Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

March 26, 1993

Mr. Bernard Levy
Vice President/Corporate Counsel
HARSCH INVESTMENT CORP.
1121 Salmon Street
Portland, Oregon 97205

Clayton Project No. 45080.08

Subject: Quarterly Report for the South Shore Shopping Center at the Corner of Shore Line Drive and Park Street in Alameda, California

Dear Mr. Levy:

Clayton Environmental Consultants, Inc. is pleased to present our quarterly report for the activities conducted from November, 1992 to February, 1993 at the South Shore Shopping Center located at the Corner of Park Street and Shoreline Drive in Alameda, California.

A copy of this report should be sent to the Regional Water Quality Control Board and the Alameda County Health Care Services Agency.

If you have any questions or comments regarding this report, please contact me at (510) 426-2616 or Dariush Dastmalchi at (510) 426-2609.

Sincerely,

Anthony S. McElligott, P.E.
Supervisor, Remediation
Western Operations

ASM/cmh

Western Operations

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Clayton
ENVIRONMENTAL
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Quarterly Report
for
South shore Shopping Center
Corner of Shore Line Drive and Park Street
Alameda, California

Clayton Project No. 45040.08
March 29, 1993

CONTENTS

1.0 INTRODUCTION

Clayton Environmental Consultants, Inc. was retained by Harsch Investment Corp. to conduct quarterly monitoring activities at the South Shore Shopping Center at the corner of Shore Line Drive and Park Street in Alameda, California (Figure 1). These activities were conducted from November, 1992 to February, 1993. The following tasks were completed during this period:

- Task 1 - Monitoring Well Installation (MW-22, MW-23, MW-24 and MW-25)
- Task 2 - Monitoring Well Development
- Task 3 - Groundwater monitoring and sampling
- Task 4 - Soil and groundwater samples analysis

2.0 TASK 1: MONITORING WELL INSTALLATION

On February 16, 1993, Clayton observed the installation of two monitoring wells MW-22 and MW-23 (Figure 2). Before commencing the drilling activities, Clayton had prepared a health and safety plan based on the planned work activities and environmental investigations, in accordance with Title 29 of the Code of Federal Regulations, Section 1910.120 (29 CFR 1910.120).

During the drilling of the monitoring wells, soil characteristics were logged in the field by Mr. Dariush Dastmalchi, Clayton geologist, using the Unified Soil Classification System (Appendix A). At the time of this report the boring logs for monitoring wells MW-24 and MW-25 were not available to Clayton from Kamur Industries. Distinguishing features such as color, odor, and relative soil moisture content were noted in the field logs. Drilling and sampling activities were conducted in accordance with the Regional Water Quality Control Board (RWQCB), and Tri-Regional and Alameda County Health Care Services Agency (ACHCSA) guidelines. Clayton's drilling, well construction, and sampling protocols for borehole/monitoring well installation (Appendix B) was supervised by a civil engineer registered in the State of California.

To aid in locating contamination, Clayton screened the soil cuttings during the drilling activity for total ionizable organic compounds using a photoionization detector (PID), and visually examined the soil for petroleum compounds. Clayton collected soil samples with a 2.5-inch split-barrel sampler until groundwater was encountered.

Monitoring well MW-22 was installed to assess the extent of the contamination from the former Texaco Gas Station. It was drilled southeast of the Lyon's Restaurant (former Texaco service station). Monitoring well MW-22 was permitted by the East Bay Regional Parks District and was constructed within park property. The well was constructed of 2-inch diameter polyvinyl chloride (PVC) casing to a depth of 25 feet below ground surface (bgs).

Monitoring well MW-23 was installed to determine the possible extent of the contamination from operation of the hydraulic lifts in the former Goodyear Service Station (currently a Big 5 Sporting Goods Store). Monitoring well MW-23 was permitted by Alameda County Flood Control and Water Conservation District (Zone 7). The well was constructed of 2-inch diameter PVC casing to a depth of 20 feet bgs.

The monitoring wells were constructed using screened casing extending above the water table. Solid casing was then installed to the surface. The sand pack was extended to 1 foot above the screen. A 1-foot thick bentonite seal was placed on top of the sand pack, and the well was sealed to the surface using cement grout. A locking cap was used to secure the well in a Christie box that was raised above the surface grade by approximately 1 inch. Figures 3 and 4 show the schematic diagrams for construction of these wells.

3.0 TASK 2: MONITORING WELL DEVELOPMENT

The well seal in newly constructed wells was allowed to set for 72 hours prior to development. Development of the well can volatilize the contaminants present; therefore, the wells were sampled 72 hours after development.

The wells were developed using disposable bailers until water turbidity and specific conductance stabilized.

4.0 TASK 3: GROUNDWATER MONITORING AND SAMPLING

On February 23 and 24, 1993, Clayton collected groundwater samples from monitoring wells MW-5B, MW-7B, MW-8B, MW-11, MW-13 (designated at STMW-4 by Kamur Industries), MW-14, MW-15, MW-16, MW-17, MW-18, MW-19, MW-20, MW-22 and MW-23. The groundwater samples were collected in clean laboratory-supplied containers and placed immediately into an iced cooler for transport to Clayton's laboratory. One trip blank was furnished in accordance with Clayton's quality assurance/quality control (QA/QC) program. Groundwater sampling activities were conducted according to Clayton's monitoring well sampling protocols based on the RWQCB and ACHCSA guidelines (Appendix C). Details of the groundwater sampling activities are provided in the water sampling field survey forms (Appendix D).

Monitoring wells MW-10 (designated at STMW-1 by Kamur Industries), MW-12 (designated as STMW-3 by Kamur Industries, MW-24 and MW-25 were sampled and monitored by Kamur Industries. Kamur Industries did not provide Clayton with their field survey forms.

