HC FINANCIAL ADVISORS, INC.

REGISTERED INVESTMENT ADVISOR 25 AVENIDA DE ORINDA ORINDA, CALIFORNIA 94563-2386

JAMES M. HOTCHKISS, JR., CPA PEGGY S. CABANISS, CFP

December 23, 1992

(510) 254-1023 FAX: (510) 254-6011

Alameda County Health Care Services Agency Hazardous Materials Program 80 Swan Way, Room 200 Oakland, CA 94621

ATTN: Mr. Scott Seery

RE:

Subsurface investigation report 7667 Amador Valley Boulevard

Dublin, California

Gentlemen:

Enclosed is a copy of a report recently completed by Resna Industries, Inc. for the above described property. I am the agent for Helen Janin, the owner of the property.

If you wish to initiate discussion of this report, please make first contact with:

> Jerry L. Lemm J. L. Lemm and Associates 5506 Sunol Boulevard Suite 203 Pleasanton, California 94566-7779 Phone: (510) 417-1600

Thank you for your cooperation.

Sincerely,

James M. Hotchkiss, Jr.

JMH: ems

Enclosure

Jerry Lemm cc:

Dr. Edward Kemprud Peter Wohlfeiler

Helen Janin II. Clo James Hotzhkiss 25 Avenida de Orinda

elo J.L. Lemm + ASSOC. 5506 Sunol Blod # 203

Pleasanton 94566-7779

SUBSURFACE INVESTIGATION FOR

AMADOR VALLEY MEDICAL CLINIC 7667 AMADOR VALLEY BOULEVARD DUBLIN, CALIFORNIA

> Project No. F9234.11 December 1992



42501 Albrae Street Fremont, CA 94538 Phone: (510) 440-3300 FAX: (510) 651-2233

December 14, 1992 Project No. F9234.11

Amador Valley Medical Clinic 7667 Amador Valley Boulevard Dublin, California 94568

Attention:

Mr. Jerry Lemm

Subject:

Amador Valley Medical Clinic 7667 Amador Valley Boulevard Dublin, California 94568

Dear Mr. Lemm:

RESNA Industries Inc., is pleased to submit the results of the subsurface investigation conducted at the subject site in Dublin, California. The work consisted of drilling four exploratory borings and collecting soil samples for analysis. Results from the laboratory analysis indicated the presence of hydrocarbon-bearing soil in two of the four borings. RESNA recommends that further work be conducted in order to assess the extent to which groundwater beneath the site has been impacted by hydrocarbons. A Subsurface Groundwater Investigation would consist of the following tasks:

Task 1 Groundwater Monitoring Well Installation

- Drilling and installation of at least three groundwater monitoring wells;
- Preparation of a Subsurface Groundwater Investigation report

Task 2 Quarterly Monitoring and Reporting

- Quarterly monitoring and sampling of the groundwater wells for at least one year
- Preparation of one Quarterly Monitoring report for each sampling event

If you have any questions, please contact the undersigned at (510) 440-3300.

Sincerely,

RESNA Industries Inc.

Sheryl Fontaine Staff Geologist Gary Pischke, C.E.G. 1501

Project Manager

SF/GP

Table of Contents

Section	Page
Site Description and Background	1
Purpose and Scope of Work	1
Field Investigation Exploratory Drilling and Soil Sampling	2 2
Subsurface Conditions	2
Laboratory Analyses and Results Soil Analysis Results	3
Discussion	3
Reporting Requirements	3
Limitations	4

Table of Contents — continued

Tables

1 Soil Analyses Data

Plates

- 1 Site Location Map
- 2 Site Plan
- 3 Cross-section of Angled Boring B4

Appendices

- A Boring Logs
- B Soil Sampling Protocol
- C Permits
- D Laboratory Reports and Chain-of-Custody Records

SUBSURFACE INVESTIGATION AT AMADOR VALLEY MEDICAL CLINIC 7667 AMADOR VALLEY BOULEVARD DUBLIN, CALIFORNIA

This report presents the results of a Subsurface Investigation conducted at the subject site in Dublin, Alameda County, California (see Plate 1).

SITE DESCRIPTION AND BACKGROUND

The site is located on the northwest corner of Amador Valley Boulevard and Starward Drive in Dublin, California. It is approximately 1/2 mile north of Highway 880 and 1/4 mile west of Highway 680 (see Plate 1). The land use in the area is primarily commercial to the south, west, and east of the site, and residential to the north of the site. A Chevron Service Station occupied the site from approximately 1960 to 1975 and the current building was constructed in 1976 (Environmental Assessment of 7667 Amador Valley Boulevard, Dublin, California, RESNA, July 1992).

Underground fuel storage tanks were removed from the site in 1976. At that time, there were no apparent leaks in the tanks, however, the product was not removed from the tanks prior to excavation, and approximately 15 to 20 gallons of fuel spilled into the tank pit. The product was removed from the pit, but the affected soil was not excavated (Environmental Assessment of 7667 Amador Valley Boulevard, Dublin, California, RESNA, July 1992).

