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73 Digital Drive
Novato, CA 94949
Phone: (415) 382-7400
Fax: (415) 382-7415

**REPORT
ADDITIONAL SUBSURFACE ENVIRONMENTAL INVESTIGATION**

at

Former Chevron Service Station No. 9-2621
7667 Amador Valley Boulevard
Dublin, California

Prepared for:

Mr. Kenneth Kan
Chevron U.S.A. Products Company
P.O. Box 5004
San Ramon, CA 94583

Prepared by:

RESNA Industries Inc.
73 Digital Drive
Novato, CA 94949

Erich A. Neupert
Erich A. Neupert
Staff Geologist

Michael L. Siembieda
Michael L. Siembieda, R.G. 4007
Geoscience Manager



November 23, 1993

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Chevron U.S.A. Products Company

1.0 INTRODUCTION

At the request of Chevron U.S.A. Products Company (Chevron), RESNA Industries (RESNA) performed an additional subsurface environmental investigation at Former Chevron Service Station No. 9-2621 located at 7667 Amador Valley Boulevard in Dublin, California. The site is on the southwest corner of the intersection of Amador Valley Boulevard and Starward Drive. The approximate location of the site is shown on the Site Vicinity Map (Plate 1). The purpose of the investigation was to evaluate soil and groundwater conditions at the site, and offsite to the north and east.

Work RESNA conducted for the investigation included:

- Drilling two onsite and two offsite soil borings (B-5 through B-8) into first encountered groundwater at locations selected by Chevron.
- Collecting soil samples from the borings at approximately five-foot intervals, changes in lithology, where subjective evidence of petroleum hydrocarbons were observed, and just above first encountered groundwater.
- Constructing two-inch-diameter monitoring wells (MW-1 through MW-4) in the borings.
- Developing, purging and sampling the monitoring wells.

- Submitting selected soil and groundwater samples for analysis to Chevron's contracted laboratory for total petroleum hydrocarbons as gasoline (TPHg), and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Additionally, one soil sample from onsite boring B-6 was submitted for analysis of total organic carbon (TOC).
- Contracting a licensed land surveyor to measure the top-of-casing elevations of the wells relative to mean sea level.
- Evaluating the direction of groundwater flow and gradient beneath the site.
- Performing a survey of water wells within a one mile radius of the site.
- Preparing a report presenting our findings.

1.1 Site Description

Former Chevron Service Station No. 9-2621 is located at 7667 Amador Valley Boulevard in Dublin, California. The site is currently occupied by the Amador Valley Medical Center and is on the southwest corner of the intersection of Amador Valley Boulevard and Starward Drive. The approximate locations of the former station building, pump islands, and gasoline underground storage tanks (USTs) are shown on the generalized site plan (Plate 2).

2.0 BACKGROUND

Based on information provided by Chevron, RESNA understands that from approximately 1960 to 1976, Chevron operated a service station at the site. In 1976 Chevron removed the service station building, underground storage tanks, dispenser islands, and associated piping. In 1992 RESNA Industries drilled four soil borings at the site (RESNA, November 1992. Project No. F1036.01). Residual hydrocarbons were detected in the soil beneath the site. In March 1993, Pacific Environmental Group (PEG) collected soil and groundwater samples at six locations onsite. Hydrocarbons were not detected in soil samples collected from the borings. Hydrocarbons were detected in groundwater samples collected from the temporary well locations, except from the temporary well located adjacent to the former waste oil underground storage tank. (PEG, April 26, 1993. Project 325-35.01).

3.0 FIELD INVESTIGATION

3.1 Site-Specific Health and Safety Plan/ Permitting

RESNA prepared a Site-Specific Health and Safety Plan required by the Occupational Health and Safety Administration (OSHA) Standard "Hazardous Waste Operations and Emergency Response" guidelines (29 CFR 1910.120). The Site-Specific Health and Safety Plan (HSP) was prepared by RESNA personnel, following a review of site conditions. The HSP was reviewed by the project manager, RESNA field personnel, and subcontractor personnel before beginning field operations at the site.

All applicable permits pertaining to drilling soil borings and installing groundwater monitoring wells were obtained from the Zone 7 Water Agency, and the City of Dublin. Copies of permits obtained by RESNA are in Appendix A.

3.2 Soil Borings and Sampling

At Chevron's request, a geologist from RESNA was at the site on September 21, 1993 to observe Kvilhaug Well Drilling and Pump of Concord, California drill four soil borings (B-5 through B-8) into first encountered groundwater at locations selected by Chevron, using a Mobile B-53 truck-mounted drill rig equipped with 8-inch hollow-stem augers, and install 2-inch-diameter monitoring wells (MW-1 through MW-4) in the borings. The locations of the wells are shown on Plate 2. During field operations, RESNA personnel followed RESNA's standard operating procedures for drilling soil borings and installing groundwater monitoring wells. RESNA's standard operating procedures are presented in Appendix B.

During drilling of borings B-5 through B-8, soil samples were collected at approximately five-foot intervals, at obvious changes in sediment type, where subjective evidence of petroleum hydrocarbons was observed, and just above first encountered groundwater. Samples were collected using a 2.0 inch diameter California-modified split-spoon sampler, lined with cleaned 2-inch-diameter by 6-inch-long brass sample tubes. At the selected sampling depths the sampler was

driven 18 inches ahead of the augers. Soil samples were screened in the field using a photoionization detector (PID), and readings were recorded on the boring logs. One sample from each sample interval was sealed with aluminum foil, capped, secured with teflon tape, labeled, placed on ice in an insulated container, and delivered under chain-of-custody protocol to a California-certified laboratory selected by Chevron for chemical analysis. Soil sampling equipment was decontaminated with a solution of phosphate-free soap between sampling to minimize the possibility of cross-contamination. The field geologist logged the earth materials encountered during drilling using the Unified Soil Classification System. Logs of borings are in Appendix C. Drill cuttings from each boring were placed on plastic sheeting pending characterization, and were subsequently removed from the site for disposal by Chevron's contractor, Balch Petroleum, of Milpitas, California.

3.3 Monitoring Well Construction

Monitoring wells MW-1 through MW-4 were constructed of schedule 40, flush-threaded, 2-inch diameter blank casing and well screen with 0.020-inch slots. The well screen was installed between approximately 3 and 18 feet below grade in each boring. A sand filter was placed around the well screen to a height of approximately six inches above the top of the screen. A hydrated bentonite plug about six inches thick was placed above the sand pack and the remaining annular space was filled with a cement/bentonite slurry to grade. The wellhead was protected by a locking cap and a traffic-rated utility box with a water-tight, bolted lid. Well construction details are presented in the boring logs (Appendix C).

3.4 Monitoring Well Development and Sampling

The monitoring wells were developed by surging and bailing on September 22, 1993. Well development removes fine-grained sediments from the well and sand pack, produces a relatively evenly distributed sand filter pack, and improves well efficiency. Prior to well development, a RESNA technician used a bailer to collect groundwater samples for subjective analysis of hydrocarbon sheen or free product. No subjective evidence of hydrocarbons was noted in the groundwater removed from monitoring wells MW-1 through MW-4 prior to development.

Following subjective analysis, the technician bailed approximately ten well volumes of groundwater from each well. Well development water was placed into a Department of Transportation (DOT) approved water trailer and transported to Chevron's Richmond, California refinery for recycling.

On September 23, 1993, a RESNA technician measured depths-to-water in each newly installed well to an accuracy of 0.01 foot using an interface probe. The interface probe incorporates an optical sensor and electrical conductivity probe which distinguishes between water and petroleum products. No free product was detected in monitoring wells MW-1 through MW-3. Before collecting groundwater samples from monitoring wells MW-1 through MW-3, RESNA personnel purged approximately three well casing volumes of water from the wells. Following groundwater recovery, groundwater samples were collected and placed in appropriate containers using a Teflon bailer cleaned with a solution of Alconox and rinsed with tap water and distilled water. Samples were labeled and placed on ice in an insulated container for delivery under chain-of-custody protocol to a Chevron contracted laboratory. Purge water generated during groundwater sampling was placed into a DOT approved water trailer and transported to Chevron's Richmond, California refinery for disposal.

4.0 WATER WELL SURVEY

On October 7, 1993, a RESNA geologist conducted a survey of water wells within a one mile radius of the site by searching the State of California, Department of Water Resources records of water wells in the site vicinity. The report of the water well survey is included in Appendix D.

5.0 SITE CONDITIONS

5.1 Geology and Hydrogeology

During drilling of borings B-5 through B-8, unconsolidated sediments consisting of clay, clayey-silt, silty-gravel and gravely-sand were encountered. Descriptions of the materials encountered are shown on the boring logs (Appendix C). Groundwater was first encountered during drilling at approximate depths ranging between 7 and 9 feet.

5.2 Groundwater Gradient

The elevation of each newly installed wellhead was surveyed to within 0.01 foot with respect to a known benchmark and mean sea level by Ron Archer Civil Engineering of Pleasanton, California, a licensed land surveyor. Well survey data are in Appendix E. These data were combined with the depths to groundwater measured on September 23, 1993 to evaluate the elevation of the groundwater surface in each well and the groundwater gradient beneath the site. A map of the potentiometric surface at the site is presented in Plate 3. Data used to compile the Potentiometric Map are presented in Table 1. Based on these data, the interpreted groundwater flow direction at the site is to the east. The evaluated hydraulic gradient on September 23, 1993 was approximately 0.007.

6.0 LABORATORY ANALYSES

Selected soil samples collected from each boring were submitted to Chevron's contract laboratory for analysis for total petroleum hydrocarbons as gasoline (TPHg) using modified Environmental Protection Agency (EPA) Method 8015, and benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8020. Additionally, one sample from onsite boring B-6 was analyzed for total organic carbon (TOC) using EPA Method 415.1.

Groundwater samples collected from wells MW-1 through MW-4 were analyzed for TPHg and using EPA Modified Method 8015, and BTEX using EPA Method 8020.

7.0 ANALYTICAL RESULTS

7.1 Soil

Results of soil samples analyses are summarized in Table 2. Laboratory analytical results are included in Appendix F. Concentrations of total petroleum hydrocarbons as gasoline (TPHg) and benzene, ethylbenzene, and total xylenes were not detected in soil samples collected from borings B-5 through B-8. Concentrations of toluene were not detected in soil samples collected from

borings B-6 through B-8. Concentrations of toluene, just above the detection limit, were detected in soil samples collected from boring B-5. Concentrations of total organic carbon (TOC) were detected in the soil sample collected from boring B-6.

7.2 Groundwater

Results of groundwater analyses are summarized in Table 3. TPHg and BTEX were not detected in water samples collected from monitoring wells MW-1 through MW-4.

7.0 LIMITATIONS

This report was prepared in accordance with generally accepted standards of environmental geological practice in California at the time this investigation was performed. This investigation was conducted solely for the purpose of evaluating environmental conditions of soil and ground water beneath the site. No soil engineering or geotechnical recommendations are implied or should be inferred. Evaluation of the geologic conditions at the site for the purpose of this investigation is made from a limited number of observation points. Subsurface conditions may vary away from the data points available.

8.0 REFERENCES

United States Geological Survey, 1980. Dublin, California. 7.5-Minute Topographic Quadrangle Map.

RESNA Industries. November 1992. Phase II Investigation at Amador Valley Medical Center (Former Chevron Service Station 9-2621), 7667 Amador Valley Boulevard, Dublin, California. Project No. F1036.01.

Pacific Environmental Group, Inc. April 26, 1993. Report: Soil and Groundwater Investigation at Former Chevron Service Station 9-2621, 7667 Amador Valley Boulevard at Starward Drive, Dublin, California. Project 325-35.01.

RESNA Industries. August 8, 1993. Site Safety Plan: Soil Boring and Monitoring Well Installation at Former Chevron Service Station 9-2621, 7667 Amador Valley Boulevard, Dublin, California. 170111.01SSP.

