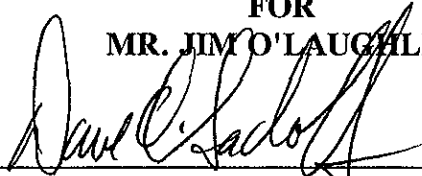


**SUBSURFACE SOIL AND**  
**GROUND WATER EXPLORATION**  
**PROJECT #083-246-01B**

**FORMER CHEVRON STATION**  
**11727 MAIN STREET**  
**SUNOL, CALIFORNIA**

**PREPARED BY ENVIRONMENTAL BIO-SYSTEMS, INC.**

**FOR**  
**MR. JIM O'LAUGHLIN**

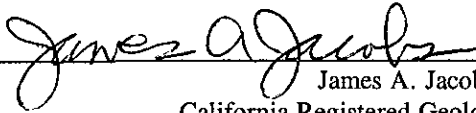


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Dave A. Sadoff

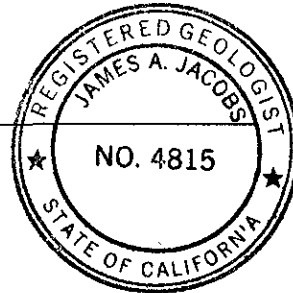
Project Manager, Registered Environmental Assessor No. 03642

Reviewed by:



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James A. Jacobs  
California Registered Geologist No. 4815



**30 July 1993**

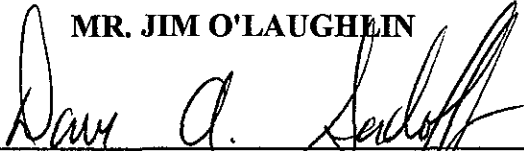
**SUBSURFACE SOIL AND**  
**GROUND WATER EXPLORATION**  
**PROJECT #083-246-01B**

**FORMER CHEVRON STATION**  
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**MR. JIM O'LAUGHLIN**

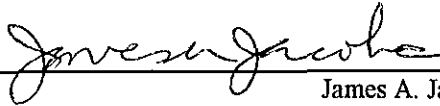


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Dave A. Sadoff

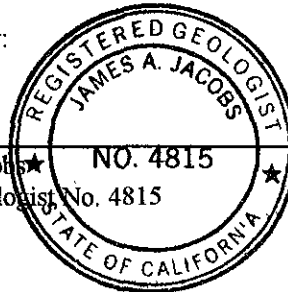
Project Manager, Registered Environmental Assessor No. 03642

Reviewed by:



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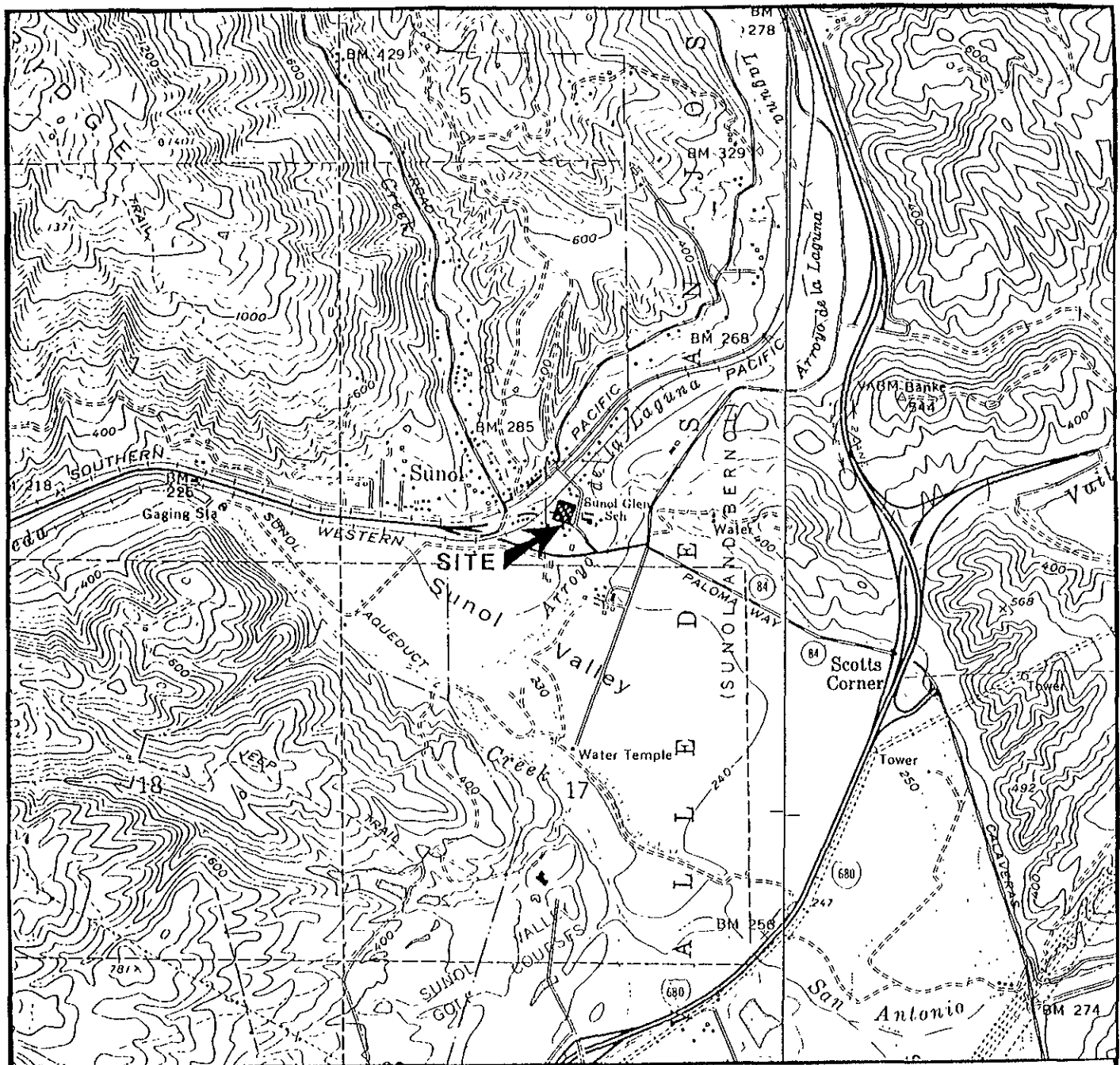
James A. Jacobs  
California Registered Geologist No. 4815



**30 July 1993**

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From USGS La Costa Valley and Niles 7.5-Minute Quadrangles



ENVIRONMENTAL  
BIO-SYSTEMS, INC.

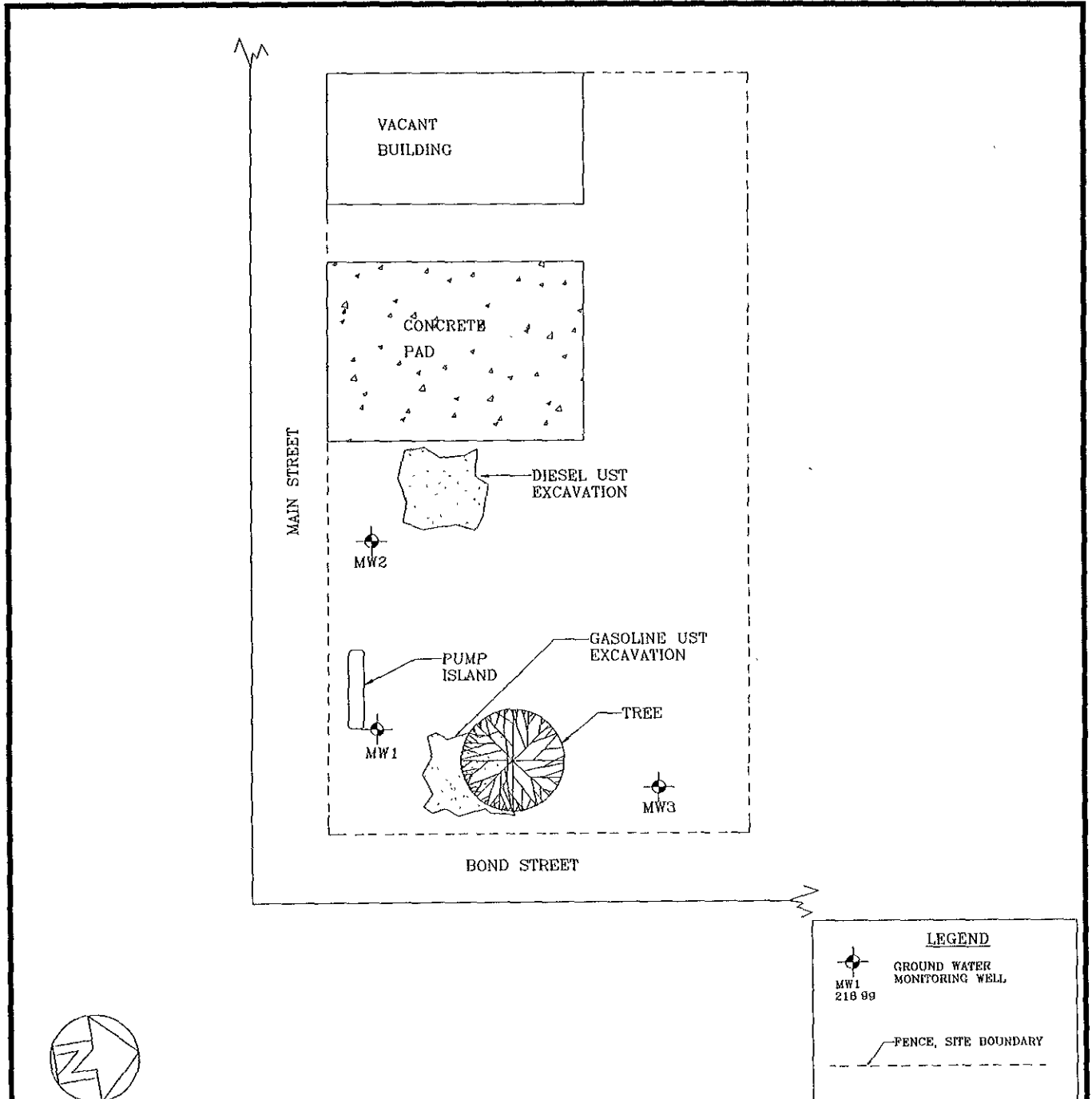
DATE:  
7/30/93

DRAWN BY:  
DAS

SCALE:  
1"=2,000'

FIGURE 1:  
SITE LOCATION MAP

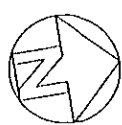
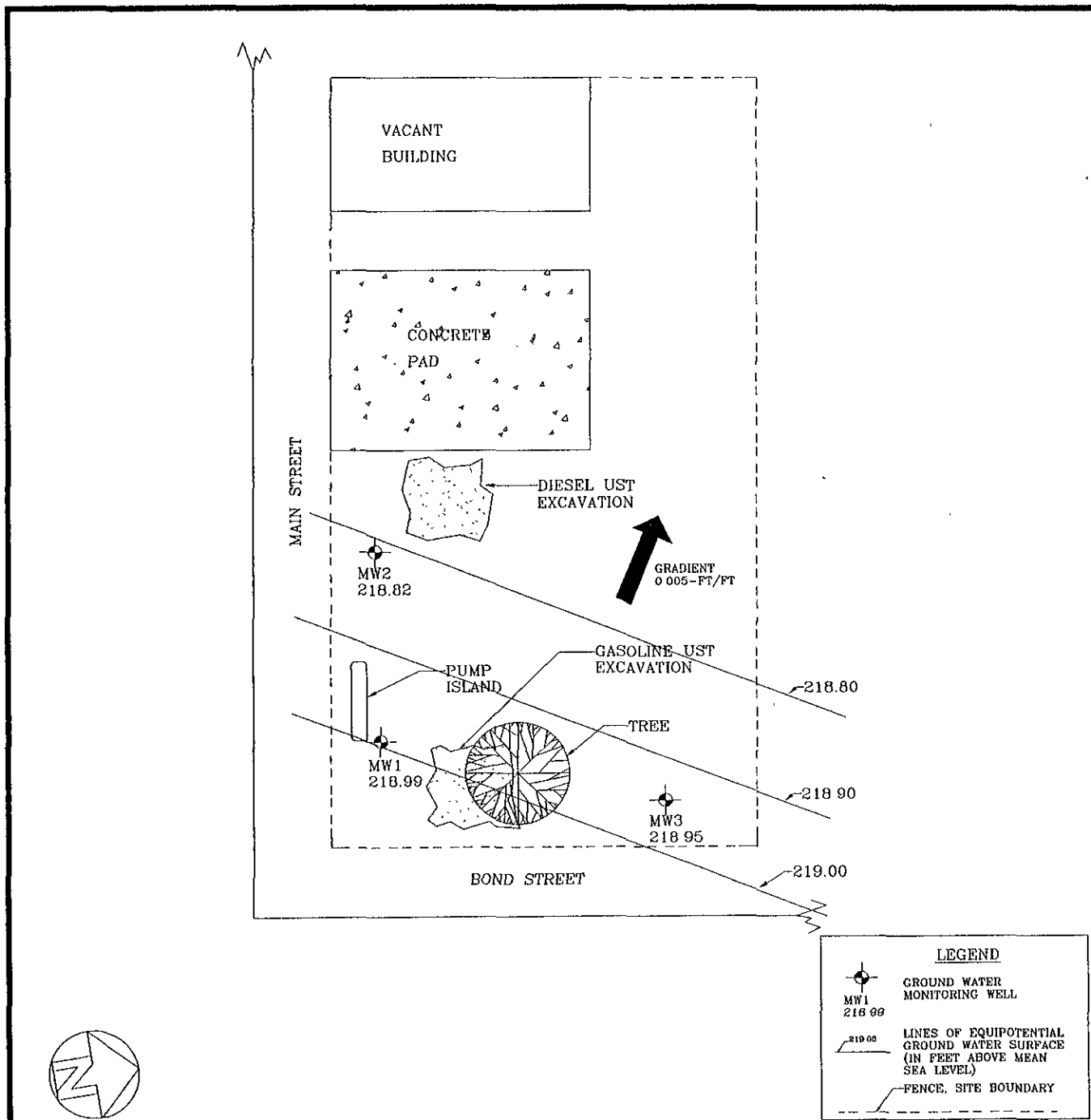
Former Chevron Station  
11727 Main Street  
Sunol, California



  
 ENVIRONMENTAL  
 BIO-SYSTEMS, INC.