PURPOSE AND SCOPE OF WORK

In September 1992, RESNA submitted to the Amador Valley Medical Clinic, a Proposal for Subsurface Investigation to Evaluate Hydrocarbon-Bearing Soil From the Former Chevron Service Station. The investigation included the following:

- Preparation of a Site Safety Plan per CFR 1910;
- Contracting a Subsurface Location Service to locate any underground utility lines on-site;
- Drilling of four exploratory borings (three vertical, one angled);
- Collection of soil samples at five-foot intervals from the borings;
- Laboratory analysis of the soil samples; and
- Preparation of this report.

FIELD INVESTIGATION

RESNA conducted field work for this investigation from October 13 through 15, 1992. The field work involved an initial site walk with the underground utility service and the drilling of the four exploratory borings. Borings B1, B2, B3, and B4 were drilled at the approximate locations of the former southeast pump island, the former northwest pump island, the former waste oil tank, and the former underground fuel storage tanks (see Plate 2).

Exploratory Drilling and Soil Sampling

RESNA drilled four exploratory borings, designated B1, B2, B3, and B4 on October 15. 1992 at the locations shown on the Site Plan (Figure 2), using an Exploration Geoservices Mobile B-42 truck-mounted drill rig. Drilling was performed under Alameda County Zone 7 Flood Control District permit number 92516. Soil samples were collected in the borings at approximately 5-foot depth intervals by driving a pre-cleaned modified California splitspoon sampler with a 140-pound hammer into the soil ahead of the augers. The angled boring was drilled with the same rig, with the tower of the rig angled 30° from vertical, under the existing clinic building (see Plate 3). In this manner, an attempt was made to sample the area of the former fuel tanks, which were located under the existing building. The sampler, containing three 2-inch diameter by 6-inch long brass liners, was driven 18 inches into the undisturbed soil, then retrieved and disassembled. The samples were checked for the presence of volatile hydrocarbons using an Organic Vapor Meter (OVM). A liner containing the soil from each interval selected for analysis was covered at both ends with foil and plastic caps, labeled with a unique sample number, and stored in a chilled cooler for transport to the laboratory. A total of nine samples were collected and chain-ofcustody documentation accompanied the samples to the laboratory. A copy of RESNA's Soil Sampling Protocol is in Appendix B.

A RESNA geologist logged the borings and characterized the soil in the remaining sample liners using the Unified Soil Classification System. Details of the subsurface materials encountered in the borings are presented in Appendix A. The soil cuttings generated during drilling were placed in Department of Transportation (DOT) approved 55-gallon drums and stored on-site pending analytical results.

SUBSURFACE CONDITIONS

The boring locations were underlain by approximately four inches of asphalt, followed by approximately eight inches of gravelly sand aggregate base. Below the base was two to four feet of dark brown to black granular soil, interpreted as fill, possibly imported at the time of station destruction and tank removal. The remaining soil in the borings was a medium to dark brown silty clay. Some fine sands were observed in borings B2 and B3 at depths of 3 1/2 feet and 5 feet, respectively and rootholes were encountered in boring B4 at approximately 6 feet below grade.

LABORATORY ANALYSES AND RESULTS

Soil samples from each of the exploratory borings were submitted to RESNA Environmental Laboratories, a state-certified laboratory in Fremont, California. RESNA analyzed the samples for the presence of total petroleum hydrocarbons as gasoline (TPHG) and benzene, toluene, ethyl benzene, and total xylenes (BTEX) using methods approved by the California Regional Water Quality Control Board (CRWQCB) and the Environmental Protection Agency (EPA). Samples from borings B1, B2, and B4 were also analyzed for total petroleum hydrocarbons as diesel (TPHd), and samples from boring B3 were also analyzed for total oil and grease (TOG). Copies of the laboratory reports and chain-of-custody records are included in Appendix D.

Soil Analysis Results

Total petroleum hydrocarbons as gasoline (TPHg) was detected in sample numbers B1-2 and B4-2 at concentrations of 11 parts per million (ppm) and 65 ppm, respectively. These samples also contained detectable levels of toluene, ethyl-benzene, total xylenes, and total petroleum hydrocarbons as diesel (TPHd). Benzene was detected in sample number B1-2 at 0.018 ppm. The remaining samples did not contain detectable amounts of TPHg, BTEX, TPHd, or TOG. The soil laboratory results are summarized in Table 1.

DISCUSSION

RESNA drilled and sampled four exploratory borings at the subject site to evaluate whether hydrocarbon-bearing soil remains on-site at the former tank pit and pump island locations. The locations of the borings are shown in Plate 2.

The subsurface conditions encountered at the site include two to four feet of loose, dark brown to black silty clay, interpreted as fill, and six to eight feet of denser, lighter brown silty clay.