TABLES

Table 2

SOIL ANALYTICAL RESULTS
Former Chevron Service Station No. 9-2621
7667 Amador Valley Boulevard
Dublin, California

Sample	Date	TPHg	B	T	E	X	TOC
S-3.5-B5	9/21/93	<1	<0.005	0.006	<0.005	<0.015	NA
S-6.5-B5	9/21/93	<1	<0.005	0.006	<0.005	<0.015	NA
S-5.3-B6	9/21/93	<1	<0.005	<0.005	<0.005	<0.015	1,800
S-4.7-B7	9/21/93	<1	<0.005	<0.005	<0.005	<0.015	NA
S-3.5-B8	9/21/93	<1	<0.005	<0.005	<0.005	<0.015	NA
S-6.3-B8	9/21/93	<1	<0.005	<0.005	<0.005	<0.015	NA

Notes:

All results in parts per million (ppm)

- S = Soil sample
- 6.5 = Sample depth in feet
- B-1 = Boring 1
- TPHg = Total petroleum hydrocarbons as gasoline.
- TOC = Total organic carbon
- B = Benzene
- T = Toluene
- E = Ethylbenzene
- X = Total xylenes
- < = Less than indicated detection limit established by the laboratory

Table 1

GROUNDWATER ELEVATION DATA
 Former Chevron Service Station No. 9-2621
 7667 Amador Valley Boulevard
 Dublin, California

WELL NUMBER	DATE MEASURED	TOC	DTW	ELEV./P.S.
MW-1	9-23-93	346.73	6.62	340.11
MW-2	9-23-93	348.41	8.11	340.30
MW-3	9-23-93	347.14	7.04	340.10
MW-4	9-23-93	343.52	5.12	338.40

Notes:

- TOC = Top-of-Casing elevation feet above sea level (feet)
- DTW = Depth to Water (feet)
- ELEV./P.S. = Groundwater/Potentiometric Surface elevation above mean sea level (feet)

Table 3

GROUNDWATER ANALYTICAL RESULTS
 Former Chevron Service Station No. 9-2621
 7667 Amador Valley Boulevard
 Dublin, California

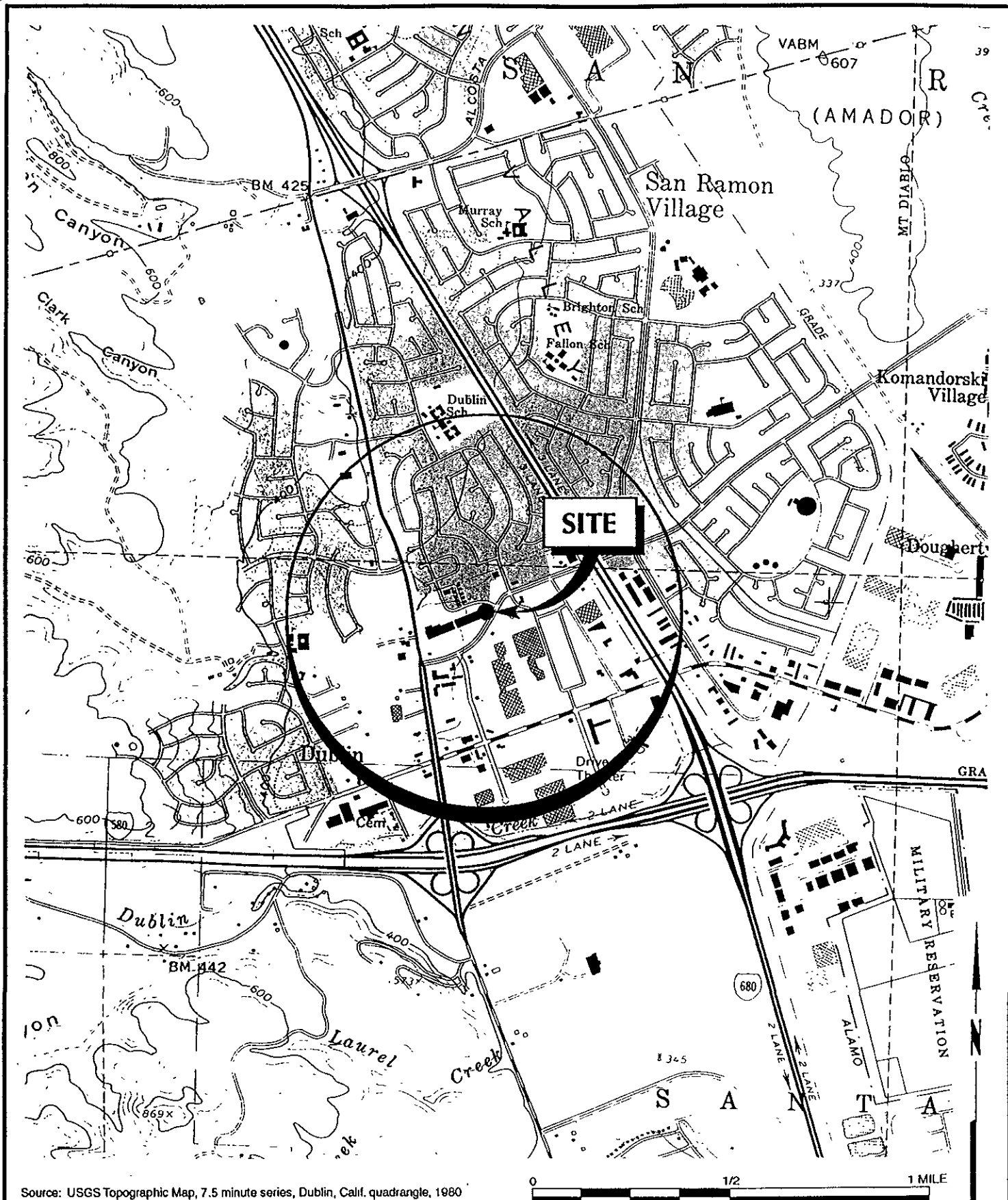
Sample Number	Date Sampled	TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes
W-6-MW1	9/23/93	<50	<0.5	<0.5	<0.5	<1.5
W-8-MW2	9/23/93	<50	<0.5	<0.5	<0.5	<1.5
W-7-MW3	9/23/93	<50	<0.5	<0.5	<0.5	<1.5
W-5-MW4	9/23/93	<50	<0.5	<0.5	<0.5	<1.5
TB-LB	9/23/93	<50	<0.5	<0.5	<0.5	<1.5

Notes:

All results in parts per billion (ppb)

- W = Water sample
- 5 = Water level elevation
- MW1 = Monitoring Well MW-1
- TPHg = Total petroleum hydrocarbons as gasoline.
- < = Less than detection limit established by the laboratory
- TB-LB = Travel blank

