ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

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

July 18, 2012

Masood Amini Filibadi and Shahrbano Amini
Springtown Gas
909 Bluebell Drive
Livermore, CA 94551-1419

Subject: Case Closure for Fuel Leak Case No. RO0002894 and GeoTracker Global ID T06019716197, Springtown Gas, 909 Bluebell Drive, Livermore, CA 94551

Dear Masood Amini Filibadi and Shahrbano Amini:

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:

- Methyl tert-butyl ether (MTBE) remains in groundwater at concentrations up to 14 ppb.
- Tert butyl alcohol (TBA) remains in groundwater at concentrations up to 290 ppb.
- As described in section IV of the attached Case Closure Summary, the case was closed with Site Management Requirements that limit future land use to the current commercial land use only.

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

Sincerely,

Donna L. Drogos, P.E.
Division Chief

Enclosures:
1. Remedial Action Completion Certification
2. Case Closure Summary

cc:

Colleen Winey (QIC 8021) w/enc
Zone 7 Water Agency
100 North Canyons Pkwy
Livermore, CA 94551
(Sent via E-mail to: cwiney@zone7water.com))

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

Danielle Stefani (w/enc)
Livermore-Pleasanton Fire Department
3560 Nevada Street,
Pleasanton, CA 94566
(*Sent via E-mail to: dstefani@lpfire.org*)

City of Livermore Planning Department (w/enc),
1052 South Livermore Avenue,
Livermore, CA 94550

Jenny Weese
Geological Technics, Inc.
1172 Kansas Avenue
Stockton, CA 95351
(*Sent via E-mail to: jennyw@gtienv.com*)

Donna Drogos, ACEH (*Sent via E-mail to: donna.drogos@acgov.org*)
Jerry Wickham, ACEH (*Sent via E-mail to: 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

REMEDIAL ACTION COMPLETION CERTIFICATION

July 18, 2012

Masood Amini Filibadi and Shahrbano Amini
Springtown Gas
909 Bluebell Drive
Livermore, CA 94551-1419

Subject: Case Closure for Fuel Leak Case No. RO0002894 and GeoTracker Global ID T06019716197, Springtown Gas, 909 Bluebell Drive, Livermore, CA 94551

Dear Masood Amini Filibadi and Shahrbano Amini:

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

Alameda County Environmental Health

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

I. AGENCY INFORMATION

Date: April 11, 2012

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: Springtown Gas		
Site Facility Address: 909 Bluebell Drive, Livermore, California 94551		
RB Case No.: ---	Local Case No.: ---	LOP Case No.: RO0002894
URF Filing Dates: 07/29/2005	GeoTracker ID: T06019716197	APN: 99-22-1

Responsible Parties	Addresses	Phone Numbers
Masood Amini Filibadi and Shahrbano Amini	909 Bluebell Drive Livermore, CA 94551-1419	---
---	---	---

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
Piping Release Only	---	---	--	---
Dispensers and Piping			Upgraded	06/2005

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Unknown. Soil and groundwater contamination detected during tank top upgrade.	
Site characterization complete? Yes	Date Approved By Oversight Agency: -----

Monitoring wells installed? Yes	Number: 8	Proper screened interval? Yes
Highest GW Depth Below Ground Surface: 4.95 feet	Lowest Depth: 10.00 feet	Flow Direction: Northwest
Most Sensitive Current Use: Drinking water source.		

Summary of Production Wells in Vicinity: The nearest water supply well is a domestic well located approximately 1,950 feet southeast of the site. A second water supply well is located approximately 1,400 feet southeast of the site. Based on the upgradient locations and distances from the site, these wells are not expected to be receptors for the site. No other water supply wells appear to be located within 2,000 feet of the site.	
Are drinking water wells affected? No	Aquifer Name: Mocho I Subbasin of Livermore Amador Groundwater Basin
Is surface water affected? No	Nearest SW Name: Arroyo Las Positas is approximately 1,850 feet southwest of the site
Off-Site Beneficial Use Impacts (Addresses/Locations): None	
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health and Livermore-Pleasanton Fire Department

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	---	Tank top upgrade only	---
Piping	40 pounds	Transported by Ecology Control Industries to their Richmond, CA facility for disposal	07/05/2005
Free Product	---	---	---
Soil	Approximately 10 cubic yards	Disposal contracted by Walton Engineering; disposal destination not reported	8/2005
Groundwater	---	---	---

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP
(Please see Attachments 2 – 4 for additional information on contaminant locations and concentrations)

Contaminant	Soil (ppm)		Groundwater (ppb)	
	Before	After	Before	After
TPH (Gas)	220	1.3	660 (1)	10 (1)
TPH (Diesel)	1.6	<50	100 (2)	<50 (2)
Oil & Grease	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed
Benzene	<0.5	<0.5	1.7	<0.5
Toluene	<0.5	<0.5	<100	<0.5
Ethylbenzene	<0.5	<0.5	11	<0.5
Xylenes	<0.5	<0.5	3.1	<0.5
Heavy Metals (Cd, Cr, Pb, Ni, Zn)	NA	NA	NA (3)	22 (4)
MTBE	4.2 (5)	0.66 (6)	2,600 (7)	14 (8)
Other (8240/8270)	<5	<5	49 (9)	49 (9)

(1) The maximum concentration before cleanup is from a grab groundwater sample from borehole SB-5, collected on February 2, 2007; the maximum concentration after cleanup is from a groundwater sample collected from well P1 during the most recent groundwater monitoring event on August 19, 2011.
(2) The maximum concentration before cleanup is from grab groundwater sample SG/PL1-1-2/GW collected during the tank top upgrade on June 25, 2005; the last groundwater samples analyzed for TPHd were collected on September 4, 2007, in which TPHd was not detected above the reporting limit in any sample.
(3) Groundwater sampling results for metals prior to cleanup have data quality issues.
(4) Chromium VI = 22 ppb; chromium III <1 ppb; lead <1 ppb; cadmium <1 ppb; nickel = 10 ppb; and zinc = 43 ppb.
(5) MTBE = 4.2 ppm; TBA = 120 ppm; EtBE <0.5 ppm, DIPE <0.1 ppm, TAME <0.5 ppm; ethanol <0.5 ppm; EDB <0.5 ppm; and EDC <0.5 ppm.
(6) MTBE = 0.66 ppm; TBA = 1.1 ppm; EtBE <0.005 ppm, DIPE <0.005 ppm, TAME <0.005 ppm; ethanol <0.5 ppm; EDB <0.005 ppm; and EDC <0.005 ppm.
(7) MTBE = 2,600 ppb; TBA = 56,000 ppb; EtBE <0.5 ppb; DIPE = 10 ppb; TAME <0.5 ppb; ethanol <200 ppb; EDB <0.5 ppb; and EDC <0.5 ppb.
(8) During the most recent groundwater monitoring event on August 19, 2011, MTBE = 14 ppb; TBA = 290 ppb; EtBE <0.5 ppb; DIPE <0.5 ppb; TAME <0.5 ppb; ethanol <5 ppb; EDB <0.5 ppb; and EDC <0.5 ppb.
(9) Tetrahydrofuran = 49 ppb; TCE = 0.88 ppb; and chloroform = 0.66 ppb

Site History and Description of Corrective Actions:

The site is an active service station located at the corner of Bluebell Drive and Springtown Road in Livermore, California. Surrounding land use is commercial. This case closure summary addresses releases of gasoline detected during station renovation and tank top upgrade activities in 2005. Previous releases from a former waste oil tank and former fuel tanks that were located in the western portion of the site were evaluated under ACEH case RO0001050. Following site investigation and cleanup, ACEH case RO0001050 was closed on August 30, 2000. This case closure summary does not re-evaluate the earlier releases considered under previous fuel leak case RO0001050.

Current Fuel Leak Case RO0002894

During the first half of 2005, the former minimart building was demolished and the existing minimart building was constructed. A tank top upgrade of the three USTs took place and the product delivery piping and fuel dispensers were replaced. Elevated concentrations of TPHg and TPHd were detected in soil and groundwater samples collected at product dispenser 1-2. Impacted soil below the dispenser was removed by excavation. Elevated concentrations of MTBE and TBA were detected in soil samples collected at approximately 0.5 feet bgs from product dispensers 1-2, 5-6, 7-8, and below the product piping in the area of the USTs.

Nine soil borings (SB-1 through SB-9) were advanced around the USTs and dispenser area in February 2007 TPHg, TPHd, and BTEX were not detected in soil samples but MTBE and TBA were detected in soil samples collected between 5 and 15 feet bgs. Concentrations of TPHg and MTBE up to 660 and 740 ppb, respectively, were detected in grab groundwater samples from the soil borings.

In June 2007, two cone penetrometer borings (CPT-1 and CPT-2) were advanced to characterize soil stratigraphy and collect grab groundwater samples to evaluate the vertical extent of groundwater impacts. MTBE was detected in two shallow grab groundwater samples at a maximum concentration of 89 ppb and was not detected at concentrations above reporting limits in the deeper grab groundwater samples.

In August 2007, seven direct push soil borings (GP-1 through GP-7) were advanced. Three of the borings were converted to 2-inch diameter monitoring wells (STMW-1 through STMW-3). The monitoring wells were sampled in September 2007, December 2007, and September 2008. MTBE was detected at a maximum concentration of 850 ppb.

In May 2008, four direct-push soil borings were advanced on a commercial property on the north side of Bluebell Drive (GP-7 through GP-10). One boring (GP-6) was also advanced on a commercial property east of the site. On June 6, 2008, a soil vapor extraction pilot test was performed using two vapor extraction wells (VE-1 and VE-2) and the existing monitoring wells as vacuum monitoring wells. The results of the soil vapor extraction pilot test were inconclusive.

An injection well (P1) was installed on September 19, 2008 for a hydrogen peroxide injection pilot test. A hydrogen peroxide pilot test was conducted between September 29 and November 8, .2008. The hydrogen peroxide pilot test included hydrogen peroxide injection at STMW-1, STMW-3, and P1. Interim hydrogen peroxide injections consisting of 16 events were conducted between March 30, 2010 and July 21, 2010. An additional series of 12 interim hydrogen peroxide injection events took place between December 14, 2010 and March 10, 2011. Groundwater monitoring conducted after the interim hydrogen peroxide injection events indicated that dissolved oxygen levels remained elevated five months after the events. The concentrations of fuel hydrocarbons and oxygenates interim remediation was near historic lows following the interim remediation. Following approximately five months of rebound monitoring, only two wells showed a minor rebound in concentrations.

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, it does not appear that the release would present a risk to human health based upon current land use and conditions.		
Site Management Requirements: Case closure for this fuel leak site is granted for the current commercial land use only. If a change in land use to any residential or other conservative land use scenario occurs at this site, Alameda County Environmental Health (ACEH) must be notified as required by Government Code Section 65850.2.2. ACEH will re-evaluate the case upon receipt of approved development/construction plans. Excavation or construction activities in areas of residual contamination require planning and implementation of appropriate health and safety procedures by the responsible party prior to and during excavation and construction activities.		
Should corrective action be reviewed if land use changes? Yes		
Was a deed restriction or deed notification filed? No		Date Recorded: ---
Monitoring Wells Decommissioned: No	Number Decommissioned: 0	Number Retained: 8
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: ---		

V. ADDITIONAL COMMENTS, DATA, ETC.

Considerations and/or Variances:

No soil vapor sampling was conducted for the site. Soil vapor sampling does not appear to be warranted based on the apparent limited extent of benzene, toluene, ethylbenzene, and xylenes in soil and groundwater. The release appears to have been primarily a vapor release of MTBE and TBA.

Conclusion:

Alameda County Environmental Health staff believe that the levels of residual contamination do not pose a significant threat to water resources, public health and safety, and the environment under the current commercial land use based upon the information available in our files to date. No further investigation or cleanup for the fuel leak case is necessary unless a change in land use to any residential or other conservative land use scenario occurs at the site. ACEH staff recommend closure for this site.

VI. LOCAL AGENCY REPRESENTATIVE DATA

Prepared by: Jerry Wickham	Title: Senior Hazardous Materials Specialist
Signature: Jerry Wickham	Date: 04/11/12
Approved by: Donna L. Drogos, P.E.	Title: Division Chief
Signature: Donna L. Drogos	Date: 04/11/12

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: 04/11/12	

VIII. MONITORING WELL DECOMMISSIONING

Date Requested by ACEH: 04/12/12	Date of Well Decommissioning Report: 07/12/12	
All Monitoring Wells Decommissioned: Yes	Number Decommissioned: 9	Number Retained: Ø
Reason Wells Retained: ---		
Additional requirements for submittal of groundwater data from retained wells: ---		
ACEH Concurrence - Signature: Jerry Wickham		Date: 07/18/12

Attachments:

1. Vicinity and Site Maps (3 pp)
2. Soil Concentration Maps (2 pp)
3. Groundwater Gradient and Concentration Maps (5 pp)
4. Soil Analytical Data (7 pp)
5. Groundwater Analytical Data (10 pp)
6. Boring Logs (41 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.

Wickham, Jerry, Env. Health

From: Cherie MCcaulou [CMccaulou@waterboards.ca.gov]
Sent: Thursday, April 12, 2012 9:17 AM
To: Wickham, Jerry, Env. Health
Subject: Re: Pending closure of 909 Bluebell Drive, Livermore, CA

Jerry - Thank you for the notification of case closure for the above referenced site. The Regional Water Board staff have no objection to the issuance of a case closure letter for this site.

>>> "Wickham, Jerry, Env. Health" <jerry.wickham@acgov.org> 4/11/2012 6:00 PM >>>
Hi Cherie,

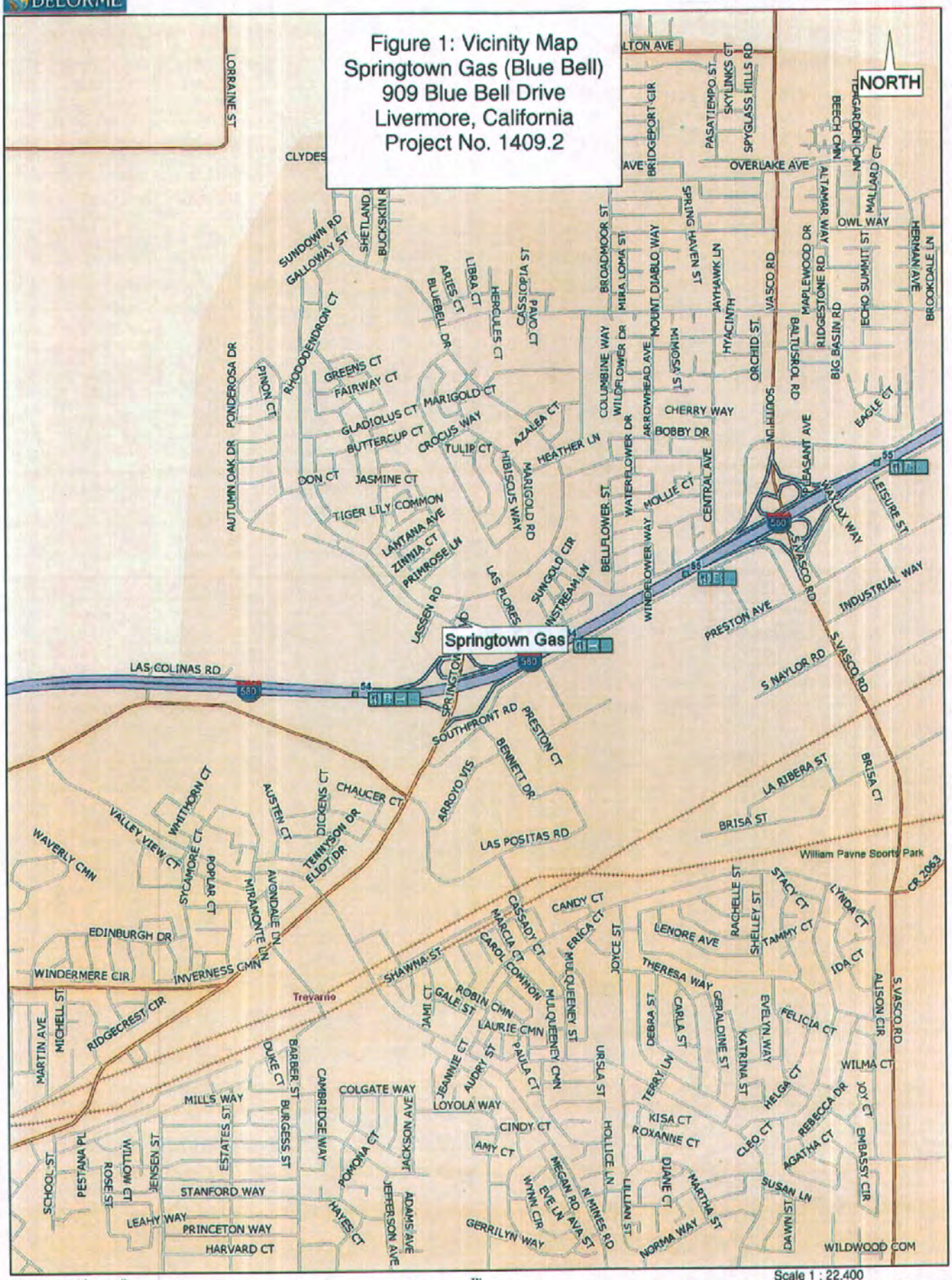
This email provides notification of pending closure for ACEH case RO2894, 909 Bluebell Drive, Livermore, CA.

Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577
phone: 510-567-6791
jerry.wickham@acgov.org


Bluebell Drive
Springtown Blvd.
Underground Storage Tanks
909 Bluebell Dr, Livermore, CA 94551
© 2011 Europa Technologies
© 2011 Google
©2010 Google
Imagery Date: 10/1/2009
37°42'18.43" N 121°44'24.94" W elev 521 ft
Eye alt 1276 ft

DeLorme Street Atlas USA® 2010

Figure 1: Vicinity Map
Springtown Gas (Blue Bell)
909 Blue Bell Drive
Livermore, California
Project No. 1409.2



Data use subject to license.

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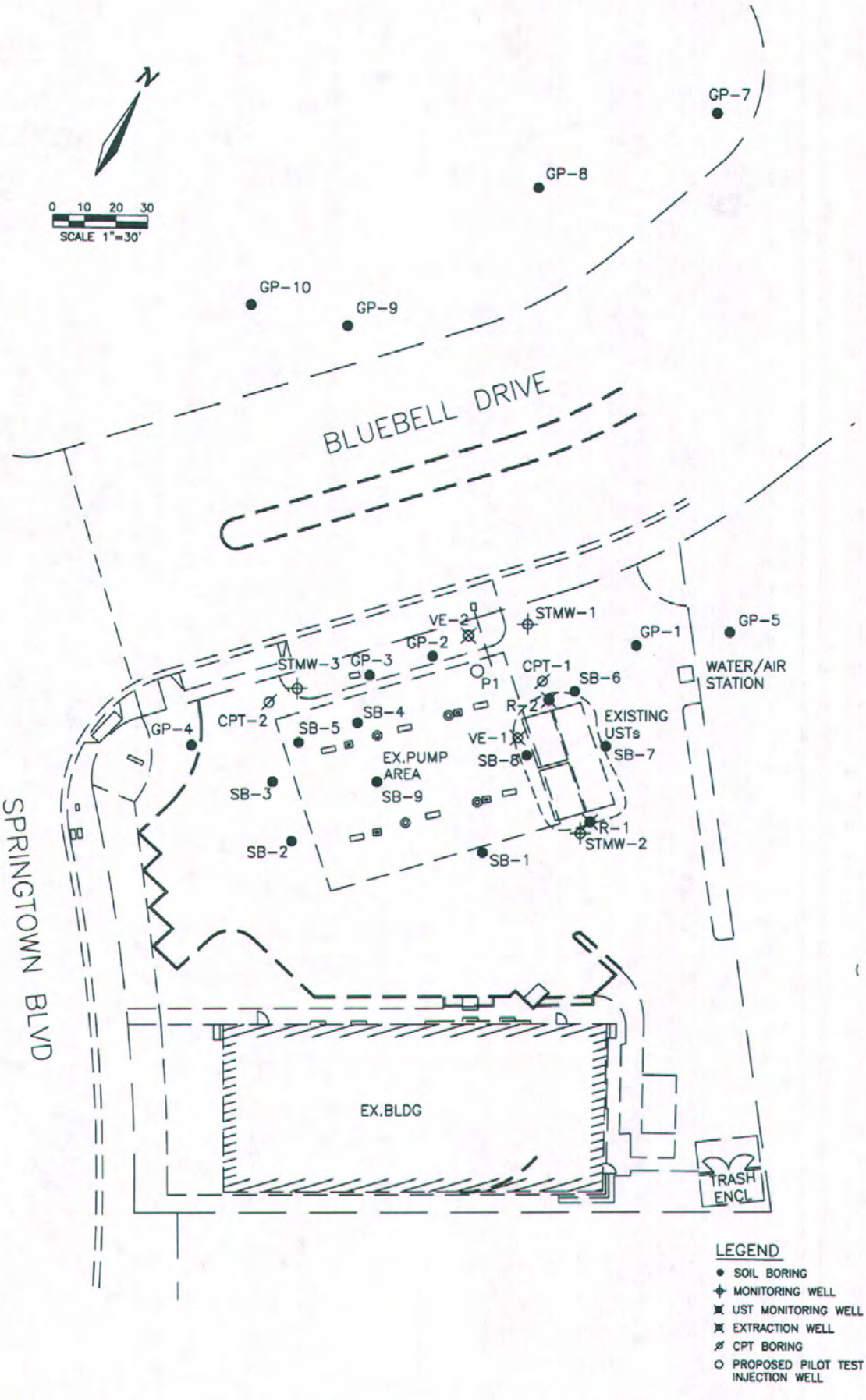
www.delorme.com

TN
MN (14.0°E)

