

ALAMEDA COUNTY  
HEALTH CARE SERVICES  
AGENCY  
ALEX BRISCOE, Agency Director



ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
(510) 567-6700  
FAX (510) 337-9335

November 26, 2013

Marvin Katz  
Shell Oil Products US  
20945 S. Wilmington Ave.  
Carson, CA 90810-1039  
(Sent via E-mail to: [marvin.katz@shell.com](mailto:marvin.katz@shell.com))

Carl Cox  
CJC Hacienda LLC  
4431 Stoneridge Drive #100  
Pleasanton, CA 94588-8417

Subject: Case Closure for Fuel Leak Case No. RO0002985 and GeoTracker Global ID T10000000423, Shell #16-5112, 4895 Hacienda Drive, Dublin, CA 94568

Dear Mr. Katz and Mr. Cox:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Health (ACEH) is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed. This case closure letter and the case closure summary can also be viewed on the State Water Resources Control Board's Geotracker website (<http://geotracker.swrcb.ca.gov>) and the Alameda County Environmental Health website (<http://www.acgov.org/aceh/index.htm>).


#### SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- Total Petroleum Hydrocarbons as gasoline remains in groundwater at concentrations up to 320 ppb.
- MTBE remains in groundwater at concentrations up to 410 ppb.

If you have any questions, please call Jerry Wickham at (510) 567-6791. Thank you.

Sincerely,

  
Donna Drogos, P.E.  
Division Chief

#### Enclosures:

1. Remedial Action Completion Certification
2. Case Closure Summary

cc:

Colleen Winey (QIC 8021)  
Zone 7 Water Agency  
100 North Canyons Pkwy\  
Livermore, CA 94551  
(Sent via E-mail to: [cdizon@zone7water.com](mailto:cdizon@zone7water.com))

Closure Unit  
State Water Resources Control Board  
UST Cleanup Fund  
P.O. Box 944212  
Sacramento, CA 94244-2120  
(uploaded to GeoTracker)

Peter Schaefer  
Conestoga-Rovers & Associates  
5900 Hollis Street, Suite A  
Emeryville, CA 94608 2032  
(Sent via E-mail to: [pschaefer@croworld.com](mailto:pschaefer@croworld.com))

Donna Drogos, ACEH (Sent via E-mail to: [donna.drogos@acgov.org](mailto:donna.drogos@acgov.org))  
Jerry Wickham, ACEH (Sent via E-mail to: [jerry.wickham@acgov.org](mailto:jerry.wickham@acgov.org))

GeoTracker (w/enc)  
eFile (w/orig enc)

ALAMEDA COUNTY  
HEALTH CARE SERVICES  
AGENCY

ALEX BRISCOE, Director



DEPARTMENT OF ENVIRONMENTAL HEALTH  
OFFICE OF THE DIRECTOR  
1131 HARBOR BAY PARKWAY  
ALAMEDA, CA 94502  
(510) 567-6777  
FAX (510) 337-9135

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**REMEDIAL ACTION COMPLETION CERTIFICATION**

November 26, 2013

Marvin Katz  
Shell Oil Products US  
20945 S. Wilmington Ave.  
Carson, CA 90810-1039  
(Sent via E-mail to: [marvin.katz@shell.com](mailto:marvin.katz@shell.com))

Carl Cox  
CJC Hacienda LLC  
4431 Stoneridge Drive #100  
Pleasanton, CA 94588-8417

Subject: Case Closure for Fuel Leak Case No. RO0002985 and GeoTracker Global ID T10000000423, Shell #16-5112, 4895 Hacienda Drive, Dublin, CA 94568

Dear Mr. Katz and Mr. Cox:

This letter confirms the completion of a site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25299.37 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.77 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

Claims for reimbursement of corrective action costs submitted to the Underground Storage Tank Cleanup Fund more than 365 days after the date of this letter or issuance or activation of the Fund's Letter of Commitment, whichever occurs later, will not be reimbursed unless one of the following exceptions applies:

- Claims are submitted pursuant to Section 25299.57, subdivision (k) (reopened UST case); or
- Submission within the timeframe was beyond the claimant's reasonable control, ongoing work is required for closure that will result in the submission of claims beyond that time period, or that under the circumstances of the case, it would be unreasonable or inequitable to impose the 365-day time period.

This notice is issued pursuant to subdivision (h) of Section 25299.37 of the Health and Safety Code. Please contact our office if you have any questions regarding this matter.

Sincerely,

  
Ariu Levi  
Director

**CASE CLOSURE SUMMARY**  
**LEAKING UNDERGROUND FUEL STORAGE TANK - LOCAL OVERSIGHT PROGRAM**

**I. AGENCY INFORMATION**

Date: August 7, 2013

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 567-6791
Responsible Staff Person: Jerry Wickham	Title: Senior Hazardous Materials Specialist

**II. CASE INFORMATION**

Site Facility Name: Shell #16-5112		
Site Facility Address: 4895 Hacienda Drive, Dublin, CA 94568		
RB Case No.: ---	Local Case No.: ---	LOP Case No.: RO0002985
URF Filing Date: 9/24/2008	Geotracker ID: T1000000423	APN: 986-8-13
Responsible Parties	Addresses	Phone Number
Carl Cox CJC Hacienda LLC	4431 Stoneridge Drive #100 Pleasanton, CA 94588-8417	No phone number
Marvin Katz Shell Oil Products US	20945 S. Wilmington Ave. Carson, CA 90810-1039	(707) 865-0251

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
--	---	---	Tanks not removed or replaced	---
Piping			Piping not removed or replaced	---

**III. RELEASE AND SITE CHARACTERIZATION INFORMATION**

Cause and Type of Release: Unknown. Petroleum hydrocarbons were detected in groundwater during a Phase II Environmental Site Assessment for due diligence in 2008.		
Site characterization complete? Yes	Date Approved By Oversight Agency: -----	
Monitoring wells installed? Yes	Number: 6	Proper screened interval? Yes
Highest GW Depth Below Ground Surface: 11.65 feet bgs	Lowest Depth: 14.49 feet bgs	Flow Direction: South to southeast
Most Sensitive Current Use: Drinking water source.		

Summary of Production Wells in Vicinity: One water supply well were identified within 2,000 feet of the site. Water supply well 3S/1E 5K1 was identified by well survey records approximately 1,800 feet southeast of the site across Interstate 580 on Rosewood Drive. Spring Valley Water Company (now defunct) owned the well, which was 130 feet deep and of unknown diameter. The well, which was installed in 1912, could not be located in the field and the area has been redeveloped. Based on the distance from the site and the apparent stability of the plume, the well is not expected to be a receptor for the site.	
Are drinking water wells affected? No	Aquifer Name: Camp Subbasin of Livermore-Amador Groundwater Basin
Is surface water affected? No	Nearest SW Name: Tassajara Creek is located approximately 2,000 feet east of site.
Off-Site Beneficial Use Impacts (Addresses/Locations): None identified.	
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL			
Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	----	----	----
Piping	----	----	----
Free Product	----	----	----
Soil	----	----	----
Groundwater	----	----	----

**MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP**  
 (Please see Attachments 1 through 6 for additional information on contaminant locations and concentrations)

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
TPH (Gas)	< 0.5	< 0.5	410	320
TPH (Diesel)	39	39	110	110
TPH (Motor Oil)	----	----	----	----
Oil and Grease	----	----	----	----
Benzene	< 0.005	< 0.005	< 0.5	< 0.5
Toluene	< 0.005	< 0.005	< 0.5	< 0.5
Ethylbenzene	< 0.005	< 0.005	< 0.5	< 0.5
Xylenes	< 0.01	< 0.01	<1.0	< 1.0
Heavy Metals (Cd, Cr, Pb, Ni, Zn)	----	----	----	----
MTBE	0.073 <sup>(1)</sup>	0.073 <sup>(1)</sup>	410 <sup>(2)</sup>	410 <sup>(2)</sup>
Other (8240/8270)	----	----	----	----

<sup>(1)</sup> MTBE = 0.073 ppm; EDB and EDC < 0.005 ppm; TBA < 0.06 ppm; DIPE, ETBE, and TAME < 0.01 ppm; EtOH < 0.6 ppm.

<sup>(2)</sup> MTBE = 410 ppb; TBA = 39 ppb; DIPE, ETBE, and TAME < 2.0 ppb; 1,2-DCA and EDB < 0.5 ppb; EtOH < 500 ppb.

#### Site History and Description of Corrective Actions:

The property is an active Shell-branded gasoline station located at the western edge of the Hacienda Crossings shopping center. Surrounding land use is commercial, with residential land use to the north across Dublin Boulevard. The station is equipped with a station building, dispenser islands and associated canopy, and car wash. The property has been occupied by gasoline stations since approximately 1998. Soils encountered beneath the site are low permeability clay to approximately 20 feet bgs, underlain by higher permeability sandy clay, clayey sand and sand to approximately 30 feet bgs.

On August 20, 2008, four borings (B-1 through B-4) were advanced as part of a due diligence site assessment. Depths of the borings ranged between 20 and 25 feet below ground surface (bgs). One soil sample was collected from each boring at a depth between 19 and 20 feet bgs. Grab groundwater samples were collected from borings B-1 and B-2. The soil samples detected up to 39 parts per million (ppm) TPHd and 0.026 ppm methyl tert-butyl ether (MTBE). The groundwater sample from boring B-2 detected 320 parts per billion (ppb) Total Petroleum Hydrocarbons as gasoline (TPHg) and 270 ppb MTBE.

On February 16 through 18, 2010, six monitoring wells (MW-1 through MW-6) were installed onsite at depths ranging between 25 and 60 feet bgs. Soil samples, which were collected from all borings at depths ranging between 20 and 40 feet bgs, detected MTBE at concentrations up to 0.057 ppm. TPHg, TPHd, benzene, toluene, ethylbenzene, and xylenes (BTEX), and additional fuel oxygenates were not detected at concentrations above reporting limits in the soil samples. The completed monitoring wells were initially sampled on March 19, 2010. Groundwater samples detected up to 410 ppb TPHg and 310 ppb MTBE. The highest concentrations were detected in groundwater from wells MW-2 and MW-5, which are located near the UST complex and dispenser islands, respectively.

On March 13 through 16, 2012, four borings (CPT-1 through CPT-4) were advanced both on-site and off-site. Grab groundwater samples were collected from each boring. Groundwater was first encountered in the borings at depths between 20 to 23 feet bgs. Grab groundwater samples from on-site borings CPT-1 and CPT-2 detected up to 110 ppb TPHd. Grab groundwater samples from off-site and downgradient borings (CPT-3 and CPT-4) detected up to 88 ppb TPHd, 310 ppb TPHg, and 410 ppb MTBE.

Due to the previous detection of MTBE in off-site groundwater, additional borings were advanced further downgradient to complete plume delineation. On November 5 through 9, 2012, four borings (CPT-5 through CPT-8) were advanced off-site to depths between 54.5 and 59 feet bgs. Grab groundwater samples were collected from each of the borings at various depths. The maximum constituent concentrations detected in grab groundwater samples were 59 ppb TPHd and 1.0 ppb MTBE. TPHg, BTEX, and additional fuel oxygenates were not detected at concentrations above reporting limits in the grab groundwater samples.

Groundwater monitoring began at the site on March 19, 2010 and was conducted quarterly in 2010 and 2011, then semi-annually in 2012. Results of groundwater investigations indicate that a plume of TPHd, TPHg, and MTBE extends approximately 500 feet south (downgradient) from the site. Groundwater monitoring data indicate that the plume of petroleum hydrocarbons appears to be stable and shrinking in extent.

**IV. CLOSURE**

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes		
Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, closure of this site appears to be consistent with the policies established by the State Water Resources Control Board Low-Threat Underground Storage Tank Closure Policy which became effective on August 17, 2012.		
Site Management Requirements: This fuel leak case has been evaluated for closure consistent with the State Water Resources Control Board Low-Threat Underground Storage Tank Closure Policy (LTCP). Based on this evaluation, no site management requirements appear to be necessary.		
Should corrective action be reviewed if land use changes? No		
Was a deed restriction or deed notification filed? No		Date Recorded: ----
Monitoring Wells Decommissioned: No	Number Decommissioned: 0	Number Retained: 6
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: ----		



## V. ADDITIONAL COMMENTS, DATA, ETC.

### Considerations and/or Variances:

The site meets the general criteria for case closure under the LTCP.

The site meets the groundwater media-specific criteria for closure under the LTCP based on the following:

1. The plume is stable or decreasing in size.
2. The plume is less than 1,000 feet in length.
3. There is no free product.
4. The dissolved concentration of benzene is less than 1,000 ppb.
5. The dissolved concentration of MTBE is less than 1,000 ppb.
6. The nearest water supply well and surface water body is greater than 1,000 feet from the plume boundary.

No soil vapor sampling has been performed at the site. Because the site is an active commercial fueling station, the LTCP does not require evaluation of the potential for vapor intrusion to indoor air for the on-site building. Site-specific conditions for the off-site buildings appear to meet the low-threat vapor-intrusion criteria in scenario 3 of the LTCP based on the following reasons:

1. The concentration of benzene is less than 100 ppb in groundwater beneath the buildings. Benzene has not been detected in groundwater at concentrations above the reporting limit
2. Within the off-site area above the dissolved plume, TPH in soil is expected to be less than 100 ppm within the upper five feet of soil. Therefore, there is a continuous bioattenuation zone that provides a separation of at least 5 feet vertically between the plume and the building foundations.

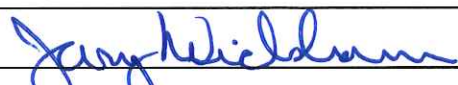
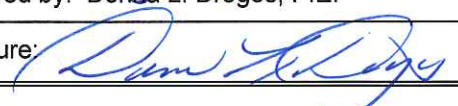
Based on the above conditions, the site appears to pose a low-threat for vapor intrusion and soil vapor sampling for the off-site buildings is not warranted.

No soil samples were collected within the upper 10 feet for comparison to the media-specific criteria in Table 1 of the LTCP for direct contact and outdoor air exposure. Benzene and ethylbenzene were not detected at concentrations above reporting limits in soil samples collected below 10 feet or in groundwater samples collected at the site. Since benzene and ethylbenzene were not detected in deeper soil samples or groundwater, sampling and analysis of shallow soil for these constituents does not appear to be warranted.

### Conclusion:

Alameda County Environmental Health staff believe that the site meets the conditions for case closure under the State Water Resources Control Board Low-Threat Underground Storage Tank Closure Policy. Based upon the information available in our files to date, no further investigation or cleanup for the fuel leak case is necessary at this time.

**VI. LOCAL AGENCY REPRESENTATIVE DATA**

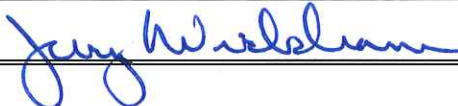
Prepared by: Jerry Wickham, P.G.	Title: Senior Hazardous Materials Specialist
Signature: 	Date: 8/7/13
Approved by: Donna L. Dregos, P.E.	Title: Division Chief
Signature: 	Date: 8/7/13

This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions.