PLATES



Source: USGS Topographic Map, 7.5 minute series, Dublin, Calif. quadrangle, 1980

RESNA

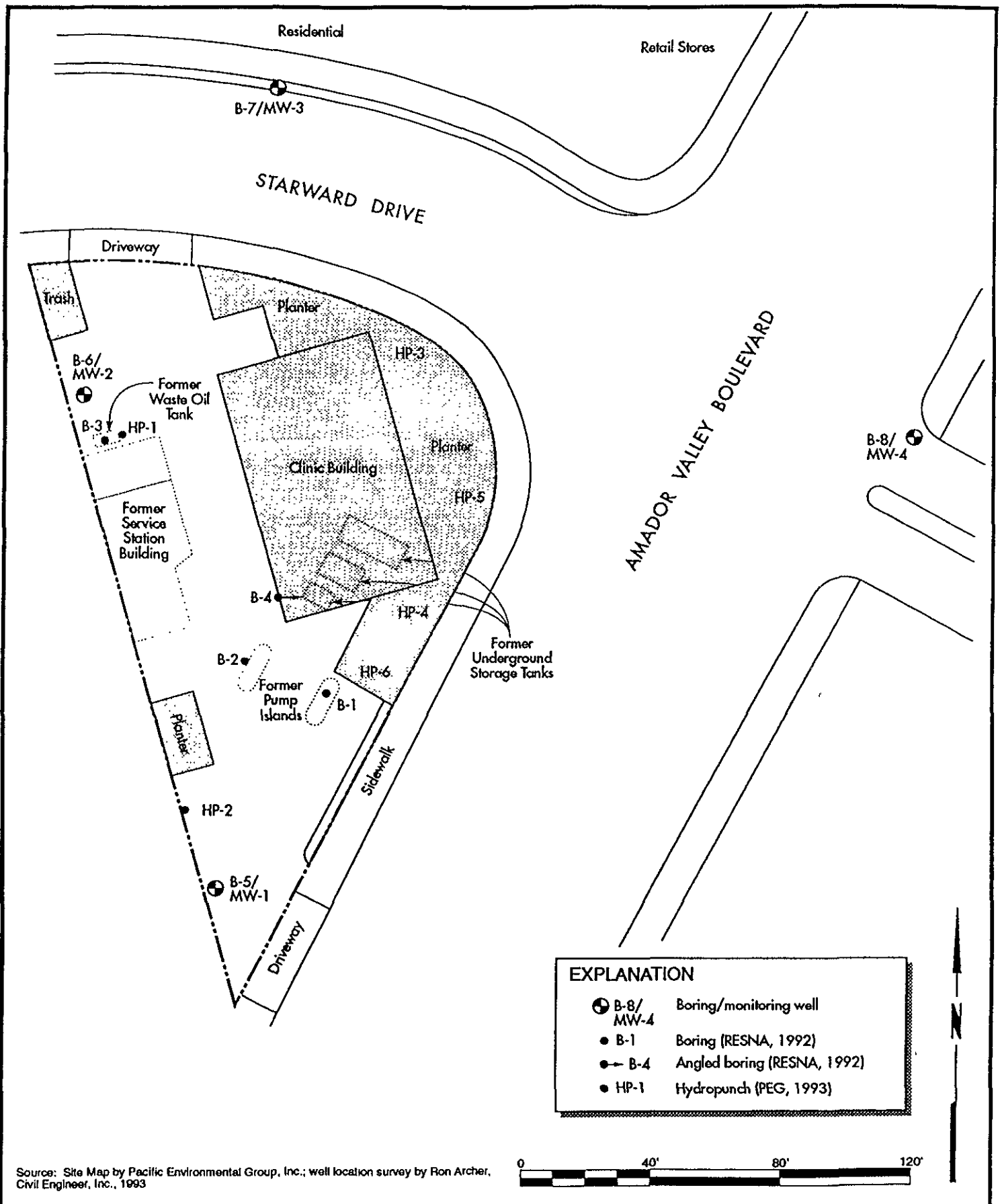
PROJECT NO. 170111.01

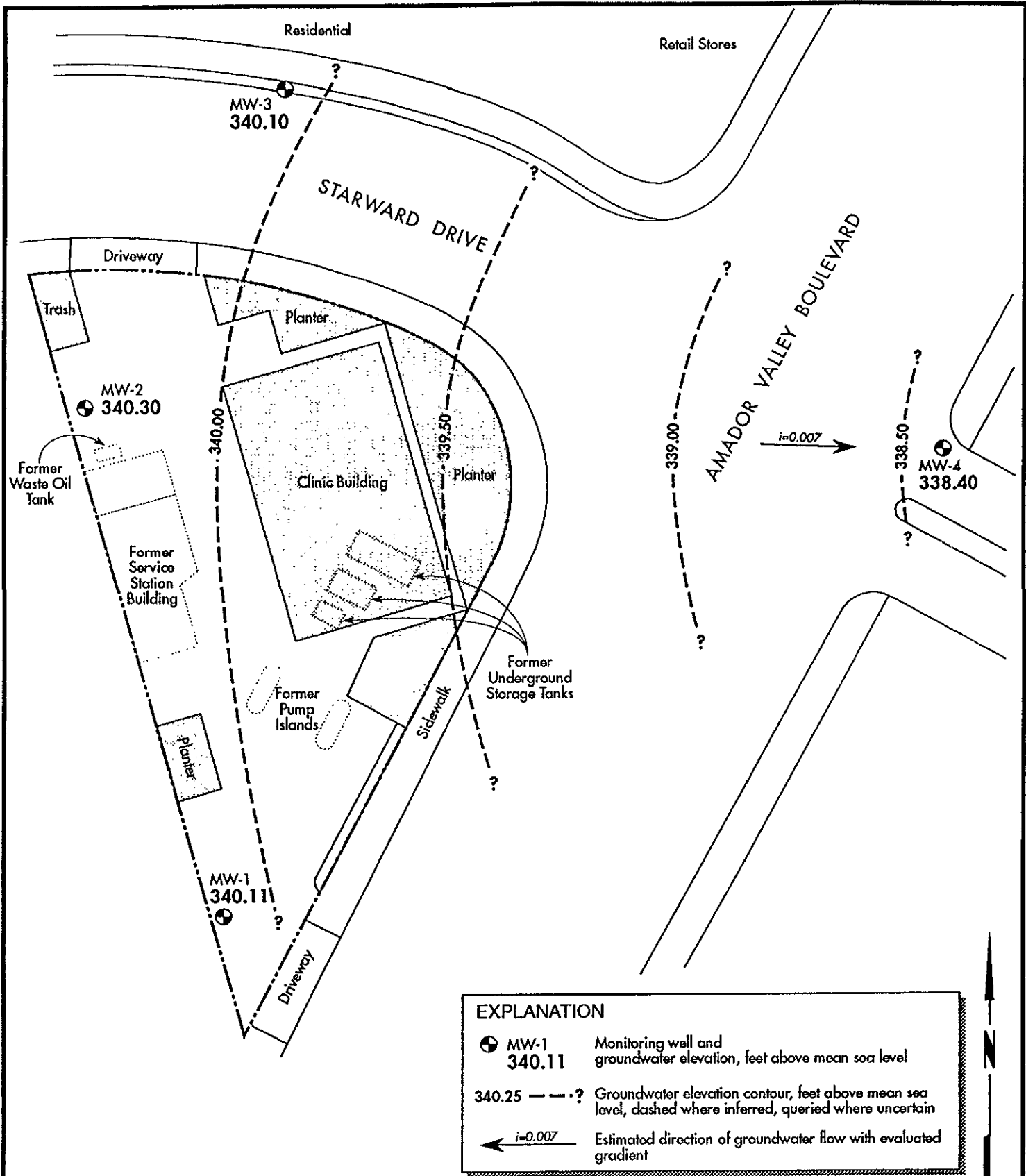
6/93

SITE VICINITY MAP
 Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

PLATE

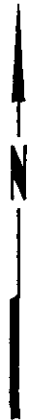
1





EXPLANATION	
MW-1 340.11	Monitoring well and groundwater elevation, feet above mean sea level
340.25 - - - ?	Groundwater elevation contour, feet above mean sea level, dashed where inferred, queried where uncertain
$i=0.007$	Estimated direction of groundwater flow with evaluated gradient

Source: Site Map by Pacific Environmental Group, Inc.; well location survey by Ron Archer, Civil Engineer, Inc., 1993



RESNA

PROJECT NO. 170111.01 10/93

POTENTIOMETRIC SURFACE MAP
 September 23, 1993
 Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

PLATE
3

APPENDIX A

PERMITS



ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588

VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT

7667 Amador Valley Boulevard
Dublin Calif

PERMIT NUMBER 93406

LOCATION NUMBER _____

CLIENT

Name Chevron
Address 2410 Camino Rd. Voice _____
City San Ramon Ca. Zip 94583

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT

Name RESNA Industries Fax (415) 382-7400
Address 73 Digital Dr. Voice _____
City Novato Ca. Zip 94949-5704

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.

TYPE OF PROJECT

Well Construction	Geotechnical Investigation
Cathodic Protection _____	General _____
Water Supply _____	Contamination <input checked="" type="checkbox"/>
Monitoring <input checked="" type="checkbox"/>	Well Destruction _____

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 and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

PROPOSED WATER SUPPLY WELL USE

Domestic _____	Industrial _____	Other _____
Municipal _____	Irrigation _____	

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.

DRILLING METHOD:

Mud Rotary _____	Air Rotary _____	Auger <input checked="" type="checkbox"/>
Cable _____	Other _____	

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

DRILLER'S LICENSE NO. CS7 482390

E. WELL DESTRUCTION. See attached.

WELL PROJECTS

Drill Hole Diameter <u>8</u> in.	Maximum _____
Casing Diameter <u>2</u> in.	Depth <u>15</u> ft.
Surface Seal Depth <u>3</u> ft.	Number <u>4</u>

GEOTECHNICAL PROJECTS

Number of Borings <u>4</u>	Maximum _____
Hole Diameter <u>2</u> in.	Depth <u>45</u> ft.

ESTIMATED STARTING DATE 8/3/94

ESTIMATED COMPLETION DATE 8/30/94

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

Approved

Wyman Hong
Wyman Hong

Date 26 Jul 94

APPLICANT'S SIGNATURE

Austin Lowe Date 7/16/93

(Copy)

JUL 30 '93 J.M.M.

CITY OF DUBLIN
PUBLIC WORKS DEPARTMENT

100 Civic Plaza
Dublin, CA 94568
(510) 833-6630

AUG 18 1993 JP

ENCROACHMENT PERMIT

PERMIT TO DO WORK IN ACCORDANCE WITH THE CITY OF DUBLIN MUNICIPAL CODE CHAPTER 7.04 AND ANY SPECIAL REQUIREMENTS SHOWN OR LISTED HEREIN.

Application/Permittee: _____ Permit Number: 93-53
Name: KENNETH KAN-CHEVRON U.S.A. PRODUCTS COMPANY Receipt No. 0518
Address: 2410 CAMINO RAMON, P.O. Box 5004 Fee: \$ 90.00
SAN RAMON, CA 94583-0804 Bond: \$ 2,000.00 Surety
Phone: 510 842-8752 OR 510 842-9500

*** PLEASE READ THIS PERMIT CAREFULLY. KEEP IT AT THE WORK SITE. TO ARRANGE FOR INSPECTION, PHONE 833-6630 AT LEAST 48 HOURS BEFORE YOU START WORK.

JOB LOCATION 7667 AMADOR VALLEY BLVD., DUBLIN, CALIFORNIA 94568

DESCRIPTION OF WORK: REFER TO RESNA JULY 28, 1993 ADDITIONAL ENVIRONMENTAL ASSESSMENT WORK PLAN.

USA Identification Number: 232152-00 (NOTE: PLEASE PROVIDE NUMBER)

Length of Excavation _____ l.f. Width _____ l.f. Depth _____ ft.

ATTENTION IS DIRECTED TO THE GENERAL PROVISIONS PRINTED ON THE REVERSE SIDE OF THIS PERMIT AND TO THE FOLLOWING SPECIAL REQUIREMENTS (To be filled in by Public Works Inspection Department):

PERMITTEE SHALL PROVIDE AND KEEP CURRENT A CERTIFICATE OF PUBLIC LIABILITY AND WORKERS' COMPENSATION INSURANCE WHICH NAMES THE CITY OF DUBLIN AND ITS EMPLOYEES AND AGENTS AS ADDITIONAL INSUREDS.

Worksites left in an unsafe condition will be secured by the City Maintenance Department and the cost charged to the permittee.

*Traffic control shall be to Caltrans standards.
Working hours 9:00 a.m. to 3:30 p.m.*

of the work permitted and done by permittee under a permit...
under said permit in respect to maintenance and encroachment. The permittee shall protect and indemnify the City of Dublin, its officers and employees, and save them harmless in every way from all action by law for damage or injury to persons or property that may arise out of or be occasioned in any way because of his operations as provided in this permit.

Signature of Permittee

By: *Kenneth Lou for Chevron U.S.A. Products Company*
Date: *08-09-93*

City Engineer

By: *[Signature]*
Date of Issue: *8/11/93*

Work Completed: _____

Inspector: _____

DPW - 001

APPENDIX B

FIELD PROCEDURES

FIELD PROTOCOLS

The following presents RESNA Industries' field protocol for a typical site investigation involving gasoline hydrocarbon-impacted soil and/or groundwater.

Site Safety Plan

The Site Safety Plan describes the safety requirements for the evaluation of gasoline hydrocarbons in soil, groundwater, and the vadose-zone at the site. The site Safety Plan is applicable to personnel of RESNA Industries and its subcontractors. RESNA Industries personnel and subcontractors of RESNA Industries scheduled to perform the work at the site are briefed on the contents of the Site Safety Plan before work begins. A copy of the Site Safety Plan is available for reference by appropriate parties during the work. A site Safety Officer is assigned to the project.

Soil Borings

Prior to the drilling of borings and construction of monitoring wells, permits are acquired from the appropriate regulatory agency. In addition to the above-mentioned permits, encroachment permits from the City or State are acquired if drilling of borings offsite on City or State property is necessary. Copies of the permits are included in the appendix of the project report. Prior to drilling, Underground Service Alert (USA) is notified of our intent to drill, and known underground utility lines and structures are approximately marked.

The borings are drilled by a truck-mounted drill rig equipped with 8- or 10-inch-diameter, solid-stem or hollow-stem augers. Other methods such as rotary or casing hammer may be used if special conditions are encountered. The augers, sampling equipment and other equipment that comes into contact with the soil are steam-cleaned prior to drilling each boring to minimize the possibility of cross-contamination. Sampling equipment is cleaned with a trisodium phosphate solution and rinsed with clean water between samples. After drilling the borings, monitoring wells are constructed in the borings, or neat-cement grout with bentonite is used to backfill the borings to the ground surface.

Borings for groundwater monitoring wells are drilled to a depth of no more than 20 feet below the depth at which a saturated zone is first encountered, or a short distance into a stratum beneath the saturated zone which is of sufficient texture, moisture, and consistency to be judged as a perching layer by the field geologist, whichever is shallower. Drilling into a deeper aquifer below the shallowest aquifer is begun only after a conductor casing is properly installed and allowed to set, to seal the shallow aquifer.

Drill Cuttings

Drill cuttings subjectively evaluated as containing gasoline hydrocarbons at levels greater than 100 parts per million (ppm) are separated from those subjectively evaluated as containing gasoline hydrocarbons at levels less than 100 ppm. Evaluation is based either on subjective evidence of soil discoloration, or on measurements made using a field calibrated OVM. Readings are taken by placing a soil sample into a ziplock-type plastic bag and allowing volatilization to occur. The intake probe of the OVM is then inserted into the headspace created in the plastic bag immediately after opening it. The drill cuttings from the borings are placed in labeled 55-gallon drums approved by the Department of Transportation, or on plastic at the site, and covered with plastic. The cuttings remain the responsibility of the client.

Soil Sampling in Borings

Soil samples are collected at no greater than 5-foot intervals from the ground surface to the total depth of the borings. The soil samples are collected by advancing the boring to a point immediately above the sampling depth, and then driving a California-modified, split-spoon sampler containing brass sleeves through the hollow center of the auger into the soil. (A standard penetrometer, which does not contain liners, may be used to collect samples when laboratory analysis for volatile components is not an issue. The sampler and brass sleeves are laboratory-cleaned, steam-cleaned, or washed thoroughly with Alconox® and water, prior to each use. The sampler is driven with a standard 140-pound hammer repeatedly dropped 30 inches. The number of blows to drive the sampler each successive six inches are counted and recorded to evaluate the relative consistency of the soil. When necessary, the sampler may be pushed by the drill rig hydraulics. In this case, the pressure exerted (in pounds per square inch) is recorded.

The samples selected for laboratory analysis are removed from the sampler and quickly sealed in their brass sleeves with aluminum foil, plastic caps, and plastic zip-lock bags or aluminized duct tape. The samples are then labeled, promptly placed in iced storage, and delivered to a laboratory certified by the State of California to perform the analyses requested.

One of the samples in brass sleeves not selected for laboratory analysis at each sampling interval is tested in the field using an OVM that is field calibrated at the beginning of each day it is used. This testing is performed by inserting the intake probe of the OVM into the headspace in the plastic bag containing the soil sample as described in the Drill Cuttings section above. The OVM readings are presented in Logs of Borings included in the project report.

Logging of Borings

A geologist is present to log the soil cuttings and samples using the Unified Soil Classification System. Samples not selected for chemical analysis, and the soil in the sampler shoe, are extruded in the field for inspection. Logs include texture, color, moisture, plasticity, consistency, blow counts, and any other characteristics noted. Logs also include subjective evidence for the presence of gasoline hydrocarbons; such as soil staining, noticeable or obvious product odor, and OVM readings.