5.0 TASK 4: SOIL AND GROUNDWATER SAMPLE ANALYSES

Clayton collected one soil sample at the soil and water interphase from each well for laboratory analysis. The soil sample collected from the monitoring well MW-22 was analyzed by the following Environmental Protection Agency (EPA) Methods:

- EPA Method 8015 for total petroleum hydrocarbons as gasoline (TPH-G)
- EPA Method 8020 for benzene, toluene, ethylbenzene and xylene (BTEX)

The soil sample collected from monitoring well MW-23 was analyzed by the following methods:

- EPA Method 8015 for TPH-G
- EPA Method 8020 for BTEX
- EPA Method 8015 for total petroleum hydrocarbons as diesel (TPH-D)
- EPA Method 8015 for total petroleum hydrocarbons as motor oil
- EPA Method 8010 for halogenated hydrocarbons

The groundwater samples were analyzed by one or more of the following methods:

- EPA Method 8015 for TPH-G
- EPA Method 8020 for BTEX
- EPA Method 8015 for (TPH-D)
- EPA Method 601 for halogenated hydrocarbons
- EPA Method 6010 for metals
- EPA Method 160.1 for total dissolved solids (TDS)
- Standard Method 5520-F for total hydrocarbons oil and grease (O&G)

Laboratory analysis performed for the groundwater samples are shown in Table 1.

Table 2 summarizes the laboratory results for the groundwater samples collected in February 1992. The regulatory guidelines are also listed in this table. Previous groundwater sampling results are included in Appendix E. Table 2 lists only those compounds detected at or above analytical detection limits. Clayton's laboratory analytical reports are presented in Appendix F. Kamur Industries analytical reports are included in Appendix G.

Past sampling activities of monitoring wells MW-15 and MW-18 through MW-21, did not result in any constituents at or above analytical detection limits. Therefore these wells are not include in Appendix E. Monitoring wells MW-10 through MW-13 were monitored by the Kamur Industries, therefore, the historical data for these wells is not included in this report.

6.0 FINDINGS AND CONCLUSIONS

Based on the laboratory reports, we conclude the following:

- The highest concentration of TPH-G was detected in the groundwater sample collected from MW-12. TPH-G was also present in the groundwater samples collected from MW-5B, MW-10 and MW-25. No drinking water standards are published for TPH-G at this time. The isoconcentration map for TPH-G is presented in Figure 5.

- Benzene was detected in the groundwater samples collected from monitoring wells MW-5B, MW-10, MW-12 and MW-25 only, at levels that exceeds the drinking water standard. Figure 6 shows an isoconcentration contour map for benzene.

- The concentrations of total xylenes and ethylbenzene in the groundwater sample collected from MW-12 exceed the drinking water standards. The groundwater samples collected from MW-5B and MW-10 contained xylenes and ethylbenzene at concentrations lower that the drinking water standards.

- The concentration of toluene in the groundwater samples collected from MW-5B, MW-10, MW-12 and MW-25 ranged from 4.2 micrograms per liter (µg/l) to 1900 µg/l. No drinking water standard has been published for toluene at this time.

- The concentration of TPH-D in the groundwater samples from MW-5B, MW-14, MW-15, and MW-22 exceeds the Suggested No-Adverse Response Levels (SNARL) set by the USEPA. No drinking water standard is published for diesel at this time. Figure 7 shows an isoconcentration map for TPH-D.

- The concentrations of cis-1,2-dichloroethene, trichloroethene, and tetrachloroethene in the groundwater samples collected from monitoring wells MW-7B and MW-8 exceeds their respective drinking water standards. Isoconcentration contour lines for these compounds are presented in Figures 8, 9, and 10.

- Chlorobenzene, trans-1,4-dichloroethene, and 1,1-dichloroethene historically have been present in the groundwater samples from MW-7B. However, they were not detected in the groundwater sample from MW-7B. The detection limits were increased above the concentrations used for drinking water standards due to matrix interference from tetrachloroethene; therefore, these compounds may be present in the sample at concentrations above the drinking water standards but less than the detection limits achieved.

- The concentration of 1,2-dichloroethane in the groundwater samples collected from monitoring wells MW-14 and MW-22 exceeds the drinking water standard. The concentration of 1,2-dichloroethane increases with increasing distance from the former Texaco site, in the direction of the groundwater flow. The cause for this increase is not known at this time. However, this may indicate that the contaminant plume has move away from the site and the concentration in monitoring well MW-5B is the tail end of the plume. An isoconcentration map for 1,2-dichloroethane is shown on Figure 11.

- The groundwater sample from monitoring well MW-12 contained 3,900 µg/l oil and grease. No drinking water standards have been published for oil and grease at this time.

- The groundwater flow direction beneath the subject property is presented in Figure 12. The groundwater flow beneath the former Texaco Gas Station and the former dry cleaner site is similar to the ground surface topography toward San Francisco Bay. In contrast, the groundwater beneath Kamur Industries flows in a northerly direction and away from San Francisco Bay. The cause for this flow direction beneath Kamur Industries is not known at this time. However, it may be caused by a ruptured or leaking water line(s) or excessive water infiltration from the surface.

- TDS concentrations in groundwater samples collected from monitoring wells MW-16, MW-17, and MW-18 exceeds the State Water Resources guideline of 3,000 milligrams per liter (mg/l) for potential drinking water sources.

- The soil sample collected during the installation of monitoring well MW-22 contained 0.007 milligrams per kilogram (mg/kg) toluene. The laboratory reports did not indicate any compounds at concentrations at or above the analytical detection limits in other soil samples collected by Clayton or Kamur Industries.