Analytical results indicate that hydrocarbon-bearing soil does exist under the former southeast pump island, now paved, and in the vicinity of the former underground fuel storage tanks, beneath the existing medical clinic building.

REPORTING REQUIREMENTS

A copy of this report should be forwarded by the Amador Valley Medical Clinic, in a timely manner, to the following agencies:

Alameda County Health Care Services Agency Hazardous Materials Program 80 Swan Way, Room 200 Oakland, California 94621 Attention: Mr. Scott Seery California Regional Water Quality Control Board 2101 Webster Street, Room 500 Oakland, CA 94612

LIMITATIONS

The discussion and recommendations presented in this report are based on the following:

- 1. Exploratory borings drilled at the site and in its vicinity.
- 2. Observations by field personnel.
- 3. The results of laboratory analyses performed by a state-certified laboratory.
- 4. Our understanding of the regulations of the State of California and Alameda County.

It is possible that variations in the soil conditions could exist beyond the points explored in this investigation.

The service performed by RESNA has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the Dublin area. Please note that contamination of soil must be reported to the appropriate agencies in a timely manner. No other warranty, expressed or implied, is made.

RESNA includes in this report chemical analytical data from a state-certified laboratory. The analytical results are performed according to procedures suggested by the U.S. EPA and State of California. RESNA is not responsible for laboratory errors in procedure or result reporting.

Please call if you have any questions regarding this report.

Sincerely,

RESNA Industries, Inc.

Sheryl Fontaine Staff Geologist Gary Pischke, C.E.G. 1501

Project Manager

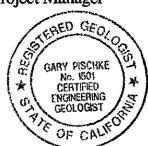


TABLE 1 SOIL ANALYSES DATA for

AMADOR VALLEY MEDICAL CLINIC

Sample Number	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl- benzene (ppm)	Total xylenes (ppm)	TPHd (ppm)	TOG (mg/kg)
B1-1	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NR
B1-2	11	0.018	0.054	0.036	0.016	24	NR
B2-1	<1.0	< 0.005	< 0.005	< 0.005	< 0.005	<1.0	NR
B2-2	<1.0	< 0.005	< 0.005	< 0.005	< 0.005	<1.0	NR
B3-1	<1.0	< 0.005	< 0.005	< 0.005	< 0.005	NR	<50
B3-2	<1.0	< 0.005	< 0.005	< 0.005	< 0.005	NR	<50
B4-1	<1.0	< 0.005	< 0.005	< 0.005	< 0.005	<1.0	NR
B4-2	65	< 0.005	0.14	0.086	0.032	1.2	NR
B4-3	<1.0	< 0.005	< 0.005	<0.005	< 0.005	< 0.005	NR

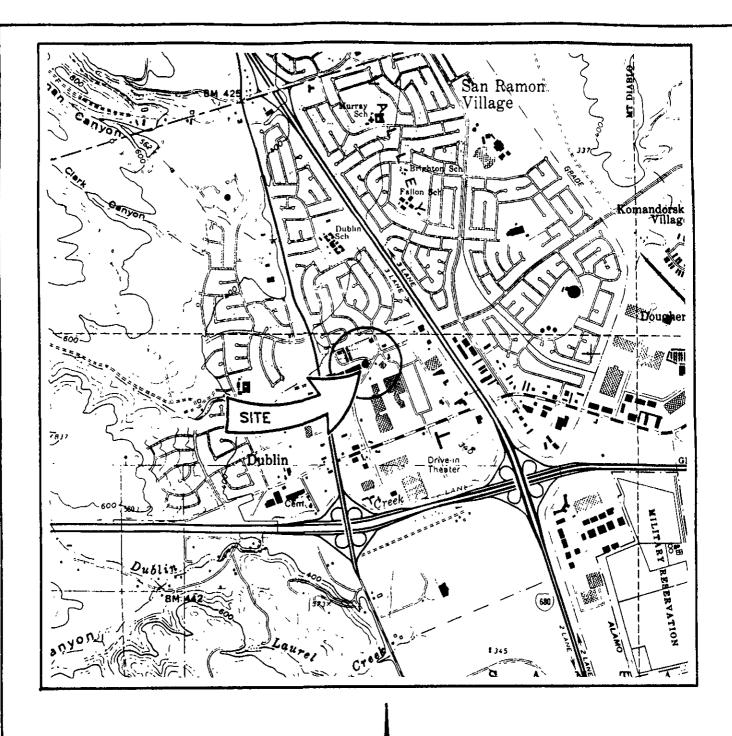
ppm = Parts per million = mg/kg = milligrams per kilogram.

< 0.005

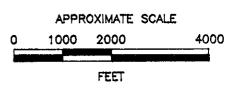
Not detected. Number following < indicates applicable laboratory detection limit.

NR

Analysis not requested.