Sampling of Stockpiled Soil

One composite soil sample is collected for each 50 cubic yards of stockpiled soil, and for each individual stockpile composed of less than 50 cubic yards. Composite soil samples are obtained by first evaluating relatively high, average, and low areas of hydrocarbon concentration by digging approximately one to two feet into the stockpile and placing the intake probe of a field calibrated OVM against the surface of the soil; and then collecting one sample from the "high" reading area, and three samples from the "average" areas. Samples are collected by removing the top one to two feet of soil, then driving laboratory-cleaned brass sleeves into the soil. The samples are sealed in the sleeves using aluminum foil, plastic caps, and plastic zip-lock bags or aluminized duct tape; labeled; and promptly placed in iced storage for transport to the laboratory, where compositing is performed.

Monitoring Well Construction

Monitoring wells are constructed in selected borings using clean 2- or 4-inch-diameter, thread-jointed, Schedule 40 polyvinyl chloride (PVC) casing. No chemical cements, glues, or solvents are used in well construction. Each casing bottom is sealed with a threaded end-plug, and each casing top with a locking plug. The screened portions of the wells are constructed of machine-slotted PVC casing with 0.020-inch-wide (typical) slots for initial site wells. Slot size for subsequent wells may be based on sieve analysis and/or well development data. The screened sections in groundwater monitoring wells are placed to allow monitoring during seasonal fluctuations of groundwater levels.

The annular space of each well is backfilled with No. 2 by 12 sand or similar sorted sand (groundwater monitoring wells), or pea gravel (vapor extraction wells) to approximately two feet above the top of the screened casing for initial site wells. The sand pack grain size for subsequent wells may be based on sieve analysis and/or well development data. A 1- to 2-foot-thick bentonite plug is placed above the sand as a seal against cement entering the filter pack. The remaining annulus is then backfilled with a slurry of water, neat cement, and bentonite to approximately one foot below the ground surface.

An aluminum utility box with a PVC apron is placed over each wellhead and set in concrete placed flush with the surrounding ground surface. Each wellhead cover has a seal to protect the monitoring well against surface-water infiltration and requires a special wrench to open. The design discourages vandalism and reduces the possibility of accidental disturbance of the well.

Groundwater Monitoring Well Development

The monitoring wells are developed by bailing or over-pumping and surge-block techniques. The wells are either bailed or pumped, allowed to recharge, and bailed or pumped again until the water removed from the wells is determined to be clear. Turbidity measurements (in NTUs) are recorded during well development and are used in evaluating well development. The development method used, initial turbidity measurement, volume of water removed, final turbidity measurement, and other pertinent field data and observations are recorded. The wells are allowed to equilibrate for at least 48 hours after development prior to sampling. Water generated by well development is stored in 17E Department of Transportation (DOT) 55-gallon drums on site, and remains the responsibility of the client.

Groundwater Sampling

The static water level in each well is measured to the nearest 0.01-foot using a Solinst® electric water-level sounder or oil/water interface probe (if the wells contain floating product) cleaned with Alconox® and water before use in each well. The depth of each well is also measured. The liquid in the wells is examined for visual evidence of gasoline hydrocarbons by gently lowering approximately half the length of a Teflon® bailer (cleaned with Alconox® and water) past the air-/water interface. The sample is then retrieved and inspected for floating product, sheen, emulsion, color, sediment, and clarity. Obvious product odor is recorded if noted. If floating product is present in the well, the thickness of floating product is measured using an oil/water interface probe and is recorded to the nearest 0.01 foot. Floating product is removed from wells on site visits.

Groundwater samples from the wells are collected in approximate order of increasing product concentration, as best known or estimated. Wells which do not contain floating product are purged using a submersible pump. Equipment which comes in contact with the interior of the well or the groundwater is cleaned with Alconox® and deionized or distilled water prior to use in each well.

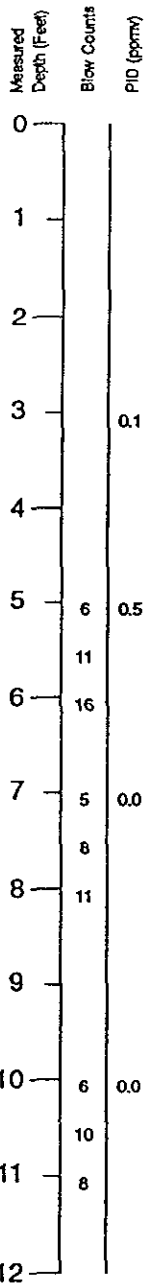
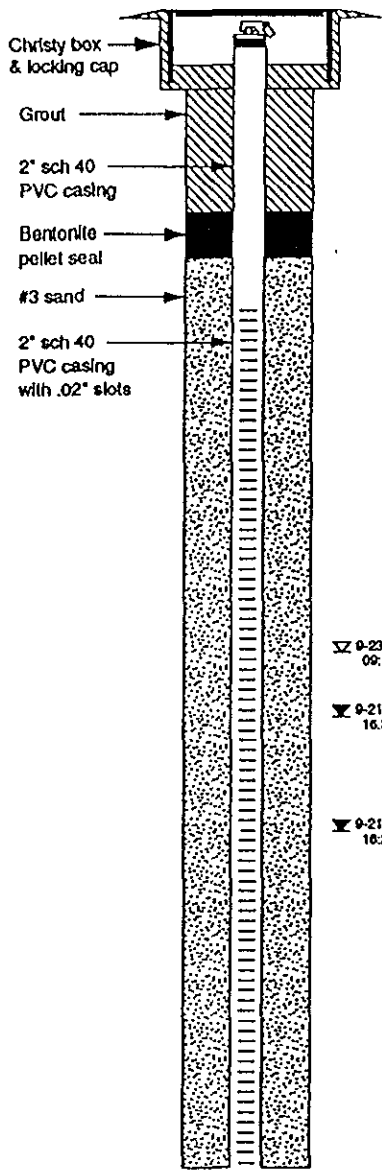
The wells are purged until withdrawal is of sufficient duration to result in stabilized pH, temperature, and electrical conductivity of the water. These parameters are measured to the nearest 0.1 pH unit, 0.1 degree F, and 10 umhos/cm, respectively, using portable meters calibrated daily to a buffer and conductivity standard, according to the manufacturer's specifications. A minimum of four well volumes is purged from each well. If the well becomes dewatered, the water level is allowed to recover to at least 80 percent of the initial water level. When recovery of the water level has not reached at least 80 percent of the static water level after two hours, a groundwater sample will be collected when sufficient volume is available to fill the sample container. Prior to the collection of each groundwater sample, the Teflon® bailer is cleaned with Alconox® and rinsed with tap water and deionized water, and the latex gloves worn by the sampler changed. Hydrochloric acid is added to the sample vials as a preservative (when applicable). Sample containers remain sealed until usage at the site. A sample method blank is collected by pouring distilled water into the bailer and then into sample vials. Method blanks are analyzed periodically to verify effective cleaning procedures. A sample of the formation water is then collected from the surface of the water in each of the wells using the Teflon® bailer. The water samples are then gently poured into laboratory-cleaned, 40-milliliter (ml) glass vials, 500 ml plastic bottles or 1-liter glass bottles (as required for specific laboratory analysis), sealed with Teflon®-lined caps, and inspected for air bubbles to check for headspace, which would allow volatilization to occur. If a bubble is evident, the cap is removed, more sample is added, and the bottle resealed. The samples are then labeled and promptly placed in iced storage, and the wellhead is secured. A field log documenting sampling procedures and parameter monitoring is maintained. Water generated by the purging of wells is stored in 17E DOT 55-gallon drums, and floating product bailed from the wells is stored in double containment onsite; this water and product remains the responsibility of the client.

Sample Labeling and Handling

Sample containers are labeled in the field with the job number, unique sample location, depth, and date, and promptly placed in iced storage for transport to the laboratory. A Chain of Custody Record is initiated by the field geologist and updated throughout handling of the samples, and accompanies the samples to a laboratory certified by the State of California for the analyses requested. Samples are transported to the laboratory promptly to help ensure that recommended sample holding times are not exceeded. Samples are properly disposed of after their useful life has expired.

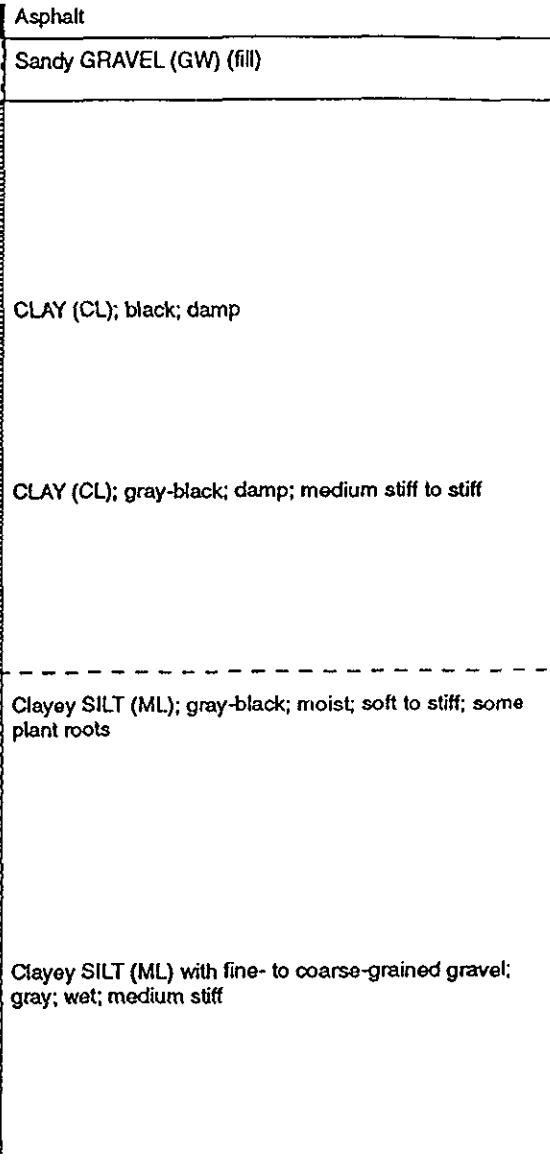
APPENDIX C

BORING LOGS



GRAPHIC LOG

DESCRIPTION



▽ 9-23-93 09:16
 ▼ 9-21-93 16:30
 ▼ 9-21-93 16:20

continues

Logged by: Erich Neupert
 Project Mgr: Justin Power
 Dates Drilled: 9/21/93
 Drilling Company: Kvilhaug
 Drilling Method: 8" Hollow Stem Auger
 Driller: Paul Santos
 Well Head Completion: Christy box & locking cap
 Type of Sampler: 1 1/2" & 2 1/2" split spoon
 TD (Total Depth): 18.0 feet

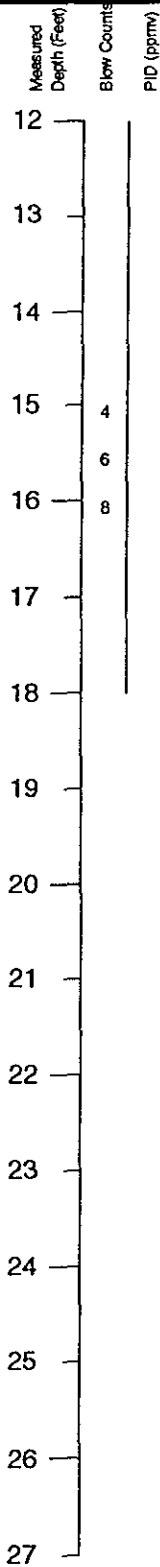
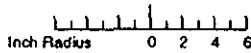
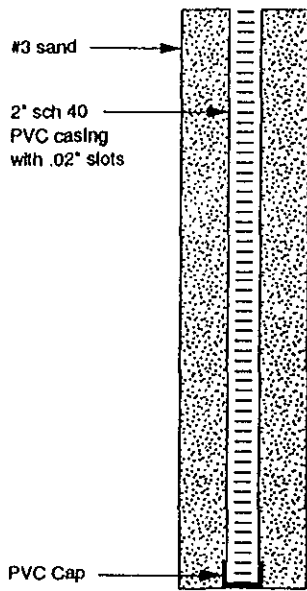
EXPLANATION

	Recovered drill sample	est K	Estimated permeability (hydraulic conductivity)	CONTACTS: ——— Solid where certain ····· Dotted where approximate - - - Dashed where uncertain // // // // Hatched where gradational
	Sample sealed for chemical analysis	1K = primary 2K = secondary		
	Sieve sample	NR	No recovery	
	Grab sample	▼	Water level during drilling	
	Core sample	▽	Water level in completed well	



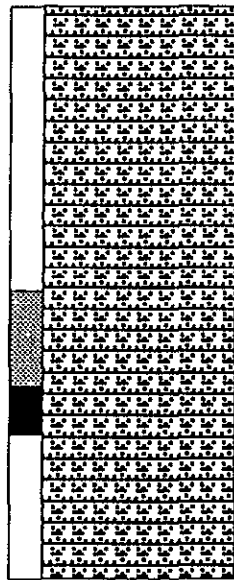
BORING LOG—Boring B-5 (Monitoring Well MW-1)
 Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

BORING
B-5



GRAPHIC LOG

DESCRIPTION



Clayey SILT (ML) with fine- to coarse-grained gravel; gray; wet; medium stiff

Clayey SILT (ML) with fine-grained sand; gray; wet; medium stiff

TD @ 18.0 ft.