DATE:  
 7/30/93  
 DRAWN BY:  
 DAS  
 SCALE:  
 1" = 30'

FIGURE 2:  
 SITE DIAGRAM  
 Former Chevron Station  
 11727 Main Street  
 Sunol, California



**LEGEND**

- GROUND WATER MONITORING WELL
- LINES OF EQUIPOTENTIAL GROUND WATER SURFACE (IN FEET ABOVE MEAN SEA LEVEL)
- FENCE, SITE BOUNDARY

 ENVIRONMENTAL BIO-SYSTEMS, INC.	DATE: 7/30/93	FIGURE 3: GROUND WATER GRADIENT MAP
	DRAWN BY: DAS	
	SCALE: 1" = 30'	Former Chevron Station 11727 Main Street Sunol, California

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CHAIN OF CUSTODY DOCUMENTATION

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## **ENVIRONMENTAL BIO-SYSTEMS, INC.**

Innovative Solutions for a Better Environment

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### **1. INTRODUCTION**

Environmental Bio-Systems, Inc. (EBS) is providing this report describing our subsurface soil and ground water exploration at the former Chevron Station, located at 11727 Main Street in Sunol, California (the site). Mr. Jim O'Laughlin (the client) retained EBS to conduct this exploration subsequent to a request by the Alameda County Health Care Services Agency (ACHCSA).

The subject site is owned by the Client. The principal site contacts are:

**Principal Client Contact:** Mr. Jim O'Laughlin, P.O. Box 400, Sunol, CA 94586, (510) 471-1100.

**Consultant:** Environmental Bio-Systems, Inc., 30028 Industrial Parkway Southwest, Suite C, Hayward, CA 94544, (510) 429-9988, Mr. Dave A. Sadoff - Project Manager.

### **2. SCOPE OF WORK**

This report describes the installation and sampling of two ground water monitoring wells at the site. The wells were installed to evaluate petroleum hydrocarbon impact to the subsurface.

EBS workplan #WP93002, submitted to the ACHCSA on 12 May 1993, outlined the scope of work intended to be performed at the site. The



work plan was approved by the ACHCSA on 14 June 1993. The scope of work included the following tasks:

- Procurement of permits for the installation of two ground water monitoring wells.
- Drilling of two soil borings to a depth of approximately 15 to 20-feet below the depth at which ground water was first encountered.
- Collection of nine soil samples to be analyzed for chemical analysis to detect total petroleum hydrocarbons as gasoline (TPHg) with the hydrocarbon constituents benzene, toluene, ethylbenzene, and xylene isomers (BTEX); total petroleum hydrocarbons as diesel (TPHd); and total petroleum hydrocarbons as kerosene (TPHk).
- Logging of subsurface conditions by an EBS geologist.
- Construction of two ground water monitoring wells.
- Development of the two ground water monitoring wells.
- Collection of three ground water samples to be analyzed for TPHg, BTEX, TPHd, and TPHk analyses.
- Elevation and geographical survey of the top of well casings and boxes.
- Storage of drill cuttings, decontamination and purged well water.
- Interpretation of field and laboratory data.

### **3. SITE LOCATION AND DESCRIPTION**

The site is located at 11727 Main Street in the City of Sunol, County of Alameda, California. A site location Map is presented as Figure 1. A site diagram showing the locations of proposed monitoring wells and relevant site structures is included as Figure 2.

The site lies approximately 100-feet south of Sinbad Creek and approximately 400-feet west of Arroyo de la Laguna, on the north edge of the Sunol Valley.

The site is currently vacant. A fire destroyed two site structures in 1989. A concrete pad and pump island are the only remaining structures on the site. The topography of the site is generally flat, dipping slightly to the east.

### **3.1. REGIONAL GEOLOGY AND HYDROGEOLOGY**

The site is located in the northern tip of the Sunol Valley, which is an elongate northwest-southeast trending structural trough bounded to the east by the Calaveras Fault, and to the west by the Sinbad Fault. The Sunol Valley is drained by Alameda Creek, which is located approximately 2,600-feet southwest of the site.

The site is underlain by highly permeable Quaternary Alluvium characteristic of stream bed deposits which were derived from the ancestral Alameda Creek. These deposits consist of unconsolidated beds of sand, gravel and boulders with discontinuous layers of clay. According to the State of California Department of Water Resources Bulletin No. 118-2, June 1974, these deposits have a permeability of up to 10-feet per day.

Recharge of the ground water is accomplished largely through infiltration and percolation. Sources of recharge include precipitation,

stream flow along the Alameda Creek, and water applied for irrigation and other uses on the valley alluvium.

The largest extraction of ground water in the Sunol Sub Basin is at the Sunol filter galleries, located approximately 2.5-miles northeast of the site. Significant discharge is also achieved by effluent flow into Alameda Creek. Infiltration and percolation of this effluent flow helps to recharge the ground water reservoirs underlying the Niles Cone at its apex in the vicinity of the Niles District in Fremont.

Soils encountered during the scope of this project included sandy gravel and gravely sand; and well sorted gravel with cobbles. Ground water was first encountered at 29-feet below ground surface (bgs) in one boring, and at 33.5-feet bgs in the other boring.

#### **4. PREVIOUS ENVIRONMENTAL WORK**

One 550-gallon diesel underground storage tank (UST), one 550-gallon regular gasoline UST, one 1,000-gallon unleaded gasoline, and one 1,000-gallon premium gasoline UST were excavated and removed from the site by Hageman Schank, Inc. (HSI) on 7 February 1990.

Soil samples collected by HSI from the UST excavations revealed that soil at the site had been impacted by up to 200-parts per million (ppm) TPHd; up to 1,100-ppm TPHg; and up to 2.4-ppm, 12-ppm, 6.2-ppm, and 18-ppm BTEX, respectively.

According to their report dated 25 July 1990, HSI extended the two excavations until confirmation soil samples contained below detectable levels of petroleum hydrocarbons. The excavated soil (approximately 40-cubic yards) is presently stockpiled on asphalt and a concrete pad at the site.

HSI attempted to install one ground water monitoring well at the site, by using an air-rotary drill rig on 13 July 1990. HSI was not able to set casing due to sloughing within the boring. Ground water was reportedly encountered at approximately 70-feet bgs. This boring was reportedly backfilled with Monterey sand.

HSI redrilled the backfilled boring using hollow-stem augers on 30 October 1990. At this time, ground water was reportedly encountered at approximately 33-feet bgs. This ground water monitoring well was completed to a total depth of 65-feet bgs.

HSI collected a ground water sample from the well on 13 November 1990. The sample contained 840-micrograms per litre ( $\mu\text{g/L}$ ) TPHd, and below detectable levels of TPHg and BTEX.

Nine sampling events were performed by HSI (now known as Hageman-Aguiar, Inc.) between February 1991 and 22 February 1993. The results of these previous sampling events reviewed by EBS are presented in Table 1.

## **5. PROCEDURES**

### **5.1. PERMITS**

The following permits and regulatory agency work plan approvals were requested and procured prior to the commencement of field work:

- California Department of Water Resources Notice of Intent
- Alameda County Flood Control and Water Conservation District  
Zone 7 Ground Water Protection Ordinance Permit
- Alameda County Health Care Services Agency Work Plan Approval

Copies of these documents are included in Appendix A.

### **5.2. MONITORING WELL INSTALLATIONS**

#### **5.2.1. Drilling Activities**

Two soil borings were drilled by Bayland Drilling of Menlo Park, California (C-57 license #374152) on 24 June 1993. The borings were drilled at the locations depicted on the site diagram. The boreholes were drilled using a truck mounted CME 75 drill rig equipped with 8-inch diameter hollow stem augers. The designation of the boreholes MW2 and MW3 correspond to the monitoring wells constructed within them. The logs of soil borings and well construction details are presented in Appendix B.

Ground water was first encountered in the boring of ground water monitoring well MW2 at approximately 33.5-feet bgs. This boring was completed to a depth of 50-feet bgs. Ground water was first encountered

at approximately 29-feet bgs in the boring of MW3. This boring was completed to a depth of 45-feet bgs.

Soil lithologies encountered in the drilling of MW2 included poorly sorted sandy gravel and gravelly sand to approximately 33-feet bgs, at which depth well sorted gravel and cobbles were encountered. Poorly sorted gravel was again encountered at approximately 38-feet bgs. A lens of well indurated sandstone inhibited drilling activities between 40 and 44-feet bgs. Poorly sorted gravel was found beneath the sandstone to the total depth of the boring.

Soil lithologies encountered in the drilling of MW3 included organic rich silty sand. Poorly sorted sandy gravel and gravelly sand was encountered at approximately 6-feet bgs, and extended to the bottom of the boring.

#### **5.2.2. Soil Sample Collection**

Soil samples were collected from the borings at 5-foot intervals using a California modified split-spoon sampler. For collection, the sampler was driven 18-inches (the total sampler length) into the soil by a 140-pound weight falling a distance of approximately 30-inches. The number of blows required to drive the sampler each 6-inches was counted as an indicator of the relative density of the soil.

Soil samples were removed from the sampler as soon as it was opened. The ends of all tubes submitted to the laboratory were covered with Teflon<sup>®</sup> tape and sealed with plastic end caps. The sample tubes were labeled, stored in a cooler on crushed ice, and transported to American

Environmental Network (AEN) of Pleasant Hill, California. AEN is certified by the State of California to perform the stated analyses.

**5.2.3. Decontamination Procedures for Drilling and Soil Sampling Equipment**

The modified California split-spoon sampler was washed with Alconox detergent and double rinsed with distilled water between the collection of soil cores and samples. The augers used to drill the borings were steam cleaned on-site between the drilling of each borehole. All decontamination water was collected and stored on-site in department of transportation (DOT) approved 55-gallon drums. All soil cuttings generated during drilling were stored on-site on top of visqueen, and covered with weighted visqueen to prohibit runoff or infiltration by rainwater.

**5.2.4. Ground Water Monitoring Well Construction**

Two-inch ground water monitoring wells were constructed within the soil borings. Graphic depictions of well construction details are shown on the logs of borings included in Appendix B.

The wells were constructed of polyvinyl chloride (PVC) casing and screen connected with threaded joints, and a threaded bottom end cap. The screened intervals of the wells were perforated by the factory with 0.020-inch wide slots. Blank casing was used to complete the upper portion of the wells.

Filter sand (Lonestar #3) was used to pack the annular space between the well casings and borehole sides. The sand was extended to a depth of approximately 2-feet above the perforated pipe section. A 1-foot bentonite spacer was placed above the sand and hydrated in place. The upper annulus (to a depth of approximately 1-foot bgs) was sealed with neat cement grout.

A locking well cap fitted with a watertight gasket was secured and locked in place over the top of the casing. A traffic box with a bolt-on lid was placed over the well head and secured in place with concrete grout.

#### **5.2.5. Well Development**

Development of the ground water monitoring wells was conducted on 28 June 1993. The depth to water and total well depths were measured upon opening of the wells. Measurements were taken using a water level indicator (Slope Indicator Model #51453).