SOURCE: U.S. GEOLOGICAL SURVEY 7.5-MINUTE QUADRANGLE DUBLIN, CA. PHOTOREVISED 1980



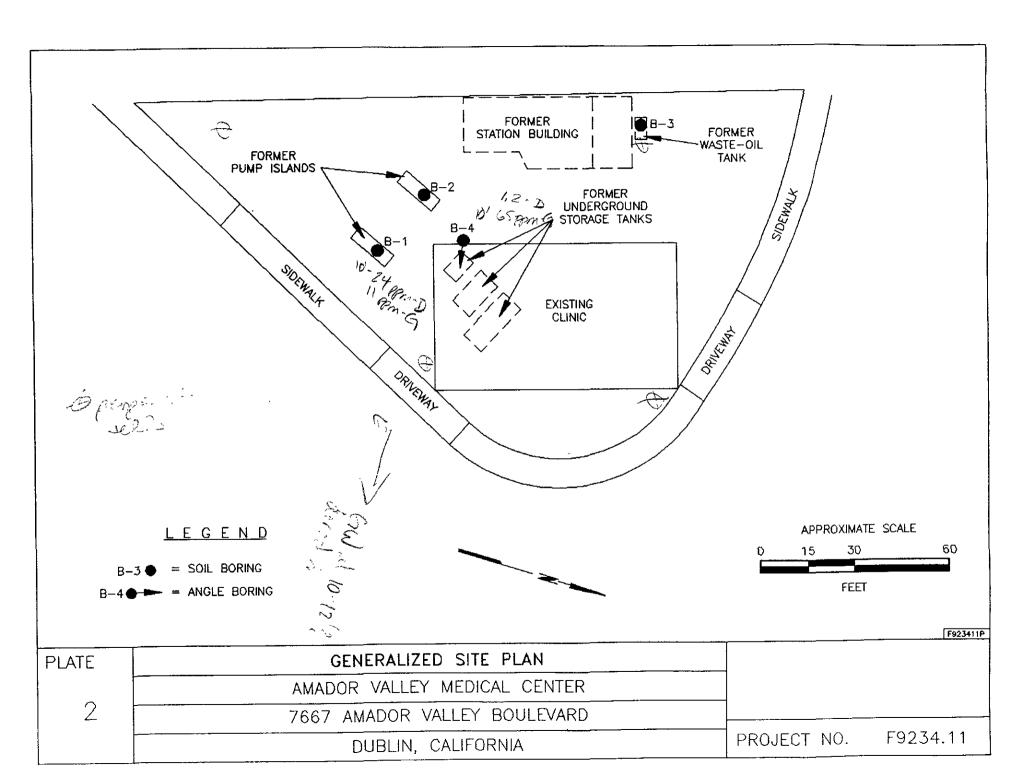
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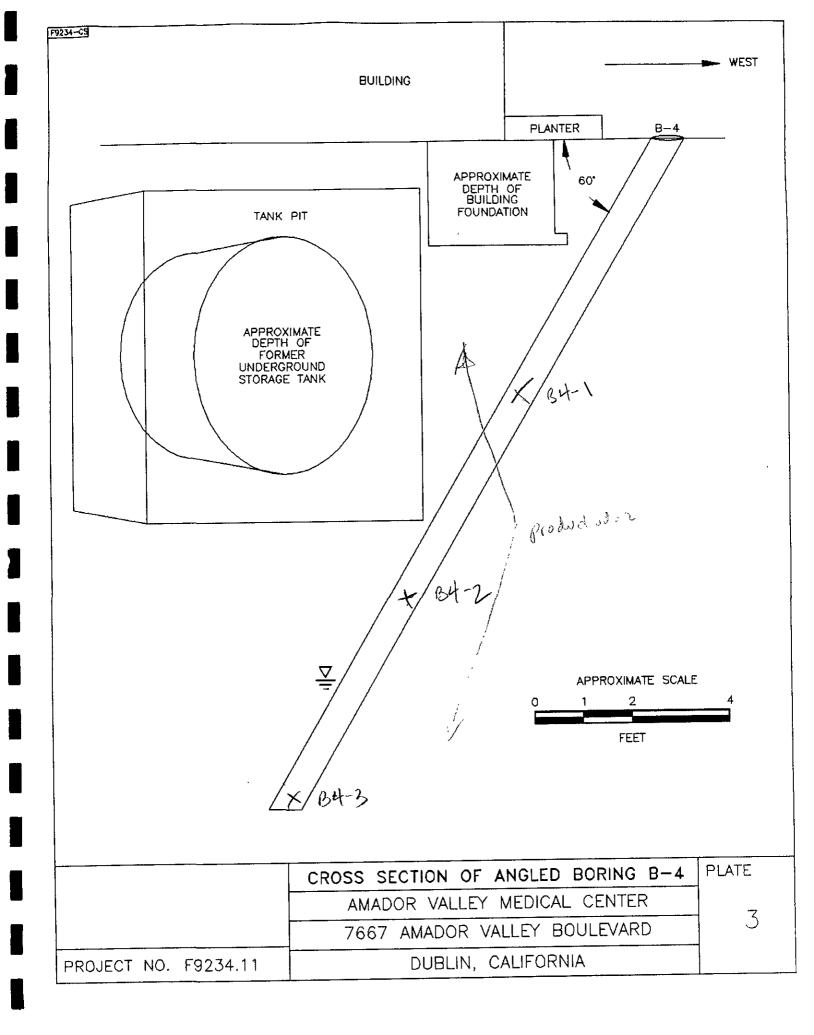
PROJECT NO. F9234.11