EXPLANATION

- Recovered drill sample
- Sample sealed for chemical analysis
- Sieve sample
- Grab sample
- Core sample
- est K Estimated permeability (hydraulic conductivity)
1K = primary 2K = secondary
- NR No recovery
- Water level during drilling
- Water level in completed well

CONTACTS:

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational



PROJECT NO. 170111.01

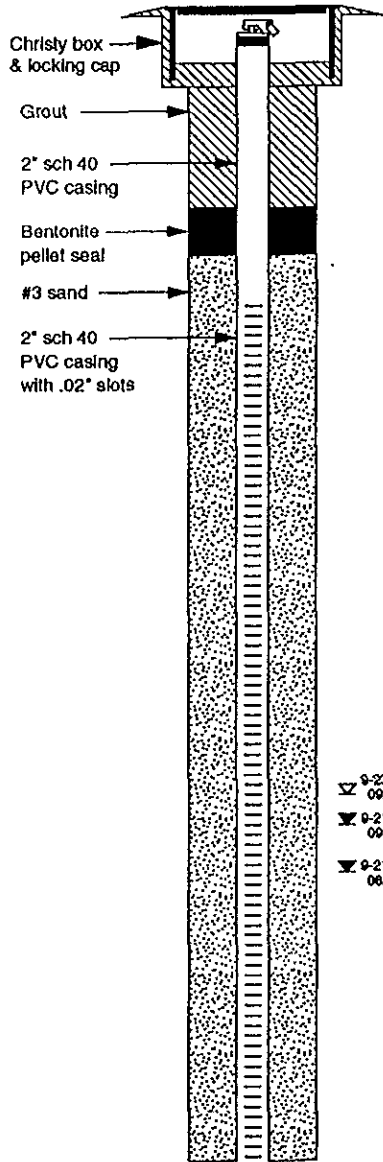
9/93

BORING LOG—Boring B-5 (Monitoring Well MW-1)

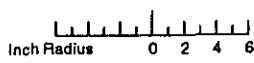
Amador Valley Medical Center
7667 Amador Valley Boulevard
Dublin, California

BORING

B-5



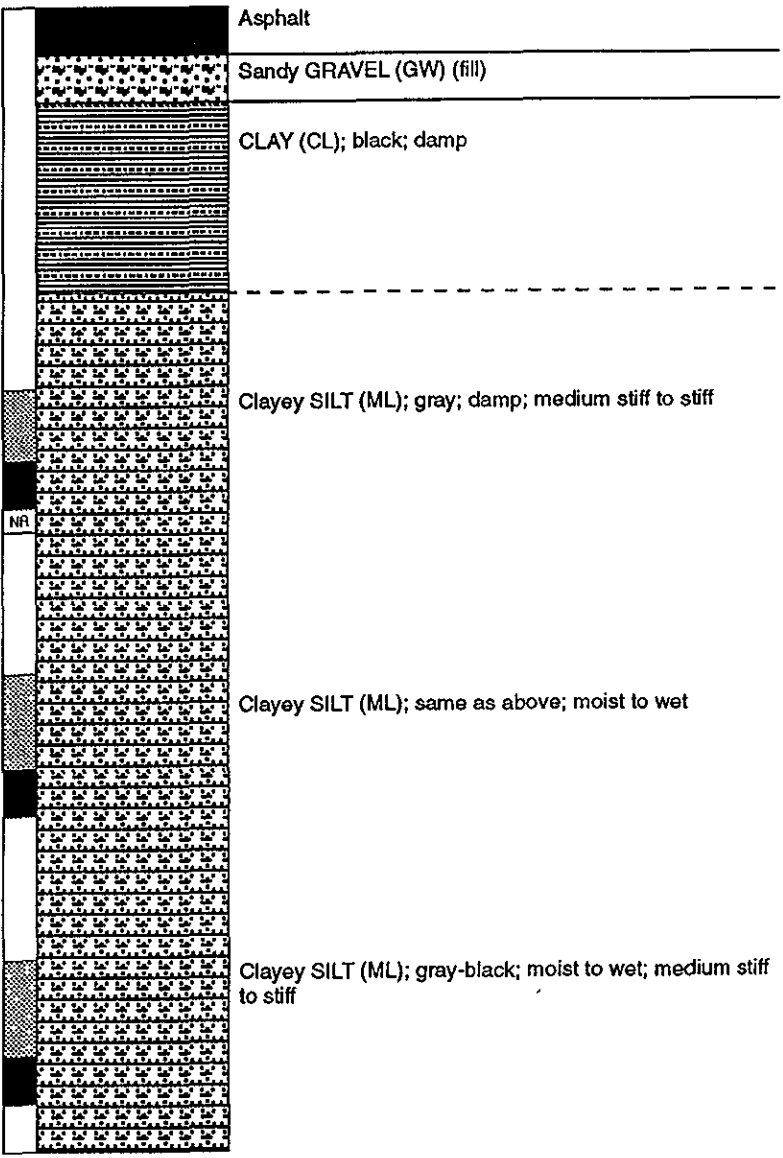
- 9-23-93 09:12
- 9-21-93 09:05
- 9-21-93 08:50



Measured Depth (Feet)	Blow Counts	PID (ppmv)
0		
1		
2		
3		
4	8	0.0
5	21	
6		
7	7	0.2
8	13	
9		
10	7	0.0
11	16	
12		

GRAPHIC LOG

DESCRIPTION



continues

EXPLANATION

- Recovered drill sample
- Sample sealed for chemical analysis
- Sieve sample
- Grab sample
- Core sample
- est K Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR No recovery
- Water level during drilling
- Water level in completed well

CONTACTS:

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

Logged by: Erich Neupert
 Project Mgr: Justin Power
 Dates Drilled: 9/21/93
 Drilling Company: Kvilhaug
 Drilling Method: 8" Hollow Stem Auger
 Driller: Paul Santos
 Well Head Completion: Christy box & locking cap
 Type of Sampler: 1 1/2" & 2 1/2" split spoon
 TD (Total Depth): 19.0 feet



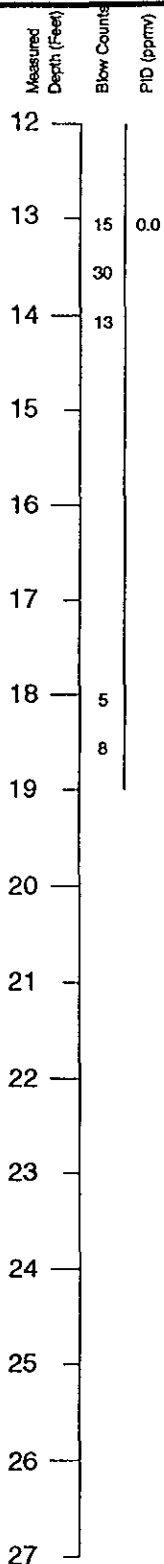
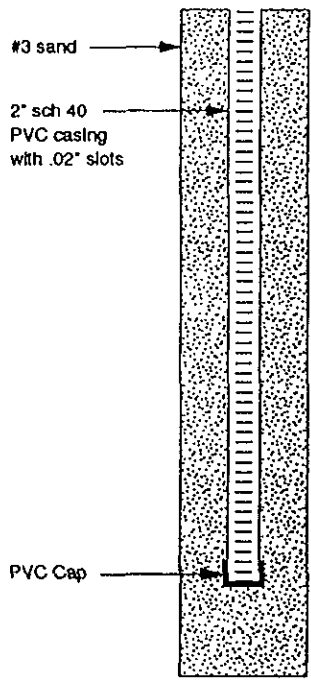
BORING LOG—Boring B-6 (Monitoring Well MW-2)

Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

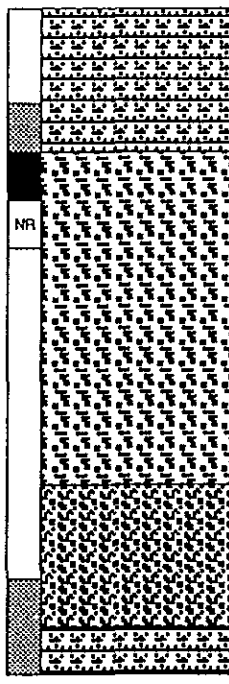
BORING B-6

PROJECT NO. 170111.01

9/93



GRAPHIC LOG



DESCRIPTION

Clayey SILT (ML); gray-black; moist to wet; medium stiff to stiff

Silty GRAVEL (GM) with sand; gray; wet; dense

Gravelly SAND (SW) with fine- to medium-grained gravel; gray; wet

Clayey SILT (ML); gray-brown; wet

TD @ 19.0 ft.

EXPLANATION

	Recovered drill sample	est K	Estimated permeability (hydraulic conductivity)	CONTACTS	
	Sample sealed for chemical analysis	1K = primary	2K = secondary	—	Solid where certain
	Sieve sample	NR	No recovery	Dotted where approximate
	Grab sample	∇	Water level during drilling	- - -	Dashed where uncertain
	Core sample	∑	Water level in completed well	////	Hachured where gradational



PROJECT NO. 170111.01

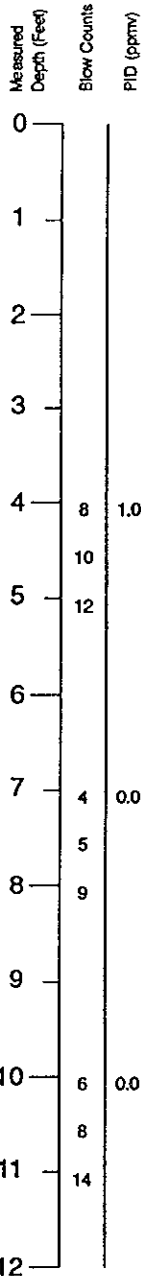
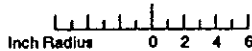
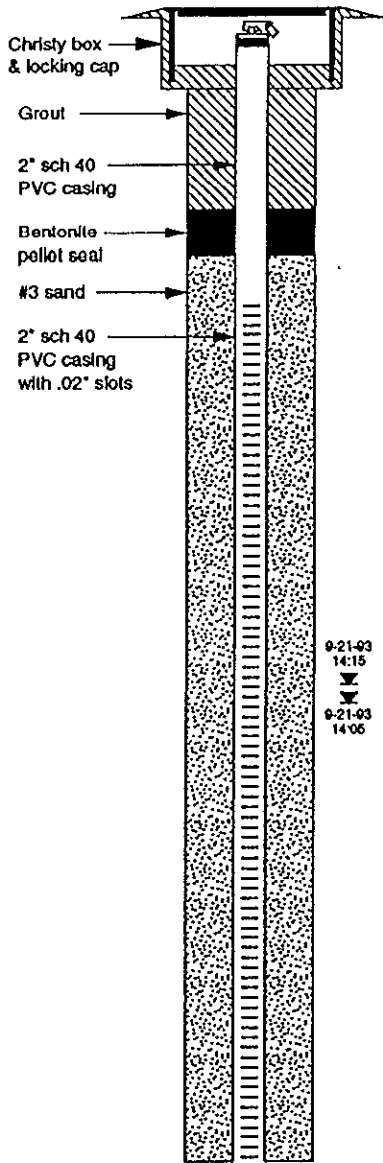
9/93