Scale 1 : 22,400

1" = 1,866.7 ft Data Zoom 13-2

ATTACHMENT 1

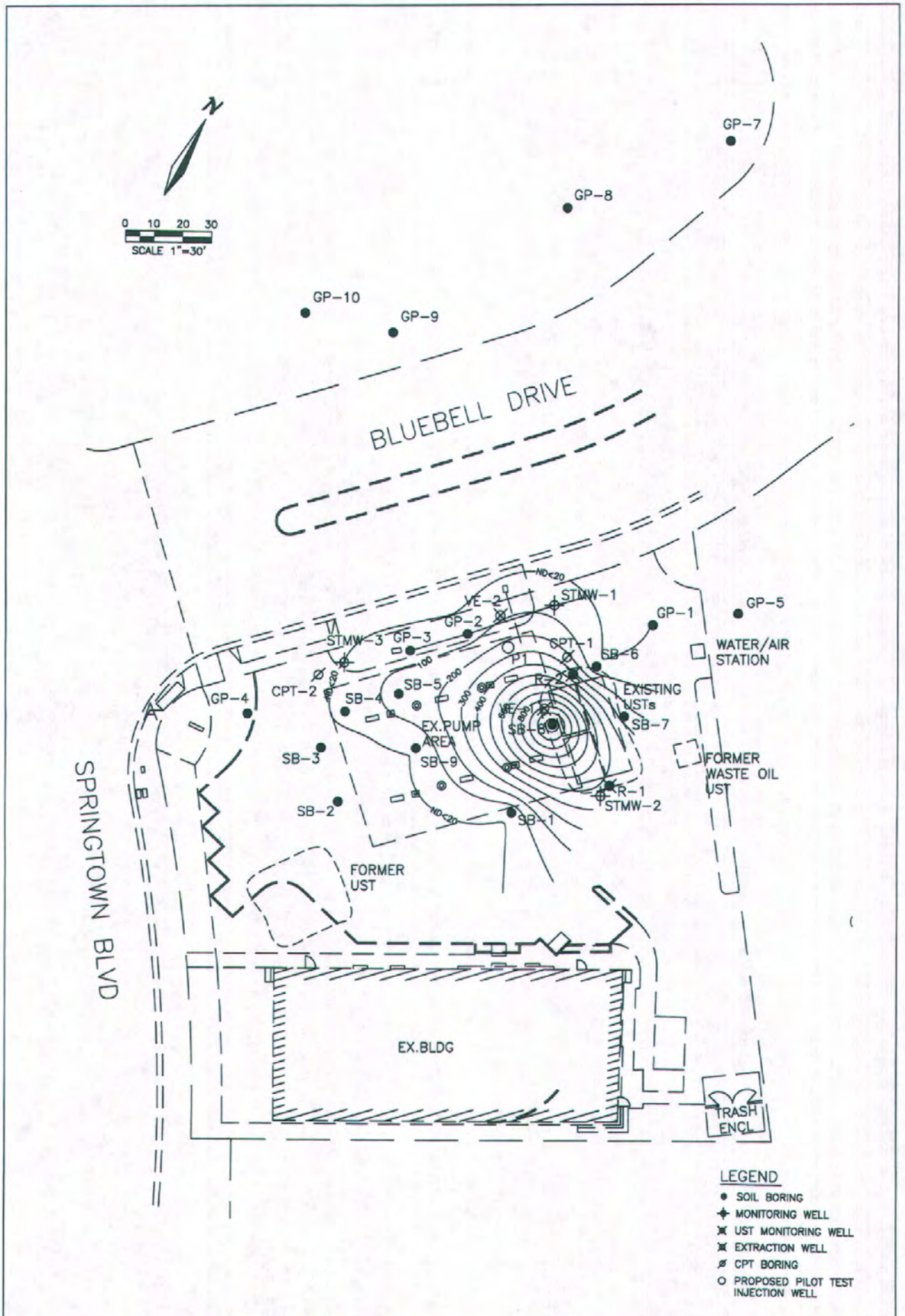


By:	TB
Job No:	1409.2 Date: 11/26/08
Scale:	1"=30'
File:	14092 site plan

Geological Technics, Inc.
1101 7th Street
Modesto, CA
95354
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 2: Site Map

SPRINGTOWN GAS (BLUEBELL)
909 BLUEBELL DRIVE
LIVERMORE, CA



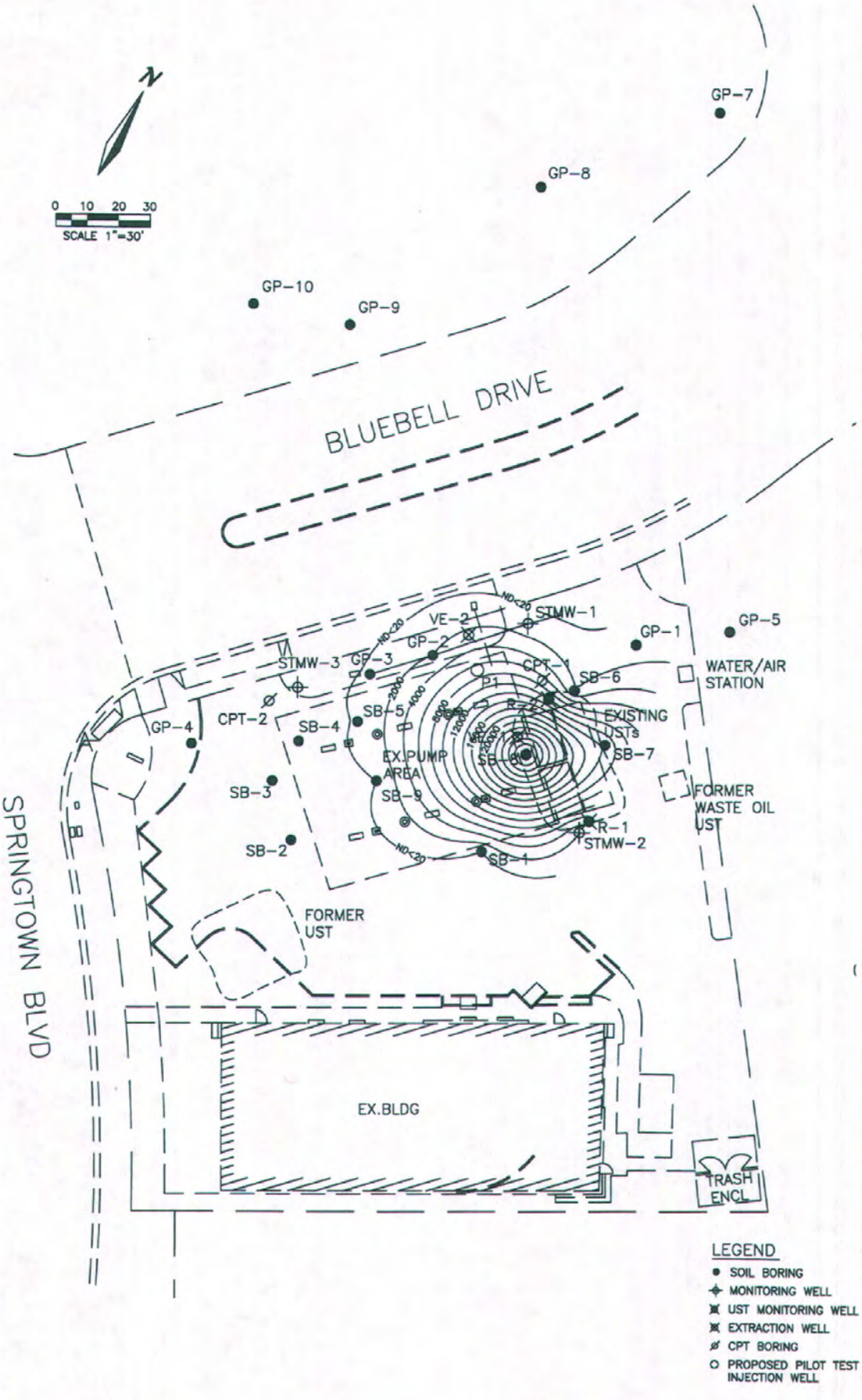
By:	TB
Job No: 1409.2	Date: 11/25/08
Scale:	1"=30'
File:	14092 site plan

Geological Technics, Inc.
1101 7th Street
Modesto, CA
95354
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 19: MTBE Plume in Soil

SPRINGTOWN GAS (BLUEBELL)
909 BLUEBELL DRIVE
LIVERMORE, CA

ATTACHMENT 2

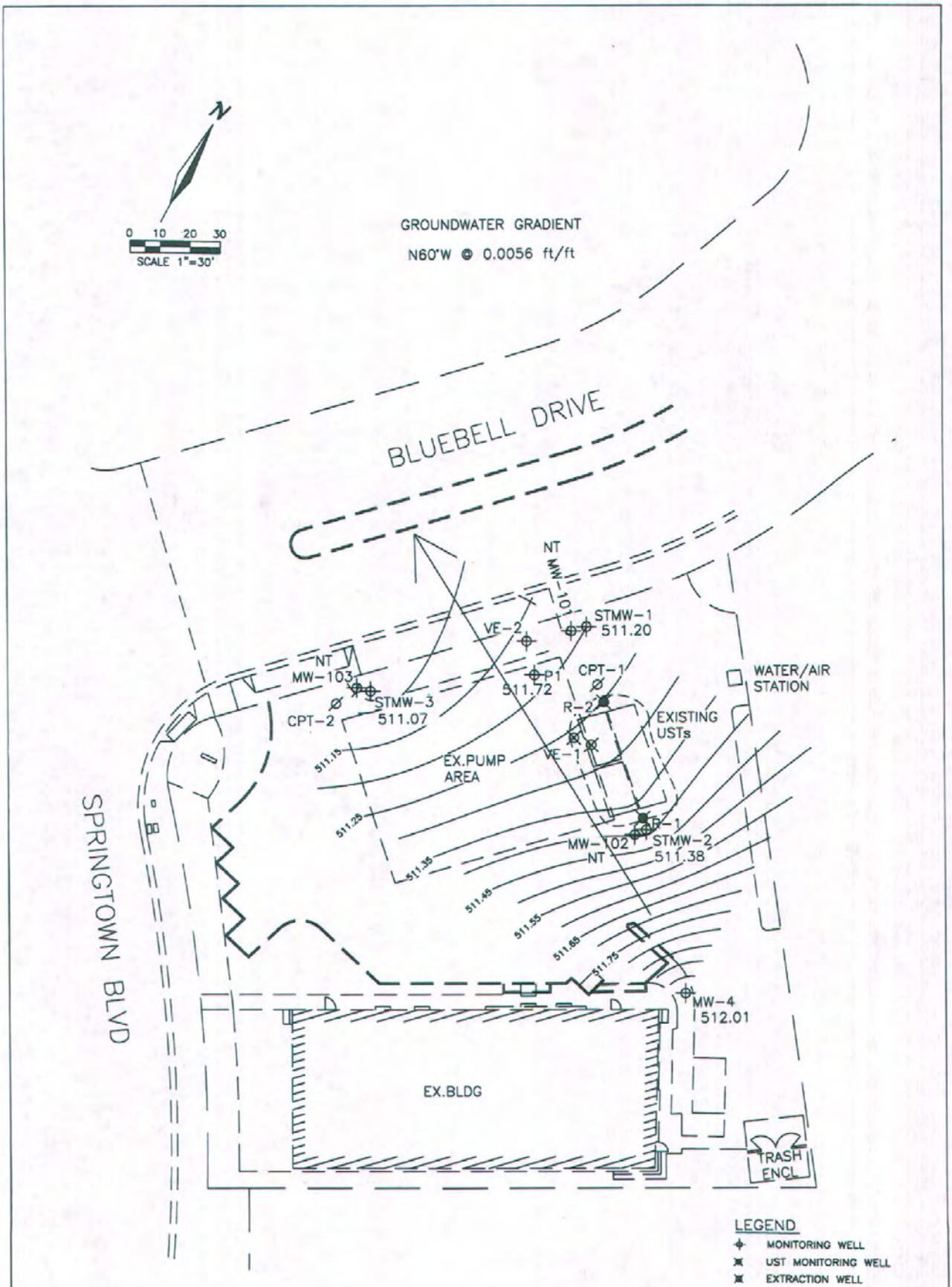


By:	TB
Job No:	1409.2 Date: 11/25/08
Scale:	1"=30'
File:	14092 site plan

Geological Technics, Inc.
1101 7th Street
Modesto, CA
95354
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 20: TBA Plume in Soil

SPRINGTOWN GAS (BLUEBELL)
909 BLUEBELL DRIVE
LIVERMORE, CA



Gradient determined using 3-point problem w/ MW-4, STMW-3 & STMW-1 along w/ computer generated contours

By:	AD
Job No:	1409.2 Date: 8/19/11
Scale:	1"=30'
File:	14092 GWG Contour

Geological Technics, Inc.
1172 Kansas Avenue
Modesto, CA
95351
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 3: Groundwater Gradient Map
(3rd Quarter 2011)

SPRINGTOWN GAS (BLUEBELL)
909 BLUEBELL DRIVE
LIVERMORE, CA

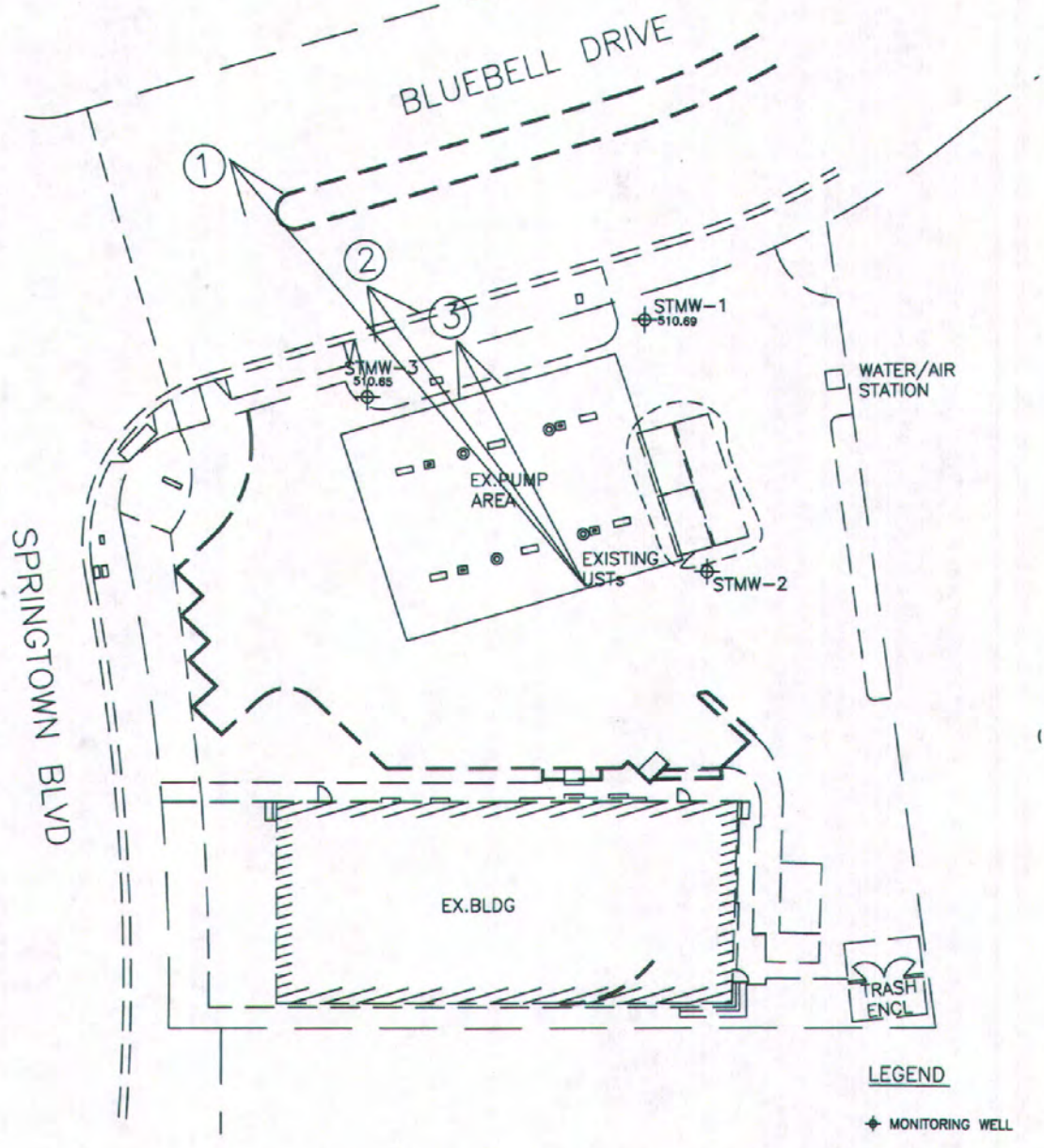
ATTACHMENT 3

	Date	Slope	Bearing
1.	09/04/07	0.006 ft/ft	N66°W
2.	12/10/07	0.004 ft/ft	N62°W
3.	09/25/08	0.003 ft/ft	N54°W

N

0 10 20 30
SCALE 1"=30'

Gradient Scale Feet/Feet
0.0000 0.002

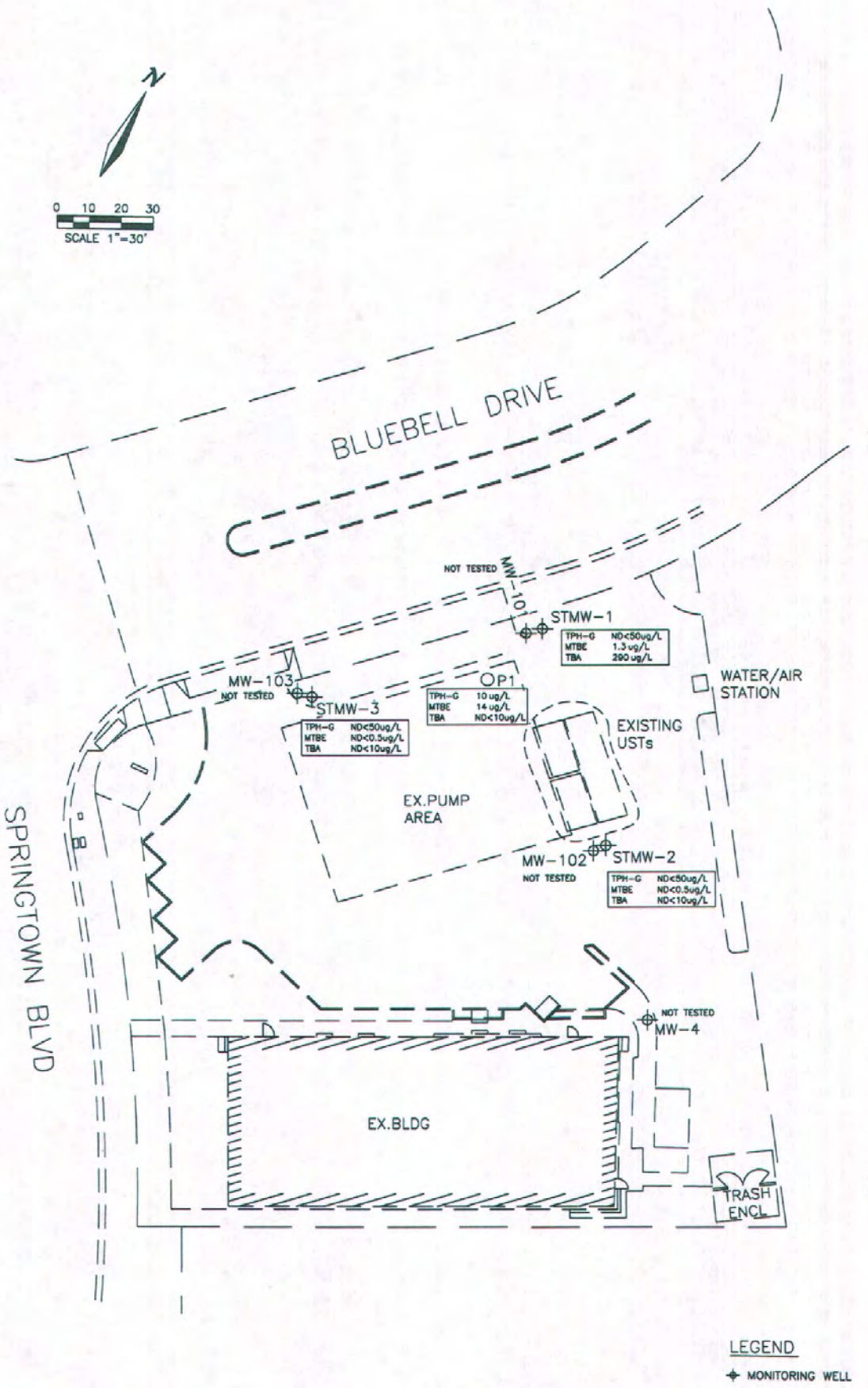


By:	RG
Job No:	1409.2 Date: 11/26/08
Scale:	1"=30'
File:	4Q08 Rose Springtown

Geological Technics, Inc.
1101 7th Street
Modesto, CA
95354
209.522.4119 (tel)
209.522.4227 (fax)

Figure 16 Groundwater Gradient Rose Diagram

SPRINGTOWN GAS (BLUEBELL)
909 BLUEBELL DRIVE
LIVERMORE, CA

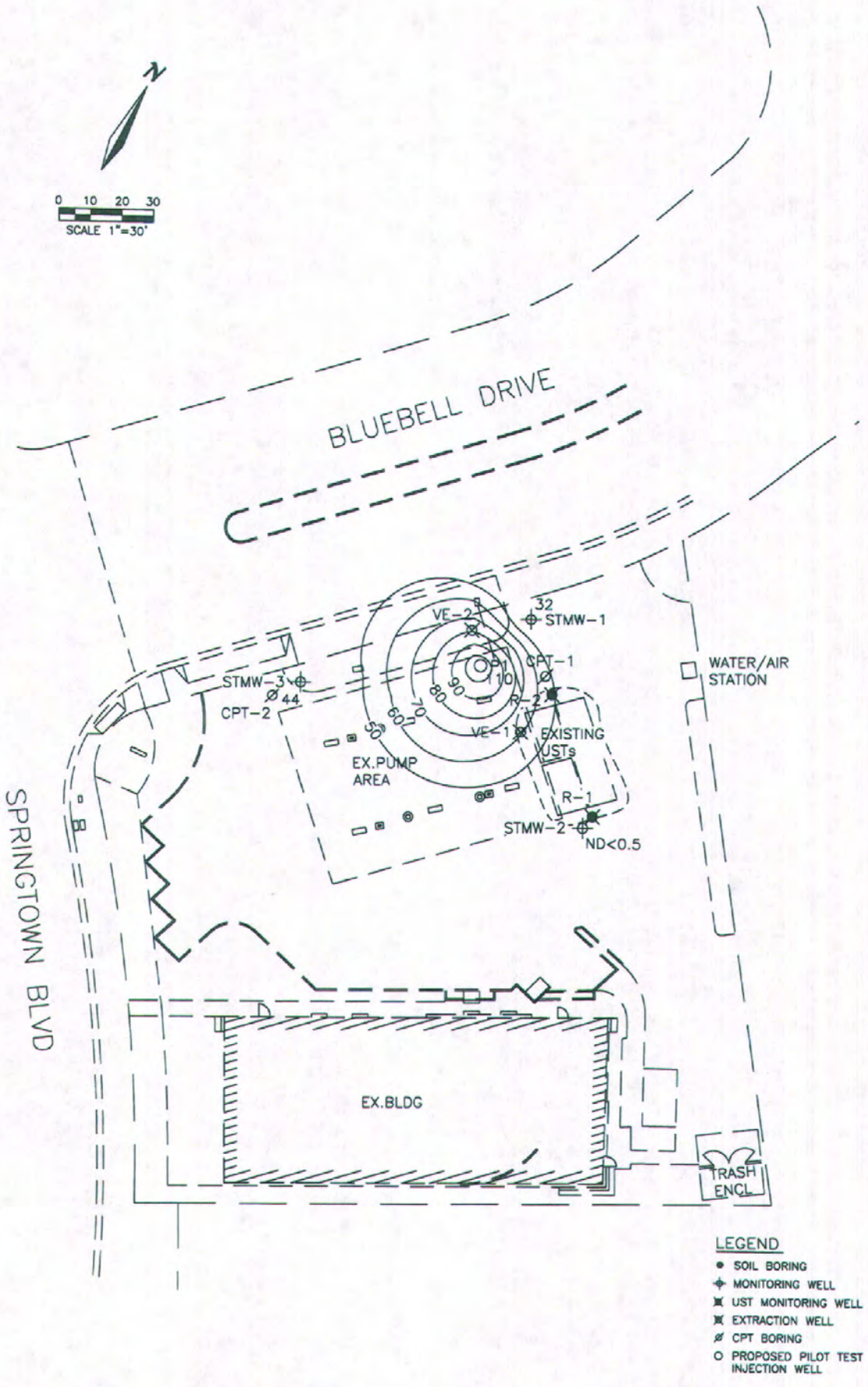


By:	AD
Job No:	1409.2 Date: 8/19/11
Scale:	1"=30'
File:	14092 GW Concentrations

Geological Technics, Inc.
1172 Kansas Avenue
Modesto, CA
95351
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 5: Groundwater Concentrations (3rd Quarter 2011)

