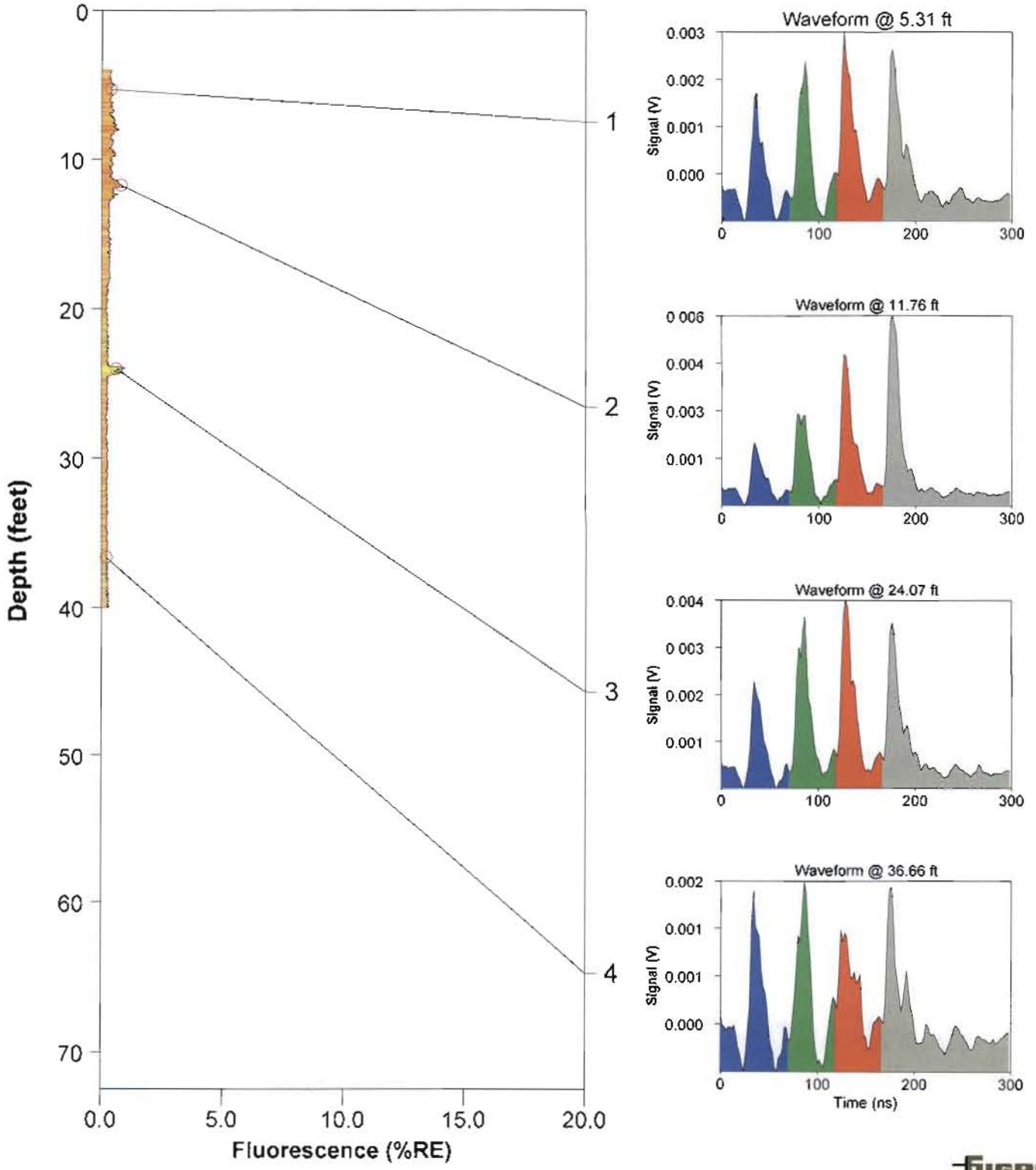
Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/30/2009 @ 8:15:44 AM	Max fluorescence: 0.68% @ 20.71 ft
ROST Unit: 1	Final depth BGS: 20.92 ft



ROST Fluorescence Response Data

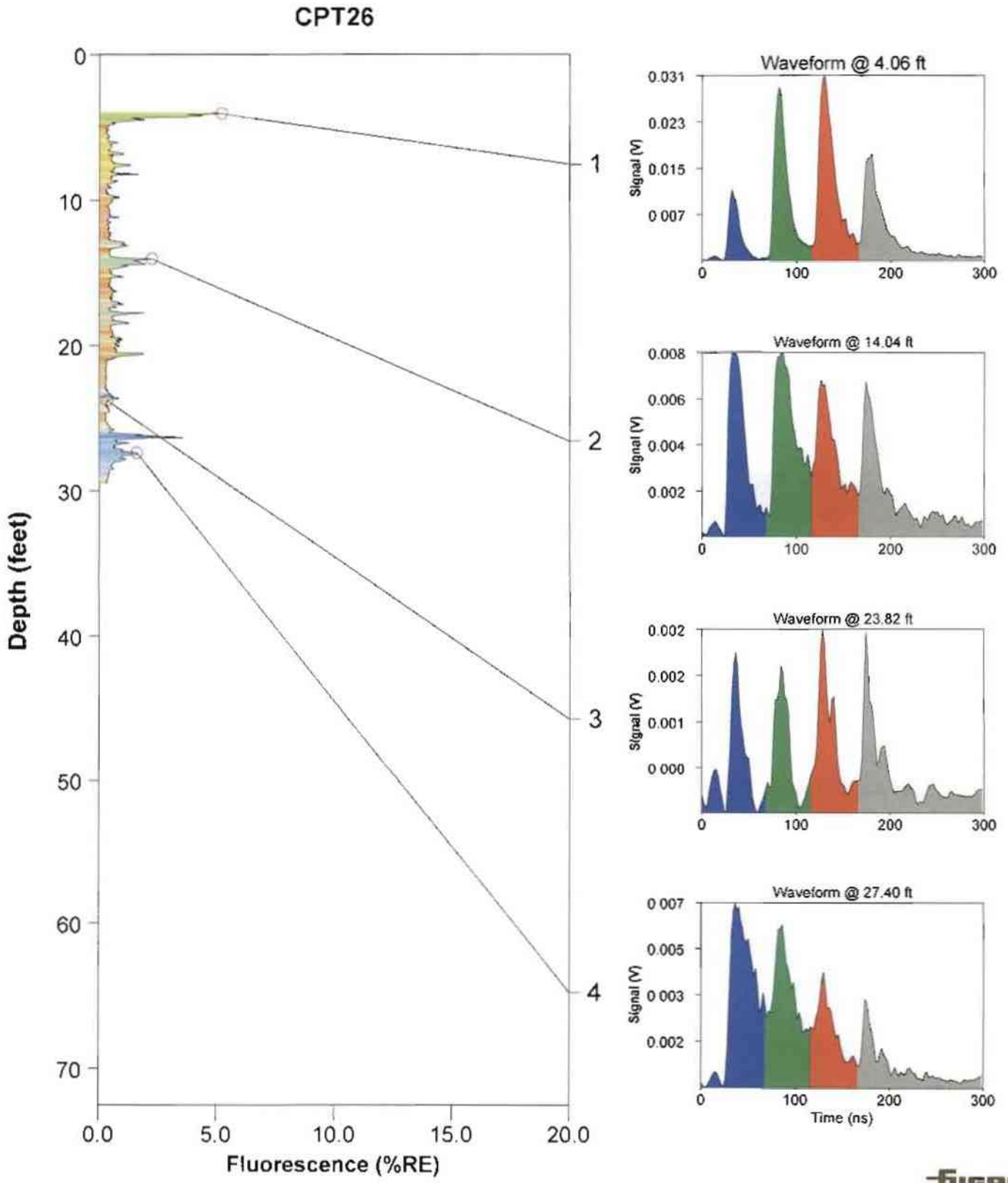
Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/30/2009 @ 10:27:13 AM	Max fluorescence: 0.98% @ 24.03 ft
ROST Unit: 1	Final depth BGS: 40.06 ft

CPT25



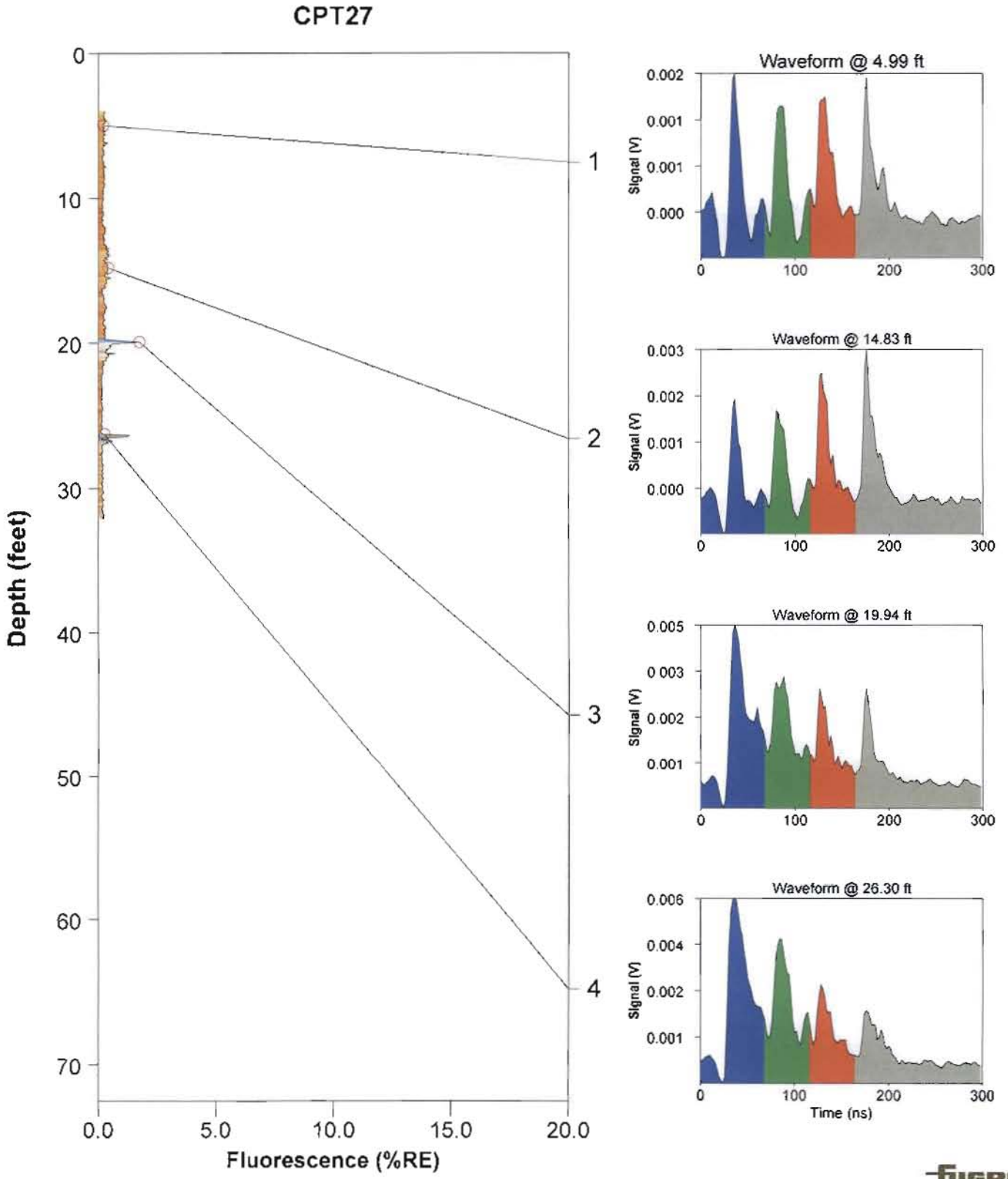
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/29/2009 @ 1:24:29 PM	Max fluorescence: 5.22% @ 4.06 ft
ROST Unit: 1	Final depth BGS: 29.52 ft



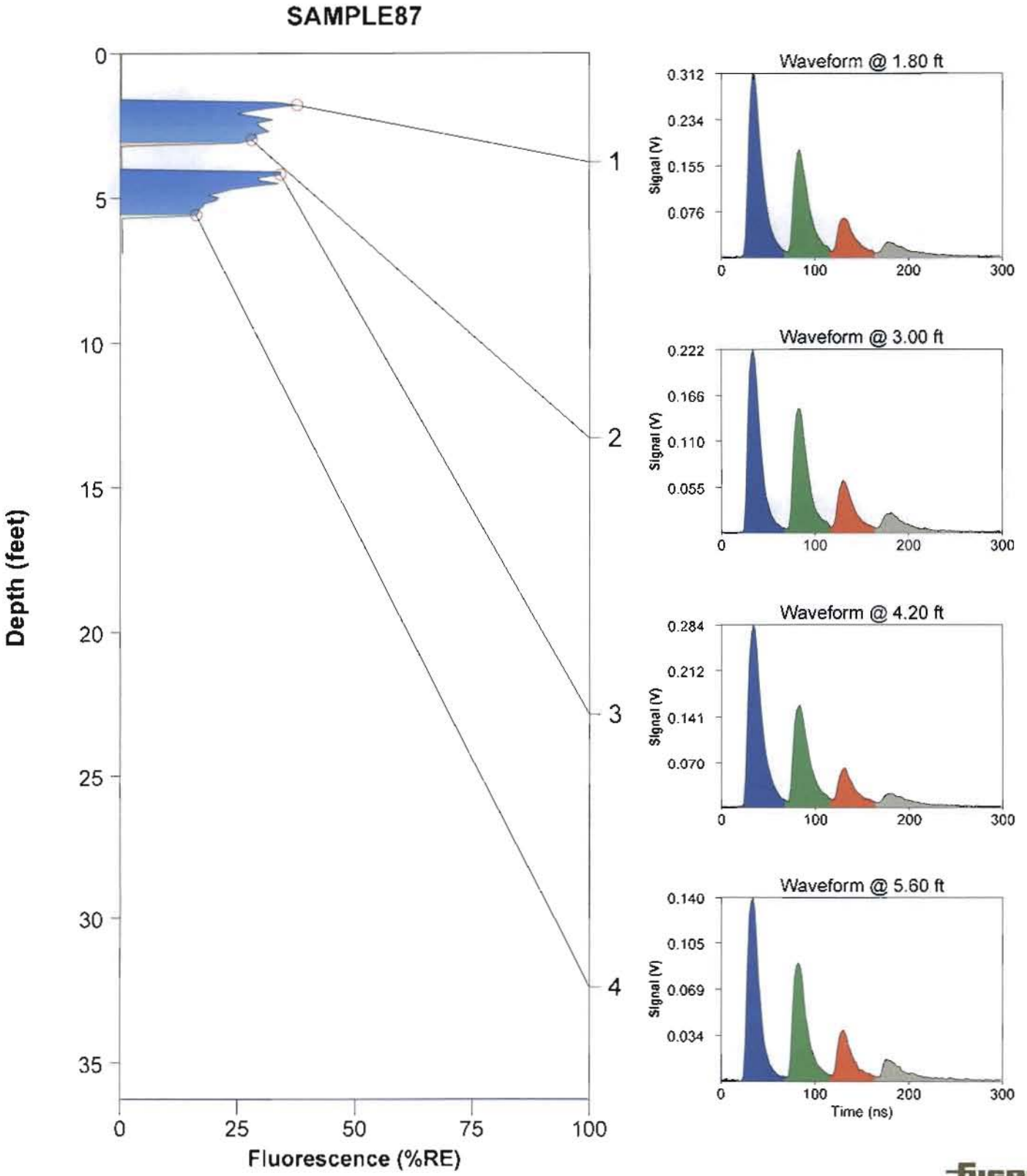
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/30/2009 @ 12:13:56 PM	Max fluorescence: 1.75% @ 19.94 ft
ROST Unit: 1	Final depth BGS: 32.11 ft



ROST Fluorescence Response Data

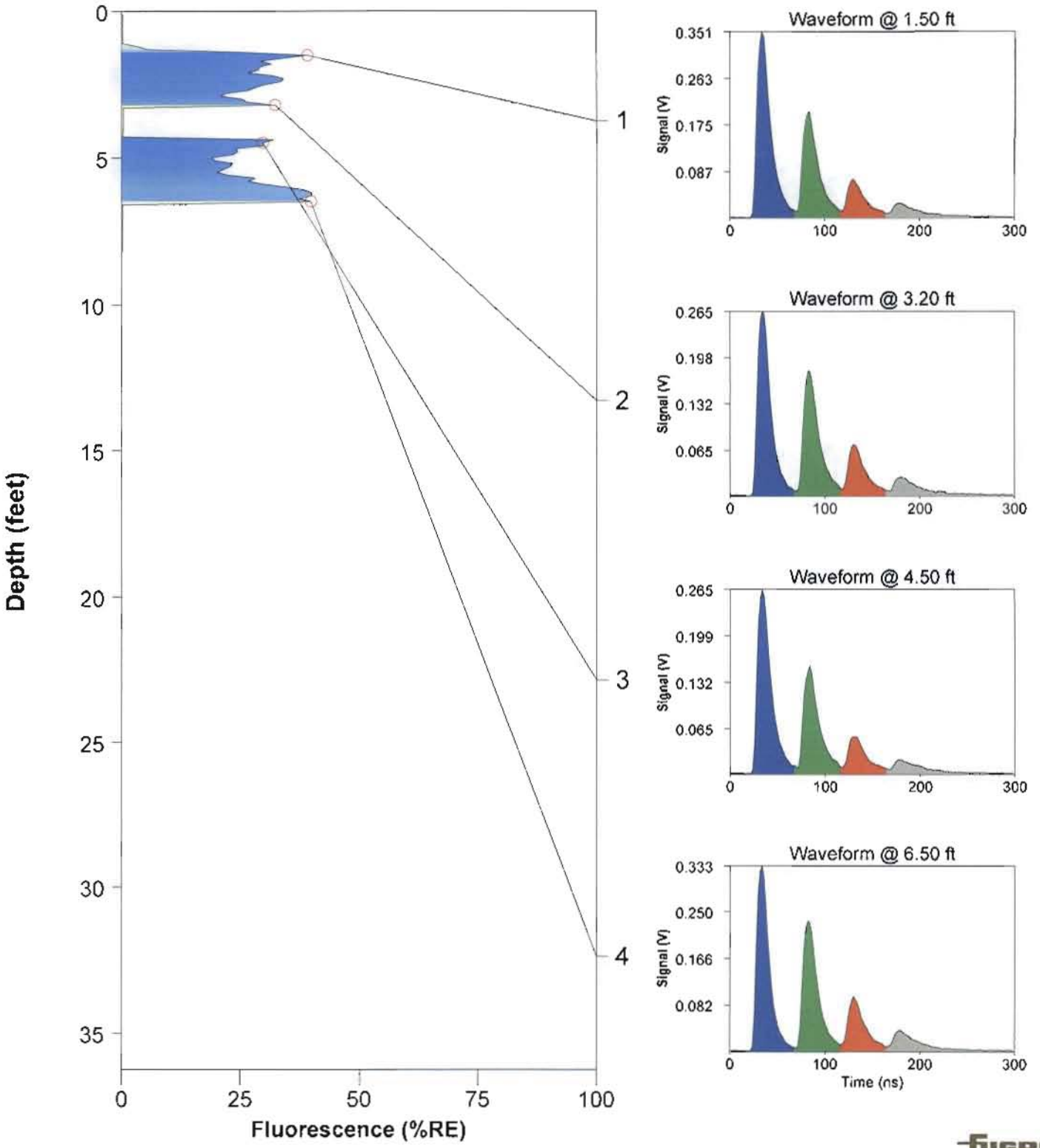
Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/29/2009 @ 12:37:28 PM	Max fluorescence: 37.78% @ 1.80 ft
ROST Unit: 1	Final depth BGS: 6.90 ft



ROST Fluorescence Response Data

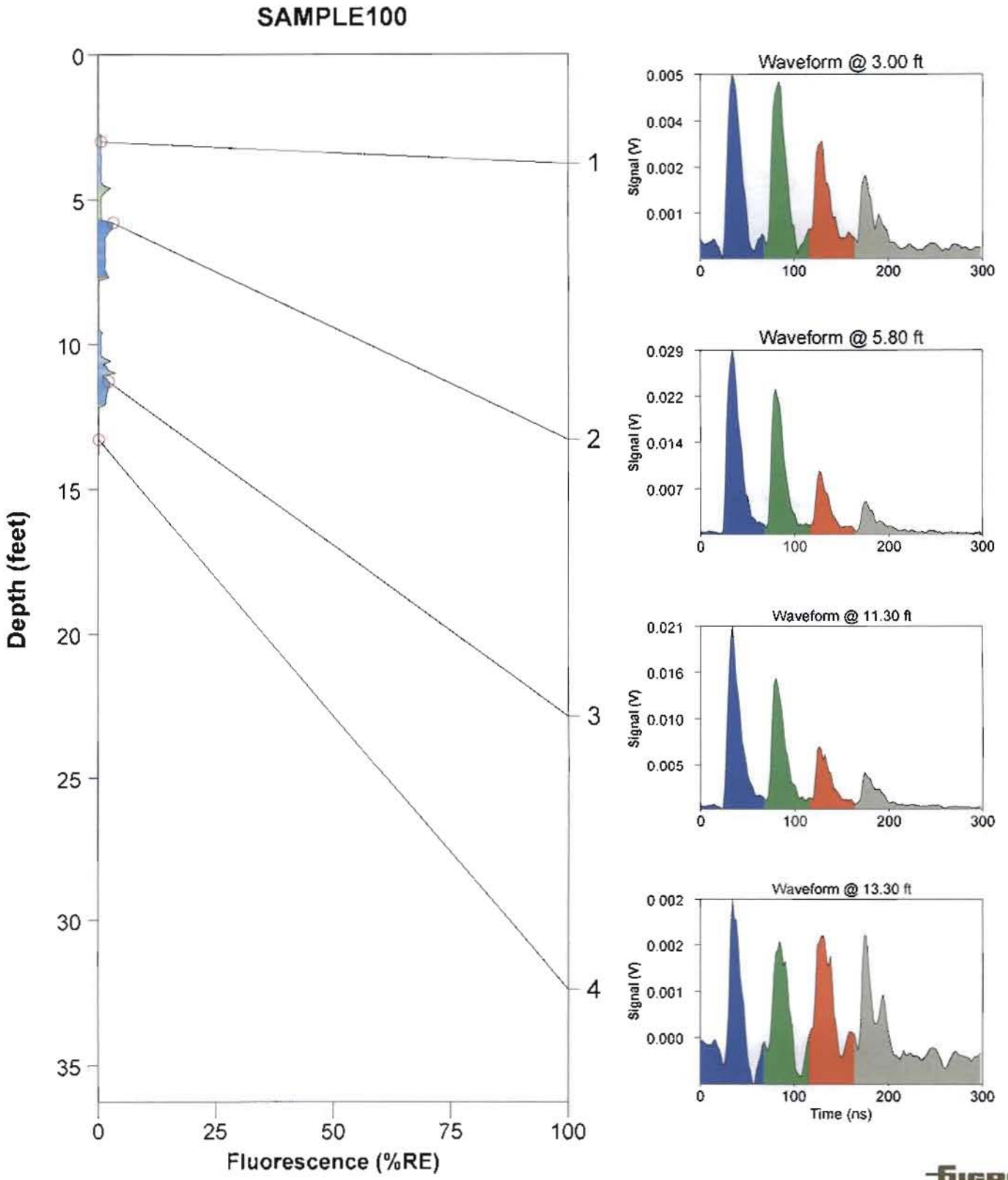
Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/29/2009 @ 12:43:55 PM	Max fluorescence: 40.15% @ 6.20 ft
ROST Unit: 1	Final depth BGS: 8.20 ft

SAMPLE91



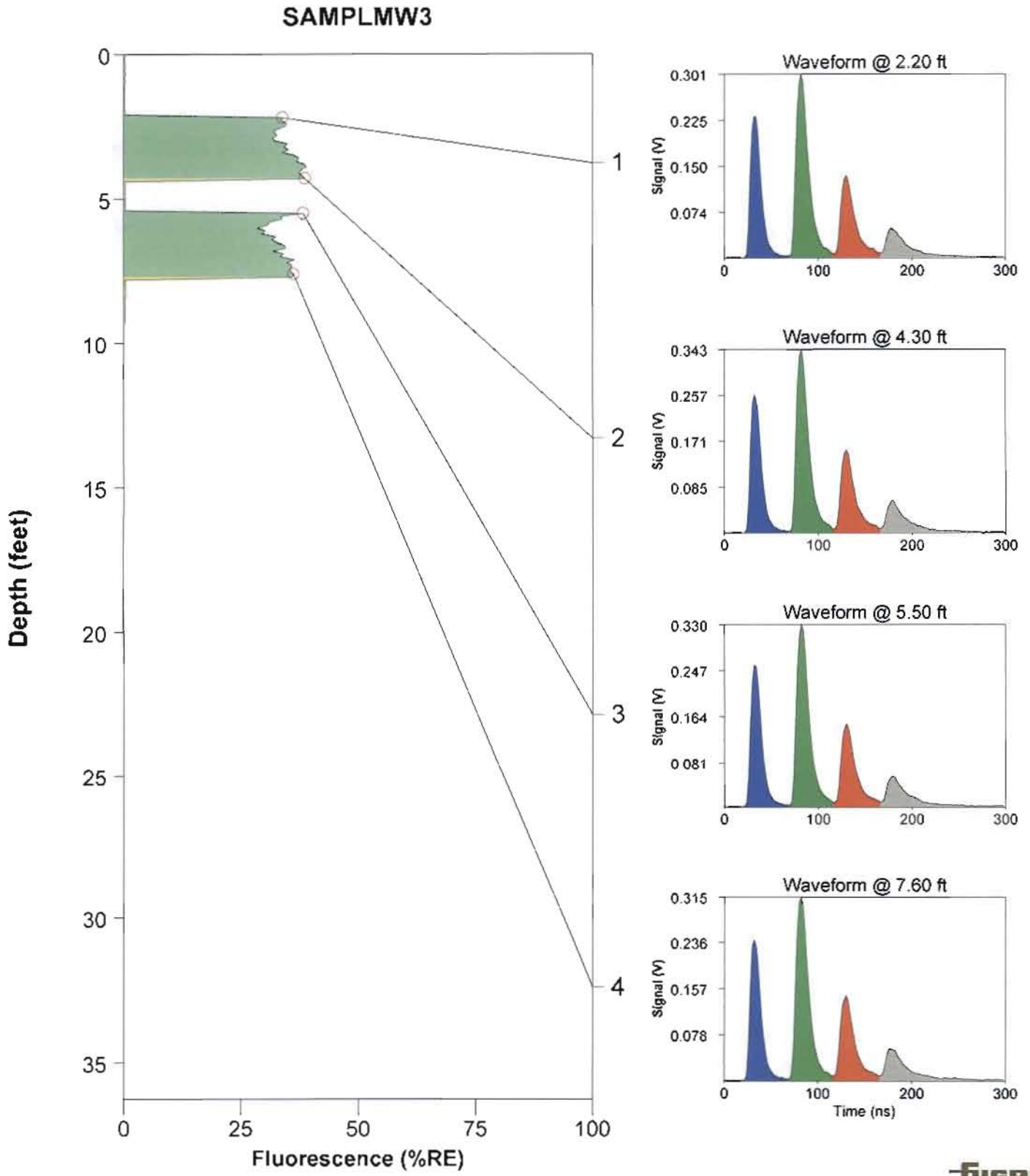
ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/29/2009 @ 12:51:41 PM	Max fluorescence: 3.78% @ 11.00 ft
ROST Unit: 1	Final depth BGS: 13.80 ft



ROST Fluorescence Response Data

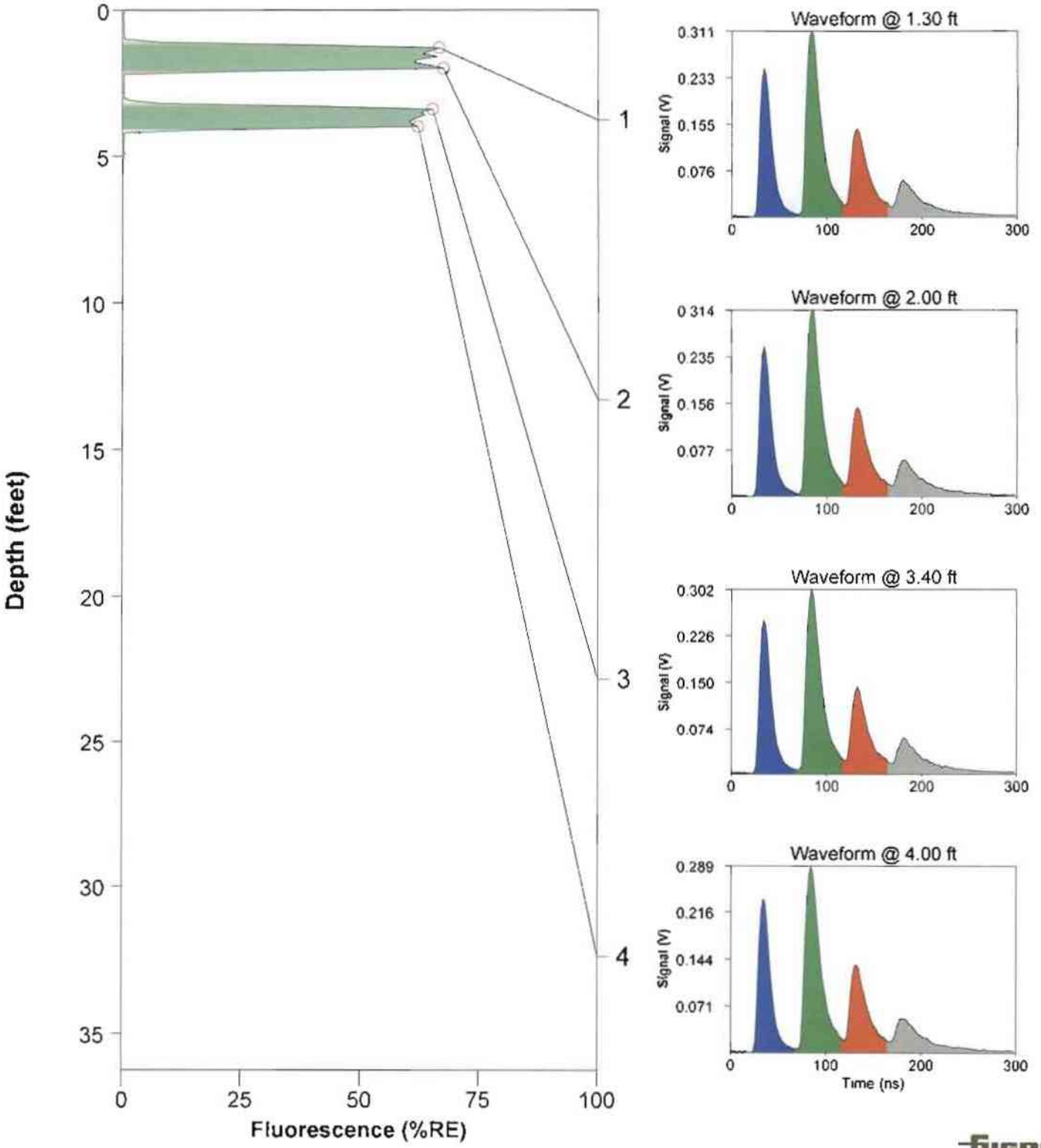
Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/29/2009 @ 1:07:02 PM	Max fluorescence: 38.98% @ 3.90 ft
ROST Unit: 1	Final depth BGS: 9.30 ft



ROST Fluorescence Response Data

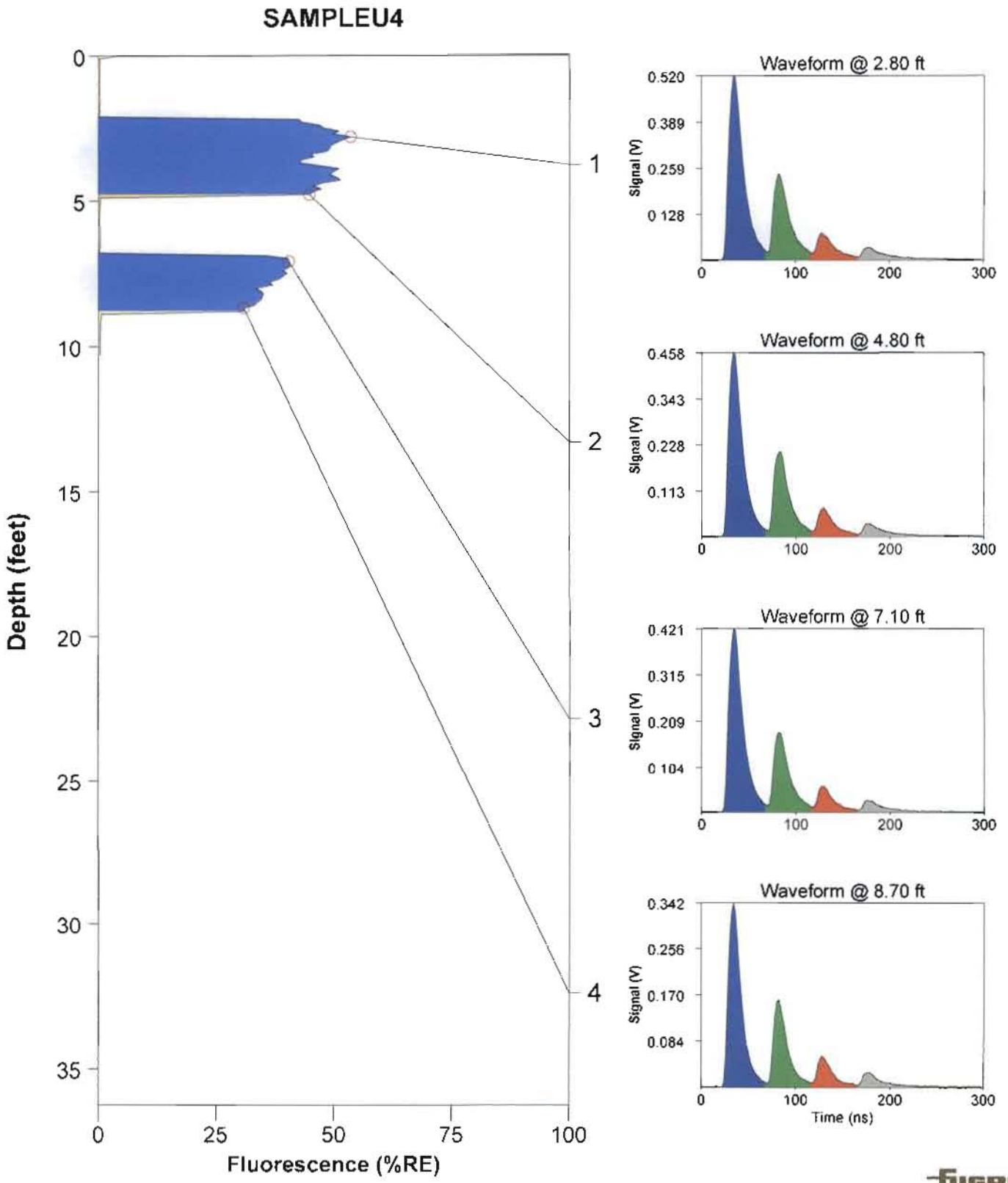
Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/28/2009 @ 12:21:44 PM	Max fluorescence: 67.50% @ 2.00 ft
ROST Unit: 1	Final depth BGS: 5.10 ft

MW3_CPT07 sample



ROST Fluorescence Response Data

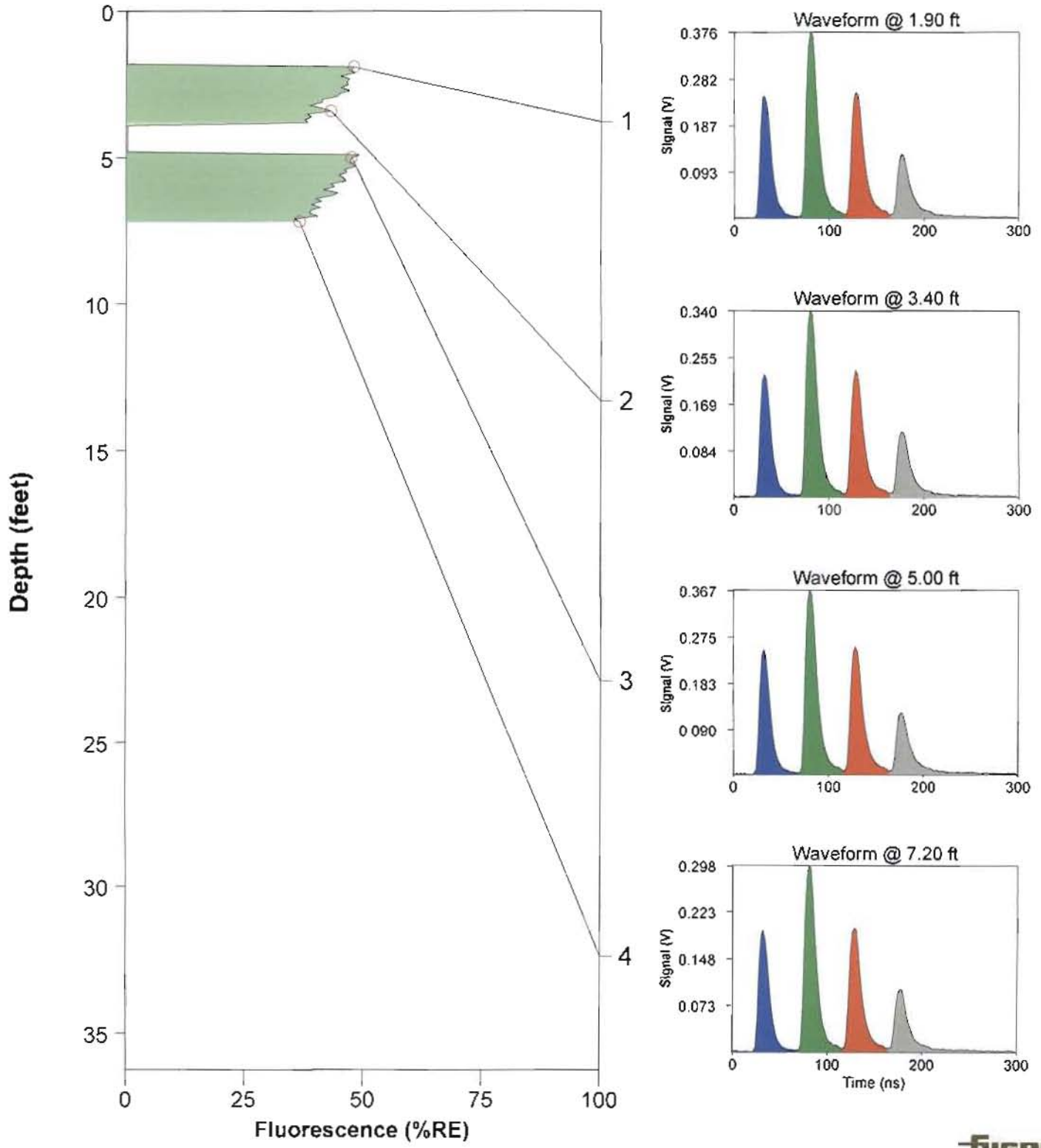
Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/29/2009 @ 1:13:02 PM	Max fluorescence: 53.64% @ 2.80 ft
ROST Unit: 1	Final depth BGS: 10.30 ft



ROST Fluorescence Response Data

Site: Rancho Santa Fe, CA	Operator: MITCHELL
Client: B.B.C. Environmental, Inc.	Fugro Job #: 04.0909-0023
Date/Time: 4/29/2009 @ 1:01:33 PM	Max fluorescence: 49.03% @ 4.90 ft
ROST Unit: 1	Final depth BGS: 7.20 ft

SAMPLE VW4



BBC ENVIRONMENTAL, INC.

3593 Adams Avenue, San Diego, CA 92116

January 13, 2011

County of San Diego
Department of Environmental Health
Site Assessment and Mitigation Program
Monitoring Well Permit Desk
P.O. Box 129261
San Diego, CA. 92112-9261

RE: TRANSMITTAL OF DRILLING REPORT FOR BORING INSTALLATIONS PERFORMED AT THE RANCHO SANTA FE MOBIL FACILITY, 6089 LA FLECHA, RANCHO SANTA FE, CALIFORNIA (Permit #LMON107181)

Monitoring Well Permit Desk:

In accordanee with SAM Manual 2004 guidelines, BBC Environmental, Inc. is submitting the attached boring installation summary report for nine borings installed at the Raneho Santa Fe Mobil facility on June 30th – July 2nd, 2010.

Should you have any question regarding this matter, please do not hesitate to eontact Mr. Walter Craig at (619) 546-7165.

Thank You,
BBC Environmental, Inc.

Mr. Stephen Jeltema
Environmental Scientist

Enclosures (1): Boring Installation Summary Report dated 01/11/11

cc: Tony Rababy-Rancho Santa Fe, CA

BBC ENVIRONMENTAL, INC.

3593 Adams Avenue, San Diego, CA 92116

January 11, 2011

County of San Diego
Department of Environmental Health
Site Assessment and Mitigation Program
Monitoring Well Permit Desk
P.O. Box 129261
San Diego, CA. 92112-9261

RE: BORING LOG SUMMARY REPORT FOR BORING INSTALLATIONS PERFORMED AT THE RANCHO SANTA FE MOBIL FACILITY, 6089 LA FLECHA, RANCHO SANTA FE, CALIFORNIA (Permit #LMON107181)

Monitoring Well Permit Desk:

In accordance with SAM Manual 2004 guidelines, BBC Environmental, Inc. is submitting the attached boring logs, construction information, and analytical data for nine borings installed at the Rancho Santa Fe Mobil facility on June 30th – July 2nd, 2010.

Site Identification:	Rancho Santa Fe Mobil Facility 6089 La Flecha Rancho Santa Fe, CA 92091
Assessor's Parcel Number:	266-291-01, -02; 266-272-16-00; 266-300-36-00
SAM Program Est. Number:	H13190-001
Boring Permit Number:	LMON107181
Date of Installation:	06/30/10 – 07/02/10
Drilling Company: C57 License No.:	Cascade Drilling, Inc. 932633

A total of nine borings (SB-10 through SB-18) were installed on- and off-site at the project location (Figure 1). Boring completion depths are provided in Table 1. Subsurface soil sampling using a hollow stem auger and split barrel tube sampler was performed at all locations.

The outside diameter of the hollow stem auger used during this drilling operation was 8 inches. Upon reaching specified depths of the boring, the split barrel tube sampler is threaded onto the sampling rod. Subsequent hammer blows drive the sampler into the native soils and is retracted to procure samples. When total depth is reached, the auger is retracted and the boring is backfilled from the total depth of each boring to approximately 3.0 feet bgs with hydrated bentonite slurry, from approximately 3.0 feet bgs to 0.5 feet bgs with bentonite pellets, and from approximately 0.5 feet bgs to ground surface with a concrete seal. The volume of hydrated bentonite ranged between 8.5 and 14.0 cubic feet per boring depending upon the completion depth.

A total of nine borings were sampled and installed in this same manner. A total of approximately 120.0 cubic feet of bentonite slurry, approximately 9.2 cubic feet of bentonite pellets, and approximately 2.6 cubic feet of concrete seal was placed in the boring holes as backfill material at the site. No permanent well locations were installed during this event.

Forty subsurface soil samples were collected during this event. Detailed Boring logs for each of the nine borings have also been included in this report submittal. A site plan with the locations of the nine borings is also presented for your review. Laboratory analytical data will be presented once a site characterization report is completed and uploaded to the Geotracker database in accordance with the State Water Resources Control Board reporting requirements.

Should you have any questions or require additional information with regards to this submittal, please contact Mr. Walter Craig of BBC Environmental, Inc. at (619) 546-7165.

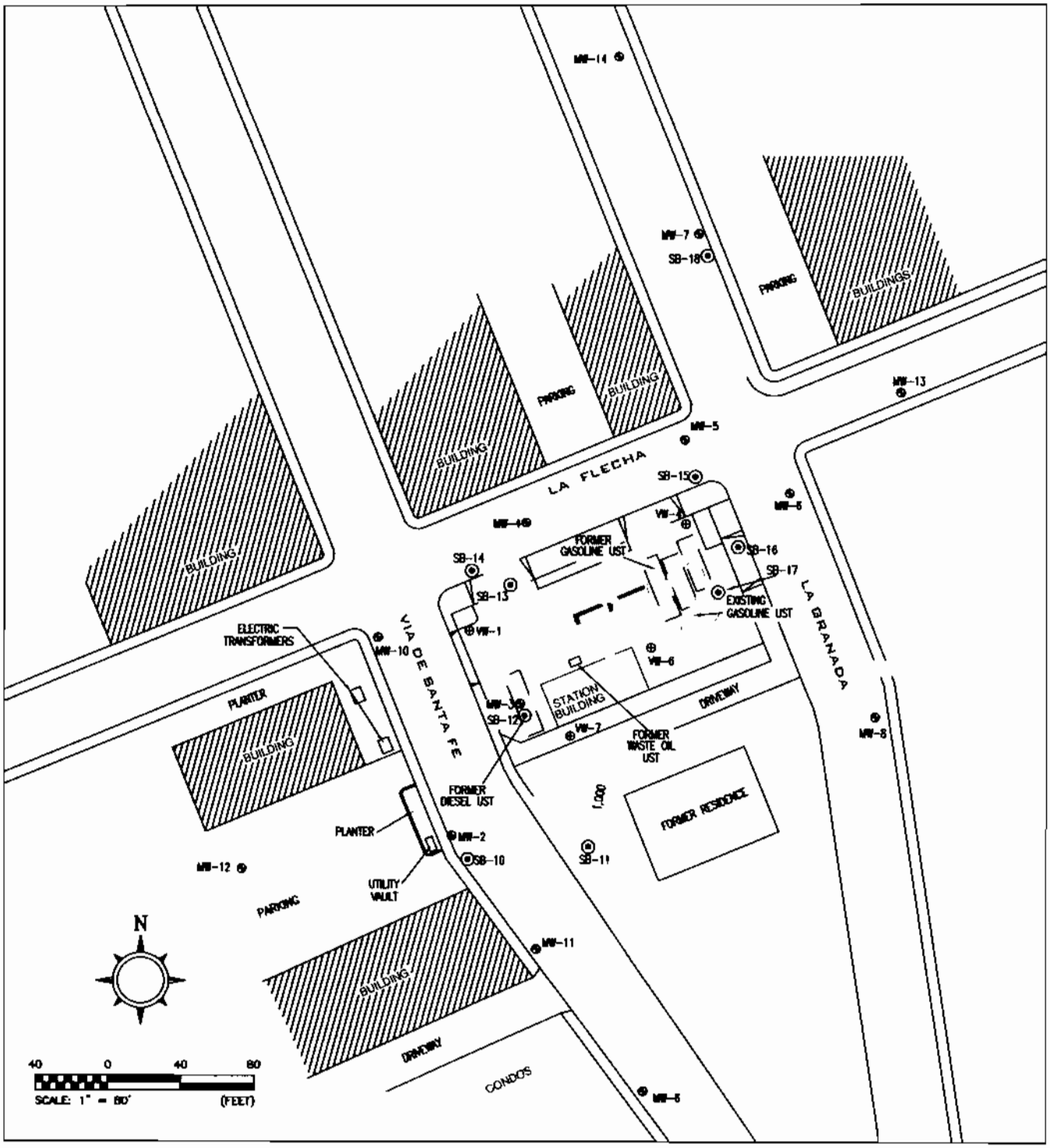
Thank You,
BBC Environmental, Inc.

Mr. Stephen Deltema
Environmental Scientist

Mr. Gerald Shiller, PG
California Professional Geologist No. 4558

PROFESSIONAL GEOLOGIST
GERALD I. SHILLER
PG-4558
STATE OF CALIFORNIA

Attachments (5): Soil Boring Construction Permit No. LMON107181
Sampling Location Map – Figure 1
Boring Completion Depths – Table 1
Boring Logs for SB-10 through SB-18



LEGEND	BORING INSTALLATION LOCATIONS
⊙ SB-10 BORING LOCATIONS INSTALLED JUNE/JULY 2010 ⊕ MW-8 GROUNDWATER MONITORING WELL ⊕ VW-4 VAPOR WELL	RANCHO SANTA FE MOBIL 6089 LA FLECHA RANCHO SANTA FE, CALIFORNIA
	FIGURE No. 3 — PROJECT No. RSF MOBIL
	BBC ENVIRONMENTAL, INC.

Boring Log Summary Report
1/11/2011
Permit # LMON107181

Consultant: BBC Environmental, Inc.

Driller: Cascade Drilling, Inc.

Rancho Santa Fe Mobil
6089 La Flecha
Rancho Santa Fe, CA 92091

Table 1 - Borehole Completion Depths

Boring Location ID	Depth (ft.)	Installation Date
SB-10	40.0	6/30/2010
SB-11	40.0	7/2/2010
SB-12	24.0	7/2/2010
SB-13	40.0	7/1/2010
SB-14	40.0	6/30/2010
SB-15	40.0	6/30/2010
SB-16	40.0	7/1/2010
SB-17	40.0	7/1/2010
SB-18	40.0	6/30/2010
Total	**344.0**	6/30/10-7/2/10

DRILLING COMPANY: CASCADE DRILLING RIG: CME-75 DATE: 6/30/10

BORING DIAMETER: 8 INCHES DRIVE WEIGHT (S): 140 LB. DROP: 30 IN. ELEVATION.

BORING NO. SB-10

DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	BLOWS/6 INCHES	CHEM ANALYSIS TRPH (PPM)	CHEM ANALYSIS TPH (PPM)	LITHOGRAPHIC CLASS	SOIL CLASS (U.S.C.S)	LITHOLOGIC DESCRIPTIONS	WELL CONSTRUCTION
0							SC	4-INCHES ASPHALT DUSKY YELLOW BROWN SANDY CLAY, DAMP, STIFF	REDI-CRETE AND RAPID-SET MIX SEAL 0-0.5 FEET (0.25 CU FT).
5						SLTST		DARK YELLOW ORANGE SLIGHTLY SANDY, CLAYEY SILTSTONE, DAMP, VERY DENSE. WITH BANDS OF LIGHTER AND DARKER CLAYSTONE ALTERNATING.	MEDIUM BENTONITE PELLETS 0.5-3.0 FEET (1.0 CU FT). BENTONITE GROUT SLURRY 3.0-40 FEET (14.0 CU FT). GROUT TREMMIED BELOW ~15 FEET.
10									
						CLST		PALE YELLOW ORANGE SILTY CLAYSTONE, DAMP, DENSE-VERY DENSE	
15						SDST		VERY PALE ORANGE SILTY SANDSTONE, DAMP-MOIST, DENSE-VERY DENSE.	
		X	8/29/43						
20						CLST		PALE YELLOW ORANGE SILTY CLAYSTONE, DAMP, DENSE-VERY DENSE, MOTTLED APPEARANCE.	
25		X	8/12/27			CLST		MODERATE YELLOW BROWN SILTY CLAYSTONE, DAMP, DENSE-VERY DENSE, SLIGHT FUEL ODOR.	
30									
						CLST		PALE OLIVE SILTY CLAYSTONE, DAMP, DENSE-VERY DENSE, SLIPPERY FEEL.	
35		X	26/40/45						
40		X	29/50-5"			SDST		YELLOW GRAY FINE-MEDIUM SANDSTONE, DAMP, DENSE-VERY DENSE. TOTAL DEPTH 40 FEET. GROUNDWATER POSSIBLY ENCOUNTERED AT 23 FEET DURING DRILLING. NO CAVING.	
45									

RANCHO SANTA FE MOBIL

BBC ENVIRONMENTAL BORING LOG

PROJECT NO. LOGGED BY: G.I. SHILLER FIGURE NO.

DRILLING COMPANY: CASCADE DRILLING RIG: CME-75 DATE: 7/2/10

BORING DIAMETER: 8 INCHES DRIVE WEIGHT (S): 140 LB. DROP: 30 IN. ELEVATION:

BORING NO. SB-11

DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	BLOWS/6 INCHES	CHEM ANALYSIS TRPH (PPM)	CHEM ANALYSIS TPH (PPM)	LITHOGRAPHIC CLASS	SOIL CLASS (U.S.C.S)	LITHOLOGIC DESCRIPTIONS	WELL CONSTRUCTION
0							SC	DARK YELLOW ORANGE SANDY CLAY, DRY, STIFF-VERYSTIFF.	SOIL 0-1.0 FEET (0.5 CU FT). MEDIUM BENTONITE PELLETS 1.0-4.0 FEET (1.25 CU FT). BENTONITE GROUT SLURRY 4.0-40 FEET (13.5 CU FT). GROUT TREMMIED BELOW ~15 FEET.
5									
10						SDST+ CLST		PALE YELLOW ORANGE CLAYEY SAND, CLAYEY SAND, DAMP-MOIST, DENSE-VERY DENSE. WITH BANDS OF LIGHTER AND DARKER CLAYSTONE ALTERNATING.	
15									
20			12 27 30			SLTST +CLST		MODERATE BROWN SANDY SILTSTONE, MOTTLED WITH PALE YELLOW ORANGE SILTY CLAYSTONE, DAMP, DENSE-VERY DENSE. ALSO 4-IN LAYER OF TAN-WHITE FINE SANDSTONE, VERY DENSE, IN SAMPLER, SLIGHT FUEL ODOR.	
25			16 50-6"			SLTST		MOTTLED GRAYISH ORANGE AND MODERATE YELLOW BROWN SILTSTONE, DAMP-DRY, DENSE-VERY DENSE.	
30									
35			12 19 23					MOTTLED VERY PALE ORANGE AND DARK YELLOW ORANGE SILTSTONE, DAMP-DRY, DENSE-VERY DENSE.	
40			15 50-5"			SDST		PALE OLIVE FINE-MEDIUM SANDSTONE, DAMP-MOIST, DENSE-VERY DENSE. TOTAL DEPTH 40 FEET. GROUNDWATER POSSIBLY ENCOUNTERED AT 28 FEET DURING DRILLING. NO CAVING.	
45									

RANCHO SANTA FE MOBIL

BBC ENVIRONMENTAL BORING LOG

PROJECT NO. LOGGED BY: G.I. SHILLER FIGURE NO.

DRILLING COMPANY: CASCADE DRILLING RIG: CME-75 DATE: 7/2/10

BORING DIAMETER: 8 INCHES DRIVE WEIGHT (S): 140 LB. DROP: 30 IN. ELEVATION:

BORING NO. SB-12

DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	BLOWS/6 INCHES	CHEM ANALYSIS TRPH (PPM)	CHEM ANALYSIS TPH (PPM)	LITHOGRAPHIC CLASS	SOIL CLASS (U.S.C.S)	LITHOLOGIC DESCRIPTIONS	WELL CONSTRUCTION
0							SM	14 INCHES CONCRETE MODERATE YELLOW BROWN SILTY SAND FILL, DENSE, DAMP-MOIST.	REDI-CRETE AND RAPID-SET MIX SEAL 0-1.25 FEET (0.5 CU FT). MEDIUM BENTONITE PELLETS 1.25-3.0 FEET (1.0 CU FT). BENTONITE GROUT SLURRY 3.0-24 FEET (8.5 CU FT). GROUT TREMMIED BELOW ~15 FEET.
5									
								LIGHTENS SLIGHTLY IN COLOR AT 8 FEET	
10							GP	PEA GRAVEL (EDGE OF OLD EXCAVATION)	
15			12 24 38			SLTST		MOTTLED PALE RED AND LIGHT BROWN CLAYEY SILTSTONE, VERY DENSE, DAMP, SLIGHT FUEL ODOR.	
20						CLST		DARK YELLOW ORANGE SLIGHTLY SANDY, SILTY CLAYSTONE, DAMP-MOIST, DENSE-VERY DENSE. SLIGHT FUEL ODOR	
						CLST		DARK YELLOW BROWN SLIGHTLY SILTY CLAY-STONE, DAMP, DENSE-VERY DENSE. STRONG FUEL ODOR	
25			7 18 22			SDST		VERY PALE ORANGE FINE SANDSTONE, DAMP-MOIST, DENSE-VERY DENSE, WITH MINOR DARK YELLOW ORANGE MOTTLING.	
30								TOTAL DEPTH 24 FEET. GROUNDWATER POSSIBLY ENCOUNTERED AT 22 FEET DURING DRILLING. NO CAVING.	
35									
40									
45									

RANCHO SANTA FE MOBIL

BBC ENVIRONMENTAL BORING LOG

PROJECT NO. LOGGED BY: G.I. SHILLER FIGURE NO.

DRILLING COMPANY: CASCADE DRILLING RIG: CME-75 DATE: 7/1/10

BORING DIAMETER: 8 INCHES DRIVE WEIGHT (S): 140 LB. DROP: 30 IN. ELEVATION:

BORING NO. SB-13

DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	BLOWS/6 INCHES	CHEM ANALYSIS TRPH (PPM)	CHEM ANALYSIS TPH (PPM)	LITHOGRAPHIC CLASS	SOIL CLASS (U.S.C.S)	LITHOLOGIC DESCRIPTIONS	WELL CONSTRUCTION
0							SM	12 INCHES CONCRETE. MODERATE YELLOW BROWN SANDY SILT FILL, DAMP, DENSE-VERY DENSE.	REDI-CRETE AND RAPID-SET MIX SEAL 0-1.0 FEET (0.5 CU FT).
						CLST		MOTTLED LIGHT BROWN AND PALE ORANGE SILTY CLAYSTONE, DAMP, DENSE-VERY DENSE	MEDIUM BENTONITE PELLETS 1.0-3.0 FEET (1.0 CU FT).
5									BENTONITE GROUT SLURRY 3.0-40 FEET (14.0 CU FT). GROUT TREMMIED BELOW ~15 FEET.
10			10 15 29			CLST		GRAYISH ORANGE SANDY CLAYSTONE, DAMP, DENSE-VERY DENSE. WITH OCCASIONAL SANDY LENSES.	
15			11 19 22			SLTST		MOTTLED YELLOW GRAY AND PALE ORANGE CLAYEY SILTSTONE, DAMP, DENSE-VERY DENSE.	
20									
25			16 28 32			CLST		PALE OLIVE CLAYSTONE, DRY, VERY DENSE.	
30									
35			12 50-6"					PALE OLIVE CLAYSTONE, DRY, VERY DENSE.	
40			32 50-5"			SDST		DARK GREENISH GRAY MEDIUM SANDSTONE, DRY, VERY DENSE-HARD. TOTAL DEPTH 40 FEET. NO CAVING.	
45									

RANCHO SANTA FE MOBIL

BBC ENVIRONMENTAL BORING LOG

PROJECT NO. LOGGED BY: G.I. SHILLER FIGURE NO.

DRILLING COMPANY: CASCADE DRILLING RIG: CME-75 DATE: 6/30/10

BORING DIAMETER: 8 INCHES DRIVE WEIGHT (S): 140 LB. DROP: 30 IN. ELEVATION:

BORING NO. SB-14

DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	BLOWS/6 INCHES	CHEM ANALYSIS TRPH (PPM)	CHEM ANALYSIS TPH (PPM)	LITHOGRAPHIC CLASS	SOIL CLASS (U.S.C.S)	LITHOLOGIC DESCRIPTIONS	WELL CONSTRUCTION
0							SM	4 INCHES ASPHALT. YELLOW ORANGE SANDY CLAY FILL, DAMP, STIFF-VERY STIFF.	REDI-CRETE AND RAPID-SET MIX SEAL 0-0.5 FEET (0.25 CU FT). MEDIUM BENTONITE PELLETS 0.5-3.0 FEET (1.0 CU FT).
5						CLST		PALE YELLOW ORANGE SANDY CLAYSTONE, DAMP, DENSE-VERY DENSE.	BENTONITE GROUT SLURRY 3.0-40 FEET (14.0 CU FT). GROUT TREMMIED BELOW ~15 FEET.
10			22 50-3"			SDST		WHITISH CLAYEY SANDSTONE, WITH RUSTY MOTTLING, DAMP, DENSE-VERY DENSE.	
15			18 21 26			SDST		PALE GREENISH YELLOW CLAYEY SANDSTONE, DRY, VERY DENSE.	
20						SLTST		PALE OLIVE CLAYEY SILTSTONE, DRY, VERY DENSE, VERY FINE LAYERING VISIBLE.	
25			20 28 29						
30									
35			20 50-6"			SLTST		YELLOW GRAY SILTSTONE, DRY, VERY DENSE.	
40			15 50-5"			SDST+ SLTST		MIXED LIGHT OLIVE GRAY SANDSTONE AND YELLOW GRAY SILTSTONE, BOTH VERY DENSE-HARD, WITH OLIVE GRAY SANDSTONE CONCRETION. TOTAL DEPTH 40 FEET. NO CAVING	
45									

RANCHO SANTA FE MOBIL

BBC ENVIRONMENTAL BORING LOG

PROJECT NO. LOGGED BY: G.I. SHILLER FIGURE NO.

DRILLING COMPANY: CASCADE DRILLING RIG: CME-75 DATE: 6/30/10

BORING DIAMETER: 8 INCHES DRIVE WEIGHT (S): 140 LB. DROP: 30 IN. ELEVATION:

BORING NO. SB-15

DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	BLOWS/6 INCHES	CHEM ANALYSIS TRPH (PPM)	CHEM ANALYSIS TPH (PPM)	LITHOGRAPHIC CLASS	SOIL CLASS (U.S.C.S)	LITHOLOGIC DESCRIPTIONS	WELL CONSTRUCTION
0									
							SC	4 INCHES ASPHALT YELLOW ORANGE SANDY CLAY FILL, DAMP, STIFF-VERY STIFF.	REDI-CRETE AND RAPID-SET MIX SEAL 0-0.5 FEET (0.25 CU FT).
						CLST		PALE YELLOW ORANGE SANDY CLAYSTONE, DAMP, DENSE-VERY DENSE.	MEDIUM BENTONITE PELLETS 0.5-3.0 FEET (1.0 CU FT).
5								SANDY LENSE AT ~7 FEET.	BENTONITE GROUT SLURRY 3.0-40 FEET (14.0 CU FT). GROUT TREMMIED BELOW ~15 FEET.
10									
						CLST		PALE YELLOW BROWN CLAYSTONE, DAMP-DRY, VERY DENSE, FUEL ODOR	
15									
			18 21 26						
20						CLST		DUSKY YELLOW BROWN SLIGHTLY SANDY CLAYSTONE, MOIST, DENSE-VERY DENSE.	
25									
			39 50-4"			SDST		WHITISH SANDSTONE, DAMP, VERY DENSE-HARD, FUEL ODOR.	
30						SDST		DARK YELLOW BROWN SILTY FINE SANDSTONE, DAMP, VERY DENSE	
35			19 50-4"						
						CLST		GRAYISH OLIVE CLAYSTONE DENSE- VERY DENSE, DRY-DAMP	
40			22 31 39					TOTAL DEPTH 40 FEET. NO CAVING.	
45									

RANCHO SANTA FE MOBIL

BBC ENVIRONMENTAL BORING LOG

PROJECT NO. LOGGED BY: G.I. SHILLER FIGURE NO.

DRILLING COMPANY: CASCADE DRILLING RIG: CME-75 DATE: 7/1/10

BORING DIAMETER: 8 INCHES DRIVE WEIGHT (S): 140 LB. DROP: 30 IN. ELEVATION:

BORING NO. SB-16

DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	BLOWS/6 INCHES	CHEM ANALYSIS TRPH (PPM)	CHEM ANALYSIS TPH (PPM)	LITHOGRAPHIC CLASS	SOIL CLASS (U.S.C.S)	LITHOLOGIC DESCRIPTIONS	WELL CONSTRUCTION
0									
							SC	4 INCHES CONCRETE. YELLOW BROWN SILTY SAND FILL, DAMP, DENSE.	REDI-CRETE AND RAPID-SET MIX SEAL 0-0.5 FEET (0.25 CU FT).
						CLST		MOTTLED YELLOW BROWN AND OLIVE GRAY CLAY STIFF-FIRM, DAMP-VERY DAMP.	MEDIUM BENTONITE PELLETS 0.5-3.0 FEET (1.0 CU FT)
5						SDST		MOTTLED DARK YELLOW ORANGE AND YELLOW BROWN SILTY SAND, DENSE-VERY DENSE, DAMP	BENTONITE GROUT SLURRY 3.0-40 FEET (14.0 CU FT). GROUT TREMMIED BELOW ~15 FEET.
						CLST		PALE YELLOW ORANGE CLAYSTONE, DAMP, DENSE-VERY DENSE.	
10									
						SLST		VERY PALE YELLOW ORANGE CLAYEY SILTSTONE, DAMP, DENSE-VERY DENSE, WITH THIN GRAYISH ORANGE LAYERS.	
15			24 29 32						
						CLST		MODERATE YELLOW BROWN SILTY CLAYSTONE, DAMP, DENSE-VERY DENSE.	
20								FUEL ODOR IN CUTTINGS BETWEEN SAMPLES.	
						SDST		MOTTLED VERY PALE ORANGE AND PALE REDDISH BROWN SANDSTONE, DRY, VERY DENSE, SLIGHT FUEL ODOR.	
25			50 50-6"						
30							SP	YELLOW GRAY MEDIUM-FINE SAND, MOIST, DENSE.	
35			32 35 38						
40			15 18 30				SP	YELLOW GRAY MEDIUM-FINE SAND, WET, LOOSE-DENSE	
								TOTAL DEPTH 40 FEET. NO CAVING. GROUNDWATER ENCOUNTEREO AT 28 FEET DURING DRILLING.	
45									

RANCHO SANTA FE MOBIL

BBC ENVIRONMENTAL BORING LOG

PROJECT NO. LOGGED BY: G.I. SHILLER FIGURE NO.

DRILLING COMPANY: CASCADE DRILLING RIG: CME-75 DATE: 7/1/10

BORING DIAMETER: 8 INCHES DRIVE WEIGHT (S): 140 LB. DROP: 30 IN. ELEVATION:

BORING NO. SB-17

DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	BLOWS/6 INCHES	CHEM ANALYSIS TRPH (PPM)	CHEM ANALYSIS TPH (PPM)	LITHOGRAPHIC CLASS	SOIL CLASS (U.S.C.S)	LITHOLOGIC DESCRIPTIONS	WELL CONSTRUCTION
0							GM	10 INCHES CONCRETE. MIXED PEA GRAVEL AND LIGHT BROWN SANDY CLAY FILL IN OLD EXCAVATION, DENSE, DAMP.	REDI-CRETE AND RAPID-SET MIX SEAL 0-1.0 FEET (0.33 CU FT). MEDIUM BENTONITE PELLETS 1.0-3.0 FEET (1.0 CU FT). BENTONITE GROUT SLURRY 3.0-40 FEET (14.0 CU FT). GROUT TREMMIED BELOW ~15 FEET.
5									
10								FILL WET AT 10 FEET	
							SC	GRAYISH ORANGE CLAYEY SAND, MOIST, DENSE, POSSIBLE FILL. BASE OF EXCAVATION AT 12-13 FEET	
15		X	20/50-6"			SDST		WHITISH MEDIUM-FINE SANDSTONE, MOIST, VERY DENSE, SLIGHT FUEL ODOR.	
20								FRAGMENTS OF SANDSTONE CONCRETIONS IN CUTTINGS FROM ~20-25 FEET.	
25		X	50-6"			SDST		MOTTLED PALE RED AND LIGHTBROWN SANDSTONE, MOIST-DAMP, VERY DENSE.	
30									
35		X	16/29/33					DUSKY YELLOW MEDIUM-FINE SANDSTONE, DAMP, DENSE-VERY DENSE.	
40		X	25/26/28			SDST		MOTTLED GRAYISH OLIVE AND REDDISH ORANGE MEDIUM-FINE SANDSTONE, WET, DENSE-VERY DENSE. TOTAL DEPTH 40 FEET. NO CAVING. GROUNDWATER POSSIBLY ENCOUNTERED AT ~37 FEET DURING DRILLING.	
45									

RANCHO SANTA FE MOBIL

BBC ENVIRONMENTAL BORING LOG

PROJECT NO. LOGGED BY: G.I. SHILLER FIGURE NO.

DRILLING COMPANY: CASCADE DRILLING RIG: CME-75 DATE: 6/30/10

BORING DIAMETER: 8 INCHES DRIVE WEIGHT (S): 140 LB. DROP: 30 IN. ELEVATION:

BORING NO. SB-18

DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	BLOWS/6 INCHES	CHEM ANALYSIS TRPH (PPM)	CHEM ANALYSIS TPH (PPM)	LITHOGRAPHIC CLASS	SOIL CLASS (U.S.C.S)	LITHOLOGIC DESCRIPTIONS	WELL CONSTRUCTION
0							SC	4 INCHES ASPHALT. 6" BASE FILL. YELLOW ORANGE SANDY CLAY, DAMP, FIRM, BECOMES DENSER AT ~4 FEET	REDI-CRETE AND RAPID-SET MIX SEAL 0-0.5 FEET (0.25 CU FT). MEDIUM BENTONITE PELLETS 0.5-3.0 FEET (1.0 CU FT). BENTONITE GROUT SLURRY 3.0-40 FEET (14.0 CU FT). GROUT TREMMIED BELOW ~15 FEET.
5			29 50-5"			SDST		WHITISH-VERY PALE ORANGE MEDIUM SANDSTONE, DRY, HARD..	
10			19 50-6"			CLST		MOTTLED PALE ORANGE AND MODERATE YELLOW BROWN CLAYSTONE, DRY, HARD	
15			18 29 33			SDST		WHITISH MEDIUM-FINE SANDSTONE, DAMP, HARD-VERY DENSE.	
20			18 29 33					SOLVENT ODOR.	
25			25 28 32			CLST		GREENISH GRAY FINE SILTSTONE OR CLAYSTONE, DRY, VERY DENSE-HARD.	
30			29 30 35					CLAYSTONE, BUT NOT AS DENSE AS AT 25 FEET.	
35			27 39 41					DITTO	
40			50-6"			SDST		TRACES OF VERY PALE ORANGE MEDIUM-FINE SANDSTONE AT BOTTOM OF 40-FOOT SAMPLE, SLIGHT SOLVENT ODOR. TOTAL DEPTH 40 FEET. NO CAVING.	
45									

RANCHO SANTA FE MOBIL

BBC ENVIRONMENTAL BORING LOG

PROJECT NO. LOGGED BY: G.I. SHILLER FIGURE NO.

SECOR

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San Diego, CA 92108
619-296-6195 TEL
619-296-6199 FAX

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D. E. H.
MAILROOM

April 27, 2004

Project No. MTCH.92795.08

Ms. Marisue Crystal
County of San Diego, Department of Environmental Health
Land and Water Quality Division, Site Assessment and Mitigation Program
P.O. Box 129261
San Diego, California 92112-9261

Subject: **60-Day Drilling Permit Report**
Former Chevron Service Station No. 9-2795
6051 El Tordo
Rancho Santa Fe, California 92067

Reference: **Well Permit No. LMON102161**
EST # - H36819-002
APN # - 266-261-01-00

Dear Ms. Crystal:

On behalf of Chevron Environmental Management Company (Chevron), SECOR International Incorporated (SECOR) is submitting this report to summarize the results of monitoring well installation activities completed at the subject site. Well installation activities were performed under permit #LMON102161, issued by the County of San Diego, Land and Water Quality Division (LWQD), Site Assessment and Mitigation Division (SAM). Well installation activities were performed in accordance with the San Diego County well construction standards outlined in Appendix B of the *SAM Manual 2004*. Figure 1 illustrates the location of Chevron 9-2795. A site plan showing the location of the new well and existing monitoring wells is presented as Figure 2.

WELL INSTALLATION ACTIVITIES

On April 13, 2004, a SECOR International Incorporated (SECOR) geologist observed the drilling of one borehole to a depth of fourty-one feet below ground surface (bgs). The borehole was converted to a 2-inch PVC groundwater monitoring well (MW-10). The purpose for installing MW-10 is to further assess the horizontal extent of hydrocarbon impact to groundwater at the site. All well installation activities were performed under the supervision of a California Registered Geologist.

Drilling and well installation were conducted by West Hazmat Drilling, Inc., using a CME-75 drill rig equipped with 8-inch diameter hollow-stem augers. During drilling, a SECOR geologist supervised the collection of soil samples at five-foot intervals and logged the borehole describing the soil samples utilizing the Unified Soil Classification System (USCS). Soil color descriptions were referenced from the Munsell Soil Color Chart published in 2000. Soil cuttings and wash water generated during decontamination procedures were contained in properly labeled 55-gallon drums and stored on-site pending transportation and disposal.

The monitoring well was constructed with twenty-six feet of 2-inch diameter, schedule-40 PVC, blank well casing and fifteen feet of screened casing with 0.020-inch slots. The annular space for the well was backfilled with six (6) 100-pound bags of Monterey #3 filter pack silica sand (6.0 cubic feet), four (4) 50-pound bags of bentonite chips (14.0 cubic feet), ten (10) 70-pound bags of

Quickset concrete (7.0 cubic feet), and twenty (20) 70-pound bags of Ready Mix cement (14.0 cubic feet). An unusually large volume of concrete was required to complete the surface seal because the well was constructed within a sidewalk which required substantial demolition and reconstruction. The volume of sand, bentonite chips, concrete, and cement used within the boring are provided in Table 1.

The borehole logs, site location map, and site plan are also provided as attachments to this report. The laboratory results and chain-of-custody documentation for soil and groundwater samples will be provided with the Site Assessment Report (SAR) being prepared for the site. The SAR will include details of the boring activities and summary tables of the analytical results.

If any additional information is required, please contact one of the undersigned at (619) 296-6195.

Respectfully Submitted,

SECOR International Incorporated

Reed Thomberry
Reed Thomberry
Staff Scientist

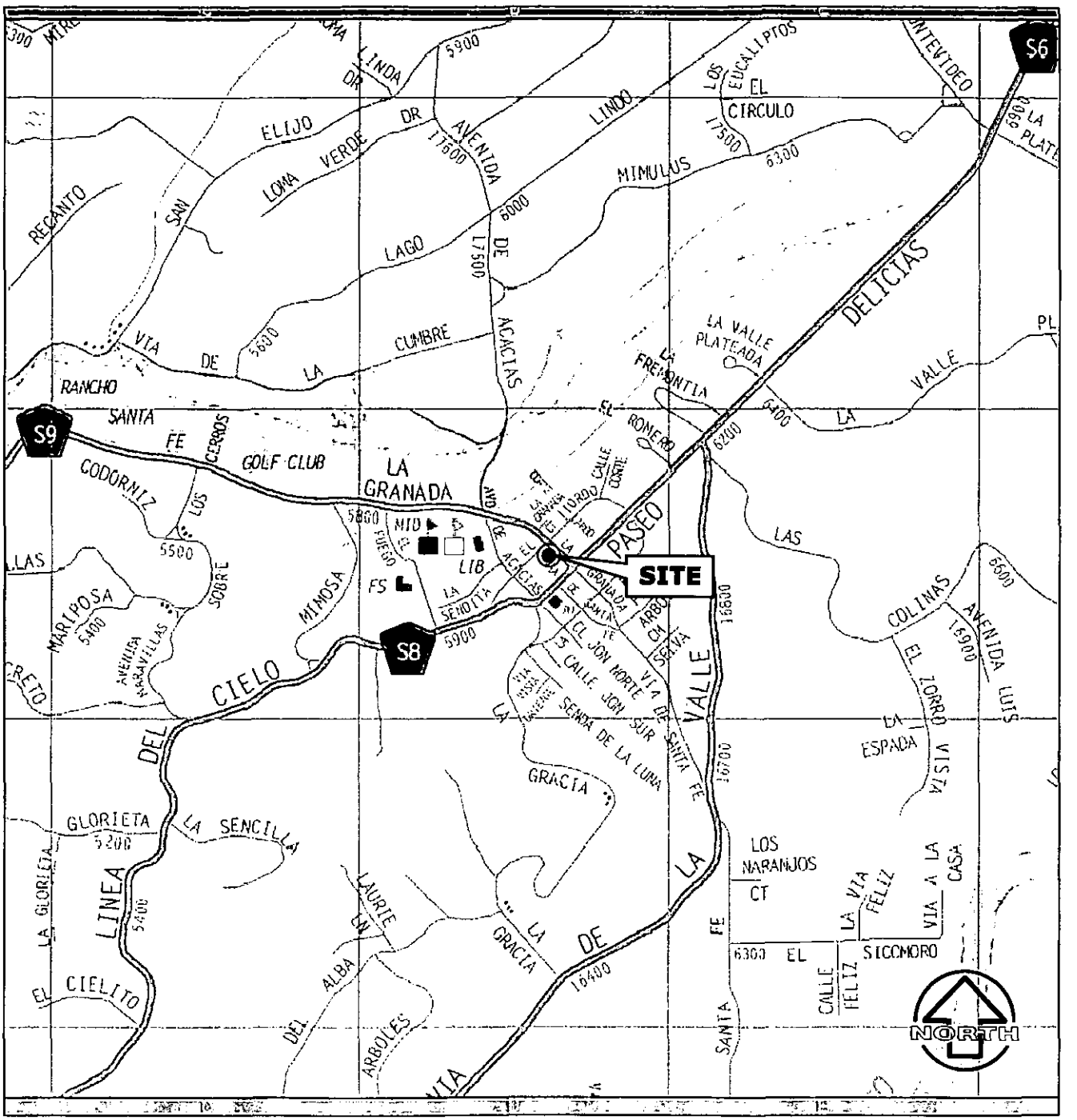
Ryan D. Turner R.G. # 6816
Senior Project Manager

REGISTERED GEOLOGIST
Ryan D. Turner
No. 6816
STATE OF CALIFORNIA

Attachments:

Figure 1 - Site Location Map
Figure 2 - Site Plan
Table 1 - Groundwater Monitoring Well Construction Materials
Attachment 1 – Borehole Logs for MW-10

cc: Ms. Karen Streich, Chevron Environmental Management Company



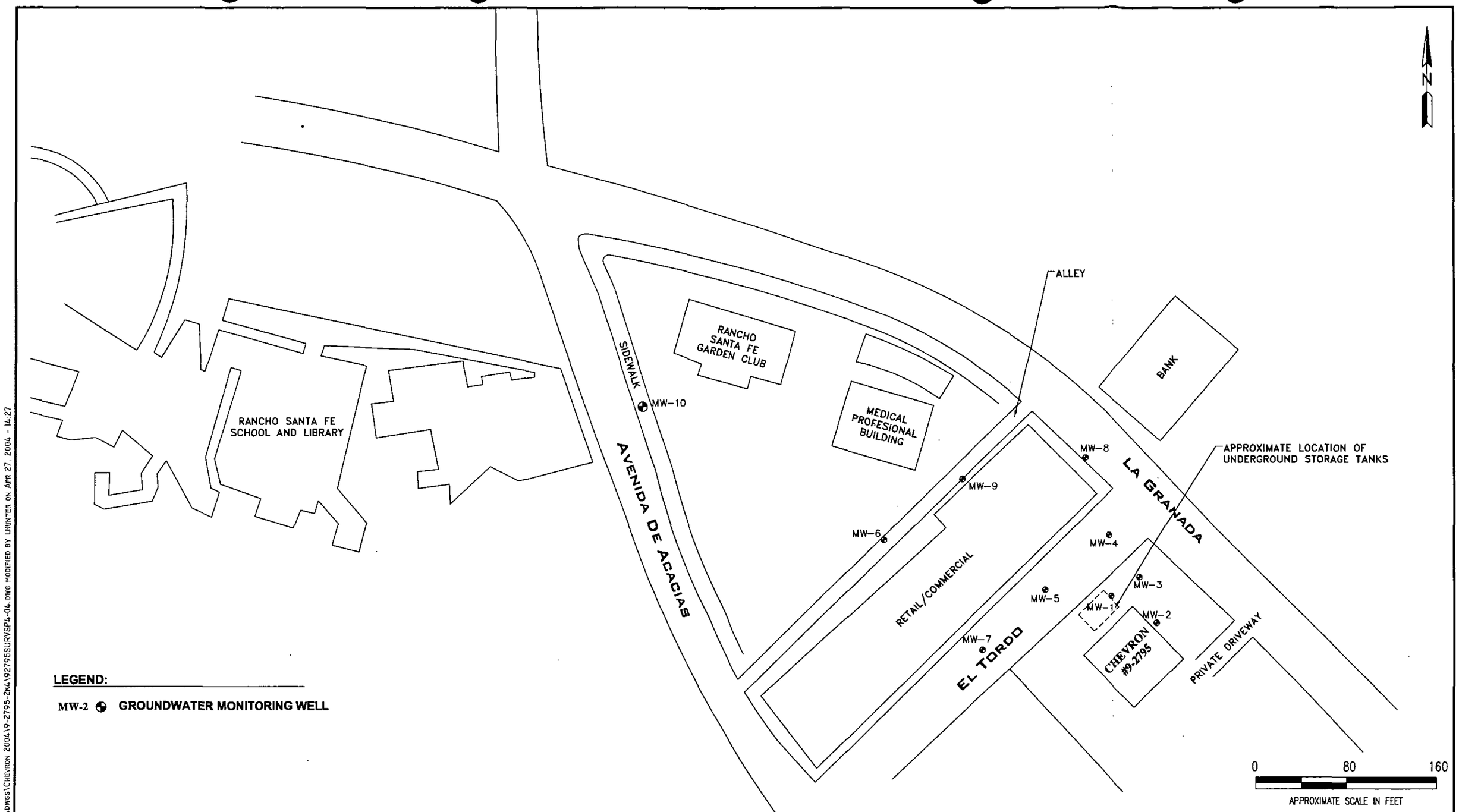
REFERENCE: THOMAS GUIDE CD-ROM, PAGE & GRID 1168 D3.

0 1320 2640

APPROXIMATE SCALE IN FEET

DRAWN BY: LGH CHECKED: RDT APPROVED: RDT DATE: 4/26/04 JOB No.: MTCH.92795.08 CAD FILE: 92795SLOC	PREPARED BY: SECOR 2655 Camino del Rio North, Suite 302 San Diego, California	PREPARED FOR: CHEVRON STATION #9-2795 6051 EL TORDO SAN DIEGO, CALIFORNIA	FIGURE: 1 **SITE LOCATION MAP**

P:\CAD\ALLPROJECTS2002DWGS\CHEVRON 2002\9-2795-2K2\92795SLOC-02.DWG MODIFIED BY LHUNTER ON APR 26, 2004 - 9:59



LEGEND:

MW-2 ⊕ **GROUNDWATER MONITORING WELL**

DRAWN BY: LGH CHECKED: RDT APPROVED: RDT DATE: 4/27/04 JOB No.: MTCH.91197.08 CAD FILE: 9-1197SURVSP4-04	PREPARED BY: SECOR 2655 Camino del Rio North, Suite 302 San Diego, California	PREPARED FOR: FORMER CHEVRON STATION #9-1197 8808 LAWRENCE WELK DRIVE ESCONDIDO, CALIFORNIA	FIGURE: 1 **SITE PLAN**

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Table 1
Construction Materials for Well Installation
Chevron Service Station 9-2795

Boring/Well Number	Boring Depth (bgs)*	Bags of Sand**	Bags of Bentonite Chips***	Bags of Concrete****	Bags of Cement*****	Sand Fill Volume	Bentonite Chip Fill Volume	Concrete and Cement Fill Volume
MW-10	41 feet	6 bags	4 bags	10 bags	20 bags	6.0 cubic feet	14.0 cubic feet	21.0 cubic feet

Wow!

* Below Ground Surface
** Sand bags were 100 pounds each
*** Bentonite chips were 50 pounds each
**** Concrete bags were 70 pounds each
***** Cement bags were 70 pounds each

SECOR
International Incorporated

Logged By:	Date Drilled:	Drilling Contractor	Project Name:	Method/Equipment:	Well Number:
BL/RT	4/13/04	WestHazmat	Former Chevron 9-2795 6051 El Tordo, Rancho Santa Fe	Hollow Stem Auger CME-75	MW-10

Boring Diam.(in.):	Surface Elev.(ft.):	Groundwater Depth (ft.):	Total Depth (ft.):	Drive wt.(lbs.):	Drop Dist.(in.):
8		▽ 33.5 First Water ▼ 27.31 End of Day	41.0	140	30

Well Construction	Depth, (ft.)	Sample Type	Blows/12"	Description	PID (ppm)
Christy Box Concrete (0-3')				Concrete Silt with Sand (ML) Loose, gray (5Y 6/1) with yellowish red (5YR 6/8) mottling, mostly silt, little fine-grained sand, moist, no hydrocrabon odor.	
	5			Silty Sand (SM) Loose, yellow (5Y 7/6), mostly fine- to medium-grained sand, little silt, moist, no hydrocarbon odor.	
	10		25	Well Graded Sand (SW) Dense, white (5Y 8/1), mostly fine- to coarse-grained sand, little silt, moist, red (2.5YR 4/6) stringers, no hydrocarbon odor. Well Graded Sand (SW) Dense, olive yellow (5Y 6/6), mostly fine- to coarse-grained sand, little silt, damp, no hydrocarbon odor.	1.9
Grout 2" Sch. 40 PVC Blank Casing	15		13	Silt with Sand (ML) Stiff, light olive gray (5Y 6/2), mostly silt, some fine-grained sand, moist, orange mottling, no hydrocarbon odor.	0.0
Bentonite Seal #3 Sand	20 22		15	Silt (ML) Medium stiff, light olive gray (5Y 4/2), mostly silt, dry, no hydrocarbon odor.	0.0

The substrata descriptions above are generalized representations and based upon visual/manual classification of cuttings and/or samples obtained during drilling. Predominant material types shown on the log may contain different materials and the change from one predominant material type to another could be different than indicated. Descriptions on this log apply only at the specific location at the time of drilling and may not be representative of subsurface conditions at other locations or times.

Project No. **MTCH.92795.08** Date **4-13-04**

Log of Well

MW-10.GPJ
LOG OF BOREHOLE

Approved by BRT

Figure **MW-10** (sheet 1 of 2)

SECOR
International Incorporated

Logged By:	Date Drilled:	Drilling Contractor	Project Name:	Method/Equipment:	Well Number:
BL/RT	4/13/04	WestHazmat	Former Chevron 9-2795 6051 El Tordo, Rancho Santa Fe	Hollow Stem Auger CME-75	MW-10

Boring Diam.(in.):	Surface Elev.(ft.):	Groundwater Depth (ft.):	Total Depth (ft.):	Drive wt.(lbs.):	Drop Dist.(in.):
8		▽ 33.5 First Water ▼ 27.31 End of Day	41.0	140	30

Well Construction	Depth, (ft.)	Sample Type	Blows/12"	Description	PID (ppm)
			8	Silt (ML) Stiff, light olive gray (5Y 5/2), mostly silt, dry, no hydrocarbon odor.	0.0
2" Sch. 40 PVC 0.020" Slotted Screen	30		18	Well Graded Sand (SW) Loose, light olive brown (5Y 4/3), mostly sand, little silt, dry, no hydrocarbon odor.	0.0
#3 Sand	35		46	Silty Sand (SM) Medium dense, medium brown (5Y 4/4), mostly sand, little silt, moist, no hydrocarbon odor.	0.9
	40		19	Silt with Sand (ML) Stiff, light olive gray (5Y 4/2), mostly silt, little sand, dry, no hydrocarbon odor. Bottom of boring at 41 feet below ground surface	0.0
	45				

The substrata descriptions above are generalized representations and based upon visual/manual classification of cuttings and/or samples obtained during drilling. Predominant material types shown on the log may contain different materials and the change from one predominant material type to another could be different than indicated. Descriptions on this log apply only at the specific location at the time of drilling and may not be representative of subsurface conditions at other locations or times.

Project No. **MTCH.92795.08** Date **4-13-04**

Log of Well

MW-10.GPJ
LOG OF BOREHOLE

Approved by RDT

Figure **MW-10** (sheet 2 of 2)

DEFINITION OF TERMS

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES		SM	SILTY SANDS, SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

SECOR
INTERNATIONAL INCORPORATED
2655 CAMINO DEL RIO N., SUITE 302
SAN DIEGO, CA. 92108

BOREHOLE/WELL LOG LEGEND

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GRAIN SIZES

	U.S. Standard Series Sieve				Clear Square Sieve Openings			
	200	40	10	4	3/4"	3"	12"	
SILT and CLAYS	SAND			GRAVEL		COBBLES	BOULDERS	
	Fine	Medium	Coarse	Fine	Coarse			

Component Percent

Mostly 50-100%
Some 30-45%
Little 15-25%
Few 5-10%
Trace <5%

RELATIVE DENSITY

Sand and Gravels	Blows/Foot†
Very Loose	0 - 4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

CONSISTENCY

Silt and Clays	Strength ‡	Blows/Foot†
Very Loose	0 - 1/4	0 - 2
Soft	1/4 - 1/2	2 - 4
Firm	1/2 - 1	2 - 4
Stiff	1 - 2	8 - 16
Very Stiff	2 - 4	16 - 32
Hard	Over 4	Over 32

† Number of blows of 140 pound hammer falling approximately 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) standard pentetration test (SPT) split spoon (ASTM D-1586).

‡ Unconfined compressive strength in tons/sq.ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.

Graphic Log Symbols

LPH OR PSH — Liquid-Phase Hydrocarbons/ Phase Separated Hydrocarbons

Ground Water (Static)

Ground Water (First Encountered)

Well Design Symbol

< > Centralizer

Sample Symbols

Sample Recovered

Undisturbed Sample

No Recovery

Abbreviations Used

MSL	Mean Sea Level
A/C	Asphalt/Concrete
Bent	Bentonite
bgs	Below Ground Surface
dia	Diameter
'	Feet
LPH	Liquid-Phase Hydrocarbons
PSH	Phase Separated Hydrocarbons
GW	Groundwater
HC	Hydrocarbon
"	Inches
med	Medium
mod	Moderate
NA	Not Analyzed
NR	Not Recorded
ppm	Parts Per Million

Well Design Fill Patterns

Concrete

Bentonite

Sand

Screened Interval

SECOR
INTERNATIONAL INCORPORATED
2655 CAMINO DEL RIO N., SUITE 302
SAN DIEGO, CA 92108

BOREHOLE/WELL LOG LEGEND

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DD 4/13

PERMIT #LMON102161
A.P.N. #266-261-01-00
EST #H36819-002

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION

MONITORING WELL CONSTRUCTION PERMIT

SITE NAME: OFF-SITE FROM CHEVRON STATION #9-2795

SITE ADDRESS: IN STREET, ADJACENT TO 17025 AVENIDAS DE ACACIAS, RANCHO SANTA FE, CA 92067

PERMIT TO: **INSTALL 1 GROUNDWATERING MONITORING WELL**

PERMIT APPROVAL DATE: APRIL 12, 2004

PERMIT EXPIRES ON: AUGUST 10, 2004

RESPONSIBLE PARTY: CHEVRON ENVIRONMENTAL MANAGEMENT CO.

PERMIT CONDITIONS:

1. **Modify construction to permit a 3' bentonite transition seal. Construction approved as follows: 0-3' concrete surface seal, 3-10' annular seal, 10-13' bentonite transition seal, 13-35' filter pack, 15-35' perforation.**

2. Wells must have a **minimum 3-foot concrete surface seal**. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.

3. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

4. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

5. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

APPROVED BY: Carol Spangenberg CAROL SPANGENBERG DATE: 04/12/2004

NOTIFIED: by email 4/12/04 MSC

DEH:SAM-9075 (4/03)

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

TO JIM 4/6/04

RECEIVED
2004 MAR 30 PM 12 46
D.E.H.

OFFICE USE ONLY
PERMIT #W T102161
SAM CASE #H 36819 JCS
DATE RECEIVED: 3.30.04
FEE PAID: $255-
CHECK # 582 821
LOP

A. RESPONSIBLE PARTY Chevron Environmental Management Co. Phone (925)842-1589
Mailing Address 6001 Bollinger Canyon Road City San Ramon State CA Zip 94583
Contact Person Karen Streich Phone (925)842-1589 ext. N/A

B. SITE ASSESSMENT PROJECT IF APPLICABLE #H 36819-002

C. CONSULTING FIRM SECOR International, Inc.
Mailing Address 2655 Camino Del Rio North City San Diego State CA Zip 92108
Registered Professional Ryan Turner Registration # 6848 (RG) RCE, CEG)
Contact Person Reed Thornberry Phone (619)296-6195 ext. 291

D. DRILLING COMPANY West Hazmat Drilling Corp. C57# 819548 Phone (619) 686-5800
Mailing Address 3620 Kurtz St. City San Diego State CA Zip 92110

FED 04-09-04 11:37 EDW 117429
CHK $255.00

CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☒ Groundwater	1
☐ Vadose	
☐ Boring	
☐ Other	

NUMBER OF WELLS TO BE DESTROYED #

☐ _____

MATERIALS TO BE USED CASING SEAL/BORING BACKFILL

Not Applicable _____

☐ Neat Cement

Type PVC

☒ Cement & Bentonite

Gauge Sch. 40

☐ Sand-Cement

Diameter ~~4"~~ 2" See attd

☐ Bentonite

Well Screen Size 0.020

☐ Other

Filter Pack #3 Montery Sand
(Specify)

Drilling Method

☒ Auger
☐ Air Rotary
☐ Mud Rotary
☐ Other
☐ Percussion

PROPOSED CONSTRUCTION

Estimated ground water depth 15-20 ft.

Concrete surface seal 0 to 3

Annular seal 3 to 11

Bentonite transition seal 11 to 13

Filter Pack 13 to 35

Perforation 15 to 35

NOTE:
Attach a well construction diagram for wells with multiple completions

3/31/04. needs Adjacent APN for site

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 3/30/04

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction/or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE _____ DATE 3/30/04

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 266-261-01-00

Site Name County of San Diego Right of Way ADJ. TO: offsite from Chev #9-2775

Site Address 17025 Avenidas de Acacias City Rancho Santa Fe Zip 92067

PROPERTY OWNER County of San Diego—See Attached Encroachment Permit Phone _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS 1 **TYPE OF WELLS** Groundwater Monitoring Wells

2. **ASSESSOR'S PARCEL NUMBER** _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____ Phone _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____ Phone _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____ Phone _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, [illegible]3 through June 30, 2004):

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells) **Permit for Well Maintenance Inspection** (Valid for three years)	$165.00 for the first monitoring well	1 x $165.00 $ 165.00
	$ 90.00 for first well maintenance inspection	1 x $ 90.00 $ 90.00
Each Additional New Well	$140.00 for each additional well installation	1 x $140.00 $
	$ 30.00 for each additional well maintenance inspection	x $ 30.00 $
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$165.00 for the first boring	1 x $165.00 $
	$45.00 for each additional boring	x $ 45.00 $
Permit for Well Destructions Only	$165.00 for the first destruction	1 x $165.00 $
	$110.00 for each additional destruction	x $110.00 $
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $165.00.	1 x $165.00 $
	Additional activities will be as follows:	
	$140.00 for each additional well	x $140.00 $
	$ 90.00 for first well maintenance inspection	1 x $ 90.00 $
	$ 30.00 for each additional well maintenance inspection	x $ 30.00 $
	$ 45.00 for each additional boring	x $ 45.00 $
	$110.00 for each well destruction	x $110.00 $
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$305.00 (Flat Fee)**	**$305.00**
	TOTAL COST OF PERMIT	**$ 255.00**

H. APPLICATION SUBMITTAL, PLAN APPROVAL, PERMIT ISSUANCE, AND REQUIRED INSPECTIONS

Submit one (1) original and two (2) copies of this application package, including plan drawings with the required fee to the Monitoring Well Permit Desk, Department of Environmental Health, Site Assessment and Mitigation Program (SAM). 1255 Imperial Avenue, San Diego, CA 92101. Or mail to P. O. Box 129261, San Diego, CA 92112-9261. Information in addition to that presented in the application package may be needed in order to obtain final approval. **Checks should be made payable to the County of San Diego.**

A permit will be issued by SAM upon review and approval of the application and plans. The required fees must be submitted with the application package. No work is to begin on the proposed project until a permit has been issued. The required inspections cannot be scheduled until a permit is issued.

Once the permit has been issued, it is the responsibility of the permittee to notify SAM at least two (2) working days in advance to schedule each required inspection.

USE ONE APPLICATION PACKAGE FOR A SINGLE SITE PROJECT. A SINGLE PERMIT WILL BE ISSUED FOR A SINGLE SITE PROJECT, EVEN IF WELLS/BORINGS ARE COMPLETED ON MORE THAN ONE PROPERTY. PLEASE USE SEPARATE APPLICATIONS FOR MULTIPLE SITE PROJECTS.

PERMIT APPLICATION FOR
GROUND WATER AND VADOSE MONITORING WELLS
EXPLORATORY OR TEST BORINGS

- For well destruction, complete only #1 below.
- Well design, logging and construction must be supervised by a Geologist, Engineering Geologist or Civil Engineer who is registered or certified by the State of California.
- Well driller must have an active C-57 License and current $7,500 bond with the County.
- Provide a plot plan giving location of property lines, existing improvements such as structures, underground tanks, underground utilities, underground piping, and the proposed monitoring and/or observation wells.
- If applicable, provide a signed copy of the Property Owner Responsibility form for each property listed in Section "F." Provide encroachment/excavation permit and/or traffic control permit for work to be done in street or public right of way.

1. If wells are to be destroyed, provide a description of method of destruction. _____

2. What is the purpose of the well/boring investigation? Soil and groundwater investigation

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction?

   All downhole equipment will be thoroughly decontaminated prior to use

4. What field procedures will be utilized to determine if contamination exists?

   Field screening using an organic vapor analyzer (OVA)

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving?

   Samples will be sent for laboratory analysis based on field screening results

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)?

TPHg, BTEX, MTBE, TBA, ETBE, DIPE by EPA 8260B

7. How will samples be transported and preserved? Samples will be transported and preserved in an ice-filled cooler

8. What sampling methods will be used? California Split spoon sampler

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction of Vadose and Ground Water Monitoring Wells (Current SAM Manual Requirements). If yes, specify these variations.

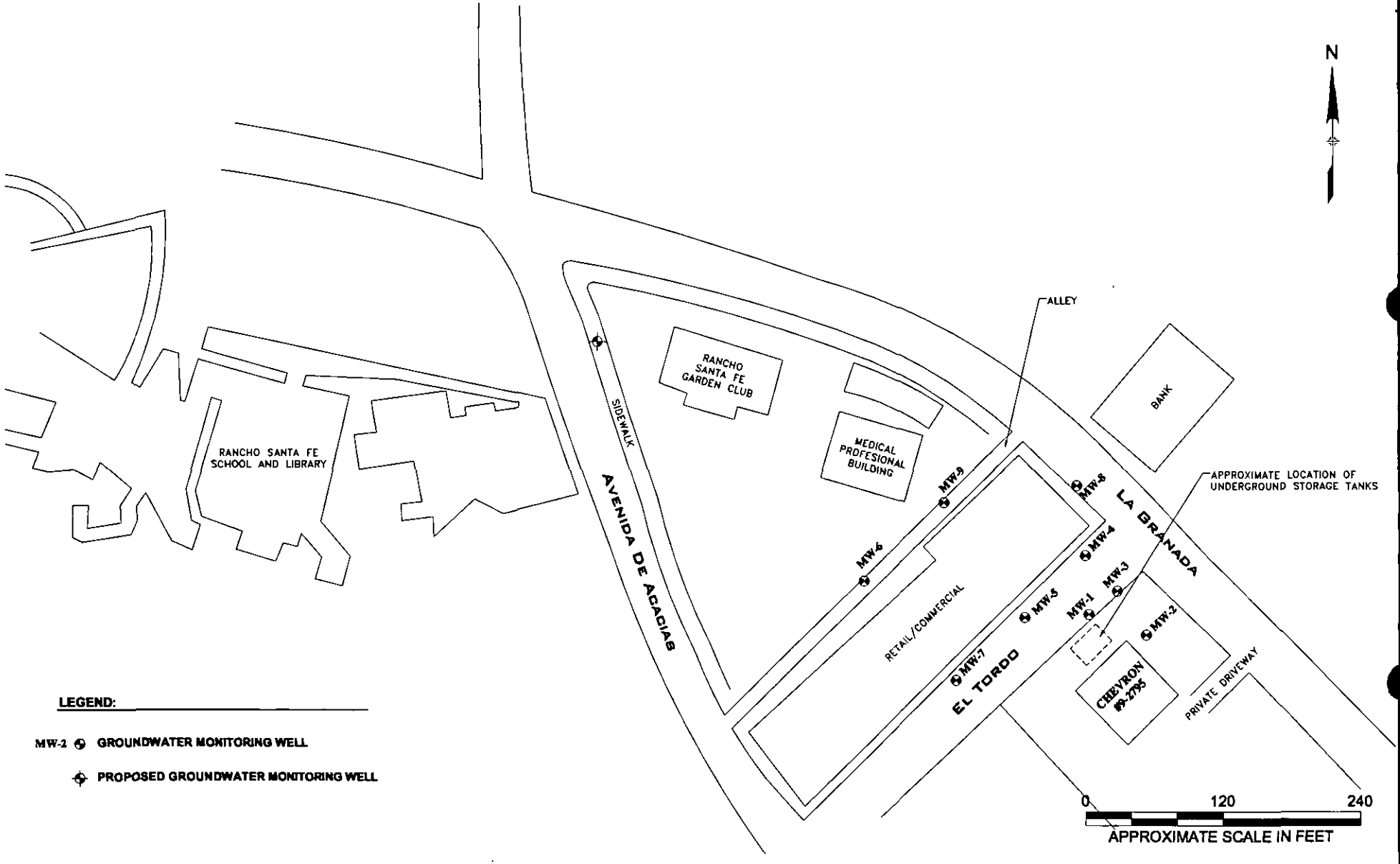
No

10. What procedures will be used to ensure no contamination will be introduced by the drilling equipment?

All downhole equipment will be steam cleaned prior to use

11. What methods will be used to clean sampling equipment? Triple rinse with alconox, tap water, and deionized water

12. What cleaning method will be used to clean casing and screen prior to installation? Only new, factory sealed screen and casing will be used.



LEGEND:

MW-2 ⊕ GROUNDWATER MONITORING WELL

⊕ PROPOSED GROUNDWATER MONITORING WELL

SECOR
2655 Camino del Rio North, Suite 302
San Diego, California
619-296-6195/Fax 619-296-6199

PREPARED FOR:

CHEVRON STATION NO. 9-2795
6051 El Tordo
Rancho Santa Fe, California

PROPOSED MONITORING WELL LOCATION MAP

FIGURE: **2**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
08CH.52795.03	RJO			2/20/04

P:\CAD\ALLPROJECTS2004DWGS\CHEVRON 2004\9-2795-2K4\92795SP2-04.DWG MODIFIED BY PDODGE ON MAR 30, 2004 - 10:53

92795SP2-04

KEY.

COUNTY OF SAN DIEGO

DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION
5201 Ruffin Road. Suite D
San Diego, CA 92123-4310
(858)694-3275

Permit Number
N 3942
(KIVA Code: 4940)

Issued: 15-MAR-2004

ENCROACHMENT PERMIT

Charge to:

APPLICANT	OWNER
SECOR INTERNATIONAL INCORP 2655 CAMINO DEL RIO N #302 SAN DIEGO, CA 92108 Res: 619-296-6195	SECOR INTERNATIONAL INCORP 2655 CAMINO DEL RIO N #302 SAN DIEGO CA 92108 Phone: 619-296-6195

SITE ADDRESS: **THOMAS BROS**

AVENIDA DE ACACIAS (NB LN, N/O EL TORDO -OPPOSITE RSF SCHOOL & LIBRARY) RSF TB 1168 D3

APN:

Project: UNASSIGNED

SCOPE OF WORK

Encroachment Description:INSTALL X1 MONITORING WELL Pipe Size:4" Material:SCH 40 PVC -FLUSH MOUNT WITH SURFACE OF P.C.C. SIDEWALK. NOTE:BMP'S TO BE ENFORCED.REF: E84680

Encroachment will not interfere with the public use & maintenance of:T/W, SHOULDER OR PARKING LN, SIDE PATH OR SIDEWALK, DRAINAGE STRUCTURE OR WATERCOURSE.

Permit Justification:REQ'D BY COUNTY OF SAN DIEGO, LAND & WATER QUALITY DIVISION.

NOTE:PERMIT REVISED 3/25/04.

This permit is governed by Chapter 6, Division 1, Title 7 of the San Diego County Code of Regulatory Ordinances.

In consideration of the granting of this permit, the permittee agrees:

1. **To save harmless the County of San Diego and any officer or employee thereof for any accident, loss or damage to persons or property, happening or occurring as the proximate result of any placement, change or renewal of an encroachment under the terms of this permit, and to assume all of said liabilities.**
2. **To comply with all applicable laws in the establishment, maintenance and removal of the encroachment.**
3. **That he and any other persons engaged in any work authorized by this permit shall conform to all due safety precautions for the protection of persons and property.**
4. **To remove or relocate any encroachment placed, changed or renewed under the authority of this permit; prior to its expiration or within 24 hours of notification to remove, if the duration is 10 days or less; or within 5 days of notification to remove, if the permit is of indefinite duration.**
5. **After removing or relocating the encroachment to restore the highway to the equivalent or better condition than it was prior to the date this permit became effective, or prior to the date the encroachment was first placed, whichever is earlier.**

In consideration of the above agreement the permit is granted.

County of San Diego,
Director of Public Works by: _____ Date: 3/25/04

The highway is in acceptable conditionthe permit and agreement are terminated.

County of San Diego,
Director of Public Works by: _____ Date: _____

REV.

COUNTY OF SAN DIEGO

DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION
5201 Ruffin Road. Suite D
San Diego, CA 92123-4310
(858)694-3275

Permit Number
E 84680
(KIVA Code: 4930)

Issued: 15-MAR-2004
Expires: 15-MAY-2004

Charge to: YH4680

EXCAVATION PERMIT

APPLICANT	OWNER
SECOR INTERNATIONAL INCORP 2655 CAMINO DEL RIO N #302 SAN DIEGO, CA 92108 Res: 619-296-6195	SECOR INTERNATIONAL INCORP 2655 CAMINO DEL RIO N #302 SAN DIEGO CA 92108 Phone: 619-296-6195

SITE ADDRESS: **THOMAS BROS**

AVENIDA DE ACACIAS (NB LN, N/O EL TORDO -OPPOSITE RSF SCHOOL & LIBRARY) RSF TB 1168 D3

APN:

QUANTITIES:

Excavation Length (feet): 0.1	Excavation Width (feet): 0.1	Excavation Depth (feet): 35

SCOPE OF WORK
Existing Surface:CONCRETE Purpose of Permit:TRENCH TO INSTALL X1 MONITORING WELL
Pipe Size:4" Material:SCH 40 PVC -FLUSH MOUNT WITH SURFACE OF P.C.C. SIDEWALK
NOTE:BMP'S TO BE ENFORCED. TRAFFIC CONTROL PERMIT REQ'D. REF: N-3942

NOTE:3/25/04 -PERMIT & PLAN REVISED, MOVE M.W. FROM ROADWAY INTO CONCRETE SIDEWALK.

Before you dig, call UNDERGROUND SERVICE ALERT at 1-800-422-4133.

Enter UNDERGROUND SERVICE ALERT Inquiry Identification Number here: _____

THIS PERMIT IS NOT VALID UNTIL AN INQUIRY NUMBER IS OBTAINED.

NOTIFY CONSTRUCTION INSPECTION at (858)694-3165 24 HOURS IN ADVANCE OF BEGINNING OF ANY PORTION OF WORK, COMPLETION OF WORK, BACK FILL OR CONCRETE POUR, AND OTHERWISE AS REQUIRED BY THE DIRECTOR OF PUBLIC WORKS.

Work to be performed in accordance with San Diego County Department of Public Works "Special Provisions for Work Done Under Excavation Permit".

Issuance of this permit does not authorize any work to be performed until the permission of the property owner has been obtained.

This permit is granted under provisions of Title 7 of the San Diego County Code of Regulatory Ordinances. It is understood and agreed upon that if this location is under construction, the consent of the contractor must be obtained. This installation is granted with the strict understanding that same is subject to relocation, change of grade, or removal at the Request of the Director, Department of Public Works. Permittee shall be responsible for any liability due to any accident, loss or damage resulting from the design or performance of work involved.

County of San Diego, Director of Public Works by: _____

Date Completed: _____ **Inspector:** _____

THIS PERMIT MUST BE KEPT ON THE WORK TO BE SHOWN TO ANY AUTHORIZED AGENT OF THE COUNTY UPON REQUEST.

SECOR

SECOR INTERNATIONAL INCORPORATED

www.secor.com

2655 Camino Del Rio N. Suite 302
San Diego, CA 92108
619-296-6195 TEL
619-296-6199 FAX

August 29, 2006

RECEIVED
SEP 5 2006
ENVIRONMENTAL HEALTH

Project No. MTCH.92795.08

Ms. Marisue Crystal
County of San Diego
Land and Water Quality Division
P.O. Box 129261
San Diego, California 92112-9261

Reference: **Former Chevron Service Station No. 9-2795**
6051 El Tordo
Rancho Santa Fe, CA 92067

Drilling Permit #LMON103947
EST # H36819-002
APN # 266-283-03-00

Subject: **Monitoring Well Abandonment Report**

Dear Ms. Crystal:

On behalf of Chevron Environmental Management Company (Chevron), SECOR International Incorporated (SECOR) is submitting this report summarizing the results of groundwater monitoring well (MW) abandonment activities performed at the referenced property (the Site). Figure 1 illustrates the location of the Site.

Well abandonment activities were performed under permit #LMON103947, issued by the County of San Diego, Land and Water Quality Division (LWQD), Site Assessment and Mitigation Division (SAM). Well abandonment activities were performed in accordance with the applicable requirements of San Diego County well standards as outlined in Appendix B of the *SAM Manual 2004*. A site plan showing the abandoned wells is presented as Figure 2.

WELL ABANDONMENT ACTIVITIES

On two dates (August 7 and 8, 2006), under the supervision of a California Professional Geologist, a SECOR scientist observed the abandonment of two on-site MWs (MW-2 and MW-3) and eight off-site MWs (MW-1 and MW-4 through MW-10) (Figure 2).

Well abandonment activities were performed by Test America Drilling Corporation (Test America) using a CME-75 drill rig equipped with 8-inch-diameter and 10-inch-diameter, continuous-flight, hollow-stem augers. MW-1 was over-drilled to a total depth of approximately 25 feet below ground surface (ft bgs). Wells MW-4, MW-5, and MW-6 were over-drilled to a total depth of approximately 25.5 ft bgs. Wells MW-7, MW-8, and MW-9 were over-drilled to a total depth of approximately 28 ft bgs. MW-3 was over-drilled to a total depth of approximately 31 ft bgs. MW-2 was over-drilled to a total depth of approximately 36 ft bgs. MW-10 was over-drilled to a total depth of approximately 41 ft bgs.

The over-drilled boreholes for MW-1 through MW-10 were backfilled with a combination of a bentonite-grout slurry mixture and bentonite chips from the bottom of the borehole to approximately 3 ft bgs and with concrete from approximately 3 ft bgs to ground surface. Approximately twenty-one 50-pound bags of bentonite-grout (73.5 cubic feet), ten 50-pound

bags of bentonite chips (6.5 cubic feet) and a combination of twenty-three 70-pound bags of Ready Mix/Quick Set concrete mix (16.1 cubic feet) were installed (to serve as an upper seal) during the well abandonment activities. In addition, wells MW-4, MW-5, MW-7, and MW-8 had the upper 18 inches (from 1.5 feet bgs to ground surface) of the borehole backfilled with hot patch asphalt, as required be the County of San Diego Department of Public Works Land Development Division

Drill cuttings generated during the well abandonment activities, consisting of filter pack sand and bentonite sealing materials were placed into 55-gallon drums that were properly labeled and temporarily stored on-site pending transport and disposal by Chevron-approved contractors. The well box, casing materials, and concrete were disposed of by Test America at a sanitary landfill. Additionally, the volume of bentonite-grout, bentonite chips, sand, and concrete mix used in each abandoned well is provided in Table 1.

If you have any questions regarding the information provided in this report, please contact the undersigned at (619) 296-6195.

Respectfully submitted,

SECOR INTERNATIONAL INCORPORATED

PROFESSIONAL GEOLOGIST NO. 4456
CLIFFORD R. POLLOCK
Certified Hydrogeologist
No. HG514
Expires 11/30/06
STATE OF CALIFORNIA

Brian C. Londquist
Project Scientist

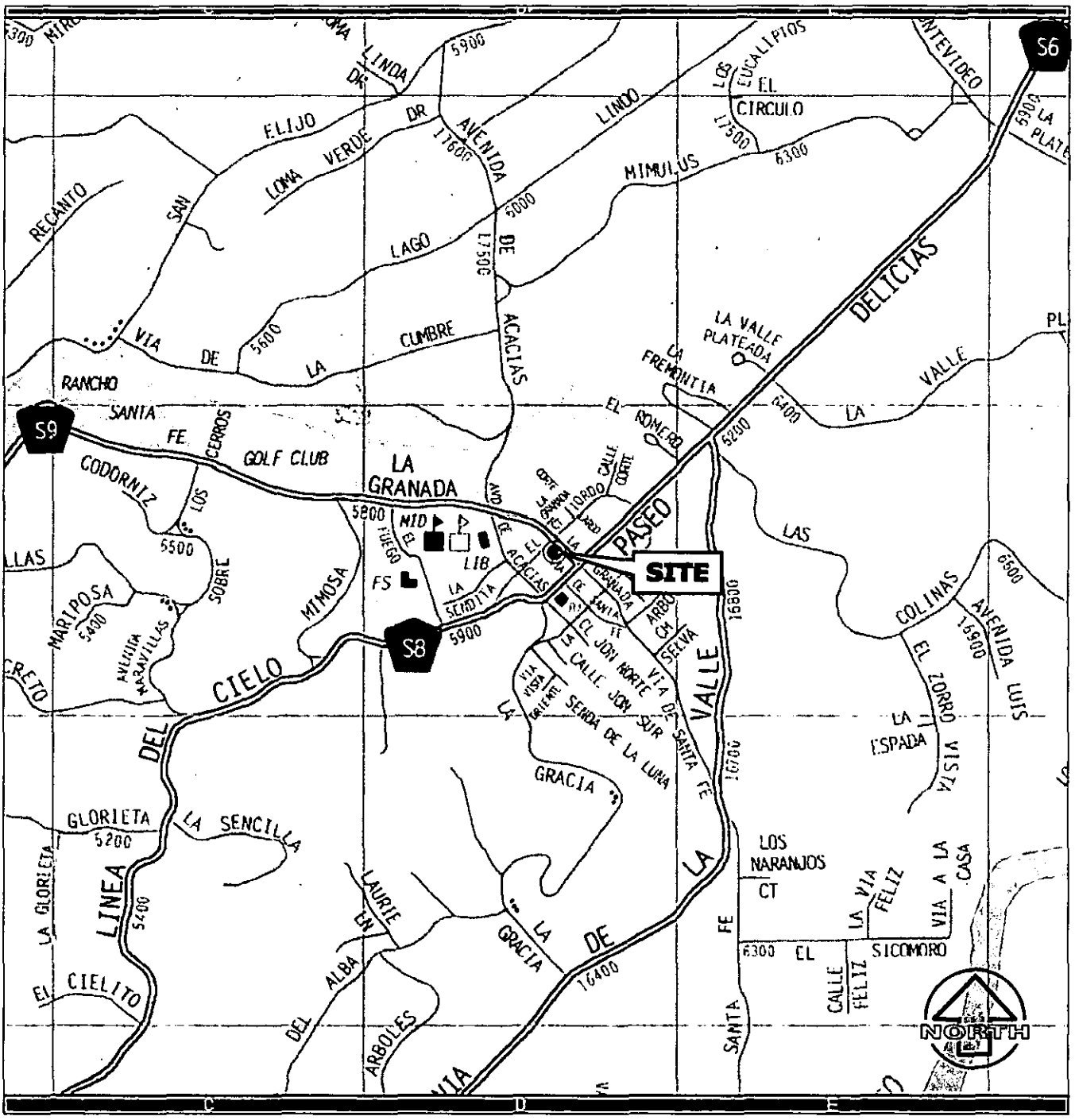
Clifford R. Pollock, CEG/CHG #514
Principal Engineering Geologist

Enclosure: Figure 1 - Site Location Map
Figure 2 - Site Plan Showing Abandoned Wells
Table 1 - Construction Materials for Monitoring Well Abandonment

Attachments: Photo Documentation

cc: Mr. Dana Thurman, Chevron Environmental Management Company
Mr. Kent Huth, County of San Diego DEH, LWQD-SAM Program (w/o attachment)
SECOR Mountain View Files

FIGURES



REFERENCE: THOMAS GUIDE CD-ROM, PAGE & GRID 1168 D3.

0 1320 2640

APPROXIMATE SCALE IN FEET

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SECOR
2855 Camino del Rio North, Suite 302
San Diego, California
619-296-6195/Fax 619-296-6189

PREPARED FOR:

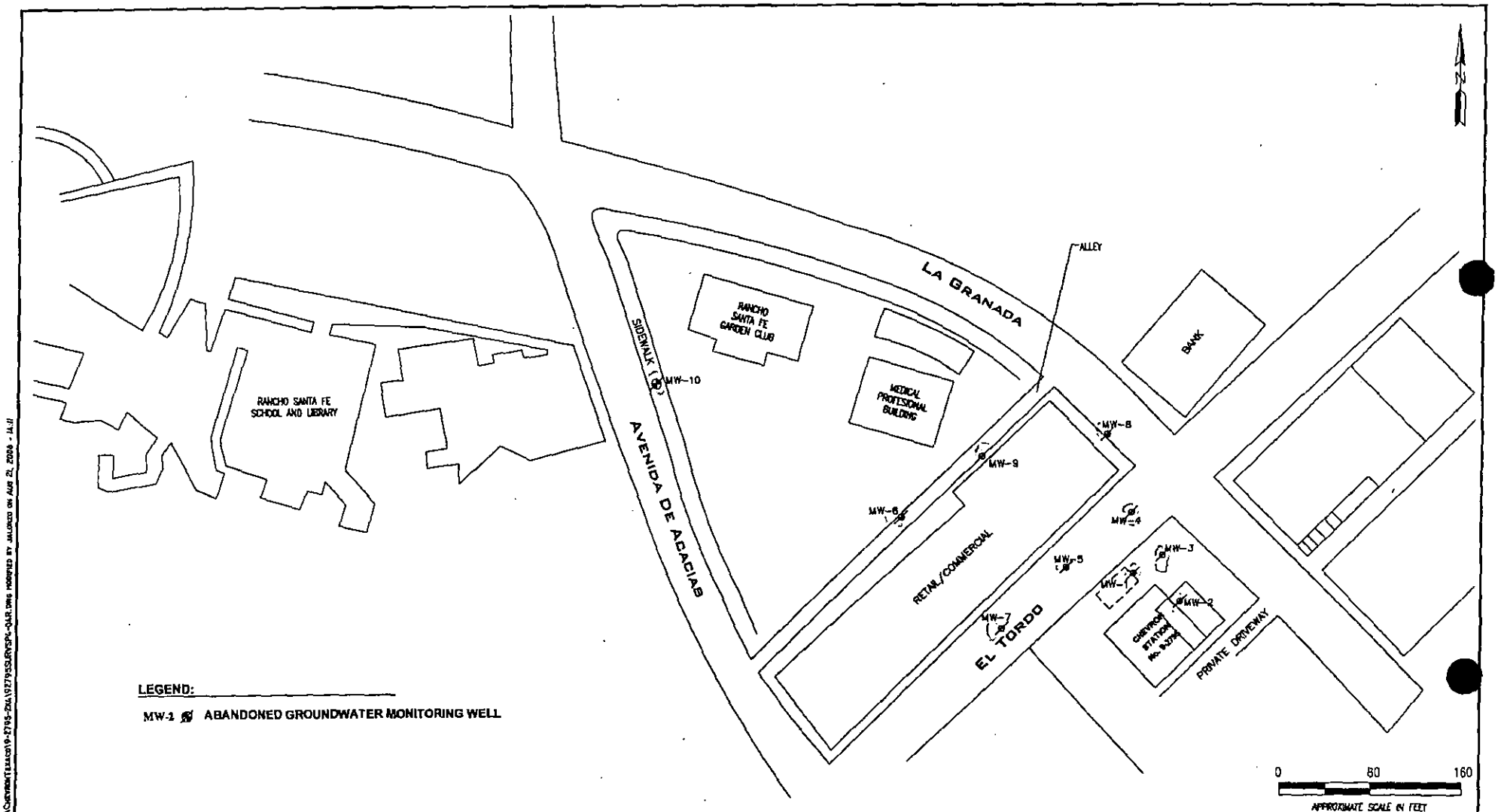
FORMER CHEVRON STATION NO. 9-2795
6051 El Tordo
Rancho Santa Fe, California

SITE LOCATION MAP

FIGURE: 1

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
MTCH.92795.08	RJO			11/25/04

92795SLOC



LEGEND:

MW-1 ABANDONED GROUNDWATER MONITORING WELL

DRAWN BY: LGH CHECKED: 7/18/06 APPROVED: M. BARON DATE: 4/29/04 JOB No.: MTCH.92795.06 CAD FILE: 9-11978URVSP4-04	PREPARED BY: SECOR 2655 Camino del Rio North, Suite 302 San Diego, California	PREPARED FOR: FORMER CHEVRON STATION #9-2795 6051 EL TORDO RANCH SANTA FE, CALIFORNIA	FIGURE: 2 SITE PLAN SHOWING ABANDONED GROUNDWATER MONITORING WELLS

Q:\CADD-08\PROJECTS 2004\CHEVRONTEXACO\9-2795-2X4\92795SURVSP4-DAR.DWG MODIFIED BY JALORCO ON AUG 21, 2006 - 14:11

Table 1

Construction Materials for Monitoring Well Abandonment

Former Chevron Service Station 9-2795

Boring/Well Number	Overdrill Depth (ft bgs)	Bentonite-Grout (bags)*	Bentonite Chips (bags)*	Concrete Mix (bags)**	Bentonite-Grout Fill (cubic feet)	Bentonite Chip Fill (cubic feet)	Concrete Mix Fill (cubic feet)
MW-1	25	3	1	2	10.5	0.655	1.4
MW-2	36	2	1	3	7	0.655	2.1
MW-3	31	1.5	1	2	5.25	0.655	1.4
MW-4	25.5	2	1	2	7	0.655	1.4
MW-5	25.5	2	1	3	7	0.655	2.1
MW-6	25.5	2	1	2	7	0.655	1.4
MW-7	28	2	1	3	7	0.655	2.1
MW-8	28	1.5	1	2	5.25	0.655	1.4
MW-9	28	2	1	2	7	0.655	1.4
MW-10	41	3	1	2	10.5	0.655	1.4

Notes:

ft bgs — Feet below ground surface

* — 50 pound bags

** — 70 pound bags

MW-1 Post-Abandonment

MW-2 Post-Abandonment

MW-3 Post-Abandonment

MW-4 Post-Abandonment

MW-5 Post-Abandonment

MW-6 Post-Abandonment

MW-7 Post-Abandonment

MW-8 Post-Abandonment

MW-9 Post-Abandonment

MW-10 Post-Abandonment

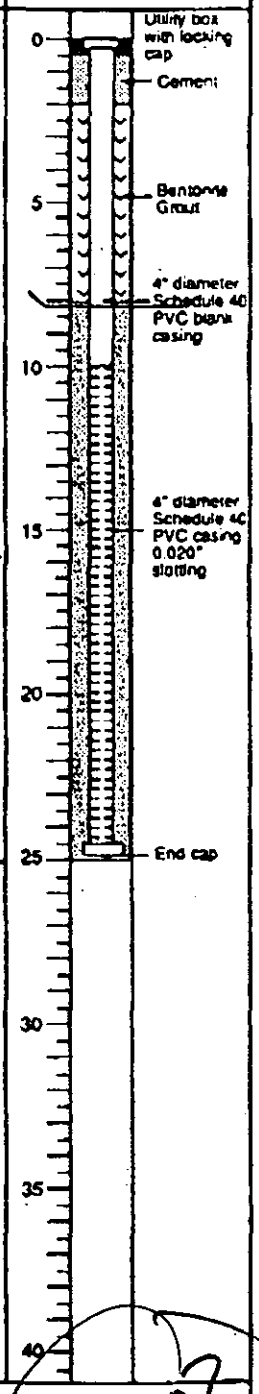
PROJECT NO.:	60-0348-01	DATE DRILLED:	June 16, 1998
LOCATION:	Former Chevron 9-2795	LOGGED BY:	D. Swope
	6051 El Tordo	APPROVED BY:	G. McCue, RG
	Rancho Santa Fe California, California	DRILLING CO.:	West Hazmat

UNION 9741

DRILLING METHOD: CME 75 Hollow Stem Auger
SAMPLER TYPE: 2.0-inch Split Spoon Sampler
TOTAL DEPTH: 25.0 feet DEPTH TO WATER: 15.8 feet
CASING ELEVATION: NA

BLOWS PER 6 INCHES	CGI (ppm)	TPH (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	GRAPHIC LOG
				0	Surface Material: Concrete. Hand-augered to 5 feet below grade.		
					Drilled out old well, sandpack and grout.		
				5			
				10			
				15			
				20			
				25			
				30			
				35			
				40			

WELL CONSTRUCTION DETAIL



ALTON GEOSCIENCE
San Diego, California

LOG OF EXPLORATORY BORING

MW-1R

60-0348 Borings 6/27/98 bls

LMON T6630

PROJECT NO. 08726-06-02

BORING/WELL NO. MW 2

DATE DRILLED 4/3/97 WATER LEVEL (ATD) 19.0'

EQUIPMENT IR A-300 DRILLER SDS

DEPTH FT.	PENETRAT. RESIST. BLWS/FT.	SAMPLE NO.	LITHOLOGY	SOIL DESCRIPTION	WELL CONSTRUCTION	HEADSPACE (PPM)
1				APPROXIMATELY 4 INCHES ASPHALT CONCRETE		
2				Dense, humid, brown, Clayey, fine to medium SAND (SC)		
3						
4						
5	30	MW2-5 0827		Very dense, humid, tan, fine to medium SAND (SP)		
6	66					
7						
8						
9						
10	31	MW2-10 0908		Very stiff, humid, brown, Silty CLAY, trace fine sand (CL)		
11	52			-Becomes orangish-gray-brown and more sandy at approximately 11 feet		
12						
14						
15	52	MW2-15 0929		-Becomes, light tan, and more clayey at approximately 15 feet		
16	71					
17						
18						
19						
20	38	MW2-20 0952		Dense, saturated, black, medium SAND (SP)		
21						
22						
23				Dense, moist, brown, Sandy CLAY (SC)		
24						

Figure A-7, log of Boring MW 2

Continued Next Page

6051A

CASING ELEVATION: 239.16 FEET MSL	QUANTITY OF FILTER MATERIAL: 6 BAGS
DIAMETER & TYPE OF CASING: 2" PVC	WELL SEAL & INTERVAL: CONCRETE/0-2 FEET
CASING INTERVAL: 0-15 FEET	WELL SEAL QUANTITY: 3.5 BAGS
SCREEN: 0.020	ANNULUS SEAL/INTERVAL: BENTONITE/2-10 FEET
SCREEN INTERVAL: 15-35	ADDITIVES: N/A
WELL COVER: FLUSH-MOUNT	WELL DEPTH: 35 FEET
FILTERPACK/INTERVAL: #16 SAND/10-36 FEET	ENGINEER/GEOLOGIST: ROSS WHITE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 08726-06-02

BORING/WELL NO. MW 2

DATE DRILLED 4/3/97 WATER LEVEL (ATD) 19.0'

EQUIPMENT JR A-300 DRILLER SDS

DEPTH FEET	PENETRAT. RESIST. BLWS/FT.	SAMPLE NO.	LITHOLOGY	SOIL DESCRIPTION	WELL CONSTRUCTION	HEADSPACE (PPM)
26	>65	MW2-25 1009		-Becomes very dense, humid, and more clayey at approximately 27 feet		
27						
28						
29				Very dense, humid, olive green, Silty CLAY, trace of sand (CL)		
30	69	MW2-30 1032				
31						
32						
33						
34						
35	>70	MW2-35 1053				
36				BORING TERMINATED AT APPROXIMATELY 36 FEET		
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						

Figure A-8, log of Boring MW 2

6051A

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

B7.6.1

LMON TCL 30

PROJECT NO. 08726-06-02

BORING/WELL NO. MW 3

DATE DRILLED 6/2/97 WATER LEVEL (ATD) 20.0'

EQUIPMENT IR A-300 DRILLER SDS

DEPTH IN FEET	PENETRAT. RESIST. BLWS/FT.	SAMPLE NO.	LITHOLOGY	SOIL DESCRIPTION	WELL CONSTRUCTION	HEADSPACE (PPM)
1				APPROXIMATELY 4 INCHES ASPHALT CONCRETE		
2				Moderately dense, humid, tan-brown, Clayey, fine to medium SAND (SC)		
3						
4						
5	22	MW3-5 1049				
6	26					
7						
8						
9						
10	39	MW3-10 1106		-Becomes dense and tan-orange at approximately 10 feet		
11	52			-Becomes very dense at approximately 11 feet		
12						
13						
14				-Becomes damp and more sandy at approximately 14 feet		
15	59	MW3-15 1123				
16	79			-Becomes tan at approximately 16 feet		
17						
18						
19						
20	31	MW3-20 1142		-Becomes dense, saturated, brown-light yellow, and more clayey at approximately 20 feet		
21						
22						
23				-Becomes moist to wet and brown at approximately 23 feet		
24						

Figure A-9, log of Boring MW 3

Continued Next Page

6051A

CASING ELEVATION: 235.58 FEET MSL	QUANTITY OF FILTER MATERIAL: 5 BAGS
DIAMETER & TYPE OF CASING: 2" PVC	WELL SEAL & INTERVAL: CONCRETE 0-2 FEET
CASING INTERVAL: 0-15 FEET	WELL SEAL QUANTITY: 3.5 BAGS BENTONITE
SLOT SCREEN: 0.020	ANNULUS SEAL/INTERVAL: BENTONITE/2-10 FEET
SCREEN INTERVAL: 15-30 FEET	ADDITIVES:
WELL COVER: FLUSH-MOUNT	WELL DEPTH: 30 FEET
FILTERPACK/INTERVAL: #16 SAND/10-31 FEET	ENGINEER/GEOLOGIST: ROSS WHITE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 08726-06-02

BORING/WELL NO. MW 3

DATE DRILLED 4/2/97 WATER LEVEL (ATD) 20.0'

EQUIPMENT IR A-300 DRILLER SDS

DEPTH IN FEET	PENETRAT. RESIST. BLWS/FT.	SAMPLE NO.	LITHOLOGY	SOIL DESCRIPTION	WELL CONSTRUCTION	HEADSPACE (PPM)
26	39	MW3-25 1155				
27						
28						
29						
30	42	MW3-30 1213				
31				BORING TERMINATED AT 31 FEET		
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						

Figure A-10. log of Boring MW 3

6051A

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

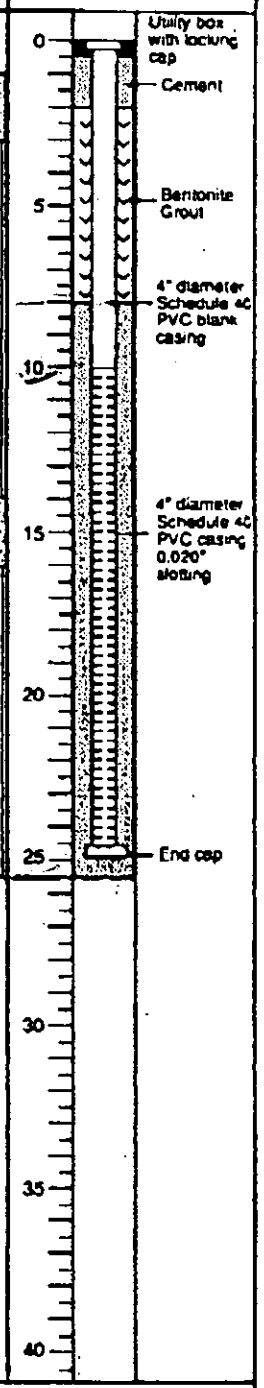
PROJECT NO.:	60-0348-01	DATE DRILLED:	June 16, 1998 UNOA9741
LOCATION:	Former Chevron 9-2795	LOGGED BY:	D. Swope
	6051 El Tordo	APPROVED BY:	G. McCue, RG
	Rancho Santa Fe California, California	DRILLING CO.:	West Hazmat

DRILLING METHOD: CME 75 Hollow Stem Auger
SAMPLER TYPE: 2.0-inch Split Spoon Sampler
TOTAL DEPTH: 25.5 feet DEPTH TO WATER: 15 feet
CASING ELEVATION: NA

BLOWS PER 6 INCHES	CGI (ppm)	TPH (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS
				0	Surface Material: Asphaltic Concrete. Hand-augered to 5 feet below grade.	
					SAND: light brown, dry, fine- to coarse-grained, with some silt and pebbles.	SP
17/37/50 for 5"	0			5	SILTY SAND: yellowish orange, dense, dry, very fine- to coarse-grained, some gravel.	SM
17/22/30	0			10	SANDY SILT: yellowish orange, medium dense, dry, very fine- to fine-grained sand.	
50 for 6"	10			15	SAND: light gray and white to yellowish orange, damp, very fine- to medium-grained, some silt.	SW
						SM
50 for 6"				20	Dense, very fine- to coarse-grained, coarsening.	
					Dense.	
30/50	55			25	Saturated.	
				30		
				35		
				40		

GRAPHIC LOG

WELL CONSTRUCTION DETAIL



ALTON GEOSCIENCE
San Diego, California

LOG OF EXPLORATORY BORING

MW-4

PAGE 1 OF 1

60-0348 Borings 7/24/98 bla

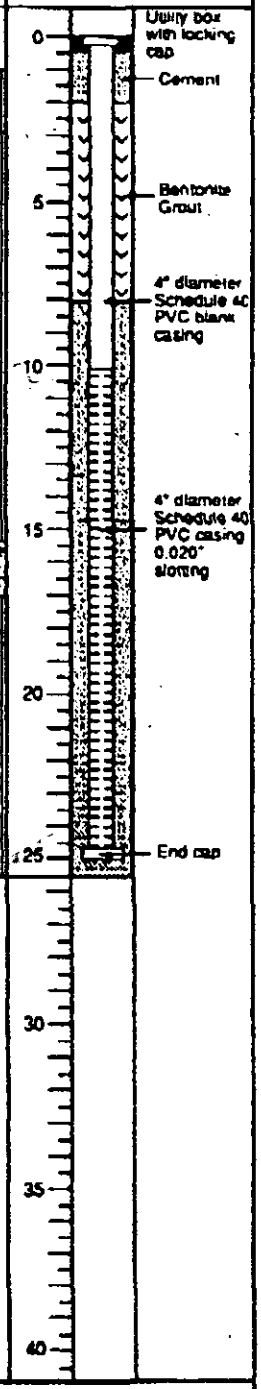
PROJECT NO.:	60-0348-01	DATE DRILLED:	June 16, 1998 LHDN97411
LOCATION:	Former Chevron 9-2795	LOGGED BY:	D. Swope
	6051 El Tordo	APPROVED BY:	G. McCue, RG
	Rancho Santa Fe California, California	DRILLING CO.:	West Hazmat

DRILLING METHOD: CME 75 Hollow Stem Auger
SAMPLER TYPE: 2.0-inch Split Spoon Sampler
TOTAL DEPTH: 25.5 feet DEPTH TO WATER: 16.6 feet
CASING ELEVATION: NA

BLOWS PER 6 INCHES	CGI (ppm)	TPH (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS
				0	Surface Material: Asphaltic Concrete. Hand-augered to 5 feet below grade.	
					SILTY SAND: yellowish orange (10YR 6/6), damp, very fine- to very coarse-grained, poorly sorted, some pebbles and gravel.	SM
4/5/5	0			5	Loose, dry, very fine- to medium-grained, some pebbles.	
					Dark brown (7.5 YR 3/4), damp, very fine- to coarse grained.	
5/6/8	0			10	Yellowish orange, dry, very fine- to medium-grained.	
7/9/11	5				Dark brown, moist, very fine- to coarse-grained, some pebbles.	
				15	Yellowish orange, damp to moist, very fine- to medium-grained.	
50	10				SAND: white, gray, and orange, dense, damp, very fine- to medium-grained, well sorted, clean with few ?, some silt.	SW
					SILTY SAND: yellowish orange (10YR 6/6), damp, very fine- to very coarse-grained, poorly sorted, some pebbles and gravel.	SM
50 for 5"				20	Moist.	
					Decreasing silts, hit saturated zone.	
33/50 for 4"	170			25	Hydrocarbon odor.	
				30		
				35		
				40		

GRAPHIC LOG

WELL CONSTRUCTION DETAIL



ALTON GEOSCIENCE
San Diego, California

LOG OF EXPLORATORY BORING

MW-5
PAGE 1 OF 1

60-0348 Borings 7/24/98 bls

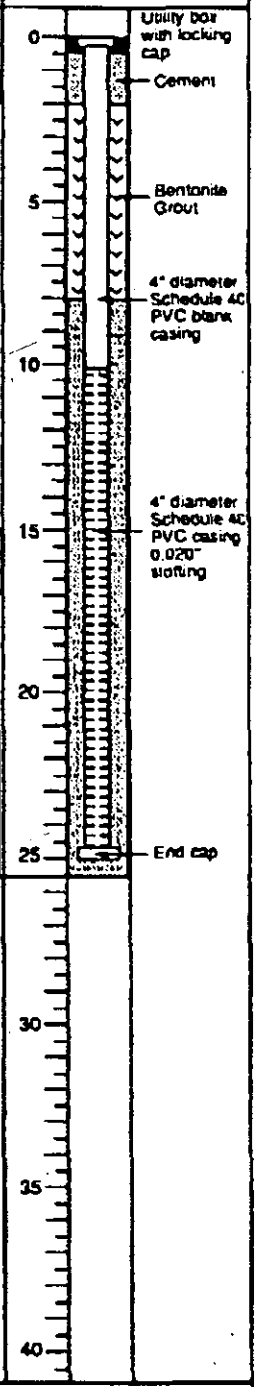
PROJECT NO.: 60-0348-01	DATE DRILLED: June 16, 1998 UMON97411
LOCATION: Former Chevron 9-2795	LOGGED BY: D. Swope
6051 El Tordo	APPROVED BY: G. McCue, RG
Rancho Santa Fe California, California	DRILLING CO.: West Hazmat

DRILLING METHOD: CME 75 Hollow Stem Auger
SAMPLER TYPE: 2.0-inch Split Spoon Sampler
TOTAL DEPTH: 25.5 feet DEPTH TO WATER: 17.4 feet
CASING ELEVATION: NA

BLOWS PER 6 INCHES	CGI (ppm)	TPH (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS
				0	Surface Material: Asphaltic Concrete. Hand-augered to 5 feet below grade.	
					SAND: greenish gray, fine- to medium-grained.	SP
					SILTY SAND: brownish gray, dry, very fine- to medium-grained, with some pebbles.	SM
19/24/31	0			5	Yellowish bright orange, medium dense, dry, very fine- to fine grained, clay.	
					Yellowish orange, dense, damp, very fine- medium-grained sand, with some pebbles.	
24/27/32	0			10	Yellowish orange, not bright almost beige.	
50 for 5"	0			15	SAND: white, gray, and orange (7.5YR 8), dense, damp, very fine- to medium-grained, well sorted, clean, very few ?, some silt.	SW
					SILTY SAND: yellowish orange with dark brown streaks, moist, very fine- to medium-grained.	SM
15/28/35	1.6			20	White and gray with yellowish orange streaks, medium dense, damp, very fine- to fine-grained.	
38/50 for 3"	0.8			25	Very dense.	
				30		
				35		
				40		

GRAPHIC LOG

WELL CONSTRUCTION DETAIL



ALTON GEOSCIENCE
San Diego, California

LOG OF EXPLORATORY BORING

MW-6

60-0348 Borings 7/24/98 bla

SECOR

BOREHOLE / WELL LOG

Number: MW-7 UMPN100076

Client: CHEVRON USA	Job No: 008.52795	Sheet: 1 of 1	
Location: Chevron Station No. 9-2795, 6051 El Tordo, Rancho Santa Fe, CA	Drilling Company/Driller: West Hazmat Drilling / Rick Hastings, Mike Barrow		
SECOR Rep: R. Reyes	Approved by: CR Pollock		
Date Started: 10/24/01	Date Finished: 10/24/01	Drill Rig/Sampling Method: CME-75 / Split Spoon	Borehole Dia.: 8" / Casing Dia.: 2" / Surface Elevation: N/A

Sample Number	OVA/PID (ppm)	Lab Results TPHg(ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Geologic Description (Soil Type, Color, grain, minor soil component, moisture, density, odor, etc.)
				0		4" Asphalt Surface
				1–5	SM	Silty SAND, orangish-brown (2.5Y 7/7), fine to medium grained sand, subangular-subrounded, very slightly moist, dense, friable, no visible staining, no hydrocarbon (HC) odor.
MW-7/5'	0		26/52	5–10	SM	Silty SAND, gray to yellowish gray (2.5Y 8/3), fine to medium grained sand, subangular to subrounded, highly indurated, slightly moist, dense, no visible staining, no HC odor.
MW-7/10'	0		17/17/26	10–15	CL	Silty CLAY, brown to yellowish brown, (2.5Y 6/5), slightly moist, dense, no visible staining, no HC odor.
MW-7/15'	0.4	ND	50 for 6"	15–20	SM	Silty SAND, light tan to gray and olive gray (5Y 7/3), sand grains subangular to subrounded, minor amount of silt, moist, dense, friable, no visible staining, no HC odor.
MW-7/20'	0.2		36/50	20–25	SM	Silty SAND, orangish-brown (2.5Y 7/7), sand grains subangular to subrounded, minor amount of clay, moist, friable, no visible staining, no HC odor.
MW-7/25'	0.3	ND	34/50	25–28	SM	Silty SAND, gray to light gray (2.5Y 7/2), subangular to subrounded sand grains, minor amount of clay, moist, dense, friable, no visible staining, no HC odor.
MW-7/28'	0	ND	27/50	28–30	CL	Silty CLAY, mottled yellowish gray and orange (5Y 6/7), moist, dense, friable, no visible staining, no HC odor.

TOTAL DEPTH AT 28 FEET BGS

SECOR

BOREHOLE / WELL LOG

Number: MW-8 LMPN100076

Client:	CHEVRON USA
Job No:	008.52795
Sheet:	1 of 1
Location:	Chevron Station No. 9-2795, 6051 El Tordo, Rancho Santa Fe, CA
Drilling Company/Driller:	West Hazmat Drilling / Rick Hastings, Mike Barrow
R Rep:	R. Reyes
Approved by:	CR Bollale
Date Started:	10/24/01
Date Finished:	10/24/01
Drill Rig/Sampling Method:	CME-75 / Split Spoon
Borehole Dia.:	8"
Casing Dia.:	2"
Surface Elevation:	N/A

Sample Number	OVA/PID (ppm)	Lab Results TPHg(ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Geologic Description (Soil Type, Color, grain, minor soil component, moisture, density, odor, etc.)
				0		4" Asphalt Surface
				1–4	SM	Silty SAND, orangish-brown (2.5Y 7/7), fine to medium grained sand, subangular to subrounded, minor amount of clay, very slightly moist, friable, no HC odor.
MW-8/5'	0		14/16/21	5–9	CL	Silty CLAY, brown to orangish-brown, mottled with orange color, very slightly moist, stiff, no visible staining, no HC odor.
MW-8/10'	0		36/50	10–14	SM	Silty SAND, light gray to yellowish gray (2.5Y 6/6), fine, subangular to subrounded sand grains, very slightly moist, moderately indurated but friable, no visible staining, no HC odor.
MW-8/15'	0.1	ND	50 for 6"	15–19	SM	Silty SAND, light gray to yellowish gray (2.5Y 8/3), fine, subangular to subrounded sand grains, moist, moderately indurated but friable, no visible staining, no HC odor.
MW-8/20'	0		41/50	20–24	SM	Silty SAND, light gray to yellowish gray (10Y 8/1), fine, subangular to subrounded sand grains, moist, moderately indurated but friable, no visible staining, no HC odor.
MW-8/25'	0	ND	36/50	25–29	SM	Silty SAND, tan to orangish tan (5Y 7/3), subangular to subrounded, fine to medium grained sand, moist, no visible staining, no HC odor.
-8/28'	0	ND	32/50	30	SM	Silty SAND, tan to orangish tan (2.5Y 5/4), subangular to subrounded, fine to medium grained sand, wet, no visible staining, no HC odor.

TOTAL DEPTH AT 28 FEET BGS

WELL LOG: Well Design

SECOR

BOREHOLE / WELL LOG

Number: MW-9 UMON 10006

Client:	CHEVRON USA
Job No:	008.52795
Sheet:	1 of 1
Location:	Chevron Station No. 9-2795, 6051 El Tordo, Rancho Santa Fe, CA
Drilling Company/Driller:	West Hazmat Drilling / Rick Hastings, Mike Barrow
SECOR Rep:	R. Reyes
Approved by:	CR Pollock
Date Started:	10/24/01
Date Finished:	10/24/01
Drill Rig/Sampling Method:	CME-75 / Split Spoon
Borehole Dia.:	8"
Casing Dia.:	2"
Surface Elevation:	N/A

Sample Number	OVA/PID (ppm)	Lab Results TPHg(ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Description (Soil Type, Color, grain, minor soil component, moisture, density, odor, etc.)	Well Design
				0			4" Asphalt Surface	
				1–4	ML		FILL MATERIAL (?) Clayey SILT, grayish brown to orangish brown (10YR 5/6), slightly moist, soft, friable, no visible staining, no HC odor.	
MW-9/5'	0		3/4/5	5–6	ML		Clayey SILT, grayish brown to orangish brown (10YR 5/6), slightly moist, soft, friable, no visible staining, no HC odor.	
9/10'	0		36/50	10–11	SM		Silty SAND, gray to orangish gray (5Y 8/2), fine to medium grained sand, minor amount of clay, moderately indurated, very slightly moist, no visible staining, no HC odor.	
MW-9/15'	0.2	ND	15 for 6"	15	SC		Clayey SAND, gray to orangish gray (5Y 7/3), fine subangular to subrounded grained sand, moderately indurated, moist, dense, no visible staining, sample is mottled displaying oranger color sediments, no HC odor.	
MW-9/20'	0.1		25/30/36	20–21	ML		Clayey SILT, gray to olive mottled with orange (5Y 6/3), minor amount of fine grained sand, subangular to subrounded, slightly moist, dense, no visible staining, no HC odor.	
MW-9/25'	0.1	ND	50 for 6	25–26	SM		Silty SAND, light gray to olive gray (2.5Y 7/2), sand if fine to medium grained, slightly moist, dense, friable, no visible staining, no HC odor.	
MW-9/28'	0	ND	35/50	28	CL		Silty CLAY, mottled yellowish gray and orange (5Y 7/3), moist, dense, friable, no visible staining, no HC odor. TOTAL DEPTH AT 28 FEET BGS	

UMON102161

SECOR

BOREHOLE / WELL LOG

Number: MW-10

Client: Chevron Texaco

Job No: MTCH.92795.08

Sheet: 1 of 2

Location: Chevron Service Station #9-2795, 6051 El Tordo, Rancho Santa Fe, California

Drilling Company/Driller: West Hazmat

SECOR Rep: BL/ RT

Approved by:

Date Started:	Date Finished:	Drill Rig/Sampling Method:	Borehole Dia.:	Casing Dia.:	Surface Elevation:
4/13/04	4/13/04	CME-75/ CA Split Spoon Sampler	8"	2"	--

Sample Number	OVA/PID (ppm)	Lab Results TPH(ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Description (Soil Type, Color, grain, minor soil component, moisture, density, odor, etc.)
				0			3" Concrete
				1	ML		Silt with SAND, loose, gray with orange mottling, mostly silt, little fine-grained sand, moist, no hydrocarbon (HC) odor
				3	SM		Silty SAND, loose, yellow (5Y 7/6), mostly fine to medium grained sand, little silt, moist, no HC odor
MW-10/5'	--	--	--	4			
				7	SW		Well graded SAND, dense, white (5Y 8/1), mostly fine to coarse grained sand, little silt, moist, red (2.5YR 4/6) stringers, no HC odor
MW-10/10'	1.9	--	25	9			
				10			Well graded SAND, dense, olive yellow (5Y 6/6), mostly fine to coarse grained sand, little silt, damp, no HC odor
MW-10/15'	0.0	--	13	4	ML		Silt with SAND, stiff, light olive gray (5Y 6/2), mostly silt, some fine grained sand, moist, orange mottling, no HC odor
MW-10/20'	0.0	--	15	9			SILT, medium stiff, light olive gray (5Y 4/2), mostly silt, dry, no HC odor
MW-10/25'	0.0	--	8	4			SILT, stiff, light olive gray (5Y 5/2), mostly silt, dry, no HC odor
MW-10/30'	0.0	--	18	9	SW		Well graded SAND, loose, light olive brown (5Y 4/3), mostly sand, little silt, dry, no HC odor

Well Design

SECOR

BOREHOLE / WELL LOG

Number: MW-10

Client: Chevron Texaco

Job No: MTCH.92795.08

Sheet: 2 of 2

Location: Chevron Service Station #9-2795, 6051 El Tordo, Rancho Santa Fe, California

Drilling Company/Driller: West Hazmat

SECOR Rep: BL/ RT

Approved by:

Date Started:	Date Finished:	Drill Rig/Sampling Method:	Borehole Dia.:	Casing Dia.:	Surface Elevation:
4/13/04	4/13/04	CME-75/ CA Split Spoon Sampler	8"	2"	--

SAMPLE LOG			BOREHOLE LOG					WELL LOG
Sample Number	OVA/PID (ppm)	Lab Results TPH(ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Description (Soil Type, Color, grain, minor soil component, moisture, density, odor, etc.)	Well Design
MW-10/30'	0.0	--	18	30	SW			
MW-10/35'	0.0	--	46	35	SM		Silty SAND, medium dense, medium brown (5Y 4/4), mostly sand, little silt, moist, no HC odor	
MW-10/40'	0.0	--	19	40	ML		Silt with SAND, stiff, light olive gray (5Y 4/2), mostly silt, little sand, dry, no HC odor	
							Bottom boring at 41 feet below ground surface	

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

Mission City Corporate Center
2365 Northside Drive, Suite C-100
San Diego, CA 92108
Phone: 619.521.0165
Fax: 619.521.8580

September 4, 2003

RECEIVED
2003 SEP 8 AM 8 48
D. E. H.
MAILROOM

Ms. Marisue Crystal
Monitoring Well Permitting Clerk
COUNTY OF SAN DIEGO
Department of Environmental Health
Site Assessment and Mitigation Division
P O Box 129261
San Diego, California 92112

Re: Documentation of Observation Well Construction Activities,
Morgan Run Resort, Rancho Santa Fe, California

Dear Ms. Crystal:

In fulfillment of the requirements of the San Diego County Department of Environmental Health (DEH) and the provisions of Well Construction Permit No. W101186 (the Permit), this letter has been prepared to document the construction of water-level observation wells at and in the vicinity of the Morgan Run Resort, Rancho Santa Fe, California (the site).