BORING LOG—Boring B-6 (Monitoring Well MW-2)

Amador Valley Medical Center
7667 Amador Valley Boulevard
Dublin, California

BORING

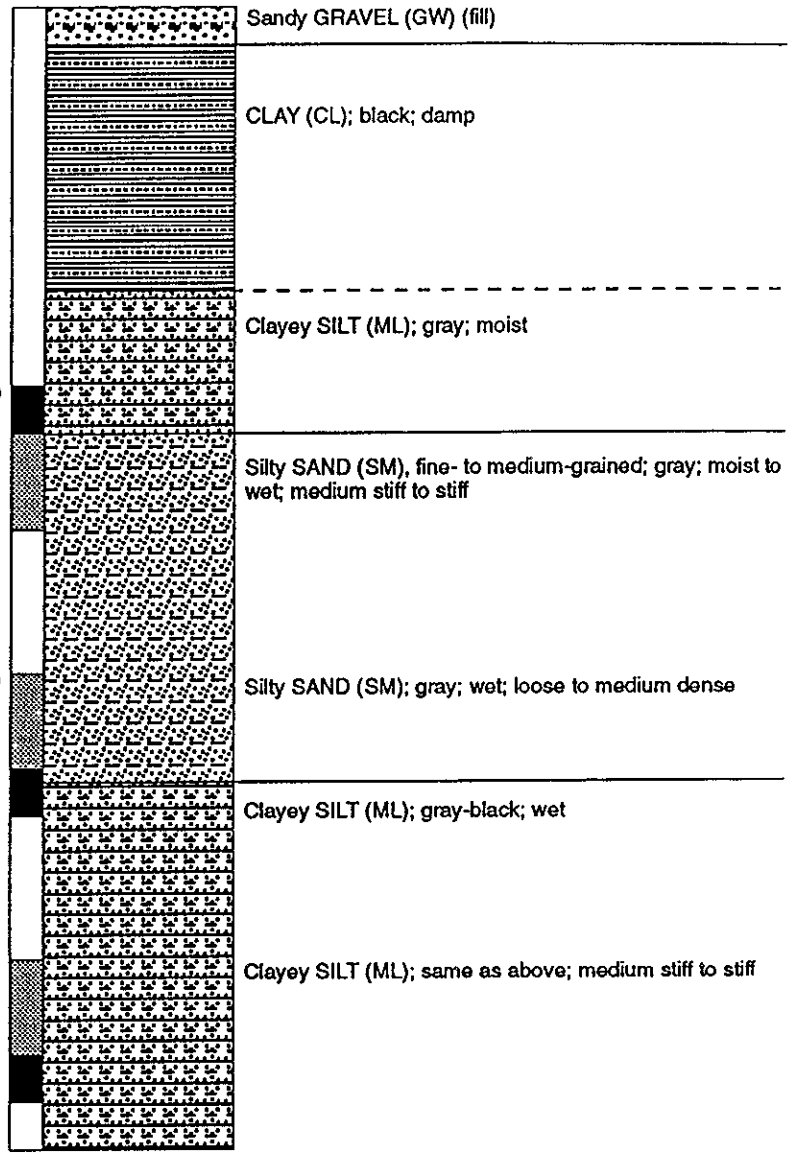
B-6



9-21-93 14:15
 9-21-93 14:06
 9-23-93 00:06

GRAPHIC LOG

DESCRIPTION



continues

EXPLANATION		
	Recovered drill sample	
	Sample sealed for chemical analysis	
	Sieve sample	
	Grab sample	
	Core sample	
est K	Estimated permeability (hydraulic conductivity)	
1K = primary 2K = secondary		
NR	No recovery	
	Water level during drilling	
	Water level in completed well	
CONTACTS:		
	Solid where certain	
	Dotted where approximate	
	Dashed where uncertain	
	Hachured where gradational	

Logged by: Erich Neupert
 Project Mgr: Justin Power
 Dates Drilled: 9/21/93

Drilling Company: Kvilhaug
 Drilling Method: 8" Hollow Stem Auger
 Driller: Paul Santos

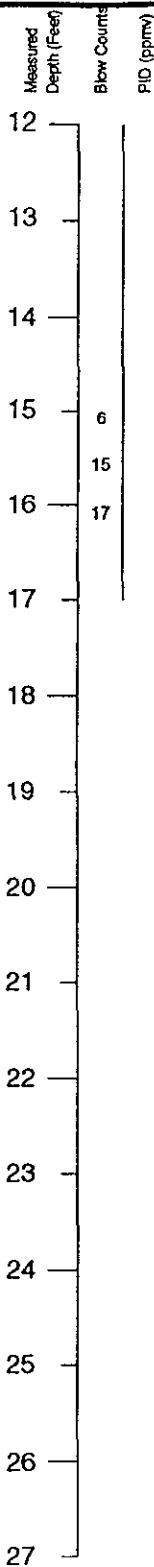
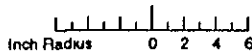
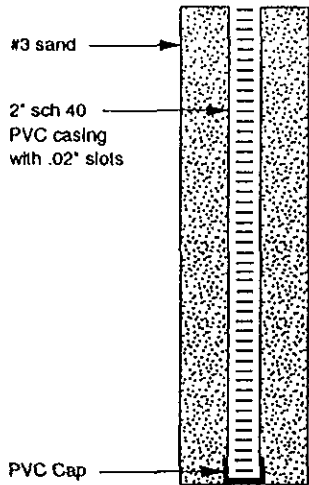
Well Head Completion: Christy box & locking cap
 Type of Sampler: 1 1/2" & 2 1/2" split spoon
 TD (Total Depth): 17.0 feet



BORING LOG—Boring B-7 (Monitoring Well MW-3)

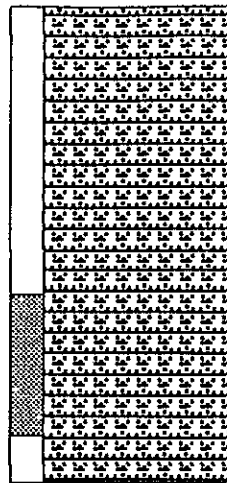
Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

**BORING
 B-7**



GRAPHIC LOG

DESCRIPTION



Clayey SILT (ML); gray-black; wet; medium stiff to stiff

Clayey SILT (ML); gray; wet; medium stiff to very stiff

TD @ 17.0 ft.

EXPLANATION

- | | | | |
|--|-------------------------------------|-----------------------------|---|
| | Recovered drill sample | est K | Estimated permeability (hydraulic conductivity) |
| | Sample sealed for chemical analysis | 1K = primary 2K = secondary | |
| | Sieve sample | NR | No recovery |
| | Grab sample | | Water level during drilling |
| | Core sample | | Water level in completed well |

CONTACTS:

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational



PROJECT NO. 170111.01

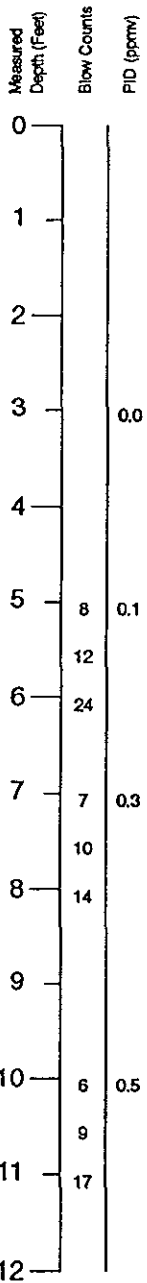
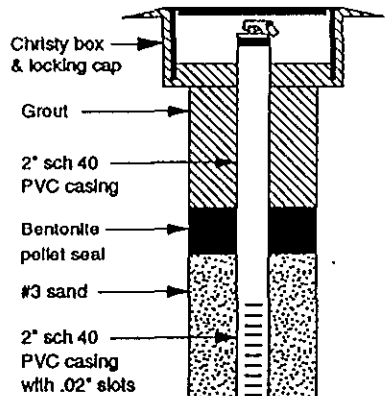
9/93

BORING LOG—Boring B-7 (Monitoring Well MW-3)

**Amador Valley Medical Center
7667 Amador Valley Boulevard
Dublin, California**

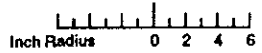
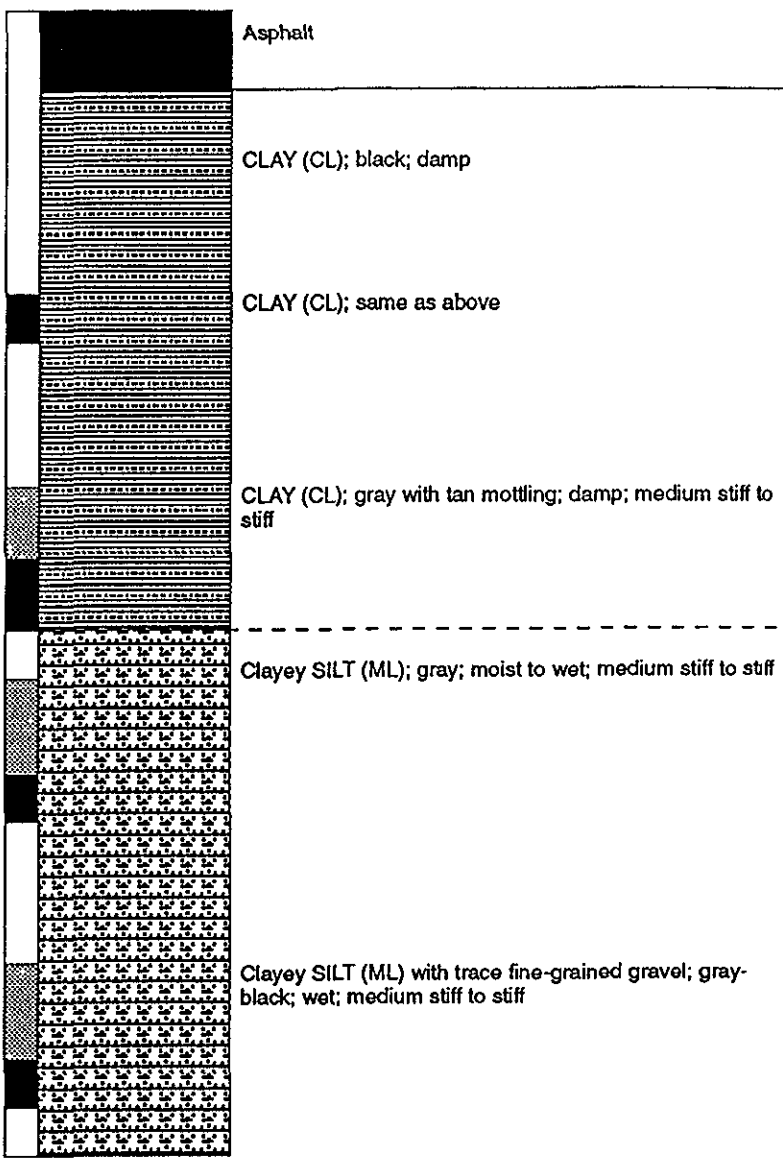
BORING

B-7



GRAPHIC LOG

DESCRIPTION



continues

EXPLANATION

- Recovered drill sample
- Sample sealed for chemical analysis
- Sieve sample
- Grab sample
- Core sample
- est K Estimated permeability (hydraulic conductivity)
1K = primary 2K = secondary
- NR No recovery
- Water level during drilling
- Water level in completed well

CONTACTS:

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

Logged by: Erich Neupert
 Project Mgr: Justin Power
 Dates Drilled: 9/21/93
 Drilling Company: Kvilhaug
 Drilling Method: 8" Hollow Stem Auger
 Driller: Paul Santos
 Well Head Completion: Christy box & locking cap
 Type of Sampler: 1 1/2" & 2 1/2" split spoon
 TD (Total Depth): 18.0 feet