SPRINGTOWN GAS (BLUEBELL)
909 BLUEBELL DRIVE
LIVERMORE, CA

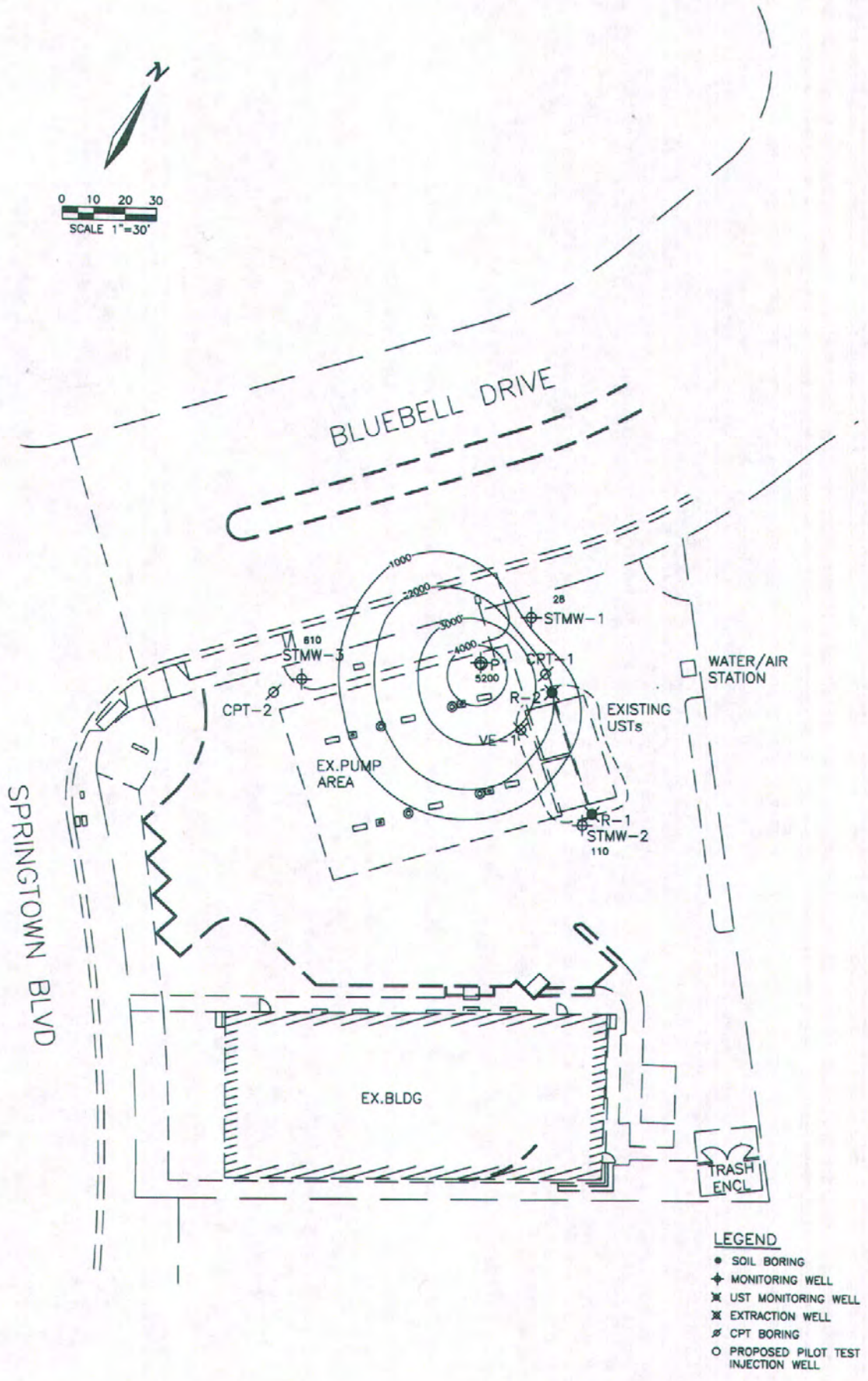


By:	MV
Job No:	1409.2 Date: 02/22/10
Scale:	1"=30'
File:	14092 site plan

Geological Technics, Inc.
1172 Kansas Avenue
Modesto, CA
95351
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 17: MTBE PLUME IN GROUNDWATER (1ST QTR 2010)

SPRINGTOWN GAS (BLUEBELL)
909 BLUEBELL DRIVE
LIVERMORE, CA



By:	MV
Job No:	1409.2 Date: 02/22/10
Scale:	1"=30'
File:	14092 site plan

Geological Technics, Inc.
1172 Kansas Avenue
Modesto, CA
95351
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 18: TBA Plume in Groundwater (1st Qtr 2010)

SPRINGTOWN GAS (BLUEBELL)
909 BLUEBELL DRIVE
LIVERMORE, CA

File No. 10-93-567-ST

TABLE 4
SUMMARY OF SOIL SAMPLES ANALYTICAL RESULTS OF FORMER DISPENSER & FUEL PIPELINE COLLECTED BY H_2OGEOL

Date	Sample Number	Depth feet	TPHg mg/Kg	TPHd mg/Kg	B µg/Kg	T µg/Kg	E µg/Kg	X µg/Kg	MTBE µg/Kg	EtBE µg/Kg	DIPE µg/Kg	TAME µg/Kg	TBA µg/Kg
6/29/05	1-2/0.5	0.5	ND<4900	110	ND<25	ND<25	ND<25	ND<25	390	ND<25	ND<49	ND<25	6500
	1-2/3	3	220000	1600	ND<500	ND<500	ND<500	ND<500	ND<500	ND<500	ND<1000	ND<500	ND<2500
	1-2/7	7	ND<1000	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<10
	3-4/0.5	0.5	ND<1000	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<10
	5-6/0.5	0.5	ND<1000	ND<1	ND<24	ND<24	ND<24	ND<24	490	ND<24	ND<48	ND<24	8400
	7-8/0.5	0.5	ND<1000	ND<1	ND<5	ND<5	ND<5	ND<5	38	ND<5	ND<10	ND<5	400
	PL1/1	1	ND<4900	ND<1	ND<25	ND<25	ND<25	ND<25	1100	ND<25	ND<49	ND<25	7600
	PL1/6	6	ND<1000	2.1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<10
	PL2/.05	0.5	ND<1000	ND<1	ND<5	ND<5	ND<5	ND<5	61	ND<5	ND<10	ND<5	1400
	PL3/0.5	0.5	ND<1000	ND<1	ND<5	ND<5	ND<5	ND<5	140	ND<5	ND<10	ND<5	1000
	PL4/2*	2	ND<1000	ND<1	ND<5	ND<5	ND<5	ND<5	8.9	ND<5	ND<10	ND<5	160
	PL5/.05	0.5	3400	1.7	ND<500	ND<500	ND<500	ND<500	4200	ND<500	ND<1000	ND<500	120000
	SCort-1-2/6	6	ND<1000	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<10
	NCort-1-2/6	6	4200	150	ND<5	ND<5	ND<5	ND<5	80	ND<5	ND<10	ND<5	46

TPHg – Total Petroleum Hydrocarbon as gasoline
MTBE – Methyl Tertiary Butyl Ether
DIPE – Di-isopropyl Ether
TBA – tert-Butanol
mg/Kg – Milligram per Kilogram
ND – Not Detected (Below Laboratory Detection Limit)
* Labeled as PL1/2

BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
EtBE – Ethyl tert-Butyl Ether
TAME – tert-Butyl Methyl Ether
TCE - Trichloroethene
µg/Kg – Microgram per Kilogram

ENVIRO SOIL TECH CONSULTANTS

ATTACHMENT 4

File No. 10-93-567-ST

TABLE 1
SUMMARY OF SOIL SAMPLES ANALYTICAL RESULTS

Date	Sample Number	Depth feet	TPHg mg/Kg	TPHd mg/Kg	B µg/Kg	T µg/Kg	E µg/Kg	X µg/Kg	MTBE µg/Kg	PCE µg/Kg	TBA µg/Kg	TCE µg/Kg	Other VOCs by 8260B µg/Kg
2/02/07	SB-7-5	5	ND<0.5	ND<2.5a	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<40	ND<5	None Detected<5
	SB-7-10	10	ND<0.5	ND<2.5a	ND<250	ND<250	ND<250	ND<500	ND<250	ND<250	27000	ND<250	None Detected<250
	SB-7-15	15	ND<0.5	ND<2.5a	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	560	ND<5	None Detected<5
	SB-1-5	5	ND<0.5	ND<2.5a	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<40	ND<5	None Detected<5
	SB-1-10	10	ND<0.5	ND<2.5a	ND<5	ND<5	ND<5	ND<10	14	ND<5	ND<40	ND<5	None Detected<5
	SB-1-15	15	ND<0.5	ND<2.5a	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<40	ND<5	None Detected<5
	SB-8-5	5	ND<0.5	ND<2.5a	ND<50	ND<50	ND<50	ND<100	200	ND<50	11000	ND<50	Acetone 1800
	SB-8-7	7	ND<0.5	ND<2.5	ND<1000	ND<1000	ND<1000	ND<2000	ND<1000	ND<1000	110000	ND<1000	None Detected<1000
	SB-8-10	10	ND<0.5	ND<2.5a	ND<25	ND<25	ND<25	ND<50	ND<25	ND<25	4200	ND<25	None Detected<25
	SB-8-15	15	ND<0.5	ND<2.5a	ND<12	ND<12	ND<12	ND<25	ND<12	ND<12	3000	ND<12	None Detected<12
	SB-9-5	5	ND<0.5	ND<2.5a	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<40	ND<5	None Detected<5
	SB-9-10	10	ND<0.5	ND<2.5a	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<40	ND<5	None Detected<5
	SB-9-15	15	ND<0.5	ND<2.5b	ND<5	ND<5	ND<5	ND<10	6.6	ND<5	ND<40	ND<5	None Detected<5
	SB-2-5	5	ND<0.5	ND<2.5a	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<40	ND<5	None Detected<5
	SB-2-10	10	ND<0.5	ND<2.5a	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<40	ND<5	None Detected<5
	SB-2-15	15	ND<0.5	ND<2.5a	ND<5	ND<5	ND<5	ND<10	5	ND<5	ND<40	ND<5	None Detected<5
	SB-3-5	5	ND<0.5	ND<2.5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<40	ND<5	None Detected<5
	SB-3-10	10	ND<0.5	ND<2.5a	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<40	ND<5	None Detected<5
	SB-3-15	15	ND<0.5	ND<2.5a	ND<5	ND<5	ND<5	ND<10	5.6	ND<5	ND<40	ND<5	None Detected<5
	SB-4-5	5	ND<0.5	ND<2.5c	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<40	ND<5	None Detected<5
	SB-4-10	10	ND<0.5	ND<2.5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<40	ND<5	None Detected<5
	SB-4-15	15	ND<0.5	ND<2.5	ND<5	ND<5	ND<5	ND<10	6.4	ND<5	ND<40	ND<5	None Detected<5
	SB-5-5	5	ND<0.5	ND<2.5	ND<5	ND<5	ND<5	ND<10	19	ND<5	100	ND<5	None Detected<5
	SB-5-10	10	ND<0.5	ND<2.5	ND<5	ND<5	ND<5	ND<10	150	ND<5	72	ND<5	n-Propylbenzene 7.9
	SB-5-15	15	ND<0.5	ND<2.5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	210	ND<5	None Detected<5
	SB-6-5	5	ND<0.5	ND<2.5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<40	ND<5	None Detected<5
	SB-6-10	10	ND<0.5	ND<2.5	ND<25	ND<25	ND<25	ND<50	ND<25	ND<25	4000	ND<25	None Detected<25
	SB-6-15	15	ND<0.5	ND<2.5	ND<5	ND<5	ND<5	ND<10	13	ND<5	160	ND<5	None Detected<5

File No. 10-93-567-ST

TABLE 1 CONT'D
SUMMARY OF SOIL SAMPLES ANALYTICAL RESULTS

TPHg – Total Petroleum Hydrocarbon as gasoline
MTBE – Methyl Tertiary Butyl Ether
TBA – tert-Butanol
VOCs – Volatile Organic Compounds
mg/Kg – Milligram per Kilogram
BTEX – Benzene, Toluene, Ethylbenzene, Total Xylenes
PCE – Tetrachloroethene
TCE - Trichloroethene
ND – Not Detected (Below Laboratory Detection Limit)
µg/Kg – Microgram per Kilogram
a – Hydrocarbon (C9-C28). No diesel pattern present
b – Discrete peaks of hydrocarbon compounds (C9-C28). No diesel pattern present
c – Hydrocarbon (C10-C28). No diesel pattern present

File No. 10-93-567-ST

TABLE 4
SUMMARY OF SOIL SAMPLES ANALYTICAL RESULTS
FROM BOREHOLES OF MONITORING WELLS

Date	Sample Number	Depth feet	TPHg mg/Kg	Methanol mg/Kg	B µg/Kg	T µg/Kg	E µg/Kg	X µg/Kg	MTBE µg/Kg	Ethanol µg/Kg	PCE µg/Kg	TBA µg/Kg	TCE µg/Kg	Other VOCs by 8260B µg/Kg
8/23/07	STMW-1-5	5	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5
	STMW-1-10	10	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	760	ND<5	None Detected<5
	STMW-1-15	15	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	66	ND<500	ND<5	900	ND<5	None Detected<5
	STMW-1-20	20	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	570	ND<5	None Detected<5
	STMW-2-5	5	ND<0.5	8.9	ND<25	ND<25	ND<25	ND<50	460	ND<2500	ND<25	3700	ND<25	Acetone 950
	STMW-2-10	10	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	270	ND<5	None Detected<5
	STMW-2-15	15	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5
	STMW-2-20	20	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5
8/28/07	STMW-3-5	5	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5
	STMW-3-10	10	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5
	STMW-3-15	15	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5
	STMW-3-20	20	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5

TPHg – Total Petroleum Hydrocarbon as gasoline
MTBE – Methyl Tertiary Butyl Ether
TBA – tert-Butanol
VOCs – Volatile Organic Compounds
mg/Kg – Milligram per Kilogram

BTEX – Benzene, Toluene, Ethylbenzene, Total Xylenes
PCE – Tetrachloroethene
TCE - Trichloroethene
ND – Not Detected (below laboratory detection limit)
µg/Kg – Microgram per Kilogram

File No. 10-93-567-ST

TABLE 3
SUMMARY OF SOIL SAMPLES ANALYTICAL RESULTS FROM GEOPROBE BOREHOLES

Date	Sample Number	Depth feet	TPHg mg/Kg	Methanol mg/Kg	B µg/Kg	T µg/Kg	E µg/Kg	X µg/Kg	MTBE µg/Kg	Ethanol µg/Kg	PCE µg/Kg	TBA µg/Kg	TCE µg/Kg	Other VOCs by 8260B µg/Kg
8/22/07	GP-1-5	5	ND<0.5	ND<5	ND<12	ND<12	ND<12	ND<25	ND<12	ND<1200	ND<12	1300	ND<12	Acetone 420
	GP-1-10	10	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5
	GP-1-15	15	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<10	ND<500	ND<5	ND<40	ND<5	None Detected<5
	GP-1-20	20	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<10	ND<500	ND<5	720	ND<5	Acetone 110 Carbon Disulfide 5.2
	GP-2-5	5	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<10	ND<500	ND<5	ND<40	ND<5	None Detected<5
	GP-2-10	10	ND<0.5	5.2	ND<25	ND<25	ND<25	ND<50	39	ND<2500	ND<25	3700	ND<25	None Detected<25
	GP-2-15	15	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5
	GP-2-20	20	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5
	GP-3-5	5	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5
	GP-3-10	10	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	12	ND<500	ND<5	ND<40	ND<5	None Detected<5
	GP-3-15	15	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	490	ND<5	None Detected<5
	GP-3-20	20	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	34	ND<500	ND<5	ND<40	ND<5	None Detected<5
	GP-4-5	5	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5
	GP-4-10	10	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5
	GP-4-15	15	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5
	GP-4-20	20	ND<0.5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<500	ND<5	ND<40	ND<5	None Detected<5

TPHg – Total Petroleum Hydrocarbon as gasoline
MTBE – Methyl Tertiary Butyl Ether
TBA – tert-Butanol
VOCs – Volatile Organic Compounds
mg/Kg – Milligram per Kilogram

BTEX – Benzene, Toluene, Ethylbenzene, Total Xylenes
PCE – Tetrachloroethene
TCE - Trichloroethene
ND – Not Detected (below laboratory detection limit)
µg/Kg – Microgram per Kilogram

File No. 10-93-567-ST
July 1, 2008

TABLE 1
SUMMARY OF SOIL SAMPLES
ANALYTICAL RESULTS FROM GP BOREHOLES

Date	Sample No.	Depth feet	TPHg mg/Kg	B µg/Kg	T µg/Kg	E µg/Kg	X µg/Kg	MTBE µg/Kg	DIPE µg/Kg	ETBE µg/Kg	TAME µg/Kg	TBA µg/Kg	EDB µg/Kg	1,2-DCA µg/Kg
5/09/08	GP-5-5	5	ND<0.46	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-5-10	10	ND<0.48	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-5-15	15	ND<0.48	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-7-5	5	ND<0.48	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-7-10	10	ND<0.46	ND<5	ND<5	ND<5	ND<10	6.5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-7-15	15	ND<0.5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-8-5	5	ND<0.48	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-8-10	10	ND<0.5	ND<25	ND<25	ND<25	ND<50	440	ND<25	ND<25	ND<25	2300	ND<25	ND<25
	GP-8-15	15	ND<0.49	ND<5	ND<5	ND<5	ND<10	44	ND<5	ND<5	ND<5	270	ND<5	ND<5
	GP-9-5	5	ND<0.48	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-9-10	10	ND<0.49	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-9-15	15	ND<0.45	ND<5	ND<5	ND<5	ND<10	14	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-10-5	5	ND<0.49	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-10-10	10	ND<0.45	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-10-15	15	ND<0.46	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
↓	GP-10-20	20	ND<0.49	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5

TPHg – Total Petroleum Hydrocarbon as gasoline
MTBE – Methyl Tertiary Butyl Ether
ETBE – Tertiary Butyl Ethyl Ether
TBA – Tertiary Butanol
1,2-DCA – 1,2-Dichloroethane
µg/Kg – Microgram per Kilogram
ND – Not Detected (below laboratory detection limit)

BTEX – Benzene, Toluene, Ethylbenzene, Total Xylenes
DIPE – Diisopropyl Ether
TAME – Tertiary Amyl Methyl Ether
EDB – 1,2-Dibromoethane

mg/Kg – Milligram per Kilogram

ENVIRO SOIL TECH CONSULTANTS

Table 2A
Summary of Geoprobe Soil Analytical Data

Springtown Gas
909 Bluebell Drive
Livermore, California

Boring	Depth	Date	TPHg	B	T	E	X	MtBE	TBA	DIPE	EtBE	TAME
	feet		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
GP-11	8' - 8.5'	2/24/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	11.5' - 12'	2/24/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	14' - 14.5'	2/24/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	23' - 23.5'	2/24/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	30.5' - 31'	2/24/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
GP-12	11.5' - 12'	2/23/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	19.5' - 20'	2/23/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	40	40	ND<5	ND<5	ND<5
	23.5' - 24'	2/23/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	60	110	ND<5	ND<5	ND<5
	27.5' - 28'	2/23/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	43.5' - 44'	2/23/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
GP-13	8' - 8.5'	2/24/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	10.5' - 11.5'	2/24/2010	1,600	ND<3	ND<3	ND<3	ND<3	ND<5	330	ND<5	ND<5	ND<5
	16' - 16.5'	2/24/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	6.3	ND<5	ND<5	ND<5	ND<5
	23.5' - 24'	2/24/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	27.5' - 28'	2/24/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
GP-14	7.5' - 8'	2/23/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	11.5' - 12'	2/23/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	15.5' - 16'	2/23/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	31.5' - 32'	2/23/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	34.5' - 35'	2/23/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
GP-15	9' - 9.5'	2/24/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	14.5' - 15'	2/24/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	80	590	ND<5	ND<5	ND<5
	20' - 20.5'	2/24/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	660	1,100	ND<5	ND<5	ND<5
	24' - 24.5'	2/24/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	30	60	ND<5	ND<5	ND<5
GP-16	10' - 10.5'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	15.5' - 16'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	23.5' - 24'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	29' - 29.5'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	32' - 32.5'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
MW-4	5' - 5.5'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	9.5' - 10'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	15.5' - 16'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	18' - 18.5'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
MW-101	9.5' - 10'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	15.5' - 16'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	6	ND<5	ND<5	ND<5	ND<5
	20' - 20.5'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	80	820	ND<5	ND<5	ND<5
	25.5' - 26'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
MW-102	5' - 5.5'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	120	10	ND<5	ND<5	ND<5
	11.5' - 12'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	20	ND<5	ND<5	ND<5
	15.5' - 16'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	50	ND<5	ND<5	ND<5
	22' - 22.5'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	10	ND<5	ND<5	ND<5
	25' - 25.5'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	29.5' - 30'	2/25/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	10	ND<5	ND<5	ND<5
MW-103	11' - 11.5'	2/26/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	15.5' - 16'	2/26/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	20' - 20.5'	2/26/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	ND<5	ND<5	ND<5	ND<5	ND<5
	30' - 30.5'	2/26/2010	ND<1000	ND<3	ND<3	ND<3	ND<3	20	ND<5	ND<5	ND<5	ND<5