Permit No. W101186 was originally issued by DEH on April 2, 2002, for the construction of seven observation wells (six shallow and one deep well) at the site. Drilling and construction of the six shallow observation wells P-5, P-6, P-7, P-8, P-9, and P-10 were completed on April 14 and 15, 2003. The borehole for deep observation well P-6D was drilled on June 5, 2003. Based on the conditions encountered during the drilling of this borehole, it was elected not to construct an observation well at this location and the borehole was grouted from the bottom of the borehole at 80 feet with neat cement. Observation wells P-5, P-6, P-7, P-8, P-9, and P-10 were installed in public right-of-ways (streets) in the residential neighborhood just west of the Morgan Run Golf Resort (Figure 1). County Assessor's parcel numbers of parcels near observation wells P-5, P-6, P-7, P-8, P-9, and P-10 are summarized on Table 1.

P-6D not constructed

The well construction permit was modified by DEH on May 29, 2002, to include two additional observation wells and one exploratory boring at the site. Drilling and construction of nested observation well P-11A/B, deep observation well P-11D, and boring EB-1 were completed on June 3 to 5, 2003. Observation wells P-11A/B, P-11D, and boring EB-1 were installed on the Morgan Run Golf Resort, located at 15169 Via De La Valle in Rancho Santa Fe, California (Figure 1). The County Assessor's parcel number for the Morgan Run Resort is 302-120-36, and the establishment number is H20766 (Table 1).

Other Offices:
Mesa, AZ
Tucson, AZ
Dallas, TX

All of the observation wells constructed under this permit are owned by the Olivenhain Municipal Water District, 1966 Olivenhain Road, Encinitas, California 92024. The observation wells were constructed in accordance with the Permit and with applicable DEH and California Department of Water Resources regulations. As-built construction details for the observation wells have been provided (Table 2). Graphical well construction and lithologic logs based on soil cores and or CPT investigations previously performed are provided in Figures 2 to 12. Water samples were not collected from the observation wells installed under this permit.

If you have any questions or require additional information, please contact me.

Sincerely,

HARGIS + ASSOCIATES, INC.

REGISTERED GEOLOGIST
CERTIFICATE NO
5915
MICHAEL A.
PALMER
Date Signed 9/4/03
STATE OF CALIFORNIA

Michael A. Palmer, RG 5915, CHG 146
Principal Hydrogeologist

MAP/CAP/kal

Enclosure

cc: Ms. Ariel Wallace, West Hazmat Drilling Corp.
Mr. Kevin Kienast, Morgan Run Resort and Club
Mr. Harry Ehrlich, Olivenhain Municipal Water District

689 I crystal03.kal

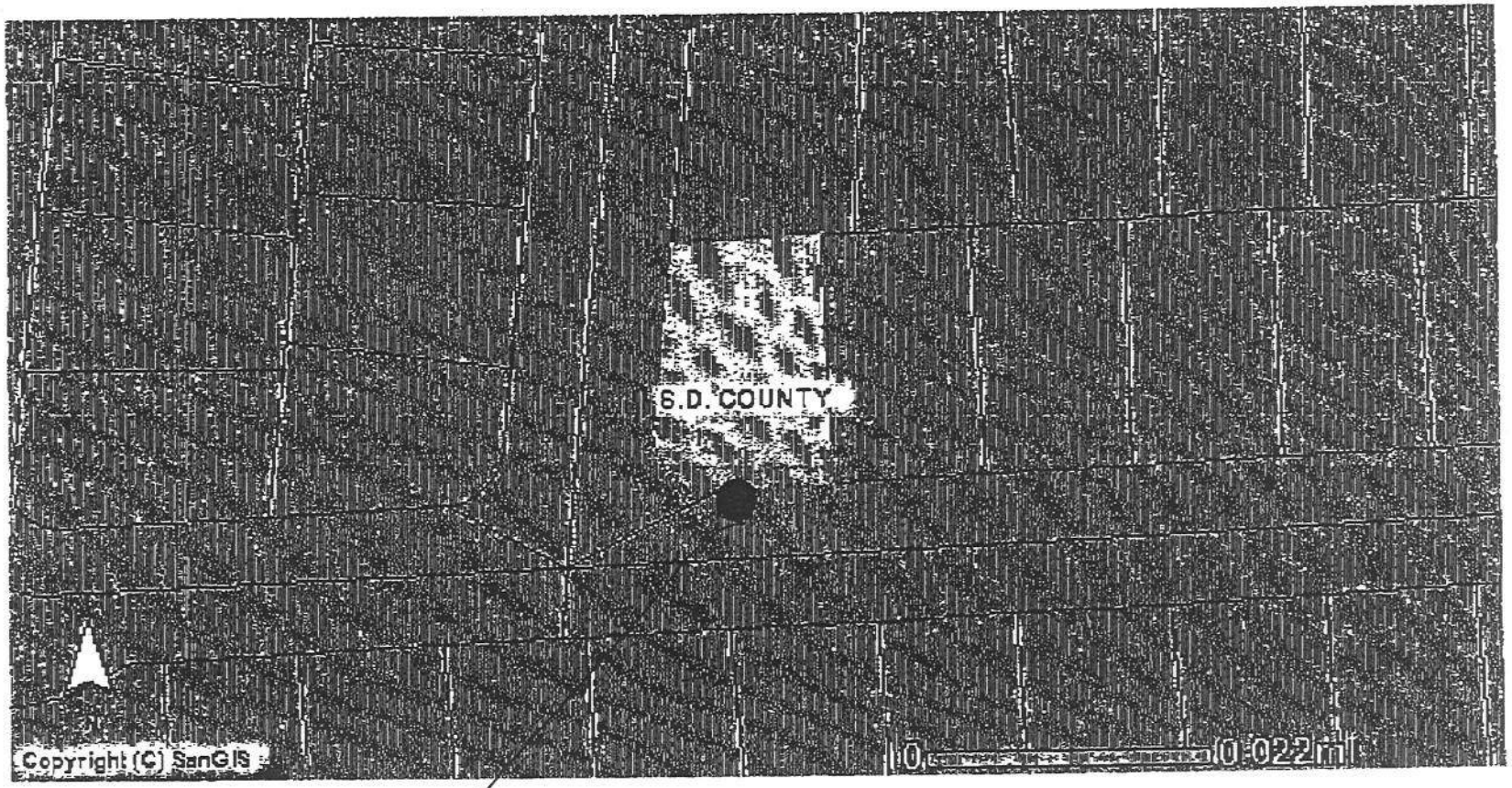
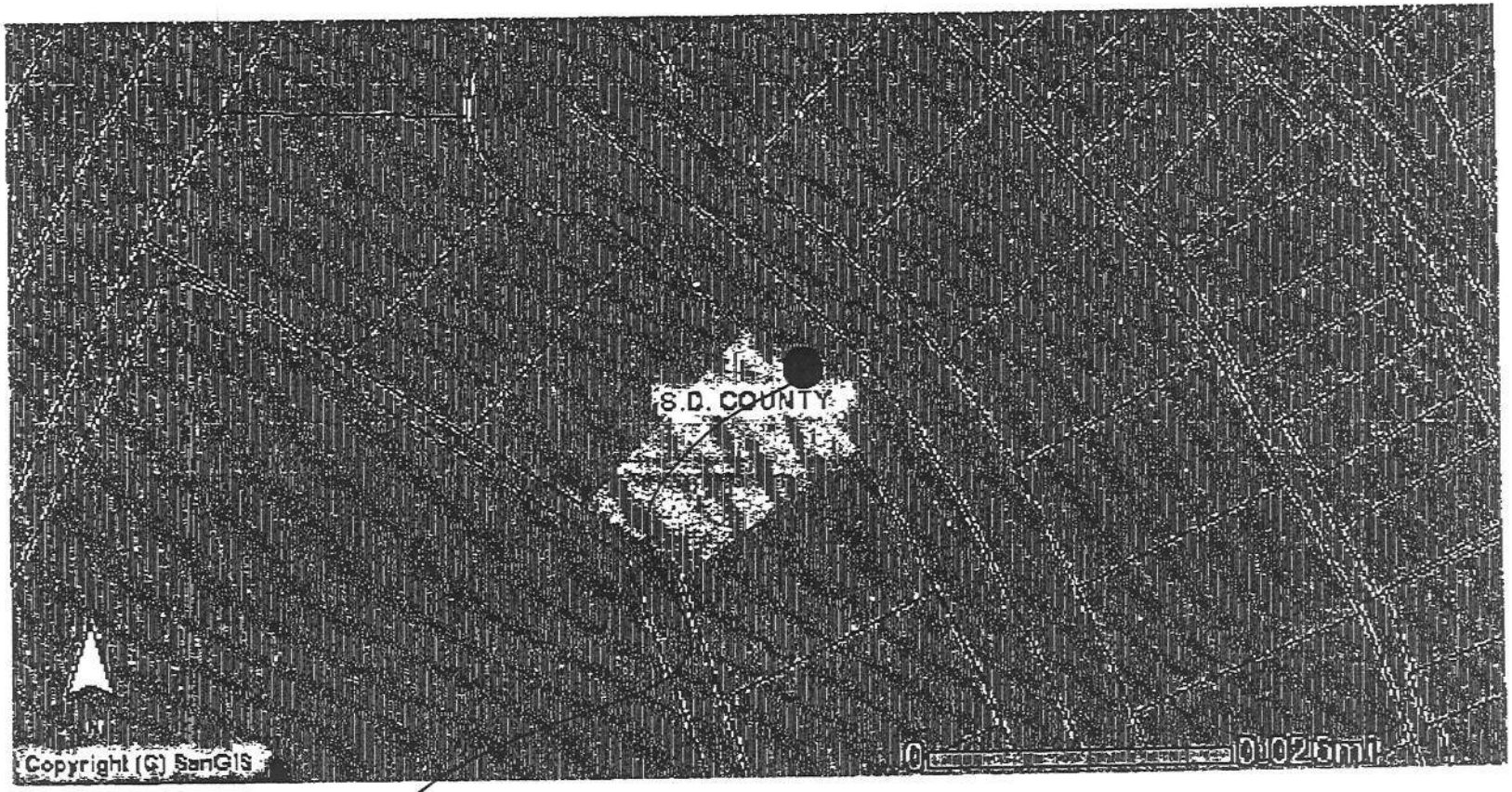


FIGURE 1. PROPOSED WELL LOCATION 1

302-240-17



PROPOSED WELL LOCATION 2

302-120-07-41

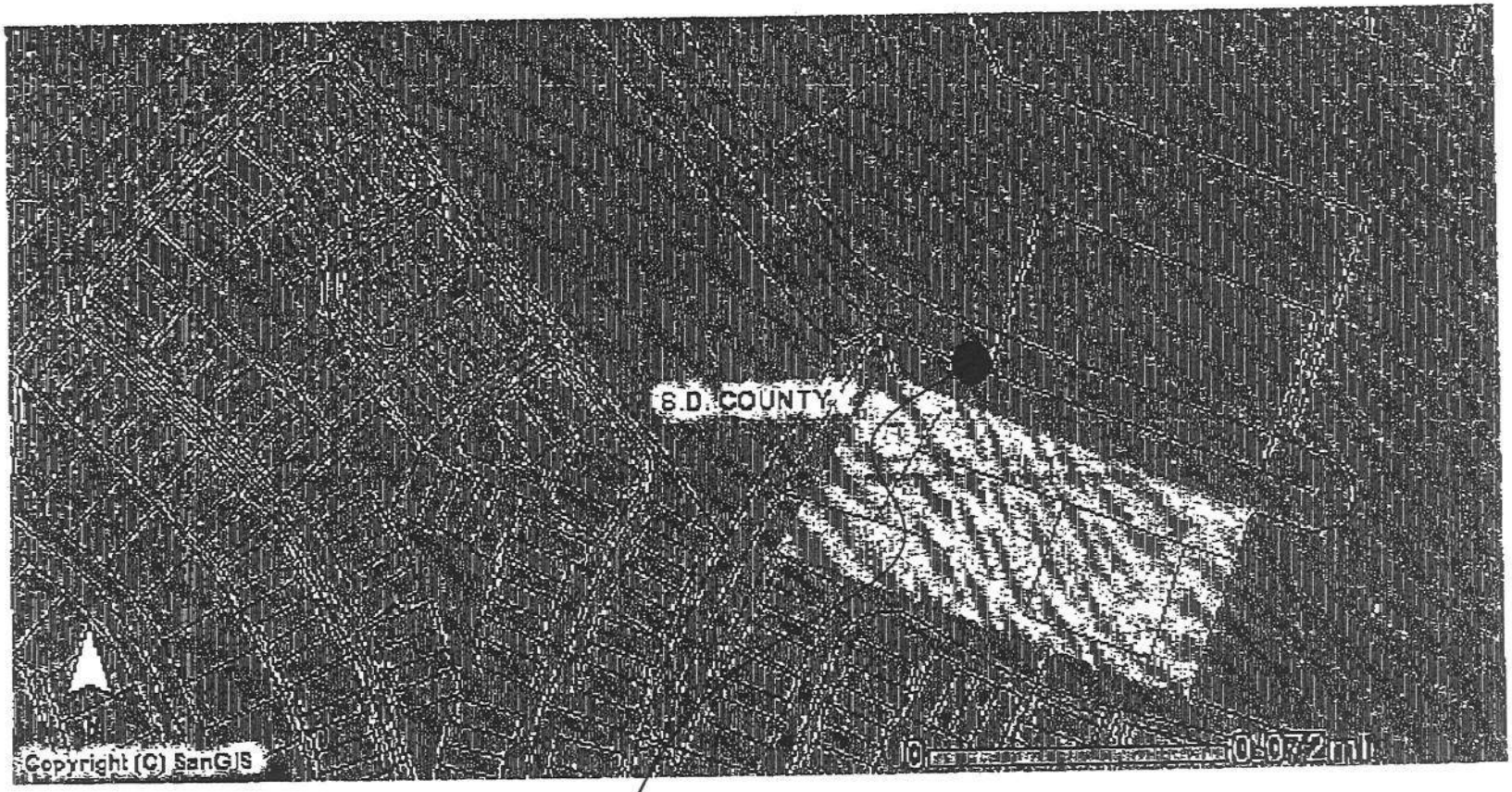
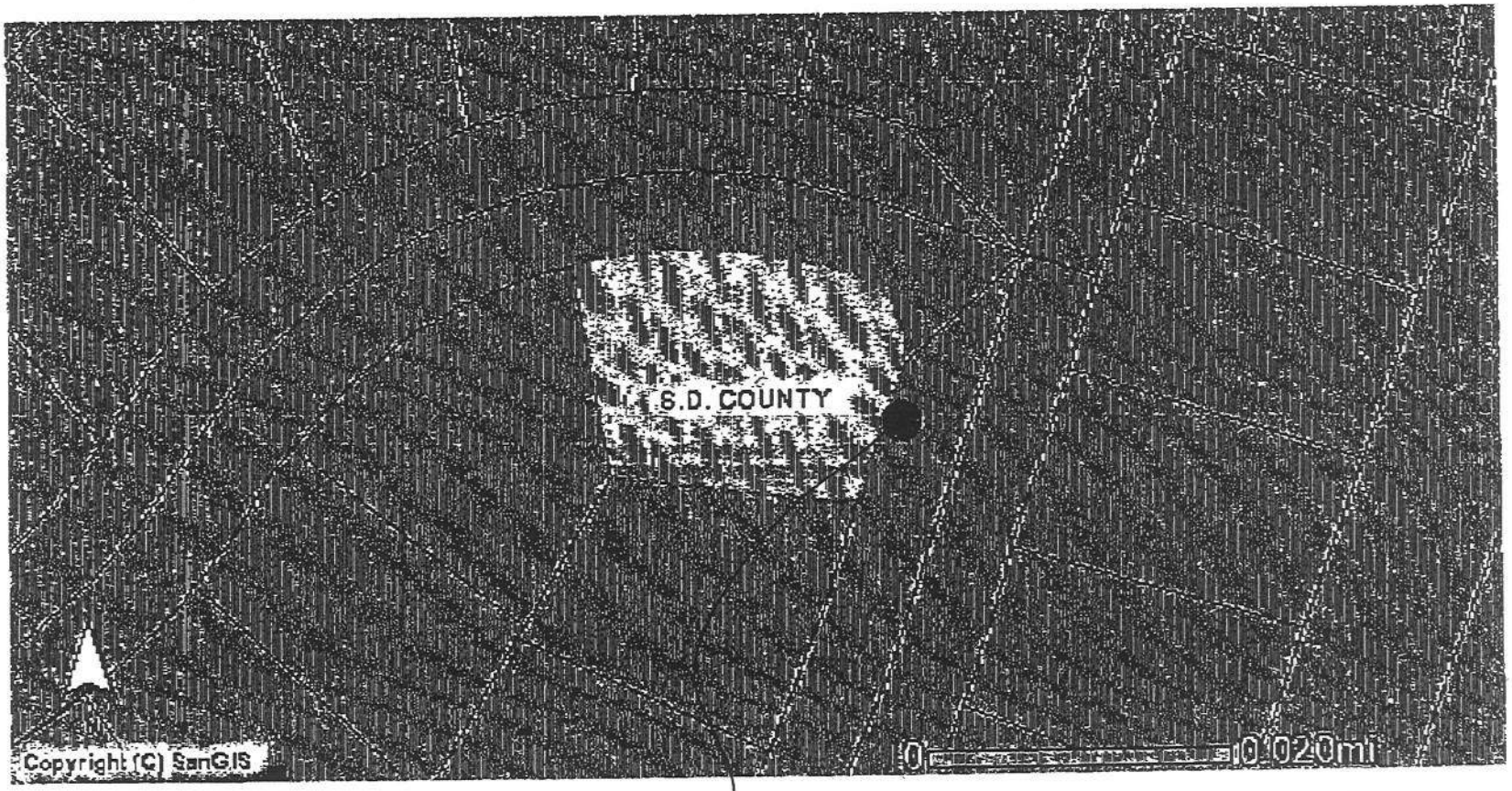


FIGURE 4. PROPOSED WELL LOCATION 4

302-163-16-00



PROPOSED WELL LOCATION 3

302-120-36-00

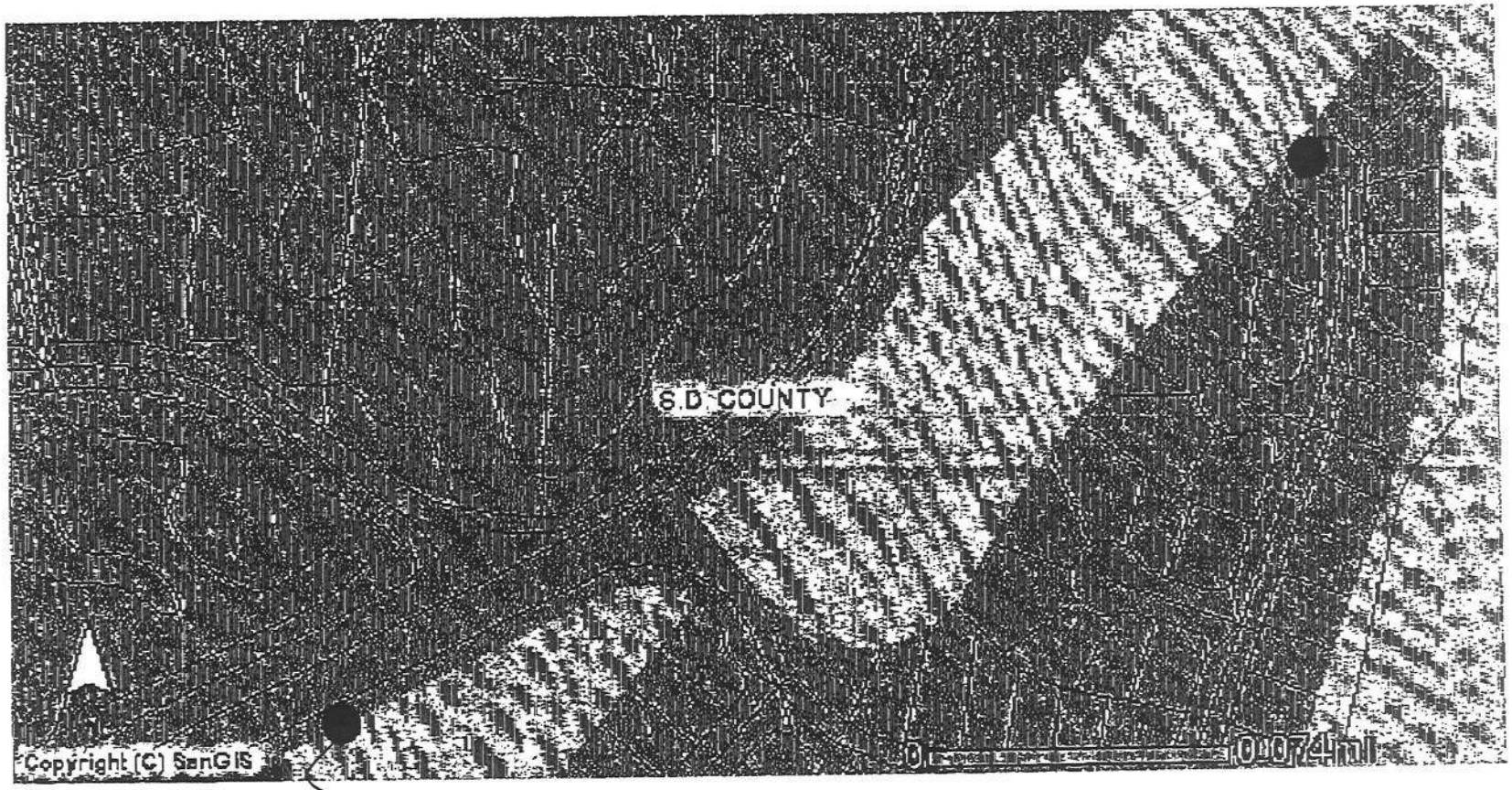
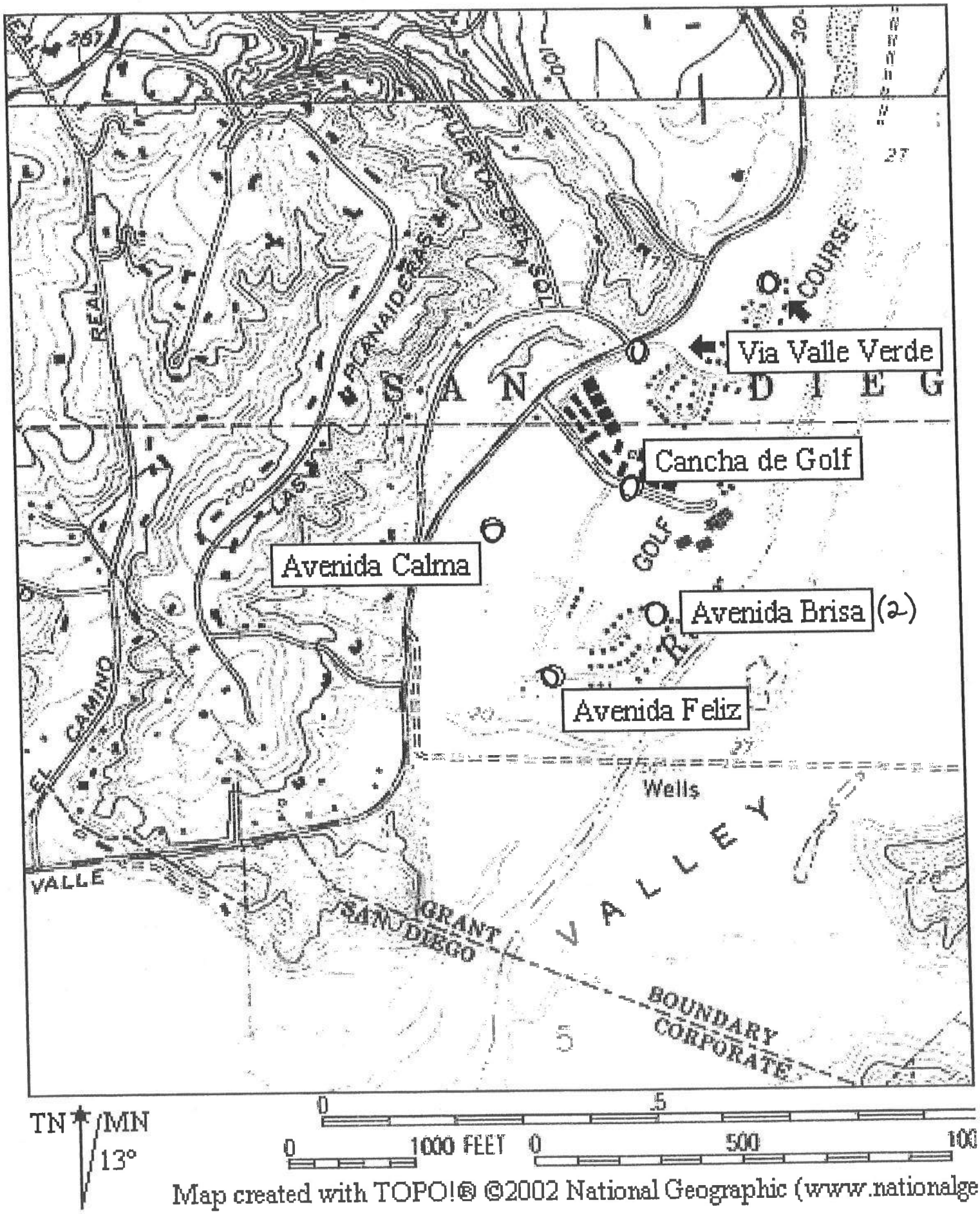


FIGURE 5. PROPOSED WELL LOCATIONS 5 AND 6

302-120-32-02

FIGURE 1

OBSERVATION WELL LOCATIONS



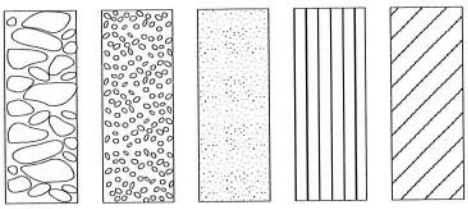
Map created with TOPO!® ©2002 National Geographic (www.nationalge

LITHOLOGIC LOG SYMBOLS

GRAPHIC LOG MATERIALS SYMBOLS

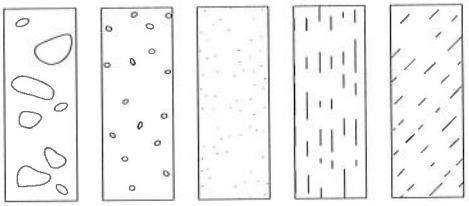
LITHOLOGIC MATERIAL

Cobble Gravel Sand Silt Clay



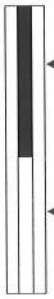
MODIFIERS

Cobbles Gravelly Sandy Silty Clayey



SAMPLE TYPE SYMBOLS

CONTINUOUS CORE



SPT

CALIFORNIA MODIFIED

6/03	RPT NO.857.04A	BoringLegend.CDR	VER 1.

HARGIS + ASSOCIATES, INC.
Hydrogeology/Engineering

FIGURE: 2 LITHOLOGIC LOG SYMBOLS

APN 302-120-07-41

OBSERVATION WELL P-5

DATE DRILLED: *04/14/03*

SURFACE ELEVATION: *29 feet msl*

BOREHOLE DIA.: *7 inches*

TOTAL DEPTH OF BORING *31 feet bls*

DRILLING COMPANY: *West Hazmat*

METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *R. Suffle*

DRILL RIG: *CME 75*

LOGGED BY: *S. Berryman*

CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

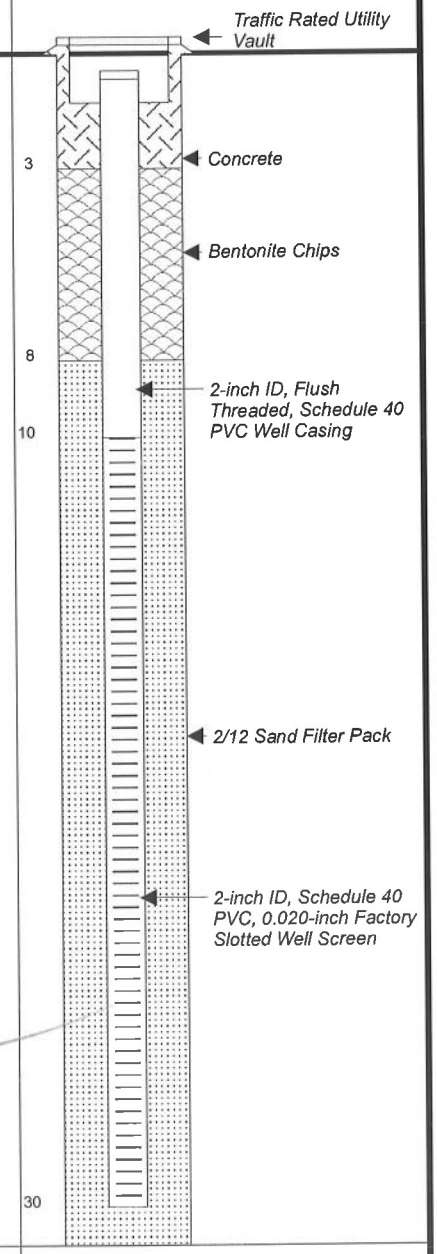
PROJECT NUMBER: *689.26*

LOCATION *Cancha de Golf at Via Osuna Rancho Santa Fe, CA*

COMMENTS

Weather: Rain

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM
					Boring not logged. See Cone Penetrometer Log CPT-24 for Lithology.	



TOTAL DEPTH OF BORING = 31 FEET BELOW LAND SURFACE

FIGURE: 3 LITHOLOGIC LOG FOR OBSERVATION WELL P-5

302-163-16

PIEZOMETER P-6

DATE DRILLED: *04/14/03*

SURFACE ELEVATION: *31 feet msl*

BOREHOLE DIA.: *7 inches*

TOTAL DEPTH OF BORING *31 feet bls*

DRILLING COMPANY: *West Hazmat*

METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *R. Suffle*

DRILL RIG: *CME 75*

LOGGED BY: *S. Berryman*

CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

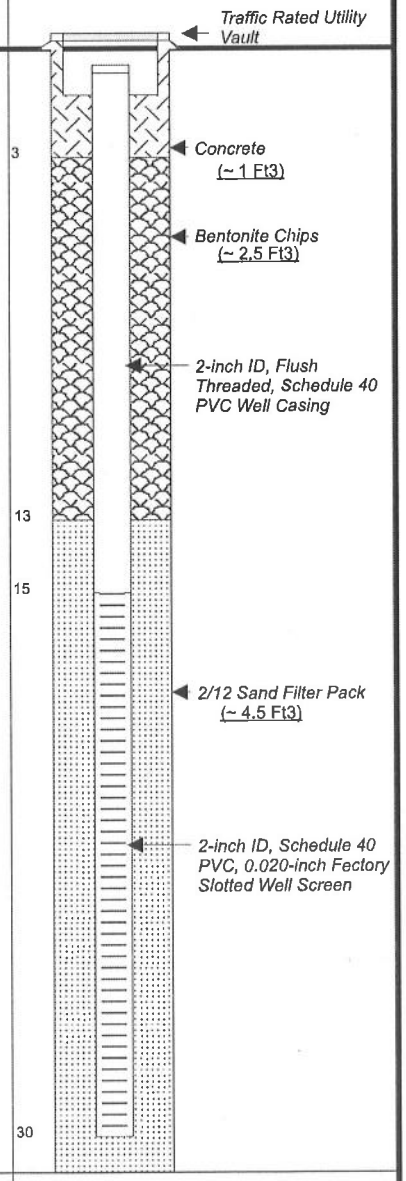
PROJECT NUMBER: *689.26*

LOCATION *Via Reposo at Avenida Brisa, Rancho Santa Fe, CA*

COMMENTS

Weather: Rain

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM
5, 10, 15, 20, 25, 30					Boring not logged. See Cone Penetrometer Log CPT-25 for Lithology.	



REGISTERED GEOLOGIST
GREG T. CRANHAM
No. 5897
Date Signed:
STATE OF CALIFORNIA

TOTAL DEPTH OF BORING = 31 FEET BELOW LAND SURFACE

LITHOLOGIC LOG FOR PIEZOMETER P-6

(Not constructed as well)

BORING P-6D

DATE DRILLED: *06/05/03*

SURFACE ELEVATION: *31 feet msl*

BOREHOLE DIA.: *8 inches*

TOTAL DEPTH OF BORING *80 feet bls*

DRILLING COMPANY: *West Hazmat*

METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *T. Nichols*

DRILL RIG: *CME 85*

LOGGED BY: *C. Perkovac (R.G. #6576)* CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

PROJECT NUMBER: *689.26*

LOCATION *Via Reposo at Avenida Brisa, Rancho Santa Fe, CA*

COMMENTS

Weather: Overcast

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM
					Boring not logged. See Cone Penetrometer Log CPT-25 for Lithology.	3 Concrete
15						
30						Neat Cement (~ 33.5 Ft(3))
45						
60					NOTE: Below ~60 feet, localized pocket of natural gas encountered. Well not constructed. Borehole backfilled with neat cement.	
75						80
					TOTAL DEPTH OF BORING = 80 FEET BELOW LAND SURFACE	
90						

REGISTERED GEOLOGIST
CHRISTIAN PERKOVAC
No. 6576
Date Signed:
STATE OF CALIFORNIA

LITHOLOGIC LOG FOR BORING P-6D

302-163-01

PIEZOMETER P-7

DATE DRILLED: *04/14/03*

SURFACE ELEVATION: *30 feet msl*

BOREHOLE DIA.: *7 inches*

TOTAL DEPTH OF BORING *36 feet bls*

DRILLING COMPANY: *West Hazmat*

METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *R. Suffle*

DRILL RIG: *CME 75*

LOGGED BY: *S. Berryman*

CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

PROJECT NUMBER: *689.26*

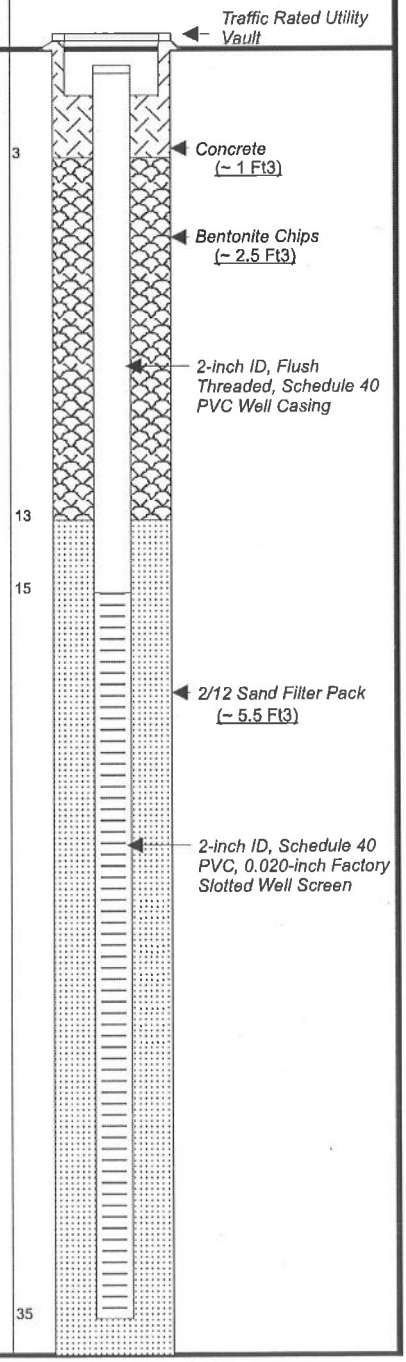
LOCATION *Via de las Palmas at Avenida Feliz, Rancho Santa Fe, CA*

COMMENTS

Weather: Rain

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL
					Boring not logged. See Cone Penetrometer Log CPT-26 for Lithology.
5					
10					
15					
20					
25					
30					
35					TOTAL DEPTH OF BORING = 36 FEET BELOW LAND SURFACE

WELL CONSTRUCTION DIAGRAM



REGISTERED GEOLOGIST
GREG T. CRANHAM
No. 5897
Date Signed:
STATE OF CALIFORNIA

LITHOLOGIC LOG FOR PIEZOMETER P-7

302-120-36

PIEZOMETER P-8

DATE DRILLED: *04/15/03*

SURFACE ELEVATION: *31 feet msl*

BOREHOLE DIA.: *7 inches*

TOTAL DEPTH OF BORING *31 feet bls*

DRILLING COMPANY: *West Hazmat*

METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *R. Suffle*

DRILL RIG: *CME 75*

LOGGED BY: *S. Berryman*

CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

PROJECT NUMBER: *689.26*

LOCATION *Via Valle Verde at Hole 5 Tee Box, Rancho Santa Fe, CA*

COMMENTS

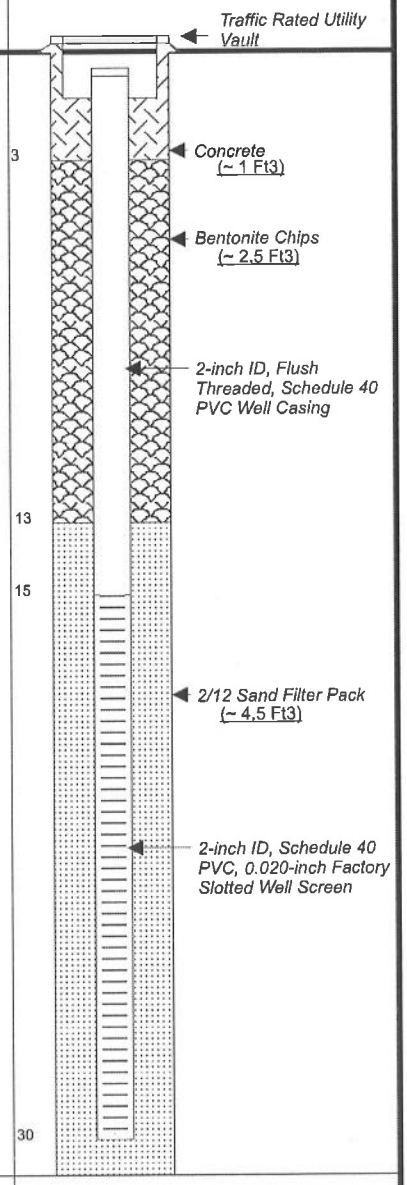
Weather: Rain
Sampler: 1.5" Diameter SPT Split Barrel Sampler

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL
5	▼	10 15 20	ML		SILT (0/10/90) Dark yellowish brown (10YR 3/6), moist, stiff to very stiff, low plasticity; trace sand, fine-grained, micaceous.
10	▼	10 10 10	ML		SILT WITH SAND (0/20/80) Dark grayish brown (2.5Y 4/2), moist, stiff, medium plasticity; sand fine- to medium-grained, slightly micaceous.
15	▼	10 15 15	SP		SAND (0/95/5) Pale olive (5Y 6/3), moist, medium dense, fine- to coarse-grained, poorly sorted, subrounded to rounded; trace silt.
20	▼	10 15 16	SP		SAND Pale olive (5Y 6/4), slightly coarser-grained, otherwise as above.
25	▼	10 18 20	SP		SAND Same as above.
30	▼		Td		BEDROCK, Probable Delmar Formation

TOTAL DEPTH OF BORING = 31 FEET BELOW LAND SURFACE

REGISTERED GEOLOGIST
GREG T. CRANHAM
No. 5897
Date Signed:
STATE OF CALIFORNIA

WELL CONSTRUCTION DIAGRAM



LITHOLOGIC LOG FOR PIEZOMETER P-8

302-120-36

PIEZOMETER P-9

DATE DRILLED: *04/15/03*

SURFACE ELEVATION: *35 feet msl*

BOREHOLE DIA.: *7 inches*

TOTAL DEPTH OF BORING *26 feet bls*

DRILLING COMPANY: *West Hazmat*

METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *R. Suffle*

DRILL RIG: *CME 75*

LOGGED BY: *S. Berryman*

CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

PROJECT NUMBER: *689.26*

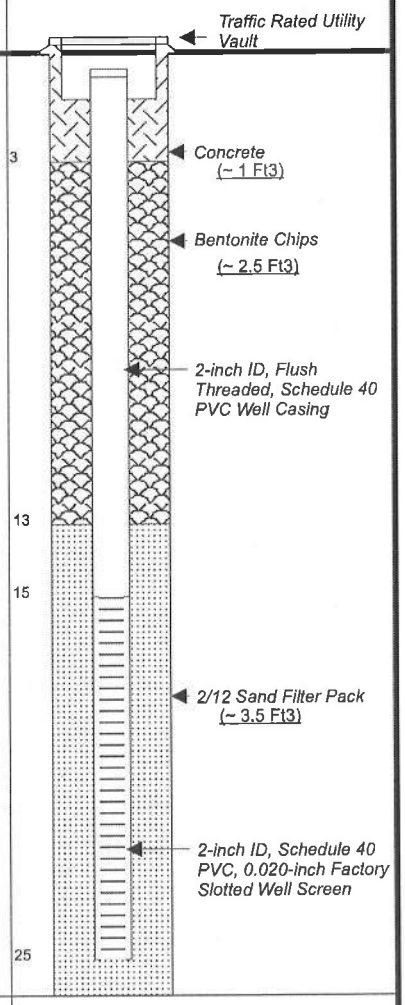
LOCATION *Via Valle Verde north end, cul-de-sac, Rancho Santa Fe, CA*

COMMENTS

Weather: Rain
Sampler: 1.5" Diameter SPT Split Barrel Sampler

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL
5	▼	10 15 15	SP-SM		SAND WITH SILT (0/90/10) Olive brown (2.5Y 4/4), moist, medium dense, fine- to coarse-grained, predominantly fine, moderately sorted, subrounded; micaceous.
10	▼	10 15 15	SP-SM SP		SAND WITH SILT Same as above. SAND (0/100/0) Dark yellowish brown (10YR 3/6), moist, medium dense, fine- to coarse-grained, moderately sorted, subrounded; slightly micaceous.
15	▼	10 15 15	SP		SAND (0/95/5) Olive brown (2.5Y 4/4), moist, medium dense, fine- to medium-grained, predominantly fine, moderately to well sorted, subangular to subrounded; trace silt, micaceous.
20	▼	5 10 15	SP		SAND (0/98/2) Olive brown (2.5Y 4/4), moist, medium dense, fine- to coarse-grained, predominantly medium, moderately sorted, subangular to subrounded; trace silt, micaceous.
25	▼	5 10 15	SP		SAND Same as above
30					TOTAL DEPTH OF BORING = 26 FEET BELOW LAND SURFACE

WELL CONSTRUCTION DIAGRAM



REGISTERED GEOLOGIST
GREG T. CRANHAM
No. 5897
Date Signed:
STATE OF CALIFORNIA

LITHOLOGIC LOG FOR PIEZOMETER P-9

302-240-17

PIEZOMETER P-10

DATE DRILLED: *04/15/03*

SURFACE ELEVATION: *31 feet msl*

BOREHOLE DIA.: *7 inches*

TOTAL DEPTH OF BORING *26 feet bls*

DRILLING COMPANY: *West Hazmat*

METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *R. Suffle*

DRILL RIG: *CME 75*

LOGGED BY: *S. Berryman*

CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

PROJECT NUMBER: *689.26*

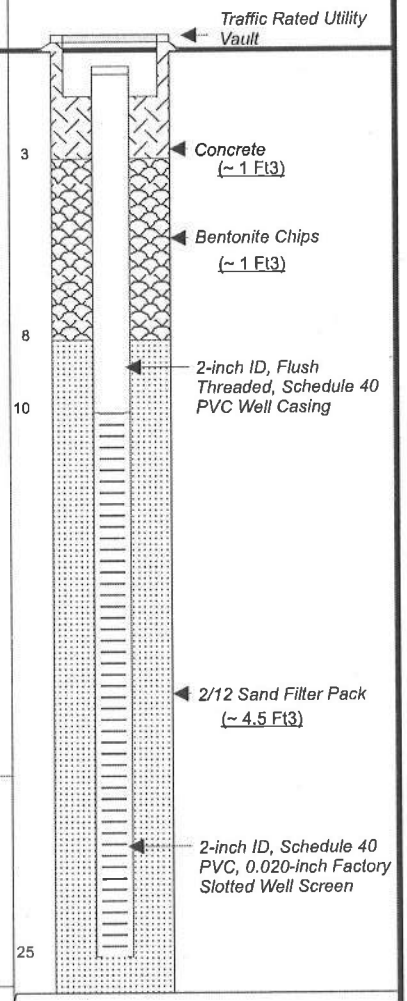
LOCATION *Avenida Calma at 16050, Rancho Santa Fe,CA*

COMMENTS

Weather: Rain
Sampler: 1.5" Diameter SPT Split Barrel Sampler

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL
5		25 50 25	SP-SM		SAND WITH SILT (0/90/10) Olive brown (2.5Y 4/4), moist, medium dense to dense, fine- to medium-grained, predominantly fine, moderately sorted, subangular; micaceous.
10		5 6 6	SP-SM		SAND WITH SILT Loose, otherwise as above
15		10 10 10	SP		SAND (0/100/0) Olive brown (2.5Y 4/4), moist, medium dense, fine- to coarse-grained, predominantly medium, moderately sorted, subangular to subrounded; micaceous.
			SP		SAND Same as above
20		10 10 15	ML		SANDY SILT (0/30/70) Dark brown (10YR 3/3), moist, stiff, medium plasticity; sand fine-grained, micaceous.
25		10 15 15	SP		SAND (0/95/5) Olive brown (2.5Y 4/4), moist, medium dense, fine- to medium-grained, moderately sorted, subangular; trace silt, micaceous.
			ML		SILT WITH SAND (0/20/80) Dark brown (10YR 3/3), moist, stiff, medium plasticity; sand fine-grained, micaceous.
30					TOTAL DEPTH OF BORING = 26 FEET BELOW LAND SURFACE

WELL CONSTRUCTION DIAGRAM



REGISTERED GEOLOGIST
GREG T. CRANHAM
No. 5897
Date Signed:
STATE OF CALIFORNIA

LITHOLOGIC LOG FOR PIEZOMETER P-10

302-120-36

PIEZOMETER CLUSTER P-11A/B

DATE DRILLED: *06/04/03* SURFACE ELEVATION: *23 feet msl*

BOREHOLE DIA.: *8 inches* TOTAL DEPTH OF BORING *45 feet bls*

DRILLING COMPANY: *West Hazmat* METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *T. Nichols* DRILL RIG: *CME 85*

LOGGED BY: *C. Perkovac (R.G. #6576)* CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

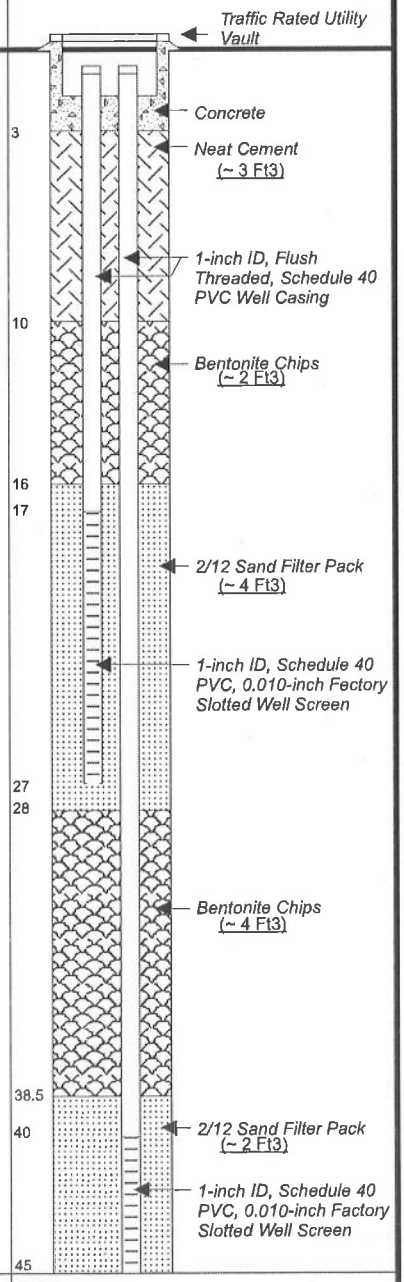
PROJECT NUMBER: *689.26*

LOCATION *Morgan Run Golf Resort, Rancho Santa Fe, CA*

COMMENTS

Weather: Overcast

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM
10, 20, 30, 40					Boring not logged. See Cone Penetrometer Log CPT-22 for Lithology. NOTE: Well screened from 17 to 27 feet is designated as "P-11A"; and well screened from 40 to 45 feet is designated as "P-11B".	



REGISTERED GEOLOGIST
CHRISTIAN PERKOVAC
No. 6576
Date Signed:
STATE OF CALIFORNIA

TOTAL DEPTH OF BORING = 45 FEET BELOW LAND SURFACE

LITHOLOGIC LOG FOR PIEZOMETER CLUSTER P-11A/B

HARGIS + ASSOCIATES, INC.

TABLE 1

Boring / Observation Well Geographic Location Summary

Well Identifier	Latitude	Longitude	Township[a]	Range[a]	Section[a]	Quarter Section[a]	Nearest Assessor's Parcel Number
P-5	32.9916	117.2115	14S	3W	5	NE	302 120 0741[b]
P-6	32.9886	117.2113	14S	3W	5	NE	302 163 1600[b]
P-7	32.9876	117.2139	14S	3W	5	NW	302 163 0100[b]
P-8	32.9947	117.2109	13S	3W	32	SE	302 120 3600[b]
P-9	32.9962	117.2077	13S	3W	32	SE	302 120 3600[b]
P-10	32.9908	117.2152	14S	3W	5	NW	302 240 1700[b]
P-11A/B	32.9886	117.2078	14S	3W	5	NE	302-120-36
P-11D	32.9886	117.2078	14S	3W	5	NE	302-120-36
Boring Identifier							
P-6D	32.9886	117.2113	14S	3W	5	NE	302 163 1600[b]
EB-1	32.9885	117.2078	14S	3W	5	NE	302-120-36

FOOTNOTES

a = San Bernardino Base and Meridian

b = Located in road right of way adjacent to parcel

HARGIS + ASSOCIATES, INC.

TABLE 2

Boring / Observation Well Construction Data

WELL IDENTIFIER	DATE INSTALLED	TOTAL DEPTH OF BOREHOLE (feet bls)	BORING DIAMETER (inches)	PERFORATED INTERVAL (feet bls)	SCREEN SLOT SIZE (inches)[a]	CASING DIAMETER (inches)[a]	FILTER PACK INTERVAL (feet bls)	FILTER PACK SAND SIZE	BENTONITE CHIP SEAL (feet bls)	CEMENT SEAL (feet bls)[b]
P-5	4/14/2003	31	7	10 - 30	0.02	2	8 - 31	#2/12	3 - 8	0 - 3
P-6	4/14/2003	31	7	15 - 30	0.02	2	13 - 31	#2/12	3 - 13	0 - 3
P-7	4/14/2003	36	7	15 - 35	0.02	2	13 - 36	#2/12	3 - 13	0 - 3
P-8	4/15/2003	31	7	15 - 30	0.02	2	13 - 31	#2/12	3 - 13	0 - 3
P-9	4/15/2003	26	7	15 - 25	0.02	2	13 - 26	#2/12	3 - 13	0 - 3
P-10	4/15/2003	26	7	10 - 25	0.02	2	8 - 26	#2/12	3 - 8	0 - 3
P-11A/B	6/4/2003	45	8	17 - 27 40 - 45	0.01 0.01	1 1	16 - 28 38.5-45	#2/12 #2/12	10-16 28-38.5	0 - 10
P-11D	6/4/2003	99	8	84 - 99	0.01	2	74 - 99	#2/12	73 - 74	0 - 68
BORING IDENTIFIER										
P-6D	6/5/2003	80	8	---	---	---	---	---	---	0 - 80
EB-1	6/3/2003	140	5	---	---	---	---	---	---	0 - 140

Not installed Boring

FOOTNOTES

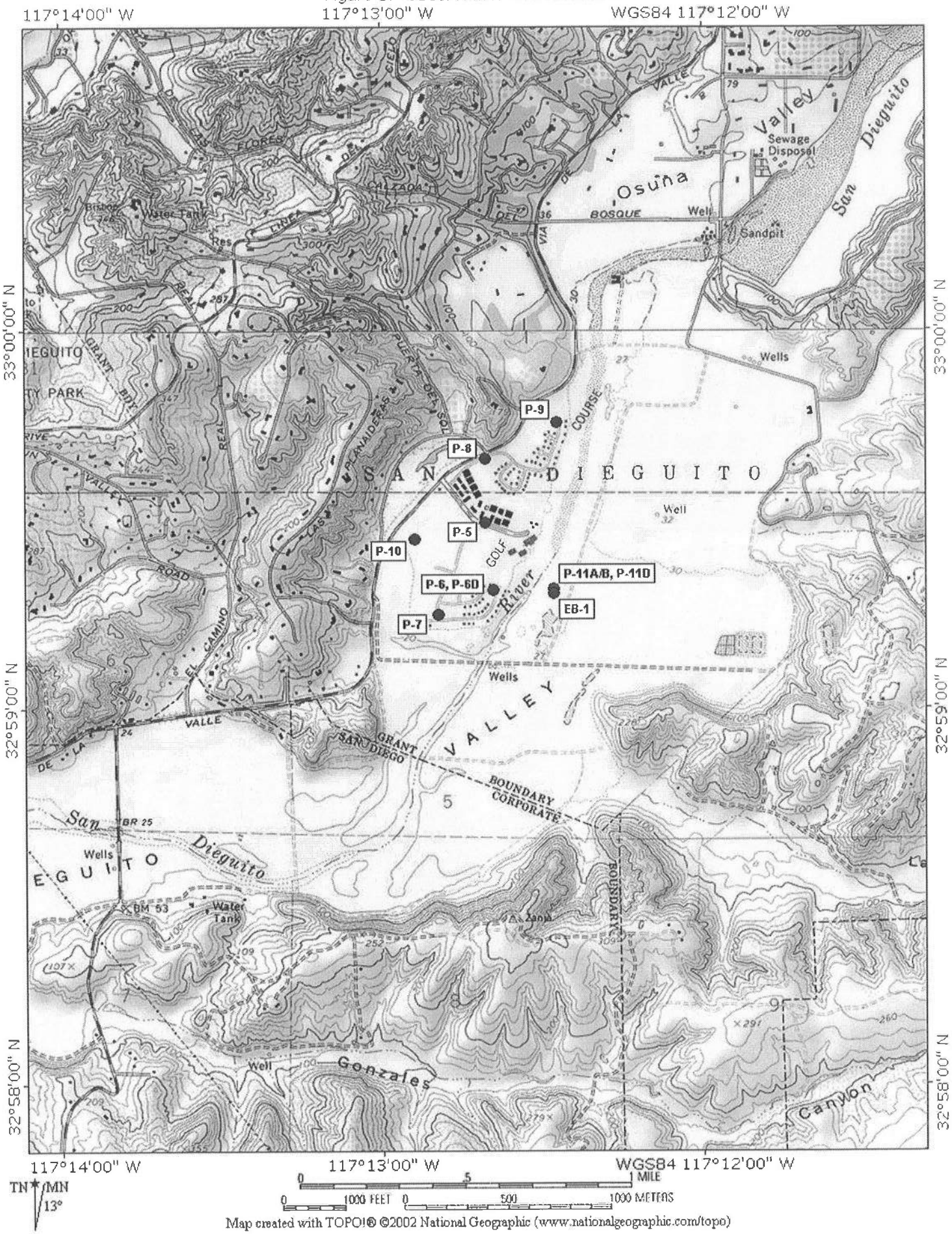
bls = Below land surface

a = Schedule 40 polyvinyl chloride screen and casing

b = Indicates cement-based materials (concrete or neat cement)

689 tbls Tbl 1 and 2 to crystal03.kal ltr
09/04/03

Figure 1: Observation Well Locations



Map created with TOPO!® ©2002 National Geographic (www.nationalgeographic.com/topo)

302-120-36

PIEZOMETER P-11D

DATE DRILLED: *06/04/03*

SURFACE ELEVATION: *23 feet msl*

BOREHOLE DIA.: *8 inches*

TOTAL DEPTH OF BORING *99 feet bls*

DRILLING COMPANY: *West Hazmat*

METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *T. Nichols*

DRILL RIG: *CME 85*

LOGGED BY: *C. Perkovac (R.G. #6576)* CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

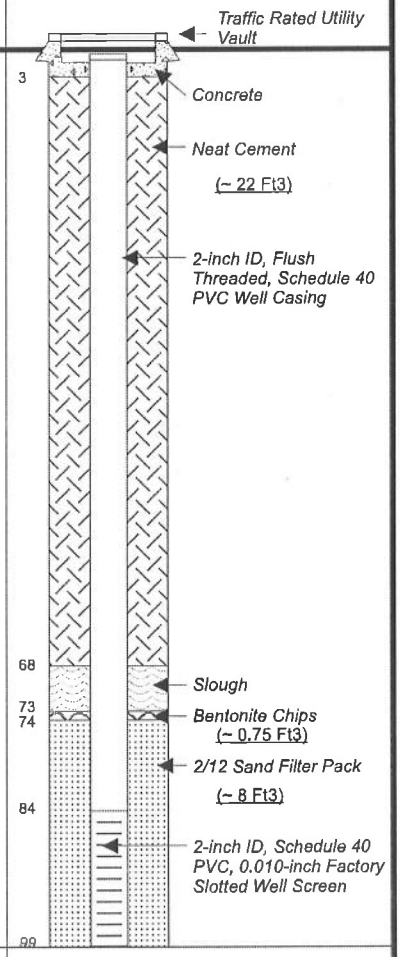
PROJECT NUMBER: *689.26*

LOCATION *Morgan Run Golf Resort, Rancho Santa Fe, CA*

COMMENTS

Weather: Overcast

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM
20, 40, 60, 80, 100, 120					Boring not logged. See Cone Penetrometer Log CPT-22 for Lithology.	
					TOTAL DEPTH OF BORING = 99 FEET BELOW LAND SURFACE	



REGISTERED GEOLOGIST
CHRISTIAN PERKOVAC
No. 6576
Date Signed:
STATE OF CALIFORNIA

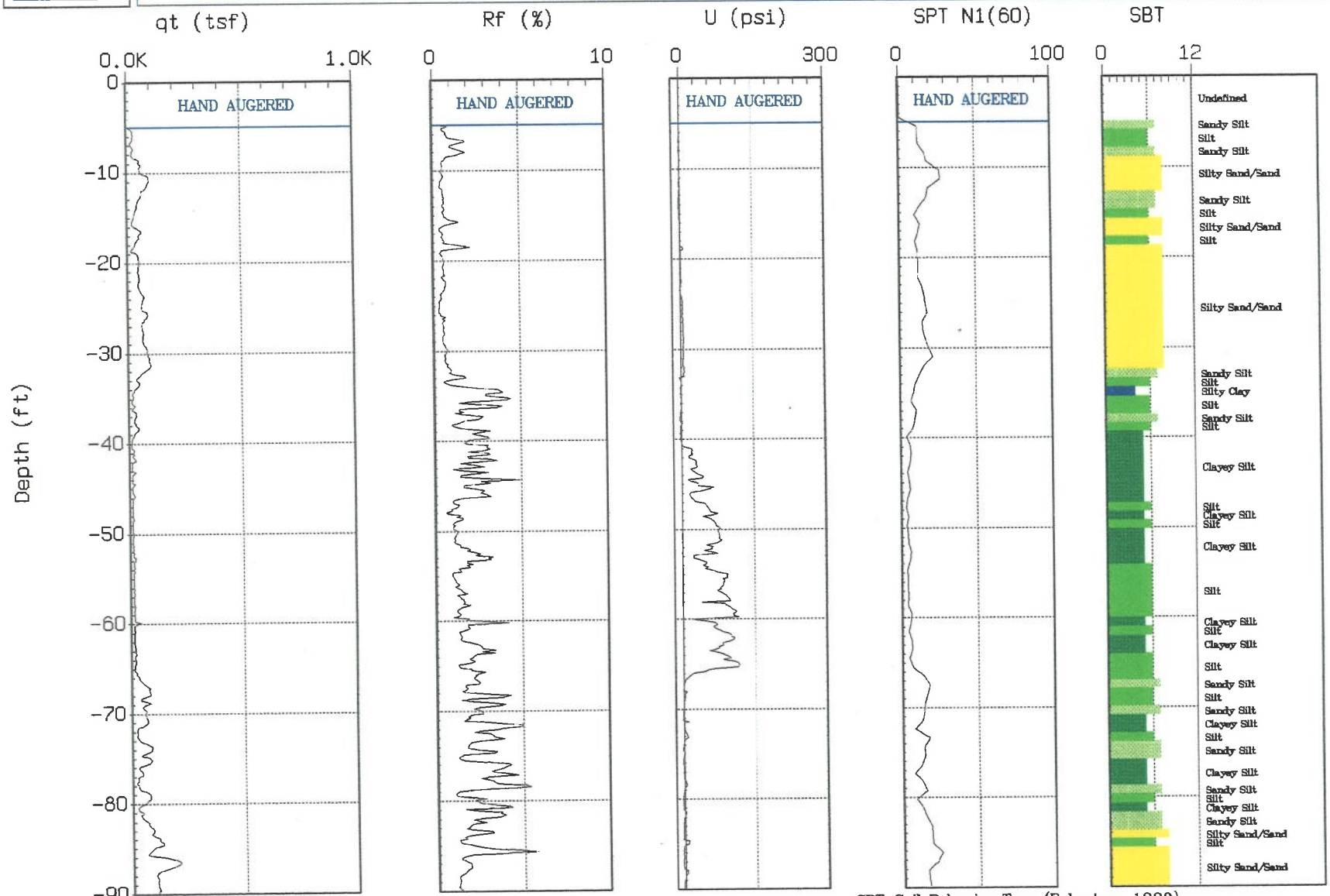
LITHOLOGIC LOG FOR PIEZOMETER P-11D

GREGG

HARGIS + ASSOCIATES

Site : OMWD S.D.
Location : CPT-24

Geologist : S. BERRYMAN
Date : 09:19:02 09:59



Max. Depth: 104.17 (ft)

Depth Inc.: 0.164 (ft)

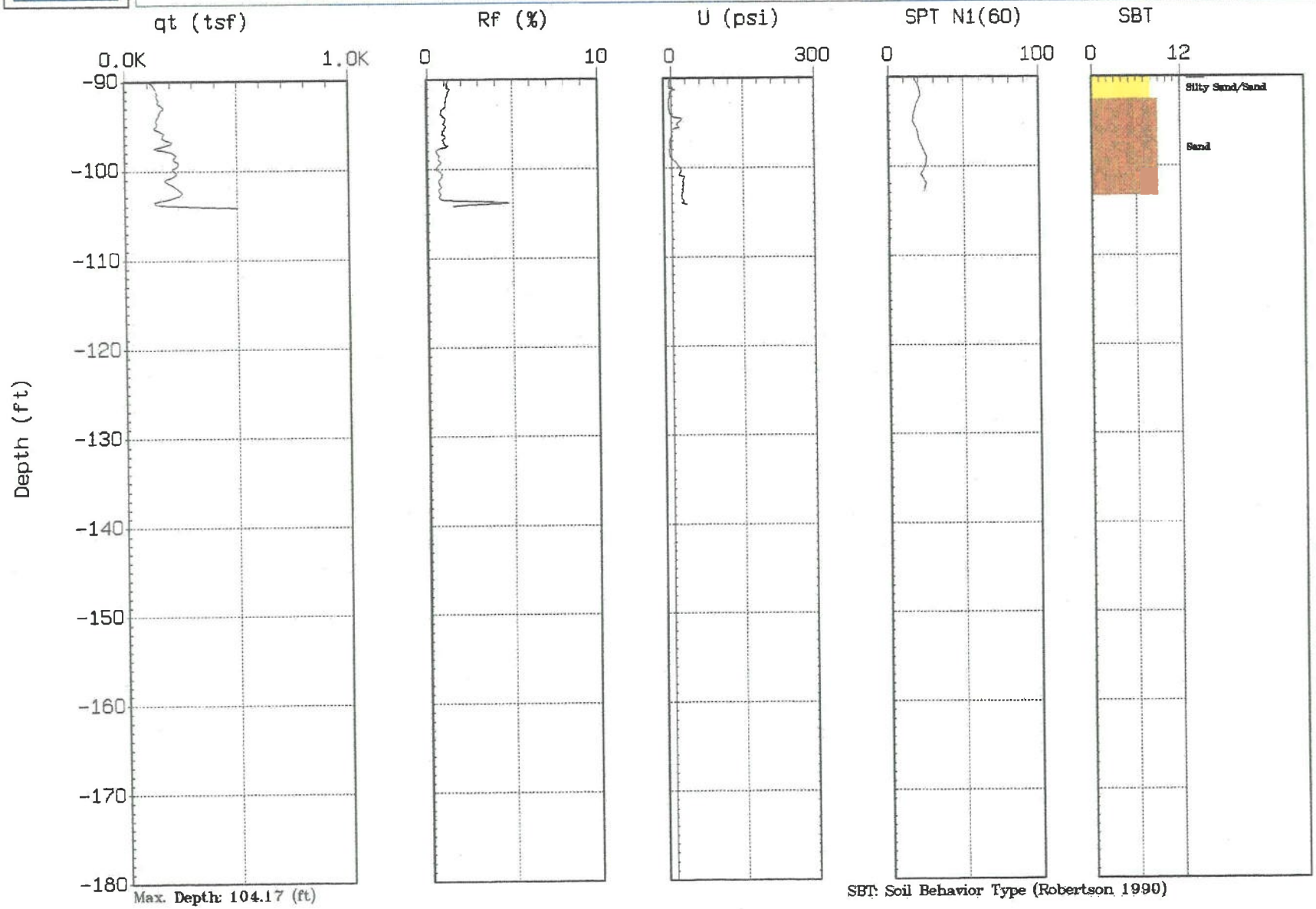
SBT: Soil Behavior Type (Robertson 1990)

GREGG

HARGIS + ASSOCIATES

Site : OMWD S.D.
Location : CPT-24

Geologist : S. BERRYMAN
Date : 09:19:02 09:59



Max. Depth: 104.17 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

OBSERVATION WELL P-6

DATE DRILLED: *04/14/03*

SURFACE ELEVATION: *31 feet msl*

BOREHOLE DIA.: *7 inches*

TOTAL DEPTH OF BORING *31 feet bls*

DRILLING COMPANY: *West Hazmat*

METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *R. Suffle*

DRILL RIG: *CME 75*

LOGGED BY: *S. Berryman*

CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

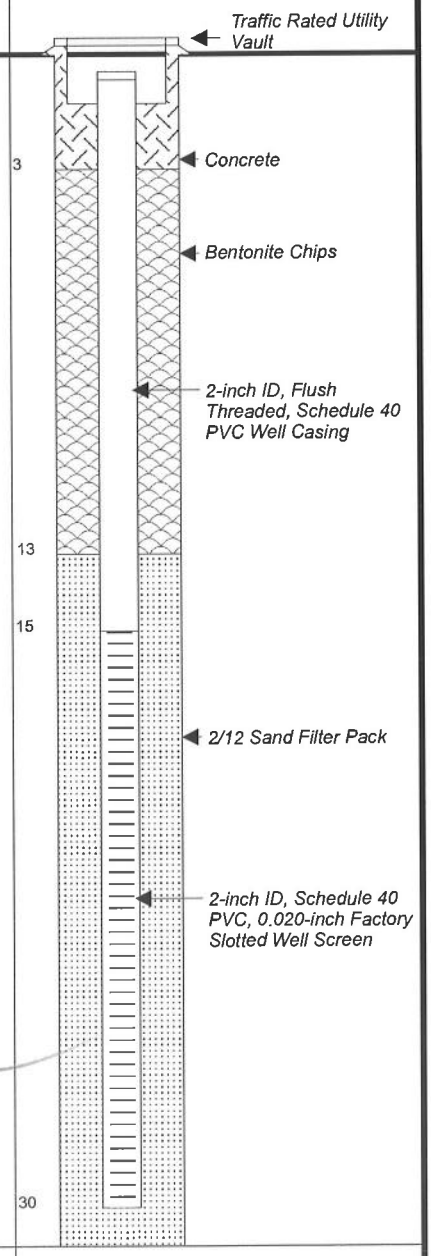
PROJECT NUMBER: *689.26*

LOCATION *Via Reposo at Avenida Brisa, Rancho Santa Fe, CA*

COMMENTS

Weather: Rain

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM
5, 10, 15, 20, 25, 30					Boring not logged. See Cone Penetrometer Log CPT-25 for Lithology.	



REGISTERED GEOLOGIST
GREG T. CRANHAM
No. 5897
Date Signed: 9/3/03
STATE OF CALIFORNIA

TOTAL DEPTH OF BORING = 31 FEET BELOW LAND SURFACE

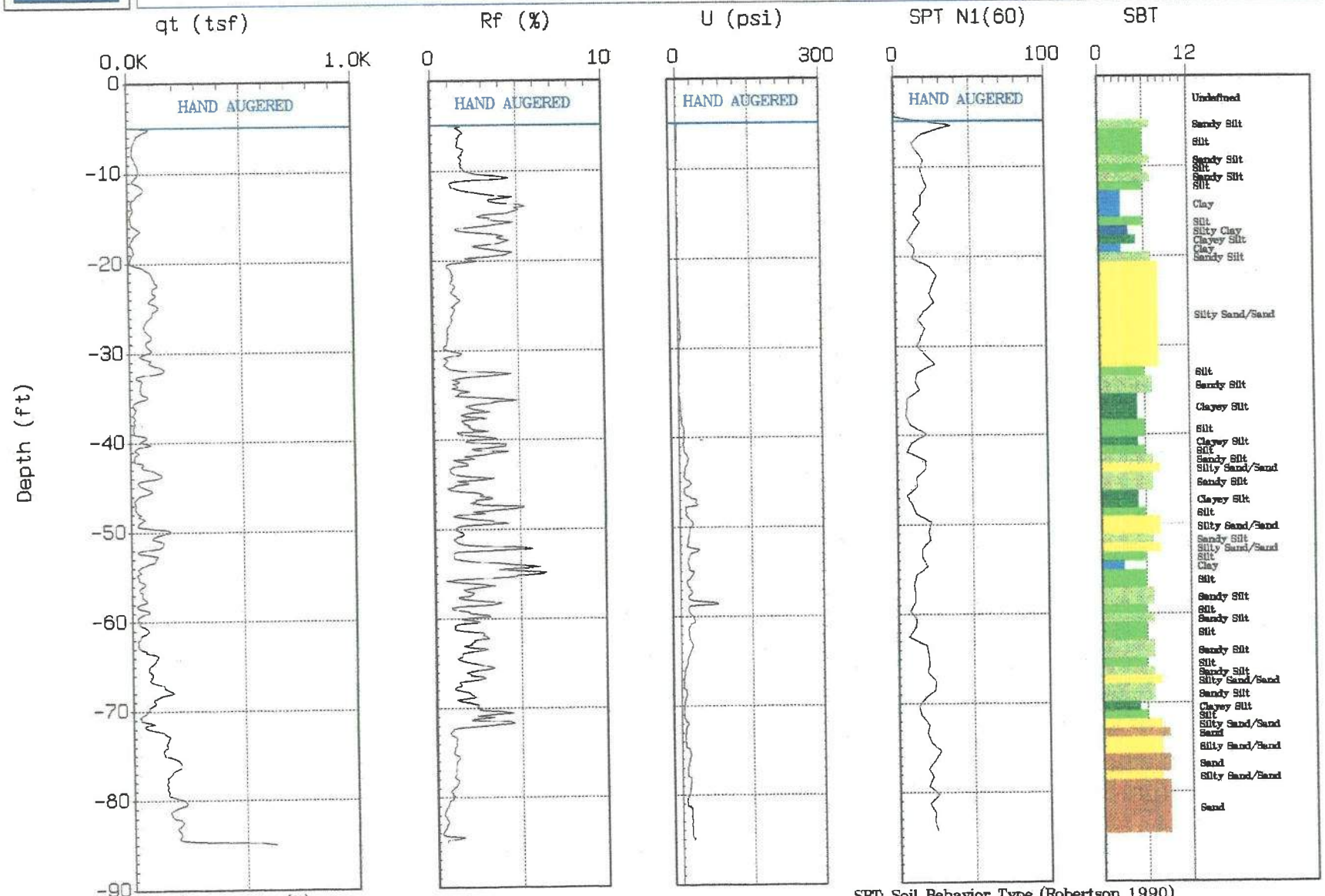
FIGURE: 4 LITHOLOGIC LOG FOR OBSERVATION WELL P-6

GREGG

HARGIS + ASSOCIATES

Site : OMWD S.D.
Location : CPT-25

Geologist : S. BERRYMAN
Date : 09:19:02 11:46



Max. Depth: 84.97 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

BORING P-6D

DATE DRILLED: *06/05/03*

SURFACE ELEVATION: *31 feet msl*

BOREHOLE DIA.: *8 inches*

TOTAL DEPTH OF BORING *80 feet bls*

DRILLING COMPANY: *West Hazmat*

METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *T. Nichols*

DRILL RIG: *CME 85*

LOGGED BY: *C. Perkovac (R.G. #6576)* CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

PROJECT NUMBER: *689.26*

LOCATION *Via Reposo at Avenida Brisa, Rancho Santa Fe, CA*

COMMENTS

Weather: Overcast

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM
					Boring not logged. See Cone Penetrometer Log CPT-25 for Lithology.	3 Concrete
15						
30						
45						Neat Cement
60					NOTE: Below ~60 feet, localized pocket of natural gas encountered. Well not constructed. Borehole backfilled with neat cement.	
75						80
					TOTAL DEPTH OF BORING = 80 FEET BELOW LAND SURFACE	
90						

REGISTERED GEOLOGIST
CHRISTIAN PERKOVAC
No. 6576
Date Signed: 9/3/03
STATE OF CALIFORNIA

FIGURE: 5 LITHOLOGIC LOG FOR BORING P-6D

OBSERVATION WELL P-7

DATE DRILLED: *04/14/03*

SURFACE ELEVATION: *30 feet msl*

BOREHOLE DIA.: *7 inches*

TOTAL DEPTH OF BORING *36 feet bls*

DRILLING COMPANY: *West Hazmat*

METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *R. Suffle*

DRILL RIG: *CME 75*

LOGGED BY: *S. Berryman*

CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

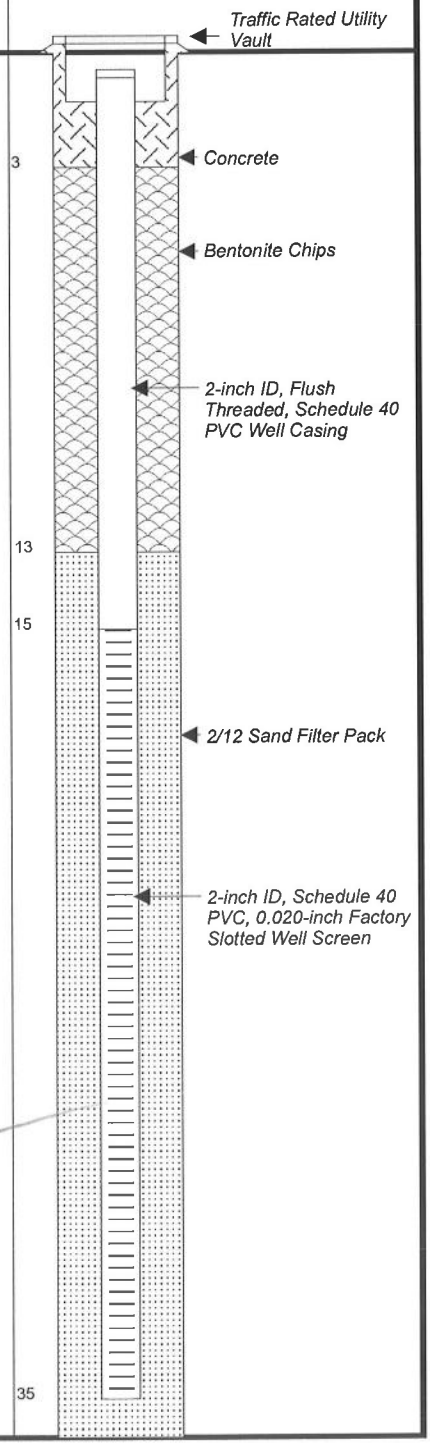
PROJECT NUMBER: *689.26*

LOCATION *Via de las Palmas at Avenida Feliz, Rancho Santa Fe, CA*

COMMENTS

Weather: Rain

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM
5, 10, 15, 20, 25, 30, 35					Boring not logged. See Cone Penetrometer Log CPT-26 for Lithology.	



REGISTERED GEOLOGIST
GREG T. CRANHAM
No. 5897
Date Signed: 7/3/03
STATE OF CALIFORNIA

TOTAL DEPTH OF BORING = 36 FEET BELOW LAND SURFACE

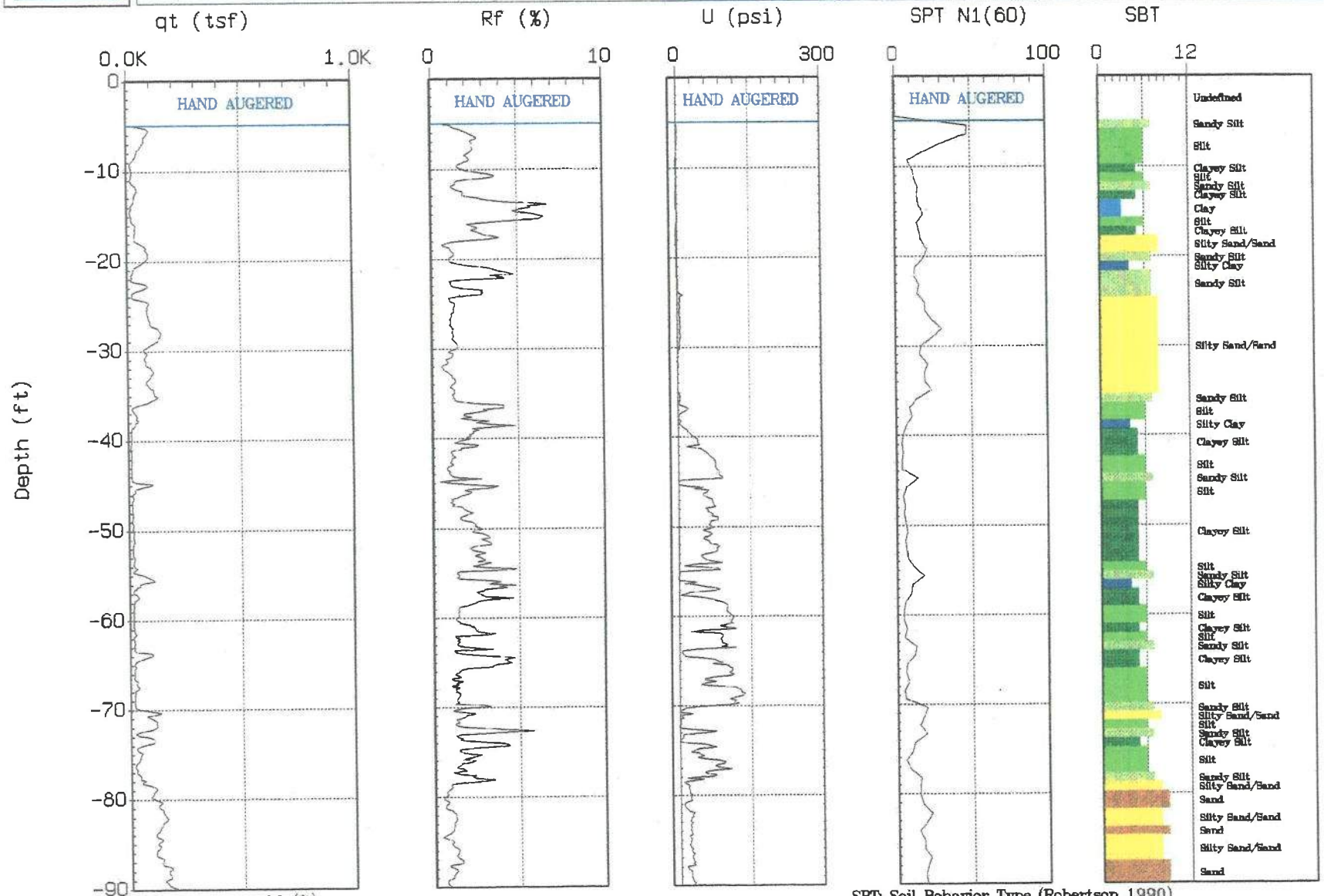
FIGURE: 6 LITHOLOGIC LOG FOR OBSERVATION WELL P-7

GREGG

HARGIS + ASSOCIATES

Site : OMWD S.D.
Location : CP-26

Geologist : S. BERRYMAN
Date : 09:19:02 13:39



Max. Depth: 100.06 (ft)

Depth Inc.: 0.164 (ft)

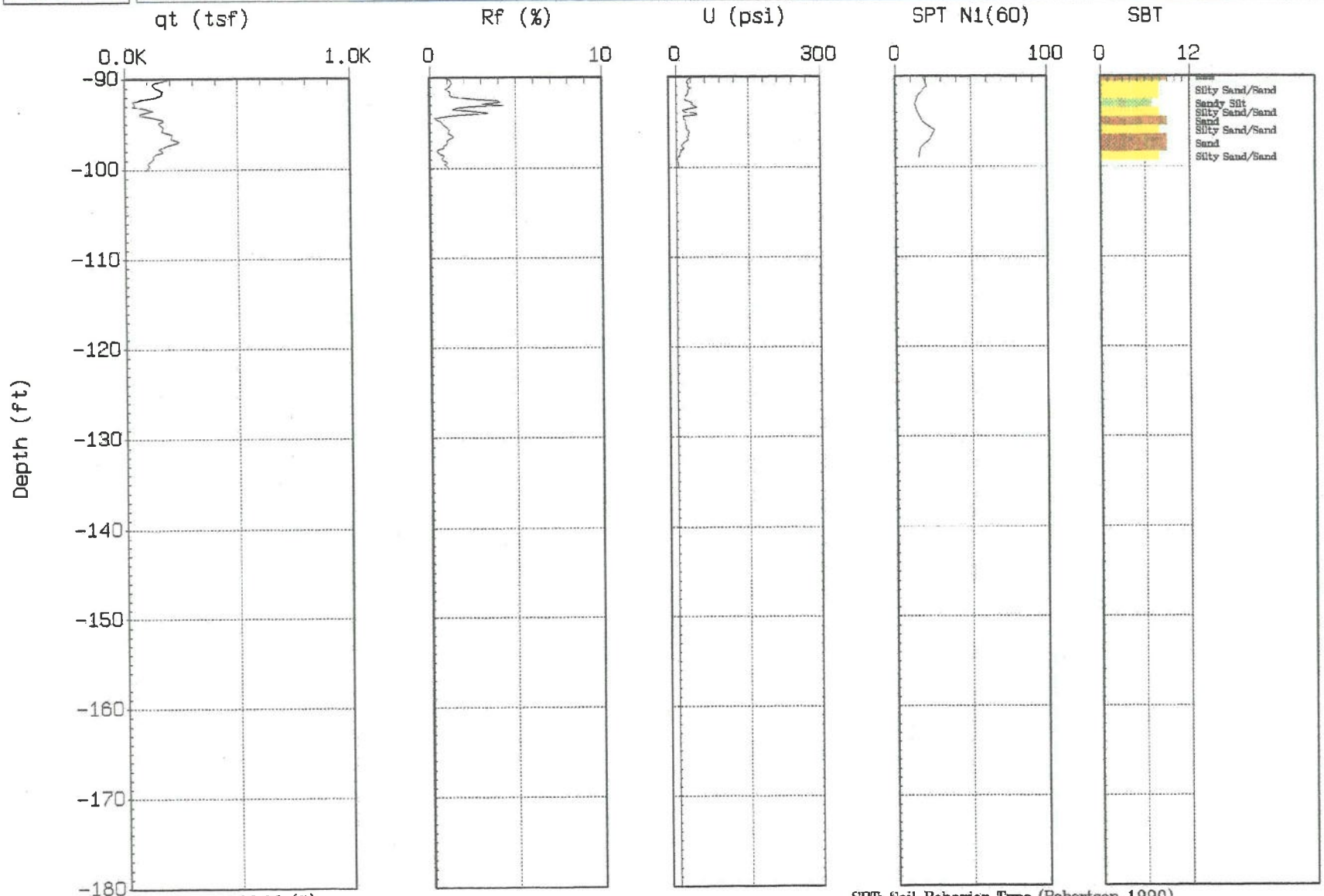
SBT: Soil Behavior Type (Robertson 1990)

GREGG

HARGIS + ASSOCIATES

Site : OMWD S.D.
Location : CPT-26

Geologist : S. BERRYMAN
Date : 09:19:02 13:39



Max. Depth: 100.06 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

OBSERVATION WELL P-8

DATE DRILLED: *04/15/03*

SURFACE ELEVATION: *31 feet msl*

BOREHOLE DIA.: *7 inches*

TOTAL DEPTH OF BORING *31 feet bls*

DRILLING COMPANY: *West Hazmat*

METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *R. Suffle*

DRILL RIG: *CME 75*

LOGGED BY: *S. Berryman*

CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

PROJECT NUMBER: *689.26*

LOCATION *Via Valle Verde at Hole 5 Tee Box, Rancho Santa Fe, CA*

COMMENTS

Weather: Rain
Sampler: 1.5" Diameter SPT Split Barrel Sampler

DEPTH (feet)	SAMPLE BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL
5	10 15 20	ML		SILT (0/10/90) Dark yellowish brown (10YR 3/6), moist, stiff to very stiff, low plasticity; trace sand, fine-grained, micaceous.
10	10 10 10	ML		SILT WITH SAND (0/20/80) Dark grayish brown (2.5Y 4/2), moist, stiff, medium plasticity; sand fine- to medium-grained, slightly micaceous.
15	10 15 15	SP		SAND (0/95/5) Pale olive (5Y 6/3), moist, medium dense, fine- to coarse-grained, poorly sorted, subrounded to rounded; trace silt.
20	10 15 16	SP		SAND Pale olive (5Y 6/4), slightly coarser-grained, otherwise as above.
25	10 18 20	SP		SAND Same as above.
30		Td		BEDROCK, Probable Delmar Formation

TOTAL DEPTH OF BORING = 31 FEET BELOW LAND SURFACE

WELL CONSTRUCTION DIAGRAM

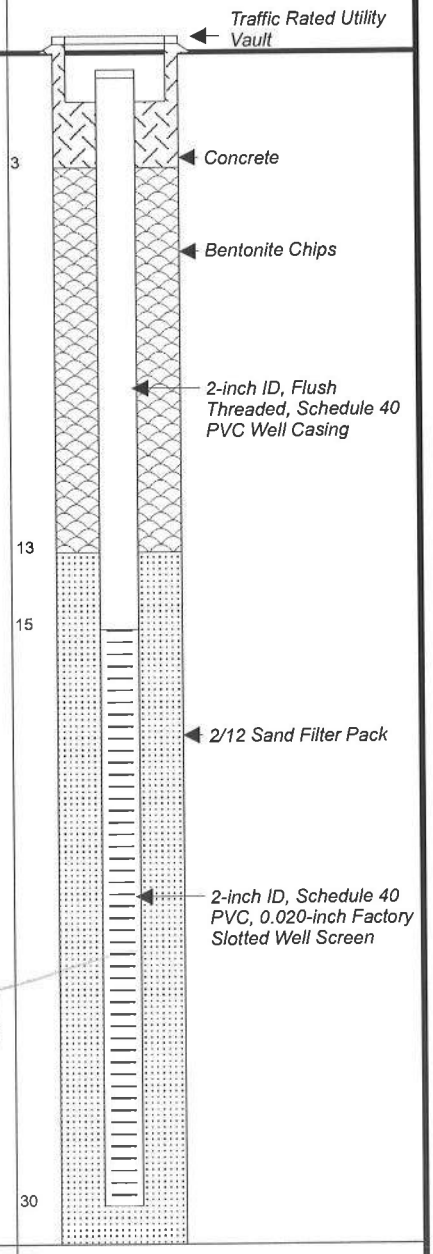


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FIGURE: 7 LITHOLOGIC LOG FOR OBSERVATION WELL P-8

OBSERVATION WELL P-9

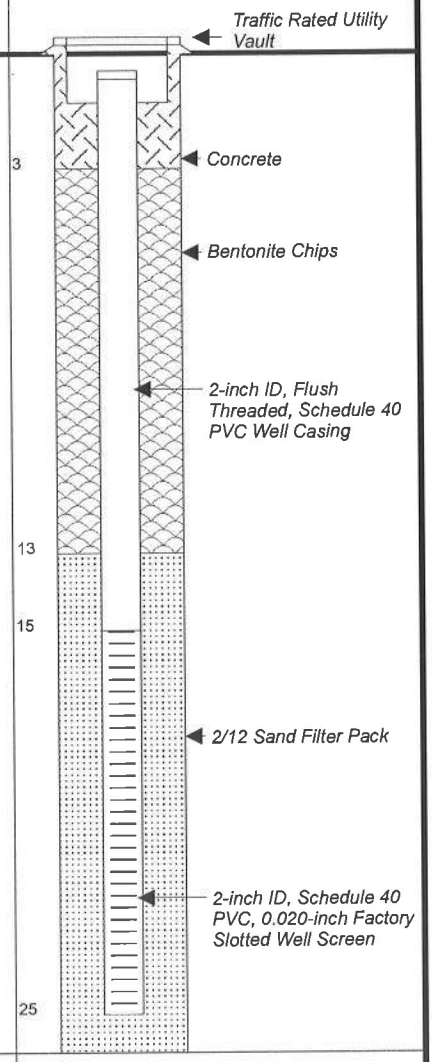
DATE DRILLED: *04/15/03*
SURFACE ELEVATION: *35 feet msl*
BOREHOLE DIA.: *7 inches*
TOTAL DEPTH OF BORING *26 feet bls*
DRILLING COMPANY: *West Hazmat*
METHOD: *Hollow Stem Auger*
DRILLER'S NAME: *R. Suffle*
DRILL RIG: *CME 75*
LOGGED BY: *S. Berryman*
CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*
PROJECT NUMBER: *689.26*
LOCATION *Via Valle Verde north end, cul-de-sac, Rancho Santa Fe,CA*

COMMENTS
Weather: Rain
Sampler: 1.5" Diameter SPT Split Barrel Sampler

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL
5	▼	10 15 15	SP-SM		SAND WITH SILT (0/90/10) Olive brown (2.5Y 4/4), moist, medium dense, fine- to coarse-grained, predominantly fine, moderately sorted, subrounded; micaceous.
10	▼	10 15 15	SP-SM		SAND WITH SILT Same as above.
			SP		SAND (0/100/0) Dark yellowish brown (10YR 3/6), moist, medium dense, fine- to coarse-grained, moderately sorted, subrounded; slightly micaceous.
15	▼	10 15 15	SP		SAND (0/95/5) Olive brown (2.5Y 4/4), moist, medium dense, fine- to medium-grained, predominantly fine, moderately to well sorted, subangular to subrounded; trace silt, micaceous.
20	▼	5 10 15	SP		SAND (0/98/2) Olive brown (2.5Y 4/4), moist, medium dense, fine- to coarse-grained, predominantly medium, moderately sorted, subangular to subrounded; trace silt, micaceous.
25	▼	5 10 15	SP		SAND Same as above
30					TOTAL DEPTH OF BORING = 26 FEET BELOW LAND SURFACE

WELL CONSTRUCTION DIAGRAM



REGISTERED GEOLOGIST
GREG T. CRANHAM
No. 5897
Date Signed: 7/3/03
STATE OF CALIFORNIA

FIGURE: 8 LITHOLOGIC LOG FOR OBSERVATION WELL P-9

OBSERVATION WELL P-10

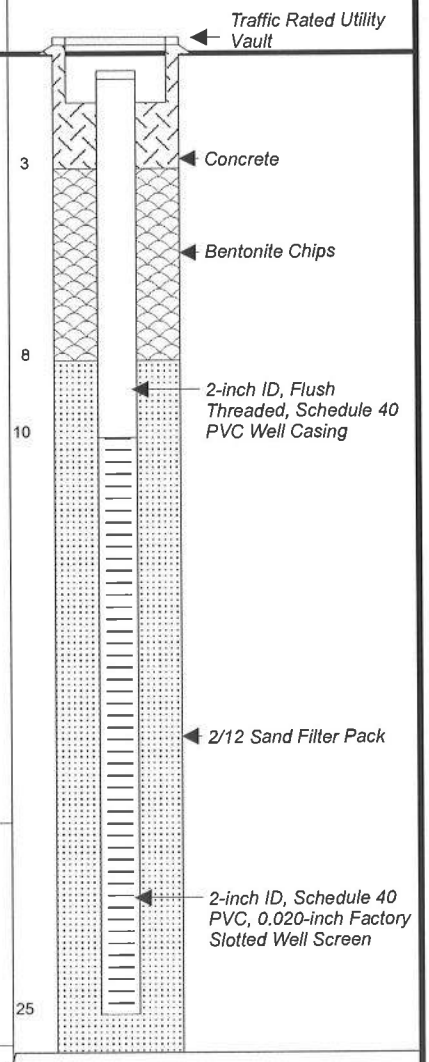
DATE DRILLED: *04/15/03*
SURFACE ELEVATION: *31 feet msl*
BOREHOLE DIA.: *7 inches*
TOTAL DEPTH OF BORING *26 feet bls*
DRILLING COMPANY: *West Hazmat*
METHOD: *Hollow Stem Auger*
DRILLER'S NAME: *R. Suffle*
DRILL RIG: *CME 75*
LOGGED BY: *S. Berryman*
CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*
PROJECT NUMBER: *689.26*
LOCATION *Avenida Calma at 16050, Rancho Santa Fe,CA*

COMMENTS
Weather: Rain
Sampler: 1.5" Diameter SPT Split Barrel Sampler

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL
5		25 50 25	SP-SM		SAND WITH SILT (0/90/10) Olive brown (2.5Y 4/4), moist, medium dense to dense, fine- to medium-grained, predominantly fine, moderately sorted, subangular; micaceous.
10		5 6 6	SP-SM		SAND WITH SILT Loose, otherwise as above
15		10 10 10	SP		SAND (0/100/0) Olive brown (2.5Y 4/4), moist, medium dense, fine- to coarse-grained, predominantly medium, moderately sorted, subangular to subrounded; micaceous.
			SP		SAND Same as above
20		10 10 15	ML		SANDY SILT (0/30/70) Dark brown (10YR 3/3), moist, stiff, medium plasticity; sand fine-grained, micaceous.
25		10 15 15	SP ML		SAND (0/95/5) Olive brown (2.5Y 4/4), moist, medium dense, fine- to medium-grained, moderately sorted, subangular; trace silt, micaceous.
					SILT WITH SAND (0/20/80) Dark brown (10YR 3/3), moist, stiff, medium plasticity; sand fine-grained, micaceous.
30					TOTAL DEPTH OF BORING = 26 FEET BELOW LAND SURFACE

WELL CONSTRUCTION DIAGRAM



REGISTERED GEOLOGIST
GREG T. CRANHAM
No. 5897
Date Signed: 7/3/03
STATE OF CALIFORNIA

FIGURE: 9 LITHOLOGIC LOG FOR OBSERVATION WELL P-10

OBSERVATION WELL P-11A/B

DATE DRILLED: *06/04/03* SURFACE ELEVATION: *23 feet msl*

BOREHOLE DIA.: *8 inches* TOTAL DEPTH OF BORING *45 feet bls*

DRILLING COMPANY: *West Hazmat* METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *T. Nichols* DRILL RIG: *CME 85*

LOGGED BY: *C. Perkovac (R.G. #6576)* CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

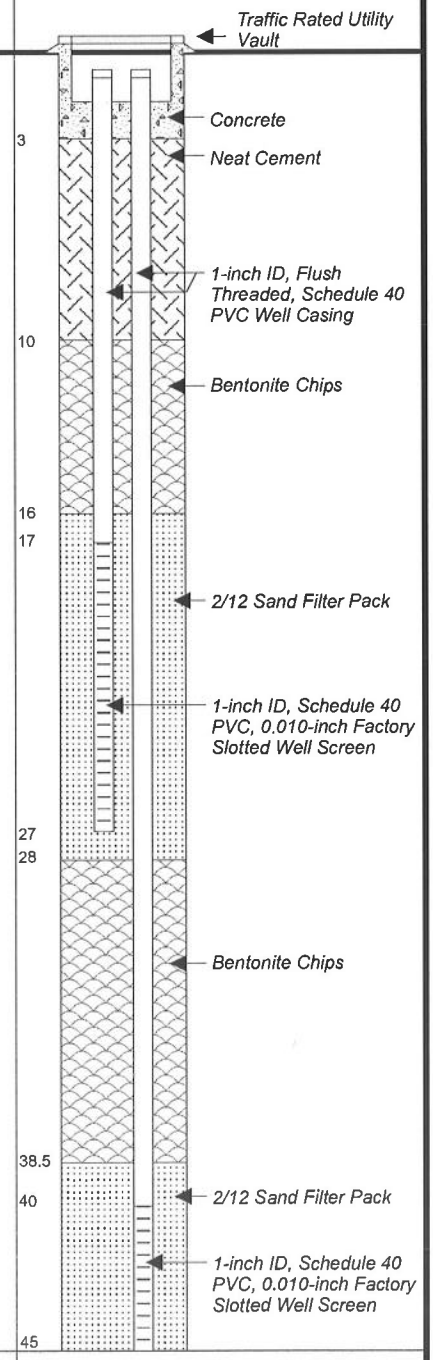
PROJECT NUMBER: *689.26*

LOCATION *Morgan Run Golf Resort, Rancho Santa Fe, CA*

COMMENTS

Weather: Overcast

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM
10, 20, 30, 40					Boring not logged. See Cone Penetrometer Log CPT-22 for Lithology. NOTE: Well screened from 17 to 27 feet is designated as "P-11A"; and well screened from 40 to 45 feet is designated as "P11B".	



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TOTAL DEPTH OF BORING = 45 FEET BELOW LAND SURFACE

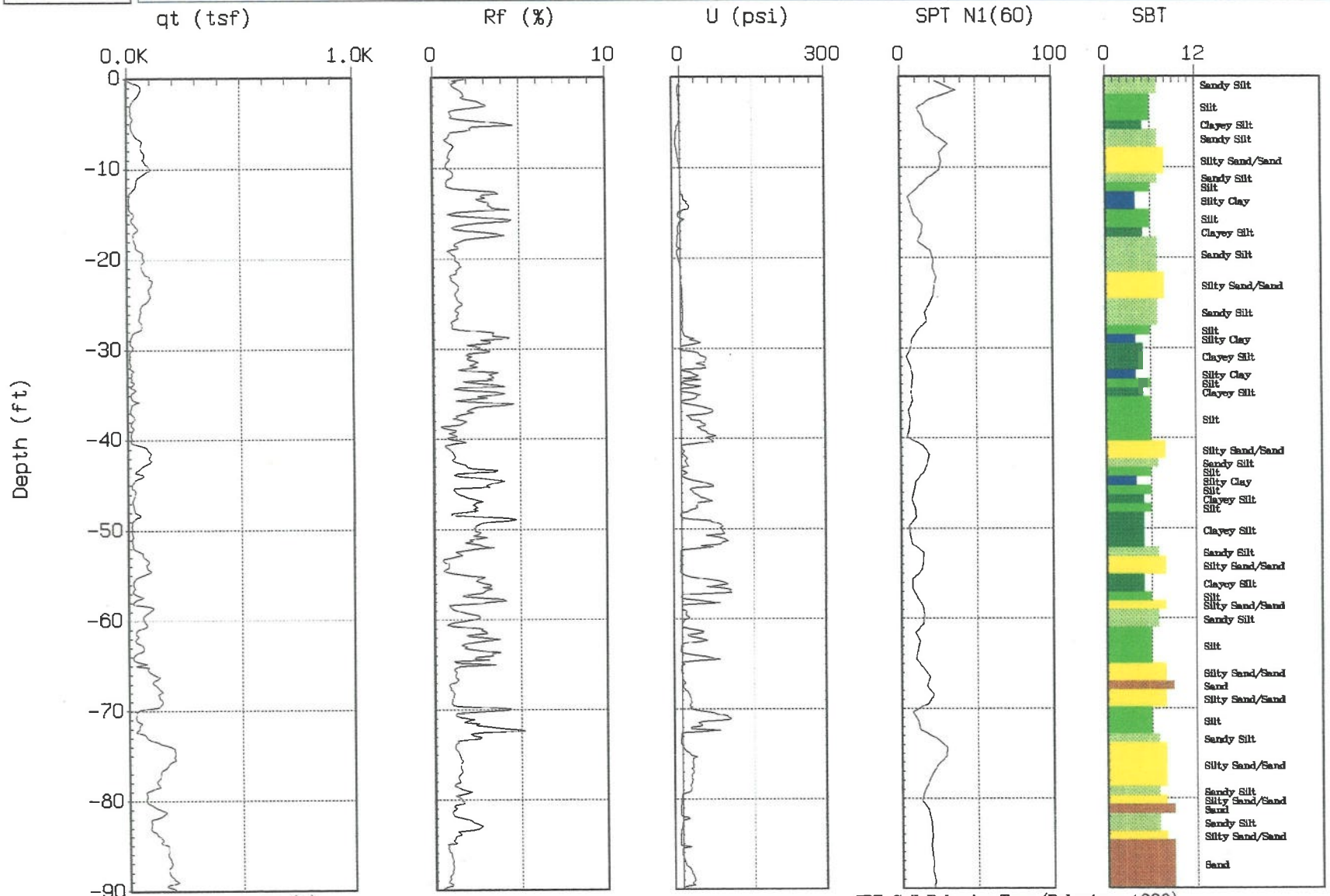
FIGURE: 10 LITHOLOGIC LOG FOR NESTED OBSERVATION WELL P-11A/B

GREGG

HARGIS + ASSOCIATES

Site : OMWD S.D.
Location : CPT-22

Geologist : S. BERRYMAN
Date : 09:18:02 15:26



Max. Depth: 132.71 (ft)

Depth Inc.: 0.164 (ft)

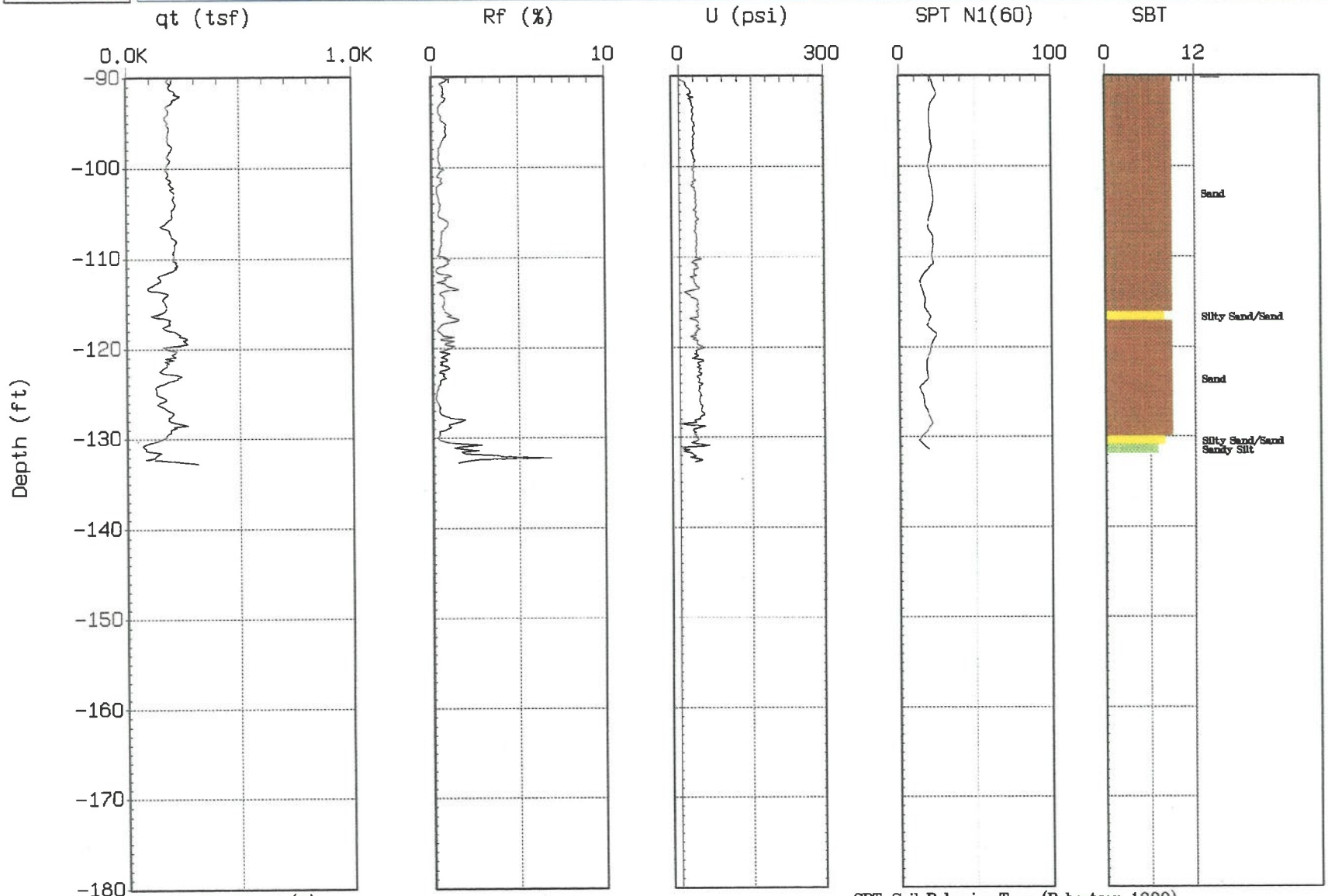
SBT: Soil Behavior Type (Robertson 1990)

GREGG

HARGIS + ASSOCIATES

Site : OMWD S.D.
Location : CPT-22

Geologist : S. BERRYMAN
Date : 09:18:02 15:26



Max. Depth: 132.71 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

OBSERVATION WELL P-11D

DATE DRILLED: *06/04/03* SURFACE ELEVATION: *23 feet msl*

BOREHOLE DIA.: *8 inches* TOTAL DEPTH OF BORING *99 feet bls*

DRILLING COMPANY: *West Hazmat* METHOD: *Hollow Stem Auger*

DRILLER'S NAME: *T. Nichols* DRILL RIG: *CME 85*

LOGGED BY: *C. Perkovac (R.G. #6576)* CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

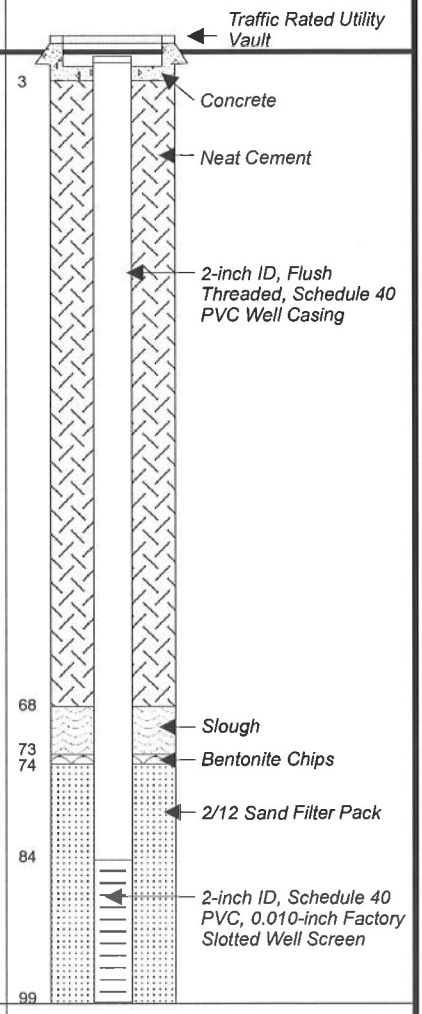
PROJECT NUMBER: *689.26*

LOCATION *Morgan Run Golf Resort, Rancho Santa Fe, CA*

COMMENTS

Weather: Overcast

DEPTH (feet)	SAMPLE	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM
20, 40, 60, 80, 100, 120					Boring not logged. See Cone Penetrometer Log CPT-22 for Lithology.	
					TOTAL DEPTH OF BORING = 99 FEET BELOW LAND SURFACE	



REGISTERED GEOLOGIST CHRISTIAN PERKOVAC No. 6576 Date Signed: 9/3/03 STATE OF CALIFORNIA

FIGURE: 11 LITHOLOGIC LOG FOR OBSERVATION WELL P-11D

BORING EB-1

DATE DRILLED: *06/02/03 to 06/03/03*

SURFACE ELEVATION: *23 feet msl*

BOREHOLE DIA.: *5 inches*

TOTAL DEPTH OF BORING *140 feet bls*

DRILLING COMPANY: *West Hazmat*

METHOD: *Mud Rotary*

DRILLER'S NAME: *T. Nichols*

DRILL RIG: *CME 85*

LOGGED BY: *C. Perkovac (R.G. #6576)* CHECKED BY: *G. Cranham (R.G. #5897)*

PROJECT NAME: *OMWD-San Dieguito*

PROJECT NUMBER: *689.26*

LOCATION *Morgan Run Golf Resort, Rancho Santa Fe, CA*

COMMENTS

Sampler: Continuous coring and modified California sampler.

DEPTH (feet)	SAMPLE RECOVERY (percentage)	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL
5					
10	61%		SM		SILTY SAND [0/80/20] Gray brown, fine- to medium-grained, moderately sorted; micaceous, some rootlets. Interbedded with silty sand as above without medium-grained sand.
	58%		SP		SAND [0/95/5] Brown, fine-grained, well sorted; micaceous.
			SM		SILTY SAND Same as 7.5 to 11 feet.
15	33%		ML		SANDY SILT [0/40/60] Brown, very soft to soft, medium plasticity; sand fine- to medium-grained, micaceous.
	0%		SM		SILTY SAND Fine-grained; otherwise same as 7.5 to 11 feet.
20	80%				SILTY SAND [0/70/30] Gray brown, fine-grained, well sorted; micaceous.
	87%				SAND WITH SILT [0/90/10] Very dark gray, dense, fine-grained, well sorted; laminated, micaceous.
	89%		SP-SM		
25	67%	34 43			At 25.5 feet, rootlets.
	100%				
	72%	34 35 37			
	83%	11 13 15	SM		SILTY SAND [0/60/40] Dark gray, medium dense; micaceous.
30			SP-SM		SAND WITH SILT Same as 20.5 feet to 28 feet.
		16 27 29	ML		SANDY SILT [0/40/60] Dark gray, soft, low plasticity.
	66%	9 10 12	SM		SILTY SAND [0/55/45] Dark gray, medium dense, fine-grained, well sorted.
	100%				

REGISTERED GEOLOGIST CHRISTIAN PERKOVAC No. 6576 Date Signed: 9/3/03 STATE OF CALIFORNIA

FIGURE: 12 LITHOLOGIC LOG FOR BORING EB-1

BORING EB-1

PROJECT NAME: *OMWD-San Dieguito*
PROJECT NUMBER: *689.26*
DATE DRILLED *06/02/03 to 06/03/03*

DEPTH (feet)	SAMPLE	RECOVERY (percentage)	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL
		100%	7 12 16	SC		CLAYEY SAND [0/70/30] Dark gray, loose to medium dense, fine-grained, well sorted; micaceous, with pink shell fragments up to 1/4 inch in length.
		75%				
		87%		SM		SILTY SAND [0/70/30] Dark gray, fine-grained, well sorted; micaceous.
40						
		100%		SC		CLAYEY SAND [0/60/40] Dark gray, fine-grained; with shell fragments.
				SM		SILTY SAND [0/70/30] Dark gray, fine-grained, well sorted.
		50%		ML		SANDY SILT [0/40/60] Dark gray, soft, medium plasticity.
45						
		100%	17 24 31	SM		SILTY SAND [0/60/40] Dark gray, medium dense to dense, fine-grained, well sorted; micaceous.
				ML		SANDY SILT [0/40/60] Dark gray, soft, low plasticity; micaceous, sand fine-grained.
		77%		SM		SILTY SAND [0/70/30] Dark gray, fine-grained; abundant shell fragments.
				ML		SANDY SILT [0/40/60] Dark gray, soft, medium plasticity; sand fine-grained.
50		100%	12 16 21			
		100%				SILTY SAND [0/60/40] Dark gray, fine-grained, well sorted; micaceous, with shell fragments.
		80%		SM		At 54 to 55 feet; slightly coarser sand.
55						
				SM /ML		SILTY SAND TO SANDY SILT [0/50/50] Dark gray, fine-grained, soft, medium plasticity.
60			17 24 27			SILTY SAND Same as 51.5 feet to 59.5 feet.
		83%		SM		
65						
		83%				SAND [0/96/4] Dark gray, fine- to medium-grained, predominantly fine, moderately sorted; locally laminated, slightly micaceous.
70				SP		
		73%				At 73.5 feet to 74.5 feet; medium sand fraction decreases.

REGISTERED GEOLOGIST CHRISTIAN PERKOVAC No. 6576 Date Signed: 9/3/03 STATE OF CALIFORNIA

FIGURE: 12 LITHOLOGIC LOG FOR BORING EB-1

BORING EB-1

PROJECT NAME: *OMWD-San Dieguito*
PROJECT NUMBER: *689.26*
DATE DRILLED *06/02/03 to 06/03/03*

DEPTH (feet)	SAMPLE	RECOVERY (percentage)	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL
				SP		SAND as above.
		83%				
80						
		47%				SAND WITH SILT [0/90/10] Dark gray, fine-grained, well sorted; laminated, micaceous.
85				SP-SM		At 85 feet; harder drilling, per driller.
		80%		SP		SAND [0/97/3] Gray, fine- to medium-grained, moderately sorted; micaceous.
90						At 88 feet to 93 feet; cemented soil or gravel, per driller.
						At approximately 94 feet; gravel observed in shoe.
		71%				At 93; feet harder drilling, per driller, with rig chatter.
		100%				
95				SP		SAND [10/90/0] Gray, fine- to coarse-grained, well sorted; trace gravel, angular, micaceous.
		28%				
100						~15% fluid loss from ~93 feet to 112.5 feet. Required thickening of mud.
		100%				
		13%				
105						
		17%				
110						
		33%				At approximately 112.5 feet; local thin layer of fine- to medium-grained sand.
		14%				

REGISTERED GEOLOGIST
CHRISTIAN PERKOVAC
No. 6576
Date Signed: 9/3/03
STATE OF CALIFORNIA

FIGURE: 12 LITHOLOGIC LOG FOR BORING EB-1

BORING EB-1

PROJECT NAME: *OMWD-San Dieguito*
PROJECT NUMBER: *689.26*
DATE DRILLED *06/02/03 to 06/03/03*

DEPTH (feet)	SAMPLE	RECOVERY (percentage)	BLOWS (per 6 inches)	USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL
				SP		SAND as above.
		10%				At 117 feet; rig chatter.
120		7%				
		80%				SAND [5/95/0] Gray, medium- to coarse-grained, moderately sorted; trace gravel. At 122 feet; rig chatter.
				SP		
125		23%				From 125.5 feet to 128 feet; sand, per driller.
		27%				From 128 feet to 129.5 feet; gravelly, per driller. At 129.5 feet; sand, per driller.
130						
						From 132 feet to 134.5 feet; cobbly, per driller; no recovery.
						From 134.5 to 140 feet; drilled with tri-cone bit.
135						From 135 to 135.5 feet; sand, per driller.
						From 136 to 137 feet; sand, per driller. From 137 to 138 feet; gravel, per driller.
						At 140 feet; gravel, per driller.
140						TOTAL DEPTH OF BORING = 140 FEET BELOW LAND SURFACE
145						
150						

REGISTERED GEOLOGIST
CHRISTIAN PERKOVAC
No. 6576
Date Signed: 9/3/03
STATE OF CALIFORNIA

FIGURE: 12 LITHOLOGIC LOG FOR BORING EB-1

F/up
3/11/04

Profeta, Ernie

To: mpalmer@hargis.com
Subject: Well Permit #W101186, Olivenhain Water District Project for San Dieguito Valley

Dear Mr. Palmer,

The 60 day drilling report you submitted for the subject permit is incomplete. Please submit the following items not included with your report.

1). Submit the type of seals and volumes of materials used (in cubic feet) for each monitoring well installed.

2). For P-6d and EB-1, submit the type of sealing materials, volumes used (in cubic feet) to backfill these borings.

Please submit the above requested information within 14 days by mail, fax (619-338-2377) or e-mail. If you have any questions, please contact me at (619) 338-2492.

Sincerely,

Ernie L. Profeta
Environmental Health Technician
DEH-SAM Monitoring Well Program

3/15/04 Talked to Mike Palmer re: req. for addtl. info, gave him my email address and he said he will send. EP

GEO TEK, INC.
1384 Poinsettia Ave., Suite A
Vista, CA 92081-8505
(760) 599-0509 FAX (760) 599-0593

Geotechnical
Environmental
Materials

RECEIVED
AUG 28 2006
ENVIRONMENTAL HEALTH

August 23, 2006
Project No.: 2991SD3

COUNTY OF SAN DIEGO
Department of Environmental Health
Land and Water Quality Division – Well Desk
P.O. Box 129261
San Diego, California 92112-9261

Attention: Amelia Cesena

Subject: Geotechnical Boring Destruction
Morgan Run Resort and Club
5690 Cancha de Golf
Rancho Santa Fe, California 92091
APN: 3021203600

Reference: County of San Diego DEH Permit #LMON 103818, dated February 24, 2006.

Dear Ms. Cesena:

We are providing herewith, boring logs and site plan for the subject site. A total of five small-diameter geotechnical soil borings were drilled at the site on March 14 and March 16, 2006. Three 8-inch diameter hollow-stem auger borings were drilled to a maximum depth of approximately 66.5 feet below the existing ground surface by California Pacific Drilling, and two 6-inch diameter hollow-stem auger borings were drilled to a maximum depth of approximately 31.5 feet below the existing ground surface by Pacific Drilling. Groundwater was encountered in our exploratory borings at depths of approximately 12 to 17.5 feet below existing ground surface. The approximate locations of the soil borings are illustrated on attached Figure 2.

After completion, each of the permitted borings were immediately destroyed by backfilling with bentonite grout and chips from the bottom of the boring to ground surface. Borings greater than 30 feet in depth were backfilled using the tremmie method. Boring logs, including the type and volume of sealing material, are attached.

If you have any questions concerning this report, please do not hesitate to contact the undersigned.

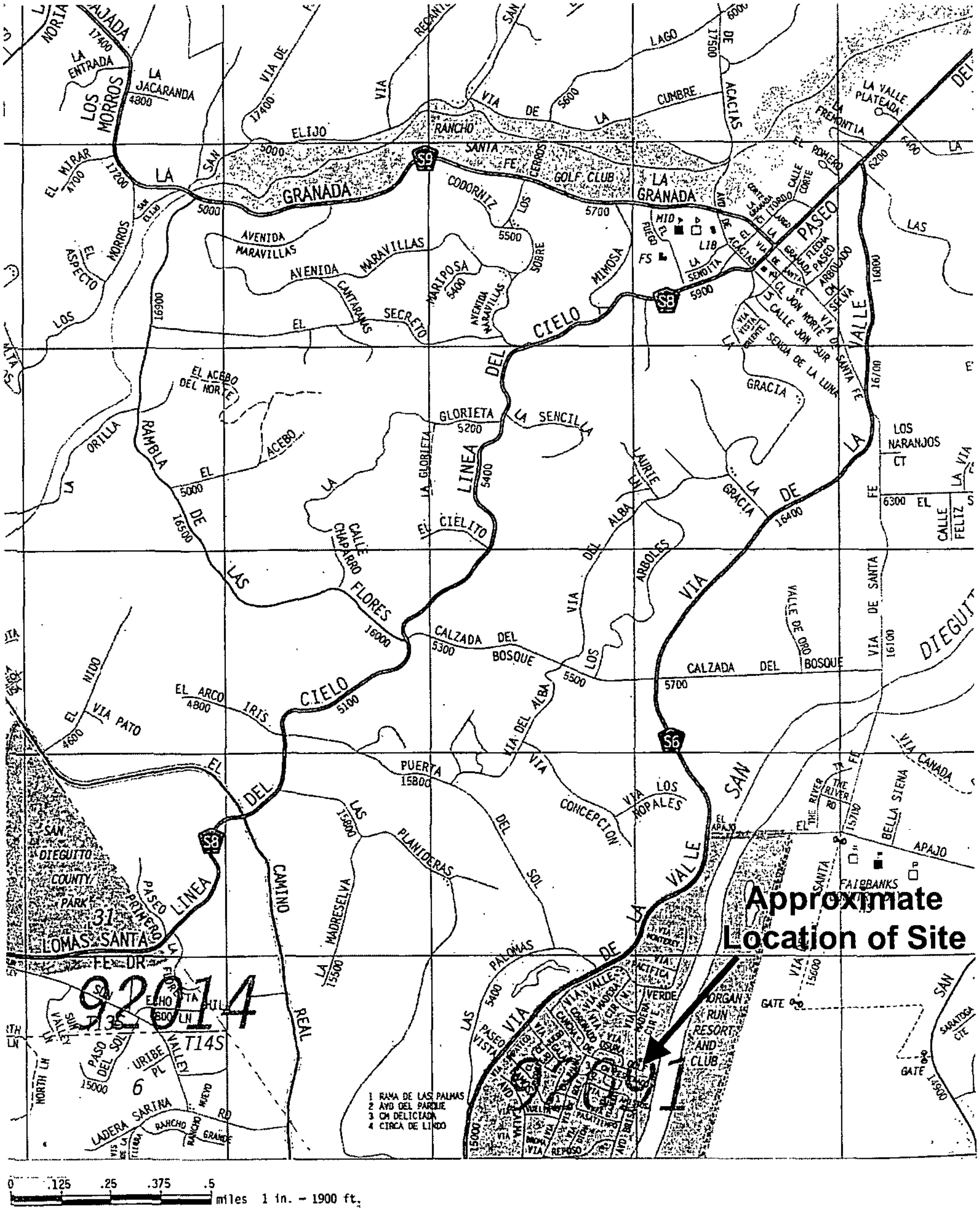
Respectfully Submitted,
GeoTek, Inc.

Todd C. Schmitz,
Project Geologist

Jeffrey P. Blake,
CEG 2248, Exp. 10/31/07
Senior Engineering Geologist

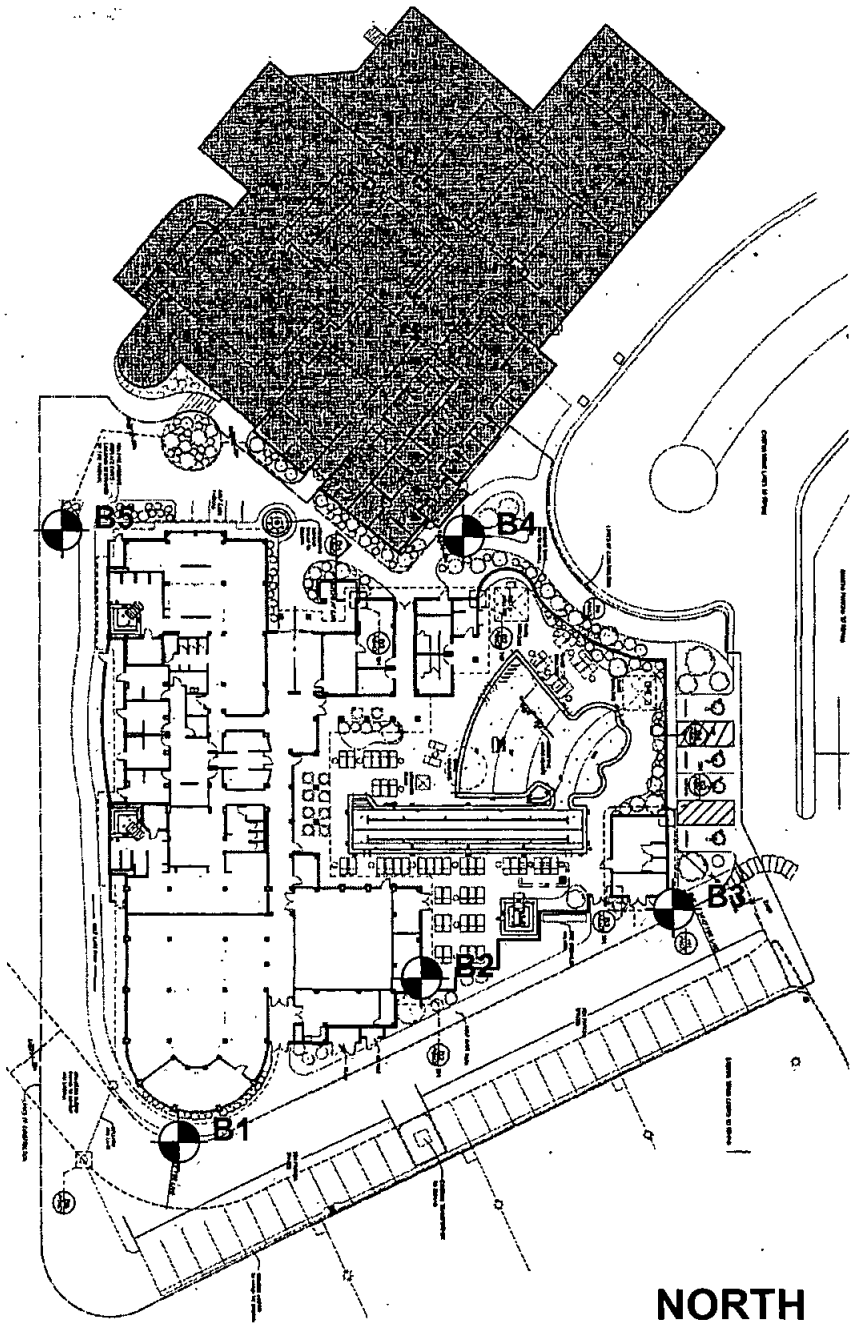
CERTIFIED ENGINEERING GEOLOGIST
JEFFREY P. BLAKE
No. EG 2248
Exp. 10/31/07
STATE OF CALIFORNIA

Distribution: (1) Addressee
Enclosure: Site Location Map
Site Map
Exploratory Boring Logs
G:\Projects\Projects 2000 to 2999\Projects 2950 to 2999\2991 Morgan Run\2991 DEH Boring Submission.doc



Source: Thomas Brothers Guide, 2006 Edition

OLC Architecture Morgan Run Resort and Club Fitness and Spa 5690 Cancha de Golf Rancho Santa Fe, California 92091 *GeoTek Project No.: 2991SD3*	N	**<u>Figure 1</u>** **Site** **Location** **Map**	GEO TEK, INC. 1384 Poinsettia Avenue, Suite A Vista, California 92081-8505



NORTH

LEGEND

B5 Approximate Location of Exploratory Boring

Source: Provided by OLC Architecture

OLC Architecture Morgan Run Resort and Club Fitness and Spa 5690 Cancha de Golf Rancho Santa Fe, California 92091 *GeoTek Project No.: 2991SD3*	**Figure 2** **Exploratory Boring Location Map** (Not to scale)	GEOTEK, INC. 1384 Poinsettia Avenue, Suite A Vista, California 92081-8505

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Ohlson Lavoie Collaborative	**DRILLER:**	Cal-Pac Drilling	**LOGGED BY:**	TCS
PROJECT NAME:	Proposed Morgan Run Resort	**DRILL METHOD:**	8" Hollow Stem	**OPERATOR:**	Andy
PROJECT NO.:	2991SD3	**HAMMER:**	140 lb w/ 30" drop	**RIG TYPE:**	Mobile B-61 w/ autohammer
LOCATION:	See Site Plan			**DATE:**	3/14/2006

BORING NO.: *B-1*

Depth (ft)	Sample Type	Blows/ 6 in	Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Water Content (%)	Dry Density (pcf)	Others
			B1-1	SM	**Fill** Gray-brown, damp to moist, dense, silty fine SAND			
		10 21 36	B1-2	SM	**Alluvium** Gray-brown, damp to moist, dense, silty fine SAND	4.8 6.0	124	SR, EI
5		10 18 31	B1-3			4.6	125	
				GW	*Gray, moist, dense, sandy Gravel with cobble*			
				SM	Gray-brown, damp to moist, dense, silty fine SAND becomes loose to medium dense			
10		5 7 8	B1-4			2.6	100	
15		2 3 4	B1-5	SP/SM	Gray-brown, moist to wet, loose to medium dense, silty fine to medium SAND; micaceous	23.4		5% passing 200 sieve
20		- 2 2	B1-6	SM	Gray-brown, saturated, very loose to loose, silty fine SAND; micaceous	28.6		33% passing 200 sieve
25		2 4 9	B1-7		becomes loose	30.4 25.3	104	24% passing 200 sieve

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	Ohlson Lavoie Collaborative	**DRILLER:**	Cal-Pac Drilling	**LOGGED BY:**	TCS
PROJECT NAME:	*Proposed Morgan Run Resort*	**DRILL METHOD:**	*8" Hollow Stem*	**OPERATOR:**	*Andy*
PROJECT NO.:	2991SD3	**HAMMER:**	140 lb w/ 30" drop	**RIG TYPE:**	Mobile B-61 w/ autohammer
LOCATION:	See Site Plan			**DATE:**	3/14/2006

BORING NO.: *B-1* (continued)

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
30	Ring	- 2 2		SM	Gray-brown, saturated, very loose to loose, silty fine SAND; micaceous	38.7		31% passing 200 sieve
35	Ring	2 3 3		ML	Dark-gray brown, saturated, loose, fine sandy SILT; micaceous			64% passing 200 sieve *Non-Plastic*
40	Ring	2 3 5		SP/SM	Gray, saturated, loose, silty fine to medium SAND			
45	Ring	2 4 5			-same-	39.4		9% passing 200 sieve
50	Ring	3 4 6			becomes loose to medium dense, fine grained	36.1		
55	Ring	5 6 8		SM	Dark-gray, saturated, medium dense, silty fine to medium SAND; shells observed	31.7		27% passing 200 sieve

LEGEND

Sample type: —Ring —SPT —Small Bulk —Large Bulk —No Recovery —Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	Ohlson Lavoie Collaborative	**DRILLER:**	Cal-Pac Drilling	**LOGGED BY:**	TCS
PROJECT NAME:	Proposed Morgan Run Resort	**DRILL METHOD:**	8" Hollow Stem	**OPERATOR:**	Andy
PROJECT NO.:	2991SD3	**HAMMER:**	140 lb w/ 30" drop	**RIG TYPE:**	Mobile B-61 w/ autohammer
LOCATION:	See Site Plan			**DATE:**	3/14/2006

BORING NO.: *B-1* (continued)

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
60		1 2 2		CH	Dark-gray, saturated, soft to medium stiff, silty CLAY			89% passing 200 sieve LL=62, PL=29, PI= 33
65		1 3 4		ML	Dark-gray, saturated, medium stiff, fine sandy SILT; micaceous	43.7		88% passing 200 sieve Non-Plastic
					HOLE TERMINATED AT 66.5 FEET - groundwater observed at 17.5 feet - Hole backfilled with approximately 23 cubic feet of bentonite grout			
70								
75								
80								
85								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	Ohlson Lavoie Collaborative	DRILLER:	Cal-Pac Drilling	LOGGED BY:	TCS
PROJECT NAME:	Proposed Morgan Run Resort	DRILL METHOD:	8" Hollow Stem	OPERATOR:	Andy
PROJECT NO.:	2991SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Mobile B-61 w/ autohammer
LOCATION:	See Site Plan			DATE:	3/14/2006

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	BORING NO.: B-2 — MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
				SM	**Fill** Gray-brown, damp to moist, loose to medium dense, silty fine SAND			
5		7 20 27	B2-1	SM	**Alluvium** Dark-gray brown, damp to moist, medium dense, silty fine SAND; micaceous becomes gray-brown, fine to medium grained			
10		1 3 3	B2-2	SP/SM	Brown, moist to wet, loose, silty fine to medium SAND; micaceous	7.6		
15		2 2 4	B2-3		becomes dark-gray, very loose	26.2		▽
20		1 3 4	B2-4	SM	Dark-brown, saturated, loose, silty fine SAND; micaceous	23		
25		1 2 2	B2-5	SC	Dark-gray, saturated, very loose to loose, clayey fine to medium SAND; micaceous			
				SM	Dark-gray, saturated, loose, silty fine SAND; micaceous			

LEGEND

Sample type: —Ring —SPT —Small Bulk —Large Bulk —No Recovery —Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	Ohlson Lavoie Collaborative	**DRILLER:**	Cal-Pac Drilling	**LOGGED BY:**	TCS
PROJECT NAME:	Proposed Morgan Run Resort	**DRILL METHOD:**	8" Hollow Stem	**OPERATOR:**	Andy
PROJECT NO.:	2991SD3	**HAMMER:**	140 lb w/ 30" drop	**RIG TYPE:**	Mobile B-61 w/ autohammer
LOCATION:	See Site Plan			**DATE:**	3/14/2006

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	**BORING NO.: *B-2* (continued)** MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
30	Ring	1 2 4	B2-6	SM	Dark-gray, saturated, loose, silty fine SAND; micaceous			
					HOLE TERMINATED AT 31.5 FEET - groundwater observed at 15.5 feet - Hole backfilled with approximately 11 cubic feet of bentonite grout			
35								
40								
45								
50								
55								

LEGEND

Sample type: Ring; SPT; Small Bulk; Large Bulk; No Recovery; Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Ohlson Lavoie Collaborative	DRILLER:	Cal-Pac Drilling	LOGGED BY:	TCS
PROJECT NAME:	Proposed Morgan Run Resort	DRILL METHOD:	8" Hollow Stem	OPERATOR:	Andy
PROJECT NO.:	2991SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Mobile B-61 w/ autohammer
LOCATION:	See Site Plan			DATE:	3/14/2006

BORING NO.: *B-3*

Depth (ft)	Sample Type	Blows/ 6 in	Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Water Content (%)	Dry Density (pcf)	Others
				SM	**Fill** Gray-brown, damp to moist, medium dense, silty fine SAND			
	Ring	10 17 25	B3-1	SM	**Alluvium** Gray-brown, moist, medium dense, silty fine SAND; micaceous			
5	Ring	10 23 33	B3-2		becomes dark-brown and dense			
10	Ring	3 7 7	B3-3	SP-SM	Gray-brown, moist, loose, silty fine to medium SAND; micaceous	3.8	97	
15	Ring	2 2 4	B3-4	SM	Dark-brown, wet to saturated, very loose, silty fine SAND; micaceous			▽
					becomes loose and saturated			
20	Ring	1 3 8	B3-5			24.7	81.2	
25	Ring	- 1 2	B3-6	ML	Gray-brown, very soft, saturated, clayey SILT with fine sand; micaceous			
				SM	Dark-gray, saturated, very loose, silty fine SAND; micaceous			

LEGEND

Sample type: ■ —Ring ■ —SPT ▨ —Small Bulk ☒ —Large Bulk □ —No Recovery ▽ —Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	Ohlson Lavoie Collaborative	DRILLER:	Cal-Pac Drilling	LOGGED BY:	TCS
PROJECT NAME:	Proposed Morgan Run Resort	DRILL METHOD:	8" Hollow Stem	OPERATOR:	Andy
PROJECT NO.:	2991SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Mobile B-61 w/ autohammer
LOCATION:	See Site Plan			DATE:	3/14/2006

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	BORING NO.: *B-3* (continued) — MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
30		2 2 5	B3-7	SM	Dark-gray, saturated, very loose, silty fine SAND; micaceous			
35		1 4 4	B3-8	ML	Dark-gray, saturated, loose, fine sandy SILT; micaceous			
40		4 6 7	B3-9	SM	Dark-gray, loose, saturated, silty fine SAND; micaceous			
45		1 1 2	B3-10		-same-			
50		1 2 3	B3-11	ML	Dark-gray, saturated, medium stiff, clayey SILT with fine sand			
55					HOLE TERMINATED AT 51.5 FEET - groundwater observed at 16.0 feet - Hole backfilled with approximately 18 cubic feet of bentonite grout			

LEGEND

Sample type: —Ring —SPT —Small Bulk —Large Bulk —No Recovery —Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	Ohlson Lavoie Collaborative	DRILLER:	Pacific Drilling	LOGGED BY:	TCS
PROJECT NAME:	Proposed Morgan Run Resort	DRILL METHOD:	6" Hollow Stem Auger	OPERATOR:	Steve G
PROJECT NO.:	2991SD3	HAMMER:	140 lbs/ 30in	RIG TYPE:	Limited Access Mole Rig
LOCATION:	See Site Plan			DATE:	3/17/2006

BORING NO.: *B-4*

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
			B4-1	SM	**Fill** Dark-brown, moist, loose, silty fine SAND			
		24 31 35	B4-2	SP	**Alluvium** Light-brown, moist, dense, fine to medium SAND; micaceous	9.0	119	
5		19 30	B4-3	SM	Brown, moist, dense, silty fine to medium SAND; micaceous *Sampler bouncing on cobble*			
10		2 3 5	B4-4		becomes loose, saturated			
15		4 4 8	B4-5		becomes dark-brown	26.7	129	▽
20		2 3 4	B4-6		-same-			
25		3 3 5	B4-7		-same-			

LEGEND

Sample type: —Ring —SPT —Small Bulk —Large Bulk —No Recovery —Water Table

Lab testing: AL = Atterberg Limits; SR = Sulfate/Resistivity Test; EI = Expansion Index; SH = Shear Test; SA = Sieve Analysis; CO = Consolidation test; RV = R-Value Test; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	Ohlson Lavoie Collaborative	DRILLER:	Cal-Pac Drilling	LOGGED BY:	TCS
PROJECT NAME:	Proposed Morgan Run Resort	DRILL METHOD:	8" Hollow Stem	OPERATOR:	Steve G
PROJECT NO.:	2991SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Mobile B-61 w/ autohammer
LOCATION:	See Site Plan			DATE:	3/14/2006

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	BORING NO.: *B-4* (continued) — MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
30		2						
		3		SC	Dark-gray, saturated, medium stiff, clayey fine SAND; micaceous			
		3	B4-8					
					HOLE TERMINATED AT 31.5 FEET - groundwater observed at 15.5 feet - Hole backfilled with approximately 11 cubic feet of bentonite grout			
35								
40								
45								
50								
55								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	Ohlson Lavoie Collaborative	**DRILLER:**	Pacific Drilling	**LOGGED BY:**	TCS
PROJECT NAME:	Proposed Morgan Run Resort	**DRILL METHOD:**	6" Hollow Stem Auger	**OPERATOR:**	Steve G
PROJECT NO.:	2991SD3	**HAMMER:**	140 lbs/ 30in	**RIG TYPE:**	Limited Access Mole Rig
LOCATION:	See Site Plan			**DATE:**	3/17/2006

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	BORING NO.: *B-5* — MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
			B5-1	SM	**Fill** Gray-brown, damp to moist, loose, silty fine SAND			
				SP/SM	**Alluvium** Light-brown, moist, loose, slightly silty fine to medium SAND; micaceous, laminated, mottled dark gray			
5		5 7 7	B5-2					
10		2 2 3	B5-3	SM	Dark-brown, saturated, loose, silty fine SAND; micaceous			▽
15		1 2 3	B5-4	SC	Dark-gray, saturated, medium stiff, clayey fine SAND; micaceous			
20		1 2 2	B5-5	SM	Dark-gray, saturated, loose silty fine SAND; micaceous			
25		2 4 7	B5-6		becomes medium dense			
					HOLE TERMINATED AT 21.5 FEET - groundwater observed at 12.0 feet - Hole backfilled with approximately 7 cubic feet of bentonite grout			

LEGEND

Sample type: —Ring —SPT —Small Bulk —Large Bulk —No Recovery —Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Anelysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GEOTEK, INC.
1384 Poinsetta Ave., Suite A
Vista, CA 92081-8505
(760) 599-0509 FAX (760) 599-0593

Geotechnical
Environmental
Materials

RECEIVED
2005 FEB 25 AM 7 50
D. E. H.
MAILROOM

February 23, 2005
Project No.: 2661SD3

COUNTY OF SAN DIEGO
Department of Environmental Health
Land and Water Quality Division, Well Permit Desk
P.O. Box 128261
San Diego, California 92112-9281

Attention: Ernesto L. Profeta

Subject: 60-Day Permit Report
Helen Woodward Animal Center
6461 El Apajo Road & 6525 Calle Del Nido
APNs: 269-080-05, 09
Rancho Santa Fe, California 92067

Reference: County of San Diego DEH Permit #: LMON102461, EST #:H20754, dated 8/11/04.

We are providing herewith boring logs and location plan for the subject site. A total of eighteen auger borings were drilled at the site between August 17 and August 19, 2004. Fourteen 8.5" diameter hollow-stem auger borings were drilled to a maximum depth of approximately 50.5 feet below existing ground surface (bgs) by Scott's Drilling between August 17 and August 18, 2004. Four 6.0" diameter solid-stem auger borings were drilled to a maximum depth of approximately 12.5 feet bgs by South Coast Drilling on August 19, 2004. The auger boring locations are illustrated on attached Figure 2. After completion, each boring was immediately destroyed by backfilling with an appropriate sealing material from the bottom to ground surface. Borings greater than 30 feet in depth were backfilled using the tremmie method. Boring logs, including the type and volume of sealing material, are attached. If you have any questions concerning this report, please do not hesitate to contact the undersigned.

Respectfully Submitted,
GeoTek, Inc.

Todd C. Schmitz,
Project Geologist

CERTIFIED ENGINEERING GEOLOGIST
JEFFREY P. BLAKE
No. EG 2248
Exp. 10/31/05
STATE OF CALIFORNIA

Jeffrey P. Blake
CEG 2248, Exp. 10/31/05
Geotechnical Department Manager

Distribution: (2) Addressee
Enclosure: Site Location Map
Site Map
Exploratory Boring Logs

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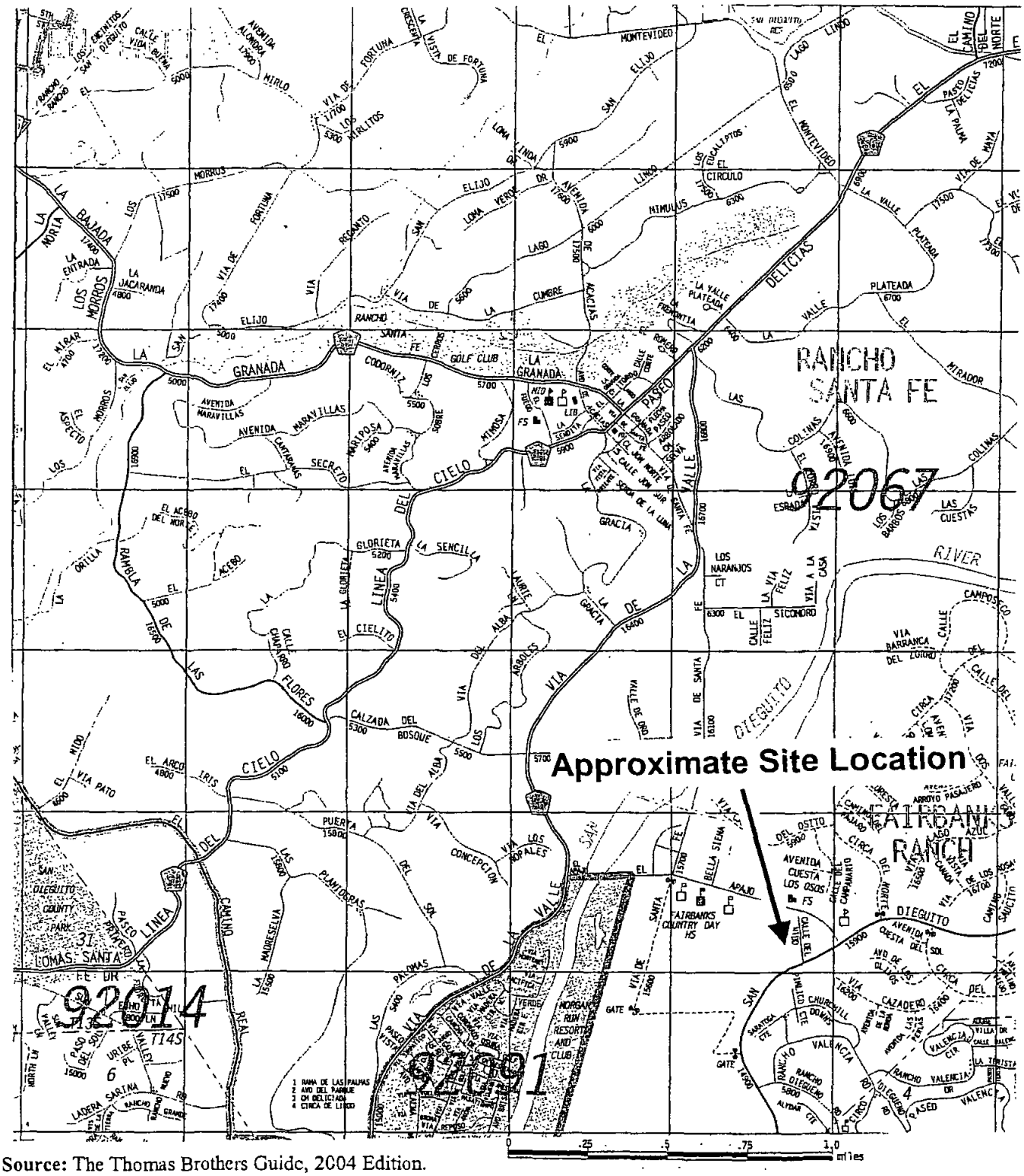

Source: The Thomas Brothers Guide, 2004 Edition.

Helen Woodward Animal Center
6461 El Apajo Road
6525 Calle Del Nido
Rancho Santa Fe, California 92067

Project Number 2661SD3

FIGURE 1

Site Location Map

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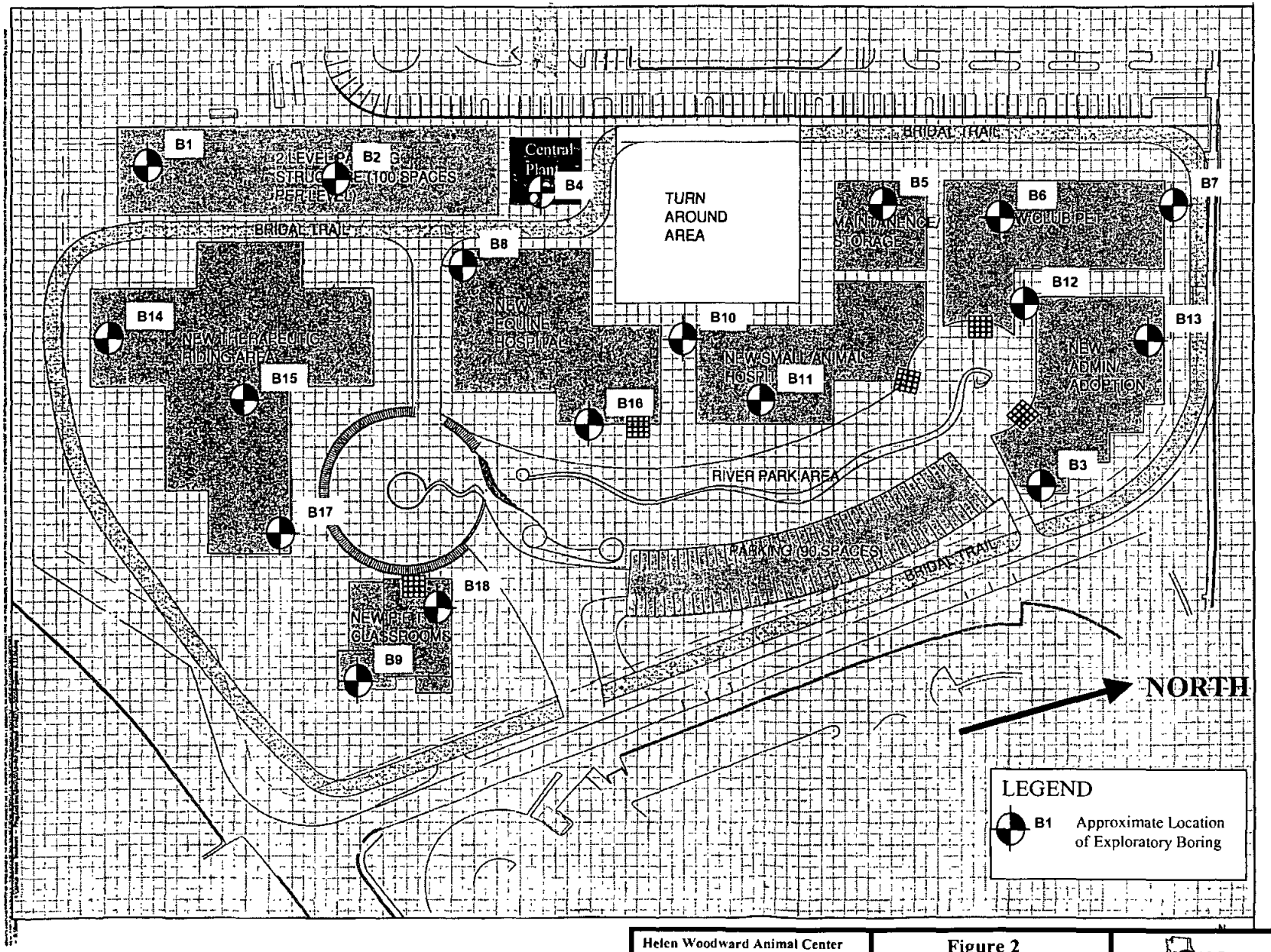
GEO TEK, INC.