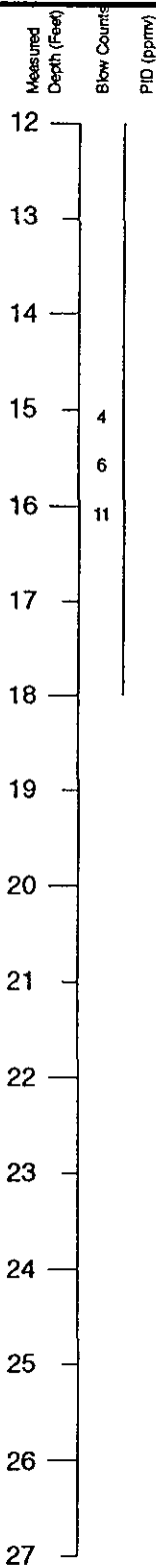
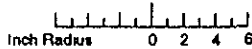
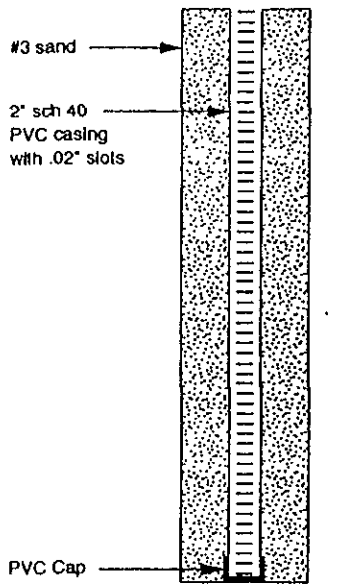


BORING LOG—Boring B-8 (Monitoring Well MW-4)
 Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

BORING
B-8

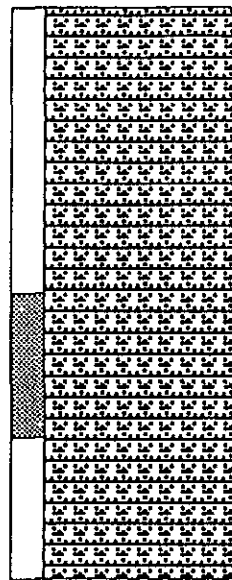
PROJECT NO. 170111.01

9/93



GRAPHIC LOG

DESCRIPTION



Clayey SILT (ML); gray; wet; medium stiff to stiff

TD @ 18.0 ft.

EXPLANATION

- Recovered drill sample
- Sample sealed for chemical analysis
- Sieve sample
- Grab sample
- Core sample
- est K Estimated permeability (hydraulic conductivity)
1K = primary 2K = secondary
- NR No recovery
- Water level during drilling
- Water level in completed well

CONTACTS.

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational



BORING LOG—Boring B-8 (Monitoring Well MW-4)

Amador Valley Medical Center
7667 Amador Valley Boulevard
Dublin, California

BORING

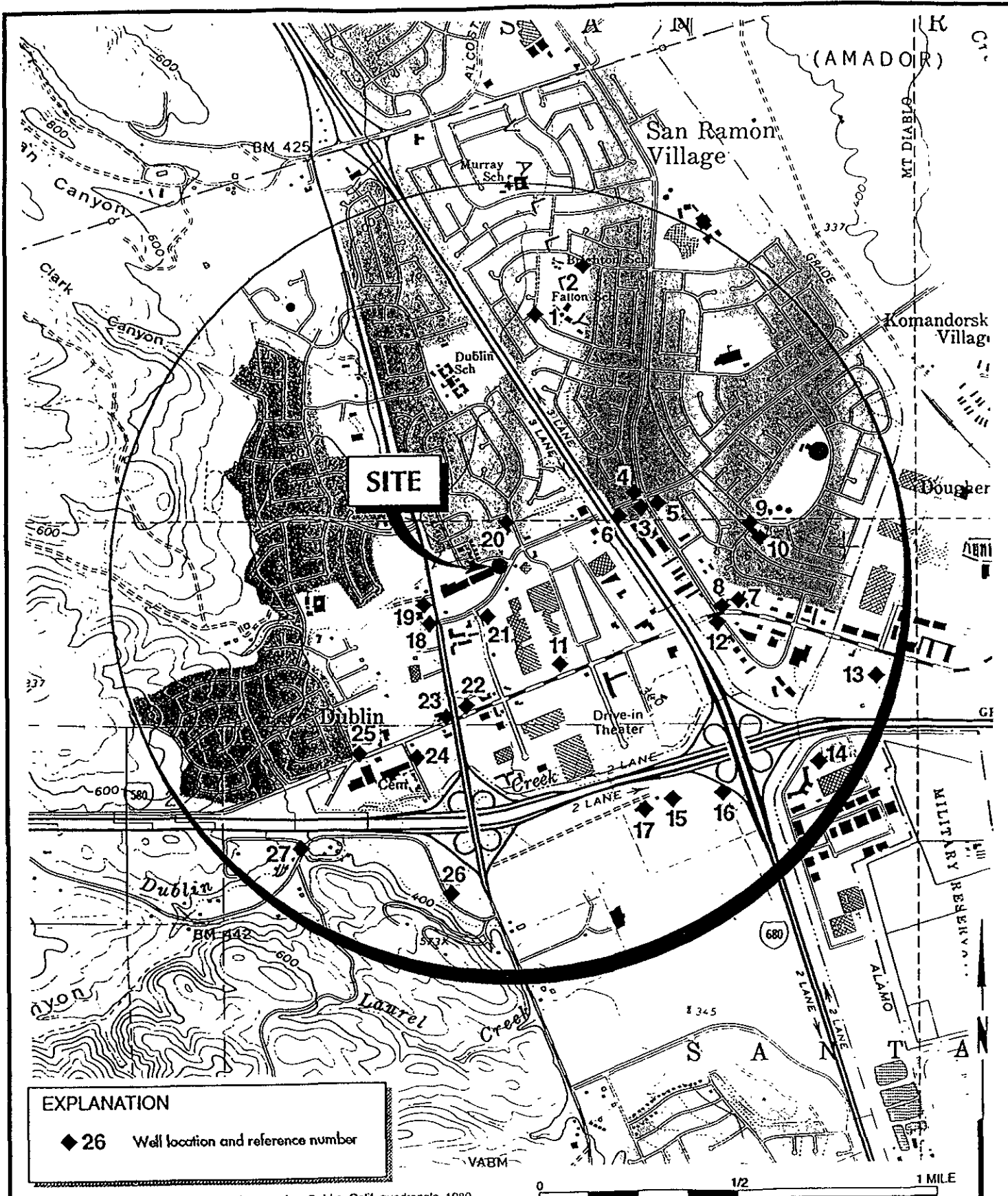
B-8

PROJECT NO. 170111.01

9/93

APPENDIX D

WATER WELL SURVEY



Source: USGS Topographic Map, 7.5 minute series, Dublin, Calif. quadrangle, 1980

RESNA

PROJECT NO. 170111.01 10/93

WATER WELL LOCATION MAP
 Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

APPENDIX E

SURVEY DATA

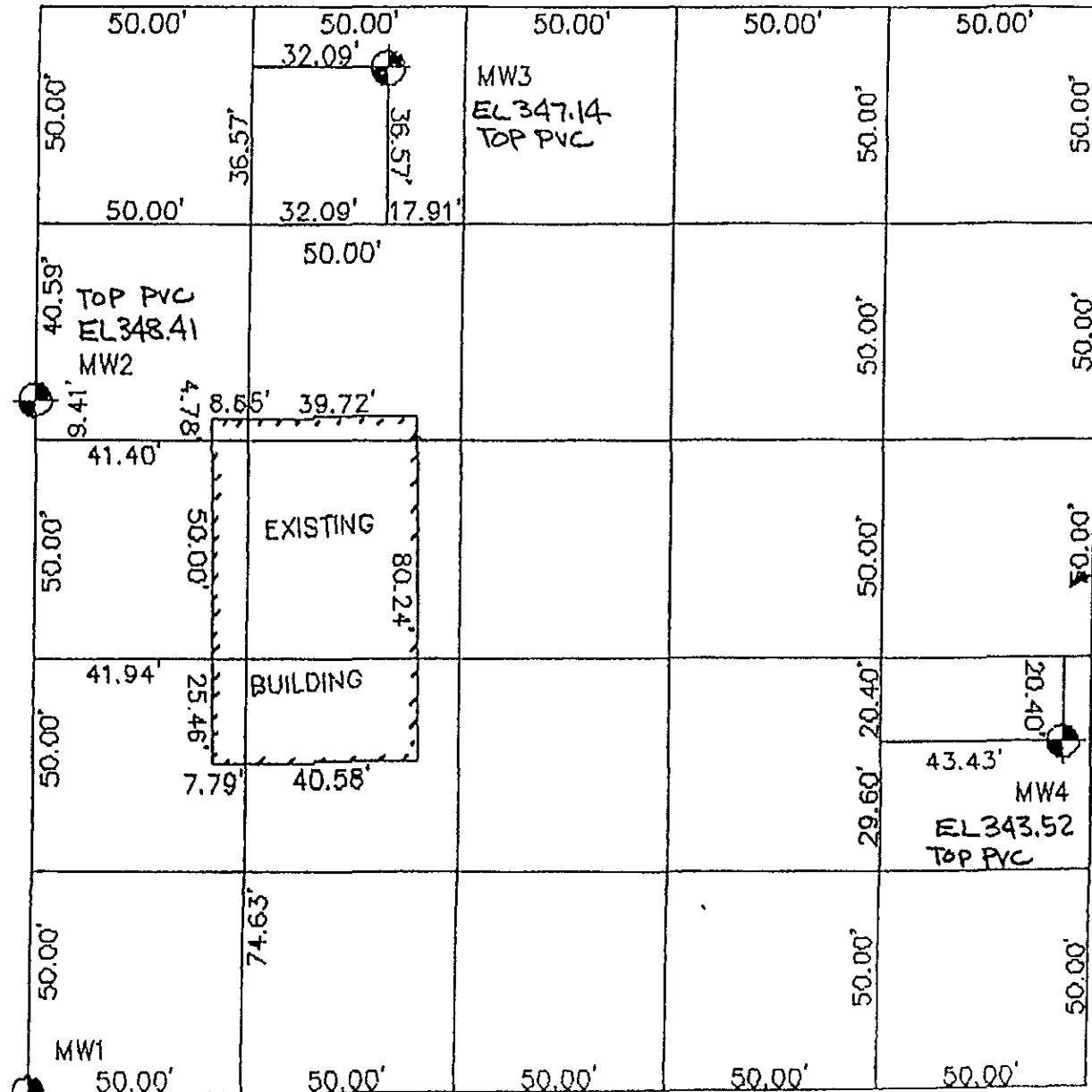
RON ARCHER

CIVIL ENGINEER, INC.

CONSULTING • PLANNING • DESIGN • SURVEYING

4133 Mohr Ave., Suite E • Pleasanton, CA 94566

(610) 462-8372



EL 346.73
TOP PVC

WORKSHEET
SCALE 1" = 40'

7667 AMADOR VALLEY RD.
DUBLIN, CA.

APPENDIX F

**LABORATORY ANALYTICAL REPORTS
AND CHAIN OF CUSTODY RECORDS**



OCT 06 1993

Resna Industries
Attn: Justin Power

Project 170111-01
Reported 10/01/93

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed Matrix
14773- 1	TB-LB	09/23/93	09/30/93 Water
14773- 2	W-5-MW4 RINSATE	09/23/93	/ / Water
14773- 3	W-5-MW4	09/23/93	09/30/93 Water
14773- 4	W-7-MW3 RINSATE	09/23/93	/ / Water
14773- 5	W-7-MW3	09/23/93	09/30/93 Water
14773- 6	W-8-MW2 RINSATE	09/23/93	/ / Water
14773- 7	W-8-MW2	09/23/93	09/30/93 Water
14773- 8	W-6-MW1 RINSATE	09/23/93	/ / Water
14773- 9	W-6-MW1	09/23/93	09/30/93 Water

RESULTS OF ANALYSIS

Laboratory Number: 14773- 1 14773- 2 14773- 3 14773- 4 14773- 5

Gasoline:	ND<50	NA	ND<50	NA	ND<50
Benzene:	ND<0.5	NA	ND<0.5	NA	ND<0.5
Toluene:	ND<0.5	NA	ND<0.5	NA	ND<0.5
Ethyl Benzene:	ND<0.5	NA	ND<0.5	NA	ND<0.5
Xylenes:	ND<1.5	NA	ND<1.5	NA	ND<1.5

Concentration: ug/L ug/L ug/L ug/L ug/L

Laboratory Number: 14773- 6 14773- 7 14773- 8 14773- 9

Gasoline:	NA	ND<50	NA	ND<50
Benzene:	NA	ND<0.5	NA	ND<0.5
Toluene:	NA	ND<0.5	NA	ND<0.5
Ethyl Benzene:	NA	ND<0.5	NA	ND<0.5
Xylenes:	NA	ND<1.5	NA	ND<1.5

Concentration: ug/L ug/L ug/L ug/L



Superior Precision Analytical, Inc.