Notes:

TPHg	Total petroleum hydrocarbons as gasoline
TPHd	Total petroleum hydrocarbons
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
MtBE	Methyl tertiary butyl ether
TBA	Tert-butyl alcohol
DIPE	Di-isopropyl ether
EtBE	Ethyl-tertiary butyl ether
TAME	Tert-amyl-methyl ether
1,2-DCA	1,2-Dichloroethane
EDB	1,2-Dibromoethane
bgs	below ground surface
ug/l	micrograms per liter
-	Not analyzed or not reported

Table 2
Summary of Groundwater Analytical Data

Springtown Gas
909 Bluebell Drive
Livermore, California

MONITORING WELL	Date	TPHg	B	T	E	X	MtBE	TBA	DIPE	EtBE	TAME	1,2-DCA	EDB	Methanol	Ethanol
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
STMW-1	9/4/2007	220	<10	<10	<10	<10	850	6,500	-	-	-	-	-	-	-
	12/10/2007	210	<5	<5	<5	<5	540	4,200	-	-	-	-	-	-	-
	9/25/2008	230	<0.5	<0.5	<0.5	<1.0	204	704	<0.5	<0.5	0.6	<0.5	<0.5	<5	<20
	11/20/2008	<50	<0.5	<0.5	<0.5	<1.0	14	930	<0.5	<0.5	<0.5	-	-	-	-
	12/29/2008	<50	<0.5	<0.5	<0.5	<1.0	15	1,000	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	3/10/2009	<50	<0.5	<0.5	<0.5	<1.0	29	3,000	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	6/10/2009	<50	<0.5	<0.5	<0.5	<1.0	60	3,800	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	9/8/2009	<50	<0.5	<0.5	<0.5	<1.0	52	190	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	2/10/2010	<50	<0.5	<0.5	<0.5	<1.0	32	28	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	6/25/2010	Not sampled													
	8/24/2010	<50	<0.5	<0.5	<0.5	<1.0	5.9	87	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	11/30/2010	Not sampled													
	2/17/2011	<50	<0.5	<0.5	<0.5	<1.0	4.2	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	8/19/2011	<50	<0.5	<0.5	<0.5	<1.0	1.3	290	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
STMW-2	9/4/2007	<50	<0.5	<0.5	<0.5	<0.5	<1	42	-	-	-	-	-	-	-
	12/10/2007	<50	<0.5	<0.5	<0.5	<0.5	<1	83	-	-	-	-	-	-	-
	9/25/2008	<50	<0.5	<0.5	<0.5	<1	<0.5	71	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<20
	11/20/2008	90	1.7	6.9	1.7	7.6	2.2	190	<0.5	<0.5	<0.5	-	-	-	-
	12/29/2008	<50	<0.5	<0.5	<0.5	<1.0	<0.5	56	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	3/10/2009	<50	<0.5	<0.5	<0.5	<1.0	1.5	96	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	6/10/2009	<50	<0.5	<0.5	<0.5	<1.0	1.1	43	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	9/8/2009	<50	<0.5	<0.5	<0.5	<1.0	<0.5	45	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	2/10/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	110	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	6/25/2010	Not sampled													
	8/24/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	33	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	11/30/2010	Not sampled													
	2/17/2011	<50	<0.5	<0.5	<0.5	<1.0	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	8/19/2011	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
STMW-3	9/4/2007	59	<1	<1	<1	<1	160	120	-	-	-	-	-	-	-
	12/10/2007	<50	<0.5	<0.5	<0.5	<0.5	17	86	-	-	-	-	-	-	-
	9/25/2008	<50	<0.5	<0.5	<0.5	<0.5	67	31.7	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<20
	11/20/2008	<50	<0.5	<0.5	<0.5	<1.0	12	<5	<0.5	<0.5	<0.5	-	-	-	-
	12/29/2008	<50	<0.5	<0.5	<0.5	<1.0	2.2	<5.	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	3/10/2009	<50	<0.5	<0.5	<0.5	<1.0	3	95	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	6/10/2009	<50	<0.5	<0.5	<0.5	<1.0	8.3	45	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	9/8/2009	<50	<0.5	<0.5	<0.5	<1.0	11	29	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	2/10/2010	<50	<0.5	<0.5	<0.5	<1.0	44	610	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	6/25/2010	Not sampled													
	8/24/2010	<50	<0.5	<0.5	<0.5	<1.0	ND<0.5	ND<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	11/30/2010	Not sampled													
	2/17/2011	<50	<0.5	<0.5	<0.5	<1.0	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	8/19/2011	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
P1	11/20/2008	<50	<5	<5	<5	<10	180	2,300	<5	<5	<5	-	-	-	-
	12/29/2008	<50	<0.5	<0.5	<0.5	<1.0	120	3,900	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	3/10/2009	<50	<0.5	<0.5	<0.5	<1.0	240	9,300	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	6/10/2009	<50	<0.5	<0.5	<0.5	<1.0	250	6,300	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	9/8/2009	<250	<2.5	<2.5	<2.5	<5	180	2,900	<2.5	<2.5	<2.5	<2.5	<2.5	<250	<25
	2/10/2010	<250	<2.5	<2.5	<2.5	<5	110	5,200	<2.5	<2.5	<2.5	<2.5	<2.5	<250	<25
	6/25/2010	Not sampled													
	8/24/2010	<50	<0.5	<0.5	<0.5	<1.0	5.4	120	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	11/30/2010	Not sampled													
	2/17/2011	<50	<0.5	<0.5	<0.5	<1.0	1.9	ND<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	8/19/2011	10	<0.5	<0.5	<0.5	<1.0	14	ND<10	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
MW-4	6/25/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	8/24/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	11/30/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	2/17/2011	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	8/19/2011	Not sampled													
MW-101	6/25/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	8/24/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	11/30/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	2/17/2011	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	8/19/2011	Not sampled													
MW-102	6/25/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	8/24/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	11/30/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	2/17/2011	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	8/19/2011	Not sampled													
MW-103	6/25/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	8/24/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	11/30/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	2/17/2011	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	8/19/2011	Not Sampled													

Notes:

TPHg	Total petroleum hydrocarbons as gasoline
TPHd	Total petroleum hydrocarbon
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
MtBE	Methyl tertiary butyl ether
TBA	Tert-butyl alcohol
DIPE	Di-isopropyl ether
EtBE	Ethyl-tertiary butyl ether
TAME	Tert-amyl-methyl ether
1,2-DCA	1,2-Dichloroethane
EDB	1,2-Dibromoethane
bgs	below ground surface
ug/l	micrograms per liter
-	Not analyzed or not reported

ATTACHMENT 5

File No. 10-93-567-ST

TABLE 2
SUMMARY OF WATER SAMPLES FROM BOREHOLES
ANALYTICAL RESULTS
IN MICROGRAM PER LITER (µg/L)

Date	Sample No.	TPHg	TPHd	B	T	E	X	MTBE	PCE	TBA	TCE	Other VOCs by 8260B
2/02/07	SB-7	ND<50	ND<55	ND<10	ND<10	ND<10	ND<10	43	ND<10	7300	ND<10	None Detected<10
	SB-1	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.6	ND<0.5	80	ND<0.5	None Detected<0.5
	SB-8	ND<50	ND<84a	ND<100	ND<100	ND<100	ND<100	ND<200	ND<100	56000	ND<100	None Detected<100
	SB-2	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	37	ND<0.5	14	ND<0.5	None Detected<0.5
	SB-3	ND<50	ND<72a	ND<1	ND<1	ND<1	ND<1	79	ND<1	ND<20	ND<1	None Detected<1
	SB -4	ND<50	ND<62a	ND<0.5	ND<0.5	ND<0.5	ND<0.5	100	ND<0.5	ND<10	ND<0.5	None Detected<0.5
	SB-5	660	ND<72b	ND<1	ND<1	11	3.1	180	ND<1	180	ND<1	Isopropylbenzene 3.5 n-Propylbenzene 12
	SB-6	220	NA	ND<5	ND<5	ND<5	ND<5	740	ND<5	1600	ND<5	None Detected<5
	SB-9	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5	21	ND<0.5	ND<10	ND<0.5	None Detected<0.5

TPHg – Total Petroleum Hydrocarbon as gasoline
MTBE – Methyl Tertiary Butyl Ether
TBA – tert-Butanol
VOCs – Volatile Organic Compounds
NA – Not Analyzed
BTEX – Benzene, Toluene, Ethylbenzene, Total Xylenes
PCE – Tetrachloroethene
TCE – Trichloroethene
ND – Not Detected (Below Laboratory Detection Limit)
a – The reporting limits are increased due to a high level of sediment
b – Hydrocarbon (C9-C18). No diesel pattern present. The reporting limits are increased due to high level of sediment

File No. 10-93-567-ST

TABLE 5
SUMMARY OF WATER SAMPLES ANALYTICAL RESULTS FROM GEOPROBE BOREHOLES

Date	Sample Number	TPHg µg/L	Methanol mg/L	B µg/L	T µg/L	E µg/L	X µg/L	MTBE µg/L	Ethanol µg/	PCE µg/L	TBA µg/L	TCE µg/L	Other VOCs by 8260B µg/L
8/22/07	GP-1-20W	ND<50	ND<1	ND<1	ND<1	ND<1	ND<1	61	ND<400	ND<1	110	ND<1	None Detected<1
	GP-2-20W	ND<50	1.7	ND<1	ND<1	ND<1	ND<1	81	ND<400	ND<1	540	ND<1	None Detected<1
	GP-3-20W	220a	ND<1	ND<2.5	ND<2.5	ND<2.5	ND<2.5	370	ND<1000	ND<2.5	230	ND<2.5	None Detected<2.5
	GP-4-20W	ND<50	ND<1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<200	ND<0.5	ND<10	ND<0.5	None Detected<0.5

TPHg – Total Petroleum Hydrocarbon as gasoline
MTBE – Methyl Tertiary Butyl Ether
TBA – tert-Butanol
VOCs – Volatile Organic Compounds
mg/L – Milligram per Liter
a – Not a gasoline pattern (value due to MTBE in sample)

BTEX – Benzene, Toluene, Ethylbenzene, Total Xylenes
PCE – Tetrachloroethene
TCE - Trichloroethene
ND – Not Detected (below laboratory detection limit)
µg/L – Microgram per Liter

File No. 10-93-567-ST
July 1, 2008

TABLE 2
SUMMARY OF WATER SAMPLES
ANALYTICAL RESULTS FROM GP BOREHOLES
IN MICROGRAMS PER LITER (µg/L)

Date	Sample No.	TPHg	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA	EDB	1,2-DCA
5/09/08	GP-5-W	560a	ND<10	ND<10	ND<10	ND<20	ND<20	ND<100	ND<100	ND<100	ND<200	ND<10	ND<10
	GP-7-W	ND<50	ND<0.5	1.7	ND<0.5	ND<1	40	ND<5	ND<5	ND<5	ND<10	ND<0.5	ND<0.5
	GP-8-W	530a	ND<5	ND<5	ND<5	ND<10	970	ND<50	ND<50	ND<50	4100	ND<5	ND<5
	GP-9-W	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	8.7	ND<5	ND<5	ND<5	ND<10	ND<0.5	ND<0.5
↓	GP-10-W	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<1	ND<5	ND<5	ND<5	ND<10	ND<0.5	ND<0.5

TPHg – Total Petroleum Hydrocarbon as gasoline
MTBE – Methyl Tertiary Butyl Ether
ETBE – Tertiary Butyl Ethyl Ether
TBA – Tertiary Butanol
1,2-DCA – 1,2-Dichloroethane
ND – Not Detected (below laboratory detection limit)
a – A typical pattern

BTEX – Benzene, Toluene, Ethylbenzene, Total Xylenes
DIPE – Diisopropyl Ether
TAME – Tertiary Amyl Methyl Ether
EDB – 1,2-Dibromoethane

File No. 10-93-567-ST

TABLE 1
SUMMARY OF GROUNDWATER SAMPLES
ANALYTICAL RESULTS FROM CPT BOREHOLES

Date	Sample No.	Depth feet	TPHg µg/L	B µg/L	T µg/L	E µg/L	X µg/L	MTBE µg/L	Methanol mg/L	Ethanol µg/L	EPA 8260B µg/L
6/13/07	CPT1-34-38	34-38	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.4	ND<1	ND<200	Chloroform 1.2
	CPT1-64-68	64-68	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<1	ND<200	None Detected<0.5
	CPT2-18-22	18-22	ND<50	ND<1	ND<1	ND<1	ND<1	89	ND<1	ND<400	None Detected<1
	CPT2-31-35	31-35	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<1	ND<200	Chloroform 0.66 Tetrachloroethene 0.88
	CPT2-55-59	55-59	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<1	ND<200	None Detected<0.5

TPHg – Total Petroleum Hydrocarbon as gasoline
MTBE – Methyl Tertiary Butyl Ether
µg/L – Microgram per Liter
ND – Not Detected (below laboratory detection limit)

BTEX – Benzene, Toluene, Ethylbenzene, Total Xylenes
EPA 8260B – Other Fuel Hydrocarbon Oxygenates by 8260B
mg/L – Milligram per Liter

Table 2B
Summary of Geoprobe Water Analytical Data

Springtown Gas
909 Bluebell Drive
Livermore, California

Boring	Depth	Date	TPHg	B	T	E	X	MtBE	TBA	DIPE	EtBE	TAME
	feet		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
GP-11	35'	2/24/2010	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1	ND<0.50	ND<20	ND<0.50	ND<0.50	ND<0.50
GP-13	20'	2/24/2010	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1	2.3	ND<20	ND<0.50	ND<0.50	ND<0.50
	35'	2/24/2010	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1	2.3	ND<20	ND<0.50	ND<0.50	ND<0.50
GP-14	15'	2/23/2010	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1	20	ND<20	ND<0.50	ND<0.50	ND<0.50
	36'	2/23/2010	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1	4.6	ND<20	ND<0.50	ND<0.50	ND<0.50
GP-15	28'	2/24/2010	1,300	ND<10	ND<10	ND<10	ND<20	2,600	660	10	ND<10	ND<10
	35'	2/24/2010	620	ND<10	ND<10	ND<10	ND<20	1,200	650	ND<10	ND<10	ND<10
GP-16	30'	2/25/2010	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1	4.1	ND<20	ND<0.50	ND<0.50	ND<0.50
	40'	2/25/2010	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1	3	ND<20	ND<0.50	ND<0.50	ND<0.50
MW-101	30'	2/25/2010	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1	ND<0.50	ND<20	ND<0.50	ND<0.50	ND<0.50
MW-102	35'	2/25/2010	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1	5.3	ND<20	ND<0.50	ND<0.50	ND<0.50

Notes:

TPHg	Total petroleum hydrocarbons as gasoline
TPHd	Total petroleum hydrocarbons
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
MtBE	Methyl tertiary butyl ether
TBA	Tert-butyl alcohol
DIPE	Di-isopropyl ether
EtBE	Ethyl-tertiary butyl ether
TAME	Tert-amyl-methyl ether
1,2-DCA	1,2-Dichloroethane
EDB	1,2-Dibromoethane
bgs	below ground surface
ug/l	micrograms per liter
-	Not analyzed or not reported

File No. 10-93-567-ST

TABLE 1
GROUNDWATER MONITORING DATA (feet)
AND ANALYTICAL RESULTS

Date	Well No./ Elevation	Depth of Well	Depth to Perf.	Depth to Water	GW Elev.	Well Observation	TPHg µg/L	B µg/L	T µg/L	E µg/L	X µg/L	MTBE µg/L	Ethanol µg/L	Methanol mg/L	TBA µg/L	Other VOCs by EPA 8260B (µg/L)
9/04/07	STMW-1 (517.55)•	20	10-20	6.58]	510.97	Rainbow sheen No odor	220	ND <10	ND <10	ND <10	ND <10	850	ND <4000	ND <1	6500	None Detected<10
9/04/07	STMW-2 (519.59)•	20	10-20	8.30]	511.29	No sheen or odor	ND <50	ND <0.5	ND <0.5	ND <0.5	ND <0.5	ND <1	ND <200	ND <1	42	Tetrahydrofuran 49
9/04/07	STMW-3 (520.37)•	20	10-20	9.52]	510.85	No sheen or odor	59	ND <1	ND <1	ND <1	ND <1	160	ND <400	ND <1	120	None Detected<1

TPHg – Total Petroleum Hydrocarbons as gasoline
MTBE – Methyl Tertiary Butyl Ether
Perf. – Perforation
TBA – tert-Butanol
mg/L – Milligrams Per Liter
ND – Not Detected (below laboratory detection limit)
* Well screens are not submerged
• Mean Sea Level

BTEX – Benzene, Toluene, Ethylbenzene, Total Xylenes
GW Elev. – Groundwater Elevation
PCE – Tetrachloroethene
TCE – Trichloroethene
µg/L – Micrograms Per Liter

] Well screens are submerged

ENVIRO SOIL TECH CONSULTANTS

TABLE 1
SUMMARY OF SOIL AND PIT WATER ANALYTICAL RESULTS
SPRINGTOWN GAS
909 BLUEBELL DRIVE
LIVERMORE, CALIFORNIA
(Method 8260B soil analyte concentrations in micrograms per kilogram)
(Method 8015M soil analyte concentrations in milligrams per kilogram)

	TEPH-diesel range, mg/Kg	TPH-gasoline	Benzene	Toluene	Ethylbenzene	Total Xylene isomers	Methyl tert-butyl ether (MtBE)	tert-Butyl alcohol (TBA)	Di-isopropyl Ether (DIPE)	Ethyl tert-butyl ether (EtBE)	tert-Amyl methyl ether (TAME)
DISPENSER AREA SAMPLES.											
06/29/05 Dispenser area samples at specified depth below base of pea gravel. at locations specified by Livermore-Pleasanton Fire Department representative.											
SG/1-2/0.5 Ft.	110	< 4900	< 25	< 25	< 25	< 25	390	6500	< 49	< 25	< 25
SG/1-2/3 Ft.	1600	220000	< 500	< 500	< 500	< 500	< 500	< 2500	< 1000	< 500	< 500
SG/1-2/7 Ft.	< 1.0	< 1000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10	< 5.0	< 5.0
SG/3-4/0.5 Ft.	< 1.0	< 1000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10	< 5.0	< 5.0
SG/5-6/0.5 Ft.	< 1.0	< 1000	< 24	< 24	< 24	< 24	490	8400	< 48	< 24	< 24
SG/7-8/0.5 Ft.	< 1.0	< 1000	< 5.0	< 5.0	< 5.0	< 5.0	38	400	< 10	< 5.0	< 5.0
SG/PL1/1 Ft.	< 1.0	< 4900	< 25	< 25	< 25	< 25	1100	7600	< 49	< 25	< 25
SG/PL1/6 Ft.	2.1	< 1000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10	< 5.0	< 5.0
SG/PL2/0.5 Ft.	< 1.0	< 1000	< 5.0	< 5.0	< 5.0	< 5.0	61	1400	< 10	< 5.0	< 5.0
SG/PL3/0.5 Ft.	< 1.0	< 1000	< 5.0	< 5.0	< 5.0	< 5.0	140	1000	< 10	< 5.0	< 5.0
SG/PL4/2 Ft. Labeled as PL1/2Ft.	< 1.0	< 1000	< 5.0	< 5.0	< 5.0	< 5.0	8.9	160	< 10	< 5.0	< 5.0
SG/PL5/0.5 Ft.	1.7	3400	< 500	< 500	< 500	< 500	4200	120000	< 1000	< 500	< 500
SG/SCor1-2Plt/6Ft	< 1.0	< 1000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10	< 5.0	< 5.0
SG/NCor1-2Plt/6Ft	150	4200	< 5.0	< 5.0	< 5.0	< 5.0	80	46	< 10	< 5.0	< 5.0
(Method 8260B and 8015M groundwater analyte concentrations in micrograms per liter)											
SG/PL1-1-2/GW	100	89	< 0.50	< 0.50	< 0.50	< 1.0	62	20	< 1.0	< 0.50	0.74

"SOIL" STOCKPILE SAMPLES												Total lead mg/Kg
06/29/05 Three to one laboratory composited samples.												
Soil Pile Composite A	< 1.0	< 1000	< 5.0	< 5.0	< 5.0	< 5.0	43	1300	< 10	< 5.0	< 5.0	3.7
Soil Pile Composite B	4.0	< 1000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	150	< 10	< 5.0	< 5.0	1.5
Soil Pile Composite C	8.3	< 1000	< 5.0	< 5.0	< 5.0	< 5.0	7.6	160	< 10	< 5.0	< 5.0	6.7

Table 3
Summary of Groundwater Metal Data

Springtown Gas
909 Bluebell Drive
Livermore, California

MONITORING WELL	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium III	Chromium VI	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Units		µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Primary MCLs		6	0	2,000	4	5	100	-	-	1,300	0	2	-	-	50	-	50	-	-
Secondary MCLs		-	-	-	-	-	-	-	-	1,000	-	-	-	-	-	100	-	-	5,000
STMW-1	9/25/2008	ND<10	44.6	1360	7	40.8	691	-	116	358	61.9	18.9	ND<10	709	ND<20	ND<10	ND<20	535	726
	11/20/2008	ND<2	3.7	150	ND<1	ND<1	2.7	14	ND<5	ND<5	ND<1	ND<0.25	23	7.4	2.7	ND<1	ND<1	5.3	19
STMW-2	9/25/2008	ND<10	27.2	1860	6.3	32	561	-	103	257	58.9	5.18	ND<10	533	ND<20	ND<10	ND<20	407	558
	11/20/2008	ND<2	4.7	41	ND<1	ND<1	8.8	1.7	ND<5	ND<5	ND<1	ND<0.25	61	ND<5	2.4	ND<1	ND<1	13	6.5
STMW-3	9/25/2008	ND<10	20.4	789	ND<5	24.7	390	-	101	187	48.9	2.7	ND<10	440	ND<20	ND<10	ND<20	335	425
	11/20/2008	ND<2	2.6	67	ND<1	ND<1	2.6	22	ND<5	ND<5	ND<1	ND<0.25	23	ND<5	1.1	2	ND<1	3.1	12
P1	9/25/2008	ND<10	ND<10	206	ND<5	ND<10	75.4	-	ND<50	30.2	ND<10	ND<0.25	ND<10	76.7	ND<20	ND<10	ND<20	62.5	68.5
	11/20/2008	ND<2	5.3	82	ND<1	ND<1	3	12	ND<5	ND<5	ND<1	ND<0.25	13	ND<5	1.4	ND<1	ND<1	7.3	8.1
VE-1	9/25/2008	ND<10	274	16400	53.1	323	4330	-	857	2750	458	ND<0.25	ND<10	3450	ND<20	ND<10	ND<20	3790	4970
	11/20/2008	ND<2	3.2	210	ND<1	ND<1	8	ND<0.2	ND<5	ND<5	ND<1	ND<0.25	20	7.8	1.8	ND<1	ND<1	5.8	43
VE-2	9/25/2008	ND<10	12.2	257	ND<5	ND<10	91.8	-	ND<50	42.8	10.8	ND<0.25	11	87.2	ND<20	ND<10	ND<20	88.7	107
	11/20/2008	ND<2	5.6	62	ND<1	ND<1	7.2	12	ND<5	6.1	ND<1	ND<0.25	10	10	3.1	ND<1	ND<1	6.1	34

notes:

TPHg	Total petroleum hydrocarbons as gasoline
TPHd	Total petroleum hydroca
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
MtBE	Methyl tertiary butyl ether
TBA	Tert-butyl alcohol
DIPE	Di-isopropyl ether
EtBE	Ethyl-tertiary butyl ether
TAME	Tert-amyl-methyl ether
1,2-DCA	1,2-Dichloroethane
EDB	1,2-Dibromoethane
bgs	below ground surface
ug/l	micrograms per liter
-	Not analyzed or not reported

Data collected on 09/25/2008 have data quality issues.