**VII. REGIONAL BOARD NOTIFICATION**

Regional Board Staff Name: Cherie McCaulou	Title: Engineering Geologist
Notification Date: 6/18/13	

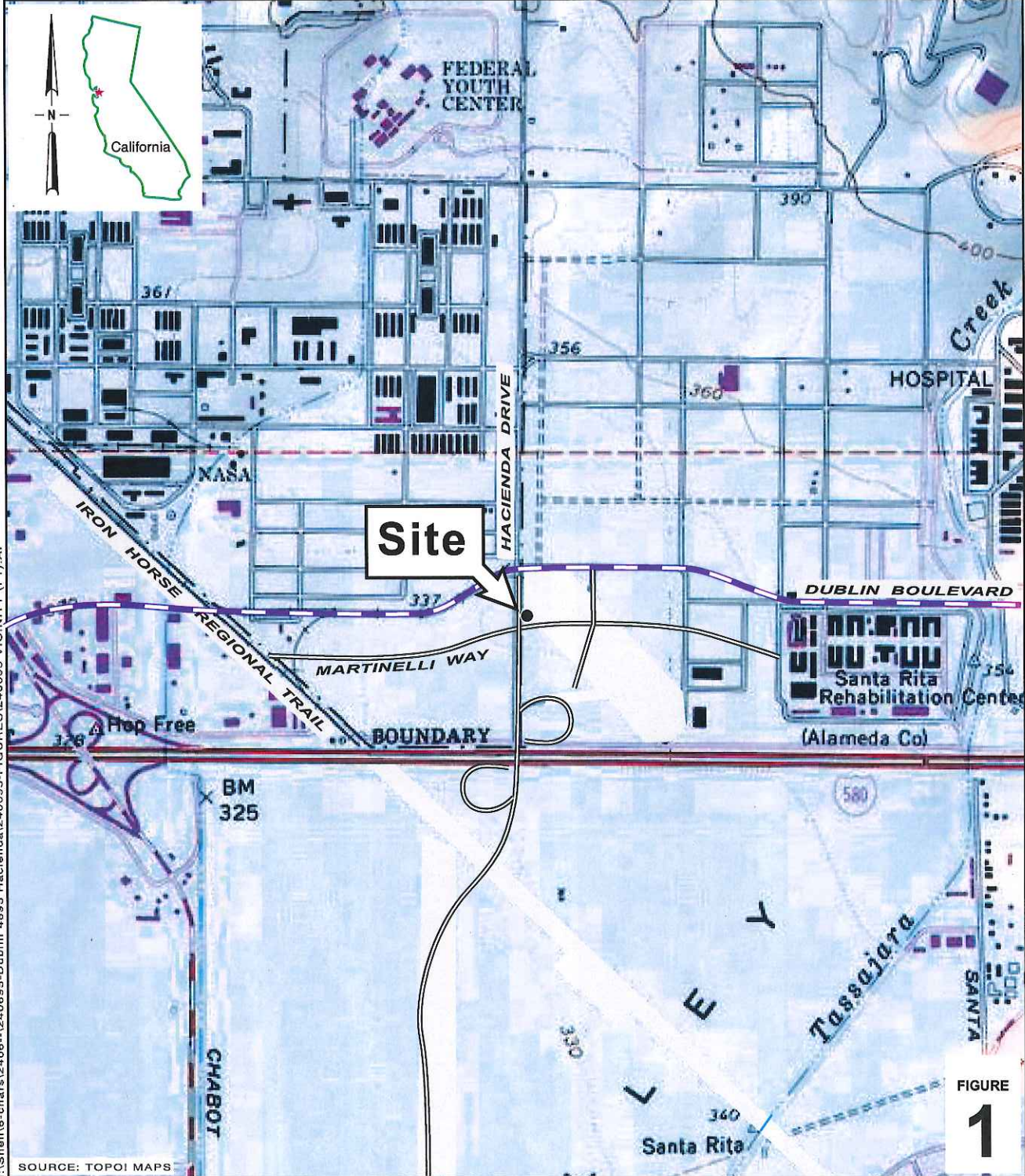
**VIII. MONITORING WELL DECOMMISSIONING**

Date Requested by ACEH: 8/27/13	Date of Well Decommissioning Report: 11/20/13	
All Monitoring Wells Decommissioned: Yes <input checked="" type="radio"/> No <input type="radio"/>	Number Decommissioned: 6	Number Retained: 0
Reason Wells Retained: NA		
Additional requirements for submittal of groundwater data from retained wells: None		
ACEH Concurrence - Signature: 		Date: 11/26/13

**Attachments:**

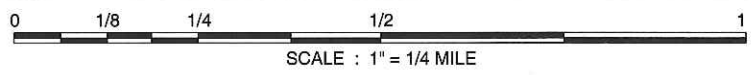
1. Site Vicinity Map and Aerial Photo (2 pp)
2. Groundwater Contour and Chemical Concentration Maps (4 pp)
3. Soil Analytical Data (2 pp)
4. Groundwater Analytical Data (5 pp)
5. Boring Logs (18 pp)
6. Cross Sections (2 pp)

This document and the related CASE CLOSURE LETTER & REMEDIAL ACTION COMPLETION CERTIFICATE shall be retained by the lead agency as part of the official site file.



I:\Shell\6-chars\2406--\240695-Dublin 4895 Hacienda\240695-FIGURES\240695 VICINITY (F1).AI

SOURCE: TOPOI MAPS



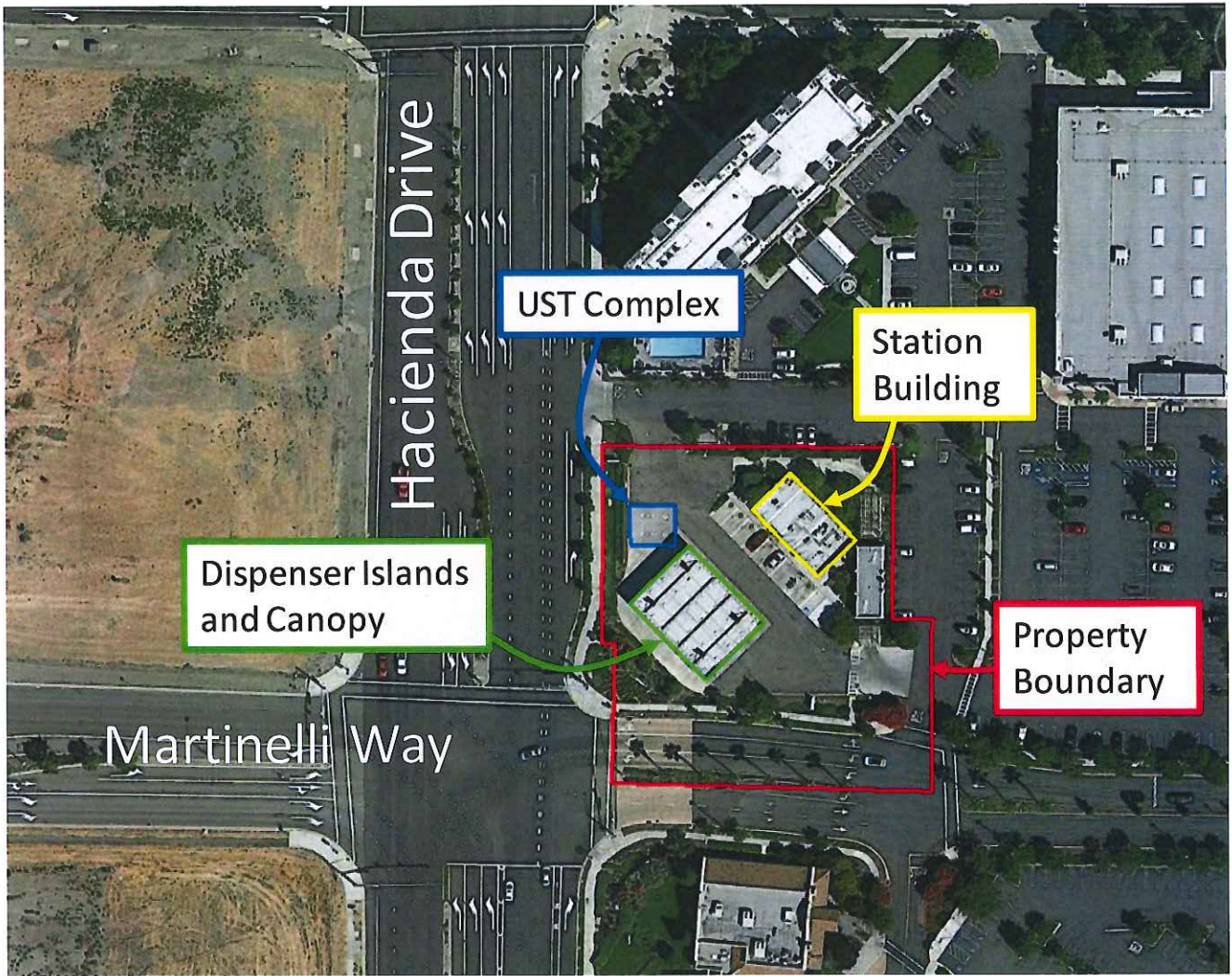
**Shell-branded Service Station**  
 4895 Hacienda Drive  
 Dublin, California



**CONESTOGA-ROVERS  
 & ASSOCIATES**

**Vicinity Map**

**ATTACHMENT 1**



Aerial View of Property (Google, 2013)

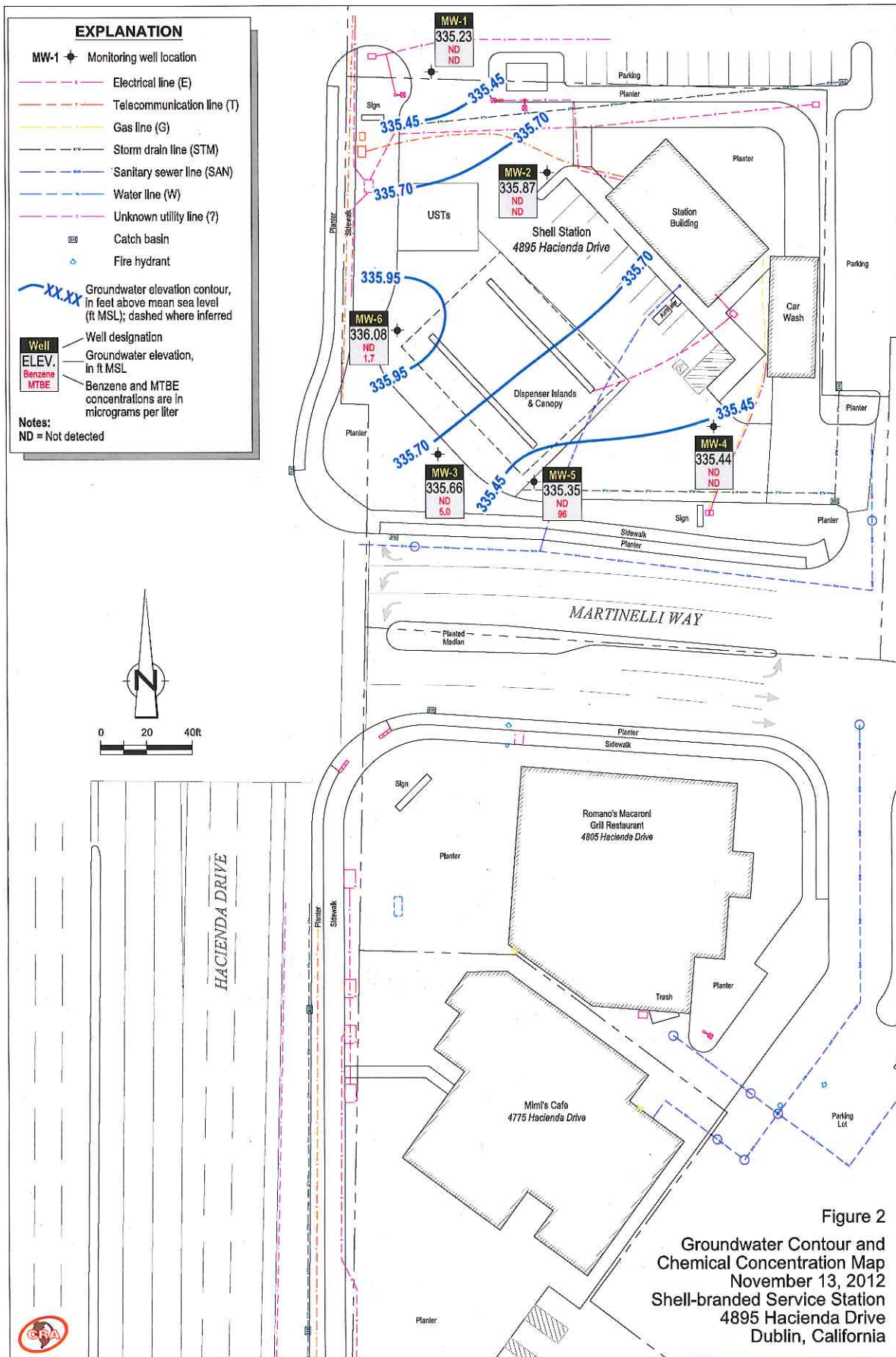
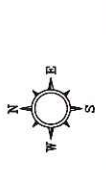
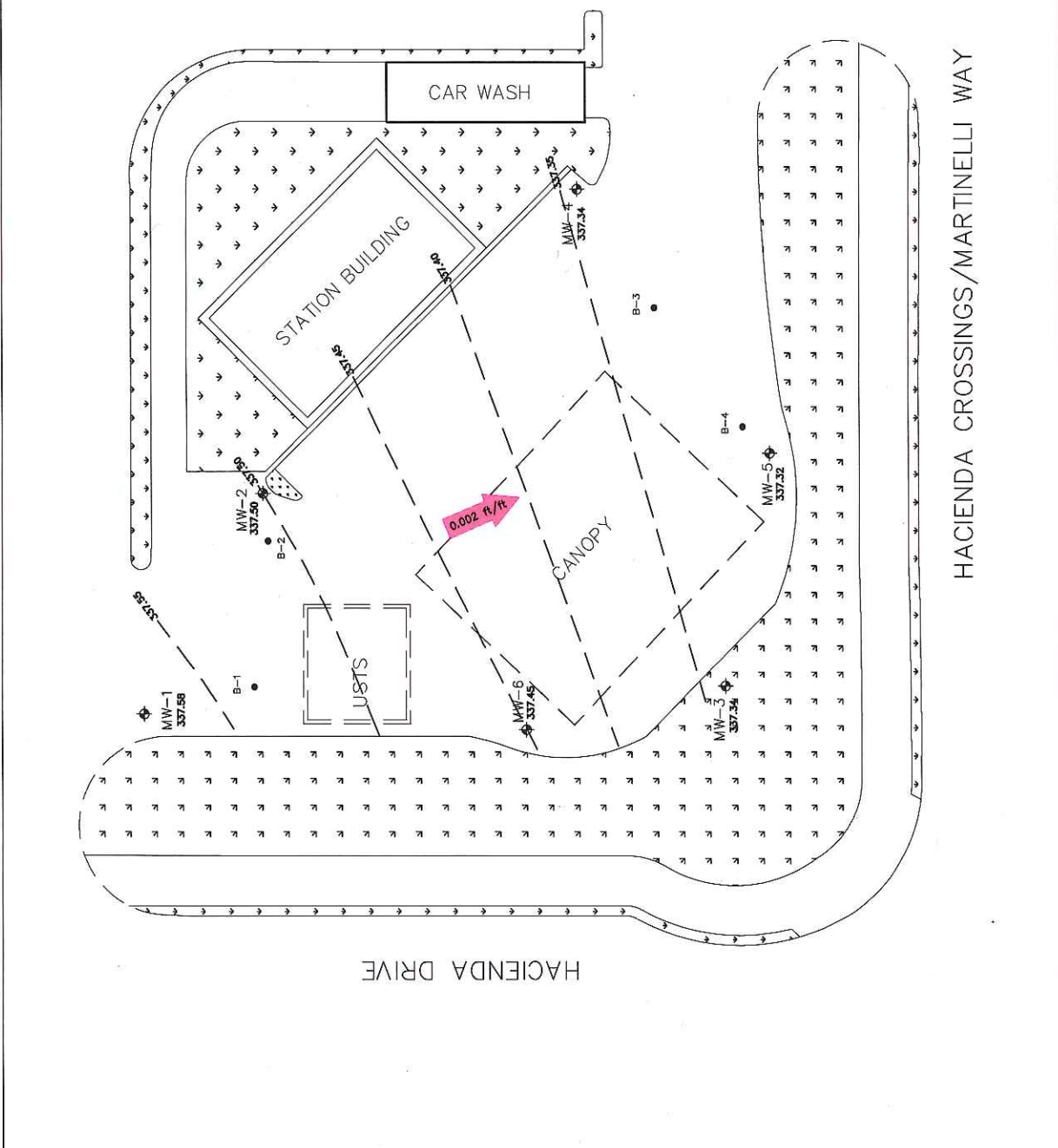


Figure 2  
Groundwater Contour and  
Chemical Concentration Map  
November 13, 2012  
Shell-branded Service Station  
4895 Hacienda Drive  
Dublin, California



**LEGEND**

- B-1 ● SOIL BORING (AUGUST 20, 2008)
- MW-1 ◆ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- 337.58 GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (FV/MSL)
- 337.35 GROUNDWATER CONTOUR IN FEET ABOVE MEAN SEA LEVEL (FV/MSL)
- 0.002 ft/ft APPROXIMATE GROUNDWATER GRADIENT DIRECTION (F/F)

WELL	DTW	TOC	GW
MW-1	11.75	349.33	337.58
MW-2	13.16	350.66	337.50
MW-3	12.84	350.18	337.54
MW-4	12.98	350.32	337.34
MW-5	12.98	350.31	337.32
MW-6	12.84	350.29	337.45