7.0 FUTURE ACTIVITIES

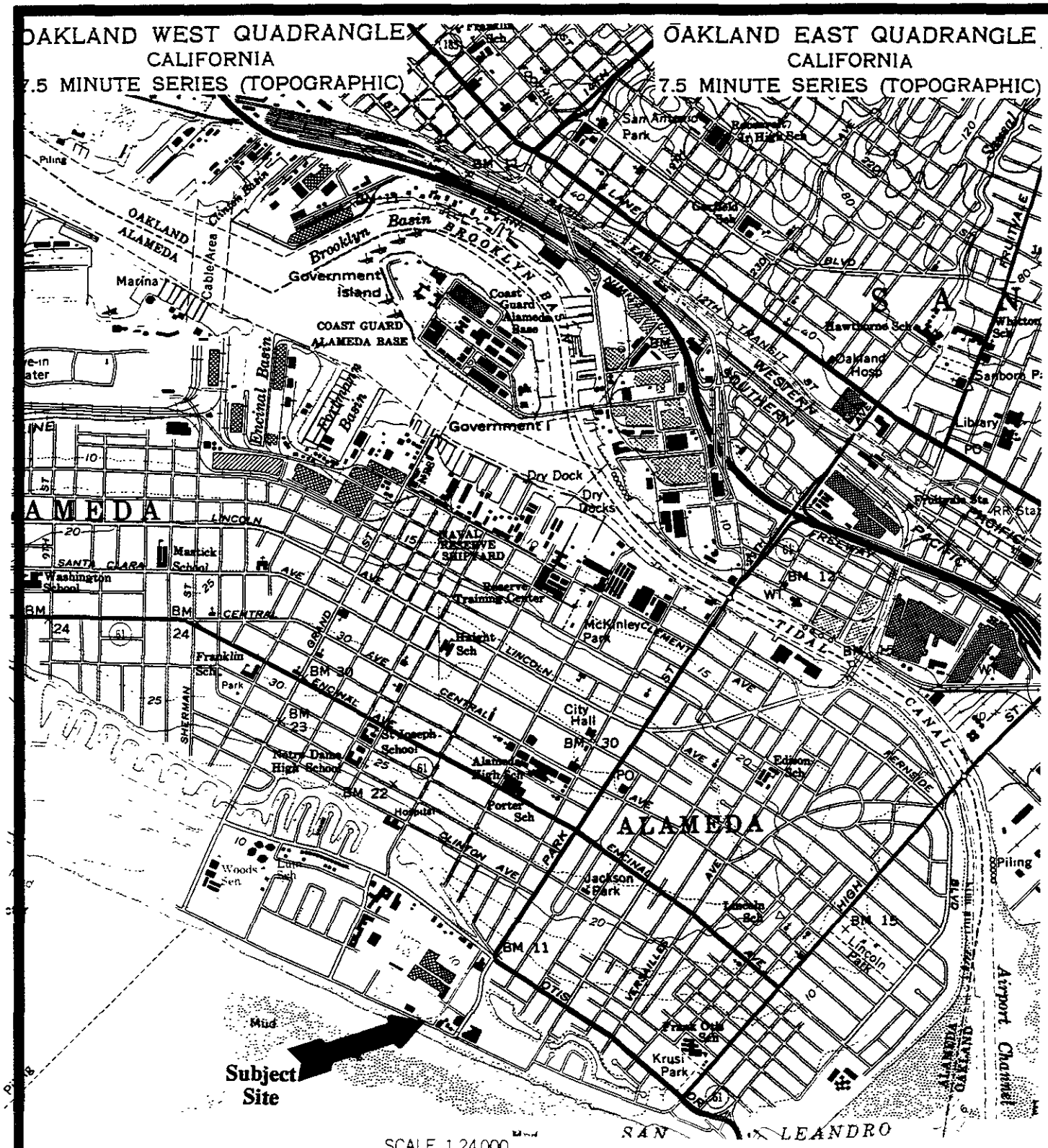
On October 9, 1992, ACHCSA requested that Harsch Investment Corp. prepare a work plan for further investigations and possible remediation. We are currently in the process of preparing this work plan. We expect to present the work plan to RWQCB and ACHCSA by April 26, 1993.

This report prepared by: _____
Dariush Dastmalchi
Geologist

This report reviewed by: _____
Anthony S. McElligott
Supervisor, Remediation
Western Operations

March 29, 1993

FIGURES



Site Location and Topographic Map
SHORE LINE SHOPPING CENTER
Corner of Shore Line Drive and Park Street
Alameda, California

Clayton Project No. 45040.08

Figure 1

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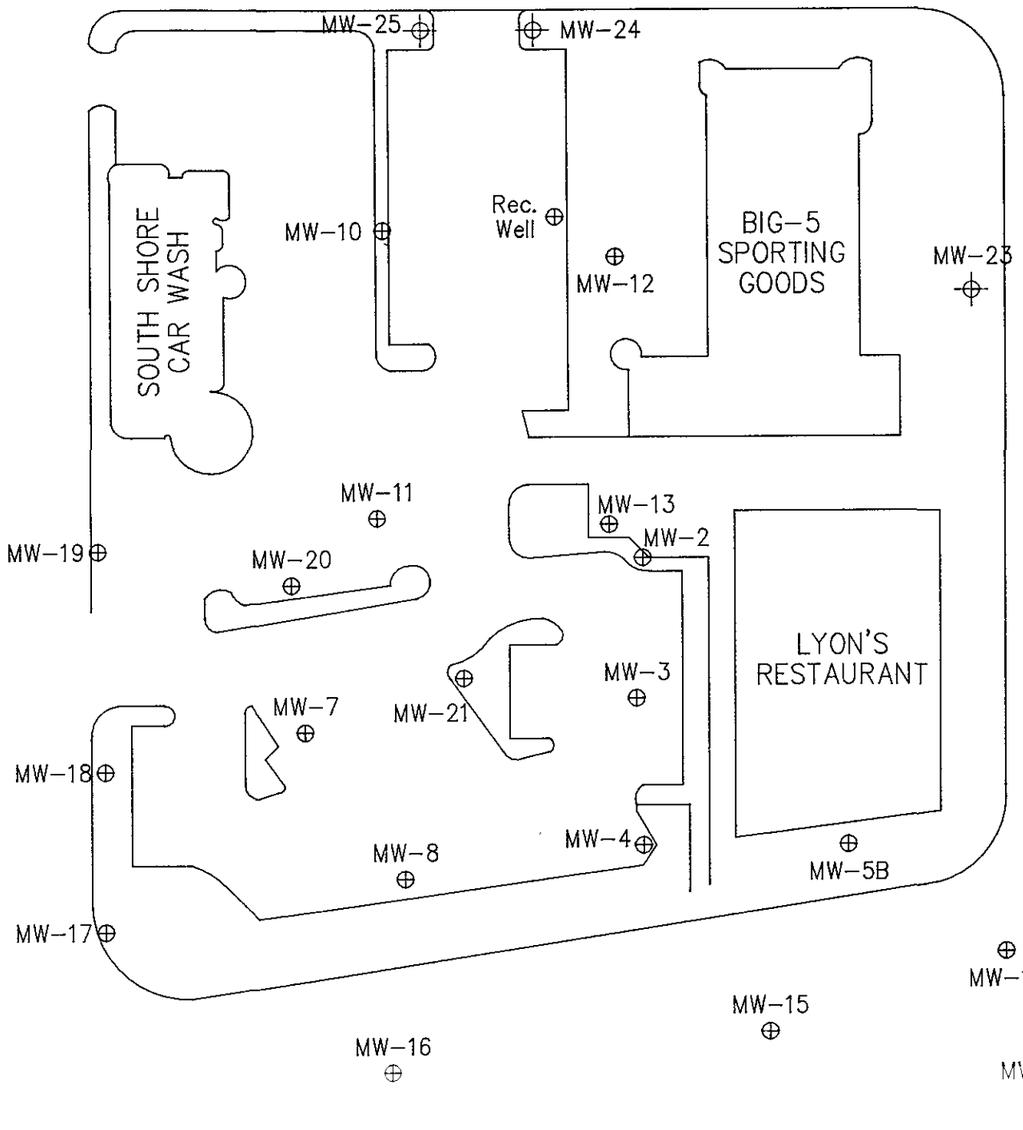
45040-24-16