1384 Poinsettia Avenue, Suite A
Vista, California 92081-8505



Base Map Provided by Tucker, Sadler, Noble Architects.

Helen Woodward Animal Center
6461 El Apajo Road
6525 Calle Del Nido
Rancho Santa Fe, California 92067

PN. 2661SD3 | August, 2004

Figure 2

Exploratory Boring Location Plan
(Not to Scale)

GEO TEK, INC.
1384 Poinsettia Avenue, Suite A
Vista, California 92083

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	DRILLER:	Scotts Drilling	LOGGED BY:	TCS
PROJECT NAME:	Helen Woodward Animal Center	DRILL METHOD:	8" Hollow Stem Auger	OPERATOR:	Kimball
PROJECT NO.:	2661-SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Ingersol Rand A- 300
LOCATION:	See Site Plan			DATE:	8/18/2004

BORING NO.: *B-1*

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
				SM	**FILL** Olive-grey, damp to moist, medium dense, silty fine to coarse SAND with gravel			
5		1 3 3		CL	**Alluvium** Dark-grey brown, moist, medium stiff, silty CLAY with sand; micaceous - @ 6.0 becomes saturated			▽
				SM	Grey-brown, saturated, very loose. Silty SAND; micaceous			
10	■	2 4	B1-1					
	■	8	B1-2	CL	Grey-brown, saturated, stiff, Sandy CLAY; micaceous	30.2	96	
15		3 6 9						
20	■	5 8 8	B1-3	SM	Grey-brown, saturated, loose, silty fine SAND; micaceous	23.7	99.1	
25					HOLE TERMINATED AT 21.5 FEET - groundwater observed @ 8 feet - Hole backfilled with Bentonite chips/grout (8.3 cubic feet)			

LEGEND

Sample type: ■ ---Ring ▮ ---SPT ⧄ ---Small Bulk ☒ ---Large Bulk ☐ ---No Recovery ▽ ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	DRILLER:	Scotts Drilling	LOGGED BY:	TCS
PROJECT NAME:	Helen Woodward Animal Center	DRILL METHOD:	8" Hollow Stem Auger	OPERATOR:	Kimball
PROJECT NO.:	2661-SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Ingersol Rand A- 300
LOCATION:	See Site Plan			DATE:	8/18/2004

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	BORING NO.: B-2 — MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
				SM	**FILL** Olive-grey, damp to moist, medium dense, silty fine to coarse SAND with gravel			
		2 3 3	B2-1	SM	**Alluvium** *Grey-brown, damp to moist, loose, silty fine SAND; micaceous*			
5		1 1 1	B2-2	CL	Dark-grey brown, saturated, very soft, fine sandy CLAY; micaceous			▽
10		1 3 3	B2-3	SM	Grey-brown, saturated, loose sandy SILT with clay; micaceous			
15		4 7 10	B2-4			28.6	95	
					HOLE TERMINATED AT 16.5 FEET - groundwater observed @ 6.0 feet - Hole backfilled with Bentonite chips/grout (6.3 cubic feet)			
20								
25								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	**DRILLER:**	SouthCoast Drilling	**LOGGED BY:**	TCS
PROJECT NAME:	Helen Woodward Animal Center	**DRILL METHOD:**	6" Solid Stem Auger	**OPERATOR:**	Roger
PROJECT NO.:	2661-SD3	**HAMMER:**	140 lb w/ 30" drop	**RIG TYPE:**	Limited Access w/cathead
LOCATION:	See Site Plan			**DATE:**	8/19/2004

BORING NO.: *B-3*

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
			B3-1	SC	**FILL** Grey-brown, wet, loose, clayey SAND			
		5 8 10	B3-2a B3-2b	SM	**Alluvium** Dark-grey brown, wet to saturated, loose silty fine SAND; micaceous			
5		3 5 8 2	B3-3a B3-3b		@ 5.0 ' : becomes grey-brown	▽ 23.7	10.6	
		3 5	B3-4	SC	Grey-brown, saturated, loose, clayey fine SAND			
10					HOLE TERMINATED AT 8.0 FEET - groundwater observed @ 5.0 feet - Hole backfilled with Bentonite chips/grout (1.6 cubic feet) - Caving observed @ 6.0 feet			
15								
20								
25								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	DRILLER:	Scotts Drilling	LOGGED BY:	TCS
PROJECT NAME:	Helen Woodward Animal Center	DRILL METHOD:	8" Hollow Stem Auger	OPERATOR:	Kimball
PROJECT NO.:	2661-SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Ingersol Rand A- 300
LOCATION:	See Site Plan			DATE:	8/17/2004

BORING NO.: *B-4*

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
					2.5 " AC			
			B4-1	SM	**FILL** Olive-grey, moist, loose, silty fine to coarse SAND with gravel			
		9 8 9	B4-2	SM	**Alluvium** Grey-brown, moist to wet, loose, silty fine SAND; micaceous	15.8	106	
5		3 4 5	B4-3		- @ 6.5 becomes saturated	▽		
10		2 3 3	B4-4	ML	Grey-brown, wet to saturated, loose, sandy SILT with clay; micaceous	19.4		
15		6 9 7	B4-5	SM	Grey-brown, saturated, medium dense, silty fine SAND; micaceous			
20		1 1 1	B4-6	ML	Grey-brown, saturated, very loose, sandy SILT with clay; micaceous			48% Passing 200
25		3 5 6	B4-7a B4-7b		@ 25.0 ' : becomes loose			
					HOLE TERMINATED AT 26.5 FEET - groundwater observed @ 8.0 feet - Hole backfilled with Bentonite chips/grout (10.2 cubic feet)			

LEGEND

Sample type: —Ring —SPT —Small Bulk —Large Bulk —No Recovery —Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	DRILLER:	South Coast Drilling	LOGGED BY:	TCS
PROJECT NAME:	Helen Woodward Animal Center	DRILL METHOD:	6" Solid Stem Auger	OPERATOR:	Roger
PROJECT NO.:	2661-SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Limited Access w/cathead
LOCATION:	See Site Plan			DATE:	8/19/2004

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	BORING NO.: *B-5* — MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
				SM	**Fill** Brown, damp, loose, silty fine to medium SAND			
		6 9 16	B5-1	SM	**Alluvium** Grey-brown, moist, medium dense silty fine SAND; micaceous	26.3		
5		2 3 4	B5-2	ML	Grey-brown, wet to saturated, loose, clayey SILT with sand; micaceous	▽ 15.6	111	
		3 4 7	B5-3	SP	Light-grey brown, saturated, medium dense, fine to medium SAND with silt; micaceous			
10					HOLE TERMINATED AT 9.5 FEET - groundwater observed @ 5.5 feet - Hole backfilled with Bentonite chips/grout (1.9 cubic feet) - Caving observed @ 6.0 feet			
15								
20								
25								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	**DRILLER:**	South Coast Drilling	**LOGGED BY:**	TCS
PROJECT NAME:	Helen Woodward Animal Center	**DRILL METHOD:**	6" Solid Stem Auger	**OPERATOR:**	Roger
PROJECT NO.:	2661-SD3	**HAMMER:**	140 lb w/ 30" drop	**RIG TYPE:**	Limited Access w/cathead
LOCATION:	See Site Plan			**DATE:**	8/19/2004

BORING NO.: *B-6*

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
				SM	**FILL** Grey-brown, damp, medium dense, silty SAND			
		6 12 16	B6-1	ML	**Alluvium** Grey-brown, moist, medium dense, fine sandy SILT; micaceous	22.9	110	
5		7 8 10	B6-2	SM	Grey-brown, moist to wet, medium dense, silty fine sand; micaceous @ 6.0 ' : becomes saturated	▽ 10.5	108	
10		4 5 6	B6-3		@ 8.0 ' : becomes fine to medium grained			
15 20 25					HOLE TERMINATED AT 12.5 FEET - groundwater observed @ 6.0 feet - Hole backfilled with Bentonite chips/grout (2.5 cubic feet) - Caving observed @ 10.5 feet			

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	DRILLER:	Scotts Drilling	LOGGED BY:	TCS
PROJECT NAME:	Helen Woodward Animal Center	DRILL METHOD:	8" Hollow Stem Auger	OPERATOR:	Kimball
PROJECT NO.:	2661-SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Ingersol Rand A- 300
LOCATION:	See Site Plan			DATE:	8/17/2004

BORING NO.: *B-7*

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
					2.5 " AC			
					Fill			
				SM	Dark-grey brown, damp to moist, loose, silty fine SAND; micaceous			
			B7-1		**Alluvium**			
		7		SM	Dark-grey brown, dry to moist, loose, silty fine SAND; micaceous			
		8						
		8	B7-2			18.4	105	
5		1			@ 5.0 ' : becomes moist to wet			
		2						
		4	B7-3			21.9	98.3	
								▽
10		1	B7-4					
		1						
		1	B7-5	ML	Dark-grey brown, saturated, very soft, clayey SILT with fine sand; micaceous			
15		6		SM	Grey-brown, saturated, medium dense, silty fine sand; micaceous	27		30 % Passing 200
		11						
		13	B7-6					
20		1		ML	Grey-brown, wet to saturated, very soft, clayey SILT; micaceous			
		1						
		1						
				SM	Grey-brown, wet to saturated, loose silty fine SAND; micaceous			
25		1						46 % Passing 200
		3						
		4	B7-7					

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	DRILLER:	Scotts Drilling	LOGGED BY:	TCS
PROJECT NAME:	Helen Woodward Animal Center	DRILL METHOD:	8" Hollow Stem Auger	OPERATOR:	Kimball
PROJECT NO.:	2661-SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Ingersol Rand A- 300
LOCATION:	See Site Plan			DATE:	8/17/2004

BORING NO.: *B-7* (continued)

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
30		3 4 5			No recovery due to saturation			
35		5 11 11		ML	Dark-grey, saturated, medium dense, fine sandy SILT; micaceous			67% Passing 200
				SM	*Dark grey, wet, medium dense, silty fine SAND;micaceous*			
40		1 2 3	B7-9	ML	Dark-grey, saturated, medium stiff, clayey SILT; laminated			LL = 40; PI = 8
45		5 4 5	B7-10		@ 45' : becomes stiff			
		2 3		SM	Grey, saturated, loose, silty SAND			
50		4	B7-11	ML	Dark grey, saturated, medium stiff, clayey SILT			
					HOLE TERMINATED AT 50.5 FEET - groundwater observed @ 8.0 feet - Hole backfilled with Bentonite chips/grout (19.4 cubic feet)			
55								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	DRILLER:	Scotts Drilling	LOGGED BY:	TCS
PROJECT NAME:	Helen Woodward Animal Center	DRILL METHOD:	8" Hollow Stem Auger	OPERATOR:	Kimball
PROJECT NO.:	2661-SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Ingersol Rand A- 300
LOCATION:	See Site Plan			DATE:	8/18/2004

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	BORING NO.: *B-8* — MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
					3" AC			
				SM	**FILL** Olive grey, moist, dense, silty fine to coarse SAND with gravel; (import)			
		33 36 38	B8-1					
5		16 17 14	B8-2		@ 5.0 ' : becomes medium dense	9.1	125	
				SM	**Alluvium** Dark grey, saturated, loose, silty fine SAND with clay; micaceous			
10		2 2 5	B8-3			▽		27 2 % Passing 200
15		1 3 5	B8-4	ML	Dark-grey brown, saturated, medium stiff to stiff, clayey SILT with fine sand; micaceous			LL=37; PI=13
20		1 1 3	B8-5	SM	Dark-grey brown, saturated, very loose, silty fine SAND; micaceous			
25					HOLE TERMINATED AT 21.5 FEET - groundwater observed @ 10.0 feet - Hole backfilled with Bentonite chips/grout (8.3 cubic feet)			

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	**DRILLER:**	Scotts Drilling	**LOGGED BY:**	TCS
PROJECT NAME:	Helen Woodward Animal Center	**DRILL METHOD:**	8" Hollow Stem Auger	**OPERATOR:**	Kimball
PROJECT NO.:	2661-SD3	**HAMMER:**	140 lb w/ 30" drop	**RIG TYPE:**	Ingersol Rand A- 300
LOCATION:	See Site Plan			**DATE:**	8/18/2004

BORING NO.: *B-9*

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
					3' AC			
				SM	**Fill** Olive-grey, damp to moist, medium dense, silty fine to coarse SAND wi @ 1.5 ' : becomes grey			
		22 27 24	B9-1			13.2	89	
5								
				CL	**Alluvium** Dark-grey brown, wet to saturated, medium stiff, silty CLAY with sand			
10		1 2 3	B9-2			29.4		
15		1 1 3	B9-3					LL=49; PI=24
20		3 6 7	B9-4	SM	Grey -brown, saturated, medium dense, silty fine SAND			
25					HOLE TERMINATED AT 30 FEET - groundwater observed @15 feet - Hole backfilled with Bentonite chips/grout (11.5 cubic feet)			
		1 3 4	B9-5		@ 28.5 ': becomes loose			

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	DRILLER:	Scotts Drilling	LOGGED BY:	TCS
PROJECT NAME:	Helen Woodward Animal Center	DRILL METHOD:	8" Hollow Stem Auger	OPERATOR:	Kimball
PROJECT NO.:	2661-SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Ingersol Rand A- 300
LOCATION:	See Site Plan			DATE:	8/18/2004

BORING NO.: *B-10*

Depth (ft)	Sample Type	Blows/ 6 in	Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Water Content (%)	Dry Density (pcf)	Others
					2.5" AC/2" Base			
					Alluvium			
				SM	Dark-grey brown, damp to moist, loose, silty fine SAND; micaceous			
		9 8 9	B10-1		@ 3.0 ' : becomes wet	31.3		
5		2 2 5	B10-2		@ 5.0 ' : becomes very loose	21.3		
10		2 1 1	B10-3	CL	Grey-brown, saturated, very soft, silty CLAY with sand; micaceous			
15		5 6 3	B10-4	SM	Brown to grey-brown, saturated, loose, silty fine to medium SAND; micaceous			
20		push 1	B10-5					
		1	B10-6	CL	Dark-grey brown, saturated, very soft, silty CLAY with sand; micaceous			
25		2 3 3	B10-7	ML	Grey-brown, saturated, loose, fine sandy SILT; micaceous			
					HOLE TERMINATED AT 26.5 FEET - groundwater observed @ 10 feet - Hole backfilled with Bentonite chips/grout (10.2 cubic feet)			

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	**DRILLER:**	South Coast Drilling	**LOGGED BY:**	TCS
PROJECT NAME:	Helen Woodward Animal Center	**DRILL METHOD:**	6" Solid Stem Auger	**OPERATOR:**	Roger
PROJECT NO.:	2661-SD3	**HAMMER:**	140 lb w/ 30" drop	**RIG TYPE:**	Limited Access w/cathead
LOCATION:	See Site Plan			**DATE:**	8/19/2004

BORING NO.: *B-11*

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
				SM	**FILL** Grey-brown, damp to moist, loose, silty fine to medium SAND			
		2 2 5	B11-1	SM	**Alluvium** Dark-grey brown, very loose, moist to wet, silty fine SAND; micaceous	23.5	91	
5		3 4 6						▽
		2 2 4	B11-2		@ 7.0 ' : becomes grey-brown	17.5		
10					HOLE TERMINATED AT 8.5 FEET - groundwater observed @ 7.0 feet - Hole backfilled with Bentonite chips/grout (1.7 cubic feet) - Caving observed @ 7.0 feet			
15								
20								
25								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	DRILLER:	Scotts Drilling	LOGGED BY:	TCS
PROJECT NAME:	Helen Woodward Animal Center	DRILL METHOD:	8" Hollow Stem Auger	OPERATOR:	Kimball
PROJECT NO.:	2661-SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Ingersol Rand A- 300
LOCATION:	See Site Plan			DATE:	8/17/2004

BORING NO.: *B-12*

Depth (ft)	Sample Type	Blows/ 6 in	Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Water Content (%)	Dry Density (pcf)	Others
					3" AC / 3" Base			
				SM	**Alluvium** Dark-grey to black, damp to moist, medium dense, fine sandy silt; micaceous			
		9 15 19	B12-1			14.9	115	
5		3 4 5	B12-2		@ 5.0 ' : becomes grey, wet, loose	26.1	87	
				SP	Grey, wet, loose, fine to medium SAND; micaceous			▽
10		1 1 3	B12-3	ML	Grey, saturated, loose, fine sandy SILT; micaceous			
15		3 7 10	B12-4	SM	Grey-brown, saturated, medium dense, silty fine SAND			
20		1 2 2	B12-5		@ 20.0 ' : becomes grey, loose			
25					HOLE TERMINATED AT 21.5 FEET - groundwater observed @ 8 feet - Hole backfilled with Bentonite chips/grout (8.3 cubic feet)			

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	**DRILLER:**	Scotts Drilling	**LOGGED BY:**	TCS
PROJECT NAME:	Helen Woodward Animal Center	**DRILL METHOD:**	8" Hollow Stem Auger	**OPERATOR:**	Kimball
PROJECT NO.:	2661-SD3	**HAMMER:**	140 lb w/ 30" drop	**RIG TYPE:**	Ingersol Rand A- 300
LOCATION:	See Site Plan			**DATE:**	8/17/2004

BORING NO.: *B-13*

Depth (ft)	SAMPLES: Sample Type	Blows/ 6 in	Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Dry Density (pcf)	Others
					2.5"AC / 3" Base			
					Alluvium			
				SM	Dark-grey, brown, moist, loose, silty fine SAND; micaceous			
		3 7 8	B13-1					
5		4 4 5	B13-2		@ 5.0': becomes wet	19.7	96	▽
10		1 1 2	B13-3	SP	Dark-grey, saturated, very loose, fine to medium SAND; micaceous			
				SC	Dark grey, saturated, very loose, clayey fine SAND; micaceous			
15		3 6 8	B13-4	SM	Dark-grey, saturated, medium dense, silty fine SAND; micaceous			
20		2 2 3	B13-5		@ 20.0 ' : becomes very loose, fine to medium grained			
25		3 7 14	B13-6		@ 25.0': becomes medium dense			
					HOLE TERMINATED AT 26.5 FEET - groundwater observed @ 6 feet - Hole backfilled with Bentonite chips/grout (10.2 cubic feet)			

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	**DRILLER:**	Scotts Drilling	**LOGGED BY:**	TCS
PROJECT NAME:	Helen Woodward Animal Center	**DRILL METHOD:**	8" Hollow Stem Auger	**OPERATOR:**	Kimball
PROJECT NO.:	2661-SD3	**HAMMER:**	140 lb w/ 30" drop	**RIG TYPE:**	Ingersol Rand A- 300
LOCATION:	See Site Plan			**DATE:**	8/18/2004

BORING NO.: *B-14*

Depth (ft)	Sample Type	Blows/ 6 in	Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Water Content (%)	Dry Density (pcf)	Others
					Landscaping			
			B14-1		**Fill** Grey-brown, damp to moist, medium dense, silty fine to coarse SAND with gravel and cobbles			
		50/6			- no recovery due to cobble			
					Alluvium			
5		9		SM	Dark-grey brown, saturated, medium dense, silty fine SAND; micaceous			
		11	B14-2					
		10	B14-3			21.6	100	▽
10		1						
		2		SP	Dark-grey, saturated, very loose fine to medium SAND; micaceous			
		2	B14-4	SM	Dark-grey brown, moist, loose to medium dense, silty fine SAND; micaceous			
					HOLE TERMINATED AT 11.5 FEET - groundwater observed @ 6.0 feet - Hole backfilled with Bentonite chips/grout (4.4 cubic feet)			
15								
20								
25								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	DRILLER:	Scotts Drilling	LOGGED BY:	TCS
PROJECT NAME:	Helen Woodward Animal Center	DRILL METHOD:	8" Hollow Stem Auger	OPERATOR:	Kimball
PROJECT NO.:	2661-SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Ingersol Rand A- 300
LOCATION:	See Site Plan			DATE:	8/18/2004

BORING NO.: *B-15*

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
					2.5"AC			
				SM	**Fill** Olive-grey, moist, dense, silty fine to coarse SAND with gravel			
		9 26 29	B15-1			7.8	132	
5		15 24 13	B15-2		@ 5.0' : becomes medium dense	8.8	135	
				ML	**Alluvium** Dark-grey, wet, medium stiff, clayey SILT with sand; micaceous			
10		3 3 5	B15-3	CL	Grey, saturated, medium stiff, silty CLAY with sand; micaceous, orange to tan mottling			
15		1 3 4	B15-4		@ 15.0' : becomes grey-brown			LL=52; PI=26
20		6 11 6	B15-5	SM	Grey-brown, saturated, loose, silty fine SAND; micaceous			
25					HOLE TERMINATED At 21.5 FEET - groundwater observed @ 14 feet - Hole backfilled with Bentonite chips/grout (8.3 cubic feet)			

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	DRILLER:	Scotts Drilling	LOGGED BY:	TCS
PROJECT NAME:	Helen Woodward Animal Center	DRILL METHOD:	8" Hollow Stem Auger	OPERATOR:	Kimball
PROJECT NO.:	2661-SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Ingersol Rand A- 300
LOCATION:	See Site Plan			DATE:	8/18/2004

BORING NO.: *B-16*

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
					2.5"AC			
					Fill			
					Olive-grey, moist, dense, silty fine to coarse, SAND with gravel			
					Alluvium			
		7		SM	Grey-brown, loose, moist, silty fine SAND; micaceous			
		7						
		8	B16-1		@ 3.0': becomes saturated	19.9	99	
5		3		SM				▽
		3			Dark-grey brown, very loose, wet, silty fine SAND with clay; micaceous			
		3	B16-2			20.1	104	
10		2						
		3						
		3	B16-3					
15		4			@ 15.0' : becomes grey-brown, medium dense			
		9						
		5	B16-4					
20		1			@ 20.0' : becomes very loose			
		1		CL	Grey-brown, saturated, very soft, Silty CLAY with fine sand; micaceous			
		1	B16-5					
25		3		SM	Grey-brown, Saturated, loose, silty fine SAND; micaceous, laminated			
		4						
		5	B16-6					
					HOLE TERMINATED AT 26.5 FEET			
					- groundwater observed @ 5.0 feet - Hole backfilled with Bentonite chips/grout (10.2 cubic feet)			

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	DRILLER:	Scotts Drilling	LOGGED BY:	TCS
PROJECT NAME:	Helen Woodward Animal Center	DRILL METHOD:	8" Hollow Stem Auger	OPERATOR:	Kimball
PROJECT NO.:	2661-SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Ingersol Rand A- 300
LOCATION:	See Site Plan			DATE:	8/18/2004

BORING NO.: *B-17*

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
					3.0" AC			
				SM	**Fill** Olive-grey, moist, dense, silty fine to coarse, SAND with gravel			
	■	8 10 12	B17-1	SM	**Alluvium** Dark-grey brown, wet to saturated, medium dense, silty fine SAND; micaceous	21.2	103	
5	☒		B17-2			▽		
10	■	2 4 6	B17-3	CL	Dark-grey brown, saturated, stiff, silty CLAY with fine sand; micaceous	21.3	107	
	☒		B17-4					
15	□	1 4 6	B17-5		(No recovery)			
20	■	1 1 4	B17-6	SM	Dark brown, wet, very loose, silty fine SAND; micaceous			
25					HOLE TERMINATED AT 21.5 FEET - groundwater observed @ 8.0 feet - Hole backfilled with Bentonite chips/grout (8.3 cubic feet)			

LEGEND

Sample type: ■ ---Ring ■ ---SPT ▨ ---Small Bulk ☒ ---Large Bulk □ ---No Recovery ▽ ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resistivity Test; SH = Shear Test; CO = Consolidation test; MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	Helen Woodward Animal Center	DRILLER:	Scotts Drilling	LOGGED BY:	TCS
PROJECT NAME:	Helen Woodward Animal Center	DRILL METHOD:	8" Hollow Stem Auger	OPERATOR:	Kimball
PROJECT NO.:	2661-SD3	HAMMER:	140 lb w/ 30" drop	RIG TYPE:	Ingersol Rand A- 300
LOCATION:	See Site Plan			DATE:	8/18/2004

BORING NO.: *B-18*

Depth (ft)	Sample Type	Blows/ 6 in	Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Water Content (%)	Dry Density (pcf)	Others
					3.0" AC			
				SM	**Fill** Olive-grey, moist, dense, silty fine to coarse, SAND with gravel (import)			
				CL	Brown, moist, stiff, fine sandy CLAY			
		6						
		8			**Alluvium**			
		8	B18-1	SM	Dark-grey brown, wet, loose, silty fine SAND; micaceous			
5								
10		3		ML	Grey-brown, moist to wet, loose, sandy SILT with clay; micaceous			
		4						
		5	B18-2			28.2	98.1	
15		1		SM	Grey-brown, saturated, loose, silty fine SAND with clay; micaceous			
		2						
		4	B18-3					
20		1			@ 20.0' : becomes very loose			
		1						45% Passing 200
		1	B18-4					
				ML	Grey-brown, saturated, medium stiff, clayey SILT with sand; micaceous			
25		3						
		4	B18-5					
		5	B18-6	CL	Grey-brown, saturated, medium stiff, silty CLAY with fine sand			LL=43; PI=19
					HOLE TERMINATED AT 26.5 FEET - groundwater observed @ 13 feet - Hole backfilled with Bentonite chips/grout (10.2 cubic feet)			

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; SR = Sulfate/Resistivity Test; EI = Expansion Index; SH = Shear Test; SA = Sieve Analysis; CO = Consolidation test; RV = R-Value Test; MD = Maximum Density

ATC ASSOCIATES INC.

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D. E. H.
MAILROOM

August 3, 2004

Ernie Profeta
County of San Diego
Department of Environmental Health
Land and Water Quality Division
P.O. Box 129261
San Diego, California 92112-9261

RE: Soil Boring Report
Polo Plaza
3702 and 3790 Via De La Valle
Del Mar, California 92014
Permit # LMON102393 **EST #** None **A.P.N. #** 302-210-30 and -40

Dear Mr. Profeta:

On July 14, 2004, ATC Associates Incorporated (ATC) supervised the advancement of four soil borings (SB-1 through SB-4) in the approximate locations illustrated on Figure 1. The soil borings were advanced utilizing a direct-push Strataprobe drill-rig equipped with 2-inch diameter rods operated by H&P Mobile Geochemistry. Soil borings SB-1, SB-2, SB-3, and SB-4 were drilled to maximum explored depth of approximately 20, 24, 14, and 20 feet below ground surface (bgs), respectively. Soils encountered were logged and samples were collected from each boring for laboratory analysis. Groundwater was encountered at depths ranging from approximately 10 feet bgs in SB-3 to 20 feet bgs in SB-4.

Each soil boring (SB-1 through SB-4) was backfilled with hydrated granular bentonite from the bottom of the borehole to approximately 3.5 feet bgs, capped with concrete from 0.5 to 3.5 feet bgs and covered to the surface to match the existing grade. The approximate volumes of bentonite and concrete used during destruction of the soil borings are provided in Table 1. Soil encountered in the field and backfill details are provided on the enclosed Soil Boring Log. Soil analytical results are enclosed.

It was the attention of ATC to complete six soil borings to complete the scope of work, however ATC only drilled four soil borings on behalf of our client PNC Bank, N.A. (PNC). ATC submitted permit fees of $400.00 for six soil borings, therefore ATC anticipates a refund of $90 for the two soil borings that were not completed on behalf of PNC.

If any additional information is required, please contact our office.

Respectfully,

ATC Associates Incorporated

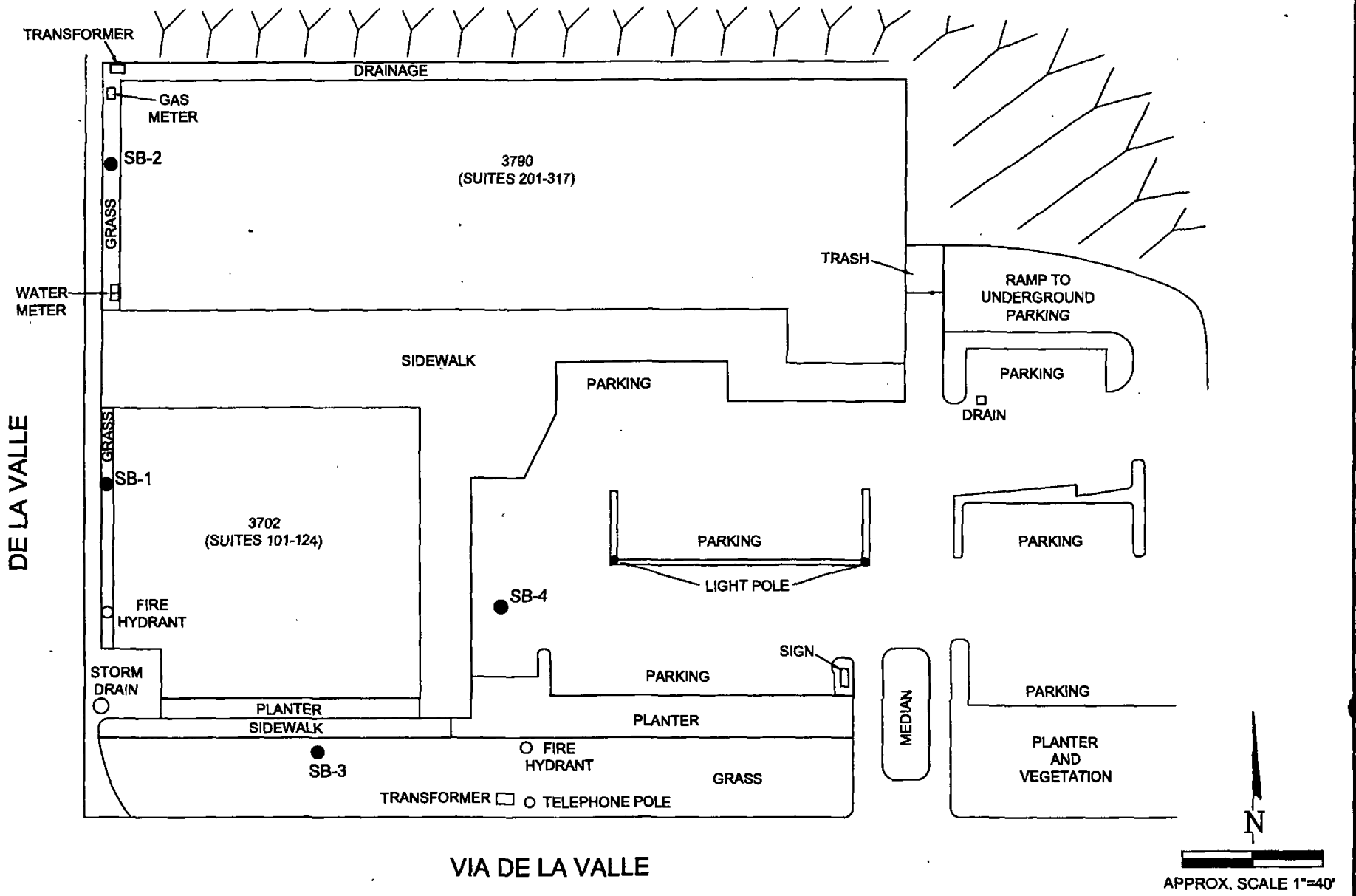
REGISTERED GEOLOGIST
MICHAEL T DAVIS
Exp. 5/31/05
No. 7400
STATE OF CALIFORNIA

Scott D. Levin
Project Manager

Michael T. Davis, RG #7400
Senior Geologist

Enclosures: Figure 1 - Site Map (with soil boring locations)
Table 1 – Soil Boring Destruction Materials
Approved Soil Boring Construction Permit
Borehole/Well Logs & Legend
Laboratory Analytical Report and Chain-of-Custody

cc: June Cho, PNC Bank, N.A.
Roger Boesky, Polo Plaza, LLC
Louise Adams, H&P Mobile Geochemistry



LEGEND

SLOPE

FENCE

SITE PLAN

POLO PLAZA
3702 AND 3790 VIA DE LA VALLE
DEL MAR, CALIFORNIA 92014

PROJECT NO. 43.27517.0001	FIGURE 1
FILE NO. h:projects2/POLO PLAZA/FIG 1	

ATC ASSOCIATES INC.
9620 Chesapeake Drive, Suite 203
San Diego, California 92123

TABLE 1
SOIL BORING DESTRUCTION MATERIALS

Polo Plaza

3702 and 3790 Via De La Valle, Del Mar, California

Well I.D.	Borehole Size (inches)	Casing Size (inches)	Screen Interval (feet bgs)	Screen Slot Size (inches)	#3 Sand (cu. ft.)	Medium Bentonite Chips (cu. ft.)	Bentonite Grout (cu. ft.)	Concrete (cu. ft)
SB-1	2	NA	NA	NA	NA	NA	0.363	0.066
SB-2	2	NA	NA	NA	NA	NA	0.451	0.066
SB-3	2	NA	NA	NA	NA	NA	0.231	0.066
SB-4	2	NA	NA	NA	NA	NA	0.363	0.066

Notes: Calculations are approximate

I.D. = Identification

NA = Not Applicable

cu. ft. = Cubic Feet

DEFINITION OF TERMS

PRIMARY DIVISIONS			GRAPHIC SYMBOL	GROUP SYMBOL	SECONDARY DIVISONS
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN No. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OR COARSE FRACTION IS LARGER THAN No. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)		GW	WELL GRADED GRAVELS, GRAVEL SAND MIXTURES, LITTLE OR NO FINES.
				GP	POORLY GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES.
		GRAVEL WITH FINES		GM	SILTY GRAVELS, GRAVEL-SAND-CLAY MIXTURES, NON-PLASTIC FINES.
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES, PLASTIC FINES.
	SANDS MORE THAN HALF OR COARSE FRACTION IS SMALLER THAN No. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)		SW	WELL GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES.
				SP	POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES.
		SANDS WITH FINES		SM	SILTY SANDS, SAND-SILT MIXTURES, PLASTIC FINES.
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES, PLASTIC FINES.
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN No. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50%			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY.
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN.
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY.
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50%			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OF SILTY SOILS, ELASTIC SILTS.
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS.
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS.
HIGHLY ORGANIC SOILS				Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS.

ATC ASSOCIATES INC.

BOREHOLE/WELL LOG LEGEND

PROJECT: POLO PLAZA
LOCATOIN: SB-1
BORING DATE: 7-14-04

SOIL BORING LOG

DATUM: GROUND SURFACE

DRILLER: HP LABS
METHOD: STRATAPROBE (2" DIAMETER)

DIP: VERTICAL

LOGGED: SCOTT LEVIN

DEPTH SCALE (FEET)	ANALYSIS INTERVAL	SOIL PROFILE: DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	SAMPLES: ID	SOIL TYPE	BLOWS / FOOT	CONCENTRATION: OVA (PPM)
0		UNPAVED SURFACE (GRASS)						
2		POORLY GRADED SAND (SP), BROWN (10YR, 5/3), FINE TO MEDIUM GRAINED SAND, MOIST, NO HYDROCARBON (HC) ODOR.						
4		CLAYEY SAND (SC), BROWN (10YR, 4/3), FINE GRAINED SAND, MEDIUM PLASTIC CLAY, MOIST, NO HC ODOR.			SB-1/4'	SC		0.2
6					SB-1/6'	SC		0.1
8		SILTY SAND (SM), BROWN (10YR, 4/3), FINE GRAINED SAND, MOIST, NO HC ODOR.			SB-1/8'	SM		0.0
		CLAYEY SAND (SC), BROWN (10YR, 5/3), FINE GRAINED SAND, LOW PLASTIC CLAY, VERY MOIST, NO HC ODOR.						
10		POORLY GRADED SAND (SP), BROWN (10YR, 5/3), FINE GRAINED SAND, TRACE FINES, MOIST, NO HC ODOR.			SB-1/10'	SC		1.5
12		SILTY SAND (SM), BROWN (10YR, 4/3), VERY FINE GRAINED SAND, MOIST, NO HC ODOR.			SB-1/12'	SM		0.2
14		BECOMES YELLOWISH BROWN (10YR 5/4), LESS FINES, SLIGHTLY MOIST TO DRY.			SB-1/14'	SM		0.2
16	☒			▼	SB-1/16'	SM		1.8
18		BECOMES WET, FINES INCREASE.						
20		BECOMES LESS FINES.			SB-1/20'	SM		0.3
22		TOTAL DEPTH DRILLING = 20 FEET BELOW GROUND SURFACE (BGS)						
24		BOREHOLE BACKFILLED WITH HYDRATED GRANULAR BENTONITE GROUT FROM APPROXIMATELY 3.5 FEET TO 20 FEET BGS, CAPPED WITH CONCRETE FROM 0.5 FEET TO 3.5 FEET BGS, AND COVERED WITH MATCHING UNPAVED SURFACE (GRASS).						
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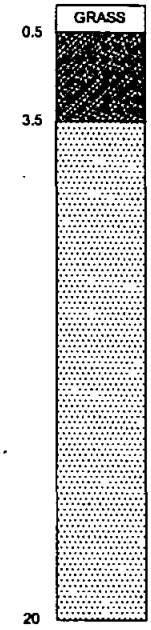
VATC ASSOCIATES INC.



PROJECT: POLO PLAZA
LOCATOIN: SB-2
BORING DATE: 7-14-04

SOIL BORING LOG

DATUM: GROUND SURFACE

DRILLER: HP LABS
METHOD: STRATAPROBE (2" DIAMETER)
DIP: VERTICAL
LOGGED: SCOTT LEVIN

DEPTH SCALE FEET	ANALYSIS INTERVAL	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	SAMPLES ID	SOIL TYPE	BLOWS / FOOT	CONCENTRATION OVA (PPM)
0		UNPAVED SURFACE (GRASS)						
		POORLY GRADED SAND (SP), BROWN (10YR, 5/3), FINE TO MEDIUM GRAINED SAND, MOIST, NO HYDROCARBON (HC) ODOR.						
2		CLAYEY SAND (SC), BROWN (10YR, 4/3), FINE GRAINED SAND, MEDIUM PLASTIC CLAY, MOIST, NO HC ODOR.						0.0
4		SILTY SAND (SM), BROWN (10YR, 4/3), FINE GRAINED SAND, MOIST, NO HC ODOR.						
6					SB-2/6'	SM		0.8
8		CLAYEY SAND (SC), BROWN (10YR, 5/3), FINE GRAINED SAND, LOW PLASTIC CLAY, MOIST, NO HC ODOR.						
10		POORLY GRADED SAND (SP), BROWN (10YR, 5/3), FINE GRAINED SAND, TRACE FINES, MOIST, NO HC ODOR.			SB-2/10'	SP		0.1
12		SILTY SAND (SM), BROWN (10YR, 4/3), VERY FINE GRAINED SAND, MOIST, NO HC ODOR.						0.0
14		POORLY GRADED SAND (SP), BROWN (10YR, 5/3), FINE GRAINED SAND, NO FINES, MOIST, NO HC ODOR.			SB-2/14'	SP		0.4
16		SILTY SAND (SM), BROWN (10YR, 4/3), VERY FINE GRAINED SAND, MOIST, NO HC ODOR.						
18		POORLY GRADED SAND (SP), YELLOWISH BROWN (10YR, 5/4), SLIGHTLY MOIST TO DRY, NO HC ODOR.			SB-2/18'	SP		0.2
20	☒	BECOMES TRACE FINES, VERY MOIST TO WET.		▼	SB-2/20'	SP		1.8
22								
24		BECOMES WET.			SB-2/24'	SP		0.6
		TOTAL DEPTH DRILLING = 24 FEET BELOW GROUND SURFACE (BGS)						
26		BOREHOLE BACKFILLED WITH HYDRATED GRANULAR BENTONITE GROUT FROM APPROXIMATELY 3.5 FEET TO 24 FEET BGS, CAPPED WITH CONCRETE FROM 0.5 FEET TO 3.5 FEET BGS, AND COVERED WITH MATCHING UNPAVED SURFACE (GRASS).						
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50								

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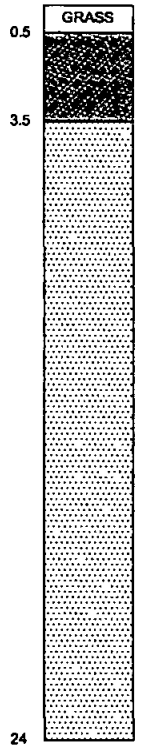

PROJECT: POLO PLAZA
LOCATOIN: SB-3
BORING DATE: 7-14-04

SOIL BORING LOG

DATUM: GROUND SURFACE

DRILLER: HP LABS
METHOD: STRATAPROBE (2" DIAMETER)

DIP: VERTICAL

LOGGED: SCOTT LEVIN

DEPTH SCALE FEET	ANALYSIS INTERVAL	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	SAMPLES ID	SOIL TYPE	BLOWS / FOOT	CONCENTRATION OVA (PPM)
0		UNPAVED SURFACE (GRASS)						
2		POORLY GRADED SAND (SP), BROWN (10YR, 5/3), FINE TO MEDIUM GRAINED SAND, MOIST, NO HYDROCARBON (HC) ODOR.				SP		0.0
4		POORLY GRADED SAND WITH SILT (SP-SM), DARK GRAYISH BROWN (10YR, 4/2), FINE GRAINED SAND, SEMI-ELASTIC SILT, MOIST, NO HC ODOR.			SB-4/4'	SP-SM		0.2
6					SB-4/6'	SP-SM		0.6
8		POORLY GRADED SAND (SP), BROWN (10YR, 5/3), FINE GRAINED SAND, TRACE SILT, VERY MOIST TO WET, NO HC ODOR.						
10	☒			▼	SB-3/10'	SP		0.6
12		BECOMES YELLOWISH BROWN (10YR 5/4), FINE GRAINED SAND, TRACE SILT, WET.						
14		TOTAL DEPTH DRILLING = 14 FEET BELOW GROUND SURFACE (BGS)			SB-3/14'	SP		0.6
16		BOREHOLE BACKFILLED WITH HYDRATED GRANULAR BENTONITE GROUT FROM APPROXIMATELY 3.5 FEET TO 14 FEET BGS, CAPPED WITH CONCRETE FROM 0.5 FEET TO 3.5 FEET BGS, AND COVERED WITH MATCHING UNPAVED SURFACE (GRASS).						
18								
20								
22								
24								
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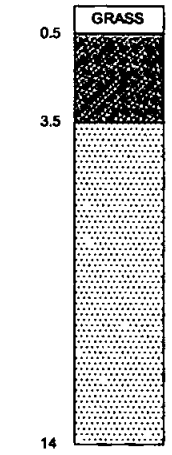
ATC ASSOCIATES INC.



PROJECT: POLO PLAZA
LOCATOIN: SB-4
BORING DATE: 7-14-04

SOIL BORING LOG

DATUM: GROUND SURFACE

DRILLER: HP LABS
METHOD: STRATAPROBE (2" DIAMETER)
DIP: VERTICAL
LOGGED: SCOTT LEVIN

DEPTH SCALE (FEET)	ANALYSIS INTERVAL	SOIL PROFILE: DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	SAMPLES: ID	SOIL TYPE	BLOWS / FOOT	CONCENTRATION: OVA (PPM)
0		ASPHALT SURFACE						
2		POORLY GRADED SAND (SP), LIGHT YELLOWISH BROWN (10YR, 6/4), FINE GRAINED SAND, DRY, NO HYDROCARBON (HC) ODOR.						0.0
4					SB-4/4'	SP		0.0
6								
8		POORLY GRADED SAND WITH SILT (SP-SM), DARK GRAYISH BROWN (10YR, 4/2), FINE GRAINED SAND, NON-ELASTIC SILT, SLIGHTLY MOIST, NO HC ODOR.			SB-4/8'	SP-SM		0.1
10		POORLY GRADED SAND (SP), BROWN (10YR, 5/3), FINE GRAINED SAND, TRACE FINES, SLIGHTLY MOIST, NO HC ODOR.						0.0
12								0.0
14		BECOMES YELLOWISH BROWN (10YR 5/4), SEMI-ELASTIC FINES INCREASE, WET.			SB-4/14'	SP		0.2
16	☒			▼	SB-4/16'	SP		0.8
18								
20		BECOMES LESS FINES.			SB-4/20'	SP		0.8
22		TOTAL DEPTH DRILLING = 20 FEET BELOW GROUND SURFACE (BGS)						
24		BOREHOLE BACKFILLED WITH HYDRATED GRANULAR BENTONITE GROUT FROM APPROXIMATELY 3.5 FEET TO 20 FEET BGS, CAPPED WITH CONCRETE FROM 0.5 FEET TO 3.5 FEET BGS, AND COVERED WITH MATCHING ASPHALT SURFACE.						
26								
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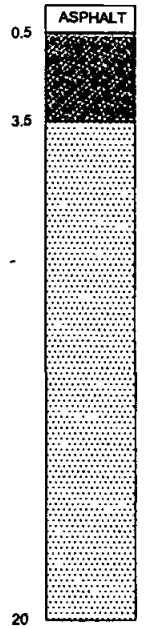
ATC ASSOCIATES INC.



SunStar Laboratories, Inc.

16 July 2004

Scott Levin
ATC Associates, San Diego
9620 Chesapeake Dr #203
San Diego, CA 92123

RE: Polo Plaza (Polo)

Enclosed are the results of analyses for samples received by the laboratory on 07/14/04 16:12. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ben Beauchaine
Laboratory Supervisor

3002 Dow Avenue. Suite 212, Tustin, Ca. 92780 Phone: (714) 505-4010 Fax: (714) 505-4028

ATC Associates, San Diego	Project: Polo Plaza (Polo)	
9620 Chesapeake Dr #203	Project Number: [none]	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	07/16/04 15:01

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-1-16	T400775-01	Soil	07/14/04 08:45	07/14/04 16:12
SB-2-20	T400775-03	Soil	07/14/04 09:44	07/14/04 16:12
SB-3-10	T400775-04	Soil	07/14/04 10:40	07/14/04 16:12
SB-4-16	T400775-06	Soil	07/14/04 11:28	07/14/04 16:12
SB-1	T400775-08	Water	07/14/04 09:00	07/14/04 16:12
SB-2	T400775-09	Water	07/14/04 09:55	07/14/04 16:12
SB-3	T400775-10	Water	07/14/04 10:50	07/14/04 16:12
SB-4	T400775-11	Water	07/14/04 11:45	07/14/04 16:12

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Polo Plaza (Polo)	
9620 Chesapeake Dr #203	Project Number: [none]	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	07/16/04 15:01

SB-1-16
T400775-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Halogenated Volatile Compounds (8010 List) by EPA 8260									
Bromodichloromethane	ND	2.0	ug/kg	1	4071412	07/14/04	07/15/04	EPA 8260B	
Bromomethane	ND	2.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.0	"	"	"	"	"	"	
Chlorobenzene	ND	2.0	"	"	"	"	"	"	
Chloroethane	ND	2.0	"	"	"	"	"	"	
Chloroform	ND	2.0	"	"	"	"	"	"	
Chloromethane	ND	2.0	"	"	"	"	"	"	
Dibromochloromethane	ND	2.0	"	"	"	"	"	"	
Dibromomethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
Methylene chloride	ND	2.0	"	"	"	"	"	"	
Styrene	ND	2.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.0	"	"	"	"	"	"	
Tetrachloroethene	ND	2.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.0	"	"	"	"	"	"	
Trichloroethene	ND	2.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		*115 %*	*81-117*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*110 %*	*74-121*		"	"	"	"	
Surrogate: Dibromofluoromethane		*96.4 %*	*80-120*		"	"	"	"	

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Polo Plaza (Polo)	
9620 Chesapeake Dr #203	Project Number: [none]	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	07/16/04 15:01

SB-2-20
T400775-03 (Soil)

SunStar Laboratories, Inc.

Halogenated Volatile Compounds (8010 List) by EPA 8260

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromodichloromethane	ND	2.0	ug/kg	1	4071412	07/14/04	07/15/04	EPA 8260B	
Bromomethane	ND	2.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.0	"	"	"	"	"	"	
Chlorobenzene	ND	2.0	"	"	"	"	"	"	
Chloroethane	ND	2.0	"	"	"	"	"	"	
Chloroform	ND	2.0	"	"	"	"	"	"	
Chloromethane	ND	2.0	"	"	"	"	"	"	
Dibromochloromethane	ND	2.0	"	"	"	"	"	"	
Dibromomethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
Methylene chloride	ND	2.0	"	"	"	"	"	"	
Styrene	ND	2.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.0	"	"	"	"	"	"	
Tetrachloroethene	ND	2.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.0	"	"	"	"	"	"	
Trichloroethene	ND	2.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		*109 %*	*81-117*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*74-121*		"	"	"	"	
Surrogate: Dibromofluoromethane		*103 %*	*80-120*		"	"	"	"	

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Polo Plaza (Polo)	
9620 Chesapeake Dr #203	Project Number: [none]	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	07/16/04 15:01

SB-3-10
T400775-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Halogenated Volatile Compounds (8010 List) by EPA 8260									
Bromodichloromethane	ND	2.0	ug/kg	1	4071412	07/14/04	07/15/04	EPA 8260B	
Bromomethane	ND	2.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.0	"	"	"	"	"	"	
Chlorobenzene	ND	2.0	"	"	"	"	"	"	
Chloroethane	ND	2.0	"	"	"	"	"	"	
Chloroform	ND	2.0	"	"	"	"	"	"	
Chloromethane	ND	2.0	"	"	"	"	"	"	
Dibromochloromethane	ND	2.0	"	"	"	"	"	"	
Dibromomethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
Methylene chloride	ND	2.0	"	"	"	"	"	"	
Styrene	ND	2.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.0	"	"	"	"	"	"	
Tetrachloroethene	ND	2.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.0	"	"	"	"	"	"	
Trichloroethene	ND	2.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		*107 %*	*81-117*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*74-121*		"	"	"	"	
Surrogate: Dibromofluoromethane		*103 %*	*80-120*		"	"	"	"	

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Polo Plaza (Polo)	
9620 Chesapeake Dr #203	Project Number: [none]	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	07/16/04 15:01

SB-4-16
T400775-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Halogenated Volatile Compounds (8010 List) by EPA 8260									
Bromodichloromethane	ND	2.0	ug/kg	1	4071412	07/14/04	07/15/04	EPA 8260B	
Bromomethane	ND	2.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.0	"	"	"	"	"	"	
Chlorobenzene	ND	2.0	"	"	"	"	"	"	
Chloroethane	ND	2.0	"	"	"	"	"	"	
Chloroform	ND	2.0	"	"	"	"	"	"	
Chloromethane	ND	2.0	"	"	"	"	"	"	
Dibromochloromethane	ND	2.0	"	"	"	"	"	"	
Dibromomethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.0	"	"	"	"	"	"	
Methylene chloride	ND	2.0	"	"	"	"	"	"	
Styrene	ND	2.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.0	"	"	"	"	"	"	
Tetrachloroethene	ND	2.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.0	"	"	"	"	"	"	
Trichloroethene	ND	2.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		*105 %*	*81-117*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*74-121*		"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*	*80-120*		"	"	"	"	

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Polo Plaza (Polo)	
9620 Chesapeake Dr #203	Project Number: [none]	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	07/16/04 15:01

SB-1
T400775-08 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Halogenated Volatile Compounds (8010 List) by EPA 8260									
Bromodichloromethane	ND	1.0	ug/l	1	4071413	07/14/04	07/15/04	EPA 8260B	
Bromomethane	ND	1.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
Chloromethane	ND	1.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
Dibromomethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	1.0	"	"	"	"	"	"	
Styrene	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Vinyl chloride	ND	0.50	"	"	"	"	"	"	
Surrogate: Toluene-d8		*100 %*	*86-115*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*94.8 %*	*86-115*		"	"	"	"	
Surrogate: Dibromofluoromethane		*109 %*	*86-118*		"	"	"	"	

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Polo Plaza (Polo)	
9620 Chesapeake Dr #203	Project Number: [none]	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	07/16/04 15:01

SB-2
T400775-09 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Halogenated Volatile Compounds (8010 List) by EPA 8260									
Bromodichloromethane	ND	1.0	ug/l	1	4071413	07/14/04	07/15/04	EPA 8260B	
Bromomethane	ND	1.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
Chloromethane	ND	1.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
Dibromomethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	1.0	"	"	"	"	"	"	
Styrene	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Vinyl chloride	ND	0.50	"	"	"	"	"	"	
Surrogate: Toluene-d8		*110 %*	*86-115*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.2 %*	*86-115*		"	"	"	"	
Surrogate: Dibromofluoromethane		*93.8 %*	*86-118*		"	"	"	"	

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Polo Plaza (Polo)	
9620 Chesapeake Dr #203	Project Number: [none]	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	07/16/04 15:01

SB-3
T400775-10 (Water)

SunStar Laboratories, Inc.

Halogenated Volatile Compounds (8010 List) by EPA 8260

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromodichloromethane	ND	1.0	ug/l	1	4071413	07/14/04	07/15/04	EPA 8260B	
Bromomethane	ND	1.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
Chloromethane	ND	1.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
Dibromomethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	1.0	"	"	"	"	"	"	
Styrene	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Vinyl chloride	ND	0.50	"	"	"	"	"	"	
Surrogate: Toluene-d8		*106 %*	*86-115*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*86-115*		"	"	"	"	
Surrogate: Dibromofluoromethane		*92.2 %*	*86-118*		"	"	"	"	

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Polo Plaza (Polo)	
9620 Chesapeake Dr #203	Project Number: [none]	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	07/16/04 15:01

SB-4
T400775-11 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Halogenated Volatile Compounds (8010 List) by EPA 8260									
Bromodichloromethane	ND	1.0	ug/l	1	4071413	07/14/04	07/15/04	EPA 8260B	
Bromomethane	ND	1.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
Chloromethane	ND	1.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
Dibromomethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	1.0	"	"	"	"	"	"	
Styrene	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Vinyl chloride	ND	0.50	"	"	"	"	"	"	
Surrogate: Toluene-d8		*106 %*	*86-115*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.5 %*	*86-115*		"	"	"	"	
Surrogate: Dibromofluoromethane		*96.5 %*	*86-118*		"	"	"	"	

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Polo Plaza (Polo)	
9620 Chesapeake Dr #203	Project Number: [none]	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	07/16/04 15:01

Halogenated Volatile Compounds (8010 List) by EPA 8260 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4071412 - EPA 5030 Soil MS										
Blank (4071412-BLK1)				Prepared: 07/14/04 Analyzed: 07/15/04						
Bromodichloromethane	ND	2.0	ug/kg							
Bromomethane	ND	2.0	"							
Carbon tetrachloride	ND	2.0	"							
Chlorobenzene	ND	2.0	"							
Chloroethane	ND	2.0	"							
Chloroform	ND	2.0	"							
Chloromethane	ND	2.0	"							
Dibromochloromethane	ND	2.0	"							
Dibromomethane	ND	2.0	"							
1,2-Dichlorobenzene	ND	2.0	"							
1,3-Dichlorobenzene	ND	2.0	"							
1,4-Dichlorobenzene	ND	2.0	"							
1,1-Dichloroethane	ND	2.0	"							
1,2-Dichloroethane	ND	2.0	"							
1,1-Dichloroethene	ND	2.0	"							
cis-1,2-Dichloroethene	ND	2.0	"							
trans-1,2-Dichloroethene	ND	2.0	"							
1,2-Dichloropropane	ND	2.0	"							
cis-1,3-Dichloropropene	ND	2.0	"							
trans-1,3-Dichloropropene	ND	2.0	"							
Methylene chloride	ND	2.0	"							
Styrene	ND	2.0	"							
1,1,2,2-Tetrachloroethane	ND	2.0	"							
Tetrachloroethene	ND	2.0	"							
1,1,2-Trichloroethane	ND	2.0	"							
1,1,1-Trichloroethane	ND	2.0	"							
Trichloroethene	ND	2.0	"							
Vinyl chloride	ND	2.0	"							
Surrogate: Toluene-d8	*108*		"	*100*		*108*	*81-117*			
Surrogate: 4-Bromofluorobenzene	*107*		"	*100*		*107*	*74-121*			
Surrogate: Dibromofluoromethane	*104*		"	*100*		*104*	*80-120*			

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Polo Plaza (Polo)	
9620 Chesapeake Dr #203	Project Number: [none]	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	07/16/04 15:01

Halogenated Volatile Compounds (8010 List) by EPA 8260 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4071412 - EPA 5030 Soil MS										
LCS (4071412-BS1)				Prepared: 07/14/04 Analyzed: 07/15/04						
Chlorobenzene	207	2.0	ug/kg	250		82.8	75-125			
1,1-Dichloroethene	246	2.0	"	250		98.4	15-125			
Trichloroethene	257	2.0	"	250		103	75-125			
Surrogate: Toluene-d8	*109*		"	*100*		*109*	*81-117*			
Surrogate: 4-Bromofluorobenzene	*104*		"	*100*		*104*	*74-121*			
Surrogate: Dibromofluoromethane	*104*		"	*100*		*104*	*80-120*			
Matrix Spike (4071412-MS1)		Source: T400775-01		Prepared: 07/14/04 Analyzed: 07/15/04						
Chlorobenzene	188	2.0	ug/kg	250	ND	75.2	75-125			
1,1-Dichloroethene	265	2.0	"	250	ND	106	75-125			
Trichloroethene	253	2.0	"	250	ND	101	75-125			
Surrogate: Toluene-d8	*110*		"	*100*		*110*	*81-117*			
Surrogate: 4-Bromofluorobenzene	*106*		"	*100*		*106*	*74-121*			
Surrogate: Dibromofluoromethane	*105*		"	*100*		*105*	*80-120*			
Matrix Spike Dup (4071412-MSD1)		Source: T400775-01		Prepared: 07/14/04 Analyzed: 07/15/04						
Chlorobenzene	154	2.0	ug/kg	250	ND	61.6	75-125	19.9	20	QM-07
1,1-Dichloroethene	153	2.0	"	250	ND	61.2	75-125	53.6	20	QM-07
Trichloroethene	180	2.0	"	250	ND	72.0	75-125	33.7	20	QM-07
Surrogate: Toluene-d8	*107*		"	*100*		*107*	*81-117*			
Surrogate: 4-Bromofluorobenzene	*104*		"	*100*		*104*	*74-121*			
Surrogate: Dibromofluoromethane	*108*		"	*100*		*108*	*80-120*			
Batch 4071413 - EPA 5030 Water MS										
Blank (4071413-BLK1)				Prepared: 07/14/04 Analyzed: 07/15/04						
Bromodichloromethane	ND	1.0	ug/l							
Bromomethane	ND	1.0	"							
Carbon tetrachloride	ND	0.50	"							
Chlorobenzene	ND	1.0	"							
Chloroethane	ND	1.0	"							
Chloroform	ND	1.0	"							
Chloromethane	ND	1.0	"							
Dibromochloromethane	ND	1.0	"							
Dibromomethane	ND	1.0	"							
1,2-Dichlorobenzene	ND	1.0	"							
1,3-Dichlorobenzene	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
1,1-Dichloroethane	ND	1.0	"							
1,2-Dichloroethane	ND	0.50	"							
1,1-Dichloroethene	ND	1.0	"							

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Polo Plaza (Polo)	
9620 Chesapeake Dr #203	Project Number: [none]	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	07/16/04 15:01

Halogenated Volatile Compounds (8010 List) by EPA 8260 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4071413 - EPA 5030 Water MS										
Blank (4071413-BLK1)				Prepared: 07/14/04 Analyzed: 07/15/04						
cis-1,2-Dichloroethene	ND	1.0	ug/l							
trans-1,2-Dichloroethene	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
cis-1,3-Dichloropropene	ND	0.50	"							
trans-1,3-Dichloropropene	ND	0.50	"							
Methylene chloride	ND	1.0	"							
Styrene	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
Tetrachloroethene	ND	1.0	"							
1,1,2-Trichloroethane	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
Trichloroethene	ND	1.0	"							
Vinyl chloride	ND	0.50	"							
Surrogate: Toluene-d8	*38.9*		"	*40.0*		*97.2*	*86-115*			
Surrogate: 4-Bromofluorobenzene	*37.2*		"	*40.0*		*93.0*	*86-115*			
Surrogate: Dibromofluoromethane	*43.5*		"	*40.0*		*109*	*86-118*			
LCS (4071413-BS1)				Prepared: 07/14/04 Analyzed: 07/15/04						
Chlorobenzene	102	1.0	ug/l	100		102	75-125			
1,1-Dichloroethene	97.9	1.0	"	100		97.9	15-125			
Trichloroethene	80.5	1.0	"	100		80.5	75-125			
Surrogate: Toluene-d8	*43.4*		"	*40.0*		*108*	*86-115*			
Surrogate: 4-Bromofluorobenzene	*41.5*		"	*40.0*		*104*	*86-115*			
Surrogate: Dibromofluoromethane	*35.3*		"	*40.0*		*88.2*	*86-118*			
Matrix Spike (4071413-MS1)		**Source: T400775-08**		Prepared: 07/14/04 Analyzed: 07/15/04						
Chlorobenzene	98.5	1.0	ug/l	100	ND	98.5	75-125			
1,1-Dichloroethene	94.9	1.0	"	100	ND	94.9	75-125			
Trichloroethene	82.2	1.0	"	100	ND	82.2	75-125			
Surrogate: Toluene-d8	*45.0*		"	*40.0*		*112*	*86-115*			
Surrogate: 4-Bromofluorobenzene	*43.4*		"	*40.0*		*108*	*86-115*			
Surrogate: Dibromofluoromethane	*38.6*		"	*40.0*		*96.5*	*86-118*			

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

ATC Associates, San Diego	Project: Polo Plaza (Polo)	
9620 Chesapeake Dr #203	Project Number: [none]	**Reported:**
San Diego CA, 92123	Project Manager: Scott Levin	07/16/04 15:01

Halogenated Volatile Compounds (8010 List) by EPA 8260 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4071413 - EPA 5030 Water MS										
Matrix Spike Dup (4071413-MSD1)		**Source: T400775-08**		Prepared: 07/14/04		Analyzed: 07/15/04				
Chlorobenzene	95.5	1.0	ug/l	100	ND	95.5	75-125	3.09	20	
1,1-Dichloroethene	106	1.0	"	100	ND	106	75-125	11.1	20	
Trichloroethene	88.0	1.0	"	100	ND	88.0	75-125	6.82	20	
Surrogate: Toluene-d8	*41.9*		"	*40.0*		*105*	*86-115*			
Surrogate: 4-Bromofluorobenzene	*38.4*		"	*40.0*		*96.0*	*86-115*			
Surrogate: Dibromofluoromethane	*41.0*		"	*40.0*		*102*	*86-118*			

SunStar Laboratories, Inc.

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Ben Beauchaine, Laboratory Supervisor

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

SunStar Laboratories, Inc.
326 Encinitas Blvd, Ste. 150
Encinitas, CA 92024
1-800-900-9333

Chain of Custody Record

Client: ATC Associates
Address: 9620 Chesapeake Dr. Suite 205 SD 92123
Phone: 858/569-0692 Fax: 858/569-0695
Project Manager: Scott Levin / Jim Cooper

Date: 7-14-2004 Page: 1 Of
Project Name: Pacific Plaza (PPC)
Collector: S. Levin Client Project #:
Batch #: T4CC775 Proposal #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	EPA 8010	EPA 8020	EPA 8260	EPA 8270	EPA 418.1	EPA 8015M (gasoline)	EPA 8015M (diesel)	EPA 6010/7000 RCRA (8) Metals	EPA 6010/7000 Title 22 Metals	EPA 8260 Toxicity Scan (Lists 37 + 10)			Laboratory ID #	Preservative	Comments	Total # of containers
SB-1-10'	7-14-04	0645	Soil	Plastic sleeve										X			01			1
SB-1-20'		0653												X			02		Hold	
SB-2-20'		0944												X			03			
SB-3-10'		1040												X			04			
SB-3-20'		1045															05			
SB-4-10'		1126												X			06			
SB-4-20'		1135															07			
SB-1		0900	Water	Water										X			08			4
SB-2		0955												X			09			
SB-3		1050												X			10			
SB-4		1145												X			11			

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
	7-14-04 13:15		7/14/04 13:15
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers 23
Chain of Custody seals Y/N/NA N/A
Seals intact? Y/N/NA N/A
Received good condition/cold Y/N

Notes
Please send results to
jim.cooper@atcassociates.com
SCOTTDLEVIN@HOTMAIL.COM

Turn around time: NEED BY 4pm TODAY July 16, 2004

Sample disposal Instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

GEOCON
INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. G1603-52-01
October 11, 2013

RECEIVED
OCT 18 2013
ENVIRONMENTAL HEALTH

Monitoring Well Permit Desk
County of San Diego
Department of Environmental Health (DEH)
Site Assessment and Mitigation Program (SAM)
5500 Overland Avenue, Suite 110
San Diego, California 92123

Subject: SUBMITTAL OF FIGURES AND BORING LOGS
ALL CREATURES ANIMAL HOSPITAL
3665 VIA DE LA VALLE; APN NO. 302-210-52
DEL MAR, CALIFORNIA
WELL PERMIT NO. LMWP-000479

To Whom It May Concern:

In accordance with your request, we prepared this letter to present the exploratory borings at the subject site related to DEH Permit No. LMWP-000479, dated June 13, 2013. The purpose of the borings are to observe and evaluate the existing soil conditions for a proposed new single-story animal hospital building in the Del Mar area of San Diego, California. The geologic conditions consist of undocumented fill, overlying slopewash deposits and alluvium. We encountered groundwater at depths of approximately 18 feet. The approximate location of the site is depicted on the Vicinity Map, Figure 1. The approximate locations of the exploratory borings are depicted on the Geologic Map, Figure 2. The exploratory borings were approximately 6 inches in diameter and up to approximately 51½ feet deep. We backfilled the resulting excavations with about 10 ft^3 of bentonite slurry at each boring location upon completion of tests. Please contact us if you have any questions.

Very truly yours,

GEOCON INCORPORATED

REGISTERED PROFESSIONAL ENGINEER
SHAWN WEEDON
No. 2714
GEOTECHNICAL
STATE OF CALIFORNIA

Shawn Foy Weedon
GE 2714

SFW:dmc

Attachments: Figure 1, Vicinity Map
Figure 2, Geologic Map
Boring Logs

(1) Addressee
(e-mail) All Creatures Investment Partners
Attention: Mr. Michael H. Mulvany

PROJECT NO. G1603-52-01

BORING B 1

ELEV. (MSL.) 29' DATE COMPLETED 06-14-2013

EQUIPMENT 6" HOLLOW STEM AUGER BY: C. LIANG

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	B1-1			SM	**PREVIOUSLY PLACED FILL (Qpf)** Medium dense, moist, brown, Silty, fine- to medium-grained SAND; trace roots			
2	B1-2		▽		-Seepage encountered at 2.5 feet	14	110.3	11.4
4								
6	B1-3			SM	**SLOPEWASH (Qsw)** Loose, moist, yellowish brown, Silty, fine- to medium-grained SAND; trace mica	4		12.4
	B1-4					9	103.7	8.4
10	B1-5					4		9.1
12								
14								
16	B1-6				-Trace iron oxide staining	10	102.1	8.4
1								
20	B1-7		▼	SM	Loose, wet, yellowish brown, Silty, fine- to medium-grained SAND; trace mica; iron oxide staining -Groundwater encountered at 20 feet	3		24.2
22								
24								
26	B1-8 B1-9					7	92.7	29.2
2								

Figure A-1,
Log of Boring B 1, P□ge 1 of 2

G1603-52-01 GPJ

SAMPLE SYMBOLS

- □ SAMPLING UNSUCCESSFUL
- ▨ DISTURBED OR BAG SAMPLE
- ◧ STANDARD PENETRATION TEST
- ◪ CHUNK SAMPLE
- ■ DRIVE SAMPLE (UNDISTURBED)
- ▼ WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCO

PROJECT NO. G1603-52-01

BORING B 1

ELEV. (MSL.) 29' DATE COMPLETED 06-14-2013

EQUIPMENT 6" HOLLOW STEM AUGER BY: C. LIANG

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30	B1-10			SM	**ALLUVIUM (Qa)** Loose, wet, gray, Silty, fine- to medium-grained SAND; trace mica	9		25.7
32								
34								
36	B1-11				-Becomes medium dense; trace shell fragments	11		25.1
3□				SP	Medium dense, wet, gray, medium- to coarse-grained SAND; trace shell fragments			
40	B1-12					27		20.1
42								
44								
46	B1-13			SM	Medium dense, wet, gray, Silty, fine- to medium-grained SAND; trace mica; shell fragments	26		20.3
4□								
50	B1-14					20		23.5
					BORING TERMINATED AT 51.5 FEET Groundwater encountered at 20 feet Backfilled with 9.8 ft³ bentonite grout			

Figure A-1,
Log of Boring B 1, P□ge 2 of 2

G1603-52-01.GPJ

SAMPLE SYMBOLS

- ☐ SAMPLING UNSUCCESSFUL
- ◧ STANDARD PENETRATION TEST
- ■ DRIVE SAMPLE (UNDISTURBED)
- ⊠ DISTURBED OR BAG SAMPLE
- ◪ CHUNK SAMPLE
- ▼ WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCO

PROJECT NO. G1603-52-01

BORING B 2

ELEV. (MSL.) 21' DATE COMPLETED 06-14-2013

EQUIPMENT 6" HOLLOW STEM AUGER BY: C. LIANG

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	B2-1			SM	**PREVIOUSLY PLACED FILL (Qpf)** Medium dense, damp to moist, dark brown, Silty, fine- to medium-grained SAND; trace gravel		115.4	9.4
2	B2-2					19	105.1	4.8
4	B2-3					4		8.0
6	B2-4			SP	**SLOPEWASH (Qsw)** Loose, moist, light brown to yellowish brown, fine- to medium-grained SAND; trace silt (silt pods with manganese staining	10	100.6	11.7
10	B2-5			SM	**ALLUVIUM (Qa)** Loose, moist, brown, Silty, fine- to medium-grained SAND; trace mica	6		24.4
12								
14								
16	B2-6					6	107.8	21.4
18			▼		Groundwater encountered at 18 feet			
20	B2-7				-Moist to wet, grayish brown	5		29.7
22								
24								
26	B2-8					10		32.3
28								

Figure A-2,
Log of Boring B 2, Page 1 of 2

G1603-52-01.GPJ

SAMPLE SYMBOLS

- SAMPLING UNSUCCESSFUL
- STANDARD PENETRATION TEST
- DRIVE SAMPLE (UNDISTURBED)
- DISTURBED OR BAG SAMPLE
- CHUNK SAMPLE
- WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCO

PROJECT NO. G1603-52-01

BORING B 2

ELEV. (MSL.) 21' DATE COMPLETED 06-14-2013

EQUIPMENT 6" HOLLOW STEM AUGER BY: C. LIANG

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30	B2-9				-Grades to medium- to coarse-grained sand; trace mica and shell fragments	10		27.5
32								
34								
36	B2-10				-Becomes medium dense	14		23.6
38								
40	B2-11				-Becomes fine- to medium-grained	12		23.8
42								
44								
46	B2-12				-Becomes loose	8		24.1
48								
50	B2-13					9		22.9
					BORING TERMINATED AT 51.5 FEET Groundwater encountered at 18 feet Backfilled with 9.8 ft³ bentonite grout			

Figure A-2,
Log of Boring B 2, Page 2 of 2

G1603-52-01.GPJ

SAMPLE SYMBOLS

- SAMPLING UNSUCCESSFUL
- STANDARD PENETRATION TEST
- DRIVE SAMPLE (UNDISTURBED)
- DISTURBED OR BAG SAMPLE
- CHUNK SAMPLE
- WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCO

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N

NO SCALE

GEOCON
INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 2974
PHONE 858 558-6900 - FAX 858 558-6159

CL / AML		DSK/GTYPD

VICINITY MAP

ALL CREATURES ANIMAL HOSPITAL
3665 VIA DE LA VALLE
SAN DIEGO, CALIFORNIA

DATE 07 - 22 - 2013	PROJECT NO. G1603 - 52 - 01	FIG. 1

Vicinity Map

ALL CREATURES ANIMAL HOSPITAL
3665 VIA DE LA VALLE
SAN DIEGO, CALIFORNIA

0' 15' 30' 45' 60'

SCALE 1"= 30'

GEOCON LEGEND

Qpf .....PREVIOUSLY PLACED FILL

Qsw .....SLOPE WASH (Dotted Where Buried)

Qal .....ALLUVIUM (Dotted Where Buried)

B-2 .....APPROX. LOCATION OF BORING

(5') .....APPROX. THICKNESS OF FILL (Feet)

A' A' .....APPROX. LOCATION OF GEOLOGIC CROSS-SECTION

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GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 2974
PHONE 858 558-6900 - FAX 858 558-6159

PROJECT NO. G1603 - 52 - 01
FIGURE 2
DATE 07 - 22 - 2013

LOGIC MAP

Y:\PROJECTS\G1603-52-01 (All Creatures Animal Hospital)\SHEETS\G1603-52-01 Geo Map.dwg

JT.

GeoSoils, Inc.

Geotechnical • Geologic • Coastal • Environmental

5741 Palmer Way • Carlsbad, California 92010 • (760) 438-3155 • FAX (760) 931-0915 • www.geosoilsinc.com

Revised October 15, 2012

W.O. 6359-A-SC

RECEIVED

DEC 19 2012

ENVIRONMENTAL HEALTH

County of San Diego
Department of Environmental Health
Land and Water Quality Division
P.O. Box 129261
San Diego, California 92112-9261

Attention: Ms. Amelia Cesena and Ms. Veronica Tavizon

Subject: Geotechnical Boring Log Submission, Permit No. LMON108461, Rancho Paseana, 16090 through 16092 San Dieguito Road, Rancho Santa Fe, San Diego County, California 92091

Dear Ms. Cesena and Ms. Tavizon:

In accordance with criteria presented in the San Diego County Site Assessment and Mitigation Program (SAM) Manual, GeoSoils, Inc. (GSI) is submitting our geotechnical boring logs (attached) for subsurface exploration completed at the subject site. Seven (7) hollow-stem auger borings were advanced on May 9, and 10, 2012 under the purview of County of San Diego Department of Environmental Health (DEH) Permit No. LMON108461. The diameters of the hollow-stem auger were 8 inches. No noxious odors were encountered in the borings, nor was staining observed within samples and cuttings. No chemical residues were observed on the extracted equipment. Thus, no chemical laboratory analyses were performed. Groundwater was encountered at depths ranging between approximately ±3½ feet and ±13 feet below the existing grade. The approximate location of the borings are shown on the attached Geotechnical Map (see Plate 1).

The borings were completed in general accordance with Department of Water Resources Bulletin 74-90 and backfilled in general accordance with SAM Manual guidelines. The hollow-stem auger borings were backfilled with mixture of bentonite grout and bentonite chips. The following table presents the backfill quantity of each hollow-stem auger boring.

BORING NO.	APPROXIMATE DEPTH OF BORING/CPT (FEET)	APPROXIMATE BACKFILL QUANTITY (CUBIC FEET)	BORING NO.	APPROXIMATE DEPTH OF BORING/CPT (FEET)	APPROXIMATE BACKFILL QUANTITY (CUBIC FEET)
B-1	51½	17.61	B-2	31½	10.77
B-3	66½	22.74	B-4	31½	10.77
B-5	31½	10.77	B-6	31½	10.77
B-7	51½	17.61			

If you should have any questions, please do not hesitate to contact our office.

Respectfully submitted,

GeoSoils, Inc.

Ryan Boehmer
Project Geologist

John P. Franklin
Engineering Geologist, CEG 1340

PROFESSIONAL GEOLOGIST
JOHN P. FRANKLIN
No. 1340
Certified Engineering Geologist
STATE OF CALIFORNIA

RB/JPF/ jh

Attachments: Boring Logs
Plate 1 - Geotechnical Map

Distribution: (1) Addressee (wet signed)

UNIFIED SOIL CLASSIFICATION SYSTEM					CONSISTENCY OR RELATIVE DENSITY
Major Divisions			Group Symbols	Typical Names	CRITERIA
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels 50% or more of coarse fraction retained on No. 4 sieve	Clean Gravels	GW	Well-graded gravels and gravel-sand mixtures, little or no fines	**Standard Penetration Test**
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines	
		Gravel with	GM	Silty gravels gravel-sand-silt mixtures	
			GC	Clayey gravels, gravel-sand-clay mixtures	
	Sands more than 50% of coarse fraction passes No. 4 sieve	Clean Sands	SW	Well-graded sands and gravelly sands, little or no fines	
			SP	Poorly graded sands and gravelly sands, little or no fines	
		Sands with Fines	SM	Silty sands, sand-silt mixtures	
			SC	Clayey sands, sand-clay mixtures	
Fine-Grained Soils 50% or more passes No. 200 sieve	Silts and Clays Liquid limit 50% or less		ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands	**Standard Penetration Test**
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
			OL	Organic silts and organic silty clays of low plasticity	
	Silts and Clays Liquid limit greater than 50%		MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts	
			CH	Inorganic clays of high plasticity, fat clays	
			OH	Organic clays of medium to high plasticity	
Highly Organic Soils			PT	Peat, mucic, and other highly organic soils	

Penetration Resistance N (blows/ft)	Relative Density
0 - 4	Very loose
4 - 10	Loose
10 - 30	Medium
30 - 50	Dense
> 50	Very dense

Penetration Resistance N (blows/ft)	Consistency	Unconfined Compressive Strength (tons/ft^2)
<2	Very Soft	<0.25
2 - 4	Soft	0.25 - .050
4 - 8	Medium	0.50 - 1.00
8 - 15	Stiff	1.00 - 2.00
15 - 30	Very Stiff	2.00 - 4.00
>30	Hard	>4.00

		3"	3/4"	#4	#10	#40	#200 U.S. Standard Sieve
Unified Soil Classification	Cobbles	Gravel		Sand			Silt or Clay
		coarse	fine	coarse	medium	fine	

MOISTURE CONDITIONS

Dry	Absence of moisture: dusty, dry to the touch
Slightly Moist	Below optimum moisture content for compaction
Moist	Near optimum moisture content
Very Moist	Above optimum moisture content
Wet	Visible free water; below water table

MATERIAL QUANTITY

trace	0 - 5 %
few	5 - 10 %
little	10 - 25 %
some	25 - 45 %

OTHER SYMBOLS

C Core Sample
S SPT Sample
B Bulk Sample
▼ Groundwater
Qp Pocket Penetrometer

BASIC LOG FORMAT:
Group name, Group symbol, (grain size), color, moisture, consistency or relative density. Additional comments: odor, presence of roots, mica, gypsum, coarse grained particles, etc.

EXAMPLE:
Sand (SP), fine to medium grained, brown, moist, loose, trace silt, little fine gravel, few cobbles up to 4" in size, some hair roots and rootlets.

BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-1 SHEET 1 OF 2

DATE EXCAVATED 5-9-12 LOGGED BY: RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

Approx. Elevation: ±26½' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
1				SM				**QUATERNARY COLLUVIUM (PLOW ZONE)** @ 0' SILTY SAND, fine grained, grayish brown, moist, loose.
2–4				SP				**QUATERNARY ALLUVIUM** @ 1½' SAND with SILT, fine grained, brownish gray, wet, loose; micaceous, coarsening downward to fine- to medium-grained sand.
5–14			10	SM	100.1	23.2	94.3	@ 5' Groundwater encountered. @ 5' SILTY SAND, grayish brown, saturated, loose; micaceous, very fine grained.
10–14			4					@ 10' As per 5', saturated, very loose.
15–19			8	ML/SM	80.9	39.6	100.0	@ 15' SANDY SILT, grayish brown, saturated, soft; coarsens to SILTY SAND, grayish brown, saturated, loose; micaceous.
20–24			5	SM/ML				@ 20' SILTY SAND, grayish brown, saturated, loose to SANDY SILT, grayish brown, saturated, medium stiff; micaceous.
25–29			17	SM/SP	86.1	35.3	100.0	@ 25' SILTY SAND and SAND with SILT, very fine grained, dark brownish gray, saturated, medium dense; micaceous.

BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-1 *SHEET* 2 *OF* 2

DATE EXCAVATED 5-9-12 *LOGGED BY:* RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

Approx. Elevation: ±26½' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
31			6	ML/SM				@ 30' SANDY SILT, dark brownish gray, saturated, medium stiff to SILTY SAND, dark brownish gray, saturated, loose; micaceous.
32								
33								
34								
35			13	ML/CL	88.6	33.2	100.0	@ 35' SANDY SILT, dark brownish gray, saturated, stiff; trace SANDY lean CLAY, dark brownish gray, saturated, stiff; micaceous.
36								
37								
38								
39								
40			6	CL/ML /SM				@ 40' SANDY CLAY, dark gray, wet, medium stiff; coarsens downward to SANDY SILT/SILTY SAND, very fine grained, dark gray, saturated, medium stiff/loose; trace shell fragments.
41								
42								
43								
44								
45			18	SM/ML	84.9	33.1	92.4	@ 45' SILTY SAND, very fine grained, dark gray, wet, medium dense; micaceous to SANDY SILT, dark gray, wet, stiff.
46								
47								
48								
49								
50			8	ML				@ 50' SANDY SILT, dark gray, wet, medium dense; micaceous, trace shell fragments.
51								
52								Total Depth = 51½' Groundwater Encountered @ 5' No Caving Encountered Backfilled 5-9-2012
53								
54								
55								
56								
57								
58								
59								

BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-2 SHEET 1 OF 2

DATE EXCAVATED 5-9-12 LOGGED BY: RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

Approx. Elevation: ±27½' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
1				SP				**QUATERNARY COLLUVIUM (PLOW ZONE):** @ 0' SAND with SILT, fine grained, brown, moist, loose.
2				SP				**QUATERNARY ALLUVIUM:** @ 2' SAND, fine to medium grained, brown, moist, loose; micaceous.
3								
4								
5			5					@ 5' As per 2', saturated. @ 5' Groundwater encountered.
6								
7								
8								
9								
10			5					@ 10' No recovery, flowing sands encountered.
11								
12			3	SM/ML				@ 12' SILTY SAND, very fine grained, dark brown, saturated, very loose, to SANDY SILT, dark brown, wet, soft.
13								
14								
15			5	SM/ML /MH	78.0	42.4	100.0	@ 15' SILTY SAND, very fine grained, dark brown, saturated, loose to SANDY SILT, dark brown and dark gray, wet, medium stiff, trace Elastic SILT, dark brown, wet, medium stiff; micaceous.
16								
17								
18								
19								
20			5	SP/SC				@ 20' SAND with SILT, very fine grained, dark brown, saturated, loose; micaceous, to CLAYEY SAND, dark brown, saturated, loose; micaceous.
21								
22								
23								
24								
25			21	SM/SP	86.3	34.9	100.0	@ 25' SILTY SAND, dark brown, saturated, medium dense; micaceous to SAND with minor SILT, very fine grained, dark gray, saturated, medium dense.
26								
27								
28								
29								

BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-2 *SHEET* 2 *OF* 2

DATE EXCAVATED 5-9-12 *LOGGED BY:* RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

Approx. Elevation: ±27½' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
31			5	SM/ML				@ 30' SILTY SAND/SANDY SILT, very fine grained, dark gray, saturated, loose/medium stiff.
32								Total Depth = 31½'
33								Groundwater Encountered @ 5'
34								Flowing Sand @10'
35								No Caving Encountered
36								Backfilled 5-9-2012
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
50								
51								
52								
53								
54								
55								
56								
57								
58								
59								

BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-3 SHEET 1 OF 3

DATE EXCAVATED 5-9-12 LOGGED BY: RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

Approx. Elevation: ±27½' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
1				SM				**QUATERNARY COLLUVIUM (PLOW ZONE):** @ 0' SILTY SAND, dark brown, moist, loose.
2, 3				SM				**QUATERNARY ALLUVIUM:** @ 2' SILTY SAND, dark brown and dark gray, wet, loose; micaceous.
4				SP				@ 4' SAND, Fine grained, brown, wet, loose; micaceous.
5, 6, 7, 8, 9			10	SM	94.7	13.6	48.4	@ 5' (Partial Recovery) SILTY SAND, dark brownish gray, damp, loose; micaceous.
10, 11, 12, 13, 14			6	SP/SM				@ 10' SAND with SILT, very fine grained, dark brownish gray, saturated, loose to SILTY SAND, very fine grained, dark brownish gray, saturated, loose; micaceous. @ 13' Groundwater encountered.
15, 16, 17, 18, 19			7	SM/SC	89.0	32.4	99.9	@ 15' SILTY to CLAYEY SAND, very fine grained, dark brownish gray, saturated, loose; micaceous. @ 16' Caving encountered.
20, 21, 22, 23, 24			6	SP				@ 20' SAND, fine grained, dark brownish gray, saturated, loose, fining downward to SAND with SILT, very fine grained, dark brownish gray, wet, loose; micaceous.
25, 26, 27, 28, 29			16	SP/SM /ML	98.9	25.7	100.0	@ 25' SAND, fine to medium grained, to SILTY SAND, very fine grained, dark brownish gray, saturated, medium dense; micaceous, trace SANDY SILT, dark grayish brown.

BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-3 *SHEET* 2 *OF* 3

DATE EXCAVATED 5-9-12 *LOGGED BY:* RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

Approx. Elevation: ±27½' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
31			13	CL/ML /SM				@ 30' SANDY CLAY, dark brownish gray, wet, stiff; to SANDY SILT, dark brownish gray, wet, stiff; to SILTY SAND, very fine grained, dark gray, saturated, medium dense; micaceous, trace gravel.
32								
33								
34								
35			23		90.3	31.8	100.0	@ 35' As per 30', saturated, very stiff/medium dense.
36								
37								
38								
39								
40			16	SP				@ 40' SAND, fine to medium grained, dark gray, saturated, medium dense.
41								
42								
43								
44								
45			11	CH	78.4	41.0	97.9	@ 45' SANDY CLAY, dark gray, saturated, stiff.
46								
47								
48								
49								
50			7	CL/ML /SM				@ 50' SANDY CLAY, dark gray, wet, medium stiff; micaceous to SANDY SILT, dark gray, wet, medium stiff, micaceous to SILTY SAND fine grained, dark gray, saturated, loose, micaceous.
51								
52								
53								
54								
55								
56								
57								
58								
59								

BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-3 SHEET 3 OF 3

DATE EXCAVATED 5-9-12 LOGGED BY: RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

Approx. Elevation: ±27½' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
61								
62								
63								
64								
65			4	ML/SP /CL				@ 65' SANDY SILT, dark gray, saturated, soft; micaceous to SAND, fine to medium grained, dark gray, saturated, very loose, micaceous to SANDY SILT, dark gray, wet, soft, micaceous to SANDY LEAN CLAY, dark gray, wet, soft, micaceous.
66								
67								Total Depth = 66½
68								Groundwater Encountered @ 13' Stabilized @ 5'
69								Caving Encountered @ 16'
70								Backfilled 5-9-2012
71								
72								
73								
74								
75								
76								
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89								

BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-4 *SHEET* 1 *OF* 2

DATE EXCAVATED 5-10-12 *LOGGED BY:* RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

Approx. Elevation: ±27½' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
1				SM				**QUATERNARY COLLUVIUM (PLOW ZONE):** @ 0' SILTY SAND, fine grained, dark grayish brown, moist, loose; micaceous.
2								
3				SM				**QUATERNARY ALLUVIUM:** @ 2' SILTY SAND, fine grained, dark grayish brown, moist, loose; micaceous.
4				SP				@ 4' SAND, fine grained, brown, saturated, loose; micaceous.
5								@ 4' Groundwater encountered, stabilized @ 3½'.
6			4	SM				@ 5' SILTY SAND, very fine grained, brown, saturated, very loose; micaceous.
7								
8								
9								
10			28	SP	99.8	24.9	100.0	@ 10' SAND, fine to medium grained, grayish brown, saturated, medium dense; micaceous.
11								
12								
13								
14								
15			7	SM				@ 15' SILTY SAND, very fine grained, grayish brown, saturated, loose; micaceous.
16								
17								
18								
19								
20			8	SP/ML /CL/SM	95.7	27.6	100.0	@ 20' SAND, fine to medium grained, grayish brown, saturated, loose; micaceous to SANDY SILT, grayish brown, saturated, medium stiff; micaceous to SANDY LEAN CLAY, brown, wet, medium stiff; micaceous to SILTY SAND, very fine grained, brown, saturated, loose; micaceous.
21								
22								
23								
24								
25			9	CL/SM				@ 25' SANDY LEAN CLAY, brown, wet, stiff; micaceous to SILTY SAND, very fine grained, brown, saturated, loose; micaceous.
26								
27								
28								
29								

BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-4 SHEET 2 OF 2

DATE EXCAVATED 5-10-12 LOGGED BY: RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

Approx. Elevation: ±27½' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
31			25	ML/SM /SP	89.9	31.7	100.0	@ 30' SANDY SILT, brown, saturated, very stiff; micaceous to SILTY SAND, brown, saturated, medium dense; micaceous to SAND, very fine grained, saturated, medium dense.
32								Total Depth = 31½'
33								Groundwater Encountered @4' Stabilized @3½'
34								Caving Encountered @3½'
35								Backfilled 5-10-2012
36								
37								
38								
39								
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BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-5 SHEET 1 OF 2

DATE EXCAVATED 5-10-12 LOGGED BY: RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

Approx. Elevation: ±27½' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
1				SM				**QUATERNARY COLLUVIUM (PLOW ZONE):** @ 0' SILTY SAND, very fine grained, grayish brown, moist, loose; micaceous.
2				SM				**QUATERNARY ALLUVIUM:** @ 2' SILTY SAND, very fine grained, grayish brown, moist becoming wet, loose; micaceous.
3								
4								@ 4' SILTY SAND, fine grained, grayish brown, saturated, loose; micaceous.
5			21	SP	101.8	23.0	97.4	@ 4' Groundwater encountered.
6								@ 5' SAND, fine grained, grayish brown, saturated, medium dense; micaceous.
7								
8								
9								
10			7	SP/SM /SC				@ 10' SAND, fine grained, grayish brown, saturated, loose; micaceous to SILTY SAND, fine grained, grayish brown, saturated, loose; micaceous to CLAYEY SAND, grayish brown, wet, loose, micaceous.
11								
12								
13								
14								
15			21	SP	99.5	25.3	100.0	@ 15' SAND, fine grained, grayish brown, saturated, medium dense; micaceous.
16								
17								
18								
19								
20			11	CL/SM /SP				@ 20' SANDY CLAY, brown, wet, stiff; to SILTY SAND, grayish brown, saturated, medium dense; micaceous to SAND, very fine to fine grained, grayish brown, saturated, medium dense; micaceous.
21								
22								
23								
24								
25			21	SP/SM	91.5	30.7	100.0	@ 25' SAND with trace SILT, fine grained, grayish brown, saturated, medium dense; micaceous to SILTY SAND, very fine grained, grayish brown, saturated, medium dense; micaceous.
26								
27								
28								
29								

BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-5 SHEET 2 OF 2

DATE EXCAVATED 5-10-12 LOGGED BY: RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

Approx. Elevation: ±27½' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
31			5	SP/SM /ML				@ 30' SAND, very fine grained, dark gray, saturated, loose; micaceous to SILTY SAND, very fine grained, dark gray, saturated, loose; micaceous to SANDY SILT, dark gray, wet, medium stiff; micaceous.
32								Total Depth = 31½'
33								Groundwater Encountered @ 4'
34								No Caving Encountered
35								Backfilled 5-10-2012
36								
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BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-6 *SHEET* 1 *OF* 2

DATE EXCAVATED 5-10-12 *LOGGED BY:* RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

Approx. Elevation: ±28' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
1				SM				**QUATERNARY COLLUVIUM (PLOW ZONE):** @ 0' SILTY SAND, brown, moist, loose; micaceous.
2				SM				**QUATERNARY ALLUVIUM:** @ 2' SILTY SAND, brown, moist becoming wet with depth, loose; micaceous.
3								@ 3½' Groundwater encountered.
4				SP				@ 4' SAND with trace SILT, fine grained, grayish brown, saturated, loose.
5			9					@ 5' SAND, fine to medium grained, dark gray and grayish brown, wet, loose, micaceous.
6								
7								
8								
9								
10			27	SW/SP	105.4	21.4	99.7	@ 10' SAND, fine to coarse grained, grayish brown, saturated, medium dense, micaceous, iron oxide staining to SAND, fine grained, grayish brown, saturated, medium dense, micaceous.
11								
12								
13								
14								
15			4	SM/CL				@ 15' SILTY SAND, very fine grained, grayish brown, saturated, very loose, micaceous, trace SANDY CLAY layer on the order of ½" thick.
16								
17								
18								
19								
20			18	ML/SM	91.2	30.8	100.0	@ 20' SANDY SILT, grayish brown, wet, stiff, micaceous to SANDY CLAY, brown, wet, stiff, micaceous to SANDY CLAY, brown, wet, stiff, micaceous to SILTY SAND, very fine grained, dark brownish gray, saturated, medium dense, micaceous.
21								
22								
23								
24								
25			11	CL/SM /SP				@ 25' SANDY LEAN CLAY, dark grayish brown, wet, stiff; micaceous to SILTY SAND, very fine grained, dark brownish gray, saturated, medium dense; micaceous, trace angular gravel to SAND with trace SILT, very fine grained, dark brownish gray, saturated, medium dense; micaceous, laminated, trace gravel.
26								
27								
28								
29								

BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-6 SHEET 2 OF 2

DATE EXCAVATED 5-10-12 LOGGED BY: RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

Approx. Elevation: ±28' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
31			18	SM/SP	91.9	30.7	100.0	@ 30' SILTY SAND, very fine grained, dark brownish gray, saturated, medium dense; micaceous to laminated very fine grained SILTY SAND and very fine grained SAND, dark gray, saturated, medium dense, micaceous.
32								Total Depth = 31½'
33								Groundwater Encountered @ 3½' (stabilized)
34								Caving Encountered @4'
35								Backfilled 5-10-2012
36								
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BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-7 *SHEET* 1 *OF* 2

DATE EXCAVATED 5-10-12 *LOGGED BY:* RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

Approx. Elevation: ±27½' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
1	■			SM				**QUATERNARY COLLUVIUM (PLOW ZONE):** @ 0' SILTY SAND, very fine grained, grayish brown, moist, loose; micaceous.
2	■			SM				**QUATERNARY ALLUVIUM:** @ 2' SILTY SAND, very fine grained, grayish brown, moist becoming wet with depth, loose, micaceous.
3	■							@ 3½' Groundwater encountered.
4	■							
5		▨	20	SP	101.9	23.1	98.5	@ 4½' SAND, fine to medium grained, gray, saturated, loose; micaceous. @ 5' SAND, fine to medium grained, gray and reddish yellow, saturated, medium dense; micaceous, iron-oxide staining.
6								
7								
8								
9								
10		▩	8	SM/SP				@ 10' SILTY SAND, very fine grained, grayish brown, wet, loose, micaceous, SAND with trace SILT, very fine grained, grayish brown, saturated, loose, micaceous.
11								
12								
13								
14								
15		▨	13		90.8	31.4	100.0	@ 15' SILTY SAND, very fine grained, grayish brown, saturated, medium dense; micaceous to SAND with SILT, fine grained, brownish gray, saturated, medium dense; micaceous.
16								
17								
18								
19								
20		▩	7	SM				@ 20' SILTY SAND, very fine grained, brownish gray, saturated, loose; micaceous.
21								
22								
23								
24								
25		▨	9	SP/ML	79.8	39.8	98.4	@ 25' SAND, very fine grained, dark brownish gray, wet, loose; micaceous, to SANDY SILT, dark gray, wet, stiff; micaceous.
26								
27								
28								
29								

BORING LOG

GeoSoils, Inc.

W.O. 6359-A-SC

PROJECT: CRAIG RANCH, INC.
Rancho Paseana

BORING B-7 SHEET 2 OF 2

DATE EXCAVATED 5-10-12 LOGGED BY: RBB

SAMPLE METHOD: Standard Penetration/Modified Cal Sampler, 140 Lb @ 30" Drop

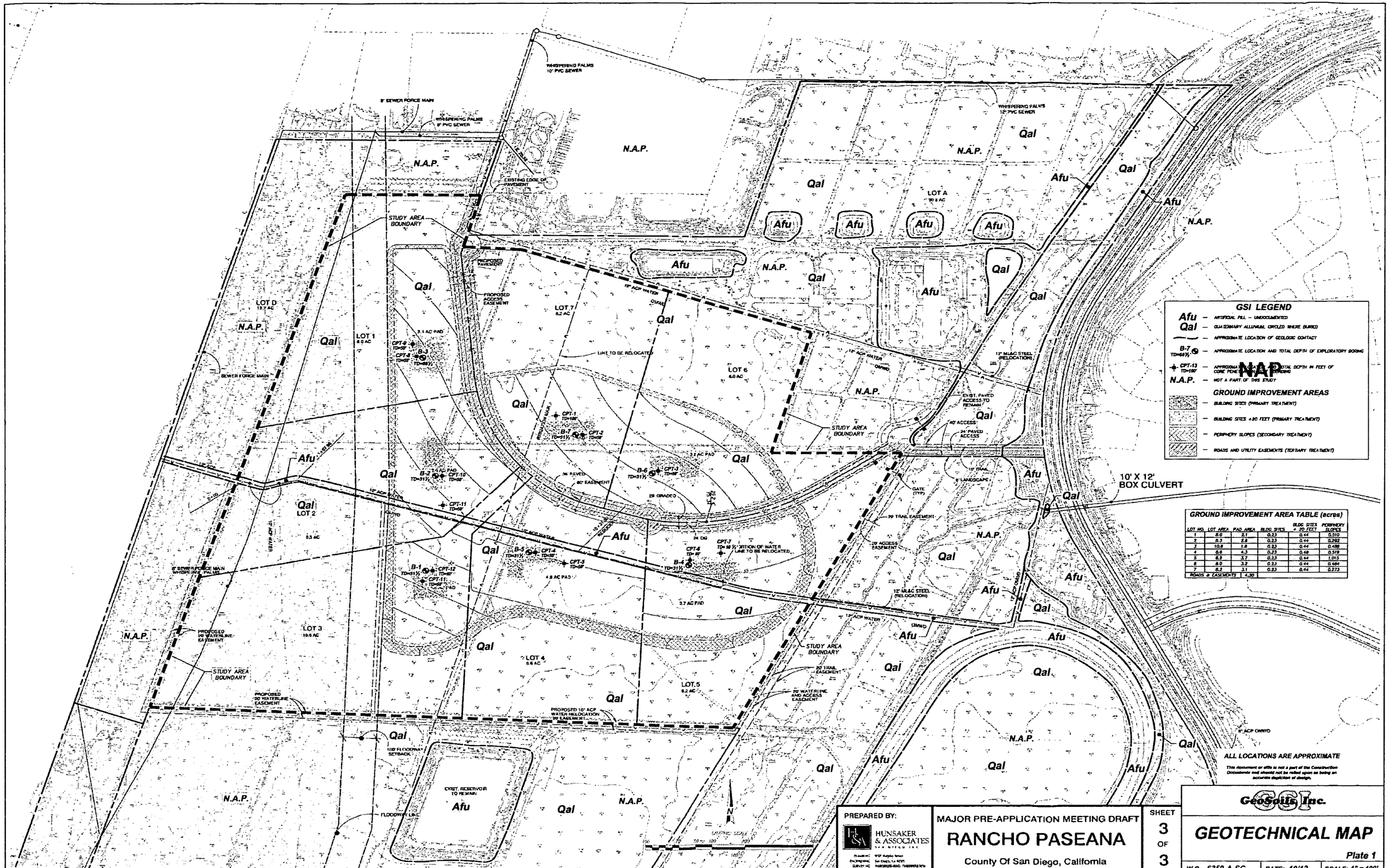
Approx. Elevation: ±27½' MSL

Standard Penetration Test

Undisturbed, Ring Sample

Groundwater

Depth (ft.)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/ft.	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Saturation (%)	Description of Material
31			12	SP				@ 30' SAND, fine grained, dark gray, saturated, loose; micaceous.
32								
33								
34								
35			29	SM/SP	97.4	26.5	100.0	@ 35' SILTY SAND, very fine grained, dark gray, saturated, medium dense; micaceous to SAND, very fine to fine grained, dark gray, saturated, medium dense; micaceous.
36								
37								
38								
39								
40			5	ML/CL /SM/SC				@ 40' SANDY SILT, dark gray, wet, medium stiff; micaceous to CLAY with trace SAND, dark gray, wet, medium stiff, to SILTY to CLAYEY SAND, dark gray, wet, loose; micaceous, trace shell fragments.
41								
42								
43								
44								
45			53	ML/SM /CL/SP	98.6	25.8	100.0	@ 45' SANDY SILT, dark gray, wet, hard; micaceous to SILTY SAND, very fine grained, dark gray, saturated, dense; micaceous to SANDY SILT, dark gray, wet, hard; micaceous to SANDY CLAY, dark gray, wet, hard; to SANDY SILT, dark gray, wet, hard; micaceous to SAND, very fine grained, dark gray, saturated dense; trace mica.
46								
47								
48								
49								
50			5	ML				@ 50' SANDY SILT, dark gray, wet, medium stiff; micaceous, trace shell fragments.
51								
52								Total Depth = 51½' Groundwater encountered @3½' Caving @3½' Backfilled 5-10-2012
53								
54								
55								
56								
57								
58								
59								



GROUND IMPROVEMENT AREA TABLE (acres)

LOT NO.	LOT AREA	PAD AREA	BLDG SITES	BLDG SITES + 20 FEET	PERIPHERY SLOPES
1	8.0	2.1	0.23	0.44	0.510
2	9.3	2.6	0.23	0.44	0.292
3	10.6	1.8	0.23	0.44	0.488
4	5.6	4.3	0.23	0.44	0.318
5	8.2	3.7	0.23	0.44	1.015
6	6.0	3.2	0.23	0.44	0.464
7	8.2	3.1	0.23	0.44	0.273
ROADS & EASEMENTS	+30				

PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC.

MAJOR PRE-APPLICATION MEETING DRAFT

RANCHO PASEANA

County Of San Diego, California

SHEET 3 OF 3

GeoSoils, Inc.

GEOTECHNICAL MAP

Plate 1

W.O. 6359-A-SC | DATE: 10/12 | SCALE: 1" = 100'

GeoSoils, Inc.

Geotechnical • Geologic • Coastal • Environmental

5741 Palmer Way • Carlsbad, California 92010 • (760) 438-3155 • FAX (760) 931-0915 • www.geosoilsinc.com

Revised October 15, 2012

W.O. 6359-A-SC

County of San Diego
Department of Environmental Health
Land and Water Quality Division
P.O. Box 129261
San Diego, California 92112-9261

Attention: Ms. Amelia Cesena and Ms. Veronica Tavizon

Subject: Cone Penetration Test Sounding Log Submission, Permit No. 108686, Rancho Paseana, 16090 through 16092 San Dieguito Road, Rancho Santa Fe, San Diego County, California 92091

Dear Ms. Cesena and Ms. Tavizon:

In accordance with criteria presented in the San Diego County Site Assessment and Mitigation Program (SAM) Manual, GeoSoils, Inc. (GSI) is submitting our cone penetration test (CPT) sounding logs (attached) for subsurface exploration completed at the subject site. Thirteen (13) CPTs were advanced on August 28, and 29, 2012 under the purview of DEH Permit No. LMON108686. The diameters of the CPT probe were 1.4 inches. No noxious odors were encountered in the CPTs, nor was staining observed within samples and cuttings. No chemical residues were observed on the extracted CPT equipment. Thus, no chemical laboratory analyses were performed. Groundwater was encountered at depths ranging between approximately ±2½ feet and ±13 feet below the existing grade. The approximate location of the CPTs are shown on the attached Geotechnical Map (see Plate 1).

The CPTs were completed in general accordance with Department of Water Resources Bulletin 74-90 and backfilled in general accordance with SAM Manual guidelines. The CPTs were backfilled with bentonite chips. The following table presents the backfill quantity of each CPT.

RECEIVED

NOV 26 2012

ENVIRONMENTAL HEALTH

BORING/ CPT NO.	APPROXIMATE DEPTH OF BORING/CPT (FEET)	APPROXIMATE BACKFILL QUANTITY (CUBIC FEET)	BORING/ CPT NO.	APPROXIMATE DEPTH OF BORING/CPT (FEET)	APPROXIMATE BACKFILL QUANTITY (CUBIC FEET)
CPT-1	100.23	1.07	CPT-8	50.20	0.53
CPT-2	50.20	0.53	CPT-9	50.20	0.53
CPT-3	50.52	0.53	CPT-10	50.20	0.53
CPT-4	50.20	0.53	CPT-11	50.52	0.53
CPT-5	50.20	0.53	CPT-12	50.20	0.53
CPT-6	50.03	0.53	CPT-13	50.20	0.53
CPT-7	50.52	0.53			

If you should have any questions, please do not hesitate to contact our office.

Respectfully submitted,

GeoSoils, Inc.

Ryan Boehmer
Project Geologist

John P. Franklin
Engineering Geologist, CEG 1340

PROFESSIONAL GEOLOGIST
JOHN P. FRANKLIN
No. 1340
Certified Engineering Geologist
STATE OF CALIFORNIA

RB/JPF/ jh

Attachments: CPT Logs
Plate 1 - Geotechnical Map

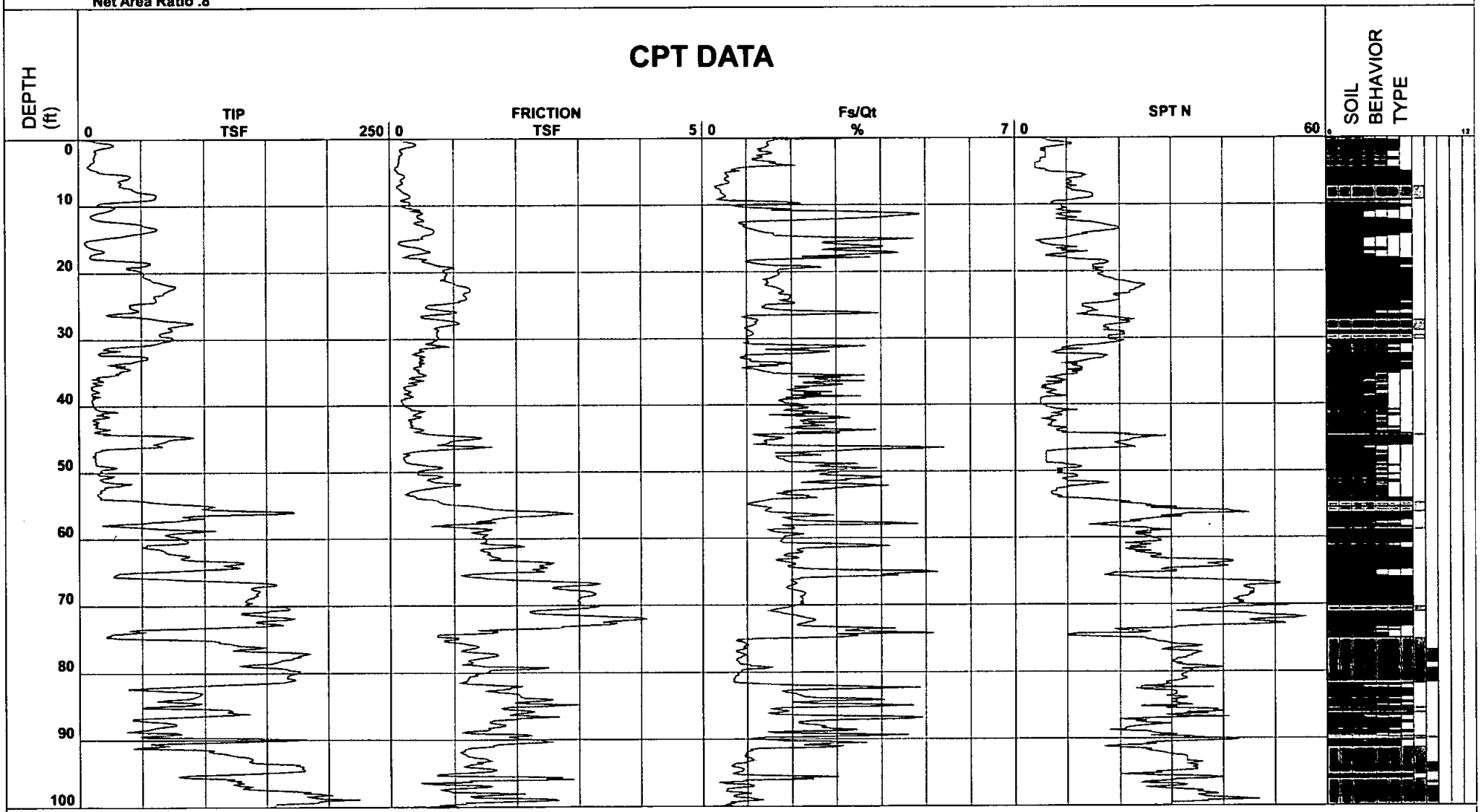
Distribution: (1) Addressee (wet signed)

GeoSoils Inc

Project	Craig Ranch	Operator	RA-JC	Filename	SDF(061).cpt
Job Number	6359-A-SC	Cone Number	DDG1214	GPS	
Hole Number	CPT-01	Date and Time	8/28/2012 8:22:20 AM	Maximum Depth	100.23 ft
EST GW Depth During Test		5.40 ft			

Net Area Ratio .8

CPT DATA



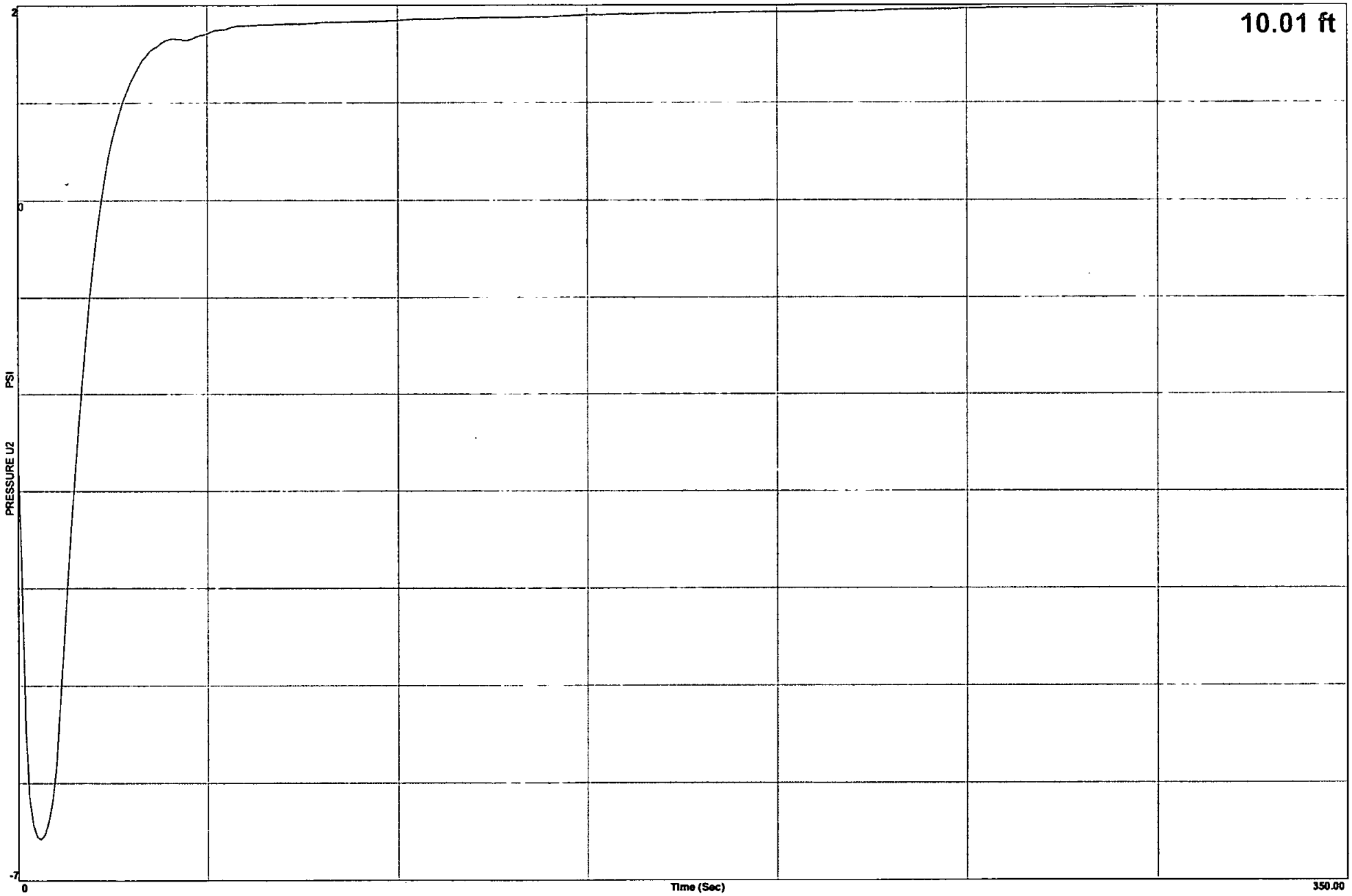
- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey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

Cone Size 10cm squared

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

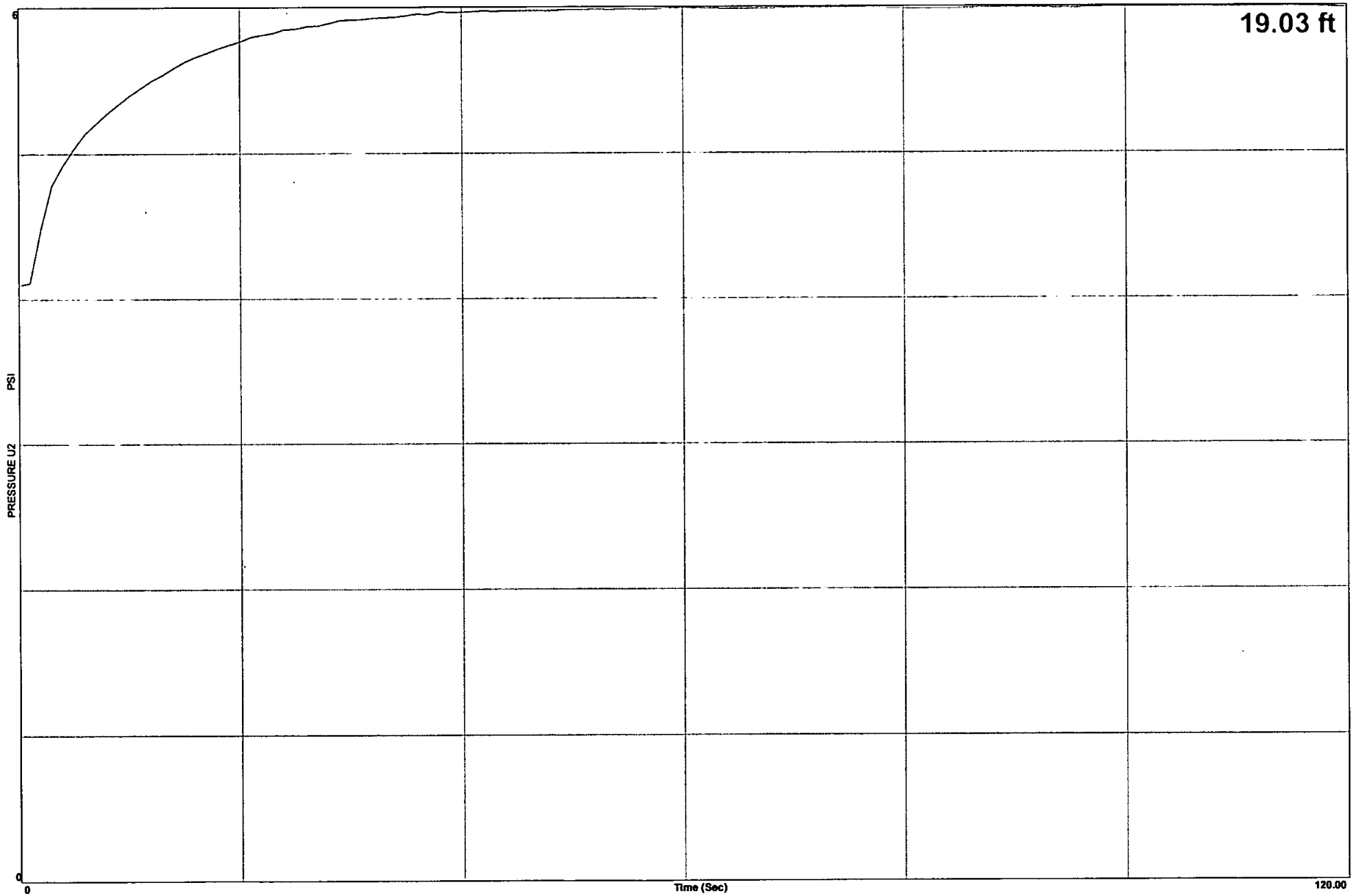
GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-01	Date and Time	8/28/2012 8:22:20 AM		
Equilized Pressure	1.9	EST GW Depth During Test	5.4		



GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-01	Date and Time	8/28/2012 8:22:20 AM		
Equilized Pressure	5.9	EST GW Depth During Test	5.2		

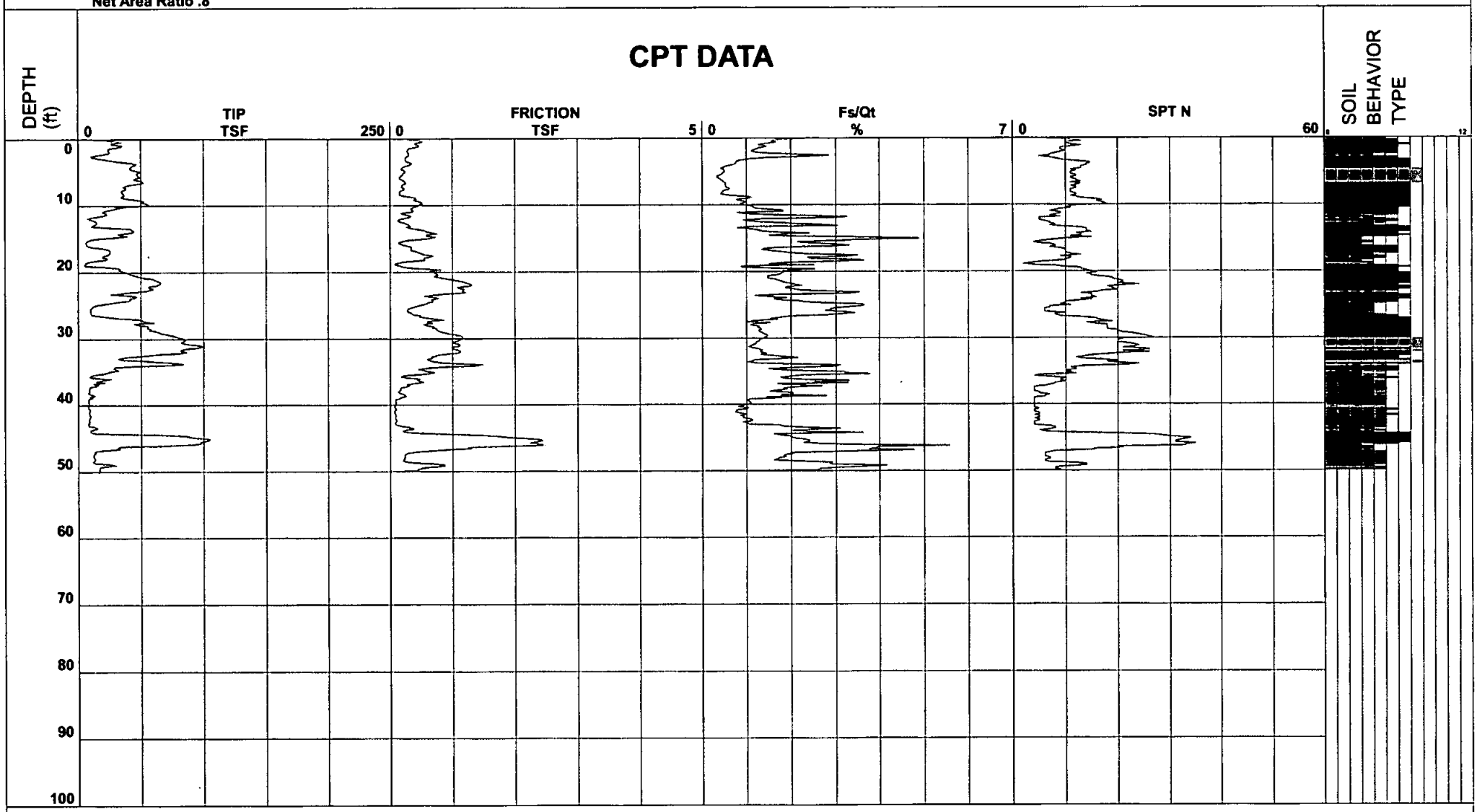


GeoSoils Inc

Project	Craig Ranch	Operator	RA-JC	Filename	SDF(063).cpt
Job Number	6359-A-SC	Cone Number	DDG1214	GPS	
Hole Number	CPT-02	Date and Time	8/28/2012 9:48:26 AM	Maximum Depth	50.20 ft
EST GW Depth During Test		8.70 ft			

Net Area Ratio .8

CPT DATA



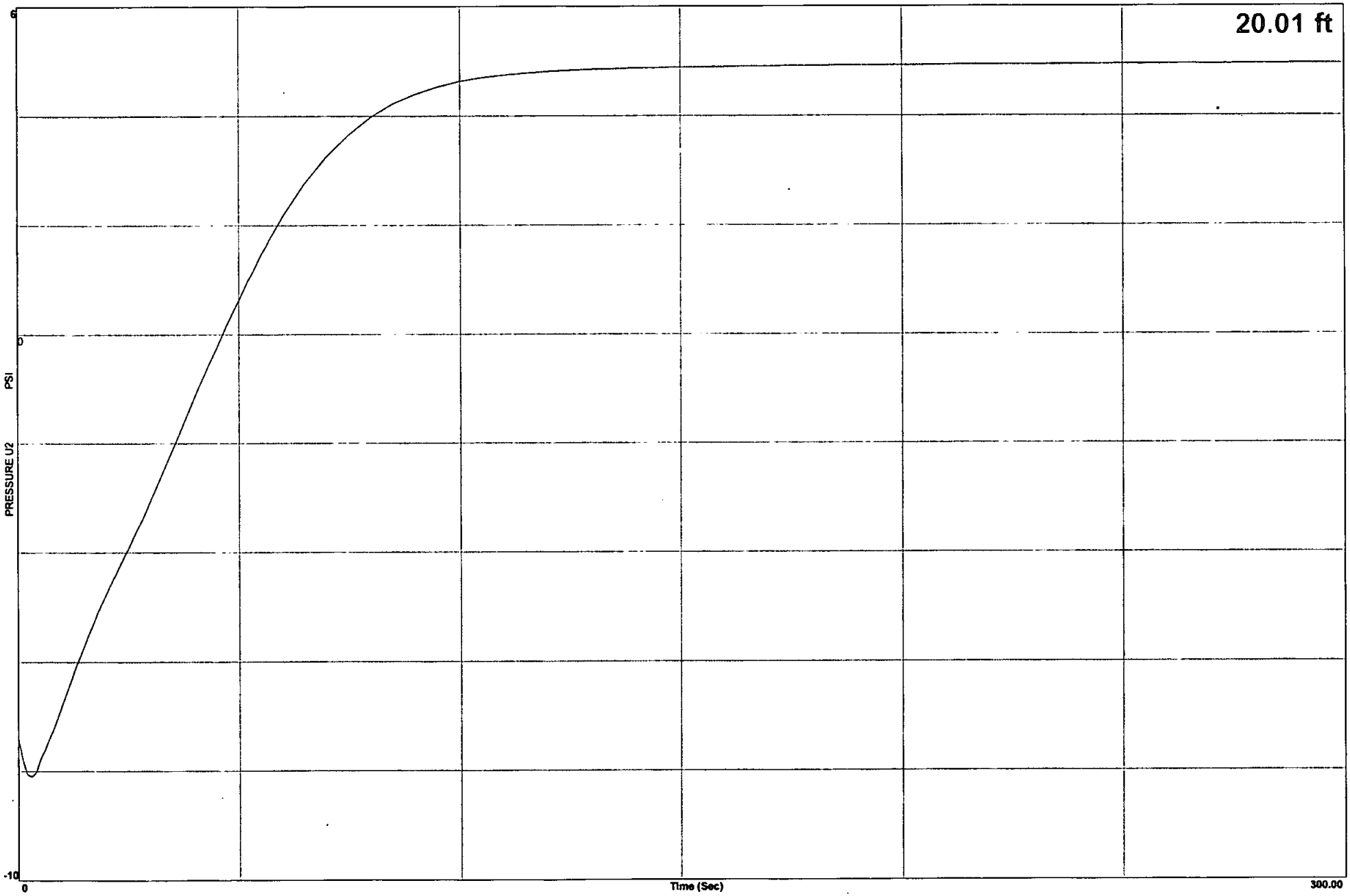
- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey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

Cone Size 10cm squared

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

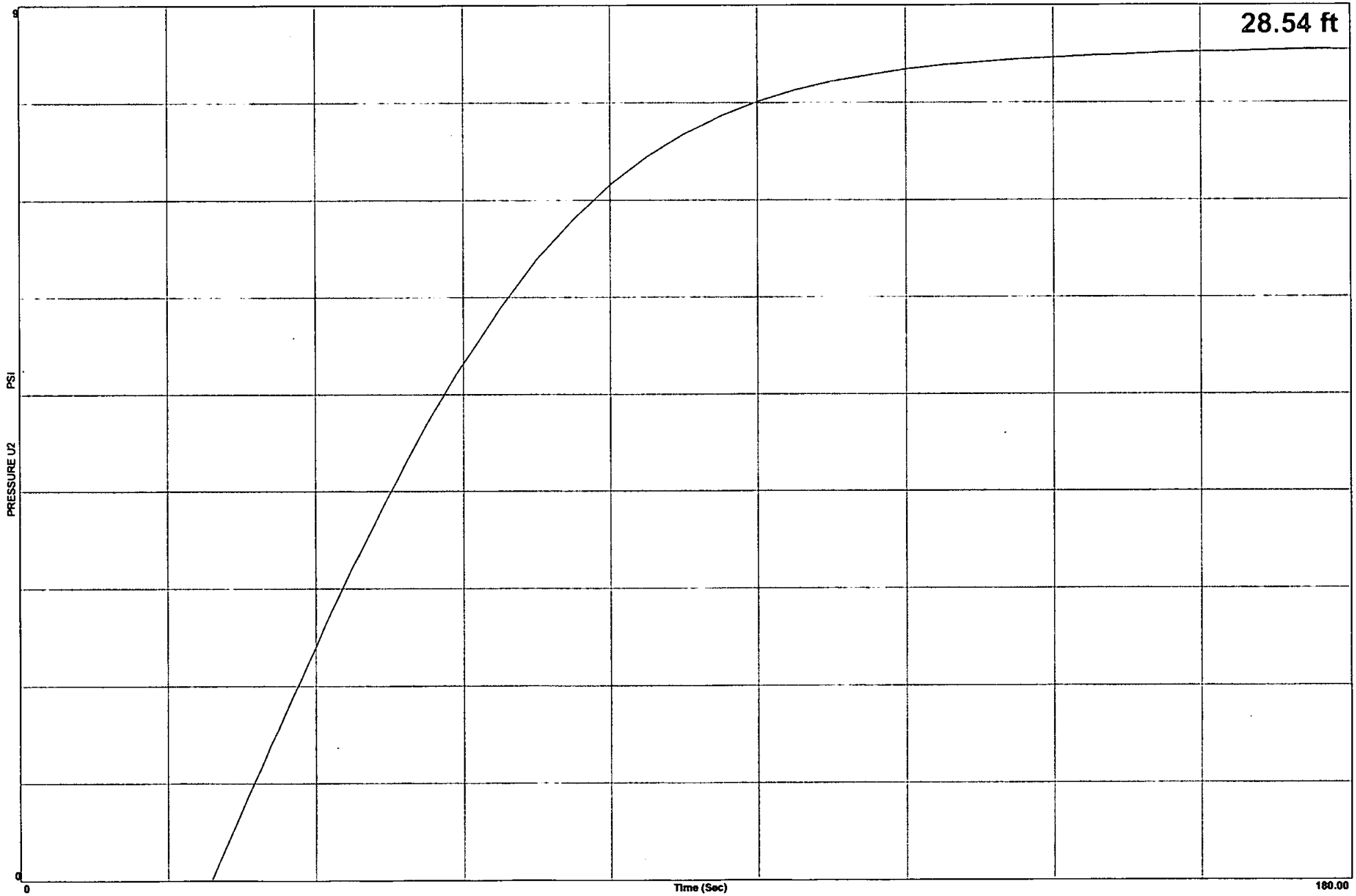
GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-02	Date and Time	8/28/2012 9:48:26 AM		
Equilized Pressure	4.8	EST GW Depth During Test	8.7		



GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-02	Date and Time	8/28/2012 9:48:26 AM		
Equilized Pressure	8.5	EST GW Depth During Test	8.8		

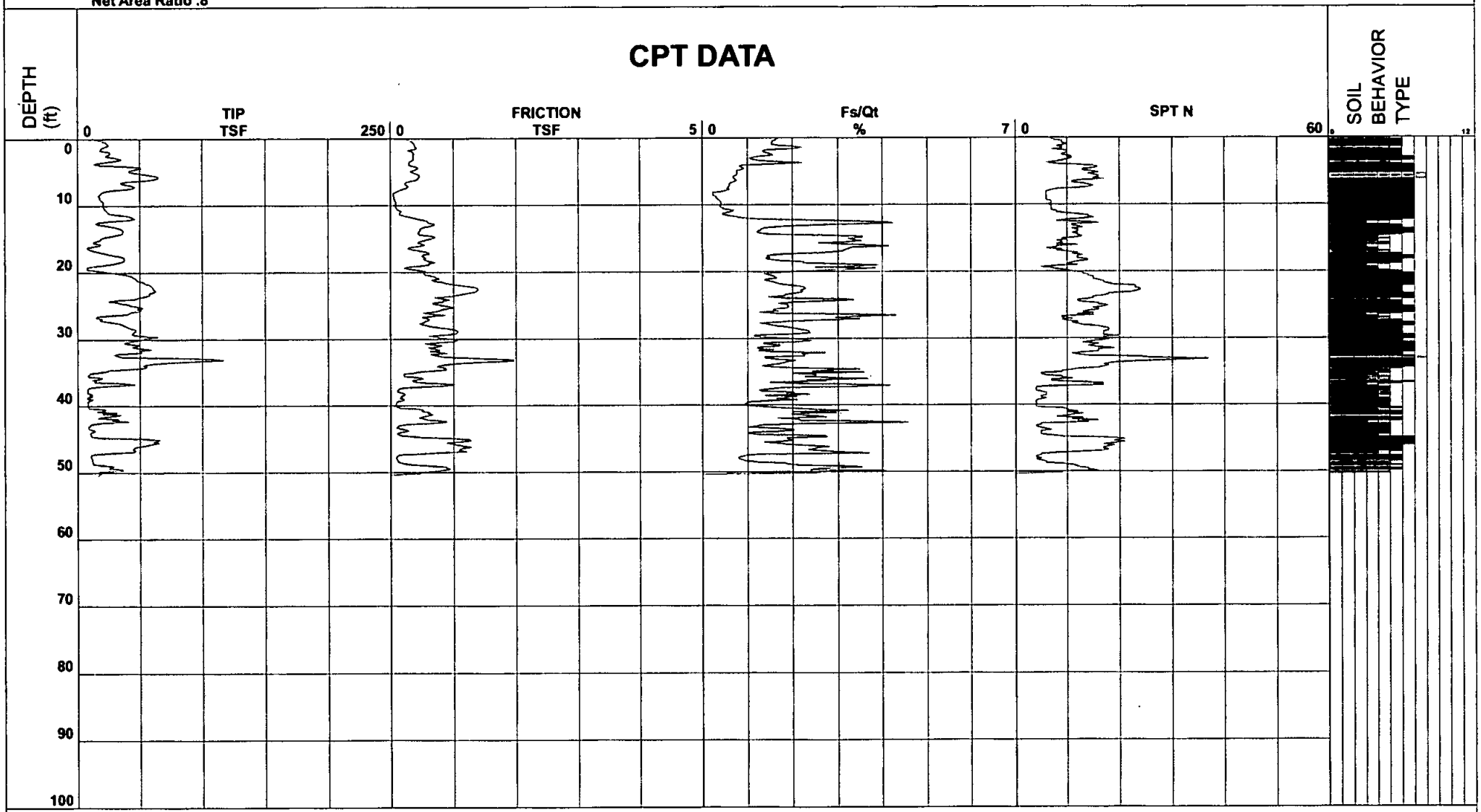


GeoSoils Inc

Project	Craig Ranch	Operator	RA-JC	Filename	SDF(064).cpt
Job Number	6359-A-SC	Cone Number	DDG1214	GPS	
Hole Number	CPT-03	Date and Time	8/28/2012 10:45:06 AM	Maximum Depth	50.52 ft
EST GW Depth During Test		2.80 ft			

Net Area Ratio .8

CPT DATA



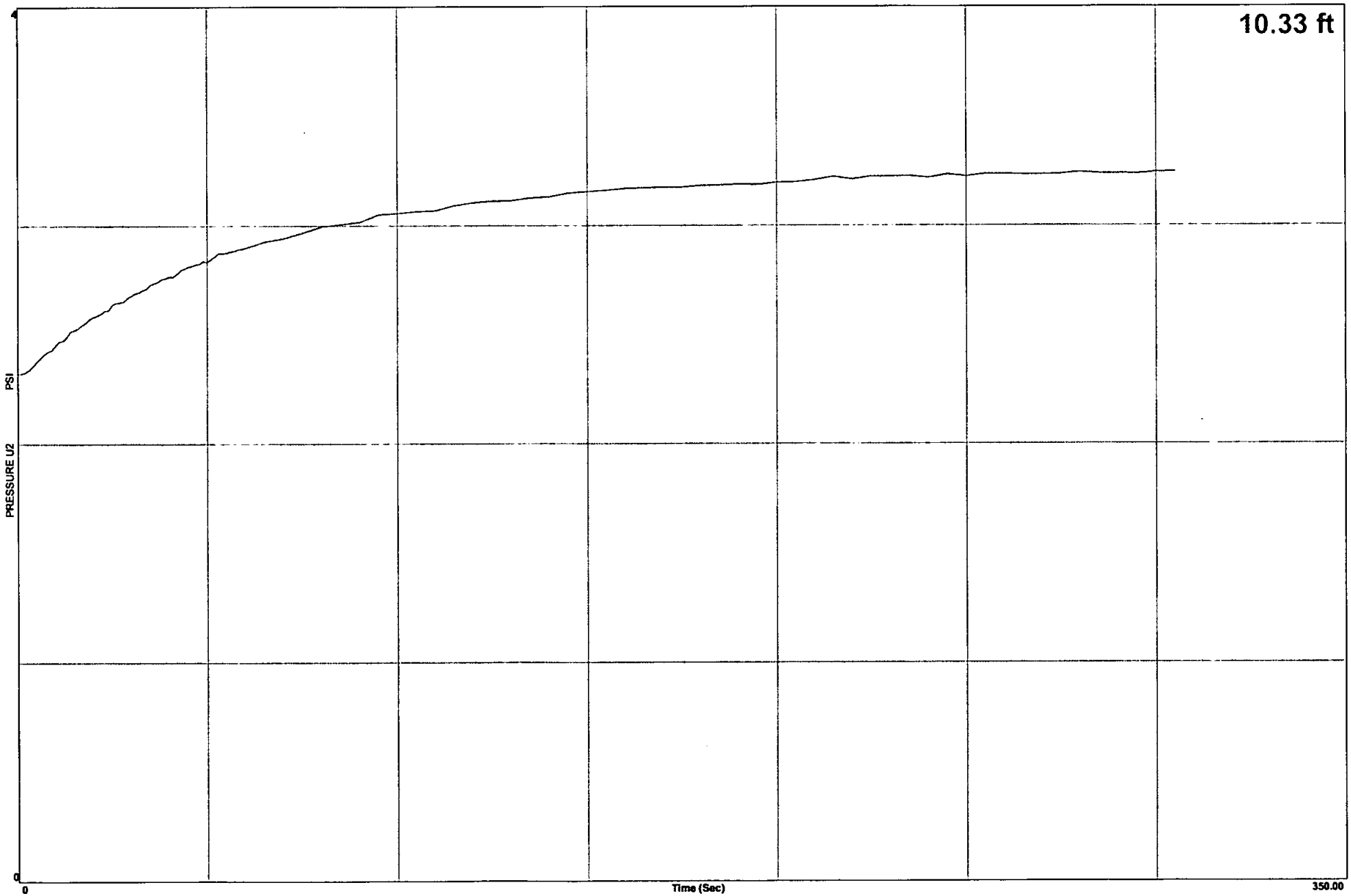
- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey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

Cone Size 10cm squared

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

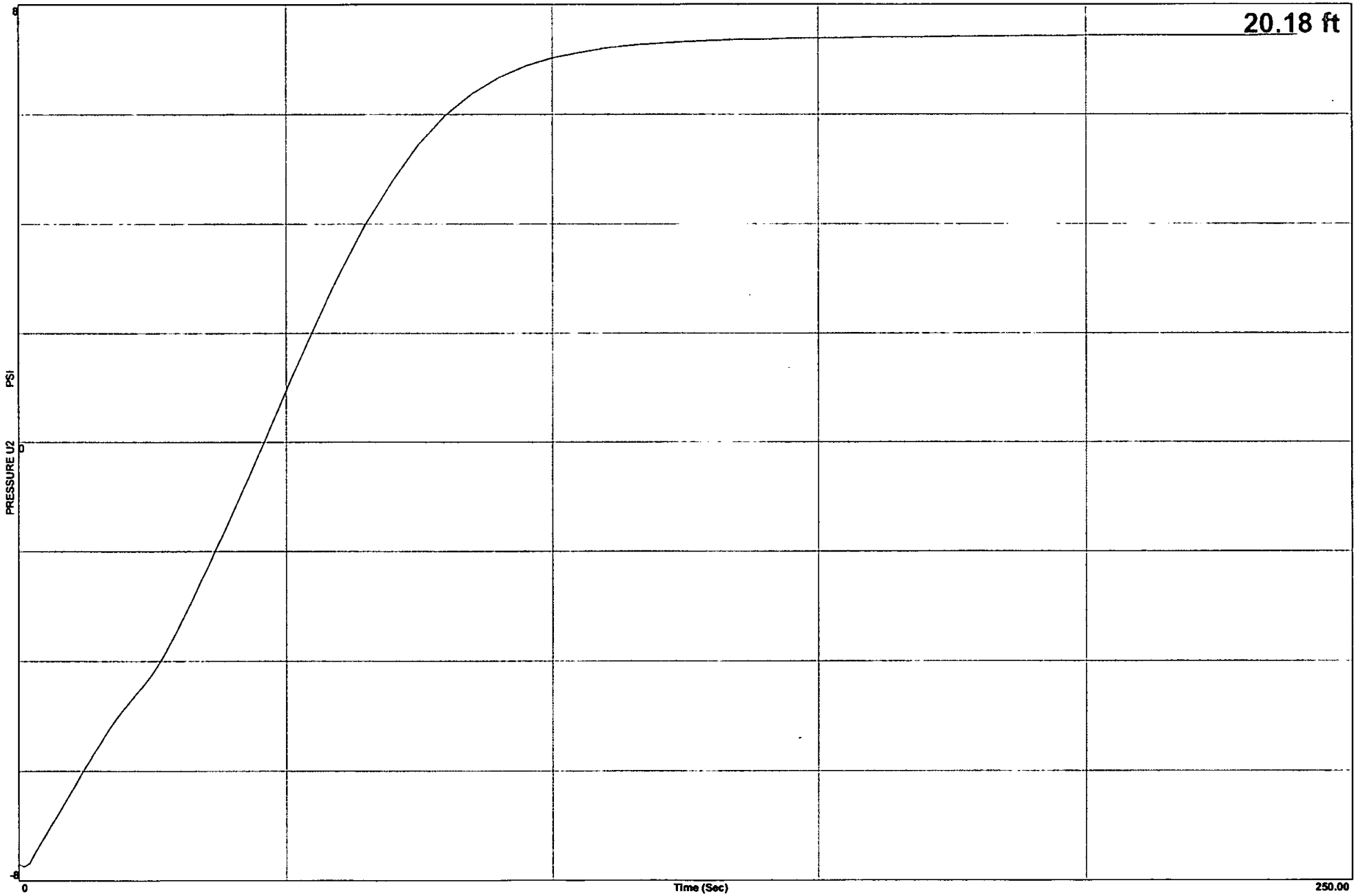
GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-03	Date and Time	8/28/2012 10:45:06 AM		
Equilized Pressure	3.2	EST GW Depth During Test	2.8		



GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-03	Date and Time	8/28/2012 10:45:06 AM		
Equilized Pressure	7.4	EST GW Depth During Test	2.9		

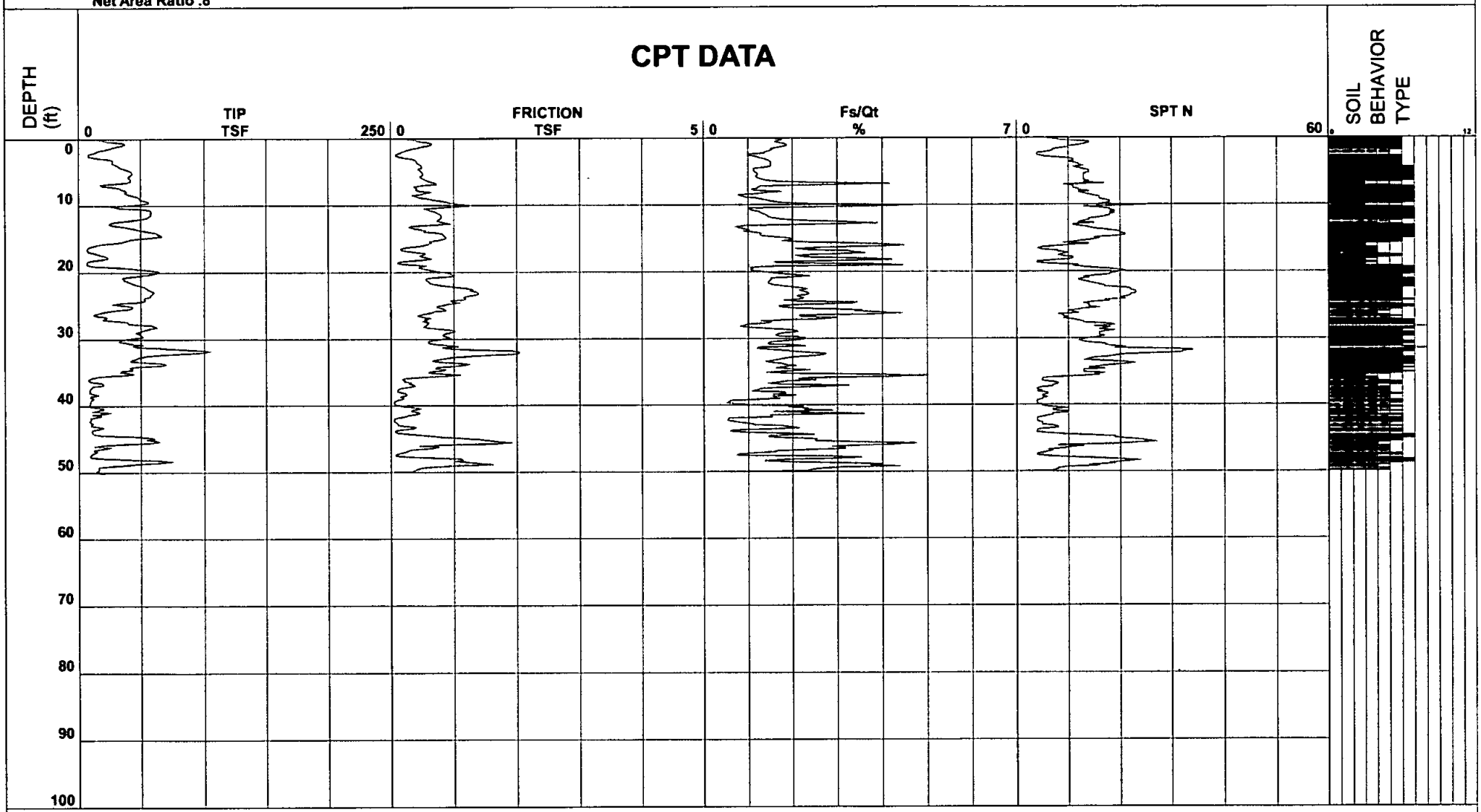


GeoSoils Inc

Project	Craig Ranch	Operator	RA-JC	Filename	SDF(066).cpt
Job Number	6359-A-SC	Cone Number	DDG1214	GPS	
Hole Number	CPT-04	Date and Time	8/28/2012 12:38:56 PM	Maximum Depth	50.20 ft
EST GW Depth During Test		4.30 ft			

Net Area Ratio .8

CPT DATA



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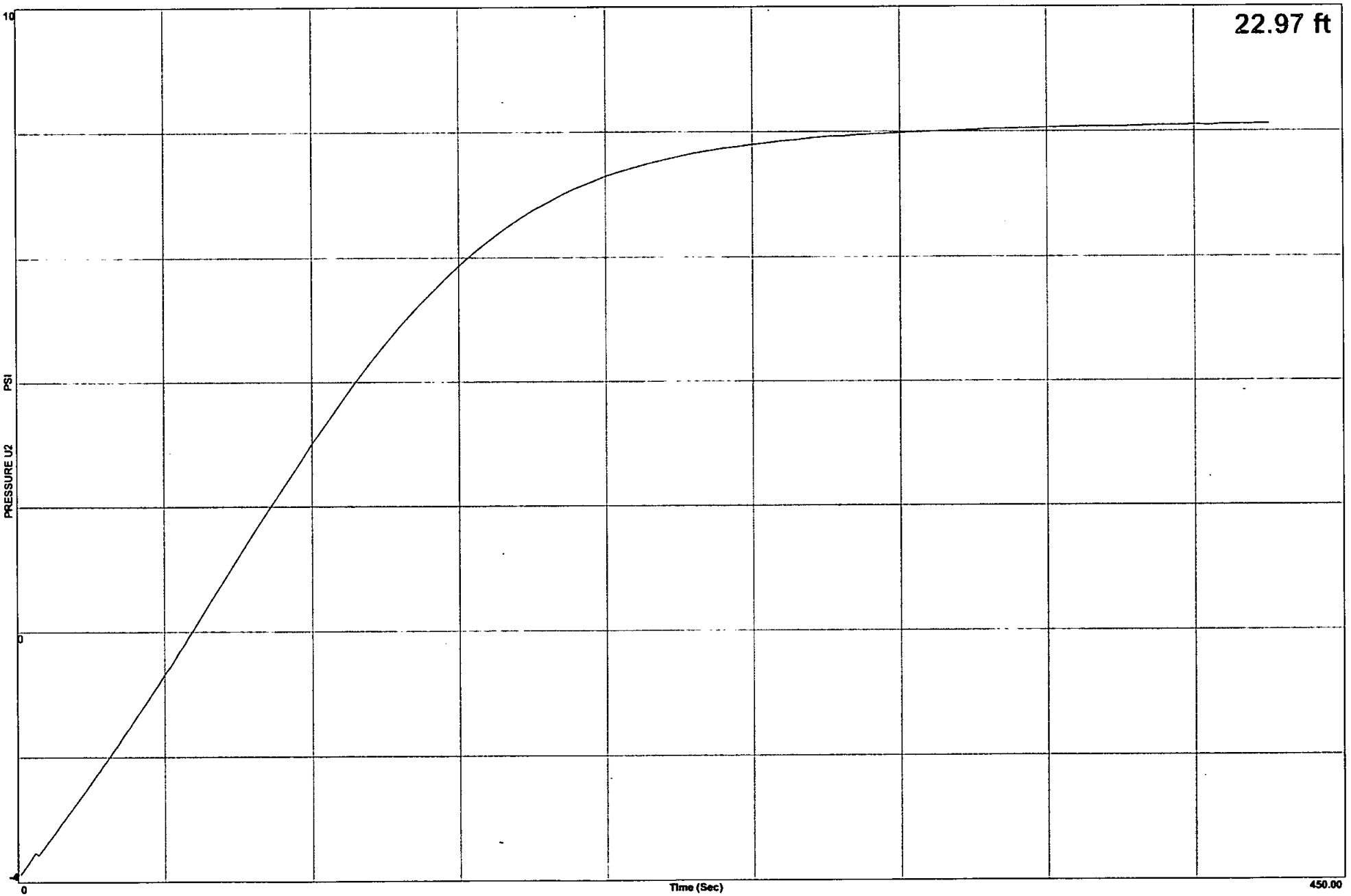
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey sand (*)