DTW DEPTH TO WATER  
 TOC TOP OF CASING  
 GW GROUNDWATER ELEVATION

**DELTA CONSULTANTS**

SHELL BRANDED SERVICE STATION

FIGURE 5  
 GROUNDWATER CONTOUR MAP  
 3/19/2010  
 4895 HACIENDA DRIVE  
 DUBLIN, CALIFORNIA

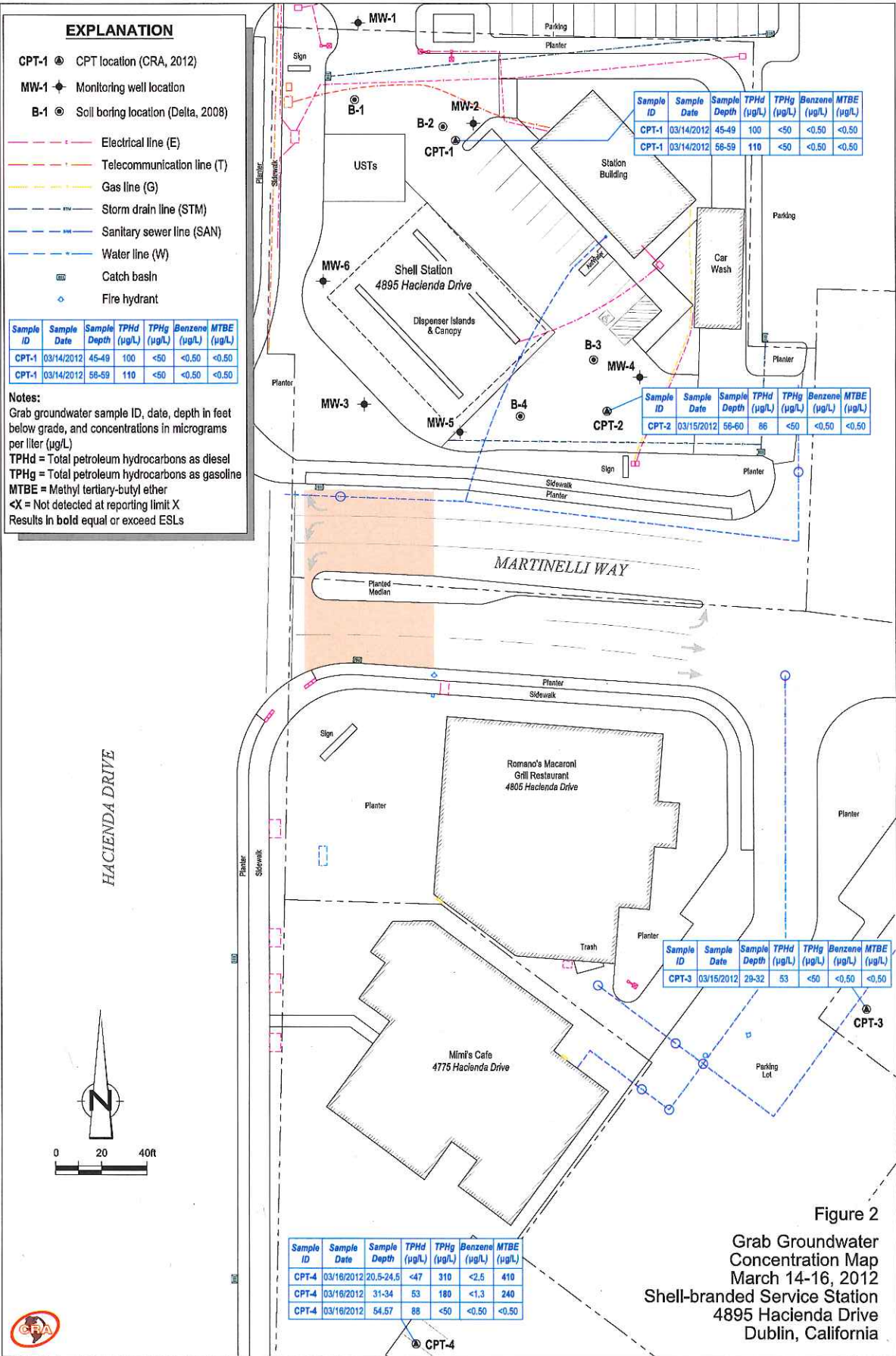


Figure 2  
 Grab Groundwater Concentration Map  
 March 14-16, 2012  
 Shell-branded Service Station  
 4895 Hacienda Drive  
 Dublin, California

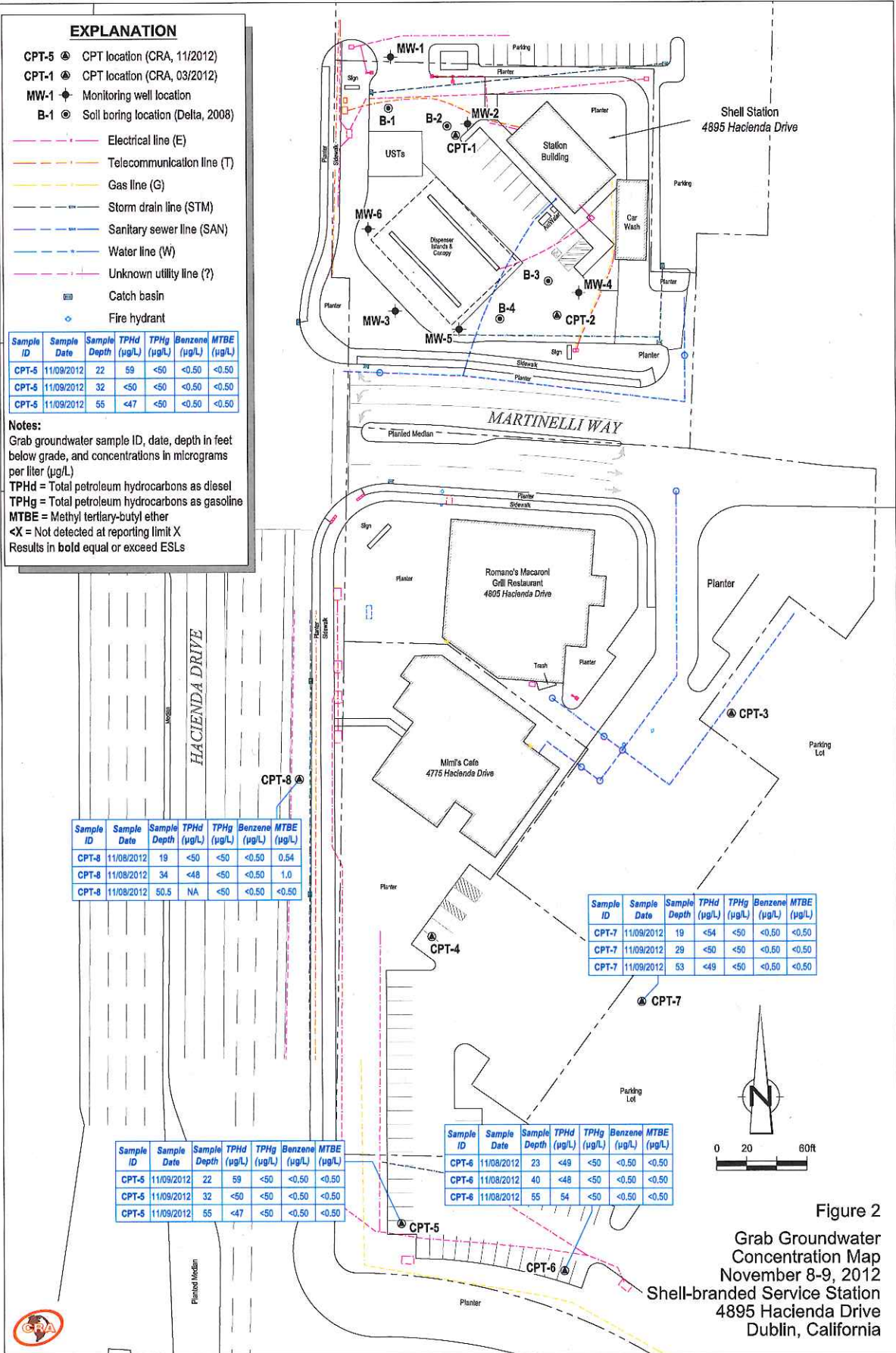


Figure 2  
 Grab Groundwater Concentration Map  
 November 8-9, 2012  
 Shell-branded Service Station  
 4895 Hacienda Drive  
 Dublin, California



**Table 1**  
**Summary of Soil Analytical Results - TPH & VOCs**  
 SAP No. 165112  
 4886 Hacienda Drive  
 Dublin, California

Sample Identification	Sample Depth (feet)	Sample Date	TPH-G (mg/kg)	TPH-D (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	EDB (mg/kg)	EDC (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	Ethanol (mg/kg)
B-1-19'	18	08/20/08	<0.50	<5.0	<0.0050	<0.0050	<0.0050	<0.0100	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.50
B-2-18-20	18-20	08/20/08	<0.50	<5.0	<0.0050	<0.0050	<0.0050	<0.0100	<0.0050	<0.0050	0.028	<0.0050	<0.010	<0.010	<0.010	<0.50
B-3-18-20'	18-20	08/20/08	<0.50	38	<0.0050	<0.0050	<0.0050	<0.0100	<0.0050	<0.0050	0.073	<0.0050	<0.010	<0.010	<0.010	<0.50
B-4-18-20'	18-20	08/20/08	<0.50	<5.0	<0.0050	<0.0050	<0.0050	<0.0100	<0.0050	<0.0050	0.020	<0.0050	<0.010	<0.010	<0.010	<0.50
ESL - Shallow Soils (<3m), Residential Land Use, Groundwater Is Current or Potential Source of Drinking Water. (Table A)																
			33	33	0.044	2.3	2.3	2.3	0.0045	0.0045	0.023	0.075	NA	NA	NA	NA
ESL - Deep Soils (>3m), Residential Land Use, Groundwater Is Current or Potential Source of Drinking Water. (Table C)																
			33	33	0.044	2.3	3.3	2.3	0.0045	0.0045	0.023	0.075	NA	NA	NA	NA

Notes:  
 mg/kg = milligrams per kilogram  
 < = Not detected at concentration exceeding laboratory method reporting limit (MRL)  
 VOC = Volatile organic compound  
 TPH-G = Total Petroleum Hydrocarbons as Gasoline  
 TPH-D = Total Petroleum Hydrocarbons as Diesel  
 EDB = 1,2-dibromoethane  
 EDC = 1,2-dichloroethane  
 MTBE = Methyl tert-Butyl Ether  
 TBA = Tertiary Butyl Alcohol  
 DIPE = Diisopropyl Ether  
 ETBE = Ethyl tert-Butyl Ether  
 TAME = Tert-Amyl Butyl Ether  
 NA = Not Analyzed, Not Available  
 VOC analysis by EPA Method 8260B  
 Gasoline-range hydrocarbons by EPA Method 8260B  
 Diesel-range hydrocarbons by EPA Method 8015B  
 \* ESL = Environmental Screening Level. Screening criteria referenced are from the Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, California Regional Water Quality Control Board, San Francisco Bay Region, Interim Final, November 2007, revised May 2008.

**TABLE 1**  
**SOIL ANALYTICAL DATA**  
**Shell-Branded Service Station**  
**4895 Hacienda Drive**  
**Dublin, California**

Sample ID	Date Collected	TPH-g (mg/kg)	TPH-d (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	Ethanol (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)
MW-1@20'	02/16/10	ND< 0.50	ND< 5.0	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.010	ND< 0.010	ND< 0.010	ND< 0.50	ND< 0.0050	ND< 0.0050
MW-1@30'	02/16/10	ND< 0.50	ND< 5.0	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.010	ND< 0.010	ND< 0.010	ND< 0.50	ND< 0.0050	ND< 0.0050
MW-2@20'	02/16/10	ND< 0.50	ND< 5.0	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	0.0097	ND< 0.0050	ND< 0.010	ND< 0.010	ND< 0.010	ND< 0.50	ND< 0.0050	ND< 0.0050
MW-2@30'	02/16/10	ND< 0.50	ND< 5.0	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.010	ND< 0.010	ND< 0.010	ND< 0.50	ND< 0.0050	ND< 0.0050
MW-3@23'	02/18/10	ND< 0.50	ND< 5.0	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.010	ND< 0.010	ND< 0.010	ND< 0.50	ND< 0.0050	ND< 0.0050
MW-4@25'	02/17/10	ND< 0.50	ND< 5.0	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.010	ND< 0.010	ND< 0.010	ND< 0.50	ND< 0.0050	ND< 0.0050
MW-5@20'	02/17/10	ND< 0.50	ND< 5.0	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.010	ND< 0.010	ND< 0.010	ND< 0.50	ND< 0.0050	ND< 0.0050
MW-6@25'	02/17/10	ND< 0.50	ND< 5.0	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.010	ND< 0.010	ND< 0.010	ND< 0.50	ND< 0.0050	ND< 0.0050
MW5@23.5-24'	02/17/10	ND< 0.50	ND< 5.0	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.010	ND< 0.010	ND< 0.010	ND< 0.50	ND< 0.0050	ND< 0.0050
MW5@39.5-40'	02/17/10	ND< 0.50	ND< 5.0	ND< 0.0050	ND< 0.0050	ND< 0.0050	ND< 0.0050	0.057	ND< 0.0050	ND< 0.010	ND< 0.010	ND< 0.010	ND< 0.50	ND< 0.0050	ND< 0.0050

**Abbreviations:**

- TPH-g = Total petroleum hydrocarbons as gasoline by EPA Method 8260B, identified by the laboratory as total purgeable petroleum hydrocarbons (TPPH)
- TPH-d = Total petroleum hydrocarbons as diesel by EPA Method 8015, identified by the laboratory as diesel range organics (DRO)
- B = Benzene, analyzed by EPA Method 8260B
- T = Toluene, analyzed by EPA Method 8260B
- E = Ethylbenzene, analyzed by EPA Method 8260B
- X = Xylenes, analyzed by EPA Method 8260B
- MTBE = Methyl tert-butyl ether, analyzed by EPA Method 8260B
- TBA = Tert-butyl alcohol, analyzed by EPA Method 8260B
- DIPE = diisopropyl ether, analyzed by EPA Method 8260B
- ETBE = ethyl tert-butyl ether, analyzed by EPA Method 8260B
- TAME = tert-amyl methyl ether, analyzed by EPA Method 8260B
- 1,2-DCA = 1,2 dichloroethane
- EDB = 1,2 dibromoethane
- mg/kg = milligrams per kilograms, equivalent to Parts per billion
- ND(<n) = Not detected above the shown detection limit (n)

HISTORICAL GRAB GROUNDWATER ANALYTICAL DATA  
SHELL-BRANDED SERVICE STATION  
4895 HACIENDA DRIVE, DUBLIN, CALIFORNIA

Sample ID	Date	Depth (ft)	TPHd (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	Ethanol (µg/L)
B-1	8/20/2008	20	—	<50	<0.50	<1.0	<1.0	<2.0	2.3	<10	<2.0	<2.0	<2.0	<1.0	<0.50	<100
B-2	8/20/2008	20	—	320	<2.5	<5.0	<5.0	<10	370	<50	<10	<10	<10	<5.0	<2.5	<500
MW-5	2/17/2010	42	55	<50	<0.50	<1.0	<1.0	<1.0	1.2	<10	<2.0	<2.0	<2.0	<1.0	<0.50	<100
CPT-1	3/14/2012	45-49	100	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-1	3/14/2012	56-59	110	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-2	3/15/2012	56-60	86	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-3	3/15/2012	29-32	53	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-4	3/16/2012	20.5-24.5	<47	310	<2.5	<2.5	<2.5	<5.0	410	<50	<2.5	<2.5	<2.5	<2.5	<2.5	—
CPT-4	3/16/2012	31-34	53	180	<1.3	<1.3	<1.3	<2.5	240	<25	<1.3	<1.3	<1.3	<1.3	<1.3	—
CPT-4	3/16/2012	54-57	88	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-5	11/9/2012	22	59 a	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-5	11/9/2012	32	<50 a	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-5	11/9/2012	55	<47 a	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-6	11/8/2012	23	<49 a	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-6	11/8/2012	40	<48 a	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-6	11/8/2012	55	54 a	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-7	11/9/2012	19	<54 a	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-7	11/9/2012	29	<50 a	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-7	11/9/2012	53	<49 a	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-8	11/8/2012	19	<50 a	<50	<0.50	<0.50	<0.50	<1.0	0.54	<10	<0.50	<0.50	<0.50	<0.50	<0.50	—

HISTORICAL GRAB GROUNDWATER ANALYTICAL DATA  
SHELL-BRANDED SERVICE STATION  
4895 HACIENDA DRIVE, DUBLIN, CALIFORNIA

Sample ID	Date	Depth (ftg)	TPHd (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	Ethanol (µg/L)
CPT-8	11/8/2012	34	<48 a	<50	<0.50	<0.50	<0.50	<1.0	1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	—
CPT-8	11/8/2012	50.5	—	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	—
<b>Groundwater ESL<sup>b</sup>:</b>			100	100	1.0	40	30	20	5.0	12	NA	NA	NA	0.050	0.50	NA

Notes:

TPHd = Total petroleum hydrocarbons as diesel analyzed by EPA Method 8015M  
 TPHg = Total petroleum hydrocarbons as gasoline analyzed by EPA Method 8260B  
 BTEX = Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B  
 MTBE = Methyl tertiary-butyl ether analyzed by EPA Method 8260B  
 TBA = Tertiary-butyl alcohol analyzed by EPA Method 8260B  
 DIPE = Di-isopropyl ether analyzed by EPA Method 8260B  
 ETBE = Ethyl tertiary-butyl ether analyzed by EPA Method 8260B  
 TAME = Tertiary-amyyl methyl ether analyzed by EPA Method 8260B  
 EDB = 1,2-Dibromoethane analyzed by EPA Method 8260B  
 1,2-DCA = 1,2-Dichloroethane analyzed by EPA Method 8260B  
 Ethanol analyzed by EPA Method 8260B

ftg = Feet below grade

µg/L = Micrograms per liter

<x = Not detected at reporting limit x

— = Not analyzed

ESL = Environmental screening level

NA =No applicable ESL

Results in **bold** equal or exceed applicable ESL

a = Analyzed with silica gel cleanup

b = San Francisco Bay Regional Water Quality Control Board ESL for groundwater where groundwater is a potential source of drinking water (Tables A and C of *Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater*, California Regional Water Quality Control Board, Interim Final - November 2007 [Revised May 2008]).