Depth to water was measure at 29.81 and 28.22-feet bgs in MW2 and MW3, respectively. The total depths of the wells were measured at (approximately) 45 and 43.56-feet bgs in MW2 and MW3, respectively. Accumulated silt in the bottom of MW3 prohibited a more accurate measurement of total well depth at this time.

The wells were developed by alternately surging with a surge block, and bailing. This method is utilized to remove sediment from the well screen and to increase well production efficiency. Approximately 55-gallons of water was purged from each well during the development



activities. All water evacuated from the wells was contained on-site in DOT approved 55-gallon drums pending disposal.

#### **5.2.6. Ground Water Sampling**

Sampling of the three ground water monitoring wells at the site was performed on 1 July 1993. Appendix D contains copies of the sample collection logs completed during well purging and sampling. The depth to water and total well depths were measured upon opening of the well, using a water level indicator (Slope Indicator Model #51453). The volume of water contained within the wells was then calculated.

A volume of water, not less than 4-well volumes, was then purged from the well using a 3-foot long PVC bailer (approximately 1-liter capacity). Periodic measurement of pH, temperature, and conductivity were taken from the bailer until the reading were found to stabilize. Table 1 lists these measurements taken during the well purging prior to sampling.

Approximately 25-gallons of ground water was purged from MW1, 15-gallons from MW2, and 15-gallons from MW3. All water removed from the wells was contained on-site in DOT approved 55-gallon drums pending disposal.

The ground water level was allowed to recover at least 80% in each well prior to sampling of the well. A new disposable bailer was used to collect a ground water sample from each well. Ground water samples were contained within laboratory cleaned amber 1-liter bottles and 40-milliliter volatile organic analysis vials (VOAs) containing hydrochloric acid as a preservative.

The sample bottles were labeled, placed in a cooler on top of crushed ice, and transported to AEN for analysis. A chain of custody accompanied each sample to the laboratory.

#### **5.2.7. Decontamination Procedures for Well Purging Equipment**

The PVC bailers used for purging were first cleaned using Alconox detergent, rinsed with clean water, then triple rinsed with distilled water. Disposable bailers used to collect the samples were discarded after a single use.

### **6. SAMPLE ANALYSIS AND RESULTS**

All soil and ground water samples submitted for analysis were analyzed for TPHg and BTEX using Environmental Protection Agency (EPA) Method 5030, Modified 8015, and 8020; and TPHd and TPHk by EPA Methods 3510/3550 (using gas chromatograph flame ionization detector).

Results of the sample analyses are summarized in Tables 2 and 3. Logs of field sampling are included as Appendix C. The chain of custody forms and certified laboratory analytical reports are presented in Appendix D.

Only one of the soil samples, MW3-15', contained detectable concentration of petroleum hydrocarbons. TPHd was measured in this sample at 20-milligrams per kilogram (mg/kg). Only one of the ground

water samples, MW1, contained a detectable concentration of petroleum hydrocarbons. This sample contained 0.3- $\mu\text{g/L}$  TPHk.

## **7. EVALUATION OF GROUND WATER FLOW DIRECTION AND GRADIENT**

The elevation of the tops of casings of wells MW1, MW2, and MW3 were surveyed on 1 July 1993 by Fremont Engineers, Inc. (FEI). FEI is a licensed land surveyor (California RPE Number 31917). The surveyor's map of the locations and elevations of the wells is included as Appendix E.

Ground water level measurements were taken on 7 July 1993. The direction and gradient of ground water flow across the site was evaluated and is presented as Figure 3. The evaluated direction and gradient of ground water flow on 7 July 1993 were to the northwest and 0.005-ft/ft, respectively.

A well survey was conducted by the Alameda County Flood Control and Water Conservation District, Zone 7 (Zone 7) at the request of EBS. According to Mr. Wyman Hong of Zone 7, no wells were located near the subject site in the northwest direction. Mr. Hong also stated that the lack of documented wells in Sunol, and northwest of the subject site does not preclude the possibility of unpermitted wells in this area.

## 8. CONCLUSIONS

1. Two soil borings were drilled, lithologically logged, and sampled at the site. The borings were completed as 2-inch diameter ground water monitoring wells designated as MW2 and MW3.
2. Selected soil and ground water samples were analyzed for TPHg, BTEX, TPHd, and TPHk.
3. TPHd was found in soil sample MW3-15' at a concentration of 20-mg/kg. No other target compounds were detected in the soil samples submitted for analysis.
4. TPHk impact to ground water was detected in a sample collected from well MW1 at a concentration of 0.3- $\mu$ g/L. No other target compounds were detected in the ground water samples submitted for analysis.
5. Ground water flow direction and gradient were measured at northwest and 0.005-ft/ft, respectively.

## **9. RECOMMENDATIONS**

Based upon the accumulated data, EBS recommends the following:

1. Quarterly sampling of the three ground water wells should continue. The samples should be analyzed for TPHg, BTEX, TPHd, and TPHk. Should the concentrations of impacting constituents found in the samples remain at present levels or decrease through one complete hydrologic cycle, case closure should be requested from the ACHCSA and the San Francisco Bay Regional Water Quality Control Board (RWQCB).
2. Depth to ground water should be measured as part of quarterly well sampling. Ground water flow direction and gradient maps should be generated and submitted with all quarterly reports.
3. A copy of this report, and subsequent quarterly ground water monitoring reports should be submitted to the ACHCSA and the RWQCB.

## **10. REFERENCES**

Environmental Bio-Systems, Inc., Work Plan #93002, Monitoring Well Installation and Sampling at 11727 Main Street, Sunol, California, 12 May 1993.

Hageman-Schank, Inc., Proposal for Subsurface Investigation, Former Chevron Station, 11727 Main Street, Sunol, California, 25 July 1990.

Hageman-Schank, Inc., Report of Groundwater Sampling, Former Chevron Station, 11727 Main Street, Sunol, California, 10 December 1990.

Hageman-Aguiar, Inc., Quarterly Groundwater Sampling Report and Proposal for Additional Subsurface Investigation, Former Chevron Station, 11727 Main Street, Sunol, California, 27 August 1992.

## **11. LIMITATIONS**

The recommendations in this report were developed in accordance with generally accepted standards of current environmental practice in Northern California. These recommendations are time-dependent and should not be considered valid after a 1-year period from the issue of this report. After 1-year from the issue of this report, site conditions and recommendations contained within this report should be reviewed.

This study was performed solely for the purpose of evaluating environmental conditions of the site subsurface relative to hydrocarbon impact at the subject site. No engineering or geotechnical references are implied or should be inferred.

Evaluation of the condition of the site, for the purpose of this study, was made from a limited number of observation points. Subsurface conditions may deviate away from these points. Additional work, including further study of the subsurface, can reduce the inherent uncertainties associated with this type of work.

This study was performed, and the report was prepared for the sole use of our client, Mr. Jim O'Laughlin. This report and the findings contained herein shall not be disclosed to nor used by any other party without the prior written consent of Environmental Bio-Systems, Inc. It is the responsibility of the client to convey these recommendations to regulatory agencies and other parties, as appropriate.

The recommendations herein are professional opinions that our firm has endeavored to provide with competence and reasonable care. We are not able to eliminate the risks associated with environmental work. No guarantees or warrants, express or implied, are provided regarding our recommendations

**TABLE 1. RESULTS OF PREVIOUS GROUND WATER SAMPLING ANALYSES**

<b>Well</b>	<b>Date</b>	<b>TPHg</b>	<b>TPHd</b>	<b>TPHk</b>	<b>B</b>	<b>T</b>	<b>E</b>	<b>X</b>	<b>TOG</b>
MW1	11/13/90	ND	840	NA	ND	ND	ND	ND	NA
MW1	2/26/91	ND	ND	NA	ND	ND	ND	ND	NA
MW1	5/16/91	ND	ND	NA	ND	ND	ND	ND	NA
MW1	8/19/91	260	220	NA	0.6	ND	0.7	3.1	NA
MW1	12/20/91	500	480	NA	ND	ND	ND	1.7	NA
MW1	2/12/92	440	ND	2,200	0.6	0.6	0.6	2.9	NA
MW1	5/13/92	ND	ND	280	ND	ND	0.6	3.6	ND
MW1	8/10/92	ND	650	520	ND	ND	ND	ND	NA
MW1	12/4/92	ND	180	120	ND	ND	ND	ND	ND
MW1	2/22/93	ND	ND	ND	ND	ND	ND	ND	ND
Detection Limit		50	50	50	0.5	0.5	0.5	0.5	0.5

**LEGEND**

TPHg: Total Petroleum Hydrocarbons as Gasoline

TPHd: Total Petroleum Hydrocarbons as Diesel

TPHk: Total Petroleum Hydrocarbons as Kerosene

BTEX: Benzene, Toluene, Ethylbenzene, Xylene Isomers

TOG: Total Oil and Grease

ND: Not Detected

NA: Not Analyzed

Note: Sampling conducted and reported by HSI

All results in  $\mu\text{g/L}$  (parts per billion), except TOG in  $\text{mg/L}$  (parts per million)



**TABLE 2. SOIL SAMPLING ANALYTICAL RESULTS**

<b>SAMPLE ID</b>	<b>TPHd (mg/kg)</b>	<b>TPHk (mg/kg)</b>	<b>TPHg (mg/kg)</b>	<b>BTEX (µg/kg)</b>
MW2-5'	NA	NA	ND	ND
MW2-10'	ND	ND	ND	ND
MW2-15'	ND	ND	ND	ND
MW2-20'	ND	ND	ND	ND
MW2-25'	ND	ND	ND	ND
MW2-30'	ND	ND	ND	ND
MW2-34.5'	ND	ND	ND	ND
MW3-15'	20	ND	ND	ND
MW3-30'	ND	ND	ND	ND
DETECTION LIMIT	1	1	0.2	5

**LEGEND**

TPHd: Total Petroleum Hydrocarbons as Diesel

TPHk: Total Petroleum Hydrocarbons as Kerosene

TPHg: Total Petroleum Hydrocarbons as Gasoline

BTEX: Benzene, Toluene, Ethylbenzene, and Xylene Isomers

NA: Not Analyzed Due to Sample Matrix (High Rock Content)

ND: Not Detected

**TABLE 3. GROUND WATER SAMPLING  
 ANALYTICAL RESULTS**

<b>SAMPLE ID</b>	<b>TPHd (mg/L)</b>	<b>TPHk (mg/L)</b>	<b>TPHg (mg/L)</b>	<b>BTEX (µg/L)</b>
MW1	ND	0.3	ND(<0.4)	ND
MW2	ND	ND	ND	ND
MW3	ND	ND	ND	ND
<b>DETECTION LIMIT</b>	0.05	0.05	0.05	BTE=0.5, X=2

**LEGEND**

TPHd: Total Petroleum Hydrocarbons as Diesel

TPHk: Total Petroleum Hydrocarbons as Kerosene

TPHg: Total Petroleum Hydrocarbons as Gasoline

BTEX: Benzene, Toluene, Ethylbenzene, and Xylene Isomers

ND: Not Detected

**Note:** Detection Limit for TPHg for MW1 Raised by Laboratory due to Presence of Hydrocarbons Heavier than Gasoline

30 July 1993

**Mr. Jim O'Laughlin**  
Former Chevron Station  
11727 Main Street, Sunol, California

Appendix A

**APPENDIX A:**  
**PERMITS AND REGULATORY AGENCY**  
**WORK PLAN APPROVALS**



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94566 (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

(1) LOCATION OF PROJECT 11727 MANN ST. Sunnyvale, CA 94586

PERMIT NUMBER 93256 LOCATION NUMBER

(2) CLIENT Name: TIM O'BRIEN Address: 1909 BROAD ST. Sunnyvale, CA Phone: Zip: 94586

PERMIT CONDITIONS

Circled Permit Requirements Apply

(3) APPLICANT Name: SAN JOAQUIN CO. BLDG. SYSTEMS, INC. 3012 S. IND. PARKWAY S.W. SUITE C Hayward, CA Phone: (510) 429-9988 Zip: 94544

A. GENERAL

- 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date. 2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects. 3. Permit is void if project not begun within 90 days of approval date.

(4) DESCRIPTION OF PROJECT Water Well Construction Geotechnical Investigation Cathodic Protection General Well Destruction Contamination

B. WATER WELLS, INCLUDING PIEZOMETERS

- 1. Minimum surface seal thickness is two inches of cement grout placed by tremie. 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic, irrigation, and monitoring wells unless a lesser depth is specially approved.

(5) PROPOSED WATER WELL USE Domestic Industrial Irrigation Municipal Monitoring Other

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

(6) PROPOSED CONSTRUCTION Drilling Method: Mud Rotary Air Rotary Auger Cable Other

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

DRILLER'S LICENSE NO. C57-374152

E. WELL DESTRUCTION. See attached.

WELL PROJECTS Drill Hole Diameter 8 in. Maximum Casing Diameter 2 in. Depth 50 ft. Surface Seal Depth 25 ft. Number 2.