Table 3
Summary of Water Quality Parameter Data

Springtown Gas
909 Bluebell Drive
Livermore, California

Monitoring Well	STMW-1						STMW-2						STMW-3					
Date	pH	E.C.	°C	°F	ORP	DO	pH	E.C.	°C	°F	ORP	DO	pH	E.C.	°C	°F	ORP	DO
9/4/2007	6.37	1462	21.40	70.5	NM	NM	6.43	1405	21.1	70.0	NM	NM	6.14	2115	20	68.0	NM	NM
12/10/2007	6.92	1090	18.50	65.3	NM	NM	7.02	1074	19.8	67.6	NM	NM	6.77	1267	NM	NM	NM	NM
9/25/2008	7.22	1706	21.63	70.9	48.3	0.38	7.15	1652	21.26	70.3	34	0.7	6.84	1838	20.32	68.6	60.2	0.84
10/2/2008	7.16	1701	21.57	70.8	45.6	0.68	7.07	1650	21.14	70.1	51.8	0.58	6.82	1892	20.47	68.8	156	1.81
10/9/2008	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
10/16/2008	7.53	970	21.48	70.7	71.6	36.39	7.07	1611	21.35	70.4	56.7	0.21	7.38	656	20.64	69.2	66.6	37.4
10/23/2008	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
10/30/2008	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
11/6/2008	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
11/20/2008	7.36	1554	20.74	69.3	208.3	11.17	7.20	1782	21.21	70.2	211.4	1.13	7.88	771	20.63	69.1	194.6	15.53
12/29/2008	7.78	1685	18.61	65.5	168.8	41.24	7.64	1577	20.21	68.4	66.9	2.04	7.55	1196	19.69	67.4	141.5	32.54
3/10/2009	7.23	1861	16.14	61.1	401.3	20.56	7.31	1600	17.94	64.3	372.9	0.67	7.10	1555	17.29	63.1	509.3	7.17
6/10/2009	7.24	1624	18.76	65.8	469.2	12.69	7.30	1548	18.58	65.4	348.7	0.38	7.08	1476	17.97	64.3	557.5	2.17
9/8/2009	7.07	NM	21.66	71.0	544.3	NM	7.22	NM	20.88	69.6	250.1	NM	6.83	NM	20.15	68.3	564.2	NM
2/10/2010	7.35	1660	17.09	62.8	531.3	6.77	7.30	1618	18.71	65.7	394.4	0.87	7.20	1642	17.99	64.4	469.0	0.89
6/25/2010	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
8/24/2010	6.44	707	20.79	69.4	195.7	43.37	6.32	1730	20.45	68.8	135.9	0.53	6.61	384	20.10	68.2	255.2	45.92
11/30/2010	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
2/17/2011	8.10	365	17.55	63.6	241.3	44.57	NM	NM	NM	NM	NM	NM	8.14	241	18.21	64.8	249	39.47
8/19/2011	7.43	1402	19.05	66.3	260.1	34.54	7.64	1098	18.80	65.8	98.9	32.75	6.74	1532	17.30	63.1	409.4	40.40

Monitoring Well	P-1						VE-1						VE-2					
Date	pH	E.C.	°C	°F	ORP	DO	pH	E.C.	°C	°F	ORP	DO	pH	E.C.	°C	°F	ORP	DO
9/4/2007	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
12/10/2007	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/25/2008	7.2	1941	20.6	69.1	50.3	1.19	6.9	2072	22.8	73.0	-44.9	3.07	7.1	1933	21.67	71.0	-13.6	6.48
10/2/2008	7.1	1893	20.44	68.8	59.6	1.18	7.18	1780	22.02	71.6	2.1	8.29	NM	NM	NM	NM	NM	NM
10/9/2008	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
10/16/2008	7.75	1285	20.61	69.1	85.9	18.23	6.84	1668	22.29	72.1	3.3	1.53	7.16	1912	21.38	70.5	-1.1	7.25
10/23/2008	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	7.42	1924	19.91	67.8	49.6	8.48
10/30/2008	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	7.81	1052	20.05	68.1	164.0	172.1
11/6/2008	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	7.13	1329	19.94	67.9	183.5	9.77
11/20/2008	7.99	1392	19.96	67.9	180	8.19	6.99	1960	18.91	66.0	38.6	4.82	6.89	1593	19.47	67.0	224.5	9.09
12/29/2008	7.99	1766	18.99	66.2	285.5	43.92	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/10/2009	7.30	1797	16.81	62.3	473.9	3.03	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
6/10/2009	7.34	1795	17.85	64.1	455.7	1.09	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/8/2009	7.14	NM	19.98	68.0	312.2	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
2/10/2010	7.42	1658	17.22	63.0	139.0	0.85	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
6/25/2010	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
8/24/2010	7.99	632	20.95	69.7	206.4	25.20	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
11/30/2010	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
2/17/2011	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
8/19/2011	7.58	753	17.65	63.8	206.5	31.87	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

Monitoring Well	MW-4						MW-101						MW-102					
Date	pH	E.C.	°C	°F	ORP	DO	pH	E.C.	°C	°F	ORP	DO	pH	E.C.	°C	°F	ORP	DO
6/25/2010	7.20	1228	18.20	64.76	165.5	0.05	7.20	1077	19.40	66.92	248.3	30.27	7.10	1042	19.60	67.28	190.3	6.35
8/24/2010	6.11	1343	19.27	66.69	125.7	0.94	6.58	1170	19.80	67.64	178.5	7.36	6.44	1141	19.81	67.66	129.3	5.22
11/30/2010	6.83	1258	18.73	65.71	214.6	0.15	6.73	1083	18.72	65.70	189.3	3.85	6.76	1060	18.91	66.04	151.0	4.55
2/17/2011	7.28	1459	18.14	64.65	229.4	0.13	7.32	1126	19.27	66.69	266.3	38.97	7.30	1094	19.18	66.52	261.8	21.70
8/19/2011	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

Monitoring Well	MW-103					
Date	pH	E.C.	°C	°F	ORP	DO
6/25/2010	7.12	1316	19.10	66.38	277.3	29.46
8/24/2010	6.56	1464	19.32	66.78	192.1	23.64
11/30/2010	6.89	1307	18.82	65.88	140.6	2.83
2/17/2011	7.21	1389	18.74	65.73	282.1	54.71
8/19/2011	NM	NM	NM	NM	NM	NM

Notes:

E.C.	Electrical conductivity
°C	Degrees centigrade
°F	Degrees fahrenheit
ORP	Oxygen reduction potential
DO	Dissolved oxygen
NM	Not measured

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 8/23/07 DATE FINISHED: 8/23/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING	PVC Schedule 40, 0.020		NUMBER OF SAMPLES BULK: 4 DRIVE:
TYPE OF PERFORATION	PVC	FROM 10 feet TO 20 feet	WATER FIRST: DEPTH COMPL.: 24 hrs.
SIZE AND TYPE OF PACK	Sand #2/12	FROM 8' TO 20'	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1: Cement	0	7'	No. 3:		
	No. 2: Bentonite	7'	8'	No. 4:		

LOG OF BORING STMW-1

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER TYPE	SAMPLES: POCKET PEN. tsf	SAMPLES: BLOWS/foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	8-inch to 10-inch Concrete.						0						
	12-inch gray clayey sandy Gravel (baserock).	GC-SC											
	Black silty Clay, moist, stiff.	CL-ML											
5							5	1-5					
	Gray silty Clay, moist, stiff.	CL-ML											
	Light greenish-gray silty Clay, moist, very stiff.	CL-ML											
10							10	1-10					
	Light brown sandy Clay with few pea gravel, moist, very stiff.	CL											
	Light brown clayey Sand with few pea gravel, moist, stiff.	SC				▽							
15							15	1-15					
	Light gray to brown silty Clay, moist, very stiff.	CL-ML											
20	Boring terminated.						20	1-20					
25							25						
30							30						
35							35						

SPRINGTOWN GAS

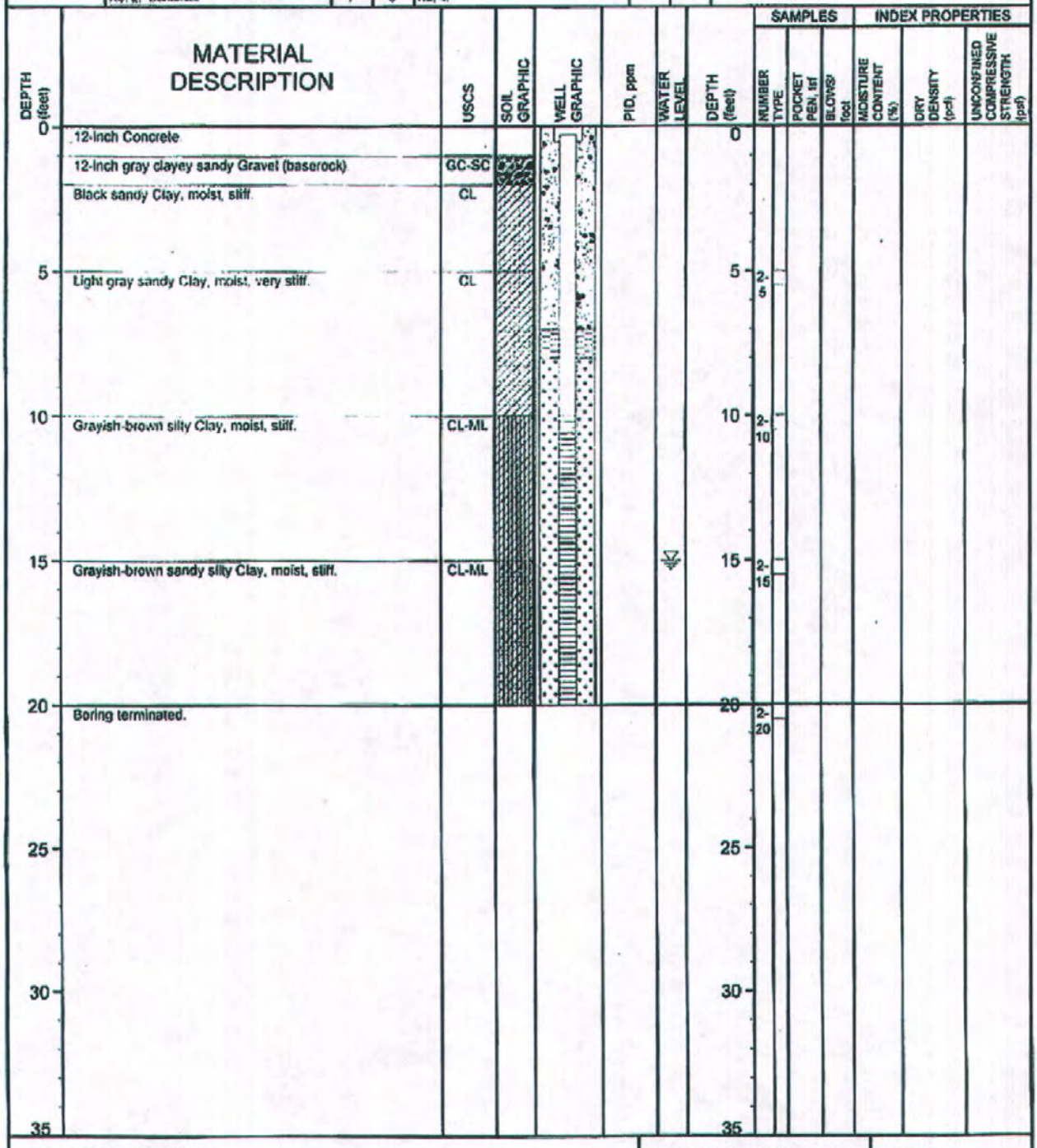
ATTACHMENT 6

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 8/23/07 DATE FINISHED: 8/23/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING	PVC Schedule 40, 0.020		NUMBER OF SAMPLES BULK: 4 DRIVE:
TYPE OF PERFORATION	PVC	FROM 10 feet TO 20 feet	WATER FIRST: DEPTH / COMPL. 24 hrs.
SIZE AND TYPE OF PACK	Sand #2/12	FROM 8' TO 20'	LOGGED BY Frank Hamedi / CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1: Cement	0	7'	No. 3:		
	No. 2: Bentonite	7'	8'	No. 4:		

LOG OF BORING STMW-2



SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 8/28/07 DATE FINISHED: 8/28/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING	PVC Schedule 40, 0.020		NUMBER OF SAMPLES BULK: 4 DRIVE:
TYPE OF PERFORATION	PVC	FROM 10 feet TO 20 feet	WATER FIRST: DEPTH COMPL.: 24 hrs.
SIZE AND TYPE OF PACK	Sand #2/12	FROM 8' TO 20'	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1: Cement	0	7'	No. 3:		
	No. 2: Bentonite	7'	8'	No. 4:		

LOG OF BORING STMW-3

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES NUMBER	SAMPLES TYPE	INDEX PROPERTIES POCKET PEN, tsf	INDEX PROPERTIES BLOWS/ foot	INDEX PROPERTIES MOISTURE CONTENT (%)	INDEX PROPERTIES DRY DENSITY (pcf)	INDEX PROPERTIES UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Black sandy Silt (landscaping material), soft, moist.	ML					0							
	Black sandy Clay, moist, stiff	CL												
	Black sandy silty Clay, moist, very stiff	CL-ML												
5	Brown sandy Clay, moist, very dense.	CL					5	3-5						
	Olive-brown gravelly sandy Clay, moist, stiff.	CL												
10	Brown/gray sandy Clay to clayey Sand, moist, stiff, dense.	SC					10	3-10						
	Light brown clayey Sand with some gravel, moist, stiff, dense.	SC				▽								
15	Light brown to light gray gravelly Sand with some clay.	SP-SC					15	3-15						
20	Boring terminated.						20	3-20						
25							25							
30							30							
35							35							

SPRINGTOWN GAS	PROJECT NO. 10-93-557-ST	FIGURE:

Geological Technics Inc.

LOG OF BORING MW-4

(Page 1 of 1)

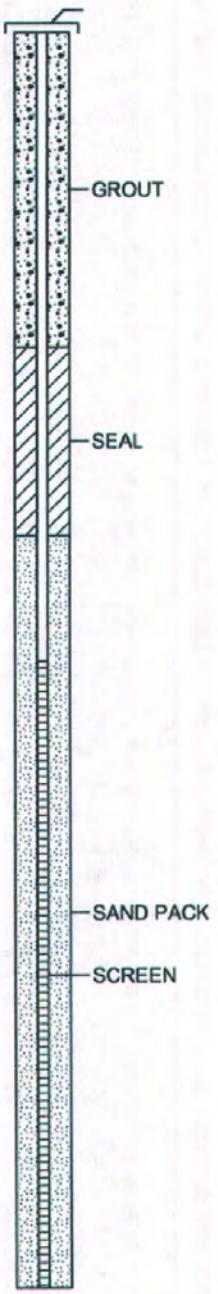
Springtown Gas
909 Bluebell Drive
Livermore, CA

Project No.: 1409.2

Date : 2/24/10
Drilling Method : Geo-Probe
Driller : RSI
Logged By : E. Nona

Depth in Feet	Lab Sample	Time	Blow Count	DESCRIPTION	GRAPHIC	USCS	OVM (ppm)
0				Pea Gravel		GW	
				SILTY CLAY, brown, very fine grained, dry, hard.		CL	
5				SILTY CLAY, black, hard, low plasticity, dry, carbonate rich, no odor.		CL	
				AA, Light brown, organic rich, little sand, very fine grained.		CL	
				AA, no sands		CL	
10				AA, very fine grained, sands.		CL	
				AA, Soft, moist.		CL	
15				AA, some pebbles 1-5 mm, no odor.		CL	
				AA, moist.		CL	
				AA, dry , crumbly, no odor		CL	
20							

MW-4



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Geological Technics Inc.

LOG OF BORING MW-101

(Page 1 of 1)

Springtown Gas
909 Bluebell Drive
Livermore, CA

Project No.: 1409.2

Date : 2/25/10
Drilling Method : HSA
Driller : RSI
Logged By : E. Nona

Depth in Feet	Lab Sample	Time	Blow Count	DESCRIPTION	GRAPHIC	USCS	OVM (ppm)
0							
5				SILTY CLAY, olive grey,fine grained, hard, slightly-plastic, organic inclusions (CaCO3).		CL	2.6 ppm
	7.5						3.5 ppm
10	9.5			AA, Color transitions to brown.			
	12					CL	3.2 ppm
15							3.5 ppm
	16						3.6 ppm
	18			AA, color transitions to greenish grey.			
20	20					CL	4.5 ppm
	24						
25	26						2.9 ppm
				SILTY CLAY, color transitions to light greenish grey, highly-plastic, pebbles and organic inclusions (CaCO3), hard.		CH	0.4 ppm
30	Water			GRAVEL, Well Graded, silts, greensich grey, moist, highly oxidized.		GM	1.1 ppm
				GRAVEL, Poorly Graded, sandy gravel, moist		GP	
				Gravelly sandy silt, poorly sorted, wet, clasts range from 1-25 mm.		GM	
35							
40							
				SILTY CLAY, grey, soft, higly plastic, moist, oxidation, pebbles and organic inclusions.		CH	
45				AA, less moist, soft.			

Well: MW-101
Elev.:

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Geological Technics Inc.

LOG OF BORING MW-102

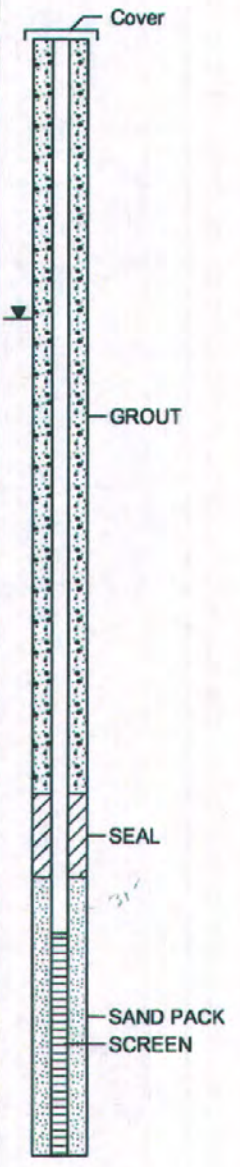
(Page 1 of 1)

Springtown Gas
909 Bluebell Drive
Livermore, CA

Project No.: 1409.2

Date : 3/2/10
Drilling Method : HSA
Driller : RSI
Logged By : E. Nona

Depth in Feet	Lab Sample	Time	Blow Count	DESCRIPTION	GRAPHIC	USCS	OVM (ppm)
0							
5	5.5			SILTY CLAY, olive grey,fine grained, hard, non-plastic, organic inclusions (CaCO3).		CL	
	7.5						
	8.5			SILTY CLAY, olive grey,fine grained, hard, plasticity increasing in depth to 16', organic inclusions (CaCO3).		CL	
10	11.5						
	12.5			SILTY CLAY, transitions to light brown,fine grained, hard, non-plastic, organic inclusions (CaCO3).		CL	
15	15.5						
	18			SILTY CLAY, light brown,fine grained, stiff, plasticity increasing, organic inclusions (CaCO3).		CL	
20	22			SILTY CLAY, olive grey,fine grained, hard, plastic, lots of organic inclusions (CaCO3).		CL	
25	26			SILTY CLAY, olive grey,fine grained, hard, plastic, lots of organic inclusions (CaCO3).		CL	1.5 ppm
				SILTY CLAY, olive grey,fine grained, hard, plastic, lots of organic inclusions (CaCO3).		CL	
				CLAYEY SILT, light grey, fine grained, moist, large pebbles, sand inclusions.		CH	
30	30			SANDY SILTY CLAY, light grey.		CL	2.0 ppm
				SILTY SANDY GRAVEL, light grey, large (3/4-1") gravel inclusions, angular, decreasing in size with depth.		GP	
				SILTY SANDY GRAVEL, light grey, large (3/4-1") gravel inclusions, angular, decreasing in size with depth, wet.		GP	
35	Water			SILTY SANDY GRAVEL, light grey, large (3/4-1") gravel inclusions, angular, decreasing in size with depth, wet.		GP	2.1 ppm
40							2.0 ppm
							1.8 ppm
45				SILTY SANDY GRAVEL, light grey, large (3/4-1") gravel inclusions, angular, decreasing in size with depth, wet.		GP	



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Geological Technics Inc.