Cone Size 10cm squared

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

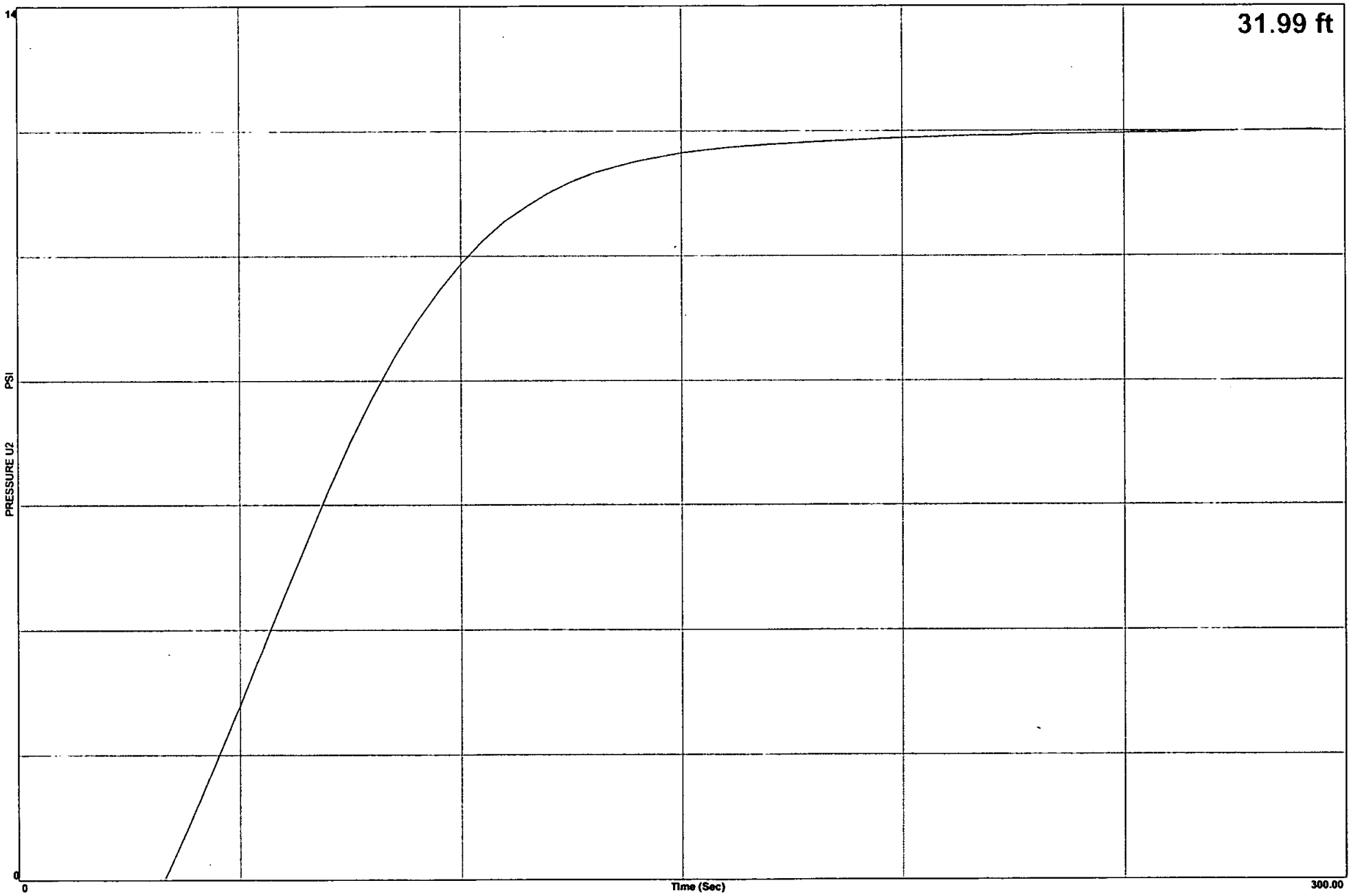
GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-04	Date and Time	8/28/2012 12:38:56 PM		
Equilized Pressure	8.0	EST GW Depth During Test	4.3		



GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-04	Date and Time	8/28/2012 12:38:56 PM		
Equilized Pressure	12.0	EST GW Depth During Test	4.2		

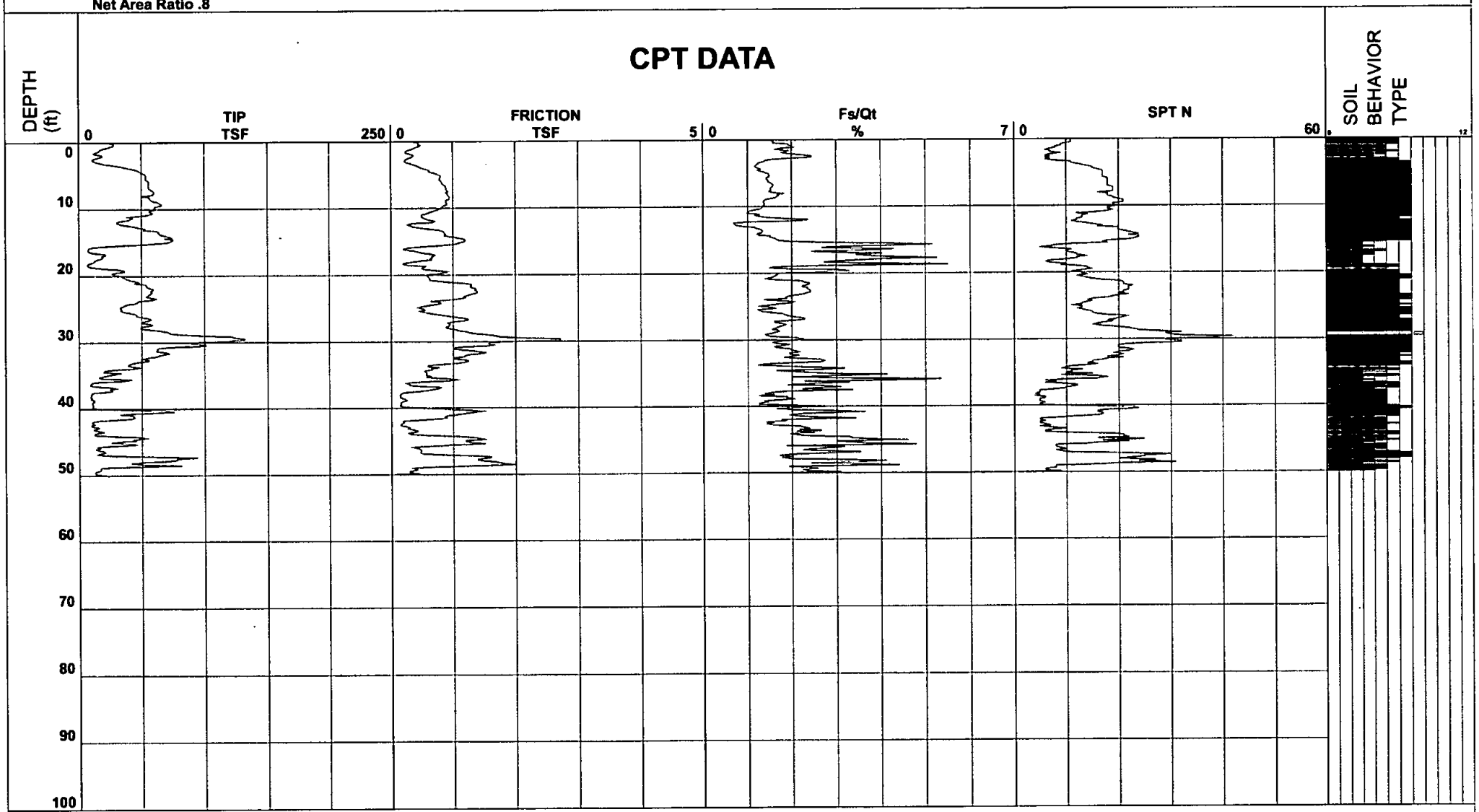


GeoSoils Inc

Project	Craig Ranch	Operator	RA-JC	Filename	SDF(067).cpt
Job Number	6359-A-SC	Cone Number	DDG1214	GPS	
Hole Number	CPT-05	Date and Time	8/28/2012 1:28:31 PM	Maximum Depth	50.20 ft
EST GW Depth During Test	2.50 ft				

Net Area Ratio .8

CPT DATA



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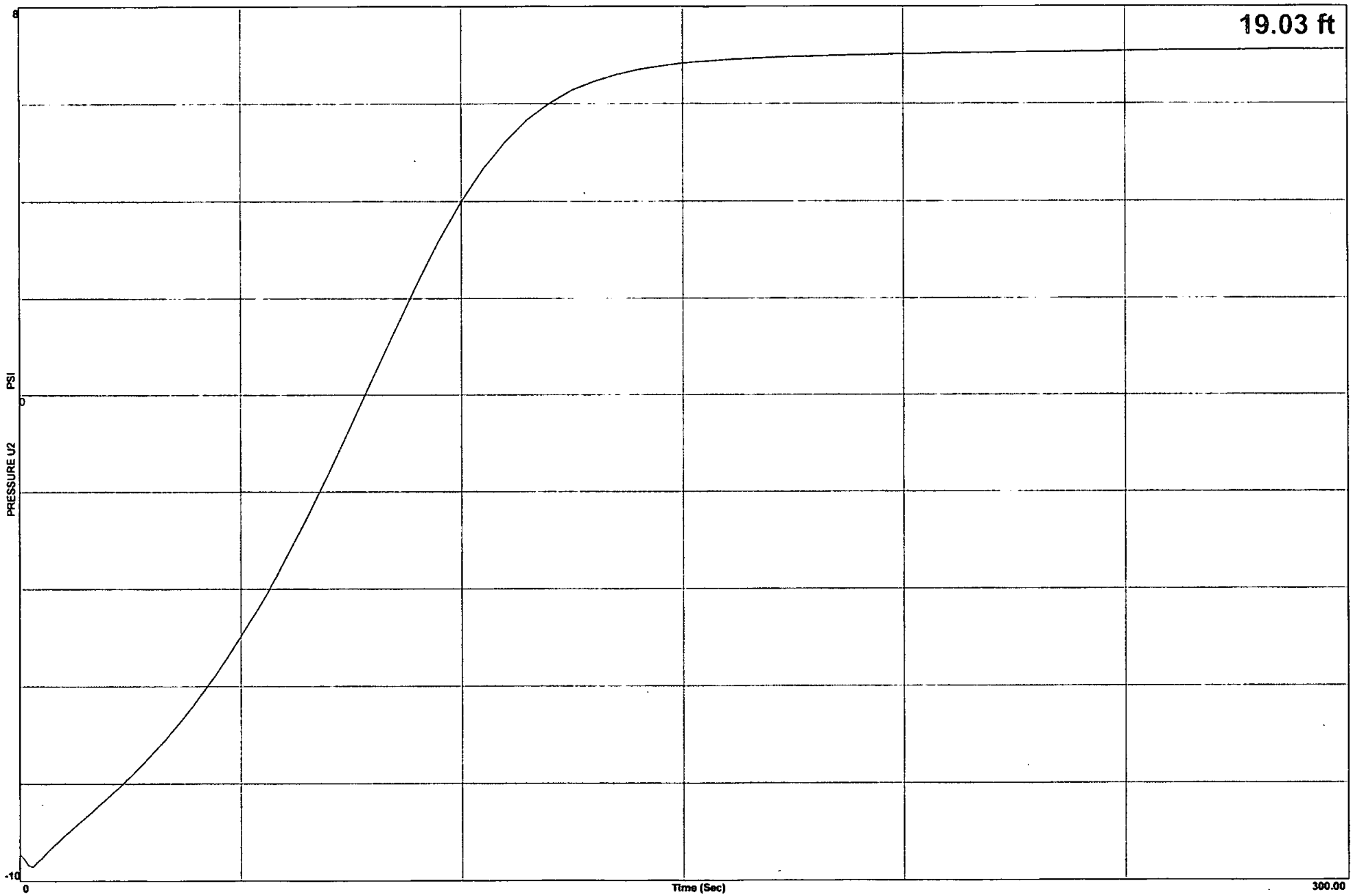
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey sand (*)

Cone Size 10cm squared

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

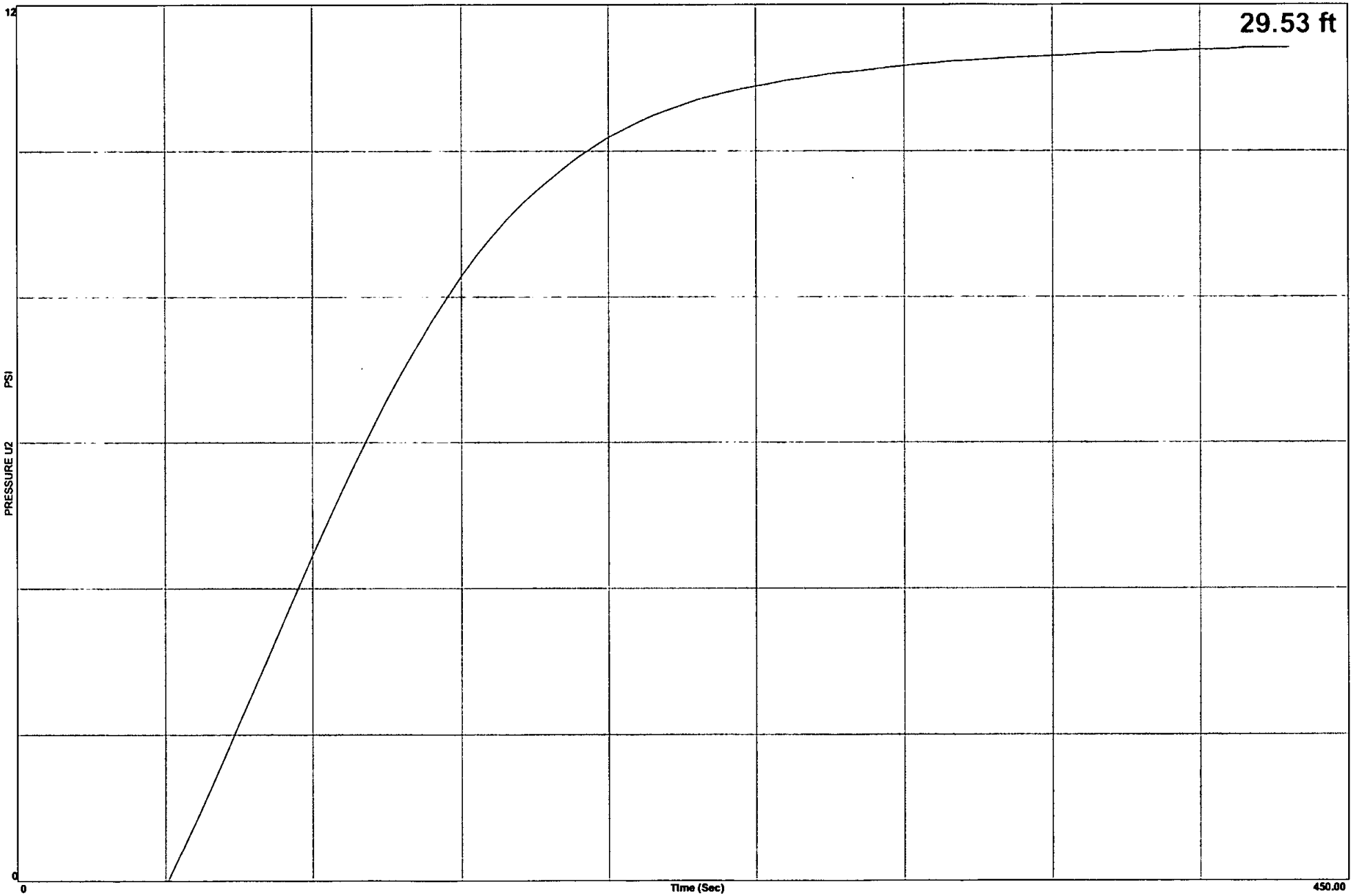
GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-05	Date and Time	8/28/2012 1:28:31 PM		
Equilized Pressure	7.1	EST GW Depth During Test	2.5		



GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-05	Date and Time	8/28/2012 1:28:31 PM		
Equilized Pressure	11.4	EST GW Depth During Test	3.1		

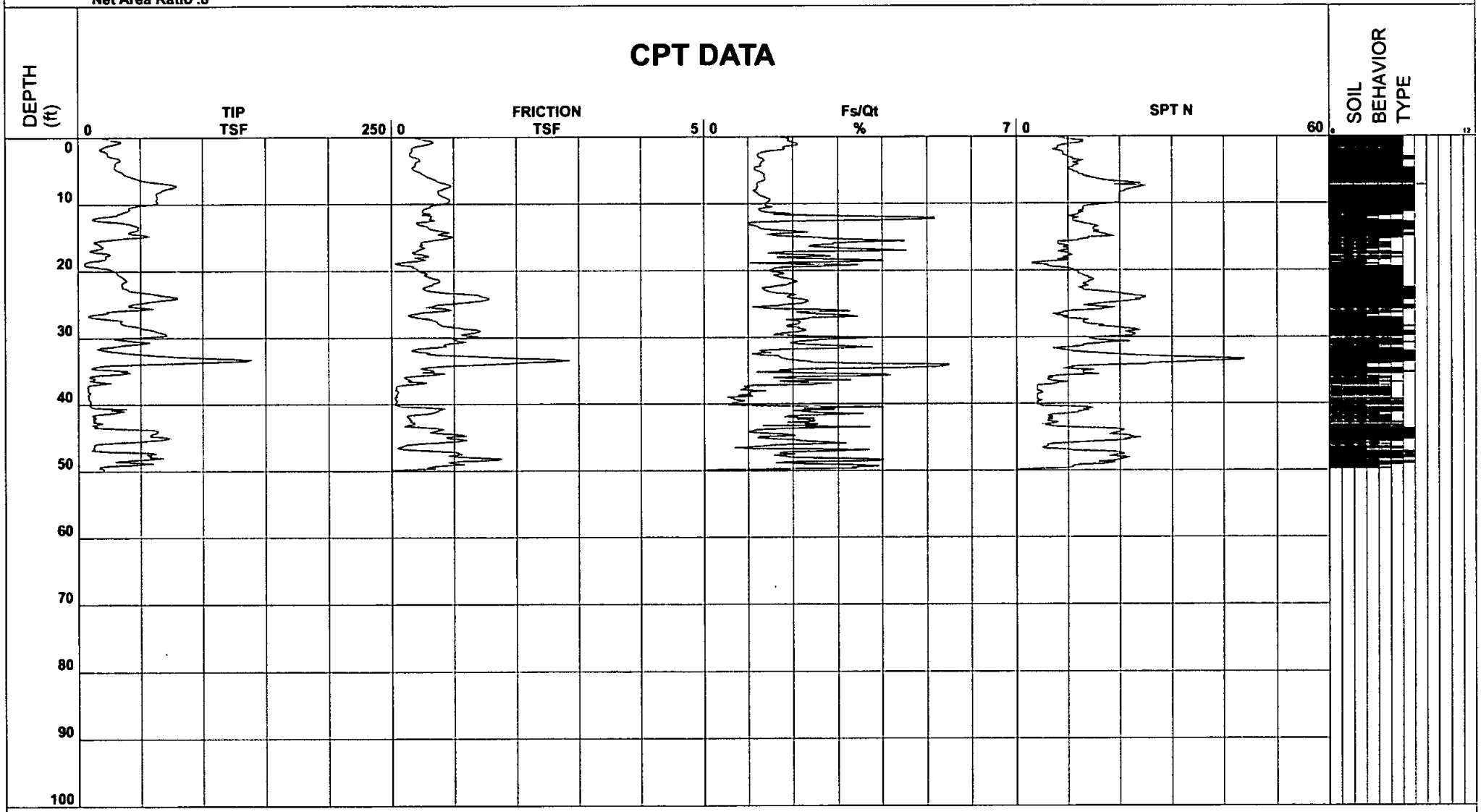


GeoSoils Inc

Project	Craig Ranch	Operator	RA-JC	Filename	SDF(068).cpt
Job Number	6359-A-SC	Cone Number	DDG1214	GPS	
Hole Number	CPT-06	Date and Time	8/28/2012 2:18:38 PM	Maximum Depth	50.03 ft
EST GW Depth During Test		3.50 ft			

Net Area Ratio .8

CPT DATA



- 1 - sensitive fine grained
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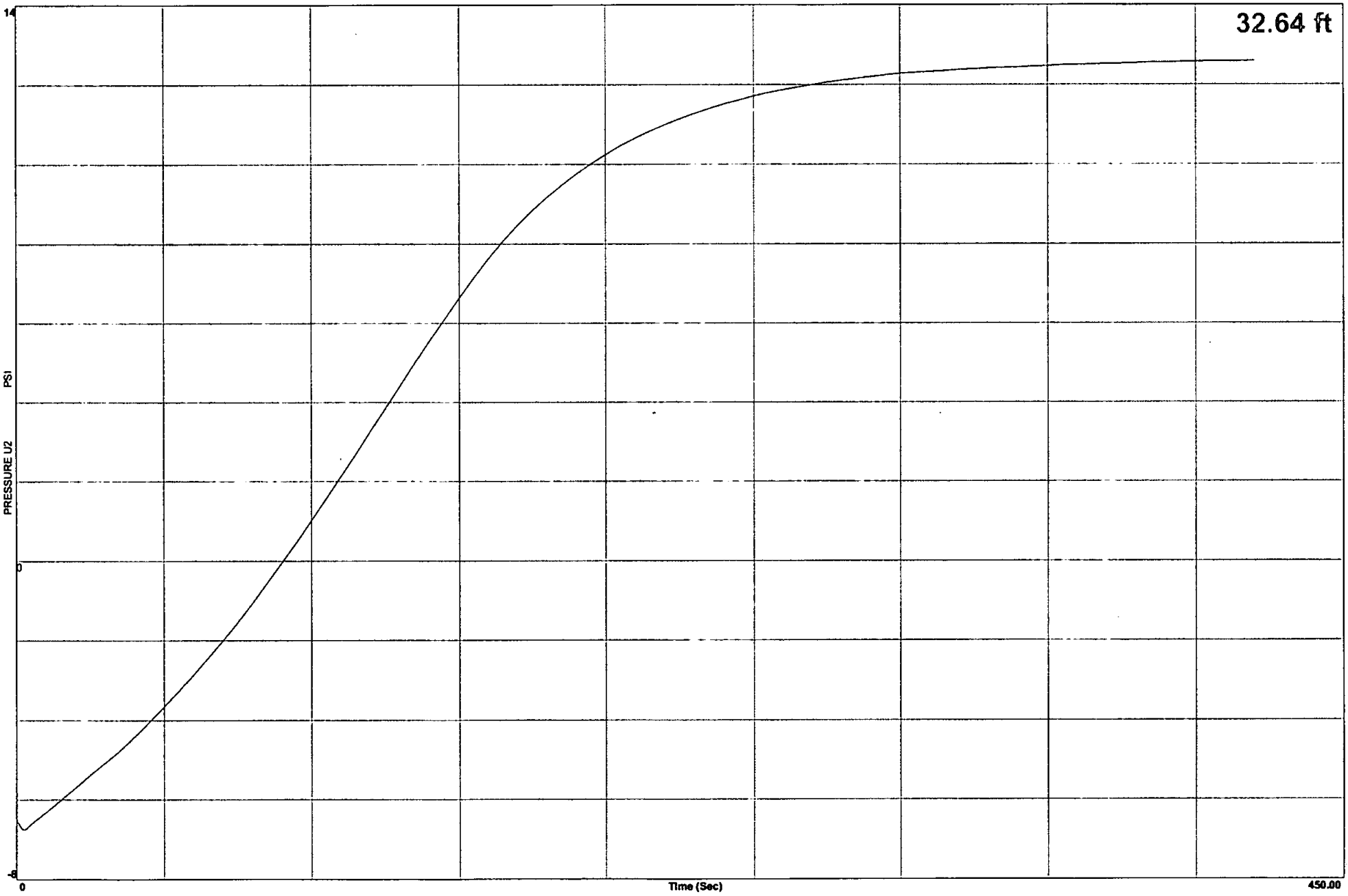
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey sand (*)

Cone Size 10cm squared

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

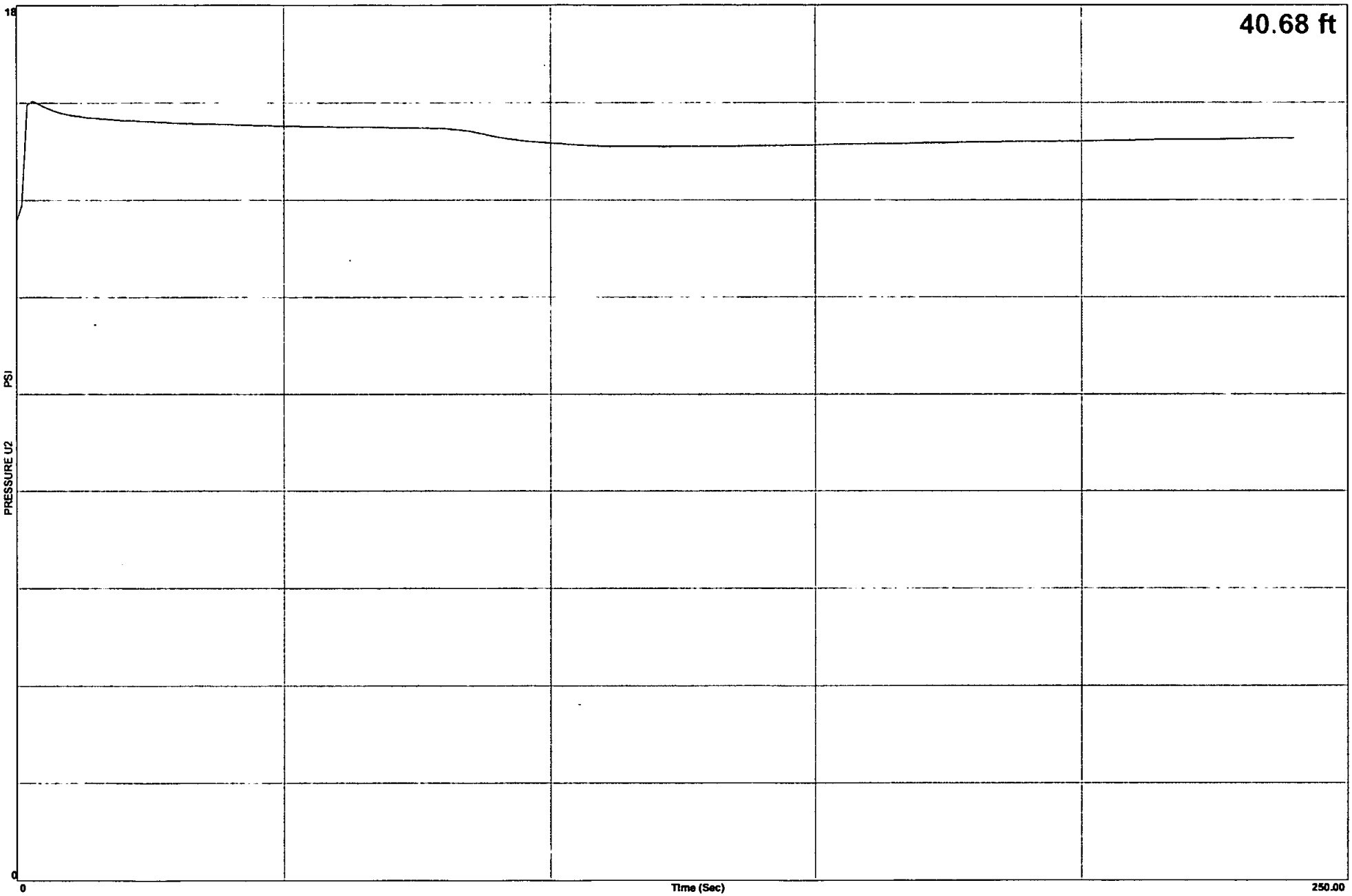
GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-06	Date and Time	8/28/2012 2:18:38 PM		
Equilized Pressure	12.5	EST GW Depth During Test	3.5		



GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-06	Date and Time	8/28/2012 2:18:38 PM		
Equilized Pressure	15.2	EST GW Depth During Test	5.5		

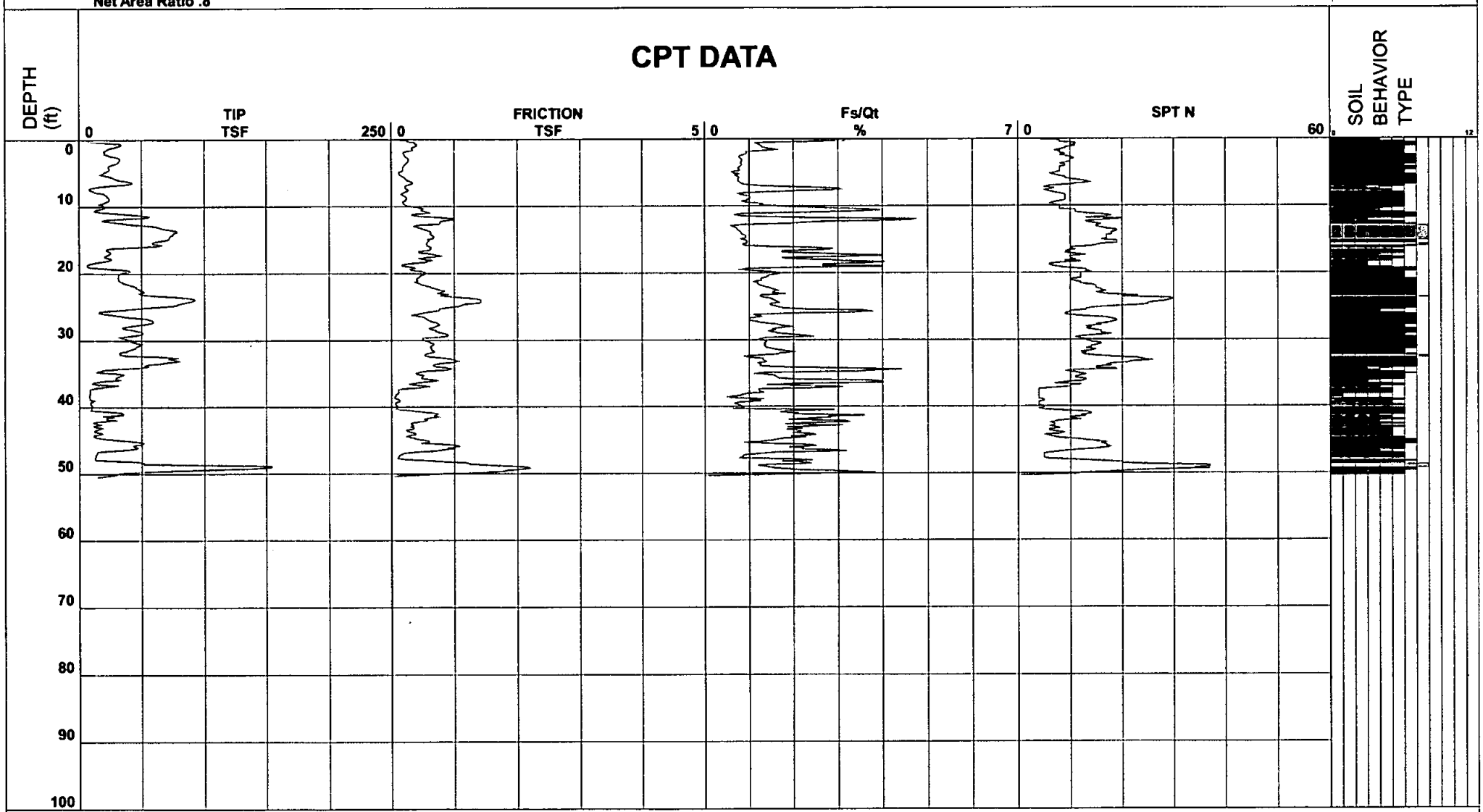


GeoSoils Inc

Project	Craig Ranch	Operator	RA-JC	Filename	SDF(069).cpt
Job Number	6359-A-SC	Cone Number	DDG1214	GPS	
Hole Number	CPT-07	Date and Time	8/29/2012 7:34:22 AM	Maximum Depth	50.52 ft
EST GW Depth During Test		4.30 ft			

Net Area Ratio .8

CPT DATA



- 1 - sensitive fine grained
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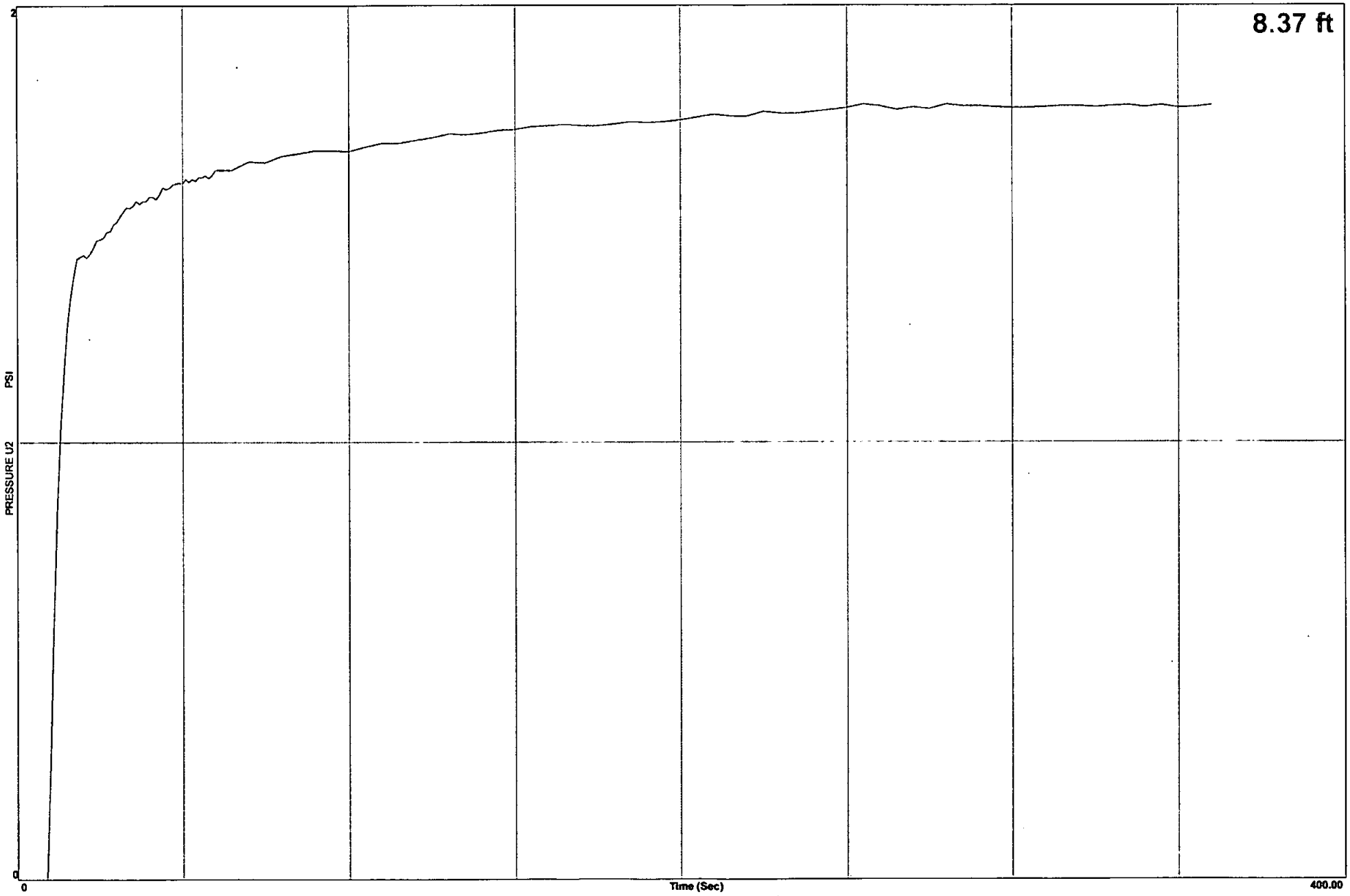
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey sand (*)

Cone Size 10cm squared

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

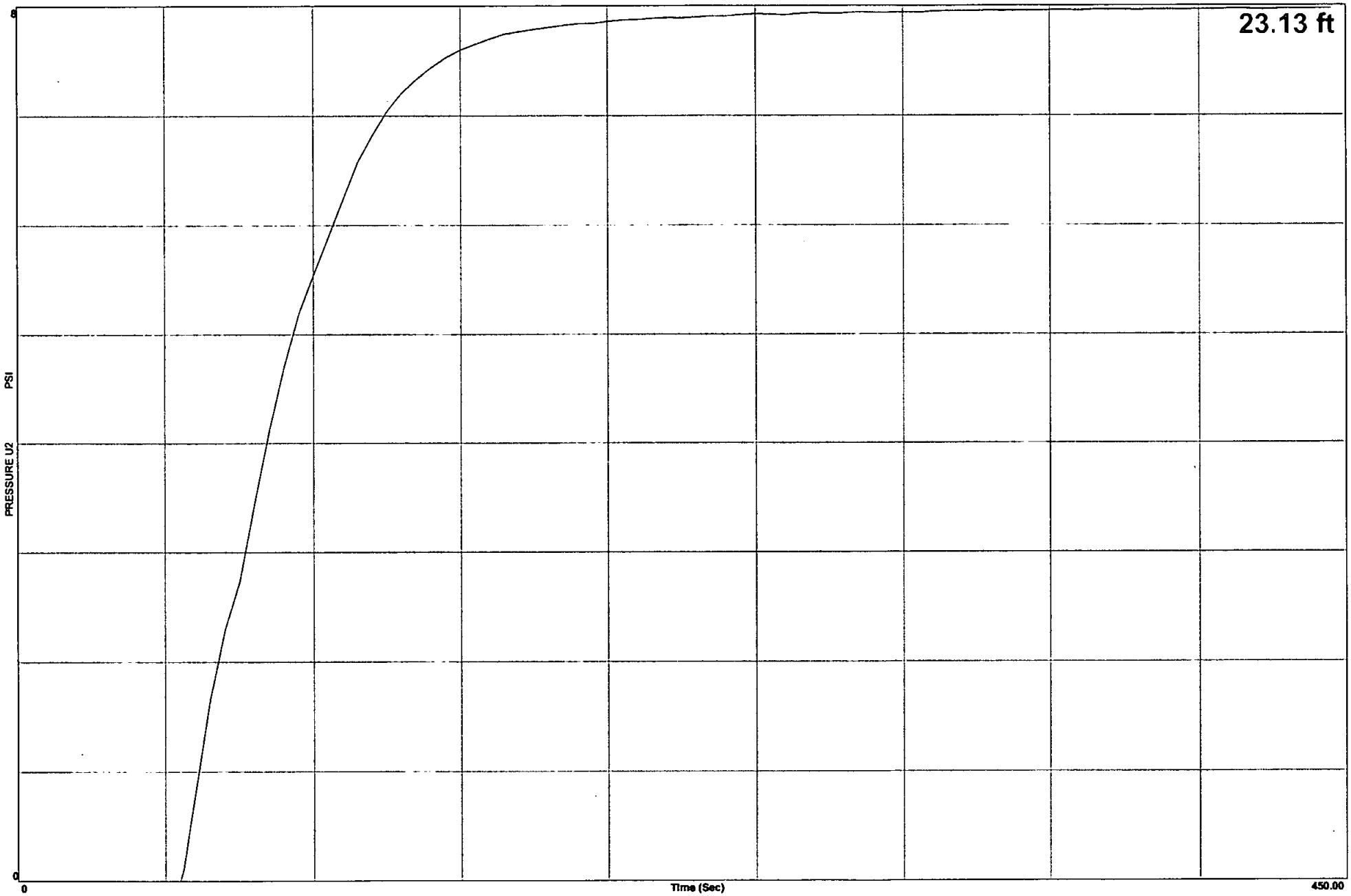
GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-07	Date and Time	8/29/2012 7:34:22 AM		
Equilized Pressure	1.7	EST GW Depth During Test	4.3		



GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-07	Date and Time	8/29/2012 7:34:22 AM		
Equilized Pressure	7.9	EST GW Depth During Test	4.7		

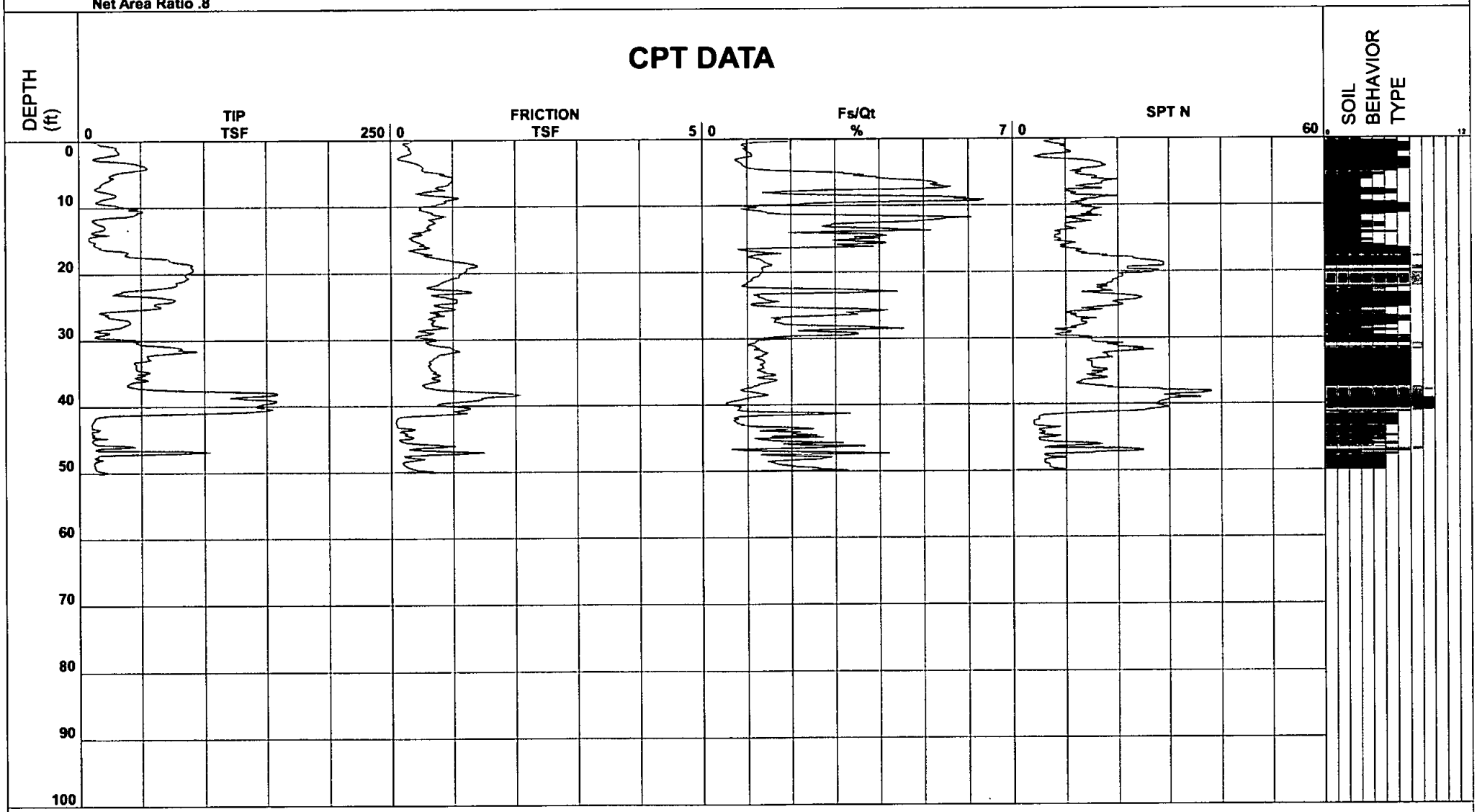


GeoSoils Inc

Project	Craig Ranch	Operator	RA-JC	Filename	SDF(070).cpt
Job Number	6359-A-SC	Cone Number	DDG1214	GPS	
Hole Number	CPT-08	Date and Time	8/29/2012 8:34:10 AM	Maximum Depth	50.20 ft
EST GW Depth During Test	6.20 ft				

Net Area Ratio .8

CPT DATA



- 1 - sensitive fine grained
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- 6 - sandy silt to clayey silt
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- 8 - sand to silty sand
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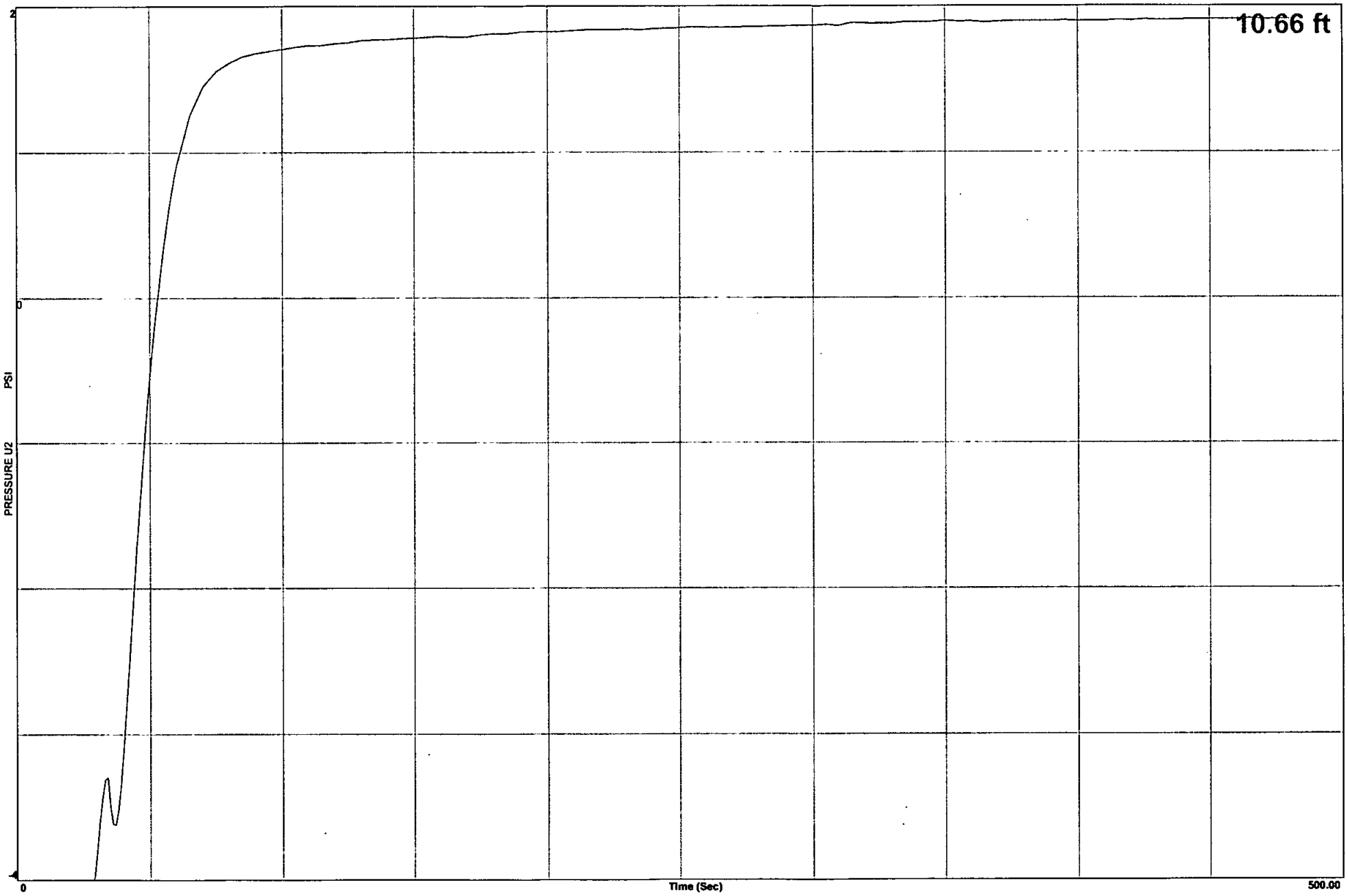
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey sand (*)

Cone Size 10cm squared

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

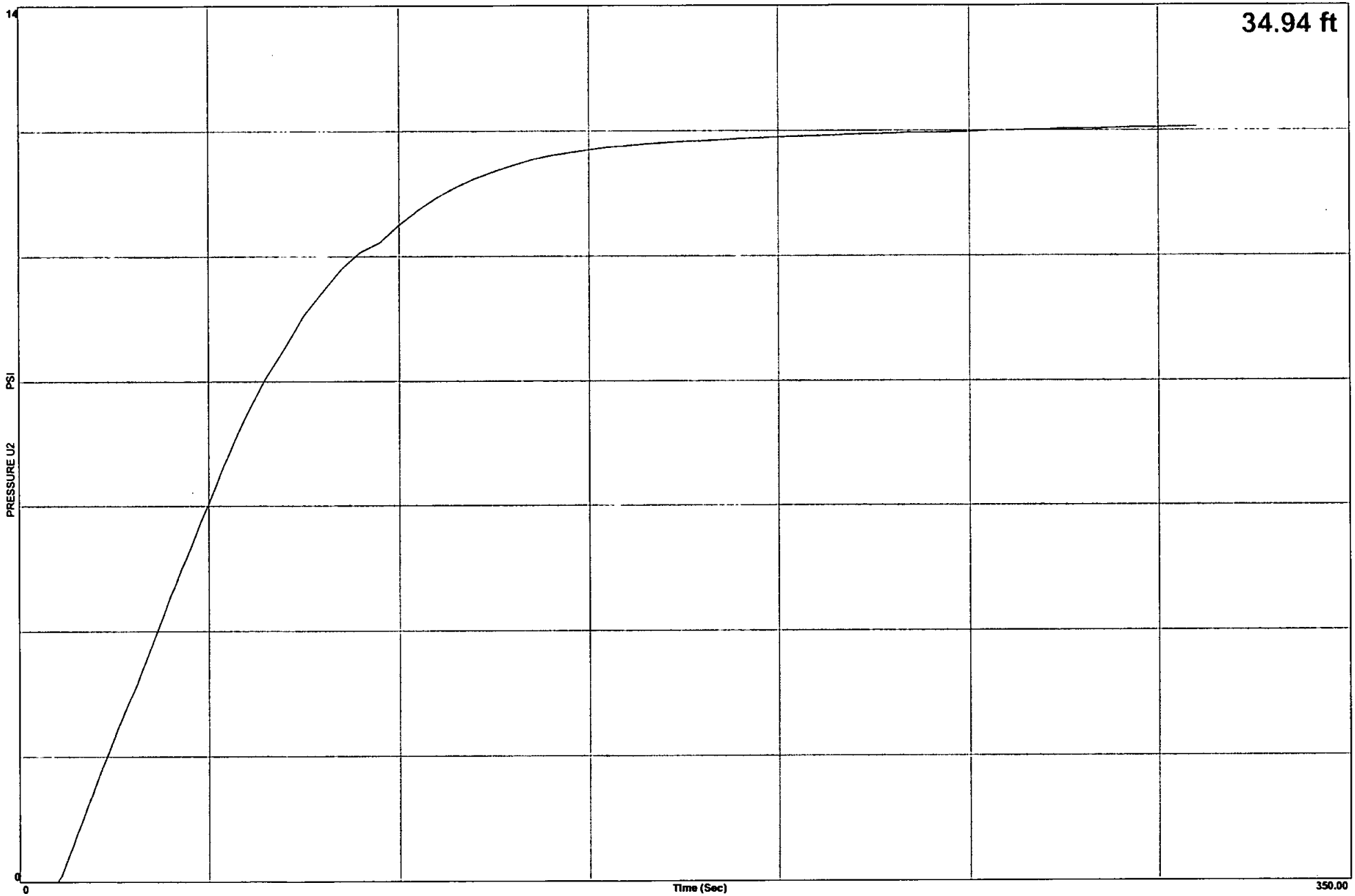
GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-08	Date and Time	8/29/2012 8:34:10 AM		
Equilized Pressure	1.8	EST GW Depth During Test	6.2		



GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-08	Date and Time	8/29/2012 8:34:10 AM		
Equilized Pressure	12.0	EST GW Depth During Test	7.2		

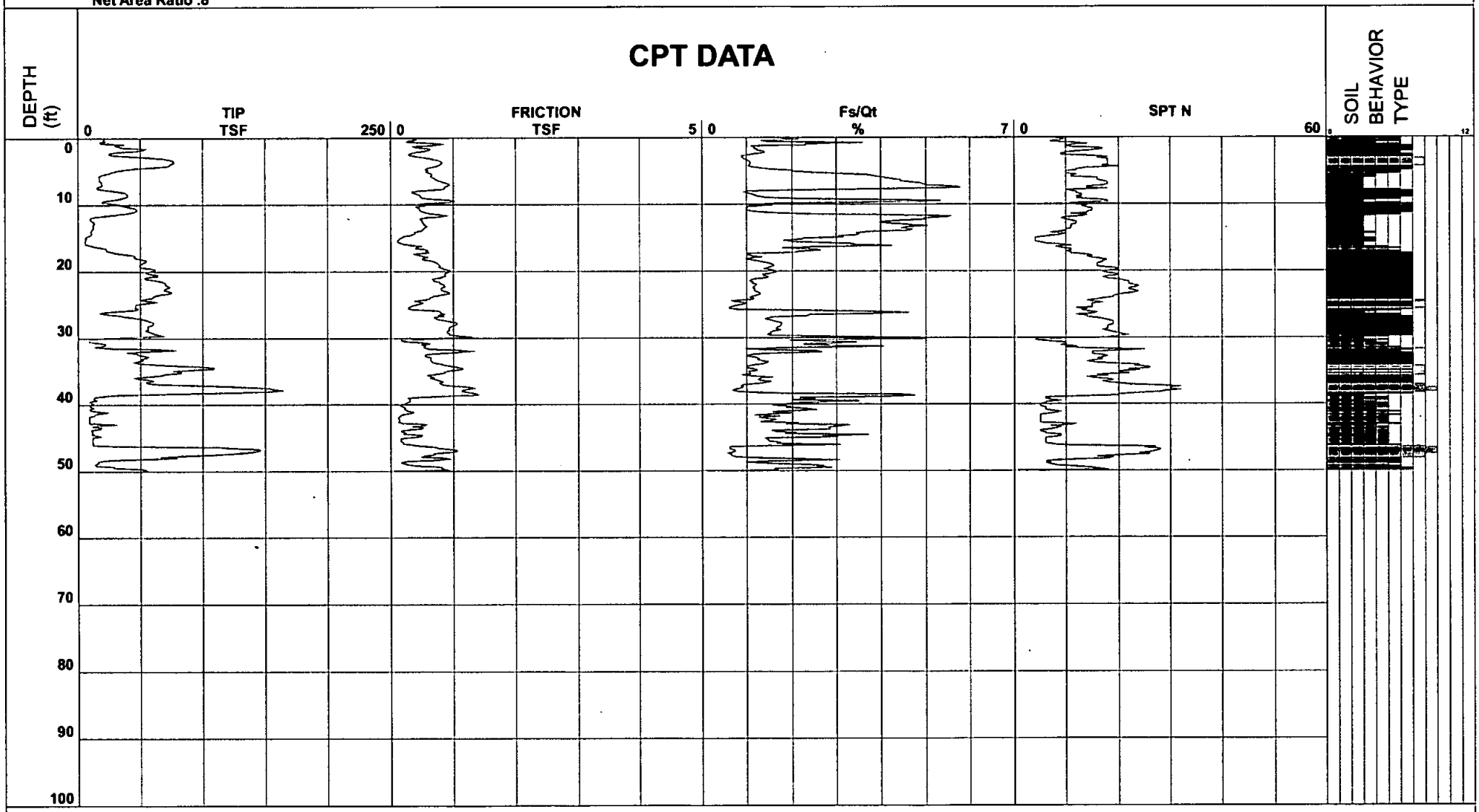


GeoSoils Inc

Project	Craig Ranch	Operator	RA-JC	Filename	SDF(071).cpt
Job Number	6359-A-SC	Cone Number	DDG1214	GPS	
Hole Number	CPT-09	Date and Time	8/29/2012 9:32:31 AM	Maximum Depth	50.20 ft
EST GW Depth During Test	6.00 ft				

Net Area Ratio .8

CPT DATA



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- 7 - silty sand to sandy silt
- 8 - sand to silty sand
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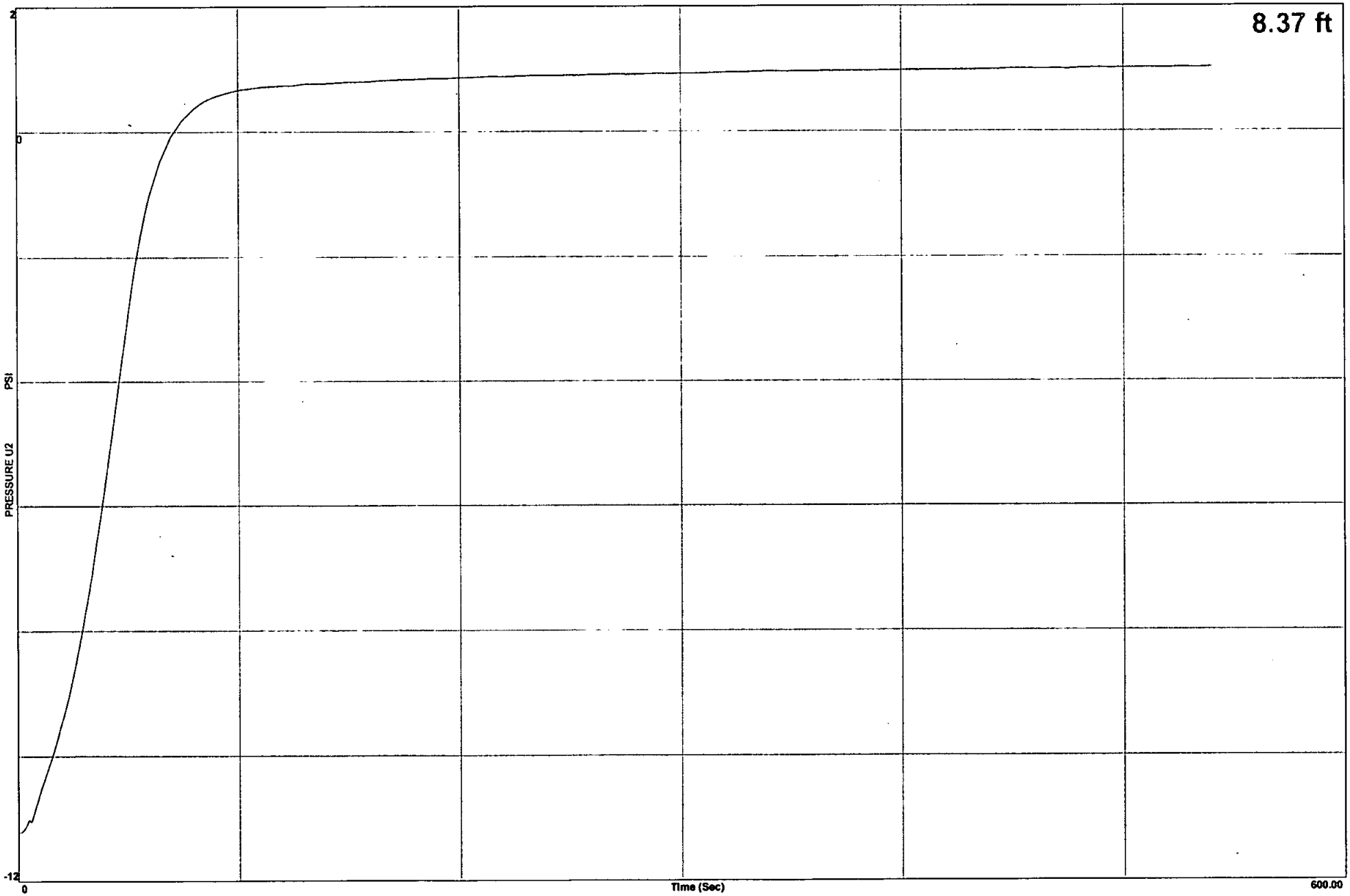
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey sand (*)

Cone Size 10cm squared

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

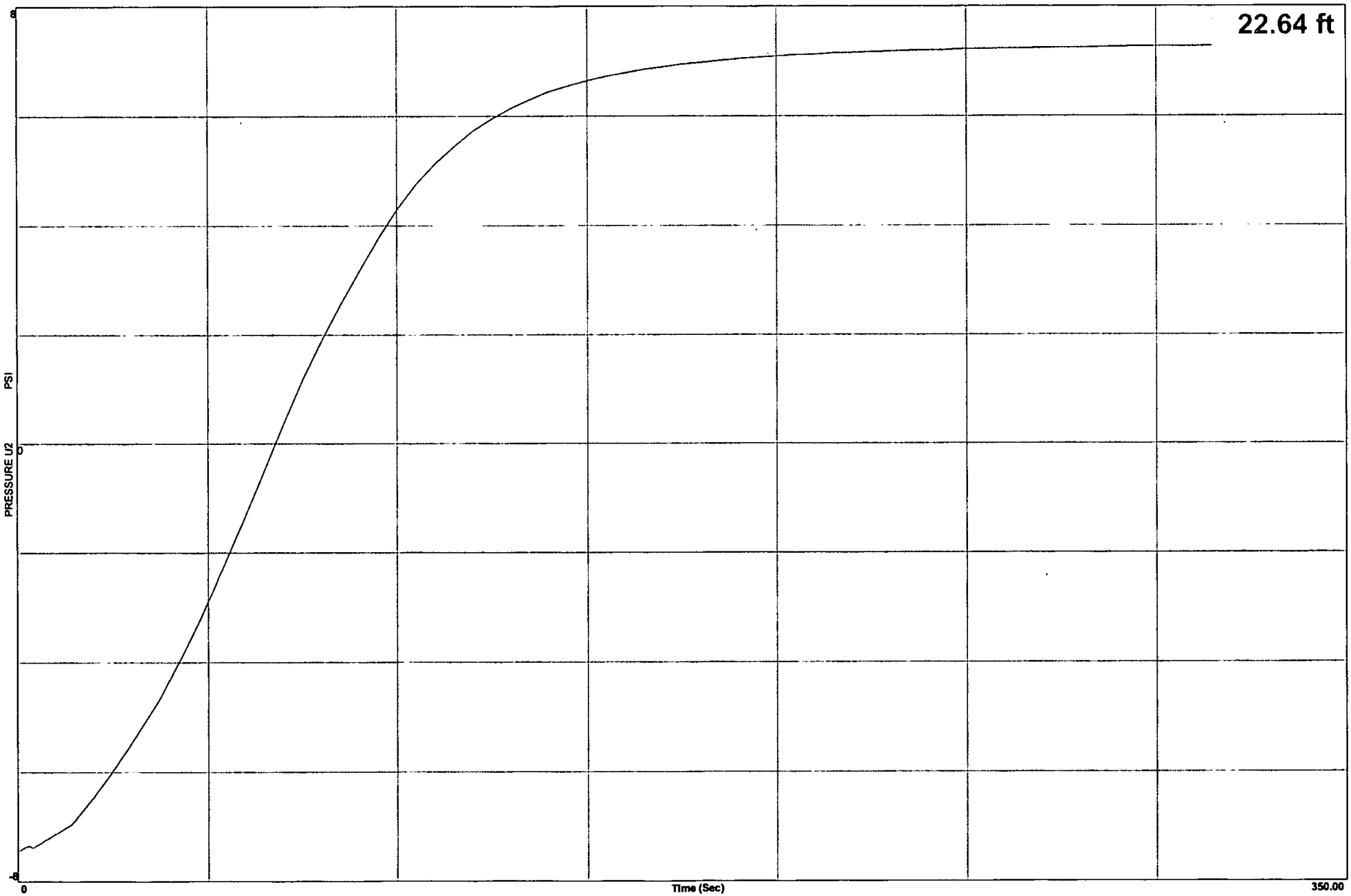
GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-09	Date and Time	8/29/2012 9:32:31 AM		
Equilized Pressure	.9	EST GW Depth During Test	6.0		



GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-09	Date and Time	8/29/2012 9:32:31 AM		
Equilized Pressure	7.2	EST GW Depth During Test	5.9		

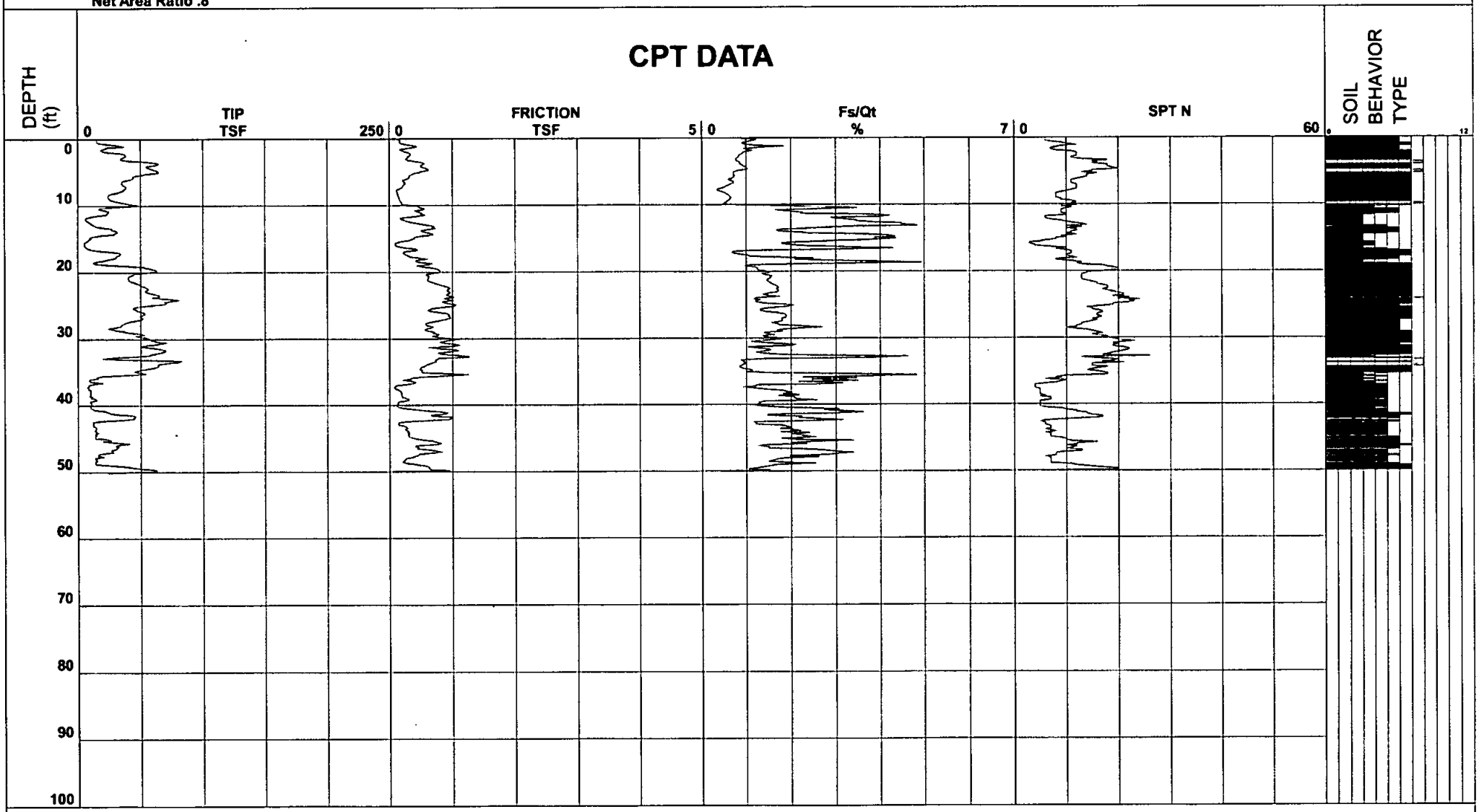


GeoSoils Inc

Project	Craig Ranch	Operator	RA-JC	Filename	SDF(072).cpt
Job Number	6359-A-SC	Cone Number	DDG1214	GPS	
Hole Number	CPT-10	Date and Time	8/29/2012 10:42:48 AM	Maximum Depth	50.20 ft
EST GW Depth During Test	3.70 ft				

Net Area Ratio .8

CPT DATA



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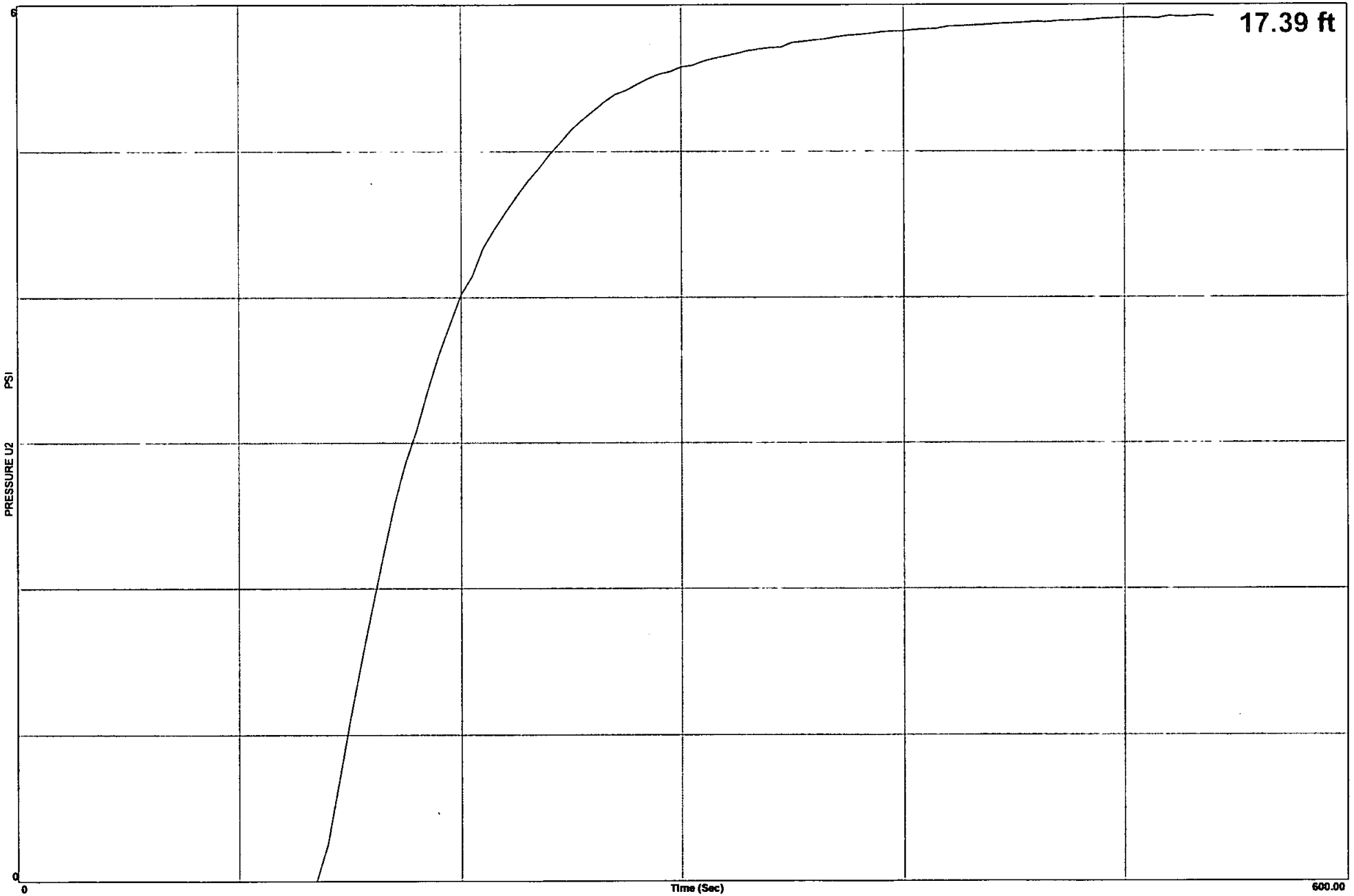
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey sand (*)

Cone Size 10cm squared

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

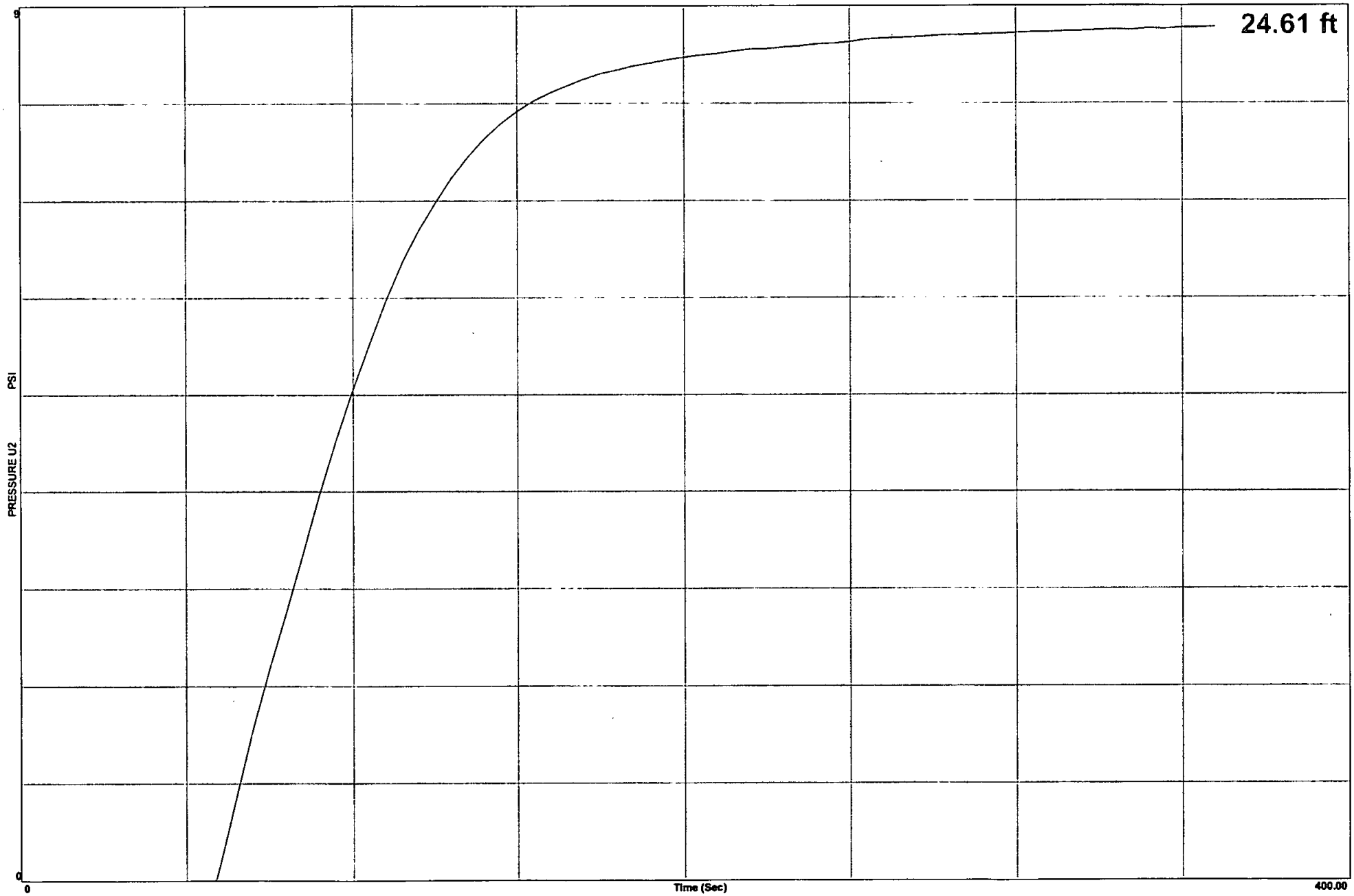
GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-10	Date and Time	8/29/2012 10:42:48 AM		
Equilized Pressure	5.9	EST GW Depth During Test	3.7		



GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-10	Date and Time	8/29/2012 10:42:48 AM		
Equilized Pressure	8.7	EST GW Depth During Test	4.4		

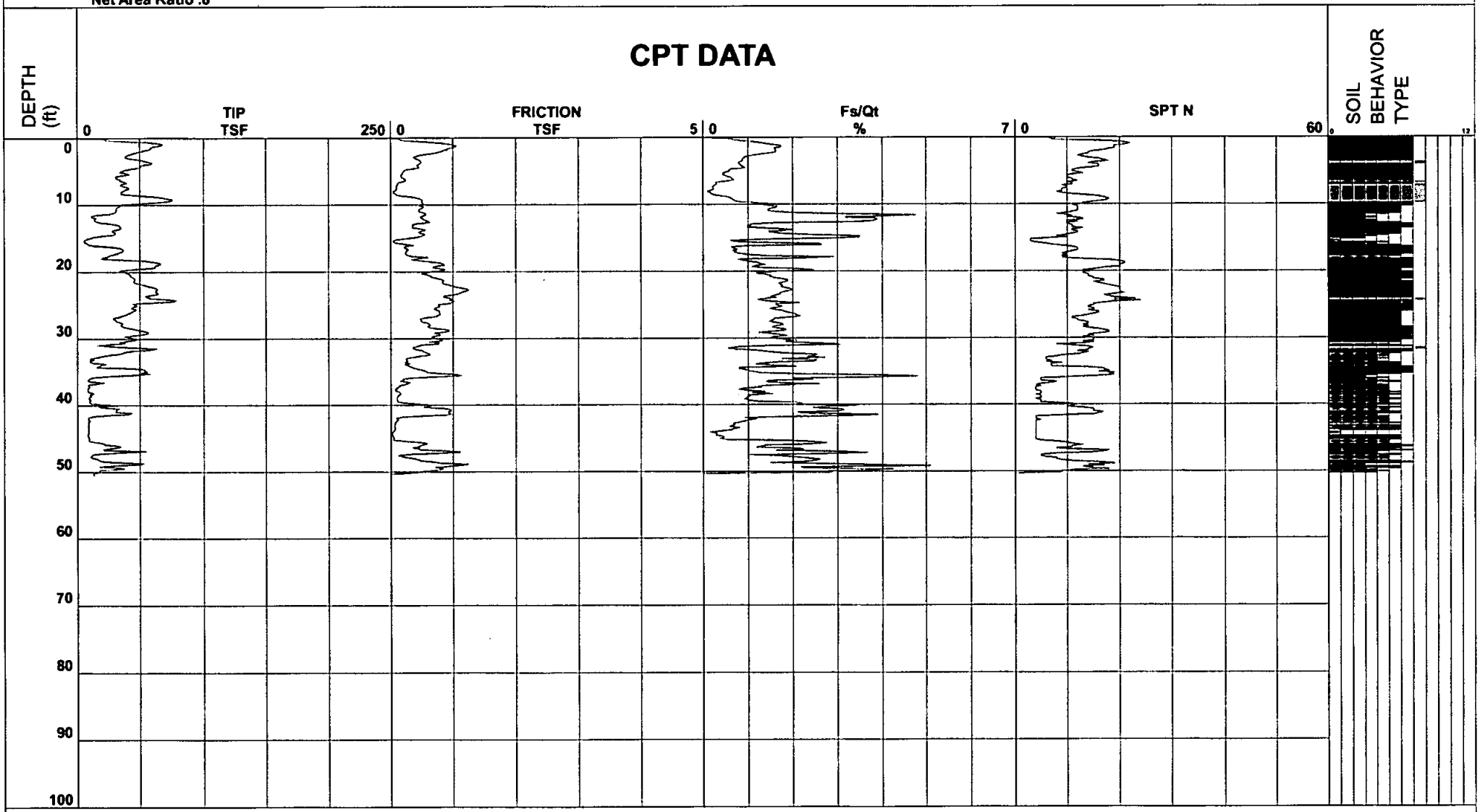


GeoSoils Inc

Project	Craig Ranch	Operator	RA-JC	Filename	SDF(073).cpt
Job Number	6359-A-SC	Cone Number	DDG1214	GPS	
Hole Number	CPT-11	Date and Time	8/29/2012 12:45:48 PM	Maximum Depth	50.52 ft
EST GW Depth During Test		3.00 ft			

Net Area Ratio .8

CPT DATA



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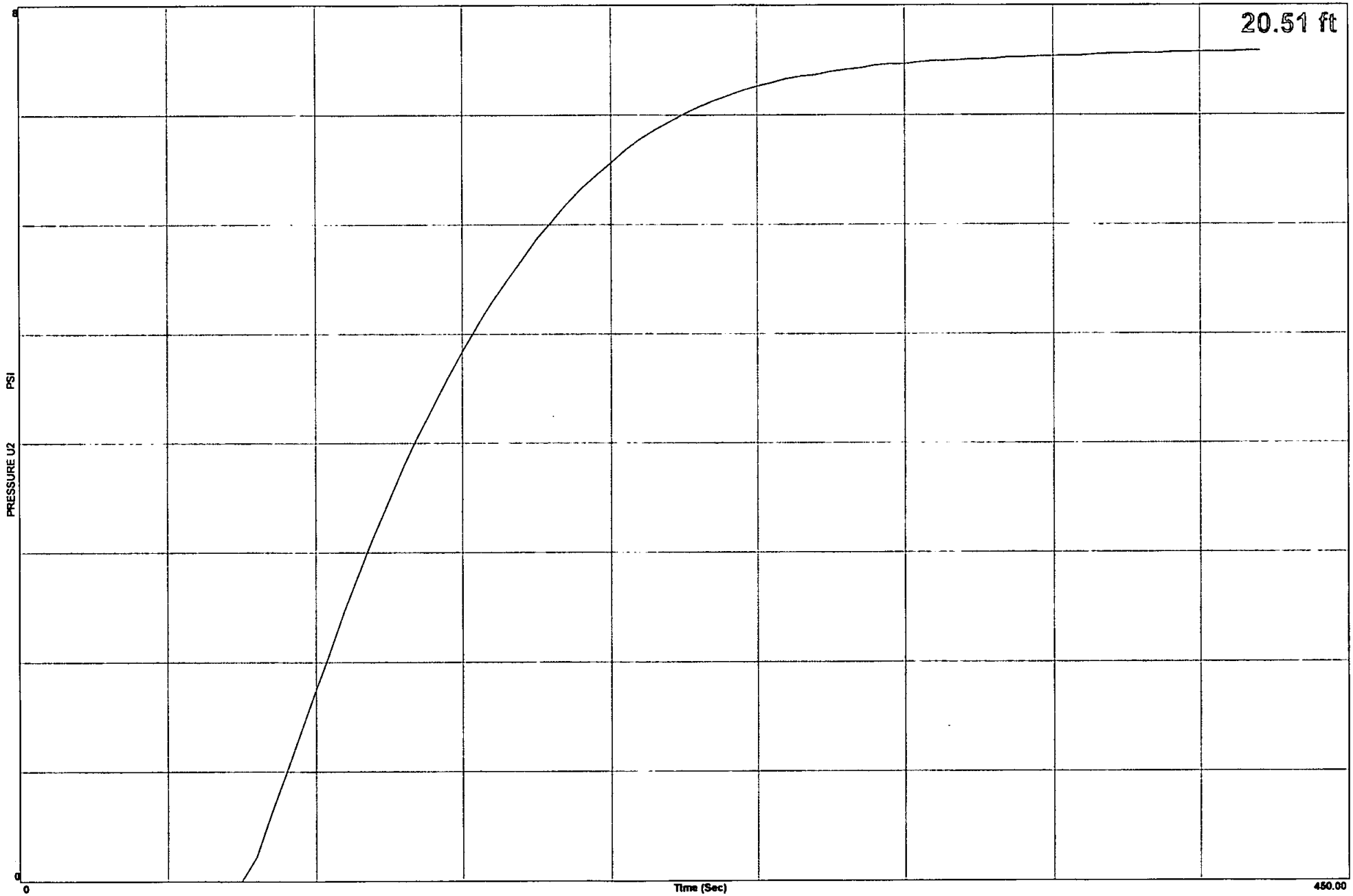
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey sand (*)

Cone Size 10cm squared

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

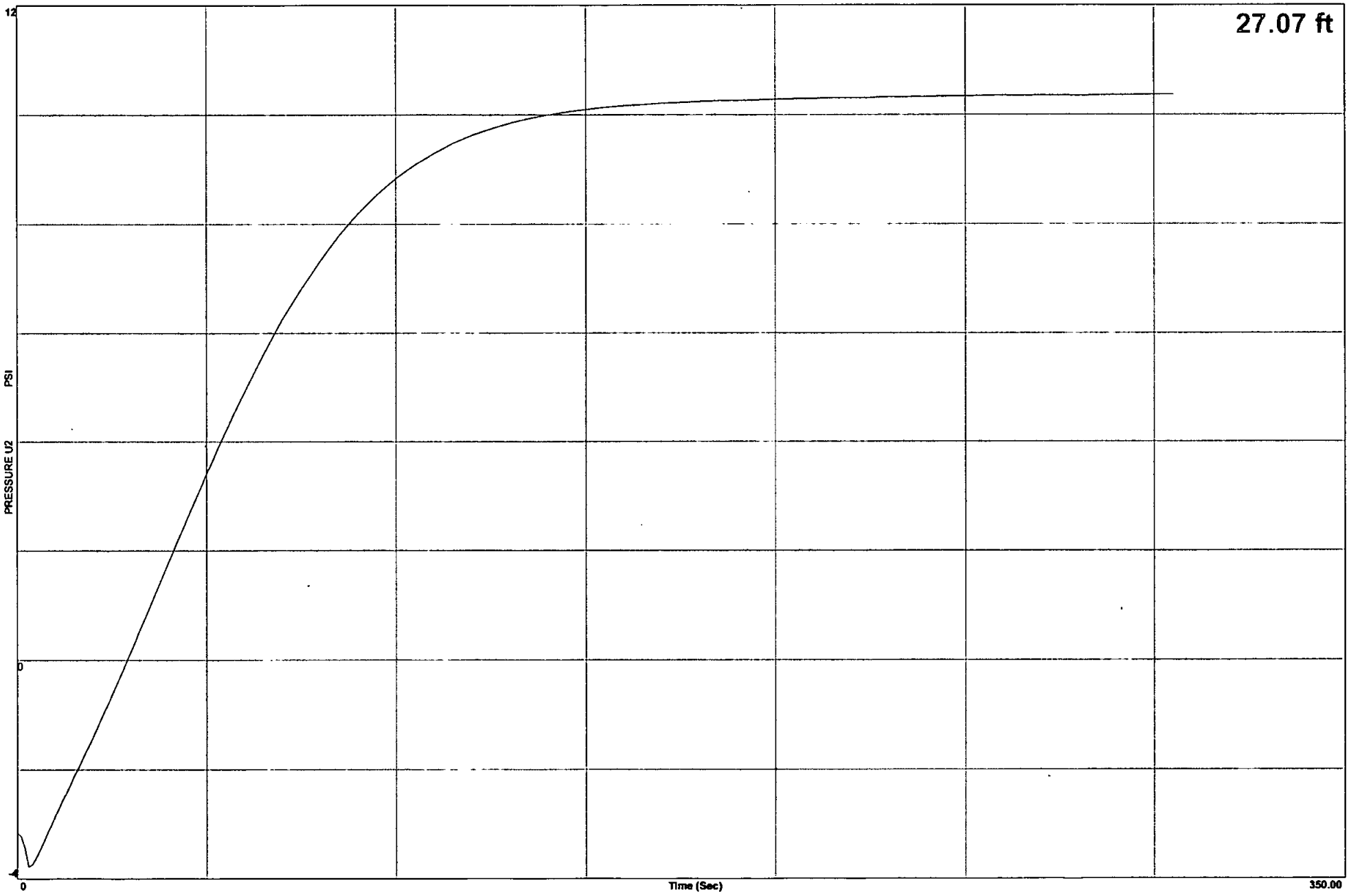
GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-11	Date and Time	8/29/2012 12:45:48 PM		
Equilized Pressure	7.5	EST GW Depth During Test	3.0		



GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-11	Date and Time	8/29/2012 12:45:48 PM		
Equilized Pressure	10.3	EST GW Depth During Test	3.2		

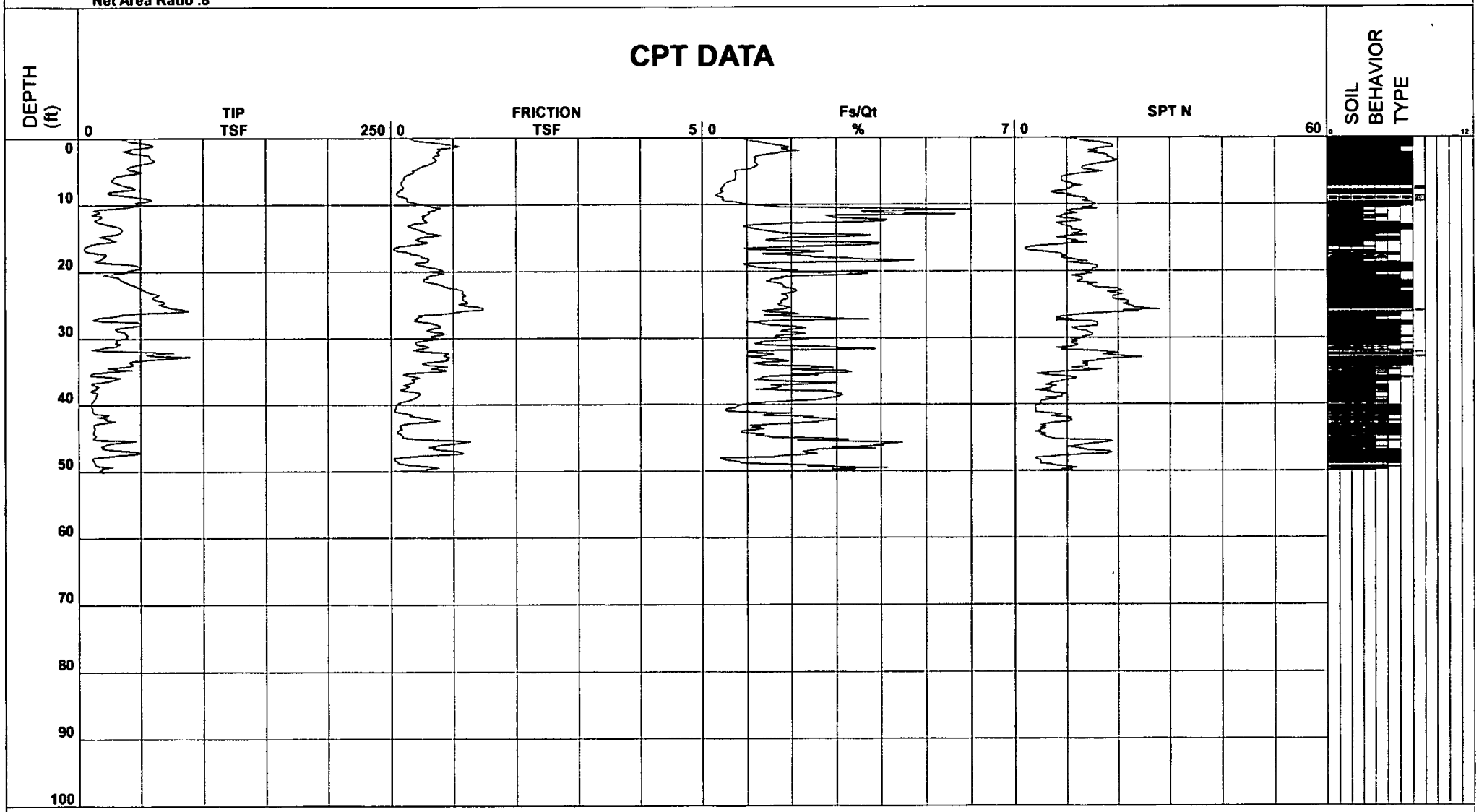


GeoSoils Inc

Project	Craig Ranch	Operator	RA-JC	Filename	SDF(074).cpt
Job Number	6359-A-SC	Cone Number	DDG1214	GPS	
Hole Number	CPT-12	Date and Time	8/29/2012 1:33:07 PM	Maximum Depth	50.20 ft
EST GW Depth During Test	3.90 ft				

Net Area Ratio .8

CPT DATA



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- 7 - silty sand to sandy silt
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- 11 - very stiff fine grained (*)
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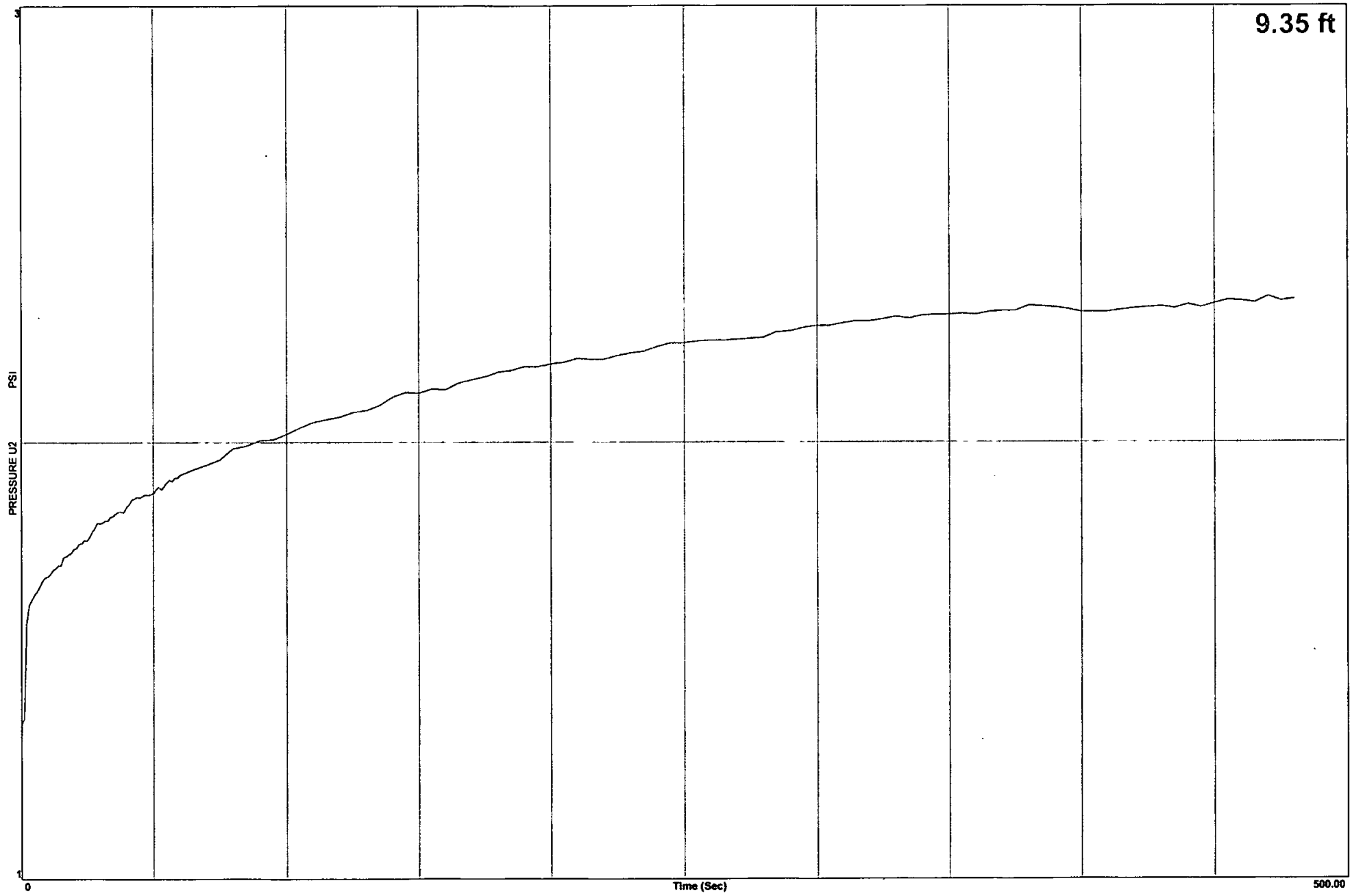
Cone Size 10cm squared

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

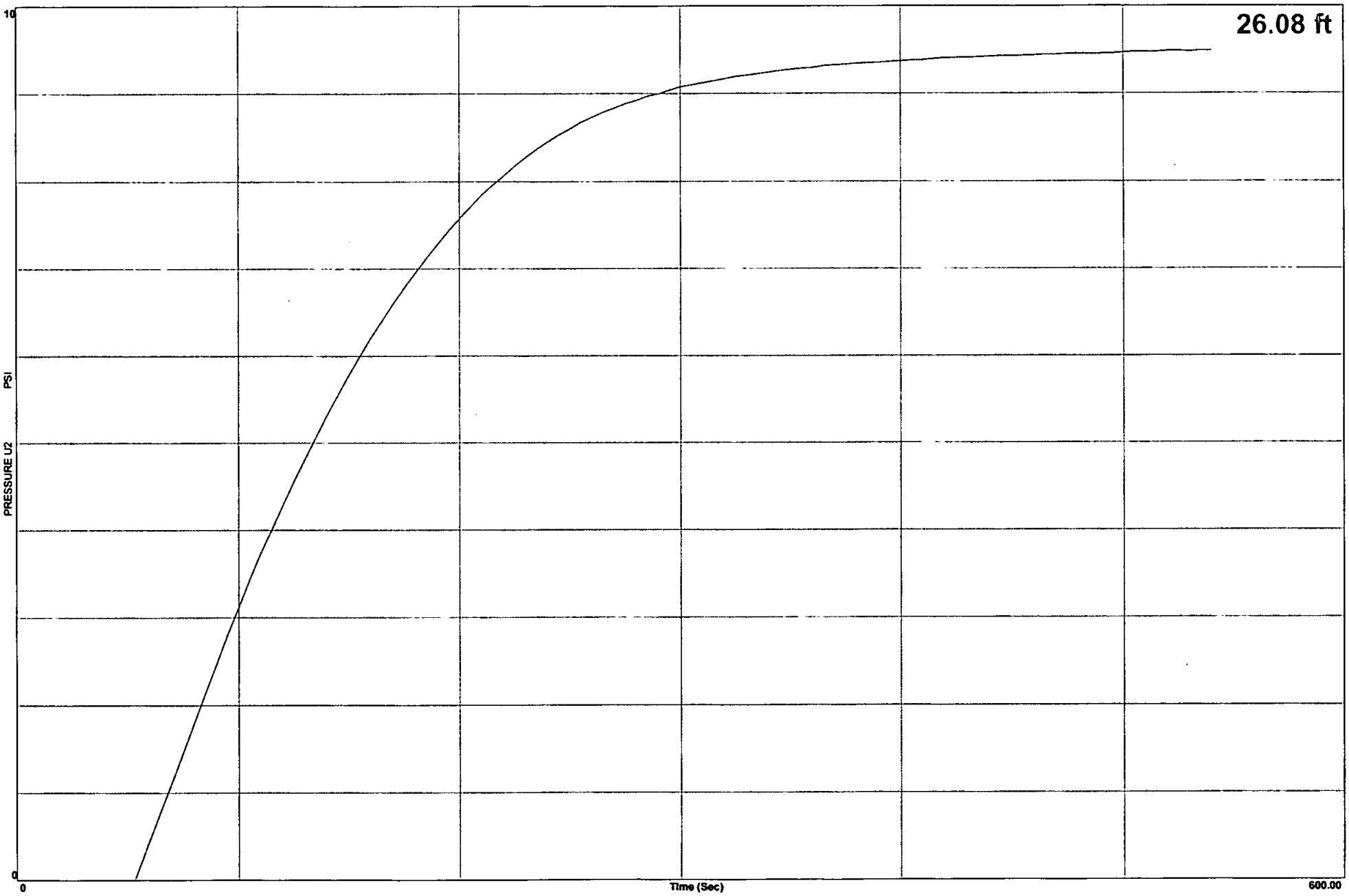
GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-12	Date and Time	8/29/2012 1:33:07 PM		
Equilized Pressure	2.3	EST GW Depth During Test	3.9		



GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-12	Date and Time	8/29/2012 1:33:07 PM		
Equilized Pressure	9.4	EST GW Depth During Test	4.2		

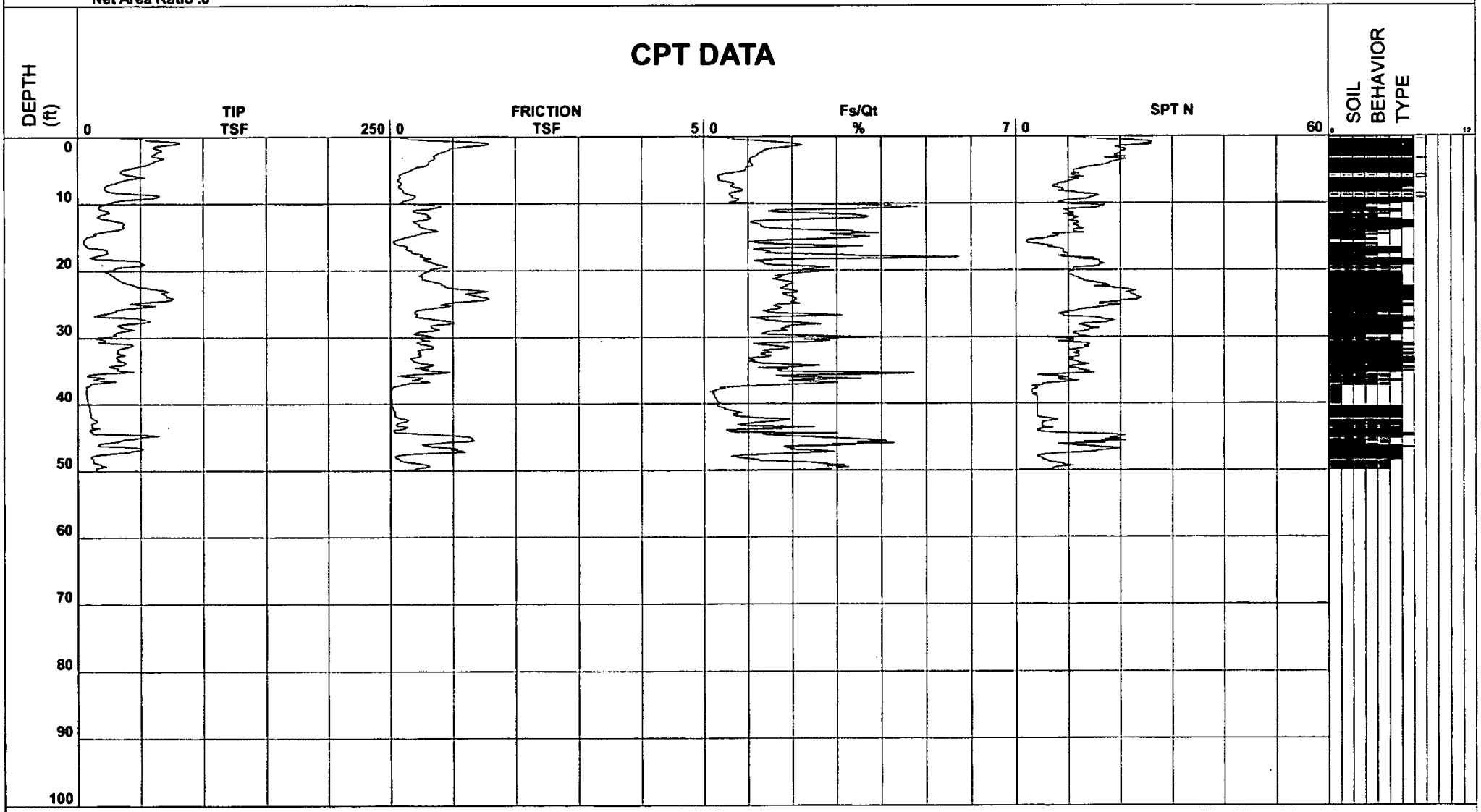


GeoSoils Inc

Project	Craig Ranch	Operator	RA-JC	Filename	SDF(075).cpt
Job Number	6359-A-SC	Cone Number	DDG1214	GPS	
Hole Number	CPT-13	Date and Time	8/29/2012 2:27:40 PM	Maximum Depth	50.20 ft
EST GW Depth During Test		3.20 ft			

Net Area Ratio .8

CPT DATA



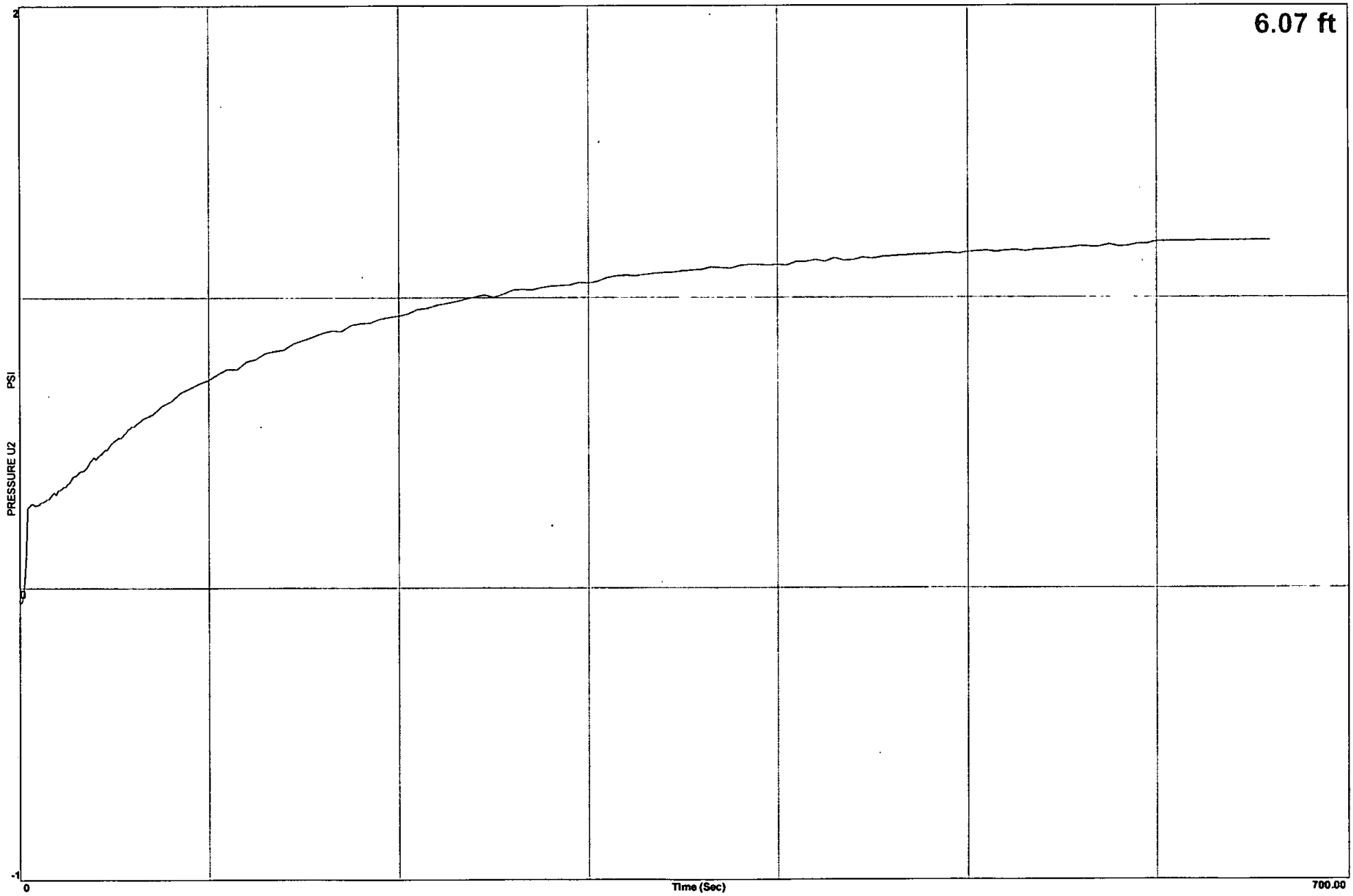
- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey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

Cone Size 10cm squared

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

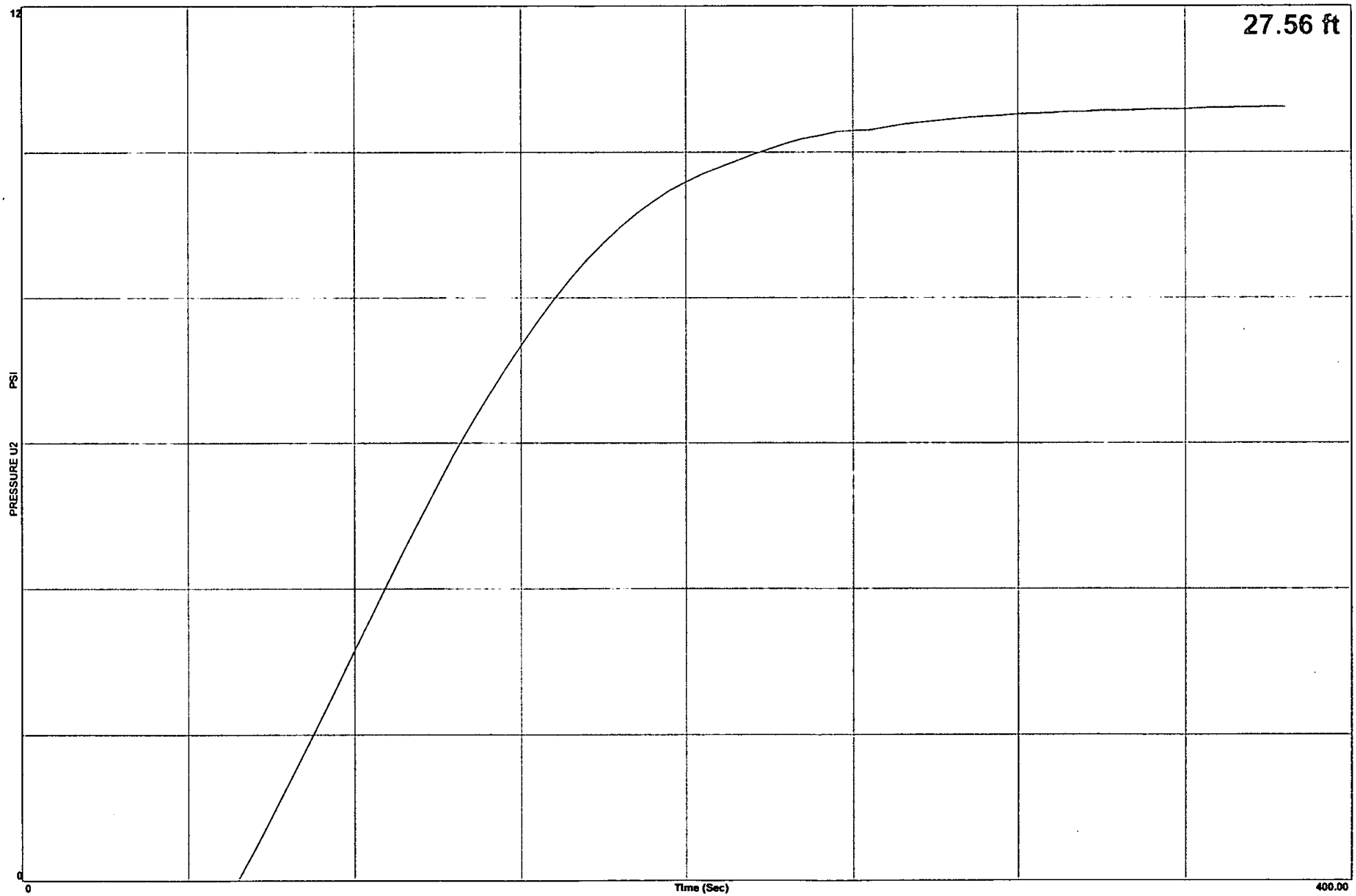
GeoSoils Inc

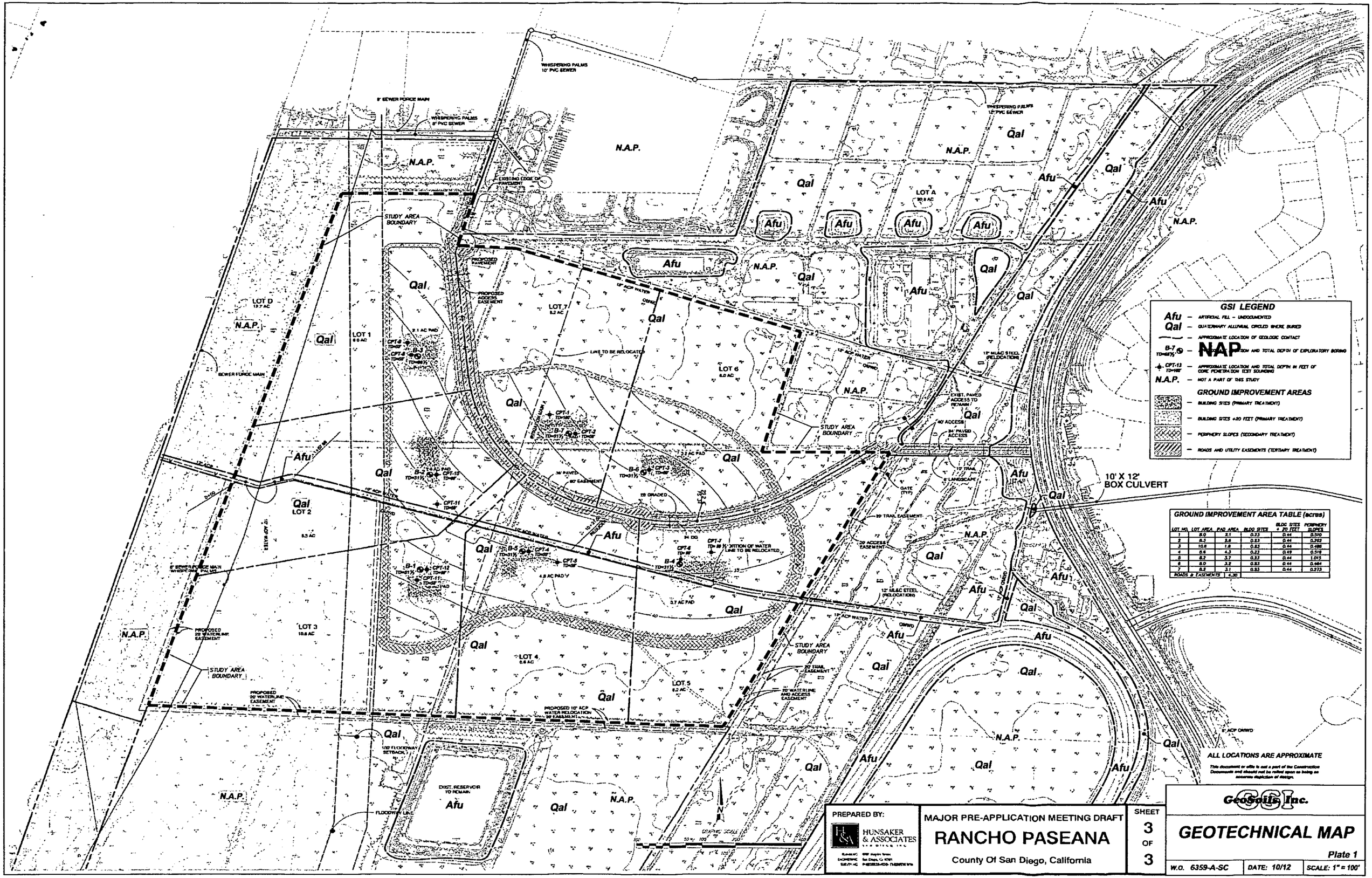
Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-13	Date and Time	8/29/2012 2:27:40 PM		
Equilized Pressure	1.2	EST GW Depth During Test	3.2		



GeoSoils Inc

Location	Craig Ranch	Operator	RA-JC	GPS	
Job Number	6359-A-SC	Cone Number	DDG1214		
Hole Number	CPT-13	Date and Time	8/29/2012 2:27:40 PM		
Equilized Pressure	10.6	EST GW Depth During Test	3.0		





GROUND IMPROVEMENT AREA TABLE (acres)

LOT NO.	LOT AREA	PAD AREA	BLDG SITES	BLDG SITES + 20 FEET	PERIPHERY SLOPES
1	8.0	2.1	0.23	0.44	0.510
2	8.3	2.6	0.23	0.44	0.292
3	10.6	1.8	0.23	0.44	0.486
4	8.6	4.3	0.23	0.49	0.518
5	8.2	3.7	0.23	0.44	1.015
6	8.0	3.2	0.23	0.44	0.464
7	8.2	3.1	0.23	0.44	0.273
ROADS & EASEMENTS		4.30			

PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC.

MAJOR PRE-APPLICATION MEETING DRAFT
RANCHO PASEANA
County Of San Diego, California

SHEET 3 OF 3

GeoSoils, Inc.

GEOTECHNICAL MAP
Plate 1

W.O. 6359-A-SC | DATE: 10/12 | SCALE: 1" = 100'

Geotechnics
Incorporated

San Diego
El Centro
Riverside

August 6, 2009

Mr. Andrew Parkinson
1328 Sun Valley Road
Solana Beach, CA 92075

Project No. 0951-001-01
Document No. 09-0434

SUBJECT: BORING COMPLETION REPORT
Quantum Estates II Bridge
Rancho Santa Fe, California
Permit LMON106182

Mr. Parkinson:

In accordance with County of San Diego requirements, we have prepared this boring completion report for the subsurface explorations performed at the site. We are attaching a site location map, geotechnical map showing boring locations, boring logs, and a copy of the approved permit. Scotts Drilling Company was the drilling subcontractor. The borings were sealed immediately after completion in general conformance with California Well Standards Bulletins and the County of San Diego Code of Regulatory Ordinances.

We appreciate this opportunity to provide professional services. If you have any questions or comments, please do not hesitate to contact us.

GEOTECHNICS INCORPORATED

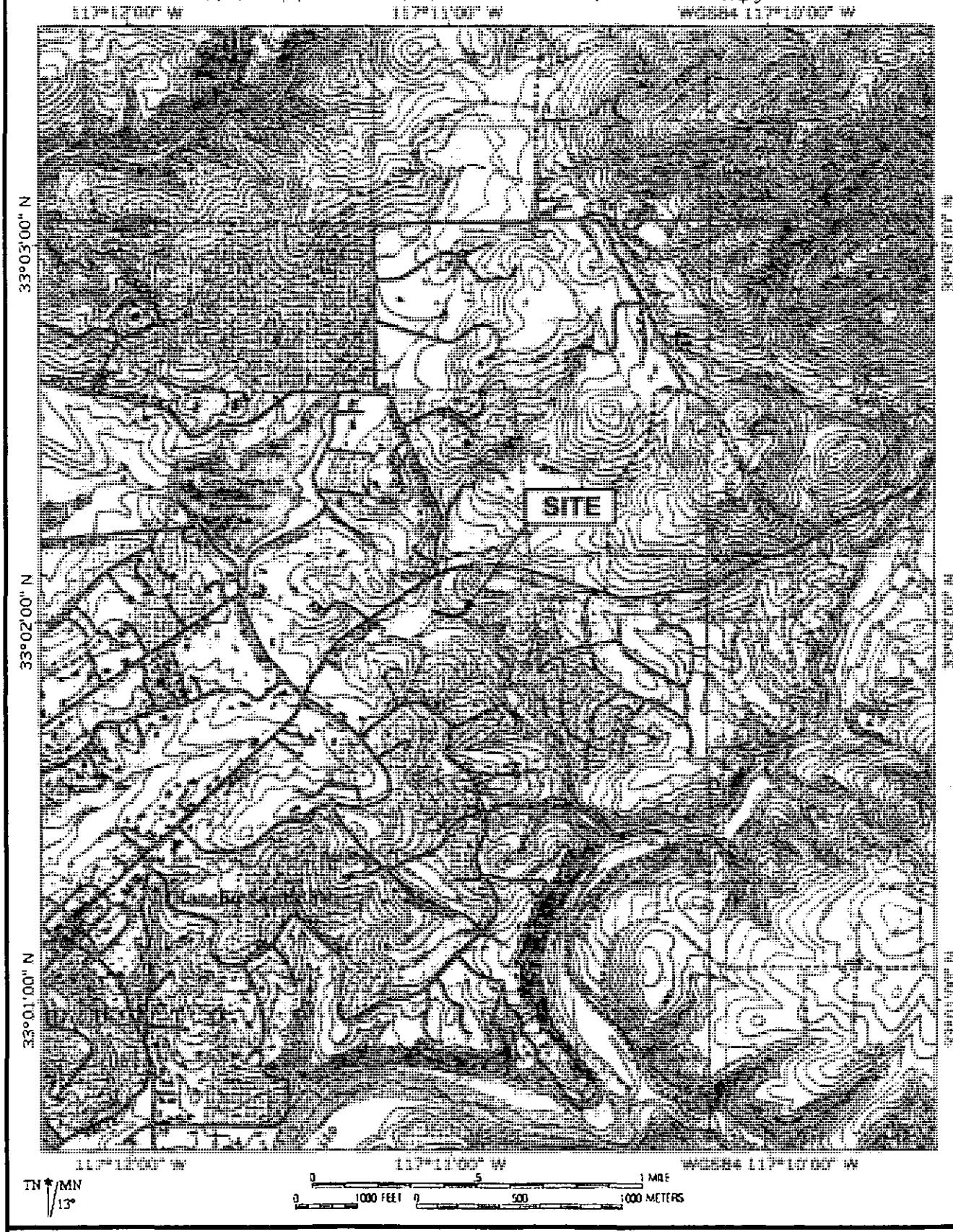
PROFESSIONAL GEOLOGIST
JAMES SANDERS
No. 2258
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

James C. Sanders, C.E.G. 2258
Project Geologist

Distribution: (1) Addressee
(1) Monitoring Well Permit Desk
Site Assessment and Mitigation Program
County of San Diego, Department of Environmental Health
P.O. Box 129261
San Diego, California 92112-9261

9245 Activity Road, Ste. 103 • San Diego, California • 92126
Phone (858) 536-1000 • Fax (858) 536-8311

TOPO! map printed on 06/15/04 from "California.tpo" and "Untitled.tpg"



Geotechnics Incorporated

SITE LOCATION MAP

Project No. 0951-001-01
Document No. 09-0044

FIGURE 1

LOG OF EXPLORATION BORING NO. 1

Logged by: JCS **Date:** 1/16/2009

Method of Drilling: 8 INCH DIAMETER HOLLOW STEM FLIGHT AUGER **Elevation:** 170 Feet

DEPTH (FEET)	BLOWS PER FT.	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE %	DESCRIPTION	LAB TESTS
1						FILL: Sandy lean clay (CL), brown, low plasticity, moist, hard.	
2							
3							
4						ALLUVIUM: Silty sand (SM), brown, fine to coarse, moist, medium dense.	
5	26	CAL		112	18	▽ *Groundwater measured at 6 feet after drilling.*	
6							
7							
8							
9							
10	14	CAL		–	–	No Recovery	
11							
12							
13							
14						Gravel and cobble layer along basal contact.	
15	120	CAL		116	8	FRIARS FORMATION: Silty sandstone, light yellow brown, fine to medium grained, moist, moderately cemented.	
16							
17							
18							
19						Difficult drilling.	
20							
21	70	SPT				Lean claystone (CL), olive brown, low plasticity, moist, very hard.	
22							
23						Total depth: 21½ feet Groundwater encountered at 6 feet	
24							
25							
26							
27							
28							
29							
30							

LOG OF EXPLORATION BORING NO. 2

Logged by: JCS **Date:** 1/16/2009

Method of Drilling: 8 INCH DIAMETER HOLLOW STEM FLIGHT AUGER **Elevation:** 168 Feet

DEPTH (FEET)	BLOWS PER FT.	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE %	DESCRIPTION	LAB TESTS
1						**ALLUVIUM:** Sandy lean clay (CL), brown, low plasticity, moist, hard.	
2							
3							
4							
5						Gravel and cobble layer along basal contact.	
6	69	CAL		112	16	Groundwater measured at 6 feet after drilling.	
7						**FRIARS FORMATION:** Silty sandstone, light yellow brown, fine to coarse grained, wet, moderately cemented.	
8							
9							
10	91	CAL		112	16		
11							
12							
13							
14						Difficult drilling.	
15	100	SPT					
16							
17							
18							
19							
20							
21						Total depth: 20 feet	
22						Groundwater encountered at 6 feet	
23							
24							
25							
26							
27							
28							
29							
30							

LOG OF EXPLORATION BORING NO. 3

Logged by: JCS | Date: 1/16/2009

Method of Drilling: 8 INCH DIAMETER HOLLOW STEM FLIGHT AUGER | Elevation: 168½ Feet

DEPTH (FEET)	BLOWS PER FT.	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE %	DESCRIPTION	LAB TESTS
1						**ALLUVIUM:** Sandy lean clay (CL), dark brown, low plasticity, moist, hard.	
2							
3							
4							
5	17	SPT				▽ Groundwater measured at 6 feet after drilling.	
6							
7							
8							
9							
10	18	CAL		104	22		
11							
12							
13							
14							
15	53	CAL		105	20	**FRIARS FORMATION:** Sandy claystone/siltstone, olive brown, low plasticity, moist, very hard.	
16							
17						Silty sandstone, light yellow brown, fine to coarse grained, moist, moderately cemented.	
18							
19							
20	85	SPT					
21							
22							
23							
24							
25	100	SPT					
26							
27							
28						Total depth: 26½ feet Groundwater encountered at 6 feet	
29							
30							

PROJECT NO. 0951-001-01 **GEOTECHNICS INCORPORATED** FIGURE: B-3

LOG OF EXPLORATION BORING NO. 4

Logged by: JCS **Date:** 1/16/2009

Method of Drilling: 8 INCH DIAMETER HOLLOW STEM FLIGHT AUGER **Elevation:** 172½ Feet

DEPTH (FEET)	BLOWS PER FT.	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE %	DESCRIPTION	LAB TESTS
1						**ALLUVIUM:** Sandy lean clay (CL), yellow brown, low plasticity, moist, hard, hard drilling.	
2							
3							
4						Refusal on gravel and rock.	
5							
6						Total depth: 4 feet No groundwater encountered	
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

LOG OF EXPLORATION BORING NO. 5

Logged by: JCS **Date:** 1/16/2009

Method of Drilling: 8 INCH DIAMETER HOLLOW STEM FLIGHT AUGER **Elevation:** 175 Feet

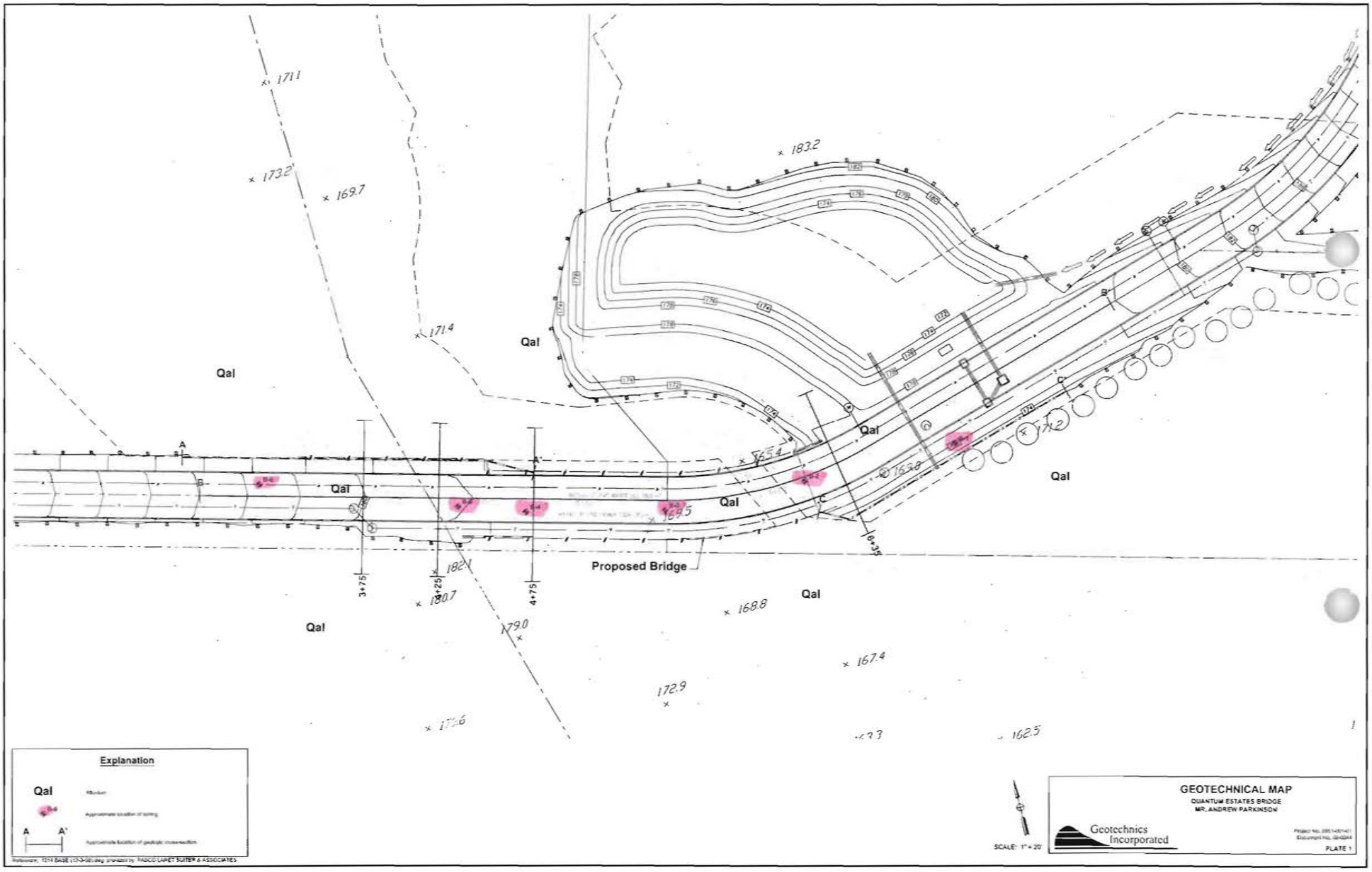
DEPTH (FEET)	BLOWS PER FT.	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE %	DESCRIPTION	LAB TESTS
1						ALLUVIUM: Sandy lean clay (CL), yellow brown, low plasticity, moist, hard. Contains some gravel and cobble.	
2							
3							
4						Very rocky below 5 feet.	
5	57	SPT				Rock in sampler.	
6							
7							
8							
9							
10	--	SPT				No recovery - too rocky.	
11							
12						Gravel and cobble layer along basal contact.	
13						FRIARS FORMATION: Silty sandstone, light yellow brown, fine to medium grained, moist, moderately to strongly cemented.	
14	158	SPT					
15						Refusal on strongly cemented sandstone.	
16						Total depth: 15 feet	
17						No groundwater encountered	
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

LOG OF EXPLORATION BORING NO. 6

Logged by: JCS **Date:** 1/16/2009

Method of Drilling: 8 INCH DIAMETER HOLLOW STEM FLIGHT AUGER **Elevation:** 187 Feet

DEPTH (FEET)	BLOWS PER FT.	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE %	DESCRIPTION	LAB TESTS
1						**ALLUVIUM:** Sandy lean clay/clayey sand (CL/SC), brown, low plasticity, moist, hard, few gravel.	
2							
3							
4							
5	43	SPT				Rock in sampler.	
6							
7							
8							
9							
10	99	CAL		--	--	No recovery - rock in sampler.	
11							
12							
13							
14	120	SPT				**FRIARS FORMATION:** Silty sandstone, light yellow brown, fine to medium grained, moist, strongly cemented.	
15						Refusal on strongly cemented sandstone.	
16						Total depth: 15 feet	
17						No groundwater encountered	
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							


Qal
Qal
Qal
Qal
Qal
Qal
Qal
Qal
Proposed Bridge
A
A'
B
B'
C
C'
3+75
4+25
4+75
6+35
171.1
173.2
169.7
171.4
183.2
165.4
169.5
163.8
172
182
180.7
179.0
168.8
167.4
172.9
162.5
Explanation
Qal
Alluvium
Approximate location of boring
A A'
Approximate location of geologic cross-section
SCALE: 1" = 20'
GEOTECHNICAL MAP
QUANTUM ESTATES BRIDGE
MR. ANDREW PARKINSON
Geotechnics Incorporated
PLATE 1

SOUTHERN CALIFORNIA SOIL & TESTING, INC.

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ENVIRONMENTAL HEALTH

REPORT OF SOIL BORING DESTRUCTION
PALMA DE LA REINA
MIXED USE PROJECT
VIA DE LA VALLE AND CANCHA DE GOLF
RANCHO SANTA FE, CALIFORNIA
PERMIT NO. LMON-106912
A.P.N. 302-120-32-00

PREPARED FOR:

MR. RICHARD CAVANAUGH
NEWPORT PACIFIC, INC.
POST OFFICE BOX 841
RANCHO SANTA FE, CALIFORNIA 92067

PREPARED BY:

SOUTHERN CALIFORNIA SOIL & TESTING, INC.
6280 RIVERDALE STREET
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September 3, 2010

SCS&T No. 1011006
Report No. 2R

Mr. Richard Cavanaugh
Newport Pacific, Inc.
Post Office Box 841
Rancho Santa Fe, California 92067

Subject: REPORT OF SOIL BORING DESTRUCTION
PALMA DE LA REINA
MIXED USE PROJECT
VIA DE LA VALLE AND CANCHA DE GOLF
RANCHO SANTA FE, CALIFORNIA
PERMIT NO. LMON-106912 A.P.N. 302-120-32-00

Dear Mr. Cavanaugh:

In accordance with the permit, we have completed our geotechnical soil borings for the subject project. A site location map is presented on Figure 1. A boring location plan and boring logs are presented in Appendix A.

BORING DESTRUCTION

Two exploratory borings using a 8-inch mud rotary auger were completed. Groundwater was encountered in the borings. No obvious contamination of soil was observed. Drill cuttings were sampled for the geotechnical investigation. The boring was sealed from the bottom to the ground surface with bentonite. The types and approximate volumes of the sealing materials are presented in Appendix A. The boring locations are shown on Figure 2 and the boring logs are also presented in Appendix A.

Should you have any questions regarding the contents of this report or if we may be of further service, please contact this office at your convenience.

Respectfully Submitted,
SOUTHERN CALIFORNIA SOIL AND TESTING, INC.

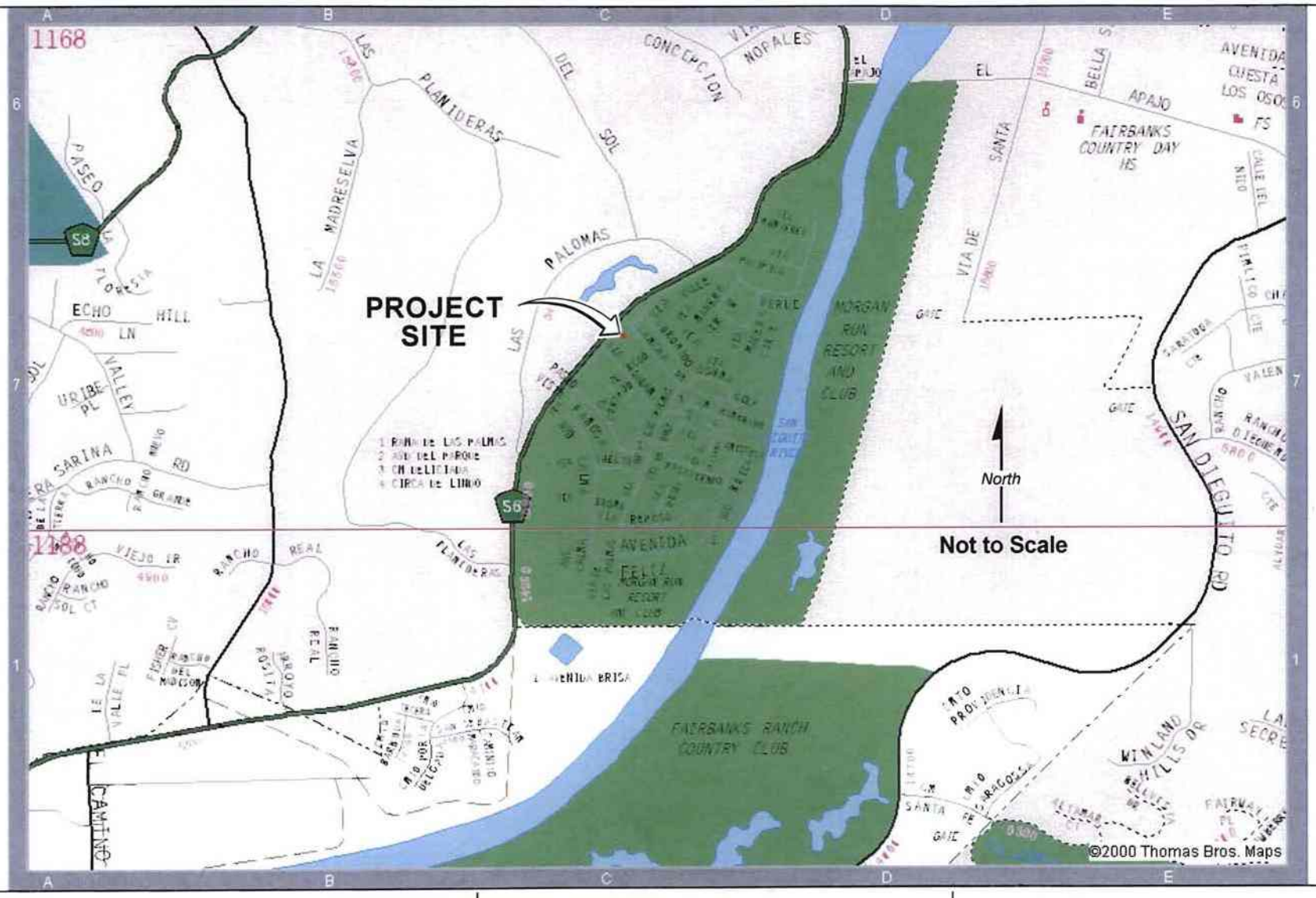
PROFESSIONAL GEOLOGIST
DOUGLAS A. SKINNER
NO. 2472
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Douglas A. Skinner, CEG 2472
Senior Engineering Geologist

DAS:aw

Attachments: Figure 1 and 2
Appendix A

(1) Addressee
(1) The County of San Diego, Attention: Ms. Marisue Crystal



SOUTHERN CALIFORNIA SOIL & TESTING, INC.

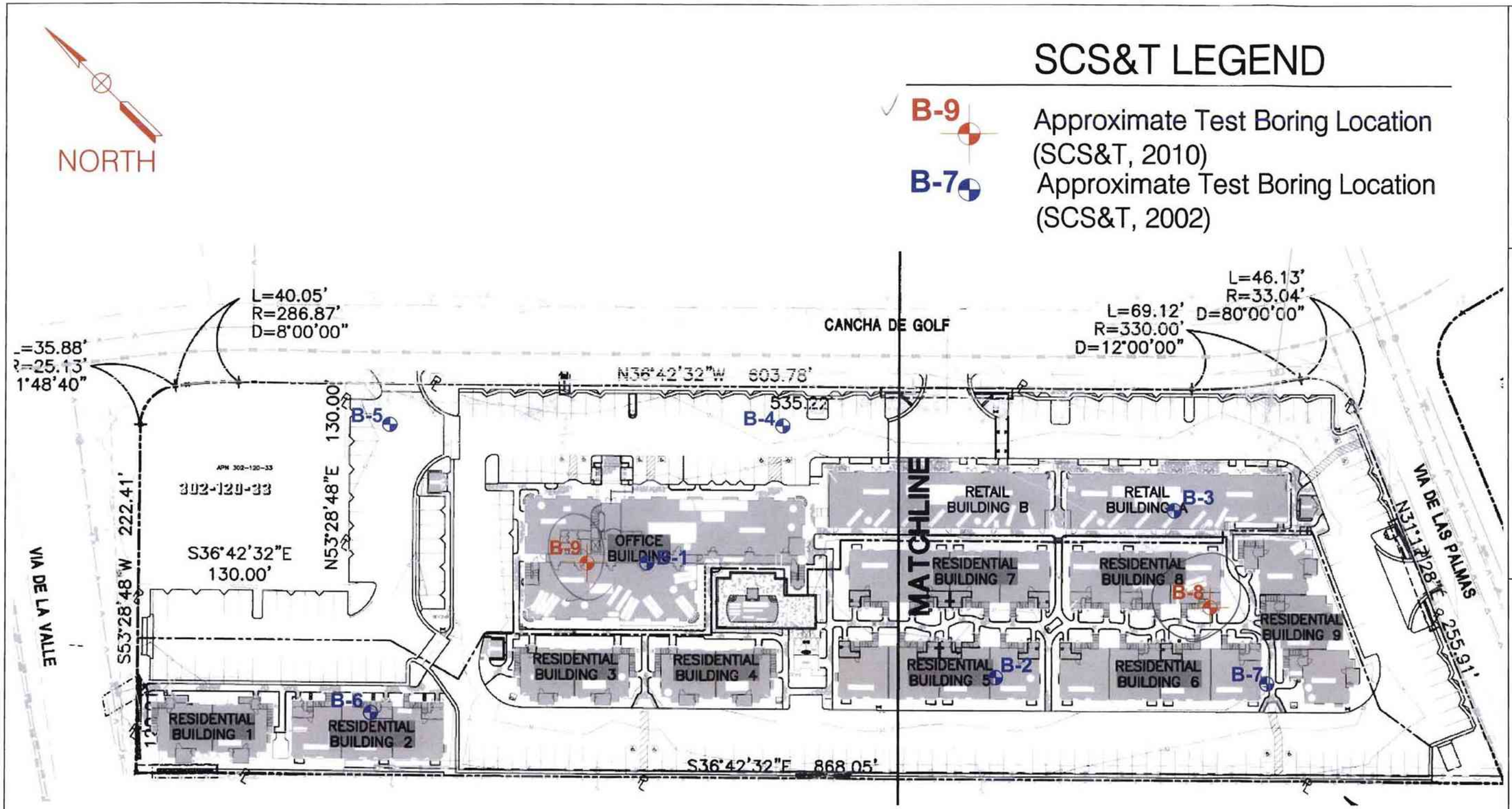
SITE LOCATION MAP
Palma De La Reina
Rancho Santa Fe, California

Job Number: 1011006-1
Figure Number: 1

SCS&T LEGEND

B-9 Approximate Test Boring Location (SCS&T, 2010)

B-7 Approximate Test Boring Location (SCS&T, 2002)



Date: 2/4/2010
By: RB/GF/EL
Job No.: 1011006-1
Scale: NOT TO SCALE

BORING LOCATION MAP
PALMA DE LA REINA

SOUTHERN CALIFORNIA
SOIL & TESTING, INC.

Figure:
2

APPENDIX A

SC
ST

LOG OF EXPLORATORY BORING NUMBER B-8

Date Excavated: 1/28/2010 | Logged by: RNB
Equipment: Mud Rotary | Project Manager: GBF
Surface Elevation (ft): N/A | Depth to Water (ft): 13.0

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: UNDISTURBED	SAMPLES: BULK	PENETRATION (blows/ ft. of drive)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
	SM	**Artificial Fill(Qaf)** - Brown, humid to moist, loose to medium dense, SILTY SAND.						
2								
4		...becomes medium dense.						
			SPT		22			
6								
8	SP / SM	**Alluvium(Qal)** - Light brown, moist, loose, poorly graded SAND WITH SILT.						
10			SPT		8	20.1		SA
12								
14		Groundwater at 14 feet.						
		saturated	SPT		2			
16								
18								
20			SPT		9	25.5		SA

(CONTINUE)

SOUTHERN CALIFORNIA SOIL & TESTING, INC.	PALMA DE LA REINA			
	By:	RNB/EL	Date:	9/3/2010
	Job Number:	1011006-1	Figure:	I-12

LOG OF EXPLORATORY BORING NUMBER B-8 (continued)

Date Excavated: 1/28/2010 | Logged by: RNB
Equipment: Mud Rotary | Project Manager: GBF
Surface Elevation (ft): N/A | Depth to Water (ft): 13.0

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: UNDISTURBED	SAMPLES: BULK	PENETRATION (blows/ ft. of drive)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
	SP SM	Light brown, saturated, loose, poorly graded SAND WITH SILT.						
22								
24								
	SM	Light brown, saturated, loose, SILTY SAND.	SPT		6			
26								
28								
30	ML	Dark gray, saturated, firm, SANDY SILT.	SPT		5	36.7		SA
32								
34								
	SM	Gray, saturated, loose, SILTY SAND.	SPT		5			
36								
38								
40	ML	Dark gray, staurated, soft, SILT with SAND.	SPT		4	43.4		SA

(CONTINUE)

SOUTHERN CALIFORNIA SOIL & TESTING, INC.	PALMA DE LA REINA			
	By:	RNB/EL	Date:	9/3/2010
	Job Number:	1011006-1	Figure:	I-13

LOG OF EXPLORATORY BORING NUMBER B-8 (continued)

Date Excavated: 1/28/2010 | Logged by: RNB
Equipment: Mud Rotary | Project Manager: GBF
Surface Elevation (ft): N/A | Depth to Water (ft): 13.0

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: UNDISTURBED	SAMPLES: BULK	PENETRATION (blows/ ft. of drive)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
	ML	Dark gray, saturated, soft, SILT with SAND.						
42								
44								
			SPT		4			
46								
	CL	Dark gray, saturated, soft, CLAY.						
48								
	CH	Dark gray, saturated, very soft, CLAY WITH SAND.						
50		**BORING TERMINATED AT 50 FEET.**	SPT		2	47.7		SA
52								
54								
56								
58								
60								

SOUTHERN CALIFORNIA SOIL & TESTING, INC.	PALMA DE LA REINA		
	By: RNB/EL	Date:	9/3/2010
	Job Number: 1011006-1	Figure:	I-14

LOG OF EXPLORATORY BORING NUMBER B-9

Date Excavated: 1/28/2010
Equipment: Mud Rotary
Surface Elevation (ft): N/A

Logged by: RNB
Project Manager: GBF
Depth to Water (ft): 13.0

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES UNDISTURBED	SAMPLES BULK	PENETRATION (blows/ ft. of drive)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
	SM	**Artificial Fill(Qaf)** - Brown, humid to moist, loose to medium dense, SANDY SILT.						
2								
4		... becomes medium dense.						
			SPT		15			
6								
8	SP / SM	**Alluvium(Qal)** - Light brown, moist, loose, poorly graded SAND WITH SILT.						
10			SPT		6			
12								
14		Groundwater at 14 feet. saturated	SPT		8	20.3		SA
16								
18								
20			SPT		8			

(CONTINUE)

SOUTHERN CALIFORNIA SOIL & TESTING, INC.

