Shell Oil Products US

November 19, 2009

Re: Soil Vapor Extraction Pilot Test Report
Former Shell-Branded Service Station
15275 Washington Avenue
San Leandro, California

Dear Mr. Jerry Wickham:

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Sincerely,
Shell Oil Products US

Denis L. Brown
Project Manager

20945 S. Wilmington Avenue, Carson, CA 90810 P: (559) 645-9306; F: (559) 645-5643

November 19, 2009
Delta Project SCA152751
SAP 129460

Mr. Jerry Wickham
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

RE: Soil Vapor Extraction Pilot Test Report
Former Shell-Branded Service Station
15275 Washington Avenue
San Leandro, California

DELTA

Dear Mr. Wickham:

Delta Consultants, Inc. (Delta), on behalf of Shell Oil Products US (Shell), has prepared this soil vapor extraction (SVE) pilot test report at the site referenced above. This pilot test report evaluates remedial measures to address measured vapor concentrations reported in the *Soil Vapor Investigation Report* dated October 7, 2008.

This document has been prepared in response to a letter received from Alameda County Environmental Health (ACEH) dated July 14, 2009 (Appendix A) requesting that a SVE pilot test report be submitted for the site by November 19, 2009.

BACKGROUND

Site Location

The subject site is located in the northwest corner of the intersection of Washington Avenue and Lewelling Boulevard in San Leandro, California. (Figure 1). The site is designated by Alameda County Environmental Health Services (ACEHS) as Fuel Leak Case No. RO0000372. The Geotracker Global ID is T0600101226.

Site Description

The subject site, formerly a Shell-branded service station, is currently an automotive emissions testing facility (Speed Smog Check). The surrounding area is a mix of residential (primarily multi-family units) and commercial properties (Figure 2). The site is bounded on the west by a mobile home park, on the south by Lewelling Boulevard, on the east by Washington Avenue, and on the north by commercial buildings. An ARCO service station is located on the southwest corner of the intersection and is currently an open leaking underground fuel tank (LUFT) case.

312 Piercy Road San Jose, California 95138 USA
Phone +1 408.224.4724 / USA Toll Free 800.477.7411
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The site property is currently owned by Mr. Frank Salel, Salel Enterprises, whose mailing address is P.O. Box 5099, Oakland, California 94605.

Site Geologic/Hydrogeologic Setting

The following sections provide a summary of the regional geologic and hydrogeologic setting.

Regional Geologic Setting

The site is located on the East Bay Plain approximately two miles east of the edge of San Francisco Bay. The East Bay Plain is a northwest trending strip of land between foothills to the east and San Francisco Bay to the west. As mapped by E. J. Helley and others (1979), soils in the site vicinity consist of late Pleistocene alluvium comprised of weakly consolidated, slightly weathered, poorly sorted, irregularly interbedded clay, silt, sand, and gravel. Sediments become finer-grained near the edge of San Francisco Bay.

Regional Hydrogeologic Setting

The site is located in the central portion of the East Bay Plain Groundwater Sub basin (DWR Bulletin 118). The East Bay Plain sub basin aquifer system consists of unconsolidated sediments of Quaternary age. Shallow aquifers are recharged by numerous creeks that cross the sub basin in a westward direction. In the site area, streams discharge to San Francisco Bay. The total depth of domestic wells reportedly ranges from 32 to 525 feet below the ground surface (bgs) with an average of 206 feet bgs. The total depth of municipal and irrigation wells ranges from 29 to 630 feet bgs, with an average of 191 feet bgs (DWR Bulletin 118). Groundwater flow is typically to the west toward San Francisco Bay. Water agencies in the area include East Bay Municipal Utility District (EBMUD) and Alameda County Flood Control and Water Conservation District.

Site Hydrogeologic Conditions

Borings have encountered primarily clay soils to a depth of approximately 25 feet bgs. Some clay samples were described as containing fractures and root holes. Interbedded layers of silty sand/clayey sand were indentified in borings S-1 through S-5, S-9, S-17, SG-3, and SR-1 at depths of approximately 4 to 6 feet bgs. Silty sand and sand were found from approximately 25 feet to 40.5 feet bgs, the total depth explored. Copies of boring logs and well construction diagrams are provided as Appendix B. Hydrogeologic cross-sections are included on Figures 3 and 4.

Groundwater was first encountered onsite in borings at depths ranging from approximately 6 to 20 feet bgs within clay deposits. In the *Corrective Action Plan* dated June 24, 1997, Enviros, Inc. concluded "the upper water-bearing zone appears to extend to a depth of approximately 6 feet to 20 feet bgs. Water in this upper zone is most likely yielded from the discreet sandy interbeds and possibly from silty horizons in the predominantly clayey (CL and CH) matrix." All groundwater monitoring wells are screened in this upper groundwater zone. Groundwater monitoring well construction information is included as Appendix B.

Groundwater flow is predominantly to the west-southwest. Copies of selected groundwater contour maps are included as Appendix C. A step-test was performed by GeoStrategies, Inc. (GeoStrategies) at the site on March 27, 1990 using well SR-1. The well dewatered after 52 minutes of pumping at a rate of 2 gallons per minute. Slug tests were performed in wells S-1, S-3, S-5, S-7, S-9, S-13, S-14, and S-16. Analysis of the slug test data indicated coefficient of permeability values ranging from 7.27 to 99.9 feet per day. In a report dated June 23, 1990, GeoStrategies concluded "The wide range in values are most likely attributed to the heteroge-

neity of the clay (especially the complexity of the interbedded sandy horizons) in the subsurface as well as inherent well construction difficulties in low-permeable, fine grained aquifers where classic well design procedures fail."

Sensitive Receptors

A sensitive receptor survey completed in 2005 by Toxichem Management Systems, Inc. identified five domestic water wells between 500 and 1,500 feet from the site, ranging in depth between 28 and 75 feet. The wells were not field verified. The survey map and forms for each of those five wells are included as Appendix D. The closest well (G1), is approximately 500 feet upgradient of the site to the north northwest; groundwater gradient typically varies from south to southwest. No sensitive receptors were identified within a 500-foot radius of the site.

Nature and Extent of Source

Please refer to the *Revised SVE Pilot Test Work Plan*, dated May 29, 2009, for details on the nature and extent of source at the site.

Site Remediation

The site fuel USTs were removed and replaced in June 1987. A total of 500 cubic yards of soil were removed from the tank pit and transported off-site for disposal. An additional 200 cubic yards of soil were excavated from trenches in the dispenser areas. Approximately 1,410 pounds of vapor-phase hydrocarbons were removed by the SVE system in 1998-1999. The SVE system was removed from the site in 2002 (Delta, June 2007).

HORIZONTAL WELL INSTALLATIONS

On August 31, 2009 Delta installed two horizontal SVE wells (ET-1 and ET-2) in five-foot deep trenches. Figure 5 presents a site map showing the test well locations and the well construction details are included on Figure 6. The five-foot deep trenches are approximately 12 feet in length and one-foot in width. The horizontal SVE wells are screened 10 feet along the entire length of the trench. The wells are installed in this fashion to target residual hydrocarbons in the shallow vadose zone.

Pre-Field Activities

Delta pre-marked the well locations and contacted Underground Services Alert at least 48 hours prior to subsurface disturbance. Delta supervised a utility locator contractor to perform a geophysical survey of the proposed trench locations. Trench locations were moved slightly due to underground utilities. Well permits were obtained from the Alameda County Public Works Agency and notifications regarding proposed field activities were made in advance to the appropriate agencies and the property owner.

Well Installation Field Activities

SVE Horizontal Well Installation Procedures. Two trenches were each excavated using a backhoe to approximately five feet bgs in depth, 12 feet in length and one foot in width; the existing pavement was saw cut prior to excavation. The trench was backfilled with #2/16 Monterey sand to a depth of approximately one foot above the bottom. The well screen was placed on top of the sand along with the connected riser pipe. The 10-foot long screen is constructed of 4-inch diameter Schedule 40 PVC with a 0.010-inch slot size. The

riser pipe is constructed of blank Schedule 40 PVC. The elbow on the riser pipe is a long radius elbow. The screen was then covered with an additional one foot of #2/16 Monterey sand above the top of the screen, followed by a 6-inch hydrated bentonite chip seal overlain by a 6-inch bentonite slurry. The trench was backfilled with pea gravel to match existing conditions and allow for replacement of pavement with like material. A locking cap was placed on each wellhead, which was enclosed in a flush-mounted traffic-rated vault.

Disposal of Drill Cuttings and Rinseate. Soil cuttings generated during horizontal well installation activities were placed in a Department of Transportation- (DOT) approved roll-off bin. The bin was sealed and labeled in accordance with the appropriate protocols, and identified on a waste inventory form. The roll-off bin was temporarily left on site, characterized, then transported and disposed of by PSC on September 22, 2009.

SVE PILOT TEST

In accordance with the approved *Revised SVE Pilot Test Work Plan*, dated May 29, 2009, Delta conducted SVE pilot testing to evaluate the effectiveness of this technique for remediation of elevated soil vapor concentrations. Delta conducted pilot testing to determine whether SVE is effective at the site. Delta utilized a portable vapor extraction system with a positive-displacement vacuum pump and a thermal catalytic oxidation unit to treat extracted vapors prior to release to the atmosphere, in compliance with the unit's air permit. The pilot testing consisted of one step test and one extended test. Field data sheets for the SVE Pilot Test are included as Appendix E.

Well ET-1 was used as the extraction well and wells ET-2, S-1, S-3, S-9, S-16, S-18 and S-19 were used as observation wells. The wells are 33 feet, 70 feet, 94 feet, 118 feet, 12 feet, and 187 feet from the test well respectively. The SVE pilot test was conducted as described below. For the purpose of this test, radius of influence (ROI) will be defined as 1 percent of the vacuum applied to the extraction well.

Field Activities

SVE Step Test. The primary goal of the step test was to determine the optimal applied vacuum that will maximize vapor flow rates without short-circuiting to the surface. The applied vacuum was increased in ten steps as the original five steps did not yield maximum flow. The initial applied vacuum was 10 inches of water (inches H_20), and was increased in 10 in H_20 increments to a maximum vacuum of 110 in H_20. The readings are reported on Table 1. Graph 1 presents vacuum and hydrocarbons versus time and Graph 2 presents vacuum and flow versus time. During each step test, the following tasks were performed:

- Vacuum measurements were collected from the observation wells at 15-minute intervals;
- Vapor flow rates and applied vacuum readings at the extraction wellhead were collected at 15-minute intervals;
- Vapor samples were collected from the extraction well at the beginning of each step in the step test and analyzed in the field for total hydrocarbons using a photoionization detector (PID); and
- At the beginning of the step test a vapor sample for laboratory analysis was collected from the test well; the Tedlar bag containing the vapor sample was placed in an opaque storage container until delivered to the laboratory. Chain-of-custody documentation was maintained throughout the sample collection, transport, and analyses process.

SVE Step Results. The optimal applied vacuum was determined to be 100 in H_20 which resulted in a flow rate of approximately 180 standard cubic feet per minute (scfm) (Graph 2). Increasing the vacuum further did not result in a significantly increased flow.

SVE Extended Test. Immediately following the step test, the extended test began. The goal of the extended test was to determine the radius-of-influence (ROI) of the vacuum system and to determine the concentrations that can be expected from a full-scale system. The applied vacuum for this test, based on the results of the step test, was determined to be 100 in H_20. The extended test was run for a total of 24 hours. The readings are reported on Table 2. Graph 3 presents flow rates and PID hydrocarbon readings versus time, Graph 4 presents vacuum measured at observations wells versus time, and Graph 5 presents the ROI determination plot. During the extended test, the following tasks were performed:

- Vapor flow rates and applied vacuum readings at the extraction wellhead, and vacuum measurements at the observation wells, were collected at 15-minute intervals for the first two hours, 30-minute intervals for the second two hours, hourly for the next four hours, and every 2 hours for the remainder of the test. Vapor samples were collected from the extraction well at these same intervals; these samples were collected in Tedlar bags and analyzed in the field for total hydrocarbons using a PID. Analytical soil vapor extraction sample results are presented in Appendix F.
- Vapor samples from the extraction well were collected in Tedlar bags for laboratory analysis at the beginning of the extended test, after 2 hours, after 4 hours, after 8 hours, after 16 hours, and at the end of the test. Tedlar bags containing vapor samples were placed in an opaque storage container until delivered to the laboratory. Chain-of-custody documentation was maintained throughout the sample collection, transport, and analyses process.

SVE Extended Test Results. The SVE ROI and mass removal rates were determined from equipment readings and laboratory analysis results from the extended SVE test. Table 3 presents petroleum hydrocarbon analytical results; total petroleum hydrocarbons calculated as gasoline (TPH-g) and benzene concentrations over time are included on Graph 6. Methane, carbon dioxide, carbon monoxide, oxygen plus argon, and nitrogen analytical results are included in Table 4. Total mass removed and mass removal rates are provided as Table 5.

- **SVE ROI Calculation Procedure:** To estimate SVE ROI for this site, the normalized vacuum influence data and distances from the extraction Well ET-1 to the observation wells (ET-2, S-1, S-3, S-9, S-16, S-18 and S-19) were plotted on a semi-logarithmic chart. ROI is defined as 1 percent of the vacuum applied to the extraction well. Supporting data for these plots are tabulated on Table 2. The ROI plots are presented as Graph 5.
- **SVE ROI:** Data collected for the Extended Test resulted in a ROI that was approximately 23 feet. However, due to the difference in depth between observation point ET-2 and SB16, the distance from ET-1 to ET-2 (33 feet) may be a more representative value for ROI.
- **Mass Removal Rates:** The removal rates were calculated based on concentrations and flow rates measured during the extended test (Table 3 and Table 4). The TPH-g mass removal rate is estimated at 96.4 pound per day (lbs/day) and the benzene mass removal rate is estimated at 0.05 lbs/day.
- **Total Mass Removed:** The total mass removed was calculated based on concentrations and flow rates measured during the test (Table 3 and Table 4). A total of approximately 119 lbs of TPH-g and 0.058 lbs of benzene were removed during a 29.5-hour period from Well ET-1. The PID reading of 4050

parts per million (ppm) at the beginning of the SVE test fell steadily throughout the test to approximately 540 ppm after 21.5 hours, and remained near that level until the end of the test (Graph 2). This is corroborated by the analytical vapor sample results of 4100 parts per million by volume (ppmv) TPH-g and 2.1 ppmv benzene at the beginning of the pilot test, falling to 530 ppmv TPH-G and 0.25 ppmv benzene at the end of the test.

- **Oxygen and Nitrogen Concentrations:** It was also observed that shortly after the initiation of the extended test, oxygen and nitrogen levels were at elevated concentrations in the vapor stream. This data indicates that air from the surface was also being drawn into the extraction well. This is not unexpected due to the shallow location of the extraction well. If a full scale system is implemented, it may be advantageous to operate the system at a lower vacuum than used in the extended test. This may result in lower flow rates with higher hydrocarbon concentrations.

Laboratory Analyses

Soil vapor samples were analyzed for TPH-g using EPA Method TO-3, benzene, toluene, ethylbenzene, and total xylenes (BTEX compounds) using EPA Method 8260, and nitrogen, methane, carbon dioxide, carbon monoxide, and oxygen by American Society for Testing and Materials (ASTM) Method D-1946 ("Fixed Gas Analysis").

CONCLUSIONS AND RECOMMENDATIONS

The pilot test results indicate that SVE may be effective at the site, however, given current subsurface conditions there are concerns about short-circuiting due to the shallow depths at which some impacts occur. SVE vapor flow rates were 180 scfm, the ROI was at least 23 feet, and inlet concentrations resulted in adequate mass removal rates. Given the sharp decline of inlet concentrations during the 24-hour test, soils characteristics, and the shallow depth of impacts, a rapid decline in inlet vapor concentrations would be expected and sustainable system operation may be difficult to maintain.

Delta proposes to field-verify the location of remaining source material at the site, both laterally and vertically. A file review and field verification activities will be initiated upon approval of this proposal.

REMARKS

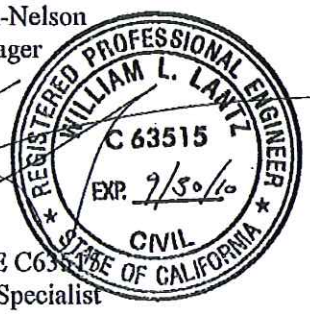
This document represents Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This document is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this document were performed. This document is intended only for the use of Delta's Client and anyone else specifically listed on this document. Delta will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this document.

Should you have any questions or need any further assistance, please contact Suzanne McClurkin-Nelson (Delta Project Manager) at (408) 826-1875, William Lantz (Delta Senior Engineer) at (626) 873-2702, or Denis Brown (Shell Site Manager) at (707) 865-0251.

Sincerely,
Delta Consultants

Matt Lambert
Senior Staff Scientist

Suzanne McClurkin-Nelson
Senior Project Manager



William Lantz, RCE C63[illegible]
Senior Engineering Specialist

cc: Denis Brown, Shell Oil Products US, Carson
Mike Bakaldin, San Leandro Fire Department, San Leandro
Salel Enterprises c/o Foothill Hardware, Oakland

ATTACHMENTS:

Figures:

- Figure 1 – Site Location Map
- Figure 2 – Extended Site Map
- Figure 3 – Hydrogeology Cross Section A–A'
- Figure 4 - Hydrogeology Cross Section B–B'
- Figure 5 –Extended Test Well Locations
- Figure 6 – Well Installation Details

Tables:

- Table 1 – SVE Pilot Test - Step Test Results for Well ET-1
- Table 2 – SVE Pilot Test - Extended Pilot Test Results for Well ET-1
- Table 3 – Soil Vapor Analytical Data – Petroleum Hydrocarbons
- Table 4 – Vapor Analytical Data – Attenuation Factors
- Table 5 – SVE Extended Pilot Test - Mass Removal Rate and Total Mass Removed

Graphs:

- Graph 1 - PID Concentrations and Vacuum Pressure vs. Time for Well ET-1 SVE Step Test
- Graph 2 – Flow Rates and Vacuum Pressure vs. Time at Well ET-1 SVE Step Test
- Graph 3 – PID Concentrations and Flow Rates vs. Time for Well ET-1 SVE Extended Test
- Graph 4 – Vacuum Pressure vs. Time at Observation Wells for Well ET-1 SVE Step Test
- Graph 5 – Radius of Influence Determination Plot (Well ET-1 Extended Test)
- Graph 6 – Hydrocarbon Concentrations vs. Time for Well ET-1 SVE Pilot Test

Appendices:

- Appendix A – Alameda County Health Care Services Agency Letter Dated March 31, 2009
- Appendix B – Boring Logs and Well Construction Details
- Appendix C – Historical Groundwater Contour Maps
- Appendix D – 2005 Toxichem Sensitive Receptor Survey Data
- Appendix E – SVE Pilot Test Field Data Sheets
- Appendix F – Certified Analytical Reports with Chain-of-Custody Documentation

FIGURES

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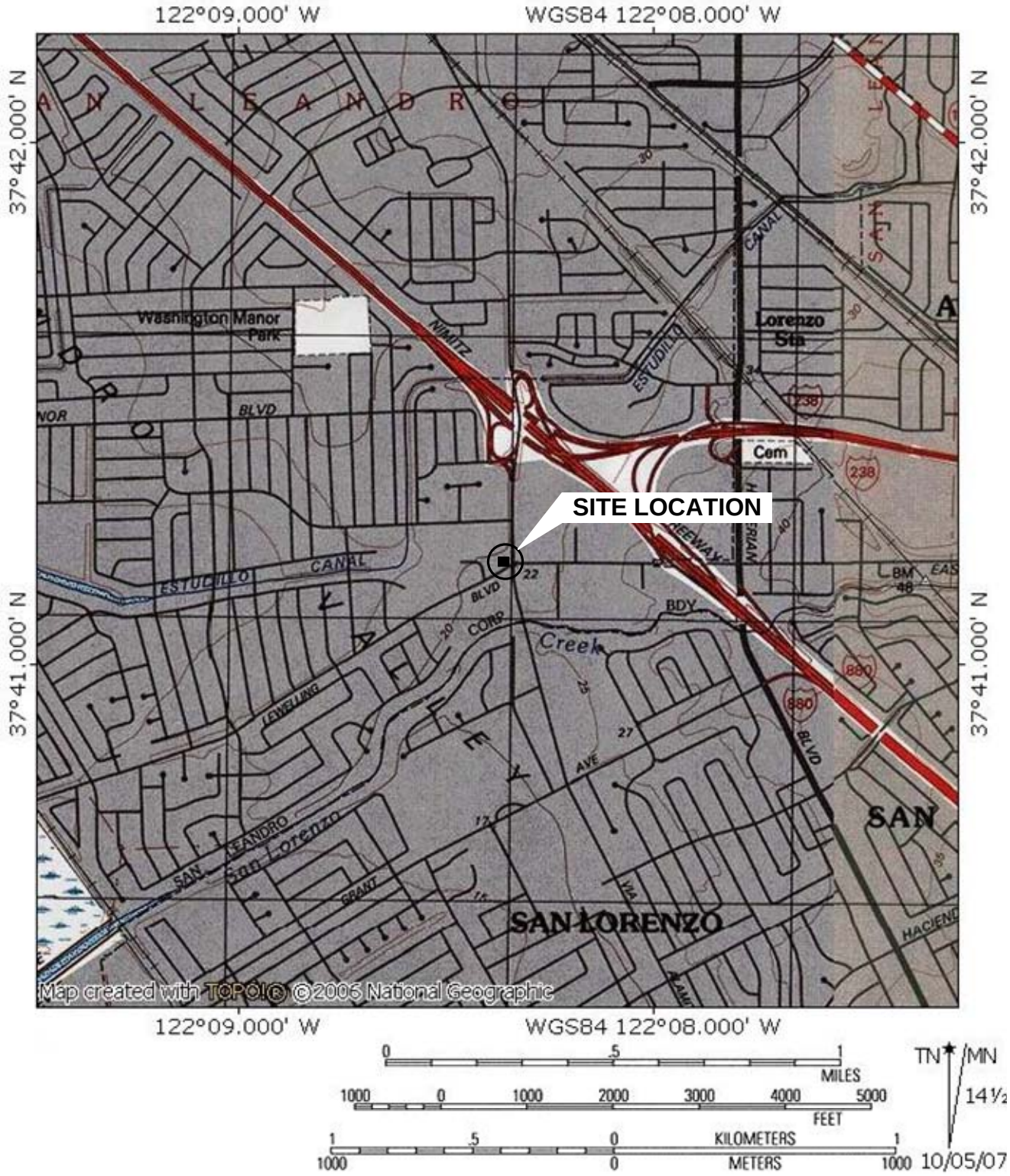

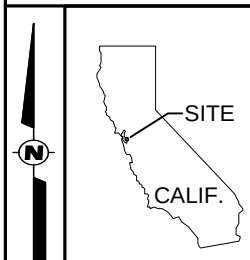

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SAN LEANDRO, CALIFORNIA

FIGURE 1
SITE LOCATION MAP

15275 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

PROJECT NUMBER SCA15275-1

APPROVED BY

CHECKED BY

DRAWN BY AD 11/19/2009

P-26 P-20 P-25 P-27 P-18 P-17 P-19 P-22 P-21 P-12 P-28 P-23 P-16 P-14 P-11 P-15 P-13 P-29 P-24 P-10

S-19 S-18 S-16 S-17 S-1 S-5 S-9 S-3 S-6 S-10 S-15 S-7 S-8 S-13 S-12 S-11 S-14

SV-1 SR-1

ET-1 ET-2

BIG O TIRE STORE

BIG O TIRE STORE

FORMER BUILDING LOCATION

FORMER DISPENSER ISLAND

FORMER USTs

FORMER DISPENSER ISLANDS

SALEL'S MOBILE HOME PARK

SPEEDY SMOG

LEWELLING BOULEVARD

WASHINGTON AVENUE

A A'

B B'

N W E S

LEGEND

- S-15 GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- S-1 GROUNDWATER MONITORING WELL MODIFIED FOR SOIL VAPOR EXTRACTION
- SV-1 SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION
- P-18 SOIL VAPOR PROBE LOCATION AND DESIGNATION
- ET-1 CURRENT BUILDING LOCATION LOCATION AND DESIGNATION
- EXTENDED TEST WELL
- TRAILER PARK STRUCTER
- FORMER BUILDING
- FORMER UST LOCATION
- PROPERTY LINE
- FENCING
- A A' CROSS SECTION DIRECTION

0 25 50

SCALE IN FEET

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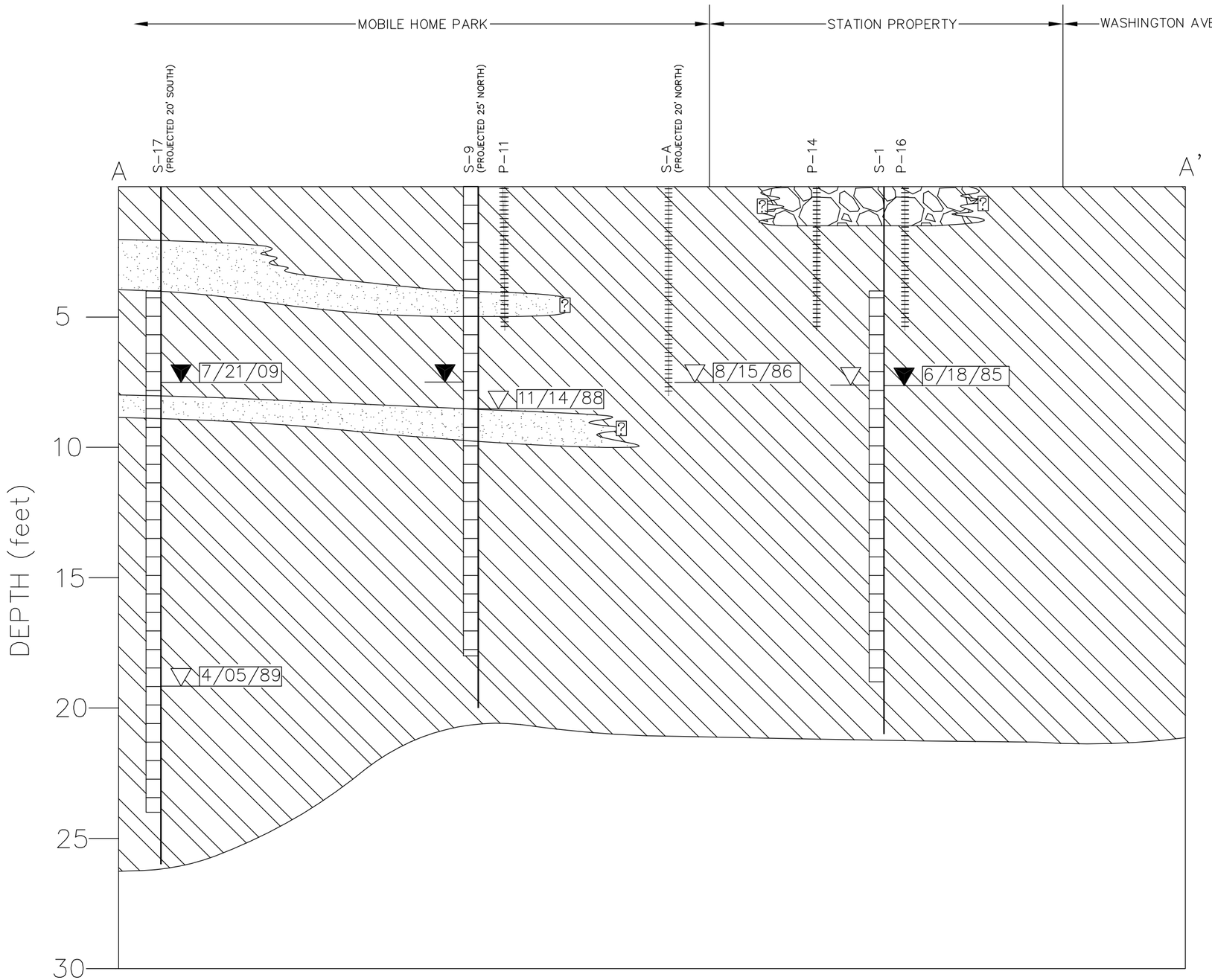
SAN LEANDRO, CALIFORNIA

FIGURE 2

SITE MAP

15275 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

PROJECT NUMBER	SCA15275
APPROVED BY	
CHECKED BY	
DRAWN BY	AD 11/17/2009



LEGEND

CLAY AND SILT (CL, ML)

SILTY SAND AND SANDY SILT (SM/ML)
THIN BEDS OF SAND IN SILT

GRAVEL FILL

MONITORING WELL

SOIL BORING

FIRST ENCOUNTERED GROUNDWATER, 8/15/86

WATER LEVE IN WELL, 7/21/09

A TO A' = 360 FEET

0 40 80

HORIZONTAL SCALE IN FEET

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FIGURE 3

HYDROGEOLOGY CROSS SECTION A - A'

15275 WASHINGTON BLVD.
SAN LEANDRO, CALIFORNIA

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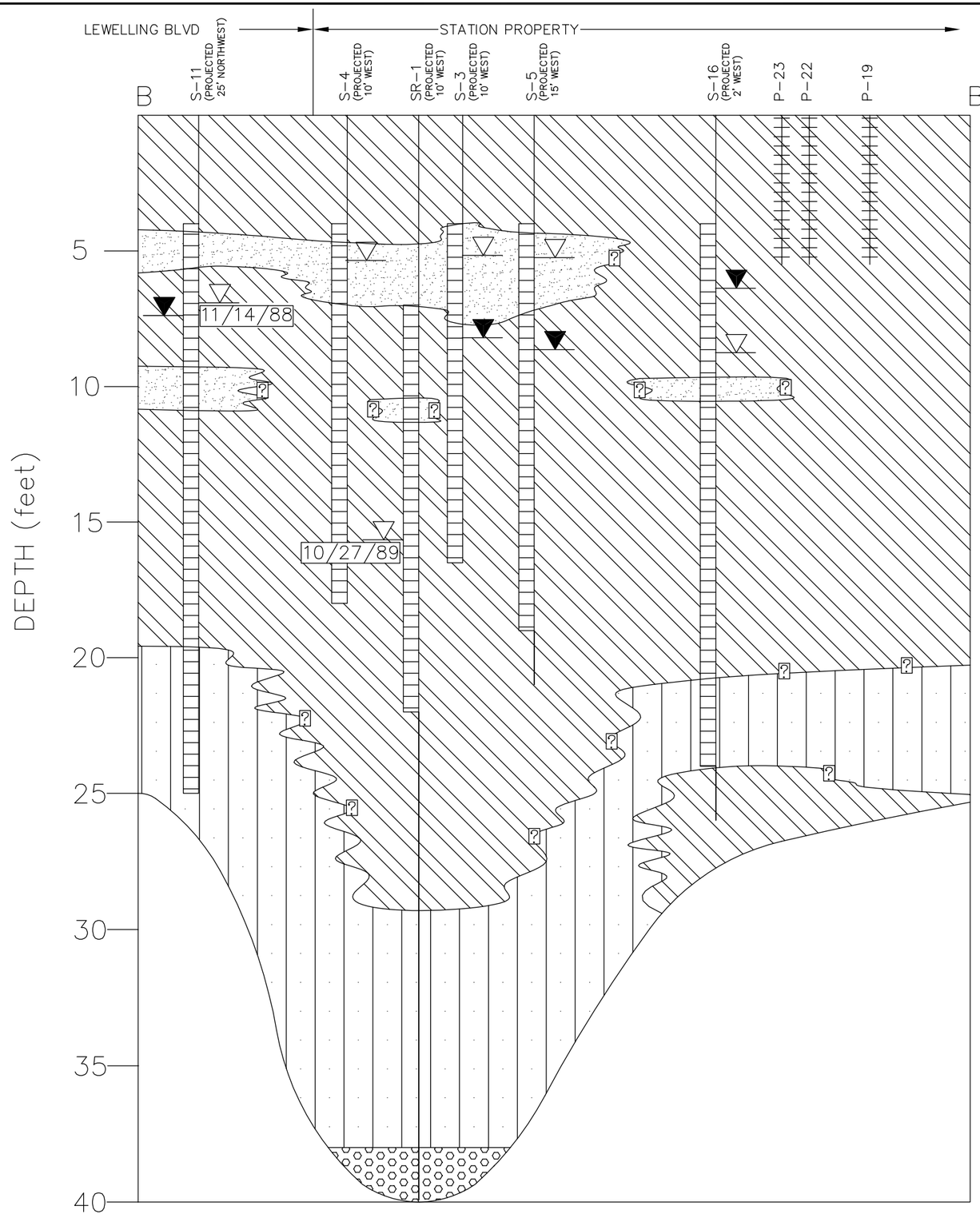
AD	11/17/2009



LEGEND

- CLAY AND SILT (CL, ML)
- SILTY SAND AND CLAYEY SAND (SM/ML) THIN BEDS OF SAND IN SILT
- SILTY SAND AND CLAYEY SAND (ML/SC)
- SAND (SP)
- MONITORING WELL
- SOIL BORING
- FIRST ENCOUNTERED GROUNDWATER
- WATER LEVE IN WELL 11/14/88

B TO B' = 270 FEET

0 40 80

HORIZONTAL SCALE IN FEET

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FIGURE 4

HYDROGEOLOGY CROSS SECTION B - B'