LOG OF BORING MW-103

(Page 1 of 1)

Springtown Gas
909 Bluebell Drive
Livermore, CA

Project No.: 1409.2

Date : 3/8/10
Drilling Method : HSA
Driller : V&W
Logged By : T. Bryant

Depth in Feet	Lab Sample	Time	Blow Count	DESCRIPTION	GRAPHIC	USCS	OVM (ppm)
0				Handauger to 5' BGS			
10				SILTY SAND, dark brown, fine grained, moist, no odor.		SM	0.2 ppm
	11	12:15	3 5 8	SILTY CLAY, transitions to brown, soft, moist, slightly plastic, some organic inclusions.		CL	0.2 ppm
15	15	12:25	2 4	SILTY SAND, GRAVEL, Well Graded, brown, wet, no odor.		GM	0.2 ppm
			11	AA, Sand particles are coarser than 15'.		GM	0.2 ppm
20	20.5	12:30	10 15 18	AA, sand particles becoming larger, gravel and pebble inclusions.		GM	0.2 ppm
25						GM	
30	30		11 30	AA, Silty sandy gravel, coarsening downward		GM	
			50	AA, Coarsening downward to very large size gravels ranging in size 1-2".		GM	
35							

Well: MW-103
Elev.:

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ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 5/07/08 DATE FINISHED: 5/07/08
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 10'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING	4-inch PVC Schedule 40		NUMBER OF SAMPLES BULK: DRIVE:
TYPE OF PERFORATION	0.020-inch PVC Schedule 40	FROM 3' TO 10'	WATER FIRST: DEPTH COMPL.: 24 hrs.
SIZE AND TYPE OF PACK	Sand #3	FROM 2½' TO 10'	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1: Cement	0	1'	No. 3:		
	No. 2: Bentonite	1'	2½'	No. 4:		

LOG OF BORING VE-1

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER TYPE	SAMPLES: POCKET PEN, tsf	SAMPLES: BLOWS/foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	12-inch reinforced Concrete.						0						
	6-inch gray Baserock.												
	Black Clay (medium to high PI), damp, stiff.	CL-CH											
5	Black silty Clay, very stiff, damp	CL-ML					5						
	Dark gray sandy silty Clay with few small size pea gravel, very stiff, damp.	CL-ML											
	Very dark brown silty Clay with minor sand	CL-ML											
10	Light brown silty Sand (medium size sand), dense, moist Boring terminated	SM					10						
15							15						
20							20						
25							25						
30							30						
35							35						

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 5/07/08 DATE FINISHED: 5/07/08
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 10'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING	4-inch PVC Schedule 40		NUMBER OF SAMPLES BULK: DRIVE:
TYPE OF PERFORATION	0.020-inch slotted PVC Schedule 40	FROM 3' TO 10'	WATER FIRST: DEPTH COMPL.: 24 hrs.
SIZE AND TYPE OF PACK	Sand #3	FROM 2½' TO 10'	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1: Cement	0	1'	No. 3:		
	No. 2: Bentonite	1'	2½'	No. 4:		

LOG OF BORING VE-2

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER TYPE	SAMPLES: POCKET PEN, tsf	SAMPLES: BLOWS/ foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Black clayey Silt (landscaping material) , soft, moist.	ML					0						
	Black silty Clay, moist, stiff.	CL-ML											
5							5						
	Gray silty Clay, moist, stiff	CL-ML											
	Light greenish gray silty Clay, moist, very stiff.	CL-ML											
10	Boring terminated.						10						
15							15						
20							20						
25							25						
30							30						
35							35						

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

Geological Technics Inc.

Borehole Log

Project Name Springtown Gas Borehole No. P1 Page 1 of 1

Project No. 1409.2 Date 9/19/2008 Contractor RSI Drilling

Area & County Livermore, Alameda County, California

Field Geo/Eng Matt Spielmann/Ezaria Nonna Drilling Method Hollow Stem Auger

Borehole Dia. 8" Tot. Depth 20' Tot. Casing Depth 20' Casing Dia. 4" Screened Interval 15-20'

Filter Pack 8-20' Annular Seal 6-8' Slot Size 0.020" Grout 6-0' Water Depth NM

Depth feet	Smpl. Intrvl	Sample No.	Time	Blow Count/6"	Well Details	Columnar Section	USCS Sym.	Description	Remarks OVM (ppm)
0			0810				ML	Top Soil, Silty Clay, black, moist fine grained	No Odor 0
5			0825				ML	Silty Clay, dark gray, moist, fine Grained	No Odor 0
			0840				CL	Clayey sand, dark gray, 70% fine grained, 30%medium grained, subrounded and very moist	No Odor 0
10			0850				CL	Clayey sand, olive brown, poorly graded, quartz rich with occasional gravel	No Odor 0
			0910				CL	Clayey sand with gravel, light olive brown, wet, poorly sorted	No Odor 0
			0925				SW	Gravelly sand, light olive brown, wet, quartz rich, 50% fine grained	No Odor 0
15			0940				SP	Gravelly sand, light olive brown, wet, quartz rich, subrounded	No Odor 0
			0955				CL	Clayey silt with 5% sand, olive brown, wet, fine grained	No Odor 0
			1010				ML	Silty Clay, gray, moist, fine Grained	No Odor
20									
25									
30									

Notes: Sand, Clay, Annular Seal, Grout, Silt, Screen, Gravel

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 2/02/07 DATE FINISHED: 2/02/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK: 3 DRIVE:
TYPE OF PERFORATION		FROM TO	WATER FIRST: DEPTH COMPL.: 24 hrs.
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Kao

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1:			No. 3:		
	No. 2:			No. 4:		

LOG OF BORING SB-1

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: POCKET PEN. tsf	SAMPLES: BLOWS/ foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	12-inch reinforced concrete.						0							
	6-inch gray baserock.													
	Black Clay (medium to high PI), damp to moist.	CL-CH												
5	Black silty Clay (medium to high PI) with miner small gravel, very stiff, damp.	CL-CH					5	1-5	X					
10	Light brown silty Clay, damp, stiff.	CL-ML					10	1-10	X					
15	Light brown silty Clay (more clay content) (medium to high pl), moist, stiff.	CL-CH				▽	15	1-15	X					
20	Boring terminated.						20							
25							25							
30							30							
35							35							

SPRINGTOWN GAS | PROJECT NO. 10-93-567-ST | FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 2/02/07 DATE FINISHED: 2/02/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK: 3 DRIVE:
TYPE OF PERFORATION		FROM TO	WATER FIRST: DEPTH COMPL.: 24 hrs.
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1:			No. 3:		
	No. 2:			No. 4:		

LOG OF BORING SB-2

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: POCKET PEN. tsf	SAMPLES: BLOWS/ foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	12-inch reinforced concrete.						0							
	6-inch gray baserock													
	Black Clay (medium to high PI), damp to moist.	CL-CH												
5	Black silty Clay (medium to high PI), very stiff, damp.	CL-CH					5	2-5						
10	Light brown silty Clay, stiff, damp.	CL-ML					10	2-10						
15	Light olive-brown silty Clay (medium to high PI), stiff to very stiff, damp to moist.	CL-CH					15	2-15						
	Light olibe-brown silty Clay (more clay content) (medium to high PI), stiff to very stiff, damp to moist.					▽								
20	Boring terminated.						20							
25							25							
30							30							
35							35							

SPRINGTOWN GAS | PROJECT NO. 10-93-567-ST | FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 2/02/07 DATE FINISHED: 2/02/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK: 3 DRIVE:
TYPE OF PERFORATION		FROM TO	WATER FIRST: DEPTH COMPL.: 24 hrs
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1:			No. 3:		
	No. 2:			No. 4:		

LOG OF BORING SB-3

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: POCKET PEN. tsf	SAMPLES: BLOWS/foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	12-inch reinforced concrete. 6-inch gray baserock.						0							
5	Light brown silty Clay with miner small size gravel, stiff, damp.	CL-ML					5	3-5	X					
10	Light brown silty Clay with miner small pea gravel, damp to moist, stiff.	CL-ML					10	3-10	X					
	Light brown sandy silty Clay (medium size sand), dense, moist.	CL-ML												
15	Light olive-brown silty Sand (fine sand) , very dense, moist to wet.	SM				▽	15	3-15	X					
20	Light brown sandy silty Clay, stiff, wet. Boring terminated.	CL-ML					20							
25							25							
30							30							
35							35							

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 2/02/07 DATE FINISHED: 2/02/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK: 3 DRIVE:
TYPE OF PERFORATION		FROM TO	WATER FIRST: DEPTH COMPL.: 24 hrs.
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1			No. 3		
	No. 2			No. 4		

LOG OF BORING SB-4

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER TYPE	SAMPLES: POCKET PEN. tsf	SAMPLES: BLOWS/ 6in	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	12-inch reinforced concrete.						0						
	6-inch gray baserock.												
	Black Clay (medium to high PI), damp, stiff.	CL-CH											
5	Dark gray silty Clay with miner small size gravel, stiff, damp.	CL-ML					5	4-5	X				
10	Light brown silty Clay to clayey Sill, stiff, damp to moist.	CL-ML					10	4-10	X				
15	Light brown silty Sand (fine sand), dense, moist.	SM					15	4-15	X				
	Light brown silty Sand (medium coarse sand with small pea gravel), wet, dense.					▽							
20	Boring terminated.						20						
25							25						
30							30						
35							35						

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 2/02/07 DATE FINISHED: 2/02/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK: 3 DRIVE:
TYPE OF PERFORATION		FROM TO	WATER FIRST: DEPTH COMPL.: 24 hrs.
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1			No. 3		
	No. 2			No. 4		

LOG OF BORING SB-5

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: POCKET PEN. tsf	SAMPLES: BLOWS/ foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	12-inch reinforced concrete.						0							
	6-inch gray baserock.													
	Black Clay (medium to high Pl), damp, stiff.	CL-CH												
5	Dark gray silty Clay, very stiff, damp.	CL-ML					5	5-5	X					
10	Light gray sandy silty Clay with miner small size gravel, stiff, damp to moist.	CL-ML					10	5-10	X					
	Olive-gray silty Clay, moist, stiff.	CL-ML												
15	Light olive-brown sandy Silt (fine sand) with miner clay.	ML				▽	15	5-15	X					
20	Boring terminated.						20							
25							25							
30							30							
35							35							

SPRINGTOWN GAS | PROJECT NO. 10-93-567-ST | FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 2/02/07 DATE FINISHED: 2/02/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK: 3 DRIVE:
TYPE OF PERFORATION		FROM TO	WATER FIRST: DEPTH COMPL.: 24 hrs.
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1			No. 3		
	No. 2			No. 4		

LOG OF BORING SB-6

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER TYPE	SAMPLES: POCKET PEN, tsf	SAMPLES: BLOWS/foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	12-inch reinforced concrete.						0						
	6-inch gray baserock.												
	Black Clay (medium to high PI), damp, stiff.	CL-CH											
5	Black silty Clay with miner small size gravel, very stiff, damp.	CL-ML					5	6-5					
10	Light gray silty Clay, damp, stiff.	CL-ML					10	6-10					
15	Light brown silty Clay, damp to moist, stiff.	CL-ML				▽	15	6-15					
20	Boring terminated.						20						
25							25						
30							30						
35							35						

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 2/02/07 DATE FINISHED: 2/02/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK: 3 DRIVE:
TYPE OF PERFORATION		FROM TO	WATER FIRST: DEPTH COMPL.: 24 hrs.
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1			No. 3		
	No. 2			No. 4		

LOG OF BORING SB-7

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER TYPE	SAMPLES: POCKET PEN. tsf	SAMPLES: BLOWS/ foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	12-inch reinforced concrete.						0						
	6-inch gray basecrck.												
	Black Clay (medium to high PI), damp to moist, stiff.	CL-CH											
5	Black silty Clay, very stiff, damp.	CL-ML					5	7-5	X				
	Light gray sandy silty Clay with few pea gravel, damp to moist.	CL-ML											
10	Light olive-brown silty Clay with few small size gravel, stiff, damp.	CL-ML					10	7-10	X				
15	Light grayish-brown sandy silty Clay, moist, stiff.	CL-ML				▽	15	7-15	X				
20	Boring terminated						20						
25							25						
30							30						
35							35						

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 2/02/07 DATE FINISHED: 2/02/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK: 4 DRIVE:
TYPE OF PERFORATION		FROM TO	WATER FIRST DEPTH COMPL.: 24 hrs
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1			No. 3		
	No. 2			No. 4		

LOG OF BORING SB-8

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER TYPE	SAMPLES: POCKET PEN, tsf	SAMPLES: BLOWS/ foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	12-inch reinforced concrete.						0						
	6-inch gray baserock.												
	Black Clay (medium to high PI), damp, stiff.	CL-CH											
5	Black silty Clay, very stiff, damp.	CL-ML					5	8-5	X				
	Dark gray sandy silty Clay with few small size pea gravel, very stiff, damp.	CL-ML						8-7	X				
	Very dark brown silty Clay with miner sand.	CL-ML											
10	Light brown silty Sand (medium size sand), dense, moist.	SM					10	8-10	X				
	Dark brown silty Clay (medium to high PI), damp to moist, stiff to very stiff.	CL-CH											
	Light brown silty Clay (medium to high PI), damp to moist, stiff to very stiff.												
15	Brown sandy silty Clay, stiff, moist.	CL-ML					15	8-15	X				
	Light brown and black medium to coarse Sand with miner clay, wet, dense.	SP-SC				▽							
	Light brown sandy silty Clay, wet, stiff.	CL-ML											
20	Boring terminated.						20						
25							25						
30							30						
35							35						

SPRINGTOWN GAS | PROJECT NO. 10-93-567-ST | FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 2/02/07 DATE FINISHED: 2/02/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK: 3 DRIVE:
TYPE OF PERFORATION		FROM TO	WATER FIRST DEPTH COMPL.: 24 hrs.
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1:			No. 3		
	No. 2			No. 4:		

LOG OF BORING SB-9

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER TYPE	SAMPLES: POCKET PEN. tsf	SAMPLES: BLOWS/foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	12-reinforced concrete.						0						
	6-inch gray baserock.												
	Brown sandy gravely Clay, damp, stiff.	CL											
	Black Clay (high PI), damp, stiff.	CH											
5	Black silty Clay, damp, very stiff.	CL-ML					5	9-5	X				
	Olive-gray sandy Clay, damp, stiff.	CL											
10	Olive-gray silty Clay, damp, very stiff.	CL-ML					10	9-10	X				
	Light brown silty Clay (medium to high PI), moist, stiff to very stiff.	CL-CH											
15	Light brown sandy clayey Silt to silty sandy Clay (very fine sand), damp to moist, stiff.	CL-ML					15	9-15	X				
	Light brown silty Clay (medium PI), very stiff, moist.	CL-CH				▽							
20	Boring terminated.						20						
25							25						
30							30						
35							35						

SPRINGTOWN GAS | PROJECT NO. 10-93-567-ST | FIGU.

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION TOP OF WELL CASING ELEVATION
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED 8/22/07 DATE FINISHED 8/22/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK 4 DRIVE
TYPE OF PERFORATION		FROM TO	WATER FIRST DEPTH COMPL. 24 hrs
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1:			No. 3		
	No. 2:			No. 4		

LOG OF BORING GP-1

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: POCKET PEN. tsf	SAMPLES: BLOWS/foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	8-inch Concrete.						0							
	12-inch grayish-green gravely Sand (baserock)	GP-SP												
	Black silty Clay, damp, stiff	CL-ML												
5	Green sandy silty Clay, moist, stiff	CL-ML					5	1-5						
	Light gray to brown silty Clay, moist, stiff	CL-ML												
10	Light brown gravely sandy Clay, moist, stiff	CL					10	1-10						
15	Light brown silty Clay, wet, medium stiff	CL-ML					15	1-15						
20	Boring terminated.						20	1-20						
25							25							
30							30							
35							35							

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Virenex, Inc	DRILLER J. McAssey	DATE STARTED 8/22/07 DATE FINISHED 8/22/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK 4 DRIVE
TYPE OF PERFORATION		FROM TO	WATER FIRST DEPTH COMPL 24 hrs
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1			No. 3		
	No. 2			No. 4		

LOG OF BORING GP-2

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES POCKET PEN. tsf	SAMPLES BLOWS/ foot	INDEX PROPERTIES MOISTURE CONTENT (%)	INDEX PROPERTIES DRY DENSITY (pcf)	INDEX PROPERTIES UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Black clayey Silt (landscaping material), soft, moist	ML					0							
	Black silty Clay, moist, stiff	CL-ML												
5							5	2			5			
	Gray silty Clay, moist, stiff	CL-ML												
	Light greenish gray silty Clay, moist, very stiff													
10							10							
	Light brown sandy Clay with few pea gravel, moist, very stiff	CL												
	Light brown clayey Sand with few pea gravel, moist, stiff	SC												
15							15	2			15			
	Light gray to brown silty Clay, moist, very stiff	CL-ML												
20	Boring terminated.						20	2			20			
25							25							
30							30							
35							35							

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED 8/22/07 DATE FINISHED 8/22/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK 4 DRIVE
TYPE OF PERFORATION		FROM TO	WATER FIRST DEPTH COMPL. 24 hrs.
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1			No. 3		
	No. 2			No. 4		

LOG OF BORING GP-3

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER TYPE	SAMPLES: POCKET PEN. tsf	SAMPLES: BLOWS/foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Black sandy Silt (landscaping material), moist, stiff	ML					0						
	Black sandy Clay, moist, stiff	CL											
	Black sandy silty Clay, moist, very stiff	CL-ML											
5	Brown sandy Clay, moist, very dense	CL					5	3-5					
	Olive-brown gravely sandy Clay, moist, stiff	CL											
10	Brown/gray sandy Clay to clayey Sand, moist, stiff, dense	SC					10	3-10					
15	Light brown clayey Sand with some gravel, moist, stiff, dense	SC					15	3-15					
	Light brown to light gray gravely Sand with some clay	SP-SC											
20	Boring terminated						20	3-20					
25							25						
30							30						
35							35						

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION TOP OF WELL CASING ELEVATION
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED 8/22/07 DATE FINISHED 8/22/07
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK: 4 DRIVE:
TYPE OF PERFORATION		FROM TO	WATER FIRST DEPTH COMPL: 24 hrs
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1:			No. 3:		
	No. 2:			No. 4:		

LOG OF BORING GP-4

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER / TYPE	SAMPLES: POCKET PEN. tsf	SAMPLES: BLOWS/ foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Black sandy clayey Silt (landscaping material), moist, stiff.	ML					0						
	Black clayey Silt with some gravel, moist, stiff.	ML											
	Black silty Clay with some gravel, moist, stiff.	CL-ML											
	Light brown gravely sandy Clay, moist, stiff	CL											
5	Brown sandy Clay, moist, stiff.	CL					5	4-5					
	Dark brown gravely sandy Clay, moist, stiff.	CL											
10	Brown silty Sand (well graded), dense, moist	SW					10	4-10					
	Brown gravely Sand (well graded), dense, moist.	SW											
15	Brown sandy Gravel (well graded), dense, moist.	GW					15	4-15					
	Light brown silty Sand with minor gravel, dense, moist.	SM											
20	Boring terminated.						20	4-20					
25							25						
30							30						
35							35						

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	933 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 5/09/08 DATE FINISHED: 5/09/08
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 25'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK 3 DRIVE
TYPE OF PERFORATION		FROM TO	WATER FIRST: DEPTH COMPL: 24 hrs
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1			No. 3		
	No. 2			No. 4		

LOG OF BORING GP-5

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER TYPE	SAMPLES: POCKET PEN. tsf	SAMPLES: BLOWS/ foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Light brown sandy silty Clay, moist, stiff	CL-ML					0						
	Black silty Clay, moist, stiff	CL-ML											
5	Dark brown silty Clay, moist, stiff						5	5-5					
	Light brown silty Clay, moist, stiff												
10							10	5-10					
	Light brown to light gray silty Clay (high Pl), moist, stiff	CL-ML											
15						▽	15	5-15					
	Light brown silty Clay (high Pl), very stiff, moist.												
20							20						
25	Boring terminated.						25						
30							30						
35							35						

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	940 Larkspur Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION
DRILLING AGENCY	Vironex, Inc	DRILLER J. McAssey	DATE STARTED: 5/09/08 DATE FINISHED: 5/09/08
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK: 3 DRIVE
TYPE OF PERFORATION		FROM TO	WATER FIRST DEPTH COMPL 24 hrs
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1			No. 3		
	No. 2			No. 4		

LOG OF BORING GP-7

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: POCKET PEN. tsf	SAMPLES: BLOWS/foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Black silty Clay (high PI), very stiff, moist.	CL-ML					0							
	Light brown silty Clay, moist, stiff.													
5							5	7-5						
10	Dark brown silty Clay, moist, stiff.	CL-ML					10	7-10						
	Light brown sandy silty Clay, moist, stiff.	CL-ML												
15	Gray/white coarse Sand with some small pea gravel, dense, wet.	SP					15	7-15						
	Light brown sandy silty Clay, moist, stiff.	CL-ML												
20	Boring terminated.						20							
25							25							
30							30							
35							35							

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	940 Larkspur Drive, Livermore, CA		GROUND SURFACE ELEVATION TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 5/09/08 DATE FINISHED: 5/09/08
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK: 3 DRIVE
TYPE OF PERFORATION		FROM TO	WATER FIRST: COMPL 24 hrs.
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1			No. 3		
	No. 2			No. 4		

LOG OF BORING GP-8

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: POCKET PEN. tsf	SAMPLES: BLOWS/ foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Light brown silty Sand, dry, dense	SM					0							
	Black silty Clay, moist, stiff	CL-ML												
	Light brown silty Clay, very moist, stiff													
5							5	B-5						
10	Light brown sandy Silt to silty Sand, dense, wet	SM					10	B-10						
15						▽	15	B-15						
20	Boring terminated.						20							
25							25							
30							30							
35							35							

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	940 Larkspur Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 5/09/08 DATE FINISHED: 5/09/08
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK: 3 DRIVE
TYPE OF PERFORATION		FROM TO	WATER FIRST DEPTH COMPL 24 hrs
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1			No. 3		
	No. 2			No. 4		

LOG OF BORING GP-9

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER TYPE	SAMPLES: POCKET PEN, tsf	SAMPLES: BLOWS/ft	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Chocolate-brown to black silty Clay, moist, stiff	CL-ML					0						
5	Light brown gravely sandy Silt, dense, moist	ML					5	9 5					
	Light brown silty Clay, moist, stiff	CL-ML											
10							10	9 10					
15							15	9 15					
	Light brown sandy Gravel, dense, moist.	GP											
20	Boring terminated.						20						
25							25						
30							30						
35							35						

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	940 Larkspur Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:
DRILLING AGENCY	Vironex, Inc	DRILLER J. McAssey	DATE STARTED: 5/09/08 DATE FINISHED: 5/09/08
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft) 20'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER SAMPLER 2" polyethene
SIZE AND TYPE OF CASING			NUMBER OF SAMPLES BULK: 3 DRIVE:
TYPE OF PERFORATION		FROM TO	WATER FIRST DEPTH COMPL 24 hrs
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedi CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO
	No. 1:			No. 3:		
	No. 2:			No. 4:		

LOG OF BORING GP-10

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES: NUMBER TYPE	SAMPLES: POCKET PEN, tsf	SAMPLES: BLOWS/foot	INDEX PROPERTIES: MOISTURE CONTENT (%)	INDEX PROPERTIES: DRY DENSITY (pcf)	INDEX PROPERTIES: UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Light brown silty Sand, dry, dense	SM					0						
	Black silty Clay, moist, stiff	CL-ML											
	Light brown silty Clay, moist, stiff	CL-ML											
5							5	10 5					
	Light brown sandy silty Clay, moist, stiff	CL-ML											
10							10	10 10					
						▽							
15	Light brown silty Clay (high PI), moist, very stiff	CL-ML					15	10 15					
20	Boring terminated						20						
25							25						
30							30						
35							35						

SPRINGTOWN GAS	PROJECT NO. 10-93-567-ST	FIGURE:

Geological Technics Inc.