PALMA DE LA REINA			
By:	RNB/EL	Date:	9/3/2010
Job Number:	1011006-1	Figure:	I-15

LOG OF EXPLORATORY BORING NUMBER B-9 (continued)

Date Excavated: 1/28/2010 | Logged by: RNB
Equipment: Mud Rotary | Project Manager: GBF
Surface Elevation (ft): N/A | Depth to Water (ft): 13.0

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES UNDISTURBED	SAMPLES BULK	PENETRATION (blows/ ft. of drive)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
	SP SM	Light brown, saturated, loose, poorly graded SAND WITH SILT.						
22								
24								
	SM	Light brown, saturated, loose, SILTY SAND.	SPT		4	29.6		SA
26								
28								
30	ML	Dark gray, saturated, soft, SANDY SILT .	SPT		4			
32								
34								
	SM	Gray, staurated, loose, SILTY SAND	SPT		7	33.1		SA
36								
38								
40	ML	Dark gray, saturated, soft, SILT with SAND	SPT		3	48.7		SA

(CONTINUE)

SOUTHERN CALIFORNIA SOIL & TESTING, INC.	PALMA DE LA REINA			
	By:	RNB/EL	Date:	9/3/2010
	Job Number:	1011006-1	Figure:	I-16

LOG OF EXPLORATORY BORING NUMBER B-9 (continued)

Date Excavated: 1/28/2010
Equipment: Mud Rotary
Surface Elevation (ft): N/A

Logged by: RNB
Project Manager: GBF
Depth to Water (ft): 13.0

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: UNDISTURBED	SAMPLES: BULK	PENETRATION (blows/ ft. of drive)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
	ML	Dark gray, saturated, soft, SILT with SAND.						
42								
44								
			SPT		3	45.9		SA
46								
	CL	Dark gray, saturated, soft, CLAY.						
48								
	CH	Dark gray, saturated, soft CLAY with SAND						
50			SPT		3			
		BORING TERMINATED AT 50 FEET.						
52								
54								
56								
58								
60								

SOUTHERN CALIFORNIA SOIL & TESTING, INC.	PALMA DE LA REINA		
	By: RNB/EL	Date:	9/3/2010
	Job Number: 1011006-1	Figure:	I-17

Boring Number	Depth Feet	Diameter Inches	Depth to Water Feet	Drilling Method	Backfill Method	Volume of Backfill Cubic Feet
B-8	50	8	14	Mud Rotary	Bentonite Slurry	18
B-9	50	8	14	Mud Rotary	Bentonite Slurry	18

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INCORPORATED

GEOTECHNICAL CONSULTANTS

RECEIVED
JAN 30 2008
ENVIRONMENTAL HEALTH

Project No. 07859-32-01
January 25, 2008

Well Permitting Clerk
Site Assessment and Mitigation Division
County of San Diego
Department of Environmental Health
Post Office Box 129261
San Diego, California 92112-9261

Subject: DEL MAR CCRC
SAN DIEGO, CALIFORNIA
APN 302-090-31-00
WELL PERMIT NO. LMON104893
SUBMITTAL OF FIGURES AND BORING LOGS

To Whom It May Concern:

In accordance with your request, Geocon Incorporated has prepared this letter for three geotechnical borings advanced at the subject site related to DEH Permit No. LMON104893, dated June 20, 2007. The site is currently undeveloped. The geologic conditions consist of alluvium to the maximum depth explored. We encountered groundwater at approximately five to eight feet below grade. The approximate location of the site is depicted on the Vicinity Map, Figure 1. The approximate locations of the borings are depicted on the Geologic Map, Figure 2, and the boring logs are attached. The Parcel Map is presented in Figure 3. Borings B-1 through B-3 were 8 inches in diameter and were a maximum of 51.5 feet deep. We backfilled the 8-inch diameter borings with a bentonite slurry after completion of drilling, sampling, and logging. Backfill materials in the 8-inch diameter boring were placed using the tremie method. Depths and quantities of grout are indicated on the boring logs. Please contact the undersigned if you have any questions

Very truly yours,

GEOCON INCORPORATED

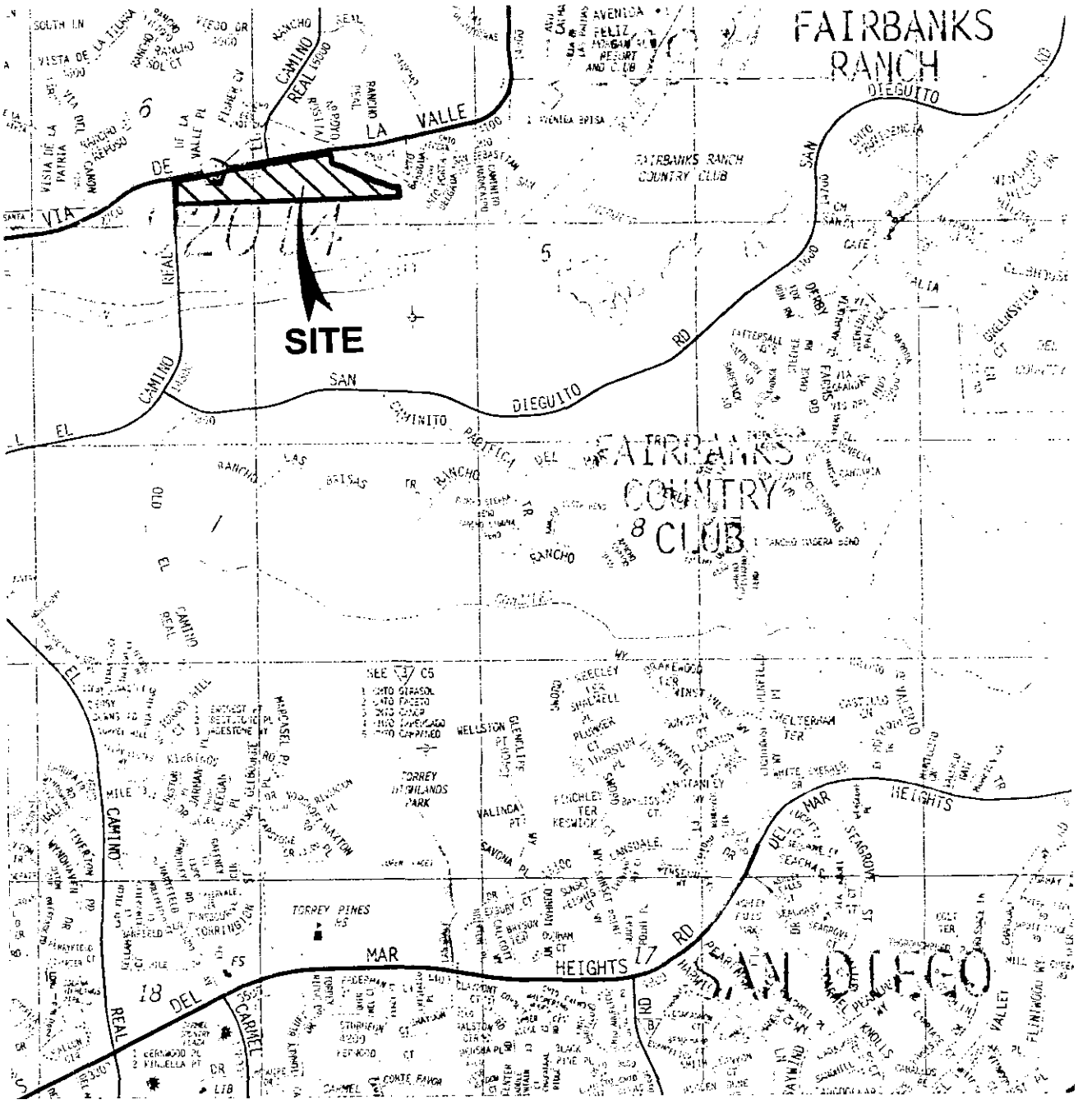
REGISTERED PROFESSIONAL ENGINEER
SHAWN WEEDON
No. 2714
Exp. 06/30/09
GEOTECHNICAL
STATE OF CALIFORNIA

Shawn Weedon
GE 2714

Attachments: Figure 1, Vicinity Map
Figure 2, Geologic Map
Figure 3, Parcel Map
Log of Borings B-1 through B-3

SW:dmc

(1) Addressee
(1) Milan Properties, LLC
Attention: Mr. Landon Wright



SOURCE: 2007 THOMAS BROTHERS MAP
SAN DIEGO COUNTY, CALIFORNIA

"MAP © RAND McNALLY, R.L.07-S-62, REPRODUCED WITH PERMISSION.
IT IS UNLAWFUL TO COPY OR REPRODUCE ALL OR ANY PART THEREOF,
WHETHER FOR PERSONAL USE OR RESALE, WITHOUT PERMISSION"

N

NO SCALE

GEOCON
INCORPORATED
GEOTECHNICAL CONSULTANTS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 2974
PHONE 858 558-6900 - FAX 858 558-6159

NNB / DW		DSK/GTYPD

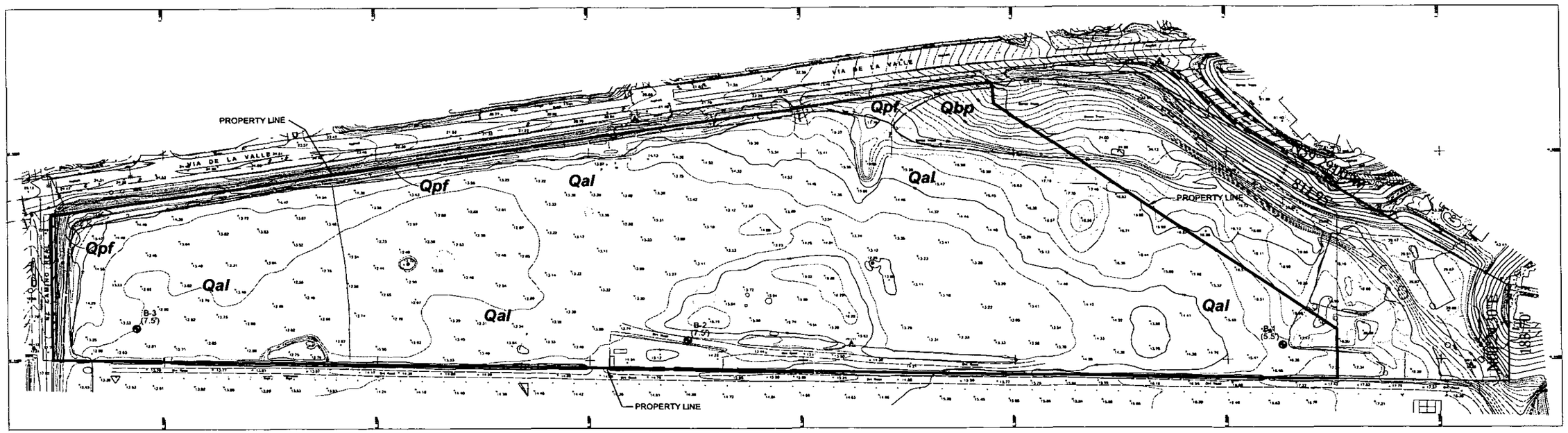
VICINITY MAP

DEL MAR, CCRC
3975 VIA DE LA VALLE
SAN DIEGO, CALIFORNIA

DATE 01-25-2008	PROJECT NO. 07859 - 32 - 01	FIG. 1

Vicinity Map

DEL MAR, CCRC
SOUTHEAST CORNER OF EL CAMINO REAL AND VIA DE LA VALLE
SAN DIEGO, CALIFORNIA



GEOCON LEGEND

Qpf .....PREVIOUSLY PLACED FILL (Queried Where Uncertain)

Qal .....ALLUVIUM

Qbp .....BAY POINT FORMATION (Queried Where Uncertain)

B-3 .....APPROX. LOCATION OF EXPLORATORY BORING

(7.5') .....APPROX. DEPTH TO GROUNDWATER FROM EXISTING GRADE

.....APPROX. LOCATION OF GEOLOGIC CONTACT

SCALE: 1" = 200'

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GEOTECHNICAL CONSULTANTS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 2974
PHONE 858 558-6900 - FAX 858 558-6159

PROJECT NO. 07859 - 32 - 01
FIGURE 2
DATE 01-25-2008

GEOLOGIC MAP

Y:/07859-32-01/DJ/7859_FIG2_GM-NNBLD.WG / GEOLOGIC MAP

San Diego, CA, 2006-2007 - 302-090-31-00, Sheet: 1 of 1

08

302-9,10

302-09

1" = 400'

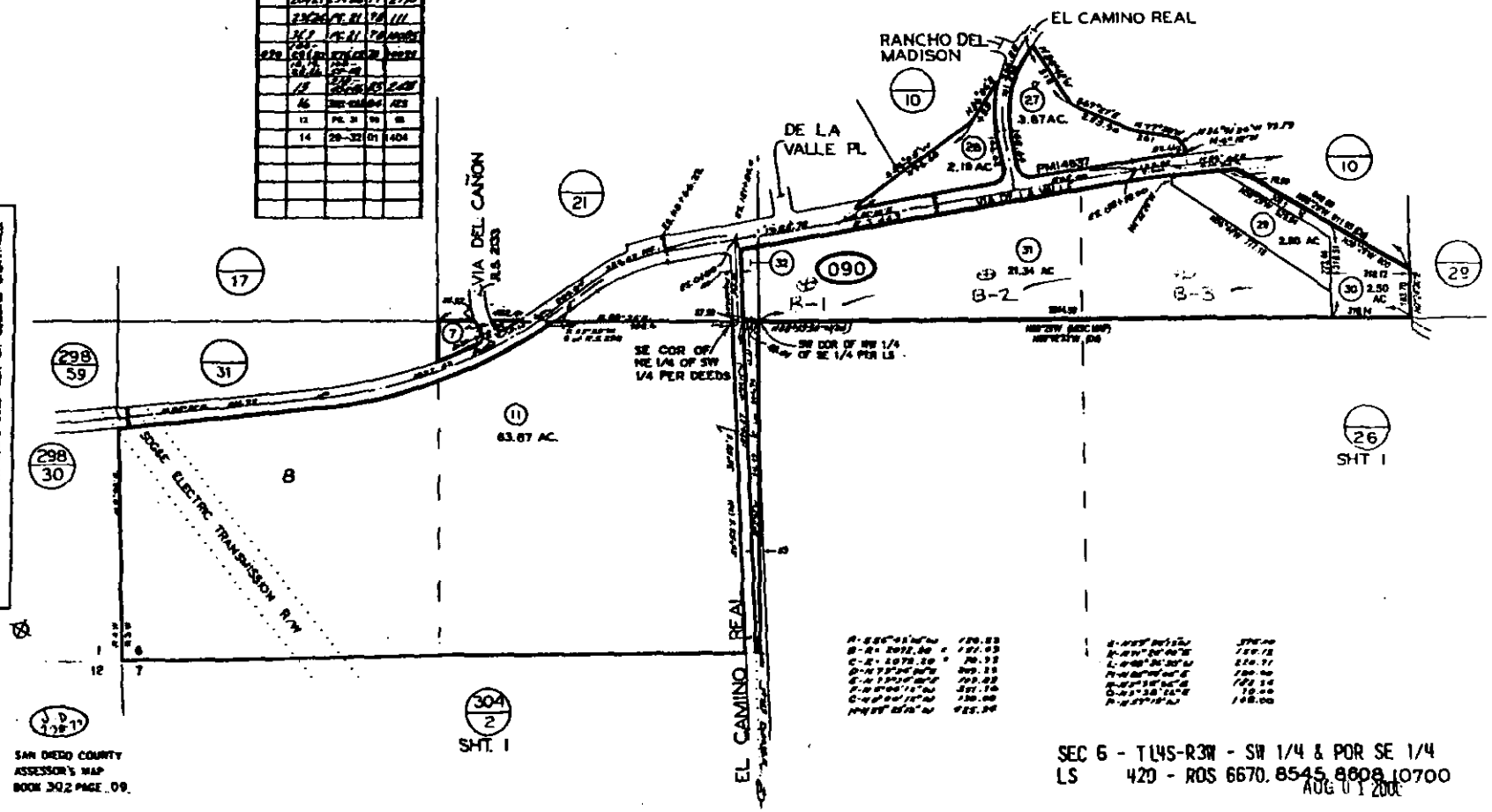
N

7/21/2000

CHANGES

BLK	OLD	NEW	YR	CUT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	[illegible]	[illegible]	[illegible]
	17	[illegible]	[illegible]	[illegible]
	8	[illegible]	[illegible]	[illegible]
	7	[illegible]	[illegible]	[illegible]
	1	[illegible]	[illegible]	[illegible]
	22	[illegible]	[illegible]	[illegible]
	20/21	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]		
	15	[illegible]	[illegible]	[illegible]
	16	[illegible]	[illegible]	[illegible]
	12	[illegible]	[illegible]	[illegible]
	14	29-32	01	1404

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL SUBDIVISION OR BUILDING ORDINANCES.



SAN DIEGO COUNTY
ASSESSOR'S MAP
BOOK 302 PAGE 09

SEC 6 - T14S-R3W - SW 1/4 & POR SE 1/4
LS 420 - ROS 6670, 8545, 8608, 10700
AUG 01 2000

⊕ Proposed Boring Locations

FIG 3

PROJECT NO. 07859-32-01

BORING B 1

ELEV. (MSL.) 16' DATE COMPLETED 06-21-2007

EQUIPMENT MUD ROTARY CME-75 BY: TPM

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				CL	**ALLUVIUM** Soft, damp, dark brown, Silty CLAY; micaceous			
2	B1-1				-No recovery due to loose sediments	6		
4				ML	Soft, damp to saturated, dark brown, Sandy SILT; micaceous			
	B1-2		▼			4	85.3	36.2
6								
8								
10	B1-3				-Becomes very soft	2	74.6	47.1
12								
14								
	B1-4			SM	Loose, saturated, brown, Silty, fine SAND; micaceous	5		43.6
16								
18								
20	B1-5				-Becomes fine to medium	10	79.8	42.6
				CL-ML	Soft, wet, dark grayish brown, Silty CLAY to Clayey SILT			
22								
24								
	B1-6				-Becomes very soft	PUSH		61.6
26								
28								

Figure A-1,
Log of Boring B 1, Page 1 of 2

07859-32-01.GPJ

SAMPLE SYMBOLS
- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. 07859-32-01

BORING B 1

ELEV. (MSL.) 16' DATE COMPLETED 06-21-2007

EQUIPMENT MUD ROTARY CME-75 BY: TPM

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30	B1-7			CL	Soft, wet, dark gray, Silty CLAY	6	77.2	43.6
32								
34					-Becomes very soft			
36	B1-8					PUSH		56.8
38								
40	B1-9					3	73.1	48.9
42								
44								
46	B1-10					1		42.2
48								
50	B1-11			SM	Dense, saturated, gray, Silty, fine to coarse SAND; abundant broken shells	60	110.3	18.8

BORING TERMINATED AT 51 FEET
Groundwater encountered at 5.5 feet
Backfilled with 18 cu.ft. of bentonite slurry

Figure A-1,
Log of Boring B 1, Page 2 of 2

07859-32-01.GPJ

SAMPLE SYMBOLS
... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT *IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.*

GEOCON

PROJECT NO. 07859-32-01

BORING B 2

ELEV. (MSL.) 14' DATE COMPLETED 06-21-2007

EQUIPMENT MUD ROTARY CME-75 BY: TPM

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				ML	**ALLUVIUM** Soft, damp, brown to dark brown, Sandy to Clayey SILT; micaceous			
2	B2-1					7		15.4
4					-Becomes very soft			
6	B2-2					3	100.7	20.7
8			▼					
10	B2-3			SM	Loose, saturated, brown, Silty, fine to medium SAND; micaceous	5		33.7
12								
14								
16	B2-4			SP-SM	Very dense, saturated, dark yellowish brown to olive brown, fine to medium SAND with trace silt; micaceous	71/11"	100.2	24.0
18								
20	B2-5				-Becomes very loose, dark grayish brown	2		
22				ML	Very soft, wet to saturated, dark gray, Clayey SILT; slightly micaceous			50.7
24				SP-SM	Very loose, saturated, grayish brown, fine to medium SAND with trace silt			
26	B2-6			CL	Very soft, wet, dark gray, Silty CLAY	3	68.4	56.0
28								

Figure A-2,
Log of Boring B 2, Page 1 of 2

07859-32-01.GPJ

SAMPLE SYMBOLS
- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. 07859-32-01

BORING B 2

ELEV. (MSL.) 14' DATE COMPLETED 06-21-2007

EQUIPMENT MUD ROTARY CME-75 BY: TPM

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30	B2-7			ML-CL	Soft, wet, dark gray, Sandy SILT to Sandy CLAY	3		42.6
32								
34								
	B2-8			ML	Very soft, wet, dark gray, Clayey SILT	2	70.7	51.7
36								
38								
40	B2-9					PUSH		
				SM-SC	Very loose, saturated, dark grayish brown, Silty to Clayey, fine to medium SAND			51.6
42								
44								
	B2-10			CL	Very soft, wet to saturated, dark gray, Silty CLAY	4	79.0	42.2
46								
48								
				SC	Very loose, wet to saturated, dark gray to brown, Clayey, medium to coarse SAND			
50	B2-11					2		40.6
					BORING TERMINATED AT 51.5 FEET Groundwater encountered at 7.5 feet Backfilled with 18 cu.ft. of bentonite slurry			

Figure A-2,
Log of Boring B 2, Page 2 of 2

07859-32-01.GPJ

SAMPLE SYMBOLS			
	... SAMPLING UNSUCCESSFUL	... STANDARD PENETRATION TEST	... DRIVE SAMPLE (UNDISTURBED)
	... DISTURBED OR BAG SAMPLE	... CHUNK SAMPLE	... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. 07859-32-01

BORING B 3

ELEV. (MSL.) 13' DATE COMPLETED 06-21-2007

EQUIPMENT MUD ROTARY CME-75 BY: TPM

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				ML	**ALLUVIUM** Firm, moist, dark brown, Sandy SILT			
2	B3-1					16	102.3	22.7
4								
6	B3-2				-Becomes soft, wet	6	83.7	35.2
8	B3-3		▼	ML	Soft, wet, dark brown, Clayey SILT	4	74.9	47.6
10	B3-4			ML	Very soft, wet, mottled olive brown to dark brown, Sandy SILT; some carbonate concretions	1		42.4
12								
14	B3-5			SM	Loose, wet, dark brown, Silty, fine to medium SAND; some carbonate concretions; micaceous	5	88.6	35.0
16								
18								
20	B3-6			SM-SC	Medium dense, saturated, dark grayish brown, Silty to Clayey, fine SAND; micaceous	7		38.0
22								
24	B3-7			SM	Medium dense, dark grayish brown, Silty, fine to medium SAND; common shell fragments	28	95.0	29.9
26								
28								

Figure A-3,
Log of Boring B 3, Page 1 of 2

07859-32-01.GPJ

SAMPLE SYMBOLS
- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. 07859-32-01

BORING B 3

ELEV. (MSL.) 13' DATE COMPLETED 06-21-2007

EQUIPMENT MUD ROTARY CME-75 BY: TPM

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30	B3-8				-Increase in fines	9		35.0
32								
34				CL	Soft, wet, Silty CLAY; some shell fragments			
36	B3-9					5	72.0	50.3
38								
40	B3-10			SM	Very soft, saturated, dark grayish brown, Silty SAND; some shell fragments	PUSH		48.6
42				ML	Very soft, wet, dark grayish brown, Clayey SILT; micaceous			
44								
46	B3-11			CL	Soft, wet, dark gray, Silty CLAY	9	76.1	44.5
48								
50	B3-12				-Becomes very soft, with thin interlayers of silt and sand	PUSH		47.2
					BORING TERMINATED AT 51.5 FEET Groundwater encountered at 7.5 feet Backfilled with 18 cu.ft. of bentonite slurry			

Figure A-3,
Log of Boring B 3, Page 2 of 2

07859-32-01.GPJ

SAMPLE SYMBOLS
... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

TerraCosta
Consulting Group

Geotechnical Engineering
Coastal Engineering
Maritime Engineering

Project No. 2396
June 8, 2007

RECEIVED
JUN 15 2007
ENVIRONMENTAL HEALTH

COUNTY OF SAN DIEGO
Department of Environmental Health
P.O. Box 129261
San Diego, California 92112-9261

Attn: Monitoring Well Desk

REFERENCE: PERMIT NO. LMON104743
APN NO. 330-030-07-00

*Redacted for Privacy RESIDENCE
5816 WINLAND HILLS DRIVE
RANCHO SANTA FE, CALIFORNIA

Gentlemen:

Attached is the log of test boring and inclinometer construction for the work completed at 5816 Winland Hills Drive in Rancho Santa Fe, California. The drilling operation and inclinometer installation was performed on May 22, 2007. Logging of the boring and installation of the inclinometer was overseen by a Registered Geologist from TerraCosta Consulting Group. That work consisted of drilling, sampling, and logging a 6-inch-diameter boring to a depth of 61.5 feet below the existing ground surface. Upon completion of the drilling, an inclinometer casing was installed to a depth of 60 feet below the ground surface, and the annulus grouted with approximately 11 cubic feet of cement/bentonite grout. A concrete surface seal was installed from the ground surface to a depth of 3 feet. The installation was completed at the surface with a traffic cover and locking cap to secure the inclinometer casing.

We trust this information meets your needs. If you have any questions or require additional information, please give us a call.

Very truly yours,
TERRACOSTA CONSULTING GROUP, INC.

Gregory A. Spaulding, Project Geologist
C.E.G. 1863, C.H.G. 351, P.G. 5892

REGISTERED GEOLOGIST
GREGORY A. SPAULDING
No. 1863
Exp. 3-31-09
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

GAS/sr
Attachment

*The information in the grayed areas has been blocked from public viewing to protect personally identifiable information and to prevent an unwarranted invasion of personal privacy per County Policy A-131 and Government Code section 6254(c), and/or to prevent disclosure of the identity of an informant per Government Code section 6254(k) and Evidence Code section 1041.

4455 Murphy Canyon Road, Suite 100 ▲ San Diego, California 92123-4379 ▲ (858) 573-6900 *voice* ▲ (858) 573-8900 *fax*
1513 6th Street, Suite 104 ▲ Santa Monica, California 90401-2500 ▲ (310) 576-1086 *voice* ▲ (310) 576-1083 *fax*
www.terracosta.com

BORING / INCLINOMETER LOG	PROJECT: 5816 WINLAND HILLS DRIVE	PROJECT NUMBER: 2396	SHEET NO.: 1 of 1	HOLE NUMBER: LEGEND

SITE	LOGGED BY	CHECKED BY	BEGUN	COMPLETED
Rancho Santa Fe, CA	G. Spaulding		5/22/2007	5/22/2007

DRILLER	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV. (ft)	TOP OF CASING ELEV. (ft)	DEPTH/*ELEV.* GROUND WATER (ft)
Pacific Drilling	6	20.0			▼ 1.8 / *na*

DRILL METHOD	CASING TYPE/DIA.	SCREEN TYPE/SLOT	GRAVEL PACK TYPE	GROUT TYPE/QUANTITY
Hollow Stem Auger	PVC	N/A	N/A	Cement / Bentonite

SAMPLING METHOD	NOTES
CAL / SPT	

DEPTH (feet)	ELEVATION	SAMPLE TYPE	SAMPLE ID	PENETRATION RESISTANCE (Blows/Foot)	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	GRAPHIC LOG	INCLINOMETER GRAPHICS	DESCRIPTION AND CLASSIFICATION

5

10

15

C 1

S 2

B 3

KEY TO EXCAVATION LOGS

▼ WATER TABLE MEASURED AT TIME OF DRILLING

PENETRATION RESISTANCE (BLOWS/ft)

Number of blows required to advance the sampler 1 foot.

California Sampler blow counts can be converted to equivalent SPT blow counts by using an end-area conversion factor of 0.67 when using a 140-pound hammer and a 30-inch drop.

SAMPLE TYPE

C ("California Sampler") - An 18-inch-long, 2-1/2-inch I.D., 3-inch O.D., thick-walled sampler. The sampler is lined with eighteen 2-3/8-inch I.D. brass rings. Relatively undisturbed, intact soil samples are retained in the brass rings.

S ("SPT") - a.k.a. Standard Penetration Test, an 18-inch-long, 2-inch O.D., 1-3/8-inch I.D. drive sampler.

B ("Bulk") - a.k.a. Bulk Sack Sample, a disturbed, but representative sample obtained from a specific depth interval placed in a large plastic bag.

INCLINOMETER

Concrete Surface Seal

Cement/Bentonite Grout

NOTES ON FIELD INVESTIGATION

Borings were advanced using a track-mounted limited-access drill rig with a 6-inch hollow-stem auger.

Standard Penetration Tests (SPT) and California Samplers were used to obtain soil samples. The SPT and California Samplers were driven into the soil at the bottom of the borings with a 140-pound hammer falling 30 inches. When the samplers were withdrawn from the boring, the samples were removed, visually classified, sealed in plastic containers, and taken to the laboratory for detailed inspection.

Free groundwater was encountered in the borings as shown on the logs.

Classifications are based upon the Unified Soil Classification System and include color, moisture, and consistency. Field descriptions have been modified to reflect results of laboratory inspection where deemed appropriate.

TCG_INCLIN_LOG1 2396.GPJ TCGWELOG.GDT 6/4/07

BORING / INCLINOMETER LOG	PROJECT: 5816 WINLAND HILLS DRIVE	PROJECT NUMBER: 2396	SHEET NO.: 1 of 4	HOLE NUMBER: B-1
SITE: Rancho Santa Fe, CA	LOGGED BY: G. Spaulding	CHECKED BY:	BEGUN: 5/22/2007	COMPLETED: 5/22/2007

DRILLER	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV. (ft)	TOP OF CASING ELEV. (ft)	DEPTH/*ELEV.* GROUND WATER (ft)
Pacific Drilling	6	61.5	84		▼ 56.0 / *28.0*

DRILL METHOD	CASING TYPE/DIA.	SCREEN TYPE/SLOT	GRAVEL PACK TYPE	GROUT TYPE/QUANTITY
Hollow Stem Auger	PVC / 2.75"	N/A	N/A	Cement-Bentonite / 11 cf

SAMPLING METHOD	NOTES
CAL / SPT	

DEPTH (feet)	ELEVATION	SAMPLE TYPE	SAMPLE ID	PENETRATION RESISTANCE (Blows/Foot)	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	GRAPHIC LOG	INCLINOMETER GRAPHICS	DESCRIPTION AND CLASSIFICATION
										TRAFFIC COVER
										FILL **Silty to Clayey SAND (SM/SC)**, medium dense, light brown / yellow-brown / gray-brown, damp to moist, fine-grained sand
										- Concrete Surface Seal from 0 to 3 feet
										- Cement/Bentonite Grout from 3 to 61.5 feet
5	79	S	1	15						
										- Becomes moist to wet
		S	2	15						
10	74									
		S	3	16						
15	69									
		C	4	32						

TCG_INCLIN_LOG1 2396.GPJ TCGWELOG.GDT 6/4/07

BORING / INCLINOMETER LOG	PROJECT: 5816 WINLAND HILLS DRIVE	PROJECT NUMBER: 2396	SHEET NO.: 2 of 4	HOLE NUMBER: B-1
SITE: Rancho Santa Fe, CA	LOGGED BY: G. Spaulding	CHECKED BY:	BEGUN: 5/22/2007	COMPLETED: 5/22/2007

DRILLER	BORING DIA. (In)	TOTAL DEPTH (ft)	GROUND ELEV. (ft)	TOP OF CASING ELEV. (ft)	DEPTH/*ELEV.* GROUND WATER (ft)
Pacific Drilling	6	61.5	84		▼ 56.0 / *28.0*

DRILL METHOD	CASING TYPE/DIA.	SCREEN TYPE/SLOT	GRAVEL PACK TYPE	GROUT TYPE/QUANTITY
Hollow Stem Auger	PVC / 2.75"	N/A	N/A	Cement-Bentonite / 11 cf

SAMPLING METHOD	NOTES
CAL / SPT	

DEPTH (feet)	ELEVATION	SAMPLE TYPE	SAMPLE ID	PENETRATION RESISTANCE (Blows/Foot)	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	GRAPHIC LOG	INCLINOMETER GRAPHICS	DESCRIPTION AND CLASSIFICATION
		S	5	19						**Clayey SAND (SC)**, medium dense, olive-brown to gray-brown, damp to moist
		B	*							* Bulk Sample taken from 20 to 24 feet
25	59	S	6	22						
										Silty to Sandy CLAY (CL), stiff, gray to olive-gray, damp to moist
		S	7	11						
30	54									
		C	8	21						- Becomes very stiff
										- Gravels less than 10%
										COLLUVIUM
35	49									**Silty to Sandy CLAY (CL)**, stiff, gray, damp
		S	9	8						

TCG_INCLIN_LOG1 2396.GPJ TCGWELOG.GDT 6/4/07

BORING / INCLINOMETER LOG	PROJECT: 5816 WINLAND HILLS DRIVE	PROJECT NUMBER: 2396	SHEET NO.: 3 of 4	HOLE NUMBER: B-1
SITE: Rancho Santa Fe, CA	LOGGED BY: G. Spaulding	CHECKED BY:	BEGUN: 5/22/2007	COMPLETED: 5/22/2007
DRILLER: Pacific Drilling	BORING DIA. (In): 6	TOTAL DEPTH (ft): 61.5	GROUND ELEV. (ft): 84	TOP OF CASING ELEV. (ft):
DEPTH/*ELEV.* GROUND WATER (ft): ▼ 56.0 / *28.0*				
DRILL METHOD: Hollow Stem Auger	CASING TYPE/DIA.: PVC / 2.75"	SCREEN TYPE/SLOT: N/A	GRAVEL PACK TYPE: N/A	GROUT TYPE/QUANTITY: Cement-Bentonite / 11 cf
SAMPLING METHOD: CAL / SPT	NOTES:			

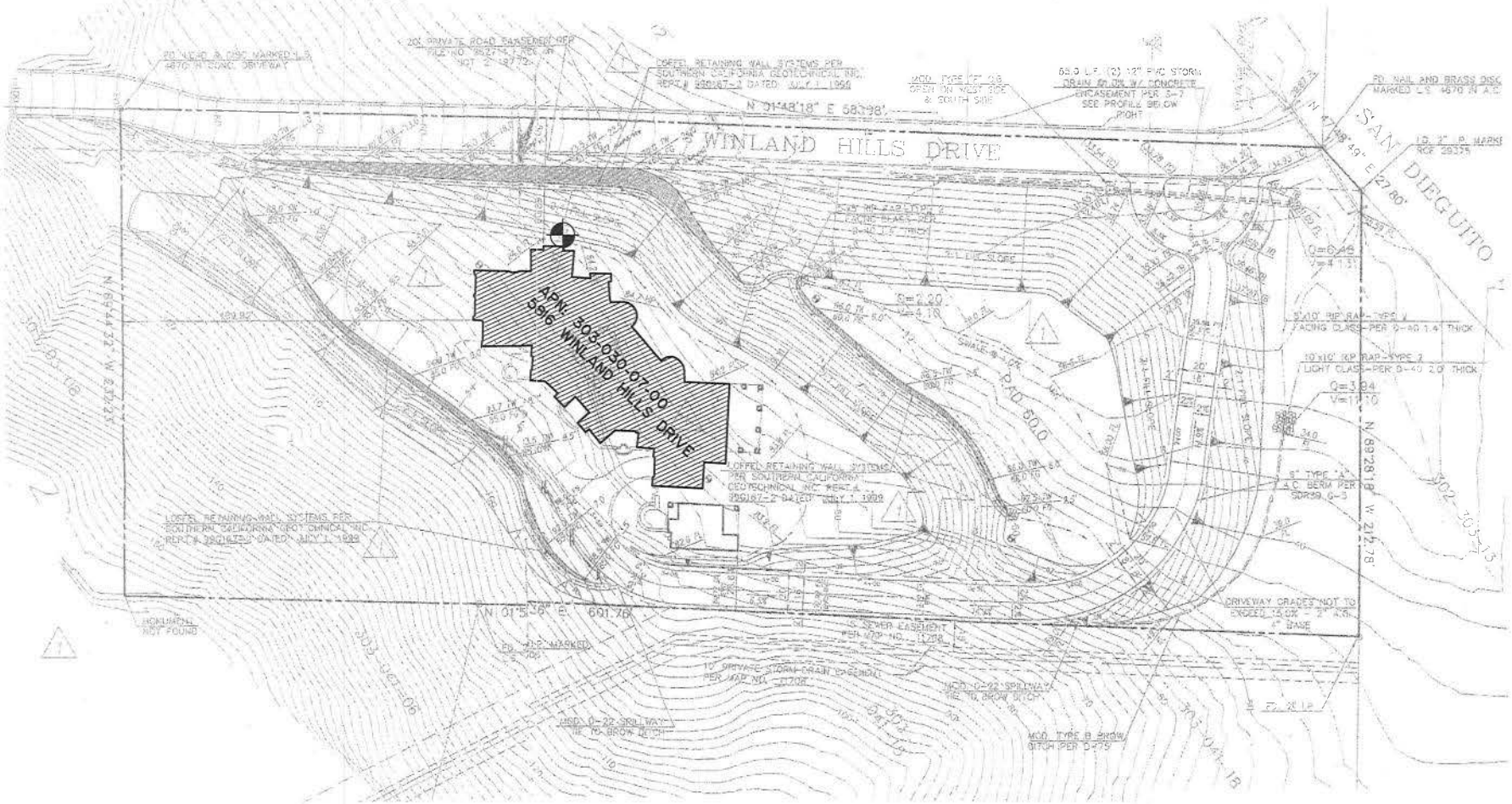
DEPTH (feet)	ELEVATION	SAMPLE TYPE	SAMPLE ID	PENETRATION RESISTANCE (Blows/Foot)	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	GRAPHIC LOG	INCLINOMETER GRAPHICS	DESCRIPTION AND CLASSIFICATION
		S	10	16						**Silty to Sandy CLAY (CL)**, stiff to very stiff, brown to olive-brown, moist, fine-grained sand
45	39	S	11	8						
										ALLUVIUM **Interbedded CLAY, SAND & SILT (CL, ML, SM)**, loose, brown, moist
		S	12	5						
50	34									
		C	13	11						
55	29									
		S	14	5						

TCG_INCLIN_LOG1_2396.GPJ TCGWELOG.GDT 6/4/07

BORING / INCLINOMETER LOG	PROJECT: 5816 WINLAND HILLS DRIVE	PROJECT NUMBER: 2396	SHEET NO.: 4 of 4	HOLE NUMBER: B-1
SITE: Rancho Santa Fe, CA	LOGGED BY: G. Spaulding	CHECKED BY:	BEGUN: 5/22/2007	COMPLETED: 5/22/2007
DRILLER: Pacific Drilling	BORING DIA. (In): 6	TOTAL DEPTH (ft): 61.5	GROUND ELEV. (ft): 84	TOP OF CASING ELEV. (ft):
DEPTH/*ELEV.* GROUND WATER (ft): ▼ 56.0 / *28.0*				
DRILL METHOD: Hollow Stem Auger	CASING TYPE/DIA.: PVC / 2.75"	SCREEN TYPE/SLOT: N/A	GRAVEL PACK TYPE: N/A	GROUT TYPE/QUANTITY: Cement-Bentonite / 11 cf
SAMPLING METHOD: CAL / SPT	NOTES:			

DEPTH (feet)	ELEVATION	SAMPLE TYPE	SAMPLE ID	PENETRATION RESISTANCE (Blows/Foot)	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	GRAPHIC LOG	INCLINOMETER GRAPHICS	DESCRIPTION AND CLASSIFICATION
		S	15	20						
										Boring terminated at depth of 61.5 feet. *Groundwater encountered at a depth of 56 feet at time of excavation.* *NOTE:* *2.75-inch-diameter inclinometer casing installed from 0.5 to 60 feet below ground surface, and grouted in with approximately 11 cubic feet of cement/bentonite grout. Concrete surface seal from 0 to 3 feet. Completed with traffic cover and locking cap.*
65	19									
70	14									
75	9									

TCG_INCLIN_LOG1 2396.GPJ TCGWELOG.GDT 6/4/07



SCALE: 1"=50'

0 25 50 100

LEGEND

BORING/INCLINOMETER LOCATION

TerraCosta Consulting Group

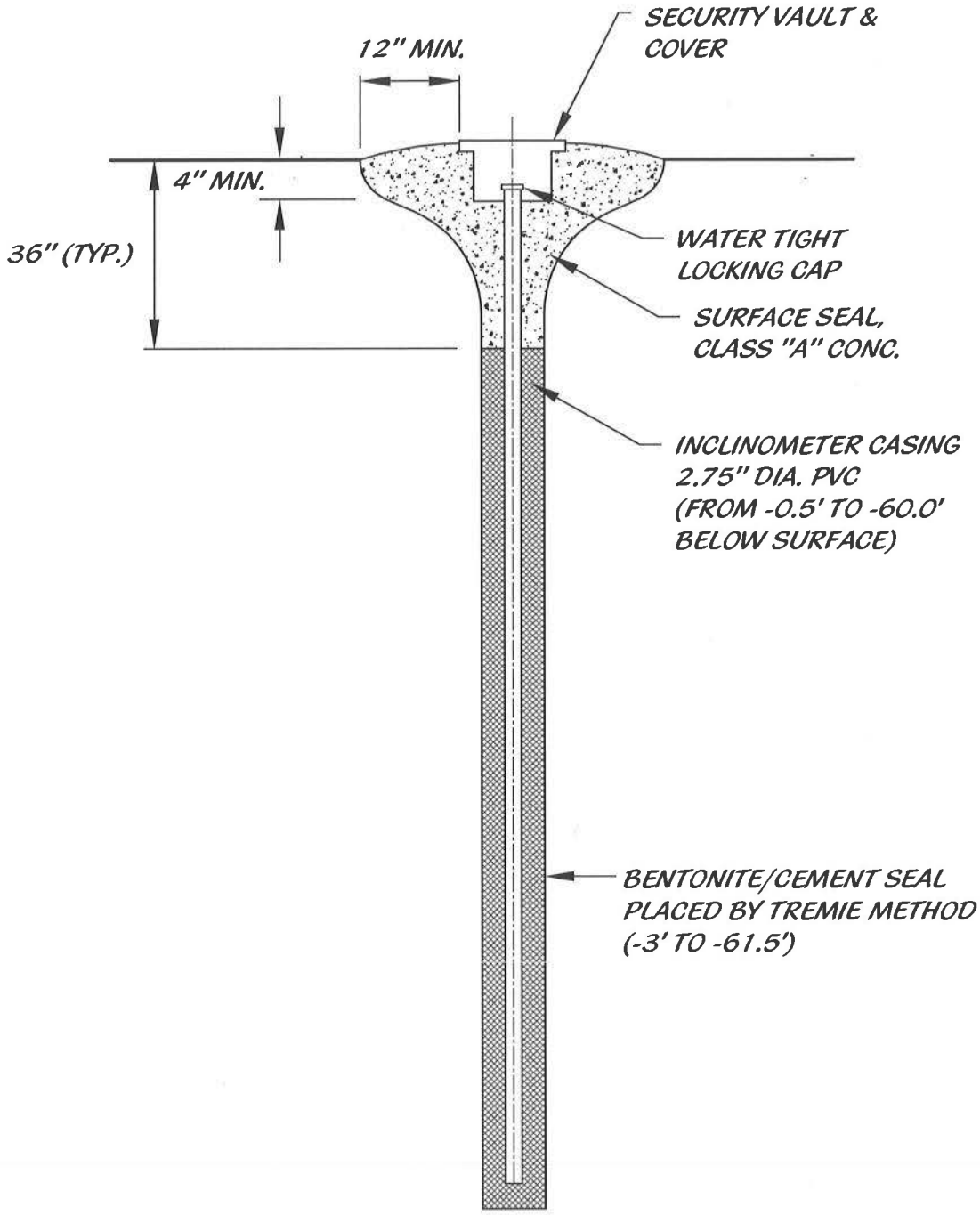
TERRACOSTA CONSULTING GROUP
ENGINEERS AND GEOLOGISTS
4435 MURPHY CANYON ROAD, SUITE 100
SAN DIEGO, CA 92123 (858) 573-6900

FIGURE NUMBER: 2

PROJECT NAME: *Redacted for Privacy RESIDENCE
5816 WINLAND HILLS DRIVE

PROJECT NUMBER: 2396

BORING/INCLINOMETER LOCATION MAP



MODIFIED INCLINOMETER CONSTRUCTION

NO SCALE

TerraCosta Consulting Group	TERRACOSTA CONSULTING GROUP ENGINEERS AND GEOLOGISTS 4455 MURPHY CANYON ROAD, SUITE 100 SAN DIEGO, CA 92123 (858) 573-6900	FIGURE NUMBER 2
	PROJECT NAME *Redacted for Privacy RESIDENCE	PROJECT NUMBER 2396
	INCLINOMETER CONSTRUCTION	

PERMIT #LMON104743
A.P.N. #330-030-07-00
EST #NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: *Redacted for Privacy RESIDENCE

SITE ADDRESS: 5816 WINLAND HILLS DR., RANCHO SANTA FE, 92067

PERMIT FOR: INSTALL 1 INCLINOMETER

PERMIT APPROVAL DATE: 04/11/2007

PERMIT EXPIRES ON: 08/09/2007

RESPONSIBLE PARTY: *Redacted for Privacy

PERMIT CONDITIONS:

1. Wells must have a **minimum 3-foot concrete surface seal**. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.

2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

3. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: _____ DATE: 04/11/2007
JAMES CLAY

NOTIFIED: emailed 05/09/07

DEH:SAM-9075 (3/05)

Rincon Consultants, Inc.
5355 Avenida Encinas, Suite 103
Carlsbad, California 92008

760 918 9444
FAX 918 9449
info@rinconconsultants.com
www.rinconconsultants.com

County of San Diego
Department of Environmental Health
Well Permit Desk
P.O Box 129261
San Diego, Ca 92112-9261

RECEIVED
JUN 04 2007
ENVIRONMENTAL HEALTH

60-Day Report
DEH Permit No. LMON 104741

Report Date:	06/01/07
Rincon Project Number:	07-23350
Site Name:	The Lilian RSF, LLC
Site Address:	6010 Paseo Delicias
City, State, Zip	Rancho Santa Fe, California 92067
Assessor's Parcel Number:	266-283-0700
County DEH SAM LOP/VAP/POP Case Number:	NA
Required Information	
Date(s) of Drilling:	April 24, 2007 and April 26, 2007
Scope of work:	5 borings
Details for borings:	See attached Table 1 and Boring logs
Containers of Soil Cuttings and/or decontamination water	12 Drums
Disposal of Containers	May 21, 2007 by NRC Environmental

Attachments:
Table 1 - Borings B1 through B5 Information
Figure 1 - Rincon Boring Location map
Copy of Boring Logs B1 through B5 by Rincon
Copy of Soil and Groundwater Analytical Laboratory Reports
Copy of Waste and Disposal Manifest

REGISTERED GEOLOGIST
STEPHANIE VASCONCELLOS
NO. 7691
exp 5/09
STATE OF CALIFORNIA

Kristie Tordai O'Neil
Rincon Environmental Scientist

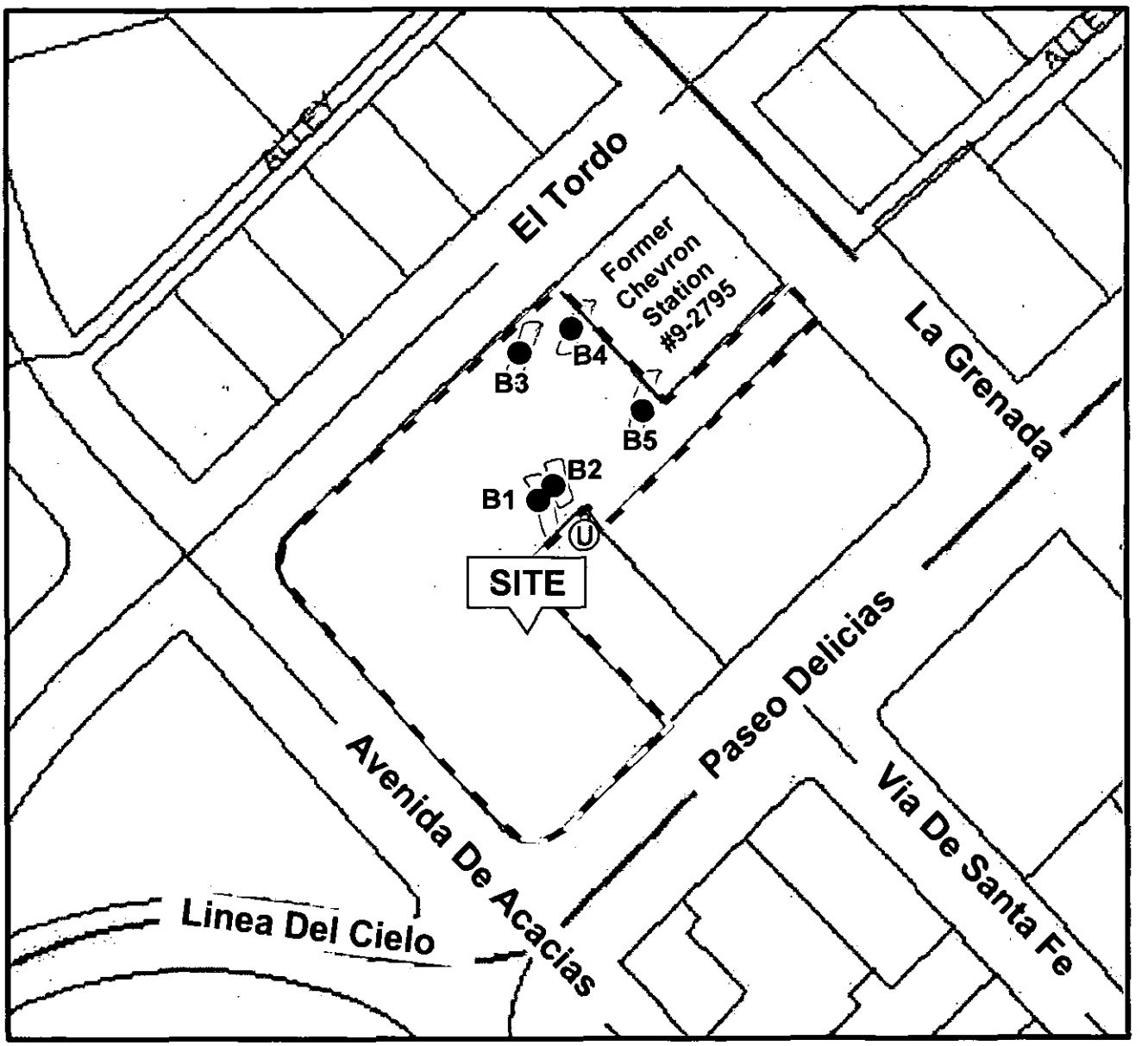
Stephanie Vasconcellos, PG #7691, REA I
Senior Geologist

cc: Joe Pinsonneault
Walter Fritz, Barratt American
Todd Ray, Allard Jansen Architects

Table 1 - Boring B1 through B5 Information The Lilian RSF, LLC Rancho Santa Fe, California
June 1, 2007

Boring Number	Total Depth of Borings (feet, bgs)	Diameter of Borings (inches)	Depth to Groundwater (feet, bgs)	Temporary or Permanent Well Installed (Y/N)[1]	Diameter of Temporary or Permanent Wells (inches)	Backfill Information[2]		
						Tremie Pipe Method used (Y/N)	Backfill Material (in feet below ground surface)	Approximate Volume of Backfill (cubic feet)
B1	12	1.5	NA	N	NA	N	Concrete (0 to 1) Bentonite chips (1 to 12) emplaced and hydrated	0.19[3]
B2	30	8	28 to 29	N	NA	N	Concrete (0 to 1) Bentonite chips (1 to 5) Bentonite grout (5 to 30)	10.5
B3	25	8	22	N	NA	N	Concrete (0 to 1) Bentonite chips (1 to 5) Bentonite grout (5 to 25)	9
B4	25	8	24	N	NA	N	Concrete (0 to 1) Bentonite chips (1 to 5) Bentonite grout (5 to 25)	9
B5	30	8	25	N	NA	N	Concrete (0 to 1) Bentonite chips (1 to 5) Bentonite grout (5 to 30)	10.5

Note: bgs = Below ground surface.
NA = Not Applicable
Y/N = Yes/No
Boring B1 was drilled by Vironex using a 1.5 inch diameter Geoprobe direct-push drill rig.
Borings B2-B5 were drilled by Test America Drilling using an 8 inch diameter hollow-stem auger drill rig.
(1) See Boring/Well Construction Logs, attached, if applicable, for details.
(2) Backfill information pertains to borings and any wells that were abandoned (if applicable) under the DEH permit
(3) Volume of backfill for boring B1 was calculated using a 2 inch diameter hand auger from 0 to 5 feet below grade and a 1.5 inch diameter probe rod from 5 to 12 feet below grade.



Source: SanGIS Interactive Map Frame, 1996-2002 ESRI Inc.

Subject property - The Lilian RSF, LLC Property

Boring location

Ⓤ Reported current or former presence of a 300-gallon diesel underground storage tank (UST) on southeast adjacent property located at 6012 Paseo Delicias.

0 100 200
approximate scale in feet

NORTH

rincon

Boring Location Map

The Lilian RSF, LLC
6010 Paseo Delicias
Rancho Santa Fe, California

Figure 1

Rincon Consultants, Inc.

LOG OF BORING B1

The Lilian RSF, LLC
6010 Paseo Delicias
Rancho Santa Fe, CA 92067

07-23350

Date Completed : 4-24-2007
Location : B1
Method : Geoprobe (2" diameter)
Drilled By : Vironex
Logged By : K. O'Neil

Sample Portion
Retained for Lab

Depth in Feet	Sample	USCS	GRAPHIC	DESCRIPTION	PID	Blow Count	Water Level	REMARKS
0				Asphalt				
	■	SC		FILL: CLAYEY SAND, dark orange-brown, very fine to fine grained, slightly moist, loose, some asphalt pieces.	0	NA		
5	■			BEDROCK: SANDSTONE, light yellow-brown, very fine to fine grained, slightly moisL dense, no to slight plasticity. (Sand with silt, SP according to USCS)	0	NA		
		SP		whitish grey				*Refusal at 12 feet due to dense soil conditions.*
10	■			light orange-brown,	0	NA		Boring terminated at 12 feet below grade.
								No groundwater encountered
	■			fine grained	0	NA		Boring backfilled on 4/24/2007 with bentonite chips subsequently hydrated from 1' to 12', and concrete from 0' to 1' below grade
15								
20								

REGISTERED GEOLOGIST
STEPHANIE VASCONCELLOS
NO. 7691
exp 5/07
STATE OF CALIFORNIA

Stephanie Vasconcellos

05-08-2007 C:\Documents and Settings\ktordai.RINCON\Desktop\Projects\In Progress\Lilian RSF Phase II-IP\Borings\B-1 Vironex.bor

Rincon Consultants, Inc.

LOG OF BORING B2

The Lilian RSF, LLC
6010 Paseo Delicias
Rancho Santa Fe, CA 92067

07-23350

Date Completed : 4-26-2007
Location : B2
Method : CME 85 Hollow Stem Auger (8" diameter)
Drilled By : Test America Drilling
Logged By : K. O'Neil

Sample Portion
Retained for Lab

Depth in Feet	Sample	USCS	GRAPHIC	DESCRIPTION	PID	Blow Count	Water Level	REMARKS
0				Asphalt				
	■	SC		FILL: CLAYEY SAND, *orange-brown with* grey-white mottling, fine to medium grained, moist, loose, moderate plasticity	0	NA		
5	■			BEDROCK: SANDSTONE, yellowish grey, very fine to fine grained, slightly moist, very dense, slight plasticity (Silty sand, SM according to USCS)	0	40/50 for 5"		
10	■	SM			0	50 for 6"		
15	■			fine grained	0	50 for 6"		
				orange-brown				
20	■	CL		CLAYSTONE, whitish grey, slightly moist, slight plasticity, hard (Clay, CL according to USCS)	0	25/35/50		
25	■	SP		SANDSTONE, light grey-white, medium to coarse grained, moist, very dense, no plasticity (Sand with silt, SP according to USCS)	0	35/50 for 12"		*Groundwater encountered between 28 to 29* feet below grade
							▼	Boring terminated at 30 feet below grade
30	■			coarse grained, wet, very dense	0	50 for 6"		Boring backfilled on 4/26/2007 with bentonite grout from 5' to 30', bentonite chips from 1' to 5', and concrete from 0' to 1' below grade

REGISTERED GEOLOGIST ★ STEPHANIE VASCONCELLOS ★ NO. 7691 exp 5/07 ★ STATE OF CALIFORNIA

Stephanie Vasconcellos

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Rincon Consultants, Inc.

LOG OF BORING B3

The Lilian RSF, LLC
6010 Paseo Delicias
Rancho Santa Fe, CA 92067

07-23350

Date Completed : 4-26-2007
Location : B3
Method : CME 85 Hollow Stem Auger (8" diameter)
Drilled By : Test America Drilling
Logged By : K. O'Neil

Sample Portion
Retained for Lab

Depth In Feet	Sample	USCS	GRAPHIC	DESCRIPTION	PID	Blow Count	Water Level	REMARKS
0				Asphalt				
	■	SP		SANDSTONE, light orange-brown, very fine to fine grained, slightly moist, loose (Sand with silt, SP according to USCS)	0	NA		
5	■			fine grained, very dense	0	50 for 6"		
10	■	CL		CLAYSTONE, grey-white with yellow mottling, dry, no plasticity, hard (Clay, CL according to USCS)	0	35/50 for 6"		
15	■			yellow-grey mottled, damp to dry, no to slight plasticity	0	25/35/40		
							▽	Depth to water measured at 18 feet below grade 40 minutes after boring terminated (and rising)
20	■	SP		SANDSTONE, light grey-white, medium to coarse grained, very dense, slightly wet (Sand with silt, SP according to USCS)	0	50 for 6"		
							▼	Groundwater encountered at approximately 22 feet below grade
								Boring terminated at 25 feet below grade
25	■	ML		SILTSTONE, grey-brown, wet, slight plasticity, hard (Silt with clay and traces of sand, ML according to USCS)	0	15/15/25		Boring backfilled on 4/26/2007 with bentonite grout from 5' to 25', bentonite chips from 1' to 5', and concrete from 0' to 1' below grade

REGISTERED GEOLOGIST
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exp 5/07
STATE OF CALIFORNIA

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Rincon Consultants, Inc.

LOG OF BORING B4

The Lilian RSF, LLC
6010 Paseo Delicias
Rancho Santa Fe, CA 92067

07-23350

Date Completed : 4-26-2007
Location : B4
Method : CME 85 Hollow Stem Auger (8" diameter)
Drilled By : Test America Drilling
Logged By : K. O'Neil and S. Vasconcellos

Sample Portion
Retained for Lab

Depth in Feet	Sample	USCS	GRAPHIC	DESCRIPTION	PID	Blow Count	Water Level	REMARKS
0				Asphalt				
	■	SM		SANDSTONE, orange-brown, fine grained, slightly moist, loose (Silty Sand, SM according to USCS)	0	NA		
5	■			fine to medium grained, very dense	0	15/25/35		
10	■	CL		CLAYSTONE, light grey, dry, no to slight plasticity, hard (Clay, CL according to USCS)	0.1	20/46/50		
15	■			medium grey mottled with yellow, slight plasticity	0.5	20/25/35		
20	■	SP		SANDSTONE, light grey-white, very fine to fine grained, slightly moist to moist, very dense (Sand with silt, SP according to USCS)	0.6	50 for 6"		Boring terminated at 25 feet below grade
				dark grey			▽	Groundwater measured at 22.12 feet below grade 5 minutes after boring terminated
				orange-brown, medium to coarse grained, wet, very dense			▼	Groundwater encountered at approximately 24 feet below grade
25	■			white-grey, very fine to fine grained, moist, very dense	0	20/20/35		Boring backfilled on 4/26/2007 with bentonite grout from 5' to 25', bentonite chips from 1' to 5', and concrete from 0' to 1' below grade

REGISTERED GEOLOGIST ★ STEPHANIE VASCONCELLOS ★ NO. 7691 exp 5/07 ★ STATE OF CALIFORNIA

Stephanie Vasconcellos

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Rincon Consultants, Inc.

LOG OF BORING B5

The Lilian RSF, LLC
6010 Paseo Delicias
Rancho Santa Fe, CA 92067

07-23350

Date Completed : 4-26-2007
Location : B5
Method : CME 85 Hollow Stem Auger (8" diameter)
Drilled By : Test America Drilling
Logged By : S. Vasconcellos

Sample Portion
Retained for Lab

Depth in Feet	Sample	USCS	GRAPHIC	DESCRIPTION	PID	Blow Count	Water Level	REMARKS
0				Asphalt				
	■	SM		SANDSTONE, orange-brown, very fine to fine-grained, slightly moist, loose (Silty sand, SM according to USCS)	0	NA		
5	■			with clay, light grey-white mottled with yellow-brown, dry, very dense, contains old roots	0	20/30/35		
10	■	SP		SANDSTONE, light grey-white with some orange mottling, fine to medium grained, slightly moist, very dense (Sand, SP according to USCS)	0	45/50 for 12"		
15	■	CL		CLAYSTONE, medium grey mottled with yellow, dry, medium plasticity when wetted, hard (Clay, CL according to USCS)	0	25/30/35		
20	■				0	35/50 for 6"		
25	■	SP		SANDSTONE, light white-grey, fine to medium grained, wet, very dense (Sand, SP according to USCS)	0	50 for 6"	▼	Groundwater encountered at 25 feet below grade Boring terminated at 30 feet below grade
30	■	CL		CLAYSTONE, medium grey, sand is very fine grained, dry, medium plasticity when wetted, hard (Sandy clay, CL according to USCS)	0	50 for 6"		Boring backfilled on 4/26/2007 with bentonite grout from 5' to 30', bentonite chips from 1' to 5', and concrete from 0' to 1' below grade

REGISTERED GEOLOGIST
STEPHANIE VASCONCELLOS
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exp 5/07
STATE OF CALIFORNIA

Stephanie Vasconcellos

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ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900 *FAX 714/538-1209*

CLIENT Rincon Consultants, Inc. (9746)
ATTN: Kristie O'Neil
5355 Avenida Encinas
Suite 103
Carlsbad, CA 92008

LAB REQUEST 189219
REPORTED 05/01/2007
RECEIVED 04/25/2007

PROJECT #07-23350

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
795146	B1-3'
795147	B1-5'
795148	B1-10'
795149	B1-12'
795150	Laboratory Method Blank

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.
Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

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TESTING & CONSULTING
Chemical
Microbiological
Environmental

Order #: 795146
Matrix: SOLID
Date Sampled: 04/24/2007
Time Sampled: 07:36
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B1-3'
Sample Description: Boring B1

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Antimony	ND	1	3.0	mg/Kg	04/27/07	KN
Arsenic	5.55	1	1.0	mg/Kg	04/27/07	KN
Barium	24.6	1	1.0	mg/Kg	04/27/07	KN
Beryllium	ND	1	0.5	mg/Kg	04/27/07	KN
Cadmium	0.580	1	0.5	mg/Kg	04/27/07	KN
Chromium	20.6	1	1.0	mg/Kg	04/27/07	KN
Cobalt	1.98	1	0.5	mg/Kg	04/27/07	KN
Copper	11.7	1	1.0	mg/Kg	04/27/07	KN
Lead	32.4	1	0.5	mg/Kg	04/27/07	KN
Molybdenum	ND	1	1.0	mg/Kg	04/27/07	KN
Nickel	3.36	1	1.5	mg/Kg	04/27/07	KN
Selenium	ND	1	1.0	mg/Kg	04/27/07	KN
Silver	ND	1	0.5	mg/Kg	04/27/07	KN
Thallium	ND	1	1.0	mg/Kg	04/27/07	KN
Vanadium	15.1	1	0.5	mg/Kg	04/27/07	KN
Zinc	80.1	1	5.0	mg/Kg	04/27/07	KN
7471A Mercury in Solid/Wipe						
Mercury	ND	1	0.14	mg/Kg	04/27/07	MDJ
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	04/26/07	AF
C10 - C22	ND	1	10	mg/Kg	04/26/07	AF
C22 - C36	54	1	50	mg/Kg	04/26/07	AF

Surrogates		Units	Control Limits
Sur-o-Terphenyl	65	%	55 - 200

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795147
Matrix: SOLID
Date Sampled: 04/24/2007
Time Sampled: 08:03
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B1-5'
Sample Description: Boring B1

Analyte	Result	DF	DLR	Units	Date/Analyst	
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	04/26/07	AF
C10 - C22	ND	1	10	mg/Kg	04/26/07	AF
C22 - C36	ND	1	50	mg/Kg	04/26/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	87			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1,1-Trichloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	04/26/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	04/26/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	04/26/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	04/26/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	04/26/07	LZ
1,4-Dichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	04/26/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	04/26/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795147
Matrix: SOLID
Date Sampled: 04/24/2007
Time Sampled: 08:03
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B1-5'
Sample Description: Boring B1

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	04/26/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	04/26/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	04/26/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	04/26/07	LZ
Acetone	ND	1	50	ug/Kg	04/26/07	LZ
Allyl chloride	ND	1	5	ug/Kg	04/26/07	LZ
Benzene	ND	1	5	ug/Kg	04/26/07	LZ
Bromobenzene	ND	1	5	ug/Kg	04/26/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	04/26/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	04/26/07	LZ
Bromoform	ND	1	5	ug/Kg	04/26/07	LZ
Bromomethane	ND	1	5	ug/Kg	04/26/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	04/26/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
Chloroethane	ND	1	5	ug/Kg	04/26/07	LZ
Chloroform	ND	1	5	ug/Kg	04/26/07	LZ
Chloromethane	ND	1	5	ug/Kg	04/26/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	04/26/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	04/26/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/26/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	04/26/07	LZ
Dibromomethane	ND	1	5	ug/Kg	04/26/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	04/26/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	04/26/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	04/26/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	04/26/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	04/26/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	04/26/07	LZ
Methylene chloride	ND	1	5	ug/Kg	04/26/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
n-Propylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
Naphthalene	ND	1	5	ug/Kg	04/26/07	LZ
o-Xylene	ND	1	5	ug/Kg	04/26/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795147
Matrix: SOLID
Date Sampled: 04/24/2007
Time Sampled: 08:03
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B1-5'
Sample Description: Boring B1

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
p-Isopropyltoluene	ND	1	5	ug/Kg	04/26/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
Styrene	ND	1	5	ug/Kg	04/26/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	04/26/07	LZ
Toluene	ND	1	5	ug/Kg	04/26/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	04/26/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	04/26/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/26/07	LZ
Trichloroethene	ND	1	5	ug/Kg	04/26/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	04/26/07	LZ
Vinyl chloride	ND	1	5	ug/Kg	04/26/07	LZ
Xylenes, total	ND	1	5	ug/Kg	04/26/07	LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	04/26/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	04/26/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	04/26/07	LZ
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	04/26/07	LZ
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	102			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	114			%	70 - 135	
Surr3 - Toluene-d8	109			%	70 - 135	
Surr4 - p-Bromofluorobenzene	96			%	70 - 135	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795148
Matrix: SOLID
Date Sampled: 04/24/2007
Time Sampled:
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B1-10'
Sample Description: Boring B1

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Antimony	ND	1	3.0	mg/Kg	04/27/07	KN
Arsenic	5.92	1	1.0	mg/Kg	04/27/07	KN
Barium	51.3	1	1.0	mg/Kg	04/27/07	KN
Beryllium	ND	1	0.5	mg/Kg	04/27/07	KN
Cadmium	ND	1	0.5	mg/Kg	04/27/07	KN
Chromium	7.25	1	1.0	mg/Kg	04/27/07	KN
Cobalt	2.13	1	0.5	mg/Kg	04/27/07	KN
Copper	ND	1	1.0	mg/Kg	04/27/07	KN
Lead	5.78	1	0.5	mg/Kg	04/27/07	KN
Molybdenum	ND	1	1.0	mg/Kg	04/27/07	KN
Nickel	1.82	1	1.5	mg/Kg	04/27/07	KN
Selenium	1.05	1	1.0	mg/Kg	04/27/07	KN
Silver	ND	1	0.5	mg/Kg	04/27/07	KN
Thallium	ND	1	1.0	mg/Kg	04/27/07	KN
Vanadium	11.1	1	0.5	mg/Kg	04/27/07	KN
Zinc	19.5	1	5.0	mg/Kg	04/27/07	KN
7471A Mercury in Solid/Wipe						
Mercury	ND	1	0.14	mg/Kg	04/27/07	MDJ
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	04/26/07	AF
C10 - C22	ND	1	10	mg/Kg	04/26/07	AF
C22 - C36	ND	1	50	mg/Kg	04/26/07	AF

Surrogates		Units	Control Limits
Sur-o-Terphenyl	71	%	55 - 200

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795149
Matrix: SOLID
Date Sampled: 04/24/2007
Time Sampled:
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B1-12'
Sample Description: Boring B1

Analyte	Result	DF	DLR	Units	Date/Analyst	
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	04/26/07	AF
C10 - C22	ND	1	10	mg/Kg	04/26/07	AF
C22 - C36	ND	1	50	mg/Kg	04/26/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	82			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1,1-Trichloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	04/26/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	04/26/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	04/26/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	04/26/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	04/26/07	LZ
1,4-Dichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	04/26/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	04/26/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795149 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B1-12'
Date Sampled: 04/24/2007 **Sample Description:** Boring B1
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	04/26/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	04/26/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	04/26/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	04/26/07	LZ
Acetone	ND	1	50	ug/Kg	04/26/07	LZ
Allyl chloride	ND	1	5	ug/Kg	04/26/07	LZ
Benzene	ND	1	5	ug/Kg	04/26/07	LZ
Bromobenzene	ND	1	5	ug/Kg	04/26/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	04/26/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	04/26/07	LZ
Bromoform	ND	1	5	ug/Kg	04/26/07	LZ
Bromomethane	ND	1	5	ug/Kg	04/26/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	04/26/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
Chloroethane	ND	1	5	ug/Kg	04/26/07	LZ
Chloroform	ND	1	5	ug/Kg	04/26/07	LZ
Chloromethane	ND	1	5	ug/Kg	04/26/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	04/26/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	04/26/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/26/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	04/26/07	LZ
Dibromomethane	ND	1	5	ug/Kg	04/26/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	04/26/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	04/26/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	04/26/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	04/26/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	04/26/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	04/26/07	LZ
Methylene chloride	ND	1	5	ug/Kg	04/26/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
n-Propylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
Naphthalene	ND	1	5	ug/Kg	04/26/07	LZ
o-Xylene	ND	1	5	ug/Kg	04/26/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795149
Matrix: SOLID
Date Sampled: 04/24/2007
Time Sampled:
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B1-12'
Sample Description: Boring B1

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
p-Isopropyltoluene	ND	1	5	ug/Kg	04/26/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
Styrene	ND	1	5	ug/Kg	04/26/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	04/26/07	LZ
Toluene	ND	1	5	ug/Kg	04/26/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	04/26/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	04/26/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/26/07	LZ
Trichloroethene	ND	1	5	ug/Kg	04/26/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	04/26/07	LZ
Vinyl chloride	ND	1	5	ug/Kg	04/26/07	LZ
Xylenes, total	ND	1	5	ug/Kg	04/26/07	LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	04/26/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	04/26/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	04/26/07	LZ
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	04/26/07	LZ

Surrogates		**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	106	%	70 - 135
Surr2 - 1,2-Dichloroethane-d4	117	%	70 - 135
Surr3 - Toluene-d8	108	%	70 - 135
Surr4 - p-Bromofluorobenzene	92	%	70 - 135

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795150 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** Laboratory Method Blank
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Antimony	ND	1	3.00	mg/Kg	04/27/07	KN
Arsenic	ND	1	1.00	mg/Kg	04/27/07	KN
Barium	ND	1	1.00	mg/Kg	04/27/07	KN
Beryllium	ND	1	0.50	mg/Kg	04/27/07	KN
Cadmium	ND	1	0.50	mg/Kg	04/27/07	KN
Chromium	ND	1	1.00	mg/Kg	04/27/07	KN
Cobalt	ND	1	0.50	mg/Kg	04/27/07	KN
Copper	ND	1	1.00	mg/Kg	04/27/07	KN
Lead	ND	1	0.50	mg/Kg	04/27/07	KN
Molybdenum	ND	1	1.00	mg/Kg	04/27/07	KN
Nickel	ND	1	1.50	mg/Kg	04/27/07	KN
Selenium	ND	1	1.00	mg/Kg	04/27/07	KN
Silver	ND	1	0.50	mg/Kg	04/27/07	KN
Thallium	ND	1	1.00	mg/Kg	04/27/07	KN
Vanadium	ND	1	0.50	mg/Kg	04/27/07	KN
Zinc	ND	1	5.00	mg/Kg	04/27/07	KN
7471A Mercury in Solid/Wipe						
Mercury	ND	1	0.14	mg/Kg	04/27/07	MDJ
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	04/26/07	AF
C10 - C22	ND	1	10	mg/Kg	04/26/07	AF
C22 - C36	ND	1	50	mg/Kg	04/26/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	144			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	04/26/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795150 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** Laboratory Method Blank
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,1,1-Trichloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	04/26/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	04/26/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	04/26/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	04/26/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	04/26/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	04/26/07	LZ
1,4-Dichlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	04/26/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	04/26/07	LZ
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	04/26/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	04/26/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	04/26/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	04/26/07	LZ
Acetone	ND	1	50	ug/Kg	04/26/07	LZ
Allyl chloride	ND	1	5	ug/Kg	04/26/07	LZ
Benzene	ND	1	5	ug/Kg	04/26/07	LZ
Bromobenzene	ND	1	5	ug/Kg	04/26/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	04/26/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	04/26/07	LZ
Bromoform	ND	1	5	ug/Kg	04/26/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795150 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** Laboratory Method Blank
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Bromomethane	ND	1	5	ug/Kg	04/26/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	04/26/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	04/26/07	LZ
Chloroethane	ND	1	5	ug/Kg	04/26/07	LZ
Chloroform	ND	1	5	ug/Kg	04/26/07	LZ
Chloromethane	ND	1	5	ug/Kg	04/26/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	04/26/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	04/26/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/26/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	04/26/07	LZ
Dibromomethane	ND	1	5	ug/Kg	04/26/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	04/26/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	04/26/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	04/26/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	04/26/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	04/26/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	04/26/07	LZ
Methylene chloride	ND	1	5	ug/Kg	04/26/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
n-Propylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
Naphthalene	ND	1	5	ug/Kg	04/26/07	LZ
o-Xylene	ND	1	5	ug/Kg	04/26/07	LZ
p-Isopropyltoluene	ND	1	5	ug/Kg	04/26/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
Styrene	ND	1	5	ug/Kg	04/26/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	04/26/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	04/26/07	LZ
Toluene	ND	1	5	ug/Kg	04/26/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	04/26/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	04/26/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/26/07	LZ
Trichloroethene	ND	1	5	ug/Kg	04/26/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	04/26/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795150 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** Laboratory Method Blank
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Vinyl chloride	ND	1	5	ug/Kg	04/26/07	LZ
Xylenes, total	ND	1	5	ug/Kg	04/26/07	LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	04/26/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	04/26/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	04/26/07	LZ
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	04/26/07	LZ
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	102			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	114			%	70 - 135	
Surr3 - Toluene-d8	109			%	70 - 135	
Surr4 - p-Bromofluorobenzene	96			%	70 - 135	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868
714/771-6900 FAX 714/538-1209

CHAIN OF CUSTODY RECORD

Date 4/24/07 Page 1 of 1

Assigned LR# 189219

CLIENT: RINCON CONSULTANTS, INC

ADDRESS: 5355 AVENIDA ENCINAS, SUITE 103
CARLSBAD, CA 92008

Is this the address the final report is to be sent to? Yes X No ___
If "No" list mailing address in "Special Instructions" section at the bottom of this Chain of Custody.

CONTACT PERSON: KRISTIE O'NEIL

SAMPLED BY (Circle One): (Client) Assoc. Lab Personnel

PROJECT IDENTIFICATION/LOCATION:

PURCHASE ORDER #: 07-23350

SAMPLER: (Print AND Sign) KONEIL

PHONE #: (760) 918-9444

FAX #: (760) 918-9449

SAMPLE TURNAROUND TIME:

Requested Turnaround Time (CIRCLE ONE)*
Priority Charges Apply to Rush Turn Around Times
RUSH: Same Day 24 Hr 48 Hr (72 Hr)
STANDARD: Standard TAT **(5 to 10 Working Days)
Other ___
* Availability of Same Day/24/48/72 Hr TAT Varies Based Upon Test Method Requirements.
**Standard TAT Varies According to Analyses.

SAMPLE CONDITION INFO - *FOR LAB USE ONLY:*
Samples Intact: Yes ✓ No ___
Sample Seals Intact: Yes ___ No ___ N/A ✓
Cooler Seals Intact: Yes ___ No ___ N/A ✓

	SAMPLE ID	SAMPLE OR LOCATION DESCRIPTION	DATE	TIME	MATRIX (See Codes Below)	# OF CONTAINERS	TEST REQUIRED
1	B1-3'	BORING B1	4/24/07	7:36	SOIL	1	TEPHcc 8015, CAM METALS
2	B1-5'	BORING B1	4/24/07	8:03	SOIL	1	TEPHcc 8015, VOCs+OXY 8260B
3	B1-10'	BORING B1	4/24/07		SOIL	1	TEPHcc 8015, CAM METALS
4	B1-12'	BORING B1	4/24/07		SOIL	1	TEPHcc 8015, VOCs+OXY 8260B
5							
6							
7							
8							
9							
10							

MATRIX: GW=Ground Water DW=Drinking Water WW=Waste Water SW=Storm Water S=Solid/Soil A=Air L=Liquid F=Food (Use the codes shown here to identify the matrix above)

Relinquished by: (Print AND Sign)***	Received By: (Print AND Sign)	Date/Time:
KONEIL	Ken Mahio	10:35 4-25-07
Ken Mahio 4:30 4-25-07	Juan Montoya	4/25/07 16:30
Relinquished by: (Print AND Sign)***	Received by Lab for Analysis: (Print AND Sign)	Date/Time:

Special Instructions:

***By signing this Chain of Custody you are authorizing the analyses shown above. KONEIL (Print AND Sign)

COC DISTRIBUTION: White with report. Yellow to AL. Pink to Client's Courier.

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SAMPLE ACCEPTANCE CHECKLIST

Section 1
Client: Rincon
Date Received: 4/25/07
Project:
Sample(s) received in cooler: (Yes) No (Skip Section 2)

Section 2
Was the cooler packed with: ✓ Ice ___ Ice Packs ___ Bubble Wrap ___ Styrofoam ___ Paper ___ None ___ Other
Cooler or box temperature: 3.6°C
(Acceptance range is 2 to 6 Deg. C.)

Section 3

	YES	NO	N/A
Was a COC received?	✓		
Were custody seals present?			✓
If Yes – were they intact?			
Were all samples sealed in plastic bags?	✓		
Did all samples arrive intact? If no, indicate below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were correct containers used for the tests required?	✓		
Was a sufficient amount of sample sent for tests indicated?	✓		
No head space in VOA vials?			✓
Were the correct preservatives used?			✓
Were the samples scanned for presence of radioactivity?			✓
Was total residual chlorine measured (Fish Bioassay samples only)? *			✓

*: If the answer is no, please inform Fish Bioassay Dept. immediately.

Section 4
Explanations/Comments

Section 5
Was Project Manager notified of discrepancies: Y / N (N/A)

Completed By: [signature] Date: 4/25/07

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900 *FAX 714/538-1209*

CLIENT Rincon Consultants, Inc. (9746)
ATTN: Kristie O'Neil
5355 Avenida Encinas
Suite 103
Carlsbad, CA 92008

LAB REQUEST 189391
REPORTED 05/07/2007
RECEIVED 04/27/2007

PROJECT #07-23350

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
795963	B2-3'
795964	B2-5'
795965	B2-10'
795966	B2-15'
795967	B2-20'
795968	B2-25'
795969	B2-30'
795970	B2-GW
795971	B3-3'
795972	B3-5'
795973	B3-10'
795974	B3-15'

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.
Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

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806 North Batavia - Orange, California 92868 - 714/771-6900 *FAX 714/538-1209*

CLIENT Rincon Consultants, Inc. (9746)
ATTN: Kristie O'Neil
5355 Avenida Encinas
Suite 103
Carlsbad, CA 92008

LAB REQUEST 189391
REPORTED 05/07/2007
RECEIVED 04/27/2007

PROJECT #07-23350

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
795975	B3-20'
795976	B3-25'
795977	B3-GW
795978	B4-3'
795979	B4-5'
795980	B4-10'
795981	B4-15'
795982	B4-20'
795983	B4-25'
795984	B4-GW
795985	B5-3'
795986	B5-5'

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward A. Belmare, Ph.D.
Vice President

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806 North Batavia - Orange, California 92868 - 714/771-6900 *FAX 714/538-1209*

CLIENT Rincon Consultants, Inc. (9746)
ATTN: Kristie O'Neil
5355 Avenida Encinas
Suite 103
Carlsbad, CA 92008

LAB REQUEST 189391
REPORTED 05/07/2007
RECEIVED 04/27/2007

PROJECT #07-23350

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
795987	B5-10'
795988	B5-15'
795989	B5-20'
795990	B5-25'
795991	B5-30'
795992	B5-GW
795993	Laboratory Method Blank
795994	Laboratory Method Blank

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.
Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

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TESTING & CONSULTING
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Order #: 795963 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-3'
Date Sampled: 04/26/2007
Time Sampled: 08:15
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Antimony	ND	1	3.0	mg/Kg	05/02/07	KN
Arsenic	11.8	1	1.0	mg/Kg	05/02/07	KN
Barium	8.93	1	1.0	mg/Kg	05/02/07	KN
Beryllium	ND	1	0.5	mg/Kg	05/02/07	KN
Cadmium	ND	1	0.5	mg/Kg	05/02/07	KN
Chromium	5.77	1	1.0	mg/Kg	05/02/07	KN
Cobalt	1.66	1	0.5	mg/Kg	05/02/07	KN
Copper	7.21	1	1.0	mg/Kg	05/02/07	KN
Lead	7.08	1	0.5	mg/Kg	05/02/07	KN
Molybdenum	1.86	1	1.0	mg/Kg	05/02/07	KN
Nickel	1.70	1	1.5	mg/Kg	05/02/07	KN
Selenium	1.05	1	1.0	mg/Kg	05/02/07	KN
Silver	ND	1	0.5	mg/Kg	05/02/07	KN
Thallium	ND	1	1.0	mg/Kg	05/02/07	KN
Vanadium	19.1	1	0.5	mg/Kg	05/02/07	KN
Zinc	24.7	1	5.0	mg/Kg	05/02/07	KN
7471A Mercury in Solid/Wipe						
Mercury	ND	1	0.14	mg/Kg	05/01/07	MDJ
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	04/30/07	AF
C10 - C22	ND	1	10	mg/Kg	04/30/07	AF
C22 - C36	ND	1	50	mg/Kg	04/30/07	AF

Surrogates		Units	Control Limits
Sur-o-Terphenyl	108	%	55 - 200

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795964
Matrix: SOLID
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B2-5'

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Antimony	ND	1	3.0	mg/Kg	05/02/07	KN
Arsenic	5.52	1	1.0	mg/Kg	05/02/07	KN
Barium	18.7	1	1.0	mg/Kg	05/02/07	KN
Beryllium	ND	1	0.5	mg/Kg	05/02/07	KN
Cadmium	ND	1	0.5	mg/Kg	05/02/07	KN
Chromium	3.62	1	1.0	mg/Kg	05/02/07	KN
Cobalt	0.755	1	0.5	mg/Kg	05/02/07	KN
Copper	1.17	1	1.0	mg/Kg	05/02/07	KN
Lead	26.5	1	0.5	mg/Kg	05/02/07	KN
Molybdenum	1.03	1	1.0	mg/Kg	05/02/07	KN
Nickel	ND	1	1.5	mg/Kg	05/02/07	KN
Selenium	ND	1	1.0	mg/Kg	05/02/07	KN
Silver	ND	1	0.5	mg/Kg	05/02/07	KN
Thallium	ND	1	1.0	mg/Kg	05/02/07	KN
Vanadium	5.20	1	0.5	mg/Kg	05/02/07	KN
Zinc	27.3	1	5.0	mg/Kg	05/02/07	KN
7471A Mercury in Solid/Wipe						
Mercury	ND	1	0.14	mg/Kg	05/01/07	MDJ
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	04/30/07	AF
C10 - C22	ND	1	10	mg/Kg	04/30/07	AF
C22 - C36	ND	1	50	mg/Kg	04/30/07	AF

Surrogates		Units	Control Limits
Sur-o-Terphenyl	76	%	55 - 200

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795965 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-10'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	3.57	1	0.5	mg/Kg	05/04/07	KN
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	04/30/07	AF
C10 - C22	ND	1	10	mg/Kg	04/30/07	AF
C22 - C36	ND	1	50	mg/Kg	04/30/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	78			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,1-Trichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795965 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-10'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,4-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	04/30/07	LZ
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	04/30/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	04/30/07	LZ
Acetone	ND	1	50	ug/Kg	04/30/07	LZ
Allyl chloride	ND	1	5	ug/Kg	04/30/07	LZ
Benzene	ND	1	5	ug/Kg	04/30/07	LZ
Bromobenzene	ND	1	5	ug/Kg	04/30/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Bromoform	ND	1	5	ug/Kg	04/30/07	LZ
Bromomethane	ND	1	5	ug/Kg	04/30/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	04/30/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
Chloroethane	ND	1	5	ug/Kg	04/30/07	LZ
Chloroform	ND	1	5	ug/Kg	04/30/07	LZ
Chloromethane	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Dibromomethane	ND	1	5	ug/Kg	04/30/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	04/30/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	04/30/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	04/30/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	04/30/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	04/30/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	04/30/07	LZ
Methylene chloride	ND	1	5	ug/Kg	04/30/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795965 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-10'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
n-Propylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Naphthalene	ND	1	5	ug/Kg	04/30/07	LZ
o-Xylene	ND	1	5	ug/Kg	04/30/07	LZ
p-Isopropyltoluene	ND	1	5	ug/Kg	04/30/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Styrene	ND	1	5	ug/Kg	04/30/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	04/30/07	LZ
Toluene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	LZ
Trichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	04/30/07	LZ
Vinyl chloride	ND	1	5	ug/Kg	04/30/07	LZ
Xylenes, total	ND	1	5	ug/Kg	04/30/07	LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	04/30/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	04/30/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	04/30/07	LZ
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	04/30/07	LZ
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	102			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	121			%	70 - 135	
Surr3 - Toluene-d8	104			%	70 - 135	
Surr4 - p-Bromofluorobenzene	91			%	70 - 135	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795966 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-15'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	3.28	1	0.5	mg/Kg	05/10/07	KN
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	86			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,1-Trichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795966 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-15'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,4-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	05/09/07	LZ
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	05/09/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	05/09/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	05/09/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	05/09/07	LZ
Acetone	ND	1	50	ug/Kg	05/09/07	LZ
Allyl chloride	ND	1	5	ug/Kg	05/09/07	LZ
Benzene	ND	1	5	ug/Kg	05/09/07	LZ
Bromobenzene	ND	1	5	ug/Kg	05/09/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Bromoform	ND	1	5	ug/Kg	05/09/07	LZ
Bromomethane	ND	1	5	ug/Kg	05/09/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	05/09/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
Chloroethane	ND	1	5	ug/Kg	05/09/07	LZ
Chloroform	ND	1	5	ug/Kg	05/09/07	LZ
Chloromethane	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/09/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Dibromomethane	ND	1	5	ug/Kg	05/09/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	05/09/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	05/09/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	05/09/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	05/09/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	05/09/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	05/09/07	LZ
Methylene chloride	ND	1	5	ug/Kg	05/09/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795966 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-15'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
n-Propylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Naphthalene	ND	1	5	ug/Kg	05/09/07	LZ
o-Xylene	ND	1	5	ug/Kg	05/09/07	LZ
p-Isopropyltoluene	ND	1	5	ug/Kg	05/09/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Styrene	ND	1	5	ug/Kg	05/09/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	05/09/07	LZ
Toluene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/09/07	LZ
Trichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	05/09/07	LZ
Vinyl chloride	ND	1	5	ug/Kg	05/09/07	LZ
Xylenes, total	ND	1	5	ug/Kg	05/09/07	LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	05/09/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	05/09/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	05/09/07	LZ
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	05/09/07	LZ
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	106			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	113			%	70 - 135	
Surr3 - Toluene-d8	100			%	70 - 135	
Surr4 - p-Bromofluorobenzene	104			%	70 - 135	

8015B - Gasoline

Gasoline	ND	1	3	mg/Kg	05/09/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	99			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795967 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-20'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	32.1	1	0.5	mg/Kg	05/10/07	KN
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	05/03/07	LZ
1,1,1-Trichloroethane	ND	1	5	ug/Kg	05/03/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	05/03/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	05/03/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	05/03/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	05/03/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	05/03/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	05/03/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	05/03/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	05/03/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	05/03/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	05/03/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	05/03/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	05/03/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	05/03/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	05/03/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	05/03/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	05/03/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	05/03/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	05/03/07	LZ
1,4-Dichlorobenzene	ND	1	5	ug/Kg	05/03/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	05/03/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	05/03/07	LZ
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	05/03/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	05/03/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	05/03/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	05/03/07	LZ
Acetone	ND	1	50	ug/Kg	05/03/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795967 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-20'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Allyl chloride	ND	1	5	ug/Kg	05/03/07	LZ
Benzene	ND	1	5	ug/Kg	05/03/07	LZ
Bromobenzene	ND	1	5	ug/Kg	05/03/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	05/03/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	05/03/07	LZ
Bromoform	ND	1	5	ug/Kg	05/03/07	LZ
Bromomethane	ND	1	5	ug/Kg	05/03/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	05/03/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	05/03/07	LZ
Chloroethane	ND	1	5	ug/Kg	05/03/07	LZ
Chloroform	ND	1	5	ug/Kg	05/03/07	LZ
Chloromethane	ND	1	5	ug/Kg	05/03/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	05/03/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	05/03/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/03/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	05/03/07	LZ
Dibromomethane	ND	1	5	ug/Kg	05/03/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	05/03/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	05/03/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	05/03/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	05/03/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	05/03/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	05/03/07	LZ
Methylene chloride	ND	1	5	ug/Kg	05/03/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	05/03/07	LZ
n-Propylbenzene	ND	1	5	ug/Kg	05/03/07	LZ
Naphthalene	ND	1	5	ug/Kg	05/03/07	LZ
o-Xylene	ND	1	5	ug/Kg	05/03/07	LZ
p-Isopropyltoluene	ND	1	5	ug/Kg	05/03/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	05/03/07	LZ
Styrene	ND	1	5	ug/Kg	05/03/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	05/03/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	05/03/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795967 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-20'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Toluene	ND	1	5	ug/Kg	05/03/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	05/03/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	05/03/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/03/07	LZ
Trichloroethene	ND	1	5	ug/Kg	05/03/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	05/03/07	LZ
Vinyl chloride	ND	1	5	ug/Kg	05/03/07	LZ
Xylenes, total	ND	1	5	ug/Kg	05/03/07	LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	05/03/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	05/03/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	05/03/07	LZ
Tertiary butyl alcohol (TBA)	125	1	50	ug/Kg	05/03/07	LZ
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	104			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	113			%	70 - 135	
Surr3 - Toluene-d8	95			%	70 - 135	
Surr4 - p-Bromofluorobenzene	83			%	70 - 135	

8015B - Gasoline

Gasoline	ND	1	3	mg/Kg	05/09/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	95			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795968 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-25'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	9.06	1	0.5	mg/Kg	05/10/07	KN
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	86			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,1-Trichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795968 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-25'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,4-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	04/30/07	LZ
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	04/30/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	04/30/07	LZ
Acetone	ND	1	50	ug/Kg	04/30/07	LZ
Allyl chloride	ND	1	5	ug/Kg	04/30/07	LZ
Benzene	ND	1	5	ug/Kg	04/30/07	LZ
Bromobenzene	ND	1	5	ug/Kg	04/30/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Bromoform	ND	1	5	ug/Kg	04/30/07	LZ
Bromomethane	ND	1	5	ug/Kg	04/30/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	04/30/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
Chloroethane	ND	1	5	ug/Kg	04/30/07	LZ
Chloroform	ND	1	5	ug/Kg	04/30/07	LZ
Chloromethane	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Dibromomethane	ND	1	5	ug/Kg	04/30/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	04/30/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	04/30/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	04/30/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	04/30/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	04/30/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	04/30/07	LZ
Methylene chloride	ND	1	5	ug/Kg	04/30/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795968 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-25'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
n-Propylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Naphthalene	ND	1	5	ug/Kg	04/30/07	LZ
o-Xylene	ND	1	5	ug/Kg	04/30/07	LZ
p-Isopropyltoluene	ND	1	5	ug/Kg	04/30/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Styrene	ND	1	5	ug/Kg	04/30/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	04/30/07	LZ
Toluene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	LZ
Trichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	04/30/07	LZ
Vinyl chloride	ND	1	5	ug/Kg	04/30/07	LZ
Xylenes, total	ND	1	5	ug/Kg	04/30/07	LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	04/30/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	04/30/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	04/30/07	LZ
Tertiary butyl alcohol (TBA)	<114	1	50	ug/Kg	04/30/07	LZ
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	104			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	118			%	70 - 135	
Surr3 - Toluene-d8	101			%	70 - 135	
Surr4 - p-Bromofluorobenzene	88			%	70 - 135	

8015B - Gasoline

Gasoline	ND	1	3	mg/Kg	05/09/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	93			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795969 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-30'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	1.36	1	0.5	mg/Kg	05/10/07	KN
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,1-Trichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,4-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	05/09/07	LZ
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	05/09/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	05/09/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	05/09/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	05/09/07	LZ
Acetone	68	1	50	ug/Kg	05/09/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795969 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-30'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Allyl chloride	ND	1	5	ug/Kg	05/09/07	LZ
Benzene	ND	1	5	ug/Kg	05/09/07	LZ
Bromobenzene	ND	1	5	ug/Kg	05/09/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Bromoform	ND	1	5	ug/Kg	05/09/07	LZ
Bromomethane	ND	1	5	ug/Kg	05/09/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	05/09/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
Chloroethane	ND	1	5	ug/Kg	05/09/07	LZ
Chloroform	ND	1	5	ug/Kg	05/09/07	LZ
Chloromethane	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/09/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Dibromomethane	ND	1	5	ug/Kg	05/09/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	05/09/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	05/09/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	05/09/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	05/09/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	05/09/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	05/09/07	LZ
Methylene chloride	ND	1	5	ug/Kg	05/09/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
n-Propylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Naphthalene	ND	1	5	ug/Kg	05/09/07	LZ
o-Xylene	ND	1	5	ug/Kg	05/09/07	LZ
p-Isopropyltoluene	ND	1	5	ug/Kg	05/09/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Styrene	ND	1	5	ug/Kg	05/09/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	05/09/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795969 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B2-30'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Toluene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/09/07	LZ
Trichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	05/09/07	LZ
Vinyl chloride	ND	1	5	ug/Kg	05/09/07	LZ
Xylenes, total	ND	1	5	ug/Kg	05/09/07	LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	05/09/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	05/09/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	05/09/07	LZ
Tertiary butyl alcohol (TBA)	69	1	50	ug/Kg	05/09/07	LZ
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	103			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	119			%	70 - 135	
Surr3 - Toluene-d8	98			%	70 - 135	
Surr4 - p-Bromofluorobenzene	106			%	70 - 135	

8015B - Gasoline

Gasoline	ND	1	3	mg/Kg	05/09/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	73			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795970
Matrix: WATER
Date Sampled: 04/26/2007
Time Sampled: 09:10
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B2-GW

Analyte	Result	DF	DLR	Units	Date/Analyst	
8015B Carbon Chain I						
C06 - C10	<18	7	1.4	mg/L	05/01/07	AF
C10 - C22	ND	7	1.4	mg/L	05/01/07	AF
C22 - C36	ND	7	2.1	mg/L	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	123			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/L	04/30/07	AM
1,1,1-Trichloroethane	ND	1	5	ug/L	04/30/07	AM
1,1,2,2-Tetrachloroethane	ND	1	5	ug/L	04/30/07	AM
1,1,2-Trichloroethane	ND	1	5	ug/L	04/30/07	AM
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/L	04/30/07	AM
1,1-Dichloroethane	ND	1	5	ug/L	04/30/07	AM
1,1-Dichloroethene	ND	1	5	ug/L	04/30/07	AM
1,1-Dichloropropene	ND	1	5	ug/L	04/30/07	AM
1,2,3-Trichlorobenzene	ND	1	5	ug/L	04/30/07	AM
1,2,3-Trichloropropane	ND	1	5	ug/L	04/30/07	AM
1,2,4-Trichlorobenzene	ND	1	5	ug/L	04/30/07	AM
1,2,4-Trimethylbenzene	304	1	5	ug/L	04/30/07	AM
1,2-Dibromo-3-chloropropane	ND	1	5	ug/L	04/30/07	AM
1,2-Dibromoethane	ND	1	5	ug/L	04/30/07	AM
1,2-Dichlorobenzene	ND	1	5	ug/L	04/30/07	AM
1,2-Dichloroethane	<58	1	5	ug/L	04/30/07	AM
1,2-Dichloropropane	ND	1	5	ug/L	04/30/07	AM
1,3,5-Trimethylbenzene	53	1	5	ug/L	04/30/07	AM
1,3-Dichlorobenzene	ND	1	5	ug/L	04/30/07	AM
1,3-Dichloropropane	ND	1	5	ug/L	04/30/07	AM
1,4-Dichlorobenzene	ND	1	5	ug/L	04/30/07	AM
2,2-Dichloropropane	ND	1	5	ug/L	04/30/07	AM
2-Butanone (MEK)	485	1	100	ug/L	04/30/07	AM

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795970 **Client:** Rincon Consultants, Inc.
Matrix: WATER **Client Sample ID:** B2-GW
Date Sampled: 04/26/2007
Time Sampled: 09:10
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
2-Chloroethyl vinyl ether	ND	1	5	ug/L	04/30/07	AM
2-Chlorotoluene	ND	1	5	ug/L	04/30/07	AM
4-Chlorotoluene	ND	1	5	ug/L	04/30/07	AM
4-Methyl -2- Pentanone (MIBK)	68	1	10	ug/L	04/30/07	AM
Acetone	367	1	100	ug/L	04/30/07	AM
Allyl chloride	ND	1	5	ug/L	04/30/07	AM
Benzene	1510	100	100.0	ug/L	04/30/07	AM
Bromobenzene	ND	1	5	ug/L	04/30/07	AM
Bromochloromethane	ND	1	5	ug/L	04/30/07	AM
Bromodichloromethane	ND	1	5	ug/L	04/30/07	AM
Bromoform	ND	1	5	ug/L	04/30/07	AM
Bromomethane	ND	1	5	ug/L	04/30/07	AM
Carbon tetrachloride	ND	1	5	ug/L	04/30/07	AM
Chlorobenzene	ND	1	5	ug/L	04/30/07	AM
Chloroethane	ND	1	5	ug/L	04/30/07	AM
Chloroform	ND	1	5	ug/L	04/30/07	AM
Chloromethane	ND	1	5	ug/L	04/30/07	AM
cis-1,2-Dichloroethene	ND	1	5	ug/L	04/30/07	AM
cis-1,3-Dichloropropene	ND	1	5	ug/L	04/30/07	AM
cis-1,4-Dichloro-2-butene	ND	1	20	ug/L	04/30/07	AM
Dibromochloromethane	ND	1	5	ug/L	04/30/07	AM
Dibromomethane	ND	1	5	ug/L	04/30/07	AM
Dichlorodifluoromethane	ND	1	5	ug/L	04/30/07	AM
Ethyl benzene	312	1	5	ug/L	04/30/07	AM
Hexachlorobutadiene	ND	1	5	ug/L	04/30/07	AM
Isopropylbenzene (Cumene)	15	1	5	ug/L	04/30/07	AM
Methyl-tert-butylether (MTBE)	ND	1	1	ug/L	04/30/07	AM
Methylene chloride	ND	1	5	ug/L	04/30/07	AM
n-Butylbenzene	11	1	5	ug/L	04/30/07	AM
n-Propylbenzene	28	1	5	ug/L	04/30/07	AM
Naphthalene	142	1	5	ug/L	04/30/07	AM
p-Isopropyltoluene	ND	1	5	ug/L	04/30/07	AM
sec-Butylbenzene	ND	1	5	ug/L	04/30/07	AM

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795970 **Client:** Rincon Consultants, Inc.
Matrix: WATER **Client Sample ID:** B2-GW
Date Sampled: 04/26/2007
Time Sampled: 09:10
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Styrene	ND	1	5	ug/L	04/30/07	AM
tert-Butylbenzene	ND	1	5	ug/L	04/30/07	AM
Tetrachloroethene	ND	1	5	ug/L	04/30/07	AM
Toluene	3340	100	500.0	ug/L	04/30/07	AM
trans-1,2-Dichloroethene	ND	1	5	ug/L	04/30/07	AM
trans-1,3-Dichloropropene	ND	1	5	ug/L	04/30/07	AM
trans-1,4-Dichloro-2-butene	ND	1	20	ug/L	04/30/07	AM
Trichloroethene	ND	1	5	ug/L	04/30/07	AM
Trichlorofluoromethane	ND	1	5	ug/L	04/30/07	AM
Vinyl chloride	ND	1	5	ug/L	04/30/07	AM
Xylenes, total	2130	100	500.0	ug/L	04/30/07	AM
Di-isopropyl ether (DIPE)	66	1	1	ug/L	04/30/07	AM
Ethyl-tertbutylether (ETBE)	ND	1	1	ug/L	04/30/07	AM
Tert-amylmethylether (TAME)	177	1	1	ug/L	04/30/07	AM
Tertiary-butyl-alcohol (TBA)	1520	1	10	ug/L	04/30/07	AM
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	101			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	105			%	70 - 135	
Surr3 - Toluene-d8	103			%	70 - 135	
Surr4 - p-Bromofluorobenzene	103			%	70 - 135	

8015B - Gasoline

Gasoline	16700	10	500.0	ug/L	05/01/07	LT
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	104			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795971
Matrix: SOLID
Date Sampled: 04/26/2007
Time Sampled: 10:22
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B3-3'

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	3.71	1	0.5	mg/Kg	05/02/07	KN

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795973 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B3-10'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	39.4	1	0.5	mg/Kg	05/02/07	KN
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	82			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	Z
1,1,1-Trichloroethane	ND	1	5	ug/Kg	04/30/07	Z
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	Z
1,1,2-Trichloroethane	ND	1	5	ug/Kg	04/30/07	Z
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	04/30/07	Z
1,1-Dichloroethane	ND	1	5	ug/Kg	04/30/07	Z
1,1-Dichloroethene	ND	1	5	ug/Kg	04/30/07	Z
1,1-Dichloropropene	ND	1	5	ug/Kg	04/30/07	Z
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	Z
1,2,3-Trichloropropane	ND	1	5	ug/Kg	04/30/07	Z
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	Z
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	Z
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	04/30/07	Z
1,2-Dibromoethane	ND	1	5	ug/Kg	04/30/07	Z
1,2-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	Z
1,2-Dichloroethane	ND	1	5	ug/Kg	04/30/07	Z
1,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	Z
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	Z
1,3-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	Z
1,3-Dichloropropane	ND	1	5	ug/Kg	04/30/07	Z

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795973
Client: Rincon Consultants, Inc.
Matrix: SOLID
Client Sample ID: B3-10'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,4-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	Z
2,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	Z
2-Butanone (MEK)	ND	1	100	ug/Kg	04/30/07	Z
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	04/30/07	Z
2-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	Z
4-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	Z
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	04/30/07	Z
Acetone	ND	1	50	ug/Kg	04/30/07	Z
Allyl chloride	ND	1	5	ug/Kg	04/30/07	Z
Benzene	ND	1	5	ug/Kg	04/30/07	Z
Bromobenzene	ND	1	5	ug/Kg	04/30/07	Z
Bromochloromethane	ND	1	5	ug/Kg	04/30/07	Z
Bromodichloromethane	ND	1	5	ug/Kg	04/30/07	Z
Bromoform	ND	1	5	ug/Kg	04/30/07	Z
Bromomethane	ND	1	5	ug/Kg	04/30/07	Z
Carbon tetrachloride	ND	1	5	ug/Kg	04/30/07	Z
Chlorobenzene	ND	1	5	ug/Kg	04/30/07	Z
Chloroethane	ND	1	5	ug/Kg	04/30/07	Z
Chloroform	ND	1	5	ug/Kg	04/30/07	Z
Chloromethane	ND	1	5	ug/Kg	04/30/07	Z
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	Z
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	Z
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	Z
Dibromochloromethane	ND	1	5	ug/Kg	04/30/07	Z
Dibromomethane	ND	1	5	ug/Kg	04/30/07	Z
Dichlorodifluoromethane	ND	1	5	ug/Kg	04/30/07	Z
Ethyl benzene	ND	1	5	ug/Kg	04/30/07	Z
Hexachlorobutadiene	ND	1	5	ug/Kg	04/30/07	Z
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	04/30/07	Z
m and p-Xylene	ND	1	5	ug/Kg	04/30/07	Z
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	04/30/07	Z
Methylene chloride	ND	1	5	ug/Kg	04/30/07	Z
n-Butylbenzene	ND	1	5	ug/Kg	04/30/07	Z

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795973
Matrix: SOLID
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Client: Rincon Consultants, Inc.
Client Sample ID: B3-10'

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
n-Propylbenzene	ND	1	5	ug/Kg	04/30/07	Z
Naphthalene	ND	1	5	ug/Kg	04/30/07	Z
o-Xylene	ND	1	5	ug/Kg	04/30/07	Z
p-Isopropyltoluene	ND	1	5	ug/Kg	04/30/07	Z
sec-Butylbenzene	ND	1	5	ug/Kg	04/30/07	Z
Styrene	ND	1	5	ug/Kg	04/30/07	Z
tert-Butylbenzene	ND	1	5	ug/Kg	04/30/07	Z
Tetrachloroethene	ND	1	5	ug/Kg	04/30/07	Z
Toluene	ND	1	5	ug/Kg	04/30/07	Z
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	Z
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	Z
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	Z
Trichloroethene	ND	1	5	ug/Kg	04/30/07	Z
Trichlorofluoromethane	ND	1	5	ug/Kg	04/30/07	Z
Vinyl chloride	ND	1	5	ug/Kg	04/30/07	Z
Xylenes, total	ND	1	5	ug/Kg	04/30/07	Z
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	04/30/07	Z
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	04/30/07	Z
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	04/30/07	Z
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	04/30/07	Z
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	102			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	117			%	70 - 135	
Surr3 - Toluene-d8	99			%	70 - 135	
Surr4 - p-Bromofluorobenzene	90			%	70 - 135	
8015B - Gasoline						
Gasoline	ND	1	3	mg/Kg	04/30/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	67			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795974 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B3-15'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	7.02	1	0.5	mg/Kg	05/04/07	KN
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	74			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	05/03/07	LZ
1,1,1-Trichloroethane	ND	1	5	ug/Kg	05/03/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	05/03/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	05/03/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	05/03/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	05/03/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	05/03/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	05/03/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	05/03/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	05/03/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	05/03/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	05/03/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	05/03/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	05/03/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	05/03/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	05/03/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	05/03/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	05/03/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	05/03/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	05/03/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795974 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B3-15'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,4-Dichlorobenzene	ND	1	5	ug/Kg	05/03/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	05/03/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	05/03/07	LZ
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	05/03/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	05/03/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	05/03/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	05/03/07	LZ
Acetone	ND	1	50	ug/Kg	05/03/07	LZ
Allyl chloride	ND	1	5	ug/Kg	05/03/07	LZ
Benzene	ND	1	5	ug/Kg	05/03/07	LZ
Bromobenzene	ND	1	5	ug/Kg	05/03/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	05/03/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	05/03/07	LZ
Bromoform	ND	1	5	ug/Kg	05/03/07	LZ
Bromomethane	ND	1	5	ug/Kg	05/03/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	05/03/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	05/03/07	LZ
Chloroethane	ND	1	5	ug/Kg	05/03/07	LZ
Chloroform	ND	1	5	ug/Kg	05/03/07	LZ
Chloromethane	ND	1	5	ug/Kg	05/03/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	05/03/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	05/03/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/03/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	05/03/07	LZ
Dibromomethane	ND	1	5	ug/Kg	05/03/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	05/03/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	05/03/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	05/03/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	05/03/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	05/03/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	05/03/07	LZ
Methylene chloride	ND	1	5	ug/Kg	05/03/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	05/03/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795974 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B3-15'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
n-Propylbenzene	ND	1	5	ug/Kg	05/03/07	LZ
Naphthalene	ND	1	5	ug/Kg	05/03/07	LZ
o-Xylene	ND	1	5	ug/Kg	05/03/07	LZ
p-Isopropyltoluene	ND	1	5	ug/Kg	05/03/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	05/03/07	LZ
Styrene	ND	1	5	ug/Kg	05/03/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	05/03/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	05/03/07	LZ
Toluene	ND	1	5	ug/Kg	05/03/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	05/03/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	05/03/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/03/07	LZ
Trichloroethene	ND	1	5	ug/Kg	05/03/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	05/03/07	LZ
Vinyl chloride	ND	1	5	ug/Kg	05/03/07	LZ
Xylenes, total	ND	1	5	ug/Kg	05/03/07	LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	05/03/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	05/03/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	05/03/07	LZ
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	05/03/07	LZ
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	104			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	118			%	70 - 135	
Surr3 - Toluene-d8	106			%	70 - 135	
Surr4 - p-Bromofluorobenzene	82			%	70 - 135	

8015B - Gasoline

Gasoline	ND	1	3	mg/Kg	04/30/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	117			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795975 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B3-20'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	2.52	1	0.5	mg/Kg	05/10/07	KN
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	84			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,1-Trichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	04/30/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795975 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B3-20'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,4-Dichlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	04/30/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	04/30/07	LZ
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	04/30/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	04/30/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	04/30/07	LZ
Acetone	ND	1	50	ug/Kg	04/30/07	LZ
Allyl chloride	ND	1	5	ug/Kg	04/30/07	LZ
Benzene	ND	1	5	ug/Kg	04/30/07	LZ
Bromobenzene	ND	1	5	ug/Kg	04/30/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Bromoform	ND	1	5	ug/Kg	04/30/07	LZ
Bromomethane	ND	1	5	ug/Kg	04/30/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	04/30/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	04/30/07	LZ
Chloroethane	ND	1	5	ug/Kg	04/30/07	LZ
Chloroform	ND	1	5	ug/Kg	04/30/07	LZ
Chloromethane	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	04/30/07	LZ
Dibromomethane	ND	1	5	ug/Kg	04/30/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	04/30/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	04/30/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	04/30/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	04/30/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	04/30/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	04/30/07	LZ
Methylene chloride	6.1	1	5	ug/Kg	04/30/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795975 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B3-20'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
n-Propylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Naphthalene	ND	1	5	ug/Kg	04/30/07	LZ
o-Xylene	ND	1	5	ug/Kg	04/30/07	LZ
p-Isopropyltoluene	ND	1	5	ug/Kg	04/30/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Styrene	ND	1	5	ug/Kg	04/30/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	04/30/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	04/30/07	LZ
Toluene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	04/30/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	04/30/07	LZ
Trichloroethene	ND	1	5	ug/Kg	04/30/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	04/30/07	LZ
Vinyl chloride	ND	1	5	ug/Kg	04/30/07	LZ
Xylenes, total	ND	1	5	ug/Kg	04/30/07	LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	04/30/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	04/30/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	04/30/07	LZ
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	04/30/07	LZ
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	104			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	114			%	70 - 135	
Surr3 - Toluene-d8	107			%	70 - 135	
Surr4 - p-Bromofluorobenzene	84			%	70 - 135	

8015B - Gasoline

Gasoline	ND	1	3	mg/Kg	04/30/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	120			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795976 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B3-25'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
6010B ICP CAM Metals Only (W/S/W)						
Lead	34.5	1	0.5	mg/Kg	05/10/07	KN
8015B Carbon Chain I						
C06 - C10	ND	1	10	mg/Kg	05/01/07	AF
C10 - C22	ND	1	10	mg/Kg	05/01/07	AF
C22 - C36	ND	1	50	mg/Kg	05/01/07	AF
Surrogates				**Units**	**Control Limits**	
Sur-o-Terphenyl	80			%	55 - 200	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,1-Trichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2-Trichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
1,1-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,3-Trichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dibromoethane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichloroethane	ND	1	5	ug/Kg	05/09/07	LZ
1,2-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,3-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
1,3-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795976 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B3-25'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,4-Dichlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
2,2-Dichloropropane	ND	1	5	ug/Kg	05/09/07	LZ
2-Butanone (MEK)	ND	1	100	ug/Kg	05/09/07	LZ
2-Chloroethyl vinyl ether	ND	1	5	ug/Kg	05/09/07	LZ
2-Chlorotoluene	ND	1	5	ug/Kg	05/09/07	LZ
4-Chlorotoluene	ND	1	5	ug/Kg	05/09/07	LZ
4-Methyl -2- Pentanone (MIBK)	ND	1	5	ug/Kg	05/09/07	LZ
Acetone	ND	1	50	ug/Kg	05/09/07	LZ
Allyl chloride	ND	1	5	ug/Kg	05/09/07	LZ
Benzene	ND	1	5	ug/Kg	05/09/07	LZ
Bromobenzene	ND	1	5	ug/Kg	05/09/07	LZ
Bromochloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Bromodichloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Bromoform	ND	1	5	ug/Kg	05/09/07	LZ
Bromomethane	ND	1	5	ug/Kg	05/09/07	LZ
Carbon tetrachloride	ND	1	5	ug/Kg	05/09/07	LZ
Chlorobenzene	ND	1	5	ug/Kg	05/09/07	LZ
Chloroethane	ND	1	5	ug/Kg	05/09/07	LZ
Chloroform	ND	1	5	ug/Kg	05/09/07	LZ
Chloromethane	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,3-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
cis-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/09/07	LZ
Dibromochloromethane	ND	1	5	ug/Kg	05/09/07	LZ
Dibromomethane	ND	1	5	ug/Kg	05/09/07	LZ
Dichlorodifluoromethane	ND	1	5	ug/Kg	05/09/07	LZ
Ethyl benzene	ND	1	5	ug/Kg	05/09/07	LZ
Hexachlorobutadiene	ND	1	5	ug/Kg	05/09/07	LZ
Isopropylbenzene (Cumene)	ND	1	5	ug/Kg	05/09/07	LZ
m and p-Xylene	ND	1	5	ug/Kg	05/09/07	LZ
Methyl-tert-butylether (MTBE)	ND	1	5	ug/Kg	05/09/07	LZ
Methylene chloride	ND	1	5	ug/Kg	05/09/07	LZ
n-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795976 **Client:** Rincon Consultants, Inc.
Matrix: SOLID **Client Sample ID:** B3-25'
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
n-Propylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Naphthalene	ND	1	5	ug/Kg	05/09/07	LZ
o-Xylene	ND	1	5	ug/Kg	05/09/07	LZ
p-Isopropyltoluene	ND	1	5	ug/Kg	05/09/07	LZ
sec-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Styrene	ND	1	5	ug/Kg	05/09/07	LZ
tert-Butylbenzene	ND	1	5	ug/Kg	05/09/07	LZ
Tetrachloroethene	ND	1	5	ug/Kg	05/09/07	LZ
Toluene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,2-Dichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,3-Dichloropropene	ND	1	5	ug/Kg	05/09/07	LZ
trans-1,4-Dichloro-2-butene	ND	1	5	ug/Kg	05/09/07	LZ
Trichloroethene	ND	1	5	ug/Kg	05/09/07	LZ
Trichlorofluoromethane	ND	1	5	ug/Kg	05/09/07	LZ
Vinyl chloride	ND	1	5	ug/Kg	05/09/07	LZ
Xylenes, total	ND	1	5	ug/Kg	05/09/07	LZ
Di-isopropyl ether (DIPE)	ND	1	10	ug/Kg	05/09/07	LZ
Ethyl-tertbutylether (ETBE)	ND	1	10	ug/Kg	05/09/07	LZ
Tert-amylmethylether (TAME)	ND	1	10	ug/Kg	05/09/07	LZ
Tertiary butyl alcohol (TBA)	ND	1	50	ug/Kg	05/09/07	LZ
Surrogates				**Units**	**Control Limits**	
Surr1 - Dibromofluoromethane	105			%	70 - 135	
Surr2 - 1,2-Dichloroethane-d4	119			%	70 - 135	
Surr3 - Toluene-d8	99			%	70 - 135	
Surr4 - p-Bromofluorobenzene	102			%	70 - 135	

8015B - Gasoline

Gasoline	ND	1	3	mg/Kg	04/30/07	YL
Surrogates				**Units**	**Control Limits**	
a,a,a-Trifluorotoluene	144			%	55 - 200	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 795977 **Client:** Rincon Consultants, Inc.
Matrix: WATER **Client Sample ID:** (B3-GW)
Date Sampled: 04/26/2007
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,1-Trichloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,2,2-Tetrachloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,2-Trichloroethane	ND	1	5	ug/L	05/01/07	AM
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/L	05/01/07	AM
1,1-Dichloroethane	ND	1	5	ug/L	05/01/07	AM
1,1-Dichloroethene	ND	1	5	ug/L	05/01/07	AM
1,1-Dichloropropene	ND	1	5	ug/L	05/01/07	AM
1,2,3-Trichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,2,3-Trichloropropane	ND	1	5	ug/L	05/01/07	AM
1,2,4-Trichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,2,4-Trimethylbenzene	ND	1	5	ug/L	05/01/07	AM
1,2-Dibromo-3-chloropropane	ND	1	5	ug/L	05/01/07	AM
1,2-Dibromoethane	ND	1	5	ug/L	05/01/07	AM
1,2-Dichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,2-Dichloroethane	ND	1	5	ug/L	05/01/07	AM
1,2-Dichloropropane	ND	1	5	ug/L	05/01/07	AM
1,3,5-Trimethylbenzene	ND	1	5	ug/L	05/01/07	AM
1,3-Dichlorobenzene	ND	1	5	ug/L	05/01/07	AM
1,3-Dichloropropane	ND	1	5	ug/L	05/01/07	AM
1,4-Dichlorobenzene	ND	1	5	ug/L	05/01/07	AM
2,2-Dichloropropane	ND	1	5	ug/L	05/01/07	AM
2-Butanone (MEK)	ND	1	100	ug/L	05/01/07	AM
2-Chloroethyl vinyl ether	ND	1	5	ug/L	05/01/07	AM
2-Chlorotoluene	ND	1	5	ug/L	05/01/07	AM
4-Chlorotoluene	ND	1	5	ug/L	05/01/07	AM
4-Methyl -2- Pentanone (MIBK)	ND	1	10	ug/L	05/01/07	AM
Acetone	ND	1	100	ug/L	05/01/07	AM
Allyl chloride	ND	1	5	ug/L	05/01/07	AM
Benzene	<3.9>	1	1	ug/L	05/01/07	AM
Bromobenzene	ND	1	5	ug/L	05/01/07	AM
Bromochloromethane	ND	1	5	ug/L	05/01/07	AM

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Geotechnics Incorporated

San Diego
El Centro
Riverside

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APR 05 2007
ENVIRONMENTAL HEALTH

April 3, 2007

Horizon Christian Fellowship
5151 Mount Alifan Drive
San Diego, CA 92111

Project No. 1154-002-00
Document No. 07-0287

Attention: Mr. Josh Grant

LMON
104638

SUBJECT: BORING COMPLETION REPORT
Additions to the Horizon Christian Fellowship
Rancho Santa Fe, California

Mr. Grant:

In accordance with the requirements of the County of San Diego Department of Environmental Health, Land and Water Quality Division, we are submitting a Boring Completion Report for the additions to the Horizon Christian Fellowship in Rancho Santa Fe, California. Nine cone penetrometer test (CPT) soundings were advanced at the site up to a maximum depth of 90 feet using a 15 cm^2 cone. Bentonite pellets were used to backfill the upper portions of the holes that remained open after the cone penetrometer rods were removed (this varied from 7 to 17 feet in depth). Approximately 1.5 ft^3 of bentonite pellets were used to backfill the CPT soundings.

Per the 2002 SAM Manual, Section 5, we are submitting the following:

- Site Location Map, Figure 1
- Exploration Plan, Figure 2
- Cone Penetrometer Logs (Appendix B)
- Copy of the approved Geotechnical Boring Construction Permit (Appendix C)

We appreciate this opportunity to provide professional services. If you have any questions or comments regarding the information provided, please do not hesitate to contact us.

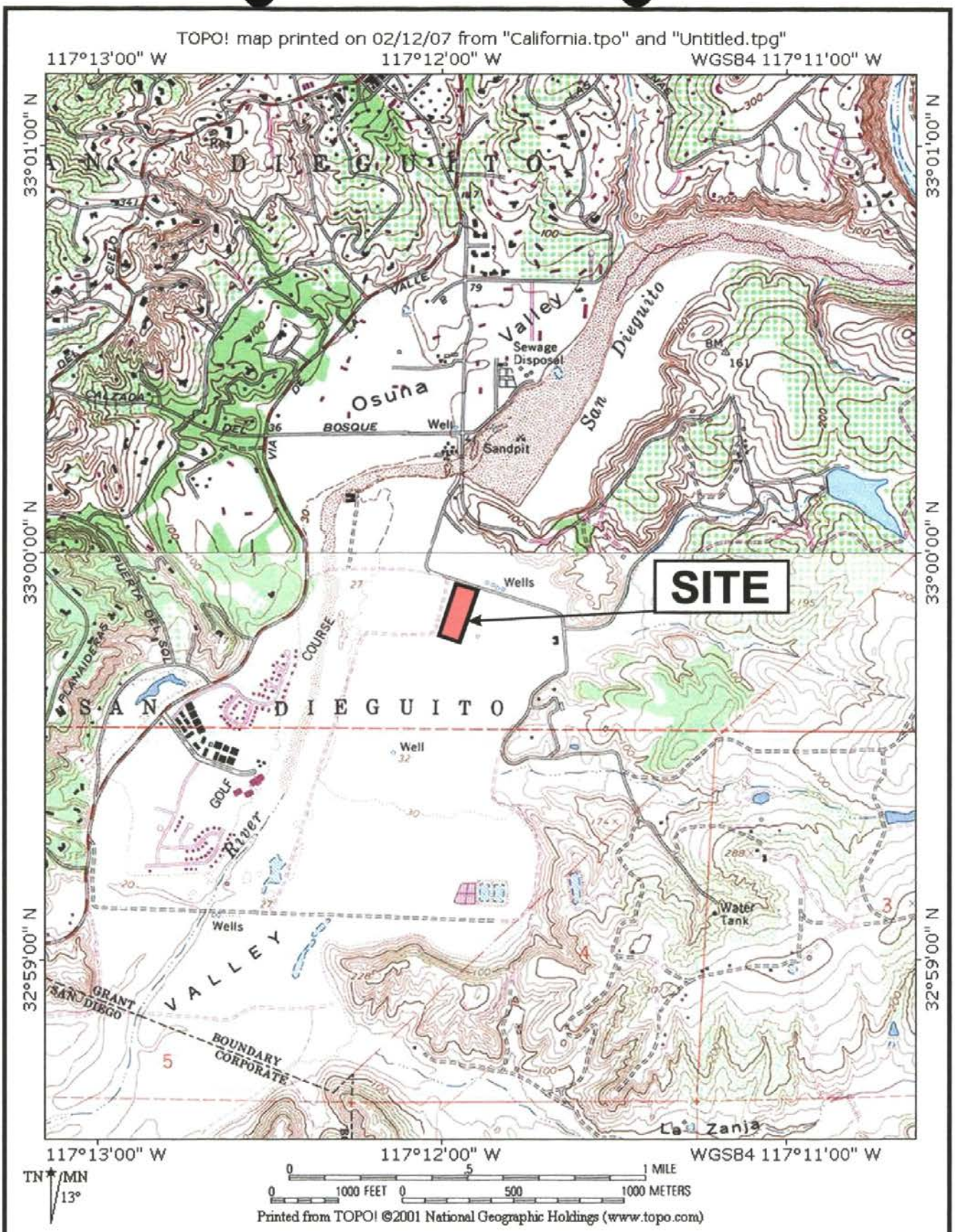
GEOTECHNICS INCORPORATED

Matthew A. Fagan, PE 57248
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
MATTHEW A. FAGAN
C57248
Exp. 12/31/07
CIVIL
STATE OF CALIFORNIA

Distribution: (1) Addressee, Mr. Josh Grant
(1) County of San Diego, Monitoring Well Permit Desk, Ms. Amelia Cesena

9245 Activity Road, Ste. 103 • San Diego, California • 92126
Phone (858) 536-1000 • Fax (858) 536-8311

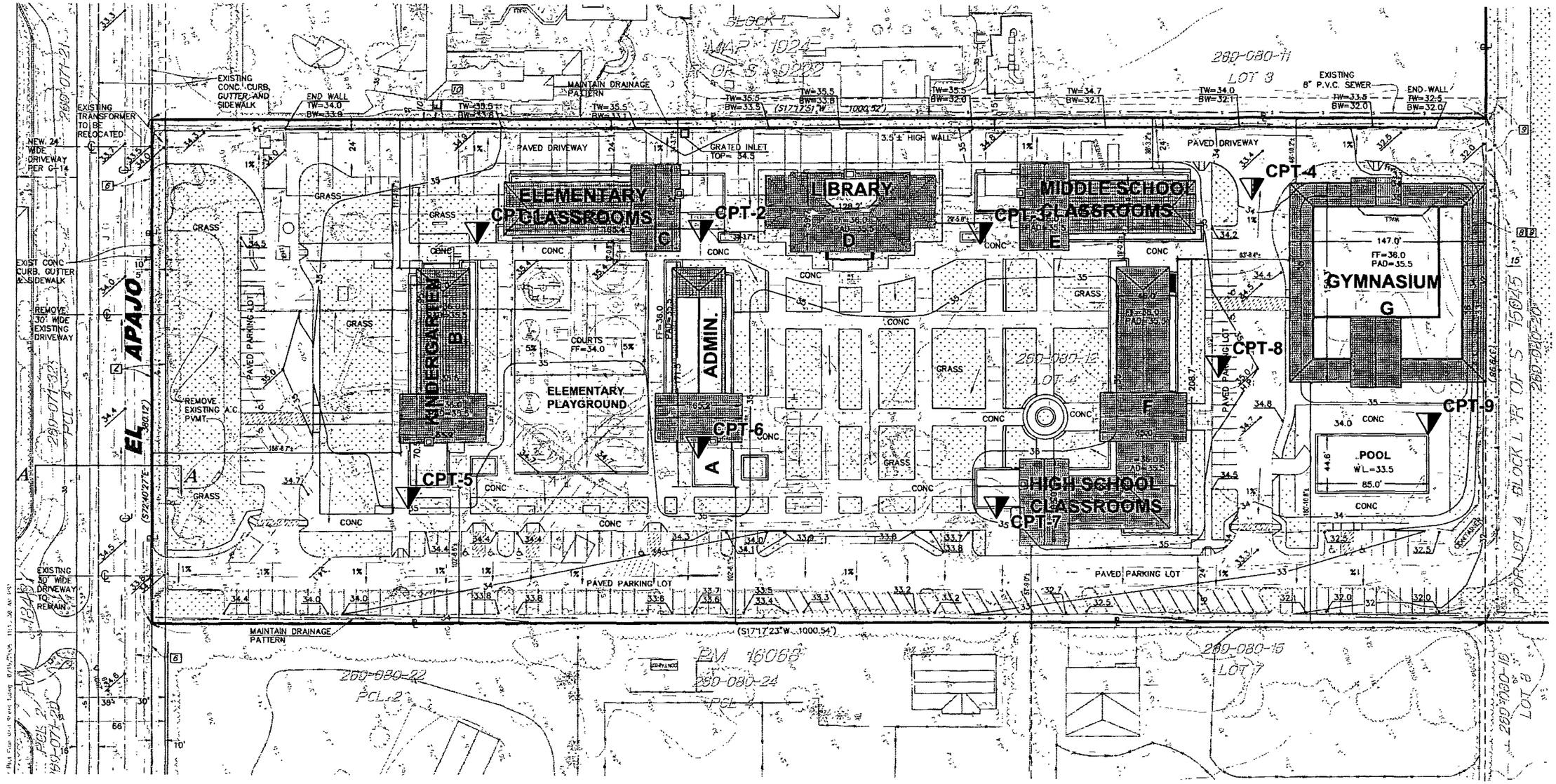


Geotechnics Incorporated

SITE LOCATION MAP

Project No. 1154-002-00
Document No. 07-0287

FIGURE 1



EXPLANATION

CPT-9

Approximate location of cone penetrometer test

SCALE: 1" = 80'

Reference: Plot Plan Mod Sheet 1 MUP 40 SCALE SHEET 1 (1).pdf, provided by Laret Engineering Company

Project No. 1154-002-00
Document No. 07-0287

FIGURE 2

EXPLORATION PLAN

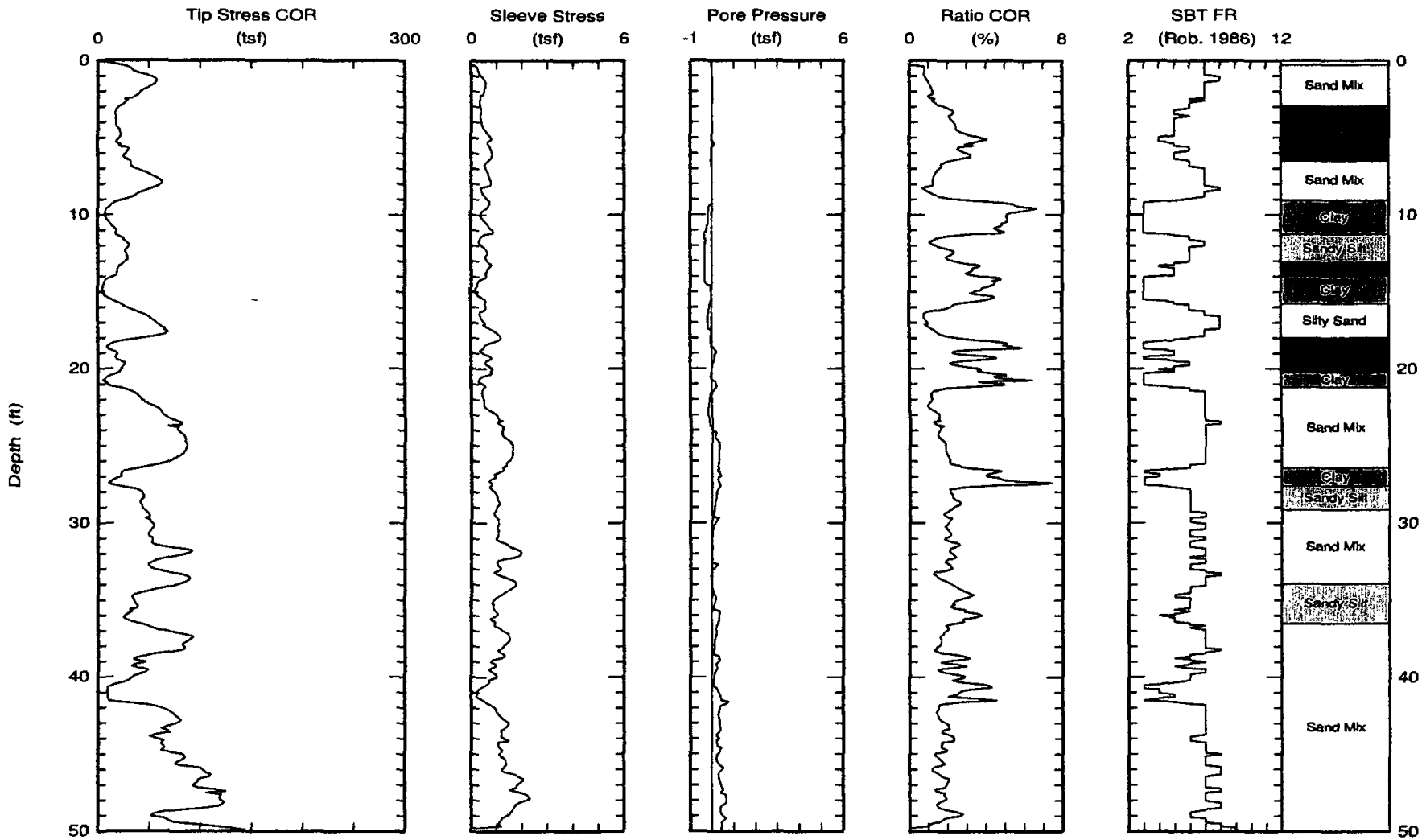
Geotechnics Incorporated

Kehoe Testing & Engineering
Office: (714) 901-7270
Fax: (714) 901-7289
skehoe@msn.com

CPT Data
30 ton rig

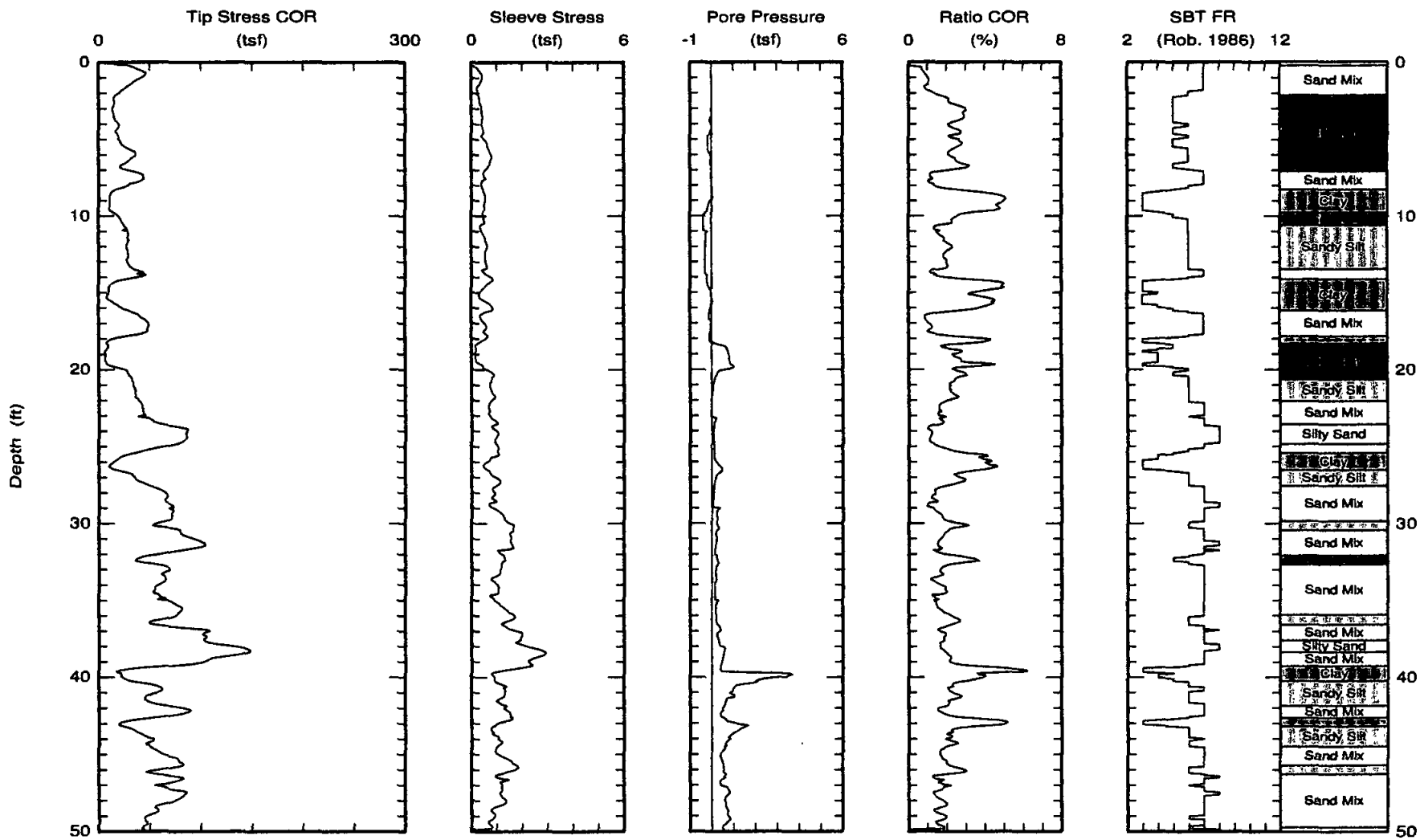
Date: 19/Mar/2007
Test ID: CPT-1
Project: SanDiego

Customer: Geotechnics Inc.
Job Site: Horizon Prep Academy



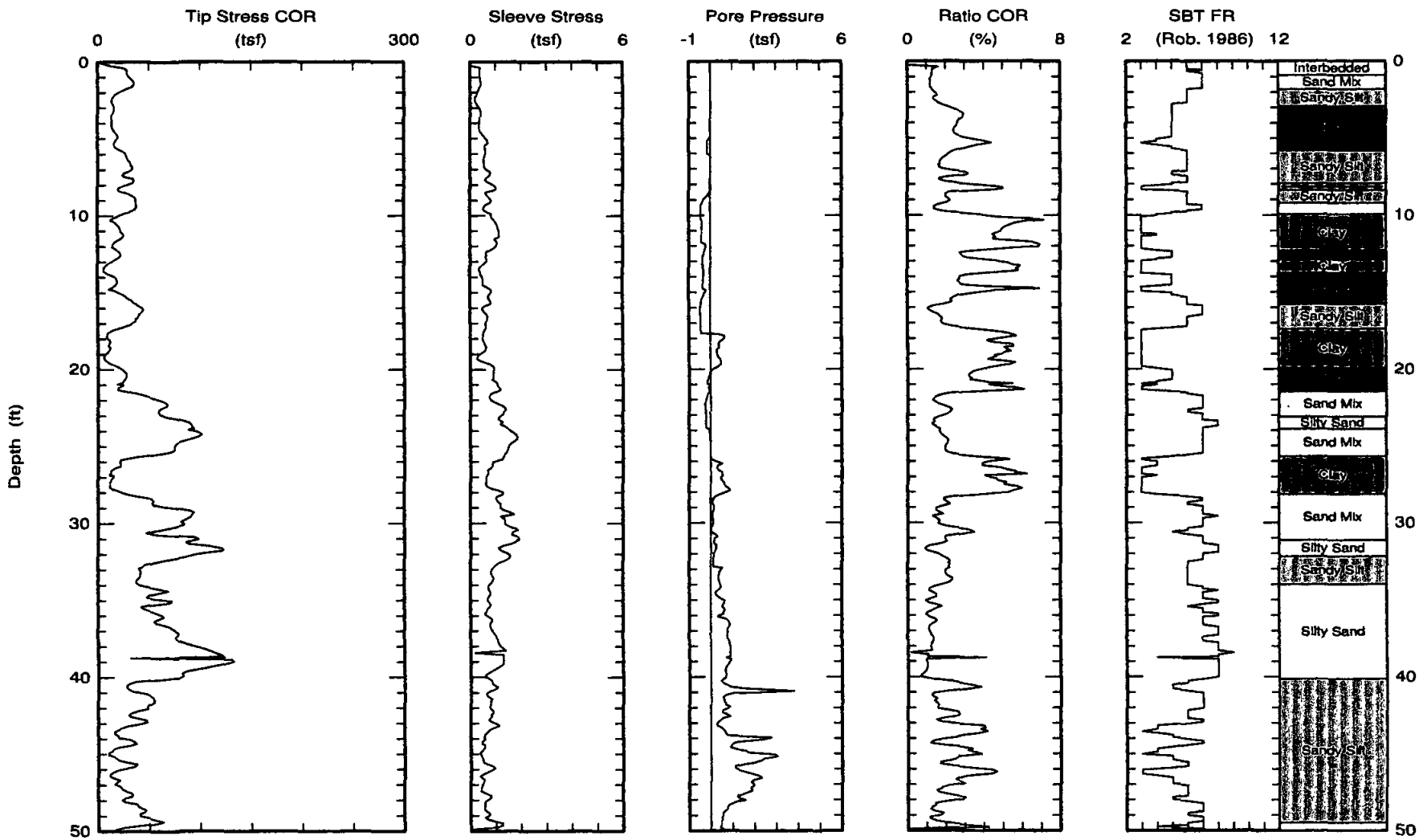
Maximum depth: 50.07 (ft)

Kehoe Testing & Engineering Office: (714) 901-7270 Fax: (714) 901-7289 skehoe@msn.com	CPT Data 30 ton rig	Date: 19/Mar/2007 Test ID: CPT-2 Project: SanDiego
	Customer: Geotechnics Inc. Job Site: Horizon Prep Academy	



Maximum depth: 50.16 (ft)

Kehoe Testing & Engineering Office: (714) 901-7270 Fax: (714) 901-7289 skehoe@msn.com	CPT Data 30 ton rig	Date: 19/Mar/2007 Test ID: CPT-3 Project: SanDiego
	Customer: Geotechnics Inc. Job Site: Horizon Prep Academy	



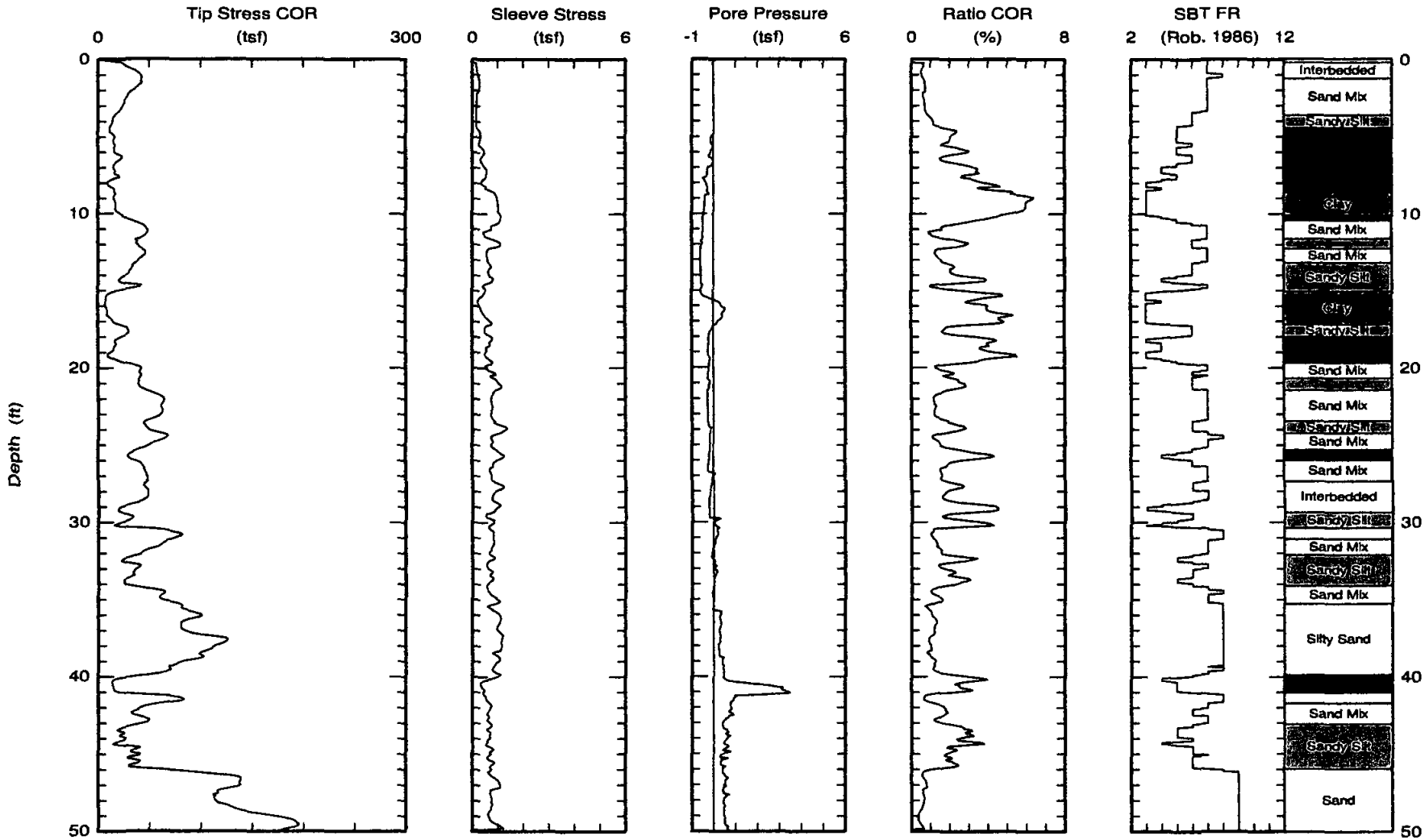
Maximum depth: 50.23 (ft)

Kehoe Testing & Engineering
Office: (714) 901-7270
Fax: (714) 901-7289
skehoe@msn.com

CPT Data
30 ton rig

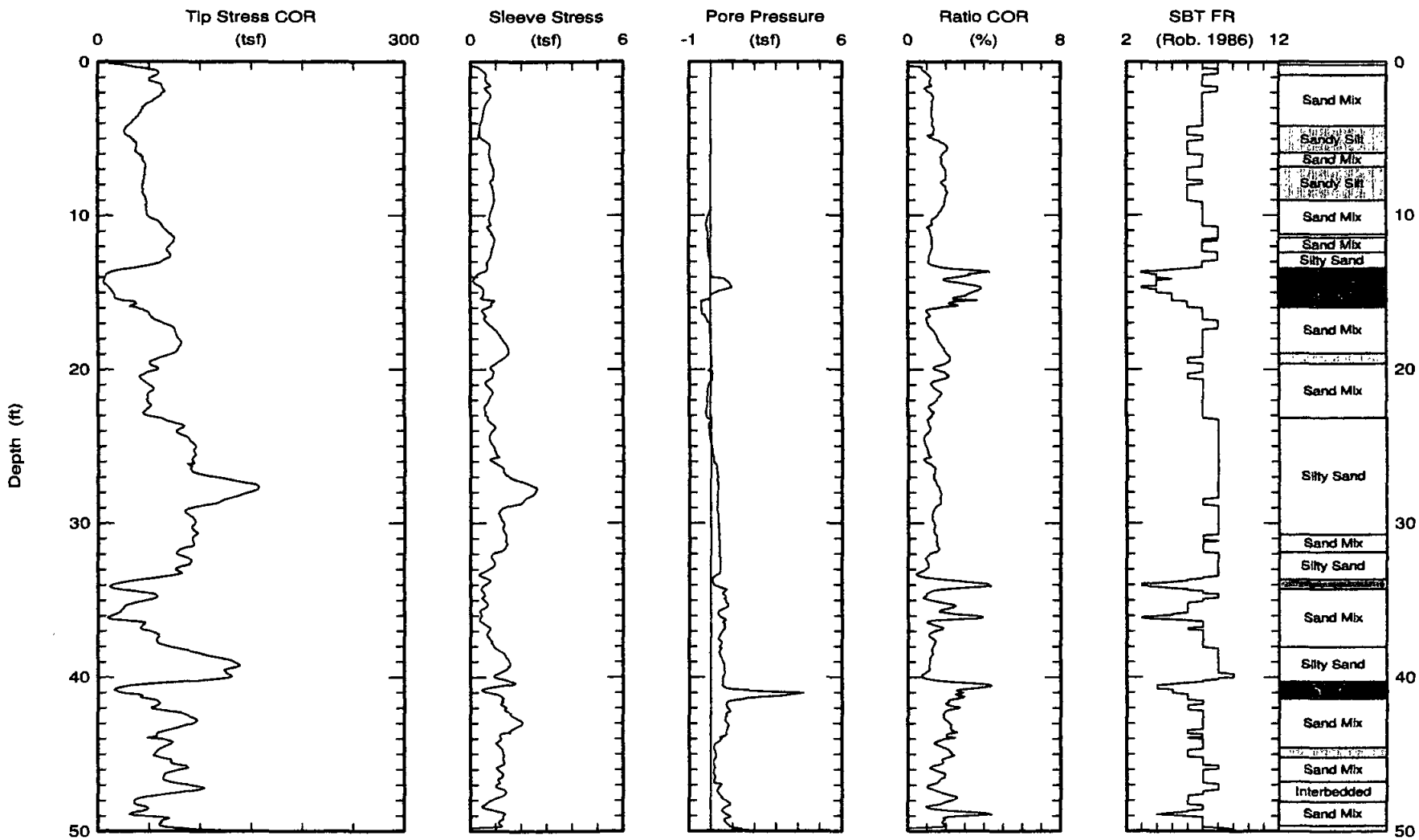
Date: 19/Mar/2007
Test ID: CPT-4
Project: SanDiego

Customer: Geotechnics Inc.
Job Site: Horizon Prep Academy



Maximum depth: 50.18 (ft)

Kehoe Testing & Engineering Office: (714) 901-7270 Fax: (714) 901-7289 skehoe@msn.com	CPT Data 30 ton rig	Date: 19/Mar/2007 Test ID: CPT-5 Project: SanDiego
	Customer: Geotechnics Inc. Job Site: Horizon Prep Academy	



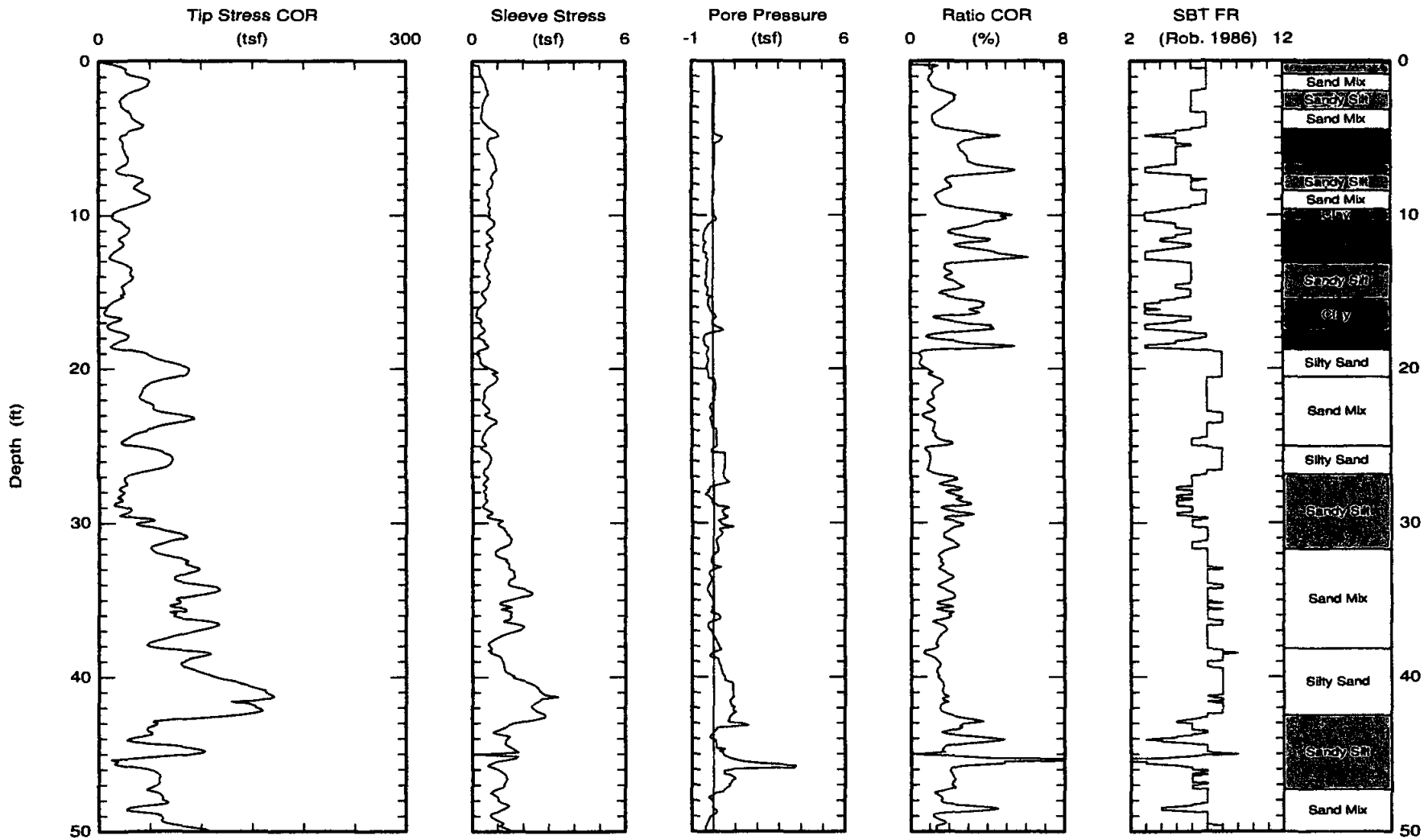
Maximum depth: 50.08 (ft)

Kehoe Testing & Engineering
Office: (714) 901-7270
Fax: (714) 901-7289
skehoe@msn.com

CPT Data
30 ton rig

Date: 19/Mar/2007
Test ID: CPT-6
Project: SanDiego

Customer: Geotechnics Inc.
Job Site: Horizon Prep Academy



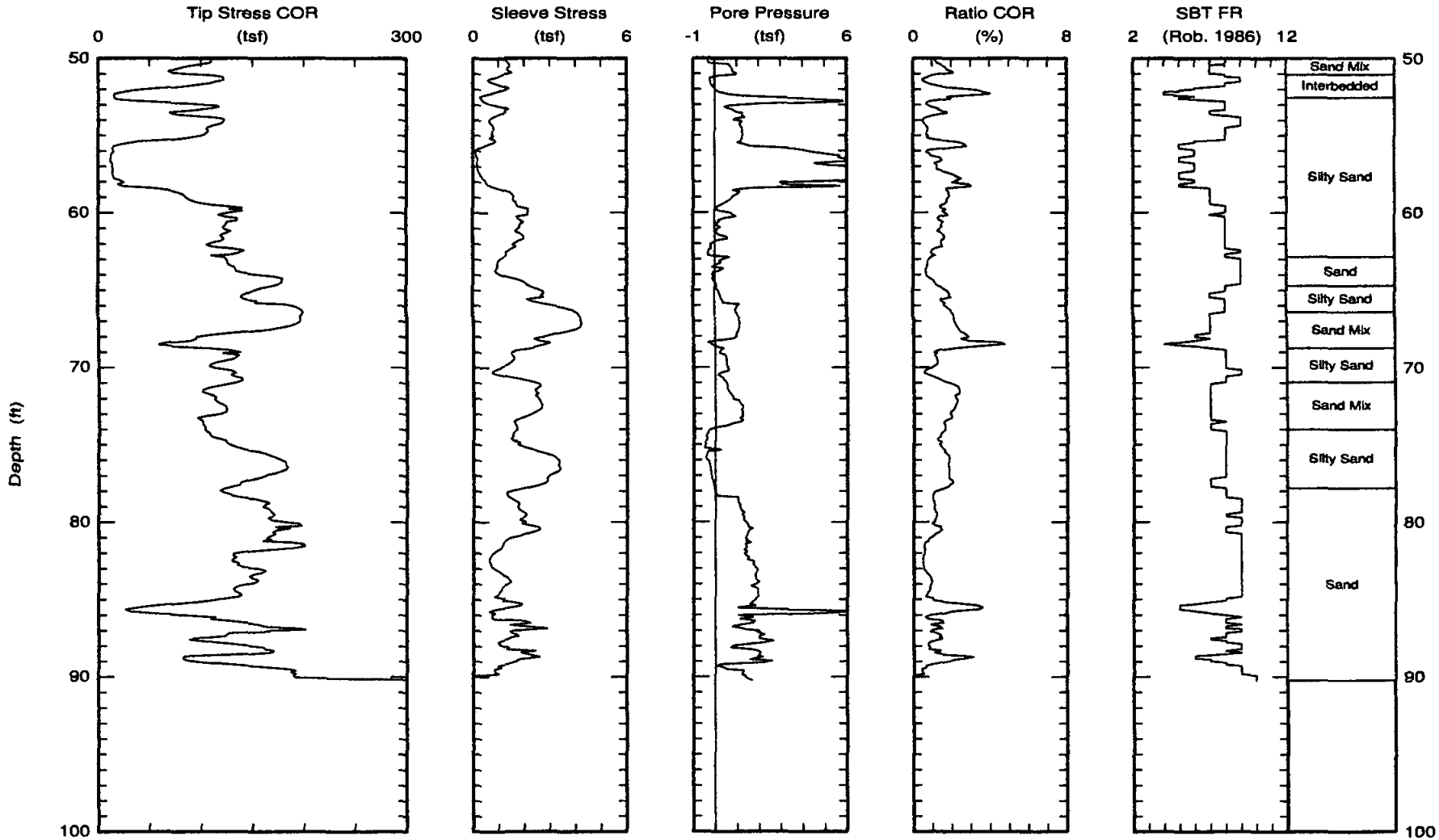
Maximum depth: 90.24 (ft)

Kehoe Testing & Engineering
Office: (714) 901-7270
Fax: (714) 901-7289
skehoe@msn.com

CPT Data
30 ton rig

Date: 19/Mar/2007
Test ID: CPT-6
Project: SanDiego

Customer: Geotechnics Inc.
Job Site: Horizon Prep Academy



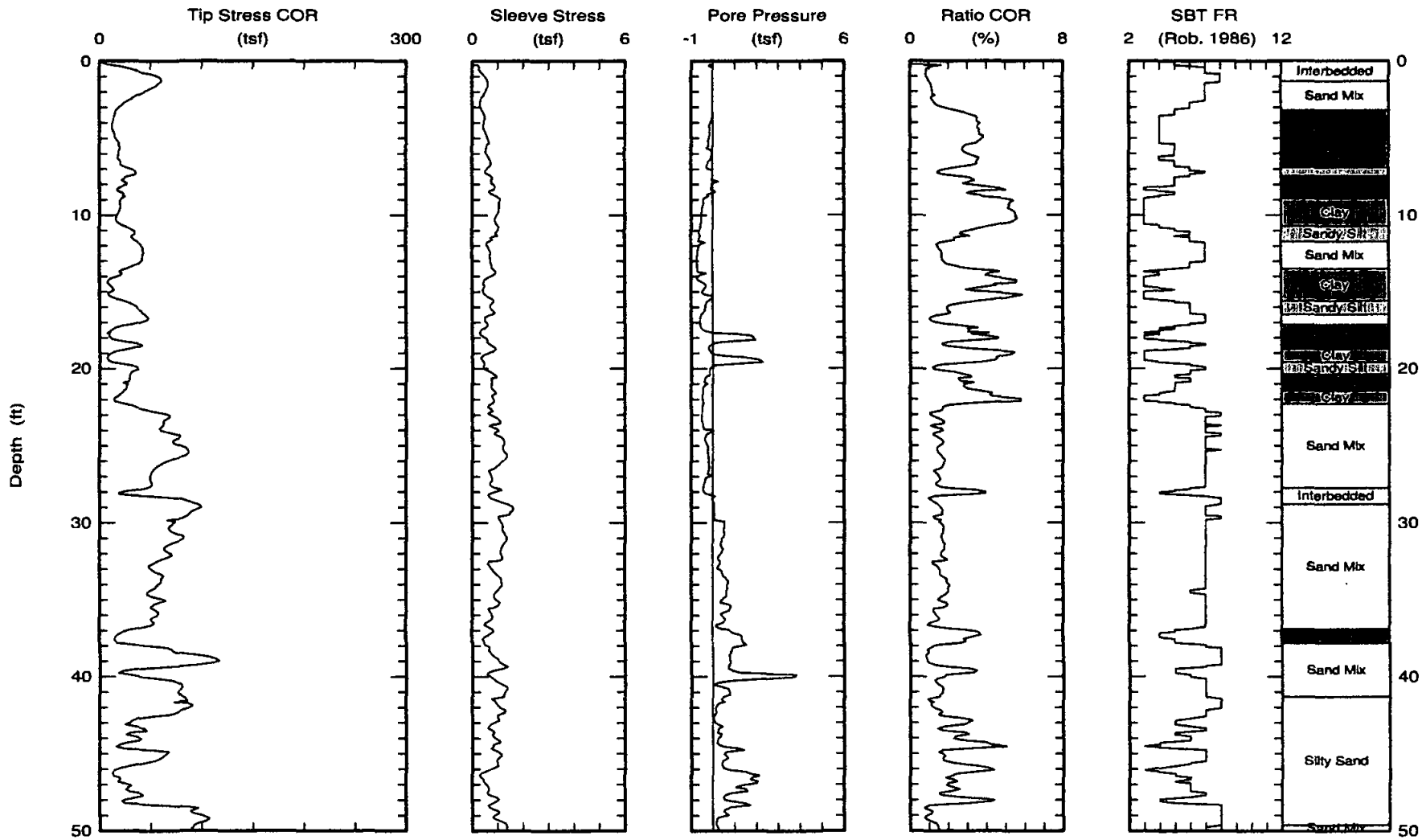
Maximum depth: 90.24 (ft)

Kehoe Testing & Engineering
Office: (714) 901-7270
Fax: (714) 901-7289
skehoe@msn.com

CPT Data
30 ton rig

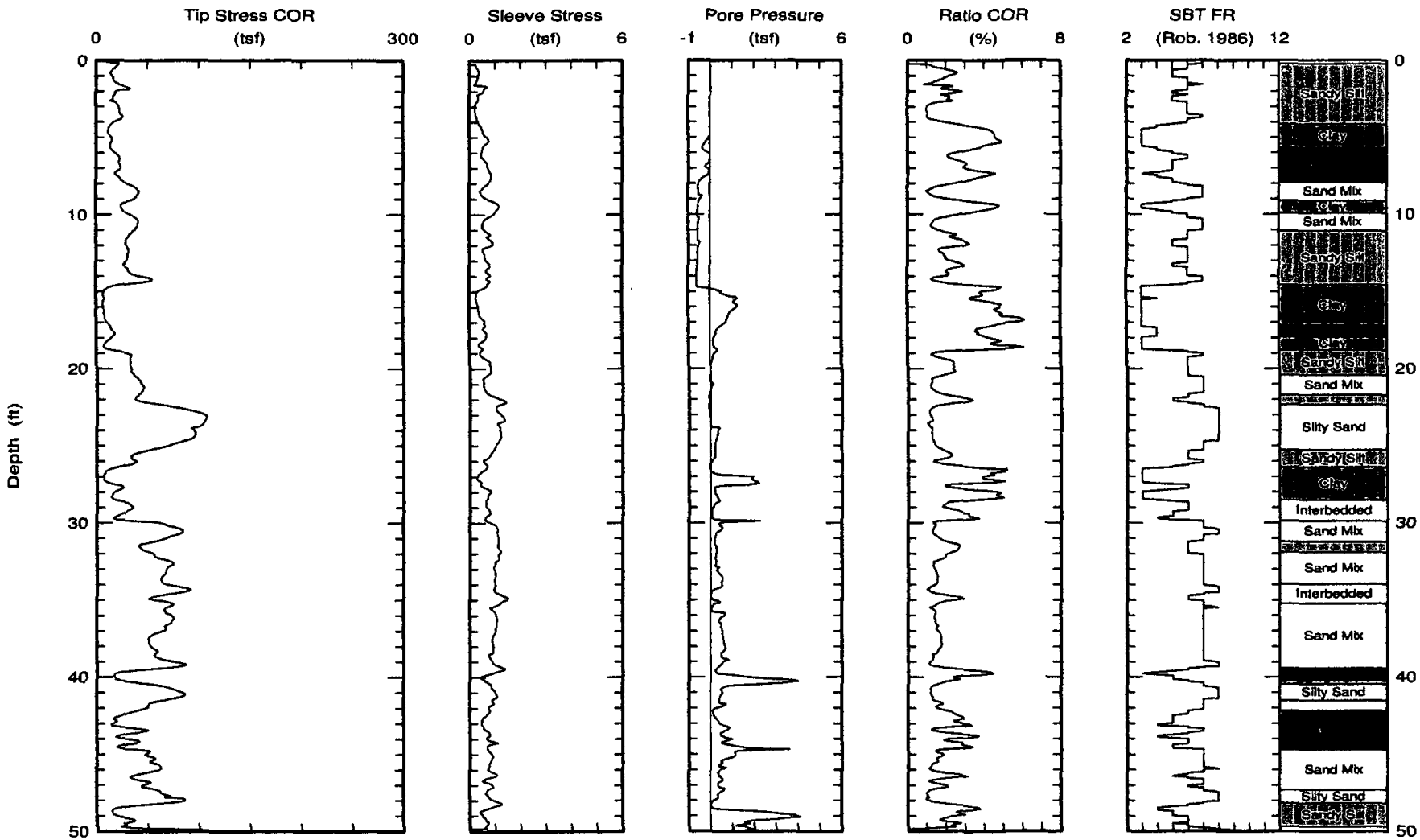
Date: 19/Mar/2007
Test ID: CPT-7
Project: SanDiego

Customer: Geotechnics Inc.
Job Site: Horizon Prep Academy



Maximum depth: 50.40 (ft)

Kehoe Testing & Engineering Office: (714) 901-7270 Fax: (714) 901-7289 skehoe@msn.com	CPT Data 30 ton rig	Date: 19/Mar/2007 Test ID: CPT-8 Project: SanDiego
	Customer: Geotechnics Inc. Job Site: Horizon Prep Academy	



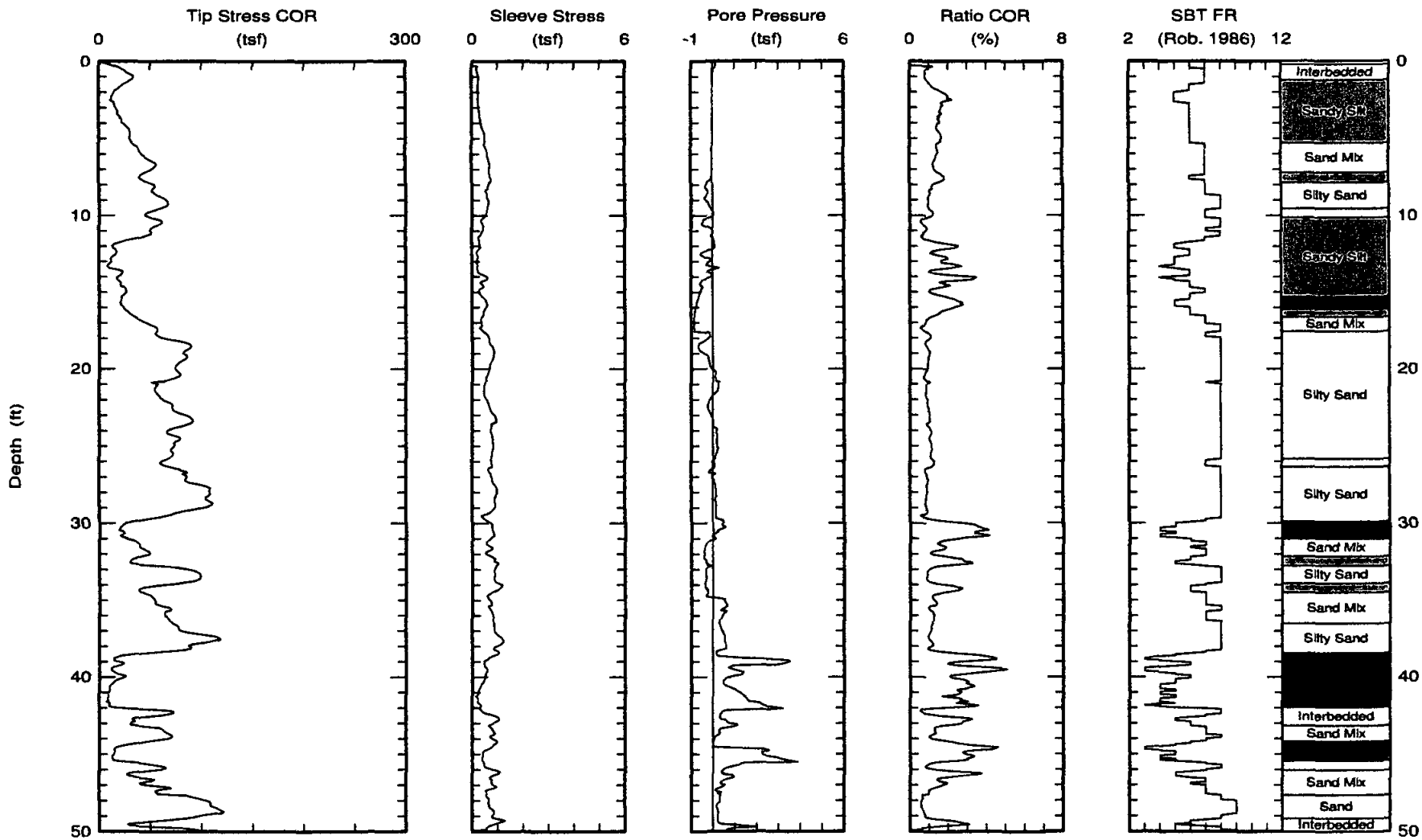
Maximum depth: 50.15 (ft)

Kehoe Testing & Engineering
Office: (714) 901-7270
Fax: (714) 901-7289
skehoe@msn.com

CPT Data
30 ton rig

Date: 19/Mar/2007
Test ID: CPT-9
Project: SanDiego

Customer: Geotechnics Inc.
Job Site: Horizon Prep Academy



Maximum depth: 50.22 (ft)

Geotechnics Incorporated

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ENVIRONMENTAL HEALTH

San Diego
El Centro
Riverside

February 27, 2007

Springline Associates, Inc.
515 North Highway 101
Solana Beach, CA 92075

Project No. 0636-002-00
Document No. 07-0153

Attention: Mr. Tom Delaney

SUBJECT: BORING COMPLETION REPORT
Church of the Nativity, Activity Center Addition
Rancho Santa Fe, California

Mr. Delaney:

In accordance with the requirements of the County of San Diego Department of Environmental Health, Land and Water Quality Division, we are submitting a Boring Completion Report for the additions to the Church of the Nativity in Rancho Santa Fe, California. Four cone penetrometer test (CPT) soundings were advanced at the site up to a maximum depth of 100 feet using a 15 cm^2 cone. Bentonite pellets were used to backfill the upper portions of the holes that remained open after the cone penetrometer rods were removed (typically the top 8 or 9 feet of the holes). About ½ ft^3 of bentonite pellets were used to backfill the four CPT soundings.