TABLE 1

**GROUNDWATER DATA**  
**SHELL-BRANDED SERVICE STATION**  
**4895 HACIENDA DRIVE, DUBLIN, CALIFORNIA**

Well ID	Date	TPHd (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to GW	
														Water (ft TOC)	Elevation (ft MSL)
MW-1	03/15/2010	—	—	—	—	—	—	—	—	—	—	—	349.33	11.65	337.68
MW-1	03/19/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	<1.0	<10	<2.0	<2.0	<2.0	349.33	11.75	337.58
MW-1	05/06/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	<1.0	<10	<2.0	<2.0	<2.0	349.33	11.99	337.34
MW-1	08/05/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	<1.0	<10	<2.0	<2.0	<2.0	349.33	12.98	336.35
MW-1	11/08/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	<1.0	<10	<2.0	<2.0	<2.0	349.33	13.50	335.83
MW-1	02/03/2011	<47	<50	<0.50	<0.50	<0.50	<1.0	<1.0	<10	<1.0	<1.0	<1.0	349.33	13.04	336.29
MW-1	05/16/2011	<50	<50	<0.50	<0.50	<0.50	<1.0	<1.0	<10	<1.0	<1.0	<1.0	349.33	12.05	337.28
MW-1	10/31/2011	<47	<50	<0.50	<0.50	<0.50	<1.0	<1.0	<10	—	—	—	349.33	13.10	336.23
MW-1	05/22/2012	75	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	—	—	—	349.33	12.83	336.50
MW-1	11/13/2012	97 a	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	—	—	—	349.33	14.10	335.23
MW-2	03/15/2010	—	—	—	—	—	—	—	—	—	—	—	350.66	12.95	337.71
MW-2	03/19/2010	<50	230	<0.50	<1.0	<1.0	<1.0	180	<10	<2.0	<2.0	<2.0	350.66	13.16	337.50
MW-2	05/06/2010	<50	100	<0.50	<1.0	<1.0	<1.0	130	<10	<2.0	<2.0	<2.0	350.66	13.32	337.34
MW-2	08/05/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	11	<10	<2.0	<2.0	<2.0	350.66	14.34	336.32
MW-2	11/08/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	7.9	<10	<2.0	<2.0	<2.0	350.66	14.28	336.38
MW-2	02/03/2011	<47	50	<0.50	<0.50	<0.50	<1.0	42	24	<1.0	<1.0	<1.0	350.66	14.45	336.21
MW-2	05/16/2011	<50	<50	<0.50	<0.50	<0.50	<1.0	22	<10	<1.0	<1.0	<1.0	350.66	13.50	337.16
MW-2	10/31/2011	<47	<50	<0.50	<0.50	<0.50	<1.0	1.0	<10	—	—	—	350.66	14.49	336.17
MW-2	05/22/2012	60	<50	<0.50	<0.50	<0.50	<1.0	0.90	<10	—	—	—	350.66	14.30	336.36
MW-2	11/13/2012	<48	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	—	—	—	350.66	14.79	335.87
MW-3	03/15/2010	—	—	—	—	—	—	—	—	—	—	—	350.18	12.62	337.56
MW-3	03/19/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	11	<10	<2.0	<2.0	<2.0	350.18	12.84	337.34
MW-3	05/06/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	6.9	<10	<2.0	<2.0	<2.0	350.18	13.51	336.67
MW-3	08/05/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	9.6	<10	<2.0	<2.0	<2.0	350.18	14.28	335.90
MW-3	11/08/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	20	<10	<2.0	<2.0	<2.0	350.18	14.41	335.77
MW-3	02/03/2011	<47	<50	<0.50	<0.50	<0.50	<1.0	16	<10	<1.0	<1.0	<1.0	350.18	14.08	336.10
MW-3	05/16/2011	<50	<50	<0.50	<0.50	<0.50	<1.0	10	<10	<1.0	<1.0	<1.0	350.18	13.05	337.13
MW-3	10/31/2011	<47	<50	<0.50	<0.50	<0.50	<1.0	32	<10	—	—	—	350.18	14.01	336.17

TABLE 1

**GROUNDWATER DATA**  
**SHELL-BRANDED SERVICE STATION**  
**4895 HACIENDA DRIVE, DUBLIN, CALIFORNIA**

Well ID	Date	TPHd (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)
MW-3	05/22/2012	<48	<50	<0.50	<0.50	<0.50	<1.0	7.3	<10	—	—	—	350.18	13.70	336.48
MW-3	11/13/2012	58 a	<50	<0.50	<0.50	<0.50	<1.0	5.0	<10	—	—	—	350.18	14.52	335.66
MW-4	03/15/2010	—	—	—	—	—	—	—	—	—	—	—	350.32	12.85	337.47
MW-4	03/19/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	3.3	<10	<2.0	<2.0	<2.0	350.32	12.98	337.34
MW-4	05/06/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	<1.0	<10	<2.0	<2.0	<2.0	350.32	13.35	336.97
MW-4	08/05/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	<1.0	<10	<2.0	<2.0	<2.0	350.32	14.23	336.09
MW-4	11/08/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	<1.0	<10	<2.0	<2.0	<2.0	350.32	14.24	336.08
MW-4	02/03/2011	<47	<50	<0.50	<0.50	<0.50	<1.0	1.7	<10	<1.0	<1.0	<1.0	350.32	14.24	336.08
MW-4	05/16/2011	<51	<50	<0.50	<0.50	<0.50	<1.0	29	<10	<1.0	<1.0	<1.0	350.32	13.64	336.68
MW-4	10/31/2011	<47	<50	<0.50	<0.50	<0.50	<1.0	2.8	<10	—	—	—	350.32	14.34	335.98
MW-4	05/22/2012	<47	<50	<0.50	<0.50	<0.50	<1.0	1.2	<10	—	—	—	350.32	14.05	336.27
MW-4	11/13/2012	<48	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	—	—	—	350.32	14.88	335.44
MW-5	03/15/2010	—	—	—	—	—	—	—	—	—	—	—	350.31	12.80	337.51
MW-5	03/19/2010	<50	410	<0.50	<1.0	<1.0	<1.0	310	<10	<2.0	<2.0	<2.0	350.31	12.99	337.32
MW-5	05/06/2010	<50	160	<1.0	<2.0	<2.0	<2.0	210	<20	<4.0	<4.0	<4.0	350.31	13.21	337.10
MW-5	08/05/2010	<50	310	<1.0	<2.0	<2.0	<2.0	250	39	<4.0	<4.0	<4.0	350.31	14.25	336.06
MW-5	11/08/2010	<50	210	<1.0	<2.0	<2.0	<2.0	210	<20	<4.0	<4.0	<4.0	350.31	14.20	336.11
MW-5	02/03/2011	<47	79 a	<0.50	<0.50	<0.50	<1.0	140	<10	<1.0	<1.0	<1.0	350.31	14.28	336.03
MW-5	05/16/2011	<50	150	<0.50	<0.50	<0.50	<1.0	200	21 b	<1.0	<1.0	<1.0	350.31	13.65	336.66
MW-5	10/31/2011	<47	100	<1.0	<1.0	<1.0	<2.0	130	<20	—	—	—	350.31	14.40	335.91
MW-5	05/22/2012	63	110	<0.50	<0.50	<0.50	<1.0	110	<10	—	—	—	350.31	14.13	336.18
MW-5	11/13/2012	<48	100 c	<0.50	<0.50	<0.50	<1.0	96	<10	—	—	—	350.31	14.96	335.35
MW-6	03/15/2010	—	—	—	—	—	—	—	—	—	—	—	350.29	12.79	337.50
MW-6	03/19/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	18	<10	<2.0	<2.0	<2.0	350.29	12.84	337.45
MW-6	05/06/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	7.4	<10	<2.0	<2.0	<2.0	350.29	13.14	337.15
MW-6	08/05/2010	<50	53	<0.50	<1.0	<1.0	<1.0	4.0	<10	<2.0	<2.0	<2.0	350.29	14.12	336.17
MW-6	11/08/2010	<50	<50	<0.50	<1.0	<1.0	<1.0	7.8	<10	<2.0	<2.0	<2.0	350.29	14.12	336.17

TABLE 1

**GROUNDWATER DATA  
SHELL-BRANDED SERVICE STATION  
4895 HACIENDA DRIVE, DUBLIN, CALIFORNIA**

Well ID	Date	TPHd (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (# MSL)	Depth to Water (# TOC)
MW-6	02/03/2011	<47	<50	<0.50	<0.50	<0.50	<1.0	18	<10	<1.0	<1.0	<1.0	350.29	14.05
MW-6	05/16/2011	<51	<50	<0.50	<0.50	<0.50	<1.0	9.8	<10	<1.0	<1.0	<1.0	350.29	13.19
MW-6	10/31/2011	<47	<50	<0.50	<0.50	<0.50	<1.0	17	<10	—	—	—	350.29	14.06
MW-6	05/22/2012	<48	<50	<0.50	<0.50	<0.50	<1.0	5.0	<10	—	—	—	350.29	13.82
MW-6	11/13/2012	<50	<50	<0.50	<0.50	<0.50	<1.0	1.7	<10	—	—	—	350.29	14.21

Notes:

TPHd = Total petroleum hydrocarbons as diesel analyzed by modified EPA Method 8015 with silica gel cleanup

TPHg = Total petroleum hydrocarbons as gasoline analyzed by EPA Method 8260B

BTEX = Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B

MTBE = Methyl tertiary-butyl ether analyzed by EPA Method 8260B

TBA = Tertiary-butyl alcohol analyzed by EPA Method 8260B

DIPE = Di-isopropyl ether analyzed by EPA Method 8260B

ETBE = Ethyl tertiary-butyl ether analyzed by EPA Method 8260B

TAME = Tertiary-amyl methyl ether analyzed by EPA Method 8260B

TOC = Top of casing elevation, in feet relative to mean sea level

GW = Groundwater

µg/L = Micrograms per liter

ft = Feet

MSL = Mean sea level

<x = Not detected at reporting limit x

— = Not analyzed or not available

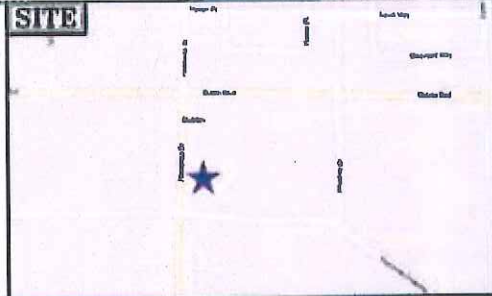
a = Hydrocarbon result partly due to individual peaks in quantitation range

b = Due to the low levels of analyte found in the sample, the analyte was qualitatively identified based on the compound's retention time and the presence of a single mass ion.

c = Concentration reported due to the presence of discrete peak of MTBE

Site wells surveyed March 19, 2010 by Mid Coast Engineers.

Drilling Started: 08/20/2008  
 Drilling Completed: 08/20/2008  
 Drilling Method and Diameter: Direct Push - 2" Dia.  
 Drilling Company: Cascade Drilling  
 Drilled By:  
 Logged By: Steve Harquall  
 Boring: B-1



Depth (feet)	Samples	Recovery (%)	PID (ppm)	LITHOLOGIC DESCRIPTION	USCS	Graphic Log	Depth (feet)
0 - 5				No Recovery - Air Knifed to 5 feet below ground surface (bgs).			0 - 5
5 - 10	100	100	0.0	Clayey Silt: Dark brown. Clayey Silt: Brown, with 5% fined grained sand.	ML	[Vertical lines]	5 - 10
10 - 13				Clayey Silt: Tan, brown.			10 - 13
13 - 14				Silty Clay: Tan, soft, high plasticity.	CH	[Diagonal hatching]	13 - 14
14 - 16	100	100	0.0	Clayey Silt: Light brown, with 5% sand	ML	[Vertical lines]	14 - 16
16 - 20	85	85	0.0	Silty Sand: Brown, wet.	SM	[Dashed lines]	16 - 20
20 - 22				Clayey Silt: Tan, hard, white to black marbling.	ML	[Vertical lines]	20 - 22
22 - 25	100	100	0.0	Boring terminated at 25 feet bgs.			22 - 25

▼ Water Level (Not Recorded)

▮ CONTINUOUS CORE Sample Collected for Laboratory Analysis

CASHL-BADW-A  
 09-26-2008 09-28-2008  
 CALIFORNIA O.P. J.R.  
 SH5112-B1

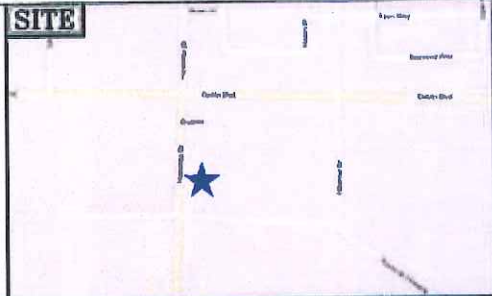
SHELL FACILITY No. 165112  
 4895 Hacienda Drive  
 Dublin, California

Soil Boring Log  
 B-1

FIGURE



Drilling Started: 08/20/2008  
 Drilling Completed: 08/20/2008  
 Drilling Method and Diameter: Direct Push - 2" Dia.  
 Drilling Company: Cascade Drilling  
 Drilled By:  
 Logged By: Steve Harquail  
 Boring: B-2



Depth (feet)	Samples Recovery (%)	PID (ppm)	LITHOLOGIC DESCRIPTION	USCS	Graphic Log	Depth (feet)
0			No Recovery - Air Knifed to 5 feet below ground surface (bgs).			0
2						2
4						4
5.00'						5.00'
5			Sandy Silt: Dark brown, hard, dry.	ML		5
8			Sandy Silt: Brown, with 5% fined grained sand, hard, dry.			8
10	100	0.0	Similar to above.			10
12						12
12.00'						12.00'
12			Clayey Silt: Tan, dry, firm, with 5% sand.	ML		12
14						14
14.00'						14.00'
14			Silty Clay: Tan, soft.	CL		14
15.00'	100	0.0				15.00'
15			Clayey Silt: Brown, hard, dry.	ML		15
16						16
18						18
20	100	0.0	Clayey Silt: Brown/tan Sand: Brown, wet.	SP		20
22						22
22.00'						22.00'
22			Clayey Sand: Tan.	SC		22
23.00'						23.00'
24			Clay: Tan, soft, dry.	CL		24
25	100	0.0				25
25.00'						25.00'
25			Boring terminated at 25 feet bgs.			25

▼ Water Level (Not Recorded)

CONTINUOUS CORE  
 Sample Collected for  
 Laboratory Analysis



CASHL-BADW-A  
 09-26-2008 09-28-2008  
 CALIFORNIA O.P. J.R.  
 SH5112-B2

SHELL FACILITY No. 165112  
 4895 Hacienda Drive  
 Dublin, California

Soil Boring Log  
 B-2

FIGURE

Drilling Started: 08/20/2008  
 Drilling Completed: 08/20/2008  
 Drilling Method and Diameter: Direct Push - 2" Dia.  
 Drilling Company: Cascade Drilling  
 Drilled By:  
 Logged By: Steve Harquail  
 Boring: B-3



Depth (feet)	Samples	Recovery (%)	PID (ppm)	LITHOLOGIC DESCRIPTION	USCS	Graphic Log	Depth (feet)
0				No Recovery - Air Knifed to 5 feet below ground surface (bgs).			0
2							2
4							4
5.00'							5.00'
6				Clayey Silt: Dark brownish-black.	ML		6
8				Clayey Silt with trace sand: Brown, hard, dry, low to medium plasticity.			8
10		90	0.0	Clayey Silt with trace sand: Brown, firm, dry.			10
12							12
14							14
15.50'		90	0.0	Similar to above, hard, dry, medium plasticity.			15.50'
16							16
18							18
20		100	0.0	Boring terminated at 20 feet bgs.			20

▼ Water Level (Not Encountered)      █ CONTINUOUS CORE Sample Collected for Laboratory Analysis



**CASHL-BADW-A**  
 09-26-2008 09-26-2008  
 CALIFORNIA O.F. J.E.  
 SH5112-B3

SHELL FACILITY No. 165112  
 4895 Hacienda Drive  
 Dublin, California

Soil Boring Log  
 B-3

FIGURE

Drilling Started: 08/20/2008  
 Drilling Completed: 08/20/2008  
 Drilling Method and Diameter: Direct Push - 2" Dia.  
 Drilling Company: Cascade Drilling  
 Drilled By:  
 Logged By: Steve Harquail  
 Boring: B-4



Depth (feet)	Samples Recovery (%)	PID (ppm)	LITHOLOGIC DESCRIPTION	USCS	Graphic Log	Depth (feet)
0			No Recovery - Air Knifed to 5 feet below ground surface (bgs).			0
2						2
4						4
5.00'						5.00'
6			Clayey Silt with Sand: Dark brown, dry, hard, medium plasticity.	ML		6
			Similar to above, brown.			
8						8
10	80	0.0	Clayey Silt: Dark brown, dry, hard.			10
12						12
14						14
16	90	0.0	Clayey Silt: Brown, hard, dry, with 5% fine grained sand.			16
18						18
20	90	0.0				20
			Boring terminated at 20 feet bgs.			