SITE LOCATION MAP
AMADOR VALLEY MEDICAL CLINIC
7667 AMADOR VALLEY BLVD.
DUBLIN, CALIFORNIA

PLATE

]





APPENDIX A BORING LOGS

Project Name:

Amador Valley Medical Clinic

7667 Amador Vailey Boulevard

Dublin, CA 94568

Project Number: F9234.11 **Boring No.** B-1

Date Drilled: 10/15/92

Logged By: S. Fontaine

Depth (ft.)	Sample No.	Blows/Foot	140 ft/lbs.	Unified Soil Classification	SOIL DESCRIPTION	Water Level	OVM Reading (ppm)	Well Construction	Asphalt
					3" Asphalt 7" gravelly sand base				ASI
				CL	SILTY CLAY with trace fine sand, gray to black, damp; cuttings				ŀ
- 2 -									
- 3 -					SILTY CLAY, trace fine sand, light gray, damp; cuttings			:	
- 4			:	CL	SILTY CLAY, trace fine to medium sand, medium brown, damp, moderate plasticity, stiff		0.0		
2	B1-1	34	4		• • • • • • • • • • • • • • • • • • •			<u> </u>	
- 7								Bentonite	•
					Product odor in cuttings			Ř	
- ° -									
		ا .		CT.	SILTY CLAY with 5% course sand/fine gravel, medium brown, damp,		over 9999		
- 11-	B1-2	42	2	CL	moderate plasticity, very stiff, strong product odor Bottom of boring at 10.5 feet		9999		i
- 12-					Q and a second				
- 13-							į		
- 14-									İ
- ₁₅ -									
- 16-									
- - 17-	1								
- 18-	1								
 - 19-									
- ₂₀ -									
- 21-	1								
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Project Name:

Project Number:

Amador Valley Medical Clinic

7667 Amador Valley Boulevard

Dublin, CA 94568

F9234.11

Boring No.

B-2

Date Drilled: 10/15/92

Logged By:

S. Fontaine

Depth (ft.)	Sample No.	Blows/Foot	140 ft/lbs.	Unified Soil Classification	SOIL DESCRIPTION	Water Level	OVM Reading (ppm)	Well Construction	Asphalt
					3" Asphalt 6" gravelly sand base				Asi
- 1 - - 2 - - 3 -				CL	SILTY CLAY with 10% fine sand, medium to dark brown, slightly damp, moderate plasticity, very stiff				
- 3 - - 4 - - 5	B2-1	43	3		Grading to less sand		37.7		
- 6 - - 7 -					Slight product odor			Bentonite	
- 8 - - 9 -					SILTY CLAY no sand, dark brown with gray mottling, damp,		45.6		
10	B2-2	35	5	CL	moderate plasticity, very stiff, slight odor	_			
- 11 -					Bottom of boring at 10.5 feet				
12-									
- 13-									
14-]						İ		l
15-									
- 16-									
17-									
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- 19- 	1								
- 20 -	1								
- 21	}								
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Project Name:

Project Number:

Amador Valley Medical Clinic

7667 Amador Valley Boulevard

Dublin, CA 94568

F9234.11

Date Drilled: 10/15/92

Logged By:

Boring No.

S. Fontaine

B-3

Depth (ft.)	Sample No.	Blows/Foot 140 ft/lbs.	Unified Soil Classification	SOIL DESCRIPTION	Water Level	OVM Reading (ppm)	Well Construction	Asphalt
				3" Asphalt 7" gravelly sand base				Asj
- 1 - - 2 - - 3 -		-	sc	CLAYEY SAND with silt, fine to medium grained, dark to medium brown, granular; fill				
- 4 - 5 - 6	B3-1	27	CL	SILTY CLAY, 5% fine sand, medium brown with gray mottling, slightly damp, stiff		75.6	Bentonite	
8 - 9						107	Ř	
	B3-2	25	CL	SILTY CLAY, trace fine sand, medium brown, damp, stiff				
- 11	1			Bottom of boring at 10.5 feet				
- 12 -	1		İ			<u> </u>		
- 13·	1						i	
- 14	1							
- 15								
- 16	1							
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Page 1 of 1



Project Name: Amador Valley Medical Clinic

7667 Amador Valley Boulevard

Dublin, CA 94568

Project Number: F9234.11 Boring No.