LEGEND

- ⊕ Existing Monitoring Wells
- ⊕ New Monitoring Wells
- Not detected at or above detection limit

(not to scale)

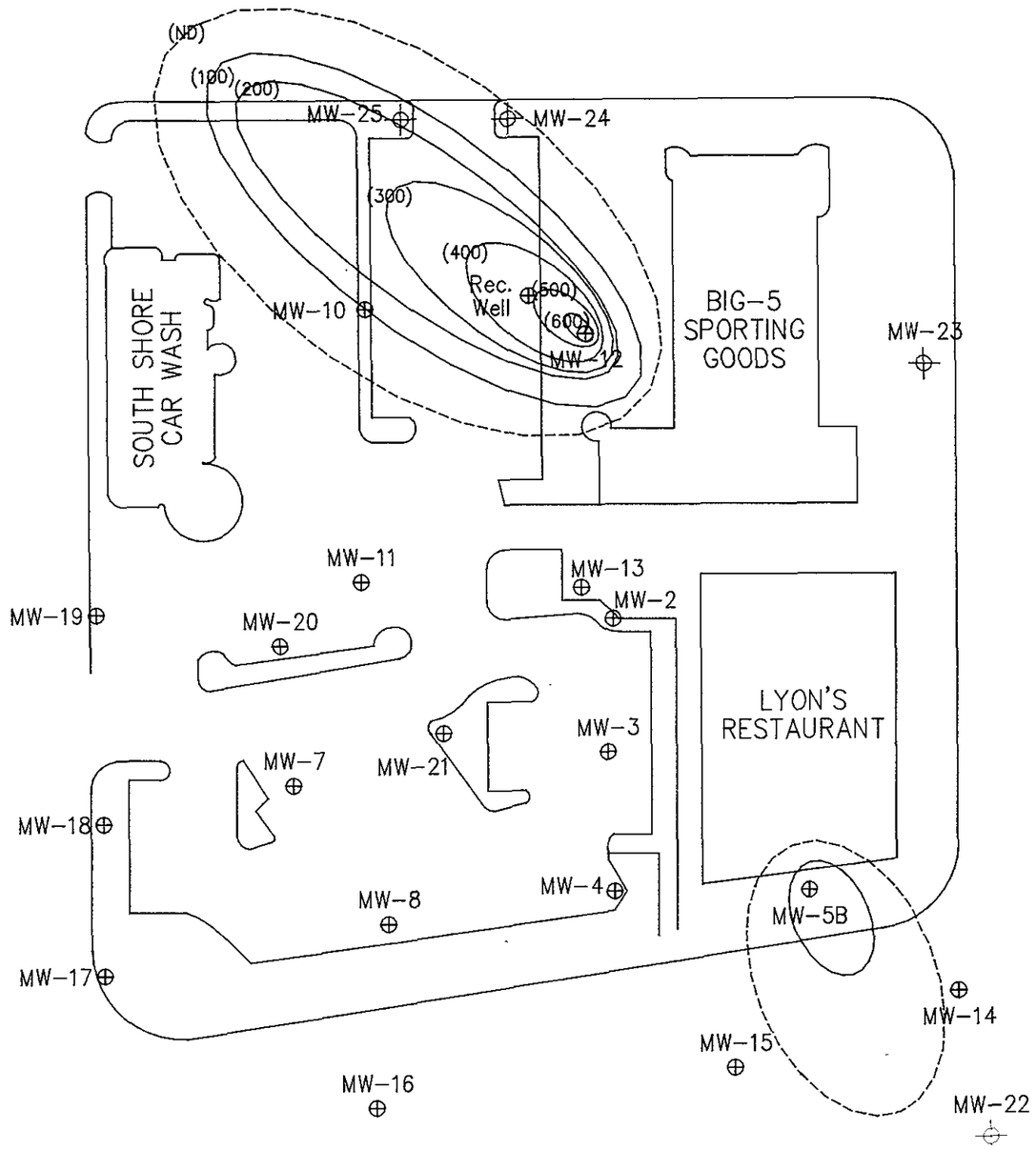
New Monitoring Wells Location
SOUTH SHORE SHOPPING CENTER
Corner of South Shore Drive and Park Street
Alameda, California

Clayton Project No. 45040.08

Figure 2

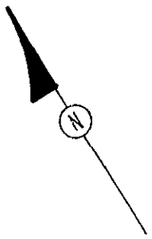
45040-DL-16

Clayton ENVIRONMENTAL CONSULTANTS



LEGEND

	Isoconcentration Line (Dashed where inferred)
(200)	Concentration
⊕	Existing Monitoring Wells
⊕	New Monitoring Wells
ND	Not detected at or above detection limit



Isoconcentration Map for Benzene
SOUTH SHORE SHOPPING CENTER
Corner of Shore Line Drive and Park Street
Alameda, California