Per the 2002 SAM Manual, Section 5, we are submitting the following:

- Site Location Map, Figure 1
- Exploration Plan, Figure 2
- Cone Penetrometer Logs (Appendix B)
- Copy of the approved Geotechnical Boring Construction Permit (Appendix C)

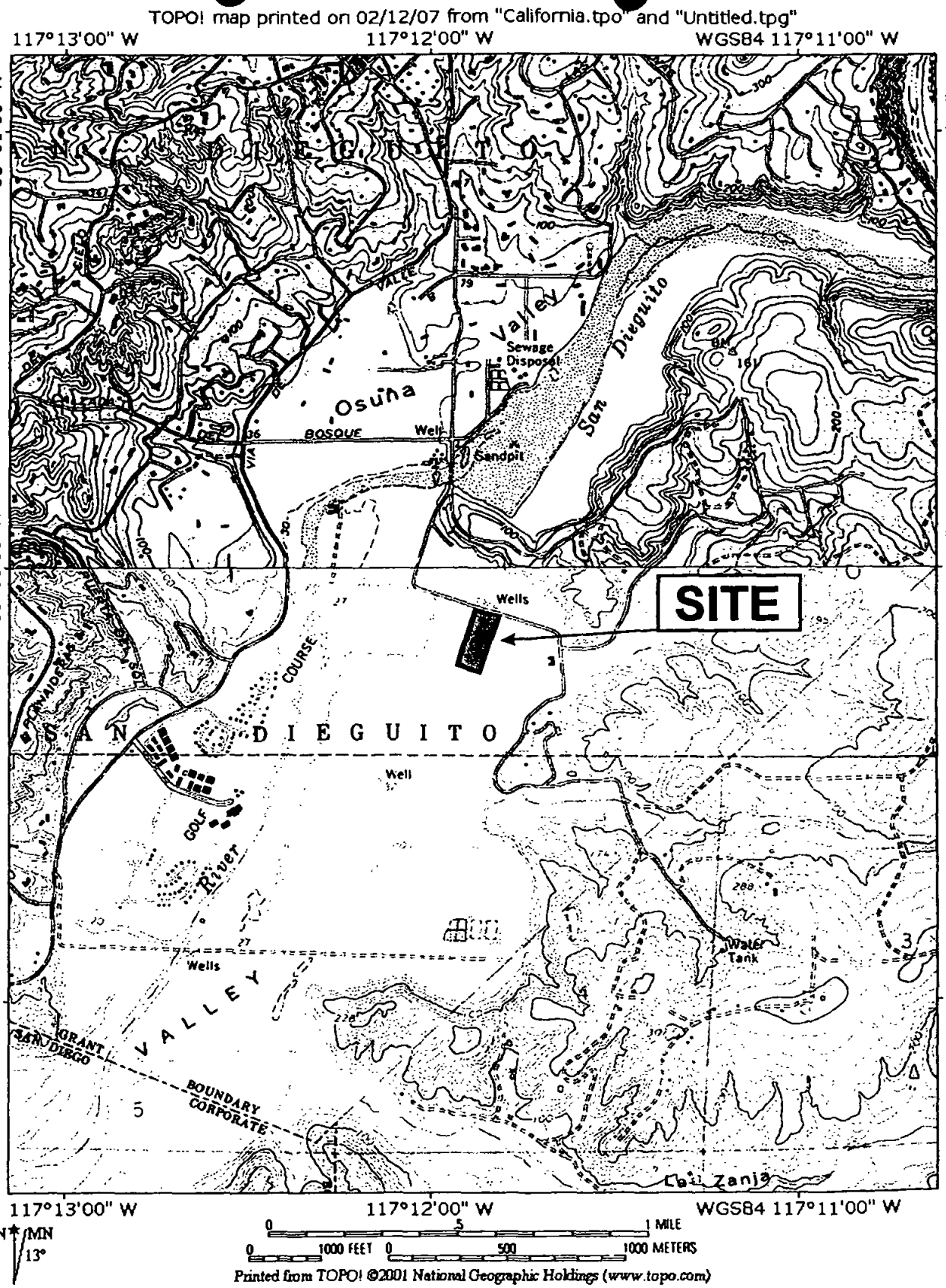
We appreciate this opportunity to provide professional services. If you have any questions or comments regarding the information provided, please do not hesitate to contact us.

GEOTECHNICS INCORPORATED

Matthew A. Fagan, PE 57248
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
MATTHEW A. FAGAN
C57248
Exp. 12/31/07
CIVIL
STATE OF CALIFORNIA

Distribution: (1) Addressee, Mr. Tom Delaney
(1) County of San Diego, Monitoring Well Permit Desk, Ms. Amelia Ceseña



Geotechnics Incorporated

SITE LOCATION MAP

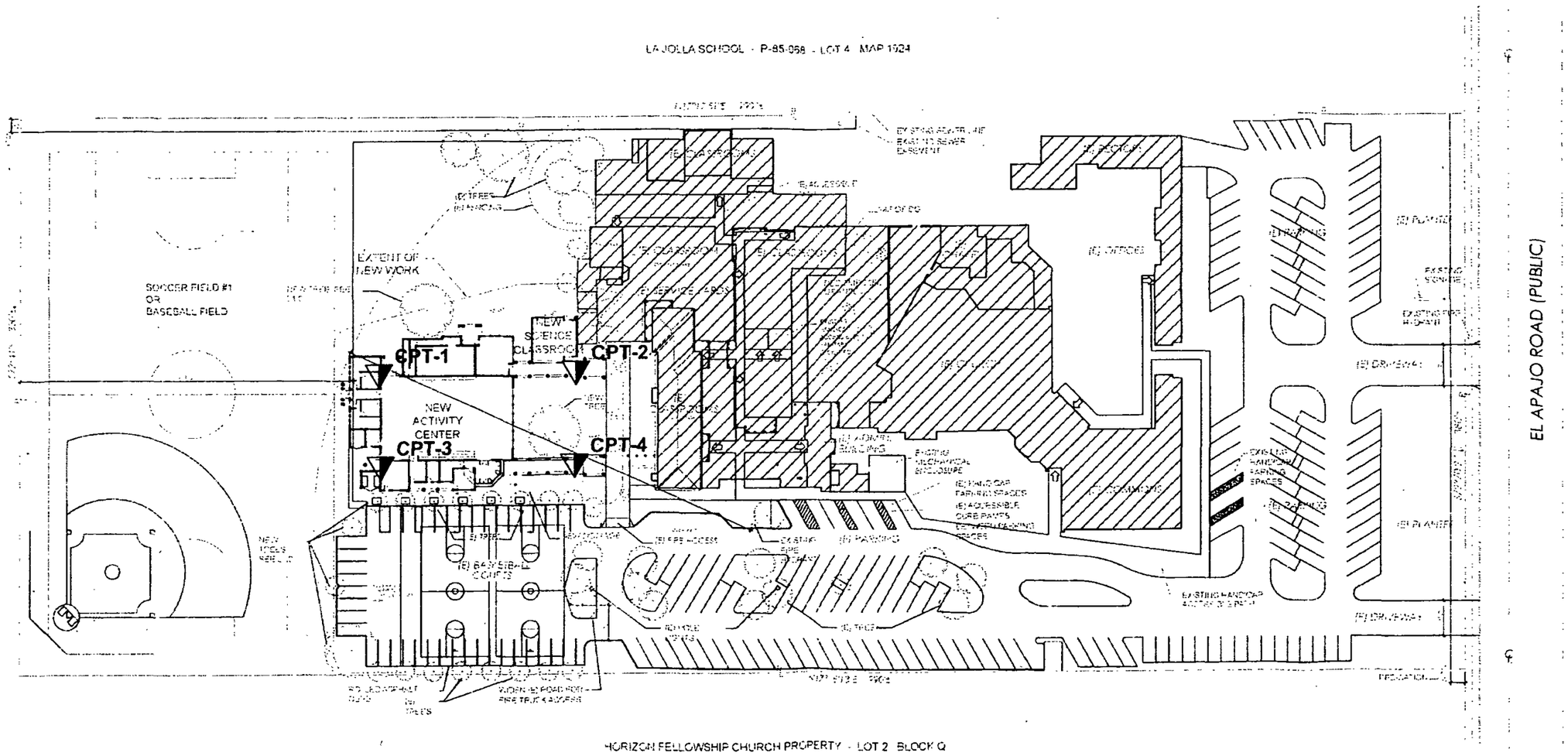
Project No. 0636-002-00
Document No. 07-0097

FIGURE 1

Project No. 0636-002-00
Document No. 07-0097

FIGURE 2

EXPLORATION PLAN



SCALE: 1" = 80'

EXPLANATION

CPT-4 — Approximate location of cone penetrometer test

Reference: Nativiy Activity Center site plan 5 FEB 2007.pdf, provided by Hodges and Hodges Architects.

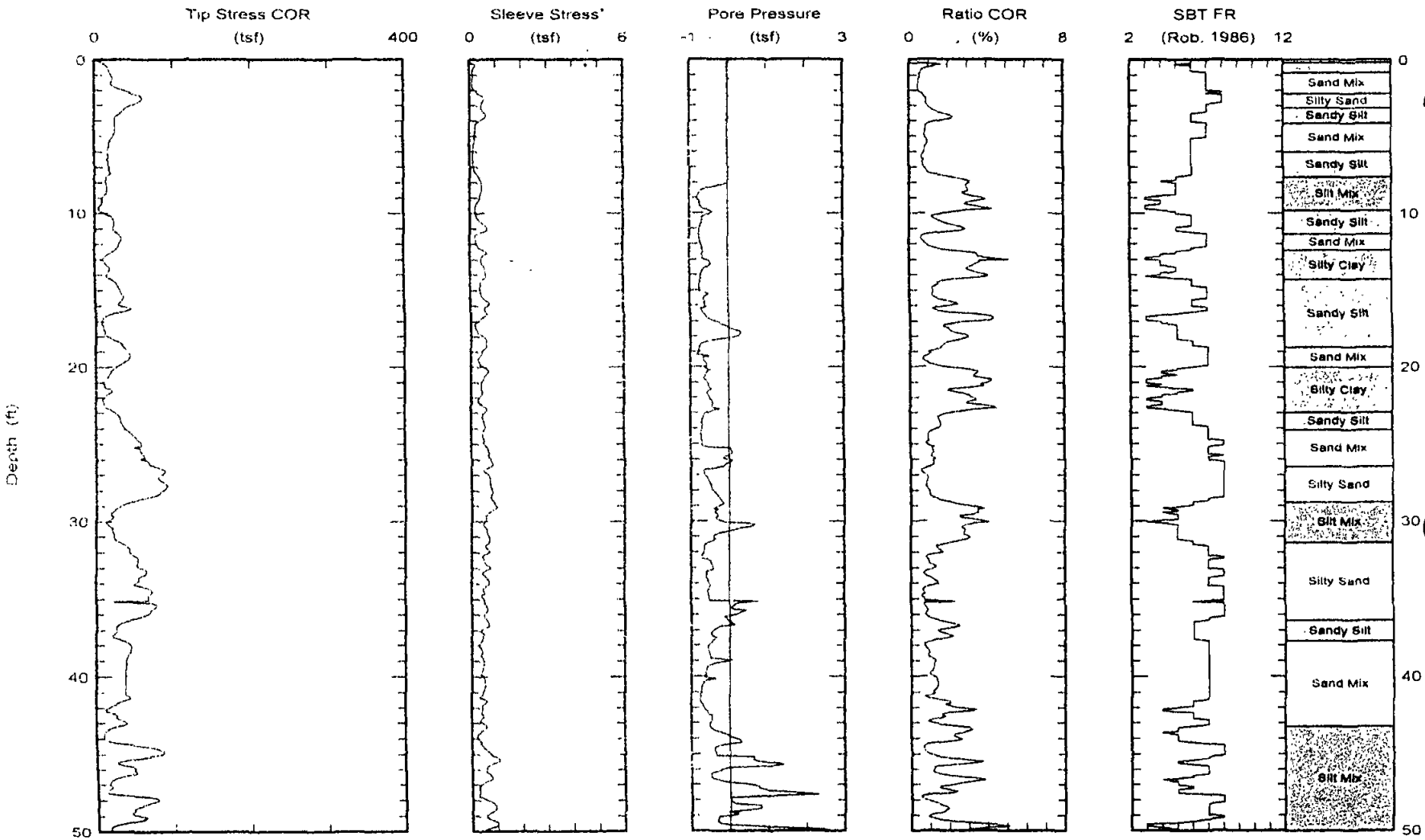
Geotechnics Incorporated

Kehoe Testing & Engineering
Office: (714) 901-7270
Fax: (714) 901-7289
skehoe@msn.com

CPT Data
30 ton rig

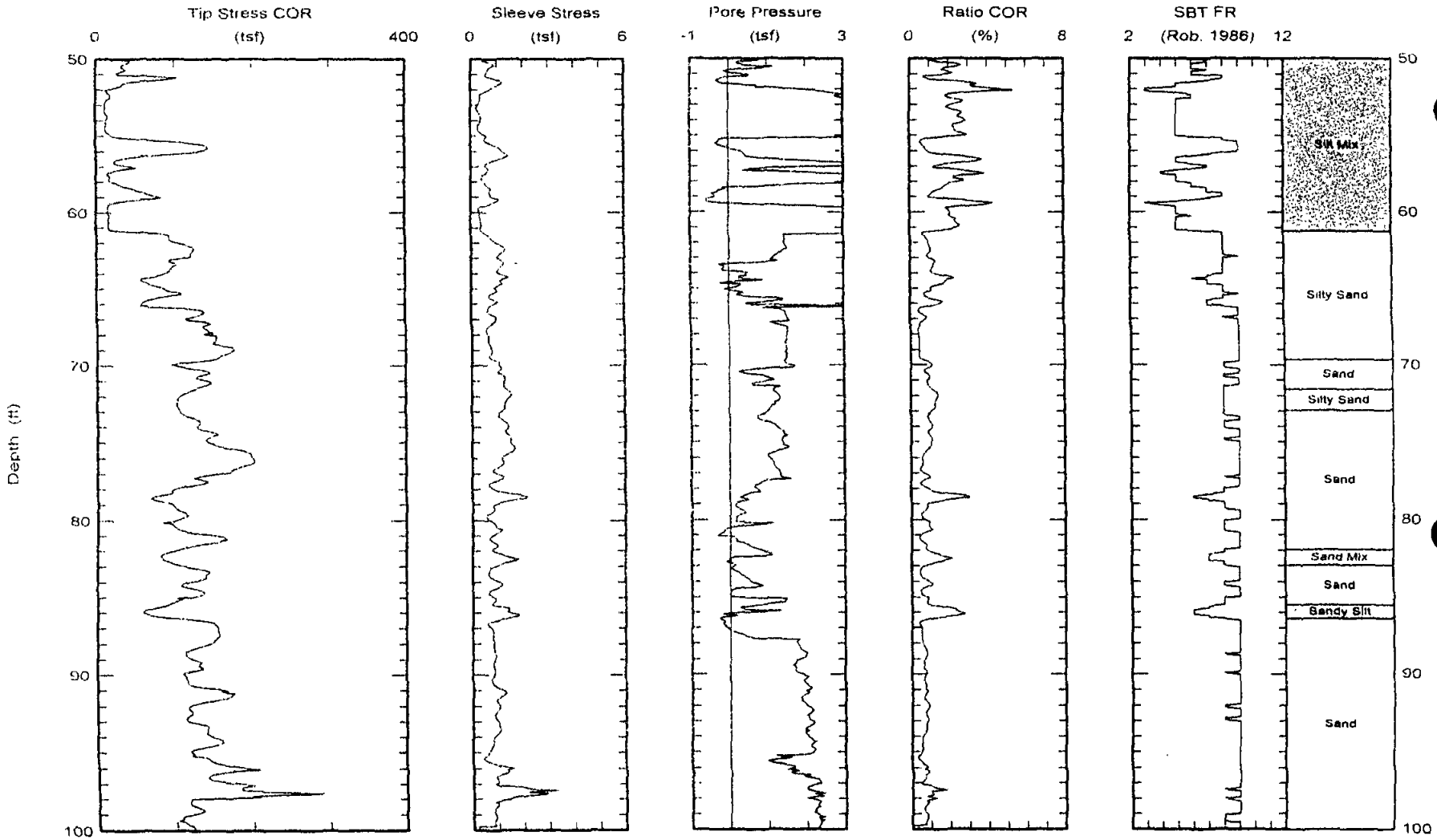
Date: 22/Feb/2007
Test ID: CPT-1
Project: RanchoSanteFe

Client: Geotechnics
Job Site: Church of Nativity



Maximum depth 100.11 (ft)

Kehoe Testing & Engineering Office: (714) 901-7270 Fax: (714) 901-7289 skehoe@msn.com	CPT Data 30 ton rig	Date: 22/Feb/2007 Test ID: CPT-1 Project: RanchoSanteFe
	Client: Geotechnics Job Site: Church of Nativity	



Maximum depth, 100.11 (ft)

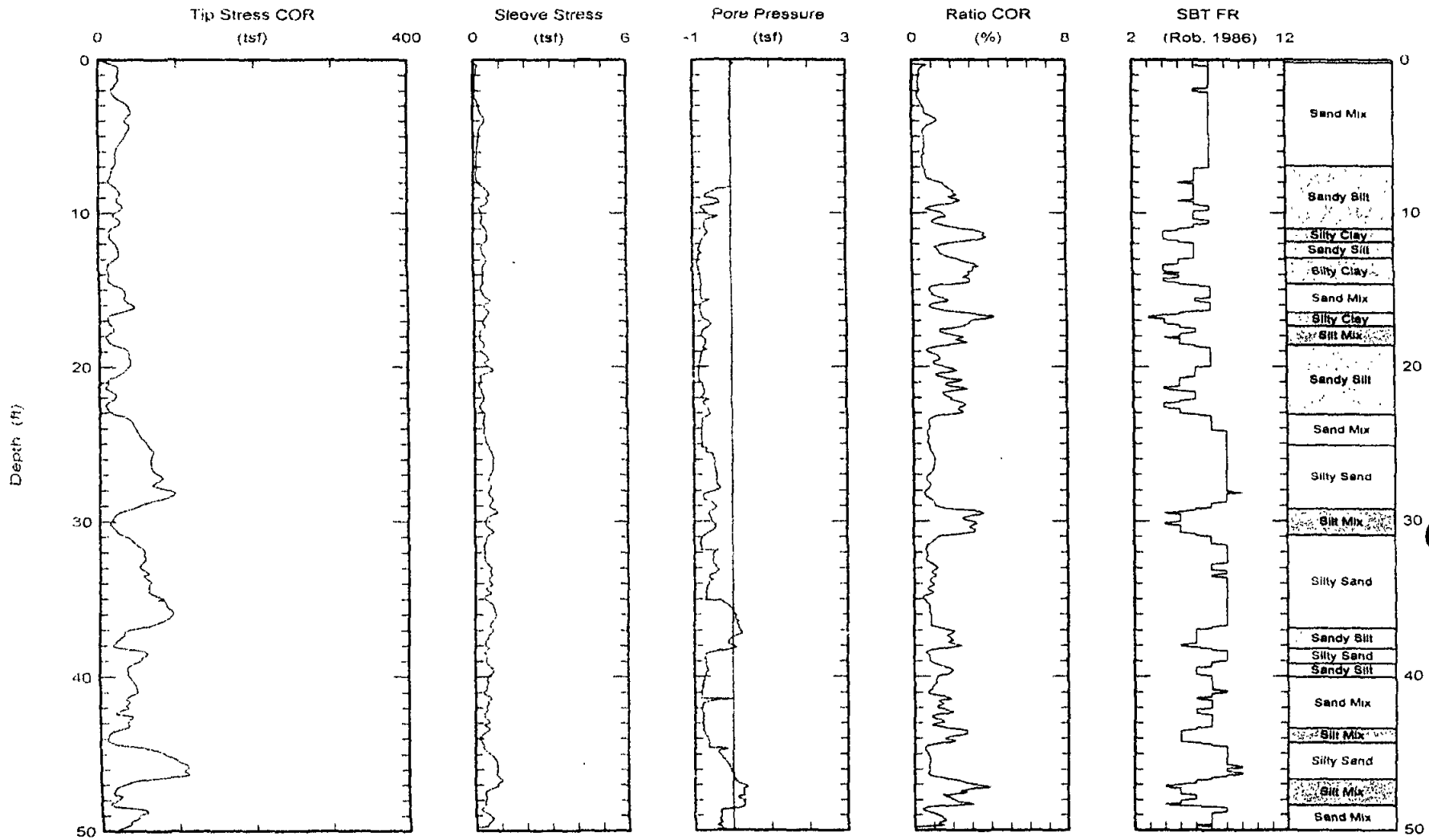
Test ID: CI
File: 222F0706C.I

Kehoe Testing & Engineering
Office: (714) 901-7270
Fax: (714) 901-7289
skehoe@msn.com

CPT Data
30 ton rig

Date: 22/Feb/2007
Test ID: CPT-2
Project: RanchoSanteFe

Client: Geotechnics
Job Site: Church of Nativity



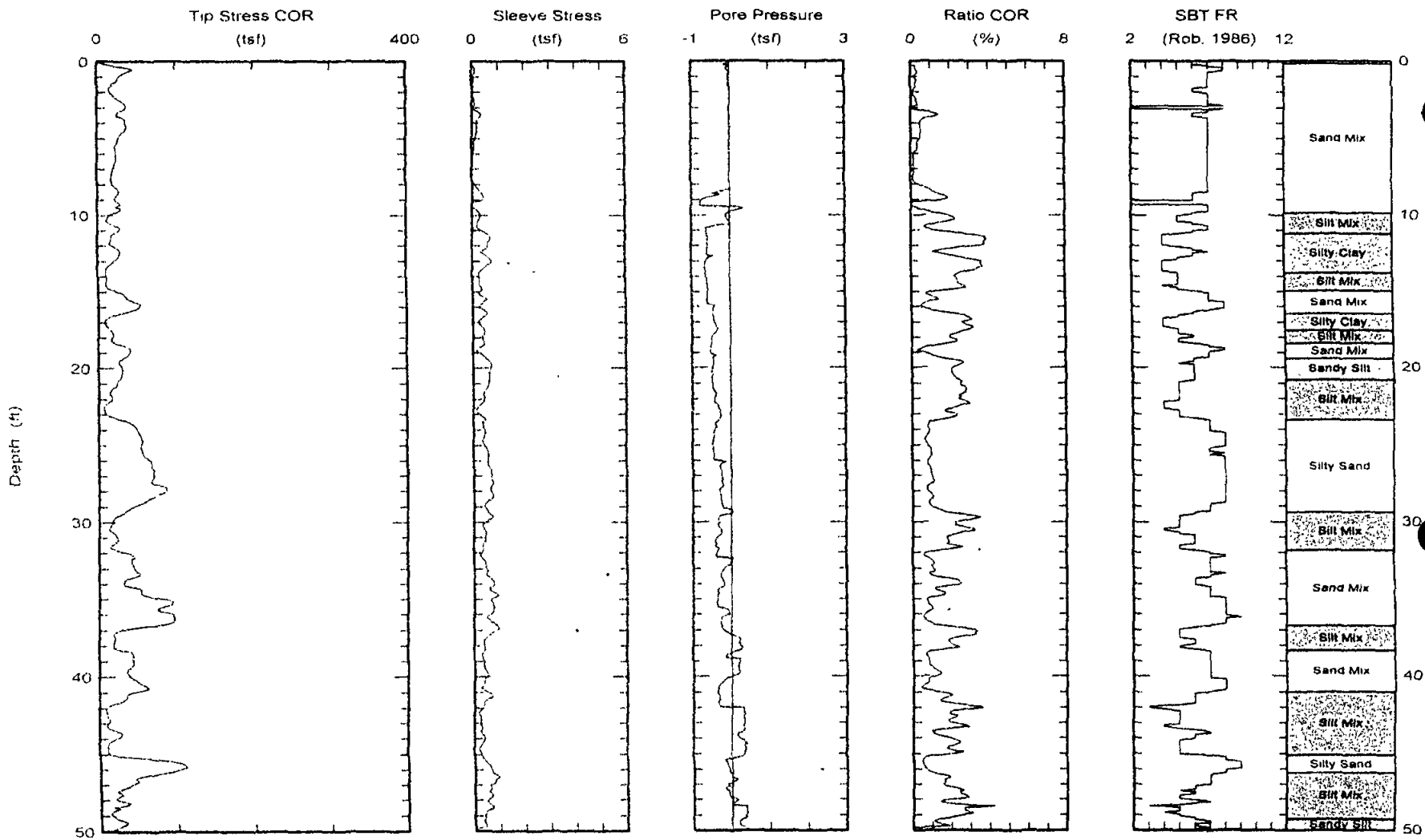
Maximum depth. 50.12 (ft)
Page 1 of 2

Kehoe Testing & Engineering
Office: (714) 901-7270
Fax: (714) 901-7289
skehoe@msn.com

CPT Data
30 ton rig

Date: 22/Feb/2007
Test ID: CPT-3
Project: RanchoSanteFe

Client: Geotechnics
Job Site: Church of Nativity



Maximum depth 50.15 (ft)

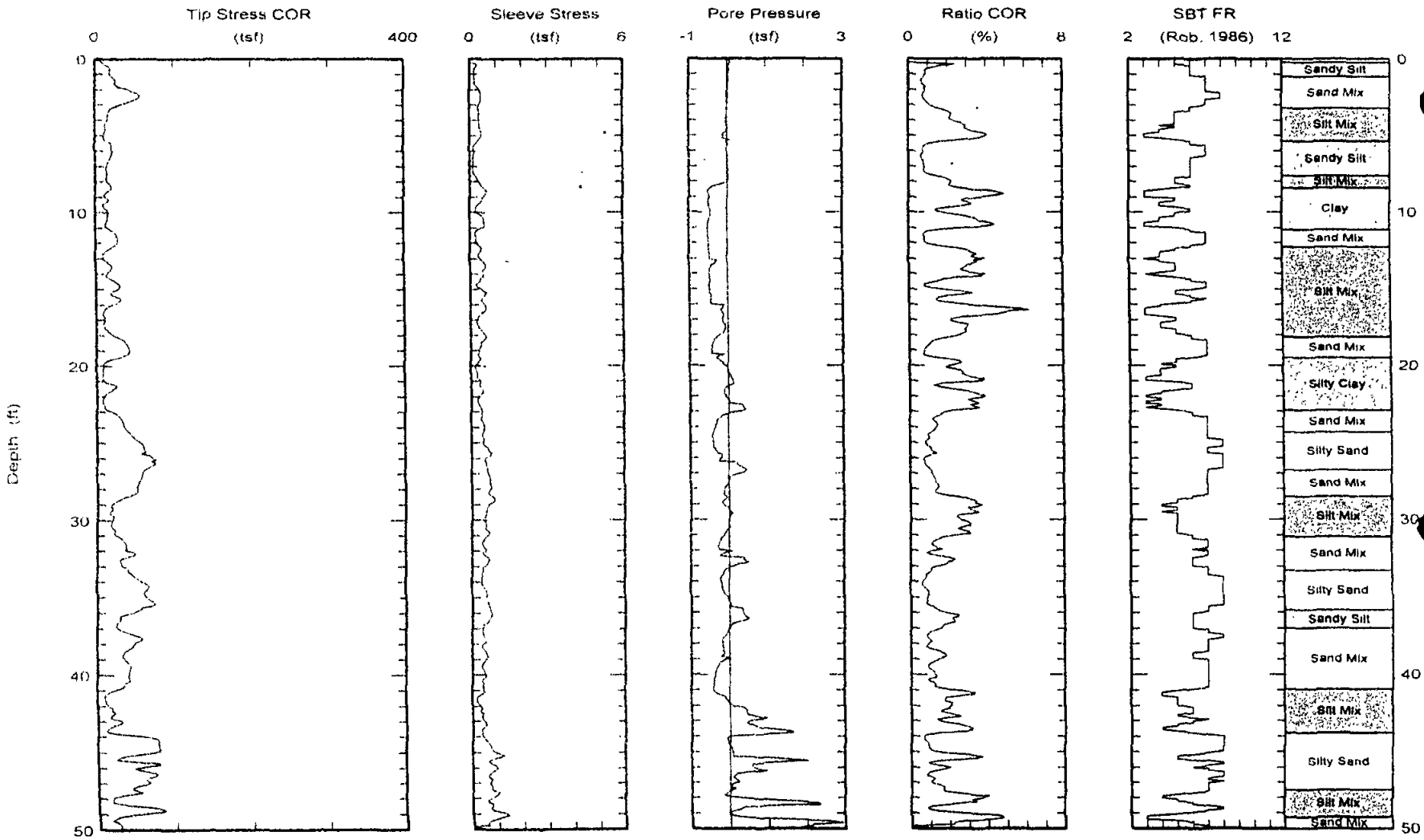
Test ID
File 727F070

Kehoe Testing & Engineering
Office: (714) 901-7270
Fax: (714) 901-7289
skehoe@msn.com

CPT Data
30 ton rig

Date: 22/Feb/2007
Test ID: CPT-4
Project: RanchoSanteFe

Client: Geotechnics
Job Site: Church of Nativity



Maximum depth: 50.14 (ft)

Test ID: C
File: 722-0708

Geotechnics Incorporated

RECEIVED
FEB 18 2009
ENVIRONMENTAL HEALTH

San Diego
El Centro
Riverside

February 13, 2009

Springline Associates
515 North Highway 101
Solana Beach, CA 92075

Project No. 0636-002-01
Document No. 09-0076

Attention: Mr. Dave Armstrong

SUBJECT: BORING COMPLETION REPORT
Church of the Nativity
Activity Center Addition
Rancho Santa Fe, California
Permit LMON105861

Mr. Armstrong:

In accordance with County of San Diego requirements, we have prepared this boring completion report for the subsurface explorations performed at the site. We are attaching a site location map, exploration plan, boring logs a copy of the approved permit. Test America Drilling Corporation was the drilling subcontractor. The borings were sealed immediately after completion in general conformance with California Well Standards Bulletins and the County of San Diego Code of Regulatory Ordinances.

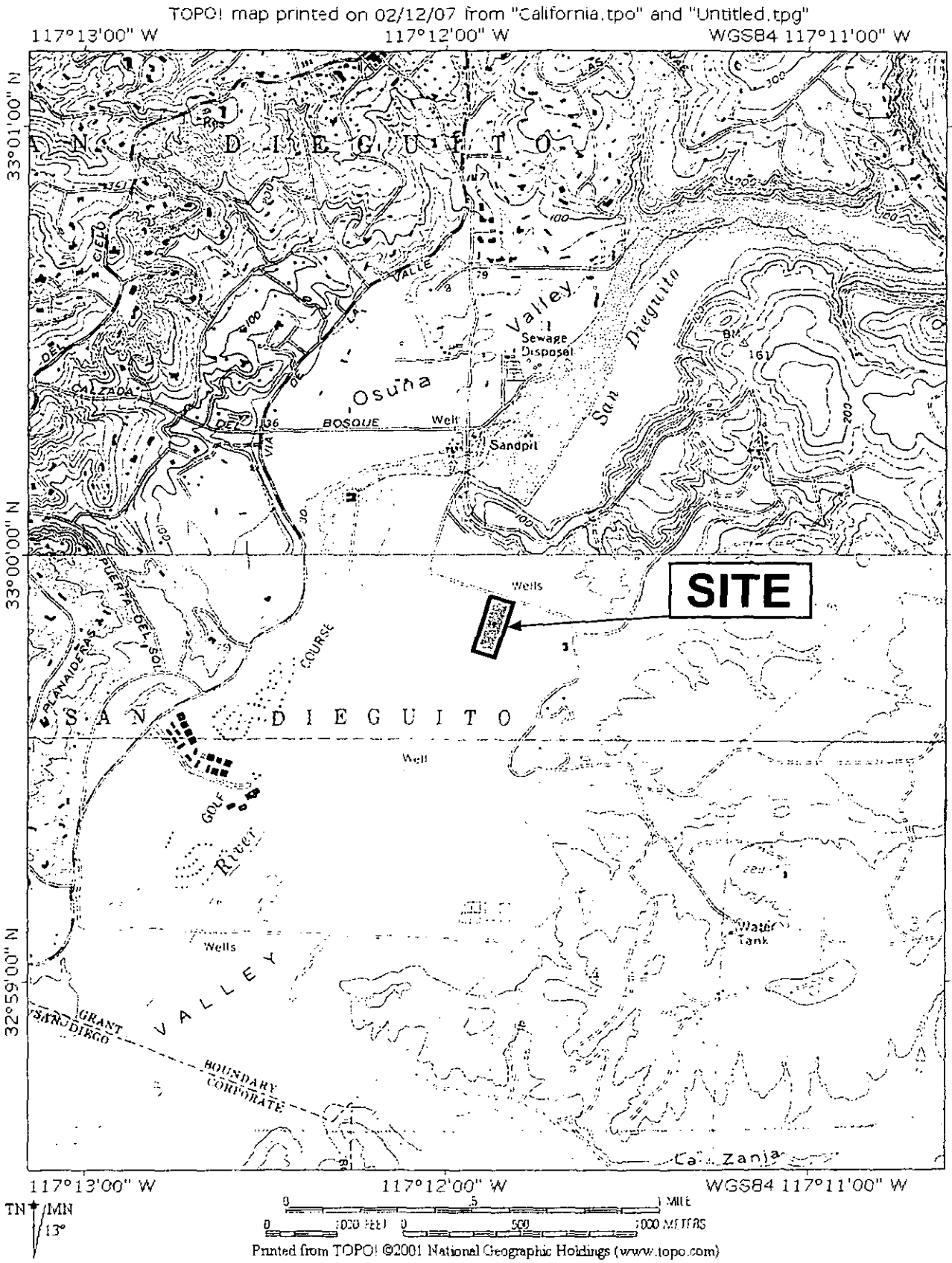
We appreciate this opportunity to provide professional services. If you have any questions or comments, please do not hesitate to contact us.

GEOTECHNICS INCORPORATED

Matthew A Fagan, P.E. 57248
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
MATTHEW A. FAGAN
C57248
Exp 12/31/09
CIVIL
STATE OF CALIFORNIA

Distribution: (1) Addressee
(1) Monitoring Well Permit Desk
Site Assessment and Mitigation Program
County of San Diego, Department of Environmental Health
P.O. Box 129261
San Diego, California 92112-9261



Geotechnics Incorporated

SITE LOCATION MAP

Project No. 0636-002-01
Document No. 08-0573

FIGURE 1

EXPLANATION

B-5 Approximate location of boring

Reference: 03106gp.dwg, provided by Sowards and Brown Engineering

SCALE: 1" = 40'

Geotechnics Incorporated

EXPLORATION PLAN

Project No. 0636-002-01
Document No. 08-0573

FIGURE 2

LOG OF EXPLORATION BORING NO. 1

Logged by: JCS **Date Drilled:** 7/25/2008

Method of Drilling: CME-75, 8-inch diameter hollow-stem auger **Elevation:** 34 Feet MSL

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						**ALLUVIUM**: Silty sand (SM), dark brown, fine grained, moist, loose to medium dense.	
2	23	CAL		107	11		
3							
4							
5	12	CAL		86	30	Sandy silt (ML), dark brown, low plasticity, moist to wet, firm.	
6							
7							
8					▽	Silty sand (SM), dark brown, fine grained, saturated, medium dense.	
9		SHE		93	29		
10							
11		SHE		87	34		
12							
13							
14							
15	22	CAL		99	27		
16							
17						Total depth = 16 feet Groundwater at 8 Feet Backfilled on 7/25/2008	
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

LOG OF EXPLORATION BORING NO. 2

Logged by: JCS **Date Drilled:** 7/25/2008

Method of Drilling: CME-75, 8-inch diameter hollow-stem auger **Elevation:** 34 Feet MSL

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						**ALLUVIUM**: Silty sand (SM), dark brown, fine grained, moist, loose to medium dense.	
2	30	CAL		103	12		
3							
4							
5						Sandy silt (ML), dark brown, low plasticity, moist to wet, firm.	
6		SHE		92	27		
7							
8					▽	Silty sand (SM), dark brown, fine grained, saturated, medium dense.	
9							
10	10	CAL		93	27		
11							
12				93	27		
13		SHE				Sandy silt (ML), dark brown, low plasticity, saturated, firm.	
14				95	27		
15	19	CAL		89	29		
16							
17							
18							
19							
20	17	CAL		93	31		
21							
22						Total depth = 21 feet Groundwater at 8 Feet Backfilled on 7/25/2008	
23							
24							
25							
26							
27							
28							
29							
30							

LOG OF EXPLORATION BORING NO. 3

Logged by: JCS | **Date Drilled:** 7/25/2008

Method of Drilling: CME-75, 8-inch diameter hollow-stem auger | **Elevation:** 33 Feet MSL

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						PAVEMENT: 3-inches asphalt concrete, no base.	
2						ALLUVIUM: Silty sand (SM), dark brown, fine grained, moist, loose to medium dense.	
3	13	SPT					
4							
5							
6						Total depth = 5 feet No Groundwater Encountered Backfilled on 7/25/2008	
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
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27							
28							
29							
30							

LOG OF EXPLORATION BORING NO. 4

Logged by: JCS **Date Drilled:** 7/25/2008

Method of Drilling: CME-75, 8-inch diameter hollow-stem auger **Elevation:** 32 Feet MSL

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						**PAVEMENT**: 3½-inches asphalt concrete, no base.	
						ALLUVIUM: Silty sand (SM), dark brown, fine grained, moist, loose to medium dense.	
2	11	CAL					
3							
4							
5							
6						Total depth = 5 feet No Groundwater Encountered Backfilled on 7/25/2008	
7							
8							
9							
10							
11							
12							
13							
14							
15							
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LOG OF EXPLORATION BORING NO. 5

Logged by: JCS **Date Drilled:** 7/25/2008

Method of Drilling: CME-75, 8-inch diameter hollow-stem auger **Elevation:** 33 Feet MSL

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
						PAVEMENT: 3-inches asphalt concrete, no base.	
1						**ALLUVIUM**: Silty sand (SM), dark brown, fine grained, moist, loose to medium dense.	
2							
3							
4						Same. Very moist to wet.	
5	9	CAL					
6					▽	Silty sand (SM), dark brown, fine grained, saturated, medium dense.	
7							
8	16	CAL					
9							
10	8	CAL					
11							
12							
13							
14							
15	16	CAL					
16							
17						Total depth = 16 feet Groundwater at 6 Feet Backfilled on 7/25/2008	
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

PERMIT #LMON105861
A.P.N. #269-080-11-00
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: CHURCH OF THE NATIVITY

SITE ADDRESS: 6309 APAJO ROAD, RANCHO SANTA FE, CA 92067

PERMIT FOR: **FIVE GEOTECHNICAL SOIL BORINGS**

PERMIT APPROVAL DATE: JULY 21, 2008

PERMIT EXPIRES ON: NOVEMBER 18, 2008

RESPONSIBLE PARTY: SPRINGLINE ASSOCIATES, INC.

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.**

APPROVED BY: Ernie Profeta — ERNIE L. PROFETA DATE: 07/21/2008

NOTIFIED: emailed 7/21/08 EP

DEH:SAM-9075 (4/03)

DEH NOTIFIED 7/22/08 2:50pm
ERNIE PROFETA

BBC ENVIRONMENTAL, INC.
3593 Adams Avenue, San Diego, CA 92116

December 27, 2012

County of San Diego
Department of Environmental Health
Site Assessment and Mitigation Program
Monitoring Well Permit Desk
P.O. Box 129261
San Diego, CA. 92112-9261

RE: BORING LOG SUMMARY REPORT FOR A WELL INSTALLATION PERFORMED OFFSITE AT THE FORMER RANCHO SANTA FE MOBIL FACILITY, 6089 LA FLECHA, RANCHO SANTA FE, CALIFORNIA (Permit #LMON108291)

Monitoring Well Permit Desk:

In accordance with current SAM Manual guidelines, BBC Environmental, Inc. is submitting the attached boring logs, construction information, and analytical data for one well installed at the Rancho Santa Fe Mobil facility on September 18th, 2012.

Site Identification:	Former Rancho Santa Fe Mobil Facility 6089 La Flecha Rancho Santa Fe, CA 92091
Assessor's Parcel Number:	266-291-01-00
Work Zone Identification:	[redacted] Property 6011 La Flecha Rancho Santa Fe CA 92091 APN: 266-300-27-00
SAM Program Est. Number:	H13190-001
Boring Permit Number:	LMON108291
Date of Installation:	9/18/2012
Drilling Company: C57 License No.:	Hargrave Environmental Consulting, Inc 686760

A total of one well (MW-15) was installed off-site at the project location (Figure 1). The boring completion depth is provided in Table 1. Subsurface soil sampling using a drive point sampler was performed at the one location.

The outside diameter of the hand auger used during this drilling operation was 6 inches. Upon reaching specified depths of the boring, the drive sampler was threaded onto the auger rod. Subsequent hammer blows drove the sampler into the native soils and was retracted to procure the sample. When total depth of approximately 12.5 feet was

reached, the auger was retracted and a 2 inch diameter PVC Schedule 40 casing with a 10 foot screen interval was installed. The casing was installed with two centralizers attached and secured at approximately 2.5 and 11 feet below ground surface. A traffic rated steel well cover with a locking plug was installed at the surface.

A total of one well was sampled and installed in this manner. The one soil sample was collected at approximately 10.5 feet bgs. A total of approximately 2.0 cubic feet of Monterey #3 sand, approximately 0.25 cubic feet of the bentonite seal, and approximately 2.5 cubic feet of Redi-Crete and Rapid-Set mix seal was placed in the annular space between the casing and the sidewall of the boring as construction material at the site. One permanent well was installed at this site.

One subsurface soil sample was collected during this event. A detailed boring log for the one well has been included in this report submittal. A site plan with the location of the well installation is also presented for your review. Laboratory analytical data for the one soil sample is presented for your review. Additional laboratory analytical data will be presented once a site characterization report is completed and uploaded to the Geotracker database in accordance with the State Water Resources Control Board reporting requirements.

Should you have any questions or require additional information with regards to this submittal, please contact Mr. Walter Craig of BBC Environmental, Inc. at (619) 546-7165.

Thank You,
BBC Environmental, Inc.

Mr. Stephen Jeltema
Environmental Scientist

Mr. Gerald Shiller, PG
California Professional Geologist No. 4558

PROFESSIONAL GEOLOGIST
GERALD I. SHILLER
PG-4558
Expires 2/28/13
STATE OF CALIFORNIA

Attachments (4):
- Soil Boring Construction Permit No. LMON108291
- Confirmation Email from CO of SD, DEH.
- Site Location Map – Figure 1
- Well Installation Location Map – Figure 2
- Boring Completion Depth – Table 1
- Boring Log for MW-15
- Associated Laboratories Soil Report (lr310904)

PERMIT #LMON108291
A.P.N. #266-291-01-00, 266-300-27-00
EST #H13190-001

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: RANCHO SANTA FE MOBIL

SITE ADDRESS: 6011 LA FLECHA, RANCHO SANTA FE, CA 92067

PERMIT FOR: INSTALL ONE OFF-SITE GROUNDWATER MONITORING WELL

PERMIT APPROVAL DATE: FEBRUARY 15, 2012

PERMIT EXPIRES ON: JUNE 14, 2012

RESPONSIBLE PARTY: MR. TONY RABABY

PERMIT CONDITIONS:

1. Wells must have a **minimum 3-foot concrete surface seal**. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.

2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

3. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at (858) 505-6688.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: _____ DATE: 02/15/2012
JAMES CLAY

OKay, LSA 1/30/12 JC 1/31/12

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 108291
SAM CASE Y/N # H13190-001 LSA
DATE RECEIVED: 1/27/2012
FEE PAID: $299.00
CHECK # online

A. RESPONSIBLE PARTY Mr. Tony Rababy E-mail N/A
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address P.O. Box 476 City Rancho Santa Fe State CA Zip 92067-
Contact Person Mrs. Adele Rababy Phone 858-756-1975 Ext. _ Fax 8587560151

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # H13190-001

C. CONSULTING FIRM BBC Environmental, Inc.
Mailing Address 3593 Adams Avenue City San Diego State CA Zip 92116-
Registered Professional Mr. Gerald I. Shiller Registration # 4558 (RG)
E-mail idogeology@cox.net
Contact Person Mr. Walter B. Craig Phone 619-546-7165 Ext. __ Fax 6195467175

D. DRILLING COMPANY Hargrave Environmental Consulting C57# 686780
Contact Name Chuck Hargrave E-mail chuck@hargraveenvironmental.com
Mailing Address 8360 Clairemont Mesa Blvd #107 City San Diego State CA Zip 92111-
Phone 858-268-4248 Fax 858-268-4528

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☒ Groundwater	1
☐ Vadose	___
☐ Boring	___
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable _____
Type PVC
Gauge sch 40
Diameter 2"
Well Screen Size 0.02"
Filter Pack #3 sand

SEAL/BOR NG BACKFILL
☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
Borehole diameter 8"

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 12 ft.
Estimated depth of boring 20 ft.

Concrete surface seal	0 to 3
Annular seal	_____ to _____
Bentoni e transition seal	3 to 4
Filter Pack	4 to 5
Perforation	5 to 20

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 1/26/12

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE Gerald I. Shiller DATE 1-26-12

PROFESSIONAL GEOLOGIST GERALD I. SHILLER PG-4558 exp 2/28/13 STATE OF CALIFORNIA

F. SITE INFORMATION

off site from Rancho Santa Fe Mobil - SAM master
APN: 266-291-01-00

1. **ASSESSOR'S PARCEL NUMBER** 266-300-27-00
   Site Name [redacted] Property
   Site Address 6011 La Flecha City Rancho Santa Fe Zip 92067-

   PROPERTY OWNER [redacted] Family Trust
   Phone 619-851-0288 Ext. Fax _____
   Mailing Address 6011 La Flecha City Rancho Santa Fe State CA Zip 92067-

   NUMBER OF WELLS **TYPE OF WELLS** 1GW Monitoring Well

2. **ASSESSOR'S PARCEL NUMBER**
   Site Name
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS **TYPE OF WELLS**

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning September 1, 2010, through June 30, 2011)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$200.00 for the first monitoring well ……	**$200.00**
Permit for Well Maintenance Inspection (Valid for three years)	$99.00 for first well maintenance inspection	**$99.00**
Each Additional New Well	$161.00 for each additional well installation	**0 x $161.00 $0.00**
	$ 30.00 for each additional well maintenance inspection ……..	**0 x $ 30.00 $0.00**
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$200.00 for the first boring …….	**___ x $200.00 $_____**
	$ 49.00 for each additional boring ……	**___ x $ 49.00 $_____**
Permit for Well Destructions Only	$200.00 for the first destruction …….	**___ x $200.00 $_____**
	$123.00 for each additional destruction …	**___ x $123.00 $_____**
Permit for any Combination of Well Installations, Borings, & Destructions (*except UST backfill permit)*	The first activity will be $200.00	**___ x $200.00 $_____**
	Additional activities will be as follows:	
	$161.00 for each additional well	**___ x $161.00 $_____**
	$99.00 for first well maintenance inspection	**___ x $ 99.00 $_____**
	$ 30.00 for each additional well maintenance inspection	**___ x $ 30.00 $_____**
	$123.00 for each well destruction	**___ x $123.00 $_____**
	$ 49.00 for each additional boring	**___ x $ 49.00 $_____**
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	**$_____**
	TOTAL COST OF PERMIT	**$299.00**

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

JACK MILLER
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:

16011 LA FLECHA
RANCHO SANTA FE, CA

Assessor's Parcel Number (APN):

216-300-27-00

I, [redacted], owner of the property/properties listed above, give my permission to BBC ENVIRONMENTAL, INC (consulting company, contractor) to conduct the following work at the locations stated above.

☑ Install 1 monitoring wells ☐ Destroy _____ monitoring wells ☐ Drill _____ soil borings

I understand that G. SHILLER (registered professional) of BBC ENV. INC. (consulting company) and an authorized signer for HARGRAVE ENV. (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: [redacted] Date: 12/14/11

Print Name: _____ Title: _____

Company: _____

Mailing Address: _____

Walter Craig

From: Clay, James <James.Clay@sdcounty.ca.gov>
Sent: Thursday, July 26, 2012 8:31 AM
To: 'w.craig@bbcenvironmental.com'
Cc: Apecechea, Laurie
Subject: RE: H13190-001 RSF Mobil GW Report

Hi Walt,

Your proposal to install the downgradient monitoring well by hand is approved as proposed. Please let me know if you have any additional questions.

Thanks,

James G. Clay
Environmental Health Specialist III
Site Assessment and Mitigation Program
Land and Water Quality Division
Department of Environmental Health
County of San Diego
Phone: 858-505-6969
james.clay@sdcounty.ca.gov

From: Apecechea, Laurie
Sent: Saturday, June 23, 2012 7:57 AM
To: 'w.craig@bbcenvironmental.com'
Cc: Clay, James; Sawyer, Tony
Subject: H13190-001 RSF Mobil GW Report

Hi Walt:
Discussed your proposal with the case Hydrogeologist, Tony Sawyer. We are not opposed to the hand installation of the well, however there is an issue that needs to be addressed prior. Can you provide us an explanation how you are going to keep the borehole open during hand augering, and how you are going to prevent near surface soils from falling down into the boring? Thank you for your time,

Laurie Apecechea
County of San Diego
Site Assessment and Mitigation Program
Land and Water Quality Division
(858) 505-6993

From: Walter Craig [mailto:w.craig@bbcenvironmental.com]
Sent: Friday, June 22, 2012 11:00 AM
To: Apecechea, Laurie
Subject: RE: RSF Mobil GW Report

Here you go. –w.

Walter B. Craig, R.E.A.
BBC Environmental, Inc.
3593 Adams Avenue
San Diego, CA 92116
Tel: 619-546-7165
Fax: 619-546-7175

From: Apecechea, Laurie [mailto:Laurie.Apecechea@sdcounty.ca.gov]
Sent: Friday, June 22, 2012 9:50 AM
To: 'w.craig@bbcenvironmental.com'
Subject: RE: RSF Mobil GW Report

Walt:
Do you have a figure you can shoot over with the proposed location so I can review with the Hydro?
(I don't have access to the Monitoring well permit)

Thanks,

Laurie

From: Walter Craig [mailto:w.craig@bbcenvironmental.com]
Sent: Tuesday, June 19, 2012 1:33 PM
To: Apecechea, Laurie
Subject: RSF Mobil GW Report

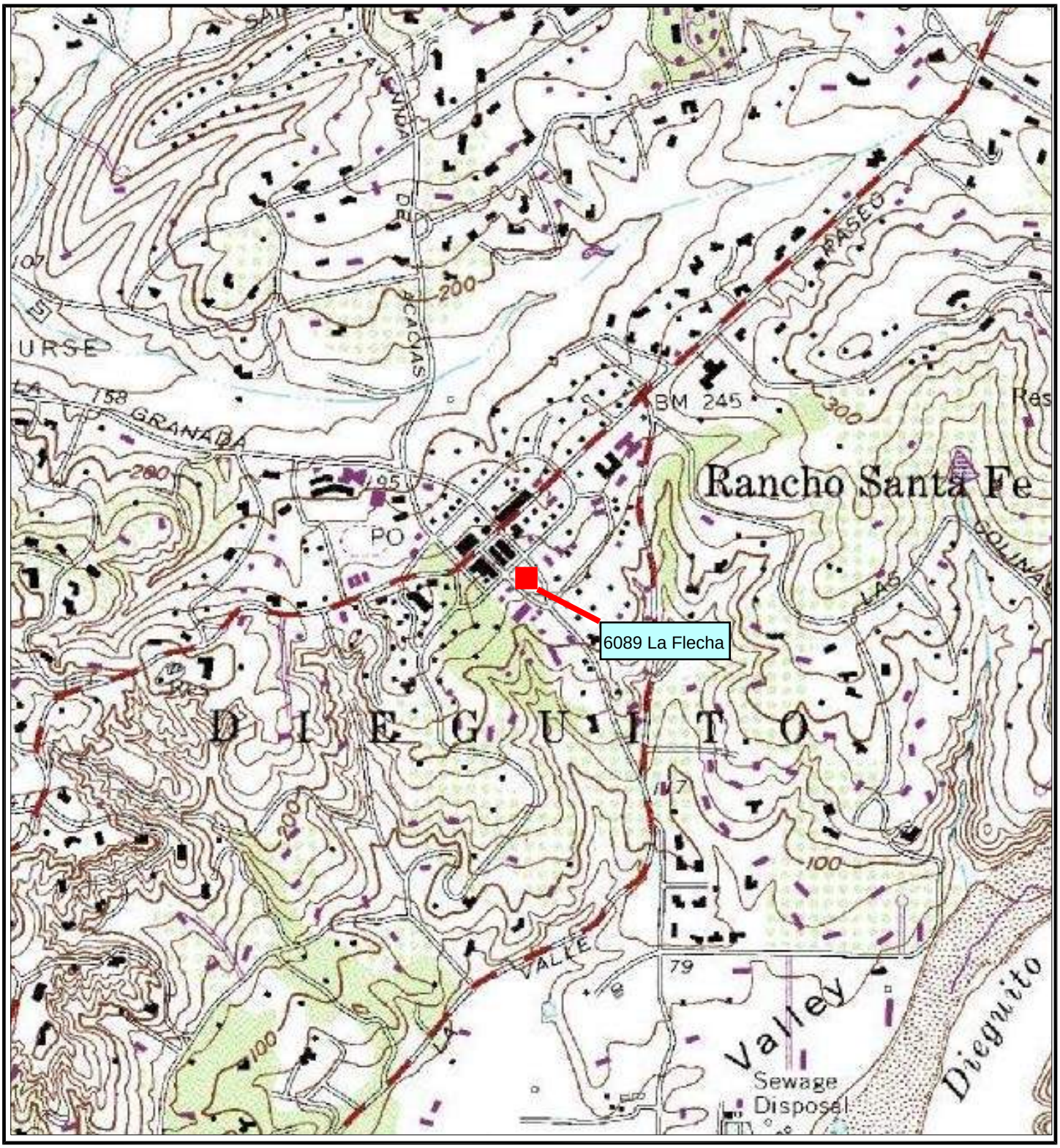
Hi Laurie:

I wanted to let you know that I dropped off the RSF Mobil GW Report for our May 2012 sampling event. This should bring the groundwater data current.

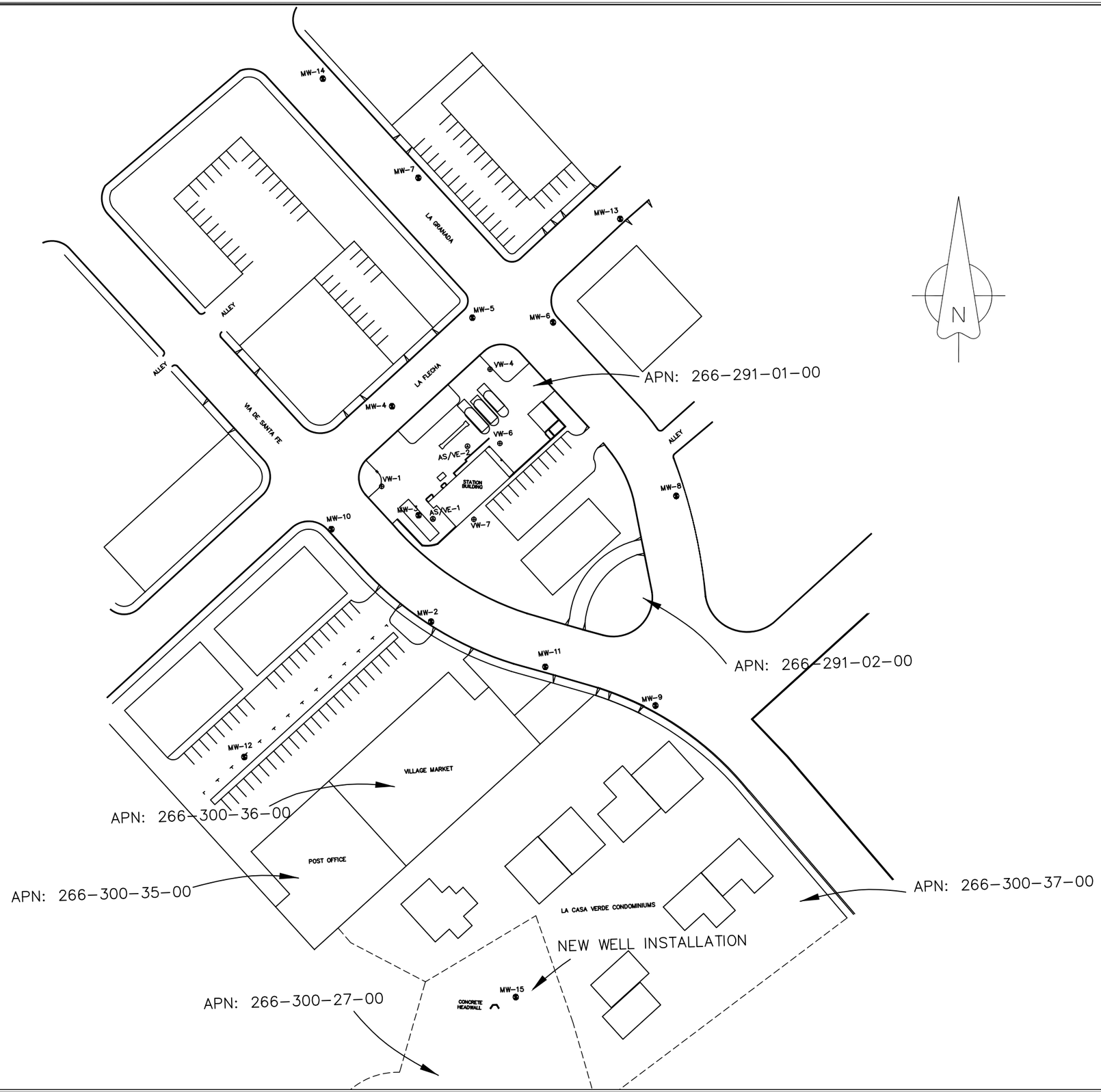
We are still hopeful of installing the downgradient well prior to June 30th so that we can use the current fiscal year budget from the UST Fund. As groundwater is anticipated to be less than 20' below ground surface I'd like to request that we install the well by hand. That would allow us to eliminate the hauling of equipment across any other parcel (i.e. the Casa Verde Condo Complex who has denied our request). The well specifications would be similar, only we would use a 6" hand auger bit as opposed to an 8" hollow-stem. Same drillers license. Same geologist.

Let me know if this is a reasonable request that SAM would consider given the location of the well on a difficult to access, vegetated slope.

Thanks, -w.
Walter B. Craig, R.E.A.
BBC Environmental, Inc.
3593 Adams Avenue
San Diego, CA 92116



LEGEND	SITE VICINITY MAP
REFERENCE: TERRASERVER-USA.COM 01 JULY 1983 COUNTY OF SAN DIEGO RANCHO SANTA FE N 547 0 547 1094 SCALE: 1" = 1,094' (FEET)	RANCHO SANTA FE MOBIL 6089 LA FLECHA RANCHO SANTA FE, CALIFORNIA
	FIGURE No. 1 — PROJECT No: RSF MOBIL
	BBC ENVIRONMENTAL, INC.



LEGEND

- MW-13 GROUNDWATER MONITORING WELL
- MW-1 ABANDONED GROUNDWATER MONITORING WELL
- VW-7 VAPOR WELL (VET)
- DPE-1 DUAL PHASE EXTRACTION WELL (SECOR)
- AS/VE-2 AIR SPARGE/VAPOR EXTRACTION WELL (SECOR)
- SEWER SEWER MANHOLE
- UNDERGROUND STORAGE TANK LOCATION
- FORMER UNDERGROUND STORAGE TANK LOCATION
- CONCRETE HEADWALL
- APN: ASSESSOR PARCEL NUMBER

40 0 40 80
SCALE: 1" = 80' (FEET)

SITE MAP

RANCHO SANTA FE MOBIL
6089 LA FLECHA
RANCHO SANTA FE, CALIFORNIA

FIGURE No. 2	PROJECT No. RSF MOBIL

BBC ENVIRONMENTAL, INC.

Boring Log Summary Report
1/11/2011
Permit # LMON107181

Consultant: BBC Environmental, Inc.

Driller: Hargrave Drilling Company

Rancho Santa Fe Mobil
6089 La Flecha
Rancho Santa Fe, CA 92091

Table 1 - Borehole Completion Depths

Boring Location ID	Depth (ft.)	Installation Date	Backfill (Cubic Feet)		
			Redi -Crete Seal	Bentonite Seal	Monterey #3 Sand
MW-15	12.5	9/18/2012	2.50	0.25	2.0
Total	**12.5**	**9/18/2012**	**2.50**	**0.25**	**2.0**

DRILLING COMPANY: HARGRAVE ENVIRONMENTAL RIG: HAND AUGER INSTALLED DATE: 9/18/12

BORING DIAMETER: 6-INCH DRIVE WEIGHT (S): ---- DROP: --- ELEVATION: 195.42 FT MSL

BORING NO. MW-15

DEPTH (FEET)	PUSH SAMPLE	DRIVE SAMPLE	BLOWS/6 IN.	CHEM. ANALYSIS TPH (ppm)	CHEM. ANALYSIS TRPH (ppm)	LITHOGRAPHIC CLASS	SOIL CLASS (U.S.C.S)	LITHOLOGIC DESCRIPTIONS	VAPOR WELL CONSTRUCTION
0							SC	3-INCHES ROOTS & TOP SOIL. LIGHT BROWN (5 YR 5/6) SANDY SILT, WITH OCCASIONAL 2-3 INCH DIAMETER CHUNKS OF CONCRETE, DAMP, DENSE-VERY DENSE.	TRAFFIC-RATED STEEL WELL COVER AND LOCKING PLUG AT SURFACE.
							CL	~ 6-INCH LAYER GRAYISH GREEN (5 G 5/2) SLIGHTLY SANDY CLAY, DAMP-MOIST, FIRM.	REDI-CRETE AND RAPID-SET MIX SEAL 0-2.0 FEET (2.5 CU FT).
5							SC	GRAYISH GREEN (5 G 5/2) SANDY SILT, DAMP, DENSE-VERY DENSE.	BENTONITE SEAL 2.0-2.5 FEET (0.25 CU FT).
							SC/SM	PALE BLUE GREEN (5 BG 7/2) CLAYEY SANDY SILT, DAMP-MOIST, DENSE-VERY DENSE. BECOMES VERY SANDY BELOW 8 FEET.	MONTEREY #3 SAND 2.5-12.5 FEET (2.0 CU FT).
10							SC	PALE BLUE GREEN (5 BG 7/2) CLAYEY SANDY SILT, DAMP-MOIST, DENSE-VERY DENSE.	WELL CONSTRUCTED OF 2-INCH DIAMETER PVC SCHEDULE 40 CASING. SOLID CASING 0-2.5 FEET. 0.020 IN. SLOTTED CASING 2.5-12.5 FEET. SEDIMENT CAP AT BOTTOM.
15								TOTAL DEPTH 12.5 FEET. GROUNDWATER ENCOUNTERED AT 10 FT DURING DRILLING, AND ROSE TO 8.6 FT AFTER WELL CONSTRUCTED.	CENTRALIZERS AT 2.5 AND 11 FEET BELOW GRADE. WELL DEVELOPED WITH SURGE BLOCK FOR 5 MINUTES DURING WELL CONSTRUCTION, AND ADDITIONAL SURGE & PURGE FOLLOWING WELL COMPLETION.

BORING NO.

DEPTH (FEET)	PUSH SAMPLE	DRIVE SAMPLE	BLOWS/6 IN.	CHEM. ANALYSIS TPH (ppm)	CHEM. ANALYSIS TRPH (ppm)	LITHOGRAPHIC CLASS	SOIL CLASS (U.S.C.S)	LITHOLOGIC DESCRIPTIONS	VAPOR WELL CONSTRUCTION
0									
5									
10									
15									

RANCHO SANTA FE MOBIL

BBC ENVIRONMENTAL BORING LOG

PROJECT NO. LOGGED BY: G.I. SHILLER FIGURE NO.

Associated Laboratories
806 N. Batavia - Orange, CA 92868
Tel (714)771-6900 Fax (714)538-1209
www.associatedlabs.com
Info@associatedlabs.com

ACCREDITED IN ACCORDANCE WITH nelac
04232CA

Client:	BBC Environmental, Inc.	Lab Request:	310904
Address:	3593 Adams Avenue San Diego, CA 92116	Report Date:	09/26/2012
		Date Received:	09/20/2012
Attn:	Walter Craig	Client ID:	9624

Comments: RSF Mobil
6089 La Flecha, Rancho Santa Fe
Global ID: T0607300193

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods. Methods accredited by NELAC are indicated on the report. This cover letter is an integral part of the final report.

Sample #	Client Sample ID
310904-001	MW-15-10.5

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.
Lab Director

NOTE: Unless notified in writing , all samples will be discarded by appropriate disposal protocol 45 days from date reported.

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TESTING & CONSULTING
Chemical
Microbiological
Environmental

Matrix: Solid	**Client:** BBC Environmental, Inc.		
Sampled: 09/18/2012 11:20	**Site:**		
Sample #: 310904-001	**Client Sample #:** MW-15-10.5	**Collector:** Client	

Analyte	Result	DF	RDL	Units	Analyzed	By	Notes
Method: EPA 8015 *NELAC*	**Prep Method:** EPA 3545					**QCBatchID:** QC1129974	
TPH Diesel	ND	1	1	mg/Kg	09/24/12	anca	
TPH Motor Oil	ND	1	5	mg/Kg	09/24/12	anca	

Analyte	% Recovery	Limits	Notes
Triacontane (SUR)	*118*	*60-140*	

Method: EPA 8015 *NELAC*	**Prep Method:** EPA 5035					**QCBatchID:** QC1129926	
TPH Gasoline	ND	1	3	mg/Kg	09/21/12	lyt	

Analyte	% Recovery	Limits	Notes
4-Bromofluorobenzene (SUR)	*85*	*60-140*	

Method: EPA 8260 *NELAC*	**Prep Method:** EPA 5035					**QCBatchID:** QC1129944	
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	09/21/12	nicollez	
1,1,1-Trichloroethane	ND	1	5	ug/Kg	09/21/12	nicollez	
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	09/21/12	nicollez	
1,1,2-Trichloroethane	ND	1	5	ug/Kg	09/21/12	nicollez	
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	09/21/12	nicollez	
1,1-Dichloroethane	ND	1	5	ug/Kg	09/21/12	nicollez	
1,1-Dichloroethene	ND	1	5	ug/Kg	09/21/12	nicollez	
1,1-Dichloropropene	ND	1	5	ug/Kg	09/21/12	nicollez	
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
1,2,3-Trichloropropane	ND	1	5	ug/Kg	09/21/12	nicollez	
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	09/21/12	nicollez	
1,2-Dibromoethane	ND	1	5	ug/Kg	09/21/12	nicollez	
1,2-Dichlorobenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
1,2-Dichloroethane	ND	1	5	ug/Kg	09/21/12	nicollez	
1,2-Dichloropropane	ND	1	5	ug/Kg	09/21/12	nicollez	
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
1,3-Dichlorobenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
1,3-Dichloropropane	ND	1	5	ug/Kg	09/21/12	nicollez	
1,4-Dichlorobenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
2,2-Dichloropropane	ND	1	5	ug/Kg	09/21/12	nicollez	
2-Butanone (MEK)	ND	1	100	ug/Kg	09/21/12	nicollez	
2-Chloroethyl Vinyl Ether	ND	1	5	ug/Kg	09/21/12	nicollez	
2-Chlorotoluene	ND	1	5	ug/Kg	09/21/12	nicollez	
4-Chlorotoluene	ND	1	5	ug/Kg	09/21/12	nicollez	
4-Isopropyltoluene	ND	1	5	ug/Kg	09/21/12	nicollez	
4-Methyl-2-pentanone (MIBK)	ND	1	5	ug/Kg	09/21/12	nicollez	
Acetone	ND	1	100	ug/Kg	09/21/12	nicollez	
Allyl Chloride	ND	1	5	ug/Kg	09/21/12	nicollez	
Benzene	ND	1	5	ug/Kg	09/21/12	nicollez	
Bromobenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
Bromochloromethane	ND	1	5	ug/Kg	09/21/12	nicollez	
Bromodichloromethane	ND	1	5	ug/Kg	09/21/12	nicollez	
Bromoform	ND	1	5	ug/Kg	09/21/12	nicollez	
Bromomethane	ND	1	5	ug/Kg	09/21/12	nicollez	
Carbon Tetrachloride	ND	1	5	ug/Kg	09/21/12	nicollez	
Chlorobenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
Chlorodibromomethane	ND	1	5	ug/Kg	09/21/12	nicollez	
Chloroethane	ND	1	5	ug/Kg	09/21/12	nicollez	

ND = Not Detected or < RDL **RDL = Reporting Detection Limit** **DF = Dilution Factor**

Matrix: Solid	**Client:** BBC Environmental, Inc.		
Sampled: 09/18/2012 11:20	**Site:**		
Sample #: 310904-001	**Client Sample #:** MW-15-10.5	**Collector:** Client	

Analyte	Result	DF	RDL	Units	Analyzed	By	Notes
Chloroform	ND	1	5	ug/Kg	09/21/12	nicollez	
Chloromethane	ND	1	5	ug/Kg	09/21/12	nicollez	
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	09/21/12	nicollez	
cis-1,3-dichloropropene	ND	1	5	ug/Kg	09/21/12	nicollez	
cis-1,4-dichloro-2-butene	ND	1	5	ug/Kg	09/21/12	nicollez	
Dibromomethane	ND	1	5	ug/Kg	09/21/12	nicollez	
Dichlorodifluoromethane	ND	1	5	ug/Kg	09/21/12	nicollez	
Di-isopropyl ether (DIPE)	ND	1	5	ug/Kg	09/21/12	nicollez	
Ethylbenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
Ethyl-tertbutylether (ETBE)	ND	1	5	ug/Kg	09/21/12	nicollez	
Hexachlorobutadiene	ND	1	5	ug/Kg	09/21/12	nicollez	
Isopropylbenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
m and p-Xylene	ND	1	5	ug/Kg	09/21/12	nicollez	
Methylene chloride	ND	1	5	ug/Kg	09/21/12	nicollez	
Methyl-t-butyl Ether (MTBE)	**6.7**	1	5	ug/Kg	09/21/12	nicollez	
Naphthalene	ND	1	5	ug/Kg	09/21/12	nicollez	
N-butylbenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
N-propylbenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
o-Xylene	ND	1	5	ug/Kg	09/21/12	nicollez	
Sec-butylbenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
Styrene	ND	1	5	ug/Kg	09/21/12	nicollez	
t-Butyl alcohol (TBA)	ND	1	10	ug/Kg	09/21/12	nicollez	
Tert-amylmethylether (TAME)	ND	1	5	ug/Kg	09/21/12	nicollez	
Tert-butylbenzene	ND	1	5	ug/Kg	09/21/12	nicollez	
Tetrachloroethene	ND	1	5	ug/Kg	09/21/12	nicollez	
Toluene	ND	1	5	ug/Kg	09/21/12	nicollez	
trans-1,2-dichloroethene	ND	1	5	ug/Kg	09/21/12	nicollez	
trans-1,3-dichloropropene	ND	1	5	ug/Kg	09/21/12	nicollez	
trans-1,4-dichloro-2-butene	ND	1	5	ug/Kg	09/21/12	nicollez	
Trichloroethene	ND	1	5	ug/Kg	09/21/12	nicollez	
Trichlorofluoromethane	ND	1	5	ug/Kg	09/21/12	nicollez	
Vinyl Chloride	ND	1	5	ug/Kg	09/21/12	nicollez	
Xylenes (Total)	ND	1	5	ug/Kg	09/21/12	nicollez	

Analyte	% Recovery	Limits	Notes
1,2-Dichloroethane-d4 (SUR)	*115*	*70-145*	
4-Bromofluorobenzene (SUR)	*98*	*70-145*	
Dibromodifluoromethane (SUR)	*100*	*70-145*	
Toluene-d8 (SUR)	*102*	*70-145*	

ND = Not Detected or < RDL **RDL = Reporting Detection Limit** **DF = Dilution Factor**

ASSOCIATED LABORATORIES QC SUMMARY FOR LAB REQUEST #310904

QCBatchID: QC1129926	**Analyst:** lytagas	**Method:** EPA 8015B
Matrix: Solid	**Analyzed:** 09/21/2012	**Instrument:** VOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1129926MB1					
TPH Gasoline	ND	mg/Kg		3	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1129926LCS1											
TPH Gasoline	5		5.71		mg/Kg	114			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1129926MS1, QC1129926MSD1												**Source: 310904-001**
TPH Gasoline	ND	5	5	5.58	5.63	mg/Kg	112	113	0.9	70-130	20	

ND = Not Detected or < RDL **MDL = Method Detection Limit** **RDL = Reporting Detection Limit** **DF = Dilution Factor**

ASSOCIATED LABORATORIES QC SUMMARY FOR LAB REQUEST #310904

QCBatchID: QC1129944	**Analyst:** nicollez	**Method:** EPA 8260B
Matrix: Solid	**Analyzed:** 09/20/2012	**Instrument:** VOA-MS (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1129944MB1					
1,1,1,2-Tetrachloroethane	ND	ug/Kg		5	
1,1,1-Trichloroethane	ND	ug/Kg		5	
1,1,2,2-Tetrachloroethane	ND	ug/Kg		5	
1,1,2-Trichloroethane	ND	ug/Kg		5	
1,1,2-Trichlorotrifluoroethane	ND	ug/Kg		5	
1,1-Dichloroethane	ND	ug/Kg		5	
1,1-Dichloroethene	ND	ug/Kg		5	
1,1-Dichloropropene	ND	ug/Kg		5	
1,2,3-Trichlorobenzene	ND	ug/Kg		5	
1,2,3-Trichloropropane	ND	ug/Kg		5	
1,2,4-Trichlorobenzene	ND	ug/Kg		5	
1,2,4-Trimethylbenzene	ND	ug/Kg		5	
1,2-Dibromo-3-chloropropane	ND	ug/Kg		5	
1,2-Dibromoethane	ND	ug/Kg		5	
1,2-Dichlorobenzene	ND	ug/Kg		5	
1,2-Dichloroethane	ND	ug/Kg		5	
1,2-Dichloropropane	ND	ug/Kg		5	
1,3,5-Trimethylbenzene	ND	ug/Kg		5	
1,3-Dichlorobenzene	ND	ug/Kg		5	
1,3-Dichloropropane	ND	ug/Kg		5	
1,4-Dichlorobenzene	ND	ug/Kg		5	
2,2-Dichloropropane	ND	ug/Kg		5	
2-Butanone (MEK)	ND	ug/Kg		100	
2-Chloroethyl Vinyl Ether	ND	ug/Kg		5	
2-Chlorotoluene	ND	ug/Kg		5	
4-Chlorotoluene	ND	ug/Kg		5	
4-Isopropyltoluene	ND	ug/Kg		5	
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg		5	
Acetone	ND	ug/Kg		100	
Allyl Chloride	ND	ug/Kg		5	
Benzene	ND	ug/Kg		5	
Bromobenzene	ND	ug/Kg		5	
Bromochloromethane	ND	ug/Kg		5	
Bromodichloromethane	ND	ug/Kg		5	
Bromoform	ND	ug/Kg		5	
Bromomethane	ND	ug/Kg		5	
Carbon Tetrachloride	ND	ug/Kg		5	
Chlorobenzene	ND	ug/Kg		5	
Chlorodibromomethane	ND	ug/Kg		5	
Chloroethane	ND	ug/Kg		5	
Chloroform	ND	ug/Kg		5	
Chloromethane	ND	ug/Kg		5	
cis-1,2-Dichloroethene	ND	ug/Kg		5	
cis-1,3-dichloropropene	ND	ug/Kg		5	
cis-1,4-dichloro-2-butene	ND	ug/Kg		5	
Dibromomethane	ND	ug/Kg		5	

ND = Not Detected or < RDL **MDL = Method Detection Limit** **RDL = Reporting Detection Limit** **DF = Dilution Factor**

ASSOCIATED LABORATORIES QC SUMMARY FOR LAB REQUEST #310904

QCBatchID: QC1129944	**Analyst:** nicollez		**Method:** EPA 8260B		
Matrix: Solid	**Analyzed:** 09/20/2012		**Instrument:** VOA-MS (group)		

Analyte	Blank Result	Units		RDL	Notes	
QC1129944MB1						
Dichlorodifluoromethane	ND	ug/Kg		5		
Di-isopropyl ether (DIPE)	ND	ug/Kg		5		
Ethylbenzene	ND	ug/Kg		5		
Ethyl-tertbutylether (ETBE)	ND	ug/Kg		5		
Hexachlorobutadiene	ND	ug/Kg		5		
Isopropylbenzene	ND	ug/Kg		5		
m and p-Xylene	ND	ug/Kg		5		
Methylene chloride	ND	ug/Kg		5		
Methyl-t-butyl Ether (MTBE)	ND	ug/Kg		5		
Naphthalene	ND	ug/Kg		5		
N-butylbenzene	ND	ug/Kg		5		
N-propylbenzene	ND	ug/Kg		5		
o-Xylene	ND	ug/Kg		5		
Sec-butylbenzene	ND	ug/Kg		5		
Styrene	ND	ug/Kg		5		
t-Butyl alcohol (TBA)	ND	ug/Kg		10		
Tert-amylmethylether (TAME)	ND	ug/Kg		5		
Tert-butylbenzene	ND	ug/Kg		5		
Tetrachloroethene	ND	ug/Kg		5		
Toluene	ND	ug/Kg		5		
trans-1,2-dichloroethene	ND	ug/Kg		5		
trans-1,3-dichloropropene	ND	ug/Kg		5		
trans-1,4-dichloro-2-butene	ND	ug/Kg		5		
Trichloroethene	ND	ug/Kg		5		
Trichlorofluoromethane	ND	ug/Kg		5		
Vinyl Chloride	ND	ug/Kg		5		
Xylenes (Total)	ND	ug/Kg		5		

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1129944LCS1											
1,1-Dichloroethene	50		54		ug/Kg	108			59-172		
Benzene	50		50		ug/Kg	100			62-137		
Chlorobenzene	50		53		ug/Kg	106			60-133		
Methyl-t-butyl Ether (MTBE)	50		49		ug/Kg	98			62-137		
Toluene	50		52		ug/Kg	104			59-139		
Trichloroethene	50		53		ug/Kg	106			66-142		

ND = Not Detected or < RDL **MDL = Method Detection Limit** **RDL = Reporting Detection Limit** **DF = Dilution Factor**

ASSOCIATED LABORATORIES QC SUMMARY FOR LAB REQUEST #310904

QCBatchID:	QC1129944	**Analyst:**	nicollez	**Method:**	EPA 8260B
Matrix:	Solid	**Analyzed:**	09/20/2012	**Instrument:**	VOA-MS (group)

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1129944MS1, QC1129944MSD1											**Source: 310843-011**	
1,1-Dichloroethene	ND	50	50	46	47	ug/Kg	92	94	2.2	59-172	22	
Benzene	ND	50	50	52	53	ug/Kg	104	106	1.9	62-137	24	
Chlorobenzene	ND	50	50	55	52	ug/Kg	110	104	5.6	60-133	24	
Methyl-t-butyl Ether (MTBE)	ND	50	50	51	50	ug/Kg	102	100	2.0	62-137	21	
Toluene	ND	50	50	56	54	ug/Kg	112	108	3.6	59-139	21	
Trichloroethene	ND	50	50	54	51	ug/Kg	108	102	5.7	66-142	21	

ND = Not Detected or < RDL **MDL = Method Detection Limit** **RDL = Reporting Detection Limit** **DF = Dilution Factor**

ASSOCIATED LABORATORIES QC SUMMARY FOR LAB REQUEST #310904

QCBatchID:	QC1129974	**Analyst:**	anca	**Method:**	EPA 8015B
Matrix:	Solid	**Analyzed:**	09/21/2012	**Instrument:**	SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1129974MB1					
TPH (>C32)	ND	mg/Kg		5	
TPH (C10 to C22)	ND	mg/Kg		3	
TPH (C13 to C22)	ND	mg/Kg		3	
TPH (C22 to C36)	ND	mg/Kg		5	
TPH (C23 to C32)	ND	mg/Kg		5	
TPH (C6 to C10)	ND	mg/Kg		3	
TPH Diesel	ND	mg/Kg		1	
TPH Motor Oil	ND	mg/Kg		5	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
	LCS	LCSD	LCS	LCSD		LCS	LCSD		%Rec	RPD	
QC1129974LCS1, QC1129974LCSD1											
TPH Diesel	25	25	23.4	22.6	mg/Kg	94	90	3	70-130	30	

ND = Not Detected or < RDL **MDL = Method Detection Limit** **RDL = Reporting Detection Limit** **DF = Dilution Factor**

Notes and Defintions

B	Analyte was present in an associated method blank. Associated sample data was reported with qualifier.
C	Laboratory Contamination.
D	The sample duplicate RPD was not within control limits, the sample data was reported without further clarification.
DF	Dilution Factor
DW	Sample result is calculated on a dry weigh basis
J	Reported value is estimated
L	The laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was out of control limits. Associated sample data was reported with qualifier.
M	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits due to matrix interference. The associated LCS and/or LCSD was within control limits and the sample data was reported without further clarification.
MDL	Method Detection Limit
NC	The analyte concentration in the sample exceeded the spike level by a factor of four or greater, spike recovery and limits do not apply.
ND	Analyte was not detected or was less than the detection limit.
P	Sample was received without proper preservation according to EPA guidelines.
RDL	Reporting Detection Limit
S	The surrogate recovery was out of control limits due to matrix interference. The associated method blank surrogate recovery was within control limits and the sample data was reported without further clarification.
T	Sample was extracted/analyzed past the holding time.

ASSOCIATED LABORATORIES
806 North Batavia ▪ Orange, CA 92868
Phone: (714) 771-6900 ▪ Fax: (714) 538-1209

Chain of Custody Record

Lab Job No. 310904
Page 1 of 1

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: BBC ENVIRONMENTAL	PROJECT NAME: RSF Mobil
SEND REPORT TO: W. CRAIG	NUMBER:
EMAIL: on file	ADDRESS: 6089 La FLECHA
ADDRESS: 3593 ADAMS AVE	Rancho Santa Fe, CA
SAN DIEGO, CA	P.O. #:
PHONE: 619 546 7165 92116	SAMPLED BY: WBC

REQUIRED TURN AROUND TIME: Standard: (X)
72 Hours: ____ 48 Hours: ____ 24 Hours: ____

	Sample ID	Date	Time	Matrix	Container Number/Size	Pres.	TPH-G 8015	TPH-D,MO 8015	VOC 8260	Test Instructions & Comments
1	MW-15-10.5	9-18-12	1120	S	1-BRASS	NONE	X	X	X	USE COUNTY of SD REPORTING LIMITS
2										
3										
4										
5										
6										NEED EDF FOR GEOTRACKER
7										ID = T0607300193
8										
9										
10										
11										
12										
13										
14										
15										

Total No. of Samples: 1 Method of Shipment: Preservative: 1= Ice 2 =HCl 3 =HNO_3 4 =H_2SO_4 5 =NaOH 6 =Other

Relinquished by 1.	Received By: 1.	Relinquished by 2.	Received By: 2.	Relinquished by 3.	Received By: 3.
Signature:	Signature:	Signature:	Signature:	Signature:	Signature:
Printed Name: W. B. CRAIG	Printed Name: Alex Lopez	Printed Name: Alex Lopez	Printed Name:	Printed Name:	Printed Name:
Date: 9-20-12 Time: 12:10	Date: 9-20-12 Time: 12:10	Date: 9-20-12 Time: 15:10	Date: 9/20/12 Time: 15:15	Date: Time:	Date: Time:

Distribution: White - Laboratory Canary - Laboratory Pink - Project/Account Manager Goldenrod - Sampler/Originator

ASSOCIATED LABORATORIES
806 North Batavia – Orange, California 92868 – 714-771-6900 *FAX 714-538-1209*

SAMPLE ACCEPTANCE CHECKLIST

Section 1
Client: BBC Enviro-
Project: RSF Mobil
Date Received: 9/20/12
Sampler's Name: Yes No
Sample(s) received in cooler: Yes No (Skip Section 2)
Shipping Information: _____

Section 2
Was the cooler packed with: ✓ Ice ___ Ice Packs ___ Bubble Wrap ___ Styrofoam ___ Paper ___ None ___ Other _____
Cooler or box temperature: 0 °C

(Acceptance range is 0 to 6 Deg. C.)

Section 3	YES	NO	N/A
Was a COC received?	X		
Is it properly completed? (IDs, sampling date and time, signature, test)	X		
Were custody seals present?		X	
If Yes – were they intact?			X
Were all samples sealed in plastic bags?	X		
Did all samples arrive intact? If no, indicate below.	X		
Did all bottle labels agree with COC? (ID, dates and times)	X		
Were correct containers used for the tests required?	X		
Was a sufficient amount of sample sent for tests indicated?	X		
Was there headspace in VOA vials?			X
Were the containers labeled with correct preservatives?			X
Was total residual chlorine measured (Fish Bioassay samples only)? *			X

*: If the answer is no, please inform Fish Bioassay Dept. immediately.

Section 4
Explanations/Comments

Section 5
Was Project Manager notified of discrepancies: Y / N N/A

Completed By: Jewel Zaio Date: 9/20/12

Created on 7/6/2012 1:29:00 PM

HETHERINGTON ENGINEERING, INC.
SOIL & FOUNDATION ENGINEERING • ENGINEERING GEOLOGY • HYDROGEOLOGY

RECEIVED
2005 SEP 6 AM 10 28
MAILROOM

September 1, 2005
Project No. 5120.1
Log No. 9484

County of San Diego
Department of Environmental Health
P.O. Box 129261
San Diego, CA 92112-9261

Attention: Monitoring Well Permit Desk
Site Assessment and Mitigation Program

Subject: GEOTECHNICAL BORINGS
6224 Los Naranjos Court
Rancho Santa Fe, California
Permit No. LMON103244

To Whom It May Concern:

We are submitting this letter in accordance with the requirements of the County of San Diego Department of Environmental Health, SAM Manual for the drilling and abandonment of geotechnical borings. One boring was drilled on July 11, 2005 utilizing a truck-mounted hollow-stem auger drill rig and two borings were drilled on July 19, 2005 utilizing a limited access solid flight auger drill rig for soil sampling related to a geotechnical investigation of the subject site. Soil samples were tested for moisture content and density and other pertinent geotechnical parameters. Following the completion of drilling, the borings were backfilled with bentonite slurry and capped with concrete.

The locations of the borings are shown on the attached. Plot Plan, Figure 1. Detailed boring logs describing the soils encountered, as well as the results of pertinent laboratory testing are shown in the attached Figures 2 through 4.

5205 Avenida Encinas, Suite A • Carlsbad, CA 92008-4369 • (760) 931-1917 • Fax (760) 931-0545
32242 Paseo Adelanto, Suite C • San Juan Capistrano, CA 92675-3610 • (949) 487-9060 • Fax (949) 487-9116
www.hetheringtonengineering.com

If you should have any questions, please contact the Carlsbad office.

Sincerely,
HETHERINGTON ENGINEERING, INC.

Jason S. Geldert
Civil Engineer 63912
(expires 9/30/06)

Mark D. Hetherington
Registered Civil Engineer 30488
Geotechnical Engineer 397
(expires 3/31/06)

Attachments: Plot Plan, Figure 1
Boring Logs, Figures 2 through 4

ADAPTED FROM: REDI (c) SANDAG/SanGIS 2005 (http://cart.sandag.org/redi)

LEGEND

APPROXIMATE LOCATION OF GEOTECHNICAL BORING

N

SCALE: 1" - 80'

PLOT PLAN

HETHERINGTON ENGINEERING, INC.
GEOTECHNICAL CONSULTANTS

APN 2690200800
6224 Los Naranjas Court, San Diego, California

PROJECT NO. 5120.1 | FIGURE NO. 1

DRILLING COMPANY: **F & C Drilling** RIG: **Mobil Drill B-61** DATE: **07/11/05**

BORING DIAMETER: **8-inch** DRIVE WEIGHT: **140 #** DROP: **30"** ELEVATION: ' ±

BORING NO. B-1

DEPTH (FEET)	BULK SAMPLE	DRIVE SAMPLE	BLOWS/FOOT	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
0.0	X						**CONCRETE SLAB**
			37 50/6"	110	10.7		**BEDROCK (Delmar Formation):** Light red brown silty to clayey fine to medium grained sandstone with small pockets of dark brown to gray clay, damp, dense, abundant roots
5.0	X		30 50/5"	119	12.9		@ 5': Red brown to olive clayey fine grained sandstone, damp, dense to very dense
			30 50/6"	119	8.1		@ 8': Medium red brown pebbly silty fine to medium grained sandstone, damp, dense, friable
10.0			36 50/6"	105	10.7		@ 10': Medium red brown pebbly silty fine to medium grained sandstone, damp, dense, friable; grades to dark olive, micaceous siltstone, damp, stiff
15.0	X		64	100	20.9		@ 15': Gray brown micaceous siltstone, damp, stiff, well developed bedding, 15 degree dip; grades to dark brown pebbly silty fine grained sandstone, moist, dense
20.0			44	119	9.4		@ 20': Light red brown pebbly to gravelly medium to coarse grained sandstone with thin lenses of gray siltstone, damp, dense
25.0							Total depth 22 feet No water or caving Backfilled with bentonite slurry: Volume of concrete cap: 1.05 cubic feet Volume of bentonite slurry: 6.63 cubic feet
30.0							

BORING LOG

HETHERINGTON ENGINEERING, INC.
GEOTECHNICAL CONSULTANTS

6224 Los Naranjos Court
Rancho Santa Fe, California

PROJECT NO. **5120.1** FIGURE NO. **2**

DRILLING COMPANY: **Pacific Drilling** RIG: **Mole Rig** DATE: **07/19/05**

BORING DIAMETER: **6.5-inch** DRIVE WEIGHT: **140 #** DROP: **30"** ELEVATION: ' ±

BORING NO. B-2

DEPTH (FEET)	BULK SAMPLE	DRIVE SAMPLE	BLOWS/FOOT	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
0.0						ML SM	**FILL:** Mottled orange and brown silty fine grained pebbly sand, dense, damp, with abundant rootlets; grades to dark brown silty fine grained sand, damp, dense
			31				
			7				@ 4': Dark red brown clayey silt, damp, medium dense, layered with light orange brown silty fine grained sand, few root hairs, damp, medium stiff
5.0							
			16			CL	@ 6': Dark brown to dark gray silty clay, moist, medium stiff, odiferous, few rootlets
			10			ML	@ 8': Dark brown to dark red brown silt, damp, medium stiff, slight porosity, roots to 1/8 inch in diameter
10.0			32				**BEDROCK (Delmar Formation):** Olive brown micaceous siltstone, damp, stiff, interbedded with light red brown micaceous siltstone, damp, stiff
			22				@ 12': Light orange brown medium to coarse grained sandstone, moist, dense, with dark orange pockets of oxidation, interbedded with dark brown micaceous siltstone, damp, medium dense
			37				@ 14': Light gray brown micaceous siltstone to fine grained sandstone, damp, stiff/dense
15.0							
			21				@ 16': Light orange brown to gray medium to coarse grained sandstone, moist, dense, friable, interbedded with dark brown micaceous siltstone, damp, medium dense
			32				@ 18': Gray brown micaceous siltstone, moist, stiff, interbedded with orange to red orange fine to medium grained silty sandstone, moist, dense, with thin lenses of olive to white siltstone/fine grained sandstone
20.0							
25.0							
30.0							

Total depth 19.5 feet
Slight seepage at 12 feet. No caving
Backfilled with bentonite slurry:
Volume of concrete cap: 0.7 cubic feet
Volume of bentonite slurry: 3.8 cubic feet

BORING LOG

HETHERINGTON ENGINEERING, INC.
GEOTECHNICAL CONSULTANTS

6224 Los Naranjos Court
Rancho Santa Fe, California

PROJECT NO. **5120.1** FIGURE NO. **3**

DRILLING COMPANY: **Pacific Drilling** RIG: **Mole Rig** DATE: **07/19/05**

BORING DIAMETER: **6.5-inch** DRIVE WEIGHT: **140 #** DROP: **30"** ELEVATION: ' ±

BORING NO. B-3

DEPTH (FEET)	BULK SAMPLE	DRIVE SAMPLE	BLOWS/FOOT	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
0.0						SP	**FILL:** Dark red brown pebbly medium to coarse grained sand, damp, dense, abundant rootlets
5.0							@ 5': Dark red brown to light orange brown, gravelly medium to coarse grained sand, damp, medium dense, abundant roots, slight porosity
						SM	@ 8': Layered dark brown, light brown and red silty fine grained sand, damp, with buff to white fine grained sand, damp, dense
10.0							***BEDROCK (Delmar Formation):*** Gray brown micaceous siltstone, damp, stiff, grades to buff siltstone to fine grained sandstone, damp, stiff/dense with thin laminations of olive gray siltstone/claystone
15.0							@ 14': Dark gray brown micaceous siltstone, damp, medium stiff to stiff, massive
							@ 18': Light red brown pebbly medium to coarse grained sandstone, damp, dense to very dense, few gravels to one inch in diameter
20.0							Total depth 19.5 feet Slight seepage at 14 feet. No caving Backfilled with bentonite slurry: Volume of concrete cap: 0.70 cubic feet Volume of bentonite slurry: 3.8 cubic feet
25.0							
30.0							

BORING LOG

HETHERINGTON ENGINEERING, INC.
GEOTECHNICAL CONSULTANTS

6224 Los Naranjos Court
Rancho Santa Fe, California

PROJECT NO. **5120.1** FIGURE NO. **4**

SHEPARDSON
ENGINEERING ASSOCIATES INC.

Geotechnical Consultants:
Engineers-Geologists

10035 Prospect Ave., Suite 101
Santee, CA 92071-4398
619 / 449-9830 FAX 619 / 449-5824
email@shepardson.com

RECEIVED
2005 OCT 24 AM 11 15
MAILROOM

September 14, 2005

S.E.A. 201165-02

Monitoring Well Permit Desk
Site Assessment and Mitigation Program
County of San Diego Dept. of Environmental Health
P.O. Box 129261
San Diego, CA 92112-9261

ATTENTION: Veronica Tavizon

SUBJECT: Boring Completion Report
Permit #LMON103305

Dear Ms. Tavizon:

Please find attached the Boring Log and the Site Plan for completed boring performed under Permit No. LMON103305. The test boring was drilled to a total depth of 86 ½ ft. The boring was backfilled with a bentonite cement grout to within approximately 3 feet of the parking lot surface, where cement was then used to the top of the existing asphalt pavement. A total volume of 37 cubic ft. of grout and approximately 1 ½ cubic ft. of cement was used for the backfill.

If there are any questions regarding the information in this letter, please do not hesitate to contact the undersigned.

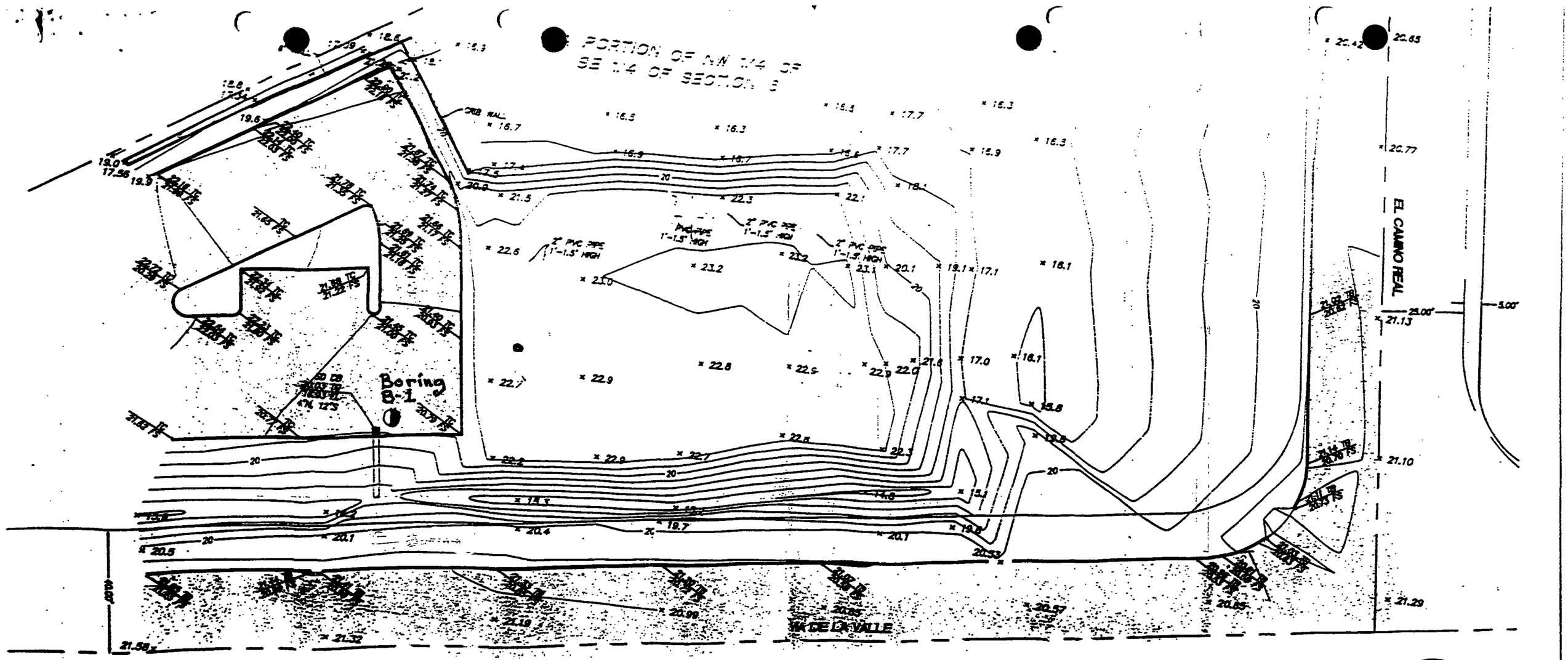
Respectfully submitted,

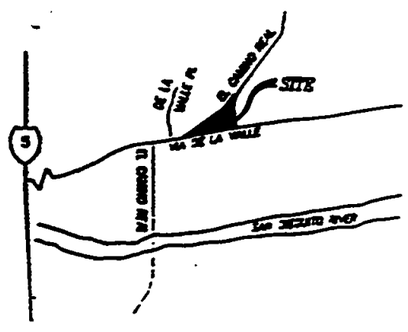
SHEPARDSON ENGINEERING ASSOCIATES, INC.

Kendall L. Sherrod
Registered Geologist No. 3263
Vice President

cc: (1) Addressee

Enclosures: Boring log
Site Plan





VICINITY MAP

NO SCALE

LEGEND

	ASPHALT PAVING
	CENTERLINE
FS	FINISH SURFACE
	PROPERTY LINE
SD CB	STORM DRAIN CATCH BASIN
TB	TOP OF BERM
TC	TOP OF CURB

= BORING LOCATION

NORTH

Scale: 1" = 30'

Base map reproduced from Topographic Survey prepared by Nasland Engineering and dated 11/26/2001 APN 302-090-28-00

SHEPARDSON ENGINEERING ASSOCIATES INC.

Geotechnical Consultants: Engineers-Geologists

Job Number: 201165-01	Date: December, 2001	Plate
SITE PLAN Gatlin Plaza Via De La Valle San Diego, California		A1

LOG OF TEST BORING NO. B- 1

Drilling Date(s): 8/18/05 Drilling Equipment: CME 55 Surface Elevation: ~22'

Logged By: KLS Method/Hole Size: HOLLOW STEM/8" Bottom Elevation: ~-65'

Depth (feet)	Sample Type	Blow Count (/foot)	Dry Density (pcf)	Moisture Content (%)	Lab Tests	USCS	Graphic Log	MATERIAL DESCRIPTION
								3" ASPHALT over 6" class 2 BASE
2, 4, 6	P	13				SM		**FILL:** silty sand with large rocks or concrete, medium dense, moist, olive gray to olive gray mottled orange. Met refusal at two locations before successfully penetrating the strata. Refusals were at -3.5 ft. and -4 feet.
8, 10, 12, 14, 16, 18, 20, 22, 24	P	3			SA	ML		**Alluvium:** micaceous silt, soft, wet, dark olive gray. Becomes saturated at -10 ft.
16	P	5						
20	P	5						
26, 28	P	5				ML		**LAGOONAL DEPOSITS:** silt, soft, saturated, charcoal to light olive gray.
30, 32	P	5			SA	SC-CL		**LAGOONAL DEPOSITS:** clayay sand-sandy clay, soft, saturated, dark gray.
34, 36, 38, 42, 44	P	43				SM		**LAGOONAL DEPOSITS** fine sand, dense, saturated, dark gray.
40	P	65						

Remarks:

Please refer to symbols and note limitations shown on "Explanation of Logs"

SHEPARDSON ENGINEERING ASSOCIATES INC.

Geotechnical Consultants: Engineers-Geologists

Date: September, 2005 | Project No.: 201165-02

Log of Test Boring No. B- 1

Villa Paraiso

Plate **C2** 1 of 2

BL1 05

LOG OF TEST BORING NO. B- 1

Drilling Date(s): 8/18/05 Drilling Equipment: CME 55 Surface Elevation: ~22'

Logged By: KLS Method/Hole Size: HOLLOW STEM/8" Bottom Elevation: ~-65'

Depth (feet)	Sample Type	Blow Count (/foot)	Dry Density (pcf)	Moisture Content (%)	Lab Tests	USCS	Graphic Log	MATERIAL DESCRIPTION
46	P	30						Becomes olive gray ,silty sand at 45 ft.
48								
50	P	37						
52								
54								
56	P	13						
58								
60	P	15						Becomes micaceous, fine grained sand-silt at -60 ft.
62								
64								
66	P	11			SA			Becomes micaceous, clayey silty sand at -65 ft.
68								
70	P	30						
72								
74								
76	P	15						Becomes silty sand at -75 ft.
78								
80	P	39						
82								
84								
86	P	40						
88								Bottom of boring at -86.5 ft.

Remarks:

Please refer to symbols and note limitations shown on "Explanation of Logs"

SHEPARDSON ENGINEERING ASSOCIATES INC.

Geotechnical Consultants: Engineers-Geologists

Date: September, 2005 | Project No.: 201165-02

Log of Test Boring No. B- 1

Villa Paraiso

Plate **C2** 2 of 2

BL.1.05

LMON104443

CHRISTIAN WHEELER
ENGINEERING

RECEIVED
MAR 02 2007
ENVIRONMENTAL HEALTH

February 28, 2007

County of San Diego
Department of Environmental Health
P.O. Box 129261
San Diego, California 92112-9261

APN: 304-021-10

LMON104443

SUBJECT: **60-DAY REPORT OF GEOTECHNICAL INVESTIGATION, PROPOSED CAVALLO FARMS PROJECT, 13985 OLD EL CAMINO REAL, SAN DIEGO, CALIFORNIA.**

To Whom It May Concern:

This letter is to confirm the excavation and backfill of three, 8-inch diameter hollow stem auger borings at the subject site. The borings were drilled to varying depths up to 40 feet below the existing site grades. Upon completion the excavations were backfilled entirely with a bentonite grout mix. The volume of backfill material is noted at the bottom of each boring log. Groundwater was encountered in two of the borings at a depth of 23 and 26.5 feet below existing site grades. Attached is a site map with the boring locations.

Respectfully submitted,
CHRISTIAN WHEELER ENGINEERING

Troy Wilson, RG #8000

4925 Mercury Street Φ San Diego, CA 92111 Φ 858-496-9760 Φ FAX 858-496-9758

CAVALLO FARMS PROJECT
13985 OLD EL CAMINO REAL, SAN DIEGO
LMON104443

+ Boring Locations

LOG OF TEST BORING NUMBER B-1

Date Excavated:	11/30/2006	Logged by:	DF
Equipment:	CME-55	Project Manager:	CHC
Existing Elevation:	42'	Depth to Water:	N/A
Finish Elevation:	N/A	Drive Weight:	140 lbs. @ 30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
2		**Artificial Fill (Qaf):** Light brown, damp, medium dense, SILTY SAND (SM), very coarse to coarse-grained, with trace gravels.	Cal		45	11.2	115.4	
4 6		Dark grayish-brown to medium brown, moist, medium dense, CLAYEY SAND (SC), very fine to coarse-grained, with gravels.	Cal		31	8.1	112.8	EI
8 10		**Alluvium (Qal):** Medium brown, moist, medium dense, SILTY SAND/CLAYEY SAND (SM/SC), very fine to coarse-grained, mottled.	Cal		21	7.9	107.5	
12 14		Light brown, moist, medium dense, SILTY SAND (SM), very fine to medium-grained, with trace clay and gravels.						
16 18		Light to medium brown, moist, medium dense, SILTY SAND/ CLAYEY SAND (SM/SC), very fine to coarse-grained, with trace black organic pieces and very fine to coarse interbedded silty sands and clayey sands. Contact at 17½ feet.	Cal		33	18.5	98.3	
20		Light brown, moist, medium dense, POORLY GRADED SAND-SILTY SAND (SP-SM), very fine to coarse-grained, with orangish iron staining.	Cal		29			

Test boring continued on Plate No. 5

CHRISTIAN WHEELER ENGINEERING

PROPOSED CAVALLO FARMS PROJECT

13985 Old El Camino Real, San Diego, California

BY:	MW	DATE:	January 2007
JOB NO. :	2051196	PLATE NO.:	4

LOG OF TEST BORING NUMBER B-1 Continued

Date Excavated:	11/30/2006	Logged by:	DF
Equipment:	CME-55	Project Manager:	CHC
Existing Elevation:	42'	Depth to Water:	N/A
Finish Elevation:	N/A	Drive Weight:	140 lbs. @ 30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
22		**Alluvium (Qal):** Light brown, moist, medium dense, POORLY GRADED SAND-SILTY SAND (SP-SM), very fine to coarse-grained, with orangish iron staining.						
24		At 23½ feet becomes very moist. At 24 feet becomes dense.	Cal		56			
26		Test boring terminated at 25 feet. No groundwater or seepage. Boring properly backfilled with ± 9 cubic feet of bentonite grout mix.						
28								
30								
32								
34								
36								
38								
40								

CHRISTIAN WHEELER
ENGINEERING

PROPOSED CAVALLO FARMS PROJECT
13985 Old El Camino Real, San Diego, California

BY:	MW	DATE:	January 2007
JOB NO. :	2051196	PLATE NO.:	5

LOG OF TEST BORING NUMBER B-5

Date Excavated:	11/30/2006	Logged by:	DF
Equipment:	CME-55	Project Manager:	CHC
Existing Elevation:	40'	Depth to Water:	23'
Finish Elevation:	47'	Drive Weight:	140 lbs. @ 30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
2		**Colluvium (Qcol):** Medium brown, damp, loose, SILTY SAND (SM), very fine to coarse-grained, with trace rootlets and black organic pieces. At 1 foot becomes moist.	Cal		14	9.1	109.1	
4		At 4 feet becomes moist to very moist.	Cal		13	18.2	102.8	
6		**Alluvium (Qal):** Dark grayish-brown, moist to very moist, medium dense to stiff, SANDY CLAY/CLAYEY SAND (CL/SC), very fine to medium-grained, with black organic pieces, micaceous.						
8								
10			Cal		24	21.3	101.8	
12		Medium brown to dark grayish-brown, moist, medium dense, CLAYEY SAND (SC), very fine to coarse-grained, with black organic pieces, micaceous.						
14			Cal		29	12.3	119.6	
16								
18		At 18 feet becomes medium brown, with white precipitate staining.						
20		At 18½ feet becomes moist to very moist.	Cal		40			

Test boring continued on Plate No. 10

CHRISTIAN WHEELER ENGINEERING

PROPOSED CAVALLO FARMS PROJECT

13985 Old El Camino Real, San Diego, California

BY:	MW	DATE:	January 2007
JOB NO. :	2051196	PLATE NO.:	9

LOG OF TEST BORING NUMBER B-5 Continued

Date Excavated:	11/30/2006	Logged by:	DF
Equipment:	CME-55	Project Manager:	CHC
Existing Elevation:	40'	Depth to Water:	23'
Finish Elevation:	47'	Drive Weight:	140 lbs. @ 30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
		Alluvium (Qal): Medium brown, moist to very moist, medium dense, CLAYEY SAND (SC), very fine to coarse-grained, micaceous.						
22		**Bay Point Formation (Qbp):** Light brown to grayish-brown, very moist to saturated, medium dense to dense, SILTY SAND-POORLY GRADED SAND (SM-SP), with gray clay beds and white precipitate/ orangish iron staining. At 24 feet becomes dense.	Cal		50			
24								
26		Test boring terminated at 25 feet.						
28		Boring properly backfilled with ±9 cubic feet of bentonite grout mix.						
30								
32								
34								
36								
38								
40								

CHRISTIAN WHEELER
ENGINEERING

PROPOSED CAVALLO FARMS PROJECT
13985 Old El Camino Real, San Diego, California

BY:	MW	DATE:	January 2007
JOB NO. :	2051196	PLATE NO.:	10

LOG OF TEST BORING NUMBER B-9

Date Excavated:	12/1/2006	Logged by:	DF
Equipment:	CME-55	Project Manager:	CHC
Existing Elevation:	45'	Depth to Water:	26.5'
Finish Elevation:	47'	Drive Weight:	140 lbs. @ 30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
2		**Artificial Fill (Qaf):** Medium brown, damp, loose, SILTY SAND/ CLAYEY SAND (SM/SC), very fine to medium-grained, with trace gravels. At 1 foot becomes moist.	Cal		11	9.0	101.4	EI MD SS, DS
4		**Alluvium (Qal):** Medium brown to grayish-brown, moist, loose to medium dense, SILTY SAND/CLAYEY SAND (SM/SC), very fine to medium-grained, with black organic pieces.	Cal		18	13.0	107.4	
6								
8		Light brown, moist, medium dense, POORLY GRADED SAND-SILTY SAND (SP-SM), very fine to coarse-grained, micaceous.	Cal		32	3.8	102.9	
10								
12		At 12½ feet becomes fine to very coarse-grained with an increase in grain size at depth.						
14			Cal		26	4.3	98.6	
16								
18		Medium brown, moist, medium dense, CLAYEY SAND (SC), very fine to coarse-grained, with black organic pieces.	Cal		24			
20								

Test boring continued on Plate No. 15

CHRISTIAN WHEELER ENGINEERING

PROPOSED CAVALLO FARMS PROJECT

13985 Old El Camino Real, San Diego, California

BY:	MW	DATE:	January 2007
JOB NO.:	2051196	PLATE NO.:	14

LOG OF TEST BORING NUMBER B-9 Continued

Date Excavated:	12/1/2006	Logged by:	DF
Equipment:	CME-55	Project Manager:	CHC
Existing Elevation:	45'	Depth to Water:	26.5'
Finish Elevation:	47'	Drive Weight:	140 lbs. @ 30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
22		**Alluvium (Qal):** Medium brown, moist, medium dense, CLAYEY SAND (SC), very fine to coarse-grained, with black organic pieces.						
24		Light to medium brown, very moist, medium dense, SILTY SAND-POORLY GRADED SAND (SM-SP), very fine to coarse-grained.	Cal		22			
26		At 26½ feet becomes saturated.						
28								
30			Cal		26			
32		Medium brown, saturated, medium dense, CLAYEY SAND (SC), very fine to coarse-grained, with black organic pieces.						
34								
36								
38		Medium brown, saturated, medium dense, SILTY SAND (SM), very fine to medium-grained, micaceous.						
40		Boring propoerly backfilled with ±14 cubic feet of bentonite grout mix.	Cal		25			

Test boring terminated at 40 feet.

CHRISTIAN WHEELER
ENGINEERING

PROPOSED CAVALLO FARMS PROJECT
13985 Old El Camino Real, San Diego, California

BY:	MW	DATE:	January 2007
JOB NO. :	2051196	PLATE NO.:	15

SOUTHERN CALIFORNIA SOIL & TESTING, INC.

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FAX (760) 775-8362
83-740 Citrus Avenue
Suite G
Indio, CA 92201-3438
www.scst.com

October 18, 2006

Project No. 0611118

Mr. And Mrs. Art Nicholas
C/o Tom Nelson
P. O. Box 641
Solana Beach, California 92075

Subject: REPORT OF SOIL BORING DESTRUCTION
WILLOW CREEK RANCH WALLS
16107 VIA DE SANTA FE
RANCHO SANTA FE, CALIFORNIA
PERMIT NO. LMON-104020
A.P.N. 269-060-01
EST NO. NONE

Dear Mr. Nicholas:

In accordance with the permit we have completed our geotechnical soil borings for the subject project. A site location map, boring location plan and boring logs are presented in Appendix A.

BORING DESTRUCTION

A total of 15 exploratory CPT were completed. Groundwater was encountered in all borings. No obvious contamination of soil was observed. Drill cuttings were sampled for the geotechnical investigation. Excess drill cuttings were left on ground surface. The borings were sealed from the bottom to the ground surface with bentonite. The types, and approximate volumes of the sealing materials are presented on Figure 1. The boring locations and logs are presented in Appendix A.

Should you have any questions regarding the contents of this report or if we may be of further service, please contact this office at your convenience.

Respectfully submitted,
SOUTHERN CALIFORNIA SOIL AND TESTING, INC.

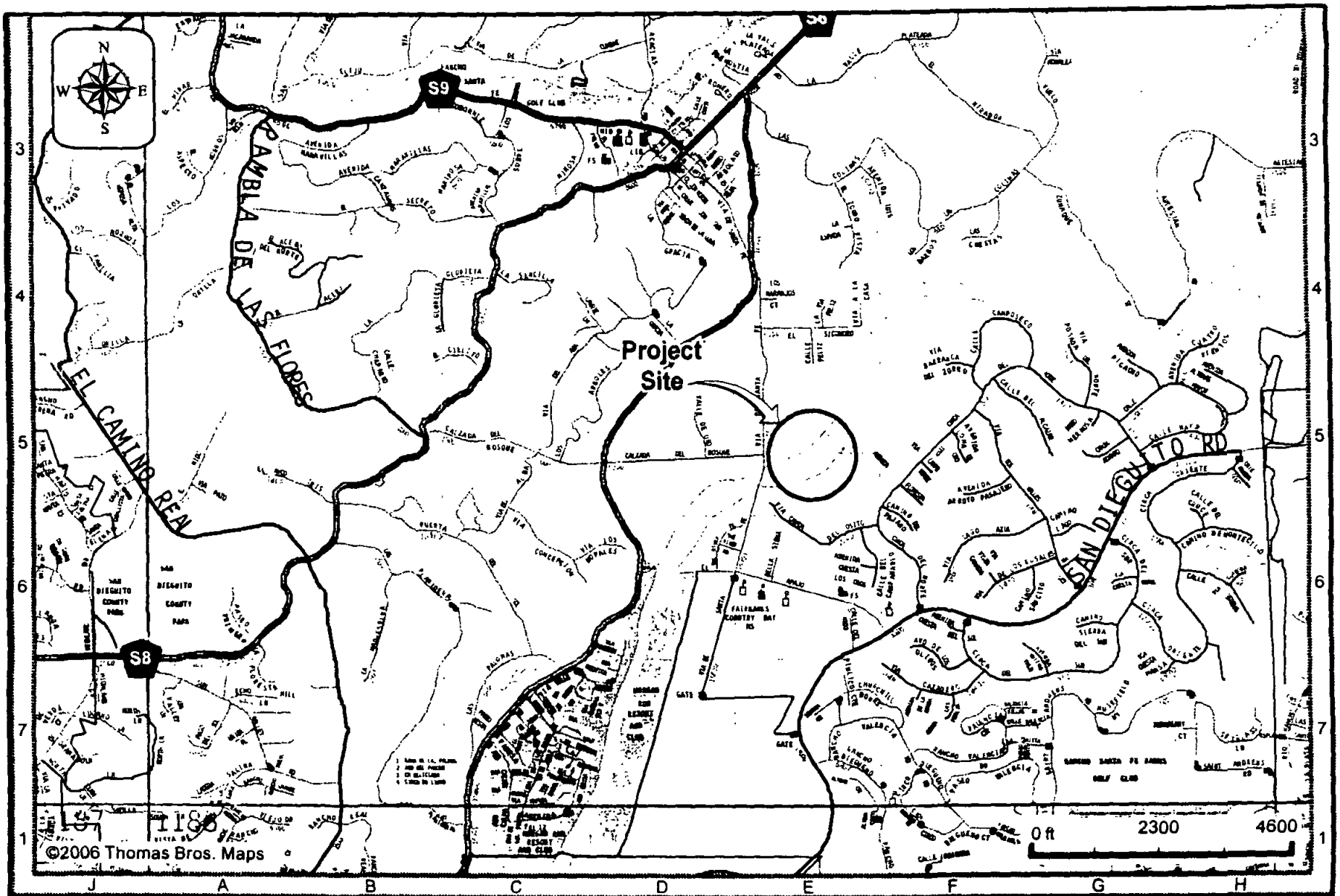
Eddie Liang
Staff Engineer

Garrett B. Fountain, RCE 63885
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
GARRETT B. FOUNTAIN
63885
EXP.09-30-08
CIVIL
STATE OF CALIFORNIA

EL:GF

(1) Addressee
(1) County of San Diego, Attn: Ms. Amelia Cesena



SC ST SOUTHERN CALIFORNIA SOIL & TESTING, INC.