15375 WASHINGTON BLVD
SAN LEANDRO, CALIFORNIA

PROJECT NUMBER SCA15275-1
APPROVED BY
CHECKED BY
DRAWN BY ML 10/06/09

WASHINGTON AVENUE

LEWELLING BOULEVARD

BIG O TIRE STORE

SV-1

FORMER DISPENSER ISLANDS

ET-2

FORMER BUILDING LOCATION

ET-1

BIG O TIRE STORE

S-16

SPEEDY SMOG

FORMER DISPENSER ISLAND

S-5

S-6

S-1

FORMER USTs

S-7

SR-1

S-3

PL

N E S W

LEGEND

- S-15 — GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- S-1 — GROUNDWATER MONITORING WELL MODIFIED FOR SOIL VAPOR EXTRACTION
- SV-1 — SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION
- ET-1 — EXTENDED TEST WELL LOCATION AND DESIGNATION
- CURRENT BUILDING LOCATION
- TRAILER PARK STRUCTER
- FORMER BUILDING
- FORMER UST LOCATION
- PROPERTY LINE
- FENCING

0 25 50
SCALE IN FEET

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SAN LEANDRO, CALIFORNIA

FIGURE 5

EXTENDED TEST WELL LOCATIONS
15275 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

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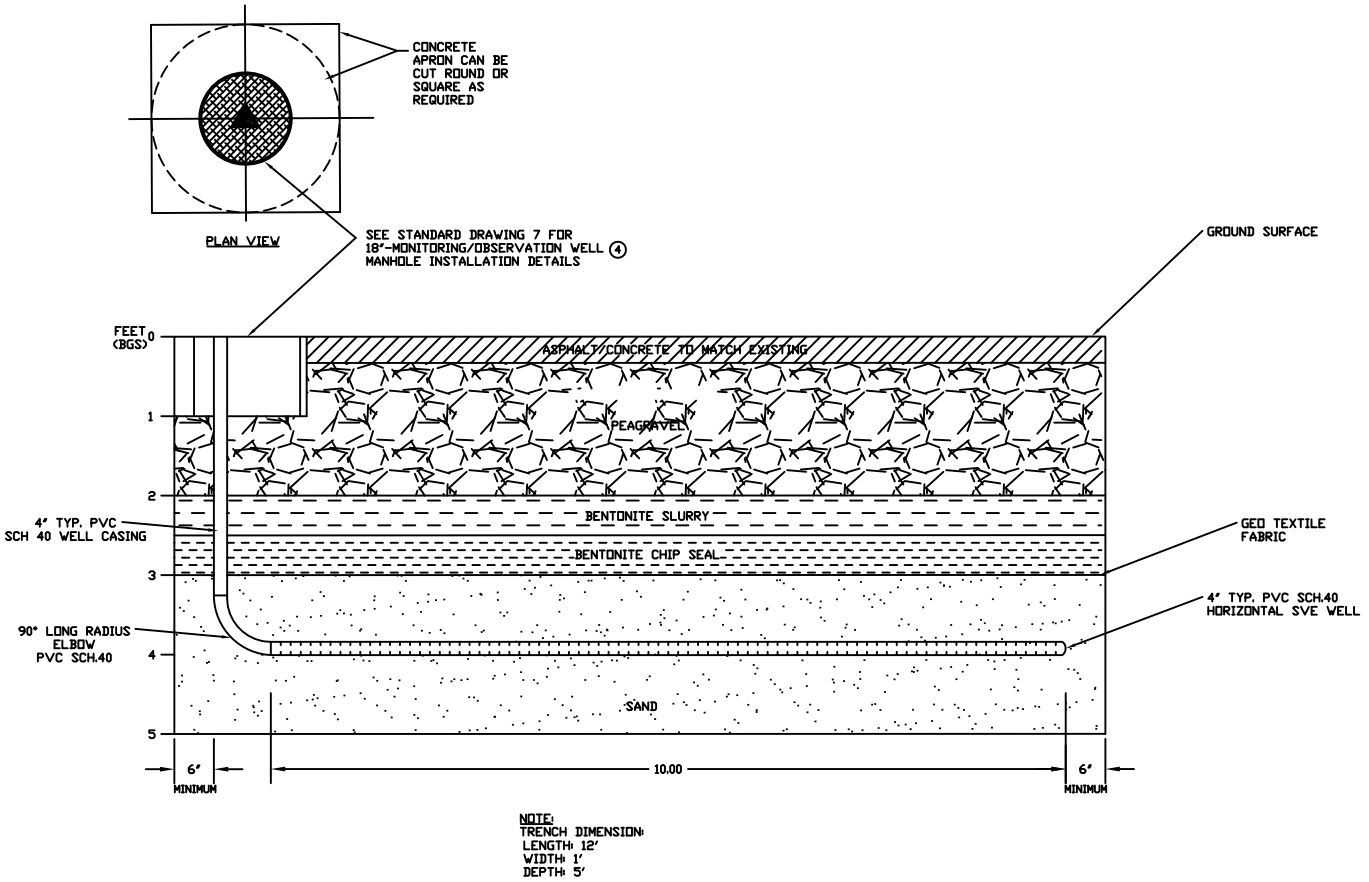

0 1 2
SCALE AS SHOWN

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SAN LEANDRO, CALIFORNIA

FIGURE 6

WELL INSTALLATION DETAILS

15275 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

TABLES

TABLE 1
SVE Pilot Test - Step Test Results for Well ET-1
Former Shell-Branded Service Station
15275 Washington Avenue
San Leandro, California

Date	Time	Elapsed Time	Vacuum (in H_20)	Differential Pressure (in H_2O)	Pipe Diameter (inches)	Flow (scfm)	PID (ppm)
9/16/2009	8:30	0:00	10	0.18	2	40	4050
	8:45	0:15	10	0.16	2	37	3990
	9:00	0:30	10	0.18	2	40	3820
	9:15	0:45	10	0.18	2	40	3630
	9:30	1:00	10	0.18	2	40	3490
	9:35	1:05	20	0.57	2	68	3410
	9:45	1:15	20	0.58	2	69	3240
	10:00	1:30	20	0.58	2	69	3140
	10:15	1:45	20	0.58	2	69	3030
	10:30	2:00	20	0.57	2	68	2880
	10:32	2:02	30	1.20	2	96	2830
	10:45	2:15	30	1.20	2	96	2690
	11:00	2:30	30	1.25	2	98	2550
	11:02	2:32	40	2.00	2	122	2520
	11:15	2:45	40	2.00	2	122	2390
	11:30	3:00	40	2.00	2	122	2160
	11:32	3:02	50	2.70	2	146	2140
	11:45	3:15	50	2.70	2	146	2010
	12:00	3:30	50	2.70	2	146	1920
	12:05	3:35	60	0.70	3	145	1780
	12:15	3:45	60	0.70	3	145	1695
	12:30	4:00	70	0.90	3	154	1650
	12:45	4:15	80	1.15	3	164	1667
	13:00	4:30	90	1.30	3	176	1565
	13:15	4:45	100	1.50	3	183	1401
	13:30	5:00	110	1.60	3	186	1308

Abbreviations
PID = Photo Ionization Detector
in H_2O = Inches of water
scfm = Standard Cubic Feet Per Minute
ppm = Parts per million

Equations:

$$SCFM = 128.8 \times K \times D^2 \times \sqrt{\left(\frac{P \times \Delta P}{(T + 460) \times Ss}\right)}$$

K = Coefficient = 0.67
D = Diameter of Pipe
P = 14.7 + Line pressure(Vacuum in PSI)
Vac (PSI) = Vac ("H2O) x 0.036
ΔP= Differential Pressure ("H2O)
T = Temperature in °F = 60
Ss = Specific Gravity of Air (Air = 1.0)

TABLE 2
SVE Pilot Test - Extended Test Results for Well ET-1
Former Shell-Branded Service Station
15275 Washington Avenue
San Leandro, California

Date	Time	Elapsed Time	Vacuum (in H_20)	Differential Pressure (in H_2O)	Pipe Diameter (inches)	Flow Rate (scfm)	PID (ppm)	Observation Wells							Notes
								S-16 (in H_2O)	ET-2 (in H_2O)	S-1 (in H_2O)	S-3 (in H_2O)	S-9 (in H_2O)	S-19 (in H2O)	S-18 (in H_2O)	
9/16/2009	14:00	0:00	100	1.50	3	183	1281	1.10	1.70	0.03	0.00	0.00	0.00	0.00	Ext Start Sample
	14:15	0:15	100	1.50	3	183	1096	1.10	1.70	0.04	0.00	0.00	0.00	0.00	
	14:30	0:30	100	1.50	3	183	1048	1.10	1.75	0.04	0.00	0.00	0.00	0.00	
	14:45	0:45	100	1.50	3	183	980	1.10	1.75	0.04	0.00	0.00	0.00	0.00	
	15:00	1:00	100	1.50	3	183	980	1.10	1.75	0.04	0.00	0.00	0.00	0.00	
	15:15	1:15	100	1.50	3	183	1029	1.05	1.75	0.04	0.00	0.00	0.00	0.00	
	15:30	1:30	100	1.50	3	183	1007	1.00	1.75	0.04	0.00	0.00	0.00	0.00	
	15:45	1:45	100	1.50	3	183	977	1.00	1.75	0.03	0.00	0.00	0.00	0.00	
	16:00	2:00	100	1.50	3	183	978	1.00	1.75	0.03	0.00	0.00	0.00	0.00	2-hr Sample
	16:30	2:30	100	1.50	3	183	1027	1.00	1.75	0.03	0.00	0.00	0.00	0.00	
	17:00	3:00	100	1.50	3	183	970	1.00	1.70	0.03	0.00	0.00	0.00	0.00	
	17:30	3:30	100	1.50	3	183	952	1.00	1.65	0.03	0.00	0.00	0.00	0.00	
	18:00	4:00	100	1.50	3	183	933	1.00	1.65	0.03	0.00	0.00	0.00	0.00	4-hr Sample
	19:00	5:00	100	1.50	3	183	918	0.98	1.52	0.03	0.00	0.00	0.00	0.00	
	20:00	6:00	100	1.50	3	183	881	0.98	1.52	0.03	0.00	0.00	0.00	0.00	
	21:00	7:00	100	1.40	3	180	859	0.98	1.52	0.03	0.00	0.00	0.00	0.00	
	22:00	8:00	100	1.40	3	180	823	0.98	1.50	0.02	0.00	0.00	0.00	0.00	8-hr Sample
9/17/2009	0:00	10:00	100	1.35	3	177	780	0.99	1.50	0.02	0.00	0.00	0.00	0.00	
	2:00	12:00	100	1.30	3	175	638	1.00	1.50	0.02	0.00	0.00	0.00	0.00	
	4:00	14:00	100	1.30	3	175	587	0.99	1.50	0.02	0.00	0.00	0.00	0.00	
	6:00	16:00	100	1.30	3	175	540	0.98	1.50	0.03	0.00	0.00	0.00	0.00	16-hr Sample
	8:00	18:00	100	1.30	3	175	584	0.98	1.50	0.03	0.00	0.00	0.00	0.00	
	10:00	20:00	100	1.30	3	175	580	1.00	1.55	0.03	0.00	0.00	0.00	0.00	
	12:00	22:00	100	1.30	3	175	558	0.98	1.55	0.03	0.00	0.00	0.00	0.00	
	14:00	24:00	100	1.30	3	175	537	0.98	1.60	0.03	0.00	0.00	0.00	0.00	Ext End Sample

Knockout Tank (At End of Test): 45 gallons
Abbreviations:
PID = Photo Ionization Detector
in H_20 = Inches of water
scfm = Standard cubic feet per minute
ppm = Parts per million

Equation:

$$SCFM = 128.8 \times K \times D^2 \times \sqrt{\left(\frac{P \times \Delta P}{(T + 460) \times Ss}\right)}$$

K = Coefficient = 0.67
D = Diameter of Pipe = 3"
P = 14.7 + Line pressure(Vacuum in PSI)
Vac (PSI) = Vac ("H2O) x 0.036
ΔP= Differential Pressure ("H2O)
T = Temperature in °F = 60
Ss = Specific Gravity of Air (Air = 1.0)

TABLE 3
Soil Vapor Analytical Data - Petroleum Hydrocarbons
Former Shell-Branded Service Station
15275 Washington Avenue
San Leandro, California

Sample ID	Date	Time Elapsed (Hours)	TPH-g (ppmv)	TPH-g (ug/L)	Benzene (ppmv)	Benzene (ug/L)	Toluene (ppmv)	Ethyl-benzene (ppmv)	Total Xylenes (ppmv)
ET-1(Step Start)	09/16/09	0	4,100	17,000	2.1	6.7	ND<5.0	5.6	4.1
ET-1(Ext Start)	09/16/09	5.5	1,600	6,500	1.5	4.8	ND<2.0	6.6	2.0
ET-1(2 hr)	09/16/09	7.5	1,200	4,900	1.0	3.2	ND<1.6	6.4	2.2
ET-1(4 hr)	09/16/09	9.5	1,000	4,100	0.92	2.9	ND<1.2	7.9	3.0
ET-1(8 hr)	09/16/09	13.5	970	4,000	0.50	1.6	ND<1.2	4.9	1.8
ET-1(16 hr)	09/17/09	21.5	740	3,000	0.28	0.89	ND<1.0	4.1	1.6
ET-1(Ext end)	09/17/09	29.5	530	2,200	0.25	0.80	ND<0.50	3.4	1.4

Abbreviations:
TPH-g = Total petroleum hydrocarbons calculated as gasoline
ppmv = Parts per million by volume
ug/L = Micrograms per liter
ND = Not detected above the shown reporting limit

Notes:
TPH-g concentration (ug/L) = [TPH-g concentration (ppmv) / 10^6] x 100 g/mole x mole/24.4 L x 10^6 ug/g
Benzene concentration (ug/L) = [Benzene concentration (ppmv) / 10^6] x 78.12 g/mole x mole/24.4 L x 10^6 ug/g
MTBE concentration (ug/L) = [MTBE concentration (ppmv) / 10^6] x 88.15 g/mole x mole/24.4 L x 10^6 ug/g

TABLE 4
Soil Vapor Analytical Data - Attenuation Factors
Former Shell-Branded Service Station
15275 Washington Avenue
San Leandro, California

Sample ID	Date	Methane (% v)	Carbon Dioxide (% v)	Carbon Monoxide (% v)	Oxygen + Argon (% v)	Nitrogen (% v)
ET-1(Step Start)	09/16/09	1.48	15.4	ND<0.500	4.62	78.5
ET-1(Ext Start)	09/16/09	ND<0.500	5.66	ND<0.500	17.1	77.3
ET-1(2 hr)	09/16/09	ND<0.500	4.67	ND<0.500	17.7	77.7
ET-1(4 hr)	09/16/09	ND<0.500	4.26	ND<0.500	17.8	77.9
ET-1(8 hr)	09/16/09	ND<0.500	3.54	ND<0.500	18.0	78.4
ET-1(16 hr)	09/17/09	ND<0.500	2.58	ND<0.500	18.7	78.7
ET-1(Ext end)	09/17/09	ND<0.500	1.73	ND<0.500	19.9	78.4

Abbreviations:

% v = percent by volume

ND = Not detected above shown detection limit

TABLE 5
SVE Extended Pilot Test - Mass Removal Rate and Total Mass Removed
Former Shell-Branded Service Station
15275 Washington Avenue
San Leandro, California

Well ID	SVE Test Dates (mm/dd/yy)	Constituent	Hours of Operation	Average Influent Concentration (ug/L)	Average Flow Rate (scfm)	Conversion Factor*	Mass Removed (lbs)	Mass Removal Rate (lbs/hour)	Mass Removal Rate (lbs/day)
ET-1	9/16-17/09	TPH-g	29.5	5,957	180	3.75E-06	119	4.02	96.4
		Benzene	29.5	2.9	180	3.75E-06	0.058	0.002	0.05

Abbreviations & Notes:
ug/L = Micrograms per liter
scfm = Standard cubic feet per minute
lbs = Pounds
TPH-g = Total petroleum hydrocarbons as gasoline
ug/L = Micrograms per liter

Calculations:
Mass removal (lbs) = Influent concentration (ug/l) x flowrate (scfm) x hours of operation (hr.) x 3.75E-06*
*Conversion factor of 3.75E-6 = (60 min./hr.) x (1 l/0.0353 ft3) x (1 g/1,000,000 ug) x (1.0 lbs/ 453.6 g)

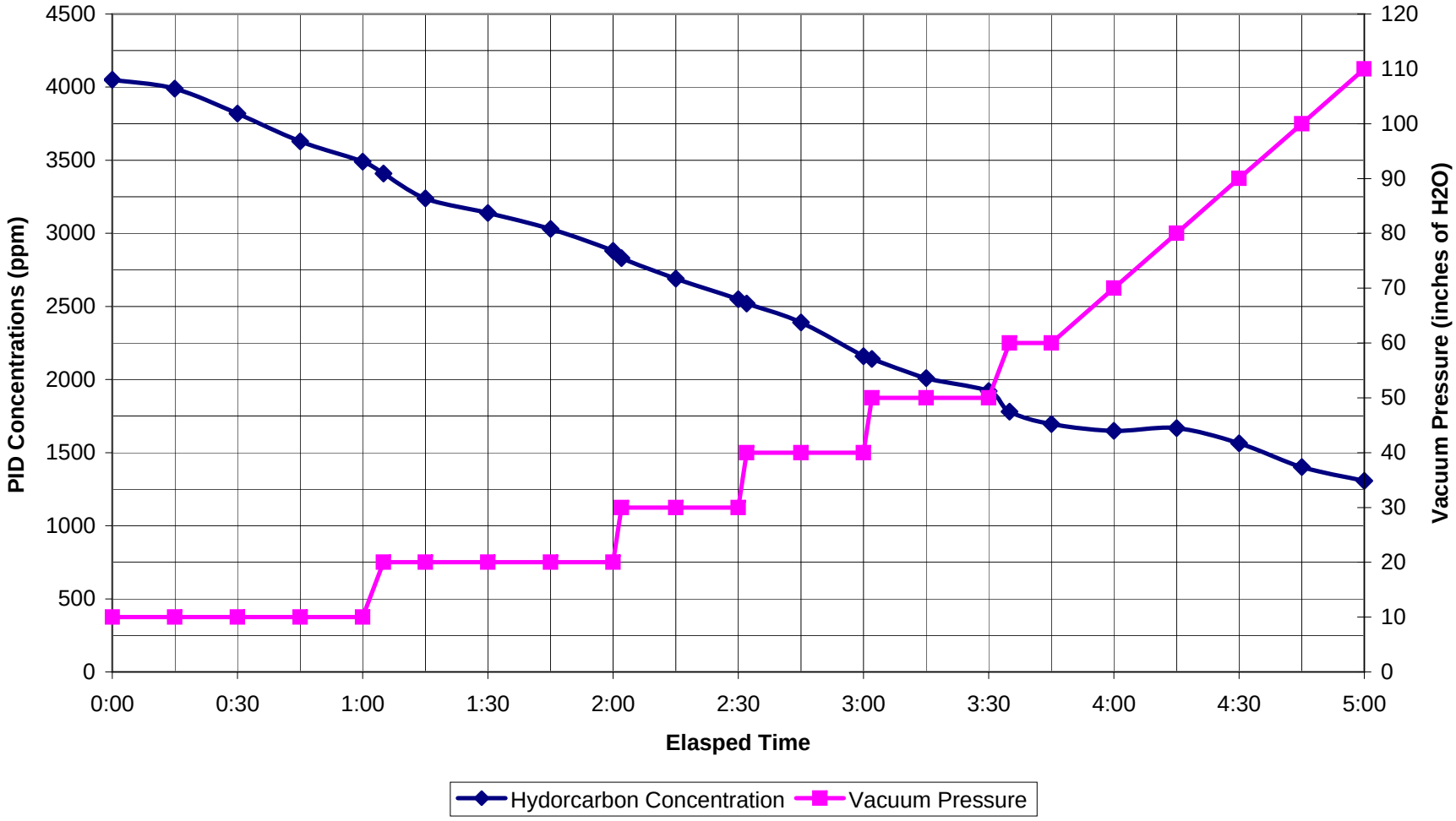
GRAPHS

GRAPH 1

PID Concentrations and Vacuum Pressure vs. Time for Well ET-1 SVE Step Test

Former Shell-Branded Service Station

15275 Washington Avenue, San Leandro, California

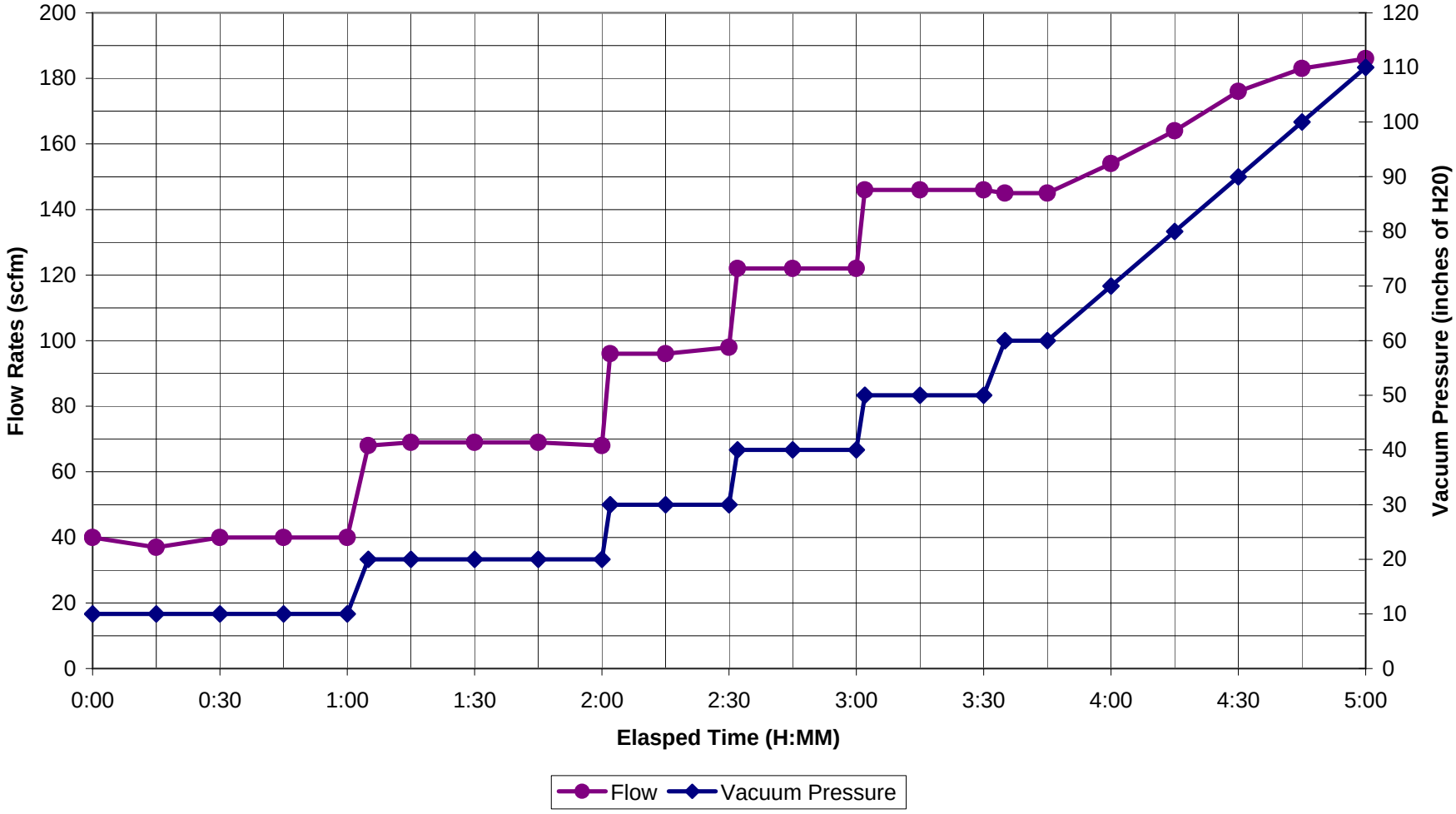


GRAPH 2

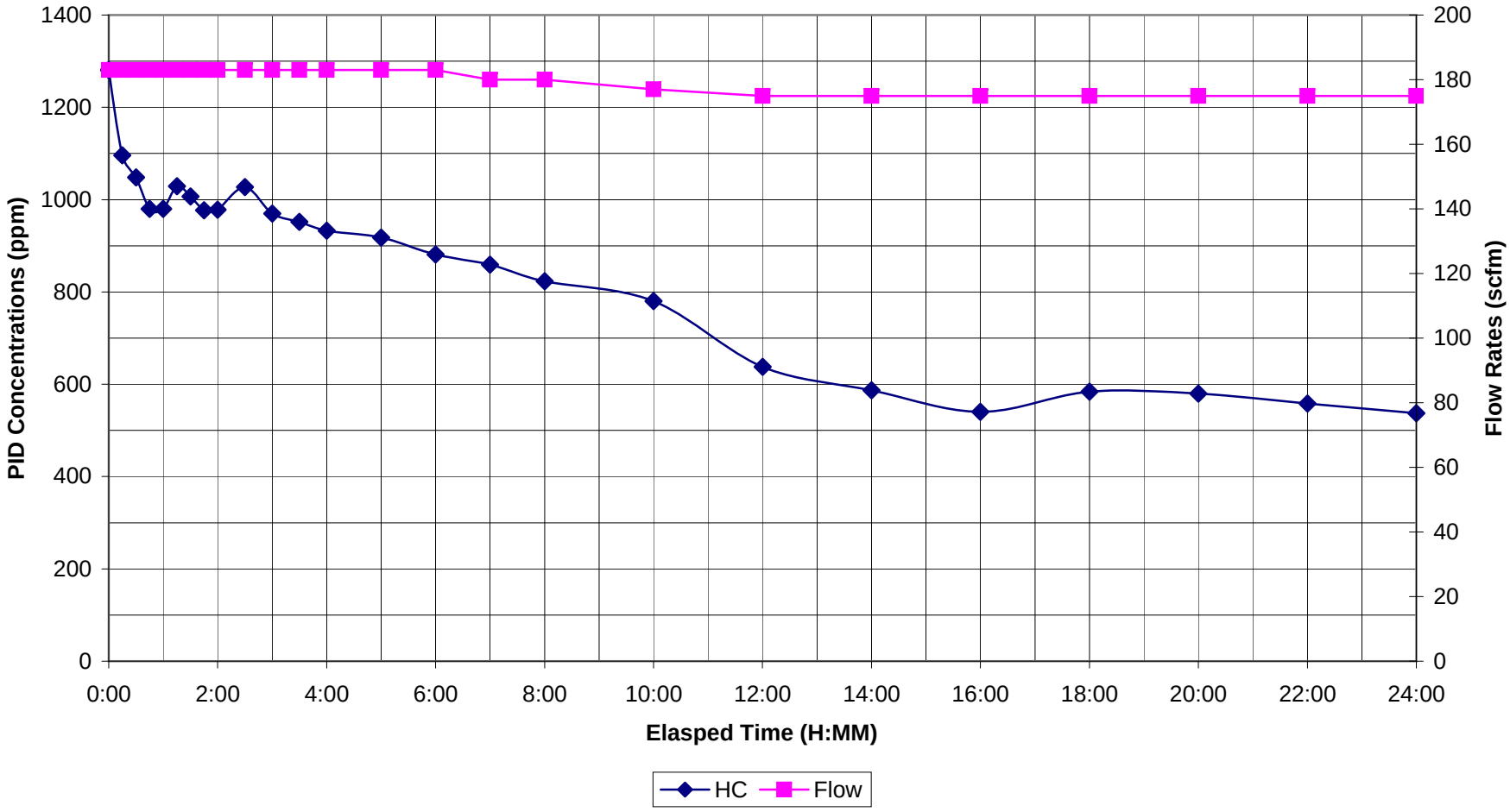
Flow Rates and Vacuum Pressure vs. Time at Well ET-1 SVE Step Test

Former Shell-Branded Service Station

15275 Washington Avenue, San Leandro, California



GRAPH 3
PID Concentrations and Flow Rates vs. Time for Well ET-1 SVE Extended Test
(Vacuum = 100 Inches of H2O)
Former Shell-Branded Service Station
15275 Washington Avenue, San Leandro, California