1555 Burke, Unit I ▪ San Francisco, California 94124 ▪ (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

Page 2 of 2
QA/QC INFORMATION
SET: 14773

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
ug/L = parts per billion (ppb)

OIL AND GREASE ANALYSIS By Standard Methods Method 5520F:
Minimum Detection Limit in Water: 5000ug/L

Modified EPA SW-846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 50ug/L

EPA SW-846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 50ug/L

EPA SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Water: 0.5ug/L

ANALYTE	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Gasoline:	95/89	7%	72-116
Benzene:	76/88	15%	71-106
Toluene:	76/88	15%	69-116
Ethyl Benzene:	77/88	13%	66-121
Xylenes:	81/92	13%	67-108

Olga A. Wozniak

Senior Chemist
Account Manager



Superior Precision Analytical, Inc.

1555 Burke, Unit 1 • San Francisco, California 94124 • (415) 647 2081 / fax (415) 821-7123

Resna Industries
Attn: Justin Power
Facility No. 9-2621 (7667 Amador Valley Blvd., Dublin)

Project 170111.01
Reported 09/29/93

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed Matrix
14768- 1	S3.5 B5	09/21/93	09/29/93 Soil
14768- 2	S6.5 B5	09/21/93	09/29/93 Soil
14768- 5	S5.3 B6	09/21/93	09/28/93 Soil
14768- 9	S4.5 B7	09/21/93	09/29/93 Soil
14768- 12	S3.5 B8	09/21/93	09/29/93 Soil
14768- 13	S6.3 B8	09/21/93	09/28/93 Soil

RESULTS OF ANALYSIS

Laboratory Number: 14768- 1 14768- 2 14768- 5 14768- 9 14768- 12

Gasoline:	ND<1	ND<1	ND<1	ND<1	ND<1
Benzene:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
Toluene:	0.006	0.006	ND<.005	ND<.005	ND<.005
Ethyl Benzene:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
Xylenes:	ND<.015	ND<.015	ND<.015	ND<.015	ND<.015
Concentration:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

Laboratory Number: 14768- 13

Gasoline:	ND<1
Benzene:	ND<.005
Toluene:	ND<.005
Ethyl Benzene:	ND<.005
Xylenes:	ND<.015
Concentration:	mg/kg



Superior Precision Analytical, Inc.

1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

Page 2 of 2

QA/QC INFORMATION

SET: 14768

NA = ANALYSIS NOT REQUESTED

ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT

mg/kg = parts per million (ppm)

OIL AND GREASE ANALYSIS By Standard Methods Method 5520F:
Minimum Detection Limit in Soil: 50mg/kg

Modified EPA SW-846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 1mg/kg

EPA SW-846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg

EPA SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.005mg/kg

ANALYTE	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Gasoline:	99/111	12%	75-111
Benzene:	114/105	8%	75-125
Toluene:	115/105	9%	75-125
Ethyl Benzene:	115/102	12%	75-125
Xylenes:	115/102	10%	75-125

Cecilia G. Joaquin
 Senior Chemist
 Account Manager



SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

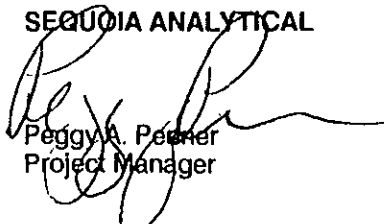
Superior Precision Analytical 1555 Burke St., Unit 1 San Francisco, CA 92124 Attention: Victor	Client Project ID: 14768/Chevron 9-2621 Sample Descript: Soil, 14768-5, 55.3 B6 Lab Number: 3IC7401	Sampled: Sep 21, 1993 Received: Sep 27, 1993 Analyzed: see below Reported: Sep 29, 1993
---	---	--

LABORATORY ANALYSIS

Analyte	Date Analyzed	Detection Limit mg/kg	Sample Result mg/kg
Total Organic Carbon	9/28/93	500	1,800

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL


Peggy A. Peener
Project Manager



SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Superior Precision Analytical
1555 Burke St., Unit 1
San Francisco, CA 92124
Attention: Victor

Client Project ID: 14768/Chevron 9-2621
Matrix: Soil

QC Sample Group: 3IC7401

Reported: Sep 29, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Total Organic Carbon
---------	----------------------

Method: EPA 415.1
Analyst: A. Savva
Conc. Spiked: 98
Units: mg/kg

LCS Batch#: LCS092893

Date Prepared: 9/28/93
Date Analyzed: -
Instrument I.D.#: -

LCS % Recovery: 87

Control Limits: 80-120

MS/MSD Batch #: 3IC7401

Date Prepared: 9/28/93
Date Analyzed: -
Instrument I.D.#: -

Matrix Spike % Recovery: 104

Matrix Spike Duplicate % Recovery: 104

Relative % Difference: 0.0

SEQUOIA ANALYTICAL


Peggy A. Fenner
Project Manager

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

3IC7401.S55 <2>

Fax copy of Lab Report and COC to Chevron Contact: Yes No 14768

Chain-of-Custody-Record

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number 9-2621
Facility Address 7667 AMADOR VALLEY BLVD. DUBLIN
Chevron Contact (Name) KENNETH KAN
(Phone) (510) 842-8752
Laboratory Name SUPERIOR LAB
Laboratory Release Number 9408031
Samples Collected by (Name) ERICH NEUPERT
Collection Date 9/21/93
Signature Erich Neupert

Consultant Project Number 170111.01
Consultant Name RESNA IND.
Address 73 DIGITAL DR. NOVATO, CA. 94949
Project Contact (Name) JUSTIN POWER
(Phone) (415) 382-7400 (Fax Number) (415) 382-7415

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed										Remarks	
								BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd, Cr, Pb, Zn, Ni (ICAP or AA)	TOC: CA-FERTILIZ. METHOD ASSOC. 518.0			
S3.5 B5	1	1	S	D			Y	X											
S6.5 B5	2	1	S	D			Y	X											
S8.5 B5	3	1	S	D			Y												HOLD
S11.5 B5	4	1	S	D			Y												HOLD
SS.3 B6	5	1	S	D			X	X									X		
S8.5 B6	6	1	S	D			Y												HOLD
S11.5 B6	7	1	S	D			Y												HOLD
S14.0 B6	8	1	S	D			Y												HOLD
S4.5 B7	9	1	S	D			Y	X											
S8.5 B7	10	1	S	D			Y												HOLD
S11.5 B7	11	1	S	D			Y												HOLD
S3.5 B8	12	1	S	D			Y	X											
S6.3 B8	13	1	S	D			Y	X											
S8.5 B8	14	1	S	D			Y												HOLD

Please Initial: VE
 Samples Stored in Ice: ✓
 Appropriate containers: ✓
 Samples preserved: ✓
 VOA's without hazardous: ✓
 Comments: _____

Relinquished By (Signature) <u>Erich Neupert</u>	Organization <u>RESNA</u>	Date/Time <u>9/22/93 11:15</u>	Received By (Signature) <u>SOEYER</u>	Organization <u>ARCO</u>	Date/Time <u>9-22-93 11:18</u>	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days <u>As Contracted</u>
Relinquished By (Signature) <u>SOEYER</u>	Organization <u>ARCO</u>	Date/Time <u>9/22/93 2:46</u>	Received By (Signature) <u>_____</u>	Organization <u>_____</u>	Date/Time <u>_____</u>	
Relinquished By (Signature) <u>_____</u>	Organization <u>_____</u>	Date/Time <u>_____</u>	Received For Laboratory By (Signature) <u>_____</u>	Organization <u>_____</u>	Date/Time <u>9/22/93</u>	

COC-3.DWG/03.91/HCH

15777

Chain of Custody and Analysis Request

Section I

page ___ of ___

From: Superior Precision Analytical, Inc.
1555 Burke St. Unit I
San Francisco, CA 94124
 Phone No. (415) 647-2081 Fax No. (415) 821-7123
 Contact: Victor
 P.O. No. 14768

Turn Around Time
 (circle one)
 Same Day 72 Hrs
 24 Hrs 5 Day
48 Hrs 10 Day



Superior Precision Analytical, Inc.

P.O. Box 1545
 Martinez, California 94553

Work Subcontracted to: Sequoia

Section II: Analysis Request

9309C74

Laboratory Sample Identification	S = Soil A = Air W = Water Matrix	CAM17	Metals:	418.1	8270	8080 (pest. and PCB's)	TOC by 518.0	Client Sample Identification	Number of Containers	Preservative (yes or no)	Sampling Remarks
1 14768-5	S						X	SS-336	1	(w)	<input checked="" type="checkbox"/> Chevron <input type="checkbox"/> Non-Chevron ** Please Fax Results ** Fax results to Resna Invoice Superior
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

Relinquished by <u>V. Escher</u>	Date/Time <u>9/27 11:40</u>	Received by _____	Date/Time _____	Lab please initial the following: Samples Stored in Ice _____ Appropriate Containers _____ Samples Preserved _____ VOCs without Headspace _____ Comments _____
Organization <u>Superior</u>	Date/Time _____	Organization _____	Date/Time _____	
Relinquished by _____	Date/Time _____	Received by _____	Date/Time _____	
Organization _____	Date/Time _____	Organization _____	Date/Time _____	

01

Fax copy of Lab Report and COC to Chevron Contact: Yes No 11773

Chain-of-Custody-Record

Chevron U.S.A. Inc. P.O. BOX 5004 San Ramon, CA 94583 FAX (415)842-9591	Chevron Facility Number <u>9-2621</u> Facility Address <u>7667 AMADOR VALLEY BLVD</u> Consultant Project Number <u>170111-01</u> Consultant Name <u>RESNA IND.</u> Address <u>73 DIGITAL DR. NOVATO CA 94949</u> Project Contact (Name) <u>JUSTIN POWER</u> (Phone) <u>(415) 382-7400</u> (Fax Number) <u>(415) 382-7415</u>	Chevron Contact (Name) <u>MR. KEN KAN</u> (Phone) _____ Laboratory Name <u>SUPERIOR</u> Laboratory Release Number <u>9408031</u> Samples Collected by (Name) <u>JEFF ANDREWS</u> Collection Date <u>9-23-93</u> Signature <u>Jeff Andrews</u>
--	--	---

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes/No)	Analytes To Be Performed										Remarks					
								BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)								
TBLB		1				HCL		/															
W-5-MW4 Rinsate		1			09:45			/															
W-5-MW4		3			09:45			/															
W-7-MW3 Rinsate		1			10:10			/															
W-7-MW3		3			10:10			/															
W-8-MW2 Rinsate		1			10:35			/															
W-8-MW2		3			10:35			/															
W-6-MW1 Rinsate		1			11:05			/															
W-6-MW1		3			11:05	HCL	Yes	/															

Samples stored in appropriate containers.
 Samples preserved.
 COCs without headspace.
 Comments:

Relinquished By (Signature) <u>Jeff Andrews</u>	Organization <u>RESNA</u>	Date/Time <u>9-23-93 13:15</u>	Received By (Signature) <u>Ken Kan</u>	Organization <u>AGRES</u>	Date/Time <u>9-23</u>	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days <input checked="" type="radio"/> As Contracted
Relinquished By (Signature) <u>Justin Power</u>	Organization <u>AGRES</u>	Date/Time <u>9-23</u>	Received By (Signature)	Organization	Date/Time	
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) <u>Justin Power</u>		Date/Time <u>9/23/93 14:00</u>	

LAB-3006 (03.8.1) (1/93)