Clayton Project No. 45040.08

Figure 6

45040-BZ-16

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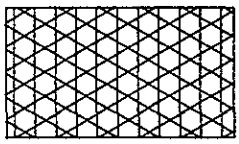
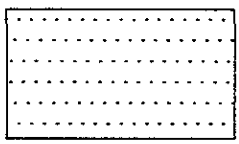
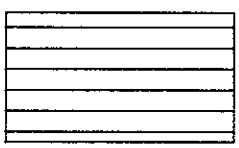


Concrete

Bentonite



Sand #2/12



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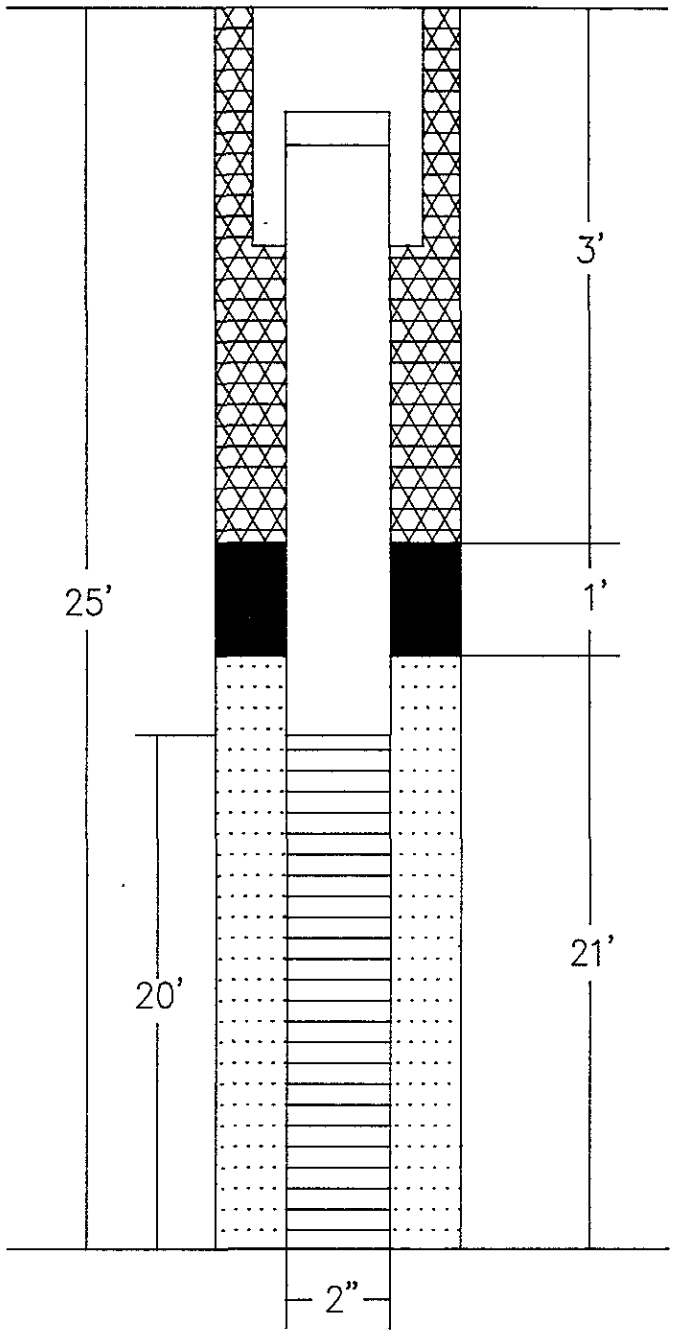

Schematic Diagram for Monitoring Well MW-22
SOUTH SHORE SHOPPING CENTER
Corner of South Shore Drive and Park Street
Alameda, California

(not to scale)

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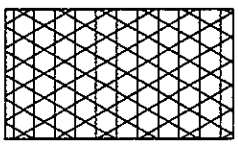
Figure 3

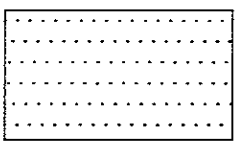
45040-MW-16

Clayton ENVIRONMENTAL CONSULTANTS

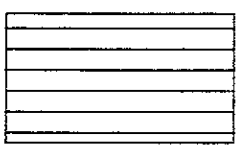


Concrete

Bentonite



Sand #2/12



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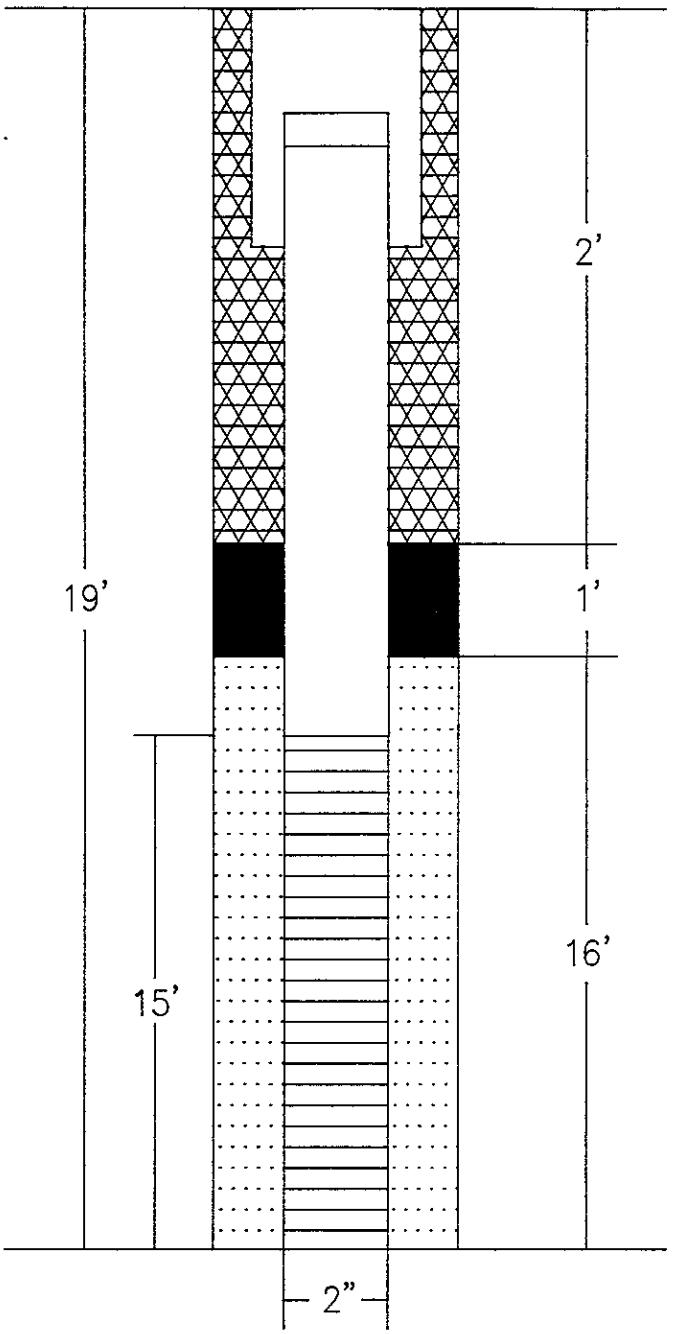