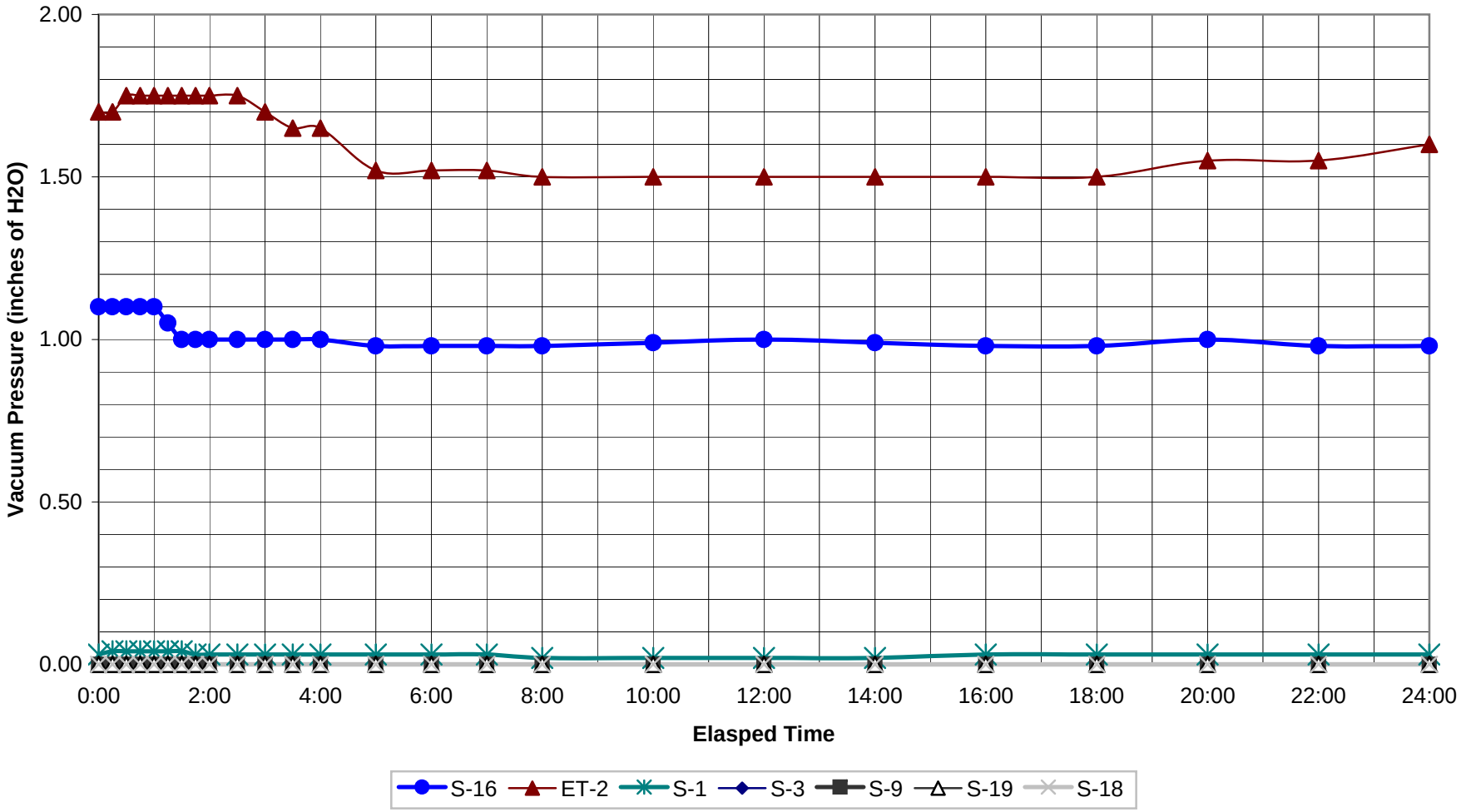


GRAPH 4

Vacuum Pressure vs. Time at Observation Wells for Well ET-1 SVE Step Test

Former Shell-Branded Service Station

15275 Washington Avenue, San Leandro, California

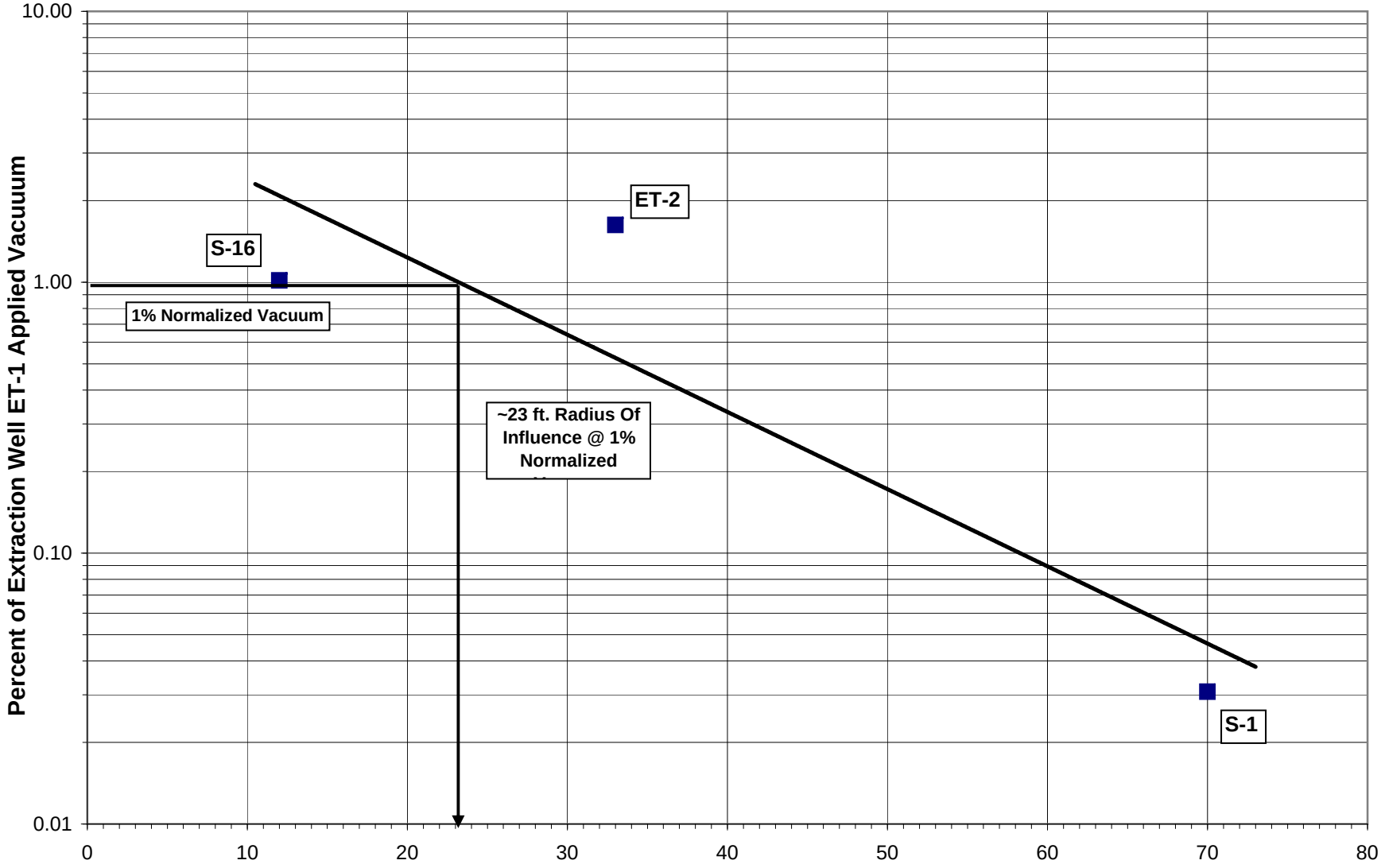


GRAPH 5

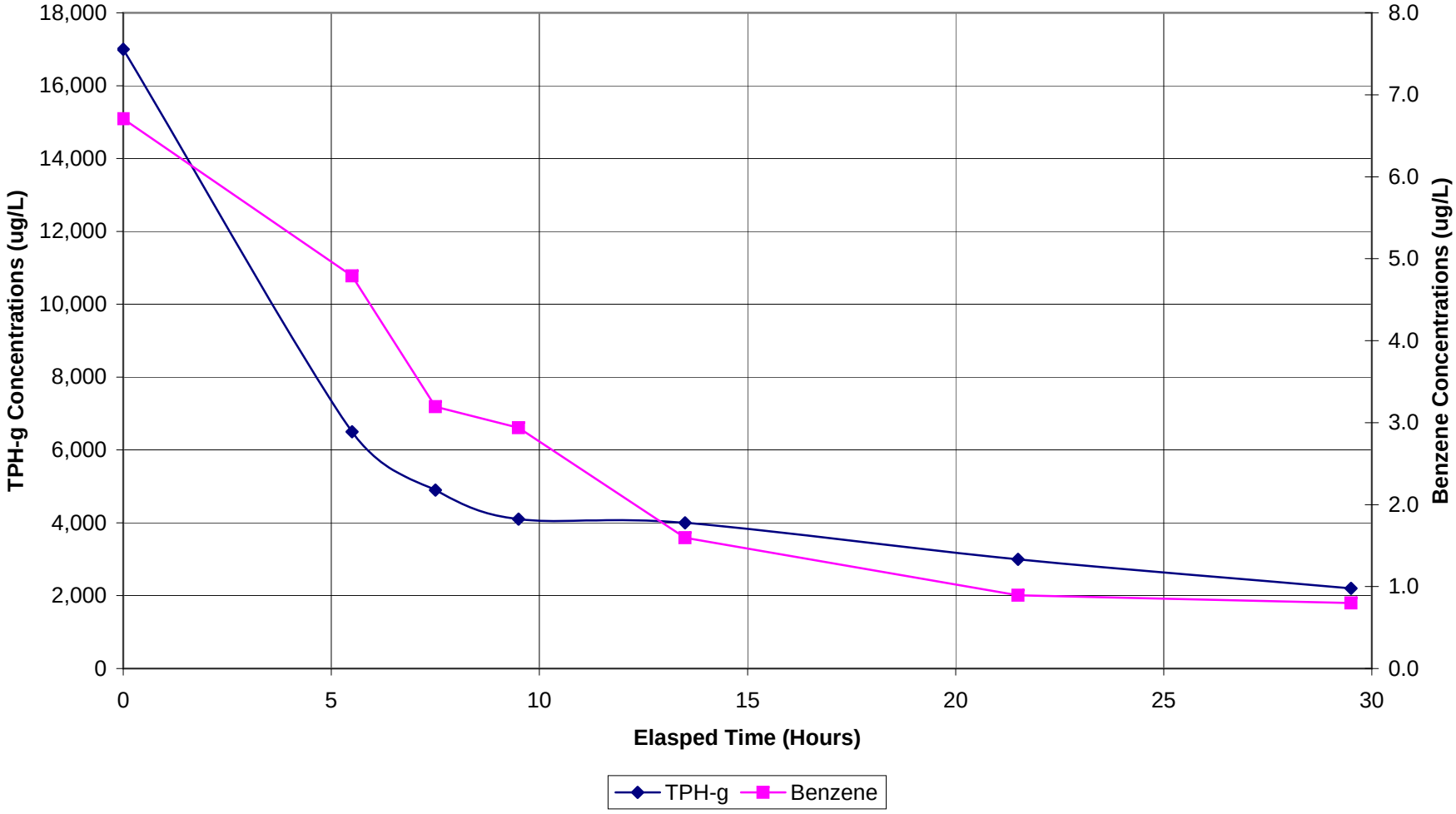
Radius of Influence Determination Plot (Well ET-1 Extended Test)

Former Shell Service Station

15275 Washington Avenue, San Leandro, California



GRAPH 6
Hydrocarbon Concentrations vs. Time for Well ET-1 SVE Pilot Test
Former Shell-Branded Service Station
15275 Washington Avenue, San Leandro, California



APPENDIX A

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
LETTER DATED MARCH 31, 2009

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-93

March 31, 2009

Mr. Denis Brown
Shell Oil Products US
20945 S. Wilmington Ave.
Carson, CA 90810-1039

Mr. Frank Salel
Salel Enterprises
P.O. Box 5099
Oakland, CA 94605

Subject: Fuel Leak Case No. RO0000372 and Geotracker Global ID T0600101226, Shell#129460, 15275 Washington Avenue, San Leandro, CA 94579

Dear Mr. Brown and Mr. Salel:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the above-referenced site including the recently submitted work plans entitled, "*Soil Vapor Extraction Pilot Test Work Plan, Former Shell-Branded Service Station, 15275 Washington Avenue, San Leandro, California,*" dated January 27, 2009 and "*Groundwater Sampling Work Plan, Former Shell-Branded Service Station, 15275 Washington Avenue, San Leandro, California,*" dated January 27, 2009. Both work plans, which were prepared on Shell's behalf by Delta Environmental, were received on the ACEH ftp site on March 17, 2009. The "*Soil Vapor Extraction Pilot Test Work Plan,*" proposes the installation of two horizontal soil vapor extraction (SVE) wells for the purpose of conducting a SVE pilot test. We concur with the proposal to conduct a step test and extended test; however, we request some modifications to the pilot test as described in the technical comments below. Therefore, we request that you address the technical comments below and prepare a Revised SVE Pilot Test Work Plan.

The proposed groundwater sampling in the "*Groundwater Sampling Work Plan,*" may be implemented provided that technical comment 5 below is addressed during field implementation. Please see technical comment 5 below regarding the selected wells in which to implement both purge and no purge sampling.

We request that you address the following technical comments, perform the proposed work, and send us the reports described below.

TECHNICAL COMMENTS

1. **Horizontal Well Locations.** In general, the highest concentrations of TPH as gasoline and benzene have been detected in soil vapor samples collected in the central and western portions of the site. Elevated concentrations of TPH as gasoline and benzene have also been detected in soil vapor off-site to the west. For the pilot test, two horizontal wells (ET-1 and ET-2) are proposed in the central portion of the site aligned parallel to the eastern edge of the former service station building. The former SVE system that operated on site from May 1998 to October 1999, also included horizontal piping for SVE (see attached Figures A-1 and C-1 from the "*Remediation System Design,*" dated March 25, 1998) that apparently ran along the east, west, and south sides of the current building. The aboveground system was removed in 2002; however, we did not find documentation to indicate that the below ground piping was removed. Therefore, it is possible that the horizontal piping remains in place. The currently proposed location of ET-2 appears to be close to the location of the horizontal piping used for the previous SVE system. We request that you review the proposed locations of ET-1 and ET-2 in relation to the former system and propose revised locations as necessary. We recommend that ET-1 be moved further to the west, closer to the locations of 2008 soil vapor sampling locations P-21 and P-23 north of the current building. Please also review the proposed location of well ET-2. Specifically, please consider the proximity of ET-2 to the horizontal SVE piping from the former system and possible effects on SVE pilot test results. Please present revised locations for the horizontal wells as necessary in the Revised SVE Pilot Test Work Plan requested below.

2. **Soil Vapor Analyses.** The SVE Work Plan currently proposes to analyze soil vapor samples for BTEX using EPA Method TO-15. Analysis for BTEX using EPA Method 8260 is acceptable and is expected to be more cost effective.

3. **Observation Wells.** The SVE Work Plan proposes to use wells ET-2, S-1, S-3, S-16, and S-18 as observation wells. We request that you include monitoring of off-site wells S-9 and S19. Please include these revisions and other revisions to the monitoring as necessary based on modified extraction well locations requested in technical comment 1.

4. **Additional Soil Vapor Samples.** As discussed during a recent meeting on March 12, 2009, we request that you review the site assessment data and propose additional soil vapor sampling as necessary. Please include these plans in the Revised SVE Pilot Test Work Plan requested below.

5. **Proposed Wells for Purge and No Purge Sampling.** The proposal to conduct both purge and no purge sampling in selected wells to assure that representative samples are being collected is generally acceptable. However, we request that purge and no purge sampling be performed during the third quarter 2009 groundwater sampling event in wells S-3, S-5, S-9, and S-16. The Groundwater Sampling Work Plan proposes purge and no purge sampling for wells S-7, S-8, and S-9. We are not requesting purge and no purge sampling in wells S-7 and S-8 at this time. Please present the results of the purge and no purge sampling in the Semi-Annual Groundwater Monitoring Report – Third Quarter 2009 requested below.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **April 21, 2009** – Semi-Annual Groundwater Monitoring Report – First Quarter 2009
- **May 29, 2009** – Revised SVE Pilot Test Work Plan
- **October 31, 2009** – Semi-Annual Groundwater Monitoring Report – Third Quarter 2009

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org.

Sincerely,

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Attachments: Figures A-1 and C-1 from *"Remediation System Design,"* dated March 25, 1998

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

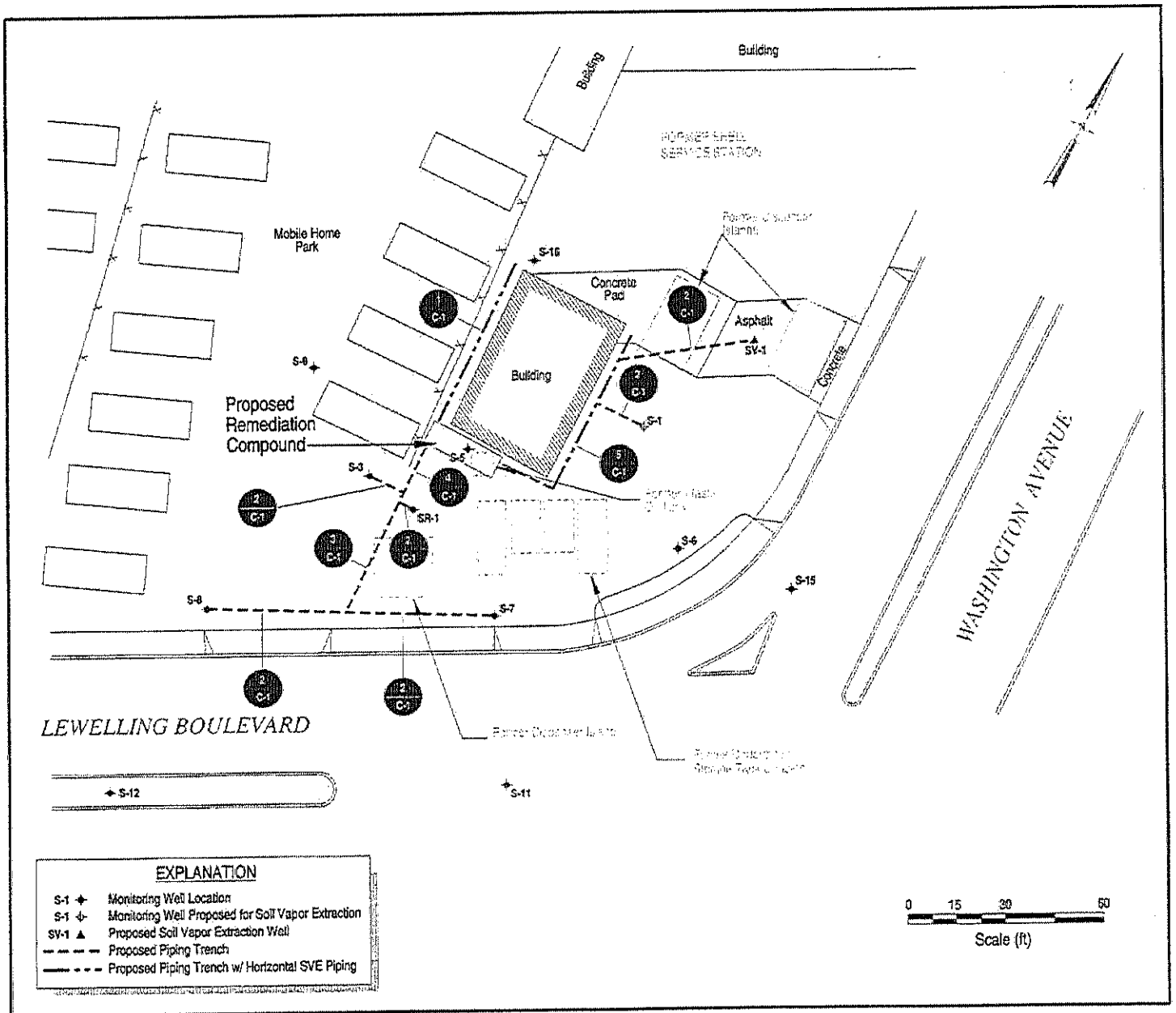
cc: Suzanne McClurkin-Nelson, Delta Environmental, 312 Piercy Road, San Jose, CA 95138

Donna Drogos, ACEH
Jerry Wickham, ACEH
File

Former Shell Service Station

15275 Washington Avenue
San Leandro, California

Site Plan and System Layout



CAMBRIA
Environmental Technology, Inc.

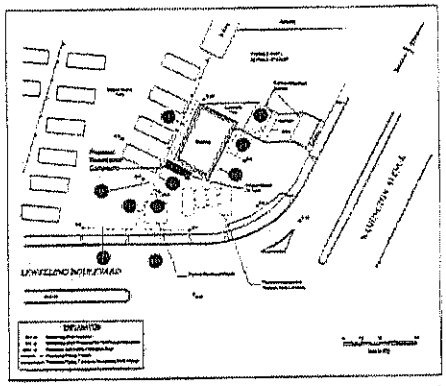


FIGURE A-1

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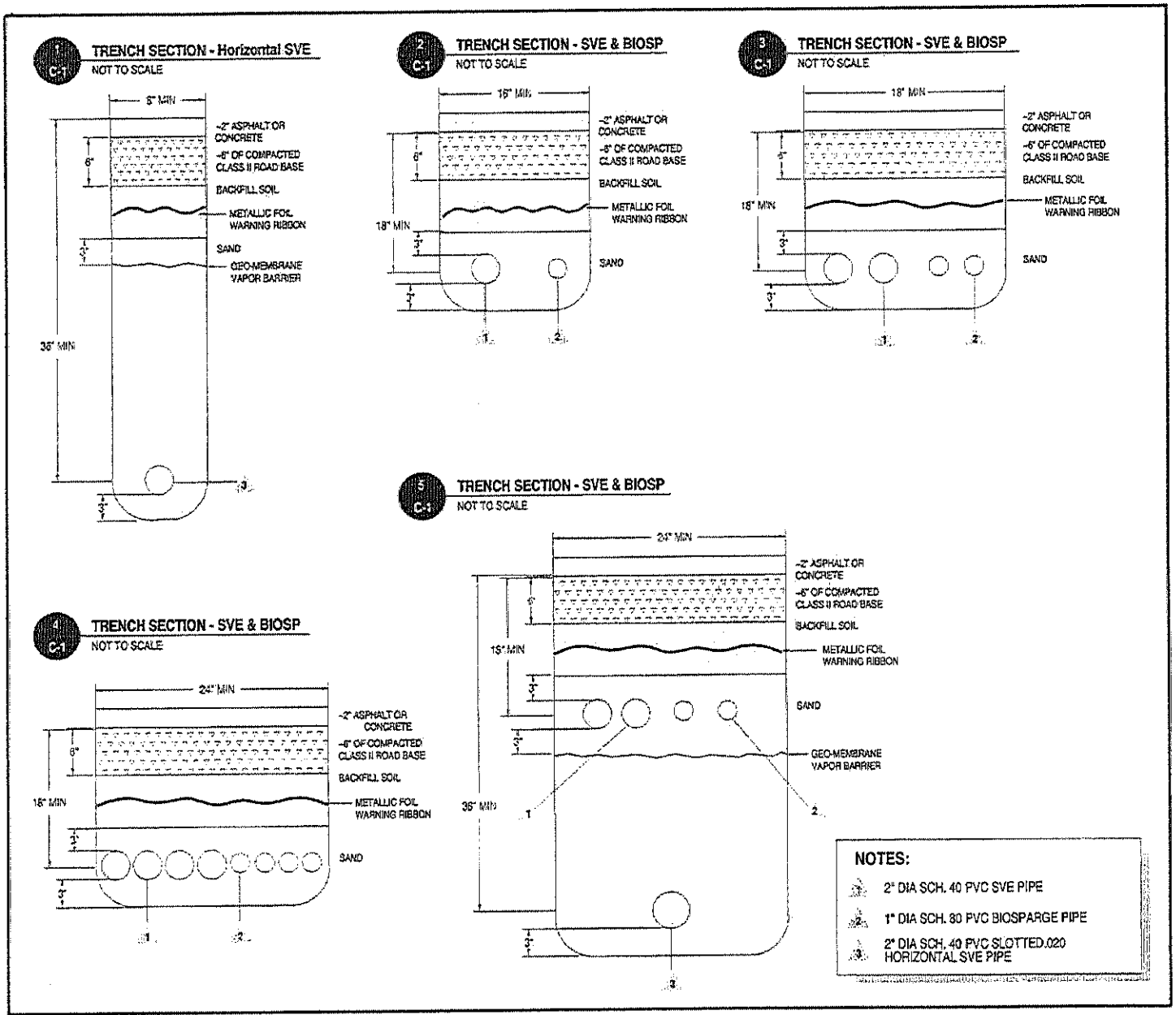
03/03/09

Former Shell Service Station

15275 Washington Avenue

San Leandro, California

Trench Sections



CAMBRIA
Environmental Technology, Inc.

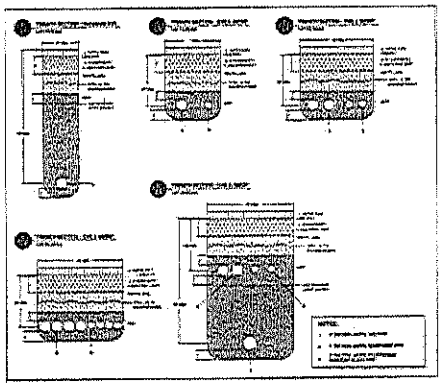


FIGURE C-1

03/25/05

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Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	**ISSUE DATE:** July 5, 2005
	REVISION DATE: December 16, 2005
	PREVIOUS REVISIONS: October 31, 2005
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

Effective **January 31, 2006**, the Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection.** (Please do not submit reports as attachments to electronic mail.)
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- Signature pages and perjury statements **must** be included and have either original or electronic signature.
- **Do not password protect the document.** Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:
  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Additional Recommendations

- A separate copy of the tables in the document should be submitted by e-mail to your Caseworker in **Excel** format. These are for use by assigned Caseworker only.

Submission Instructions

1) Obtain User Name and Password:
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to dehloptoxic@acgov.org
         or
      ii) Send a fax on company letterhead to (510) 337-9335, to the attention of Alicia Lam-Finneke.
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses,** and the **Case Numbers (RO# available in Geotracker) you will be posting for.**

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape and Firefox browsers will not open the FTP site.
   b) Click on File, then on Login As.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to dehloptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name at acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload.** (e.g., Subject: RO1234 Report Upload)

APPENDIX B

BORING LOGS AND WELL CONSTRUCTION DETAILS

LOG OF EXPLORATORY BORING

PROJECT NUMBER 738-08.01 BORING NO. S-1

PROJECT NAME Gettler-Ryan, Shell @ Washington & Lewelling , San Leandro PAGE 1 OF 2

BY JB DATE 6/18/85 SURFACE ELEV.

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				0			ASPHALT
						GC FILL	CLAYEY GRAVEL; Fill; dark olive gray (5Y, 3/2); fine to coarse gravel; 30-35% fines; damp; no product odor.
				3		CL	CLAY; dark gray (5Y, 4/1); trace fine sand; slightly silty; moist; no product odor.
				5			
			▽				
	1.25	28		10			@8.5': black (2.5Y, 3/0); no product odor.
							@10': grayish brown (2.5Y, 5/2); stiff; wet; slight product odor.
	3.0	25		15			
							@20': light olive brown (2.5Y, 5/4); very silty; firm; wet; no product odor.
	1.5	12		20			

REMARKS Drilled using 8-inch continuous flight hollow-stem auger.
Converted to a 3-inch monitoring well, detailed on Plate C.

EMCON ASSOCIATES

PLATE A

LOG OF EXPLORATORY BORING

PROJECT NUMBER 738-08.01 BORING NO. S-1

PROJECT NAME Gettler-Ryan, Shell @ Washington & Lewelling, San Leandro PAGE 2 OF 2

BY JB DATE 6/18/85 SURFACE ELEV.

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				20			HOLE TERMINATED AT 21½ FEET.
				25			

REMARKS

EMCON ASSOCIATES

PLATE B

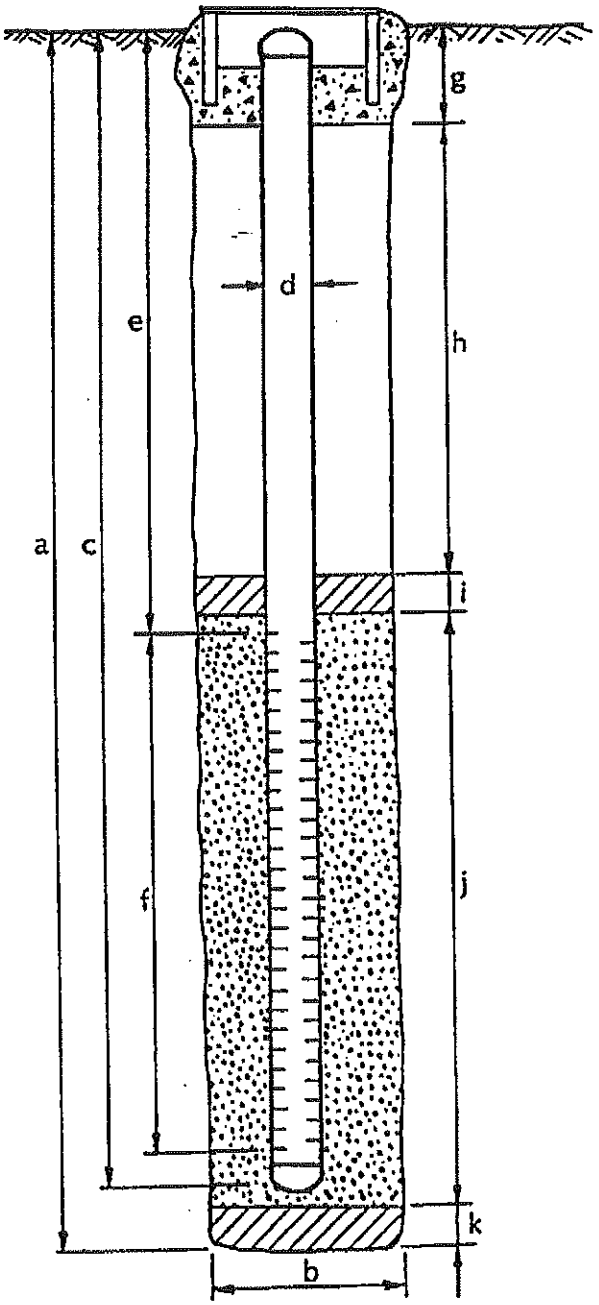
WELL DETAILS

EMKON ASSOCIATES

PROJECT NUMBER 738-08.01
PROJECT NAME Gettler-Ryan, Shell @ Washington & Lewelling
COUNTY Alameda
WELL PERMIT NO.

BORING / WELL NO. S-1
TOP OF CASING ELEV.
GROUND SURFACE ELEV.
DATUM

G-5 vault box (Std.)



EXPLORATORY BORING

a. Total depth 21½ ft.
b. Diameter 8 in.
Drilling method Hollow-Stem Auger

WELL CONSTRUCTION

c. Casing length 19 ft.
Material Schedule 40 PVC
d. Diameter 3 in.
e. Depth to top perforations 4 ft.
f. Perforated length 15 ft.
Perforated interval from 4 to 19 ft.
Perforation type Machined Slot
Perforation size 0.020 inch
g. Surface seal 1 ft.
Seal material Cement
h. Backfill 2 ft.
Backfill material Cement
i. Seal ½ ft.
Seal material Bentonite
j. Gravel pack (3½ to 19') 15½ ft.
Pack material 6 x 12 Monterey Sand
k. Bottom seal 2½ ft.
Seal material Bentonite 20-21½
Compacted Clay 19-20

PLATE C

LOG OF EXPLORATORY BORING

PROJECT NUMBER 738-08.01 BORING NO. S-2

PROJECT NAME Gettler-Ryan, Shell @ Washington & Lewelling, San Leandro PAGE 1 OF 1

BY JB DATE 6/18/85 SURFACE ELEV.

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				0		GC FILL	ASPHALT GRAVEL; Fill; 30% fines
						CL	CLAY; dark gray (5Y, 3/1); trace fine sand; slightly silty; moist; slight product odor.
			▽	5		SM	SILTY SAND; very dark gray (5Y, 3/1); 50% fine sand; 50% silt; loose; wet; strong product odor.
						CL	CLAY; black (2.5Y, 2/0); slightly silty; very stiff; very moist; slight product odor.
	2.0	32		10			
							@13.5': grayish brown (2.5Y, 5/2); stiff; wet; no product odor.
	3.0	28		15			
							@18.5': light brownish gray (2.5Y, 6/2); 40% silt; trace fine sand; stiff; wet; no product odor.
	1.75	15		20			HOLE TERMINATED AT 20 FEET.

REMARKS Drilled using 8-inch continuous flight hollow-stem auger.
Converted to 3-inch monitoring well, detailed on Plate E.

EMCON ASSOCIATES

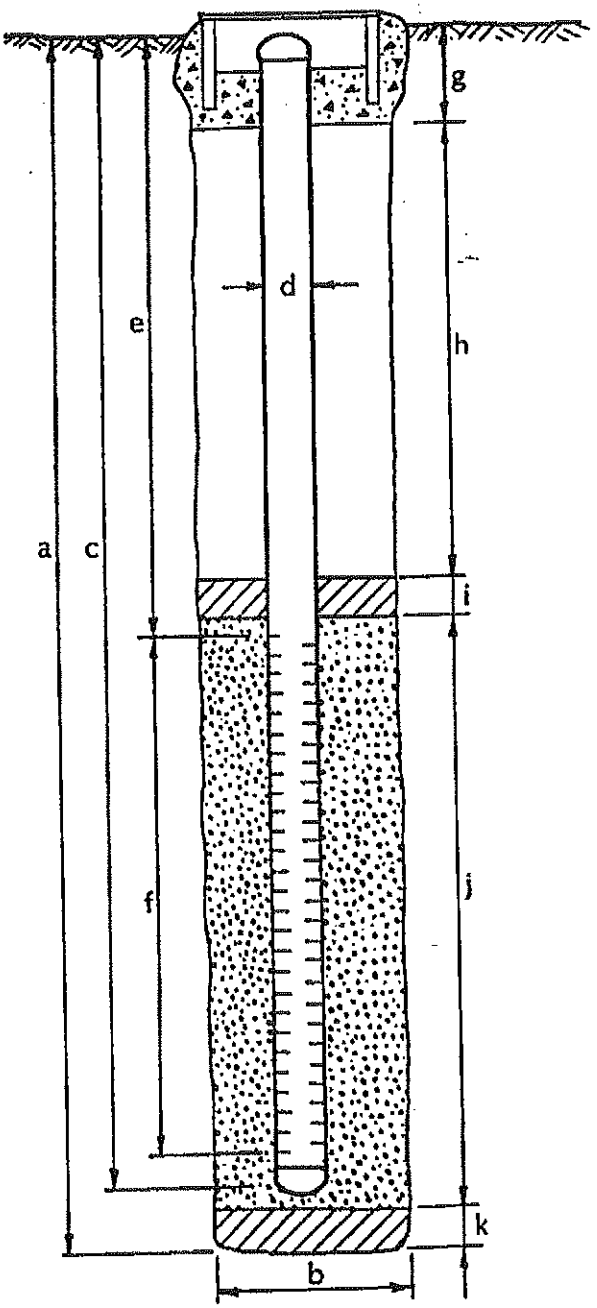
PLATE D

WELL DETAILS

PROJECT NUMBER 738-08.01
PROJECT NAME Gettler-Ryan, Shell @ Washington & Lewelling
COUNTY Alameda
WELL PERMIT NO.

BORING / WELL NO. S-2
TOP OF CASING ELEV.
GROUND SURFACE ELEV.
DATUM

G-5 vault box (Std.)



EXPLORATORY BORING

a. Total depth 20 ft.
b. Diameter 8 in.
Drilling method Hollow-Stem Auger

WELL CONSTRUCTION

c. Casing length 18½ ft.
Material Schedule 40 PVC
d. Diameter 3 in.
e. Depth to top perforations 4 ft.
f. Perforated length 14½ ft.
Perforated interval from 4 to 18½ ft.
Perforation type Machined Slot
Perforation size 0.020 inch
g. Surface seal 1 ft.
Seal material Cement
h. Backfill 2 ft.
Backfill material Cement
i. Seal ½ ft.
Seal material Bentonite
j. Gravel pack (3½ to 18½') 15 ft.
Pack material 6 x 12 Monterey Sand
k. Bottom seal 1½ ft.
Seal material Compacted clay

PLATE E

LOG OF EXPLORATORY BORING

PROJECT NUMBER 738-08.01 BORING NO. S-3

PROJECT NAME Gettler-Ryan, Shell @ Washington & Lewelling, San Leandro PAGE 1 OF 1

BY JB DATE 6/18/85 SURFACE ELEV.

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				0			ASPHALT
					GP		GRAVEL; Fill
				2	CL		CLAY; dark gray (5Y, 3/1); slightly silty; trace fine sand; moist; slight product odor.
				3			
				5	SM-ML		SILTY SAND TO SANDY SILT; very dark gray (5Y, 3/1); 50% fine sand; 50% silt; loose wet; strong product odor; saturated with product
		12	▽	6			
				7	CL		CLAY; dark gray (5Y, 4/1); silty; firm; very moist; slight product odor.
				9			
				10			@ 10': no product odor.
	1.25	11					
				15			@ 15': stiff; wet; no product odor.
	3.0	24					HOLE TERMINATED AT 16½ FEET.
				20			

REMARKS Drilled using 8-inch continuous flight hollow-stem auger. Converted to 3-inch monitoring well, detailed on Plate G.