GEOTECHNICAL PROJECTS Number of Borings Maximum Hole Diameter in. Depth ft.

(7) ESTIMATED STARTING DATE 5/25/93 ESTIMATED COMPLETION DATE 5/26/93

(8) I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

Approved: Wyman Hong Date 13 May 93

APPLICANT'S SIGNATURE: [Signature] Date 5/11/93

NOTICE OF INTENT

DEPARTMENT OF WATER RESOURCES:

May 11, 19 93

On or about May 25, 19 93, I plan to commence drilling  deepening   
reconditioning  or destruction of  a cable  rotary  or other AUGER type  
well, for MONITORING purposes. The work will be done for

JIM O'LAUGHLIN, 177 BOND ST., SUNOL, CALIFORNIA 94586  
(Proposed use of well)  
(Name of client and address)

Approximate location of well is 11727 MAIN ST.,  
SUNOL, CALIFORNIA, 94586  
(Legal subdivision or by reference to some landmark)

, in ALAMEDA County.

Bayland Drilling Lic. No. 657-374152  
(Well driller)

811 HAMILTON AVE., MENLO PARK, CA 94025  
(Address)

Need log forms  Need notice cards

ORIGINAL  
FILE WITH DEPARTMENT OF WATER RESOURCES

NOTICE OF INTENT

DEPARTMENT OF WATER RESOURCES:

MAY 11, 19 93

On or about MAY 25, 19 93, I plan to commence drilling  deepening   
reconditioning  or destruction of  a cable  rotary  or other AUGER type  
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(Proposed use of well)  
(Name of client and address)

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SUNOL, CA 94586  
(Legal subdivision or by reference to some landmark)

, in ALAMEDA County.

Bayland Drilling Lic. No. 657-374152  
(Well driller)

811 HAMILTON AVE., MENLO PARK, CA 94025  
(Address)

Need log forms  Need notice cards

ALAMEDA COUNTY  
HEALTH CARE SERVICES  
AGENCY

DAVID J. KEARS, Agency Director



RAFAT A. SHAHID, ASST. AGENCY DIRECTOR  
DEPARTMENT OF ENVIRONMENTAL HEALTH  
State Water Resources Control Board  
Division of Clean Water Programs  
CST Local Oversight Program  
80 Swan Way, Rm 200  
Oakland, CA 94621  
(510) 271-4530

STID 2468

June 14, 1993

Mr. Jim O'Laughlin  
P.O. Box 400  
Sunol, CA 94586

RE: (FORMER) SUNOL CHEVRON SERVICE, 11727 MAIN STREET, SUNOL

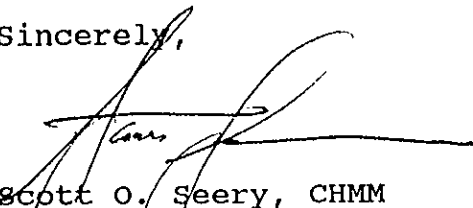
Dear Mr. O'Laughlin:

Thank you for the recent submittal of the May 12, 1993 Environmental Bio-Systems, Inc. (EBS) work plan for the installation of two additional ground water monitoring wells at the referenced site. The scope of this proposal has been accepted as submitted.

Please sample and monitor all the wells, and submit reports, on a quarterly schedule. Please also be sure that wells are surveyed relative to mean sea level (MSL), and that water elevations are referenced to same. All future reports and proposals are to be submitted under seal of a California-registered geologist or civil engineer.

Please feel free to call me at 510/271-4530 should you have any questions.

Sincerely,

  
Scott O. Seery, CHMM  
Senior Hazardous Materials Specialist

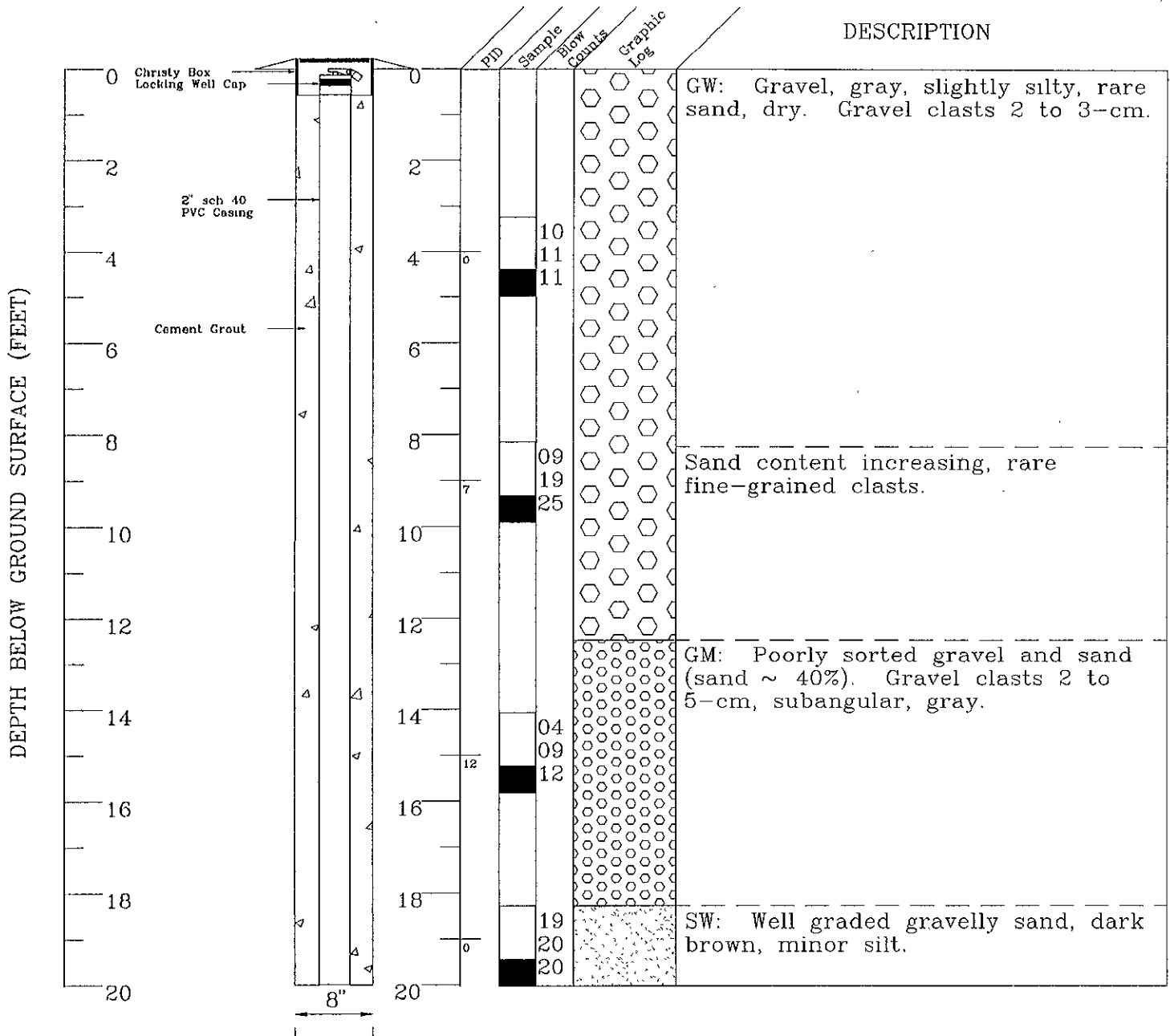
cc: Rafat A. Shahid, Assistant Agency Director  
Gil Jensen, Alameda County District Attorney's Office  
Rich Hiett, RWQCB  
Dave Sadoff, Environmental Bio-Systems, Inc.  
files

30 July 1993

**Mr. Jim O'Laughlin**  
Former Chevron Station  
11727 Main Street, Sunol, California

Appendix B

**APPENDIX B:**  
**SOIL BORING**  
**LITHOLOGIC LOGS**



Logged by: L. Golub  
 Inspector: N/A  
 Date(s): 6/24/93

Drilling Contractor: Bayland  
 Drilling Method: Hollow Stem  
 Driller: Kurt

Sanitary Seal: Cement  
 Sampler Type: Split Spoon  
 Total Boring Depth: 50-Feet



### EXPLANATION

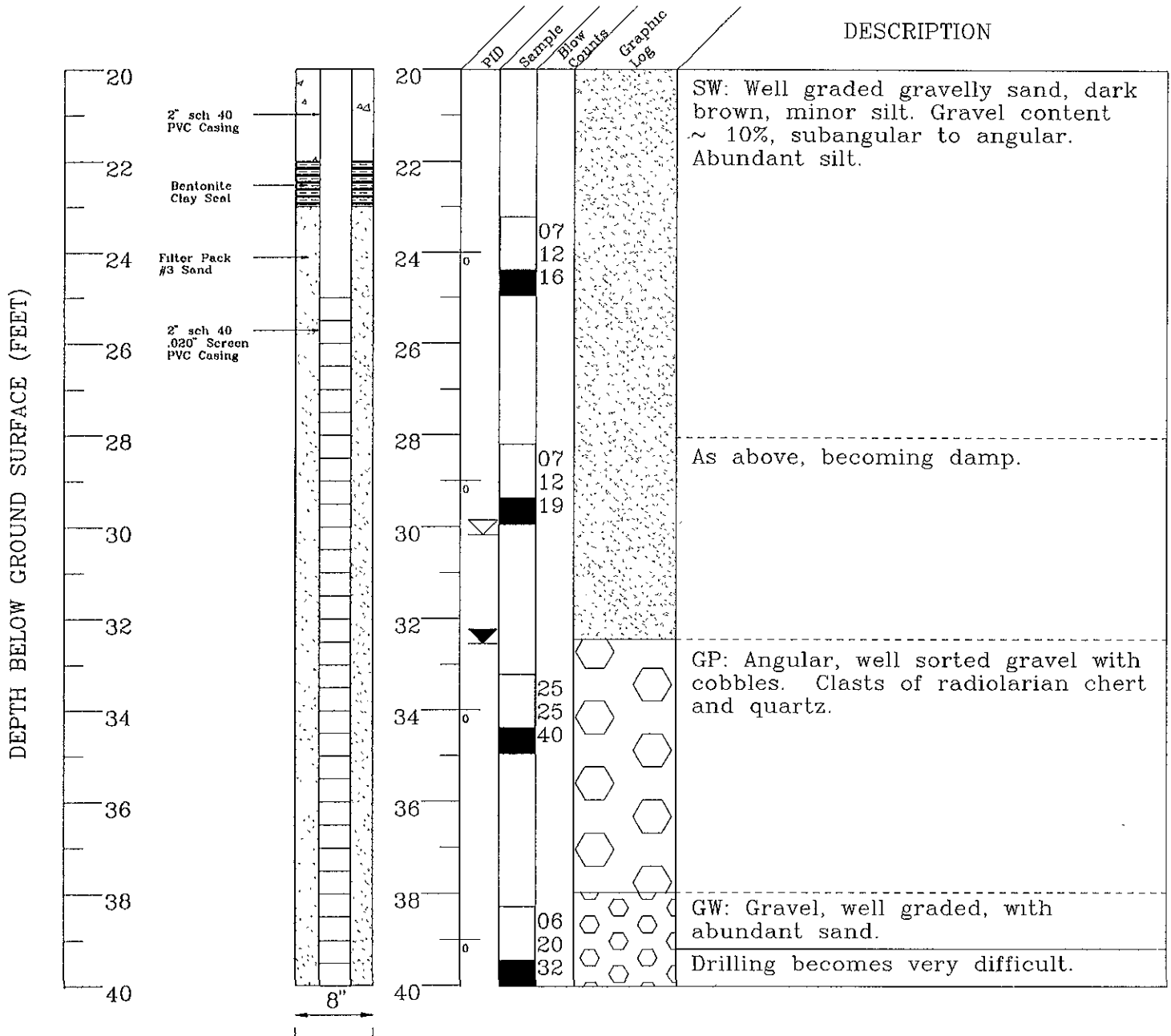
- |  |                             |                  |             |
|--|-----------------------------|------------------|-------------|
|  | water level during drilling |                  | gradational |
|  | potentiometric water level  | NR               | no recovery |
|  | drill sample                | <b>CONTACTS:</b> |             |
|  | chemical analysis sample    | —                | certain     |
|  | sieve sample                | - - -            | approximate |
|  | grab sample                 | - - -            | uncertain   |