Schematic Diagram for Monitoring Well MW-23
SOUTH SHORE SHOPPING CENTER
Corner of South Shore Drive and Park Street
Alameda, California

(not to scale)

Clayton Project No. 45040.08

Figure 4

45040-MW-17

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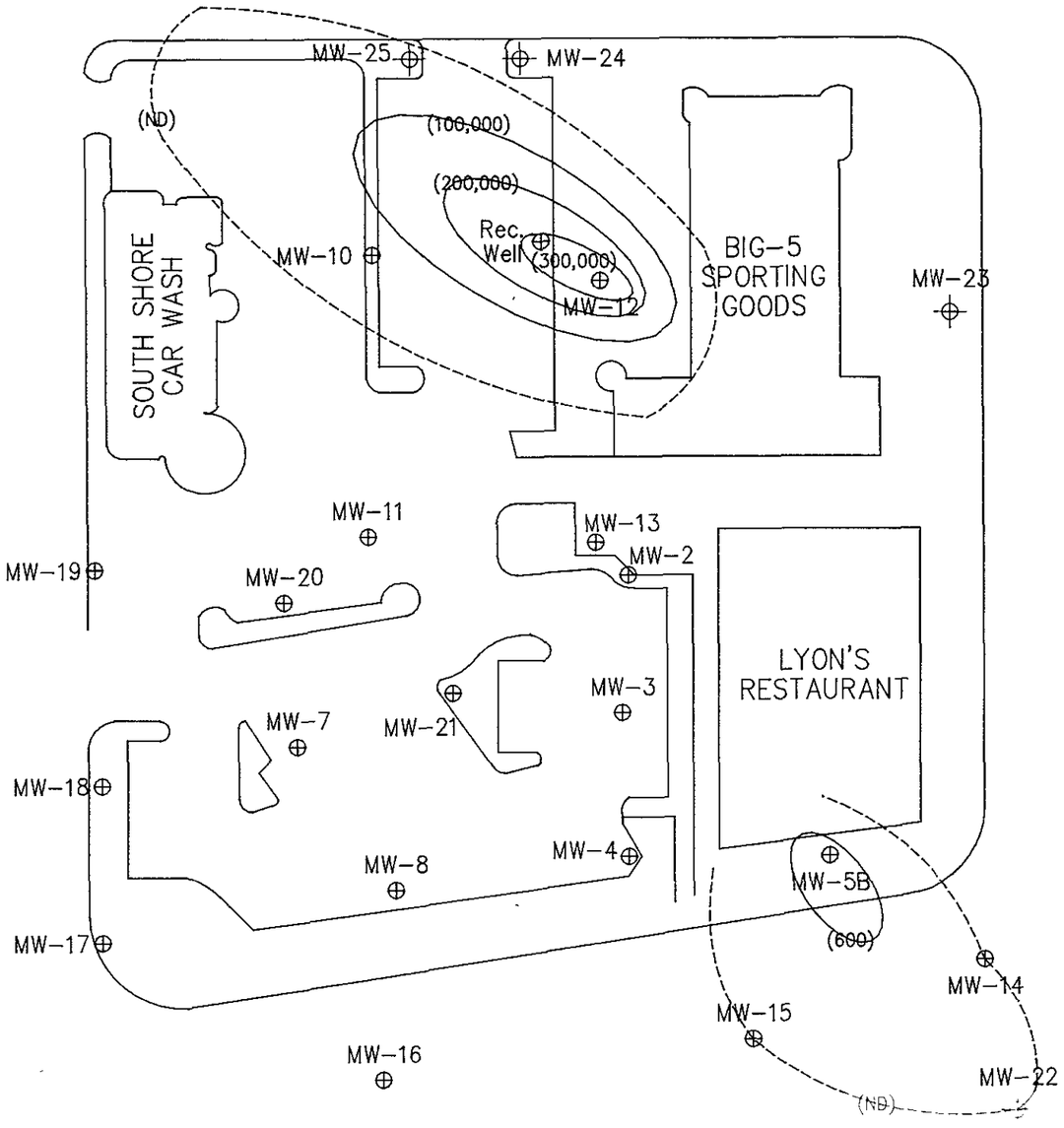
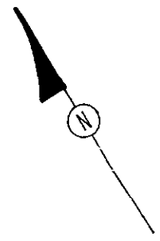


LEGEND

~	Isoconcentration Line (Dashed where inferred)
(200)	Concentration
⊕	Existing Monitoring Wells
⊕	New Monitoring Wells
ND	Not detected at or above detection limit



Isoconcentration Map for Gasoline
SOUTH SHORE SHOPPING CENTER
Corner of South Shore Drive and Park Street
Alameda, California