EMCON ASSOCIATES

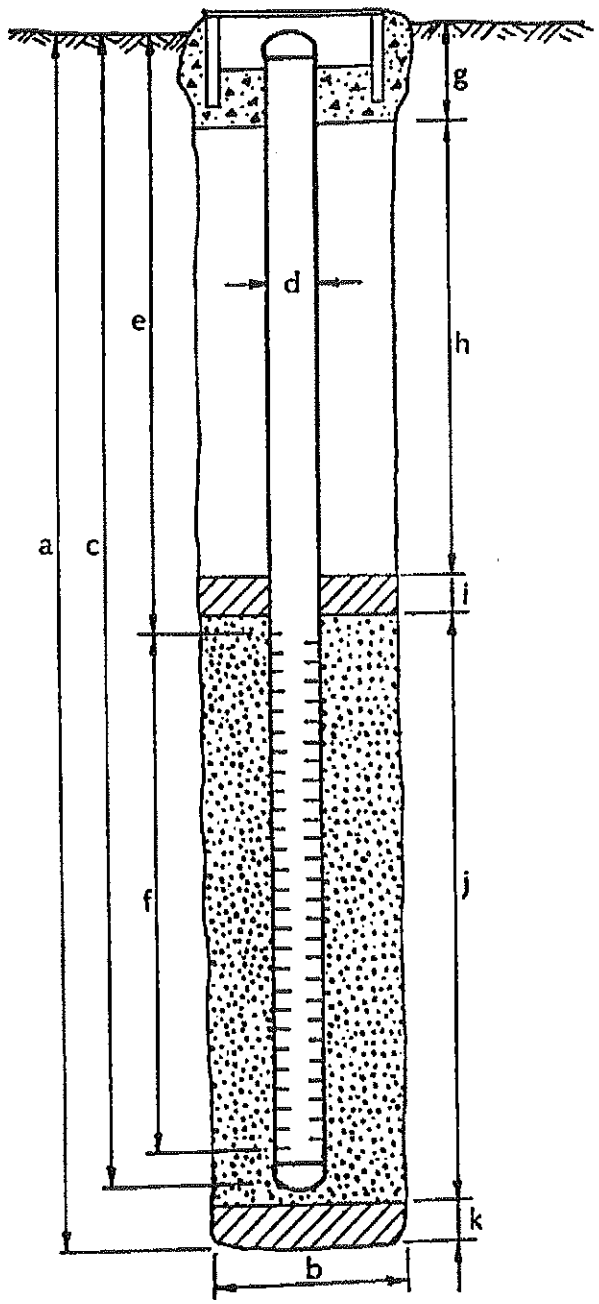
PLATE F

WELL DETAILS

PROJECT NUMBER 738-08.01
PROJECT NAME Gettler-Ryan, Shell @ Washington & Lewelling
COUNTY Alameda
WELL PERMIT NO. _____

BORING / WELL NO. S-3
TOP OF CASING ELEV. _____
GROUND SURFACE ELEV. _____
DATUM _____

G-5 vault box (Std.)



EXPLORATORY BORING

a. Total depth 16½ ft.
b. Diameter 8 in.
Drilling method Hollow-Stem Auger

WELL CONSTRUCTION

c. Casing length 16½ ft.
Material Schedule 40 PVC
d. Diameter 3 in.
e. Depth to top perforations 4 ft.
f. Perforated length 12½ ft.
Perforated interval from 4 to 16½ ft.
Perforation type Machined Slot
Perforation size 0.020 inch
g. Surface seal 1 ft.
Seal material Cement
h. Backfill 1 ft.
Backfill material Cement
i. Seal 1 ft.
Seal material Bentonite
j. Gravel pack (3 to 16½') 13½ ft.
Pack material 6x12 Monterey Sand
k. Bottom seal - ft.
Seal material -

PLATE G

LOG OF EXPLORATORY BORING

PROJECT NUMBER 738-08.01 BORING NO. S-4

PROJECT NAME Gettler-Ryan, Shell @ Washington & Lewelling, San Leandro PAGE 1 OF 1

BY JDB DATE 6/18/85 SURFACE ELEV.

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				0			CONCRETE.
						GW	GRAVEL FILL.
						CL	CLAY; dark gray (2.5Y, 3/2); slightly silty; moist; slight product odor.
				5		SP-ML	SILTY SAND to SANDY SILT; very dark gray (5Y, 3/1); loose; wet; strong product odor; saturated with product.
		11	▽				
						CL	CLAY; dark gray (5Y, 4/1); very silty; firm; wet; moderate product odor.
				10			
	2.0	9					
				15			@ 15': less silt; stiff; no product odor.
	2.75	24					
							HOLE TERMINATED AT 18 FEET.
				20			

REMARKS Drilled using 8-inch continuous flight hollow-stem auger. converted to 3-inch monitoring well as detailed on Plate I.

EMCON ASSOCIATES

PLATE H

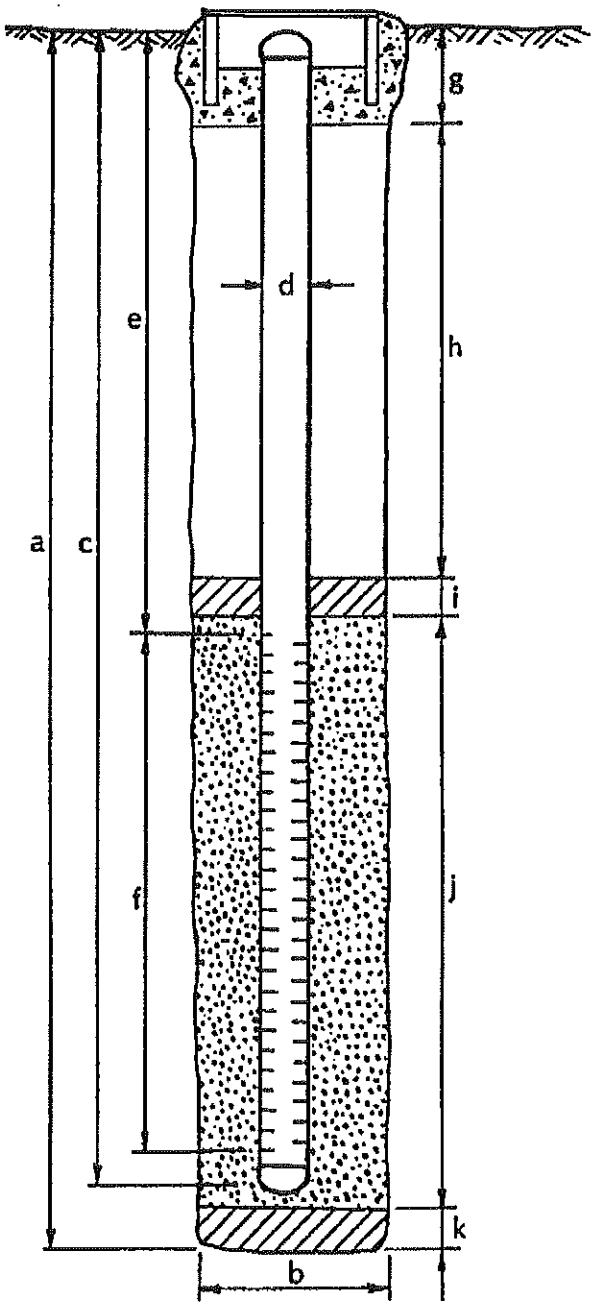
WELL DETAILS

EMKON ASSOCIATES

PROJECT NUMBER 738-08.01
PROJECT NAME Gettler-Ryan, Shell @ Washington & Lewelling
COUNTY Alameda
WELL PERMIT NO. _____

BORING / WELL NO. S-4
TOP OF CASING ELEV. _____
GROUND SURFACE ELEV. _____
DATUM _____

G-5 vault box (Std.)



EXPLORATORY BORING

a. Total depth 18 ft.
b. Diameter 8 in.
Drilling method Hollow-Stem Auger

WELL CONSTRUCTION

c. Casing length 18 ft.
Material Schedule 40 PVC
d. Diameter 3 in.
e. Depth to top perforations 4 ft.
f. Perforated length 14 ft.
Perforated interval from 4 to 18 ft.
Perforation type Machined Slot
Perforation size 0.020 inch
g. Surface seal 1 ft.
Seal material Cement
h. Backfill 1 ft.
Backfill material Cement
i. Seal 1 ft.
Seal material Bentonite
j. Gravel pack (3 to 18') 15 ft.
Pack material 6x12 Monterey Sand
k. Bottom seal - ft.
Seal material -

PLATE I

LOG OF EXPLORATORY BORING

PROJECT NUMBER 738-08.02 BORING NO. S-A

PROJECT NAME Gettler-Ryan,Shell,Lewelling Bl. & Washington Av. PAGE 1 OF 1

BY EBL DATE 8/15/86 San Leandro SURFACE ELEV. 22'±

TORVANE (TSF)	POCKET PENETRO-METER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-GRAPHIC COLUMN	DESCRIPTION
							ASPHALT, SAND, AND GRAVEL-FILL.
				5		ML	SANDY SILT; very dark gray (10YR, 3/1); 30-40% fine sand; soft; wet; strong product odor.
	2.0	10	▽		1	CH	CLAY; black (10YR,2/1); 10-20% fine sand; stiff; wet; strong product odor.
				10			BOTTOM OF BORING AT 8 FEET.
				15			
				20			
				25			
				30			
				35			
				40			

REMARKS

Drilled by 8-inch continous-flight, hollow-stem auger; samples collected with 2-inch California modified split-spoon sampler. Boring backfilled with cuttings to 1 foot; concrete to surface.

PLATE A

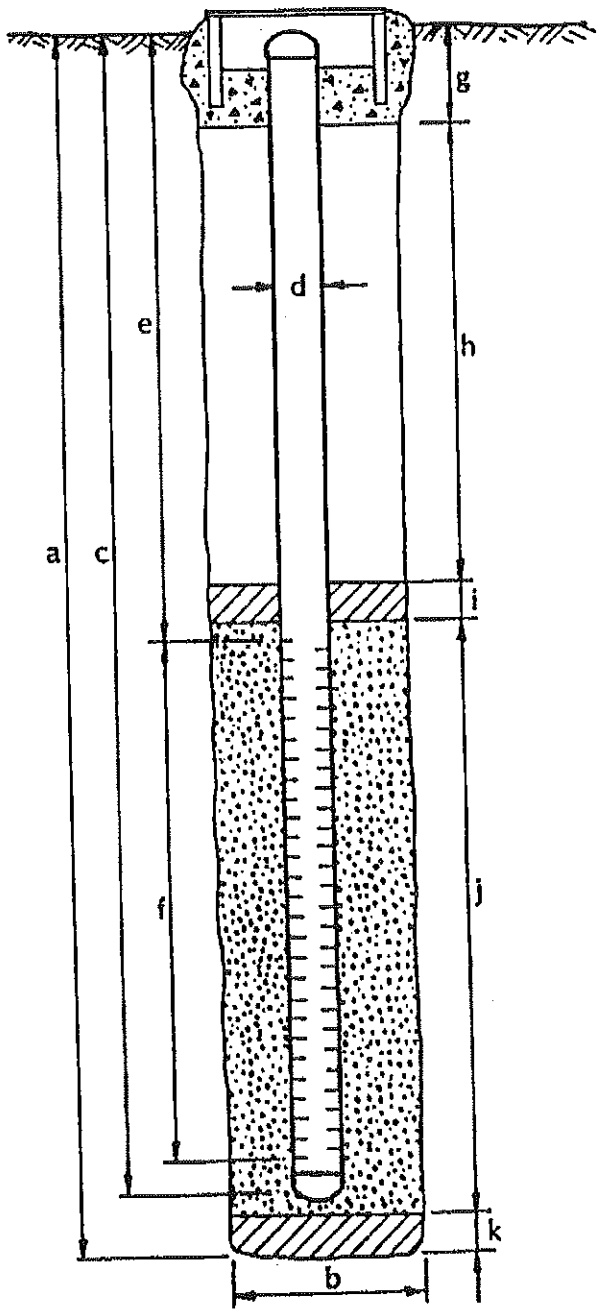
WELL DETAILS

EMCON ASSOCIATES

PROJECT NUMBER 738-08.02
PROJECT NAME G-R Shell, San Leandro
COUNTY Alameda
WELL PERMIT NO.

BORING / WELL NO. S-B
TOP OF CASING ELEV.
GROUND SURFACE ELEV. 22' MSL
DATUM USGS

G-5 vault box (Std.)



EXPLORATORY BORING

a. Total depth 15.5 ft.
b. Diameter 8 in.
Drilling method Hollow-Stem Auger

WELL CONSTRUCTION

c. Casing length 15.5 ft.
Material Schedule 40 PVC
d. Diameter 3 in.
e. Depth to top perforations 1 ft.
f. Perforated length 14.5 ft.
Perforated interval from 14.5 to 1 ft.
Perforation type Machined Slot
Perforation size .020 inch
g. Surface seal 0.3 ft.
Seal material Bentonite
h. Backfill 0 ft.
Backfill material
i. Seal 0.7 ft.
Seal material Concrete
j. Gravel pack (13.9 to 1 Ft.) 12.9 ft.
Pack material Coarse Aquarium Sand
k. Bottom seal 0 ft.
Seal material
Note: Borehole caved to 13.9 feet.

PLATE C

LOG OF EXPLORATORY BORING

PROJECT NUMBER 738-08.02 BORING NO. S-C

PROJECT NAME Gettler-Ryan,Shell,Lewelling Bl. & Washington Av. PAGE 1 OF 1

BY EBL DATE 8/15/86 San Leandro SURFACE ELEV. 22'± MSL

TORVANE (TSF)	POCKET PENETRO-METER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-GRAPHIC COLUMN	DESCRIPTION
				0			CONCRETE, SAND, and GRAVEL- FILL.
						SW	SAND-FILL; dark gray (10YR, 4/1); < 10% fines; fine to coarse sand; loose; damp; strong product odor.
				5	1	CL	CLAY-FILL; very dark gray (2.5Y, N3); 10-20% fine sand; soft; moist; strong product odor.
		4	▽		2	SW	SAND-FILL; dark gray (10YR, 4/1); < 10% fines; fine to coarse sand; loose; wet; strong product odor.
				10			
	1.5	13			3	CH	CLAY; very dark grayish brown (2.5Y, 3/2); 15-25% fine sand; stiff; wet; faint product odor.
	3.0	21		15	4		@ 14': very stiff; faint product odor.
	2.5				5		@ 15-1/2': stiff; moist; no product odor.
							BOTTOM OF BORING AT 17 FEET.
				20			
				25			
				30			
				35			
				40			

REMARKS

Drilled by 8-inch continous-flight, hollow-stem auger; samples collected with 2-inch California modified split-spoon sampler. Boring backfilled with Bentonite to 12 feet, cuttings to 1 foot, and concrete to surface.

PLATE D

LOG OF EXPLORATORY BORING

PROJECT NUMBER 738-08.02 BORING NO. S-D

PROJECT NAME Gettler-Ryan,Shell,Lewelling Bl. & Washington Av. PAGE 1 OF 1

BY EBL DATE 8/15/86 San Leandro SURFACE ELEV. 22'± MSL

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				0			CONCRETE, SAND, and GRAVEL-FILL.
					1	SP	SAND; very dark gray (10YR, 3/1); < 10% fines; fine sand; loose; moist; strong product odor.
				5			
		2	▽		2		@ 7': moderate product odor.
				10	3		@ 11': wet; strong product odor; product sheen on sampler.
		12				CL	CLAY; very dark grayish brown; (2.5Y, 3/2); 10-20% fine sand; very stiff; moist; no product odor.
	3.0	26		15	4		BOTTOM OF BORING AT 15-1/2 FEET.
				20			
				25			
				30			
				35			
				40			

REMARKS

Drilled by continous-flight, hollow-stem auger; samples collected with 2-inch California modified split-spoon sampler. Boring backfilled with Bentonite to 12 feet, cuttings to 1 foot, and concrete to surface.

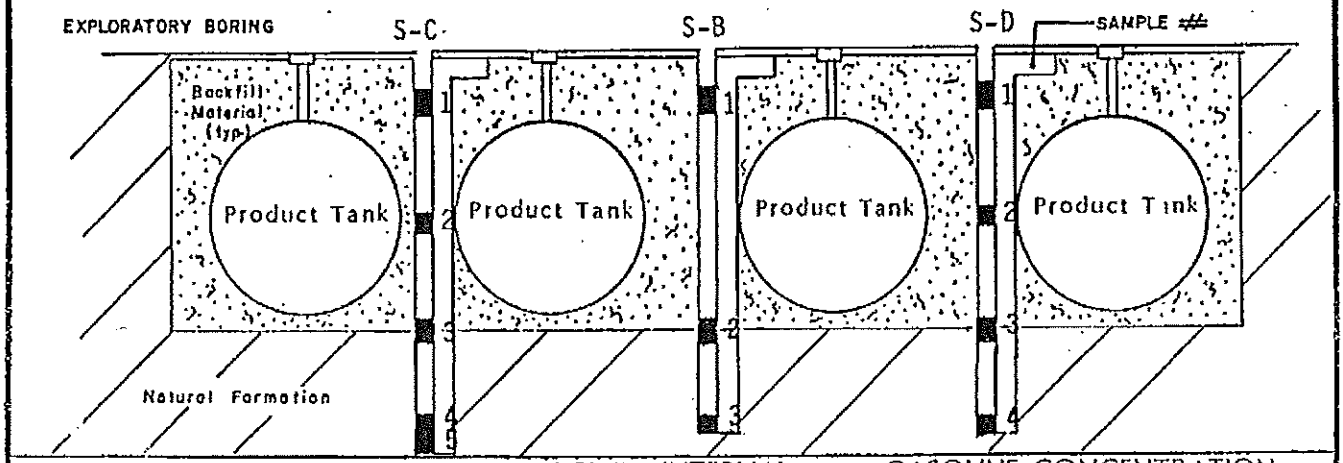
PLATE E

GETTLER-RYAN, INC.

GENERALIZED PROFILE OF SUBSURFACE TANK COMPLEX AND GASOLINE CONCENTRATIONS WITHIN BACKFILL MATERIAL

PROJECT NUMBER 738-08.02
PROJECT NAME G-R Shell, San Leandro
NUMBER OF TANKS IN COMPLEX 4

MAPVIEW DIMENSIONS 27' x 42'
APPROXIMATE DEPTH 12 feet



SAMPLE #	BORING	DEPTH INTERVAL	GASOLINE CONCENTRATION (parts per million)
1	S-B	3-1/2 to 5	1,700
2	S-B	11 to 12-1/2	1,500
3	S-B	14 to 15-1/2	nd*
1	S-C	3-1/2 to 5	310
2	S-C	7-1/2 to 9	nd[1]
3	S-C	11-1/2 to 13	nd*
4	S-C	14 to 15-1/2	300
5	S-C	15-1/2 to 17	nd*
1	S-D	3-1/2 to 5	nd[2]
2	S-D	7 to 8-1/2	nd*
3	S-D	11 to 12-1/2	nd*
4	S-D	14 to 15-1/2	nd*

nd = no detection.

* Detection limit = 5 parts per million.

1 Detection limit = 200 ppm due to matrix interferences.

2 Detection limit = 100 ppm due to matrix interferences.

LOG OF EXPLORATORY BORING

PROJECT NUMBER 738-08.03 BORING NO. S-5

PROJECT NAME Gettler-Ryan, Shell, Washington & Lewelling PAGE 1 OF 2

BY JDB DATE 12/24/86 SURFACE ELEV. 21.71'

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				1		GP	ASPHALT GRAVEL-FILL; coarse baserock.
				2		CL	CLAY; dark gray (5Y, 4/1); 98-100% low- to moderate-plasticity fines; <2% fine sand; stiff; damp; no gasoline odor. @4': slight gasoline odor.
				3			
				4			
				5			
	1.25	9			1	SC	CLAYEY SAND; dark gray (5Y, 4/1); 20-40% low-plasticity fines; 60-80% fine sand; loose; moist; slight to moderate gasoline odor.
			▽	7		ML CH-CL	SANDY SILT; dark gray (5Y, 4/1); 70-90% non-plastic fines; 10-30% fine sand; stiff; moderate gasoline odor.
				8			
	1.5	17		10	2		CLAY; black (5Y, 2.5/1); 100% moderate- to high-plasticity fines; occasionally calcareous; stiff to very stiff; wet in voids; slight gasoline odor to 10 feet.
						CH	
							@14': gray (5Y, 5/1); 100% high-plasticity fines; very stiff; very moist; no gasoline odor.
	2.25	22		15	3		@19': abundant caliche disseminated; no gasoline odor.
	2.0	29		20	4		

REMARKS

Drilled with 8- and 12-inch continuous-flight, hollow-stem auger drilling equipment. Converted to a 4-inch monitoring well as detailed on Plate B.

PLATE A

LOG OF EXPLORATORY BORING

PROJECT NUMBER 738-08.03 BORING NO. S-5

PROJECT NAME Gettler-Ryan, Shell, Washington & Lewelling PAGE 2 OF 2

BY JDB DATE 12/24/86 SURFACE ELEV. 21.71'

TORVANE (TSF)	POCKET PENETRO-METER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-GRAPHIC COLUMN	DESCRIPTION
				20			BOTTOM OF BORING AT 20.5 FEET
				25			
				30			
				35			
				40			

REMARKS

PLATE B

WELL DETAILS

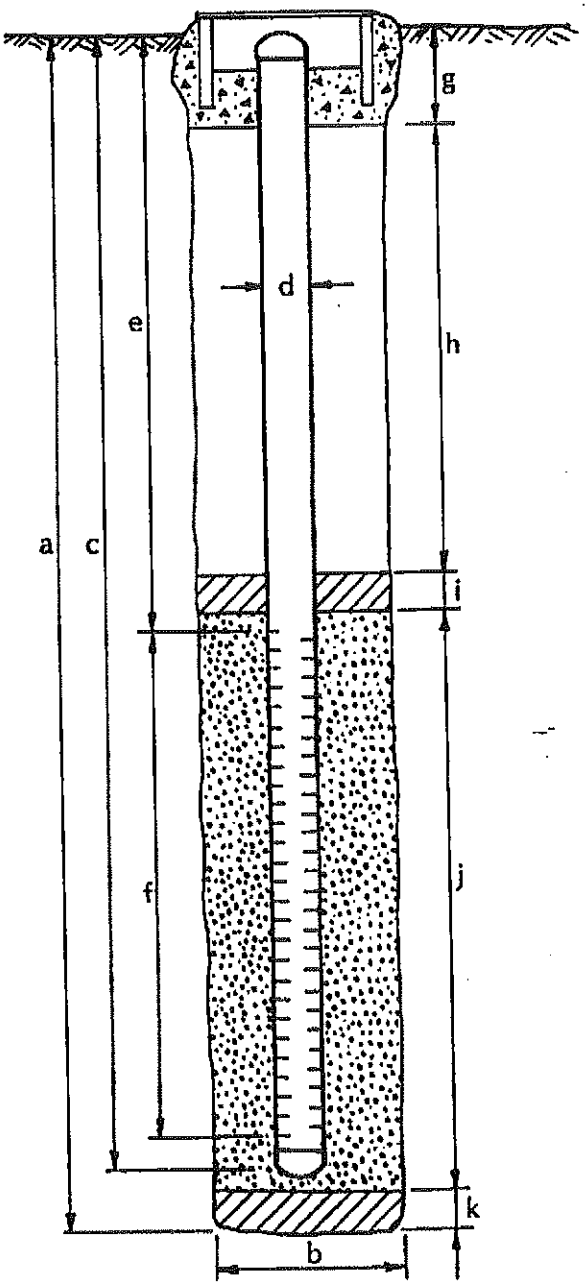
PROJECT NUMBER 738-08.03 — BORING / WELL NO. S-5

PROJECT NAME Shell, Washington & Lewelling, San Leandro — TOP OF CASING ELEV. 21.24'

COUNTY Alameda — GROUND SURFACE ELEV. 21.71'

WELL PERMIT NO. — DATUM Project

G-5 vault box (Std.)



EXPLORATORY BORING

a. Total depth 20½ ft.

b. Diameter 12 in.

Drilling method Hollow-stem auger

WELL CONSTRUCTION

c. Casing length 18½ ft.

Material schedule 40 PVC

d. Diameter 4 in.

e. Depth to top perforations 3½ ft.

f. Perforated length 15 ft.

Perforated interval from 18½ to 3½ ft.

Perforation type machined slot

Perforation size 0.020 inch

g. Surface seal (1 - 0') 1 ft.

Seal material concrete

h. Backfill (1½ - 1') ½ ft.

Backfill material concrete

i. Seal (2½ - 1½') 1 ft.

Seal material bentonite

j. Gravel pack (18½ - 2½') 16 ft.

Pack material 6x12 Monterey Sand

k. Bottom seal (20½ - 18½') 2 ft.

Seal material compacted clay

PLATE C

Woodward-Clyde Consultants

PROJECT NAME: SETTLER-RYAN NO. 8820011A

MONITORING WELL LOCATION: 15275 Washington Ave., San Leandro, CA (S-6)			ELEVATION AND DATUM
DRILLING AGENCY: Bay Land Drilling	DRILLER: Tom/Mack		DATE STARTED: 11/3/88 DATE FINISHED:
DRILLING EQUIPMENT: CME - 55			COMPLETION DEPTH: 24.5' / SAMPLER: Modified California
DRILLING METHOD: 8" Hollow stem auger	DRILL BIT: CME Carbide		NO. OF SAMPLES: DIST. 5 / UNDIST. 5
SIZE AND TYPE OF CASING: Sch 40 3" PVC	FROM 24.0 TO 0.5 FT.		WATER LEVEL: FIRST 8' / COMPL. — / 24 HRS. —
TYPE OF PERFORATION: 0.02"	FROM 24.0 TO 4.0 FT.		LOGGED BY: R. Siegel / CHECKED BY: M. Bonkowski
SIZE AND TYPE OF PACK: 2/12 Monterey Sand	FROM 24.5 TO 3.0 FT.		
TYPE OF SEAL: NO. 1 1/2" Bentonite Pellets	FROM 3 TO 2.5 FT.		
NO. 2 Cement grout	FROM 2.5 TO 0.5 FT.		

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Well Construction
			Asphaltic Concrete			
			FILL black, pebbly clay, moist			
5	1*	pushed @ 150 lbs	SILTY CLAY gray black,low plasticity, moist to dry, moderately cohesive, some vegetative debris with iron - oxide staining	OVM = 482 ppm Hydrocarbon odor	CL	
10	2*	5 5 9	SANDY to SILTY CLAY mottled brown and black, fine to medium sand with 5% pebbles up to 1/4", moist to dry, low cohesiveness - grades in B and A sample tubes to clay, black, dry, very dense and cohesive, 5% silt	OVM = 1.3 ppm	CL	
15	3	6 9 14	CLAY mottled black and brown, very stiff, dry, cohesive	OVM = 26.5 ppm	CL	
			B and C tubes - same as sample 3			
20	4	5 11 15	SANDY to SILTY CLAY light brown with some black mottling, moderate cohesion, some vegetative debris with iron oxide staining	OVM = 0.8 ppm	CL	
	5	5 7 8	CLAY black to mottled brown and black, minor silt (<5%), very stiff, dry, cohesive			
25			SILTY to SANDY CLAY light brown, fine sand, moist to dry, moderate cohesion, based on drilling resistance, probably a number of alternating clay and sandy clay layers from 15' to bottom of hole	OVM = 2.6 ppm	CL	
			Total Depth = 24.5 feet			
30			* = Laboratory Sample			
35						

Woodward-Clyde Consultants

PROJECT N. SETTLER-RYAN NO. 8820011A

MONITORING WELL LOCATION 15275 Washington Ave., San Leandro, CA (S-7)			ELEVATION AND DATUM
DRILLING AGENCY Bay Land Drilling	DRILLER Tom/Mack		DATE STARTED 11/3/88 DATE FINISHED
DRILLING EQUIPMENT CME - 55			COMPLETION DEPTH 24.5' SAMPLER Modified California
DRILLING METHOD 8" Hollow stem auger	DRILL BIT CME Carbide		NO. OF SAMPLES: DIST. 5 UNDIST. 5
SIZE AND TYPE OF CASING Sch 40 3" PVC	FROM 24.0 TO 0.5 FT.		WATER LEVEL FIRST ~8' COMPL. — 24 HRS. —
TYPE OF PERFORATION 0.02"	FROM 24.0 TO 4.0 FT.		LOGGED BY: R. Siegel
SIZE AND TYPE OF PACK 2/12 Monterey Sand	FROM 24.5 TO 3.0 FT.		CHECKED BY: M. Bonkowski
TYPE OF SEAL NO. 1 Bentonite	FROM 3 TO 2.5 FT.		
NO. 2 Cement grout	FROM 2.5 TO 0.5 FT.		

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Well Construction
			Asphaltic Concrete			
5	1*	pushed @ 200 lbs	FILL - CLAY silty sandy clay with large pebbles to 2" diameter, plastic, moist to wet, cohesive, Note: pipe encountered at ~5', moved auger over slightly	OVM = 9.0 ppm	CL	
10	2*	5 5 10	CLAY black mottled with green, low plastiviey, stiff, dry, moderate cohesion	OVM = 32 ppm	CL	
15	3	6 9 12	SILTY CLAY mottled black and brown, gravelly clay present in top, stiff, dry, moderate cohesion	OVM = 2.2 ppm	CL	
20	4	3 7 8	same as Silty Clay above	OVM = 1.8 ppm	CL	
	5	5 5 4	same as Silty Clay above but some fine sands present	OVM = 0.6 ppm		
25			Total Depth = 24.5 feet * = Laboratory Sample			
30						
35						

Woodward-Clyde Con[illegible]nts

PROJECT NA[illegible]ETTLER-RYAN NO. 8820011A

MONITORING WELL LOCATION 15275 Washington Ave., San Leandro, CA (S-8)			ELEVATION AND DATUM
DRILLING AGENCY Bay Land Drilling	DRILLER Tom/Mack		DATE STARTED / DATE FINISHED 11/3/88
DRILLING EQUIPMENT CME - 55			COMPLETION DEPTH 24.5' · SAMPLER Modified California
DRILLING METHOD 8" Hollow stem auger	DRILL BIT CME Carbide		NO. OF SAMPLES DIST. 5 · UNDIST. 5
SIZE AND TYPE OF CASING Sch 40 3" PVC	FROM 24.0 TO 0.5 FT.		WATER LEVEL FIRST ~8' · COMPL. — · 24 HRS. —
TYPE OF PERFORATION 0.02"	FROM 24.0 TO 4.0 FT.		LOGGED BY: R. Siegel · CHECKED BY: M. Bonkowski
SIZE AND TYPE OF PACK 2/12 Monterey Sand	FROM 24.5 TO 3.0 FT.		
TYPE OF SEAL NO. 1 1/2" Bentonite Pellets	FROM 3 TO 2.5 FT.		
TYPE OF SEAL NO. 2 Cement grout	FROM 2.5 TO 0.5 FT.		

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Well Construction
			Asphaltic Concrete			
5	1'	5 7 9	FILL - SILTY CLAY some pebbles to 1", low plasticity, moist, low cohesion	OVM = 43 ppm Very strong Hydrocarbon odor	CL	
10	2'	5 7 14	SILTY to SANDY CLAY mottled black and brown, fine to medium sand, a few pebbles to 1/4" diameter, poorly sorted, dry to moist	OVM = 1.4 ppm	CL	
15	3'	5 9 14	as above, poor recovery, resampled from same depth gravels and pebbles present in clay, pebbles to 1/8", increased moisture, decreased cohesion	OVM = 453 ppm	CL	
20	4'	[illegible]	as above then goes to (A tube), Silty to Sandy Clay, light brown, fine sand, moist to dry, moderate cohesion	OVM = 4.8 ppm	CL	
	5'	5 5 10	No recovery after 2 attempts			
25			Total Depth = 24.5 feet ' = Laboratory Sample			
30						
35						

Woodward-Clyde Consultants

PROJECT NAME GETTLER-RYAN NO. 8820011A

MONITORING WELL LOCATION 15275 Washington Ave., San Leandro, CA (S-9)			ELEVATION AND DATUM
DRILLING AGENCY Bay Land Drilling	DRILLER Tom/Mack		DATE STARTED / DATE FINISHED 11/4/88
DRILLING EQUIPMENT CME - 55			COMPLETION DEPTH 18' / SAMPLER Modified California
DRILLING METHOD 8" Hollow stem auger	DRILL BIT CME Carbide		NO. OF SAMPLES 4 / DIST. / UNDIST.
SIZE AND TYPE OF CASING Sch 40 3" PVC	FROM 18.0 TO 0.5 FT.		WATER LEVEL FIRST 6' +/- / COMPL. 8.2 / 24 HRS.
TYPE OF PERFORATION 0.02"	FROM 17.5 TO 4.0 FT.		LOGGED BY: G. Heyman / CHECKED BY: M Borkowski
SIZE AND TYPE OF PACK 2/12 Monterey Sand	FROM 18 TO 3.0 FT.		
TYPE OF SEAL NO. 1 1/2" Bentonite Pellets	FROM 3 TO 2.5 FT.		
NO. 2 Cement grout	FROM 2.5 TO surface FT.		