▼ Water Level (Not Encountered)

CONTINUOUS CORE  
 Sample Collected for  
 Laboratory Analysis



**CASHL-BADW-A**  
 08-26-2008 08-26-2008  
 CALIFORNIA O.F. J.E.  
 SH5112-B4

SHELL FACILITY No. 165112  
 4895 Hacienda Drive  
 Dublin, California

Soil Boring Log  
 B-4

FIGURE

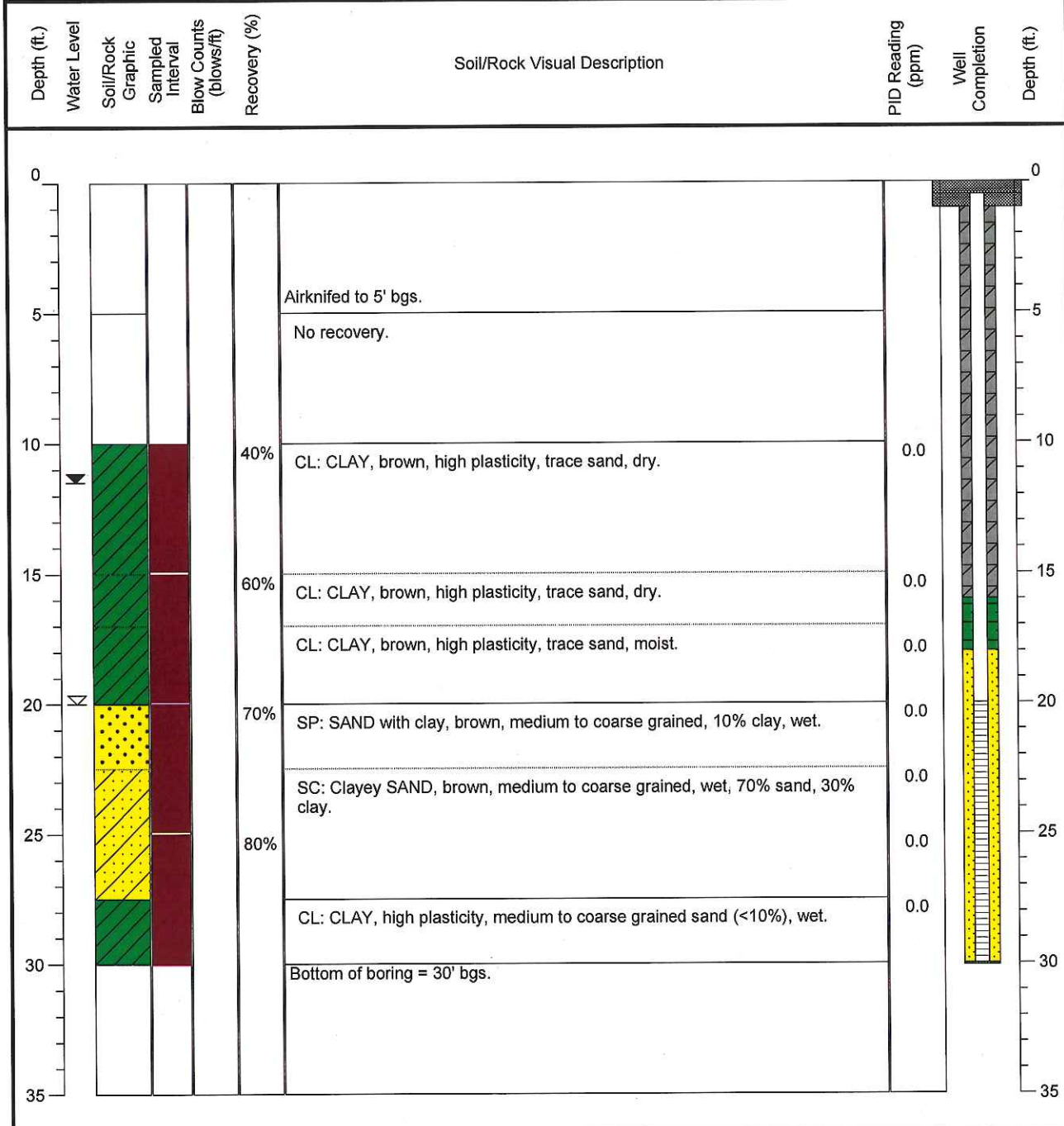


# BORING LOG

Client **Shell Oil Products US**  
 Project Number **SCA4895H1D**

Well No.  
**MW-1**

Address: <b>4895 Hacienda Drive</b> <b>Dublin, CA</b> Logged By: <b>Cora Olson</b>	Drilling Date(s): <b>02/16/10</b>	Boring diameter (in.): <b>10"</b>	Casing Material: <b>Sch 40 PVC</b>
	Drilling Company: <b>RSI</b>	Sampling Method: <b>5' Core-barrel</b>	Screen Interval: <b>20' - 30' bgs</b>
	Drilling Method: <b>HSA</b>	Well Depth (ft.): <b>30'</b>	Screen slot size: <b>0.010"</b>
	Boring Depth (ft): <b>30'</b>	Casing Diameter (in.): <b>4"</b>	Sand Pack: <b>2/12</b>





# BORING LOG

Client **Shell Oil Products US**  
 Project Number **SCA4895H1D**

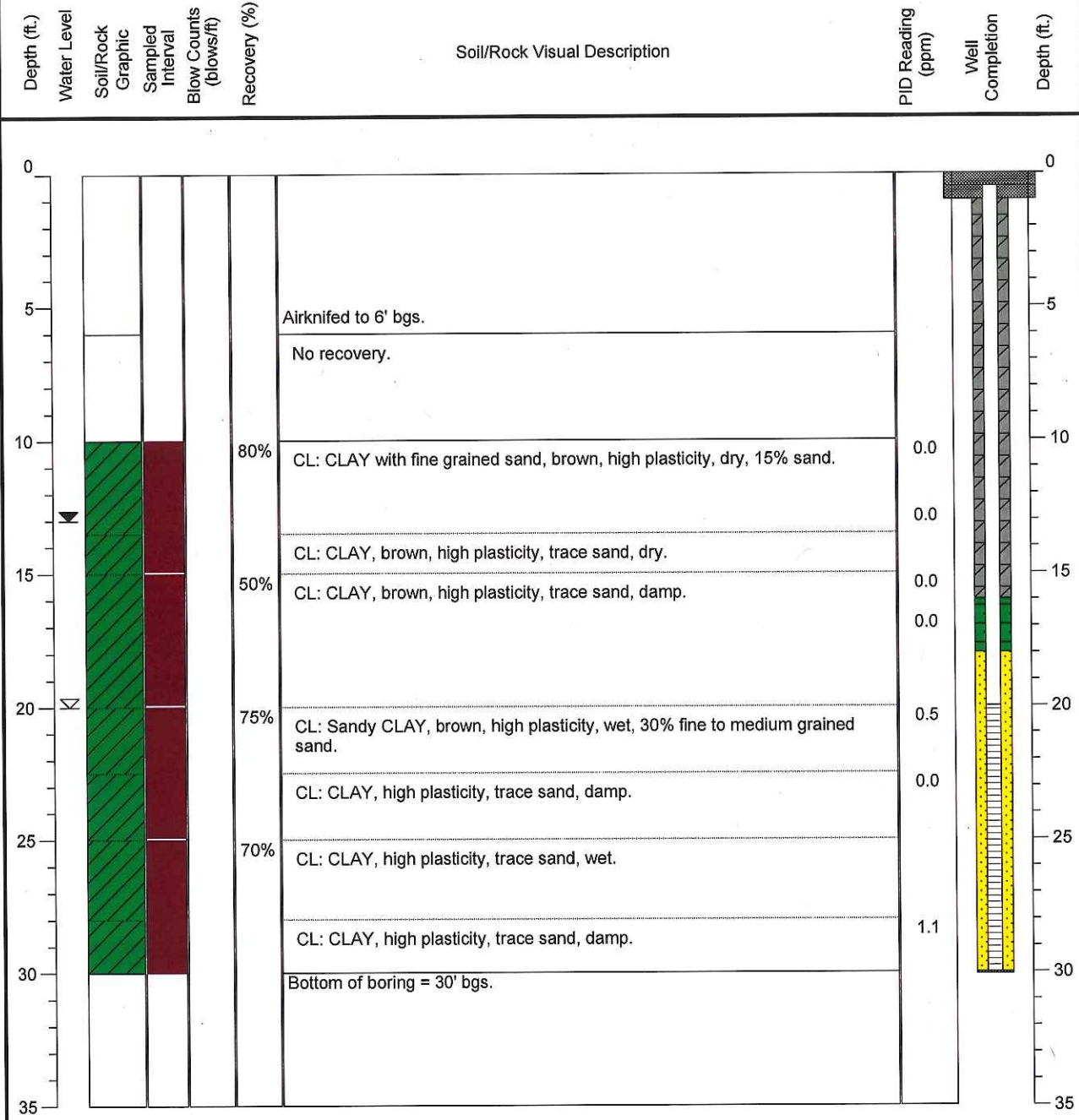
Well No.  
**MW-2**

Address:  
**4895 Hacienda Drive**  
**Dublin, CA**  
 Logged By:  
**Cora Olson**

Drilling Date(s): **02/16/10**  
 Drilling Company:  
**RSI**  
 Drilling Method:  
**HSA**  
 Boring Depth (ft.): **30'**

Boring diameter (in.): **10"**  
 Sampling Method: **5' Core-barrel**  
 Well Depth (ft.): **30'**  
 Casing Diameter (in.): **4"**

Casing Material:  
**Sch 40 PVC**  
 Screen Interval: **20' - 30' bgs**  
 Screen slot size:  
**0.010"**  
 Sand Pack: **2/12**





# BORING LOG

Client **Shell Oil Products US**  
Project Number **SCA4895H1D**

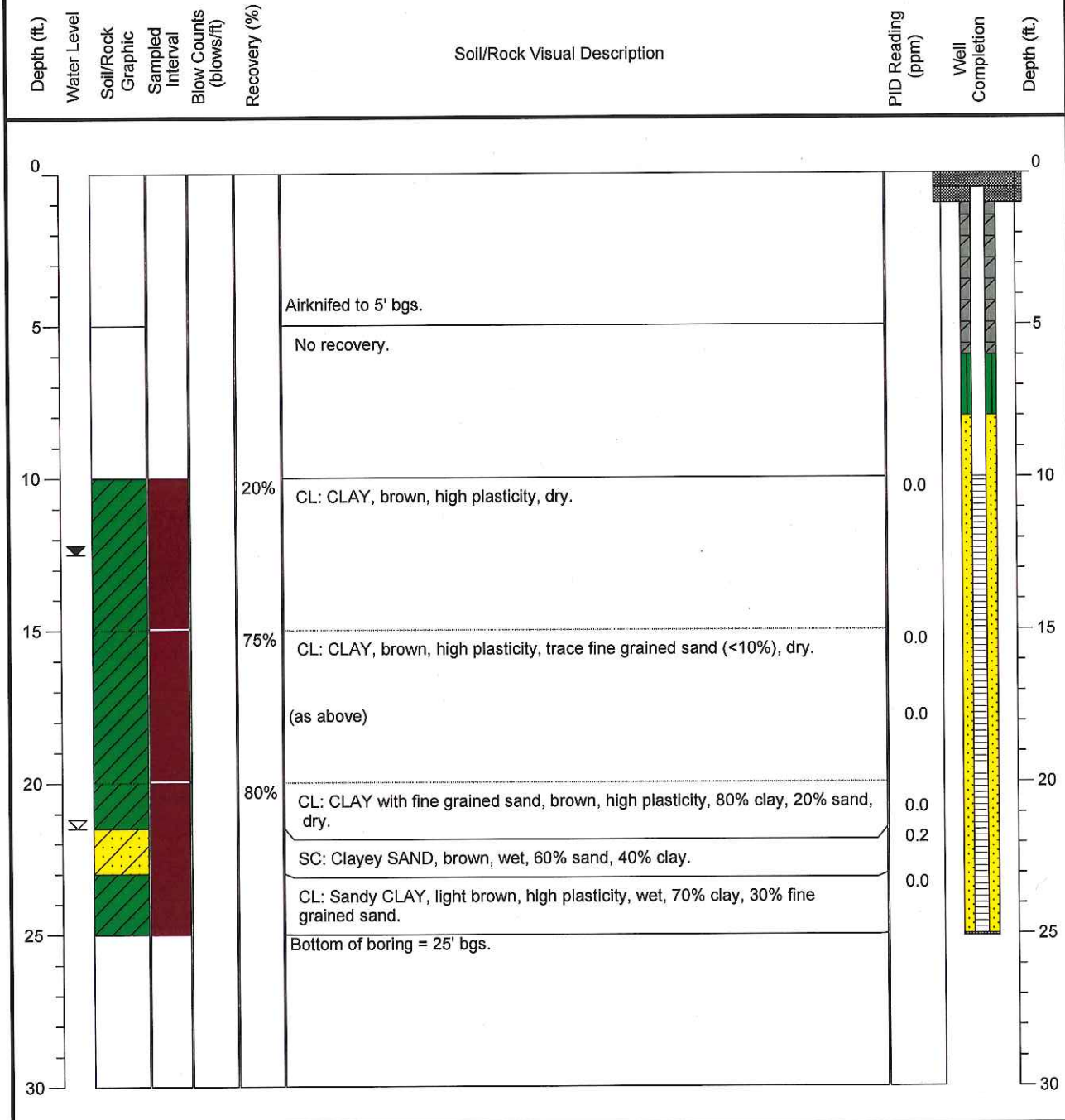
Well No.  
**MW-3**

Address:  
**4895 Hacienda Drive**  
**Dublin, CA**  
Logged By:  
**Cora Olson**

Drilling Date(s): **02/18/10**  
Drilling Company:  
**RSI**  
Drilling Method:  
**HSA**  
Boring Depth (ft): **25'**

Boring diameter (in.): **10"**  
Sampling Method: **5' Core-barrel**  
Well Depth (ft.): **25'**  
Casing Diameter (in.): **4"**

Casing Material:  
**Sch 40 PVC**  
Screen Interval: **10' - 25' bgs**  
Screen slot size:  
**0.010"**  
Sand Pack: **2/12**





# BORING LOG

Client **Shell Oil Products US**  
 Project Number **SCA4895H1D**

Well No.  
**MW-4**

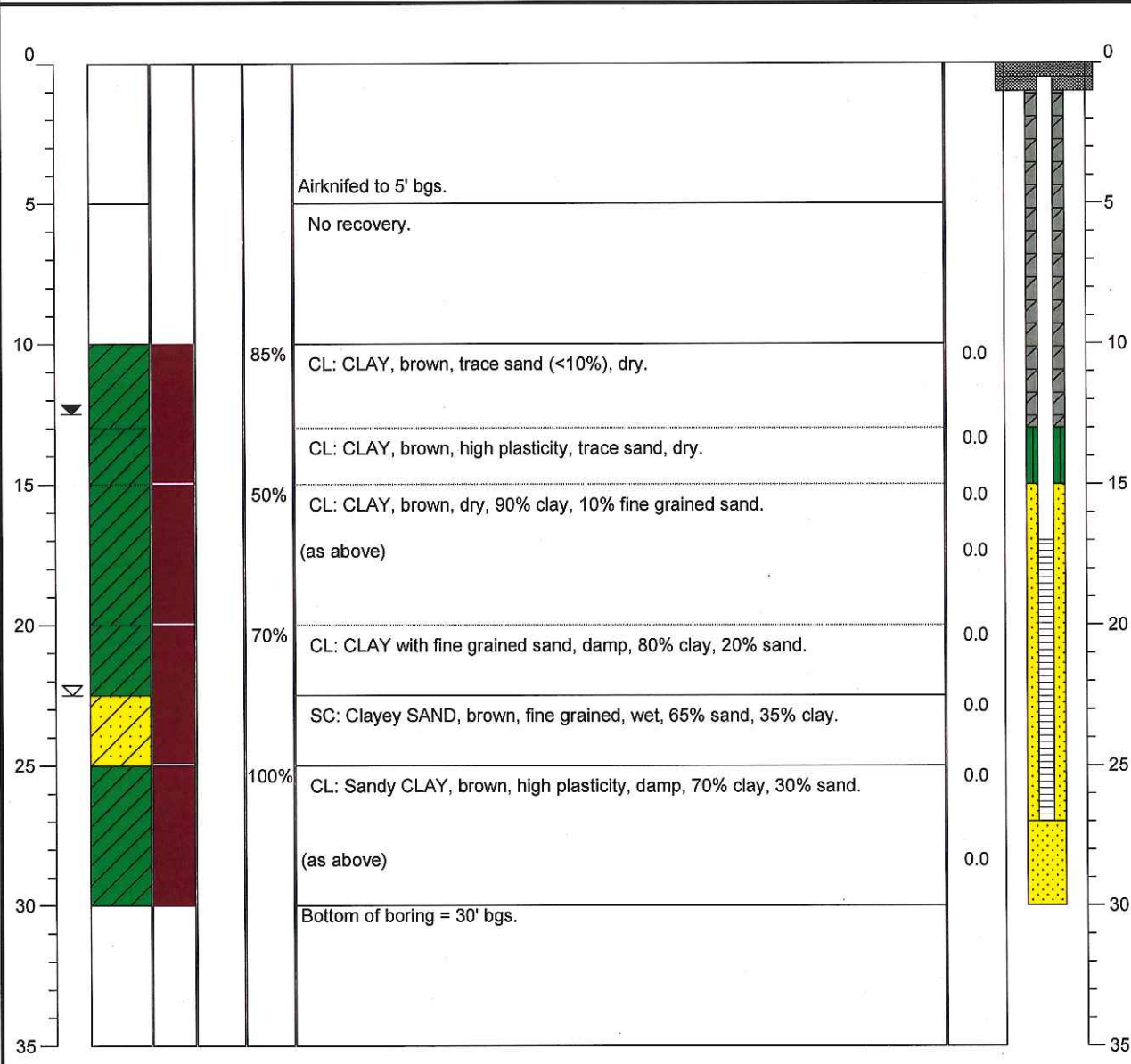
Address:  
**4895 Hacienda Drive**  
**Dublin, CA**  
 Logged By:  
**Cora Olson**