B-4

Date Drilled: 10/15/92

Logged By:

S. Fontaine

SOIL DESCRIPTION Part Par	<u> </u>	CCC 11U		- •	- +					
6° gravelly sand base CL SILTY CLAY with 10-15% fine sand, dark gray to black, granular; cuttings SILTY CLAY with 5% fine sand, light gray, granular; cuttings SILTY CLAY, trace fine sand, medium brown with some gray mottling, damp, moderate plasticity, very stiff; rootholes Gray, product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff; very strong product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff; very strong product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff; very strong product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity; very stiff; very strong product odor SILTY CLAY, medium brown, very moist, moderate plasticity; stiff Bottom of boring at 16.5 feet (angled)	Depth (ft.)	Sample No.	Blows/Foot	140 ft/lbs.	Unified Soil Classification	SOIL DESCRIPTION	Water Level	OVM Reading (ppm)	Well Construction	holt
CL SILTY CLAY with 10-15% fine sand, dark gray to black, granular; cuttings SILTY CLAY with 5% fine sand, light gray, granular; cuttings SILTY CLAY, with 5% fine sand, light gray, granular; cuttings 81.5 B4-1 42 CL SILTY CLAY, trace fine sand, medium brown with some gray mottling, damp, moderate plasticity, very stiff; rootholes Gray, product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor SILTY CLAY, medium brown, very moist, moderate plasticity; stiff Bottom of boring at 16. 5 feet (angled)										Ž
CL SILTY CLAY, trace fine sand, light gray, granular; cuttings 81.5 B4-1 42 CL SILTY CLAY, trace fine sand, medium brown with some gray mottling, damp, moderate plasticity, very stiff; rootholes Gray, product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor SILTY CLAY, medium brown, very moist, moderate plasticity; stiff Beta 26 SILTY CLAY, medium brown, very moist, moderate plasticity; stiff Bottom of boring at 16. 5 feet (angled)	- 1 -					6" gravelly sand base	•			
SILTY CLAY, trace fine sand, medium brown with some gray mottling, damp, moderate plasticity, very stiff; rootholes Gray, product odor Gray, product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity; stiff OVER 19999 SILTY CLAY, medium brown, very moist, moderate plasticity; stiff Bottom of boring at 16. 5 feet (angled)	- 2 -				CL					
B4-1 42 CL SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff; rootholes Gray, product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor B4-2 30 CL SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor B4-3 26 CL SILTY CLAY, medium brown, very moist, moderate plasticity; stiff B5-6 B4-3 26 CL SILTY CLAY, medium brown, very moist, moderate plasticity; stiff B6-7 B6-8 B6-8 B6-8 B6-8 B6-8 B6-8 B6-8 B6-8	3	i				SILTY CLAY with 5% fine sand, light gray, granular; cuttings				
B4-1 42 CL SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff; rootholes Gray, product odor SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor B4-2 30 CL SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor B4-3 26 CL SILTY CLAY, medium brown, very moist, moderate plasticity; stiff B5-6 B4-3 26 CL SILTY CLAY, medium brown, very moist, moderate plasticity; stiff B6-7 B6-8 B6-8 B6-8 B6-8 B6-8 B6-8 B6-8 B6-8	- 4 -									
8 - 9 - 10	- 5 r - 6	B4-1	4:	2	CL	SILTY CLAY, trace fine sand, medium brown with some gray mottling, damp, moderate plasticity, very stiff; rootholes		81.5		
plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity product od	- 7 - - 8 -					Gray, product odor			:	
plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity, very stiff, very strong product odor plasticity product od	- 9 -									
14 - 15 B4-3 26 CL SILTY CLAY, medium brown, very moist, moderate plasticity; stiff 35.6 17 - 18 - 19 - 20 - 21 - 21 - 21 - 21 - 21 - 21 - 21	r -	B4-2	30		CL				nite	
Bottom of boring at 16. 5 feet (angled) Bottom of boring at 16. 5 feet (angled) 20 - 21 - 21 - 21 - 21 - 21 - 21 - 21 -	- 13 - 14-								Bento	
Bottom of boring at 16. 5 feet (angled) Bottom of boring at 16. 5 feet (angled) 20 - 21 - 21 - 21 - 21 - 21 - 21 - 21 -	- 15 -									
- 18- - 19- - 20- - 21-	- 16	B4-3	20	5	CL	SILTY CLAY, medium brown, very moist, moderate plasticity; stiff	_	35.6		ł
20-	- 17- 					Bottom of boring at 16. 5 feet (angled)				
20-	- 18 - 									
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APPENDIX B SOIL SAMPLING