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Well Construction
			Asphaltic Concrete		
			FILL - SAND and GRAVEL		
			SILTY CLAY to CLAYEY SILT (cuttings)		
			dark gray, little to some very fine sand, low to medium plasticity, moist to wet — Moderate Hydrocarbon odor		
5	1'	pushed @ 150 lbs	SILTY CLAY to CLAYEY SILT dark gray, some very fine sand, low plasticity, soft, moist, homogeneous — OVM = 540 ppm, Strong Hydrocarbon odor	CL	
10	2'	3 4 6	SANDY SILT to SANDY CLAY medium gray grading down to medium brown, very fine sand, low plasticity, wet, few vesicles less than 1 mm diameter, few root traces — OVM = 27 ppm, Weak Hydrocarbon odor	CL	
15	3	6 5 12	CLAY to SILTY CLAY medium gray brown to green brown, occasionally little very fine sand, little to some silt, medium plasticity, moist with wet to saturated areas adjacent to vesicles, few root fragments, few vesicles — OVM = 8 ppm, No Hydrocarbon odor	CL-CH	
20	4		CLAYEY SILT to SILTY CLAY medium gray brown, medium plasticity, firm, wet — OVM = 5 ppm, No Hydrocarbon odor	CL-ML-SM	
			SANDY SILT to SILTY SAND light yellow brown, very fine sand, little to some clay, wet to saturated		
			Total Depth = 20.5 feet		
			* = Laboratory Sample		
25					
30					

LOG OF MONITORING WELL NO. S-9 SHEET 1 OF 1

Woodward-Clyde Cor. nts

PROJECT N. SETTLER-RYAN NO. 88200114

MONITORING WELL LOCATION 15275 Washington Ave., San Leandro, CA (S-10)			ELEVATION AND DATUM
DRILLING AGENCY Bay Land Drilling	DRILLER Tom/Mack		DATE STARTED 11/4/88 DATE FINISHED
DRILLING EQUIPMENT CME - 55			COMPLETION DEPTH 18' SAMPLER Modified California
DRILLING METHOD 8" Hollow stem auger	DRILL BIT CME Carbide		NO. OF SAMPLES DIST. 4 UNDIST. —
SIZE AND TYPE OF CASING Sch 40 3" PVC	FROM 18.0 TO 0.5 FT.		WATER LEVEL FIRST 8' +/- COMPL. 7.1' 24 HRS. —
TYPE OF PERFORATION 0.02"	FROM 17.5 TO 4.0 FT.		LOGGED BY: G. Heyman CHECKED BY: M. Bonkowski
SIZE AND TYPE OF PACK 2/12 Monterey Sand	FROM 18 TO 3.0 FT.		
TYPE OF SEAL NO. 1 1/2" Bentonite Pellets	FROM 3 TO 2.5 FT.		
NO. 2 Cement grout	FROM 2.5 TO surface FT.		

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Well Construction
			Asphaltic Concrete			
5	1*	pushed @ top of tube	SILTY to SANDY SILT dark gray, very fine sand, low plasticity, soft, moist, homogeneous	OVM = 0 ppm No Hydrocarbon odor	CL	
10	2*	3 5 7	Interlayered SILTY CLAY and CLAYEY SAND dark greenish gray, little very fine sand in clay, low plasticity, moist, wet with few saturated areas	OVM = 3.7 ppm No Hydrocarbon odor Weak Hydrocarbon odor in 20 minutes	CL-SC	
15	3	4 5 6	CLAY to SILTY CLAY light to medium brown, low to medium plasticity, moist, few off-white brittle veinlets 2 - 3 mm thick	OVM = 0 ppm No Hydrocarbon odor	CL-CH	
20	4	4 5 7	SILTY CLAY medium gray brown, some very fine sand, trace fine gravel, medium plasticity, wet to occasionally saturated	No Hydrocarbon odor	CL-CH	
			Total Depth = feet * = Laboratory Sample			
25						
30						
35						

LOG OF MONITORING WELL NO. S-10 SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME GETTLER-RYAN NO. 8820011A

MONITORING WELL LOCATION	15275 Washington Ave., San Leandro, CA (S-11)	ELEVATION AND DATUM	
DRILLING AGENCY	Bay Land Drilling	DRILLER	Tom/Mack
DATE STARTED / DATE FINISHED	11/4/88		
DRILLING EQUIPMENT	CME - 55	COMPLETION DEPTH	24.5'
SAMPLER	Modified California		
DRILLING METHOD	8" Hollow stem auger	NO. OF SAMPLES	DIST. 5
UNDIST.	5		
DRILL BIT	CME Carbide	WATER LEVEL	FIRST 8'
COMPL.	7.8'	24 HRS.	
SIZE AND TYPE OF CASING	Sch 40 3" PVC	FROM 24.5 TO 0.5 FT.	LOGGED BY: G. Heyman
CHECKED BY:	M. Bonkowski		
TYPE OF PERFORATION	0.02"	FROM 24.0 TO 4.0 FT.	
SIZE AND TYPE OF PACK	2/12 Monterey Sand	FROM 24.5 TO 3.5 FT.	
TYPE OF SEAL	NO. 1 1/2" Bentonite Pellets	FROM 3.5 TO 3.0 FT.	
	NO. 2 Cement grout	FROM 3.0 TO 0.5 FT.	

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Well Construction
			Asphaltic Concrete and base rock			
5	1	pushed @ 175 lbs	SILTY to SANDY CLAY greenish gray, silt and very fine grained sand, content varies vertically, low plasticity, firm, moist, numerous vesicles less than 1 mm diameter	OVM = 110 ppm Moderate Hydrocarbon odor Strong Hydrocarbon odor in cuttings at 8'	CL	
10	2	4 7 9	SILTY CLAY to CLAYEY SILT dark brown, little to some very fine sand, low plasticity, moist to wet, few vesicles	OVM = 0 ppm No Hydrocarbon odor	CL-ML	
15	3	5 9 11	SILTY CLAY greenish brown, little to some very fine sand, medium plasticity, wet with saturated areas, gravel layers 1 - 2" thick from 16 - 18' (driller)	OVM = 0 ppm No Hydrocarbon odor	CL	
20	4*	3 4 4	SILTY CLAY with Interbedded CLAYEY SAND to SANDY CLAY Clay is grayish brown, medium plasticity, wet with saturated areas, sand is light yellow brown, very fine grained, loose, wet to saturated, up to 3" thick	OVM = 0.5 ppm No Hydrocarbon odor	CL-SC	
	5	4 7 8	SANDY CLAY to CLAYEY SAND layers are up to 5" thick, as above	No Hydrocarbon odor	CL	
25			Total Depth = 24.5 feet * = Laboratory Sample			
30						
35						

Woodward-Clyde Consultants

PROJECT NAME GETTLER-RYAN NO. 8820011A

MONITORING WELL LOCATION	15275 Washington Ave., San Leandro, CA (S-12)	ELEVATION AND DATUM	
DRILLING AGENCY	Bay Land Drilling	DRILLER Tom/Mack	DATE STARTED 11/4 / DATE FINISHED
DRILLING EQUIPMENT	CME - 55	COMPLETION DEPTH 24.5'	SAMPLER Modified California
DRILLING METHOD	8" Hollow stem auger	DRILL BIT CME Carbide	NO. OF SAMPLES DIST. 5 / UNDIST. 5
SIZE AND TYPE OF CASING	Sch 40 3" PVC	FROM 24.0 TO 0.5 FT.	WATER LEVEL FIRST 8' / COMPL. — / 24 HRS. —
TYPE OF PERFORATION	0.02"	FROM 23.5 TO 3.5 FT.	LOGGED BY: G. Heyman
SIZE AND TYPE OF PACK	2/12 Monterey Sand	FROM 24.0 TO 3.0 FT.	CHECKED BY: M. Bonkowski
TYPE OF SEAL NO. 1	1/2" Bentonite Pellets	FROM 3 TO 2.5 FT.	
TYPE OF SEAL NO. 2	Cement grout	FROM 2.5 TO surface FT.	

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Well Construction
			Asphaltic Concrete		
5	1	pushed @ 200 lbs	CLAYEY SAND to SANDY CLAY grading down to SILTY CLAY TO CLAYEY SILT greenish gray at top with gray mottling in middle and bottom of sample, very fine sand, low plasticity, moist, generally homogeneous OVM jumped to 190 ppm then settled at 120 ppm Weak Hydrocarbon odor	CL	
10	2	4 5 7	SILTY CLAY dark brownish gray, some very fine sand, low plasticity, firm, moist to wet, few beds of clay, sand to 1/4" thick OVM = 20 ppm Weak Hydrocarbon odor	CL	
15	3	5 8 11	CLAY to SILTY CLAY medium grayish brown, some silt grading to silty clay, medium plasticity, wet homogeneous Driller Indiccates drilling through a series of 2 - 4" gravel layers from 16 - 19' OVM = 0 ppm No Hydrocarbon odor	CL	
20	4	3 4 5	CLAY to SANDY CLAY medium grayish brown, little to some very fine sand occasionally grading to sandy clay, low to medium plasticity, firm, saturated No Hydrocarbon odor	CL	
			CLAYEY SAND to SANDY CLAY medium yellow brown, very fine sand, saturated OVM = 1 ppm No Hydrocarbon odor		
	5	4 5 7	SILTY CLAY to CLAYEY SILT medium yellow brown, up to some very fine sand, low to medium plasticity, saturated OVM = 0 ppm No Hydrocarbon odor	CL	
25			Total Depth = 24.5 feet * = Laboratory Sample		
30					
35					

LOG OF MONITORING WELL NO. S-12 SHEET 1 OF 1

Field location of boring:

Project No.: 7615 | Date: 4/26/89 | Boring No: S-13

Client: Shell

Location: 15275 Washington Ave/Lewelling

City: San Leandro | Sheet 1 of 2

Logged by: DAF | Driller: Bayland

Casing installation data:

Drilling method: Hollow Stem Auger

Hole diameter: 8 inch

Top of Box Elevation: | Datum:

Water Level	8.4'	7.3'		
Time	11:50am			
Date	4/26	5/10		

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				1				PAVEMENT SECTION - 2 feet.
				2				CLAY (CL)- dark gray (10YR 4/1); soft; damp; low plasticity; trace gravel; no chemical odor.
				3				
				4				
350	150	S&H	S-13-5'					color change to dark olive gray (5Y 3/2); no chemical odor.
		push		5				
				6				
				7				
				8				
				9				▼
50	2	S&H	S-13-					
	3		10'	10				SILTY SAND (SM)- light olive brown (2.5Y 5/4); loose; damp; 20-30% silt; mottled brown; no chemical odor.
	6							
				11				
				12				CLAY (CL)- dark olive gray (5Y 3/2), medium stiff; damp; low plasticity; trace gravel; rootholes; no chemical odor.
				13				
				14				
40	3	S&H	S-13-					color change to very dark gray (5Y 3/1) mottled; organics present; no chemical odor.
	5		15'	15				
	7							
				16				
				17				▽ becoming saturated at 17.5 feet.
				18				
				19				
0	2	S&H	S-13-					SANDY SILT (ML)- light yellowish brown (2.5Y 6/4); medium stiff; saturated;
	3		20'	20				

Remarks:

BORING NO.

GeoStrategies Inc.

S-13

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615	CEG 1262	5/89		

Field location of boring:

Project No.: 7615 | Date: 4/26/89 | Boring No: S-13

Client: Shell

Location: 15275 Washington Ave/Lewelling

City: San Leandro | Sheet 2 of 2

Logged by: DAF | Driller: Bayland

Casing installation data:

Drilling method: Hollow Stem Auger

Hole diameter: 8 inch

Top of Box Elevation: | Datum:

Water Level			
Time			
Date			

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
	4							15% very fine to fine sand; 10% clay;
				21				trace organics; rootholes; mottled
								brown & black; no chemical odor.
				22				
				23				
				24				
25	2	S&H	S-13-					SILTY CLAY (CL-ML)- light olive brown
	3		25'	25				(2.5Y 5/4); medium stiff; moist; trace
	4							organics; mottled brown & black;
								no chemical odor.
								Bottom of boring 24.0 feet,
								Sampled to 25.5 feet
								4/26/89

Remarks:

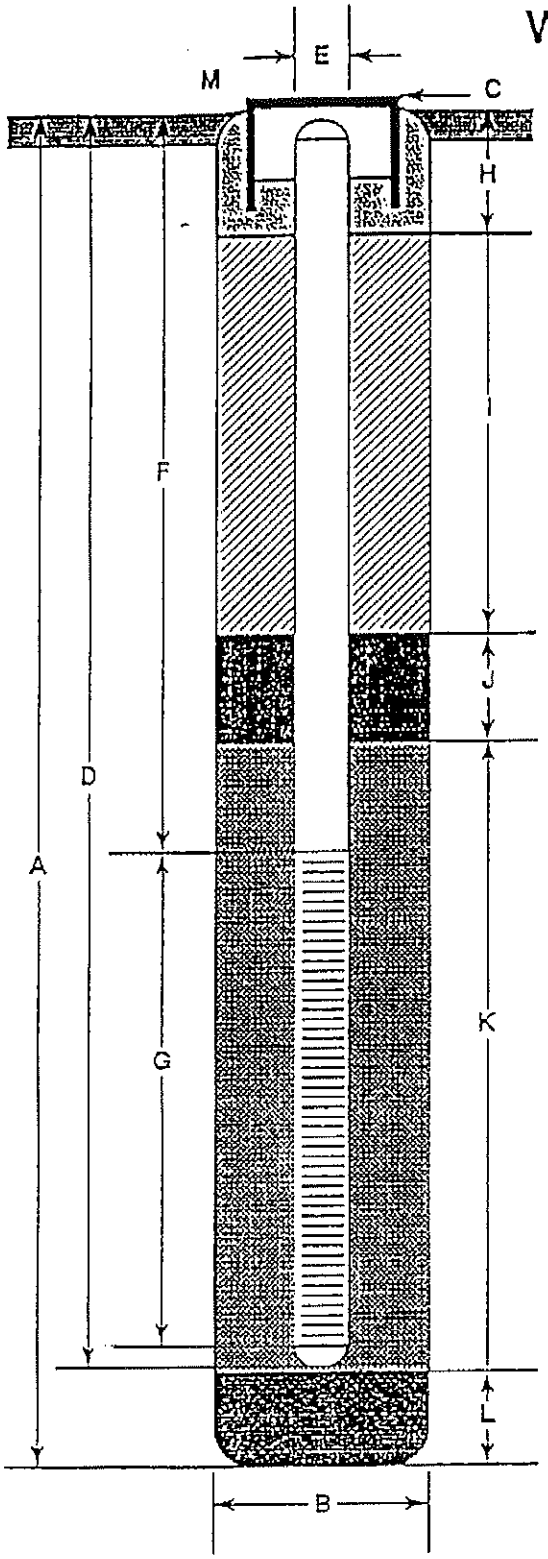
BORING NO.

GeoStrategies Inc.

S-13

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
7615	RG/CEG	5/89		

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 24 ft.

B Diameter of Boring 8 in.
Drilling Method HOLLOW STEM AUGER

C Top of Box Elevation 20.57 ft.
☐ Referenced to Mean Sea Level
☒ Referenced to Project Datum

D Casing Length 23.5 ft.
Material SCH 40 PVC

E Casing Diameter 3 in.

F Depth to Top Perforations 4 ft.

G Perforated Length 20 ft.
Perforated Interval from 4 to 24 ft.
Perforation Type FACTORY SLOTTED
Perforation Size 0.020

H Surface Seal 2.5 ft.
Seal Material CONCRETE

I Backfill ft.
Backfill Material

J Seal 0.5 ft.
Seal Material BENTONITE

K Gravel Pack 21 ft.
Pack Material LONESTAR 2/12 & #3

L Bottom Seal ft.
Seal Material

M CHRISTY BOX

GeoStrategies Inc.

Well Construction Detail
Former Shell Service Station
15275 Washington Ave.
San Leandro

WELL NO.
S-13

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615	CMP CEG 1262	5/89		

Field location of boring:

Project No.: 7615	Date: 4/26/89	Boring No.: S-14	
Client: Shell			
Location: 15275 Washington Ave/Lewelling			
City: San Leandro		Sheet 1 of 2	
Logged by: DAF	Driller: Bayland		
Casing installation data:			
Drilling method: Hollow Stem Auger			
Hole diameter: 8 inch	Top of Box Elevation:	Datum:	
Water Level	9'		
Time	10:00am		
Date	4/26/89		

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				1				PAVEMENT SECTION - 2 feet.
				2				
				3				SILTY CLAY (CL-ML)- dark gray (2.5Y N4); soft; damp.
				4				becoming firm at 5 feet; with slight
500	150	S&H	S-14-5'	5				odor.
		push		6				
				7				SILTY SAND (SM)- olive (5Y 4/3); loose;
				8				damp; 30% medium sand; 20% very fine to
				9				fine sand; trace clay; no chemical
50	2	S&H	S-14-	10				odor, comment: drill cuttings.
	3		10'					▼ CLAY (CL)- dark gray (2.5Y N4); stiff;
	4							damp; low plasticity; no chemical odor.
				11				CLAY WITH SAND (CL)- light yellowish
				12				brown (2.5Y 6/4); medium stiff; damp;
				13				10% very fine to fine sand; 5-10% silt;
				14				trace caliche nodules; mottled; no
0	2	S&H	S-14-	15				chemical odor.
	6		15'					
	7			16				color change to grayish brown (2.5Y
				17				5/2) at 15 feet.
				18				
				19				▽ becoming saturated at 19 feet.
50	2	S&H	S-14-	20				
	6		20'					

Remarks:

GeoStrategies Inc.

BORING NO. S-14

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615	CEG 1262	5/89		

Field location of boring:

Project No.: 7615 | Date: 4/26/89 | Boring No.: S-14

Client: Shell

Location: 15275 Washington Ave/Lewelling

City: San Leandro | Sheet 2 of 2

Logged by: DAF | Driller: Bayland

Casing installation data:

Drilling method: Hollow Stem Auger

Hole diameter: 8 inch

Top of Box Elevation: | Datum:

Water Level | Time | Date

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
	7							
				21				SANDY SILT (ML)- light yellowish brown (2.5Y 6/4); medium stiff; saturated; 30% very fine to fine sand; 5-10% clay; trace caliche nodules; mottled brown & black; no chemical odor.
				22				
				23				
				24				
	2	SPT						
	2			25				CLAY (CL)- grayish brown (2.5Y 5/2); medium stiff; damp; low plasticity; trace caliche nodules; no chemical odor
	4							
								Bottom of boring 24.0 feet, sampled to 25.5 feet 4/26/89

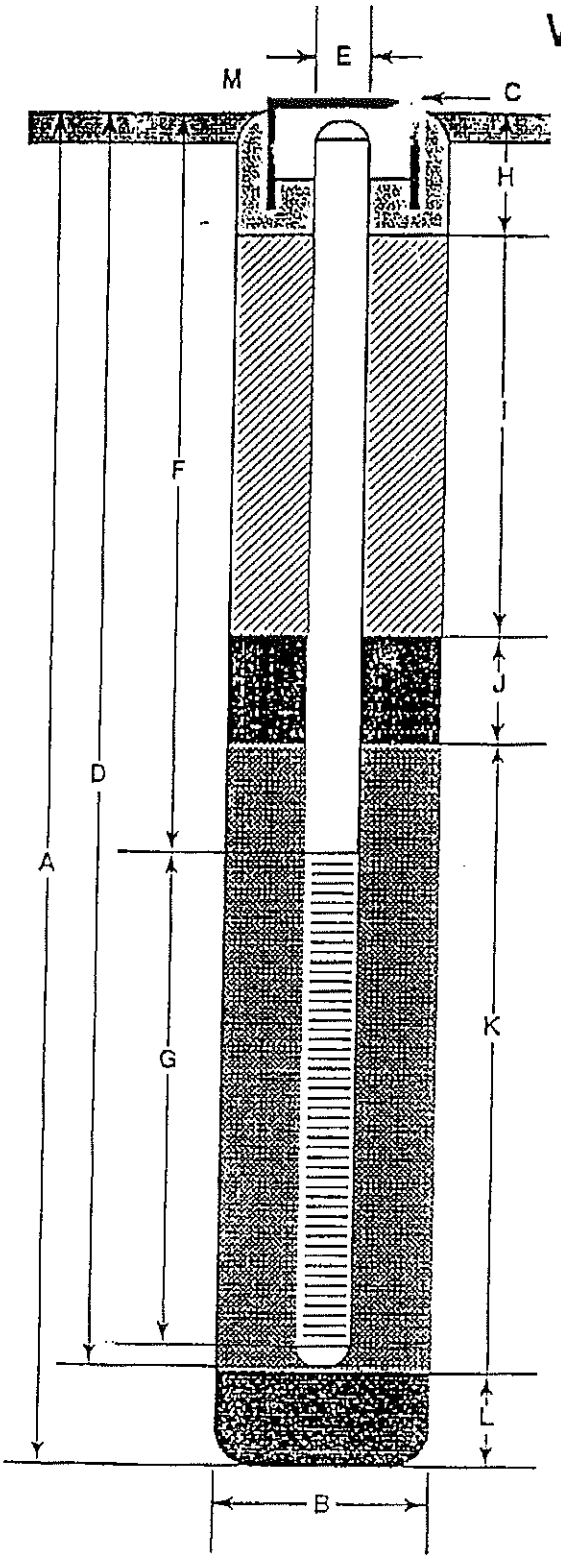
Remarks:

GeoStrategies Inc.

BORING NO. S-14

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
7615	RG/CEG	5/89		

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 24 ft.

B Diameter of Boring 8 in.
Drilling Method HOLLOW STEM AUGER

C Top of Box Elevation 20.44 ft.
☐ Referenced to Mean Sea Level
☒ Referenced to Project Datum

D Casing Length 23.5 ft.
Material SCH 40 PVC

E Casing Diameter 3 in.

F Depth to Top Perforations 4 ft.

G Perforated Length 20 ft.
Perforated Interval from 4 to 24 ft.
Perforation Type FACTORY SLOTTED
Perforation Size 0.020

H Surface Seal 2.5 ft.
Seal Material CONCRETE

I Backfill ft.
Backfill Material

J Seal 0.5 ft.
Seal Material BENTONITE

K Gravel Pack 21 ft.
Pack Material LONESTAR 2/12 & #3

L Bottom Seal ft.
Seal Material

M CHRISTY BOX

GSI GeoStrategies Inc.

Well Construction Detail
Former Shell Service Station
15275 Washington Ave.
San Leandro

WELL NO. S-14

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615	CWP CEG 1262	5/89		

Field location of boring:

Project No.: 7615 | Date: 4/26/89 | Boring No.: S-15

Client: Shell

Location: 15275 Washington Ave/Lewelling

City: San Leandro | Sheet: 1 of 2

Logged by: DAF | Driller: Bayland

Casing installation data:

Drilling method: Hollow Stem Auger

Hole diameter: 8 inch

Top of Box Elevation: | Datum:

	Water Level	Time	Date
	8.3'	2:25pm	4/26/89

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				1				PAVEMENT SECTION - 2.5 feet.
				2				
				3				CLAY (CL)- very dark grayish brown (2.5Y 3/2); medium stiff; damp; low plasticity; trace gravel.
				4				
55	150	S&H	S-15-5'	5				SILTY CLAY (CL-ML) -olive (5Y 4/3); soft; damp; low plasticity; mottled brown.
		push		6				
Driller notes change @ 7'				7				SILTY SAND (SM) -olive brown (2.5Y 4/4); loose; moist; poorly graded; trace clay.
				8				
				9				▼
35	2	S&H	S-15-	10				CLAY (CL) -very dark gray (5Y 3/1); stiff; damp; low plasticity; trace gravel; mottled brown; rootholes.
	2		10'					
	4							
				11				
				12				
				13				
				14				becoming soft; 5% silt; trace caliche nodules at 14 feet.
55	1	S&H	S-15-	15				CLAY (CL) -olive gray (5Y 4/2); stiff; damp; low plasticity; mottled; trace caliche nodules.
	4		15'					
	8							
				16				
				17				
				18				becoming saturated at 18.5 feet.
				19				▽ SILTY CLAY (CL-ML) -light olive brown (2.5Y 5/4); medium stiff; saturated; trace organics; trace caliche nodules.
NM	3	SPT		20				
	2							

Remarks:

GeoStrategies Inc.

BORING NO. S-15

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615	CEG 1262	5/89		

Field location of boring:

Project No.: 7615 | Date: 4/26/89 | Boring No.: S-15
Client: Shell
Location: 15275 Washington Ave/Lewelling
City: San Leandro | Sheet 2 of 2
Logged by: DAF | Driller: Bayland
Casing installation data:

Drilling method: Hollow Stem Auger
Hole diameter: 8 inch
Top of Box Elevation: | Datum:

Water Level				
Time				
Date				

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
	4							
				21				
				22				
				23				CLAY (CL) -very dark gray (5Y 3/1); medium stiff; damp; low plasticity.
				24				
NM	1	SPT						SILTY CLAY (CL-ML) - light olive brown
	3			25				(2.5Y 5/4); medium stiff; damp; some
	5							sandy lenses.
								Bottom of boring 24.0 feet,
								Sampled to 25.5 feet
								4/26/89

Remarks:

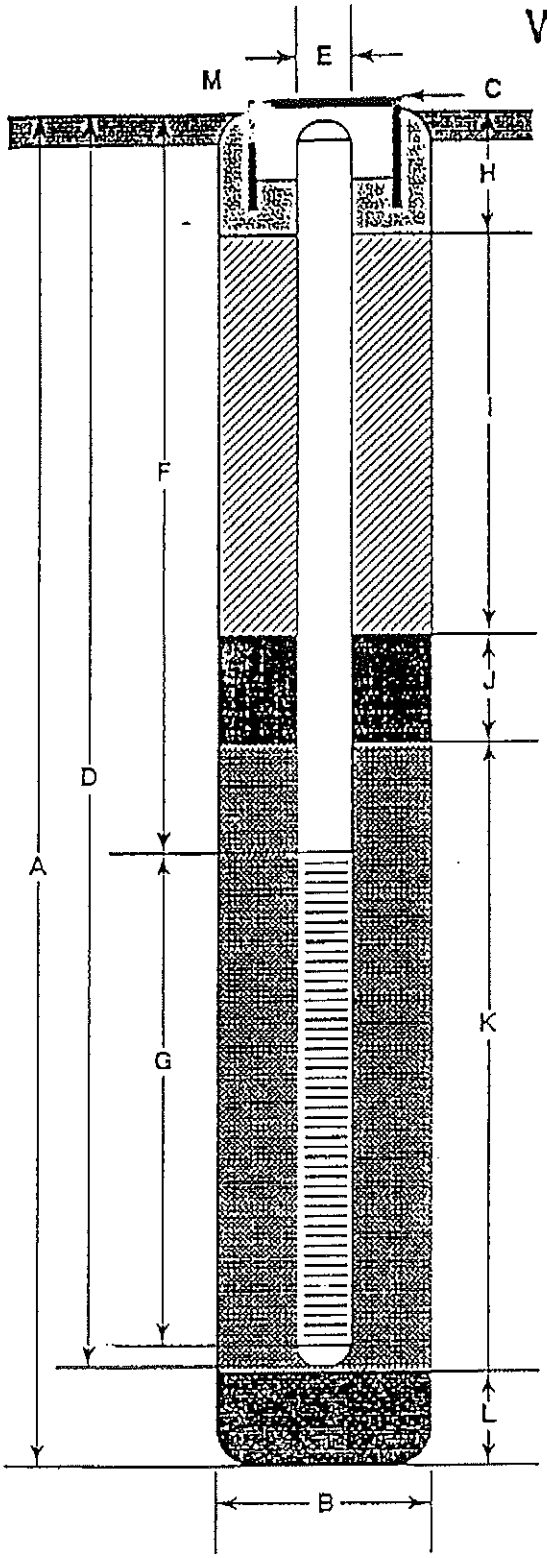
BORING NO.

GeoStrategies Inc.

S-15

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615		5/89		

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 24 ft.

B Diameter of Boring 8 in.
Drilling Method HOLLOW STEM AUGER

C Top of Box Elevation 22.22 ft.
☐ Referenced to Mean Sea Level
☒ Referenced to Project Datum

D Casing Length 23.5 ft.
Material SCH 40 PVC

E Casing Diameter 3 in.

F Depth to Top Perforations 4 ft.

G Perforated Length 20 ft.
Perforated Interval from 4 to 24 ft.
Perforation Type FACTORY SLOTTED
Perforation Size 0.020

H Surface Seal 2.5 ft.
Seal Material CONCRETE

I Backfill ft.
Backfill Material

J Seal 0.5 ft.
Seal Material BENTONITE

K Gravel Pack 21 ft.
Pack Material LONESTAR 2/12 & #3

L Bottom Seal ft.
Seal Material

M CHRISTY BOX

GeoStrategies Inc.

Well Construction Detail
Former Shell Service Station
15275 Washington Ave.
San Leandro

WELL NO. S-15

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615	CEG 1262	5/89		

Field location of boring:

Project No.: 7615 | Date: 4/25/89 | Boring No: S-16

Client: Shell

Location: 15275 Washington Ave/Lewelling

City: San Leandro | Sheet 1 of 2

Logged by: DAF | Drlr.: Bayland

Casing installation data:

Drilling method: Hollow Stem Auger

Hole diameter: 8 inch

Top of Box Elevation: | Datum:

Water Level: 8.5'

Time: 10:30am

Date: 4/25/89

PID (ppm)	Blowsft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				1				PAVEMENT SECTION - 2 feet.
				2				
				3				CLAY WITH GRAVEL (CL) -dark grayish brown (10 YR 4/2); medium stiff; damp; 5% subrounded pebbles; slight mottling.
				4				
560	150	S&H	S-16-5'	5				CLAY (CL) -dark grayish brown (10YR 4/2); medium stiff; moist; 5% silt; slight mottling; strong chemical odor.
		push		6				
				7				
				8				
				9				▼
0	3	S&H	S-16-	10				CLAY (CL) -very dark grayish brown (10YR 3/2); stiff; damp; increasing silt; trace sand; root structures.
	4		10'	11				
	6			12				
				13				
				14				
0	3	S&H	S-16-	15				CLAY (CL) -grayish brown (10YR 5/2); stiff; damp; trace organics; mottled; root structures.
	6		15'	16				
	7			17				
				18				
				19				
0	3	S&H	S-16-	20				SANDY CLAY (CL) -pale brown (10YR 6/3); stiff; damp.
	4		20'					

Remarks:

GeoStrategies Inc.

BORING NO. S-16

JOB NUMBER 7615 | REVIEWED BY RS/CEG Cliff 1262 | DATE 5/89 | REVISED DATE | REVISED DATE

Field location of boring:

Project No.: 7615 | Date: 4/25/89 | Boring No: S-16

Client: Shell

Location: 15275 Washington Ave/Lewelling

City: San Leandro | Sheet 2 of 2

Logged by: DAF | Driller: Bayland

Casing installation data:

Drilling method: Hollow Stem Auger

Hole diameter: 8 inch

Top of Box Elevation: | Datum:

Water Level | Time | Date

PID (ppm)	Blowsft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
	5							▽
				21				CLAYEY SAND (SC) -pale brown (10 YR 6/3); loose; saturated.
				22				
				23				
				24				
0	1	S&H	S-16-					SILTY CLAY (CL-ML) -brown (10YR 5/3);
	1		25'	25				soft; damp; 10% silt; <10% fine sand;
	1							trace organics; mottled gray & orange.
								Bottom of boring 24.0 feet,
								sampled to 25.5 feet.
								4/25/89

Remarks:

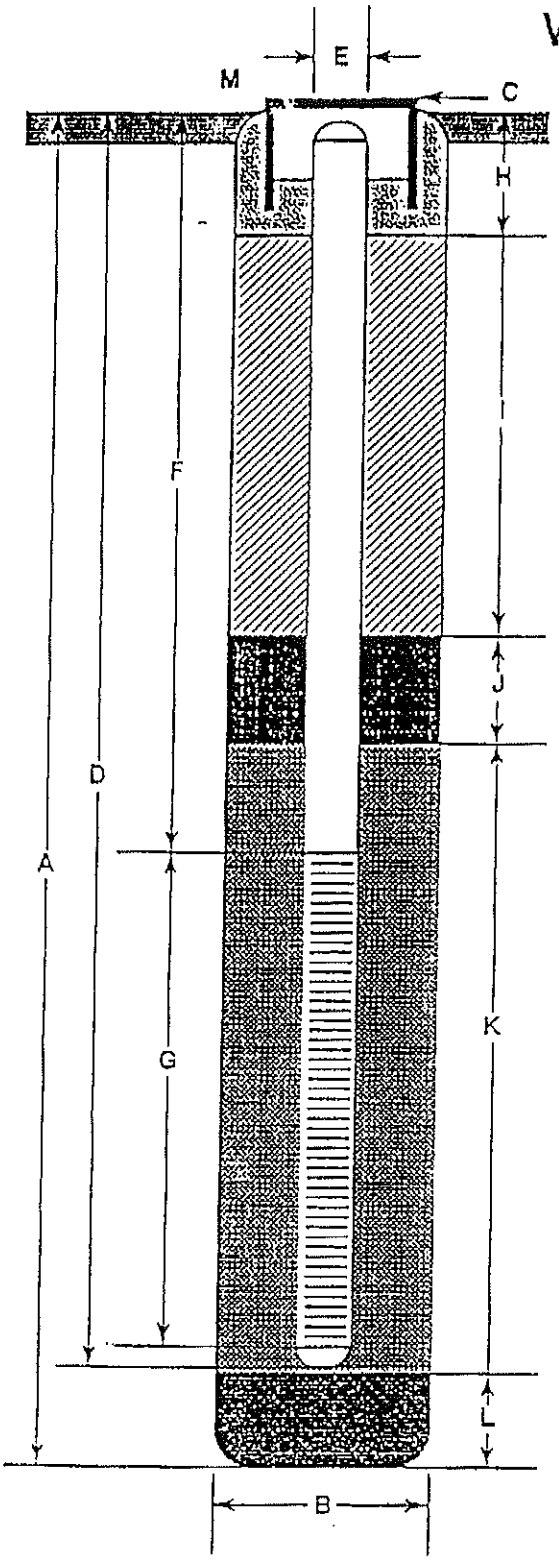
BORING NO.

GeoStrategies Inc.

S-16

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615		5/89		

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 24 ft.

B Diameter of Boring 8 in.
Drilling Method HOLLOW STEM AUGER

C Top of Box Elevation 21.82 ft.
☐ Referenced to Mean Sea Level
☒ Referenced to Project Datum

D Casing Length 23.5 ft.
Material SCH 40 PVC

E Casing Diameter 3 in.

F Depth to Top Perforations 4 ft.