**SITE:**  
 FORMER CHEVRON STATION  
 11727 MAIN STREET  
 SUNOL, CALIFORNIA

**PROJECT #083-246-01B**

**CLIENT:**  
 Mr. Jim O'Laughlin  
 P.O. Box 400  
 Sunol, California





Logged by: L. Golub  
Inspector: N/A  
Date(s): 6/24/93

Drilling Contractor: Bayland  
Drilling Method: Hollow Stem  
Driller: Kurt

Sanitary Seal: Cement  
Sampler Type: Split Spoon  
Total Boring Depth: 50-Feet



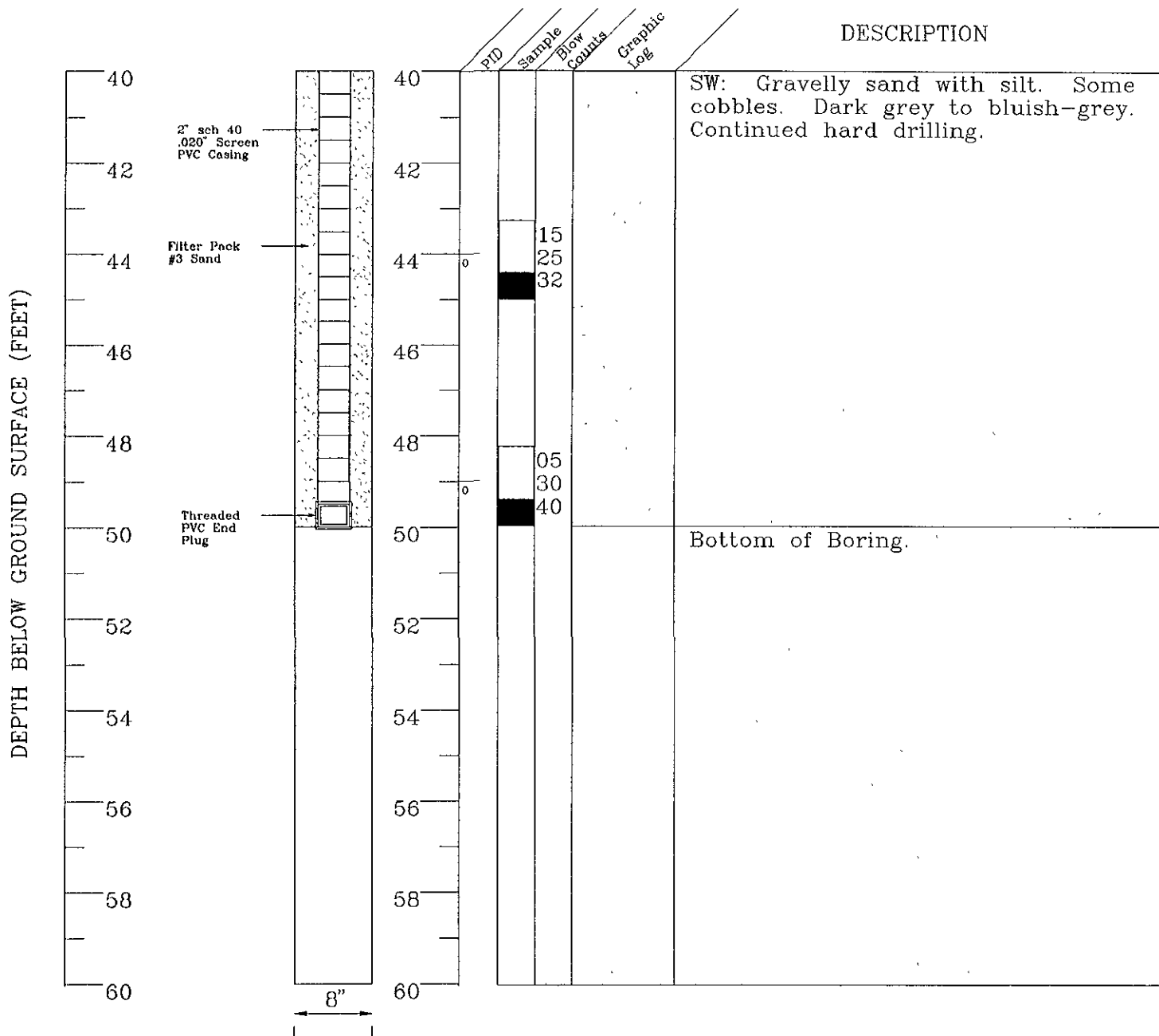
### EXPLANATION

- |  |                             |                  |             |
|--|-----------------------------|------------------|-------------|
|  | water level during drilling |                  | gradational |
|  | potentiometric water level  | NR               | no recovery |
|  | drill sample                | <b>CONTACTS:</b> |             |
|  | chemical analysis sample    | —                | certain     |
|  | sieve sample                | - -              | approximate |
|  | grab sample                 | - -              | uncertain   |

**SITE:**  
FORMER CHEVRON STATION  
11727 MAIN STREET  
SUNOL, CALIFORNIA

**PROJECT #083-246-01B**

**CLIENT:**  
Mr. Jim O'Laughlin  
P.O. Box 400  
Sunol, California



Logged by: L. Golub  
 Inspector: N/A  
 Date(s): 6/24/93

Drilling Contractor: Bayland  
 Drilling Method: Hollow Stem  
 Driller: Kurt

Sanitary Seal: Cement  
 Sampler Type: Split Spoon  
 Total Boring Depth: 50-Feet



ENVIRONMENTAL  
 BIO-SYSTEMS, INC.

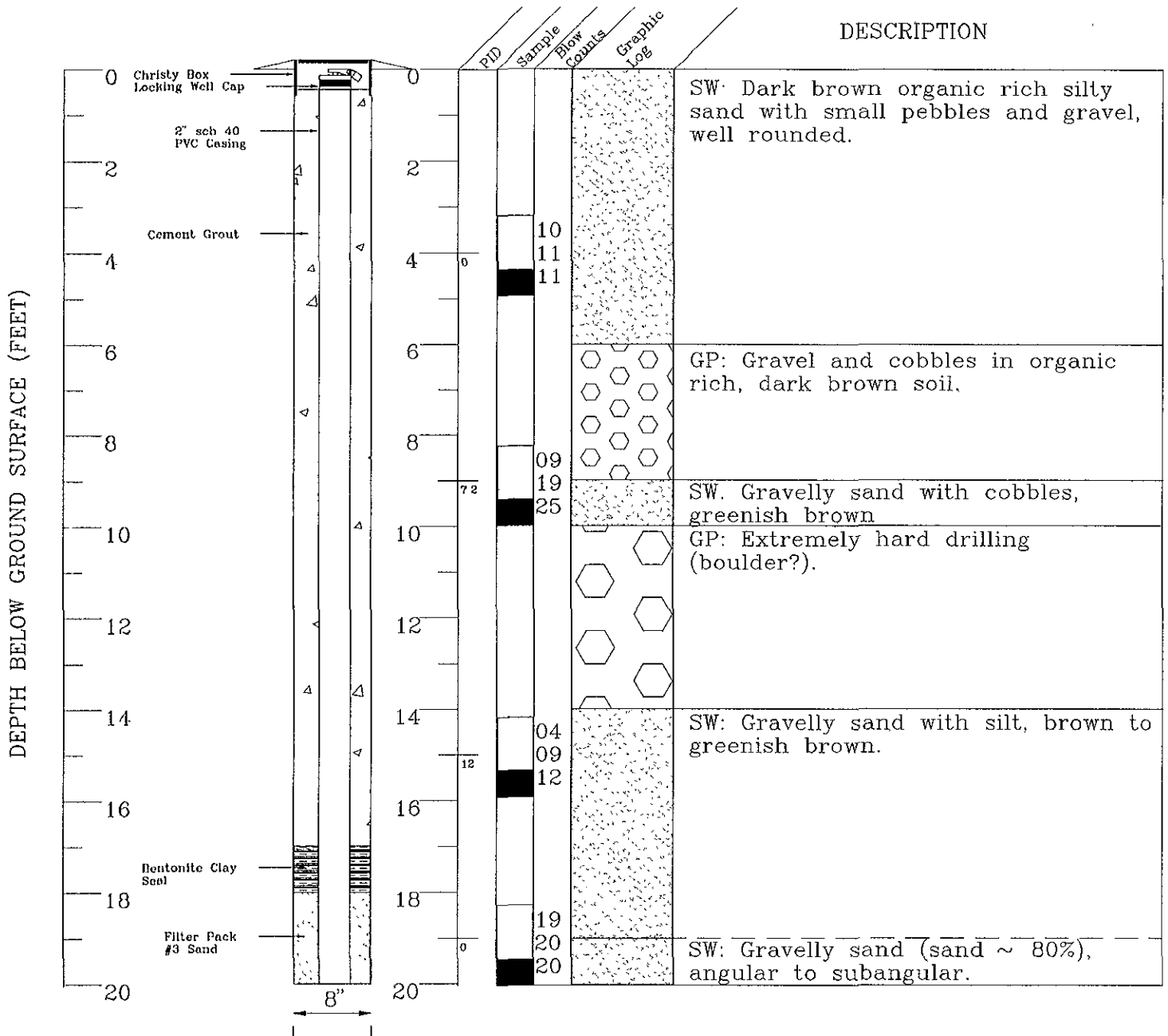
### EXPLANATION

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li> water level during drilling</li> <li> potentiometric water level</li> <li> drill sample</li> <li> chemical analysis sample</li> <li> sieve sample</li> <li> grab sample</li> </ul> | <ul style="list-style-type: none"> <li> gradational</li> <li>NR no recovery</li> <li><b>CONTACTS:</b></li> <li> certain</li> <li> approximate</li> <li> uncertain</li> </ul> |
|--|--|

**SITE:**  
 FORMER CHEVRON STATION  
 11727 MAIN STREET  
 SUNOL, CALIFORNIA

PROJECT #083-246-01B

**CLIENT:**  
 Mr. Jim O'Laughlin  
 P.O. Box 400  
 Sunol, California



Logged by: L Golub  
 Inspector: N/A  
 Date(s): 6/24/93

Drilling Contractor: Bayland  
 Drilling Method: Hollow Stem  
 Driller: Kurt

Sanitary Seal: Cement  
 Sampler Type: Split Spoon  
 Total Boring Depth: 45-Feet

### EXPLANATION

- |                               |                |
|-------------------------------|----------------|
| ▼ water level during drilling | ▨ gradational  |
| ▽ potentiometric water level  | NR no recovery |
| □ drill sample                | CONTACTS       |
| ■ chemical analysis sample    | — certain      |
| ⊠ sieve sample                | — approximate  |
| ⊡ grab sample                 | - - uncertain  |