Clayton Project No. 45040.08

Figure 5

45040-GS-16

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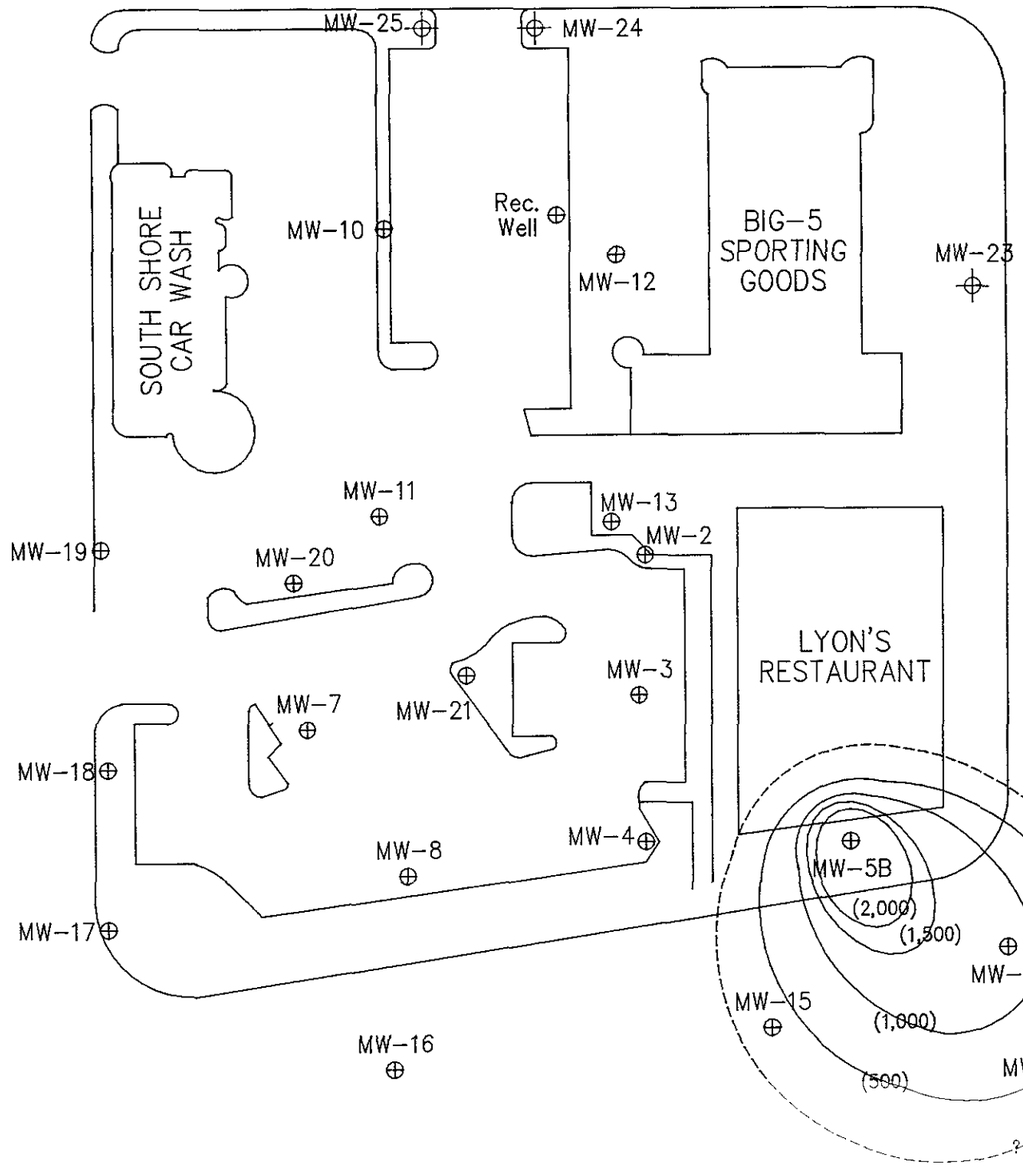
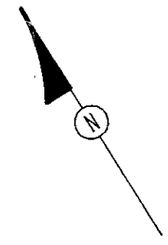


LEGEND

	Isoconcentration Line (Dashed where inferred)
(200)	Concentration
⊕	Existing Monitoring Wells
⊕	New Monitoring Wells
ND	Not detected at or above detection limit



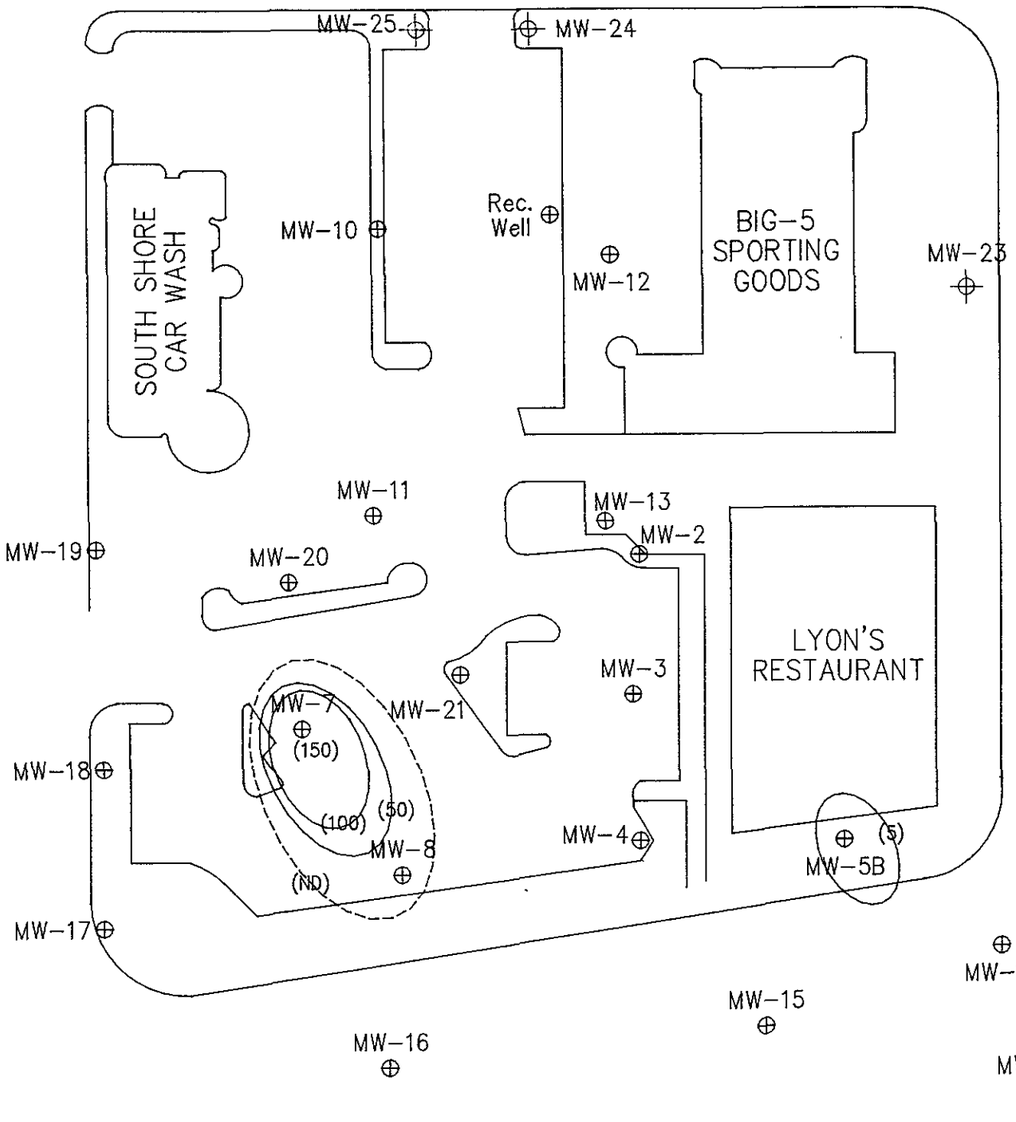
Isoconcentration Map for Diesel
SOUTH SHORE SHOPPING CENTER
Corner of South Shore Drive and Park Street
Alameda, California