G Perforated Length 20 ft.
Perforated Interval from 4 to 24 ft.
Perforation Type FACTORY SLOTTED
Perforation Size 0.020

H Surface Seal 2.5 ft.
Seal Material CONCRETE

I Backfill ft.
Backfill Material

J Seal 0.5 ft.
Seal Material BENTONITE

K Gravel Pack 21 ft.
Pack Material LONESTAR 2/12 & #3

L Bottom Seal ft.
Seal Material

M CHRISTY BOX

GeoStrategies Inc.

Well Construction Detail
Former Shell Service Station
15275 Washington Ave.
San Leandro

WELL NO. S-16

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615	Chip CEG 1262	5/89		

Field location of boring:

Project No.: 7615	Date: 4/25/89	Boring No: S-17	
Client: Shell			
Location: 15275 Washington Ave/Lewelling			
City: San Leandro		Sheet 1 of 2	
Logged by: DAF	Driller: Bayland		

Casing installation data:

Drilling method: Hollow Stemm Auger

Hole diameter: 8 inch

Top of Box Elevation: | Datum:

Water Level	7.5'		
Time	12.50 pm		
Date	4/25/89		

PID (ppm)	Blow/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				1				PAVEMENT SECTION - 2 feet.
				2				
				3				SILTY SAND (SM) -very dark gray (5Y 3/1); loose; dry; >50% very fine to fine sand; trace clay.
				4				
12.5	150	S&H	S-17-5'	5				SILTY CLAY (CL-ML) -dark greenish gray (5GY 4/1); medium stiff; damp; 5% very fine to fine sand; slight mottling - olive green & gray; moderate chemical odor.
		push						
				6				
				7				
				8				SANDY SILT (ML) -dark greenish gray (5GY 4/1); loose; saturated; 40% fine to very fine sand; 10% clay; weak chemical odor.
				9				
0	3	S&H	S-17-	10				
	4		10'					SILTY CLAY WITH SAND (CL-ML) -dark gray (5Y 4/1), stiff; damp; 15-20% very fine to fine sand; trace caliche nodules; trace organics; mottled; rootholes.
	7							
				11				
				12				
				13				gravels up to 1 cm at 14 feet.
				14				
NM	2	SPT		15				CLAY (CL) -grayish brown (5Y 5/2); stiff; damp; trace caliche nodules up to 1 cm; mottled; occasional sand lens.
	4							
	7							
				16				
				17				
				18				SANDY SILT (ML) -light yellowish brown (10 YR 6/4); loose; saturated; 30% very fine to fine sand; trace clay; trace caliche nodules; trace medium grain sized sand.
				19				
NM	2	SPT		20				
	2							

Remarks:

BORING NO.

GeoStrategies Inc.

S-17

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615	CEG 1262	5/89		

Field location of boring:

Project No.: 7615 | Date: 4/25/89 | Boring No: S-17

Client: Shell

Location: 15275 Washington Ave/Lewelling

City: San Leandro | Sheet 2 of 2

Logged by: DAF | Driller: Bayland

Casing installation data:

Drilling method: Hollow Stemm Auger

Hole diameter: 8 inch

Top of Box Elevation: | Datum:

Water Level | Time | Date

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
	4							increasing clay at 20.5 feet.
				21				
				22				
				23				
				24				SILTY CLAY (CL-ML) -olive (5Y 5/3); firm; damp; 10% very fine to fine sand; trace caliche nodules; trace medium to coarse grain sized sand; trace organics; trace saturated silt pockets.
NM	NM	SPT		25				
								Bottom of boring 24.0 feet. Sampled to 25.5 feet. 4/25/89

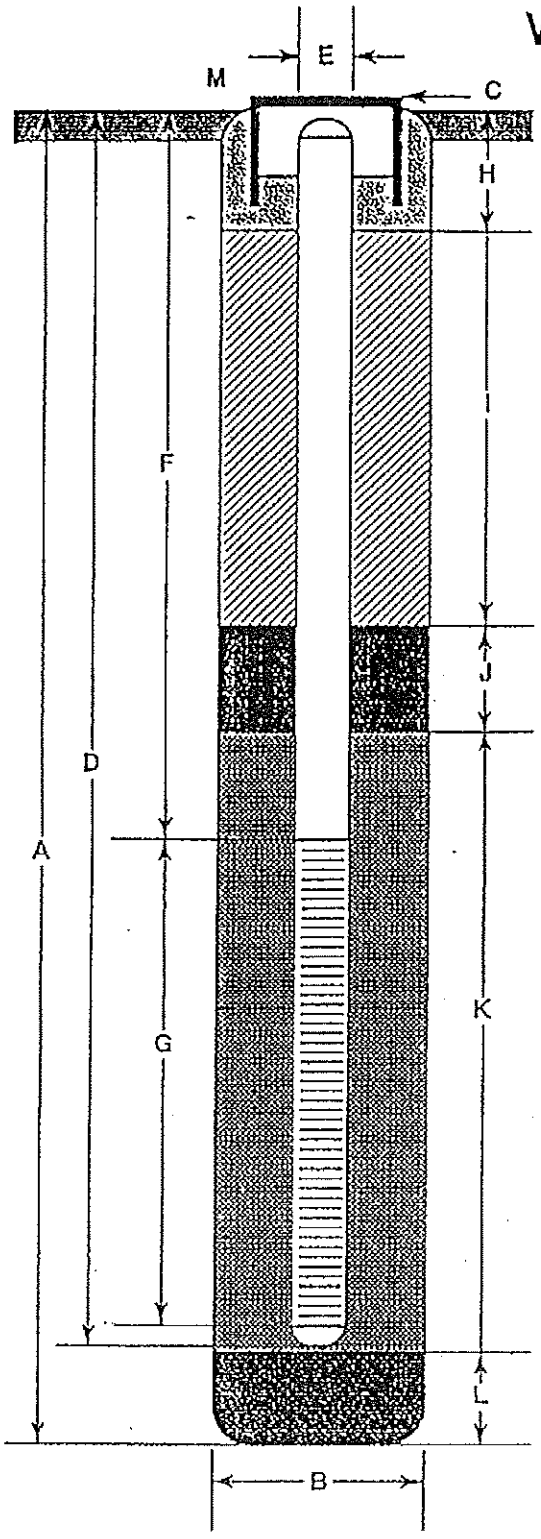
Remarks:

GeoStrategies Inc.

BORING NO. S-17

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615		5/89		

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 24 ft.

B Diameter of Boring 8 in.
Drilling Method HOLLOW STEM AUGER

C Top of Box Elevation 20.95 ft.
☐ Referenced to Mean Sea Level
☒ Referenced to Project Datum

D Casing Length 23.5 ft.
Material SCH 40 PVC

E Casing Diameter 3 in.

F Depth to Top Perforations 4 ft.

G Perforated Length 20 ft.
Perforated Interval from 4 to 24 ft.
Perforation Type FACTORY SLOTTED
Perforation Size 0.020

H Surface Seal 2.5 ft.
Seal Material CONCRETE

I Backfill ft.
Backfill Material

J Seal 0.5 ft.
Seal Material BENTONITE

K Gravel Pack 21 ft.
Pack Material LONESTAR 2/12 & #3

L Bottom Seal ft.
Seal Material

M CHRISTY BOX

GeoStrategies Inc.

Well Construction Detail
Former Shell Service Station
15275 Washington Ave.
San Leandro

WELL NO.
S-17

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615	CWP 06/13/62	5/89		

Field location of boring:

(See Plate 2)

Project No.: 7615	Date: 10/27/89	Boring No: SR-1	
Client: Shell Oil Company			
Location: 15275 Washington Avenue			
City: San Leandro, California		Sheet 1 of 3	
Logged by: M.J.J.	Driller: Bayland		

Casing installation data: Pilot Boring

Drilling method: Hollow-Stem Auger

Hole diameter: 8-inches

Top of Box Elevation: Datum:

Water Level	12.5	10.9		
Time				
Date	10/27/89	10/27/89		

PID (ppm)	Blowsft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				1				PAVEMENT SECTION - 4 inches
				2				FILL - Gravel (GW) - dark brown (10YR 3/3), damp, very loose.
				3				FILL - Clay with Silt (CL) - black (5Y 2.5/1), damp, soft, high plasticity; < 5% coarse sand; strong chemical odor.
				4				
231	2							
	3	S&H	SR1-5	5				
	4							CLAY (CL) - black (2.5Y N3/2), damp, soft, medium plasticity; interbeds of clayey sand (SP-SC); sand is very fine to fine; interbeds occur as discrete units 3 to 5 inches thick; contain 10-20% fines; strong chemical odor.
	3			6				
243	4	S&H	SR1-6.5					
	5			7				
	1							
296	2	S&H	SR1-8	8				
	3							
	2			9				
	4							moderate chemical odor.
373	6	S&H	SR1-10	10				
	2							COLOR CHANGE to black (10YR 3.3) at 10.5 feet.
108	4	S&H		11		▼		SILTY SAND (SM) - moist, loose, interbedded with
	6		SR1-					clayey silt (ML-CL), medium plasticity; no chemical odor.
			11.5	12				
				13				CLAY (CL) - very dark grayish brown (10YR 3/2), damp, stiff, high plasticity; fractured texture; no chemical odor.
				14				
	2							
4.3	4	S&H	SR1-15	15				
	8							first encountered water at 16.0 feet. Increasing sand at
				16		▽		16 feet. Interbedded clay with sand and clayey sand
				17				(observed during drilling with bucket auger, 11/16/89)
				18				
				19				

Remarks:

GeoStrategies Inc.

Log of Boring

BORING NO. SR-1

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615	CEG 1262.	11/89		

Field location of boring:

(See Plate 2)

Project No.: 7615	Date: 10/27/89	Boring No.: SR-1	
Client: Shell Oil Company			
Location: 15275 Washington Avenue			
City: San Leandro, California		Sheet 2 of 3	
Logged by: M.J.J.	Driller: Bayland		

Drilling method: Hollow-Stem Auger

Hole diameter: 8-inches

Casing installation data: Pilot Boring

Top of Box Elevation: Datum:

Water Level				
Time				
Date				

PID (ppm)	Blowsft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
	2							
80	4	S&H	SR1-20	20				
	6							
				21				CLAYEY SILT (ML-CL) - light olive brown (2.5Y 5/4), saturated, medium plasticity; 30% clay; 5% fine to medium sand; no chemical odor.
				22				
				23				
				24				CLAY with SAND (CL) - olive gray (5Y 4/2), saturated, stiff, high plasticity; 20% very fine to fine sand; no chemical odor.
	3							
66	3	S&H	SR1-30	25				
	6							
				26				SILT with SAND (ML) - light olive brown (2.5Y 5/4), saturated, stiff; 15% fine to medium sand; 20-30% clay; no chemical odor.
				27				
				28				
				29				SAND with SILT (SP-SM) - light olive brown (5Y 4/2), fine sand, saturated, medium dense; well sorted; 10% silt; trace clay; laminae of silt 0.25 inches thick in shoe; iron oxide staining; no chemical odor.
	3							
10	8	S&H	SR1-30	30				
	10							
				31				
				32				
				33				
				34				SILTY SAND (SM) - light olive brown (5Y 4/2), saturated, dense; very fine to medium sand; 15% silt; trace clay; no chemical odor.
	5							
34	7	S&H	SR1-35	35				
	18							
				36				
				37				
				38				
				39				SAND (SP) - dark grayish brown (2.5Y 3/2), saturated, dense, very fine to medium sand; interbeds of fine

Remarks:

GeoStrategies Inc.

Log of Boring

BORING NO. SR-1

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615	CEG 1262	11/89		

Field location of boring:

(See Plate 2)

Project No.: 7615	Date: 10/27/89	Boring No: SR-1	
Client: Shell Oil Company			
Location: 15275 Washington Avenue			
City: San Leandro, California		Sheet 3 of 3	
Logged by: M.J.J.	Drill . Bayland		

Drilling method: Hollow-Stem Auger

Hole diameter: 8-inches

Casing installation data: Pilot Boring

Top of Box Elevation: Datum:

Water Level				
Time				
Date				

PID (ppm)	Blowsft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
	9			40				silty sand 0.5 to 3.0 inches thick; no chemical odor.
8.2	13	S&H	SR1-40					
	17							Bottom of boring at 40.5 feet.
				41				Bottom of sample at 40.5 feet.
								10/27/89
				42				
				43				
				44				
				45				
				46				
				47				
				48				
				49				
				50				
				51				
				52				
				53				
				54				
				55				
				56				
				57				
				58				
				59				

Remarks: Boring caved to 30 feet, Bentonite from 19 to 30 feet.

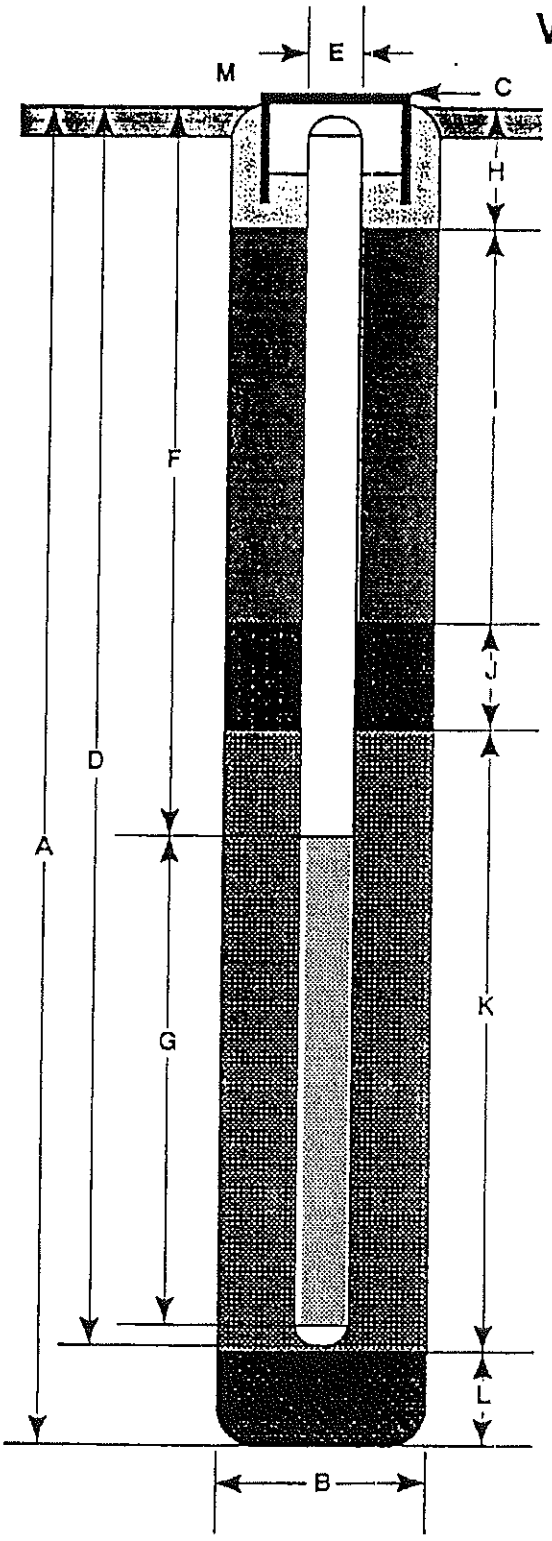
GeoStrategies Inc.

Log of Boring

BORING NO. SR-1

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615	CWP 12/6/89	11/89		

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 40.5 ft.

B Diameter of Boring 20 in.
Drilling Method Bucket Auger

C Top of Box Elevation _____ ft.
☐ Referenced to Mean Sea Level
☐ Referenced to Project Datum

D Casing Length 21 ft.
Material Schedule 40 PVC

E Casing Diameter 6 in.

F Depth to Top Perforations 6.5 ft.

G Perforated Length 15 ft.
Perforated Interval from 6.5 to 21.5 ft.
Perforation Type Machine Slot
Perforation Size 0.020 in.

H Surface Seal from 0.5 to 1.0 ft.
Seal Material concrete

I Backfill from 1.0 to 4.5 ft.
Backfill Material cement

J Seal from 4.5 to 5.5 ft.
Seal Material Bentonite

K Gravel Pack from 5.5 to 21.5 ft.
Pack Material 2/12 Lonestar sand

L Bottom Seal 21.5-30 ft.
Seal Material Bentonite

M Christy Box

Note: 30 to 40.5 Native Material (slough)

GeoStrategies Inc.

Well Construction Detail

WELL NO. SR-1

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7615	CWP CEG 1262	10/89		

Field location of boring: (See Plate 2)	Project No.: 761502	Date: 05/16/91	Boring No: S-18
	Client: Shell Oil Company		
	Location: 15275 Washington		
	City: San Leandro, California		Sheet 1 of 2
	Logged by: E.C.F.	Driller: Bayland	
Drilling method: Hollow Stem Auger	Casing installation data: (See Well Construction Detail)		
Hole diameter: 8-inches	Top of Box Elevation:		Datum:

Water Level	7.5'	7.6'	
Time	10:00	12:03	
Date	05/16/91	05/16/91	

PID (ppm)	Blows/ft. * or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				0				PAVEMENT SECTION - 0.33 feet
				1			SP	SAND (SP) - yellowish brown (10YR 5/4), medium dense, damp; 80% coarse to medium sand; 15% gravel; 5% fines (FILL).
				2				
				3				SILT with SAND (ML) - very dark gray (7.5YR N3/), stiff, damp; 80% silt; 20% very fine sand (ALLUVIUM).
				4				
	450	S&H		5				
0	450		S18-4.5					
	450			6				
				7				Soft drilling at 7.0 feet.
		S&H						SILTY SAND (SM) - dark grayish brown (10YR 4/2),
0	4		S18-8	8			SM	loose, [redacted]; 70% sand; 30% silt.
				9				
		S&H						Increasing moisture and silt content with depth.
0	6		S18-10	10				
				11				
				12				
				13				
				14				
		S&H						CLAY (CL) - gray brown (2.5Y 5/2), stiff, moist; trace fine
0	16		S18-15	15			CL	sand with rootholes and vertical dark stains.
				16				
				17				
				18				
				19				

Remarks:

* Converted to equivalent Standard Penetration blows/ft.

Log of Boring

BORING NO.

GeoStrategies Inc.

S-18

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
761502	DHP	05/91		

Field location of boring: (See Plate 2)	Project No.: 761502	Date: 05/16/91	Boring No.: S-18
	Client: Shell Oil Company		
	Location: 15275 Washington		
	City: San Leandro, California		Sheet 2 of 2
	Logged by: E.C.F.	Driller: Bayland	
Drilling method: Hollow Stem Auger	Casing installation data:		
Hole diameter: 8-Inches	Top of Box Elevation:	Datum:	

	Water Level			
	Time			
	Date			

PID (ppm)	Blows/ft. * or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
		S&H		20				
	12							
			S18-20.5					COLOR CHANGE to light yellow brown (2.5YR 6/4), stiff, damp; 80% clay; 20% coarse sand.
				21				
				22				Bottom of boring at 19.0 feet.
				23				Bottom of sample at 20.5 feet.
				24				
				25				
				26				
				27				
				28				
				29				
				30				
				31				
				32				
				33				
				34				
				35				
				36				
				37				
				38				
				39				

Remarks:

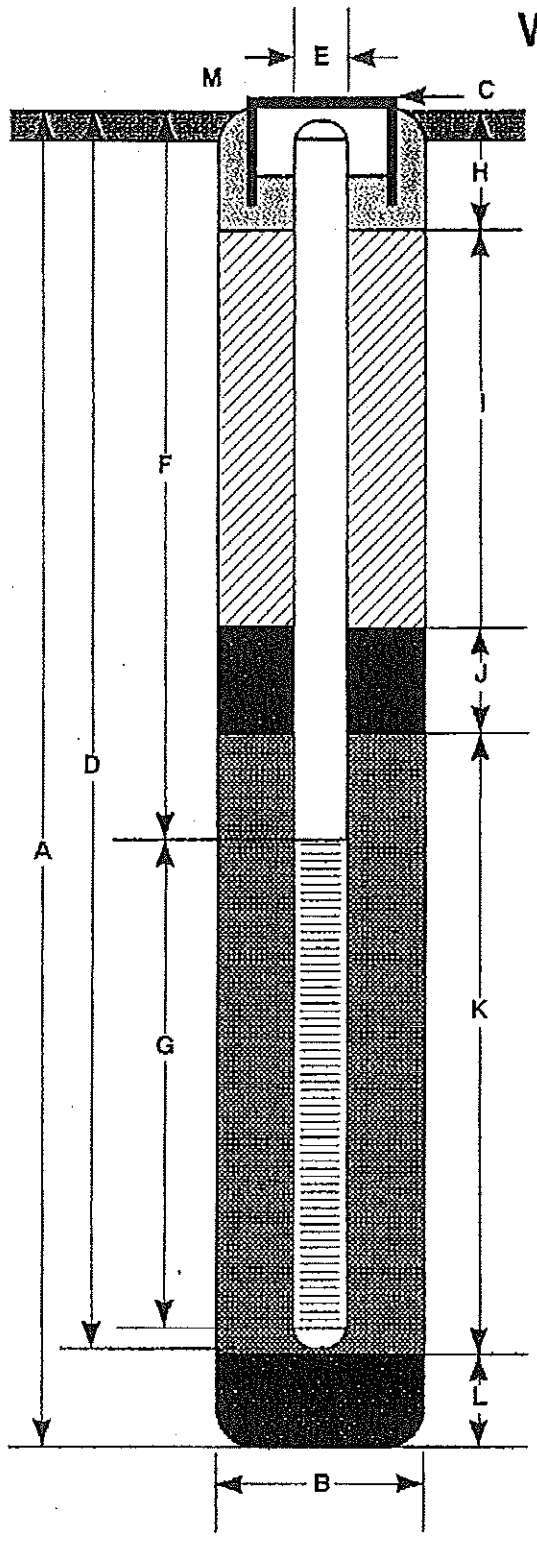
GeoStrategies Inc.

Log of Boring

BORING NO. S-18

JOB NUMBER	REVIEWED BY RS/CEG	DATE	REVISED DATE	REVISED DATE
761502	DHP	05/91		

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 19.0 ft.

B Diameter of Boring 8 in.
Drilling Method Hollow Stem Auger

C Top of Box Elevation ft.
☐ Referenced to Mean Sea Level
☐ Referenced to Project Datum

D Casing Length 18.0 ft.
Material Schedule 40 PVC

E Casing Diameter 3 in.

F Depth to Top Perforations 4 ft.

G Perforated Length 12 ft.
Perforated Interval from 4 to 18 ft.
Perforation Type Machine Slotted
Perforation Size 0.02 in.

H Surface Seal from 0 to 1.5 ft.
Seal Material Concrete

I Backfill from 1.5 to 2 ft.
Backfill Material Concrete

J Seal from 2 to 3 ft.
Seal Material Bentonite

K Gravel Pack from 3 to 18 ft.
Pack Material 2/12 Lonestar Sand

L Bottom Seal 1 ft.
Seal Material Bentonite

M Underground vault with cover, cap and lock.

Note: Depths measured from initial ground surface.

GeoStrategies Inc.

Well Construction Detail

WELL NO.
S-18

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
761502	DHP	5/91		

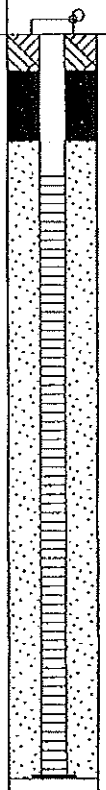
Cambria Environmental Technology, Inc.
1144 - 65th St.
Oakland, CA 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	Equilon Enterprises LLC	BORING/WELL NAME	S-19
JOB/SITE NAME	15275SNL	DRILLING STARTED	31-Jul-98
LOCATION	15275 Washington Avenue, San Leandro	DRILLING COMPLETED	31-Jul-98
PROJECT NUMBER	240-0933	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Gregg Drilling	GROUND SURFACE ELEVATION	NA
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION	NA
BORING DIAMETER	8"	SCREENED INTERVAL	4 to 21 ft bgs
LOGGED BY	J. Riggi	DEPTH TO WATER (First Encountered)	6.30 ft (31-Jul-98)
REVIEWED BY	D. Lunquist, PE	DEPTH TO WATER (Static)	
REMARKS	94 ft north of well S-9.		

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)
								ASPHALT	0.5
								FILL: brown; loose; moist; 15% clay, 25% silt, 30% sand, 30% gravel; low plasticity; high estimated permeability.	2.5
998						MH		Clayey SILT: (MH); grey to black; medium stiff; moist; 40% clay, 50% silt, 10% sand; medium plasticity; low estimated permeability.	5.0
					5			Silty CLAY: (CL); grey to black; stiff; moist; 55% clay, 45% silt; medium to high plasticity; low estimated permeability. 7/31/98 ▽	
						CL			
730					10			brown; very stiff; 55% clay, 35% silt, 10% sand; high plasticity; very low estimated permeability.	10.0
						CL			
639					15			Silty, Gravelly CLAY: (CL); brown; very stiff; wet; 45% clay, 30% silt, 10% sand, 15% gravel; high plasticity; very low estimated permeability.	15.0
						CL			
231					20				20.0
						CL		Silty, Sandy CLAY: (CL); brown; stiff; moist; 40% clay, 30% silt, 30% sand; high plasticity; very low estimated permeability.	21.1

WELL DIAGRAM



Water encountered @ 6.3 ft.

Bottom of Boring @ 21.1 ft

WELL LOG (PID) G:\SNL\15275\GINTWELLS-19.GPJ DEFAULT.GDT 12/2/98

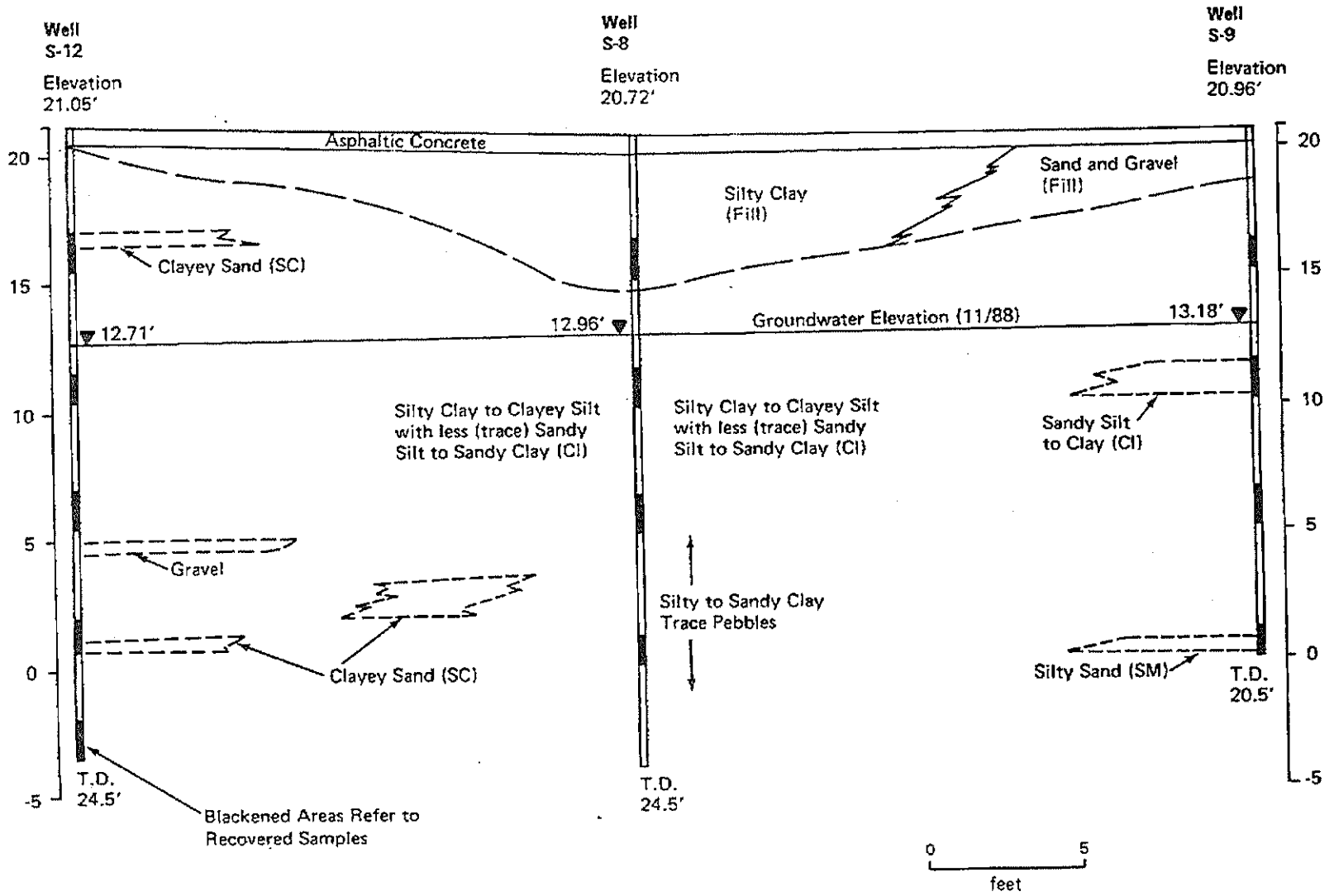
Project No.
8820011A

Woodward-Clyde Consultants

Gettler Ryan

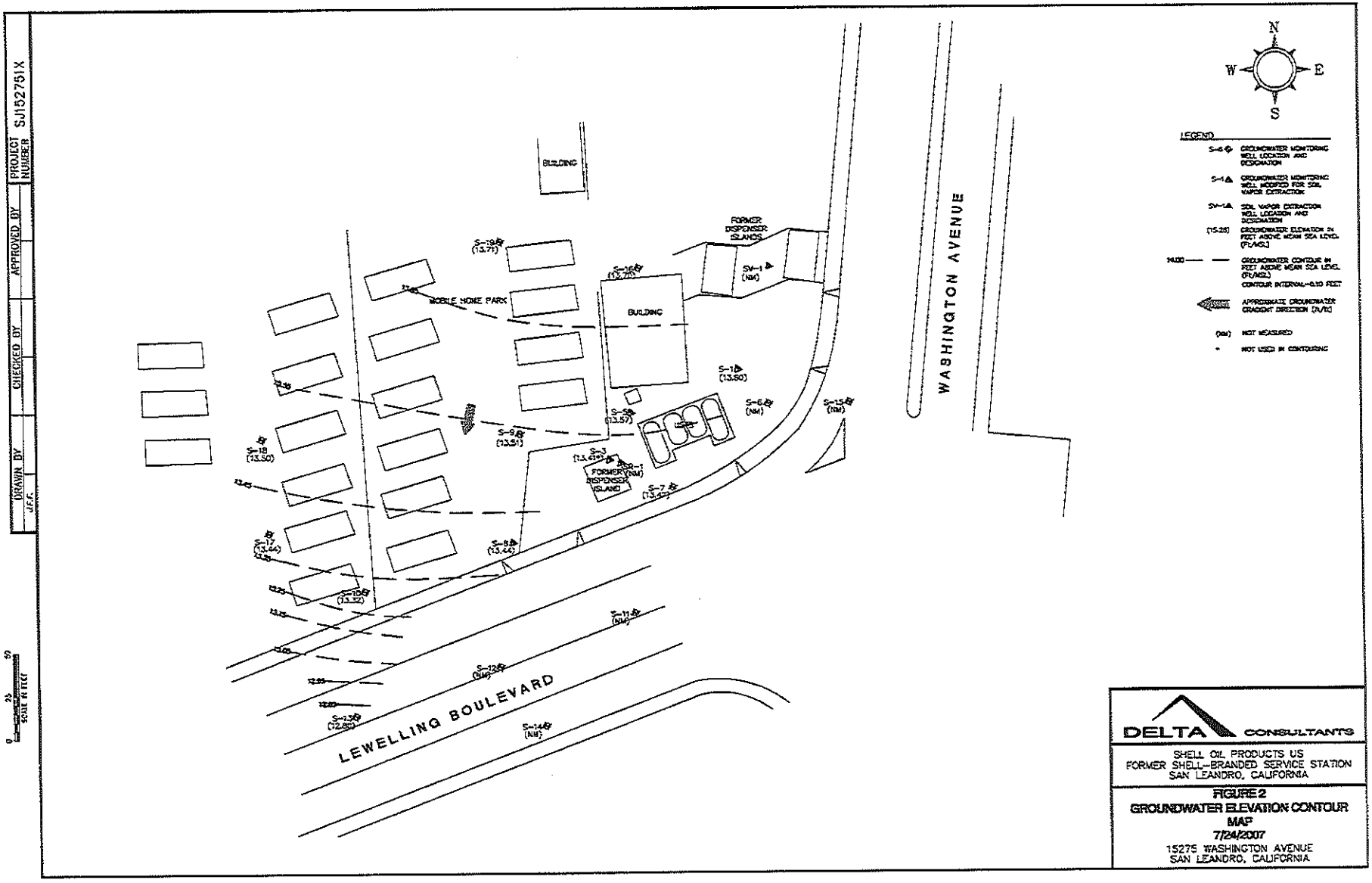
CROSS SECTION
SHELL SERVICE STATION
LEWELLING BLVD. AND WASHINGTON AVE.
SAN LEANDRO, CALIFORNIA