LOG OF BORING GP-11

(Page 1 of 1)

Springtown Gas
909 Bluebell Drive
Livermore, CA

Project No.: 1409.2

Date : 2/24/10
Drilling Method : GeoProbe 6600
Driller : RSI
Logged By : M. van den Enden

Depth in Feet	Lab Sample	Time	Blow Count	DESCRIPTION	GRAPHIC	USCS	OVM (ppm)	Well: Elev.:
0							0.0 ppm	
5				CLAY, brown, very fine grained, dry, hard, plastic, some organic inclusions, no odor.		CL	0.9 ppm	
10				CLAY, brown, very fine grained, dry, some organics, no odor.		CL		
				AA, Slight change in plasticity to moderate.		CL	0.0 ppm	
15				SANDY SILTY CLAY,brown, very fine grained, moist, hard, high plasticity.		CH	0.0 ppm	
20				AA		CH	0.3 ppm	GROUT
25				AA, large carbonate inclusions.		CH		
				AA		CH	0.0 ppm	
30				CLAY, light grey, very fine grained, moist, soft, large 3/4" pebble inclusions.		CH		
				SILTY CLAY, brown, very fine grained, moist, hard, moderate plasticity, some carbonate inclusions.		CL SW		
35				SAND, Well Graded, moist, loose		SW		
				AA, Gravel inclusions increasing with depth.				
				SILTY SANDY GRAVEL, wet sand, fines increasing, angular inclusions up to 1".		GM	0.3 ppm	
40				SANDY SILTY CLAY, brown, very fine grained, wet, hard, low plasticity.		ML		
45								

06-24-2010 K:\Jobs\S Jobs\Springtown Gas (Blue Bell) 14092\Graphics\Borehole Logs\GP-11.bor

Geological Technics Inc.

LOG OF BORING GP-12

(Page 1 of 1)

Springtown Gas
909 Bluebell Drive
Livermore, CA

Project No.: 1409.2

Date : 2/23/10
Drilling Method : GeoProbe 6600
Driller : RSI
Logged By : M. van den Enden

Well: GP-12
Elev.:

Depth in Feet	Lab Sample	Time	Blow Count	DESCRIPTION	GRAPHIC	USCS	OVM (ppm)
0							0.7 ppm
5				SILTY CLAY, grey, very fine grained, plastic, some organics.		CL	
				AA, color transitions to light brown.		CL	0.7 ppm
				AA, carbonates are introduced.		CL	
10							0.7 ppm
				AA, very soft, very wet		CH	
15							2.4 ppm
				SILTY CLAY, brown, very fine grained, wet, carbonate inclusions, no odor.		CH	
20							3.9 ppm
25							0.7 ppm
				AA, transitions to soft.		CH	
				AA, introducing coarse grain sand inclusions, pebbles.		CH	2.4 ppm
30				AA, hard		CH	
				SAND, Well Graded, transtions from silty clay with coarse grain sands to coarse grain sands, pebbles.		SW	2.8 ppm
35				SILTY CLAY, transtions back with sand and pebbles.		CL	
				SAND, Well Graded, contains gravel inclusions.		SW	0.7 ppm
40						SW	
				SAND, Well Graded, refusal of geo-probe sample tube. possibly due to large diameter gravel.		SW	
45							

GROUT

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Geological Technics Inc.

LOG OF BORING GP-13

(Page 1 of 1)

Springtown Gas
909 Bluebell Drive
Livermore, CA

Project No.: 1409.2

Date : 2/24/10
Drilling Method : GeoProbe 6600
Driller : RSI
Logged By : E. Nona

Well: GP-13
Elev.:

Depth in Feet	Lab Sample	Time	Blow Count	DESCRIPTION	GRAPHIC	USCS	OVM (ppm)
0				Top soil for planter.		TS	
				SANDY CLAY, dark brown, black, coarse sand, no odor, dry, medium plasticity.		SC	
5				SILTY CLAY, brown, fine grained, some carbonates, low plasticity, dry.		CL	
				CLAYEY GRAVELS, brown, moist, no odor.		CL	0.0 ppm
				SILTY CLAY, olive green, organics, no odor.		CH	
				AA, mild odor, some coarbonates		CH	
10				AA, odor increasing with depth.		CH	18.2 ppm
				SILTY CLAY, heavy oxidation, Fe staining.		CH	0.1 ppm
15				SANDY CLAY,		CL	1.2 ppm
				SANDY CLAY, well sorted, soft, wet sand, no odor.		SC	
				AA, with gravels and sandy clay, some carbonates, slight oxidation (Fe stains).		SC	
20				AA		SC	0.0 ppm 0.0 ppm
25				SILTY CLAY, brown, fine grained, moist, some pebbles, carbonate rich, no odor.		MH	
30				SILTY CLAY with GRAVELS, greenish brown, some oxidation, no odor,wet, hard.		CL	0.0 ppm
				SILTY SAND, transitions to fine grained silty sand with depth, sand is oxidized.		SM	
35				SILTY GRAVELS,		GM	
				SILTY CLAY, brown, carbonates, hard, plastic, no odor.		CL	
40							
45							

GROUT

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Geological Technics Inc.

LOG OF BORING GP-14

(Page 1 of 1)

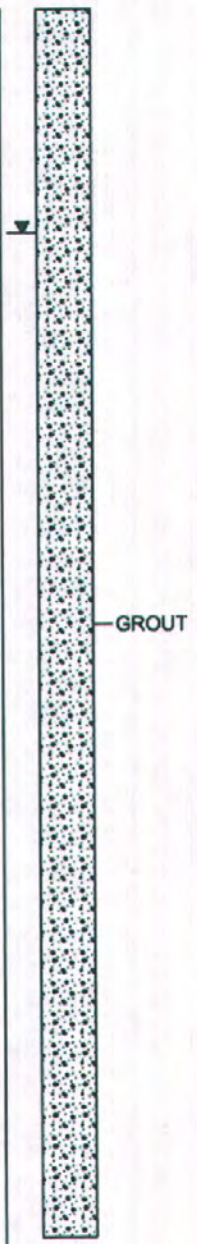
Springtown Gas
909 Bluebell Drive
Livermore, CA

Project No.: 1409.2

Date : 2/23/10
Drilling Method : GeoProbe 6600
Driller : RSI
Logged By : E. Nona

Depth in Feet	Lab Sample	Time	Blow Count	DESCRIPTION	GRAPHIC	USCS	OVM (ppm)
0				SILTY CLAY, dark brown, medium plasticity.		CL	
				AA, light brown.		CL	
5				AA, slight oxidation, some organics.		CL	1.2 ppm
10				CLAYEY SILT, dark brown, heavy oxidation, some organics, no odor.		ML	0.9 ppm
				SAND, Well Graded, brown, medium grained, moist, some pebbles, quatz rich, no odor.		SW	0.5 ppm
15				CLAYEY SAND, some gravels, heavy oxidation, hard, moist, no odor.		CL	
				SILTY GRAVELS, brown, wet, no odor.		GM	
				SANDY SILT, brown, medium grained, no odor.		SM	
				SANDY CLAY, light green, wet, high plasticity, heavy oxidation.		CH	
20	Water			SILTY SAND, quartz rich, light green, heavy oxidation, medium grained, well sorted.		SM	1.0 ppm
				SILTY CLAY, some sands, soft, plastic.		MH	
25				SILTY CLAYEY SAND,		SC	0.4 ppm
				GRAVEL, Well Graded, sand, brown, sub angular, wet, no odor.		GW	0.5 ppm
30				SILTY CLAY, brown, very fine grained, wet, carbonate rich, slight oxidation, organic rich.		MH	
35	Water			AA, wet.		MH	0.5 ppm
40				AA, wet.		MH	0.6 ppm
				AA, moist rather than wet, no odor.		MH	0.5 ppm
45							

Well: GP-14
Elev.:



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Geological Technics Inc.

LOG OF BORING GP-15

(Page 1 of 1)

Springtown Gas
909 Bluebell Drive
Livermore, CA

Project No.: 1409.2

Date : 2/23/10
Drilling Method : GeoProbe 6600
Driller : RSI
Logged By : E. Nona

Well: GP-15
Elev.:

Depth in Feet	Lab Sample	Time	Blow Count	DESCRIPTION	GRAPHIC	USCS	OVM (ppm)
0				SANDY GRAVELY CLAY, with plants.		CL	
5				SILTY CLAY, light brown, hard, moist, some organics.		CL	
				AA		CL	0.0 ppm
10				AA, hardness decreases, plasticity increases.		CL	
				SILTY CLAY, transitions to sandy, silty clay, moist.		CL	0.0 ppm
				SILTY CLAY, gravel size increases with depth.		CL	
15				SILTY CLAY, transitions to sandy, silty, clay, very fine grained, firm, moist, plastic.		CL	3.4 ppm 13.5 ppm
20				SILTY SAND, transition to		SM	3.0 ppm
				SANDY SILTY CLAY, medium firmness.		CL	25.3 ppm
25				SILTY SAND.		SM	
				SILTY SANDY CLAY, stiff, moist.		MH	
	Water			SILTY GRAVEL, Well Graded,		GM	0.0 ppm
30				AA, contains pebble inclusions.		GM	
				SILTY SANDY GRAVEL, Well Graded, clasts 3/4".		GM	
				GRAVEL, Well Graded, brown, fine grained, wet, little fines.		GW	
35				GRAVEL, Poorly Graded, wet.		GP	
				SILTY SAND, gravels end, wet, plastic.		CL	
40							0.0 ppm

GROUT

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Geological Technics Inc.

LOG OF BORING GP-16

(Page 1 of 1)

Springtown Gas
909 Bluebell Drive
Livermore, CA

Project No.: 1409.2

Date : 2/25/10
Drilling Method : GeoProbe 6600
Driller : RSI
Logged By : M. van den Enden

Well: GP-16
Elev.:

Depth in Feet	Lab Sample	Time	Blow Count	DESCRIPTION	GRAPHIC	USCS	OVM (ppm)
0				SILTY SAND, dark brown, medium grained, no odor.		SM	
				SANDY CLAY, brown, fine to medium grained, dry, moderate plasticity, increasing organics with depth.		CL	
5				CLAY, brown, dry, plastic, no odor, no sands.		CH	
				SILTY SANDY CLAY, light brown, dry, hard, low to no plasticity, carbonate rich, no odor.		CL	
				AA, transitions to dark brown, some Fe stains, highly plastic.		CH	0.2 ppm
10				AA, soft, no odor.		CH	0.2 ppm
15				AA, moist, no odor.		CH	
				GRAVEL, Poorly Graded SANDS, brown, very fine grained.		GP	
				SANDY SILTY CLAY, green olive color, medium plasticity, carbonates, soft.		CL	
20				AA, with organics, some pebbles.		CL	0.2 ppm 0.2 ppm
				GRAVEL, Poorly Graded CLAY, soft,, Fe stains, no odor.		CL	
25				SILTY CLAY, then refusal to 28'.		CL	0.5 ppm
				SAND, Poorly Graded, slight odor, coarse grained.		SP	
30	Water			CLAYEY SILT, hard, slightly plastic.		CL	
				SILTY CLAY, high plasticity, hard, no odor.		CL	
				AA, light olive green.		CL	0.3 ppm
				SANDY CLAY, brown, very fine grained,		SC	
				CLAYEY SILT, brown, very fine grained, no odor.		CH	
35				AA, moist		CH	
				SANDY SILT, wet, no odor.		SM	1.0 ppm
				AA, brown, SILTY CLAY.		CL	
				SANDY SILT, medium grained,		SM	1.4 ppm
40				CLAYEY SILT, Fe stains, hard.		CL	1.0 ppm

GROUT

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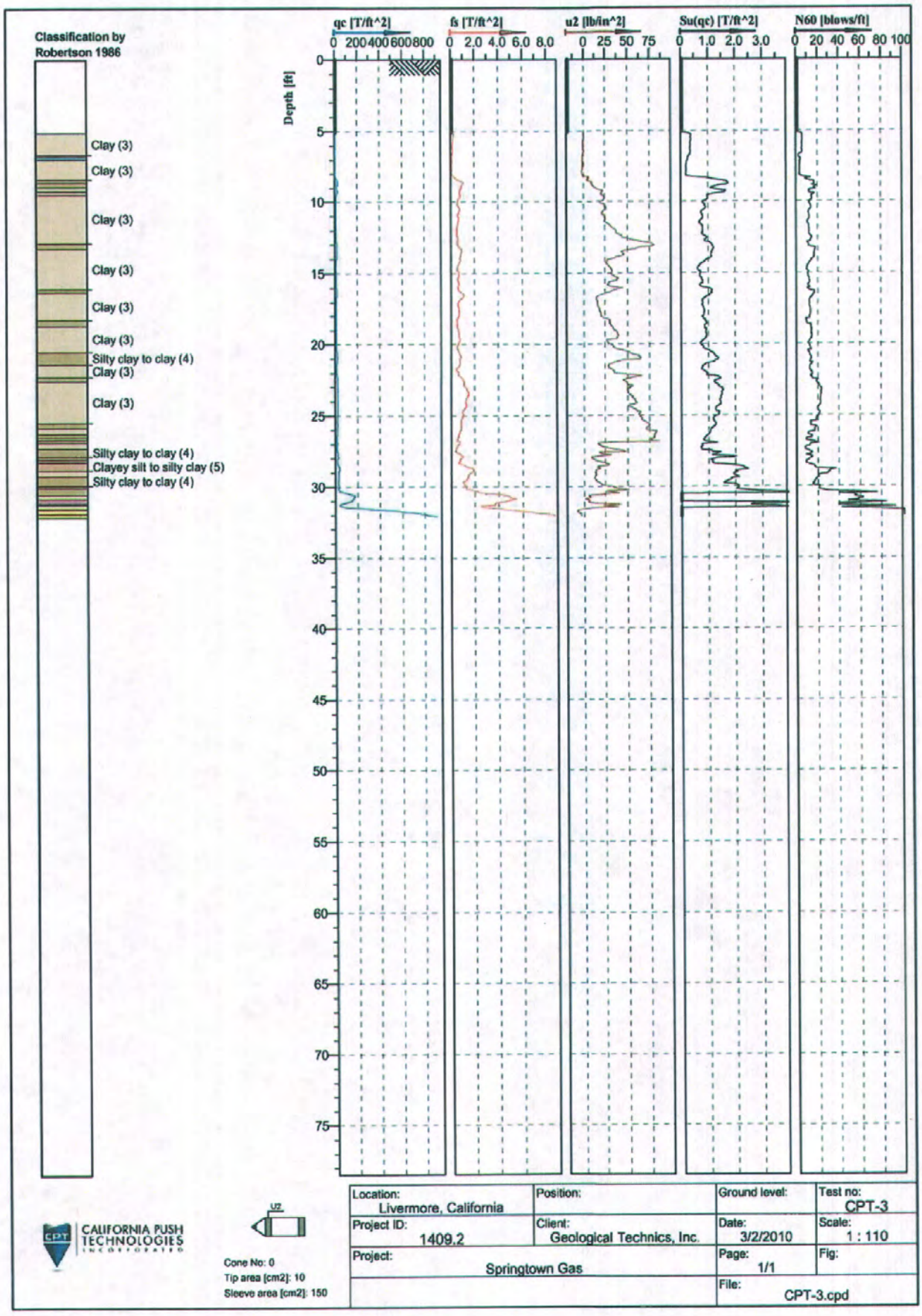
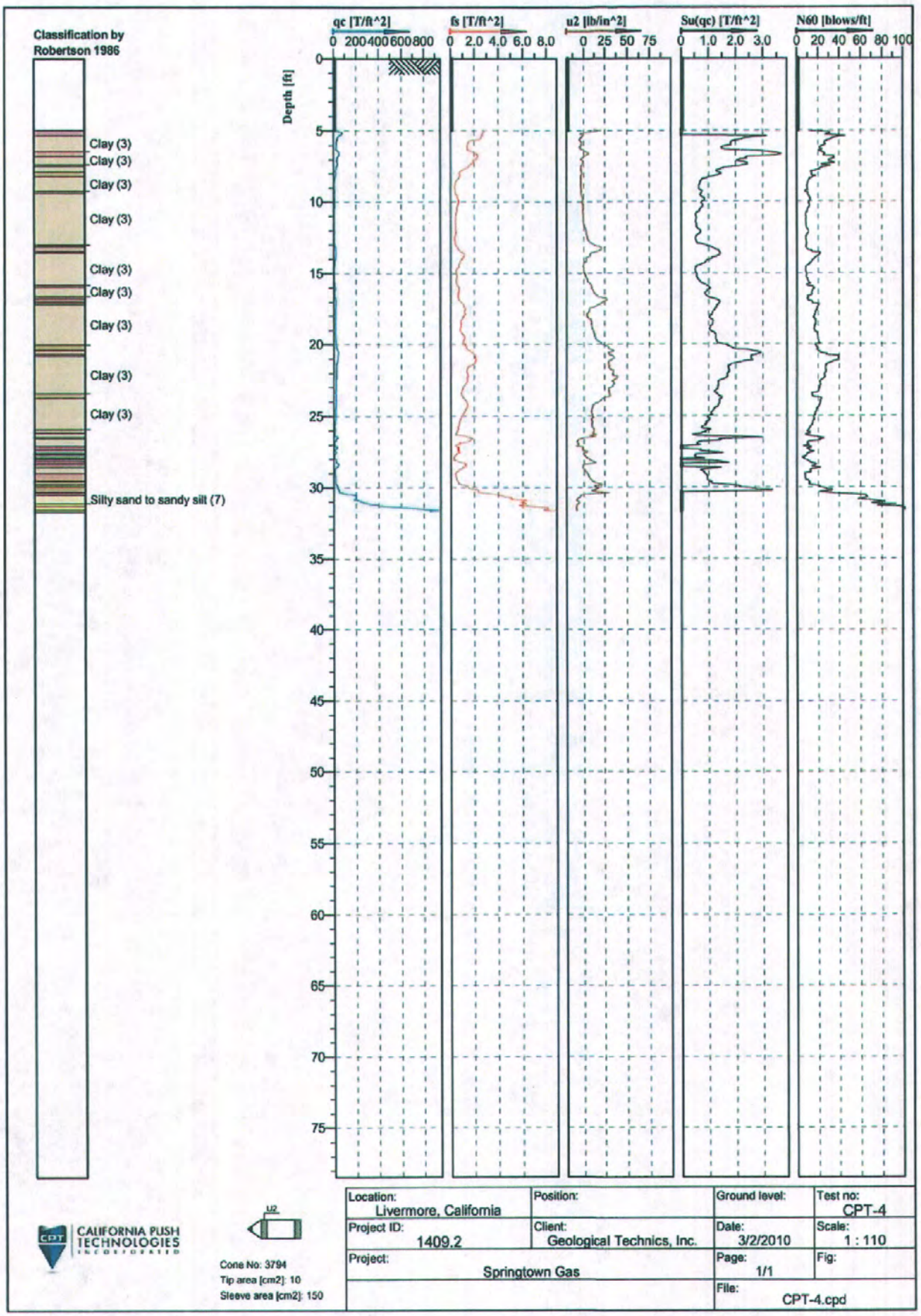


CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

U2

Cone No: 0
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: Livermore, California	Position:	Ground level:	Test no: CPT-3
Project ID: 1409.2	Client: Geological Technics, Inc.	Date: 3/2/2010	Scale: 1 : 110
Project: Springtown Gas		Page: 1/1	Fig:
		File: CPT-3.cpd	