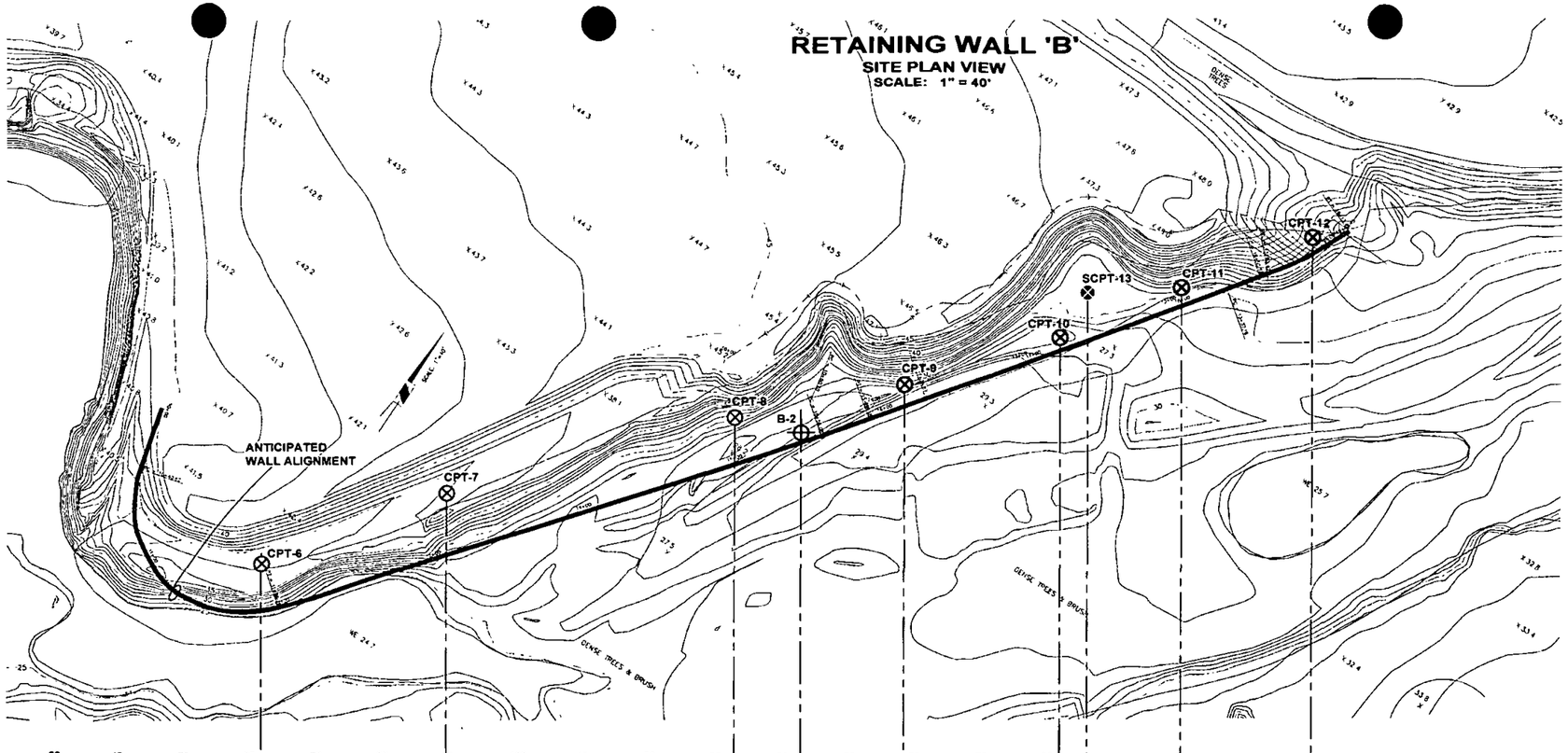
SITE LOCATION MAP
Willow Creek Ranch
16107 Via de Santa Fe
Rancho Santa Fe, California

Job No. : 0611118

Appendix : 1

RETAINING WALL 'B'

SITE PLAN VIEW
SCALE: 1" = 40'

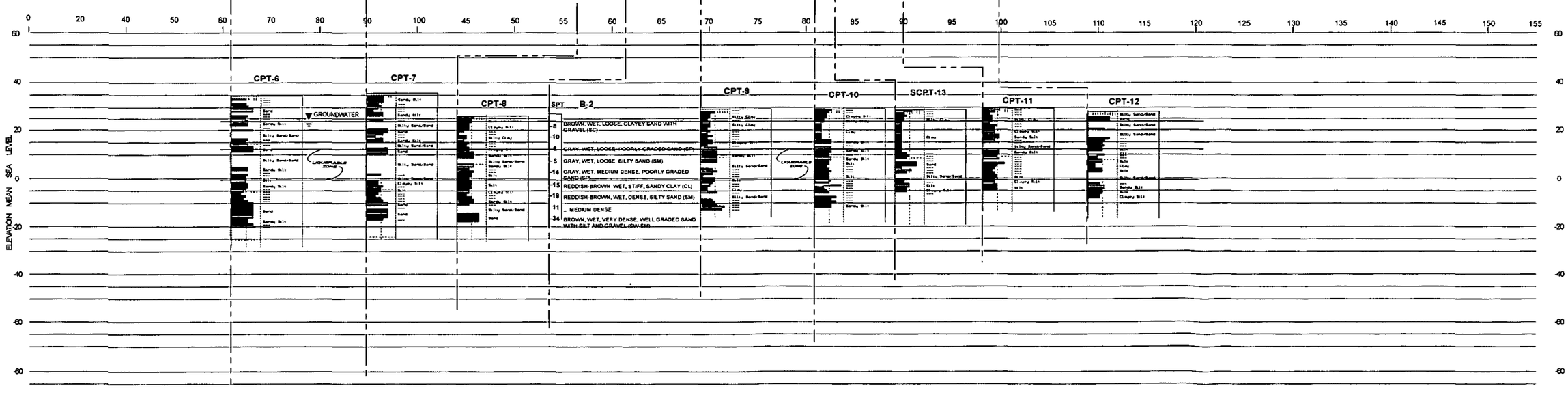


LEGEND

⊗ CPT-16	APPROXIMATE LOCATION OF CONE PENETROMETER TEST
⊗ SCPT-16	APPROXIMATE LOCATION OF SEISMIC CONE PENETROMETER TEST
⊕ B-1	APPROXIMATE LOCATION OF TEST BORING

- SENSITIVE, FINE GRAINED
- ORGANIC MATERIALS
- CLAY
- SILTY CLAY TO CLAY
- CLAYEY SILT TO SILTY CLAY
- SANDY SILT TO CLAYEY SILT
- SILTY SAND TO SANDY SILT
- SAND TO SILTY SAND
- SAND
- GRAVELY SAND TO SAND
- VERY STIFF FINE GRAINED*
- SAND TO CLAYEY SAND*

*OVER CONSOLIDATED OR CEMENTED



ELEVATION VIEW
SCALE: 1" = 20'

Note: B-1 and B-2 were done in a separate permit. (LMON 104289)

SOUTHERN CALIFORNIA SOIL & TESTING, INC.	WILLOW CREEK RANCH		
	BY: GF/DCD	DATE: TBD	
	JOB NO: 0611118-1	FIGURE: 3	

Boring Number	Depth Feet	Diameter Inches	Depth to Water Feet	Drilling Method	Backfill Method	Volume of Backfill Cubic Feet
CPT-1	68	2	3	CPT	Bentonite Slurry	1
CPT-2	91	2	3	CPT	Bentonite Slurry	2
CPT-3	83	2	3	CPT	Bentonite Slurry	2
CPT-4	89	2	3	CPT	Bentonite Slurry	2
CPT-5	56	2	3	CPT	Bentonite Slurry	1
CPT-6	56	2	12	CPT	Bentonite Slurry	1
CPT-7	54	2	13	CPT	Bentonite Slurry	1
CPT-8	45	2	4	CPT	Bentonite Slurry	1
CPT-9	43	2	4	CPT	Bentonite Slurry	1
CPT-10	42	2	4	CPT	Bentonite Slurry	1
CPT-11	35	2	4	CPT	Bentonite Slurry	1
CPT-12	37	2	7	CPT	Bentonite Slurry	1
SCPT-13	36	2	3	CPT	Bentonite Slurry	1
CPT-14	102	2	16	CPT	Bentonite Slurry	2
SCPT-15	88	2	3	CPT	Bentonite Slurry	2

SC ST

SOUTHERN CALIFORNIA SOIL AND TESTING

WILLOW CREEK RANCH WALLS

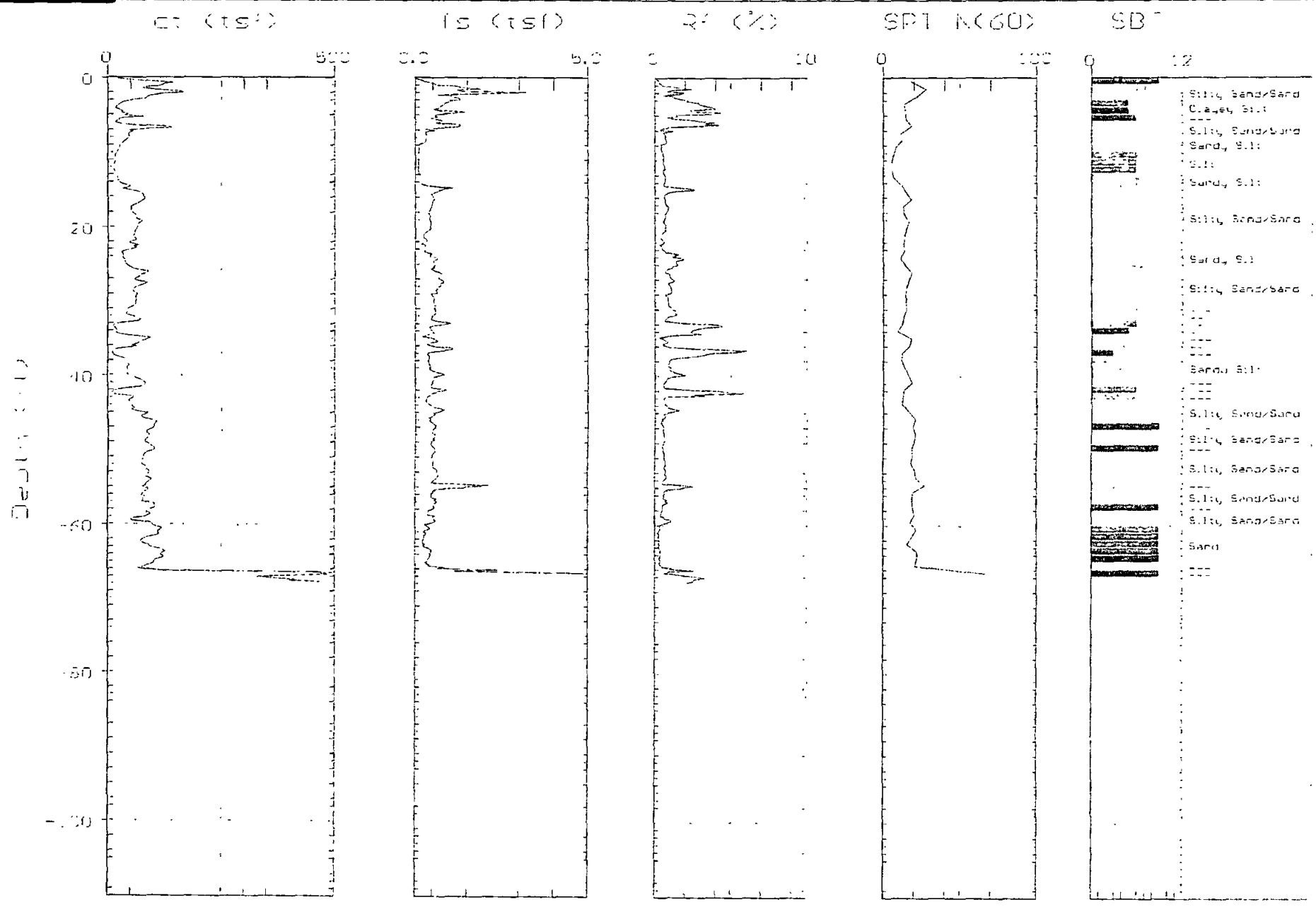
By:	EL	Date	10/17/2006
Job No.	0611118	Figure	1

GREGG

SO.CAL SOILS

Site: [illegible] LOW CREEK RANCH
Location: CPT-01

Engineer: [illegible]
Date: 06/12/06 08:45



Max. Depth: [illegible] (ft)
Depth Inc.: 0.164 (ft)

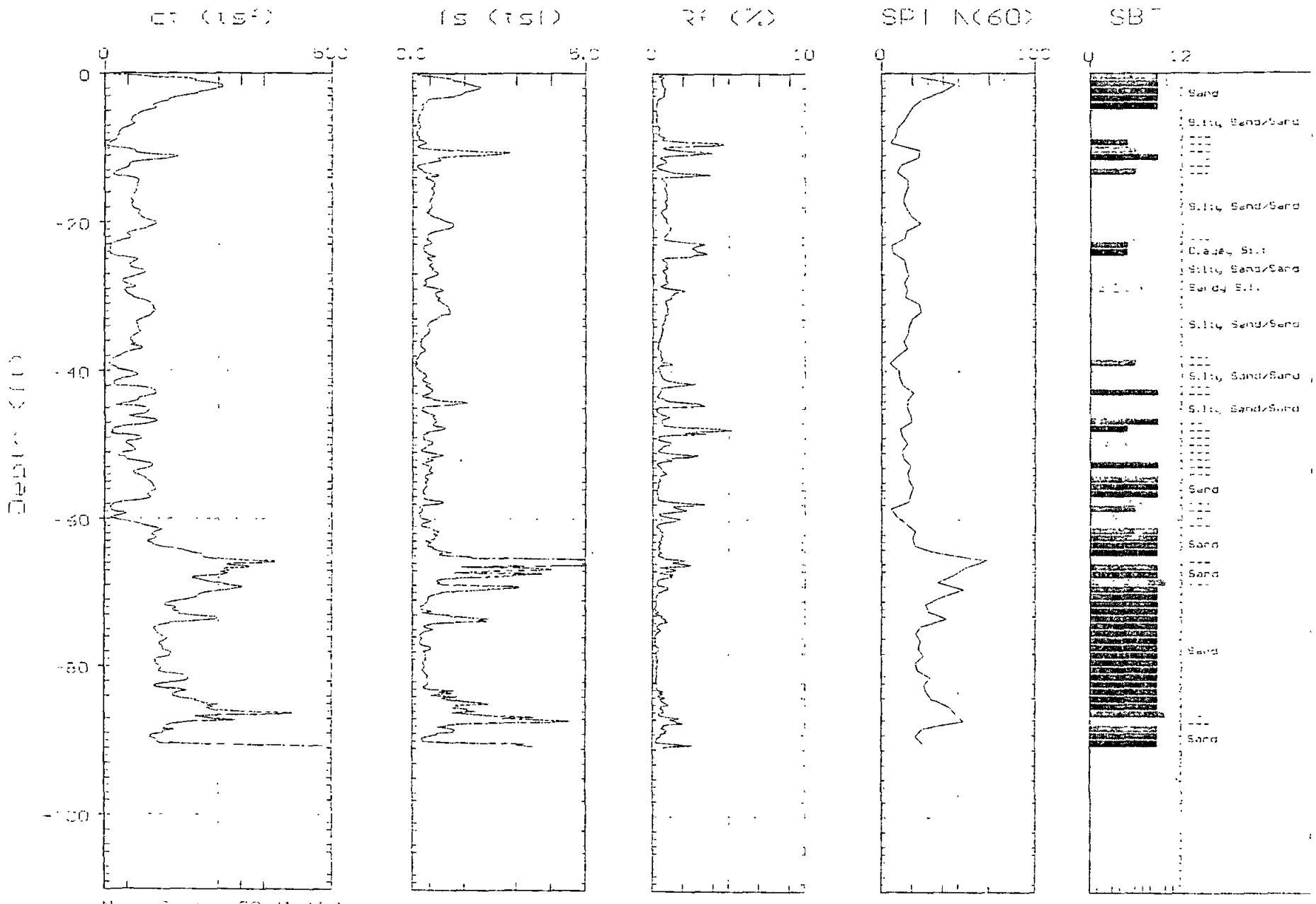
SBT: Soil Behavior Type (Robertson 1990)

GREGG

SO.CAL SOILS

Site: WILLOW CREEK RANCH
Location: CPT-02

Engineer: G.FOUNTAIN
Date: 08:12:06 05:28



Max. Depth: 80.71 (ft)
Depth Inc.: 0.164 (ft)

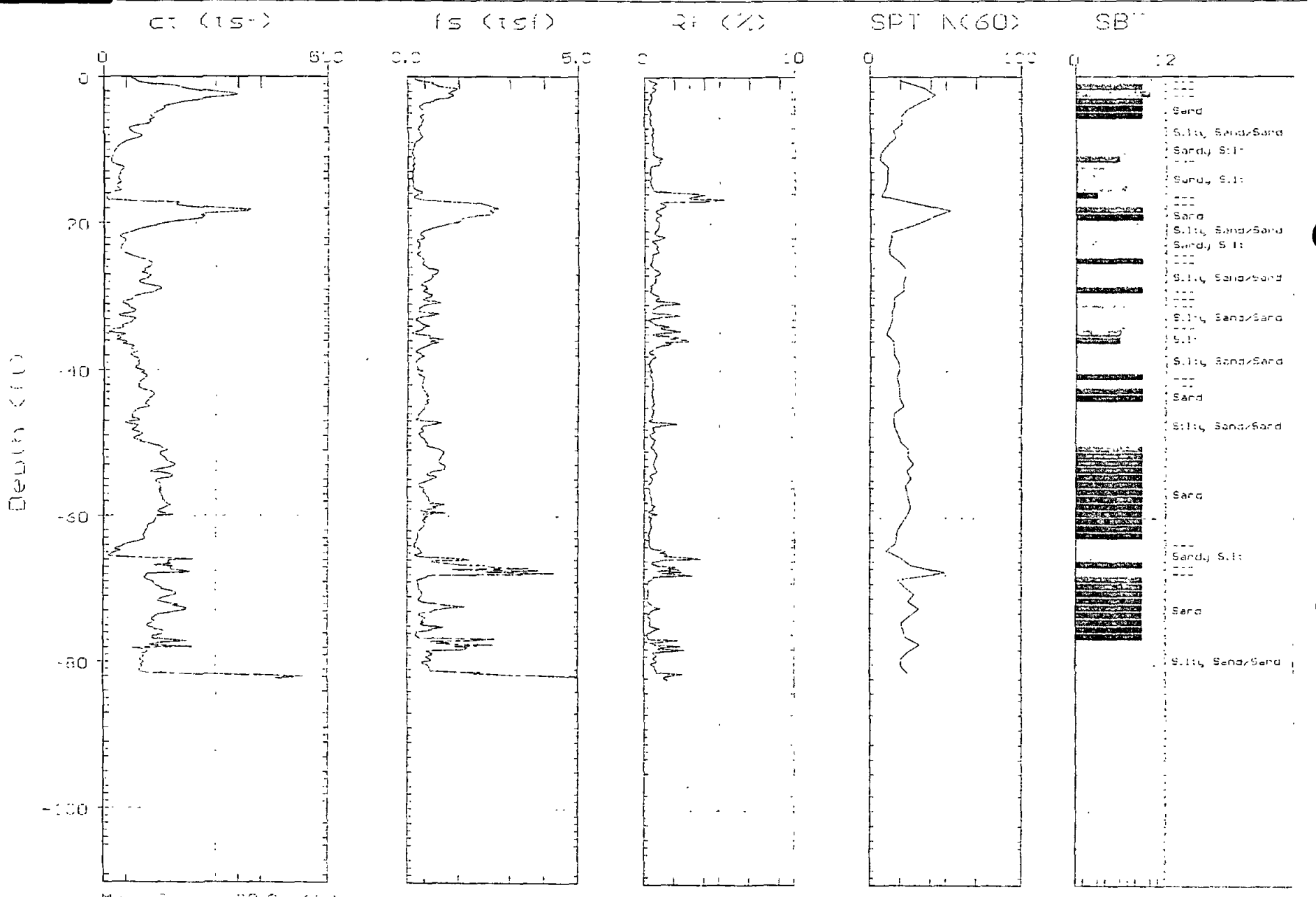
SBT: Soil Behavior Type (Robertson 1990)

GREGG

SO.CAL SOILS

Site: WILLOW CREEK RANC-
Location: CPT-03

Engineer: S.FOUNTAIN
Date: 06:12:06 10:22

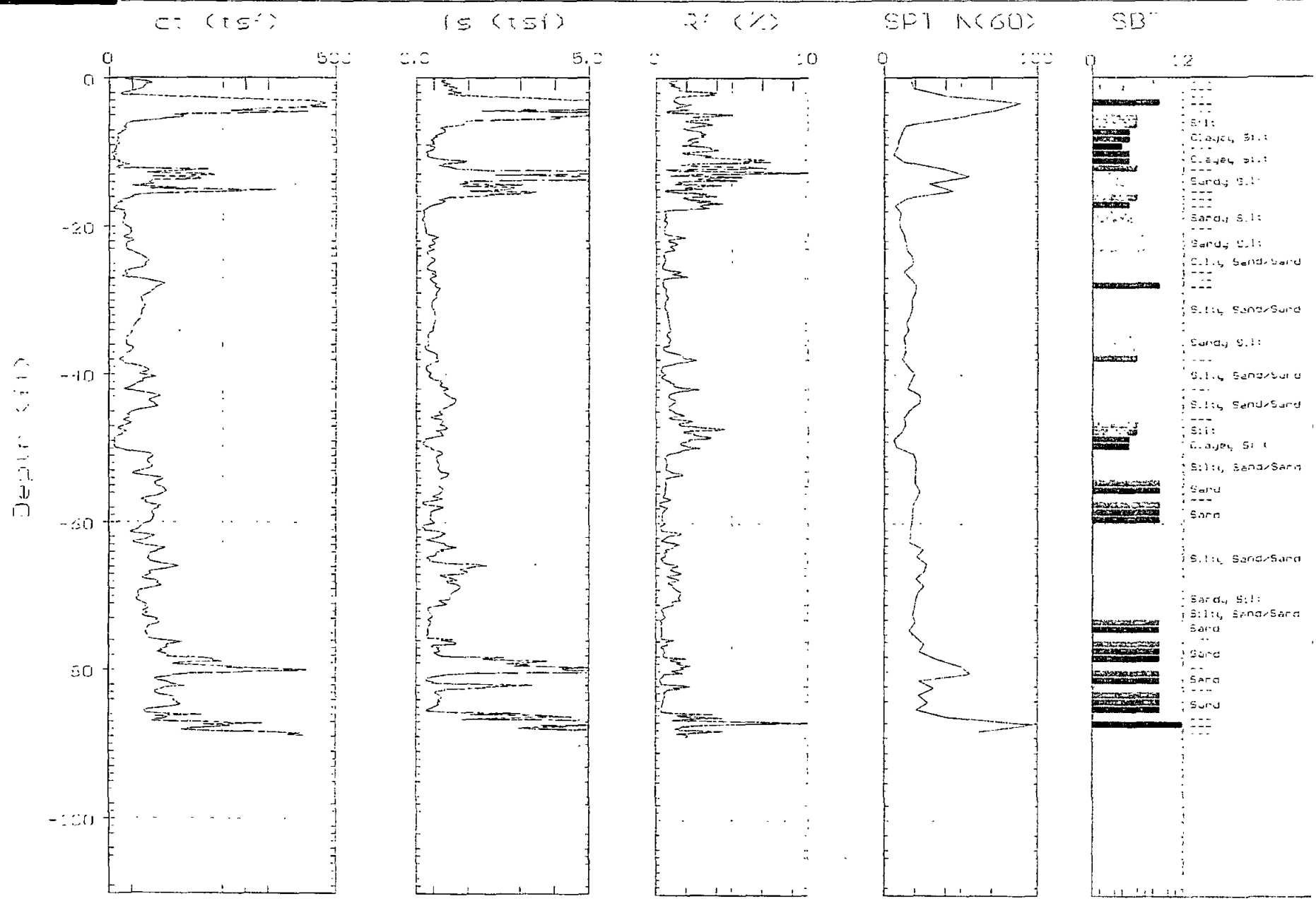


GREGG

SO.CAL SOILS

Site: WILLOW CREEK RANCH
Location: CPT-04

Engineer: G.FOUNTAIN
Date: 06/12/06 11:20



Max. Depth: 88.91 (ft)
Depth Inc.: 0.164 (ft)

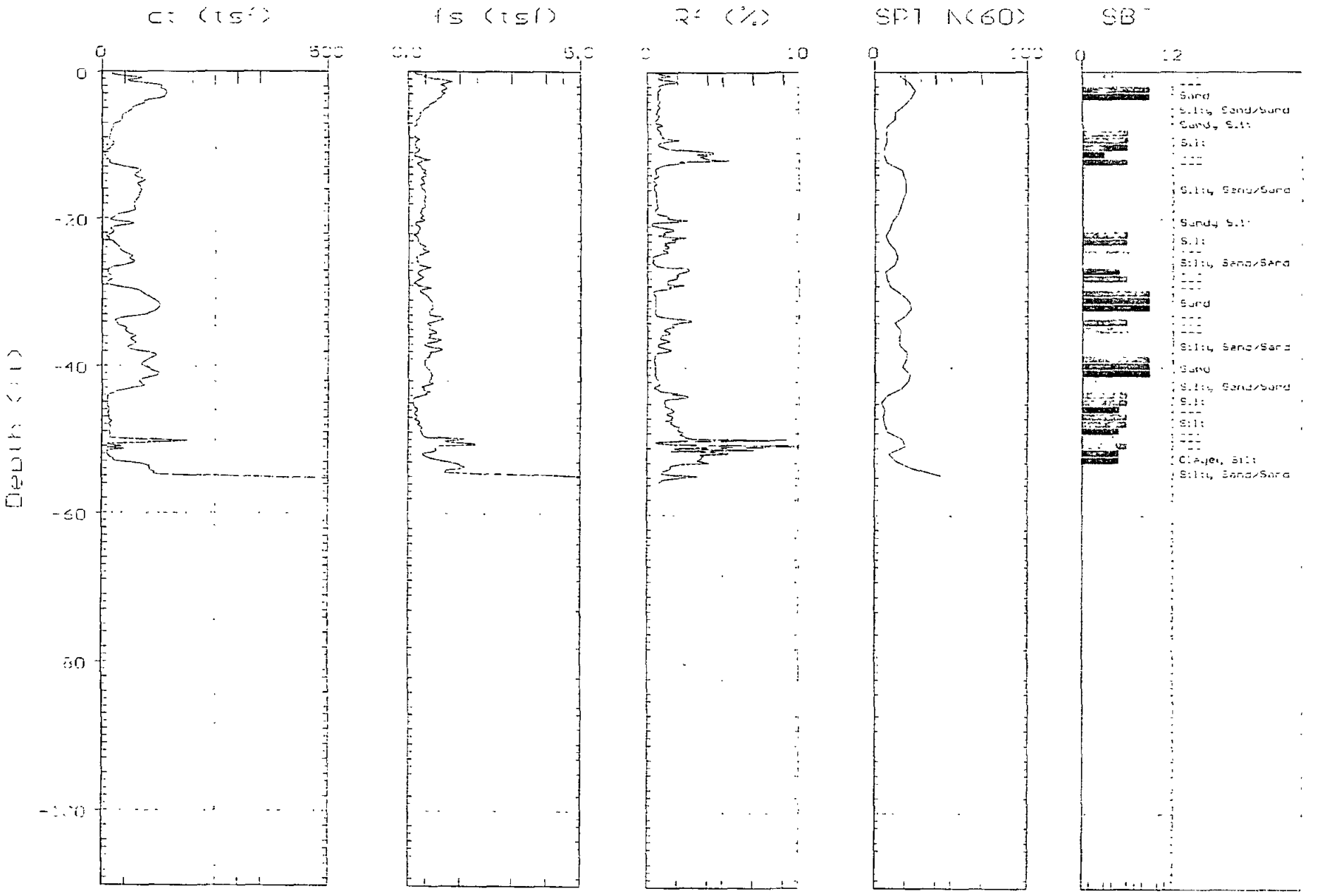
SBT: Soil Behavior Type (Robertson 1990)

GREGG

SO.CAL SOILS

Site: WILLOW CREEK RANCH
Location: CPT-05

Engineer: S.FOUNTAIN
Date: 06:12:06 13:12



Max. Depth: 65.61 (ft)
Depth Inc.: 0.164 (ft)

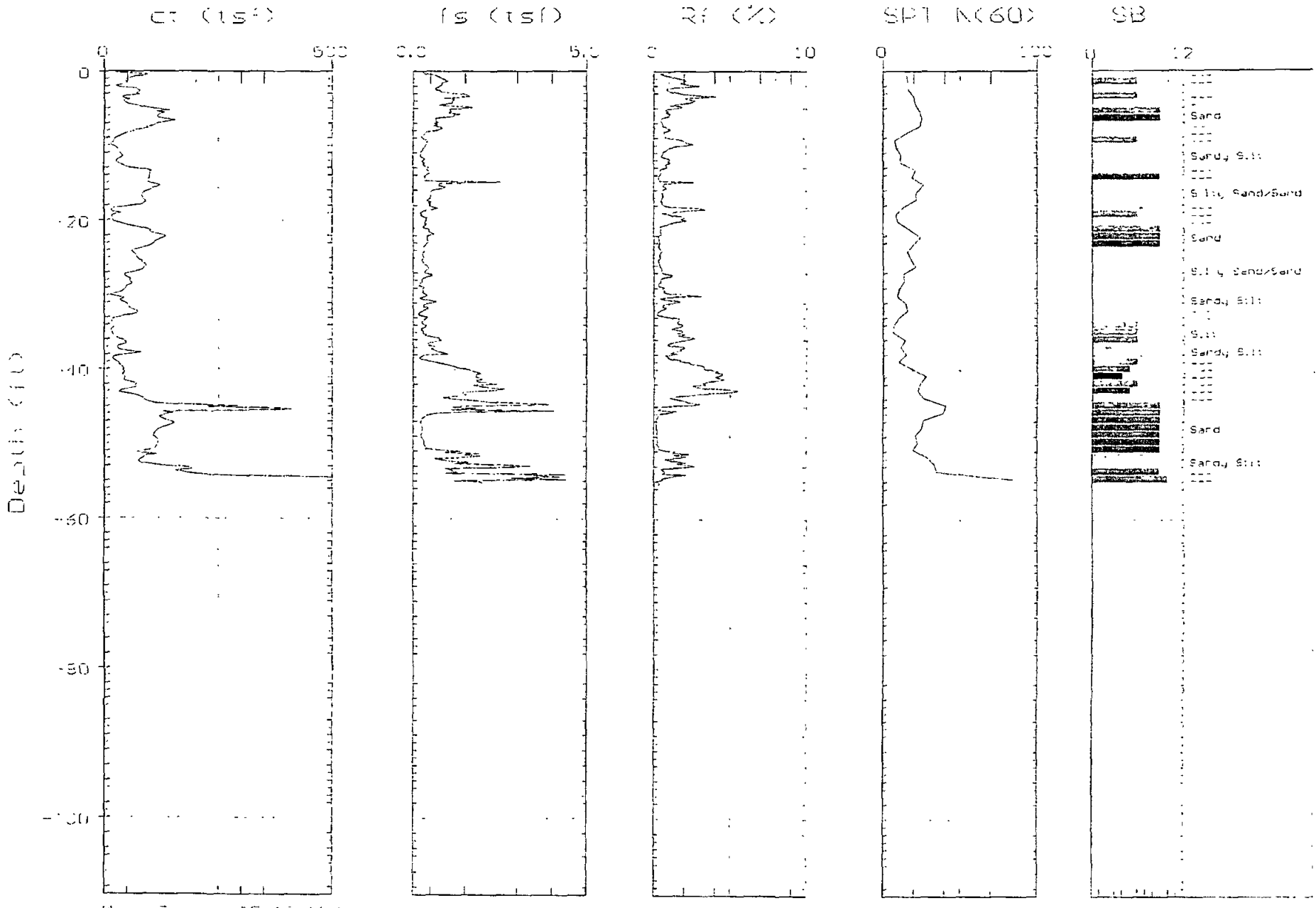
SBT: Soil Behavior Type (Robertson 1990)

GREGG

SO.CAL SOILS

Site: WILLOW CREEK RANCH
Location: CPT-06

Engineer: G.FOUNTAIN
Date: 06:12:06 13:52



Max. Depth: 65.46 (ft)
Depth Inc.: 0.164 (ft)

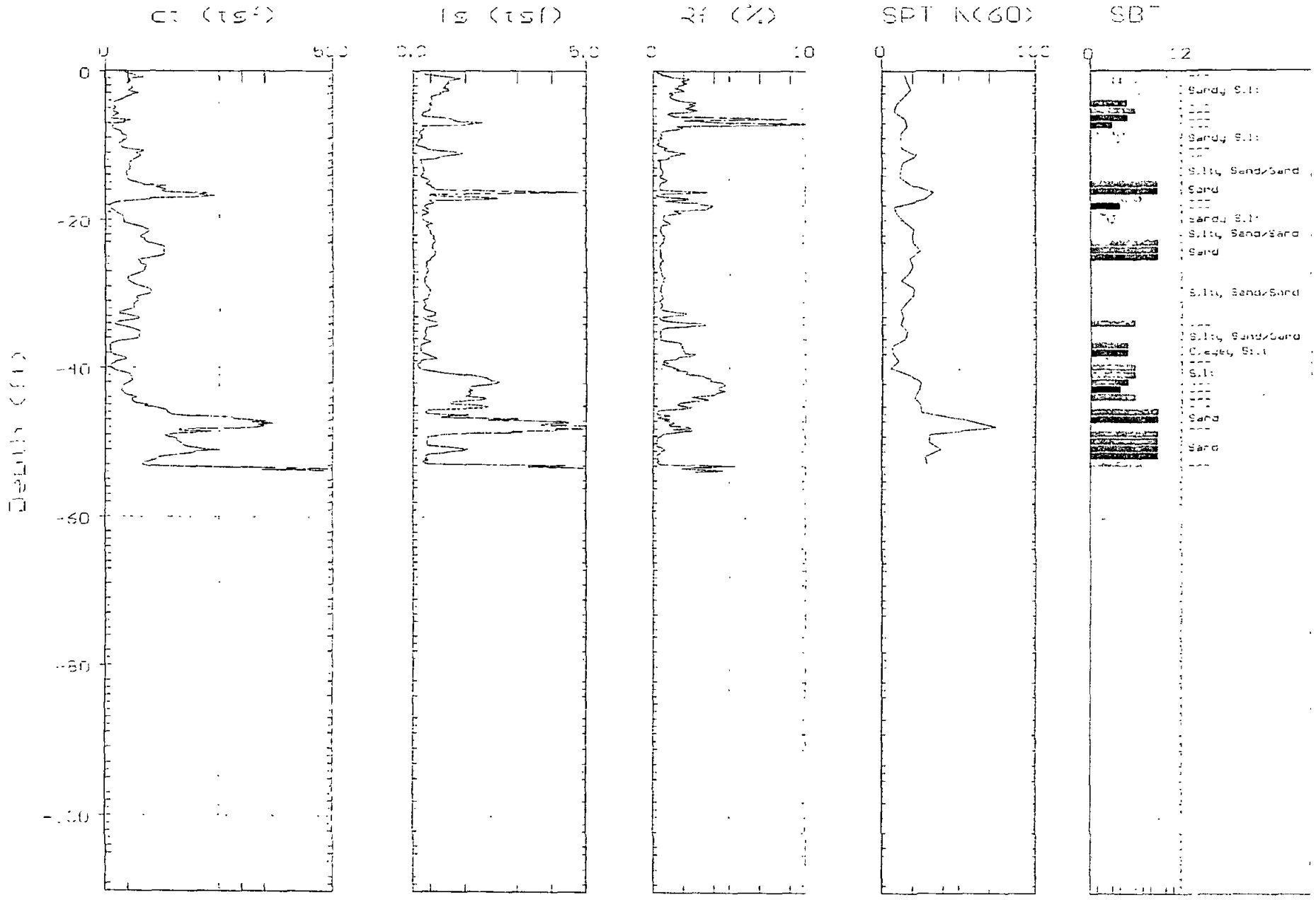
SBT: Soil Behavior Type (Robertson 1990)

GREGG

SO.CAL SOILS

Site: WILLOW CREEK RANCH
Location: CPT-07

Engineer: B.FOUNTAIN
Date: 06:12:06 14:38



Max. Depth: 63.81 (ft)
Depth Inc.: 0.164 (ft)

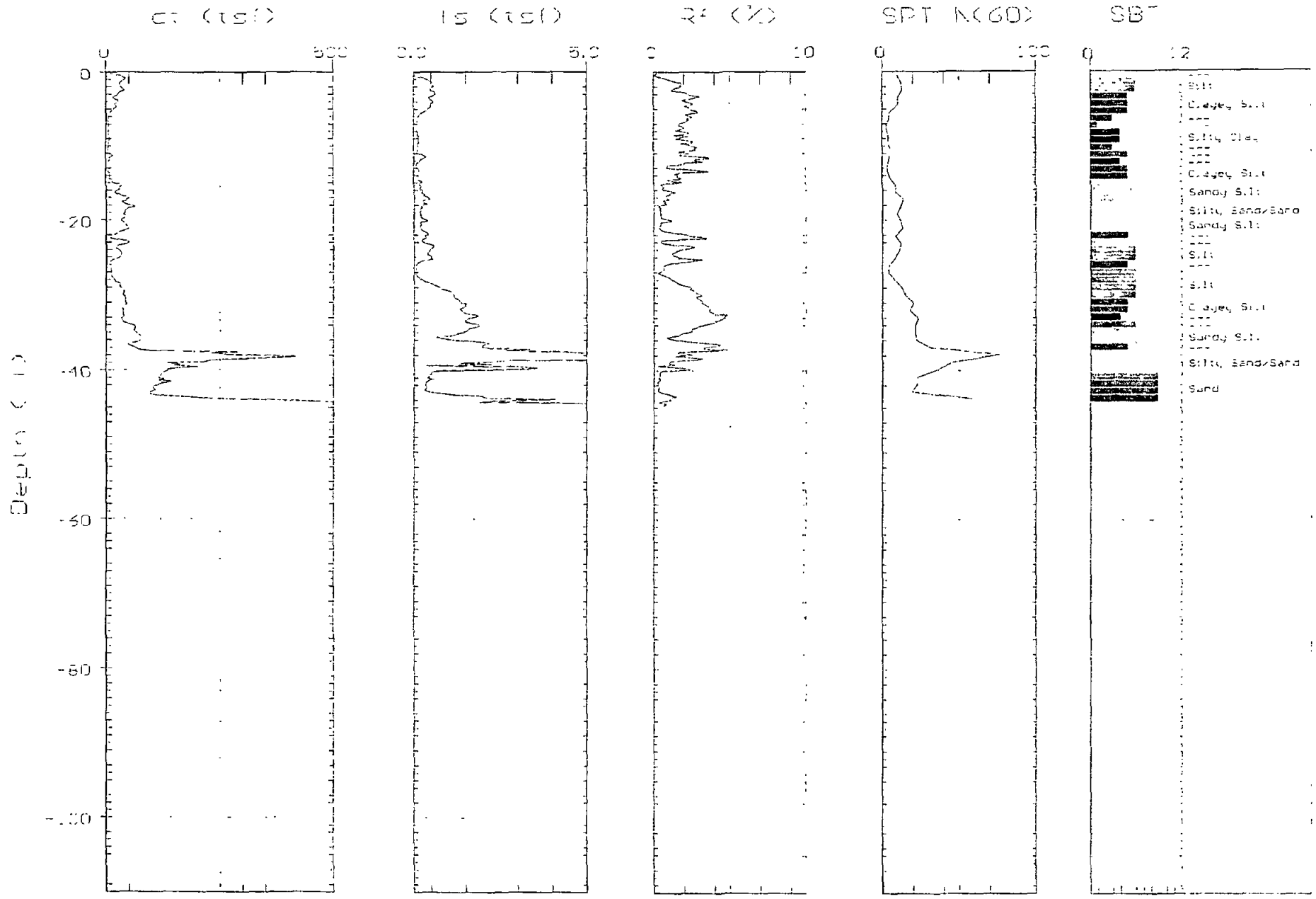
SBT: Soil Behavior Type (Robertson 1990)

GREGG

SO.CAL SOILS

Site: WILLOW CREEK RANCH
Location: CPT-08

Engineer: S.FOUNTAIN
Date: 06/17/06 13:18



Max. Depth: 44.78 (ft)
Depth Incr: 0.164 (ft)

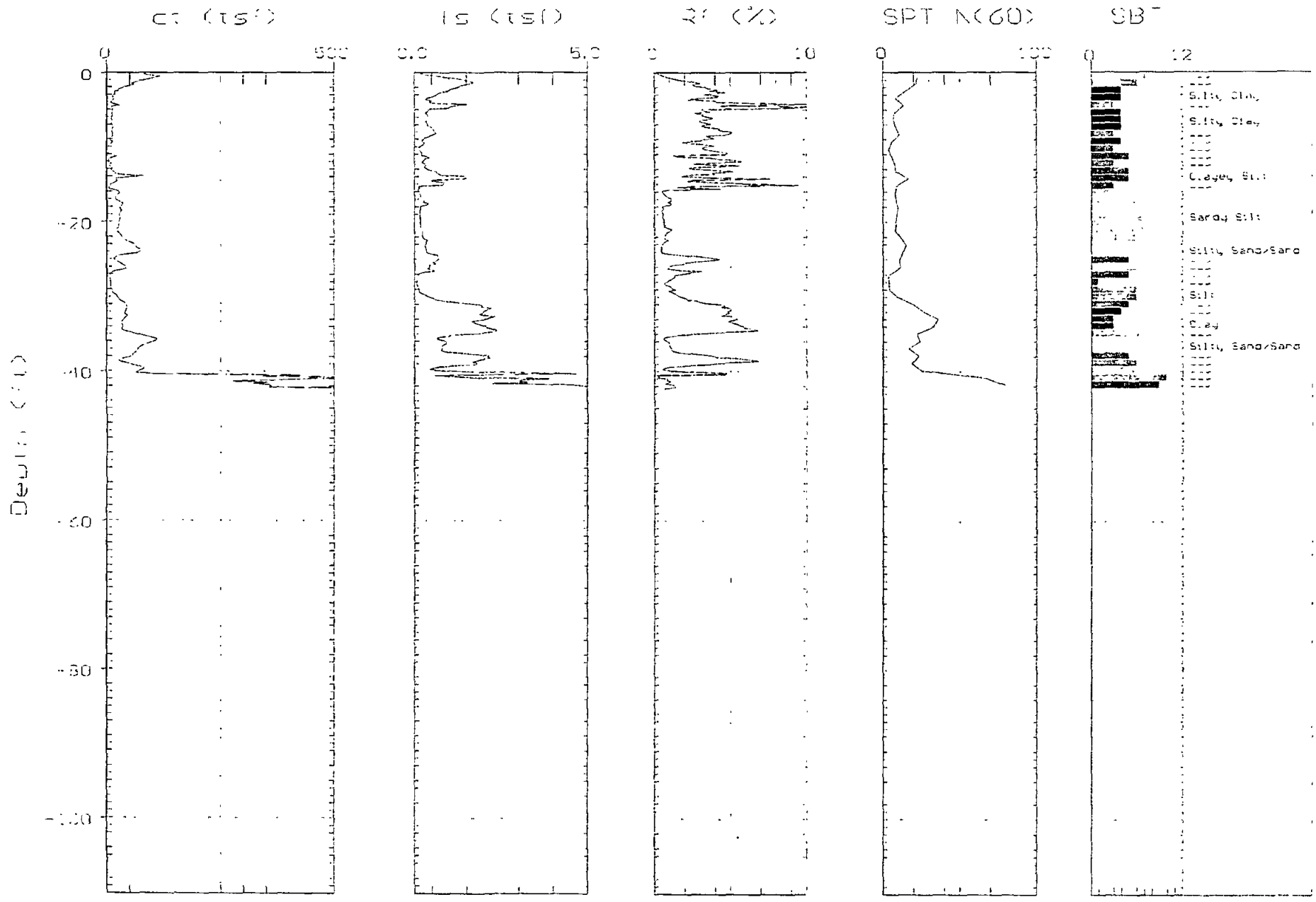
SBT: Soil Behavior Type (Robertson 1990)

GREGG

SO.CAL SOILS

Site: WILLOW CREEK RANCH
Location: CPT-09

Engineer: G.FOUNTAIN
Date: 06:13:06 07:45



Max. Depth: 42.32 (ft)
Depth Incr.: 0.164 (ft)

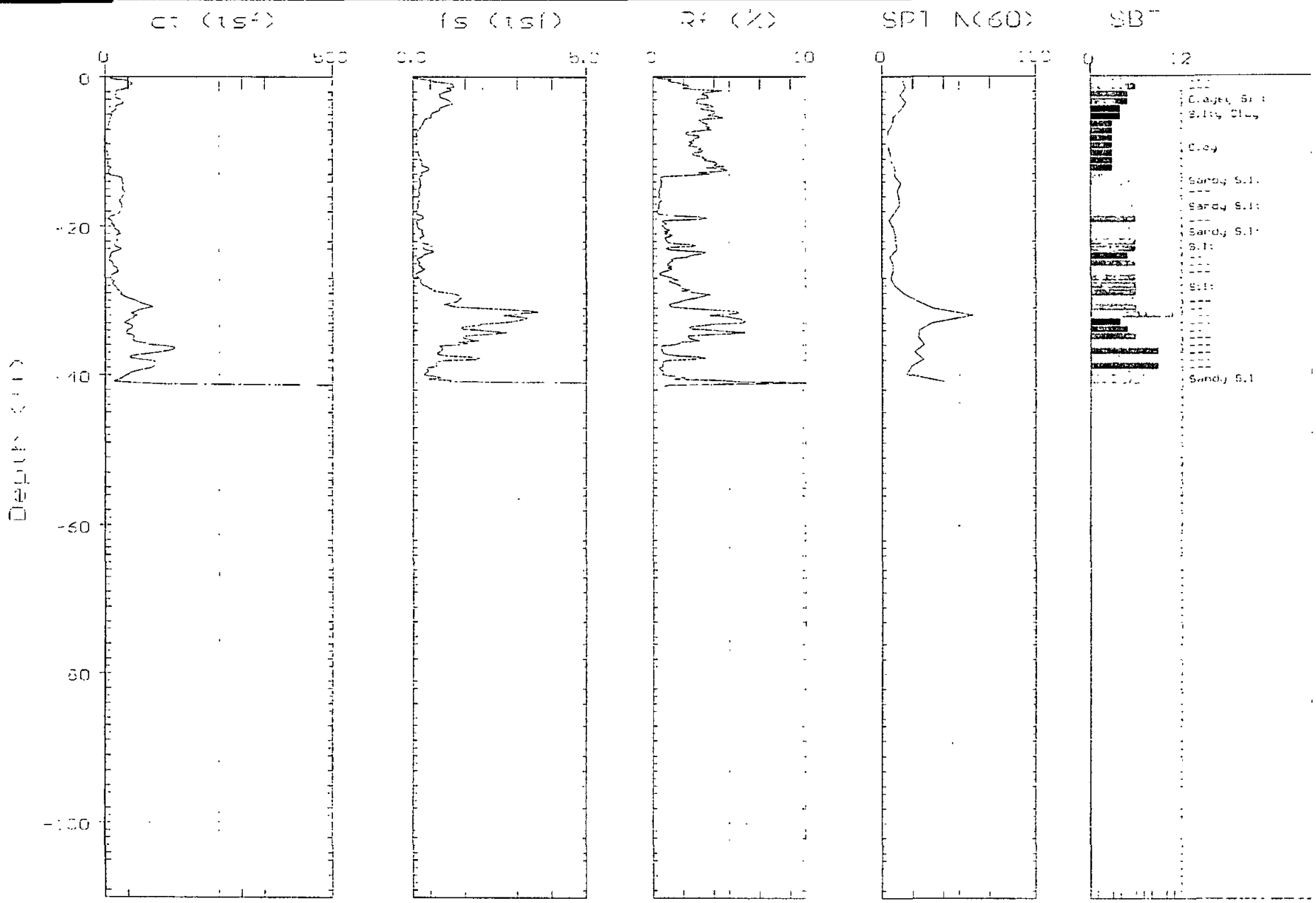
SBT: Soil Behavior Type (Robertson 1990)

GREGG

SO.CAL SOILS

Site: WILLOW CREEK RANCH
Location: CPT-10

Engineer: G.FOUNTAIN
Date: 06/13/00 08:15



Max. Depth: 41.50 (ft)
Depth Inc.: 0.164 (ft)

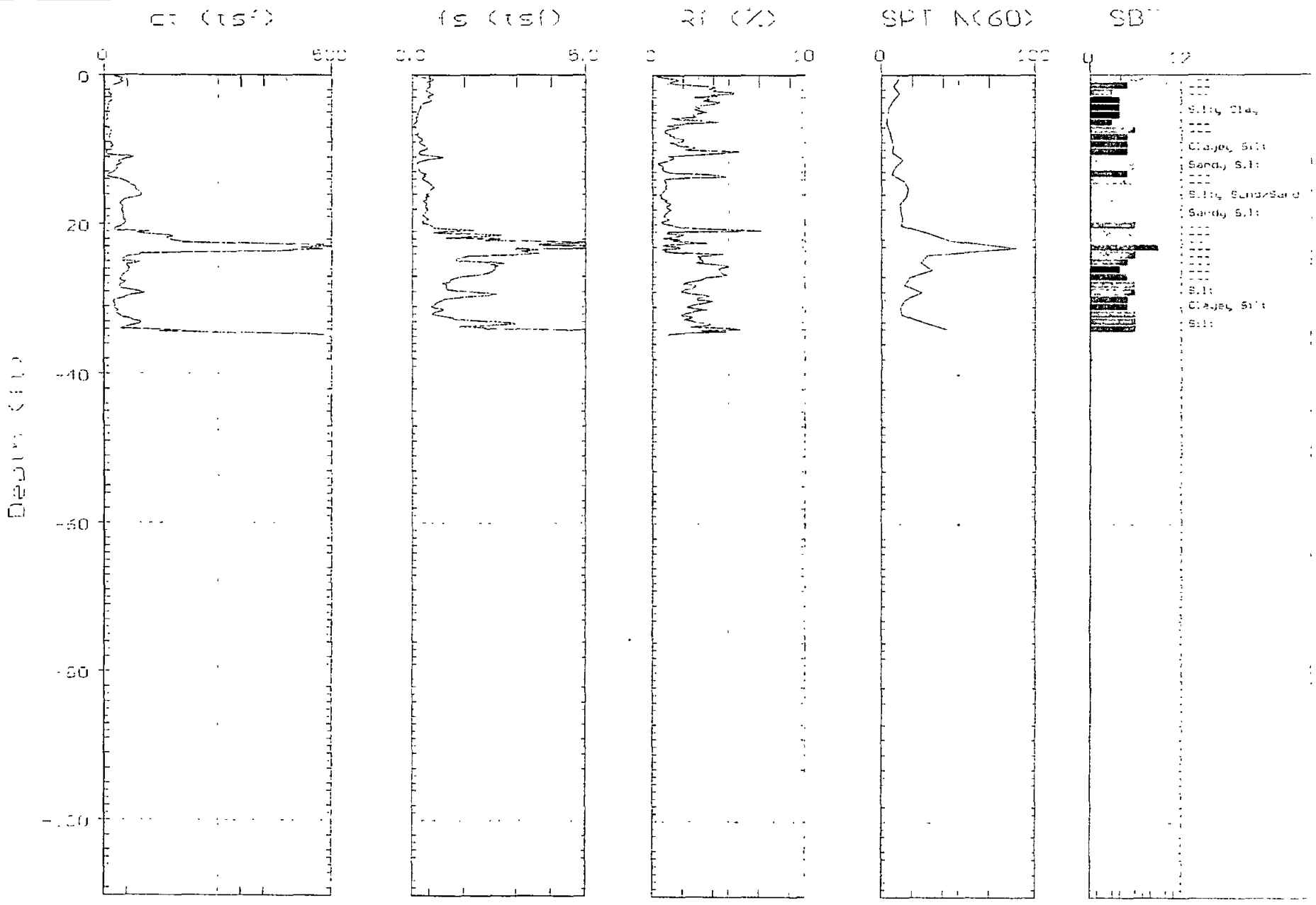
SBT: Soil Behavior Type (Robertson 1990)

GREGG

SO.CAL SOILS

Site: WILDOX CREEK RANCH
Location: CPT-11

Engineer: S.FOUNTAIN
Date: 06/13/06 08:50



Max. Depth: 34.78 (ft)
Depth Inc.: 0.164 (ft)

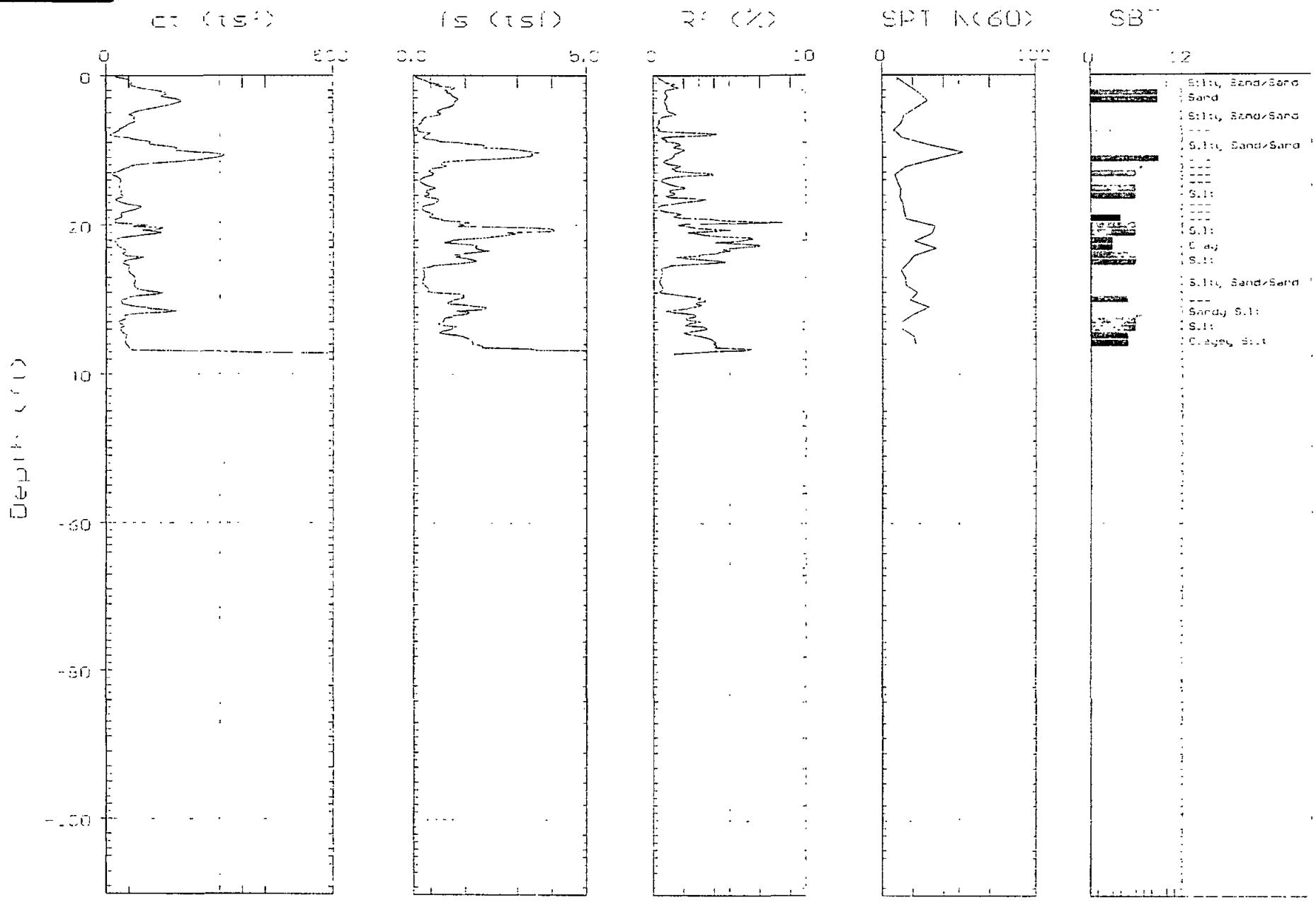
SBT: Soil behavior Type (Robertson 1990)

GREGG

SO.CAL SOILS

Site: WILLOW CREEK RANCH
Location: CPT-12

Engineer: B.FONTAIN
Date: 06/13/06 08:22

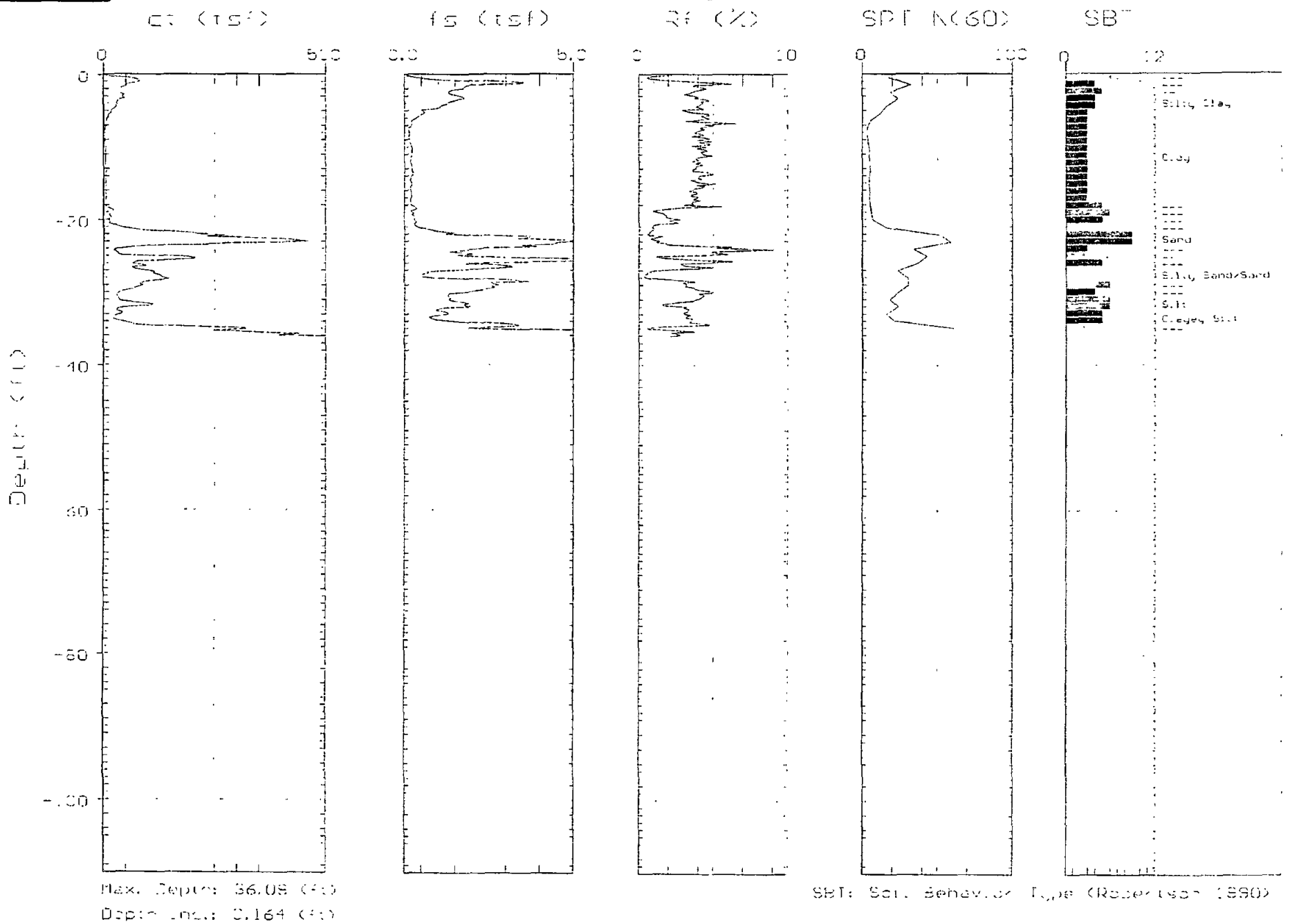


GREGG

SO.CAL SOILS

Site: WILLOW CREEK RANCH
Location: SCPT-13

Engineer: S.FOUNTAIN
Date: 06/13/06 10:03



Max. Depth: 36.08 (ft)
Depth Incr.: 0.164 (ft)

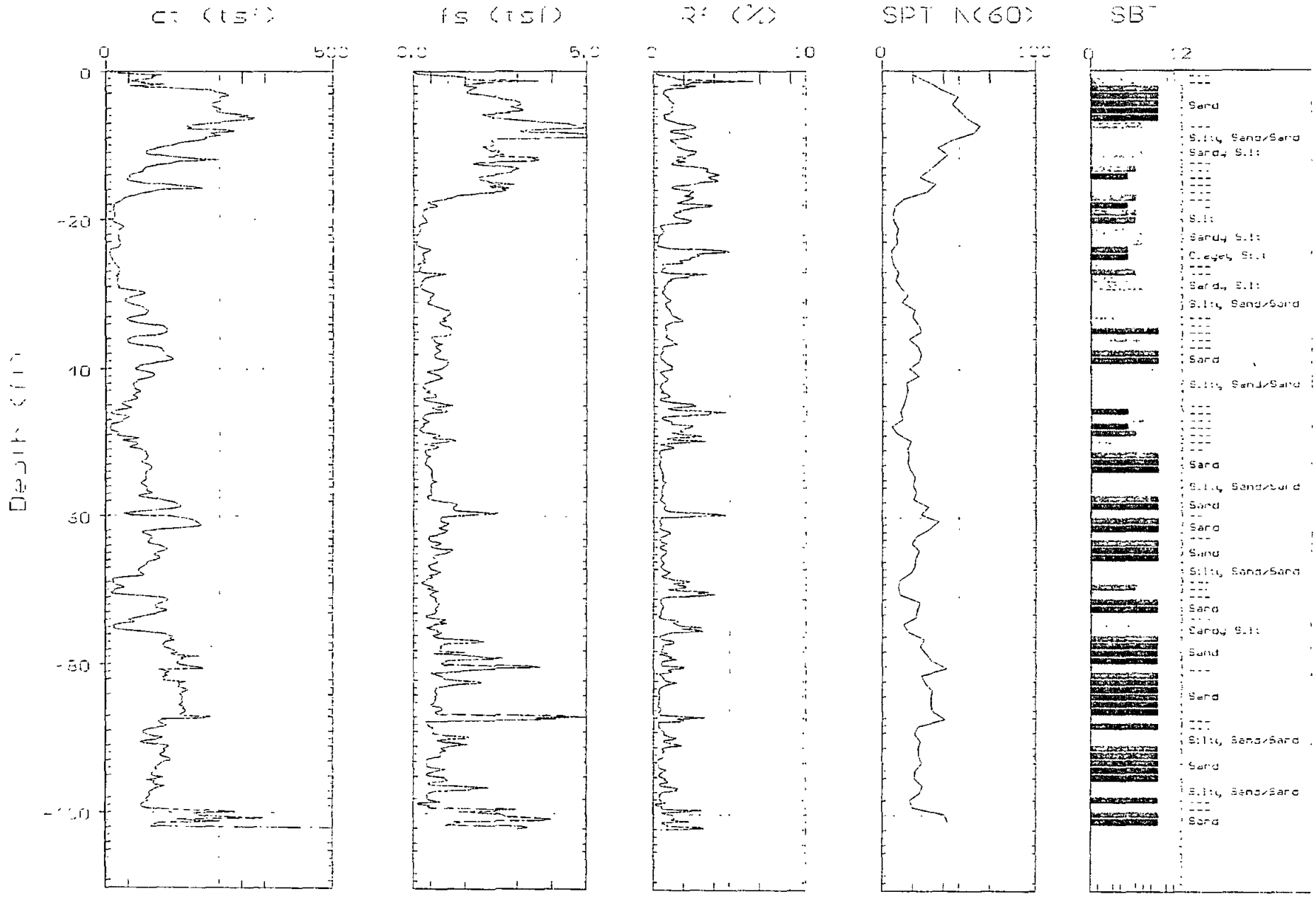
SBT: Soil Behavior Type (Robertson 1990)

GREGG

SO.CAL SOILS

Site: WILLOW CREEK RANCH
Location: CPT-14

Engineer: G.FOUNTAIN
Date: 06/13/06 12:25

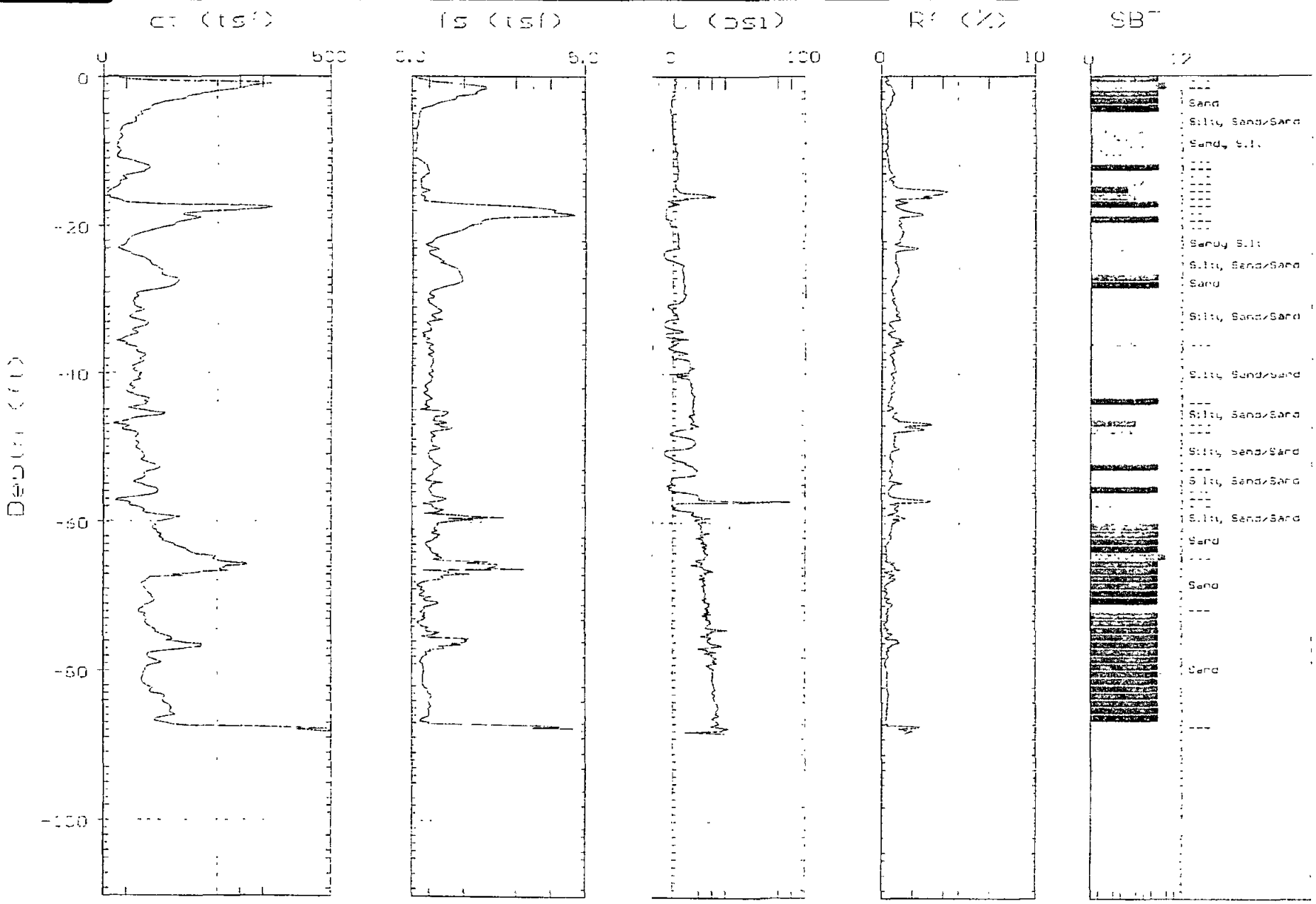


GREGG

SO. CAL SOILS

Site: LOX CREEK RANCH
Location: SCPT 18

Engineer: S.FOUNTAIN
Date: 06/13/06 11:04



Max. Depth: 88.26 (ft)
Depth Incr: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

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Suite G
Indio, CA 92201-3438
www.scst.com

October 18, 2006

Project No. 0611177

Mr. And Mrs. Art Nicholas
C/o Tom Nelson
P. O. Box 641
Solana Beach, California 92075

Subject: REPORT OF SOIL BORING DESTRUCTION
WILLOW CREEK RANCH SHOP BUILDING
16107 VIA DE SANTA FE
RANCHO SANTA FE, CALIFORNIA
PERMIT NO. LMON-104197
A.P.N. 269-06-01, 269-05-02
EST NO. H129955

Dear Mr. Nicholas:

In accordance with the permit we have completed our geotechnical soil borings for the subject project. A site location map, boring location plan and boring logs are presented in Appendix A.

BORING DESTRUCTION

A total of 4 exploratory test borings were completed. Two borings were completed by Gregg drilling with a mud rotary rig and two were completed by Scott's drilling with an auger drilling rig. A permit application from Gregg drilling is attached. Groundwater was encountered in 3 borings. No obvious contamination of soil was observed. Drill cuttings were sampled for the geotechnical investigation. Excess drill cuttings were left on ground surface. The borings were sealed from the bottom to the ground surface with bentonite. The types, and approximate volumes of the sealing materials are presented on Figure 1. The boring locations and logs are presented in Appendix A.

Should you have any questions regarding the contents of this report or if we may be of further service, please contact this office at your convenience.

Respectfully submitted,
SOUTHERN CALIFORNIA SOIL AND TESTING, INC.

Eddie Liang
Staff Engineer

Garrett B. Fountain, RCE 63885
Project Engineer

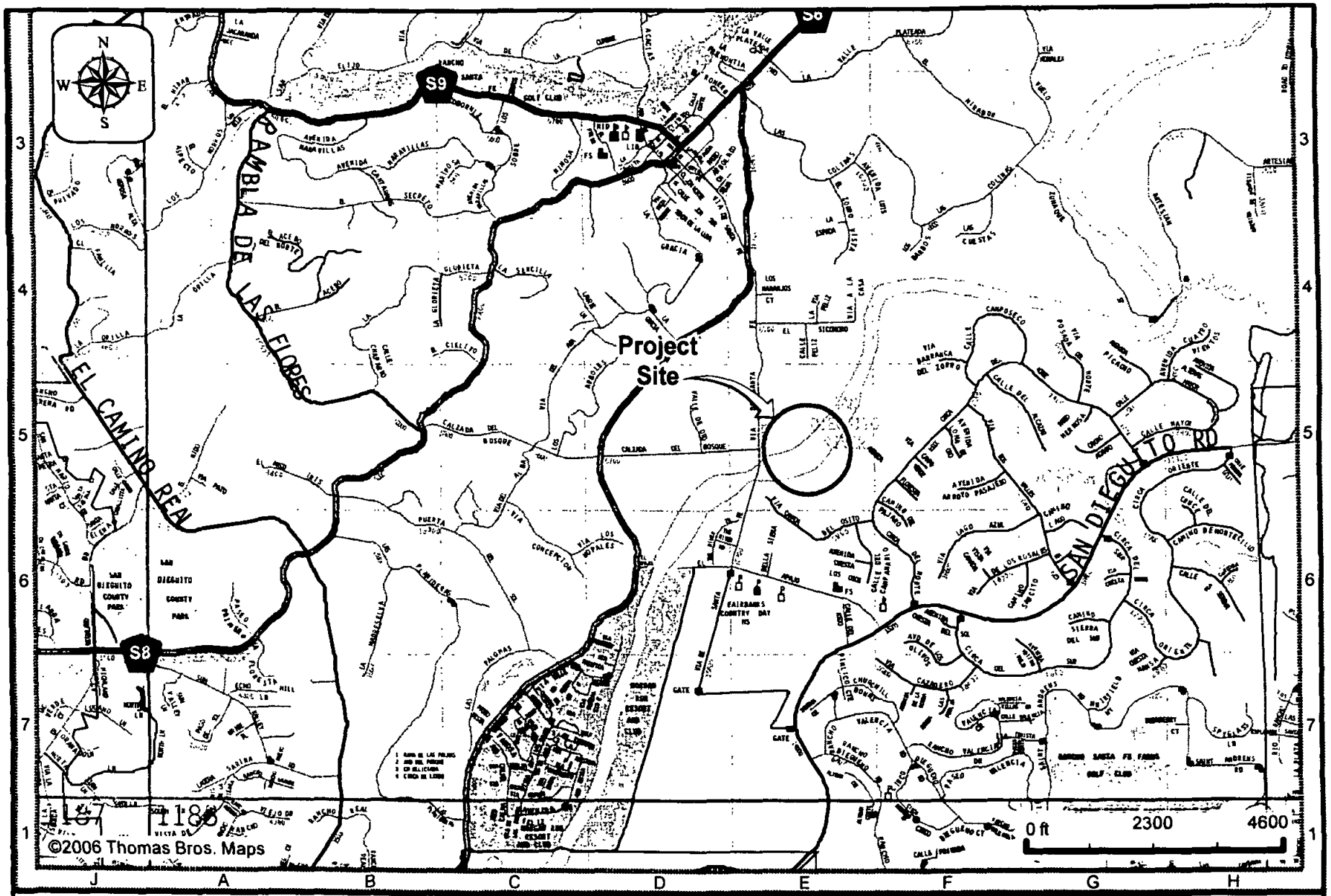
REGISTERED PROFESSIONAL ENGINEER
GARRETT B. FOUNTAIN
No. 63885
EXP 09-30-08
CIVIL
STATE OF CALIFORNIA

EL:GF

(1) Addressee
(1) County of San Diego, Attn: Ms. Amelia Cesena

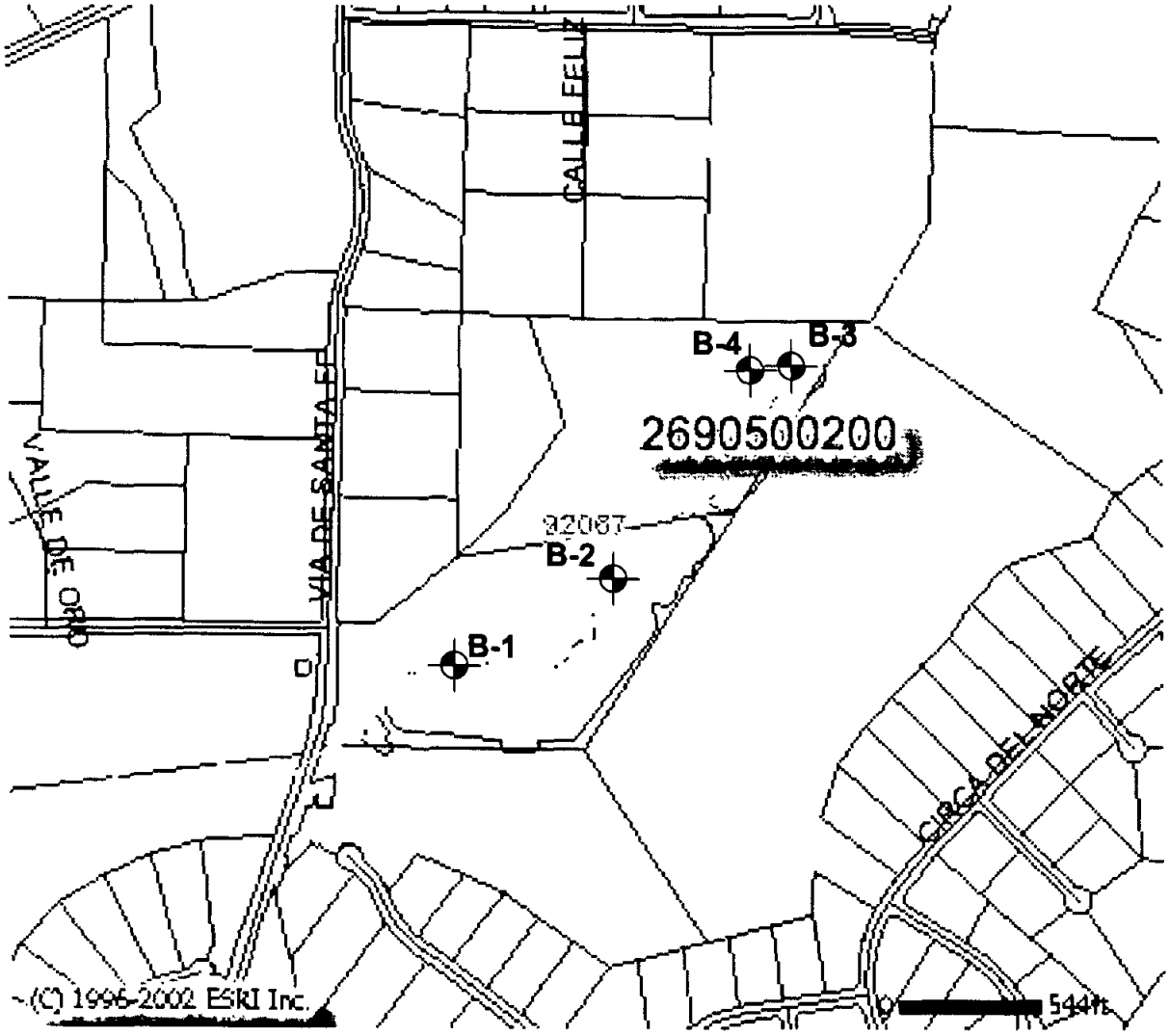
Boring Number	Depth Feet	Diameter Inches	Depth to Water Feet	Drilling Method	Backfill Method	Volume of Backfill Cubic Feet
B1	80	8	3	Mud Roatory	Bentonite Slurry	27
B2	50	8	3	Mud Roatory	Bentonite Slurry	17
B3	24	8	N/A	Auger	Bentonite Slurry	8
B4	31	8	24	Auger	Bentonite Slurry	10

SC ST	SOUTHERN CALIFORNIA SOIL AND TESTING	WILLOW CREEK RANCH SHOP BUILDING		
		By:	EL	Date: 10/12/2006
		Job No.	0611177	Figure: 1



SC ST SOUTHERN CALIFORNIA SOIL & TESTING, INC.	**SITE LOCATION MAP** **Willow Creek Ranch** **16107 Via de Santa Fe** **Rancho Santa Fe, California**	**Job No. 0611177** **Appendix: 1**

SCS&T LEGEND	
B-4	Approximate Test Boring Location



N

NOT TO SCALE

SOUTHERN CALIFORNIA SOIL & TESTING, INC.	
Willow Creek Ranch Garage	
By: GF/DCD	Date: 10/17/06
Job No.: 0611177	Appendix: 2

SUBSURFACE EXPLORATION LEGEND

UNIFIED SOIL CLASSIFICATION CHART

SOIL DESCRIPTION		GROUP SYMBOL	TYPICAL NAMES
I. COARSE GRAINED, more than half of material is larger than No. 200 sieve size.			
GRAVELS More than half of coarse fraction is larger than No. 4 sieve size but smaller than 3".	CLEAN GRAVELS	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
		GP	Poorly graded gravels, gravel sand mixtures, little or no fines.
	GRAVELS WITH FINES (Appreciable amount of fines)	GM	Silty gravels, poorly graded gravel-sand-silt mixtures.
		GC	Clayey gravels, poorly graded gravel-sand, clay mixtures.
SANDS More than half of coarse fraction is smaller than No. 4 sieve size.	CLEAN SANDS	SW	Well graded sand, gravelly sands, little or no fines.
		SP	Poorly graded sands, gravelly sands, little or no fines.
	SANDS WITH FINES (Appreciable amount of fines)	SM	Silty sands, poorly graded sand and silty mixtures.
		SC	Clayey sands, poorly graded sand and clay mixtures.
II. FINE GRAINED, more than half of material is smaller than No. 200 sieve size.			
	SILTS AND CLAYS Liquid Limit less than 50	ML	Inorganic silts and very fine sands, rock flour, sandy silt or clayey-silt-sand mixtures with slight plasticity.
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		OL	Organic silts and organic silty clays or low plasticity.
	SILTS AND CLAYS Liquid Limit greater than 50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
		CH	Inorganic clays of high plasticity, fat clays.
		OH	Organic clays of medium to high plasticity.
III. HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils.

▽	Water level at time of excavation or as indicated	CK	Undisturbed chunk sample
US	Undisturbed, driven ring sample or tube sample	☒	Bulk Sample
SC	Sand Cone	SP	Standard penetration sample
CON	Consolidation	DS	Direct Shear
EI	Expansion Index	SA	Sieve Analysis
MS	Maximum Size of Particle	PI	Plastic Index
MAX	Maximum Density	RC	Relative Compaction
ST	Shelby Tube	UC	Unconfined Compression
SPT	Standard Penetration Sample	TX	Triaxial Compression
pH	pH & Resistivity	RS	Ring Shear
SF/CL	Sulfate & Chloride	AL	Atterberg Limits

SOUTHERN CALIFORNIA SOIL & TESTING, INC.

WILLOW CREEK RANCH SHOP BUILDING

BY:	GBF	DATE:	9/1/2006
JOB NUMBER:	0611177	APPENDIX :	3

LOG OF TEST BORING NUMBER B-1

Date Excavated:	8/16/2006	Logged by:	EL
Equipment:	Mud Rotary Rig	Project Manager:	GF
Surface Elevation (ft):	28	Depth to Water (ft):	3

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: UNDISTURBED	SAMPLES: BULK	PENETRATION (blows/ ft. of drive)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
5	SP	**ALLUVIUM (Qal)** - Light tan, wet, loose, POORLY GRADED SAND	X		7			
10	SP-SM	Gray, wet, loose POORLY GRADED SAND WITH SILT	SPT		7			
15	SP	Gray, wet, loose, POORLY GRADED SAND	SPT		4			
20	SM	Grayish brown, wet, loose, SILTY SAND	SPT		13			
25	SP-SM	Brown, wwet, dense, POORLY GRADED SAND WITH SILT	SPT		21			
30	SM	Brown, wet, medium dense, SILTY SAND	SPT		12			
35	SM	Brown, wet, medium dense, SILTY SAND	SPT		17			
40	SP-SM	Brown, wet, medium dense, POORLY GRADED SILTY SAND	SPT		17			
45	SP	Gray, wet, medium dense, POORLY GRADED SAND	SPT		22			

LOG OF TEST BORING NUMBER B-1 (continued)

Date Excavated: 8/16/2006 | Logged by: EL
Equipment: Mud Rotary Rig | Project Manager: GF
Surface Elevation (ft): 28 | Depth to Water (ft): 3

DEPTH (ft.)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: UNDISTURBED	SAMPLES: BULK	PENETRATION (blows/ ft. of drive)	MOISTURE (%)	DRY UNIT WT. (p	LABORATORY TESTS
50	SP	Gray, wet, very dense, POORLY GRADED SAND	SPT		37			
55								
60	SP	Gray, wet, dense, POORLY GRADED SAND	SPT		26			
65								
70	SW-SM	Gray, wet, very dense, WELL GRADED SAND WITH SILT	SPT		27			
80		**BOTTOM OF BORING AT 80 FEET**						
90								
100								
110								
120								

SOUTHERN CALIFORNIA SOIL & TESTING, INC.

WILLOW CREEK RANCH SHOP BUILDING

BY:	EL	DATE:	10/18/2006
JOB NUMBER:	0611177	APPENDIX:	5

LOG OF TEST BORING NUMBER B-2

Date Excavated:	8/16/2006	Logged by:	EL
Equipment:	Mud Rotary Rig	Project Manager:	GF
Surface Elevation (ft):	28	Depth to Water (ft):	3

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: UNDISTURBED	SAMPLES: BULK	PENETRATION (blows/ ft. of drive)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
5	SC	**ALLUVIUM (Qal)** - Brown, wet, loose, CLAYEY SAND WITH GRAVEL	X		8			
10	SC	Gray, wet, loose, CLAYEY SAND WITH SILT	SPT		10			
15	SM	Gray, wet, loose, SILTY SAND	SPT		6			
20	SM	Grayish, wet, loose, SILTY SAND	SPT		5			
25	SP	Gray, wwet, medium dense, POORLY GRADED SAND	SPT		14			
30	CL	Reddish-Brown, wet, stiff, SANDY CLAY	SPT		15			
35	SM	Reddish-brown, wet, dense, SILTY SAND	SPT		19			
40	SM	... medium dense	SPT		11			
45	SW-SM	Brown, wet, very dense, WELL GRADED SAND WITH SILTY AND GRAVEL	SPT		22			

BOTTOM OF BORING AT 50 FEET

SOUTHERN CALIFORNIA SOIL & TESTING, INC.	WILLOW CREEK RANCH SHOP BUILDING		
	BY: EL	DATE:	10/18/2006
	JOB NUMBER: 0611177	APPENDIX:	6

LOG OF EXPLORATORY BORING NUMBER B-3

Date Excavated: 8/18/2006
Logged by: MM
Equipment: CME 55 HSA
Project Manager: GBF
Surface Elevation (ft): 43
Depth to Water (ft): Not Encountered

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: UNDISTURBED	SAMPLES: BULK	PENETRATION (blows/ ft. of drive)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
2, 4	SM	**FILL (Qaf)** - Brown, moist, loose, SILTY SAND	US	X	6			
6, 8	SC	Dark brown, moist, loose, CLAYEY SAND	US		14			
10, 12, 14	SM	Brown, moist, loose, SILTY SAND	US	X	16			
16, 18, 20	SM	**ALLUVIUM (Qal)** - Tan, moist, loose, SILTY SAND	US		16			

SOUTHERN CALIFORNIA SOIL & TESTING, INC.	WILLOW CREEK RANCH SHOP BUILDING	
	BY: GBF	DATE: 10/18/2006
	JOB NUMBER: 0611177	APPENDIX: 7

LOG OF EXPLORATORY BORING NUMBER B-3 (Continued)

Date Excavated: 8/18/2006 | Logged by: MM
Equipment: CME 55 HSA | Project Manager: GBF
Surface Elevation (ft): 43 | Depth to Water (ft): Not Encountered

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: UNDISTURBED	SAMPLES: BULK	PENETRATION (blows/ ft. of drive)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
		TERRACE DEPOSITS (Qt) - Brown, moist, dense, SILTY SAND	US		58			
22								
			SPT		50-3"			
24		**BOTTOM AT 24 FEET - AUGER REFUSAL**						
26								
28								
30								
32								
34								
34								
38								
40								

SOUTHERN CALIFORNIA SOIL & TESTING, INC.	WILLOW CREEK RANCH SHOP BUILDING	
	BY: GBF	DATE: 10/18/2006
	JOB NUMBER: 0611177	APPENDIX: 8

LOG OF EXPLORATORY BORING NUMBER B-4

Date Excavated:	8/18/2006	Logged by:	MM
Equipment:	CME 55 HSA	Project Manager:	GBF
Surface Elevation (ft):	43	Depth to Water (ft):	24

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: UNDISTURBED	SAMPLES: BULK	PENETRATION (blows/ ft. of drive)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
2, 4	SC	**FILL (Qaf)** - Brown, moist, loose, CLAYEY SAND	US	X	10			
6	SC	Dark brown, moist, loose, SILTY SAND	US		9			
10, 12, 14	CL	Brown, moist, medium, CLAY	US	X	10			
16, 18, 20	SM	**ALLUVIUM (Qal)** - Tan, moist, loose, SILTY SAND	US		14			

SOUTHERN CALIFORNIA SOIL & TESTING, INC.	WILLOW CREEK RANCH SHOP BUILDING	
	BY: GBF	DATE: 10/18/2006
	JOB NUMBER: 0611177	APPENDIX: 9

LOG OF EXPLORATORY BORING NUMBER B-4 (Continued)

Date Excavated: 8/18/2006 | Logged by: MM
Equipment: CME 55 HSA | Project Manager: GBF
Surface Elevation (ft): 43 | Depth to Water (ft): 24

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES UNDISTURBED	SAMPLES BULK	PENETRATION (blows/ ft. of drive)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
		TERRACE DEPOSITS (Qt) - Brown, moist, dense, SILTY SAND	US		62			
22								
24		Groundwater						
		Brown, wet, dense, SILTY SAND	US		48			
26								
28								
30			SPT		71			
		BOTTOM AT 31 FEET - AUGER REFUSAL						
32								
34								
34								
38								
40								

SOUTHERN CALIFORNIA SOIL & TESTING, INC.	WILLOW CREEK RANCH SHOP BUILDING		
	BY: GBF	DATE: 10/18/2006	
	JOB NUMBER: 0611177	APPENDIX: 10	

SOUTHERN CALIFORNIA SOIL & TESTING, INC.

San Diego Office
PHONE (619) 280-4321
TOLL FREE (877) 215-4321
FAX (619) 280-4717
P.O. Box 600627
San Diego, CA 92160-0627
6280 Riverdale Street
San Diego, CA 92120
www.scst.com

Indio Office
PHONE (760) 775-5983
TOLL FREE (877) 215-4321
FAX (760) 775-8362
83-740 Citrus Avenue
Suite G
Indio, CA 92201-3438
www.scst.com

November 3, 2006

Project No. 0611118

Mr. And Mrs. Art Nicholas
C/o Tom Nelson
P. O. Box 641
Solana Beach, California 92075

Subject: REPORT OF SOIL BORING DESTRUCTION
WILLOW CREEK RANCH WALLS
16107 VIA DE SANTA FE
RANCHO SANTA FE, CALIFORNIA
PERMIT NO. LMON-104367
A.P.N. 269-050-01, 02
EST NO. NONE

Dear Mr. Nicholas:

In accordance with the permit we have completed our geotechnical soil borings for the subject project. A site location map, boring location plan and boring logs are presented in Appendix A.

BORING DESTRUCTION

A total of 5 exploratory CPT's were completed. Groundwater was encountered in all borings. No obvious contamination of soil was observed. The CPTs were sealed from the bottom to the ground surface with bentonite. The types, and approximate volumes of the sealing materials are presented on Figure 1. The boring locations and logs are presented in Appendix A.

Should you have any questions regarding the contents of this report or if we may be of further service, please contact this office at your convenience.

Respectfully submitted,
SOUTHERN CALIFORNIA SOIL AND TESTING, INC.

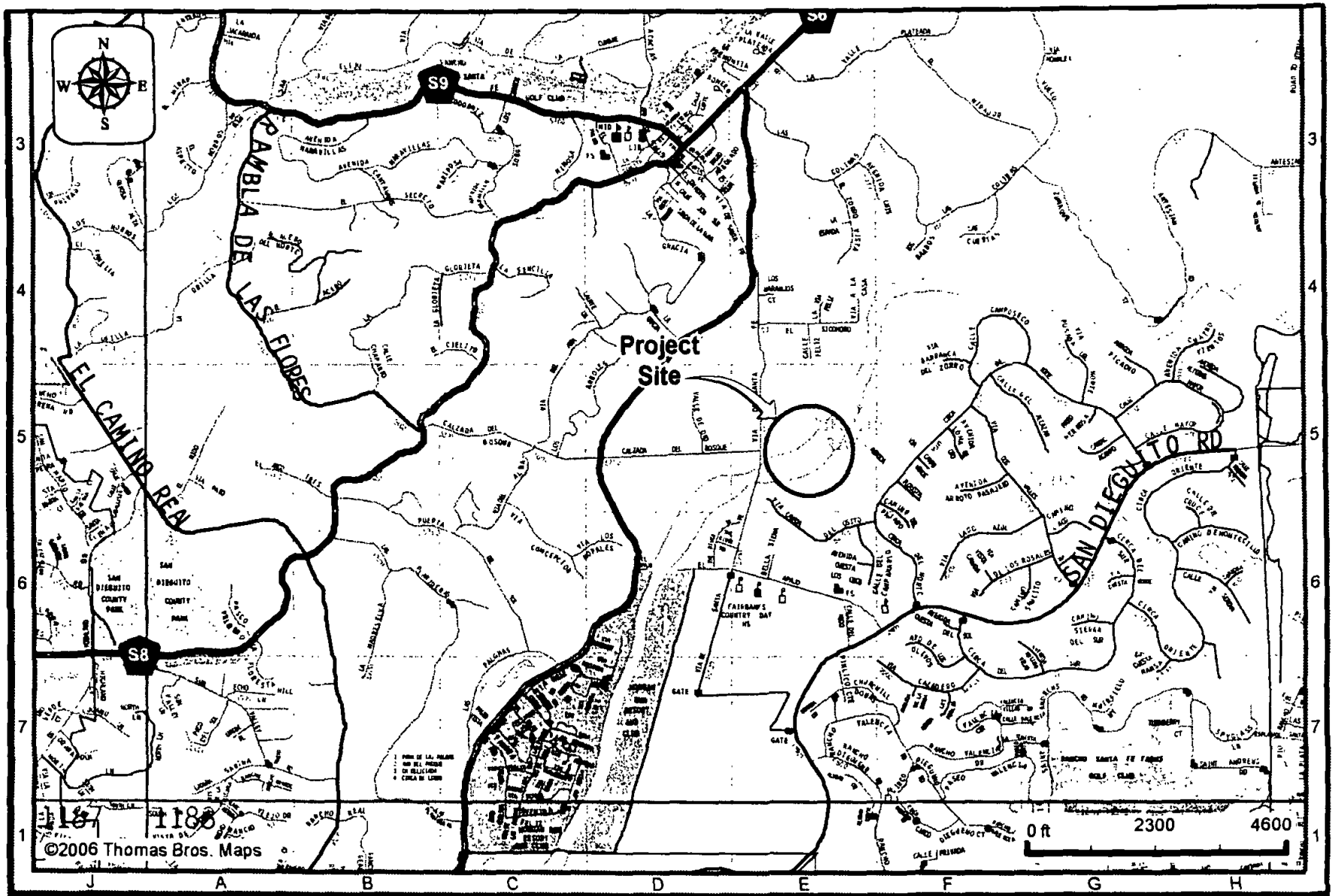
Eddie Liang
Staff Engineer

Garrett B. Fountain, RCE 63885
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
GARRETT B. FOUNTAIN
63885
EXP.09-30-08
CIVIL
STATE OF CALIFORNIA

EL:GF

(1) Addressee
(1) County of San Diego, Attn: Ms. Amelia Cesena



SOUTHERN CALIFORNIA SOIL & TESTING, INC.

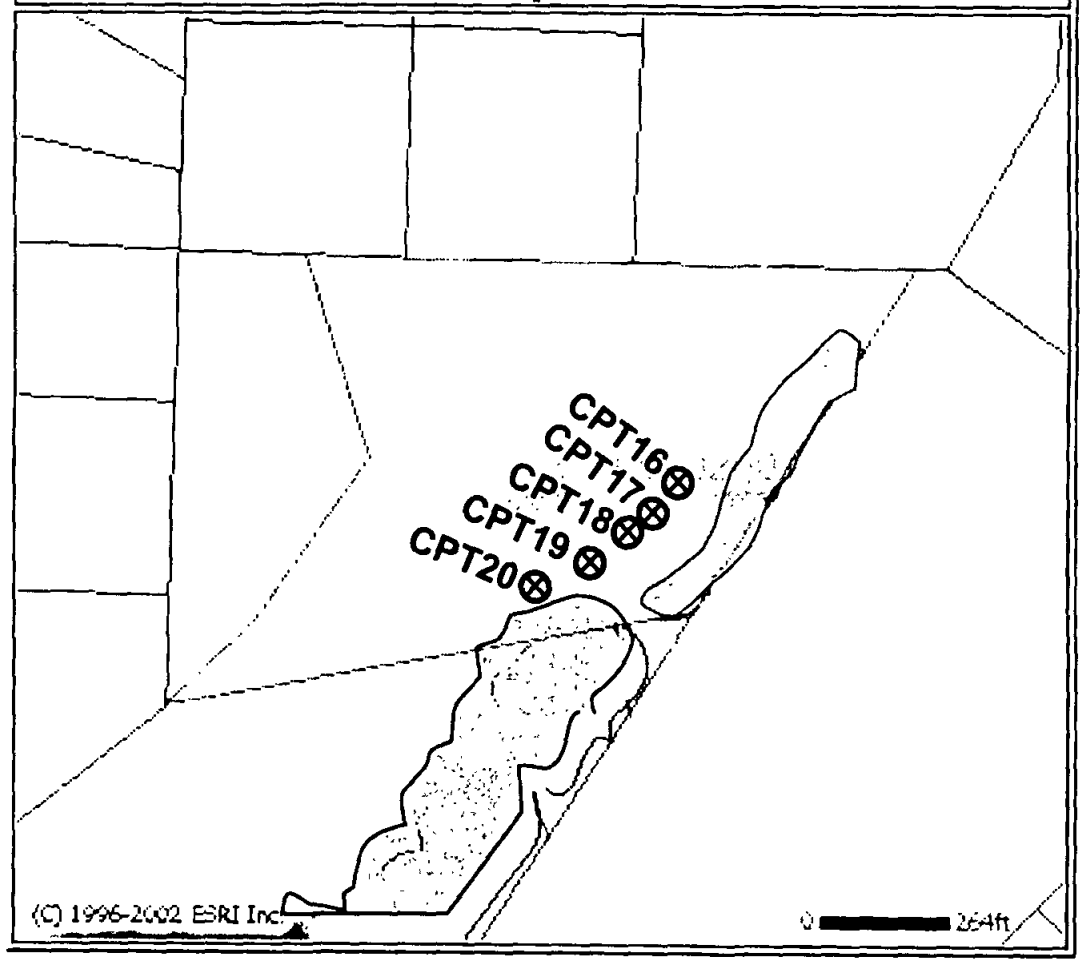
SITE LOCATION MAP
Willow Creek Ranch
16107 Via de Santa Fe
Rancho Santa Fe, California

Job No. 0611118

Appendix 1

SCS&T LEGEND	
⊗CPT20	Approximate Cone Penetrometer Test Location

Parcel Map and Data



N

Not to Scale

SOUTHERN CALIFORNIA SOIL & TESTING, INC.	Willow Creek Ranch Walls	
	By: GF/DCD	Date: 11/06/06
	Job No.: 0611118-1	Appendix: 2

Boring Number	Depth Feet	Diameter Inches	Depth to Water Feet	Drilling Method	Backfill Method	Volume of Backfill Cubic Feet
CPT 16	60	2	16	CPT	Bentonite Slurry	1
CPT 17	56	2	16	CPT	Bentonite Slurry	1
CPT 18	52	2	16	CPT	Bentonite Slurry	1
CPT 19	60	2	12	CPT	Bentonite Slurry	1
CPT 20	54	2	9	CPT	Bentonite Slurry	1

SC ST

SOUTHERN CALIFORNIA SOIL AND TESTING

WILLOW CREEK RANCH WALLS

By:	EL	Date	11/3/2006
Job No.	0611118	Figure	1

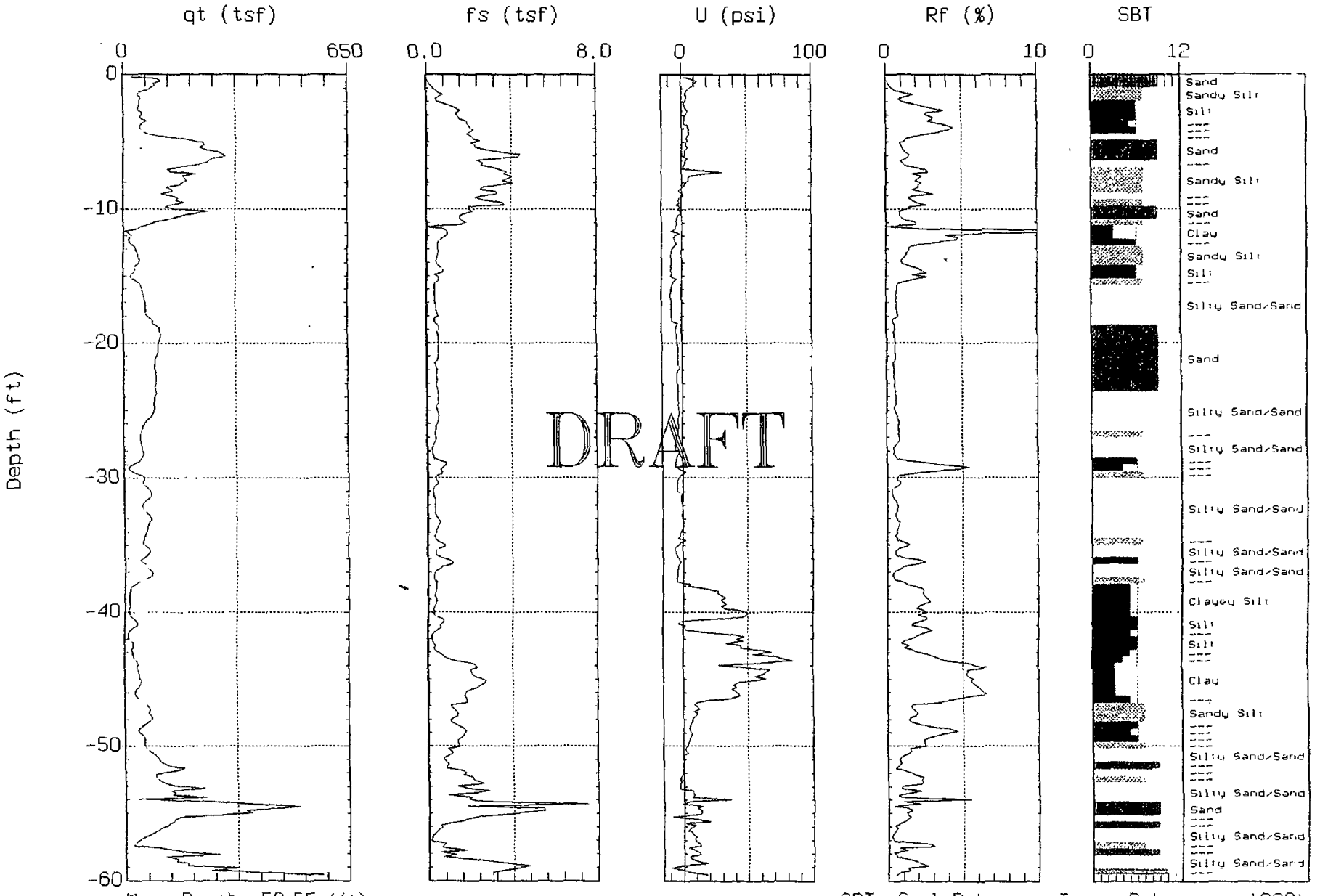
surface elev 39.9. Sta: 09+80 (15' from swell), watetable: -16' froms surface

GREGG

SCST

Site: WILLOW CREEK RANCH
Location: CPT-16

ENGINEER:: EDDIE
Date: 10/31/06 08:58



DRAFT

Max. Depth: 59.55 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

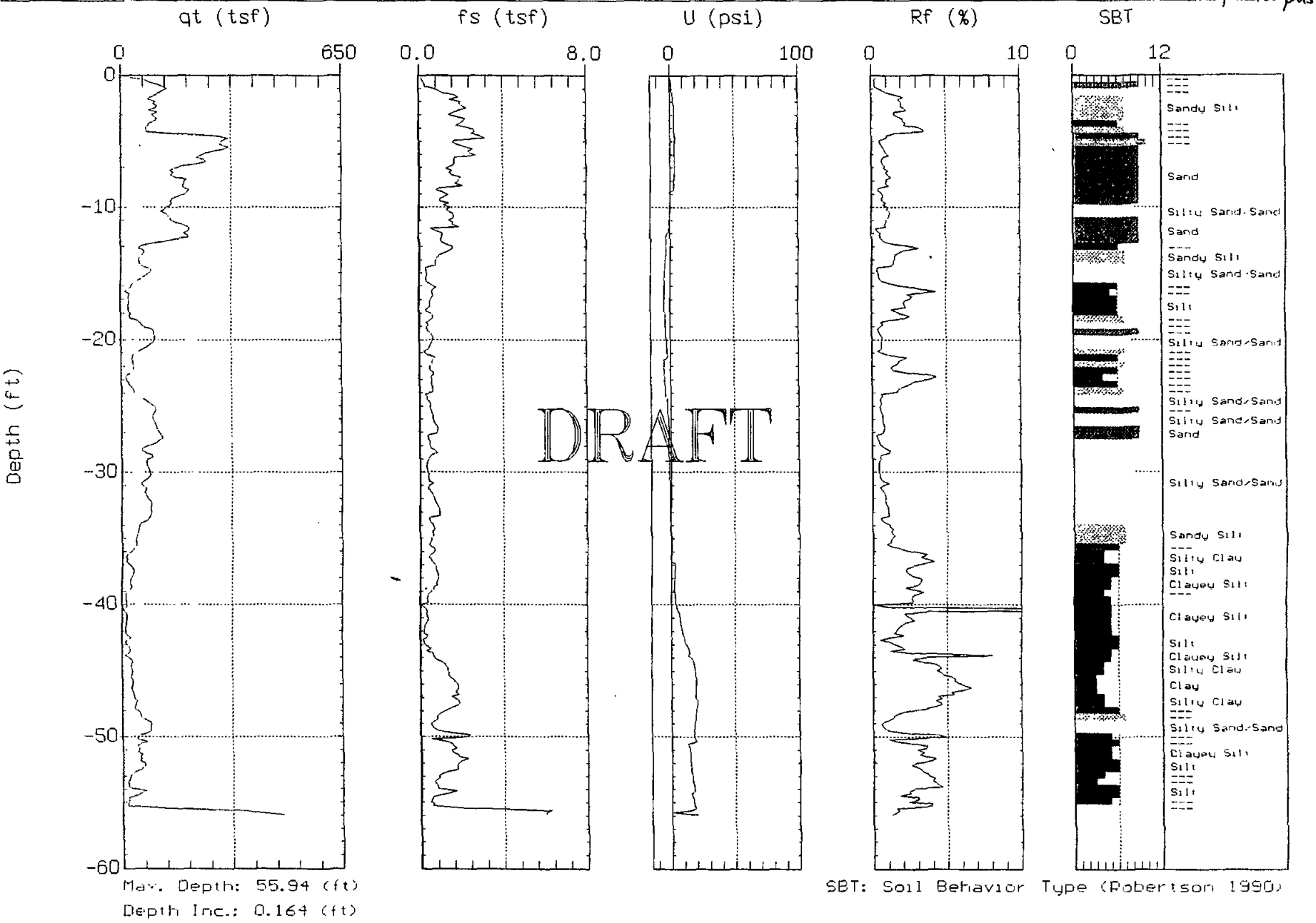
surface elev 405 Sta 08+95 (40' from swell) 2 others location refusal @ 2' & 21' b/c cobbles incline 8.2°, refusal as soon as hard layer hits. NO attempt to push through

GREGG

SCST

Site: WILLOW CREEK RANCH
Location: CPT-17

ENGINEER: EDDIE
Date: 10/31/06 11:00



Max. Depth: 55.94 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

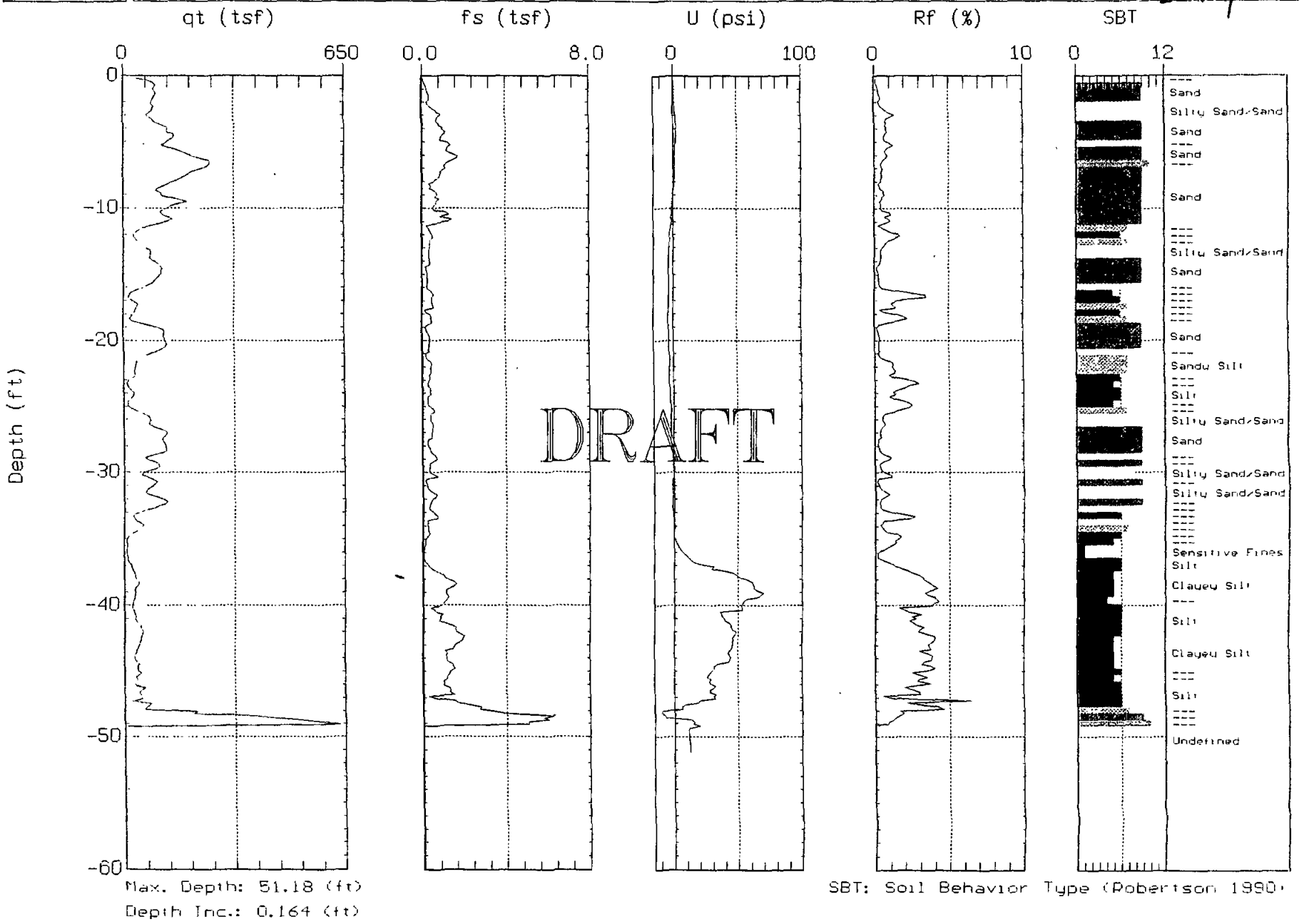
surface elev 40± Sta 7+95 (20' toward inland from edge of slope) 1 location refusal @ 5' away from edge of slope and stopped @ 2' deep

GREGG

SCST

Site: WILLOW CREEK RANCH
Location: CPT-18

ENGINEER: EDDIE
Date: 10/31/06 12:01



Max. Depth: 51.18 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

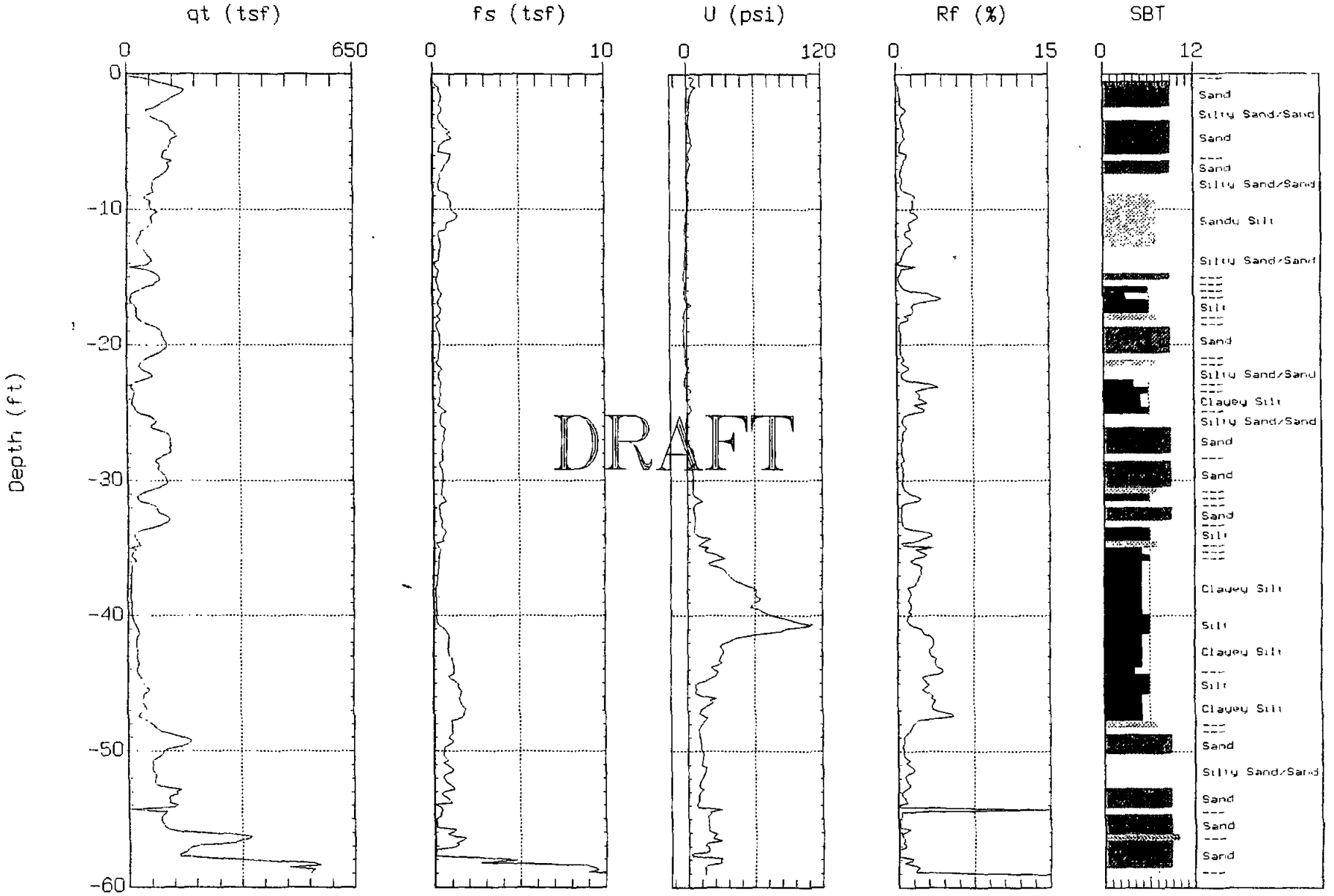
surface elev 405 Sta. 6+95 (12' from edge) watertable: 12' below surface

GREGG

SCST

Site: WILLOW CREEK RANCH
Location: CPT-19

ENGINEER:: EDDIE
Date: 10/31/06 12:41



Max. Depth: 59.05 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

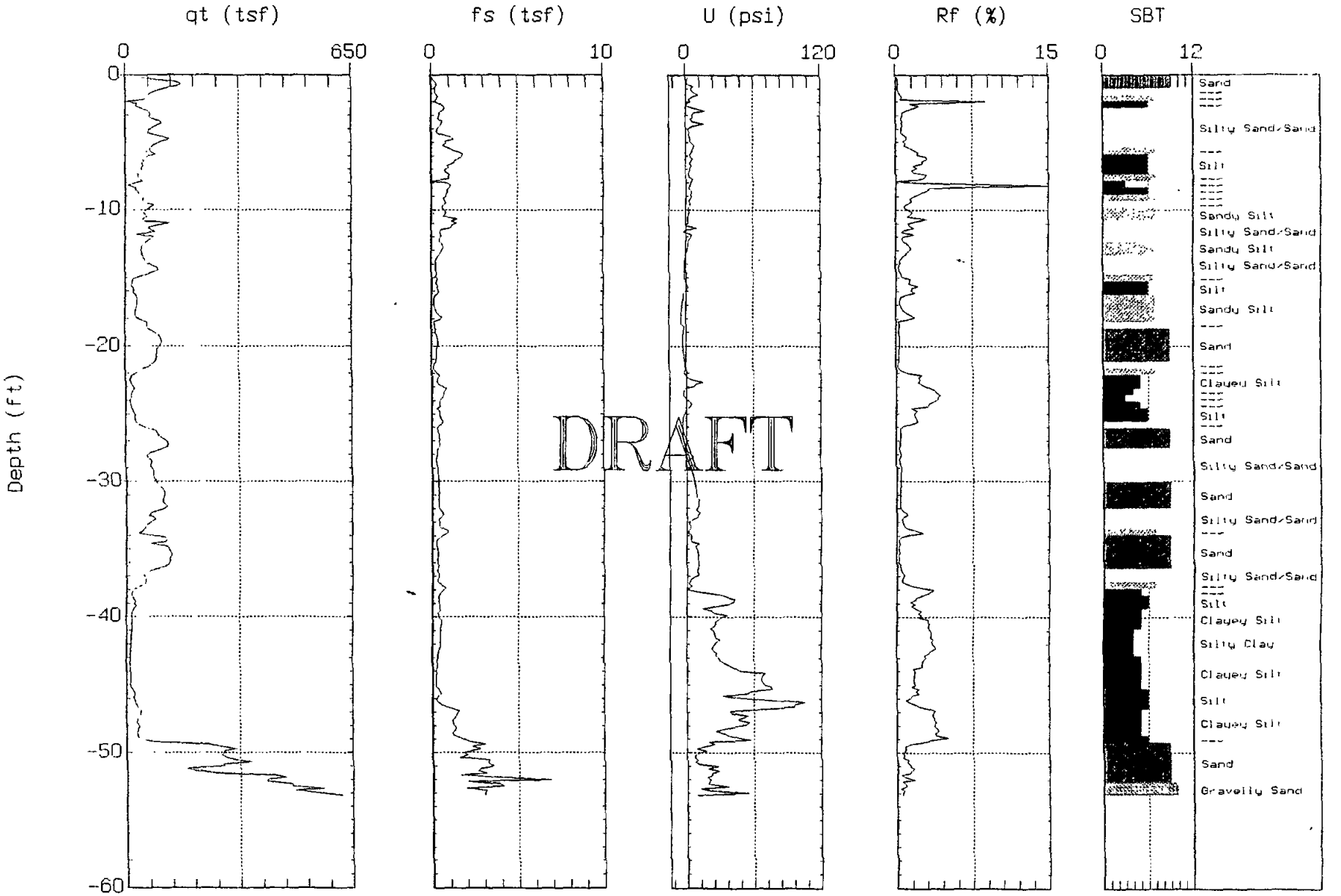
surface elev 40± Sta 5+95 (3' from edge) watertable (9' below)

GREGG

SCST

Site: WILLOW CREEK RANCH
Location: CPT-20

ENGINEER:: EDDIE
Date: 10/31/06 13:46



Max. Depth: 53.15 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

REC'D IN S.M.
1.24.06 R.S.

QUADRUPLICATE
For Local Requirements

Page 1 of 1

Owner's Well No. TWO

Date Work Began 12/5/05, Ended 12/19/05

Local Permit Agency DEH

Permit No. LWEL 17653 Permit Date 11/23/05

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 1085047

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE 33 90 889 LONGITUDE 117 19 685

APN/TRS/OTHER 269 04 020

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Rotary FLUID Gel

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	26	Clacy sand - fine grained
26	34	Sand & Gravel
34	90	Clacy sand with layers of hard round to semi round cobble rocks brown color

Completed Well Construction
Date 3/27/08
Date Inspected 3/27/08
Comments
Water Sample Taken? NO
Reviewed By WRubio

TOTAL DEPTH OF BORING 90 (Feet)

TOTAL DEPTH OF COMPLETED WELL 80 (Feet)

WELL OWNER

Redacted for Privacy

WELL LOCATION

Address 16422 Cale Feliz

City Rancho Santa Fe

County San Diego

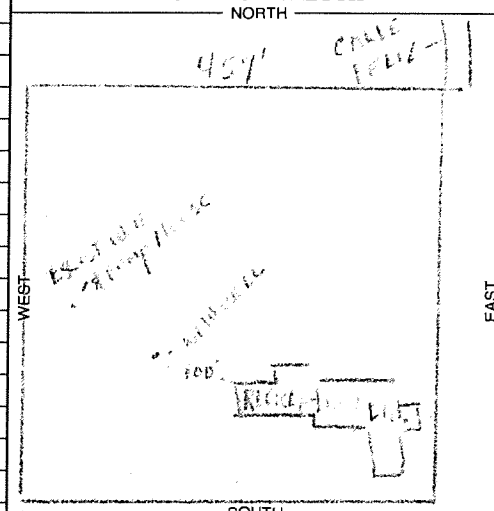
APN Book 269 Page 040 Parcel 20

Township 13S Range 3W Section 30

Lat 33 DEG. 00 MIN. .531 SEC. N Long 117 DEG. 11 MIN. .811 SEC. W

LOCATION SKETCH

NORTH



SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
___ Domestic ___ Public
X Irrigation ___ Industrial

MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 24 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 20 (Ft.) & DATE MEASURED 12/19/05

ESTIMATED YIELD * 600 (GPM) & TEST TYPE pump

TEST LENGTH 8 (Hrs.) TOTAL DRAWDOWN 6 (Ft.)

* *May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	30	18	X				PVCF480	9.8	.750	
30	70	18		X			PVCF480	9.8	.750	.032

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	X			
20	80			5/16 X 7	

ATTACHMENTS (✓)

___ Geologic Log
X Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME FAIN DRILLING & PUMP CO INC
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

12029 Old Castle Rd. Valley center, Ca

ADDRESS CITY STATE ZIP

Signed Joe R Fain 12/19/05 328287

C-57 LICENSED WATER WELL CONTRACTOR DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 05-03

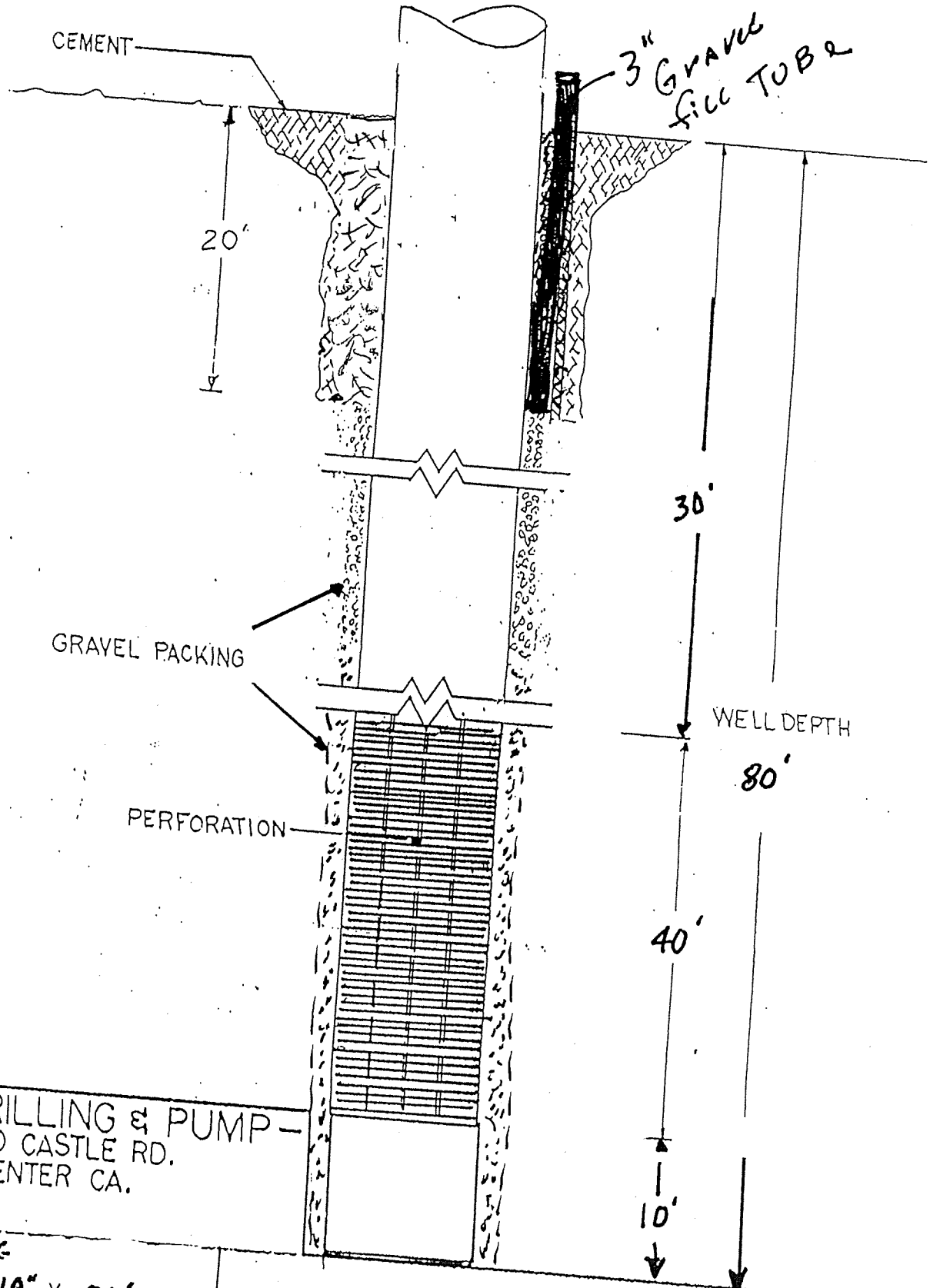
IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

NOT FOR PUBLIC USE CONFIDENTIAL WATER CODE SEC. 13752

L WEL 17653

"AS BUILT"

12-19-05



FAIN DRILLING & PUMP
12029 OLD CASTLE RD.
VALLEY CENTER CA.

WELL CASING
PVC F480 - 10" X 80'
GRAVEL SIZE 5/16 X 7

BY: JRA
JOE FAIN

REC'D IN S.M. 10.30.06 R.S.

QUADRUPLICATE
For Local Requirements

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 1085066

Page 1 of 1
Owner's Well No. TWO
Date Work Began DEH 8/21/06, Ended 8/24/06
Local Permit Agency DEH
Permit No. LWEL 18046 Permit Date 8/18/06

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE 32 99 84 | LONGITUDE 117 20 87
APN/TRS/OTHER 268 31 00 6

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Rotary FLUID Gel

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	4	Silty sand - brown color
4	21	Fine to coarse sand
21	29	Clayey sand
29	79	Fine to coarse sand
79	92	Blue clay
92	101	Cemented Sand
101	137	Blue clay with lenses of sand
137	144	Blue clay

Completed Well Construction
Date 3/27/08
Date Inspected 3/27/08
Comments
Water Sample Taken? NO
Reviewed By [signature]

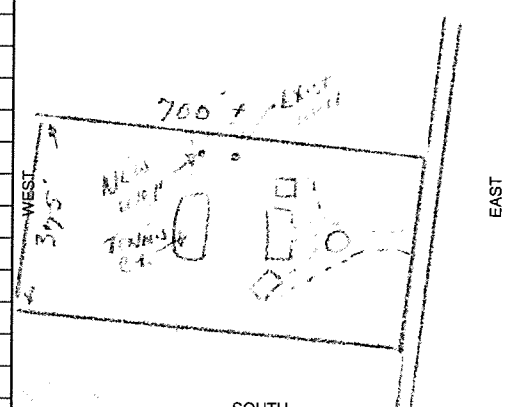
TOTAL DEPTH OF BORING 144 (Feet)
TOTAL DEPTH OF COMPLETED WELL 144 (Feet)

WELL OWNER

Redacted for Privacy

Address 15616 Via de Santa Fe
City Rancho Santa Fe
County San Diego
APN Book 268 Page 310 Parcel 06
Township 13S Range 3W Section 32
Lat 33 DEG. MIN. SEC. N Long 11 DEG. MIN. SEC. W

LOCATION SKETCH

NORTH


SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

___ NEW WELL
X MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial
X MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 29 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 19 (Ft.) & DATE MEASURED 8/24/06
ESTIMATED YIELD * 70+ (GPM) & TEST TYPE airlift
TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN 110 (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	20	22	X				Steel	13.5	.250	
0	37	13.5	X				PVCF480	6	.250	
37	97	13.5		X			PVCF480	6	.250	.032
97	117	13.5	X				PVCF480	6	.250	
117	137	13.5		X			PVCF480	6	.250	.032
137	144	13.5	X				PVCF480	6	.250	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	X			
20	144	pea gravel			5/16

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
X Other Site map

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME FAIN DRILLING & PUMP CO INC
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

12029 Old Castle Rd. Valley Center, Ca 92082
ADDRESS CITY STATE ZIP

Signed [signature] C-57 LICENSED WATER WELL CONTRACTOR
[signature] DATE SIGNED
[signature] C-57 LICENSE NUMBER

DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

NOT FOR PUBLIC CONFIDENTIAL WATER CODE SEC. 13752

ORIGINAL
File with DWR

3-13-07 R.S.

Page 1 of 1

Owner's Well No. 7

Date Work Began 9-28-06, Ended 2-15-07

Local Permit Agency County of San Diego DEH

Permit No. LWEL 13696 Permit Date 10-02-06

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 541074

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE 32 99 904 LONGITUDE 117 20 210

APN/TRS/OTHER 268 310 18

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DEPTH TO FIRST WATER 26 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	10	Tan/Brown, loose to medium dense, fine, silty sand
10	60	Brown, dense, fine silty sand with intermittent clay lenses up to 4" thick
60	100	Brown, dense to very dense silty sand with clay
100	115	very dense below 100', No change in lithology BOH @ 115'
		Static Water level @ 3 BGS, 24 hrs after well installation

Completed Well Construction

Date 3/27/08

Date Inspected 3/27/08

Comments

Water Sample Taken? No

Reviewed By

TOTAL DEPTH OF BORING 115 (Feet)

TOTAL DEPTH OF COMPLETED WELL 110 (Feet)

WELL OWNER

Redacted for Privacy

Address 15754 Via De Santa Fe

City Rancho Santa Fe, CA 92067

County San Diego

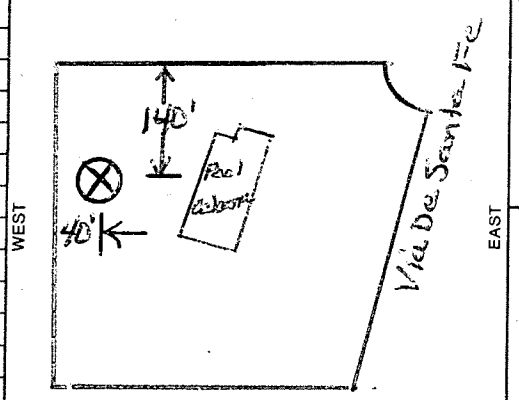
APN Book 268 Page 310 Parcel 18

Township T13S Range R3W Section

Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH

NORTH



SOUTH

Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

✓ NEW WELL

MODIFICATION/REPAIR

___ Deepen

___ Other (Specify)

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USE(S) (✓)

___ MONITORING

WATER SUPPLY

___ Domestic

___ Public

✓ Irrigation

___ Industrial

___ "TEST WELL"

___ CATHODIC PROTECTION

___ OTHER (Specify)

DRILLING METHOD Auger FLUID

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 8 (Ft.) & DATE MEASURED 2-15-07

ESTIMATED YIELD* ___ (GPM) & TEST TYPE Pumping

TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

* *May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	8	12			✓		sch40 Stl	8	sch 40	
0	80	12	✓				PVC	4	sch40	
80	105	12		✓			PVC	4	sch40	0.040
105	110		✓				PVC	4	sch40	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	8	✓			
0	24		✓		
24	115				Monterey 4X12 Sand

ATTACHMENTS (✓)

___ Geologic Log

___ Well Construction Diagram

___ Geophysical Log(s)

___ Soil/Water Chemical Analyses

___ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Tim Duddie for Tri-County Drilling Inc
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 9631 Candida St. CITY San Diego STATE CA ZIP 92126

Signed: WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED 3-1-07 C-57 LICENSE NUMBER 547737

DWR 188 REV. 7-90

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Rec'd in S.M. Marcos 2/7/08.

QUADRUPLICATE
For Local Requirements

Page 1 of 1
Owner's Well No. ONE 2007
Date Work Began 11/19/07, Ended 11/21/07
Local Permit Agency DEH
Permit No. LWEL 18466 Permit Date 8/15/07

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 1089710

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Rotary FLUID Gel

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	12	Alluvial fill fine grained sand and silt grey color
12	59	Sandy grey clay
59	64	Grey claey sand
64	69	Fine to coarse sand grey color
69	73	boulders
73	83	fine to medium sand with boulders
83	89	boulders
89	100	Sand and boulders overall color grey

TOTAL DEPTH OF BORING 100 (Feet)
TOTAL DEPTH OF COMPLETED WELL 100 (Feet)

Completed Well Construction
Date 12/21/12
Date Inspected
Comments
Water Sample Taken?
Reviewed By Doc

WELL OWNER

Redacted for Privacy

Address 5700 Blk Calzada dec Bosque
City Rancho Santa Fe
County San Diego
APN Book 268 Page 180 Parcel 37
Township Range Section
Lat 33.00253 N (3 DEG. MIN. SEC.) Long 117.12253 W (1 DEG. MIN. SEC.)

LOCATION SKETCH

NORTH
WEST EAST
Part of 25 AC.
(See Attached Map)
Well - 95
50
CALZADA del Bosque
SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
___ Domestic ___ Public
X Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 30 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 22 (Ft.) & DATE MEASURED 11/21/07
ESTIMATED YIELD * 600 (GPM) & TEST TYPE pump
TEST LENGTH 8 (Hrs.) TOTAL DRAWDOWN 60 (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	20	24	X				Steel A 53	17.5	.250	
0	60	18	X				Steel	10	.375	
60	100	18		X			Steel 304	10	.375	060

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	X			
20	100				Pea gravel
					5/16-7

ATTACHMENTS (✓)

___ Geologic Log
X Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
X Other Site Map

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME WAIN DRILLING & PUMP CO INC
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

12029 Old Castle Rd Valley Center ca 92082
ADDRESS CITY STATE ZIP

Signed [signature] 12-3-07 [illegible]
C-57 LICENSED WATER WELL CONTRACTOR DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

NOT FOR PUBLIC CONFIDENTIAL WATER CODE SECTION

WDR to SMO
6/12/91

County Mail Station —A-21

FIRST CARBON COPY

ASSESSORS PARCEL NUMBER:
302-301-11
CONTROL #W03340

COUNTY OF SAN DIEGO
DEPARTMENT OF HEALTH SERVICES
1700 PACIFIC HIGHWAY, SAN DIEGO, CA 92101-2417

Notice of Intent No. _____
Local Permit No. or Date _____

WATER WELL DRILLERS REPORT
(INSERT under ORIGINAL PAGE w/carbon of State Form)

State Well No. _____
Other Well No. _____

Redacted for Privacy

(2) LOCATION OF WELL (See instructions):
County SAN DIEGO Owner's Well Number _____
Well address if different from above RANCHO DIEGUENO & PASEO ABUELO
Township 14S Range 3W Section 3
Distance from cities, roads, railroads, fences, etc. _____

DEPARTMENT USE ONLY
Completed Well Construction:
Date _____
Date Inspected 5-26-92
Comments well is for agricultural use only
Water Sample Taken? _____
Sanitarian's Approval: Scott Walker

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item (12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☒
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) Equipment:
Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) Gravel Pack:
Yes ☒ No ☐ Size 5/16
Diameter of above 5/16
Packed from 0 to 420 ft.

(7) Casing Installed:
Steel ☒ Plastic ☐ Concrete ☐

(8) Perforations:
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot Size
0	105	8 5/8"	188	360	380	.020
				380	400	

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 105 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval _____ ft.
Method of sealing CEMENT GROUT

(10) WATER LEVELS:
Depth of first water, if known 218 ft.
Standing level after well completion 20 ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☒ 4hours
Depth to water at start of test _____ ft. At end of test _____ ft.
Discharge 230 gal/min after _____ hours Water temperature COOL
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 420 ft. Depth of completed well 420 ft.

from ft. to ft.	Formation (Describe by color, character, size or material)
0-100	Clay/brown granite
100-185	Clay/pink granite
185-218	Clay/green granite
218-420	Black/white granite

FRACTURES:

0-100'	clay/brown granite/water sealed off
100-185	Clay/pink granite/dry
185-218'	Clay/green/grey granite/dry
218'	Black/white granite/trace water
305'	Grey granite/dry
385'	Black/white/brown/quartz/water

LINED AND GRAVEL PACKED ENTIRE DEPTH OF WELL (0-420) 6" DIAMETER PVC.

Work Started 5/22/ 1991 Completed 5/30/ 1991

WELL DRILLERS STATEMENT: I hereby declare under penalty of perjury that the information provided in this report is true. This water well was installed in compliance with San Diego County Code and State of California, Department of Water Resources, Bulletin No. 74.

SIGNED Bud Morrison
(Well Driller)

NAME MORRISON DRILLING
(Person, firm, or Corporation) (Type or Print)

ADDRESS P.O. BOX 117

CITY ALPINE, CA ZIP 91903

LICENSE NO. 297450 DATE THIS REPORT JUNE 05/91

JAN 20 2010

ORIGINAL
File with DWR

County of San Diego
Dept. of Environmental Health
Land & Water Quality Div.

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 0943573

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Page ____ of ____
Owner's Well No. ____
Date Work Began 12/2/09, Ended 12/8/09
Local Permit Agency San Diego County
Permit No. LWEL 20215 Permit Date 6-17-09

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Air Rotary FLUID ____

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	106	Brown + Reddish Clay Mostly Brown Color
106	132	Brown D.G. with a little Black Rock, Water: 2 GPM
132	407	Black Rock and Brown Clay
407	415	Fractured Black Granite Water: 3 GPM Total
415	420	Fractured B+W Granite
420	455	B+W Granite
455	460	Fractured B+W Granite Water: 7 GPM Total
460	770	B+W Granite
770	780	Fractured B+W Granite Water: 15 GPM Total
780	810	B+W Granite

Well Construction
Date 12/11/12
Date Inspected 12/11/12
Comments N/A
Water Sample Taken? N/A
Reviewed By DCC

TOTAL DEPTH OF BORING 810' (Feet)
TOTAL DEPTH OF COMPLETED WELL 809' (Feet)

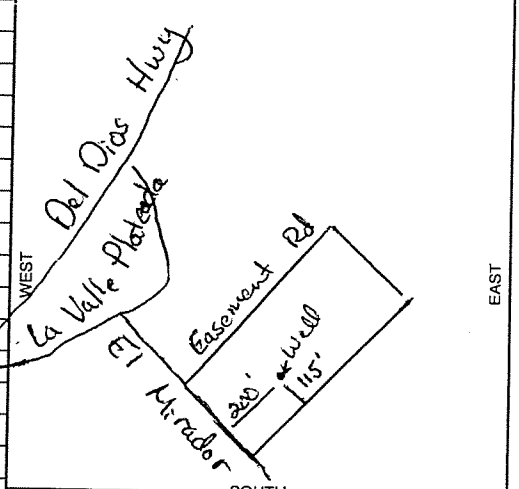
WELL OWNER

Redacted for Privacy

WELL LOCATION

Address 17089 El Mirador
City Rancho Santa Fe
County San Diego
APN Book 267 Page 090 Parcel 14
Township 13S Range 3W Section 21
Lat 33 (DEG.) 02 (MIN.) 213 (SEC.) N Long 117 (DEG.) 18 (MIN.) 494 (SEC.) W

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

✓ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
___ Domestic ___ Public
✓ Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ____ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL Unknown (Ft.) & DATE MEASURED ____
ESTIMATED YIELD * 15 (GPM) & TEST TYPE Air Lift
TEST LENGTH ____ (Hrs.) TOTAL DRAWDOWN ____ (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	135	14	✓				Steel	8	.188	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE: CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	130	✓			
130	135		✓		

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Stehly Brothers Drilling, Inc
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 13268 McNally Rd. CITY Valley Center STATE CA ZIP 92082
Signed Paul Stehly
C-57 LICENSED WATER WELL CONTRACTOR
DATE SIGNED 1-21-10
C-57 LICENSE NUMBER 709686

DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED PAGE

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

Rec'd SM 9/22/09 Le

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0097646

Page 1 of 1

Owner's Well Number 2

Date Work Began 08/19/2009 Date Work Ended 8/23/2009

Local Permit Agency San Diego County Health Department

Permit Number LWEL 20228 Permit Date 6/29/09

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ⦿ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Direct Rotary Drilling Fluid Polymer mud

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc)
0	8	Clay
8	115	Black Silt - 75 GPM
115	125	Green Rock/Soft Granite/ 2 GPM
125	130	Black/White Granite

10-27-09 Inspected well & verified GPS Co-ordinates. Well is approved

[signature]

Total Depth of Boring 130 Feet

Total Depth of Completed Well 130 Feet

Redacted for Privacy

Well Location

Address 6461 El Apajo Road

City Rancho Santa Fe County San Diego

Latitude 32 Deg. 59 Min. 734 Sec. N Longitude 117 Deg. 11 Min. 261 Sec. W

Datum Decimal Lat. 32.9854 Decimal Long. 177.18545

APN Book 269 Page 080 Parcel 05

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

86'

150'

San Dieguito Rd

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

⦿ New Well

○ Modification/Repair

○ Deepen

○ Other

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

⦿ Water Supply

☐ Domestic ☐ Public

☑ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

○ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * 150 (GPM) Test Type Air Lift

Test Length 2.0 (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	20	14	Blank	Low Carbon Steel	.156	8 5/8		
0	130	8	Screen			4	Milled Slots	

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	20	Cement	
0	130	Filter Pack	Pea gravel

Attachments

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analyses

☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Mike Thing Well Drilling & Pump Service

Person, Firm or Corporation

PO Box 2671 Alpine CA 91903

Address City State Zip

Signed [signature] 9/2/2009 783908

C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Rec'd 5/19/11 SM/LR

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0130153

Page 1 of 1

Owner's Well Number 1

Date Work Began 11/16/2009 Date Work Ended 12/24/2009

Local Permit Agency San Diego County DEH

Permit Number LWEL 20348 Permit Date 11/13/09

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N Latitude W Longitude

APN/TRS/Other

Redacted for Privacy

Geologic Log

Orientation ⦿ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Mud Rotary Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	18	
		Grayish brown silty f-m sand; some gravel
18	160	
		Greenish brown clayey, silty, fine sand, some
		gravel
160		
		Grayish brown f-m sand. More clay with depth.
		Occasional dense layers
		Clay layer @ 280'
	620	
		End of boring

Completed Well Construction

Date 12/13/12

Date Inspected 12/13/12

Comments

Water Sample Taken?

Reviewed By DOC

Total Depth of Boring 620 Feet

Total Depth of Completed Well 560 Feet

Well Location

Address 7008 El Vuelo Del Este

City Rancho Santa Fe County San Diego

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

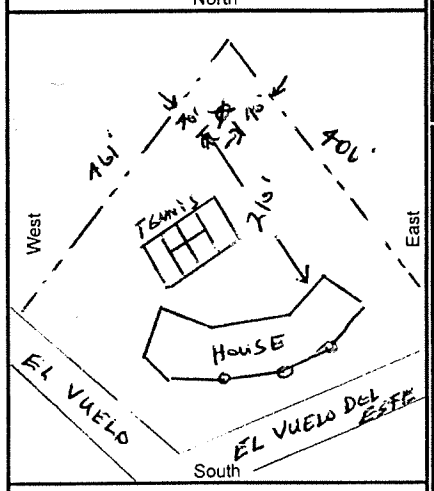
Datum Decimal Lat. 33.028867 Decimal Long. -117.18296

APN Book Page Parcel

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

⦿ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

⦿ Water Supply
☐ Domestic ☐ Public
☑ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 80 (Feet below surface)

Depth to Static Water Level 80 (Feet) Date Measured

Estimated Yield * 43 (GPM) Test Type

Test Length (Hours) Total Drawdown 90 (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0	180	12	blank	steel	.188	8.3		
0	360	8	blank	pvc	.23	4.5		
360	560	8	screen	pvc	.23	4.5	slot	0.020

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	340	Grout	bentonite
340	620	sand	med aquarium

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Tri-County Drilling, Inc. (Person, Firm or Corporation)

9631 Candida Street (Address) San Diego (City) CA (State) 92126 (Zip)

Signed [signature] (C-57 Licensed Water Well Contractor) 2/12/10 (Date Signed) 547737 (C-57 License Number)

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Rec'd 12-21-09

QUADRUPLICATE
For Local Requirements

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 1082813

Page 1 of 1
Owner's Well No. One
Date Work Began 10/08/09, Ended 10/19/09
Local Permit Agency DEH
Permit No. LWELL 20354 Permit Date 10/07/09

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Rotary FLUID Air/ Mud

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	5	light brown, hard sandy clay
5	95	lb.sandy clay W/ seepage
95	320	hard, black volcanic rock
220	221	fracture, 2 gpm
221	320	hard, black volcanic rock
320	430	hard, multi colored volcanic
430	431	fracture, 3 gpm
431	590	hard, multi colored volcanic
590	1010	hard, purple rock w/ soft green, mineralized lenses

Completed Well Construction
Date 12/13/12
Date Inspected 12/13/12
Comments
Water Sample Taken?
Reviewed By DOC

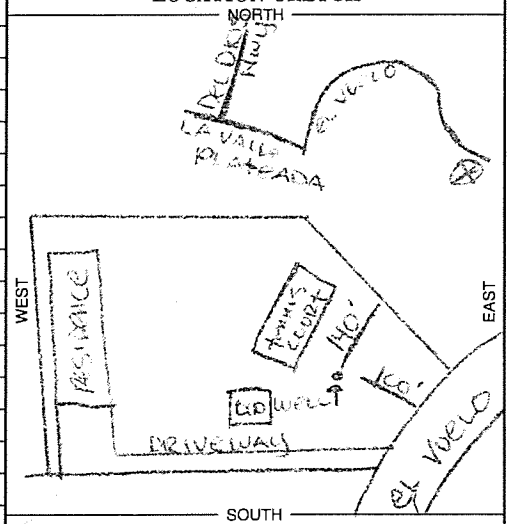
TOTAL DEPTH OF BORING 1010 (Feet)
TOTAL DEPTH OF COMPLETED WELL 1010 (Feet)

WELL OWNER

Redacted for Privacy

Address 17134 El Vuelo
City Rancho Santa Fe
County San Diego
APN Book 267 Page 090 Parcel 10
Township ___ Range ___ Section ___
Lat 33 01 39.5 N (DEG. MIN. SEC.) Long 117 10 .938 W (DEG. MIN. SEC.)

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

✓ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)
WATER SUPPLY
___ Domestic ___ Public
✓ Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 50 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 46 (Ft.) & DATE MEASURED 10/19/09
ESTIMATED YIELD * 5 (GPM) & TEST TYPE Air lift
TEST LENGTH 8 (Hrs.) TOTAL DRAWDOWN 430 (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	100	14	x				steel	8	.188	
0	500	6.5	x				PVC/sdr17	4.5	.250	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	100	x			

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Joe R. Fain, FAIN DRILLING & PUMP CO. INC
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
12029 Woodcastle Rd Valley Center CA 92082
ADDRESS CITY STATE ZIP
Signed ___ 10-19-09 328287
C-57 LICENSED WATER WELL CONTRACTOR DATE SIGNED C-57 LICENSE NUMBER

Rec'd 5/19/11 SM/LR

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0129470

Page 1 of 1

Owner's Well Number Geothermal Well #1

Date Work Began 01/18/2010 Date Work Ended 1/22/2010

Local Permit Agency County of San Diego

Permit Number LWEL 20472 Permit Date 12/31/09

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N Latitude W Longitude

APN/TRS/Other

Redacted for Privacy

Geologic Log

Orientation ⦿ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	8	
		Brown organic silty f-m sand
8	85	Lt. brown f-m sand, some silt & clays
		More dense with depth
		Occasional sand lens at 30', 85'
85		
		Dense brown f-m sand, possible torrey sandstone
	300	
		End of boring

~~Completed Well Construction~~

~~Date~~ 12/13/12

~~Date Inspected~~ 12/13/12

Comments

~~Water Sample Taken?~~

~~Reviewed By~~ DOC

Total Depth of Boring 300 Feet

Total Depth of Completed Well 300 Feet

Well Location

Address 15335 Las Planideras

City Rancho Santa Fe County San Diego

Latitude ___ Deg. ___ Min. ___ Sec. N Longitude ___ Deg. ___ Min. ___ Sec. W

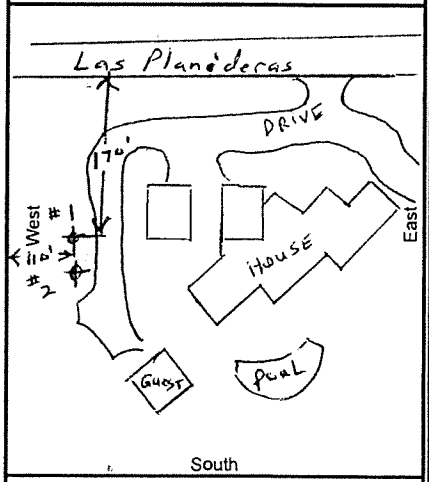
Datum ___ Decimal Lat. 32.999764 Decimal Long. -117.2205

APN Book ___ Page ___ Parcel ___

Township ___ Range ___ Section ___

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

⦿ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
⦿ Other Geothermal

Water Level and Yield of Completed Well

Depth to first water 160 (Feet below surface)

Depth to Static Water Level 160 (Feet) Date Measured 01/19/2010

Estimated Yield * ___ (GPM) Test Type ___

Test Length ___ (Hours) Total Drawdown ___ (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	300	8"	Blank	Fiberglass	.188	4.5		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	300	Grout	Geothermal grout
			Silica Sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Tri-County Drilling, Inc. (Person, Firm or Corporation)

Address 9631 Candida Street City San Diego State CA Zip 92126

Signed [signature] C-57 Licensed Water Well Contractor Date Signed 2/10/10 C-57 License Number 547737

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Rec'd 5/19/11 LR/SM

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0130103

Page 1 of 1

Owner's Well Number Geothermal Well #2

Date Work Began 01/25/2010 Date Work Ended 1/27/2010

Local Permit Agency County of San Diego DEH

Permit Number LWEL 20473 Permit Date 12/31/09

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N Latitude W Longitude

APN/TRS/Other

Geologic Log

Orientation ⦿ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Mud Rotary Drilling Fluid

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc)
0	8	
		Brown organic silty f-m sand
8	85	
		Lt. brown f-m sand, some silt & clays
		More dense with depth
		Occasional sand lens at 30', 85'
85		
		Dense brown f-m sand, possible torrey sandstone
	300	
		End of boring

Completed Well Construction

Date 12/13/12

Date Inspected 12/13/12

Comments

Water Sample Taken?

Reviewed By Doc

Total Depth of Boring Feet

Total Depth of Completed Well Feet

Well Owner

Redacted for Privacy

Well Location

Address 15335 Las Planideras

City Rancho Santa Fe County San Diego

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

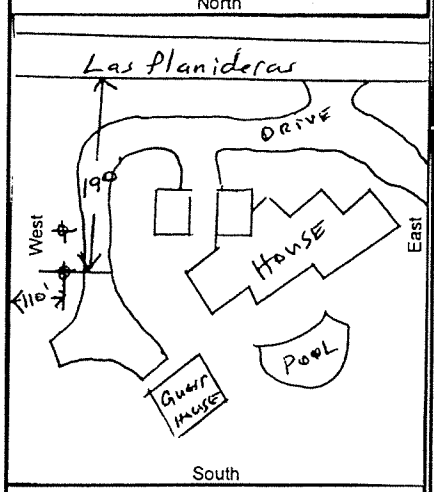
Datum Decimal Lat. 32.999764 Decimal Long. -117.2205

APN Book Page Parcel

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

⦿ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
⦿ Other Geothermal

Water Level and Yield of Completed Well

Depth to first water 160 (Feet below surface)

Depth to Static Water Level 160 (Feet) Date Measured 01/26/2010

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0	300	8	blank	Fiberglass	.188	4.5		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	300	Grout	Geothermal grout
			Silica Sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Tri-County Drilling, Inc. (Person, Firm or Corporation)

9631 Candida Street (Address) San Diego (City) CA (State) 92126 (Zip)

Signed (C-57 Licensed Water Well Contractor) Date Signed 2/10/10 C-57 License Number 547737

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

OCT 25 2010

County of San Diego
Dept. of Environmental Health
Land & Water Quality Div.

Page ___ of ___

Owner's Well No. ___

Date Work Began 6/21/10, Ended 6/28/10

Local Permit Agency County of San Diego

Permit No. LNEL 20522 Permit Date 3/11/10

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 0943608

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Air Rotary & Mud FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	40	Clay and Brown D.G.
40	45	B&W and Clay Granite
45	100	Clay and Brown D.G.
100	115	Rock and Sand
115	217	Clay
217	224	Fractured B&W Granite
224	415	Fractured B&W Granite
415	655	B&W Granite
655	660	Fractured B&W Granite Water: 10 GPM
660	725	B&W Granite
725	735	Fractured B&W Granite Water: 45 GPM Total
735	760	B&W Granite

Completed Well Construction

Date 12/13/12

Date Inspected 12/13/12

Comments ___

Water Sample Taken? ___

Reviewed By DOC

TOTAL DEPTH OF BORING 760 (Feet)

TOTAL DEPTH OF COMPLETED WELL 760 (Feet)

Redacted for Privacy

WELL LOCATION

Address 6059 Via Canada Del Osito Lot #138

City Rancho Santa Fe

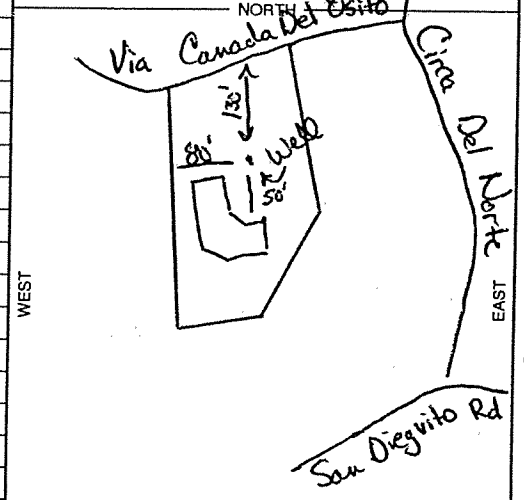
County San Diego

APN Book 269 Page 183 Parcel 32

Township 13S Range 3W Section 33

Lat 33 DEG. 00 MIN. 037 SEC. N Long 117 DEG. 19 MIN. 481 SEC. W

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

✓ NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
___ Domestic ___ Public
✓ Irrigation ___ Industrial

MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 100 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL Unkn (Ft.) & DATE MEASURED —

ESTIMATED YIELD * 45 (GPM) & TEST TYPE Air Lift

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	224	12	✓				Steel	8	.188	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	40	✓			
40	112		✓		
112	224			✓	

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Stehly Brothers Drilling, Inc.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

13268 McNally Rd. Valley Center CA 92082
ADDRESS CITY STATE ZIP

Signed Paul Stehly 10-5-10 709686
C-57 LICENSED WATER WELL CONTRACTOR DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 05-00 IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED PAGE

ORIGINAL
File with DWR

ENVIRONMENTAL HEALTH

Page ___ of ___
Owner's Well No. ___
Date Work Began 4/19/10, Ended 4/20/10
Local Permit Agency County of San Diego
Permit No. LWEL 20539 Permit Date 4/6/10

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 0943596

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Air Rotary FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	17	Sand Stone Soft
17	19	Fractured B&W Granite Water: 1/4 GPM
19	63	Black and Brown Granite with Caliche and Clay
63	95	Brown D.G.
95	150	Black & Brown Granite with Clay Dirt
150	250	B&W Granite with a little Clay
250	255	Slight Fractured B&W Granite Water: 2 GPM Total
255	335	B&W Granite
335	340	Fractured B&W Granite Water: 30 GPM total
340	405	B&W Granite
405	410	Fractured B&W Granite Water: 55 GPM total

Completed Well Construction
Date 12/13/17
Date Inspected ___
Comments ___
Water Sample Taken? ___
Reviewed By DOC

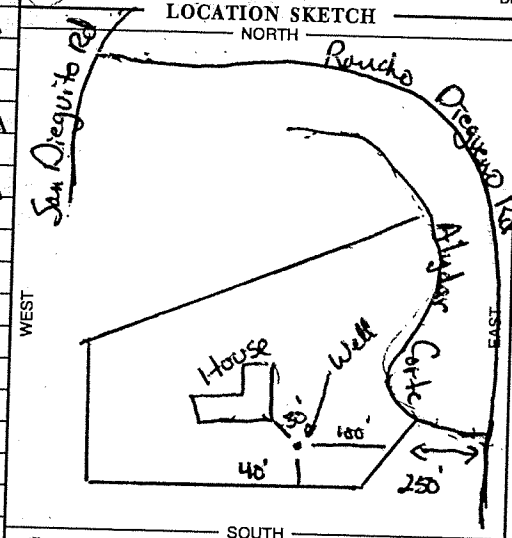
TOTAL DEPTH OF BORING 410 (Feet)
TOTAL DEPTH OF COMPLETED WELL 410 (Feet)

WELL OWNER

Redacted for Privacy

Address 6883 Alydar Corte
City Rancho Santa Fe
County San Diego
APN Book 302 Page 303 Parcel 08
Township 14S Range 3W Section 4
Lat 32 DEG. 98 MIN. 686 SEC. N Long 117 DEG. 19 MIN. 341 SEC. W

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

✓ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)
WATER SUPPLY
___ Domestic ___ Public
✓ Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 17' (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 127 (Ft.) & DATE MEASURED 4-27-10
ESTIMATED YIELD * 55 (GPM) & TEST TYPE Air Lift
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	107	12	✓				Steel	8	.188	
0	210	6.5	✓				Plastic	4.5	SDR 17	
210	230	6.5		✓			Plastic	4.5	SDR 17	
230	330	6.5	✓				Plastic	4.5	SDR 17	
330	410	6.5		✓			Plastic	4.5	SDR 17	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	100	✓			
100	107		✓		

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Stehly Bros. Drilling, Inc.
(PERSON, FIRM OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 13268 McNally Rd. CITY Valley Center STATE CA ZIP 92082
Signed Paul Stehly
C-57 LICENSED WATER WELL CONTRACTOR
DATE SIGNED 6-15-10
C-57 LICENSE NUMBER 709686

DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

county

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0153675

Page One of One

Owner's Well Number One

Date Work Began 06/01/2012 Date Work Ended 6/4/2012

Local Permit Agency DEH

Permit Number LWEL21173 Permit Date 5/16/12

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Redacted for Privacy

Geologic Log

Orientation ○ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	27	Fine, brown sand
27	33	Cobble rock
33	55	Brown, medium sized sand
55	57	Cobble rock
57	64	Brown clay w/ small rock
64	74	Blue clay
74	80	Medium coarse gravel w/ brown clay
80	97	Blue clay
97	105	small to medium size sand
105	111	compact, blue clay
111	120	Bedrock

Total Depth of Boring 120 Feet

Total Depth of Completed Well 120 Feet

Well Location

Address 15530 Via De Santa Fe

City Rancho Santa Fe County San Diego

Latitude 32 Deg. 59 Min. 42 Sec. N Longitude 117 Deg. 12 Min. 14 Sec. W

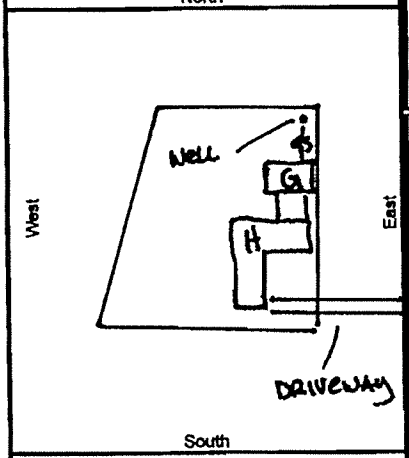
Datum Decimal Lat. Decimal Long.

APN Book 268 Page 310 Parcel 19

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

- ◉ New Well
- ○ Modification/Repair
  - ○ Deepen
  - ○ Other
- ○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ◉ Water Supply
  - ☐ Domestic ☐ Public
  - ☑ Irrigation ☐ Industrial
- ○ Cathodic Protection
- ○ Dewatering
- ○ Heat Exchange
- ○ Injection
- ○ Monitoring
- ○ Remediation
- ○ Sparging
- ○ Test Well
- ○ Vapor Extraction
- ○ Other

Water Level and Yield of Completed Well

Depth to first water 33 (Feet below surface)

Depth to Static Water Level 16 (Feet) Date Measured 06/04/2102

Estimated Yield * 200 (GPM) Test Type Air Lift

Test Length 2.0 (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0	20	15	Blank	Steel A-53	.250	10 3/4		
0	40	10	Blank	PVC SDR-17	.291	5		
40	120	10	Screen	PVC SDR-17	.291	5	Milled Slots	0.032

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	20	Cement	
0	120	Filter Pack	#6

Attachments

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Fain Drilling & Pump Co.,Inc.
Person, Firm or Corporation

12029 Old Castle Rd. Valley Center CA 92082
Address City State Zip

Signed 6/11/2012 328287
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

GROUP DELTA CONSULTANTS

Geotechnical Engineering

Geology

Hydrogeology

Earthquake Engineering

Materials Testing & Inspection

Forensic Services

July 13, 2012

Quantum Estates II, Inc.
1328 Sun Valley Road
Solana Beach, CA 92075

Attention: Mr. Andrew Parkinson

SUBJECT: BORING COMPLETION REPORT
Via de Sinnard Bridge, Quantum Estates II
Rancho Santa Fe, California

Mr. Parkinson:

In accordance with the requirements of the County of San Diego Department of Environmental Health, Land and Water Quality Division, we are submitting a Boring Completion Report for the subsurface investigation at the Quantum Estates II Via de Sinnard bridge site. One six-inch diameter boring and two 1.7-inch diameter cone-penetrometer soundings were advanced on December 8th and 20th, respectively. The explorations were advanced to depths of 51, 12 and 12 feet, respectively. Both the boring and CPT soundings were grouted full depth. Approximately 10.0, 0.2 and 0.2 ft^3 of backfill was used (for a total volume of about 10.4 ft^3). Per Section 5 of the SAM Manual, we are submitting the following:

- Site Location Map, Figure 1
- Site Vicinity Map, Figure 2
- Geotechnical Map, Figure 3
- Boring Logs, Figures A-1 through A-4
- Approved Boring Construction Permit

We appreciate this opportunity to be of professional service. Please feel free to contact the office with any questions or comments, or if you need anything else.