Figure
6

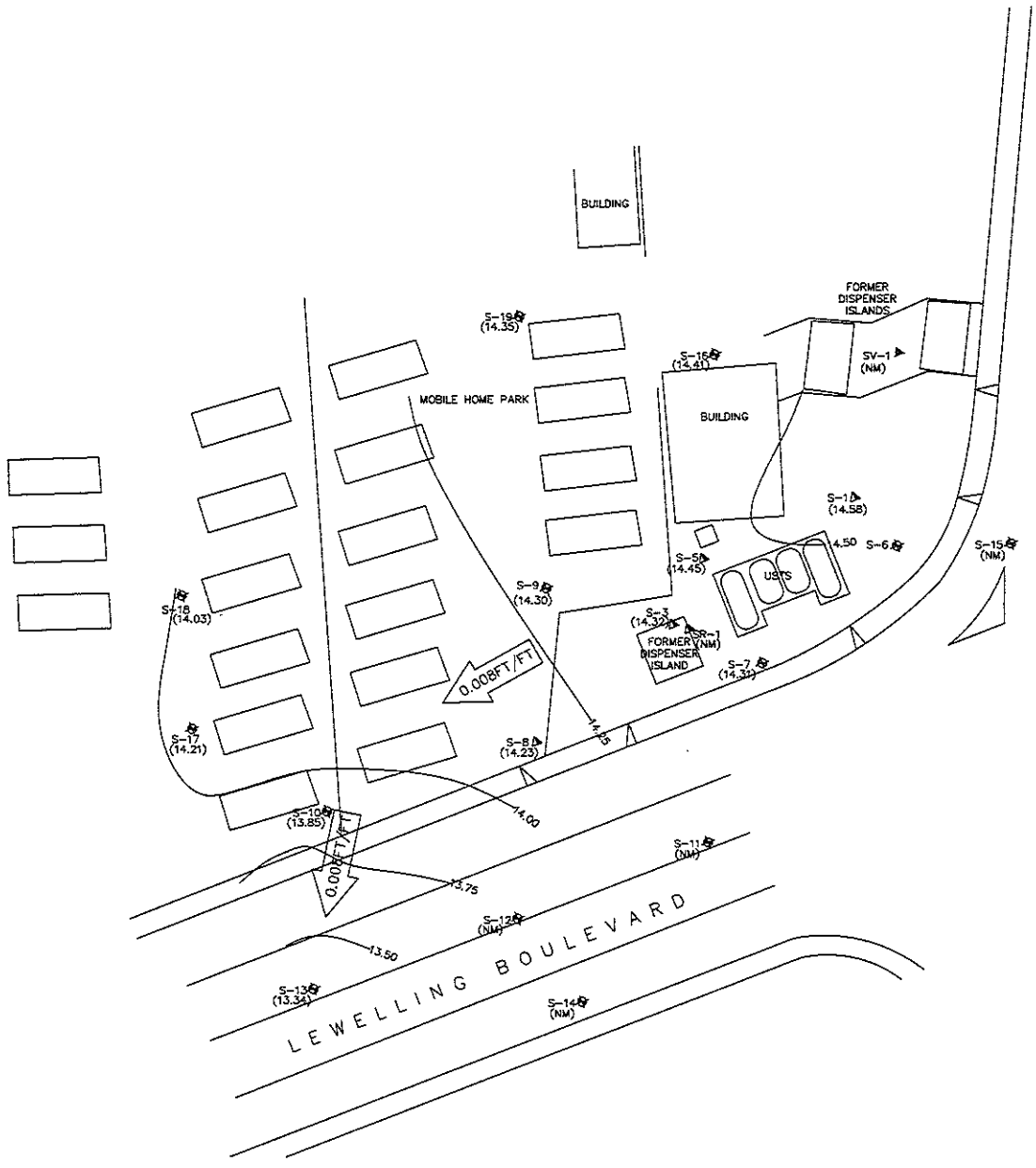


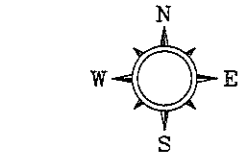
APPENDIX C

HISTORICAL GROUNDWATER CONTOUR MAPS


N
W
E
S
LEGEND
S-6 GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
S-1 GROUNDWATER MONITORING WELL MODIFIED FOR SOIL VAPOR EXTRACTION
SV-1 SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION
(15.28) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (FT/MSL)
14.00 GROUNDWATER CONTOUR IN FEET ABOVE MEAN SEA LEVEL (FT/MSL) CONTOUR INTERVAL=0.10 FEET
APPROXIMATE GROUNDWATER GRADIENT DIRECTION (N/10)
(NM) NOT MEASURED
* NOT USED IN CONTOURING
WASHINGTON AVENUE
LEWELLING BOULEVARD
BUILDING
MOBILE HOME PARK
FORMER DISPENSER ISLANDS
DRAWN BY J.F.F.
CHECKED BY
APPROVED BY
PROJECT NUMBER SJ152751X
0 25 50
SCALE IN FEET
DELTA CONSULTANTS
SHELL OIL PRODUCTS US
FORMER SHELL-BRANDED SERVICE STATION
SAN LEANDRO, CALIFORNIA
FIGURE 2
GROUNDWATER ELEVATION CONTOUR MAP
7/24/2007
15275 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

DRAWN BY	CHECKED BY	APPROVED BY	PROJECT NUMBER
AO 4/10/07	AP 4/10/07	JR 4/10/07	SJ152-75W-1





LEGEND

- S-6 ⊕ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- S-1 △ GROUNDWATER MONITORING WELL MODIFIED FOR SOIL VAPOR EXTRACTION
- SV-1 ▲ SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION
- (15.28) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (FT/MSL)
- 14.00 GROUNDWATER CONTOUR IN FEET ABOVE MEAN SEA LEVEL (FT/MSL) CONTOUR INTERVAL=0.50 FEET
- 0.008FT/FT APPROXIMATE GROUNDWATER GRADIENT DIRECTION (ft/ft)
- (NM) NOT MEASURED

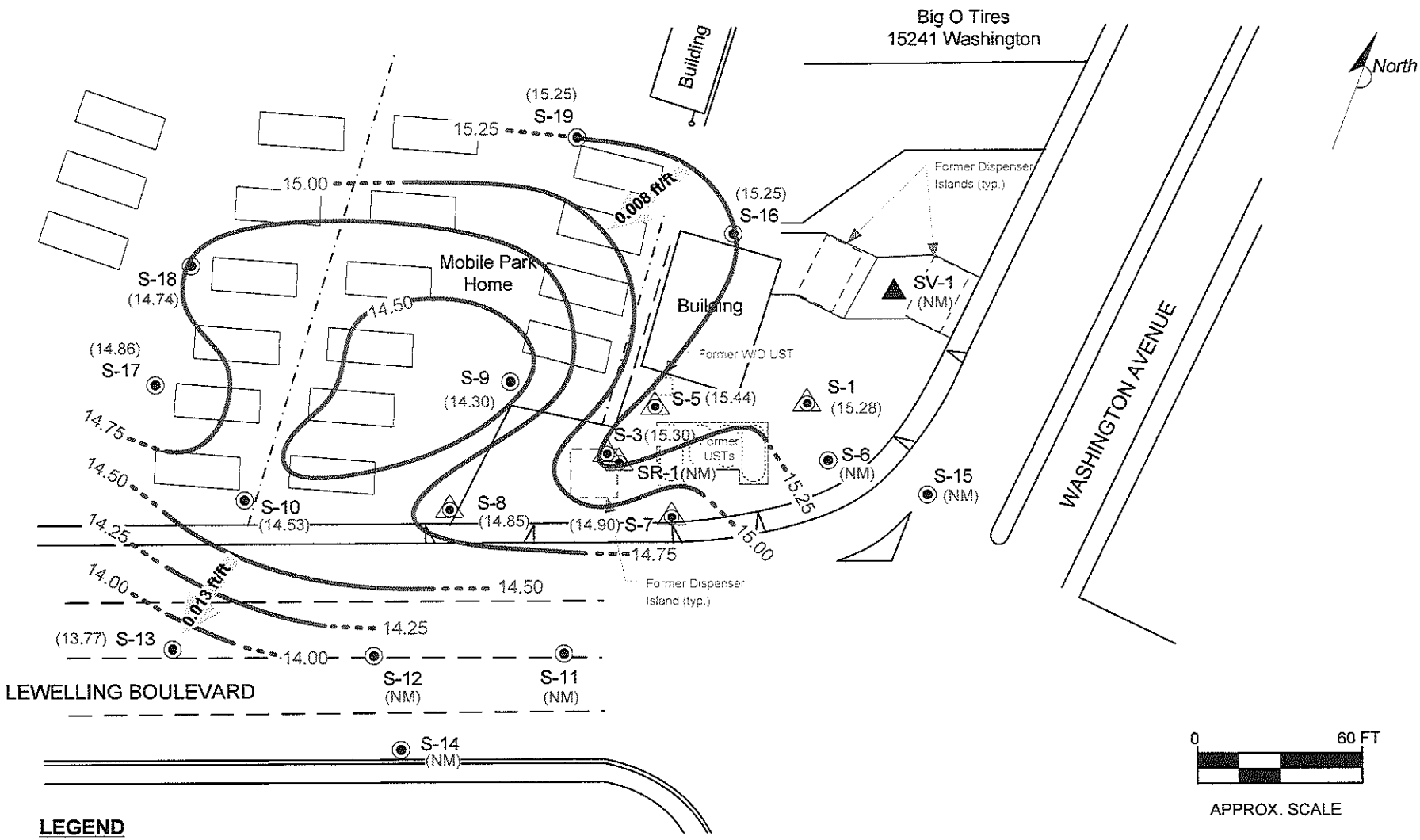
0 25 50
SCALE IN FEET

DELTA CONSULTANTS

SHELL OIL PRODUCTS U.S.
FORMER SHELL-BRANDED SERVICE STATION
SAN LEANDRO, CALIFORNIA

FIRGURE 1

GROUNDWATER ELEVATION CONTOUR MAP
JANUARY 4, 2007
15275 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA



LEGEND

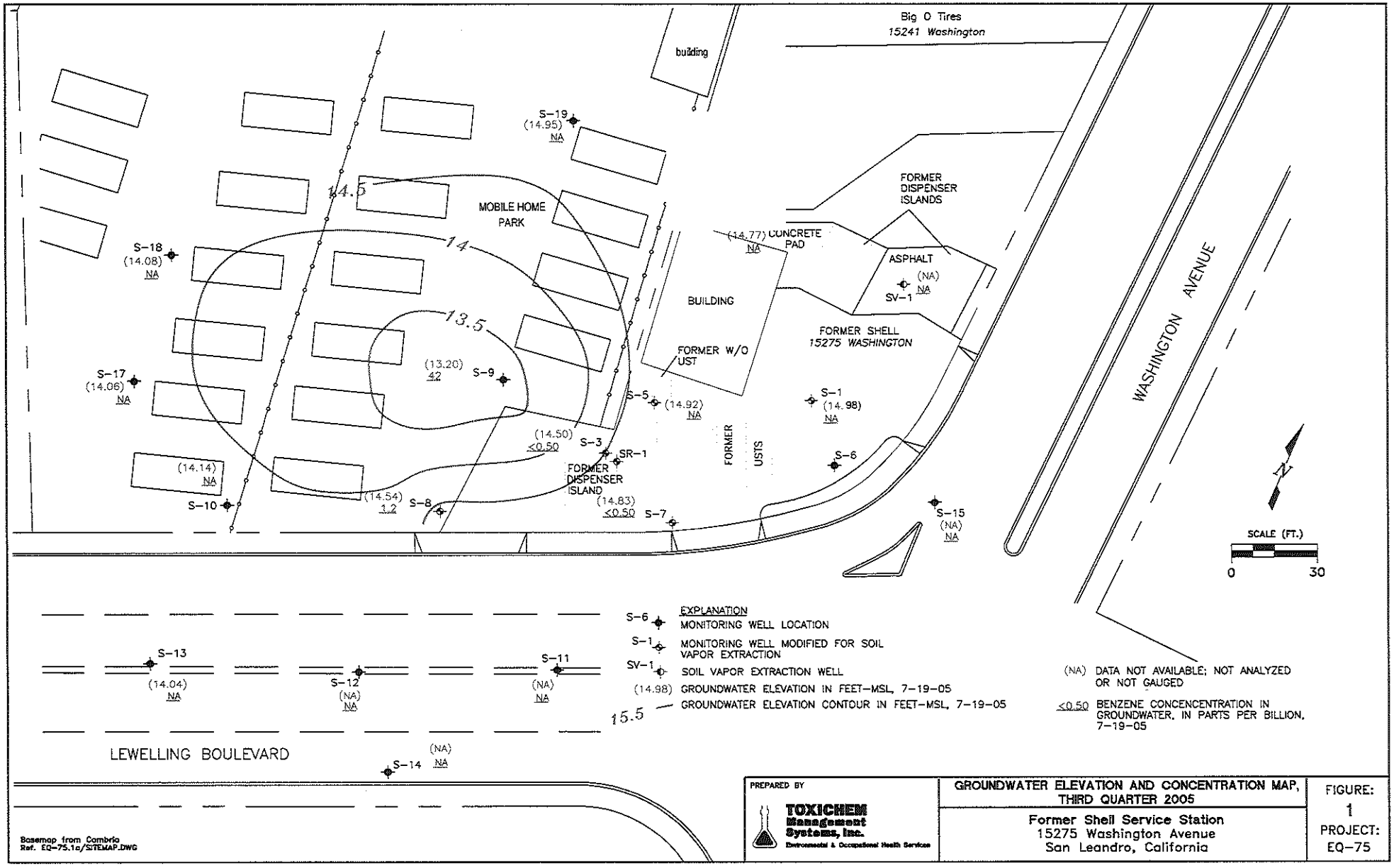
- S-6 ◉ **GROUNDWATER MONITORING WELL**
- S-1 ◉ **GROUNDWATER MONITORING WELL MODIFIED FOR SOIL VAPOR EXTRACTION**
- SV-1 ▲ **SOIL VAPOR EXTRACTION WELL**
- (15.28) **GROUNDWATER ELEVATION (FEET - MSL), 01/27/06**
- 14.00 **GROUNDWATER ELEVATION CONTOUR**
- 0.013 ft/ft **APPROXIMATE GROUNDWATER GRADIENT AND DIRECTION**
- NM **NOT MEASURED**

FIGURE 1
GROUNDWATER ELEVATION CONTOUR MAP,
JANUARY 27, 2006

FORMER SHELL-BRANDED SERVICE STATION
15275 Washington Avenue
San Leandro, CA

PROJECT NO. SJ15275-1.2006	DRAWN BY JL 04/10/06
FILE NO. SJ15275-1.2006	PREPARED BY JL
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.



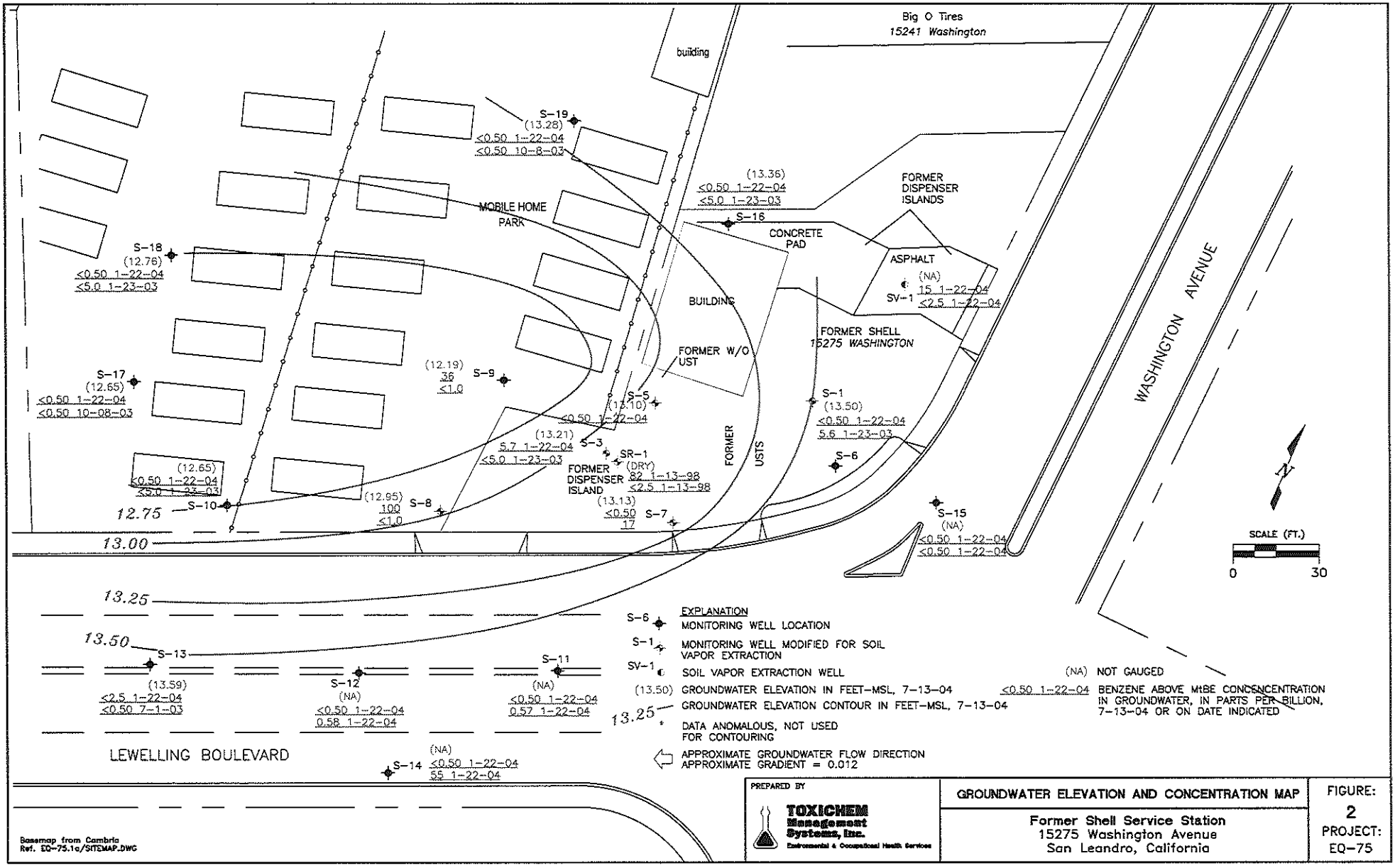
PREPARED BY

TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

GROUNDWATER ELEVATION AND CONCENTRATION MAP, THIRD QUARTER 2005

Former Shell Service Station
15275 Washington Avenue
San Leandro, California

FIGURE: 1
PROJECT: EQ-75



Basemap from Cambria
Ref. EQ-75.1c/SITEMAP.DWG

PREPARED BY
TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

GROUNDWATER ELEVATION AND CONCENTRATION MAP

Former Shell Service Station
15275 Washington Avenue
San Leandro, California

FIGURE: 2
PROJECT: EQ-75

12/17/03

FIGURE
1

Groundwater Elevation Contour Map

October 8, 2003

CAMBRIA

Former Shell Service Station
15275 Washington Avenue
San Leandro, California
Incident #97088270

G:\SANLEANDRO\15275WASHINGTON\FIGURES\WQM03.DWG

APPENDIX D

2005 TOXICHEM SENSITIVE RECEPTOR SURVEY DATA

Sensitive Receptor Survey Report Form (v. 2.1)

SITE ADDRESS 15275 Washington Avenue, San Leandro **SAP#** 129460

Site Coordinates (location				Source	Field conf.? (Y/N)
Lat. (dec. deg.)	37.6868	Long. (dec. deg.)	-122.1394	S-1 Survey	Y

SECTION 1: Sensitive Receptor Types (answer Yes/No (Y/N) for each type applicable)

Sensitive Receptor Type	Y/N	Field conf.? (Y/N)	Dist. in ft (if known)	Field conf.? (Y/N)
1. Surface water within 500 ft?	N	Y		
2. Sensitive habitats within 500 ft?	N	Y		
3. Basements within 200 ft?	N	Y		
4. Hospital, educational, residential care and childcare w/in 1000 ft?	Y	Y	600	Y
5. Water well w/in ½ mile? ***(if 'Yes', select well type below)***				
Agricultural	Y	N	<200	N
Industrial				
Other: _____				
Drinking water ***(select type; complete separate Form per well)***	Y	N	500	N

- [Y] Homeowner, single resident (*if this option is selected, complete Section 2 only*)
- [ ] Private, not single resident (*if this option is selected, complete Sections 2 & 3*)
- [ ] Public/Municipal (*if this option is selected, complete Section 2 & 3*)

SECTION 2: Owner/Operator Information

Name G-1 - (3S/2W-12G1)
Address 685 Fargo Avenue, San Leandro
Contact name NA Phone number NA

SECTION 3: Drinking Water Well Information (complete separate form for each well identified)

Well name/ID _____ Permit number _____
Address
Status _____ Description (T/S/R) _____

Coordinates				Source	Field conf.? (Y/N)
Lat. (dec. deg.)		Long. (dec. deg.)			
Lat. (H/M/S)		Long. (H/M/S)			
Northing		Easting			
Other: _____					

Coordinate margin of error (<30 ft required) _____
Ground elevation _____ Datum _____ Survey date _____

Completion/Production information

Extraction rate Max. _____ Avg. _____ Units _____ Number of connections _____
Operation frequency (typical) _____ Well total depth _____

Depth intervals	**Top**	**Bottom**	**Indicate "Screen", "Aquitard" or Aquifer name (if known)**

Depth interval data source _____

Comments *42 foot deep domestic well.*

COMPLETED BY Ross Zintine **DATE** 2-11-05

Note: The final, completed version of this form should be saved in pdf format and submitted to the site Environmental Engineer (EE). All information provided here must also be captured on the Excel spreadsheet "SRS Template v2 081403.xls" and submitted to the site EE.

Sensitive Receptor Survey Report Form (v. 2.1)

SITE ADDRESS 15275 Washington Avenue, San Leandro **SAP#** 129460

Site Coordinates (location				Source	Field conf.? (Y/N)
Lat. (dec. deg.)	37.6868	Long. (dec. deg.)	-122.1394	S-1 Survey	Y

SECTION 1: Sensitive Receptor Types (answer Yes/No (Y/N) for each type applicable)

Sensitive Receptor Type	Y/N	Field conf.? (Y/N)	Dist. in ft (if known)	Field conf.? (Y/N)
1. Surface water within 500 ft?	N	Y		
2. Sensitive habitats within 500 ft?	N	Y		
3. Basements within 200 ft?	N	Y		
4. Hospital, educational, residential care and childcare w/in 1000 ft?	Y	Y	600	Y
5. Water well w/in ½ mile? ***(if 'Yes', select well type below)***				
Agricultural	Y	N	<200	N
Industrial				
Other:				
Drinking water ***(select type; complete separate Form per well)***	Y	N	900	N

- [Y] Homeowner, single resident (*if this option is selected, complete Section 2 only*)
- [ ] Private, not single resident (*if this option is selected, complete Sections 2 & 3*)
- [ ] Public/Municipal (*if this option is selected, complete Section 2 & 3*)

SECTION 2: Owner/Operator Information

Name H-3 - (3S/3W-12H3)
Address 624 Lewelling Street, San Leandro
Contact name F. Goyette Machine Work - Teel Phone number NA

SECTION 3: Drinking Water Well Information (complete separate form for each well identified)

Well name/ID _____ Permit number _____
Address
Status _____ Description (T/S/R) _____

Coordinates				**Source**	**Field conf.? (Y/N)**
Lat. (dec. deg.)		Long. (dec. deg.)			
Lat. (H/M/S)		Long. (H/M/S)			
Northing		Easting			
Other: _____					

Coordinate margin of error (<30 ft required) _____
Ground elevation _____ Datum _____ Survey date _____

Completion/Production information

Extraction rate Max. _____ Avg. _____ Units _____ Number of connections _____
Operation frequency (typical) _____ Well total depth _____

Depth intervals	**Top**	**Bottom**	**Indicate "Screen", "Aquitard" or Aquifer name (if known)**

Depth interval data source _____

Comments *75 foot deep domestic well.*

COMPLETED BY Tom Tirline **DATE** 2-11-05

Note: The final, completed version of this form should be saved in pdf format and submitted to the site Environmental Engineer (EE). All information provided here must also be captured on the Excel spreadsheet "SRS Template v2 081403.xls" and submitted to the site EE.

Sensitive Receptor Survey Report Form (v. 2.1)

SITE ADDRESS 15275 Washington Avenue, San Leandro **SAP#** 129460

Site Coordinates (location			Source	Field conf.? (Y/N)
Lat. (dec. deg.)	37.6868	Long. (dec. deg.)	-122.1394	S-1 Survey	Y

SECTION 1: Sensitive Receptor Types (answer Yes/No (Y/N) for each type applicable)

Sensitive Receptor Type	Y/N	Field conf.? (Y/N)	Dist. in ft (if known)	Field conf.? (Y/N)
1. Surface water within 500 ft?	N	Y		
2. Sensitive habitats within 500 ft?	N	Y		
3. Basements within 200 ft?	N	Y		
4. Hospital, educational, residential care and childcare w/in 1000 ft?	Y	Y	600	Y
5. Water well w/in ½ mile? ***(if 'Yes', select well type below)***				
Agricultural	Y	N	<200	N
Industrial				
Other: _____				
Drinking water ***(select type; complete separate Form per well)***	Y	N	1,500	N

- [Y] Homeowner, single resident (*if this option is selected, complete Section 2 only*)
- [ ] Private, not single resident (*if this option is selected, complete Sections 2 & 3*)
- [ ] Public/Municipal (*if this option is selected, complete Section 2 & 3*)

SECTION 2: Owner/Operator Information

Name B1 - (3S/3W-12Bx)
Address 15038 Alexandria Avenue, San Leandro
Contact name J. Bostick Phone number NA

SECTION 3: Drinking Water Well Information (complete separate form for each well identified)

Well name/ID _____ Permit number _____
Address
Status _____ Description (T/S/R) _____

Coordinates				**Source**	**Field conf.? (Y/N)**
Lat. (dec. deg.)		Long. (dec. deg.)			
Lat. (H/M/S)		Long. (H/M/S)			
Northing		Easting			
Other: _____					

Coordinate margin of error (<30 ft required) _____
Ground elevation _____ Datum _____ Survey date _____

Completion/Production information

Extraction rate Max. _____ Avg. _____ Units _____ Number of connections _____
Operation frequency (typical) _____ Well total depth _____

Depth intervals	**Top**	**Bottom**	**Indicate "Screen", "Aquitard" or Aquifer name (if known)**

Depth interval data source _____

Comments *29 foot deep domestic well*

COMPLETED BY Ross Tintera **DATE** 2-11-05

Note: The final, completed version of this form should be saved in pdf format and submitted to the site Environmental Engineer (EE). All information provided here must also be captured on the Excel spreadsheet "SRS Template v2 081403.xls" and submitted to the site EE.

Sensitive Receptor Survey Report Form (v. 2.1)

SITE ADDRESS 15275 Washington Avenue, San Leandro **SAP#** 129460

Site Coordinates (location				Source	Field conf.? (Y/N)
Lat. (dec. deg.)	37.6868	Long. (dec. deg.)	-122.1394	S-1 Survey	Y

SECTION 1: Sensitive Receptor Types (answer Yes/No (Y/N) for each type applicable)

Sensitive Receptor Type	Y/N	Field conf.? (Y/N)	Dist. in ft (if known)	Field conf.? (Y/N)
1. Surface water within 500 ft?	N	Y		
2. Sensitive habitats within 500 ft?	N	Y		
3. Basements within 200 ft?	N	Y		
4. Hospital, educational, residential care and childcare w/in 1000 ft?	Y	Y	600	Y
5. Water well w/in ½ mile? ***(if 'Yes', select well type below)***				
Agricultural	Y	N	<200	N
Industrial				
Other: _____				
Drinking water ***(select type; complete separate Form per well)***	Y	N	1,500	N

- [Y] Homeowner, single resident (*if this option is selected, complete Section 2 only*)
- [ ] Private, not single resident (*if this option is selected, complete Sections 2 & 3*)
- [ ] Public/Municipal (*if this option is selected, complete Section 2 & 3*)

SECTION 2: Owner/Operator Information

Name B-2 - (3S/3W-12Bx)
Address 15034 Alexandria Avenue, San Leandro
Contact name Roy Swatnan Phone number NA

SECTION 3: Drinking Water Well Information (complete separate form for each well identified)

Well name/ID _____ Permit number _____
Address
Status _____ Description (T/S/R) _____

Coordinates				**Source**	**Field conf.? (Y/N)**
Lat. (dec. deg.)		Long. (dec. deg.)			
Lat. (H/M/S)		Long. (H/M/S)			
Northing		Easting			
Other: _____					

Coordinate margin of error (<30 ft required)
Ground elevation _____ Datum _____ Survey date _____

Completion/Production information

Extraction rate Max. _____ Avg. _____ Units _____ Number of connections _____
Operation frequency (typical) _____ Well total depth _____

Depth intervals	**Top**	**Bottom**	**Indicate "Screen", "Aquitard" or Aquifer name (if known)**

Depth interval data source _____

Comments ***28 foot deep domestic well.***

COMPLETED BY Ross Zintine **DATE** 2-11-05

Note: The final, completed version of this form should be saved in pdf format and submitted to the site Environmental Engineer (EE). All information provided here must also be captured on the Excel spreadsheet "SRS Template v2 081403.xls" and submitted to the site EE.

Sensitive Receptor Survey Report Form (v. 2.1)

SITE ADDRESS 15275 Washington Avenue, San Leandro **SAP#** 129460

Site Coordinates (location				Source	Field conf.? (Y/N)
Lat. (dec. deg.)	37.6868	Long. (dec. deg.)	-122.1394	S-1 Survey	Y

SECTION 1: Sensitive Receptor Types (answer Yes/No (Y/N) for each type applicable)

Sensitive Receptor Type	Y/N	Field conf.? (Y/N)	Dist. in ft (if known)	Field conf.? (Y/N)
1. Surface water within 500 ft?	N	Y		
2. Sensitive habitats within 500 ft?	N	Y		
3. Basements within 200 ft?	N	Y		
4. Hospital, educational, residential care and childcare w/in 1000 ft?	Y	Y	600	Y
5. Water well w/in ½ mile? ***(if 'Yes', select well type below)***				
Agricultural	Y	N	<200	N
Industrial				
Other:				
Drinking water ***(select type; complete separate Form per well)***	Y	N	1,500	N

- [Y] Homeowner, single resident (*if this option is selected, complete Section 2 only*)
- [ ] Private, not single resident (*if this option is selected, complete Sections 2 & 3*)
- [ ] Public/Municipal (*if this option is selected, complete Section 2 & 3*)

SECTION 2: Owner/Operator Information

Name B-3 - (3S/3W-12Bx)
Address 15028 Grenda Street, San Leandro
Contact name Lyle Bates Phone number NA

SECTION 3: Drinking Water Well Information (complete separate form for each well identified)

Well name/ID _____ Permit number _____
Address
Status _____ Description (T/S/R) _____

Coordinates				**Source**	**Field conf.? (Y/N)**
Lat. (dec. deg.)		Long. (dec. deg.)			
Lat. (H/M/S)		Long. (H/M/S)			
Northing		Easting			
Other:					

Coordinate margin of error (<30 ft required) _____
Ground elevation _____ Datum _____ Survey date _____

Completion/Production information

Extraction rate Max. _____ Avg. _____ Units _____ Number of connections _____
Operation frequency (typical) _____ Well total depth _____

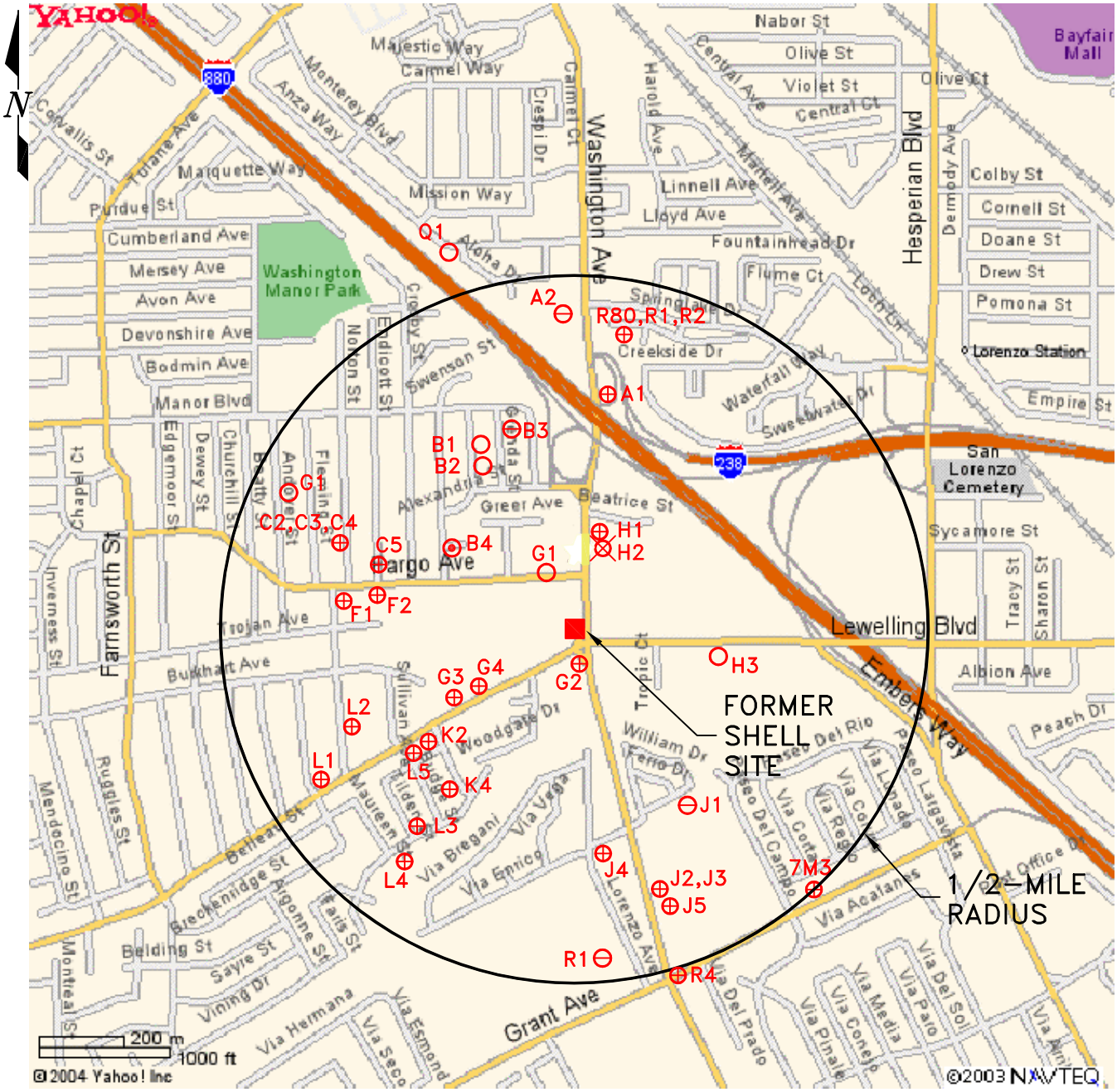
Depth intervals	**Top**	**Bottom**	**Indicate "Screen", "Aquitard" or Aquifer name (if known)**

Depth interval data source _____

Comments *28 foot deep domestic well*

COMPLETED BY Ross Zilbert **DATE** 2-11-05

Note: The final, completed version of this form should be saved in pdf format and submitted to the site Environmental Engineer (EE). All information provided here must also be captured on the Excel spreadsheet "SRS Template v2 081403.xls" and submitted to the site EE.