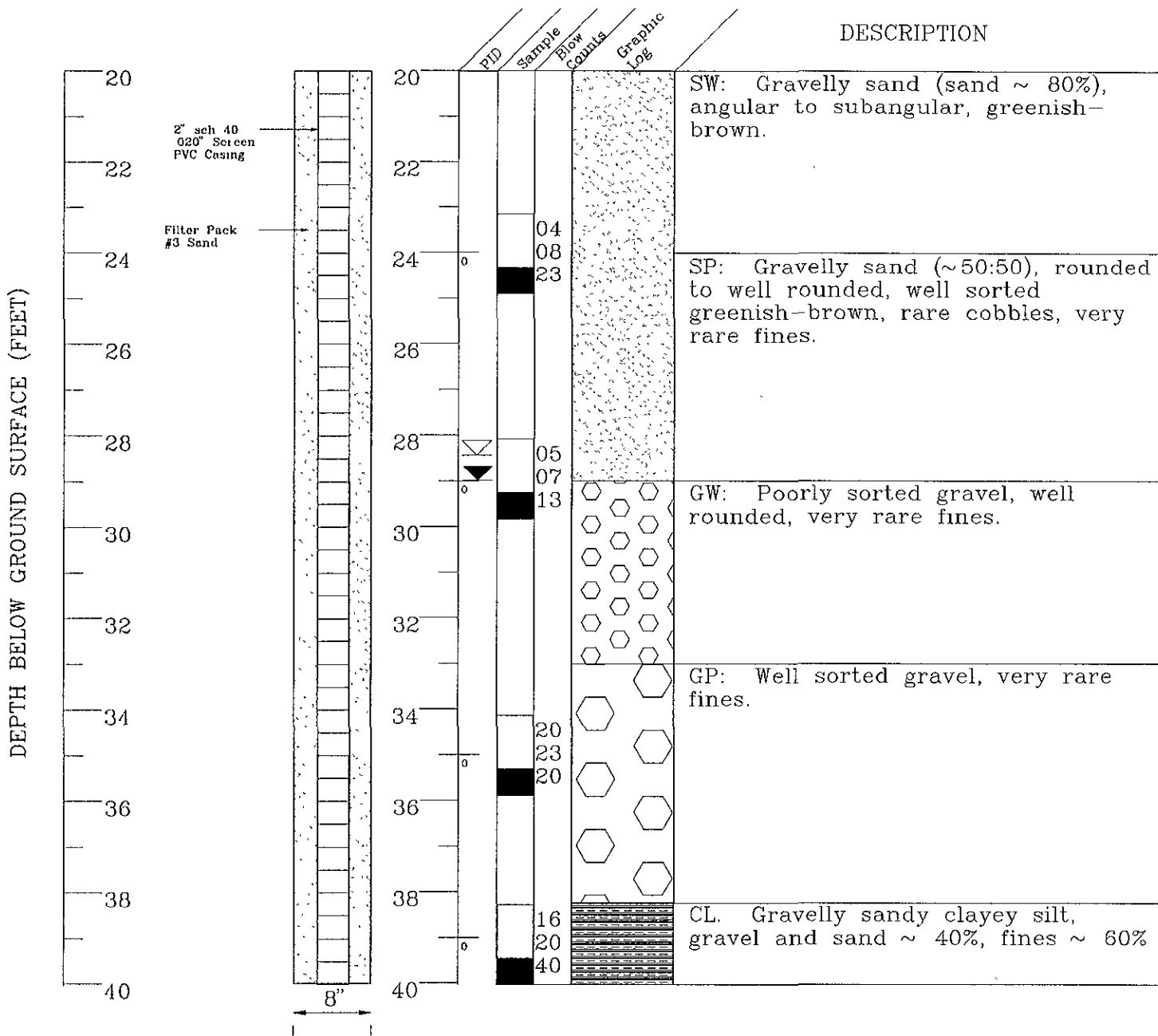
**SITE:**  
 FORMER CHEVRON STATION  
 11727 MAIN STREET  
 SUNOL CALIFORNIA

PROJECT #083-246-01B

**CLIENT:**  
 Mr. Jim O'Laughlin  
 P O Box 400  
 Sunol, California



**ENVIRONMENTAL  
 BIO-SYSTEMS, INC.**



Logged by: L Golub  
Inspector: N/A  
Date(s): 6/24/93

Drilling Contractor: Bayland  
Drilling Method: Hollow Stem  
Driller: Kurt

Sanitary Seal: Cement  
Sampler Type: Split Spoon  
Total Boring Depth: 45-Feet



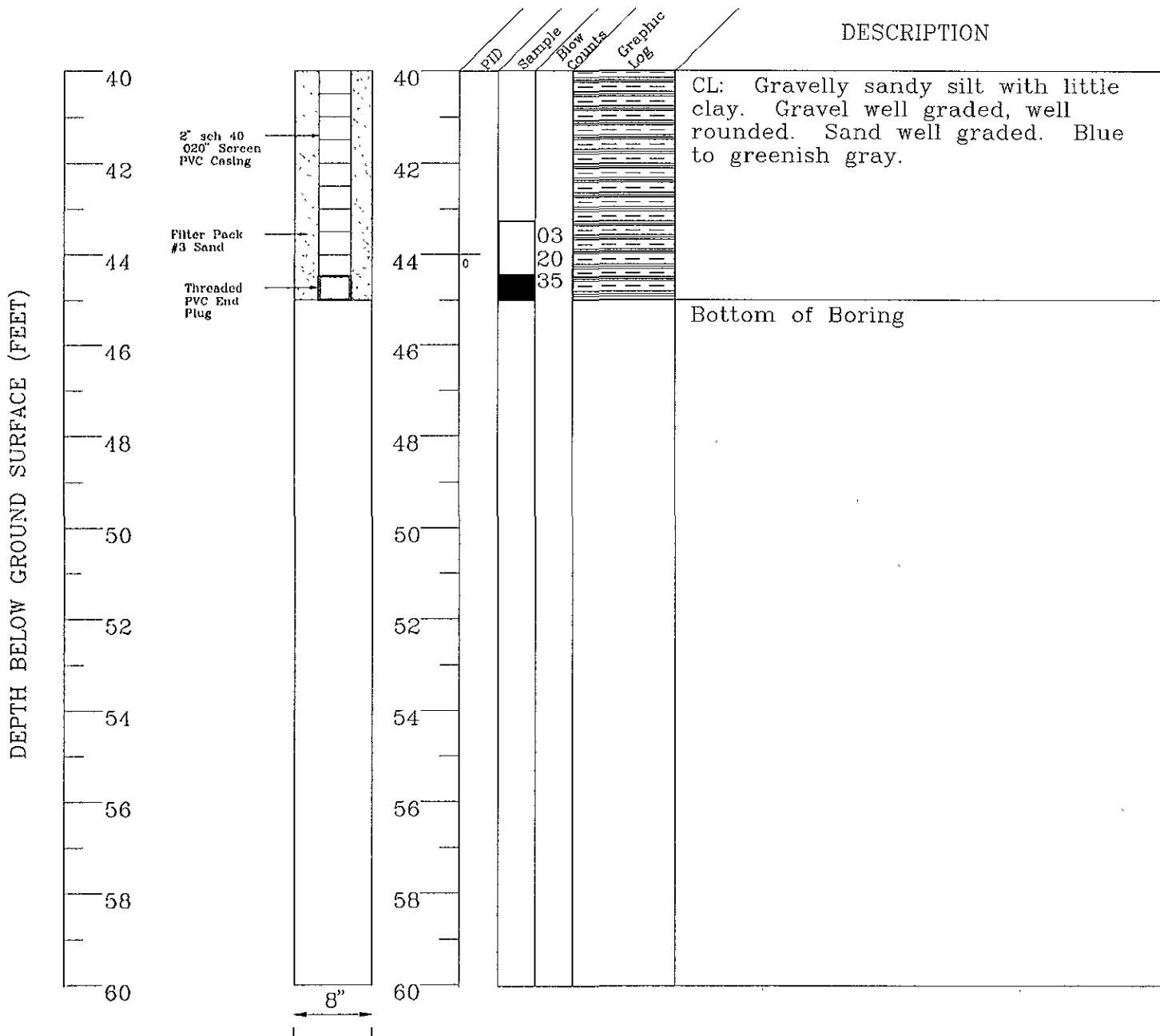
### EXPLANATION

- |                             |                |
|-----------------------------|----------------|
| water level during drilling | gradational    |
| potentiometric water level  | NR no recovery |
| drill sample                | CONTACTS:      |
| chemical analysis sample    | — certain      |
| sieve sample                | — approximate  |
| grab sample                 | - - uncertain  |

**SITE:**  
FORMER CHEVRON STATION  
11727 MAIN STREET  
SUNOL, CALIFORNIA

PROJECT #083-246-01B

**CLIENT:**  
Mr. Jim O'Laughlin  
P.O. Box 400  
Sunol, California



Logged by: L. Golub  
 Inspector: N/A  
 Date(s): 6/24/93

Drilling Contractor: Bayland  
 Drilling Method: Hollow Stem  
 Driller: Kurt

Sanitary Seal: Cement  
 Sampler Type: Split Spoon  
 Total Boring Depth: 45-Feet

### EXPLANATION

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li> water level during drilling</li> <li> potentiometric water level</li> <li> drill sample</li> <li> chemical analysis sample</li> <li> sieve sample</li> <li> grab sample</li> </ul> | <ul style="list-style-type: none"> <li> gradational</li> <li>NR no recovery</li> <li><b>CONTACTS:</b></li> <li> certain</li> <li> approximate</li> <li> uncertain</li> </ul> |
|--|--|

**SITE:**  
 FORMER CHEVRON STATION  
 11727 MAIN STREET  
 SUNOL, CALIFORNIA

PROJECT #083-246-01B

**CLIENT:**  
 Mr. Jim O'Laughlin  
 P.O. Box 400  
 Sunol, California



**ENVIRONMENTAL  
 BIO-SYSTEMS, INC.**

30 July 1993

**Mr. Jim O'Laughlin**  
Former Chevron Station  
11727 Main Street, Sunol, California

Appendix C

**APPENDIX C:**  
**GROUND WATER SAMPLING**  
**FIELD LOGS**

GROUND WATER SAMPLE COLLECTION LOG FOR WELL No. MW1

Project Name: Jim O'Laughlin  
 Project No.: 083-246-01B  
 Date and Time Collected: 7/1/93  
 Sample No.: MW1

Sample Collected by: Lev Golub  
 Weather: Sunny 70-75° F

**EQUIPMENT**

Purging Method/Equipment: Electric Pump  
 Sampling Method/ Equipment: Disposable Bailer

**PURGING INFORMATION**

Casing Diameter (A): 2" Unit Casing Volume ( Gal/Linear Ft. ) (B): 0.17  
 Total Depth to Well Bottom (C): 65' Depth to Water (D): 29.75  
 Length of Water Column in Casing (E) = (C) - (D) = 65.0 - 29.75 = 35.25  
 Casing Water Volume (F) = (B) × (E) = 0.17 × 35.25 = 5.99  
 Purged Well Volume (G) = (F) × 4 = 23.96  
 2"= 0.17 (Gal/Lin.Ft.); 3"= 0.38 (Gal/Lin.Ft.); 4"= 0.66 (Gal/Lin.Ft.); 6"= 1.50 (Gal/Lin.Ft.)

Volume	pH	Temperature	Conductance ( × 10 <sup>3</sup> )	Water Description	Time
15	7.1	65.3	1.20	Clean	12:30
20	7.3	63.6	1.20	Clean	13:10
25	7.4	62.6	1.19	Clean	13:36

**COMMENTS:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

GROUND WATER SAMPLE COLLECTION LOG FOR WELL No. MW2

Project Name: Jim O'Laughlin  
 Project No.: 083-246-01B  
 Date and Time Collected: 7/1/93  
 Sample No.: MW2

Sample Collected by: Lev Golub  
 Weather: Sunny 70-75° F

**EQUIPMENT**

Purging Method/Equipment: Electric Pump  
 Sampling Method/Equipment: Disposable Bailer

**PURGING INFORMATION**

Casing Diameter (A): 2" Unit Casing Volume ( Gal/Linear Ft. ) (B): 0.17  
 Total Depth to Well Bottom (C): 50' Depth to Water (D): 30.26'  
 Length of Water Column in Casing (E) = (C) - (D) = 50.0 - 30.26 = 19.74  
 Casing Water Volume (F) = (B) × (E) = 0.17 × 19.74 = 3.36  
 Purged Well Volume (G) = (F) × 4 = 13.44  
 2"= 0.17 (Gal/Lin.Ft.); 3"= 0.38 (Gal/Lin.Ft.); 4"= 0.66 (Gal/Lin.Ft.); 6"= 1.50 (Gal/Lin.Ft.)

Volume	pH	Temperature	Conductance ( × 10 <sup>3</sup> )	Water Description	Time
10	7.5	60.4	1.21	Little Silty	14:20
12	7.6	59.5	1.22	Clean	14:25
15	7.7	59.6	1.22	Clean	14:35

**COMMENTS:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



GROUND WATER SAMPLE COLLECTION LOG FOR WELL No. MW3

Project Name: Jim O'Laughlin Sample Collected by: Lev Golub  
 Project No.: 083-246-01B Weather: Sunny 70-75°  
 Date and Time Collected: 7/1/93  
 Sample No.: MW3

**EQUIPMENT**

Purging Method/Equipment: Electric Pump  
 Sampling Method/ Equipment: Disposable Bailer

**PURGING INFORMATION**

Casing Diameter (A): 2" Unit Casing Volume ( Gal/Linear Ft. ) (B): 0.17  
 Total Depth to Well Bottom (C): 45' Depth to Water (D): 28.44'  
 Length of Water Column in Casing (E) = (C) - (D) = 45.0 - 28.44 = 16.56  
 Casing Water Volume (F) = (B) × (E) = 0.17 × 16.56 = 2.82  
 Purged Well Volume (G) = (F) × 4 = 11.28  
 2"= 0.17 (Gal/Lin.Ft.); 3"= 0.38 (Gal/Lin.Ft.); 4"= 0.66 (Gal/Lin.Ft.); 6"= 1.50 (Gal/Lin.Ft.)

Volume	pH	Temperature	Conductance (× 10 <sup>3</sup> )	Water Description	Time
10	7.6	62.8	1.13	Silty	13:20
12	7.6	62.6	1.13	Silty	13:25
15	7.6	61.4	1.12	Silty	13:40

**COMMENTS:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

30 July 1993

**Mr. Jim O'Laughlin**  
Former Chevron Station  
11727 Main Street, Sunol, California

Appendix D

**APPENDIX D:**  
**LABORATORY ANALYTICAL REPORTS**  
**AND CHAIN OF CUSTODY DOCUMENTATION**

# American Environmental Network

## Certificate of Analysis

DOHS Certification: 1173

AHIA Accreditation: 94523-001

PAGE 1 OF 14

ENVIRONMENTAL BIO-SYSTEMS, INC.  
30028 INDUSTRIAL PKWY., S.W.  
SUITE C  
HAYWARD, CA 94544  
ATTN: DAVE SADOFF

REPORT DATE: 07/12/93

DATE SAMPLED: 06/24/93

DATE RECEIVED: 06/25/93

CLIENT PROJ. ID: 083-246-01B  
PROJECT NAME: SUNOL

AEN JOB NO: 9306212

### PROJECT SUMMARY:

On June 25, 1993, this laboratory received thirteen (13) soil samples.