Drilling Date(s): **02/17/10**  
 Drilling Company:  
**RSI**  
 Drilling Method:  
**HSA**  
 Boring Depth (ft.): **30'**

Boring diameter (in.): **10"**  
 Sampling Method: **5' Core-barrel**  
 Well Depth (ft.): **27'**  
 Casing Diameter (in.): **4"**

Casing Material:  
**Sch 40 PVC**  
 Screen Interval: **17' - 27' bgs**  
 Screen slot size:  
**0.010"**  
 Sand Pack: **2/12**

Depth (ft.)	Water Level	Soil/Rock Graphic	Sampled Interval	Blow Counts (blows/ft)	Recovery (%)	Soil/Rock Visual Description	PID Reading (ppm)	Well Completion	Depth (ft.)
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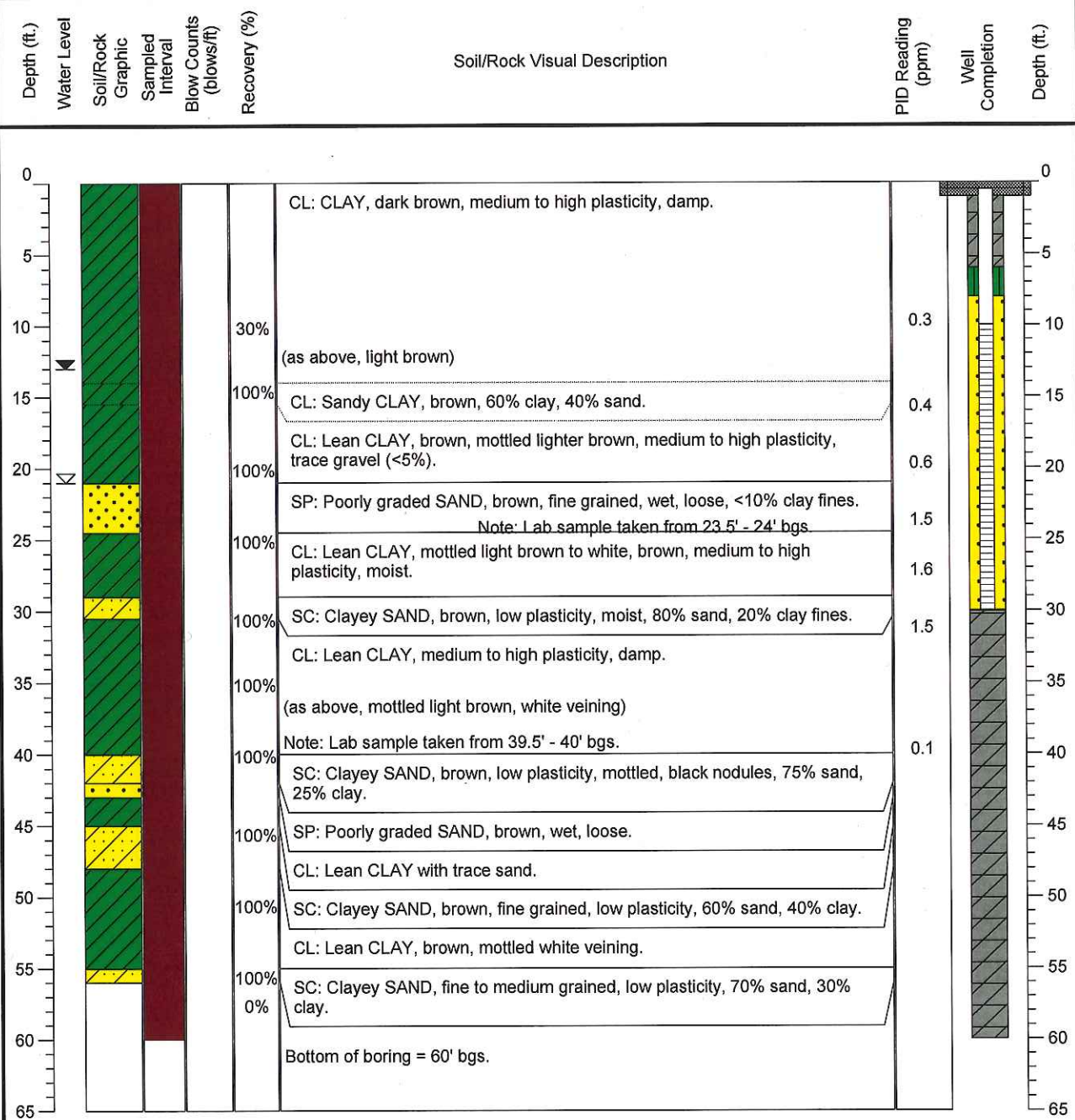


# BORING LOG

Client **Shell Oil Products US**  
 Project Number **SCA4895H1D**

Well No.  
**MW-5**

Address: <b>4895 Hacienda Drive</b> <b>Dublin, CA</b> Logged By: <b>Matt Corley</b>	Drilling Date(s): <b>02/16/10-02/17/10</b>	Boring diameter (in.): <b>2"/10"</b>	Casing Material: <b>Sch 40 PVC</b>
	Drilling Company: <b>RSI</b>	Sampling Method: <b>Acetate Liner</b>	Screen Interval: <b>10' - 30' bgs</b>
	Drilling Method: <b>HSA/DP</b>	Well Depth (ft.): <b>30'</b>	Screen slot size: <b>0.010"</b>
	Boring Depth (ft): <b>57'</b>	Casing Diameter (in.): <b>4"</b>	Sand Pack: <b>2/12</b>





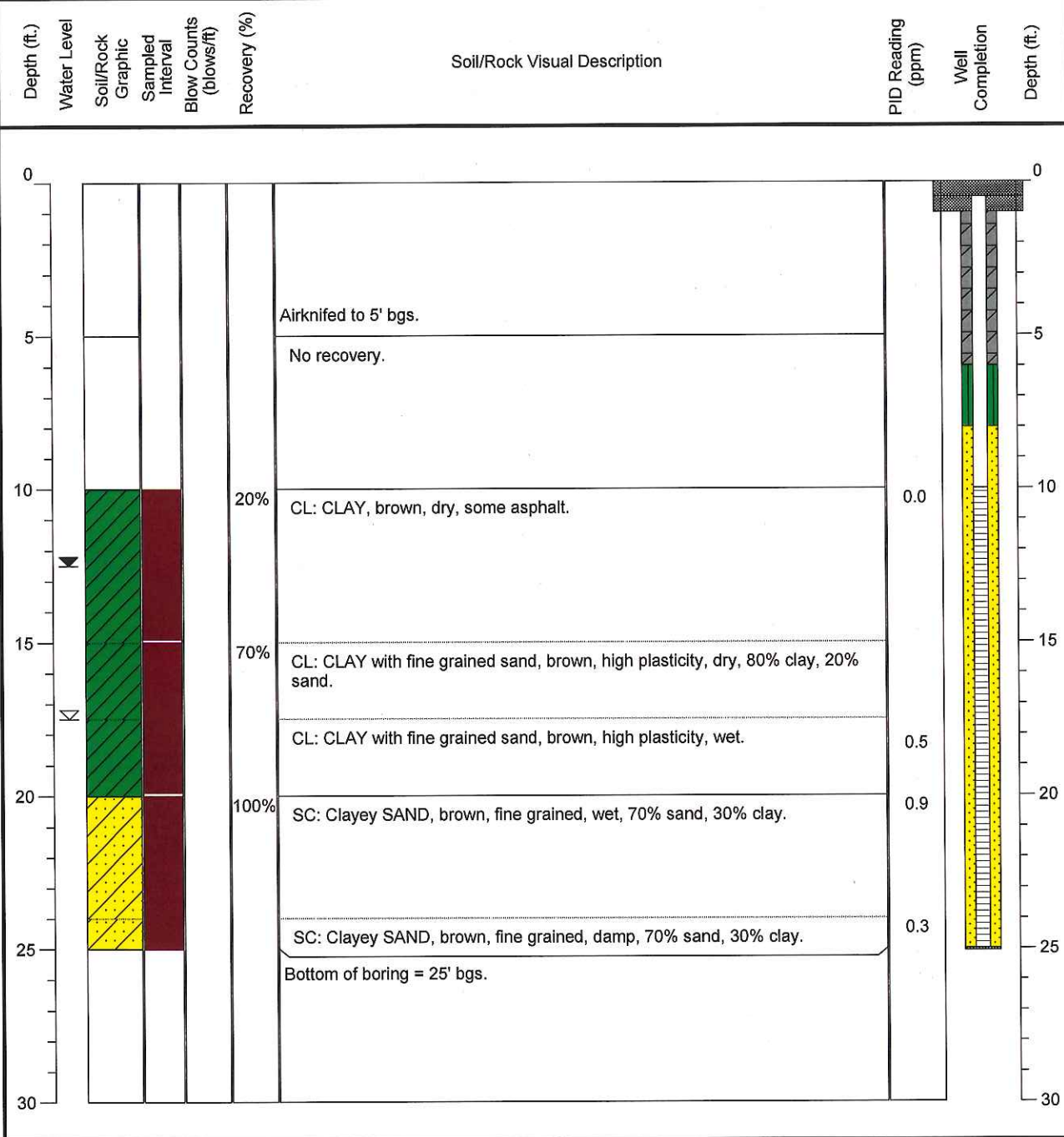


# BORING LOG

Client **Shell Oil Products US**  
 Project Number **SCA4895H1D**

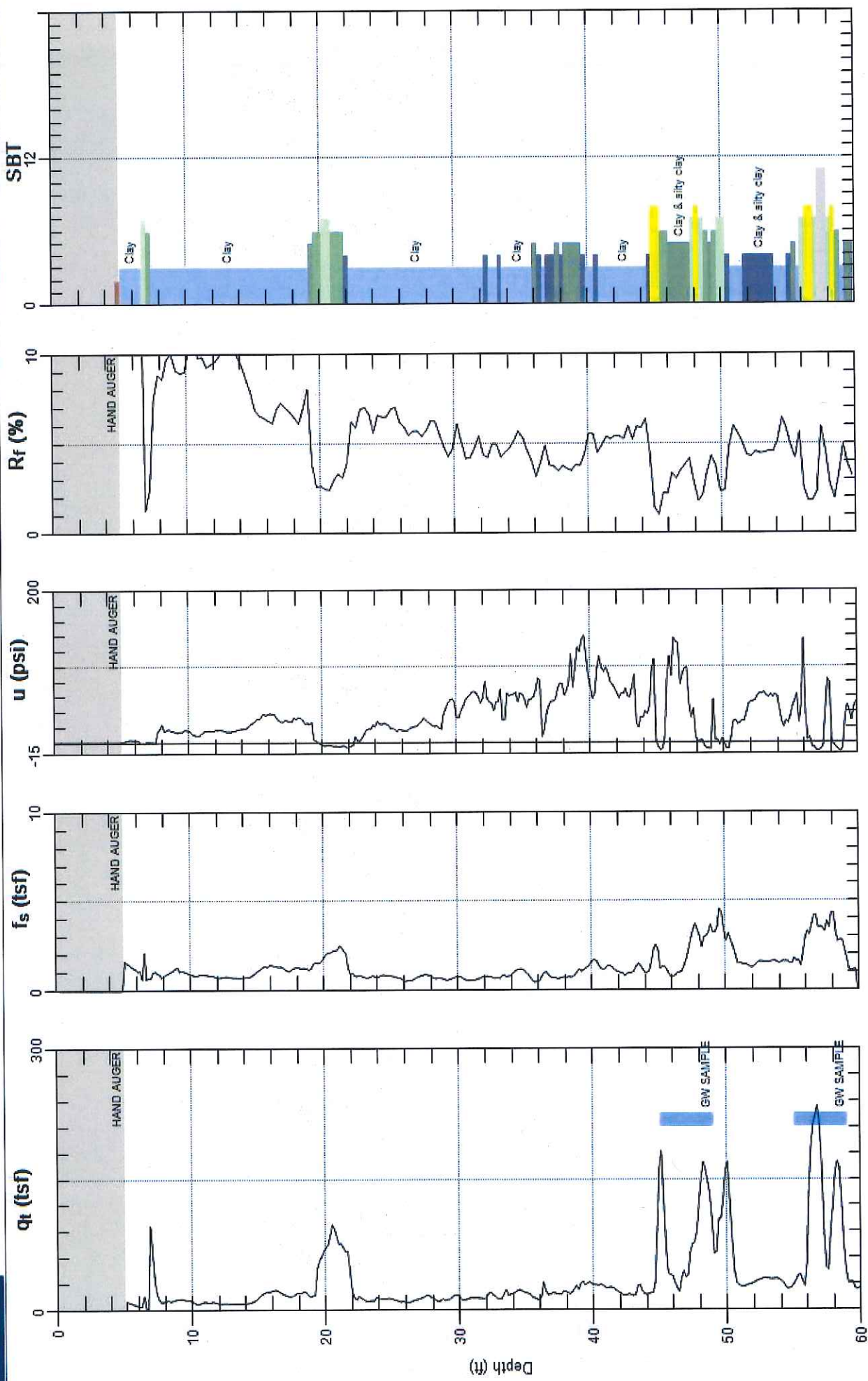
Well No.  
**MW-6**

Address: <b>4895 Hacienda Drive</b> <b>Dublin, CA</b> Logged By: <b>Cora Olson</b>	Drilling Date(s): <b>02/17/10</b>	Boring diameter (in.): <b>10"</b>	Casing Material: <b>Sch 40 PVC</b>
	Drilling Company: <b>RSI</b>	Sampling Method: <b>5' Core-barrel</b>	Screen Interval: <b>10' - 25' bgs</b>
	Drilling Method: <b>HSA</b>	Well Depth (ft.): <b>25'</b>	Screen slot size: <b>0.010"</b>
	Boring Depth (ft): <b>25'</b>	Casing Diameter (in.): <b>4"</b>	Sand Pack: <b>2/12</b>





Site: 4895 HACIENDA  
Sounding: CPT-01  
Engineer: S.LEWIS  
Date: 3/14/2012 08:13