GROUP DELTA CONSULTANTS

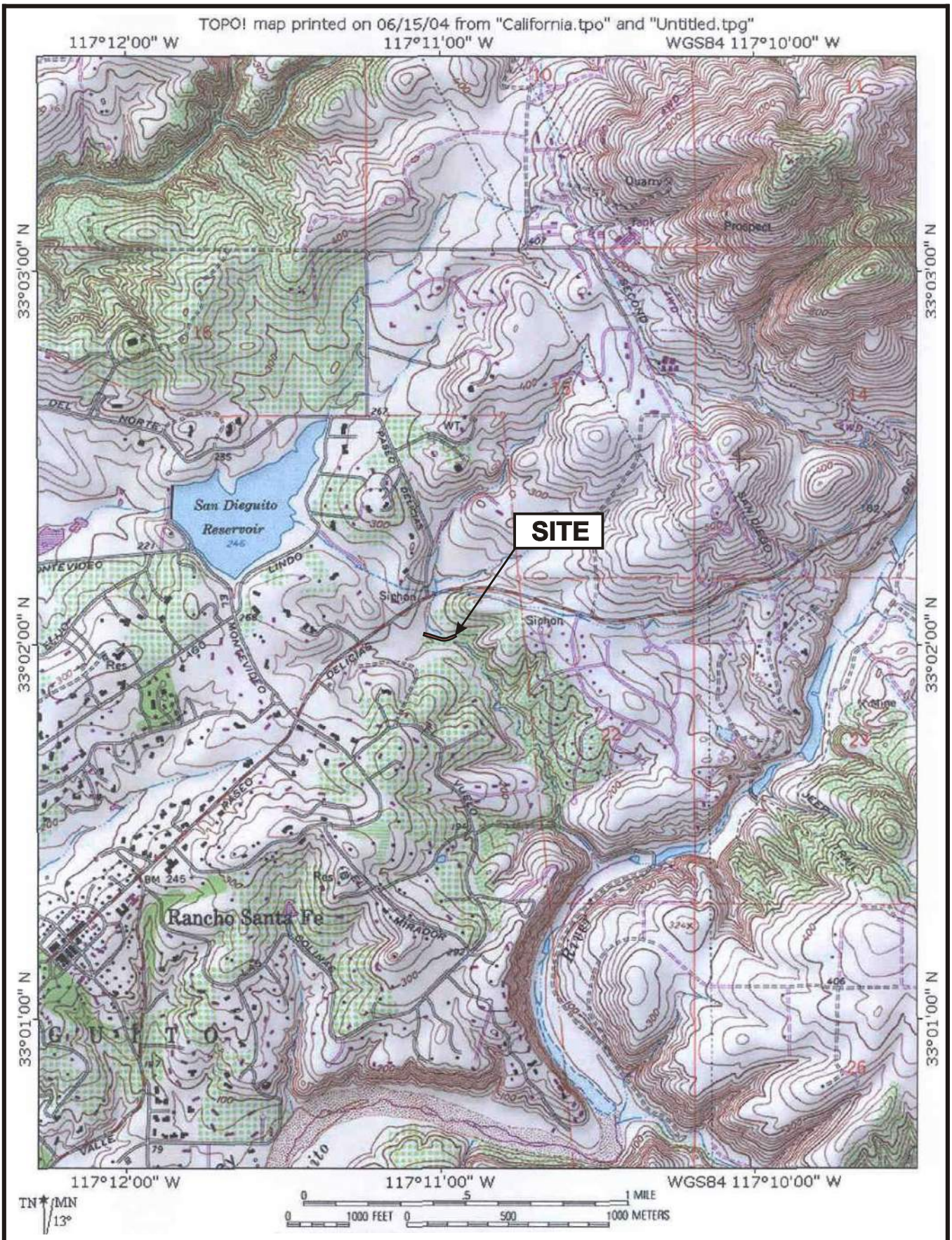
Matthew A. Fagan

Matthew A. Fagan, P.E. 57248
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
MATTHEW A. FAGAN
C57248
Exp. 12-31-13
CIVIL
STATE OF CALIFORNIA

Distribution: (1) Addressee (andrewp@scestoneanddesign.co.nz)
(1) DEH, Ms. Marisue Crystal (marisue.crystal@sdcounty.ca.gov)

FIGURES



370 Amapola Avenue, Suite 212, Torrance, CA 90501
32 Mauchly, Suite B, Irvine, CA 92618
4201 Santa Ana St., Suite F, Ontario, CA 91761
9245 Activity Road, Suite 103, San Diego, CA 92126

SITE LOCATION MAP

Document No. 11-0454
Project No. SD-260
FIGURE 1

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GROUP DELTA CONSULTANTS, INC.
ENGINEERS AND GEOLOGISTS
9245 ACTIVITY ROAD, SUITE 103
SAN DIEGO, CA 92126 (858) 536-1000

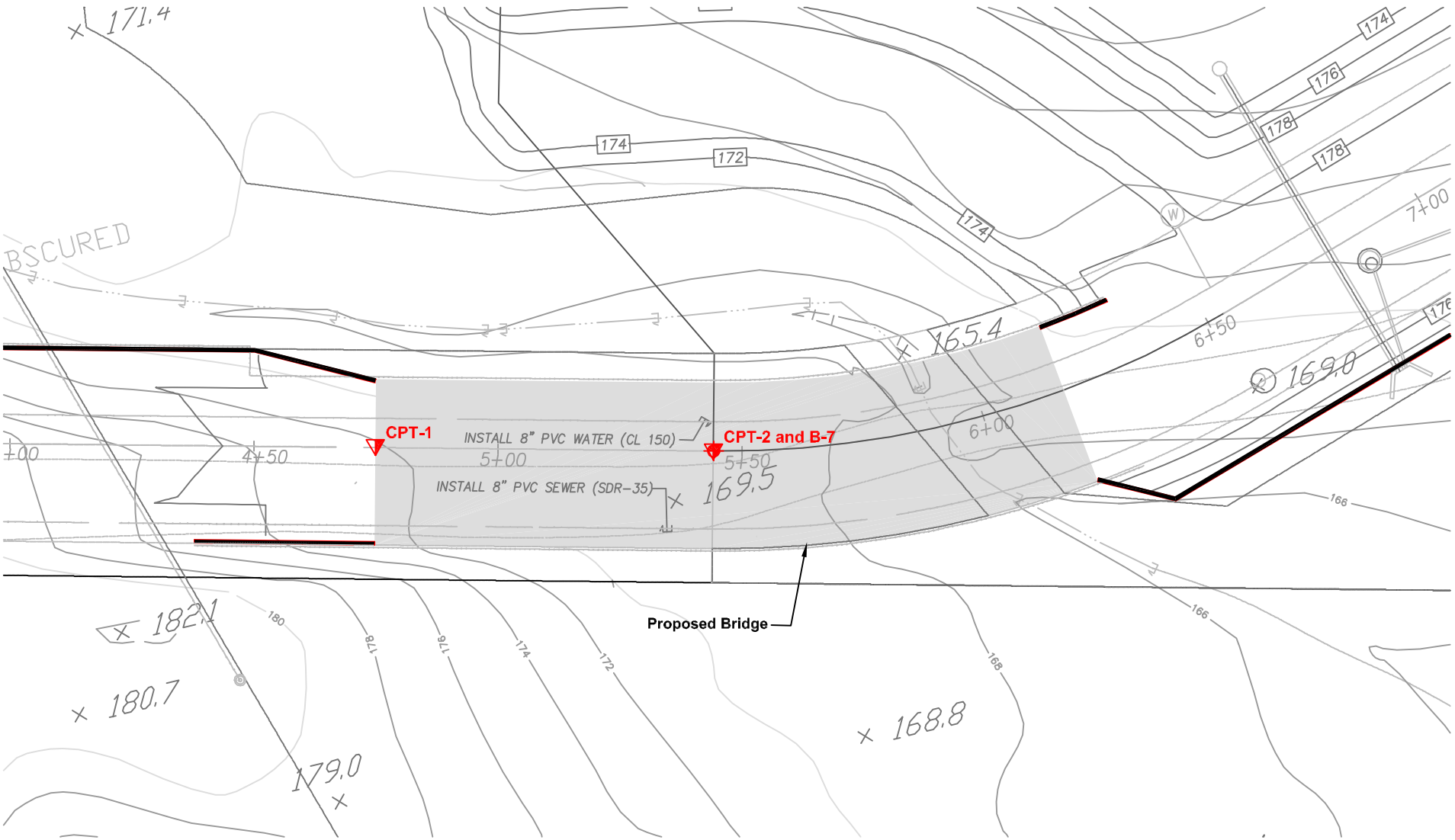
PROJECT NAME
VIA DE SINNARD BRIDGE
QUANTUM ESTATES II

PROJECT NUMBER
SD260

DOCUMENT NUMBER
11-0454

FIGURE NUMBER
2

SITE VICINITY MAP



EXPLANATION

B-7 — Approximate location of supplemental boring

CPT-2 — Approximate location of cone penetrometer tests

Reference: 1214 BASE (12-3-08).dwg, provided by PASCO LARET SUITER & ASSOCIATES

SCALE: 1" = 30'

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GROUP DELTA CONSULTANTS, INC.
ENGINEERS AND GEOLOGISTS
9245 ACTIVITY ROAD, SUITE 103
SAN DIEGO, CA 92126 (858) 536-1000

PROJECT NAME
VIA DE SINNARD BRIDGE
QUANTUM ESTATES II

PROJECT NUMBER
SD260

DOCUMENT NUMBER
11-0454

FIGURE NUMBER
3

EXPLORATION PLAN

APPENDIX A
SUBSURFACE EXPLORATION

APPENDIX A

SUBSURFACE EXPLORATION

Field exploration consisted of a visual and geologic reconnaissance of the site and the drilling of one exploratory boring on December 8th, 2011. Two supplemental cone penetrometer test (CPT) soundings were also conducted by GDC on December 20th, 2011. The maximum depth of exploration was 51 feet. The approximate exploration locations are shown on the Geotechnical Map, Figure 3. A legend describing the symbols used on the boring logs is presented in Figure A-1. Logs describing the conditions encountered in the boring are presented in Figures A-2. Interpretations of the CPT data are shown in Figures A-3 and A-4.

The borings were drilled using a truck mounted hollow stem flight auger rig. Bulk, disturbed, and relatively undisturbed soil samples were collected from the borings for testing. Disturbed soil samples were collected using a Standard Penetration Test (SPT) sampler (2-inch outside diameter). Relatively undisturbed samples were also collected using a 3-inch outside diameter, ring lined sampler (modified CALifornia sampler). The SPT and CAL samples were sealed in plastic bags, labeled, and returned to the laboratory for testing. For each sample, the number of blows needed to drive the sampler 12 inches was recorded on the logs under "blows per ft."

The two cone penetrometer (CPT) soundings were conducted in general accordance with ASTM method D5778 using a 40-ton truck mounted CPT rig. Integrated electronic circuitry was used to measure the tip resistance (Qc) and skin friction (Fs) at 1-inch intervals while the CPT was advanced into the soil with hydraulic down pressure. Shear waves were generated at 5-foot intervals using an air actuated hammer located inside the front jack of the CPT rig. The shear wave arrival times were measured using a triaxial geophone located near the cone tip. The shear wave velocity data is shown after the CPT interpretations.

The exploration locations were determined using staking provided by the project civil engineer. It should be noted that the lines designating the interface between differing soil materials on the logs may be abrupt or gradational. Further, soil conditions at locations between the explorations may be substantially different from those at the specific locations we explored. It should also be noted that the passage of time can result in changes in the soil conditions reported in our logs.

SOIL IDENTIFICATION AND DESCRIPTION SEQUENCE

Sequence	Identification Components	Refer to Section: Field	Refer to Section: Lab	Required	Optional
1	Group Name	2.5.2	3.2.2	●	
2	Group Symbol	2.5.2	3.2.2	●	
	Description Components				
3	Consistency of Cohesive Soil	2.5.3	3.2.3	●	
4	Apparent Density of Cohesionless Soil	2.5.4		●	
5	Color	2.5.5		●	
6	Moisture	2.5.6		●	
7	Percent or Proportion of Soil	2.5.7	3.2.4	●	⬭
	Particle Size	2.5.8	2.5.8	●	⬭
	Particle Angularity	2.5.9			○
	Particle Shape	2.5.10			○
8	Plasticity (for fine-grained soil)	2.5.11	3.2.5		○
9	Dry Strength (for fine-grained soil)	2.5.12			○
10	Dilatency (for fine-grained soil)	2.5.13			○
11	Toughness (for fine-grained soil)	2.5.14			○
12	Structure	2.5.15			○
13	Cementation	2.5.16		●	
14	Percent of Cobbles and Boulders	2.5.17		●	
	Description of Cobbles and Boulders	2.5.18		●	
15	Consistency Field Test Result	2.5.3		●	
16	Additional Comments	2.5.19			○

Describe the soil using descriptive terms in the order shown

Minimum Required Sequence:

USCS Group Name (Group Symbol); Consistency or Density; Color; Moisture; Percent or Proportion of Soil; Particle Size; Plasticity (optional).

⬭ = optional for non-Caltrans projects

Where applicable:

Cementation; % cobbles & boulders; Description of cobbles & boulders; Consistency field test result

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010).

HOLE IDENTIFICATION

Holes are identified using the following convention:

H – YY – NNN

Where:

H: Hole Type Code

YY: 2-digit year

NNN: 3-digit number (001-999)

Hole Type Code and Description

Hole Type Code	Description
A	Auger boring (hollow or solid stem, bucket)
R	Rotary drilled boring (conventional)
RC	Rotary core (self-cased wire-line, continuously-sampled)
RW	Rotary core (self-cased wire-line, not continuously sampled)
P	Rotary percussion boring (Air)
HD	Hand driven (1-inch soil tube)
HA	Hand auger
D	Driven (dynamic cone penetrometer)
CPT	Cone Penetration Test
O	Other (note on LOTB)

Description Sequence Examples:

SANDY lean CLAY (CL); very stiff; yellowish brown; moist; mostly fines; some SAND, from fine to medium; few gravels; medium plasticity; PP=2.75.

Well-graded SAND with SILT and GRAVEL and COBBLES (SW-SM); dense; brown; moist; mostly SAND, from fine to coarse; some fine GRAVEL; few fines; weak cementation; 10% GRANITE COBBLES; 3 to 6 inches; hard; subrounded.

Clayey SAND (SC); medium dense, light brown; wet; mostly fine sand,; little fines; low plasticity.

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GDC Project No. SD-260

QUANTUM ESTATES II, INC.
VIA DE SINNARD BRIDGE

BORING RECORD LEGEND #1

Figure A-1.1

GROUP SYMBOLS AND NAMES

Graphic / Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GM	SILTY GRAVEL SILTY GRAVEL with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL
SP	Poorly graded SAND Poorly graded SAND with GRAVEL
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SM	SILTY SAND SILTY SAND with GRAVEL
SC	CLAYEY SAND CLAYEY SAND with GRAVEL
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL
PT	PEAT
	COBBLES COBBLES and BOULDERS BOULDERS

Graphic / Symbol	Group Names
CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY elastic ELASTIC SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTING

C	Consolidation (ASTM D 2435)
CL	Collapse Potential (ASTM D 5333)
CP	Compaction Curve (CTM 216)
CR	Corrosion, Sulfates, Chlorides (CTM 643; CTM 417; CTM 422)
CU	Consolidated Undrained Triaxial (ASTM D 4767)
DS	Direct Shear (ASTM D 3080)
EI	Expansion Index (ASTM D 4829)
M	Moisture Content (ASTM D 2216)
OC	Organic Content (ASTM D 2974)
P	Permeability (CTM 220)
PA	Particle Size Analysis (ASTM D 422)
PI	Liquid Limit, Plastic Limit, Plasticity Index (AASHTO T 89, AASHTO T 90)
PL	Point Load Index (ASTM D 5731)
PM	Pressure Meter
R	R-Value (CTM 301)
SE	Sand Equivalent (CTM 217)
SG	Specific Gravity (AASHTO T 100)
SL	Shrinkage Limit (ASTM D 427)
SW	Swell Potential (ASTM D 4546)
UC	Unconfined Compression - Soil (ASTM D 2166) Unconfined Compression - Rock (ASTM D 2938)
UU	Unconsolidated Undrained Triaxial (ASTM D 2850)
UW	Unit Weight (ASTM D 4767)

SAMPLER GRAPHIC SYMBOLS

- Standard Penetration Test (SPT)
- Standard California Sampler
- Modified California Sampler (2.4" ID, 3" OD)
- Shelby Tube
- Piston Sampler
- NX Rock Core
- HQ Rock Core
- Bulk Sample
- Other (see remarks)

DRILLING METHOD SYMBOLS

- Auger Drilling
- Rotary Drilling
- Dynamic Cone or Hand Driven
- Diamond Core

WATER LEVEL SYMBOLS

- First Water Level Reading (during drilling)
- Static Water Level Reading (after drilling, date)

Definitions for Change in Material

Term	Definition	Symbol
Material Change	Change in material is observed in the sample or core and the location of change can be accurately located.	
Estimated Material Change	Change in material cannot be accurately located either because the change is gradational or because of limitations of the drilling and sampling methods.	
Soil / Rock Boundary	Material changes from soil characteristics to rock characteristics.	

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010).

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GDC Project No. SD-260

QUANTUM ESTATES II, INC.
VIA DE SINNARD BRIDGE

BORING RECORD LEGEND #2

Figure A-1.2

CONSISTENCY OF COHESIVE SOILS				
Description	Shear Strength (tsf)	Pocket Penetrometer, PP, Measurement (tsf)	Torvane, TV, Measurement (tsf)	Vane Shear, VS, Measurement (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N_{60} (blows / 12 inches)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE	
Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS	
Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 - 10%
Little	15 - 25%
Some	30 - 45%
Mostly	50 - 100%

PARTICLE SIZE		
Description		Size (in)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010), with the exception of consistency of cohesive soils vs. N_{60}.

Plasticity

Description	Criteria
Nonplastic	A 1/8-in. thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

CONSISTENCY OF COHESIVE SOILS	
Description	SPT N_{60} (blows/12 inches)
Very Soft	0 - 2
Soft	2 - 4
Medium Stiff	4 - 8
Stiff	8 - 15
Very Stiff	15 - 30
Hard	Greater than 30

Ref: Peck, Hansen, and Thornburn, 1974, "Foundation Engineering," Second Edition.

Note: Only to be used (with caution) when pocket penetrometer or other data on undrained shear strength are unavailable. Not allowed by Caltrans Soil and Rock Logging and Classification Manual, 2010.

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QUANTUM ESTATES II, INC.
VIA DE SINNARD BRIDGE

BORING RECORD LEGEND #3

Figure A-1.3

LEGEND OF ROCK MATERIALS

- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

BEDDING SPACING

Description	Thickness/Spacing
Massive	Greater than 10 ft
Very Thickly Bedded	3 ft - 10 ft
Thickly Bedded	1 ft - 3 ft
Moderately Bedded	4 in - 1 ft
Thinly Bedded	1 in - 4 in
Very Thinly Bedded	1/4 in - 1 in
Laminated	Less than 1/4 in

WEATHERING DESCRIPTORS FOR INTACT ROCK

	Diagnostic Features					
	Chemical Weathering-Discoloration-Oxidation		Mechanical Weathering and Grain Boundary Conditions	Texture and Leaching		
Description	Body of Rock	Fracture Surfaces		Texture	Leaching	General Characteristics
Fresh	No discoloration, not oxidized	No discoloration or oxidation	No separation, intact (tight)	No change	No leaching	Hammer rings when crystalline rocks are struck.
Slightly Weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull	Minor to complete discoloration or oxidation of most surfaces	No visible separation, intact (tight)	Preserved	Minor leaching of some soluble minerals	Hammer rings when crystalline rocks are struck. Body of rock not weakened.
Moderately Weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty"; feldspar crystals are "cloudy"	All fracture surfaces are discolored or oxidized	Partial separation of boundaries visible	Generally preserved	Soluble minerals may be mostly leached	Hammer does not ring when rock is struck. Body of rock is slightly weakened.
Intensely Weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in situ disaggregation, grain boundary conditions	All fracture surfaces are discolored or oxidized; surfaces friable	Partial separation, rock is friable; in semi-arid conditions, granitics are disaggregated	Texture altered by chemical disintegration (hydration, argillation)	Leaching of soluble minerals may be complete	Dull sound when struck with hammer; usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures or veinlets. Rock is significantly weakened.
Decomposed	Discolored of oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay		Complete separation of grain boundaries (disaggregated)	Resembles a soil; partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete		Can be granulated by hand. Resistant minerals such as quartz may be present as "stringers" or "dikes".

PERCENT CORE RECOVERY (REC)

$$\frac{\Sigma \text{ Length of the recovered core pieces (in.)}}{\text{Total length of core run (in.)}} \times 100$$

ROCK QUALITY DESIGNATION (RQD)

$$\frac{\Sigma \text{ Length of intact core pieces} \geq 4 \text{ in.}}{\text{Total length of core run (in.)}} \times 100$$

RQD* indicates soundness criteria not met.

ROCK HARDNESS

Description	Criteria
Extremely Hard	Cannot be scratched with a pocketknife or sharp pick. Can only be chipped with repeated heavy hammer blows
Very Hard	Cannot be scratched with a pocketknife or sharp pick. Breaks with repeated heavy hammer blows.
Hard	Can be scratched with a pocketknife or sharp pick with difficulty (heavy pressure). Breaks with heavy hammer blows.
Moderately Hard	Can be scratched with a pocketknife or sharp pick with light or moderate pressure. Breaks with moderate hammer blows
Moderately Soft	Can be grooved 1/16 in. deep with a pocketknife or sharp pick with moderate or heavy pressure. Breaks with light hammer blow or heavy manual pressure.
Soft	Can be grooved or gouged easily with a pocketknife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
Very Soft	Can be readily indented, grooved or gouged with fingernail, or carved with a pocketknife. Breaks with light manual pressure.

FRACTURE DENSITY

Description	Observed Fracture Density
Unfractured	No fractures
Very Slightly Fractured	Core lengths greater than 3 ft.
Slightly Fractured	Core lengths mostly from 1 to 3 ft.
Moderately Fractured	Core lengths mostly 4 in. to 1 ft.
Intensely Fractured	Core lengths mostly from 1 to 4 in.
Very Intensely Fractured	Mostly chips and fragments.

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010).

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GDC Project No. SD-260

QUANTUM ESTATES II, INC.
VIA DE SINNARD BRIDGE

BORING RECORD LEGEND #4

Figure A-1.4

BORING RECORD

PROJECT NAME	PROJECT NUMBER	HOLE ID
Quantum Estates Bridge Investigation	SD-260	**B-1**

SITE LOCATION	START	FINISH	SHEET NO.
Rancho Santa Fe, CA	12/8/2011	12/8/2011	1 of 3

DRILLING COMPANY	DRILL RIG	DRILLING METHOD	LOGGED BY	CHECKED BY
Scott's Drilling	CME 75	Hollow Stem Auger	JCS	MF

HAMMER TYPE (WEIGHT/DROP)	HAMMER EFFICIENCY (ERi)	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GW (ft)
Automatic, (140#, 30")	75	6	51	169	▽ / *na* DURING DRILLING

DRIVE SAMPLER TYPE(S) & SIZE (ID)	NOTES	
SPT (1.4"), CAL (2.4")		▼ 3.0 / *166.0* AFTER DRILLING

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	SPT N^*_{60}	RECOVERY (%)	RQD (%)	MOISTURE (%)	DRY DENSITY (pcf)	ATTERBERG LIMITS (LL:PI)	OTHER TESTS	DRILLING METHOD	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
															Silty SAND (SM); loose; brown; moist; few gravel; (ALLUVIUM).
															Sandy Lean CLAY (CL); very soft; dark brown-gray; wet.
	165														
5			R-1	2 3	5										No recovery - too wet.
			SH-2								40:24	PA			
	160														
10			R-3	5 8	13				21	107		UC			Sandy CLAY (CL); brown; moist-wet; medium plasticity.
															Heavy seepage.
	155														
15			S-4	15 12 21	33										Clayey SANDSTONE; medium dense; yellowish-brown; moist; fine to medium grained; with interbedded SILTSTONE: gray; moist; moderately indurated; (FRIARS FORMATION).
	150														
20			S-5	17 32 40	72										Very dense.
	145														Sampler bouncing.

GDC_LOG_BORING_2011 SD260.GPJ GDCLOG.GDT 1/5/12

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32 Mauchly, Suite B
Irvine, CA 92618

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

FIGURE
A-2.1

BORING RECORD

PROJECT NAME	PROJECT NUMBER	HOLE ID
Quantum Estates Bridge Investigation	SD-260	**B-1**

SITE LOCATION	START	FINISH	SHEET NO.
Rancho Santa Fe, CA	12/8/2011	12/8/2011	2 of 3

DRILLING COMPANY	DRILL RIG	DRILLING METHOD	LOGGED BY	CHECKED BY
Scott's Drilling	CME 75	Hollow Stem Auger	JCS	MF

HAMMER TYPE (WEIGHT/DROP)	HAMMER EFFICIENCY (ERi)	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GW (ft)
Automatic, (140#, 30")	75	6	51	169	▽ / *na* DURING DRILLING

DRIVE SAMPLER TYPE(S) & SIZE (ID)	NOTES	
SPT (1.4"), CAL (2.4")		▼ 3.0 / *166.0* AFTER DRILLING

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	SPT N^*_{60}	RECOVERY (%)	RQD (%)	MOISTURE (%)	DRY DENSITY (pcf)	ATTERBERG LIMITS (LL:PI)	OTHER TESTS	DRILLING METHOD	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
			S-6	18 25 37	62										*(Clayey SANDSTONE, continued.)*
	140														
30			S-7	37 50/4"	100+										
															SANDY CLAYSTONE; very hard; light olive gray; moist; fine grained; few pebbles; moderately cemented.
	135														
35			R-8		100+				17	115		DS			
	130														
40			S-9	50/0"	100+										Sampler bouncing.
	125														Basal gravel-weathered zone, angular metavolcanic rock fragments; rock fragments in shoe; (METAVOLCANIC ROCK (weathered)).
45			S-10	50/0"	100+										Sampler bouncing.
	120														Less weathered; dark gray; weathered; angular rock fragment cuttings in sampler (SANTIAGO PEAK VOLCANICS).

GDC_LOG_BORING_2011 SD260.GPJ GDCLOG.GDT 1/5/12

GROUP DELTA CONSULTANTS, INC.
32 Mauchly, Suite B
Irvine, CA 92618

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

FIGURE
A-2.2

BORING RECORD

PROJECT NAME	PROJECT NUMBER	HOLE ID
Quantum Estates Bridge Investigation	SD-260	**B-1**

SITE LOCATION	START	FINISH	SHEET NO.
Rancho Santa Fe, CA	12/8/2011	12/8/2011	3 of 3

DRILLING COMPANY	DRILL RIG	DRILLING METHOD	LOGGED BY	CHECKED BY
Scott's Drilling	CME 75	Hollow Stem Auger	JCS	MF

HAMMER TYPE (WEIGHT/DROP)	HAMMER EFFICIENCY (ERi)	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GW (ft)
Automatic, (140#, 30")	75	6	51	169	▽ / *na* DURING DRILLING

DRIVE SAMPLER TYPE(S) & SIZE (ID)	NOTES	
SPT (1.4"), CAL (2.4")		▼ 3.0 / *166.0* AFTER DRILLING

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	SPT N^*_{60}	RECOVERY (%)	RQD (%)	MOISTURE (%)	DRY DENSITY (pcf)	ATTERBERG LIMITS (LL:PI)	OTHER TESTS	DRILLING METHOD	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
															(METAVOLCANIC ROCK, continued.)
															Refusal on Santiago Peak Volcanics (Jsp). Total depth: 51 feet. Groundwater encountered at 3 ft bgs. Grouted to surface with bentonite and cement (soft soil mixture).
	115														
55															
	110														
60															
	105														
65															
	100														
70															
	95														

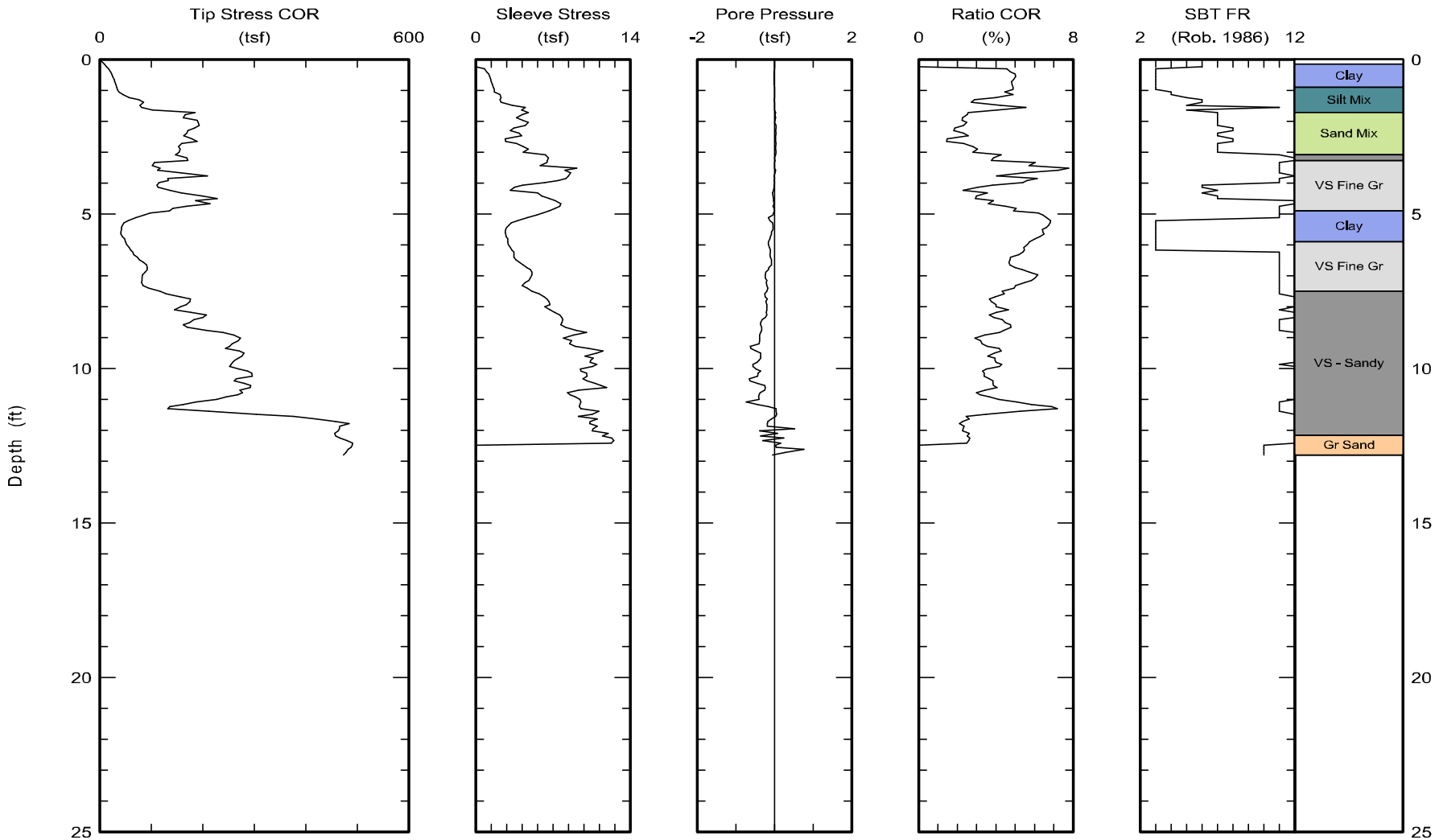
GDC_LOG_BORING_2011 SD260.GPJ GDCLOG.GDT 1/5/12

GROUP DELTA CONSULTANTS, INC.
32 Mauchly, Suite B
Irvine, CA 92618

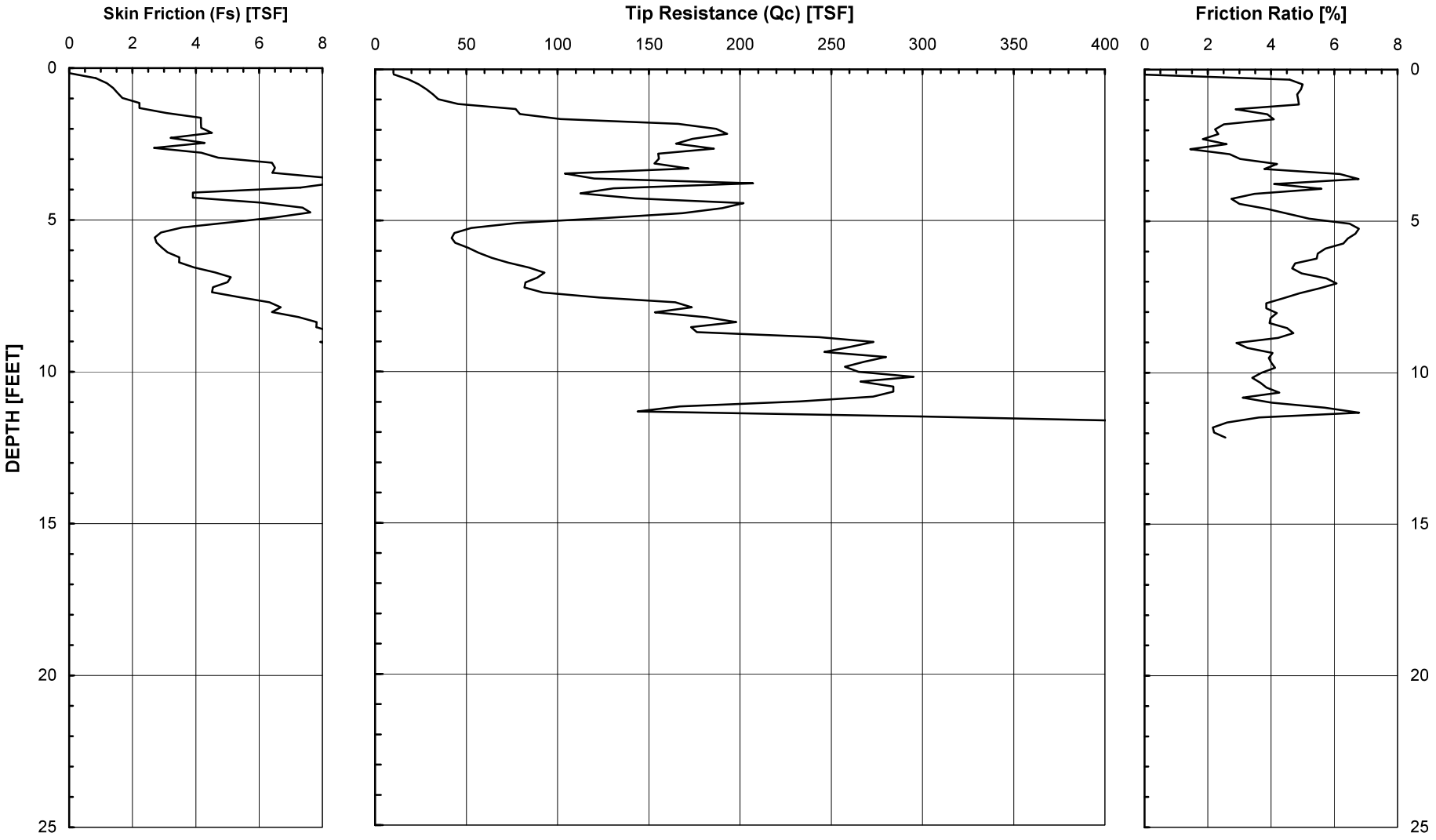
THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

FIGURE
A-2.3

Kehoe Testing & Engineering Office: (714) 901-7270 Fax: (714) 901-7289 rich@kehoetesting.com www.kehoetesting.com	CPT Data 30 ton rig	Date: 20/Dec/2011 Test ID: CPT-1 Project: RanchoSantaFe
	Customer: Group Delta Consultants, Inc. Job Site: Quantum Estates	



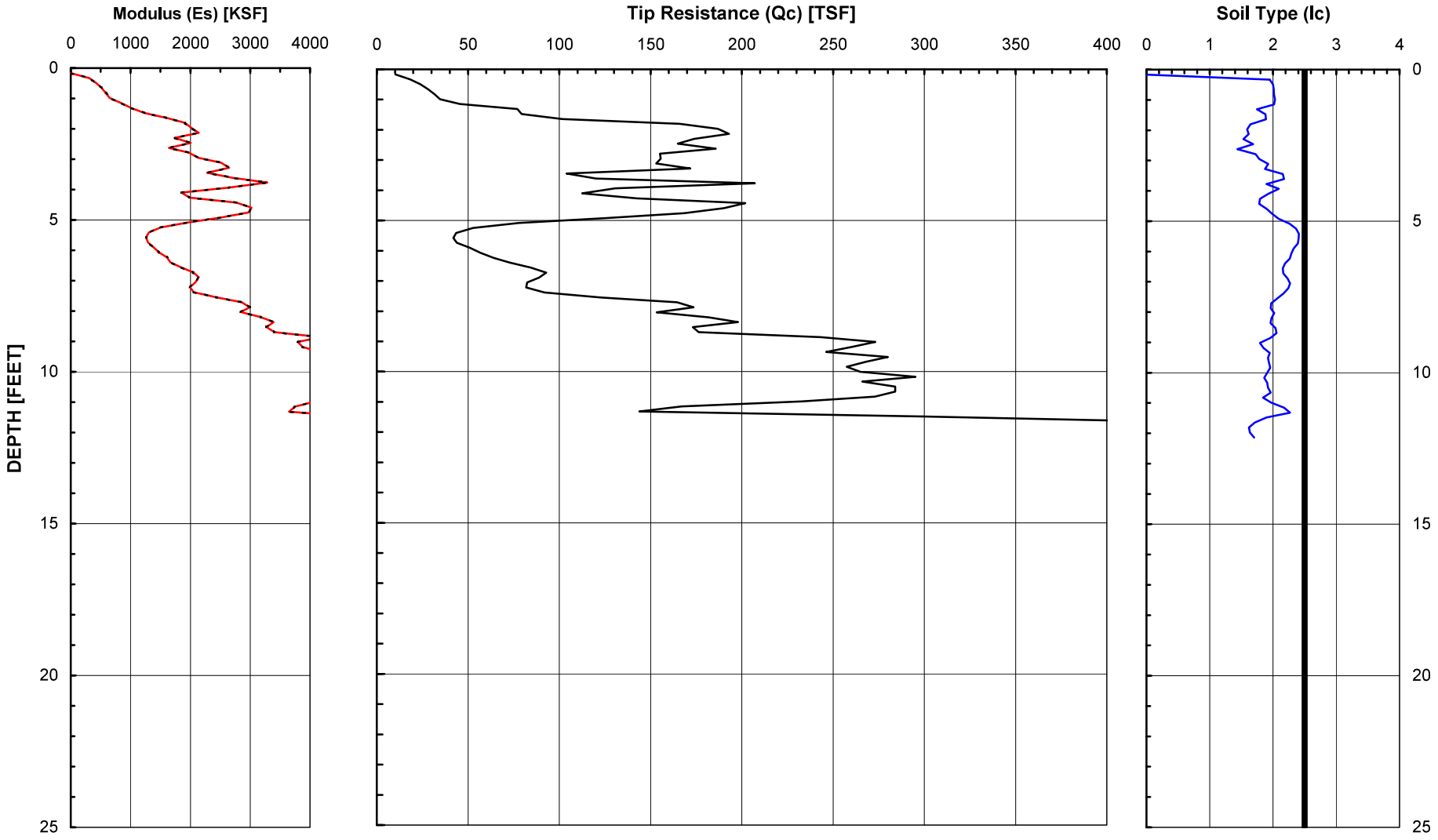
Maximum depth: 12.81 (ft)



GROUP DELTA CONSULTANTS
370 Amapola Avenue, Suite 212, Torrance, CA 90501
32 Mauchly, Suite B, Irvine, CA 92618
4201 Santa Ana St., Suite F, Ontario, CA 91761
9245 Activity Road, Suite 103, San Diego, CA 92126

CONE PENETROMETER (CPT-1)

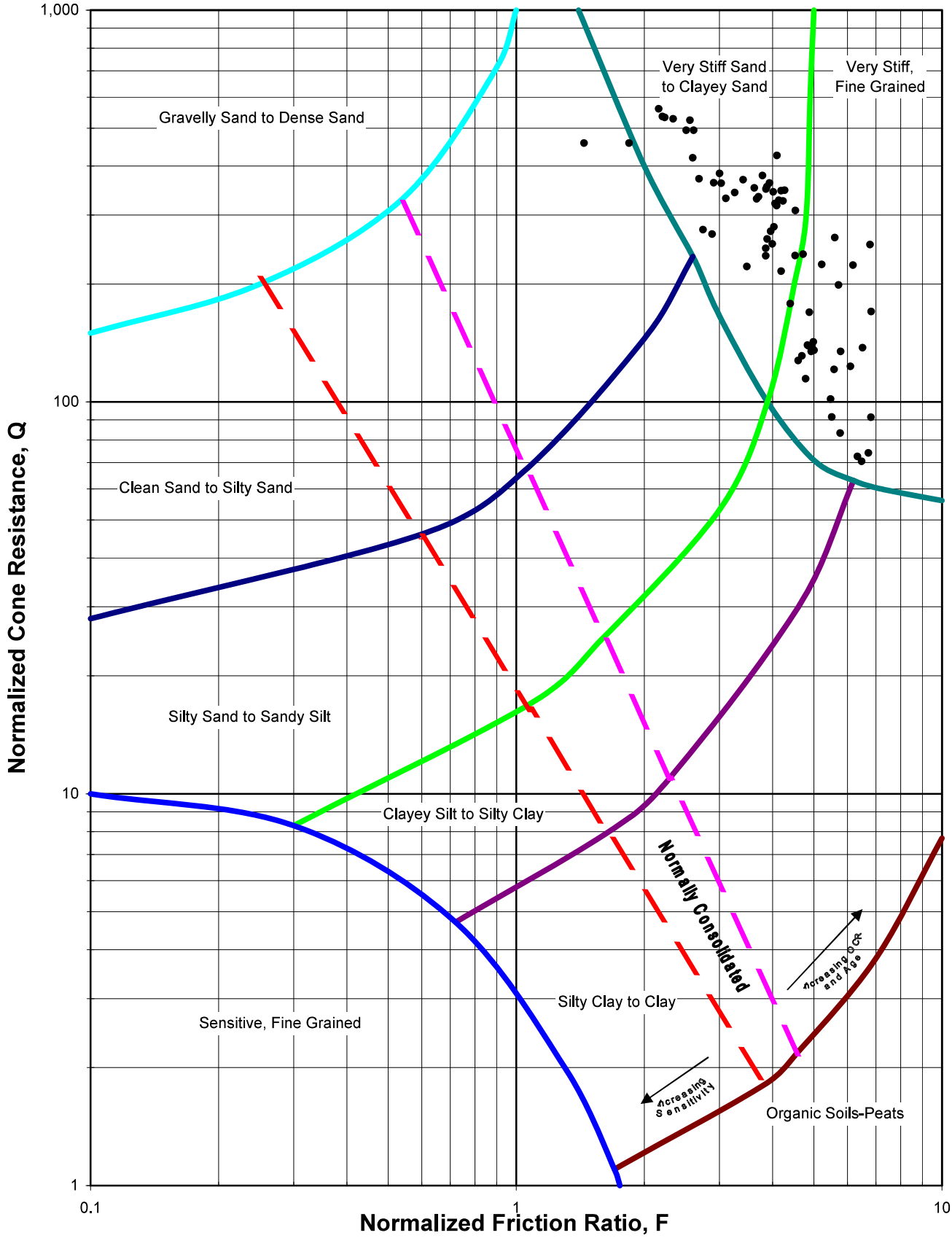
Document No. 11-0454
Project No. SD-260
FIGURE A-3.1



GROUP DELTA CONSULTANTS
370 Amapola Avenue, Suite 212, Torrance, CA 90501
32 Mauchly, Suite B, Irvine, CA 92618
4201 Santa Ana St., Suite F, Ontario, CA 91761
9245 Activity Road, Suite 103, San Diego, CA 92126

MODULUS ESTIMATE (CPT-1)

Document No. 11-0454
Project No. SD-260
FIGURE A-3.2

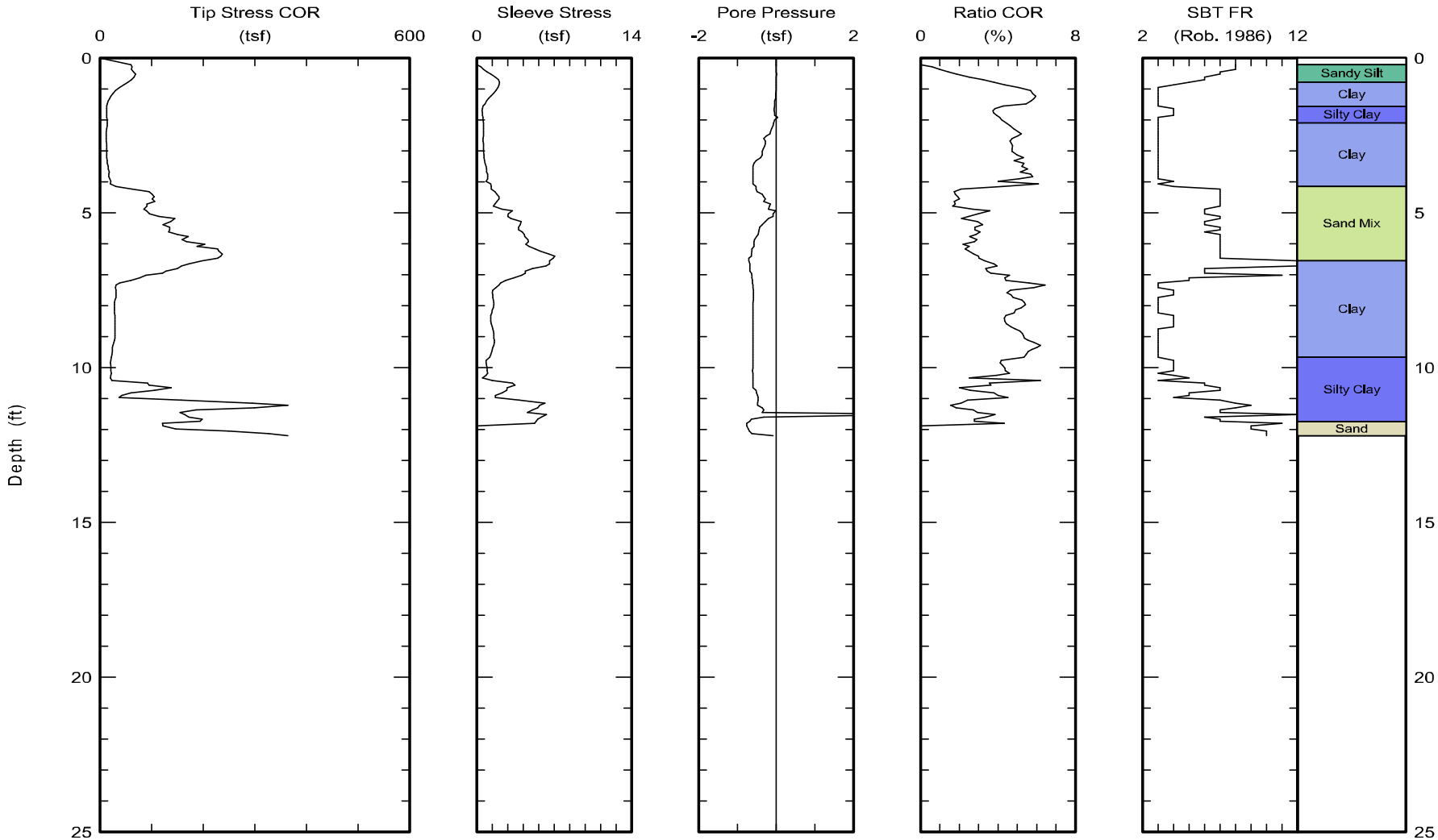


GROUP DELTA CONSULTANTS
370 Amapola Avenue, Suite 212, Torrance, CA 90501
32 Mauchly, Suite B, Irvine, CA 92618
4201 Santa Ana St., Suite F, Ontario, CA 91761
9245 Activity Road, Suite 103, San Diego, CA 92126

SOIL CLASSIFICATION (CPT-1)

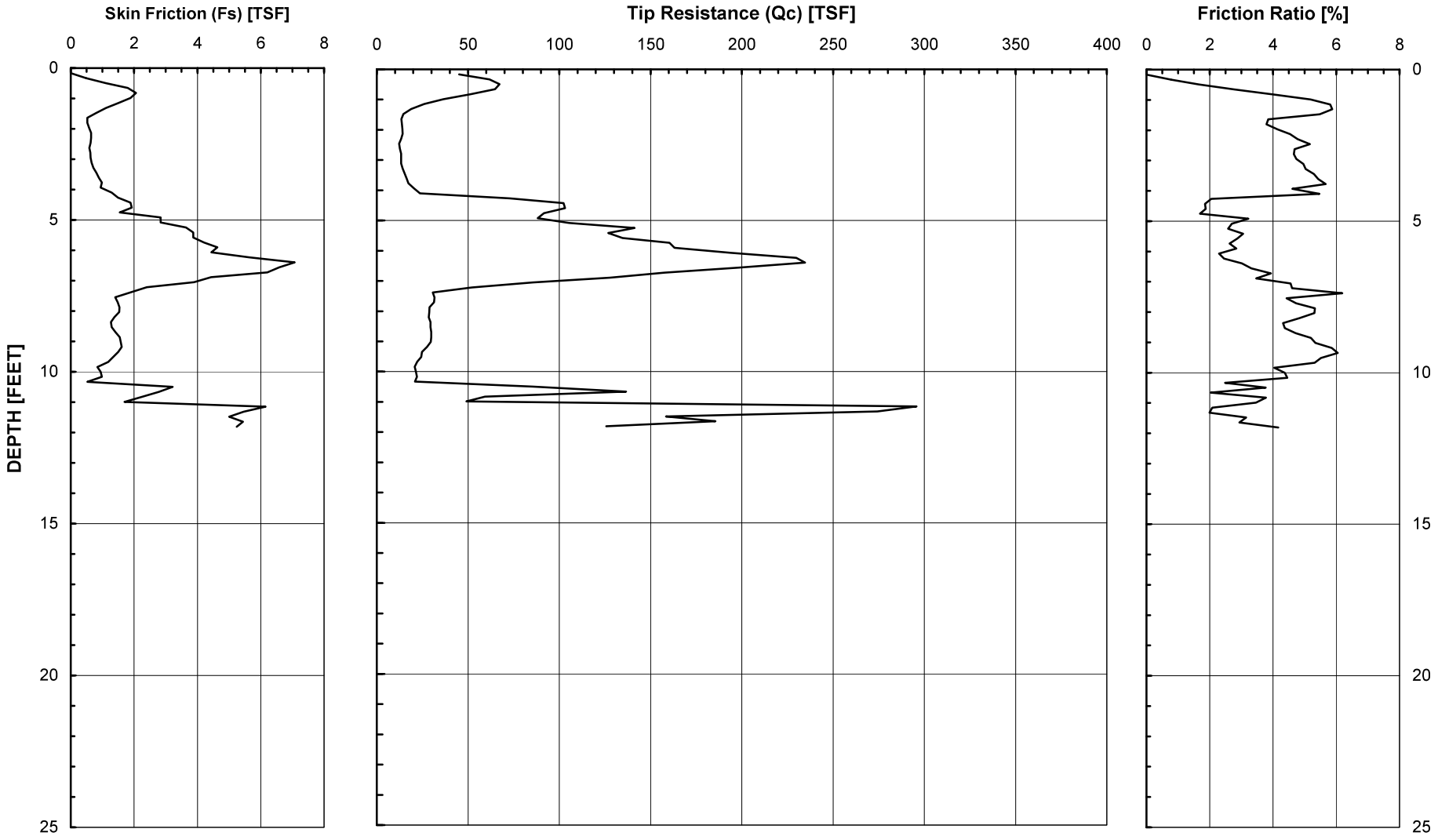
Document No. 11-0454
Project No. SD-260
FIGURE A-3.3

Kehoe Testing & Engineering Office: (714) 901-7270 Fax: (714) 901-7289 rich@kehoetesting.com www.kehoetesting.com	CPT Data 30 ton rig	Date: 20/Dec/2011 Test ID: CPT-2 Project: RanchoSantaFe
	Customer: Group Delta Consultants, Inc. Job Site: Quantum Estates	



Maximum depth: 12.20 (ft)

Test ID: CPT-2
File: Z20D1103C.ecp



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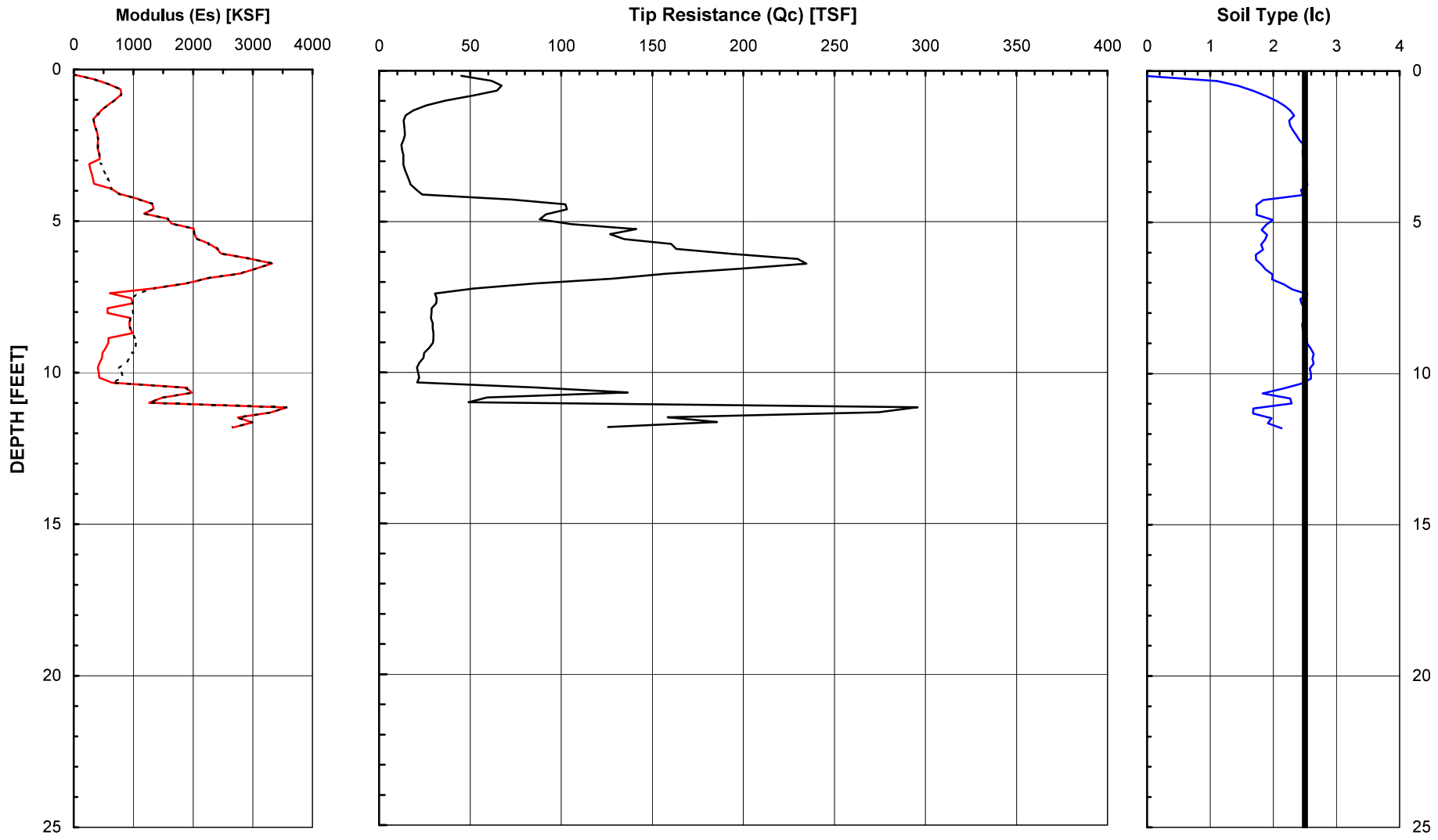
9245 Activity Road, Suite 103, San Diego, CA 92126

CONE PENETROMETER (CPT-2)

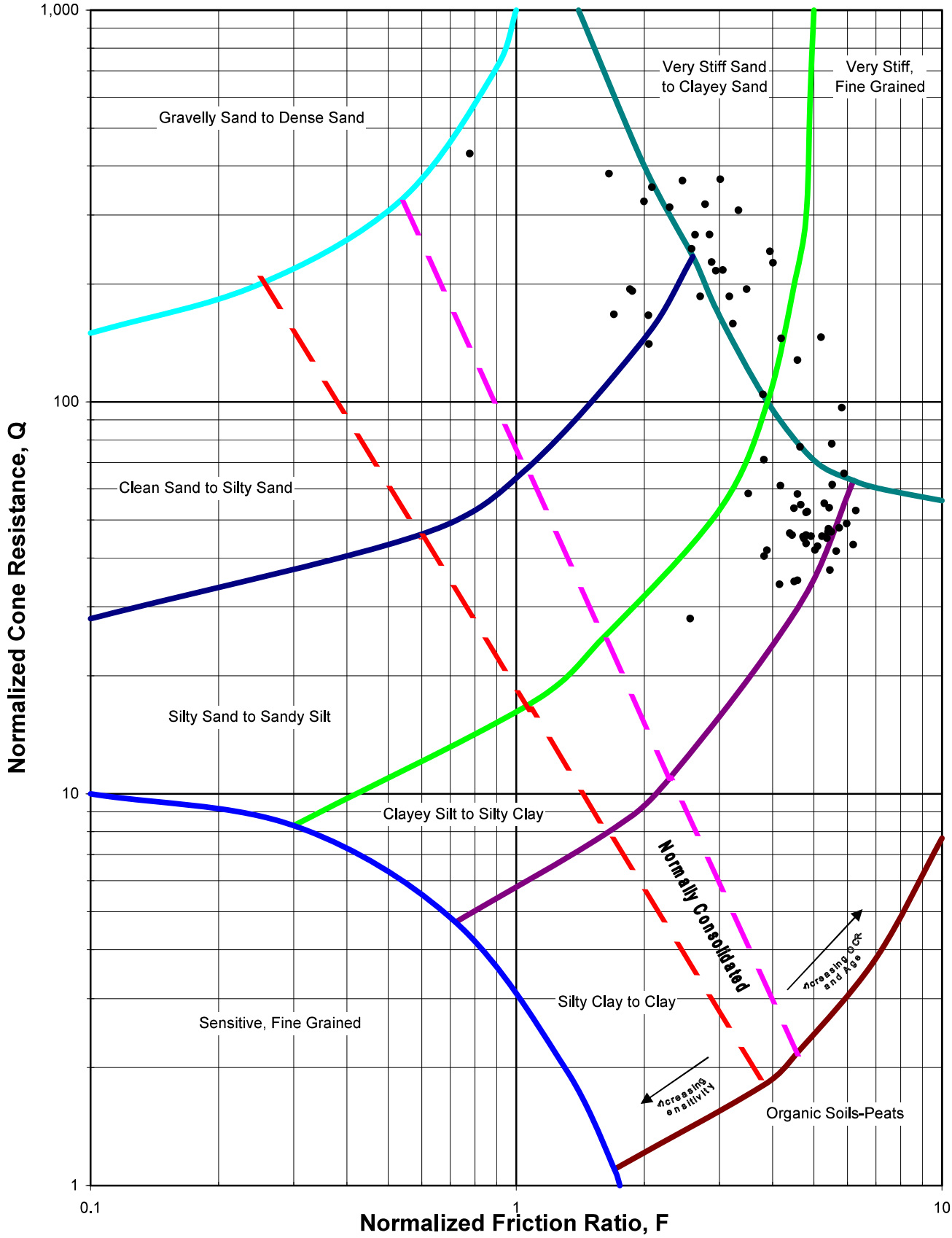
Document No. 11-0454
Project No. SD-260
FIGURE A-4.1



GROUP DELTA CONSULTANTS
370 Amapola Avenue, Suite 212, Torrance, CA 90501
32 Mauchly, Suite B, Irvine, CA 92618
4201 Santa Ana St., Suite F, Ontario, CA 91761
9245 Activity Road, Suite 103, San Diego, CA 92126

MODULUS ESTIMATE (CPT-2)

Document No. 11-0454
Project No. SD-260
FIGURE A-4.2



GROUP DELTA CONSULTANTS
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32 Mauchly, Suite B, Irvine, CA 92618
4201 Santa Ana St., Suite F, Ontario, CA 91761
9245 Activity Road, Suite 103, San Diego, CA 92126

SOIL CLASSIFICATION (CPT-2)

Document No. 11-0454
Project No. SD-260
FIGURE A-4.3

PERMIT #LMON108199
A.P.N. # 267-031-11-00
EST # NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: QUANTUM ESTATES II

SITE ADDRESS: 7003 DEL DIOS HY, RANCHO SANTA FE, CA 92067

PERMIT FOR: **THREE GEOTECHNICAL BORINGS**

PERMIT APPROVAL DATE: DECEMBER 5, 2011

PERMIT EXPIRES ON: APRIL 3, 2012

RESPONSIBLE PARTY: QUANTUM ESTATES II, INC.

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at (858) 505-6688.**

Digitally signed by Marisue Crystal
DN: cn=Marisue Crystal, o=Department of Environmental Health, ou=Monitoring Well Program, email=marisue.crystal@sdcounty.ca.gov, c=US
Date: 2011.12.05 08:56:51 -08'00'

APPROVED BY: _____ DATE: 12/05/2011
MARISUE CRYSTAL

NOTIFIED: _____

DEH:SAM-9075 (6/11)

PERMIT #LMWP-000479
A.P.N. #302-210-52
EST #150079 HMD

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: ALL CREATURES ANIMAL HOSPITAL

SITE ADDRESS: 3665 VIA DE LA VALLE DEL MAR CA 92014

PERMIT FOR: **TWO GEOTECHNICAL BORINGS**

PERMIT APPROVAL DATE: JUNE 13, 2013

PERMIT EXPIRES ON: OCTOBER 11, 2013

RESPONSIBLE PARTY: ALL CREATURES INVESTMENT PARTNERS

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at (858) 505-6688.**

APPROVED BY: Amelia Ceseña Digitally signed by Amelia Ceseña DN: cn=Amelia Ceseña, o=DEH, ou=MWP, email=amelia.cesena@sdcounty.ca.gov, c=US Date: 2013.06.13 08:20:25 -07'00' DATE: 6.13.2013

AMELIA CESEÑA

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 000479
SAM CASE Y/N # 150079 HMD
DATE RECEIVED: 6.11.213
FEE PAID:
CHECK #

A. RESPONSIBLE PARTY All Creatures Investment Partners E-mail mhmulvany@gmail.com
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 3665 Via de la Valle City Del Mar State CA Zip 92014
Contact Person Michael H. Mulvany Phone 619-559-3334 Ext. — Fax —

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE #

C. CONSULTING FIRM Geocon Incorporated
Mailing Address 6960 Flanders Drive City San Diego State CA Zip 92121
Registered Professional Shawn Weedon Registration # 2714 GE (RG, RCE, CEG, PG) Circle if applicable
E-mail weedon@geoconinc.com
Contact Person Cristian A. Liang Phone 858-558-6900 Ext. 259 Fax

D. DRILLING COMPANY Pacific Drilling Company C57# 681380
Contact Name Tod Clark E-mail tod@pacdrill.com
Mailing Address P.O. Box 84627 City San Diego State CA Zip 92138
Phone 619-294-3682 Ext. Fax 619-294-3283

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	
☐ Vadose	
☒ Boring	2
☐ Other	

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable X
Type
Gauge
Diameter
Well Screen Size
Filter Pack

SEAL/BORING BACKFILL
☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☒ Bentonite
☐ Other

Borehole diameter 8"

Drilling Method
☒ Auger
☐ Mud Rotary
☐ Percussion
☐ Air Rotary
☐ Other

PROPOSED CONSTRUCTION
Estimated groundwater depth: 10 ft.
Estimated depth of boring 50 ft.

Concrete surface seal	0 to 3
Annular seal	___ to ___
Bentonite transition seal	0 to 50'
Filter Pack	___ to ___
Perforation	___ to ___

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE DATE 6/11/13

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE DATE 6/11/2013

F. SITE INFORMATION

1. ASSESSOR'S PARCEL NUMBER 302-210-52-00

Site Name All Creatures Animal Hospital

Site Address 3665 Via de la Valle City Del Mar Zip 92014

PROPERTY OWNER All Creatures Investment Partners

Phone 619-559-3334 Ext. _____ Fax _____

Mailing Address 3665 Via de la Valle City Del Mar State CA Zip 92014

NUMBER OF WELLS 2 **TYPE OF WELLS** **Geotechnical Soil Borings**

2. ASSESSOR'S PARCEL NUMBER _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. ASSESSOR'S PARCEL NUMBER _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. ASSESSOR'S PARCEL NUMBER _____

Site Name _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. FEES (in effect beginning July 1, 2011, through June 30, 2012)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$200.00 for the first monitoring well	**$200.00**
New Well Inspection	$99.00 for first new well inspection	**$99.00**
Each Additional New Well	$161.00 for each additional well installation	___ x **$161.00** _____
	$30.00 for each additional new well inspection	___ x **$ 30.00** _____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$200.00 for the first boring	1 x **$200.00** **200.00**
	$49.00 for each additional boring	1 ~~2~~ x **$ 49.00** ~~**98.00**~~ $49.00
Permit for Well Destructions Only	$200.00 for the first destruction	___ x **$200.00**
	$123.00 for each additional destruction ...	___ x **$123.00**
Permit for any Combination of Well Installations, Borings, & Destructions ***(except UST backfill permit)***	The first activity will be $200.00	___ x **$200.00** _____
	Additional activities will be as follows:	
	$161.00 for each additional well	___ x **$161.00** _____
	$99.00 for first well maintenance inspection	___ x **$ 99.00** _____
	$ 30.00 for each additional well maintenance inspection	___ x **$ 30.00** _____
	$123.00 for each well destruction	___ x **$123.00** _____
	$ 49.00 for each additional boring	___ x **$ 49.00** _____
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	**$320.00 (Flat Fee)**	**$**_____
	TOTAL COST OF PERMIT	$249.00 **$** ~~**298.00**~~

H. **QUESTIONNAIRE: Please answer all applicable questions completely.** ***For well destructions, complete only #1 below and submit any required supportive documentation.***

1. If wells are to be destroyed, provide a description of method of destruction No wells will be destroyed.

2. What is the purpose of the well/boring investigation?

   ☐ a. Part of an ongoing site assessment case in which a government regulator is the lead agency. If yes, indicate which government regulator is the lead agency and the case number.

   DEH _____ RWQCB _____ DTSC _____

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☒ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction?

   The excavations will be backfilled with bentonite to a depth where the hole does not collapse.

4. What field procedures will be utilized to determine if contamination exists?

   A waste determination consisting of smelling the soil cuttings will be performed. If contamination is suspected, the soils will be placed in drums and sent to an authorized facility.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving?

   No contamination testing will be performed. All samples collected will be send to the laboratory. The project engineer will review the boring logs and samples to determine which samples will be testing for their physical engineering properties.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)?

   No contamination testing or laboratory testing will be performed.

7. How will samples be transported and preserved? Undisturbed, in-situ soil samples are driven into brass rings and placed in air-tight plastic containers and sealed with plastic lids and taped closed. Bulk soil samples will be collected in large bags and sealed with tape or wire prior to transportation to the laboratory.

8. What sampling methods will be used? California Modified Split Spoon sampler will be driven into the soil using a 140lb hammer.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (www.sdcdeh.org). Yes ☐ No ☒

   _____

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and *include a destruction diagram.*
    Yes ☐ No ☒

    _____

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination?

    The drill equipment will be washed prior to drilling. Immediately following the drilling and sampling, the borings will be backfilled with bentonite slurry.

12. What methods will be used to clean sampling equipment? A wire brush and water will be used.

13. What cleaning method will be used to clean casing and screen prior to installation? Casing will not be installed.

14. A Property Owner Consent (POC) agreement is required for all applications, except for onsite, open LOP/SAM site assessment cases, Caltrans properties and military properties.

County of San Diego

JACK MILLER
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
phone: 858-505-6700/800-253-9933 FAX: 858-505-6891
http://www.sdcdeh.org

ELIZABETH POZZEBON
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:

3665 Via de la Valle
Del Mar, CA 92014

Assessor's Parcel Number (APN):

302 210 52 00

I, Michael H. Mulvany, owner of the property/properties listed above, give my permission to Geocon Incorporated (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 2 soil borings

I understand that Shawn Weedon (registered professional) of Geocon Incorporated (consulting company) and an authorized signer for _____ (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

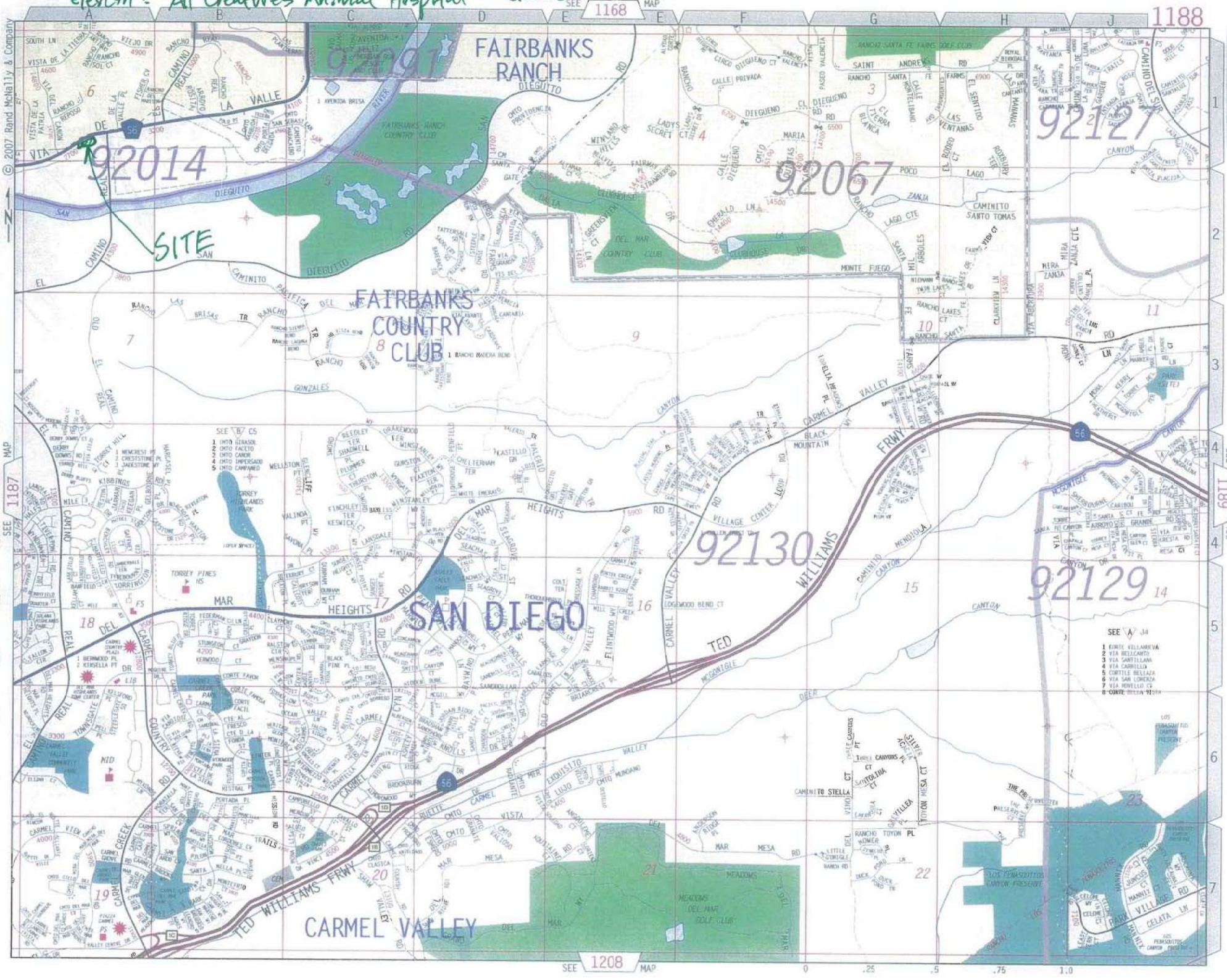
Property Owner Signature: _____ Date: 6/9/2013

Print Name: Michael H. Mulvany Title: General Partner

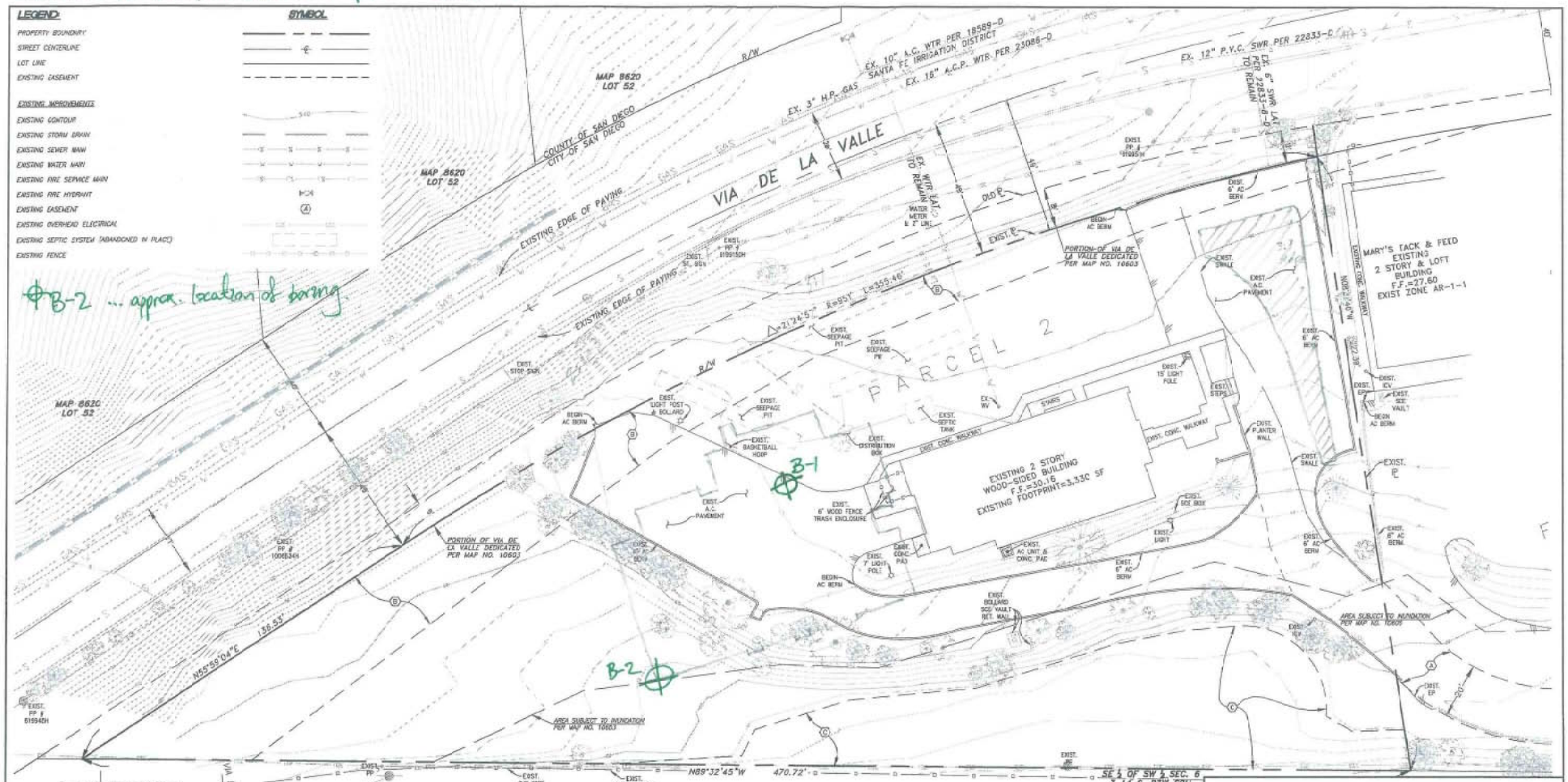
Company: All Creatures Investment Partners

Mailing Address: All Creatures Hospital 3665 Via de la Valle, Del Mar, CA 92014

Geocon: All Creatures Animal Hospital G1603-52-01



Geocon : All Creatures Animal Hospital G1603-52-01



EXISTING EASEMENTS:

(A) 26' WIDE ACCESS EASEMENT GRANTED PER MAP NO. 10603 (TO REMAIN).

(B) SLOPE EASEMENT GRANTED PER MAP NO. 10603 (TO REMAIN).

(C) OPEN SPACE EASEMENT GRANTED TO THE CITY OF SAN DIEGO PER 21064-B, DOC #2012-0557291 (TO REMAIN).

NON-PLOTTABLE EASEMENTS:

THE FOLLOWING EASEMENTS HAVE NO LOCATION SET FORTH IN THE RECORD DOCUMENT AND CANNOT BE PLOTTED:

1. EASEMENT TO SANTA FE IRRIGATION DISTRICT REC. JUNE 5, 1925 IN BOOK 1095, PAGE 147 OF DEEDS, O.R. (TO REMAIN).
2. EASEMENT TO SAN DIEGO GAS AND ELECTRIC COMPANY PER DOC. REC. DECEMBER 5, 1984 AS FILE NO. 84-454033, O.R. (TO REMAIN).
3. EASEMENT TO SAN DIEGO GAS AND ELECTRIC COMPANY PER DOC. REC. DECEMBER 5, 1984 AS FILE NO. 84-454034, O.R. (TO REMAIN).

UTILITIES:

THE PROPERTY IS ADEQUATELY SERVED BY THE FOLLOWING UTILITIES:

1. WATER: A 10" P.V.C. WATER MAIN EXISTS IN VIA DE LA VALLE ALONG THE PROJECT FRONTAGE PER CITY ENGINEER'S DWG. NO. 18589-2-D.
2. SEWER: A 12" P.V.C. SEWER MAIN EXISTS IN VIA DE LA VALLE ALONG THE PROJECT FRONTAGE PER CITY ENGINEER'S DWG. NO. 22433-8-D.

0' 8' 16' 24' 48'
SCALE 1/16"=1'-0"

NAD 83: 1938-6259	NAD 27: 298-1699	P.T.S. 288720	I.D. XXXXXXXX

PREPARED BY:
NAME: LEPPERT ENGINEERING CORPORATION
ADDRESS: 5190 GOVERNOR DRIVE, S-205
SAN DIEGO, CA 92122
PHONE #: (858) 597-2001

PROJECT ADDRESS:
3865 VIA DE LA VALLE
SAN DIEGO, CA 92014

PROJECT NAME:
ALL CREATURES HOSPITAL
CUP AMENDMENT & SDP

SHEET TITLE:
EXISTING TOPOGRAPHY AND EASEMENT PLAN

REVISION 14:
REVISION 13:
REVISION 12:
REVISION 11:
REVISION 10:
REVISION 9:
REVISION 8:
REVISION 7:
REVISION 6:
REVISION 5:
REVISION 4:
REVISION 3:
REVISION 2: 4/09/13
REVISION 1: 6/14/12

ORIGINAL DATE: 12/13/11
DRAWING C 3.0 OF 3
SHEET NO. 3 OF 12

NO.	DATE	BY	DESCRIPTION
3	7-27-12	AM	AGENCY CORRECTIONS
2	07-10-12	AM	REVISE EASEMENTS PER COUNCIL APPROVAL
1	12-13-11	AM	ORIGINAL

Leppert Engineering CORPORATION
5190 Governor Drive, Suite 205, San Diego, Ca. 92122-2642
Phone: (858) 597-2001 Fax: (858) 597-2002

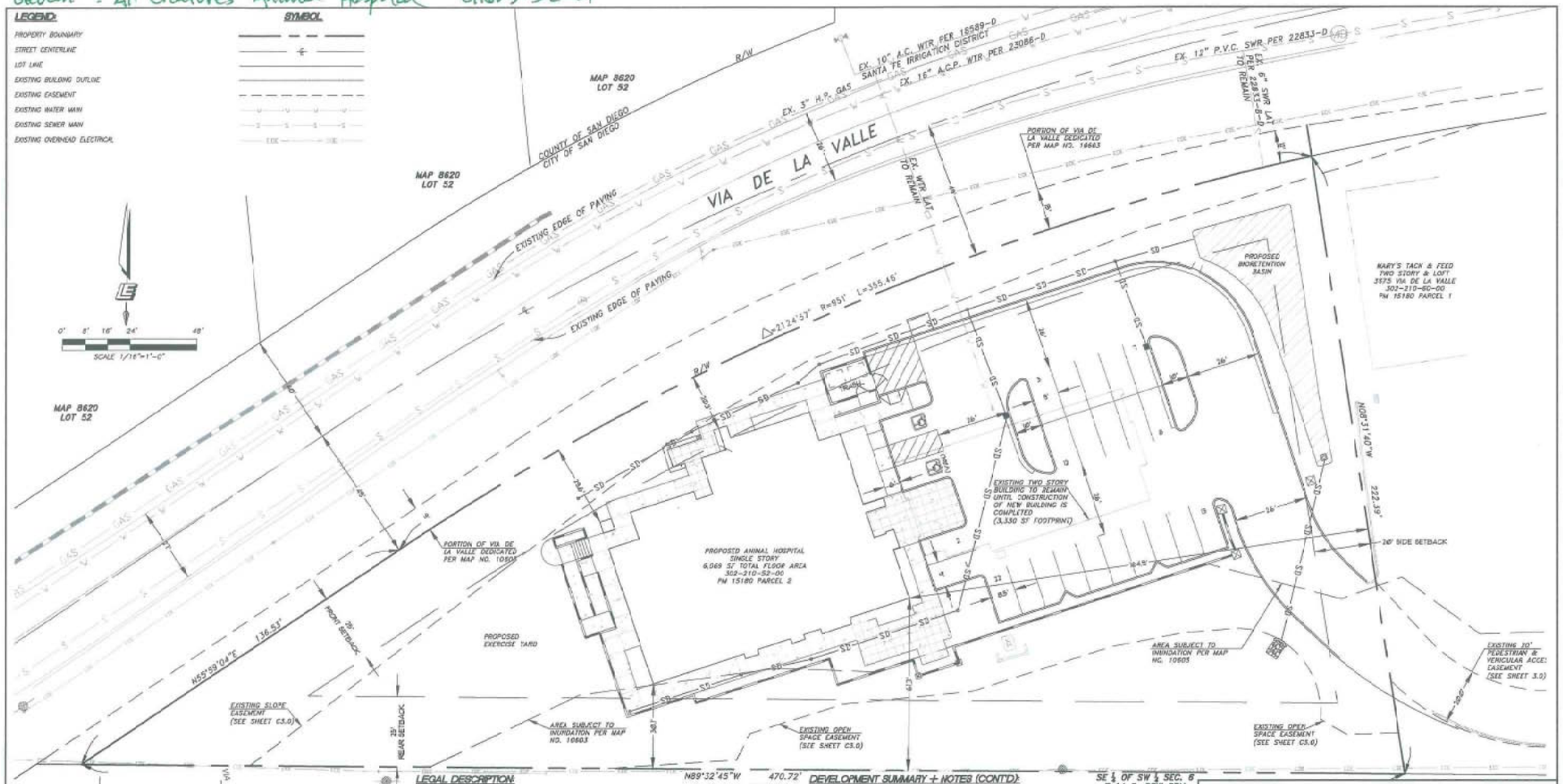
APPROVED BY ENGINEER OF RECORD: JOHN D. LEPPERT
REGISTRATION # C E: 26283
FILE CODE: SDR 3.01-04.07
DATE

PREPARATION AND REVISION LOG

Geocon : All Creatures Animal Hospital G1603-52-01

LEGEND:

	SYMBOL
PROPERTY BOUNDARY	
STREET CENTERLINE	
LOT LINE	
EXISTING BUILDING OUTLINE	
EXISTING EASEMENT	
EXISTING WATER MAIN	
EXISTING SEWER MAIN	
EXISTING OVERHEAD ELECTRICAL	



VICINITY MAP
NO SCALE

LEGAL DESCRIPTION:
PARCEL 2 OF PARCEL MAP NO. 15180, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, AS RECORDED MARCH 24, 1988, O.R.

ASSESSOR'S PARCEL NUMBER:
302-210-52-00

OWNER/APPLICANT:
ALL CREATURES INVESTMENT PARTNERS
3365 VIA DE LA VALLE
SAN DIEGO, CA 92014
(858) 481-7993

SHEET INDEX:

C 1.0	CUP AMENDMENT & SDP SITE PLAN
C 2.0	CONCEPTUAL GRADING/DRAINAGE PLAN
C 3.0	EXISTING TOPOGRAPHY AND EASEMENT PLAN

DEVELOPMENT SUMMARY + NOTES:

ZONING, LOTS AND ACREAGE

1. COMMUNITY PLAN: THE PROPERTY IS WITHIN THE NORTH CITY FUTURE URBANIZING AREA (NCFUA) SUBAREA II COMMUNITY PLAN, WITH A LAND USE DESIGNATION OF RESIDENTIAL.
2. ZONING: THE PROPERTY IS CURRENTLY ZONED AR-1-1.
   SETBACK REQUIREMENTS FOR AR-1-1:
   MIN FRONT SETBACK 25'
   MIN SIDE SETBACK 20'
   MIN REAR SETBACK 25'
3. LOTS: THE SUBJECT PROPERTY CONSISTS OF 1 LEGAL LOT. PROPOSED NUMBER OF LOTS = 1.
4. ACREAGE: THE SUBJECT PROPERTY CONTAINS 1.386± GROSS ACRES.
5. OVERLAY ZONES: THE PROPERTY IS IN THE FOLLOWING OVERLAY ZONES:
   - CITY COASTAL
   - PARKING IMPACT
   - SENSITIVE BIOLOGICAL RESOURCES

DEVELOPMENT SUMMARY + NOTES (CONT'D):

6. GEOLOGICAL HAZARD CATEGORY: 32
7. ENVIRONMENTALLY SENSITIVE LANDS: 100% OF THE SITE HAS BEEN GRADED PREVIOUSLY AS SHOWN ON CITY DRAWING NUMBER 19029-D, CONSEQUENTLY, THERE ARE NO SENSITIVE BIOLOGIC RESOURCES ON SITE.
8. USES: EXISTING USE: 24 HR ANIMAL HOSPITAL (TO REMAIN OPERATIONAL DURING CONSTRUCTION) PROPOSED USE: 24 HR ANIMAL HOSPITAL
9. PERMITS BEING APPLIED FOR: AN AMENDMENT TO CONDITIONAL USE PERMIT NO. C-16186 FOR THE EXPANSION OF A PREVIOUSLY APPROVED 3,330 SF VETERINARY CLINIC AND 1,520 SF ATTACHED SINGLE FAMILY RESIDENCE; AND SITE DEVELOPMENT PERMIT FOR DEVELOPMENT ON A PREMISES WITH ENVIRONMENTALLY SENSITIVE LANDS IN THE FORM OF SPECIAL FLOOD HAZARD AREAS FOR THE CONSTRUCTION OF AN EXPANDED ANIMAL HOSPITAL FACILITY TO REPLACE THE EXISTING FACILITY THAT WAS CONSTRUCTED ON THE PROJECT SITE IN 1983 UNDER CONDITIONAL USE PERMIT C-17660.

STREETS AND ACCESS

1. ACCESS TO THE PROJECT SITE IS PROVIDED BY A PRIVATE DRIVEWAY FROM EL CAMINO REAL BY WAY OF AN EASEMENT FOR ACCESS OVER AND ACROSS THAT PORTION OF LOT 1 OF VIA DE LA VALLE COMMERCIAL, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 10603, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, FEBRUARY 24, 1983 AS SHOWN AND DELINEATED ON SAID MAP AS 20.0 FOOT PEDESTRIAN AND VEHICULAR ACCESS EASEMENT.

EXISTING UTILITIES
(SEE SHEET C3.0)

OTHER

1. BUS STOPS: THERE ARE NO EXISTING OR PROPOSED BUS STOPS WITHIN THE AREA OF THE PROJECT SITE.

SE ¼ OF SW ¼ SEC. 6
T 14 S, R3W SBM

NAD 83: 1338-6259 | NAD 27: 298-1699 | P.T.S. 288720 | I.G. XXXXXXXX

6				11			
5				12			
4				13			
3	2-21-13	JMR	REDESIGN	14			
2	7-27-12	JMR	AGENCY CORRECTIONS	15			
1	12-13-11	JMR	ORIGINAL	16			
NO.	DATE	BY	DESCRIPTION	NO.	DATE	BY	DESCRIPTION

Leppert Engineering CORPORATION
3130 Governor Drive, Suite 205, San Diego, Ca. 92122-2408
Phone: (858) 597-2001 Fax: (858) 597-2080

APPROVED BY ENGINEER OF WORK: JOHN D. LEPPERT
REGISTRATION NO.: 26283
FILE CODE: SDR 3.01-34.07
DATE:

PREPARATION AND REVISION LOG

PREPARED BY:
NAME: LEPPERT ENGINEERING CORPORATION
ADDRESS: 3130 GOVERNOR DRIVE, S-205
SAN DIEGO, CA 92122
PHONE #: (858) 597-2001

PROJECT ADDRESS:
3365 VIA DE LA VALLE
SAN DIEGO, CA 92014

PROJECT NAME:
ALL CREATURES HOSPITAL
CUP AMENDMENT & SDP

SHEET TITLE:
SITE PLAN

REVISION 14:	
REVISION 13:	
REVISION 12:	
REVISION 11:	
REVISION 10:	
REVISION 9:	
REVISION 8:	
REVISION 7:	
REVISION 6:	
REVISION 5:	
REVISION 4:	
REVISION 3:	
REVISION 2:	4/09/13
REVISION 1:	8/14/12
ORIGINAL DATE:	12/13/11
DRAWING	C1.0 OF 3
SHEET NO.	1 OF 12

GEOSCIENCE

P.O. Box 220, Claremont, CA 91711 | P: 909.451.6650 | F: 909.451.6638 | www.gssiwater.com

Appendix D - Project Costs

Unit Costs

Unit Costs							
Construction costs			**Escalated**		**Unit Cost**		***Source***
Pipeline - street					**$25**	per in-diam/LF	*OMWD Internal Planning reports (2017)*
Pipeline - unpaved road					**$20**	per in-diam/LF	*80% of pipeline costs less traffic control, sawcutting, AC pavement repair*
HDD Crossing <500'					**$500**	per/LF	*cost for pits and casing*
HDD Crossing >500'					**$400**	per/LF	*cost for pits and casing*
Pump Station					**$6,500**	per HP	
Discharge connection					**$100,000**	each	*allowance*
Land Acquisition					**$690,000**	per acre	*OMWD informal appraisal: Palms Reservoir, surplus property, appraised at $1,100,000 as a residential site (1.6 acres total, $687,000/acre)*
Production Well					**$617,550**	per well	*GSSI provided*
Slant Well Drilling					**$3,500,000**		*GSSI: accounts for injection well depth*
Monitoring well					**$200,000**	per well	*Oceanside costs*
Dist. Syst. Conn.					**$500,000**		
Desalter	1	MGD			**$715,500**	LS	*Wigen quote (2017)+50% installation*
Iron & Manganese Treatment	1.20	MGD			**$765,000**	LS	*Loprest quote (2017)+50% installation*
Construction Cost Index					**5260.00**		*2010 CCI for California (January 2010)*
Construction Cost Index					**6373.00**		*2017 CCI for California (January 2017)*
Evaporation Ponds Treatment			$40,000		**$48,464**	LS	*Carollo TM 3 (2010) no brine minimization, does not include land required, w/out Implementation Costs*
Brine Minimization: ZLD			$889,000		**$1,077,110**	LS	*Carollo TM 3 (2010) based on 154 gpm brine sent to concentrator, does not include the land required, w/out Implementation Costs*
Chemical Feed Systems					**$15,000**	per system	*allowance*
Flouride Feed System					**$39,750**	per system	*Integrity Municipal Systems quote (2017)+50% installation*
Process Building					**$250**	SF	*allowance*
Chemical Building					**$250**	SF	*allowance*
Product Water Blend Tank					**$2**	per gallon	
Piping/ Fittings Allowance					**10%**	LS	*10% of Equipment*
Electrical Allowance					**30%**	LS	*30% of Equipment*
I&C Allowance					**20%**	LS	*20% of Equipment*
Backfill Placement (x' over entire site)			$ 1.09		**$1**	per CY	*200 HP, 50' haul, common earth from stockpile*
Backfill Haul to Site			$ 9.45		**$11**	per CY	*20 CY truck, 15 min wait, 50 MPH, cycle 40 miles*
Compaction			$ 0.89		**$1**	per SF	*Sheepsfoot Compaction, 12" lifts, 4 passes*
Grading			$ 2.97		**$4**	per SF	*site grading (for small irregular areas)*
Implementation					**25%**	of Construction cost	
Legal/Admin/Environmental					*5%*		
Design					*8%*		
Construction Management					*8%*		
Services during Construction					*4%*		
Project Contingency					**30%**	of Capital cost	
Annual Operation & Maintenance Costs							
Production Well					**1.0%**	of Construction cost	*RMC (2016)*
Pipelines					**1.0%**	of Construction cost	*RMC (2016)*
Brine Pond Maintenance					**5.0%**	of Construction cost	*RMC (2016)*
Antiscalant					**$16.82**	per gallon	*SCVWD Cost (confidential); based on $1.92/lb*
Sodium Hydroxide (50%)					**$2.50**	per gallon	*SCVWD Cost (confidential); based on $0.196/lb*
Calcium Chloride (50%)					**$0.53**	per gallon	*City of Los Angeles Groundwater Replenishment Master Planning Report, Appendix B, Table B-2*
Sodium Hypochlorite (12.5%)					**$0.40**	per gallon	*SCVWD Cost (confidential)*
Ammonium Hydroxide (19%)					**$1.39**	per gallon	*City of Los Angeles Groundwater Replenishment Master Planning Report, Appendix B, Table B-2*
Sodium Fluoride					**$1.12**	per gallon	*OMWD 2017 invoice (delivered to site)*
Deep Well Injection					**1.0%**	of Construction cost	*RMC (2016)*
Brine Discharge Rate to Ocean Ou	SEJPA				**$ 0.0008**	per gallon	*OMWD San Elijo Valley GW Study*
Brine Discharge Rate to Land Out	Escondido				**$ 0.0010**	per gallon	
Sewer Discharge Rate to Sewer	SEJPA				**$ 0.0133**	per gallon	*SEJPA cost to OMWD for GW pump test discharge to sewer (low TDS)*
Sewer Discharge Rate to Sewer	San Diego				**$ 0.0133**	per gallon	
Discharge Monitoring					**$ 120,000**	lump sum	*Sweetwater Authority annual cost for monitoring*
GW Monitoring					**$ 10,500**	lump sum	*monthly sampling at 5 locations (field work, mileage, supplies, sample pump, lab analysis)+report*
Survey					**$ 10,000**	lump sum	*5 survey markers checked annnually*
Storage					**1.0%**	of Construction cost	
Electrical Power					**$ 0.18**	kWh	
Financing							
Interest Rate					**3.5%**		
Period					**30**	years	
Capital Recovery Factor					**0.05437**		

Project Alternative
Cost Summary

Alternative	Capital Cost	Range (-30% to +50%)	Annual Costs	
Groundwater Production	$ 2,323,842		Annual Capital:	$ 126,350
		$ 1,543,875	Annual O&M:	$ 41,746
		$ 3,486,000	Total Annual:	$ 168,097
Raw Water Conveyance Project 1	$ 975,000		Annual Capital:	$ 126,350
		$ 750,000	Annual O&M:	$ 14,550
		$ 1,462,500	Total Annual:	$ 67,562
Raw Water Conveyance Project 2	$ 4,529,200		Annual Capital:	$ 246,259
		$ 3,484,000	Annual O&M:	$ 22,200
		$ 6,793,800	Total Annual:	$ 268,459
Treatment	$ 9,667,396		Annual Capital:	$ 525,629
		$ 7,171,074	Annual O&M:	$ 341,737
		$ 14,502,000	Total Annual:	$ 867,366
Brine Disposal	$ 7,375,875		Annual Capital:	$ 401,036
Alt. 1a to Escondido Outfall		$ 5,673,750	Annual O&M:	$ 161,280
		$ 11,064,000	Total Annual:	$ 562,316
Brine Disposal	$ 10,522,980		Annual Capital:	$ 572,148
Alt. 1d to SEJPA WRF (via San Andres Rd)		$ 8,094,600	Annual O&M:	$ 107,862
		$ 15,785,000	Total Annual:	$ 680,011
Brine Disposal	$ 11,238,500		Annual Capital:	$ 611,052
Alt. 2 to Deep Well Injection		$ 8,645,000	Annual O&M:	$ 87,000
		$ 16,858,000	Total Annual:	$ 698,052
Conveyance	$ 6,491,875		Annual Capital:	$ 352,972
Alt B.1 - PZ-402		$ 4,993,750	Annual O&M:	$ 127,691
		$ 9,738,000	Total Annual:	$ 480,663
Conveyance	$ 5,094,375		Annual Capital:	$ 276,988
Alt. D - PZ402		$ 3,918,750	Annual O&M:	$ 119,441
Alt. 2		$ 7,642,000	Total Annual:	$ 396,429
Brine Disposal	$ 10,719,475		Annual Capital:	$ 582,832
Alt. 2 to Land Outfall		$ 8,245,750	Annual O&M:	$ 174,630
		$ 16,080,000	Total Annual:	$ 757,462
Brine Disposal	$ 10,012,275		Annual Capital:	$ 544,381
Alt. 2 to Ocean Outfall		$ 7,701,750	Annual O&M:	$ 181,443
		$ 15,019,000	Total Annual:	$ 725,824
Brine Disposal	$ 10,751,000		Annual Capital:	$ 584,546
Alt. 2 to Deep Well Injection		$ 8,270,000	Annual O&M:	$ 89,477
		$ 16,127,000	Total Annual:	$ 674,023

Planning Level Cost
Groundwater Wells

Groundwater Extraction Wells					
Planning Level Construction Cost Estimate					
	Pipe Diam.	**Qty**	**Unit Cost**	**Unit**	**Subtotal**
Production Wells		2	$617,550	ea	1,235,100
					-
Baseline Construction Cost					**1,235,100**
Implementation			25%		308,775
Capital Cost					**1,543,875**
Project Contingency			30%		463,163
Subtotal Project Cost					**2,007,038**
Land Acquisition	100'x100'	0.46	$ 690,000	acre	316,804
Total Project Cost					**2,323,842**
Annualized Total Project Cost			0.05437		126,350
Annual O&M Cost					41,746
Total Annualized Cost					**168,097**
Annual Operations & Maintenance Cost					
Pumping Energy	**hp**	**kW**	**kWh-year**	**Unit Cost**	
Production Wells to Desalter*					
Well 1	15	11.19	97,985	$ 0.18	17,637
Well 2	10	7.46	65,323	$ 0.18	11,758
			Construction Cost	**Unit Cost**	
Production Wells			1,235,100	1.0%	12,351
					-
Total Annual Operations & Maintenance Cost					**41,746**
**Assumes 90% Online Factor*					

FROM GSSI (7/17/2017) - Supply Well Contractor Cost Estimate					
	Item	**Unit**	**Est. Qty**	**Price**	**Extension**
1	Mob, Demob, Insurance, Bonds, Permits, site clean-up & restoration	LS	1	$ 150,000.00	**$ 150,000.00**
2	Noise Control	LS	1	$ 70,000.00	**$ 70,000.00**
3	Testing and storage of drill cuttings	LS	1	$ 25,000.00	**$ 25,000.00**
4	NPDES compliance	LS	1	$ 35,000.00	**$ 35,000.00**
5	Drill Conductor	Feet	50	$ 650.00	**$ 32,500.00**
6	Drill 17 1/2" 50 - 230 ft bgs	Feet	180	$ 95.00	**$ 17,100.00**
7	Provide Geophysical Logs and Deviation survey	LS	1	$ 5,000.00	**$ 5,000.00**
8	Install Zone	Each	1	$ 12,500.00	**$ 12,500.00**
9	Zone Testing	Hours	18	$ 400.00	**$ 7,200.00**
10	Zone Testing WQ Analysis	Each	1	$ 3,500.00	**$ 3,500.00**
11	Ream 17 1/2" pilot hole to 28", 50 to 210 ft bgs	Feet	160	$ 55.00	**$ 8,800.00**
12	Caliper Survey	LS	1	$ 2,500.00	**$ 2,500.00**
13	Install 18" x 1/4" Super Duplex 2507 blank, 2.5 to 95 & 150 to 190 ft bgs	Feet	138	$ 600.00	**$ 82,800.00**
14	Install 18" x 1/4" Super Duplex 2507 ful-flo louvered, 95 to 150 ft bg	Feet	55	$ 675.00	**$ 37,125.00**
15	Install 2" sch 40 Super Duplex 2507 sounding tubes (x2), +2.5 to 155 and 165 ft bgs	Feet	325	$ 40.00	**$ 13,000.00**
16	Install filter pack	Feet	210	$ 40.00	**$ 8,400.00**
17	Install annular cement sea	Feet	50	$ 60.00	**$ 3,000.00**
18	Provide Initial development airlift and swabbing	Hours	24	$ 350.00	**$ 8,400.00**
19	Install and remove final developmetn/step,constant, tes	LS	1	$ 20,000.00	**$ 20,000.00**
20	Provide Final Development by pump and surge	Hours	24	$ 350.00	**$ 8,400.00**
21	Provide step drawdown and constant tes	Hours	40	$ 350.00	**$ 14,000.00**
22	Provide spinner survey	LS	1	$ 1,500.00	**$ 1,500.00**
23	Tittle 2 and UCMR 3 list 1 water quality analysis	LS	1	$ 5,000.00	**$ 5,000.00**
24	Complete wellhead	LS	1	$ 10,000.00	**$ 10,000.00**
25	Provide Video	LS	1	$ 1,500.00	**$ 1,500.00**
26	Disposal of drilling mud	LS	1	$ 35,000.00	**$ 35,000.00**
27	Install pea gravel between well casing and conductor	Feet	5	$ 65.00	**$ 325.00**
	Total Estimated Cost (1 well):				**$ 617,550.00**
	Total Estimated Cost (2 wells):				**$ 1,235,100.00**

Assumptions: Bottom of aquitard is approximately 95 ft bgs, with aquifer thickness of approximately 50-55 feet. (Site 2 location)

From Roscoe Moss 4/27/17

Dia x Wall	Material	Type	Material Cost/ft	Driller Cost/ft
18" x .250" wall	Duplex 2507	BLANK	$ 460.00	$ 598.00
18" x .250" wall	Duplex 2507	Ful Flo Louver	$ 518.00	$ 673.40

cost of materials plus 30% driller markup
cost of materials plus 30% driller markup

estimated cost of materials plus 30% driller markup.

Planning Level Cost
Groundwater Conveyance

Planning Level Cost Estimate - Groundwater Conveyance					
Groundwater Conveyance from South Well Site to North Treatment Plant Site					
	Pipe Diam.	**Qty**	**Unit Cost**	**Unit**	**Subtotal**
Production Well Piping to Desalter	12	2,500	$20	in-diam/LF	600,000
Trenchless-HDD			$500	LF	-
Production Well Pumps			$6,500	hp	-
Baseline Construction Cost					**600,000**
Implementation			25%		150,000
Capital Cost					**750,000**
Project Contingency			30%		225,000
Subtotal Project Cost					**975,000**
					-
Total Project Cost					**975,000**
Annualized Total Project Cost			0.05437		53,012
Annual O&M Cost					14,550
Total Annualized Cost					**67,562**
Annual Operations & Maintenance Cost					**Annual O&M**
Pumping Energy		**Flow (MGD)**	**TDH (100 ft)**	**Unit Cost**	
no pumping / part of wellhead		1.20	0.1	$57,000	8,550
			Construction Cost	**Unit Cost**	
Production Well Piping to Desalter			600,000	1.0%	6,000
Total Annual Operations & Maintenance Cost					**14,550**
Groundwater Conveyance from South Well Site to South Treatment Plant Site					
	Pipe Diam.	**Qty**	**Unit Cost**	**Unit**	**Subtotal**
Production Well Piping to Desalter	12	7,400	$25	in-diam/LF	2,220,000
Production Well Piping to Desalter	12	3,600	$20	in-diam/LF	864,000
Trenchless-HDD		500	$500	LF	250,000
Production Well Pumps			$0	hp	-
Baseline Construction Cost					**3,334,000**
Implementation			25%		150,000
Capital Cost					**3,484,000**
Project Contingency			30%		1,045,200
Subtotal Project Cost					**4,529,200**
					-
Total Project Cost					**4,529,200**
Annualized Total Project Cost			0.05437		246,259
Annual O&M Cost					22,200
Total Annualized Cost					**268,459**
Annual Operations & Maintenance Cost					**Annual O&M**
Pumping Energy	**hp**	**kw**	**kwh-yr**	**Unit Cost**	
no pumping / part of wellhead					-
			Construction Cost	**Unit Cost**	
Production Well Piping to Desalter			2,220,000	1.0%	22,200
Total Annual Operations & Maintenance Cost					**22,200**

Planning Level Cost
Groundwater Desalter

Planning Level Cost Estimate: 1.0 MGD Desalination Treatment System					
	Dia./%	Qty	Unit Cost	Unit	Subtotal
Backfill Placement (5' over 0.5 acre)- Floodplain Adjustment		4,033	$1	CY	5,327
Backfill Haul to Site		4,033	$11	CY	46,180
Compaction		21,780	$1	SF	23,486
Grading		21,780	$4	SF	78,374
Desalter		1	$715,500	LS	715,500
Greensand Influent Pump	75	2	$6,500	HP	975,000
Iron and Manganese Treatment		1	$765,000	LS	765,000
Greensand Effluent Tank		50,000	$1.50	gal	75,000
Allowance for Backwash Solids Disposal Line	2	500	$25	per in-diam/LF	25,000
Chemical Feed Systems					
Antiscalant		1	$15,000	EA	15,000
Sodium Hypochlorite		1	$15,000	EA	15,000
Aqueous Ammonia (NH_4OH)		1	$15,000	EA	15,000
Calcium Chloride		1	$15,000	EA	15,000
Sodium Hydroxide		1	$15,000	EA	15,000
Sodium Fluoride		1	$39,750	EA	39,750
Process Building (RO, Electrical, Staff)		2,600	$250	SF	650,000
Chemical Building		1,505	$250	SF	376,250
Product Water Blend Tank		42,000	$1.50	gal	63,000
Piping/Fittings/Appurtenances Allowance (% of Equipment)	10%	1	$257,025	LS	257,025
Electrical Allowance (% of Equipment)	30%	1	$771,075	LS	771,075
I&C Allowance (% of Equipment)	20%	1	$514,050	LS	514,050
Raw Construction Cost					**5,455,017**
Sales Tax on Materials			7.75%		281,843
Base Construction Cost					**5,736,859**
Implementation			25%		1,434,215
Capital Cost					**7,171,074**
Project Contingency			30%		2,151,322
Subtotal Project Cost					**9,322,396**
Land Acquisition		1	$ 690,000	acre	345,000
Total Project Cost					**9,667,396**
Annualized Total Project Cost			0.05437		525,629
Annual O&M Cost					341,737
Total Annualized Cost					**867,366**
Annual Operations & Maintenance Cost					**Annual O&M**
Chemicals					
Antiscalant		1080	$ 16.82	gal	$ 18,165.60
Sodium Hydroxide		13872	$ 2.50	gal	$ 34,680.00
Calcium Chloride		19260	$ 0.53	gal	$ 10,207.80
Sodium Hypochlorite		4284	$ 0.40	gal	$ 1,713.60
Ammonium Hydroxide		1104	$ 1.39	gal	$ 1,534.56
Sodium Fluoride		168	$ 1.12	lb	$ 187.40
Pumping Energy	**hp**	**kw**	**kwh-yr**	**Unit Cost**	
Greensand Filter Influent Pumps	75	56	440,932	$0.18	79,368
RO Pumps	125	93	734,887	$0.18	132,280
			Construction Cost	**Unit Cost**	
Iron and Manganese Treatment			$765,000	1%	7,650
Desalter			$715,500	1%	7,155
Allowance for Backwash Solids Disposal Line			$25,000	1%	250
Sewer Discharge Rate to Sewer		0.01	$3,650,000	$ 0.0133	48,545
			Mgal	**Unit Cost**	
Desalter			1.00	$0.00	-
Total Annual Operations & Maintenance Cost					**341,737**

Planning Level Cost
Brine Disposal Alternatives

Planning Level Cost Estimate: Brine Line	Alt 1A to SEJPA WRF (via San Andres Rd)				
	Pipe Diam.	**Qty**	**Unit Cost**	**Unit**	**Subtotal**
Pipeline - street	6	27,000	$25	in-diam/LF	4,050,000
Pipeline - unpaved road	6	6,800	$20	in-diam/LF	816,000
Trenchless Crossing - SD Creek		500	$500	LF	250,000
Trenchless Crossing - Lagoon		500	$500	LF	250,000
Trenchless Crossing - Freeway		1,000	$400	LF	400,000
Discharge connection		1	$100,000	each	100,000
Brine Pump	10	2	$6,500	HP	130,000
Baseline Construction Cost					**5,996,000**
Implementation	+10% add'l Environmental		35%		2,098,600
Capital Cost					**8,094,600**
Project Contingency			30%		2,428,380
Subtotal Project Cost					**10,522,980**
Total Project Cost					**10,522,980**
Annualized Total Project Cost			0.05437		572,148
Annual O&M Cost					107,862
Total Annualized Cost					**680,011**
Annual Operations & Maintenance Cost					**Annual O&M**
Pumping Energy	**hp**	**kw**	**kwh-yr**	**Unit Cost**	
Brine Pump	10	7	58,791	$0.18	10,582
			Construction Cost	**Unit Cost**	
Pipeline - street			4,050,000	1.0%	40,500
Brine Discharge Rate to Ocean Outfall			69,350,000	0.0008	55,480
Brine Pump			130,000	1.0%	1,300
			Mgal	**Unit Cost**	
Total Annual Operations & Maintenance Cost					**107,862**

Planning Level Cost Estimate: Brine Line	Alt 1B to Escondido Outfall				
	Pipe Diam.	**Qty**	**Unit Cost**	**Unit**	**Subtotal**
Pipeline - street	6	24,300	$25	in-diam/LF	3,645,000
Pipeline - unpaved road	6	1,200	$20	in-diam/LF	144,000
Trenchless Crossing - SD Creek		500	$500	LF	250,000
Trenchless Crossing - Bridge		1,000	$400	LF	400,000
Discharge connection		1	$100,000	each	100,000
Brine Pump	0	-	$6,500	HP	-
Baseline Construction Cost					**4,539,000**
Implementation			25%		1,134,750
Capital Cost					**5,673,750**
Project Contingency			30%		1,702,125
Subtotal Project Cost					**7,375,875**
Total Project Cost					**7,375,875**
Annualized Total Project Cost			0.05437		401,036
Annual O&M Cost					161,280
Total Annualized Cost					**562,316**
Annual Operations & Maintenance Cost					**Annual O&M**
Pumping Energy	**hp**	**kw**	**kwh-yr**	**Unit Cost**	
Brine Pump	-	-	-	$0.18	-
			Construction Cost	**Unit Cost**	
Pipeline - street			3,645,000	1.0%	36,450
Brine Discharge Rate to Ocean Outfall	SEJPA		69,350,000	0.0008	55,480
Brine Discharge Rate to Land Outfall	Escondido		69,350,000	0.0010	69,350
Brine Pump			-	1.0%	-
			Mgal	**Unit Cost**	
Total Annual Operations & Maintenance Cost					**161,280**

Planning Level Cost Estimate: Brine Line	Alt 1C to Deep Well Injection				
	Pipe Diam.	**Qty**	**Unit Cost**	**Unit**	**Subtotal**
Pipeline - street	6	10,000	$25	in-diam/LF	1,500,000
Pipeline - unpaved road	6	5,000	$20	in-diam/LF	600,000
Trenchless Crossing - SD Creek		500	$500	LF	250,000
Brine Pump	0	-	$6,500	HP	-
Slant Drilling		1	$3,500,000	each	3,500,000
Monitoring well		4	$200,000	each	800,000
Injection Well	part of drilling cost			per well	
Baseline Construction Cost					**6,650,000**
Implementation	+5% add'l Environmental		30%		1,995,000
Capital Cost					**8,645,000**
Project Contingency			30%		2,593,500
Subtotal Project Cost					**11,238,500**
Total Project Cost					**11,238,500**
Annualized Total Project Cost			0.05437		611,052
Annual O&M Cost					87,000
Total Annualized Cost					**698,052**
Annual Operations & Maintenance Cost					**Annual O&M**
Pumping Energy	**hp**	**kw**	**kwh-yr**	**Unit Cost**	
Brine Pump	-	-	-	$0.18	-
			Construction Cost	**Unit Cost**	
Pipeline - street			6,650,000	1.0%	66,500
GW Monitoring			1	10,500	10,500
Survey			1	10,000	10,000
Brine Pump			-	1.0%	-
			Mgal	**Unit Cost**	
Total Annual Operations & Maintenance Cost					**87,000**

Planning Level Cost Estimate: Brine Line	to Ocean Outfall Alt. 2A				
	Pipe Diam.	**Qty**	**Unit Cost**	**Unit**	**Subtotal**
Pipeline - street	6	30,500	$25	in-diam/LF	4,575,000
Pipeline - unpaved road		--			
Trenchless Crossing - SD Creek		500	$500	LF	250,000
Trenchless Crossing - Lagoon		500	$500	LF	250,000
Trenchless Crossing - Freeway		1,000	$400	LF	400,000
Discharge connection		1	$100,000	each	100,000
Brine Pump	10	2	$6,500	HP	130,000
Baseline Construction Cost					**5,705,000**
Implementation	+10% add'l Environmenta		35%		1,996,750
Capital Cost					**7,701,750**
Project Contingency			30%		2,310,525
Subtotal Project Cost					**10,012,275**
Total Project Cost					**10,012,275**
Annualized Total Project Cost			0.05437		544,381
Annual O&M Cost					181,443
Total Annualized Cost					**725,824**
Annual Operations & Maintenance Cost					**Annual O&M**
Pumping Energy	**hp**	**kw**	**kwh-yr**	**Unit Cost**	
Brine Pump	10	7	58,791	$0.18	78,913
			Construction Cos	**Unit Cost**	
Pipeline - street			4,575,000	1.0%	45,750
Brine Discharge Rate to Ocean Outfall			69,350,000	0.0008	55,480
Brine Pump			130,000	1.0%	1,300
			Mgal	**Unit Cost**	
Total Annual Operations & Maintenance Cost					**181,443**

Planning Level Cost Estimate: Brine Line	to Landoutfall Alt. 2B				
	Pipe Diam.	Qty	Unit Cost	Unit	Subtotal
Pipeline - street	6	33,200	$25	in-diam/LF	4,980,000
Pipeline - unpaved road	6	4,800	$20	in-diam/LF	576,000
Trenchless Crossing - SD Creek		500	$500	LF	250,000
Trenchless Crossing - Bridge		1,000	$400	LF	400,000
Discharge connection		1	$100,000	each	100,000
Brine Pump	0	-	$6,500	HP	-
Baseline Construction Cost					**6,306,000**
Implementation			25%		1,939,750
Capital Cost					**8,245,750**
Project Contingency			30%		2,473,725
Subtotal Project Cost					**10,719,475**
Total Project Cost					**10,719,475**
Annualized Total Project Cost			0.05437		582,832
Annual O&M Cost					174,630
Total Annualized Cost					**757,462**
Annual Operations & Maintenance Cost					**Annual O&M**
Pumping Energy	**hp**	**kw**	**kwh-yr**	**Unit Cost**	
Brine Pump	-	-	-	$0.18	-
			Construction Cos	**Unit Cost**	
Pipeline - street			4,980,000	1.0%	49,800
Brine Discharge Rate to Ocean Outfall			69,350,000	0.0008	55,480
Brine Discharge Rate to Land Outfall			69,350,000	0.0010	69,350
Brine Pump			-	1.0%	-
			Mgal	**Unit Cost**	
Total Annual Operations & Maintenance Cost					**174,630**

Planning Level Cost Estimate: Brine Line	to Deep Well Injection Alt. 2C				
	Pipe Diam.	**Qty**	**Unit Cost**	**Unit**	**Subtotal**
Pipeline	6	11,500	$25	in-diam/LF	1,725,000
Trenchless Crossing - SD Creek		500	$500	LF	250,000
Brine Pump	0	-	$6,500	HP	-
Slant Drilling		1	$3,500,000	each	3,500,000
Monitoring well		4	$200,000	each	800,000
Injection Well	part of drilling cost			per well	
Baseline Construction Cost					**6,275,000**
Implementation	+5% add'l Environmental		30%		1,995,000
Capital Cost					**8,270,000**
Project Contingency			30%		2,481,000
Subtotal Project Cost					**10,751,000**
Total Project Cost					**10,751,000**
Annualized Total Project Cost			0.05437		584,546
Annual O&M Cost					89,477
Total Annualized Cost					**674,023**
Annual Operations & Maintenance Cost					**Annual O&M**
Pumping Energy		**Flow (MGD)**	**TDH (100 ft)**	**Unit Cost**	
Brine Pump		0.19	0.6	$57,000	6,227
			Construction Cos	**Unit Cost**	
Pipeline			6,275,000	1.0%	62,750
GW Monitoring			1	$ 10,500	10,500
Survey			1	$ 10,000	10,000
Brine Pump			-	1.0%	-
			Mgal	**Unit Cost**	
Total Annual Operations & Maintenance Cost					**89,477**

Planning Level Cost
Potable Water Conveyance

Planning Level Cost Estimate - Potable Water Conveyance			From North Site to PZ-402		
	Pipe Diam.	**Qty**	**Unit Cost**	**Unit**	**Subtotal**
Pipe	10	8,300	$25	in-diam/LF	2,075,000
Product Water Pump	90	2	$6,500	hp	1,170,000
Trenchless-HDD	casing/pits	500	$500	LF	250,000
Dist. Syst. Conn. / Valves		1	$500,000	each	500,000
Baseline Construction Cost					**3,995,000**
Implementation			25%		998,750
Capital Cost					**4,993,750**
Project Contingency			30%		1,498,125
Subtotal Project Cost					**6,491,875**
Total Project Cost					**6,491,875**
Annualized Total Project Cost			0.05437		352,972
Annual O&M Cost					127,691
Total Annualized Cost					**480,663**
				AFY	1,120
				$/AFY	429
Annual Operations & Maintenance Cost					**Annual O&M**
Pumping Energy	**hp**	**kw**	**kwh-yr**	**Unit Cost**	
Product Water Pump	90	67	529,119	$0.18	95,241
			Construction Cost	**Unit Cost**	
Pipe			2,075,000	1.0%	20,750
Product Water Pump			1,170,000	1.0%	11,700
			Mgal	**Unit Cost**	
Total Annual Operations & Maintenance Cost					**127,691**

Planning Level Cost Estimate - Potable Water Conveyance	From South Site to PZ402				
	Pipe Diam.	**Qty**	**Unit Cost**	**Unit**	**Subtotal**
Pipe	10	5,000	$25	in-diam/LF	1,250,000
Product Water Pump	90	2	$6,500	hp	1,170,000
Trenchless-HDD	casing/pits	-	$500	LF	-
Dist. Syst. Conn. / Valves		1	$500,000	each	500,000
Baseline Construction Cost					**2,920,000**
Implementation			25%		998,750
Capital Cost					**3,918,750**
Project Contingency			30%		1,175,625
Subtotal Project Cost					**5,094,375**
Total Project Cost					**5,094,375**
Annualized Total Project Cost			0.05437		276,988
Annual O&M Cost					119,441
Total Annualized Cost					**396,429**
				AFY	1,120
				$/AFY	354
Annual Operations & Maintenance Cost					**Annual O&M**
Pumping Energy	**hp**	**kw**	**kwh-yr**	**Unit Cost**	
Product Water Pump	90	67	529,119	$0.18	95,241
			Construction Cost	**Unit Cost**	
Pipe			1,250,000	1.0%	12,500
Product Water Pump			1,170,000	1.0%	11,700
			Mgal	**Unit Cost**	
Total Annual Operations & Maintenance Cost					**119,441**

Appendix E - Letters of Support

THE CITY OF SAN DIEGO

August 7, 2017

Kimberly A. Thorner, Esq.
General Manager
Olivenhain Municipal Water District
1966 Olivenhain Road
Encinitas, CA 92024

Subject: San Dieguito Valley Groundwater Project – State of California, Department of Water Resources, Desalination Grant Program –Round 4

Dear Ms. Thorner:

The City of San Diego understands that Olivenhain Municipal Water District (Olivenheim) is pursuing grant funding from the California Department of Water Resources to conduct Design Pilot work; including test wells, water quality sampling, and water treatment testing for the groundwater in the San Dieguito Valley Groundwater Basin. We are writing to express support of your application for funding and would recommend that grant funding be provided for the study.

If determined to be viable, the proposed project may offer local water supply benefits. Olivenhain is completely reliant on imported water to meet its potable water demands and if this project is feasible, it will reduce demands on the imported water system and State Water Project (State). This in turn, provides improved water reliability for the State.

We are pleased to offer our cooperation during the course of the study, and we look forward to reviewing the results.

Please contact me at (619) 533-4112, or George Adrian at (619) 533-4680, if you have any questions.

Sincerely,

Lan C. Wiborg
Deputy Director, Public Utilities Department

LCW/ms/nn

Public Utilities Department
525 B Street, Suite 300, MS 906 • San Diego, CA 92101-4409
Tel (619) 533-7595

August 19, 2017

Kimberly, A. Thorner, Esq.
General Manager
Olivenhain Municipal Water District
1966 Olivenhain Road
Encinitas, CA 92064

Dear Ms. Thorner:

Subject: San Dieguito Valley Groundwater Project – State of California, Department of Water Resources, Desalination Grant Program – Round 4

Surf Cup Sports understands that Olivenhain Municipal Water District (OMWD) is pursuing grant funding from the California Department of Water Resources to conduct Design Pilot work including test wells, water quality sampling, and water treatment testing for the groundwater from the San Dieguito Valley Basin. We are writing to express our support of your application for funding and would recommend that grant funding be provided for the Design Pilot work.

If determined to be feasible, the proposed project may offer local water supply reliability benefits. OMWD is completely reliant on imported water to meet its potable water demands and if this project is feasible, it will reduce the demands on the imported water system and State Water Project. This in-turn provides improved water reliability for the State.

Surf Cup Sports is working with OMWD to obtain recycled water to supplement our groundwater supply and to improve water quality through blending. We have also cooperated with OMWD on the San Dieguito Brackish Groundwater Desalination Feasibility Study to allow water quality sampling of our wells.

We are pleased to offer our continued cooperation during the course of the grant funded Design Pilot work, and we look forward to reviewing the results. Conceptually, we are open to siting the test well on our property, and allowing OMWD to place instrumentation on our two wells to measure flows and water levels. We are also open to using water from the Design Pilot pump test for irrigation of the turf on our soccer fields. All work within our property must however be in compliance with our master lease agreement with the City of San Diego

Please contact me at 760.889.1002 if you have any questions.

Sincerely,

Rob Haskell
Surf Cup Sports

Santa Fe Irrigation District

July 25, 2017

Kimberly A. Thorner, Esq.
General Manager
Olivenhain Municipal Water District
1966 Olivenhain Road
Encinitas, CA 92024

RE: San Dieguito Valley Groundwater Project –State of California, Department of Water Resources, Desalination Grant Program – Round 4

Dear Ms. Thorner:

Santa Fe Irrigation District understands that Olivenhain Municipal Water District (Olivenhain) is pursuing grant funding from the California Department of Water Resources to conduct Design Pilot work including test wells, water quality sampling, and water treatment testing for the groundwater in the San Dieguito Valley Basin. We are writing to express support for your application for funding and would recommend that grant funding be provided for the Design Pilot work.

If determined to be feasible, the proposed project may offer significant local water supply benefits. Olivenhain is completely reliant on imported water from the San Diego County Water Authority and the Metropolitan Water District of Southern California to meet its potable water demands. As each of these regional wholesalers obtain a portion of their supplies from the State Water Project, this project can reduce demands on the Sacramento-San Joaquin Bay-Delta.

We are pleased to offer our cooperation during the course of the study, and we look forward to reviewing the results.

Please contact me if you have any questions

Sincerely,

Michael J. Bardin
General Manager

Santa Fe Irrigation District ~ PO Box 409 ~ 5920 Linea del Cielo ~ Rancho Santa Fe, CA 92067-0409
Phone 858.756.2424 Fax 858.756.0450

San Diego County Water Authority
4677 Overland Avenue • San Diego, California 92123-1233
(858) 522-6600 FAX (858) 522-6568 www.sdcwa.org

MEMBER AGENCIES

Carlsbad Municipal Water District
City of Del Mar
City of Escondido
City of National City
City of Oceanside
City of Poway
City of San Diego
Fallbrook Public Utility District
Helix Water District
Lakeside Water District
Olivenhain Municipal Water District
Otay Water District
Padre Dam Municipal Water District
Camp Pendleton Marine Corps Base
Rainbow Municipal Water District
Ramona Municipal Water District
Rincon del Diablo Municipal Water District
San Dieguito Water District
Santa Fe Irrigation District
South Bay Irrigation District
Vallecitos Water District
Valley Center Municipal Water District
Vista Irrigation District
Yuima Municipal Water District

OTHER REPRESENTATIVE

County of San Diego

August 24, 2017

Kimberly, A. Thorner, Esq.
General Manager
Olivenhain Municipal Water District
1966 Olivenhain Road
Encinitas, CA 92064

Subject: San Dieguito Valley Groundwater Project – State of California, Department of Water Resources, Desalination Grant Program – Round 4

Dear Ms. Thorner:

The San Diego County Water Authority understands that Olivenhain Municipal Water District (Olivenhain) is pursuing grant funding from the California Department of Water Resources to conduct Design Pilot work including test wells, water quality sampling, and water treatment testing for the groundwater from the San Dieguito Valley Basin. We are writing to express our support of your application for funding and would recommend that grant funding be provided for the Design Pilot work.

If determined to be viable, the proposed project may offer local water supply reliability benefits. Olivenhain is completely reliant on imported water to meet its potable water demands and if this project is feasible, it will reduce the demands on the imported water system and State Water Project, providing improved water reliability for the State.

We are pleased to offer our cooperation during the course of the Design Pilot work, and we look forward to reviewing the results.

Please contact Toby Roy at TRoy@sdcwa.org or at (858) 522-6743 if you have any questions.

Sincerely,

Robert R. Yamada
Director of Water Resources
San Diego County Water Authority

Appendix F - Design Pilot Testing Program: Scope of Work

ATTACHMENT 8. SCOPE OF WORK

TASK 1: PROJECT MANAGEMENT

Description of Work: Conduct administrative services to complete the project; monitor, supervise and review all work performed; and coordinate with DWR to assure that scope is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations. Document soliciting and awarding contract(s) to perform tasks. Prepare quarterly and annual reports which will describe the work performed and accomplishments of each task, milestones achieved, contractor activities, and project meetings. Document any problems encountered in the performance of the work.

Deliverables, Data, Meetings: Invoices and quarterly reports; annual reports; phone check-ins with project team; and reporting status in GRanTS. One hard copy and pdf of quarterly reports will be provided within 30 days of the end of the quarter.

TASK 2: PILOT HOLE DRILLING AND TEST WELL CONSTRUCTION

Description of Work: Pilot hole drilling, zone testing and water quality sampling, and test well construction and development will be completed as follows: 1) prepare test well technical specifications, 2) pre-drilling contractor coordination and site mobilization inspection, 3) onsite inspection during conductor borehole drilling and casing installation, 4) inspection during pilot borehole drilling, 5) evaluation of geophysical borehole logs and selection of intervals for isolated aquifer zone testing, 6) inspection of isolated aquifer zone testing and water quality sampling, 7) mechanical grain size analysis, 8) design of casing, screen, and filter pack, 9) onsite inspection during pilot borehole reaming, 10) onsite inspection of installation of casing, screen, filter pack and annular seal, 11) onsite inspection of airlift development, 12) onsite inspection of pump development process, and 13) inspection during step and constant rate pumping tests.

Deliverables, Meetings: Test Well and Long-Term Pumping Test Well Completion Report – draft and final. One meeting during well construction and development, one meeting to present final results.

Data: Lithologic Log, Geophysical Logs, Water Quality Data, Well Construction Details, Step and Constant Rate Pumping Test Data and Analysis

TASK 3: LONG TERM PUMP TESTING

Description of Work: Operate the test well for a period of one year. During the testing period, use groundwater monitoring network to collect data to assess: 1) impacts to water levels and water quality in nearby wells, 2) changes in water levels (piezometric levels) in both upper and lower aquifers, and 3) changes in groundwater storage in the aquifers.

The monitoring network will include the test well, selected existing piezometers, and available local private wells. Confirm the final monitoring network in the Long-Term Pumping Test Plan (LTPTP), which will include a map showing the piezometers/wells to be used for monitoring wells, proposed instrumentation and monitoring frequency, Sampling and Analysis Plan (SAP) for confirmation on-going confirmation of water quality changes, and proposed analyses and reporting of data.

Collect long-term water level and water quality data in each monitoring well using level transducers and conductivity sensors. The level transducers will consist of Solinst Levelogger Model 3001 devices or equivalent. A Solinst Barologger will be installed in one of monitoring wells on site, which will be used to normalize for atmospheric barometric variation. Select the monitoring well for the Barologger once the final monitoring well locations have been selected. Evaluate seasonal and other temporal variations in source water quality by measuring water level and water quality data. Conduct baseline sampling, followed by quarterly sampling for a 12-month period.

Deliverables, Meetings: Four quarterly monitoring reports, including water level, water quality, and pumping data for the previous quarter. Four quarterly progress meetings.

TASK 4: REFINEMENT AND RECALIBRATION OF GROUNDWATER MODEL

Description of Work: Complete a 2017 update of the San Dieguito Groundwater Basin Model (SDGBM) to: 1) refine estimated groundwater extraction rates based on test well results, 2) refine aquifer parameters (such as hydraulic conductivity and storativity) derived from the test wells and aquifer performance tests, and the runoff and riverbed conductance will be refined with current rainfall and river gage data. Recalibrate the model for the period from January 2001 to December 2017.

Deliverables: Refined and re-Calibrated SDGBM and Updated Water Balance

Meetings: One meeting to present calibration results. One meeting to present updated water balance and updated groundwater model. One meeting to present final results.

TASK 5: HYDROGEOLOGIC INVESTIGATION REPORT

Description of Work: Compile all of the data and data analysis collected and prepared from the test well installation, long-term monitoring, and groundwater model update into a Hydrogeologic Investigation Report.

Deliverables: Hydrogeologic Investigation Report – Admin draft, draft, and final

TASK 6: NPDES PERMITTING

Description of Work: Complete NPDES permitting for design pilot operation under *Conditional Waivers of Waste Discharge Requirements for Low Threat Discharges in the San Diego Region* (Order R9-2014-0041). The design pilot could gain coverage under Waiver 3: Miscellaneous “Low Threat” Discharges to Land for land application of the extracted groundwater on adjacent golf course and/or agricultural parcels. Prepare and submit Notice of Intent (NOI) package for the waiver, including description of discharge and description of management measures/best management practices (MM/BMPs).

Deliverables: NOI package – draft and final

TASK 7: FIELD TESTING MANGANESE PRE-TREATMENT SYSTEM

Description of Work: Field test greensand filtration equipment to develop/verify site specific design criteria for manganese treatment. Water quality data for the surrounding area indicates that manganese will be present in the source wells and treatment is needed to protect the reverse osmosis component of the desalter system from scaling which would impair overall system operation. Design criteria to develop/verify will include hydraulic loading rate, head loss buildup and backwash frequency requirements, and

oxidant dosing rate. The field test will consist of preparing the field location for testing, including establishing temporary utilities as needed, mobilization/testing/demobilization of the vendor test equipment, and analysis of test results to develop/verify design criteria. Prepare Manganese Field Test Report, including test conditions evaluated, findings, analytical results, and recommended criteria for full-scale design.

Deliverables: Manganese Field Test Report – draft and final

TASK 8: REFINEMENT OF TREATMENT DESIGN CRITERIA

Description of Work: Refine pre-treatment and reverse osmosis treatment design criteria. This will be based on site specific data generated from the operation of the pilot wells and field testing of the manganese pre-treatment system. Prepare Manganese Design Criteria Report, including site specific water quality data generated during pilot well testing, analysis of the data set, revised projected performance of the reverse osmosis system based on updated water quality data, and any revisions as appropriate/as needed for the manganese pretreatment and reverse osmosis system for key performance and operating parameters (e.g., required flow rates, reverse osmosis recovery, brine flow rate, etc.).

Deliverables: Manganese Design Criteria Report – draft and final

TASK 9: PUBLIC OUTREACH AND INVOLVEMENT

Description of Work: Implement a public outreach program, established in 2016/2017, including news releases to announce public workshops, postings on social media, soliciting and collecting letters supporting the project from government and non-government agencies, an informational video showcasing the project, and additional website and newsletter updates. Implement community involvement efforts including planning, publicizing, and executing a public outreach meeting to educate the general public on the project and solicit feedback and support in Fall 2017.

Deliverables, Meetings: Website material, newsletter publications, social media posts, a video, and other related outreach materials. Outreach program design kick-off meeting, progress meetings as requested.

ASSUMPTIONS

Project management will continue throughout project execution and end following submittal of final invoice/quarterly report. Scope assumes no more than two pilot holes to determine final location of test well. Groundwater samples will be collected from the test well and in additional four selected wells. Equipment for the manganese field testing will be co-located as close as possible to the pilot test wells to minimize site development and piping requirements. A fraction of the total flow generated from the pilot test wells will be required for field testing with the manganese treatment equipment. Effluent from the field test equipment will be recombined with the pilot test well water flow for conveyance to the permitted discharge location. Spent residuals from backwashing of the field test system will be hauled to the nearest publicly owned treatment works facility for disposal.

Appendix G -Public Outreach Figures

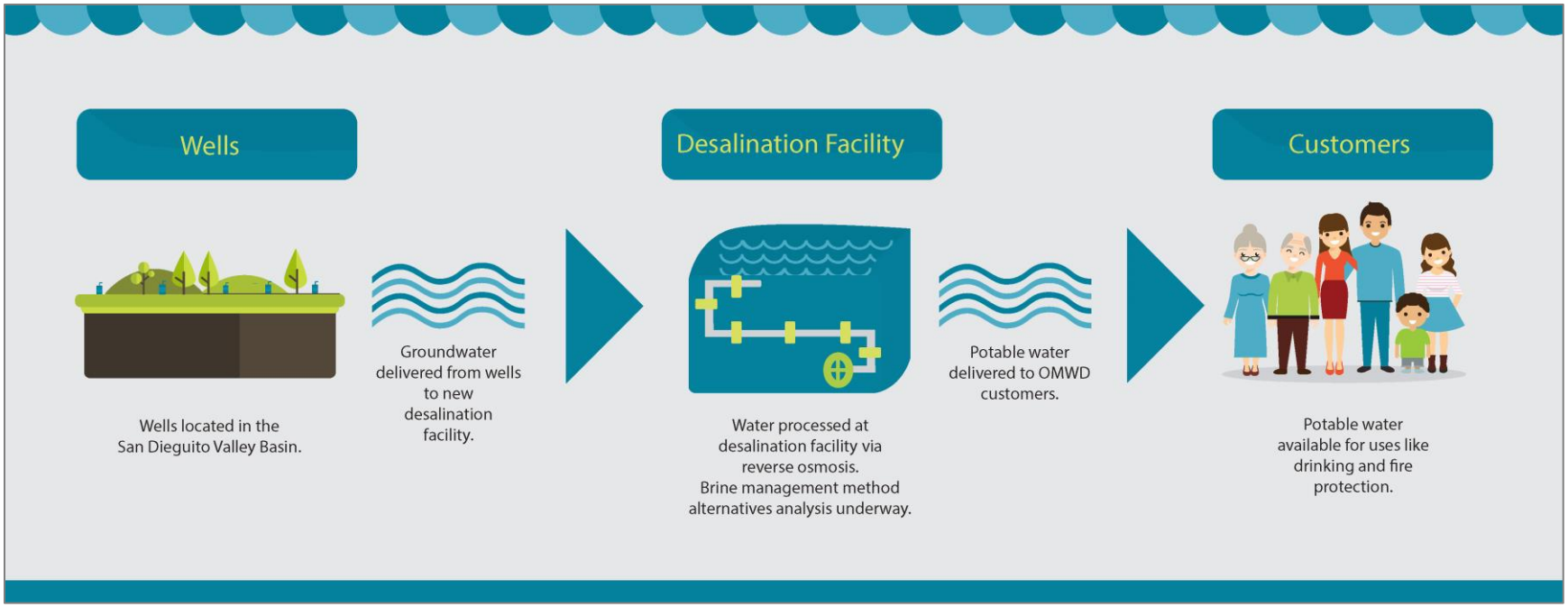


Figure 1: Infographic

Charting Local Waters:

San Dieguito Groundwater Study

An OMWD Sustainable Supplies Project

About the Study

OMWD is studying the possibility of developing a local water supply through a groundwater desalination project in the San Dieguito Valley utilizing grant funding from California's Department of Water Resources.

The study will take place through 2017 and will analyze:

1. The amount of groundwater that could be extracted from the basin on a sustainable basis without impacting the environment or current water users
2. Groundwater quality
3. Methods of groundwater treatment
4. Identification of adequate land for the wells, treatment facility, and brine disposal necessary to operate the potential project
5. Costs associated with producing the new local water supply
6. Whether the expense of producing the new water supply is cost-efficient when compared to the cost of developing other potable water supplies

If the study yields positive results, OMWD may move forward with an environmental impact analysis and construction of a groundwater desalination project.

Project Importance

OMWD is heavily reliant on imported water from far-off places like the Sacramento-San Joaquin Bay-Delta and Colorado River. The development of a local, sustainable water source like this one is becoming increasingly important as imported water costs continue to rise and water availability becomes more uncertain. Local sources can also provide water supply redundancy should imported supplies be cut.

Fast Facts:

- Project would be a critical step toward securing a local and sustainable water supply.
- Nearly all of OMWD's potable water is currently imported from outside the region.
- Imported water is vulnerable to supply shortages, service interruptions and cost increases from water wholesalers. Local supplies are more reliable.
- Groundwater quality would not be impacted since pumping and treating groundwater more frequently accelerates restoration of local quality.
- Study will take place now through December 2017.
- If deemed feasible, OMWD could begin producing locally sourced drinking water by 2020.

Figure 2: Fact Sheet

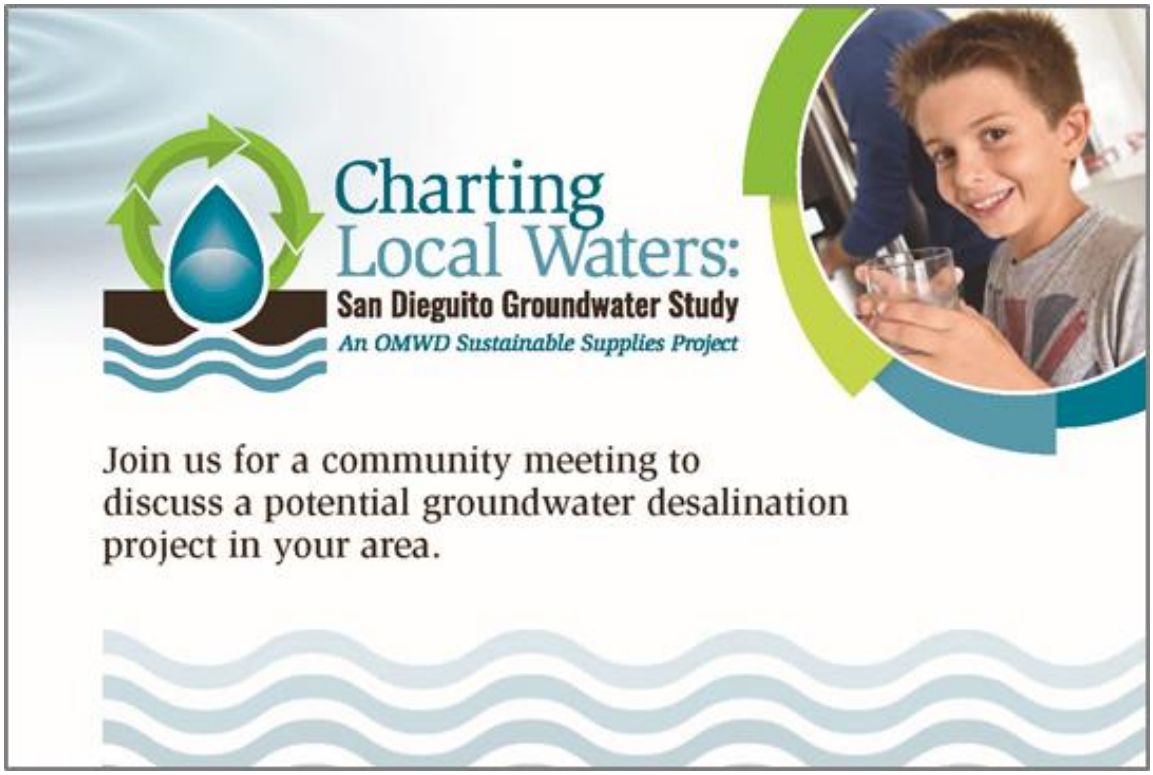


Figure 3: Outreach Postcard

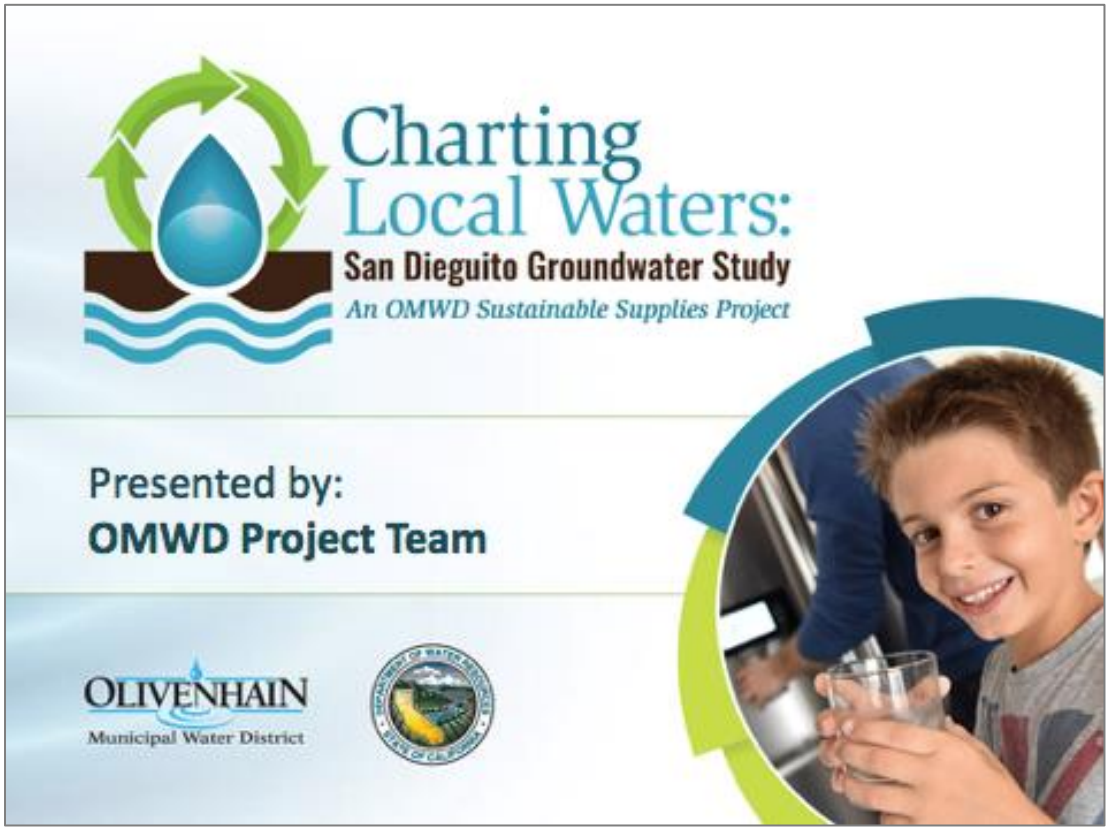


Figure 4: PowerPoint

Share Tweet Share

Charting Local Waters: San Dieguito Groundwater Study
An OMWD Sustainable Supplies Project

About the Study
Project Importance
About the Potential Project
Cost
Public Meetings
Next Steps
For More Information

About the Study

OMWD is studying the possibility of developing a local water supply through a groundwater desalination project in the San Dieguito Valley utilizing grant funding from California's Department of Water Resources.

The study will take place through 2017 and will analyze:

1. The amount of groundwater that could be extracted from the basin on a sustainable basis without impacting the environment or current water users
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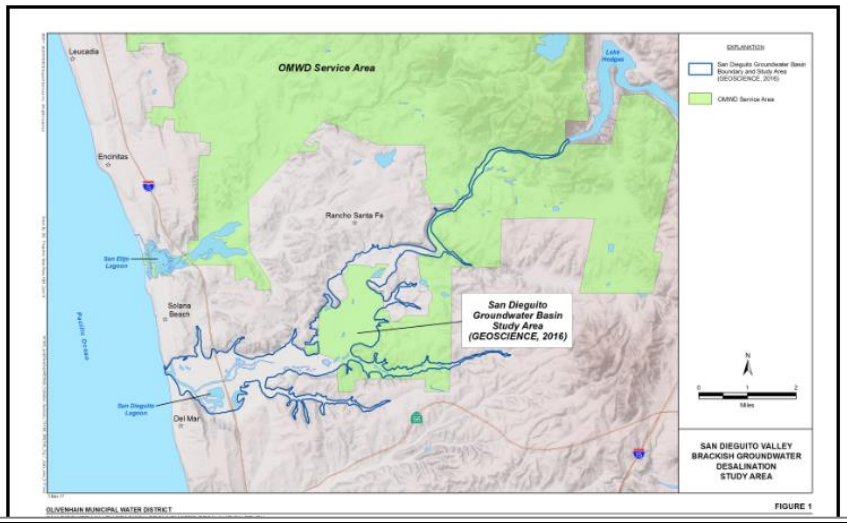


Figure 5: Website

Figure 6: Key Stakeholder Meeting

OLIVENHAIN
Municipal Water District
A Public Agency
AUGUST 2017

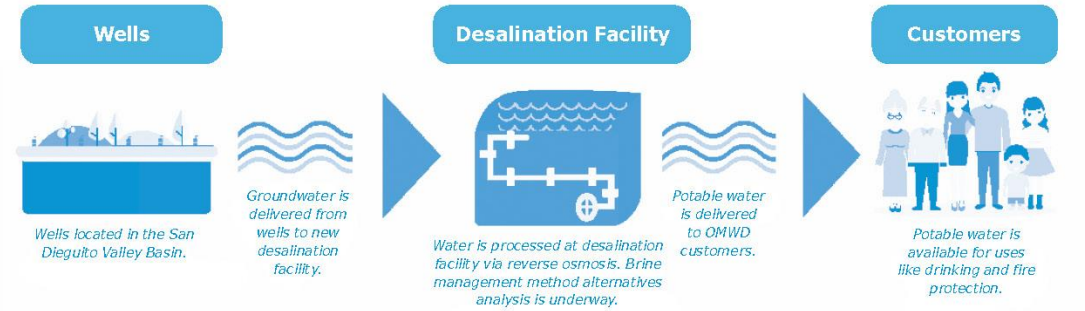
Watching Water

YOUR DISTRICT NEWS

Charting Local Waters

OMWD is currently studying the feasibility of developing a new, local water supply through a groundwater desalination project in the San Dieguito Valley. Funded through a grant from California's Department of Water Resources, the potential desalination project would extract groundwater from wells located in the San Dieguito Valley Groundwater Basin and deliver it to a nearby desalination facility.

Treated through reverse osmosis, a filtration process that improves water quality by removing impurities such as salts, hardness, and other dissolved minerals, the water would be available for uses like drinking and fire protection.



"OMWD is heavily reliant on imported water, much of which comes from far-off places like the Sacramento-San Joaquin Bay-Delta and Colorado River," explains OMWD General Manager Kimberly Thorner. "The development of a local, sustainable water source like this one is becoming increasingly important as imported water costs continue to rise and water availability becomes more uncertain. Local sources provide reliability should imported supplies be cut off."

The study will continue through 2017 and analyze several factors to determine whether the project is feasible, including costs as well as the amount of groundwater that could be extracted from the basin on a sustainable basis without impacting the environment or current water users.

If the study yields positive results, OMWD may move forward with an environmental impact analysis and construction of a groundwater desalination project. The project would be paid for through OMWD capital improvement funds and developer fees, which have been anticipated in OMWD's long-term financial planning. State and federal grants could also help offset costs.

For more information on the project, please visit www.olivenhain.com/groundwater.

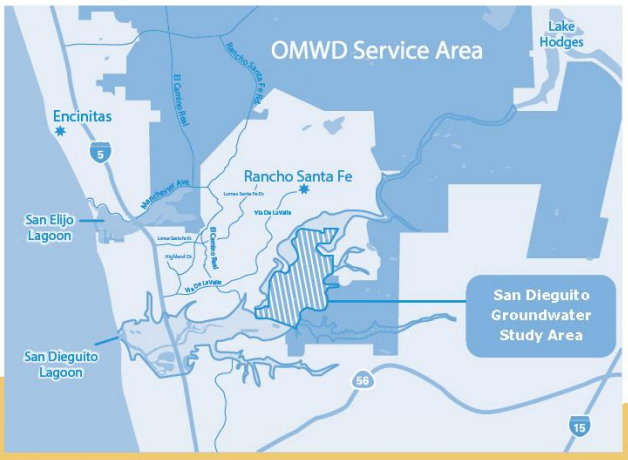


Figure 7: Watching Water Newsletter