Per client request, nine (9) samples were analyzed for organic parameters. Four (4) samples were placed on hold. Sample identification, methodologies, results and dates analyzed are summarized on the following pages.

Due to high rock content of sample MW2-5' (9306212-01A), laboratory was unable to perform all analyses requested. Total Petroleum Hydrocarbons as Gasoline, Benzene, Ethylbenzene, Toluene and Total Xylenes by EPA Methods 8020, 5030 GCFID was performed on the sample.

All laboratory quality control parameters were found to be within established limits. Batch QC data is included at the end of this report.

If you have any questions, please contact Client Services at (510) 930-9090.

  
Larry Klein  
General Manager

Results FAXed 07/07/93



## ENVIRONMENTAL BIO-SYSTEMS

SAMPLE ID: MW2-5'  
CLIENT PROJ. ID: 083-246-01B  
DATE SAMPLED: 06/24/93  
DATE RECEIVED: 06/25/93  
REPORT DATE: 07/12/93

AEN LAB NO: 9306212-01A  
AEN JOB NO: 9306212  
DATE ANALYZED: 06/28/93  
INSTRUMENT: H

BTEX AND HYDROCARBONS (SOIL MATRIX)  
METHOD: EPA 8020, 5030 GCFID

COMPOUND	CAS #	CONCENTRATION (ug/kg)	REPORTING LIMIT (ug/kg)
Benzene	71-43-2	ND	5
Toluene	108-88-2	ND	5
Ethylbenzene	100-41-4	ND	5
Xylenes, Total	1330-20-7	ND	5

## PURGEABLE HYDROCARBONS AS:

Gasoline ND mg/kg 0.2 mg/kg

ND = Not Detected

## ENVIRONMENTAL BIO-SYSTEMS

SAMPLE ID: MW2-10'  
CLIENT PROJ. ID: 083-246-01B  
DATE SAMPLED: 06/24/93  
DATE RECEIVED: 06/25/93  
REPORT DATE: 07/12/93

AEN LAB NO: 9306212-02A  
AEN JOB NO: 9306212  
DATE ANALYZED: 06/28/93  
INSTRUMENT: H

BTEX AND HYDROCARBONS (SOIL MATRIX)  
METHOD: EPA 8020, 5030 GCFID

COMPOUND	CAS #	CONCENTRATION (ug/kg)	REPORTING LIMIT (ug/kg)
Benzene	71-43-2	ND	5
Toluene	108-88-2	ND	5
Ethylbenzene	100-41-4	ND	5
Xylenes, Total	1330-20-7	ND	5

## PURGEABLE HYDROCARBONS AS:

Gasoline ND mg/kg 0.2 mg/kg

ND = Not Detected

ENVIRONMENTAL BIO-SYSTEMS

SAMPLE ID: MW2-15'  
 CLIENT PROJ. ID: 083-246-01B  
 DATE SAMPLED: 06/24/93  
 DATE RECEIVED: 06/25/93  
 REPORT DATE: 07/12/93

AEN LAB NO: 9306212-03A  
 AEN JOB NO: 9306212  
 DATE ANALYZED: 06/28/93  
 INSTRUMENT: H

BTEX AND HYDROCARBONS (SOIL MATRIX)  
 METHOD: EPA 8020, 5030 GCFID

COMPOUND	CAS #	CONCENTRATION (ug/kg)	REPORTING LIMIT (ug/kg)
Benzene	71-43-2	ND	5
Toluene	108-88-2	ND	5
Ethylbenzene	100-41-4	ND	5
Xylenes, Total	1330-20-7	ND	5

PURGEABLE HYDROCARBONS AS:

Gasoline ND mg/kg 0.2 mg/kg

ND = Not Detected

## ENVIRONMENTAL BIO-SYSTEMS

SAMPLE ID: MW2-20'  
CLIENT PROJ. ID: 083-246-01B  
DATE SAMPLED: 06/24/93  
DATE RECEIVED: 06/25/93  
REPORT DATE: 07/12/93

AEN LAB NO: 9306212-04A  
AEN JOB NO: 9306212  
DATE ANALYZED: 06/28/93  
INSTRUMENT: H

BTEX AND HYDROCARBONS (SOIL MATRIX)  
METHOD: EPA 8020, 5030 GCFID

COMPOUND	CAS #	CONCENTRATION (ug/kg)	REPORTING LIMIT (ug/kg)
Benzene	71-43-2	ND	5
Toluene	108-88-2	ND	5
Ethylbenzene	100-41-4	ND	5
Xylenes, Total	1330-20-7	ND	5
PURGEABLE HYDROCARBONS AS:			
Gasoline		ND mg/kg	0.2 mg/kg

ND = Not Detected



## ENVIRONMENTAL BIO-SYSTEMS

SAMPLE ID: MW2-25'  
CLIENT PROJ. ID: 083-246-01B  
DATE SAMPLED: 06/24/93  
DATE RECEIVED: 06/25/93  
REPORT DATE: 07/12/93

AEN LAB NO: 9306212-05A  
AEN JOB NO: 9306212  
DATE ANALYZED: 06/28-07/01/93  
INSTRUMENT: H

BTEX AND HYDROCARBONS (SOIL MATRIX)  
METHOD: EPA 8020, 5030 GCFID

COMPOUND	CAS #	CONCENTRATION (ug/kg)	REPORTING LIMIT (ug/kg)
Benzene	71-43-2	ND	5
Toluene	108-88-2	ND	5
Ethylbenzene	100-41-4	ND	5
Xylenes, Total	1330-20-7	ND	5

## PURGEABLE HYDROCARBONS AS:

Gasoline ND mg/kg 0.2 mg/kg

ND = Not Detected

## ENVIRONMENTAL BIO-SYSTEMS

SAMPLE ID: MW2-30'  
CLIENT PROJ. ID: 083-246-01B  
DATE SAMPLED: 06/24/93  
DATE RECEIVED: 06/25/93  
REPORT DATE: 07/12/93

AEN LAB NO: 9306212-06A  
AEN JOB NO: 9306212  
DATE ANALYZED: 06/28/93  
INSTRUMENT: H

BTEX AND HYDROCARBONS (SOIL MATRIX)  
METHOD: EPA 8020, 5030 GCFID

COMPOUND	CAS #	CONCENTRATION (ug/kg)	REPORTING LIMIT (ug/kg)
Benzene	71-43-2	ND	5
Toluene	108-88-2	ND	5
Ethylbenzene	100-41-4	ND	5
Xylenes, Total	1330-20-7	ND	5

## PURGEABLE HYDROCARBONS AS:

Gasoline ND mg/kg 0.2 mg/kg

ND = Not Detected

ENVIRONMENTAL BIO-SYSTEMS

SAMPLE ID: MW2-34.5'  
 CLIENT PROJ. ID: 083-246-01B  
 DATE SAMPLED: 06/24/93  
 DATE RECEIVED: 06/25/93  
 REPORT DATE: 07/12/93

AEN LAB NO: 9306212-07A  
 AEN JOB NO: 9306212  
 DATE ANALYZED: 06/28-07/02/93  
 INSTRUMENT: H

BTEX AND HYDROCARBONS (SOIL MATRIX)  
 METHOD: EPA 8020, 5030 GCFID

COMPOUND	CAS #	CONCENTRATION (ug/kg)	REPORTING LIMIT (ug/kg)
Benzene	71-43-2	ND	5
Toluene	108-88-2	ND	5
Ethylbenzene	100-41-4	ND	5
Xylenes, Total	1330-20-7	ND	5

PURGEABLE HYDROCARBONS AS:

Gasoline ND mg/kg 0.2 mg/kg

ND = Not Detected

## ENVIRONMENTAL BIO-SYSTEMS

SAMPLE ID: MW3-15'  
CLIENT PROJ. ID: 083-246-01B  
DATE SAMPLED: 06/24/93  
DATE RECEIVED: 06/25/93  
REPORT DATE: 07/12/93

AEN LAB NO: 9306212-09A  
AEN JOB NO: 9306212  
DATE ANALYZED: 06/28/93  
INSTRUMENT: H

BTEX AND HYDROCARBONS (SOIL MATRIX)  
METHOD: EPA 8020, 5030 GCFID

COMPOUND	CAS #	CONCENTRATION (ug/kg)	REPORTING LIMIT (ug/kg)
Benzene	71-43-2	ND	5
Toluene	108-88-2	ND	5
Ethylbenzene	100-41-4	ND	5
Xylenes, Total	1330-20-7	ND	5

## PURGEABLE HYDROCARBONS AS:

Gasoline ND mg/kg 0.2 mg/kg

ND = Not Detected

## ENVIRONMENTAL BIO-SYSTEMS

SAMPLE ID: MW3-30'  
CLIENT PROJ. ID: 083-246-01B  
DATE SAMPLED: 06/24/93  
DATE RECEIVED: 06/25/93  
REPORT DATE: 07/12/93

AEN LAB NO: 9306212-12A  
AEN JOB NO: 9306212  
DATE ANALYZED: 06/28/93  
INSTRUMENT: H

BTEX AND HYDROCARBONS (SOIL MATRIX)  
METHOD: EPA 8020, 5030 GCFID

COMPOUND	CAS #	CONCENTRATION (ug/kg)	REPORTING LIMIT (ug/kg)
Benzene	71-43-2	ND	5
Toluene	108-88-2	ND	5
Ethylbenzene	100-41-4	ND	5
Xylenes, Total	1330-20-7	ND	5
PURGEABLE HYDROCARBONS AS:			
Gasoline		ND mg/kg	0.2 mg/kg

ND = Not Detected

## QUALITY CONTROL DATA

DATE EXTRACTED: 07/02/93  
 DATE ANALYZED: 07/07/93  
 CLIENT PROJ. ID: 083-246-01B

AEN JOB NO: 9306212  
 SAMPLE SPIKED: 9306212-04A  
 INSTRUMENT: C

MATRIX SPIKE RECOVERY SUMMARY  
 TPH EXTRACTABLE SOILS  
 METHOD: EPA 3550 GCFID

ANALYTE	Spike Conc. (mg/kg)	Sample Result (mg/kg)	MS Result (mg/kg)	MSD Result (mg/kg)	Average Percent Recovery	RPD
Diesel	40.0	ND	24.4	27.4	64.8	11.6

## CURRENT QC LIMITS (Revised 05/15/92)

<u>Analyte</u>	<u>Percent Recovery</u>	<u>RPD</u>
Diesel	(44-106)	24

MS = Matrix Spike  
 MSD = Matrix Spike Duplicate  
 RPD = Relative Percent Difference  
 ND = Not Detected

## QUALITY CONTROL DATA

CLIENT PROJ. ID: 083-246-01B

AEN JOB NO: 9306212

INSTRUMENT: H

## SURROGATE STANDARD RECOVERY SUMMARY

METHOD: EPA 8020

(SOIL MATRIX)

Date Analyzed	SAMPLE IDENTIFICATION		SURROGATE RECOVERY (PERCENT)
	Client Id.	Lab Id.	Fluorobenzene
06/28/93	MW2-5'	01A	104.7
06/28/93	MW2-10'	02A	106.8
06/28/93	MW2-15'	03A	111.5
06/28/93	MW2-20'	04A	101.2
07/01/93	MW2-25'	05A	97.6
06/28/93	MW2-30'	06A	100.4
07/02/93	MW2-34.5'	07A	102.2
06/28/93	MW3-15'	09A	104.7
06/28/93	MW3-30'	12A	100.1

## CURRENT QC LIMITS

<u>ANALYTE</u>	<u>PERCENT RECOVERY</u>
Fluorobenzene	(70-115)

## QUALITY CONTROL DATA

DATE ANALYZED: 06/28/93  
 SAMPLE SPIKED: 9306147-01A  
 CLIENT PROJ. ID: 083-246-01B

AEN JOB NO: 9306212  
 INSTRUMENT: H

MATRIX SPIKE RECOVERY SUMMARY  
 METHOD: EPA 8020, 5030 GCFID  
 (SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Sample Result (ug/kg)	MS Result (ug/kg)	MSD Result (ug/kg)	Average Percent Recovery	RPD
Benzene	27.8	ND	27.9	28.4	101.3	1.8
Toluene	96.4	ND	96.2	96.8	100.1	0.6
Hydrocarbons as Gasoline	1000	ND	870	868	86.9	0.2

## CURRENT QC LIMITS (Revised 05/14/92)

<u>Analyte</u>	<u>Percent Recovery</u>	<u>RPD</u>
Benzene	(79.4-125.2)	9.8
Toluene	(84.4-119.3)	10.0
Gasoline	(53.7-124.2)	15.1

MS = Matrix Spike  
 MSD = Matrix Spike Duplicate  
 RPD = Relative Percent Difference  
 ND = Not Detected





**ENVIRONMENTAL BIO-SYSTEMS, INC.**

Innovative Solutions for a Better Environment

30028 Industrial Pkwy., S.W.

Suite C

Hayward, CA 94544

**CHAIN OF CUSTODY**

R-4.5-K

212.  
9306 ~~213~~

PROJECT NUMBER  
**083-24601B**

CLIENT  
**O'LAUGHLIN**

SITE  
**SUNOL**

COMPOSITE		ANALYSIS									
TPHg + BTEX	TPHd, TPHK										
X	X										
X	X										
X	X										
X	X										
X	X										
X	X										
X	X										
X	X										
X	X										

ALL SAMPLES TO BE ANALYZED USING  
METHODS AND DETECTION LIMITS  
ESTABLISHED BY REGION \_\_\_\_\_  
OF THE STATE WATER RESOURCES  
CONTROL BOARD.