PROTOCOL



Soil Sampling Protocol

SOIL SAMPLING PROTOCOL

I. SOIL SAMPLING BY DRILLING RIG

- 1) Review site proposal for boring locations and special instructions. Confirm boring locations in field with client. Have Underground Service Alert (USA) mark utilities in area prior to drilling.
- Prior to initiating an exploratory boring, all equipment to be used during drilling and sampling operation is steam cleaned. Such equipment includes, but is not limited to, augers, bits, drilling rod, and soil samplers. Additionally, before each sampling event, the sampler and any sample liners are thoroughly cleaned with a dilute trisodium phosphate solution and rinsed with clean tap water or distilled water. Additional decontamination procedures are implemented as needed by specific projects.
- either solid flight or hollow stem augers. The boring is advanced to the desired sampling depth and the sampler is lowered to the bottom of the hole. The sampler is driven a maximum of 18 inches into the undisturbed soils ahead of the auger by a 140-pound, rig-operated hammer falling 30 inches. The number of blows required to drive the sampler the final 12 inches is recorded on the boring log. 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. After the sampler has penetrated the full depth, it is retrieved to the surface.
- 4) The samplers commonly used are either a California modified sampler (3 inch or 2.5 inch O.D.) or a standard penetrometer (2 inch O.D.). The standard penetrometer does not contain sample liners and is used to determine soil strength characteristics and visually characterize the subsurface materials. If samples are collected for laboratory analysis the California modified sampler, equipped with brass liners, is used except when the analysis will include copper or zinc. In this instance, the sample should be taken with the standard penetrometer and placed in a labeled plastic bag.

Upon retrieval, the sampler is disassembled into its component parts. One or more of the liners is selected for chemical analysis. The ends of the selected liner(s) are sealed with aluminum foil or teflon tape, capped with plastic caps, labeled, logged on chain-of-custody forms and stored in a chilled ice chest for preservation in the field and during transport to the analytical laboratory. All labels are pre-written to the extent possible with indelible ink to minimize handling time.

5) Samples not sealed for chemical analysis are checked for the presence of contamination in the field by the geologist. Any discoloration or odor is noted on the boring log. Each sample is classified in the field by a geologist using the Unified Soil Classification System and a Munsell soil color chart. In addition, samples may also be field-screened with a photoionization detector (calibrated daily) or threshold limit value sniffer. In either case, the instrument probe is held adjacent to freshly crumbled soil and the stabilized reading value is recorded on the log. Values of volatile vapors measured in the field are reconnaissance only and are not meant to supplant chemical analysis in a certified laboratory. Other visual screening techniques include examination of the sample under hand-lens magnification as-well-as floating sheen inspection resulting from immersion in water.

Lithology logging will collect geologic data as required, using conventional geologic and hydrogeologic terminology. When rock is logged, a GSA Rock Color Chart and appropriate terminology will be employed to describe rock, fractures, bedding, etc. Soil or rock coring may be specified by the supervising geologist on a project-specific basis.

- Samples are held in the possession of RESNA personnel until transferred to the analytical laboratory. Transfer to the laboratory is accomplished with either delivery by RESNA personnel, pick-up by laboratory personnel, or transfer by a personal delivery service. Each transfer of responsibility is recorded on a chain-of-custody record that accompanies the samples.
- Conditions occasionally arise when other drilling equipment are used given site-specific formation conditions. Rotary drilling may be selected if coring or bearing conditions arise. Rotary or casing hammer may be used as deep drilling, flowing sands, or formation-specific conditions require.
- 8) When drilling though an aquifer known to be contaminated, a staged drilling approach will be used. This would involve using either a temporary or

permanent conductor casing placed adjacent to the contaminated aquifer and pressed or advanced slightly into the underlying aquitard. The cased hole will be cleaned as necessary, following which, a smaller diameter drill bit/auger will be advanced to the next underlying water bearing stratum. An impermeable seal will be placed in the borehole or annular space as appropriate upon completion of exploratory boring/well construction.

II. SOIL SAMPLING BY HAND

1) Some situations require that samples be collected by hand without the assistance of a drill rig (e.g., soil stock piles, excavation sidewall sampling, etc.). When possible, soil samples will be collected using a steel core sampler equipped with clean brass liners which is advanced into the soil with a slide hammer. In other cases, the outer surface of the soil is removed and a brass liner is driven into the soil by hand or with a hammer. To avoid damaging the liner, a block of wood can be held next to the liner so that the hammer strikes the block rather than the liner. The liner is removed and handled as described above. In deep excavations where safety factors preclude the direct sampling of the bottom or side wall, soil is retrieved by a backhoe bucket and this soil is sampled.