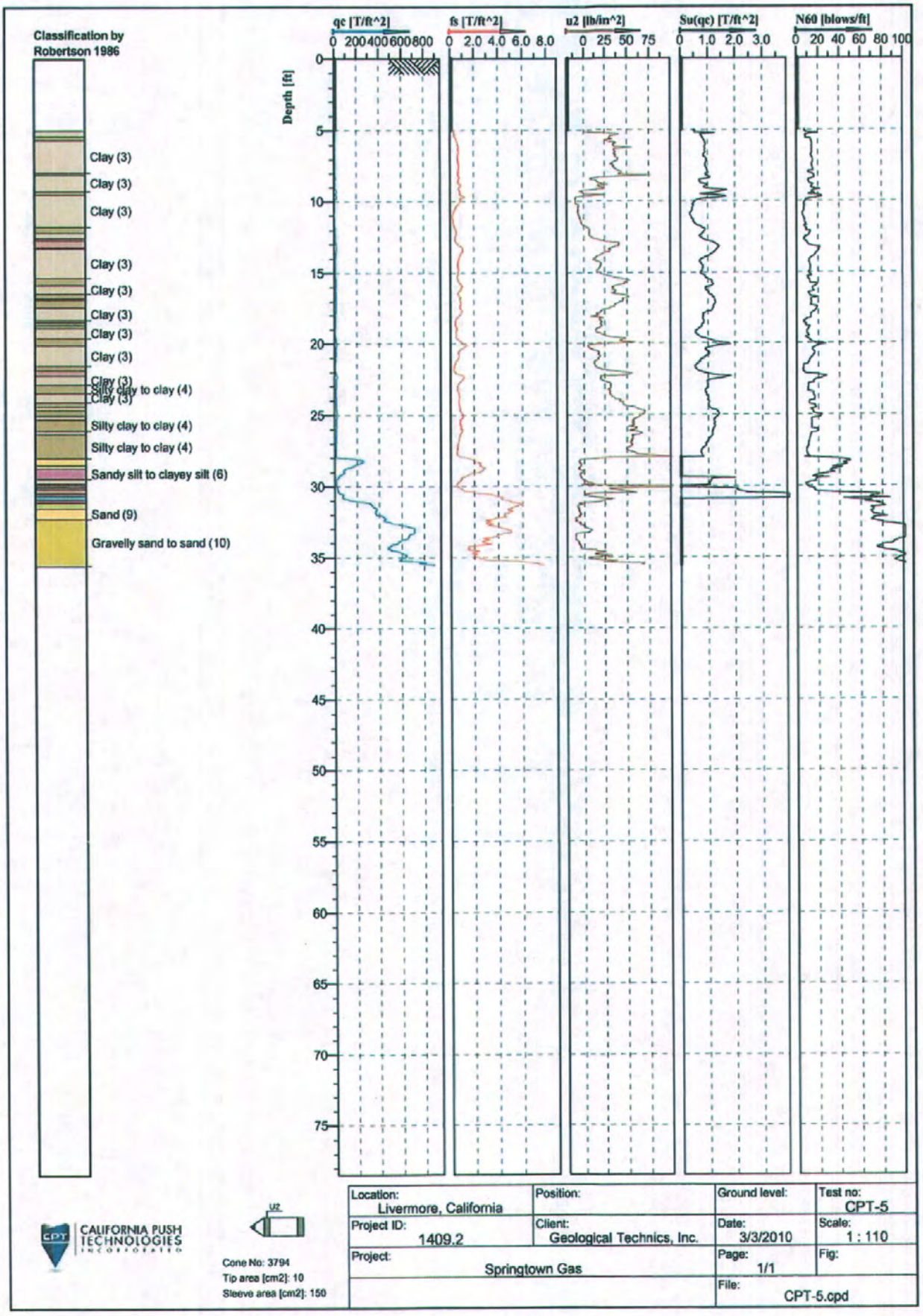


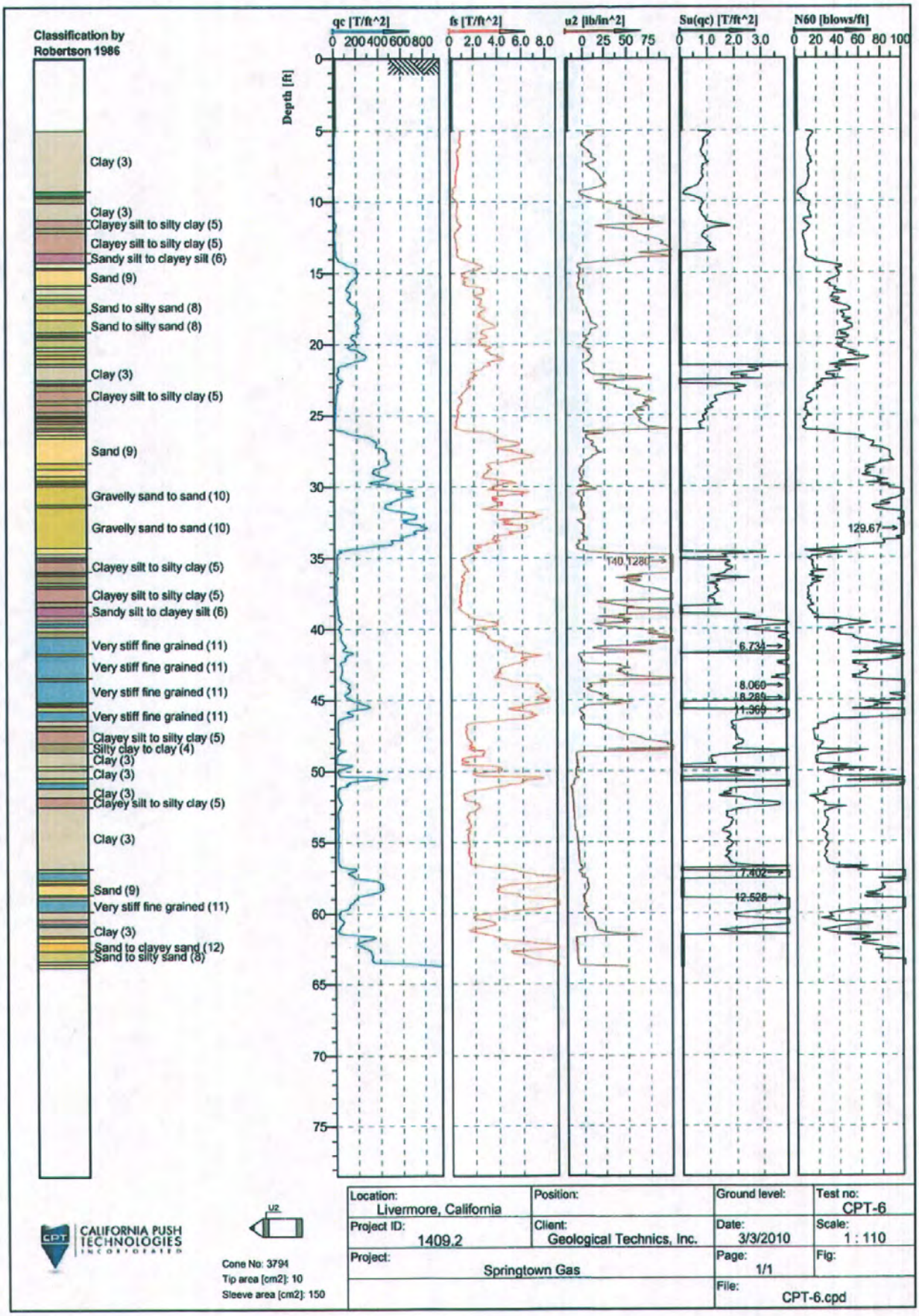
CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

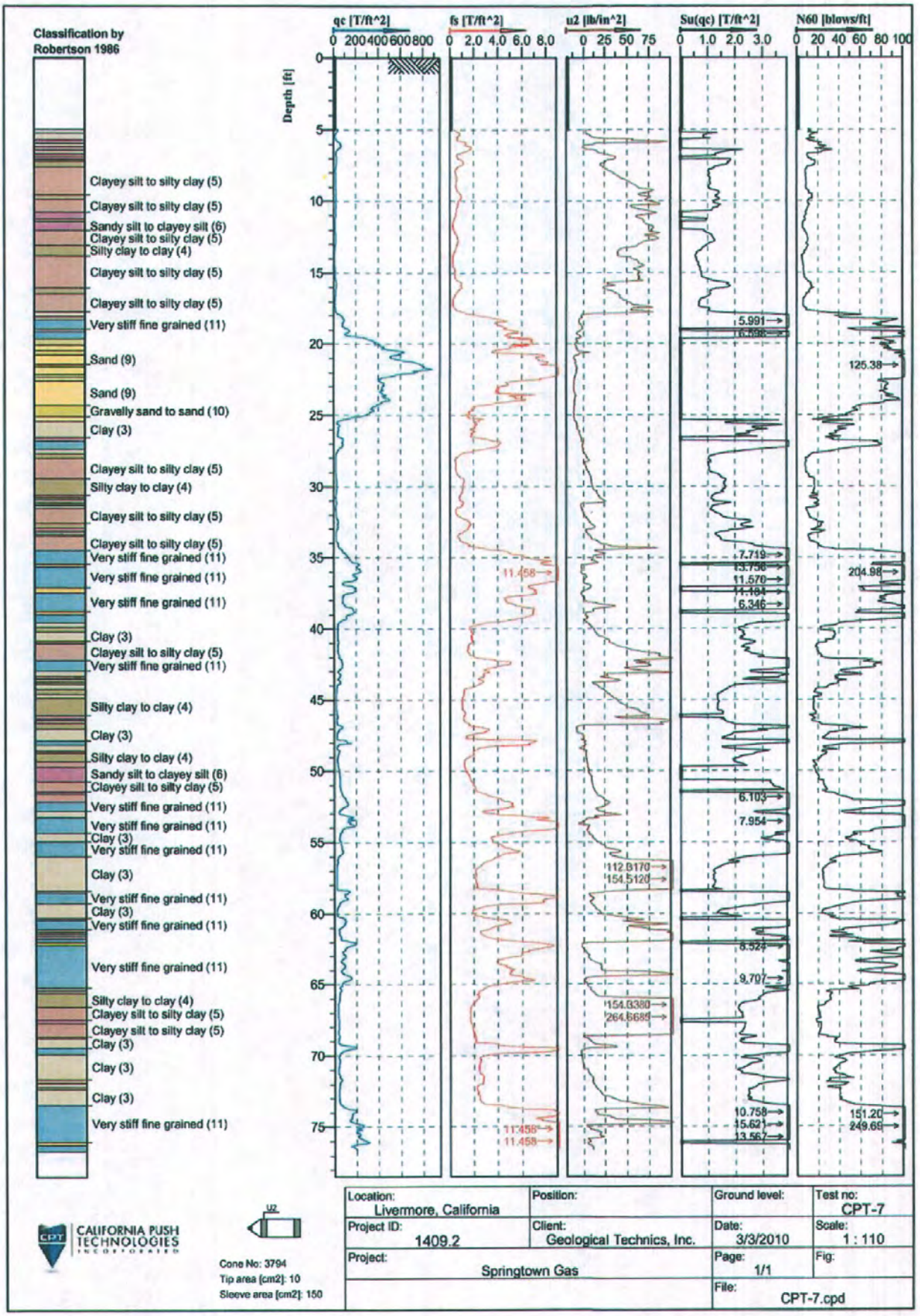
U2

Cone No: 3794
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: Livermore, California	Position:	Ground level:	Test no: CPT-4
Project ID: 1409.2	Client: Geological Technics, Inc.	Date: 3/2/2010	Scale: 1 : 110
Project: Springtown Gas		Page: 1/1	Fig:
		File: CPT-4.cpd	


Classification by Robertson 1986
Clay (3)
Clay (3)
Clay (3)
Clay (3)
Clay (3)
Clay (3)
Clay (3)
Clay (3)
Clay (3)
Silty clay to clay (4)
Silty clay to clay (4)
Silty clay to clay (4)
Sandy silt to clayey silt (6)
Sand (9)
Gravelly sand to sand (10)
qc [T/ft^2]
0 200 400 600 800
fs [T/ft^2]
0 2.0 4.0 6.0 8.0
u2 [lb/in^2]
0 25 50 75
Su(qc) [T/ft^2]
0 1.0 2.0 3.0
N60 [blows/ft]
0 20 40 60 80 100
Depth [ft]
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75
CALIFORNIA PUSH TECHNOLOGIES INCORPORATED
U2
Cone No: 3794
Tip area [cm2]: 10
Sleeve area [cm2]: 150
Location: Livermore, California
Position:
Ground level:
Test no: CPT-5
Project ID: 1409.2
Client: Geological Technics, Inc.
Date: 3/3/2010
Scale: 1 : 110
Project: Springtown Gas
Page: 1/1
Fig:
File: CPT-5.cpd

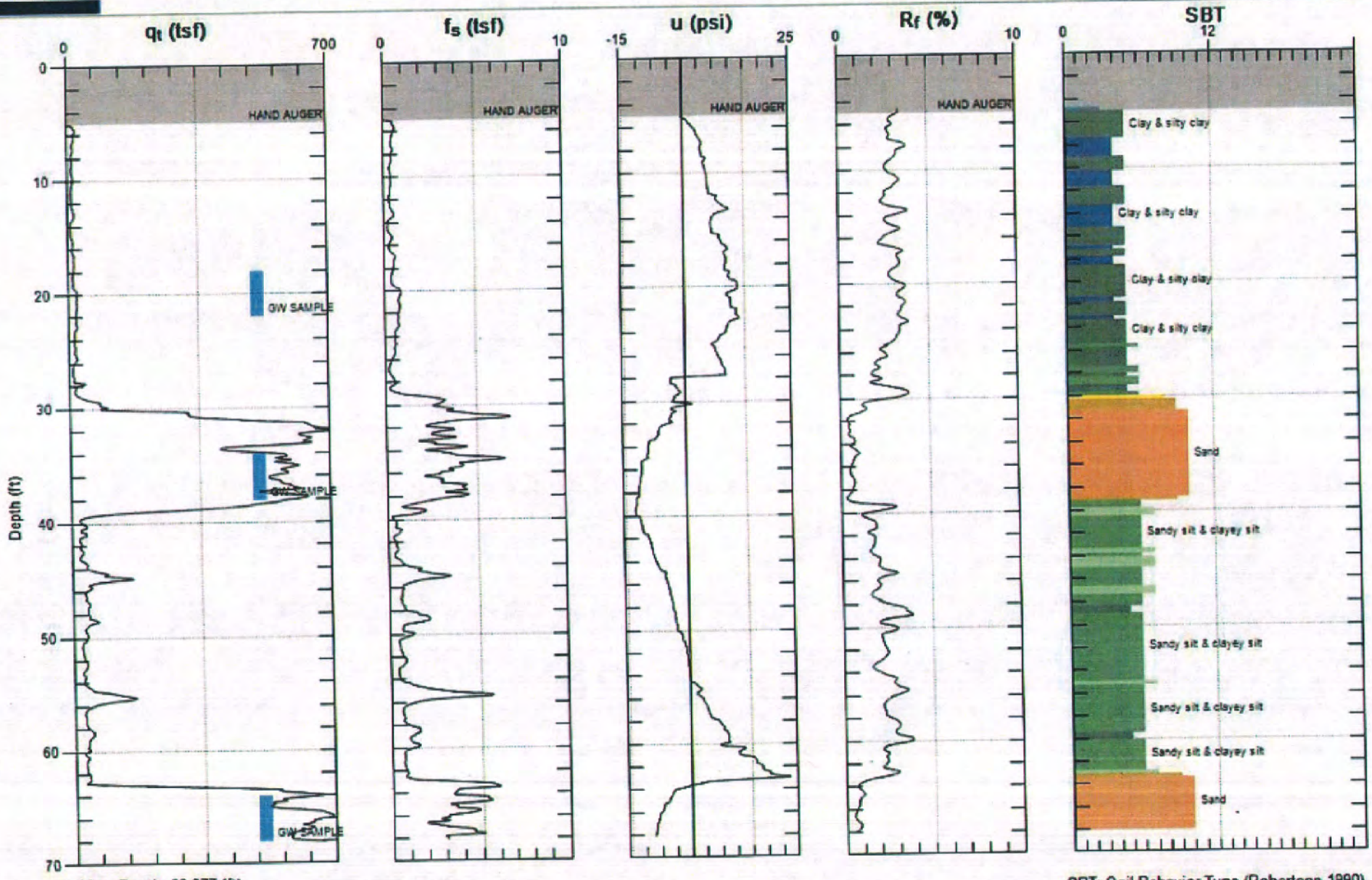

Classification by Robertson 1986
Clay (3)
Clay (3)
Clayey silt to silty clay (5)
Clayey silt to silty clay (5)
Sandy silt to clayey silt (6)
Sand (9)
Sand to silty sand (8)
Sand to silty sand (8)
Clay (3)
Clayey silt to silty clay (5)
Sand (9)
Gravelly sand to sand (10)
Gravelly sand to sand (10)
Clayey silt to silty clay (5)
Clayey silt to silty clay (5)
Sandy silt to clayey silt (6)
Very stiff fine grained (11)
Very stiff fine grained (11)
Very stiff fine grained (11)
Very stiff fine grained (11)
Clayey silt to silty clay (5)
Silty clay to clay (4)
Clay (3)
Clay (3)
Clay (3)
Clayey silt to silty clay (5)
Clay (3)
Sand (9)
Very stiff fine grained (11)
Clay (3)
Sand to clayey sand (12)
Sand to silty sand (8)
qc [T/ft^2]
fs [T/ft^2]
u2 [lb/in^2]
Su(qc) [T/ft^2]
N60 [blows/ft]
Depth [ft]
129.67
140
128
6.734
8.060
8.289
11.369
7.402
12.526
U2
CALIFORNIA PUSH TECHNOLOGIES INCORPORATED
Cone No: 3794
Tip area [cm2]: 10
Sleeve area [cm2]: 150
Location: Livermore, California
Position:
Ground level:
Test no: CPT-6
Project ID: 1409.2
Client: Geological Technics, Inc.
Date: 3/3/2010
Scale: 1 : 110
Project: Springtown Gas
Page: 1/1
Fig:
File: CPT-6.cpd


Classification by Robertson 1986
Clayey silt to silty clay (5)
Clayey silt to silty clay (5)
Sandy silt to clayey silt (6)
Clayey silt to silty clay (5)
Silty clay to clay (4)
Clayey silt to silty clay (5)
Clayey silt to silty clay (5)
Very stiff fine grained (11)
Sand (9)
Sand (9)
Gravelly sand to sand (10)
Clay (3)
Clayey silt to silty clay (5)
Silty clay to clay (4)
Clayey silt to silty clay (5)
Clayey silt to silty clay (5)
Very stiff fine grained (11)
Very stiff fine grained (11)
Very stiff fine grained (11)
Clay (3)
Clayey silt to silty clay (5)
Very stiff fine grained (11)
Silty clay to clay (4)
Clay (3)
Silty clay to clay (4)
Sandy silt to clayey silt (6)
Clayey silt to silty clay (5)
Very stiff fine grained (11)
Very stiff fine grained (11)
Clay (3)
Very stiff fine grained (11)
Clay (3)
Very stiff fine grained (11)
Clay (3)
Very stiff fine grained (11)
Very stiff fine grained (11)
Silty clay to clay (4)
Clayey silt to silty clay (5)
Clayey silt to silty clay (5)
Clay (3)
Clay (3)
Clay (3)
Very stiff fine grained (11)
qc [T/ft^2]
0 200 400 600 800
fs [T/ft^2]
0 2.0 4.0 6.0 8.0
u2 [lb/in^2]
0 25 50 75
Su(qc) [T/ft^2]
0 1.0 2.0 3.0
N60 [blows/ft]
0 20 40 60 80 100
Depth [ft]
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
11.458
5.991
125.38
7.719
13.756
11.570
11.484
6.346
204.98
6.103
7.954
112.8170
154.5120
6.524
9.707
154.8380
264.6685
10.758
15.621
13.567
151.20
249.66
11.458
11.458
U2
Cone No: 3794
Tip area [cm2]: 10
Sleeve area [cm2]: 150
CALIFORNIA PUSH TECHNOLOGIES INCORPORATED
Location: Livermore, California
Position:
Ground level:
Test no: CPT-7
Project ID: 1409.2
Client: Geological Technics, Inc.
Date: 3/3/2010
Scale: 1 : 110
Project: Springtown Gas
Page: 1/1
Fig:
File: CPT-7.cpd

ENVIRO SOIL TECH

Site: SPRINGTOWN GAS
Sounding: CPT-01

Engineer: F.HAMEDI
Date: 6/13/2007 11:08



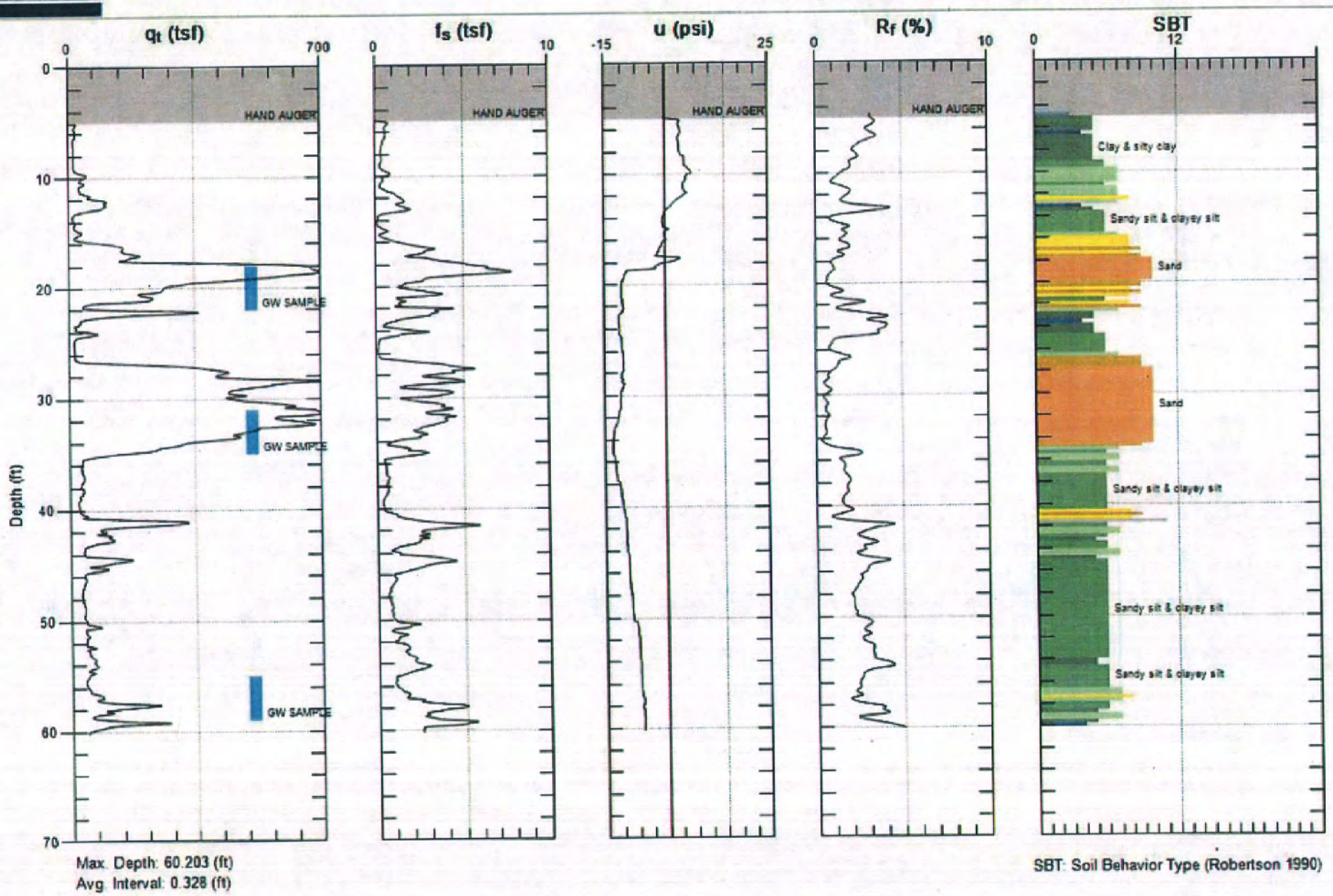
Max. Depth: 68.077 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

ENVIRO SOIL TECH

Site: SPRINGTOWN GAS
Sounding: CPT-02

Engineer: F.HAMEDI
Date: 6/13/2007 09:15



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

SBT: Soil Behavior Type (Robertson 1990)