INSTRUCTIONS:

SAMPLE I.D.	MATRIX	NUMBER OF CONTAINERS	COMPOSITE	TURNAROUND	SAMPLE CONDITION	LAB SAMPLE#
MWZ-5'	SOIL	1	X	STANDARD		01A
MWZ-10'	"	1	X	"		02A
MWZ-15'	"	1	X	"		03A
MWZ-20'	"	1	X	"		04A
MWZ-25'	"	1	X	"		05A
MWZ-30'	"	1	X	"		06A
MWZ-34.5'	"	1	X	"		07A

SAMPLING COMPLETED DATE **6/24/93** TIME **10:10** SAMPLING PERFORMED BY **D. SADOFF**

RELEASED BY **[Signature]** DATE **6/25/93** TIME **10:47** RECEIVED BY **[Signature]** DATE **6-25-93** TIME **10:47**

RELEASED BY **[Signature]** DATE **6-25-93** TIME **11:45** RECEIVED BY **[Signature]** DATE **6-25-93** TIME **1145**

RELEASED BY \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_ RECEIVED BY \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_

SHIPPED VIA \_\_\_\_\_ DATE SENT \_\_\_\_\_ TIME SENT \_\_\_\_\_ COOLER # \_\_\_\_\_



# American Environmental Network

## Certificate of Analysis

DOHS Certification: 1172

AIIA Accreditation: 94523 001

PAGE 1 OF 8

ENVIRONMENTAL BIO-SYSTEMS, INC.  
30028 INDUSTRIAL PKWY., S.W.  
SUITE C  
HAYWARD, CA 94544  
ATTN: DAVE SADOFF

REPORT DATE: 07/13/93

DATE SAMPLED: 07/01/93

DATE RECEIVED: 07/01/93

CLIENT PROJ. ID: 083-246-01B  
PROJECT NAME: O'LAUGHLIN

AEN JOB NO: 9307015

### PROJECT SUMMARY:

On July 1, 1993, this laboratory received six (6) water samples.

Per client request, three (3) samples were analyzed for organic parameters. Three (3) samples were placed on hold. Sample identification, methodologies, results and dates analyzed are summarized on the following pages.

All laboratory quality control parameters were found to be within established limits. Batch QC data is included at the end of this report.

If you have any questions, please contact Client Services at (510) 930-9090.

  
Larry Klein  
General Manager

Results FAXed 07/13/93

## ENVIRONMENTAL BIO-SYSTEMS, INC.

DATE SAMPLED: 07/01/93  
DATE RECEIVED: 07/01/93  
CLIENT PROJ. ID: 083-246-01B

REPORT DATE: 07/13/93  
AEN JOB NO: 9307015

---

Client Sample Id.	AEN Lab Id.	Extractable Hydrocarbons as Diesel (mg/L)	Extractable Hydrocarbons as Kerosene (mg/L)
MW1	01C	ND	0.3
MW2	02C	ND	ND
MW3	03C	ND	ND
Reporting Limit		0.05	0.05

EPA Method: 3510 GCFID

Instrument: C

Date Extracted: 07/08/93  
Date Analyzed: 07/10/93

ND = Not Detected

## ENVIRONMENTAL BIO-SYSTEMS

SAMPLE ID: MW1  
 CLIENT PROJ. ID: 083-246-01B  
 DATE SAMPLED: 07/01/93  
 DATE RECEIVED: 07/01/93  
 REPORT DATE: 07/13/93

AEN LAB NO: 9307015-01A  
 AEN JOB NO: 9307015  
 DATE ANALYZED: 07/06/93  
 INSTRUMENT: F

BTEX AND HYDROCARBONS (WATER MATRIX)  
 METHOD: EPA 8020, 5030 GC/FID

COMPOUND	CAS #	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Benzene	71-43-2	ND	0.5
Toluene	108-88-2	ND	0.5
Ethylbenzene	100-41-4	ND	0.5
Xylenes, Total	1330-20-7	ND	2

## PURGEABLE HYDROCARBONS AS:

Gasoline ND mg/L \* 0.4 mg/L

ND = Not Detected

\* Elevated reporting limit due to the presence of hydrocarbons heavier than those typically contained in gasoline.

## ENVIRONMENTAL BIO-SYSTEMS

SAMPLE ID: MW2  
CLIENT PROJ. ID: 083-246-01B  
DATE SAMPLED: 07/01/93  
DATE RECEIVED: 07/01/93  
REPORT DATE: 07/13/93

AEN LAB NO: 9307015-02A  
AEN JOB NO: 9307015  
DATE ANALYZED: 07/06/93  
INSTRUMENT: F

BTEX AND HYDROCARBONS (WATER MATRIX)  
METHOD: EPA 8020, 5030 GCFID

COMPOUND	CAS #	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Benzene	71-43-2	ND	0.5
Toluene	108-88-2	ND	0.5
Ethylbenzene	100-41-4	ND	0.5
Xylenes, Total	1330-20-7	ND	2

## PURGEABLE HYDROCARBONS AS:

Gasoline ND mg/L 0.05 mg/L

ND = Not Detected

## ENVIRONMENTAL BIO-SYSTEMS

SAMPLE ID: MW3  
CLIENT PROJ. ID: 083-246-01B  
DATE SAMPLED: 07/01/93  
DATE RECEIVED: 07/01/93  
REPORT DATE: 07/13/93

AEN LAB NO: 9307015-03A  
AEN JOB NO: 9307015  
DATE ANALYZED: 07/06/93  
INSTRUMENT: F

BTEX AND HYDROCARBONS (WATER MATRIX)  
METHOD: EPA 8020, 5030 GCFID

COMPOUND	CAS #	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Benzene	71-43-2	ND	0.5
Toluene	108-88-2	ND	0.5
Ethylbenzene	100-41-4	ND	0.5
Xylenes, Total	1330-20-7	ND	2

## PURGEABLE HYDROCARBONS AS:

Gasoline ND mg/L 0.05 mg/L

ND = Not Detected

## QUALITY CONTROL DATA

DATE EXTRACTED: 07/06/93  
 DATE ANALYZED: 07/06/93  
 CLIENT PROJ. ID: 083-246-01B

AEN JOB NO: 9307015  
 SAMPLE SPIKED: D.I. WATER  
 INSTRUMENT: C

MATRIX SPIKE RECOVERY SUMMARY  
 TPH EXTRACTABLE WATER  
 METHOD: EPA 3510 GCFID

ANALYTE	Spike Conc. (mg/L)	Sample Result (mg/L)	MS Result (mg/L)	MSD Result (mg/L)	Average Percent Recovery	RPD
Diesel	2.00	ND	1.77	1.74	87.8	1.7

## CURRENT QC LIMITS (Revised 06/22/92)

<u>Analyte</u>	<u>Percent Recovery</u>	<u>RPD</u>
Diesel	(45-103)	25

MS = Matrix Spike  
 MSD = Matrix Spike Duplicate  
 RPD = Relative Percent Difference  
 ND = Not Detected



## QUALITY CONTROL DATA

CLIENT PROJ. ID: 083-246-01B

AEN JOB NO: 9307015

INSTRUMENT: F

SURROGATE STANDARD RECOVERY SUMMARY  
METHOD: EPA 8020  
(WATER MATRIX)

Date Analyzed	SAMPLE IDENTIFICATION		SURROGATE RECOVERY (PERCENT)
	Client Id.	Lab Id.	Fluorobenzene
07/06/93	MW1	01A	95.0
07/06/93	MW2	02A	95.2
07/06/93	MW3	03A	94.3

## CURRENT QC LIMITS

<u>ANALYTE</u>	<u>PERCENT RECOVERY</u>
Fluorobenzene	(70-115)

## QUALITY CONTROL DATA

DATE ANALYZED: 07/06/93  
 SAMPLE SPIKED: 9307015-02A  
 CLIENT PROJ. ID: 083-246-01B

AEN JOB NO: 9307015  
 INSTRUMENT: F

MATRIX SPIKE RECOVERY SUMMARY  
 METHOD: EPA 8020, 5030 GCFID  
 (WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Average Percent Recovery	RPD
Benzene	11.9	ND	12.3	11.6	100.4	5.9
Toluene	41.6	ND	42.9	40.2	99.9	6.5
Hydrocarbons as Gasoline	500	ND	504	484	98.8	4.0

## CURRENT QC LIMITS (Revised 05/14/92)

<u>Analyte</u>	<u>Percent Recovery</u>	<u>RPD</u>
Benzene	(81.4-115.3)	10.2
Toluene	(85.3-112.4)	9.4
Gasoline	(72.0-119.4)	12.3

MS = Matrix Spike  
 MSD = Matrix Spike Duplicate  
 RPD = Relative Percent Difference  
 ND = Not Detected



**ENVIRONMENTAL BIO-SYSTEMS, INC.**

Innovative Solutions for a Better Environment

30028 Industrial Pkwy., S.W.

Suite C

Hayward, CA 94544

**CHAIN OF CUSTODY**

93-7015

PROJECT NUMBER **083-246-01B**

CLIENT **O'Laughlin**

SITE **11272 Main STREET**  
**Sanol CA**

COMPOSITE	ANALYSIS					
	TPH <sub>g</sub> + BTEX	TPHD	TPHE			
	X	X	X			
	X	X	X			
	X	X	X			
			HOLD			
			HOLD			
			HOLD			

ALL SAMPLES TO BE ANALYZED USING METHODS AND DETECTION LIMITS ESTABLISHED BY REGION \_\_\_\_\_ OF THE STATE WATER RESOURCES CONTROL BOARD.

INSTRUCTIONS:

Results to have info

SAMPLE I.D.	MATRIX	NUMBER OF CONTAINERS	TURNAROUND	SAMPLE CONDITION	LAB SAMPLE#
MW1	WATER		normal	6-6	01ABCD
MW2	-"-		-"-		02ABCD
MW3	-"-		-"-		03ABCD
EQ1	-"-				04AB
EQ2	-"-				05AB
EQ3	-"-			↓	06AB

SAMPLING COMPLETED **7/1/93 15:10** | DATE | TIME | SAMPLING PERFORMED BY **Les M. Golub**

RELEASED BY **L. M. Golub** | DATE **7/1/93** | TIME **19:05** | RECEIVED BY \_\_\_\_\_ | DATE | TIME

RELEASED BY \_\_\_\_\_ | DATE | TIME | RECEIVED BY \_\_\_\_\_ | DATE | TIME

RELEASED BY \_\_\_\_\_ | DATE | TIME | RECEIVED BY **Deise Harrington** | DATE **7/1/93** | TIME **19:05**

SHIPPED VIA \_\_\_\_\_ | DATE SENT | TIME SENT | COOLER #

30 July 1993

**Mr. Jim O'Laughlin**  
Former Chevron Station  
11727 Main Street, Sunol, California

Appendix E

**APPENDIX E:**  
**SURVEYOR'S MAP**

July 1, 1993


#4076  
 Elevations of Monitoring Wells  
 for Environmental Bio-Systems, Inc.  
 @ 11727 Main Street - Sunol

Attn: Dave Sattoff  
 (dolphin rock)

Benchmark - "STATION 143 USGS" - A copper nail and washer stamped "BM USGS" 70' east of the Tee junction of Niles Canyon Road & Main St on top of the west end of the southerly sidewalk of concrete bridge # 33-43 over Arroyo Del Laguna  
 Elevation = 243.032 NGVD 1974

TBM - Top of Fire hydrant on the southerly side of Main St on the extension E of Bond Street  
 Elevation = 248.97

Well #	@ Casing Lid	Top/PVC easterly rim
MW-1	248.90	248.74 top 2" PVC
MW-2	249.22	249.08 top 2" PVC
MW-3	247.65	247.39 top 2" PVC

Legend:  = Found Monitoring Well w/ 2" PVC

Note: Elevations taken on @ Lid & top of 2" PVC at black mark on easterly rim.