APPENDIX C 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
1667 Annador Valley Bolesard Dublin, CA 94568	PERMIT NUMBER 92516 LOCATION NUMBER
CLIENT Name Mr Ed Kemptud / Mr. James Hotchhiss - Agad Address Ilolo 7 Amadox Valley Alva Phone \$28-9211 City Dublin (A J Zip 94568	PERMIT CONDITIONS WS. Helen Janin Circled Permit Requirements Apply
APPLICANT Name Shery Fontaine RESNA Industries Dro. Address (1250) Allerae Street Phone 5(0 · U) (0 - 3300) City Fremont Zip 94538 TYPE OF PROJECT Well Construction General Water Supply Contamination Monitoring Well Destruction PROPOSED WATER SUPPLY WELL USE Domestic Industrial Other Municipal Irrigation DRILLING METHOD: Mud Rotary Air Rotary Auger X Cable Other	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. 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. 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
WELL PROJECTS Drill Hole Dlameter in. Maximum Casing Diameter in. Depth ft. Surface Seal Depth ft. Number	 snall be used in place of compacted cuttings. D. CATHODIC. Fill hole above anode zone with concrete placed by tremie. E. WELL DESTRUCTION. See attached.
GEOTECHNICAL PROJECTS Number of Borings 4 Maximum Hole Diameter 8 In. Depth 10 ft. ESTIMATED STARTING DATE 10-13-92 ESTIMATED COMPLETION DATE 10-11-92	Approved Wyman Hona Date 14 Oct 92
I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.	Wyman Hong

APPLICANTS SIGNATURE

Date 10-7-92

31992

APPENDIX D LABORATORY REPORTS AND CHAIN-OF-CUSTODY RECORDS



ANALYSIS REPORT

Attention: Project:	RESN 42501 Frem 19513	Albrae St. ont, CA 945 3-L, Project	38	Dat BTI TPI	e Sampled: e Received: EX Analyzed: Ig Analyzed: Id Analyzed:	10-15-92 10-15-92 10-15-92 10-15-92 10-19-92 Soil	2 2 2
Detection Limit: SAMPLE Laboratory Identifica		Benzene ppm 0.005	Toluene ppm 0.005	Ethyl- benzene ppm 0.005	Total Xylenes ppm 0.005	TPHg <u>ppm</u> 1.0	TPHd ppm 1.0
	dentificat	ion					
B1-1 S1210254		ND	ND	ND	ND	ND	ND
B1-2 S1210255		0.018	0.054	0.036	0.016	11	24
B2-1 S1210256		ND	ND	ND	ND	ND	ND
B2-2 S1210257		ND	ND	ND	ND	ND	ND
B3-1		ND	ND	ND	ND	ND	NR

ppm = parts per million = mg/kg = milligrams per kilogram.

S1210258

ANALYTICAL PROCEDURES

BTEX—Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg-Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

TPHd-Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laboratory Representative

October 22, 1992
Date Reported

RESNA ENVIRONMENTAL LABORATORY IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY (Certification No. 1211)

ND = Not detected. Compound(s) may be present at concentrations below the detection limit.

NR = Analysis not requested.



ANALYSIS REPORT

RES 4250 Fren Project: 1951		Albrae St. ont, CA 945 L, Project I	38	Dat BTI TPI	e Sampled: e Received: EX Analyzed: Ig Analyzed: Id Analyzed:	10-15-92 10-15-92 10-15-92 10-15-92 10-19-92 Soil	2 2 2
Detection I	Limit:	Benzene ppm 0.005	Toluene ppm 0.005	Ethylbenzene ppm 0.005	Total Xylenes ppm 0.005	TPHg <u>ppm</u> 1.0	TPHd ppm 1.0
SAMPLE Laboratory Id	entificati	on					
B3-2 S1210259		ND	ND	ND	ND	ND	NR
B4-1 S1210260		ND	ND	ND	ND	ND	ND
B4-2 S1210261		ND	0.14	0.086	0.032	65	1.2
B4-3 S1210262		ND	ND	ND	ND	ND	ND

ppm = parts per million = mg/kg = milligrams per kilogram.

ND = Not detected. Compound(s) may be present at concentrations below the detection limit.

NR = Analysis not requested.

ANALYTICAL PROCEDURES

BTEX.- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg-Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

TPHd—Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laboratory Representative

October 22, 1992
Date Reported

Environmental Laboratories



1020lab.frm

ANALYSIS REPORT

Date Sampled: 10-15-92
Date Received: 10-15-92
TOG Analyzed: 10-16-92
Matrix: Soil
Detection Limit: 50 mg/kg

Amador Valley Medical Clinic

19513-L, Project F9234.11

Ms. Sheryl Fontaine

Fremont, CA 94538

42501 Albrae St.

RESNA

TOG (mg/kg)

SAMPLE

Project:

Attention:

Laboratory Identification

B3-1 ND S1210258

B3-2 ND S1210259

mg/kg = milligrams per kilogram = ppm = parts per million
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.

ANALYTICAL PROCEDURES

TPH as Oil and Grease — Total Oil and Grease (TOG) of mineral or petroleum origin are measured by extraction and gravimetric analysis according to Standard Method 5520 E/F.

Laboratory Representative

October 27, 1992

Date Reported



CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

older:

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