EXPLANATION

- ABANDONED WELL
- AGRICULTURE/IRRIGATION WELL
- CATHODIC PROTECTION
- DOMESTIC WELL
- UNKNOWN WELL

Ref. EQ-75.1a/WELL SURVEY.DWG
Basemap from Yahoo Maps, July 2004

PREPARED BY

TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

Former Shell-Branded Service Station
15275 Washington Avenue
San Leandro, California

SITE VICINITY AND WELL SURVEY MAP

FIGURE: 1

PROJECT: EQ-75

APPENDIX E

SVE PILOT TEST FIELD DATA SHEETS

PAGE 1

#REF!

15275 WASHINGTON SVE Pilot test.

Frontier Environmental Services, Inc

EXTRACTION WELL ET-1

Our Service Makes The Difference!

Monitoring Well Data

Inches W.C. Vacuum = Well ID 1.0 2.00 = Depth Water 'bgs

Dt #	Date	Time	Well ID VAC.	Well ID DIFF.	Well ID FLOW	Well ID PPM	Well ID TEMP	Well ID	Well ID S-16	Well ID ET-2	Well ID S-1	Well ID S-3	Well ID S-9	Well ID S-19	Well ID S-18	Well ID
25	9/16/09	08:30	10	2" .18	40	4050	1538		3"	4"	4"	2"	3"	2"	3"	
26		08:45	10	.16	37	3990	1522									
27		09:00	10	.18	40	3820	1503									
28		09:15	10	.18	40	3630	1526									
29		09:30	10	.18	40	3490	1522									
30		09:35	2" 20	.57	68	3410	1524									
31		09:45	20	.58	69	3240	1517									
32		10:00	20	.58	69	3140	1515									
33		10:15	20	.58	69	3030	1522									
34		10:30	20	.57	68	2880	1519									
35		10:32	2" 30	1.20	96	2830	1522									
36		10:45	30	1.20	96	2690	1519									
37		11:00	30	1.25	98	2550	1522									
38		11:02	2" 40	2.00	122	2520	1521									
39		11:15	40	2.40	122	2390	1533									
40		11:30	40	2.00	122	2160	1517									
41		11:32	2" 50	2.70	146	2140	1525									
42		11:45	50	2.70	146	2010	1520									
43		12:00	50	2.70	146	1920	1532									
44		12:02	3" 60	0.7	145	1780	1520									
45		12:15	60	0.7	145	1695	1522									
46		12:30	70	0.9	154	1650	1521									
47		12:45	80	1.15	164	1667	1531									
48		13:00	90	1.30	176	1565	1530									

Dt #	Date	Time	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID

MATT (Delta) 408-209-5317

#REF!

Frontier
Environmental Services, Inc

Our Service Makes The Difference!

Monitoring Well Data — Inches W.C. Vacuum = Well ID 1.0 2.00 = Depth Water 'bgs

Dt #	Date	Time	Well ID VAC	Well ID DIFT	Well ID Flow	Well ID FPM	Well ID Temp	Well ID	Well ID S-16	Well ID ET-2	Well ID S-1	Well ID S-3	Well ID S-9	Well ID S-19	Well ID S-18	Well ID
49	9/16/09	13:15	100	1.50	183	1401	1520									
50		13:30	110	1.60	186	1308	1526									
51																
52	EXTENDED		TEST													
53	9/16/09	14:00*	100	1.50	183	1281	1517		1.10	0.70	0.03	0	0	0	0	
54		14:15	100	1.50	183	1096	1534		1.10	0.70	0.04	0	0	0	0	
55		14:30	100	1.50	183	1048	1522		1.10	1.75	.04	0	0	0	0	
56		14:45	100	1.50	183	980	1510		1.10	1.75	.04	0	0	0	0	
57		15:00	100	1.50	183	960	1537		1.10	1.75	.04	0	0	0	0	
58		15:15	100	1.50	183	1029	1530		1.05	1.75	.04	0	0	0	0	
59		15:30	100	1.50	183	1007	1511		1.00	1.75	.04	0	0	0	0	
60		15:45	100	1.5	183	917	1532		1.00	1.75	.03	0	0	0	0	
61		16:00*	100	1.5	183	978	1520		1.00	1.75	.03	0	0	0	0	
62		16:30	100	1.5	183	1027	1520		1.00	1.75	.03	0	0	0	0	
63		17:00	100	1.5	183	970	1530		1.00	1.75	.03	0	0	0	0	
64		17:30	100	1.5	183	952	1520		1.00	1.65	.03	0	0	0	0	
65		18:00*	100	1.5	183	938	1532		1.00	1.65	.03	0	0	0	0	
66		19:00	100	1.5	183	918	1528		.98	1.52	.03	0	0	0	0	
67		20:00	100	1.5	183	881	1531		.98	1.52	.03	0	0	0	0	
68		21:00	100	1.4	180	859	1522		.98	1.52	.03	0	0	0	0	
69		22:00*	100	1.4	180	823	1523		.98	1.5	.02	0	0	0	0	
70		24:00	100	1.36	177	780	1529		.99	1.5	.02	0	0	0	0	
71	(9/17/09)	02:00	100	1.3	175	638	1527		1.0	1.5	.02	0	0	0	0	
72		04:00	100	1.3	175	587	1522		.99	1.5	.02	0	0	0	0	
Dt #	Date	Time	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID

* = retain vapor sample

#REF!

22'
228
230

Frontier
Environmental Services, Inc

Our Service Makes The Difference!

Monitoring Well Data

Inches W.C. Vacuum = Well ID 1.0 2.00 = Depth Water 'bgs

Dt #	Date	Time	Well ID VAC	Well ID DIFT	Well ID FLOW	Well ID RPM	Well ID TEMP	Well ID	Well ID S-16	Well ID ET-2	Well ID S-1	Well ID S-3	Well ID S-9	Well ID S-19	Well ID S-18	Well ID
73	(9/17/09	06:00*	100	1.3	175	540	1533		.98	1.50	.03	0	0	0	0	
74		08:00	100	1.3	175	584	1521		.98	1.50	.03	0	0	0	0	
75		10:00	100	1.3	175	580	1524		1.00	1.55	.03	0	0	0	0	
76		12:00	100	1.3	175	558	1532		.98	1.55	.03	0	0	0	0	
77		14:00*	100	1.3	175	537	1522		.98	1.60	.03	0	0	0	0	
78	end of	extended	test													
79																
80	Knockout tank: 45 gallons															
81																
82																
83																
84																
85																
86																
87																
88																
89																
90																
91																
92																
93																
94																
95																
96																

Dt #	Date	Time	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID

*= retain vapor sample

APPENDIX F

CERTIFIED ANALYTICAL REPORTS WITH CHAIN-OF-CUSTODY DOCUMENTATION

Calscience Environmental Laboratories, Inc.

September 21, 2009

Sunzanne McClukin
Delta Environmental Consultants, Inc.
312 Piercy Rd.
San Jose, CA 95138-1401

Subject: **Calscience Work Order No.: 09-09-1278**
Client Reference: 15275 Washington, San Leandro, CA

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 9/17/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Jessie Lee
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Delta Environmental Consultants, Inc.	Date Received:	09/17/09
312 Piercy Rd.	Work Order No:	09-09-1278
San Jose, CA 95138-1401	Preparation:	N/A
	Method:	ASTM D-1946
	Units:	%v

Project: 15275 Washington, San Leandro, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(Step Start)	**09-09-1278-1-A**	**09/16/09 08:35**	**Air**	**GC 36**	**N/A**	**09/17/09 00:00**	**090917L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	1.48	0.500	1		Oxygen + Argon	4.62	0.500	1	
Carbon Dioxide	15.4	0.500	1		Nitrogen	78.5	0.500	1	
Carbon Monoxide	ND	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(Ext Start)	**09-09-1278-2-A**	**09/16/09 14:00**	**Air**	**GC 36**	**N/A**	**09/17/09 00:00**	**090917L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	17.1	0.500	1	
Carbon Dioxide	5.66	0.500	1		Nitrogen	77.3	0.500	1	
Carbon Monoxide	ND	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(2 hr)	**09-09-1278-3-A**	**09/16/09 16:00**	**Air**	**GC 36**	**N/A**	**09/17/09 00:00**	**090917L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	17.7	0.500	1	
Carbon Dioxide	4.67	0.500	1		Nitrogen	77.7	0.500	1	
Carbon Monoxide	ND	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(4 hr)	**09-09-1278-4-A**	**09/16/09 18:00**	**Air**	**GC 36**	**N/A**	**09/17/09 00:00**	**090917L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	17.8	0.500	1	
Carbon Dioxide	4.26	0.500	1		Nitrogen	77.9	0.500	1	
Carbon Monoxide	ND	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-03-002-893**	**N/A**	**Air**	**GC 36**	**N/A**	**09/17/09 00:00**	**090917L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	ND	0.500	1	
Carbon Dioxide	ND	0.500	1		Nitrogen	ND	0.500	1	
Carbon Monoxide	ND	0.500	1						

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Delta Environmental Consultants, Inc.		Date Received:	09/17/09
312 Piercy Rd.		Work Order No:	09-09-1278
San Jose, CA 95138-1401		Preparation:	N/A
		Method:	EPA TO-3M

Project: 15275 Washington, San Leandro, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(Step Start)	**09-09-1278-1-A**	**09/16/09 08:35**	**Air**	**GC 39**	**N/A**	**09/17/09 13:37**	**090917L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	4100	30	20		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(Ext Start)	**09-09-1278-2-A**	**09/16/09 14:00**	**Air**	**GC 39**	**N/A**	**09/17/09 13:26**	**090917L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	1600	7.5	5		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(2 hr)	**09-09-1278-3-A**	**09/16/09 16:00**	**Air**	**GC 39**	**N/A**	**09/17/09 13:17**	**090917L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	1200	7.5	5		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(4 hr)	**09-09-1278-4-A**	**09/16/09 18:00**	**Air**	**GC 39**	**N/A**	**09/17/09 13:08**	**090917L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	1000	7.5	5		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**098-01-005-1,954**	**N/A**	**Air**	**GC 39**	**N/A**	**09/17/09 09:26**	**090917L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	1.5	1		ppm (v/v)

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Delta Environmental Consultants, Inc.		Date Received:	09/17/09
312 Piercy Rd.		Work Order No:	09-09-1278
San Jose, CA 95138-1401		Preparation:	N/A
		Method:	EPA TO-15M
		Units:	ppm (v/v)

Project: 15275 Washington, San Leandro, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(Step Start)	**09-09-1278-1-A**	**09/16/09 08:35**	**Air**	**GC/MS K**	**N/A**	**09/17/09 18:14**	**090917L01**

Comment(s): -The method has been modified to use Tedlar bags instead of Summa Canisters.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	2.1	0.50	1000		Ethylbenzene	5.6	0.50	1000	
Toluene	ND	5.0	1000		Xylenes (total)	4.1	2.0	1000	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	106	57-129			1,2-Dichloroethane-d4	108	47-137		
Toluene-d8	106	78-156							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(Ext Start)	**09-09-1278-2-A**	**09/16/09 14:00**	**Air**	**GC/MS K**	**N/A**	**09/17/09 19:01**	**090917L01**

Comment(s): -The method has been modified to use Tedlar bags instead of Summa Canisters.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	1.5	0.20	400		Ethylbenzene	6.6	0.20	400	
Toluene	ND	2.0	400		Xylenes (total)	2.0	0.80	400	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	112	57-129			1,2-Dichloroethane-d4	106	47-137		
Toluene-d8	106	78-156							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(2 hr)	**09-09-1278-3-A**	**09/16/09 16:00**	**Air**	**GC/MS K**	**N/A**	**09/17/09 19:49**	**090917L01**

Comment(s): -The method has been modified to use Tedlar bags instead of Summa Canisters.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	1.0	0.16	330		Ethylbenzene	6.4	0.16	330	
Toluene	ND	1.6	330		Xylenes (total)	2.2	0.66	330	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	112	57-129			1,2-Dichloroethane-d4	103	47-137		
Toluene-d8	104	78-156							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(4 hr)	**09-09-1278-4-A**	**09/16/09 18:00**	**Air**	**GC/MS K**	**N/A**	**09/17/09 20:36**	**090917L01**

Comment(s): -The method has been modified to use Tedlar bags instead of Summa Canisters.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	0.92	0.12	250		Ethylbenzene	7.9	0.12	250	
Toluene	ND	1.2	250		Xylenes (total)	3.0	0.50	250	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	103	57-129			1,2-Dichloroethane-d4	102	47-137		
Toluene-d8	104	78-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Delta Environmental Consultants, Inc.		Date Received:	09/17/09
312 Piercy Rd.		Work Order No:	09-09-1278
San Jose, CA 95138-1401		Preparation:	N/A
		Method:	EPA TO-15M
		Units:	ppm (v/v)

Project: 15275 Washington, San Leandro, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-983-10**	**N/A**	**Air**	**GC/MS K**	**N/A**	**09/17/09 12:01**	**090917L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.00050	1		Ethylbenzene	ND	0.00050	1	
Toluene	ND	0.0050	1		Xylenes (total)	ND	0.0020	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	101	57-129			1,2-Dichloroethane-d4	105	47-137		
Toluene-d8	100	78-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Delta Environmental Consultants, Inc.	Date Received:	09/17/09
312 Piercy Rd.	Work Order No:	09-09-1278
San Jose, CA 95138-1401	Preparation:	N/A
	Method:	EPA TO-3M

Project: 15275 Washington, San Leandro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
ET-1(Step Start)	**Air**	**GC 39**	**N/A**	**09/17/09**	**090917D01**

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
TPH as Gasoline	4100	4300	6	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Delta Environmental Consultants, Inc.	Date Received:	N/A
312 Piercy Rd.	Work Order No:	09-09-1278
San Jose, CA 95138-1401	Preparation:	N/A
	Method:	ASTM D-1946

Project: 15275 Washington, San Leandro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-03-002-893	**Air**	**GC 36**	**N/A**	**09/17/09**	**090917L01**

Parameter	LCS Conc	LCSD Conc	RPD	RPD CL	Qualifiers
Carbon Dioxide	5.102	5.019	2	0-30	
Oxygen + Argon	19.19	18.83	2	0-30	
Nitrogen	68.49	67.23	2	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Delta Environmental Consultants, Inc.	Date Received:	N/A
312 Piercy Rd.	Work Order No:	09-09-1278
San Jose, CA 95138-1401	Preparation:	N/A
	Method:	EPA TO-15M

Project: 15275 Washington, San Leandro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-983-10	**Air**	**GC/MS K**	**N/A**	**09/17/09**	**090917L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	118	125	60-156	6	0-40	
Toluene	130	135	56-146	4	0-43	
Ethylbenzene	136	139	52-154	3	0-38	
p/m-Xylene	134	138	42-156	3	0-41	
o-Xylene	133	138	52-148	4	0-38	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 09-09-1278

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.

Shell Oil Products Chain Of Custody Record

LAB (LOCATION)
☑ CALSCIENCE (_____)
☐ SPL (_____)
☐ XENCO (_____)
☐ TEST AMERICA (_____)
☐ OTHER (_____)

Please Check Appropriate Box:
☐ ENV. SERVICES ☐ MOTIVA RETAIL ☐ SHELL RETAIL
☐ MOTIVA SD&CM ☑ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER _____

Print Bill To Contact Name: SUZANNE MCCLURKIN-NELSON
PO #:
INCIDENT # (ENV SERVICES): 97093412
SAP #: 12946
☐ CHECK IF NO INCIDENT # APPLIES
DATE: 9/16/09 ~~9/17/09~~
PAGE: 1 of 1

SAMPLING COMPANY: Delta Consultants
LOG CODE:
ADDRESS: 312 Piercy Rd, San Jose, CA. 95138
PROJECT CONTACT (Hardcopy or PDF Report to): Suzanne McClukin-Nelson
TELEPHONE: 408-826-1869
FAX: 408-225-8506
E-MAIL: ~~smcclurkin-nelson~~ @deltaenv.com

SITE ADDRESS: Street and City: 15275 Washington, San Leandro
State: CA
GLOBAL ID NO.: T0600101226
EDF DELIVERABLE TO (Name, Company, Office Location): Angela Pico, Delta Consultant San Jose, CA
PHONE NO.: 408-826-1862
E-MAIL: apico@deltaenv.com
CONSULTANT PROJECT NO.: SCA152751A
SAMPLER NAME(S) (Print): Matt Lambert / MARK RODEN
LAB USE ONLY: 09-09-1278

TURNAROUND TIME (CALENDAR DAYS):
☑ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND
☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

SPECIAL INSTRUCTIONS OR NOTES :
please also email results to: adutta@deltaenv.com and mlambert@deltaenv.com
☐ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☐ RECEIPT VERIFICATION REQUESTED

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	All sites: TPH-G Purgeable (8260B)	BTEX (8260B)	5 Shell Oxygenates (8260B)	EDB (8260B)	EDC (8260B)	Ethanol (8260B)	+ diesel: TPH-D Extractable (8015M)	Air Analysis: TPH G (TO-3)	Nitrogen, methane, CO, Carbon monoxide, Oxygen by (ASTM D-1946) Fixed Gas analysis	Waste Characterization: CAM 17 Metals (6010)	Run STLC/TCLP Metals/Org Pb if needed	Run Bioassay if Benzene >5000 ppm	TEMPERATURE ON RECEIPT C° / Container PID Readings or Laboratory Notes
1	ET-1 (Step Start)	9/16/09	8:35	air				✓		1		X						X	X				
2	ET-1 (Ext Start)	9/16/09	14:00	air				✓		1		X						X	X				
3	ET-1 (2hr)	9/16/09	16:00	air				✓		1		X						X	X				
4	ET-1 (4hr)	9/16/09	18:00	air				✓		1		X						X	X				
	~~ET-1 (8hr)~~	~~9/16/09~~	~~22:00~~	~~air~~				✓		1		X						X	X				
	~~ET-1 (16 hr)~~	~~9/17/09~~	~~06:00~~	~~air~~				✓		1		X						X	X				
	~~ET-1 (Ext end)~~	~~9/17/09~~	~~14:00~~	~~air~~				✓		1		X						X	X				

Relinquished by: (Signature) (Delta) — Received by: (Signature) MARK RODEN — Date: 9/16/09 — Time: 3:30pm
Relinquished by: (Signature) — Received by: (Signature) — Date: — Time:
Ref 105866733 — Received by: (Signature) — Date: 9/17/09 — Time: 0900

05/2/06 Revision

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-09-1278

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: DELTA CONSULTANTS DATE: 09/17/09

TEMPERATURE: (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature ____.____ °C - 0.2 °C (CF) = ____.____ °C ☐ **Blank** ☐ **Sample**

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☑ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** PS

CUSTODY SEALS INTACT:

☑ Cooler ☐_____ ☐ No (Not Intact) ☐ Not Present ☐ N/A **Initial:** PS

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** PS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ COC not relinquished. ☐ No date relinquished. ☐ No time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☐	☑	☐
Sample container(s) intact and good condition	☑	☐	☐
Correct containers and volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☐	☐	☑
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☑	☐	☐

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐500PB ☐500PB**na** ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☑Tedlar® ☐Summa® ☐_____ **Other:** ☐_____ **Checked/Labeled by:** PS

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelop **Reviewed by:** YL

Preservative: **h:** HCL **n:** HNO3 **na$_2$:** $Na_2S_2O_3$ **Na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** PS

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-09-1278

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

- ☐ **Samples NOT RECEIVED but listed on COC**
- ☐ **Samples received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s)/preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☑ **Sample labels do not match COC** – Note in comments
  - ☑ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☐ **# of Containers**
  - ☐ **Analysis**
- ☐ **Sample containers compromised** – Note in comments
  - ☐ **Leaking**
  - ☐ **Broken**
  - ☐ **Without Labels**
- ☐ **Air sample containers compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

Comments:

(-2) ET-1 (EXT START) - LABELED AS ET-2 (" "), 9/16/09 @ 14:00.

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of RSK or CO_2 or DO Received

Comments: _____

*Transferred at Client's request.

Initial / Date PS 9/17/09

Calscience Environmental Laboratories, Inc.

September 30, 2009

Sunzanne McClukin
Delta Environmental Consultants, Inc.
312 Piercy Rd.
San Jose, CA 95138-1401

Subject: **Calscience Work Order No.: 09-09-1409**
Client Reference: 15275 Washington, San Leandro, CA

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 9/18/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Philip Hamelle for

Calscience Environmental
Laboratories, Inc.
Xuan H. Dang
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Delta Environmental Consultants, Inc.	Date Received:	09/18/09
312 Piercy Rd.	Work Order No:	09-09-1409
San Jose, CA 95138-1401	Preparation:	N/A
	Method:	ASTM D-1946
	Units:	%v

Project: 15275 Washington, San Leandro, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(8 hr)	**09-09-1409-1-A**	**09/16/09 22:00**	**Air**	**GC 36**	**N/A**	**09/18/09 00:00**	**090918L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	18.0	0.500	1	
Carbon Dioxide	3.54	0.500	1		Nitrogen	78.4	0.500	1	
Carbon Monoxide	ND	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(16 hr)	**09-09-1409-2-A**	**09/17/09 06:00**	**Air**	**GC 36**	**N/A**	**09/18/09 00:00**	**090918L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	18.7	0.500	1	
Carbon Dioxide	2.58	0.500	1		Nitrogen	78.7	0.500	1	
Carbon Monoxide	ND	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(Ext end)	**09-09-1409-3-A**	**09/17/09 14:00**	**Air**	**GC 36**	**N/A**	**09/18/09 00:00**	**090918L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	19.9	0.500	1	
Carbon Dioxide	1.73	0.500	1		Nitrogen	78.4	0.500	1	
Carbon Monoxide	ND	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-03-002-894**	**N/A**	**Air**	**GC 36**	**N/A**	**09/18/09 00:00**	**090918L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	ND	0.500	1	
Carbon Dioxide	ND	0.500	1		Nitrogen	ND	0.500	1	
Carbon Monoxide	ND	0.500	1						

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Delta Environmental Consultants, Inc.		Date Received:	09/18/09
312 Piercy Rd.		Work Order No:	09-09-1409
San Jose, CA 95138-1401		Preparation:	N/A
		Method:	EPA TO-3M

Project: 15275 Washington, San Leandro, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(8 hr)	**09-09-1409-1-A**	**09/16/09 22:00**	**Air**	**GC 13**	**N/A**	**09/18/09 13:07**	**090918L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	970	7.5	5		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(16 hr)	**09-09-1409-2-A**	**09/17/09 06:00**	**Air**	**GC 13**	**N/A**	**09/18/09 13:18**	**090918L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	740	7.5	5		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(Ext end)	**09-09-1409-3-A**	**09/17/09 14:00**	**Air**	**GC 13**	**N/A**	**09/18/09 13:28**	**090918L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	530	7.5	5		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**098-01-005-1,956**	**N/A**	**Air**	**GC 13**	**N/A**	**09/18/09 09:31**	**090918L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	1.5	1		ppm (v/v)

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Delta Environmental Consultants, Inc.		Date Received:	09/18/09
312 Piercy Rd.		Work Order No:	09-09-1409
San Jose, CA 95138-1401		Preparation:	N/A
		Method:	EPA TO-15M
		Units:	ppm (v/v)

Project: 15275 Washington, San Leandro, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ET-1(8 hr)	**09-09-1409-1-A**	**09/16/09 22:00**	**Air**	**GC/MS YY**	**N/A**	**09/18/09 18:48**	**090918L01**

Comment(s): -The method has been modified to use Tedlar bags instead of Summa Canisters.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	0.50	0.12	250		Ethylbenzene	4.9	0.12	250	
Toluene	ND	1.2	250		Xylenes (total)	1.8	0.50	250	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	107	57-129			1,2-Dichloroethane-d4	98	47-137		
Toluene-d8	99	78-156							

ET-1(16 hr)	**09-09-1409-2-A**	**09/17/09 06:00**	**Air**	**GC/MS YY**	**N/A**	**09/18/09 15:49**	**090918L01**

Comment(s): -The method has been modified to use Tedlar bags instead of Summa Canisters.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	0.28	0.10	200		Ethylbenzene	4.1	0.10	200	
Toluene	ND	1.0	200		Xylenes (total)	1.6	0.40	200	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	109	57-129			1,2-Dichloroethane-d4	99	47-137		
Toluene-d8	100	78-156							

ET-1(Ext end)	**09-09-1409-3-A**	**09/17/09 14:00**	**Air**	**GC/MS YY**	**N/A**	**09/18/09 16:34**	**090918L01**

Comment(s): -The method has been modified to use Tedlar bags instead of Summa Canisters.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	0.25	0.050	100		Ethylbenzene	3.4	0.050	100	
Toluene	ND	0.50	100		Xylenes (total)	1.4	0.20	100	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	125	57-129			1,2-Dichloroethane-d4	99	47-137		
Toluene-d8	101	78-156							

Method Blank	**099-12-983-15**	**N/A**	**Air**	**GC/MS YY**	**N/A**	**09/18/09 12:43**	**090918L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.00050	1		Ethylbenzene	ND	0.00050	1	
Toluene	ND	0.0050	1		Xylenes (total)	ND	0.0020	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	96	57-129			1,2-Dichloroethane-d4	98	47-137		
Toluene-d8	99	78-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Delta Environmental Consultants, Inc.		Date Received:	09/18/09
312 Piercy Rd.		Work Order No:	09-09-1409
San Jose, CA 95138-1401		Preparation:	N/A
		Method:	EPA TO-3M

Project: 15275 Washington, San Leandro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
09-09-1407-1	**Air**	**GC 13**	**N/A**	**09/18/09**	**090918D01**

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
TPH as Gasoline	280	280	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Delta Environmental Consultants, Inc.	Date Received:	N/A
312 Piercy Rd.	Work Order No:	09-09-1409
San Jose, CA 95138-1401	Preparation:	N/A
	Method:	ASTM D-1946

Project: 15275 Washington, San Leandro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-03-002-894	**Air**	**GC 36**	**N/A**	**09/18/09**	**090918L01**

Parameter	LCS Conc	LCSD Conc	RPD	RPD CL	Qualifiers
Carbon Dioxide	5.053	5.117	1	0-30	
Oxygen + Argon	18.91	19.16	1	0-30	
Nitrogen	67.51	68.44	1	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Delta Environmental Consultants, Inc.	Date Received: N/A
312 Piercy Rd.	Work Order No: 09-09-1409
San Jose, CA 95138-1401	Preparation: N/A
	Method: EPA TO-15M

Project: 15275 Washington, San Leandro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-983-15	**Air**	**GC/MS YY**	**N/A**	**09/18/09**	**090918L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	131	133	60-156	2	0-40	
Toluene	136	140	56-146	3	0-43	
Ethylbenzene	137	142	52-154	3	0-38	
p/m-Xylene	121	124	42-156	3	0-41	
o-Xylene	141	146	52-148	4	0-38	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 09-09-1409

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.

Shell Oil Products Chain Of Custody Record

LAB (LOCATION)
- ☑ CALSCIENCE (_____)
- ☐ SPL (_____)
- ☐ XENCO (_____)
- ☐ TEST AMERICA (_____)
- ☐ OTHER (_____)

Please Check Appropriate Box:
- ☐ ENV. SERVICES
- ☐ MOTIVA RETAIL
- ☐ SHELL RETAIL
- ☐ MOTIVA SD&CM
- ☑ CONSULTANT
- ☐ LUBES
- ☐ SHELL PIPELINE
- ☐ OTHER _____

Print Bill To Contact Name: SUZANNE MCCLURKIN-NELSON

INCIDENT # (ENV SERVICES): 97093412

☐ CHECK IF NO INCIDENT # APPLIES

DATE: 9/16/09 - 9/17/09

PAGE: 1 of 1

PO #:

SAP #: 12946 0

SAMPLING COMPANY: Delta Consultants

LOG CODE:

SITE ADDRESS: Street and City: 15275 Washington, San Leandro

State: CA

GLOBAL ID NO.: T0600101226

ADDRESS: 312 Piercy Rd, San Jose, CA. 95138

EDF DELIVERABLE TO (Name, Company, Office Location): Angela Pico, Delta Consultant San Jose, CA

PHONE NO.: 408-826-1862

E-MAIL: apico@deltaenv.com

CONSULTANT PROJECT NO.: SCA152751A

PROJECT CONTACT (Hardcopy or PDF Report to): Suzanne McClukin-Nelson

TELEPHONE: 408-826-1869

FAX: 408-225-8506

E-MAIL: smcclurkin-nelson@deltaenv.com

SAMPLER NAME(S) (Print): Matt Lambert / MARK RODEN

LAB USE ONLY: 09-1409

TURNAROUND TIME (CALENDAR DAYS):
- ☑ STANDARD (14 DAY)
- ☐ 5 DAYS
- ☐ 3 DAYS
- ☐ 2 DAYS
- ☐ 24 HOURS
- ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

SPECIAL INSTRUCTIONS OR NOTES :

please also email results to: adutta@deltaenv.com and mlambert@deltaenv.com

- ☐ SHELL CONTRACT RATE APPLIES
- ☐ STATE REIMBURSEMENT RATE APPLIES
- ☐ EDD NOT NEEDED
- ☐ RECEIPT VERIFICATION REQUESTED

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	All sites: TPH-G Purgeable (8260B)	BTEX (8260B)	5 Shell Oxygenates (8260B)	EDB (8260B)	EDC (8260B)	Ethanol (8260B)	+ diesel: TPH-D Extractable (8015M)	Air Analysis: TPHS (TO-3)	N, methane, CO2, CO, O2 (ASTM D1946)	Fixed gs analysis	Waste Characterization: CAM 17 Metals (6010)	Run STLC/TCLP Metals/Org Pb if needed	Run Bioassay if Benzene >5000 ppm,	TEMPERATURE ON RECEIPT C° / Container PID Readings or Laboratory Notes
1	ET-1 (8 hr)	9/16/09	22:00	air				✓		1		X						X	X					
2	ET-1 (16 hr)	9/17/09	06:00	air				✓		1		X						X	X					
3	ET-1 (Ext end)	9/17/09	14:00	air				✓		1		X						X	X					

Relinquished by: (Signature) MARK RODEN — Received by: (Signature) MATT LAMBERT — Date: 9/17/09 — Time: 14:00

Relinquished by: (Signature) MATT LAMBERT — Received by: (Signature) — Date: — Time:

Relinquished by: (Signature) — Received by: (Signature) — Date: 9/18/09 — Time: 1030

105866780

05/2/06 Revision

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-09-1409

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Delta

DATE: 9/18/09

TEMPERATURE: (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature ____.____ °C - 0.2 °C (CF) = ____.____ °C ☐ **Blank** ☐ **Sample**

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☑ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** JP

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A **Initial:** JP

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** PS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ COC not relinquished. ☐ No date relinquished. ☐ No time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☐	☑	☐
Correct containers and volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☐	☐	☑
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☑	☐	☐

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐500PB ☐500PB**na** ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☑Tedlar® ☐Summa® ☐_____ **Other:** ☐_____ **Checked/Labeled by:** PS

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelop **Reviewed by:** JW

Preservative: **h:** HCL **n:** HNO3 **na$_2$:** $Na_2S_2O_3$ **Na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** PS

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-09-1409

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

- ☐ **Samples NOT RECEIVED but listed on COC**
- ☐ **Samples received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s)/preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☐ **Sample labels do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☐ **# of Containers**
  - ☐ **Analysis**
- ☐ **Sample containers compromised** – Note in comments
  - ☐ **Leaking**
  - ☐ **Broken**
  - ☐ **Without Labels**
- ☑ **Air sample containers compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☑ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

Comments:

(-3) ET-1 (EXT END), LEAKING.

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of RSK or CO_2 or DO Received

Comments: _____

*Transferred at Client's request.

Initial / Date PS 9/18/09