Max. Depth: 60.039 (ft)  
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



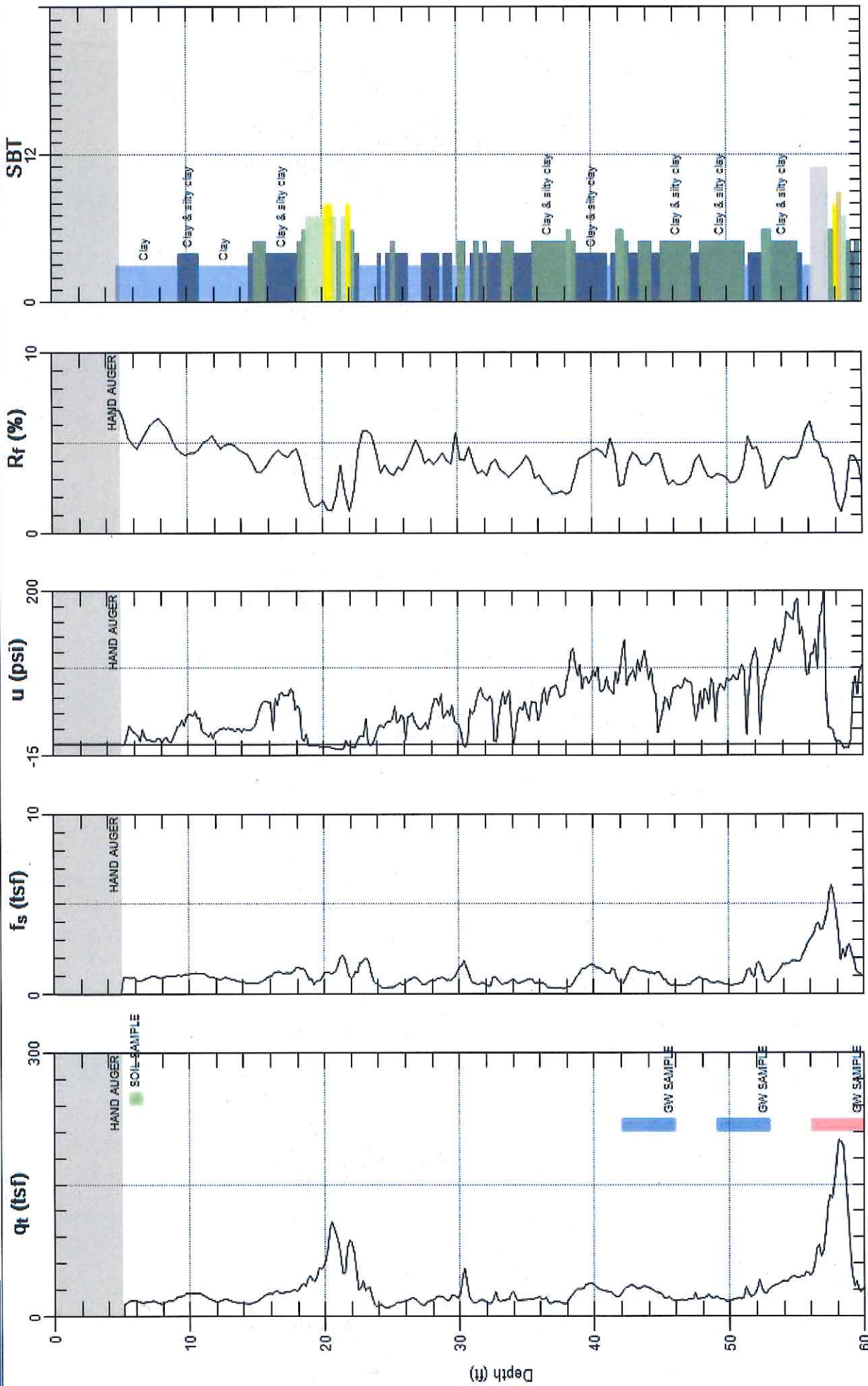
CRA

Site: 4895 HACIENDA

Engineer: S.LEWIS

Sounding: CPT-02

Date: 3/14/2012 01:19



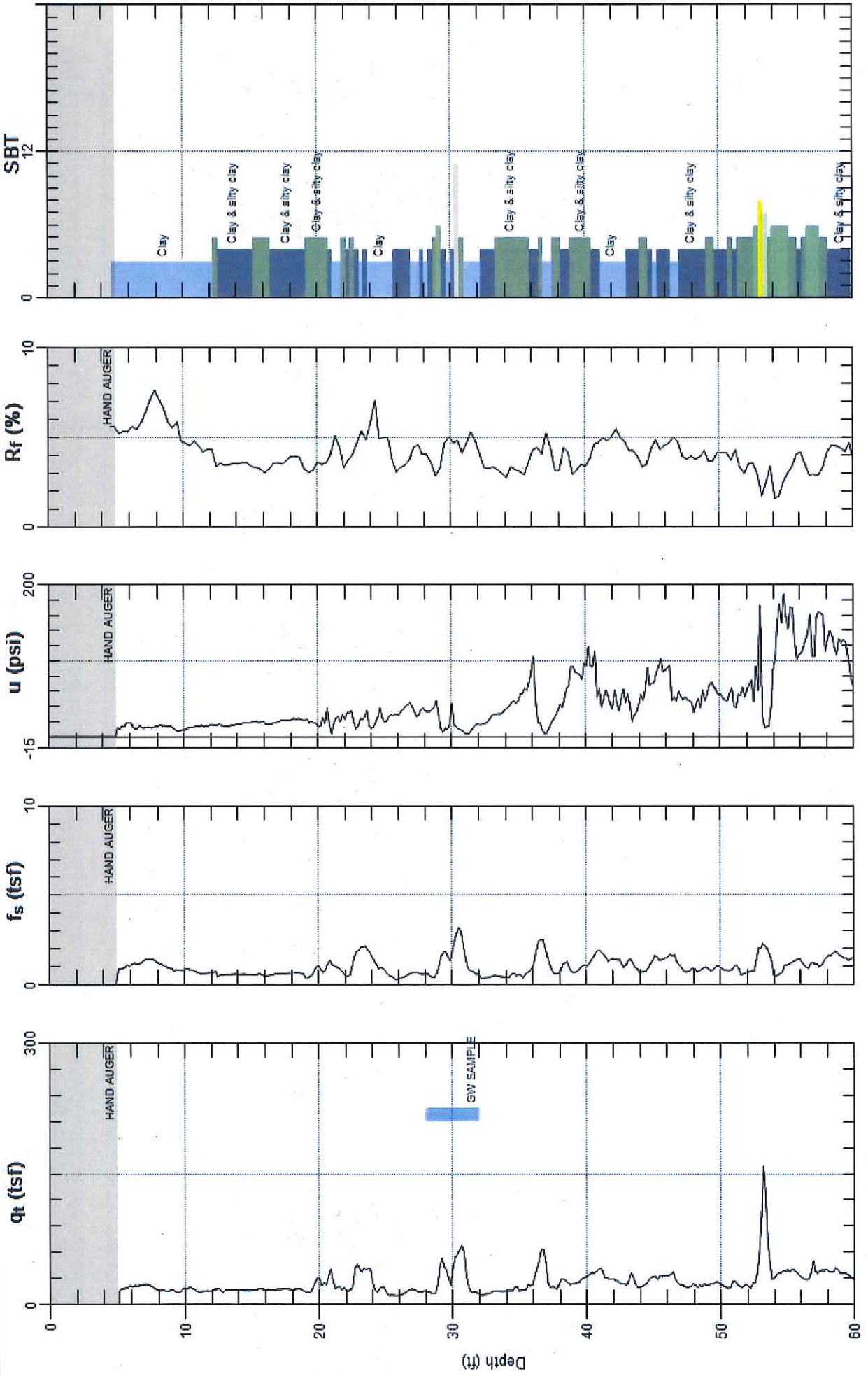
Max. Depth: 60.203 (ft)  
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



Site: 4895 HACIENDA  
Sounding: CPT-03

Engineer: S.LEWIS  
Date: 3/15/2012 11:21



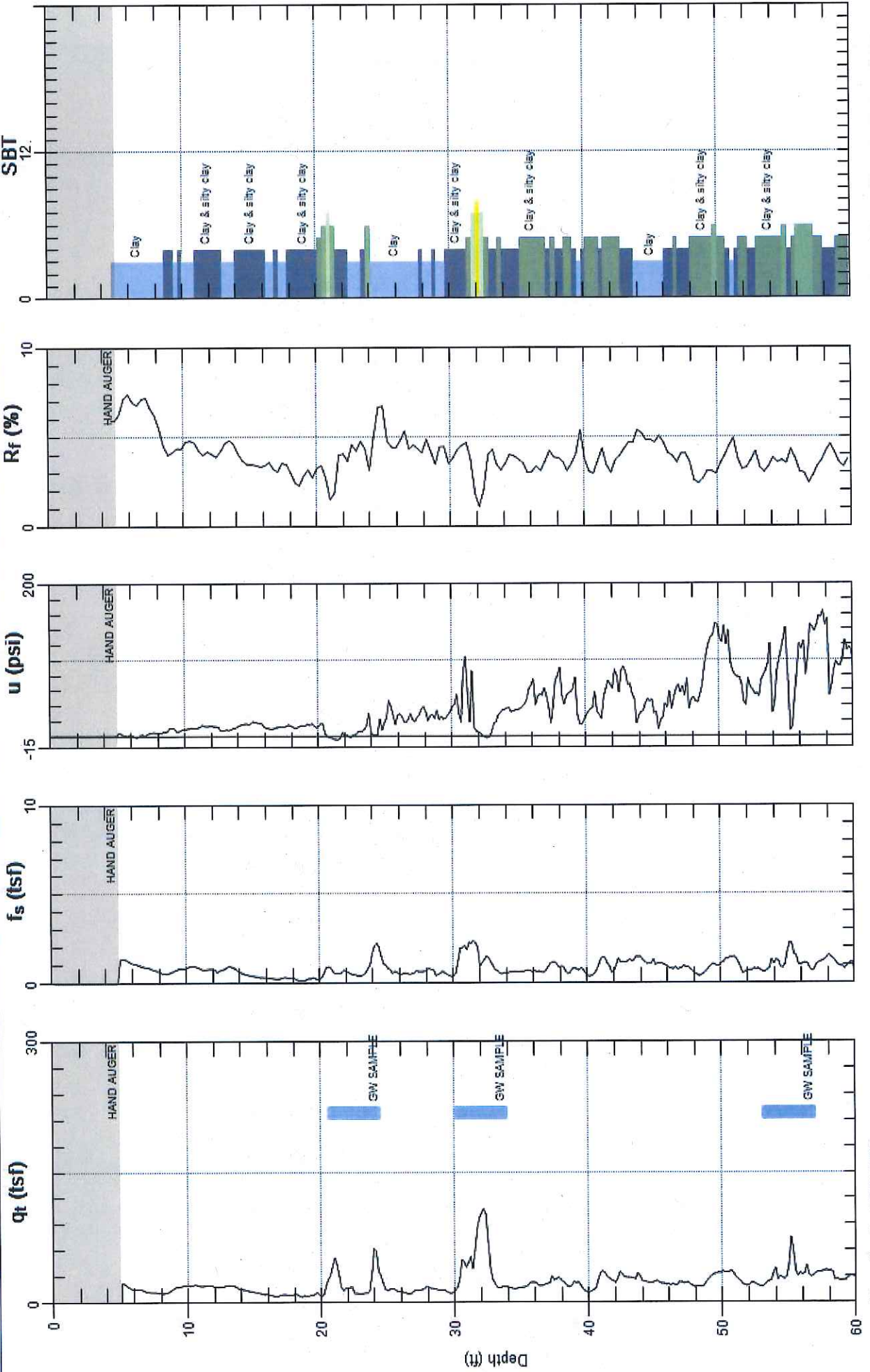
Max. Depth: 60.203 (ft)  
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



Site: 4895 HACIENDA  
Sounding: CPT-04

Engineer: S.LEWIS  
Date: 3/16/2012 07:17



Max. Depth: 60.039 (ft)  
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

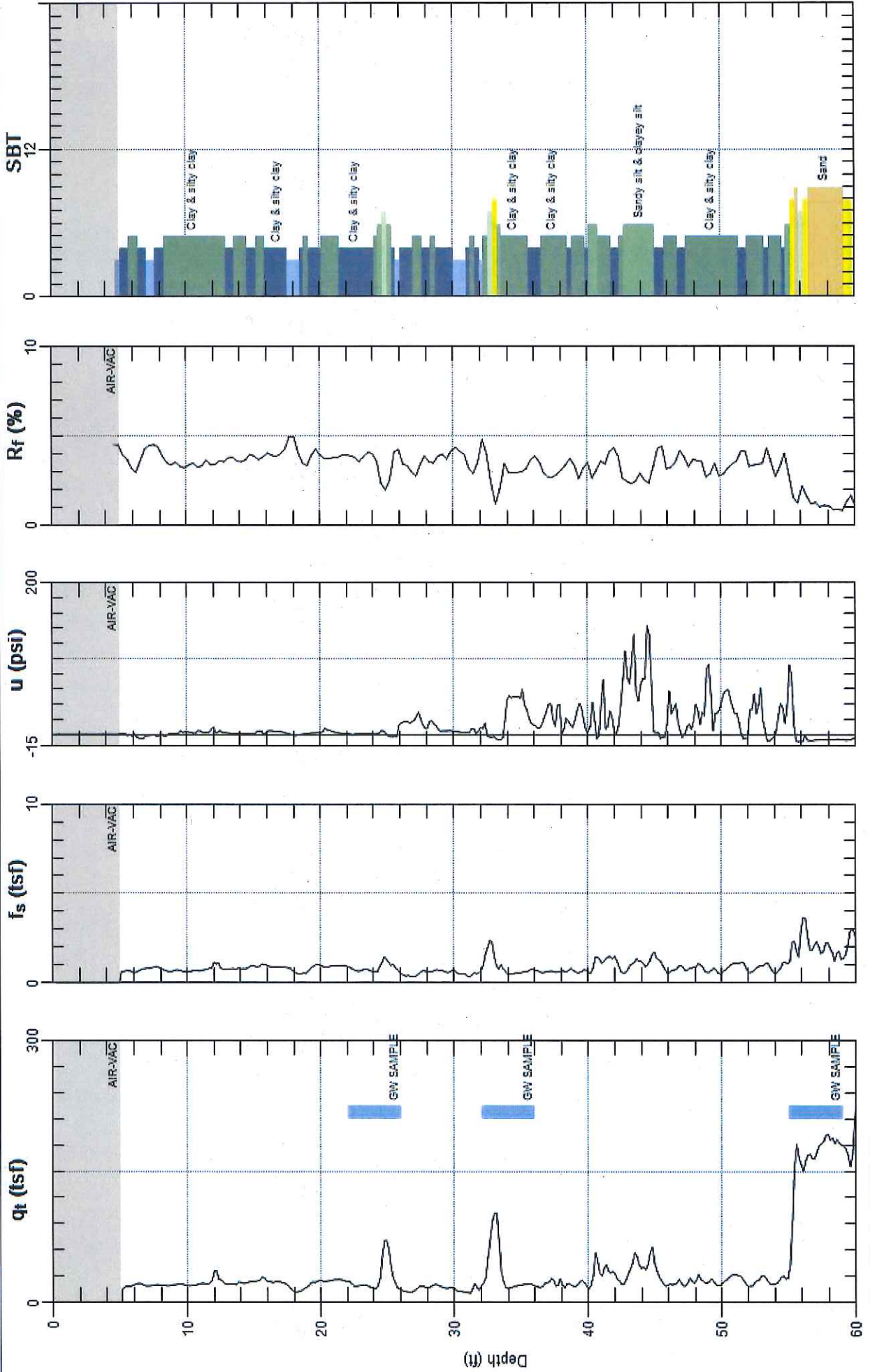


Site: 4895 HACIENDA DR.

Engineer: P. SCHAEFER

Sounding: CPT-5

Date: 11/8/2012 02:55



Max. Depth: 60.203 (ft)  
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

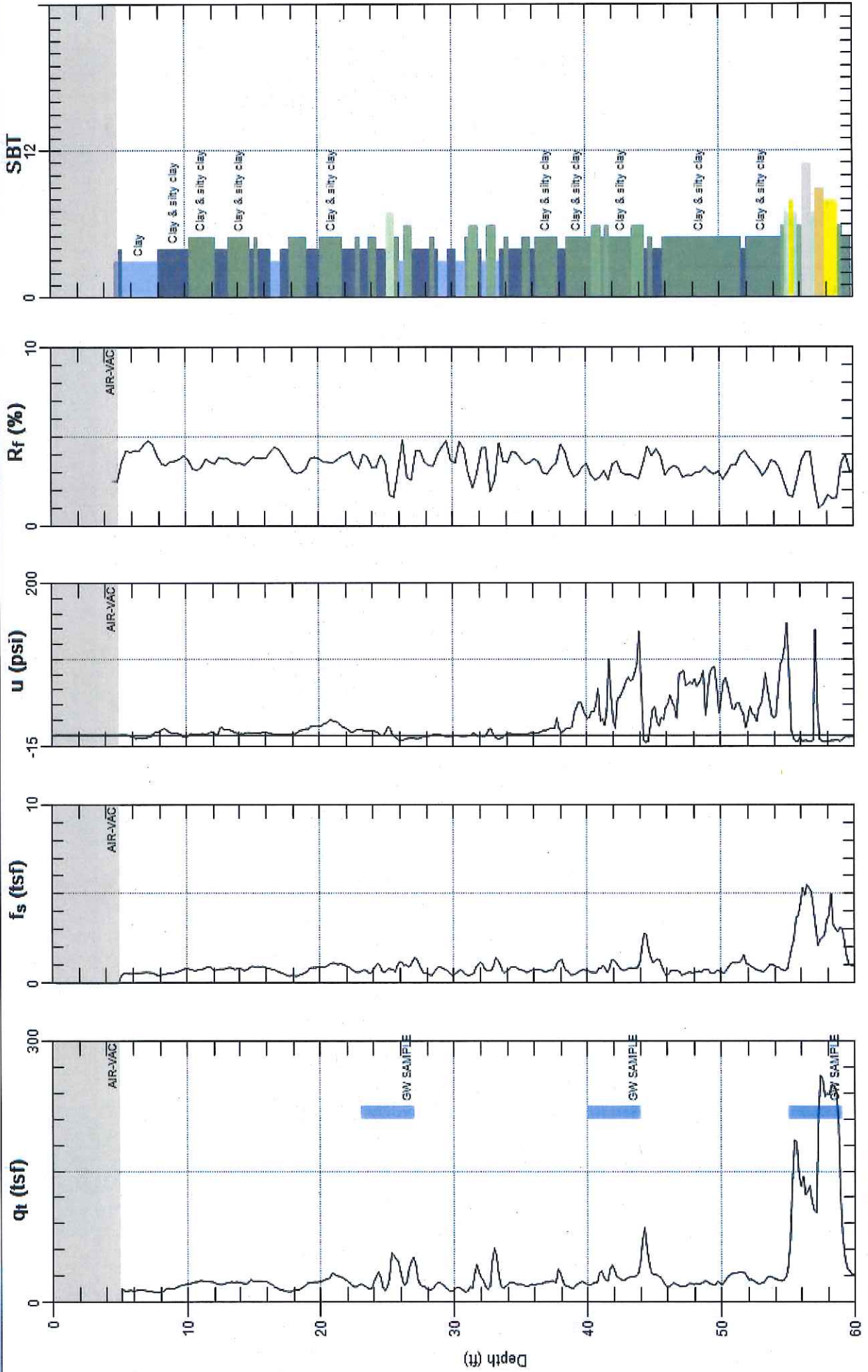


Site: 4895 HACIENDA DR.

Engineer: P.SCHAEFER

Sounding: CPT-6

Date: 11/8/2012 10:50



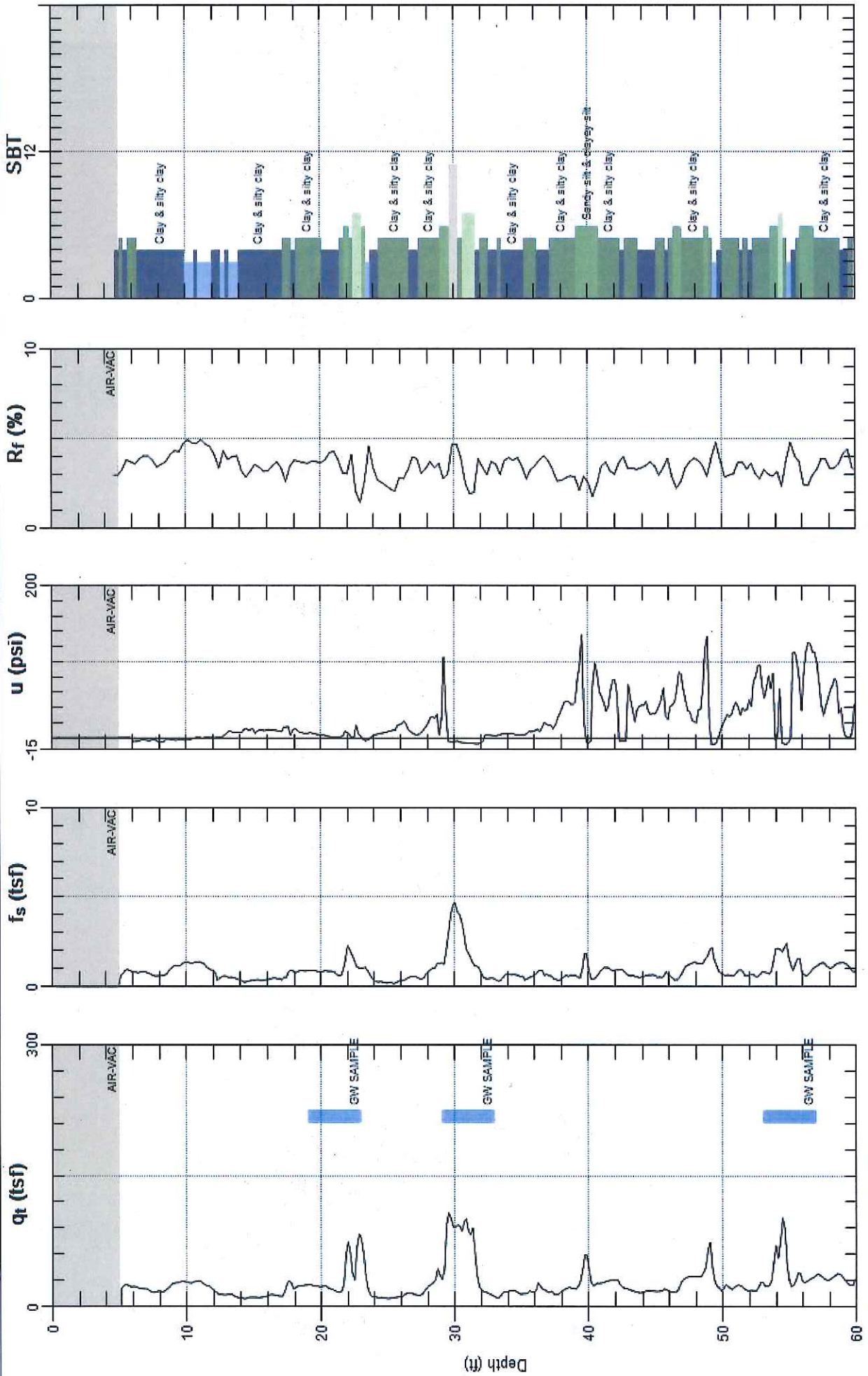
Max. Depth: 60.203 (ft)  
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



Site: 4895 HACIENDA DR.  
Sounding: CPT-7

Engineer: P. SCHAEFER  
Date: 11/9/2012 10:24



Max. Depth: 60.203 (ft)  
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



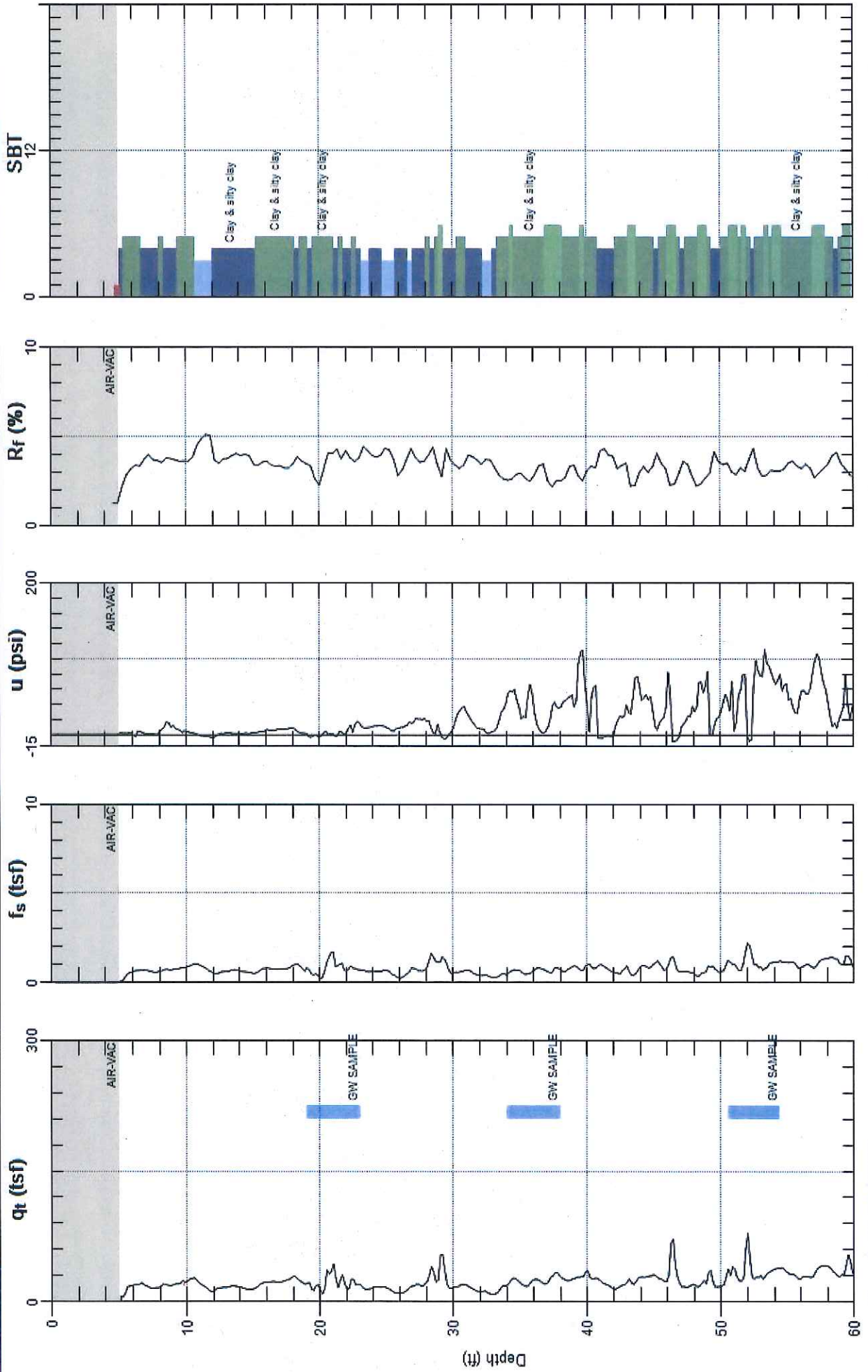


Site: 4895 HACIENDA DR.

Engineer: P. SCHAEFER

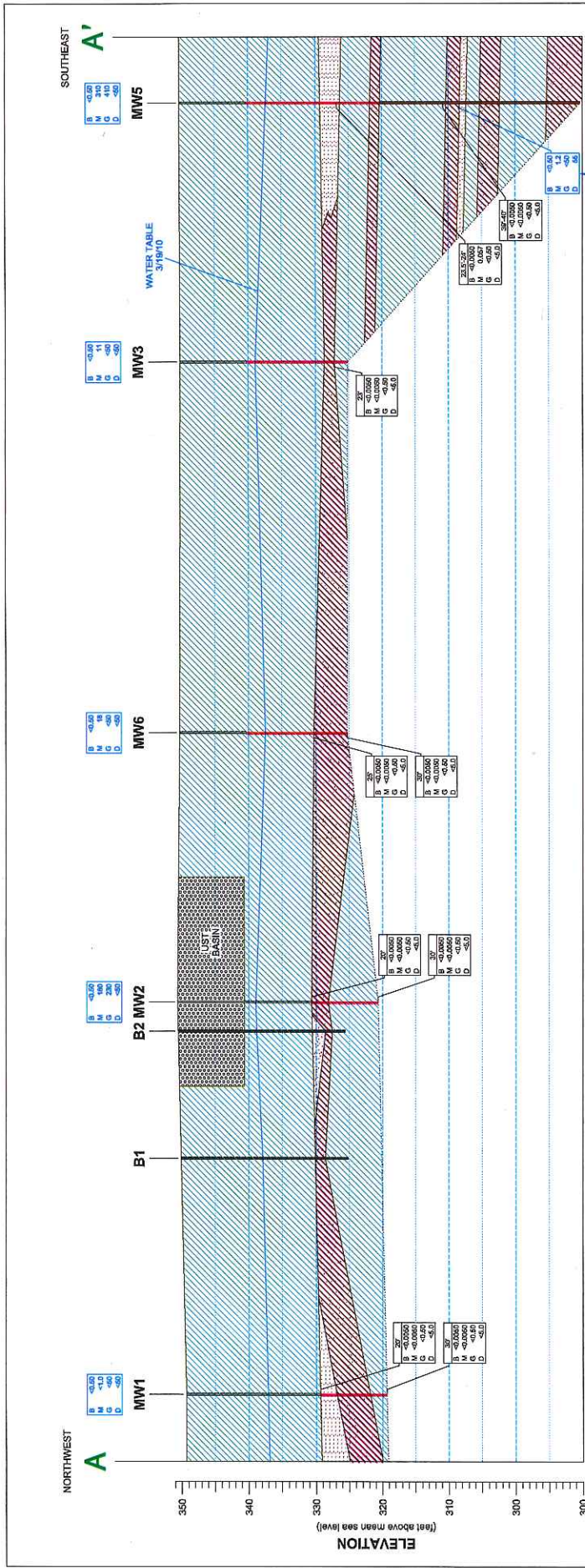
Sounding: CPT-8

Date: 11/8/2012 06:37



Max. Depth: 60.203 (ft)  
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



**Figure 3  
CROSS-SECTION A-A'**

**Shell Branded Service Station**  
4895 Hacienda Drive  
Dublin, California

Prepared by: SCA4895HD  
Filename: D1007xa

Drawn by: JMA  
Reviewed by: [blank]  
Date: 4/15/10

**DELTA**

# ATTACHMENT 6

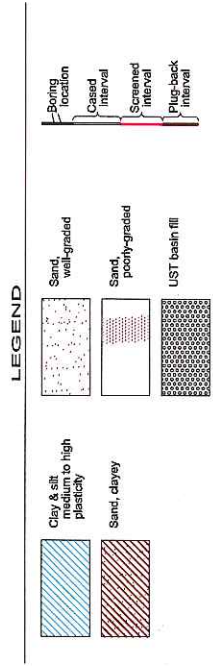
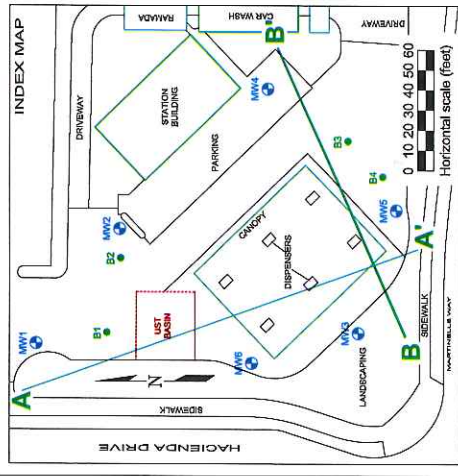
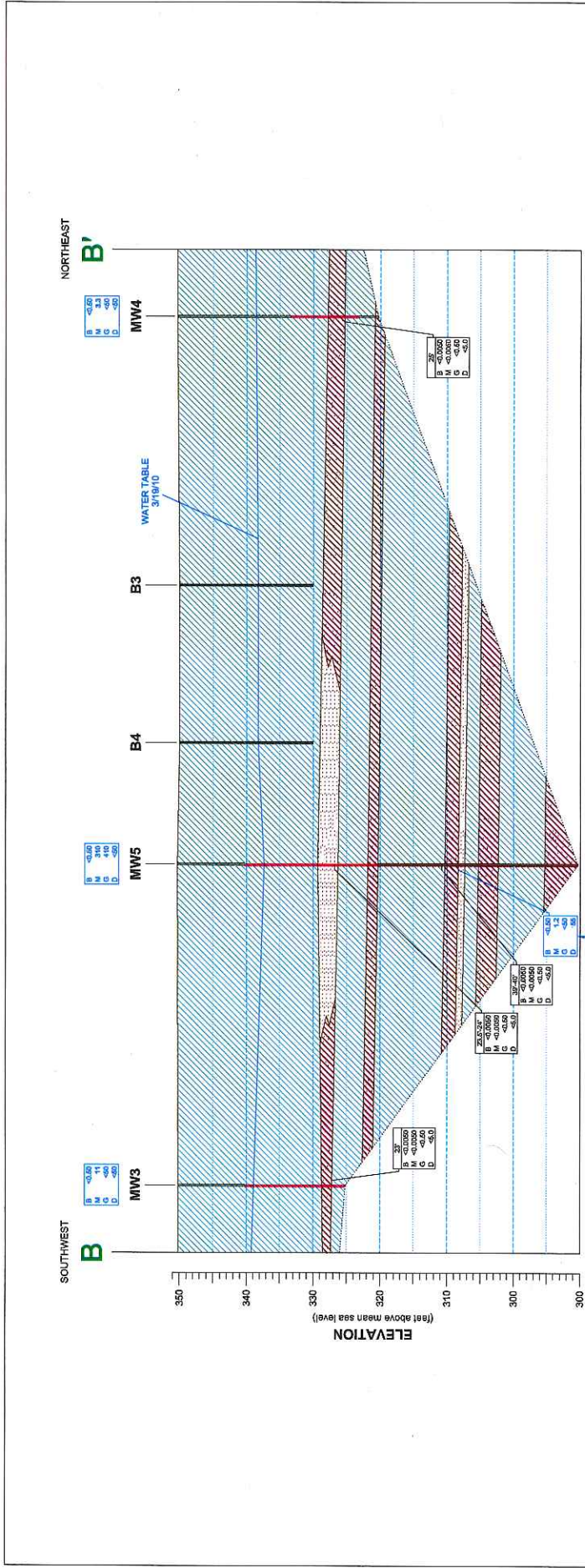


Figure 4  
CROSS-SECTION B-B'

Shell Branded Service Station  
4885 Hacienda Drive  
Dublin, California

Project No.	SCA4885H1D
Filename	D1007xb
Prepared by	JMA
Drawn by	JMA
Reviewed by	
Date	4/15/10