Clayton Project No. 45040.08

Figure 7

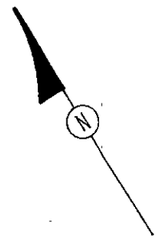
45040-DL-:6

Clayton ENVIRONMENTAL CONSULTANTS



LEGEND

~	Isoconcentration Line (Dashed where inferred)
(200)	Concentration
⊕	Existing Monitoring Wells
⊕	New Monitoring Wells
ND	Not detected at or above detection limit



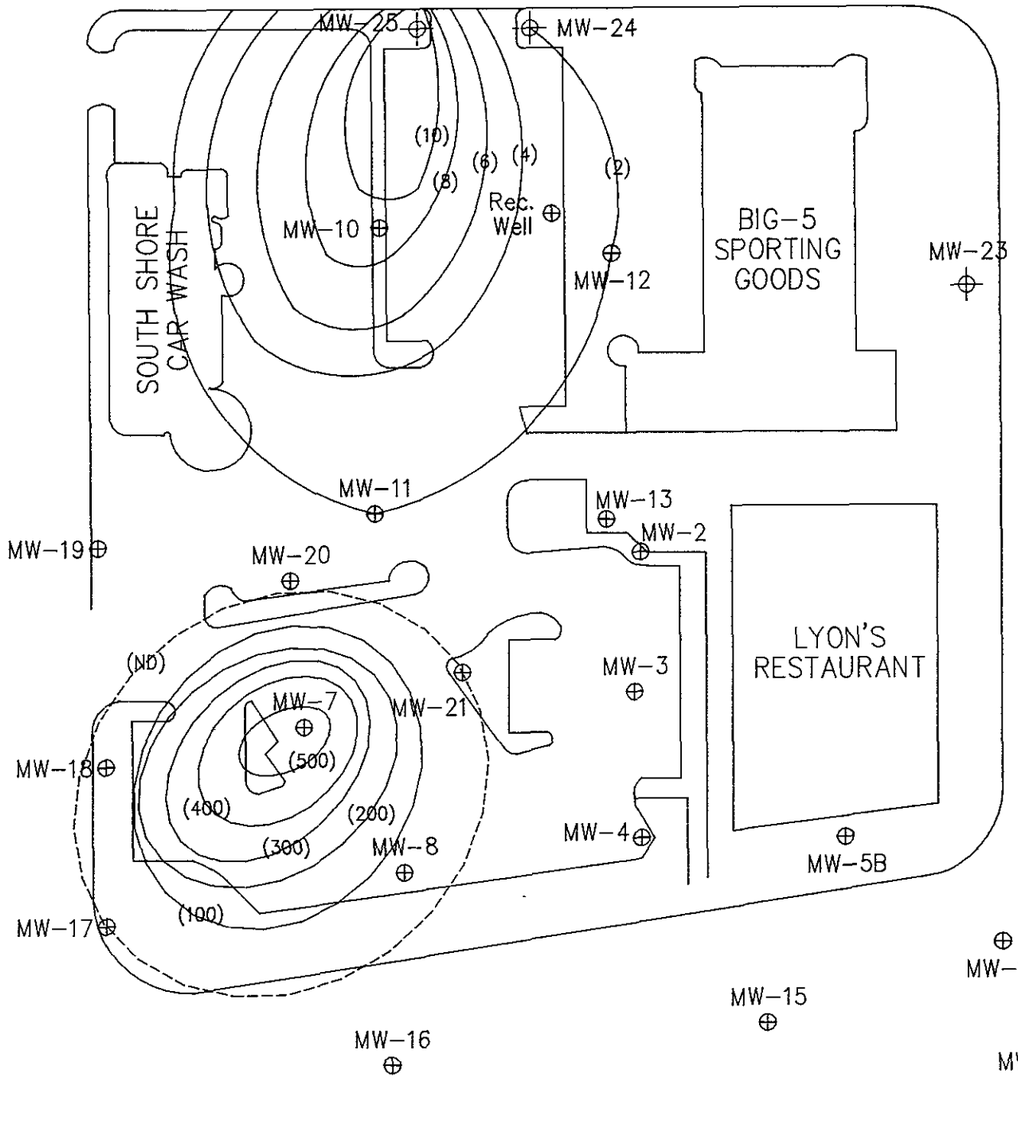
'soconcentration Map for Cis-1,2-dichloroethene
SOUTH SHORE SHOPP'NG CENTER
Corner of South Shore Drive and Park Street
Alameda, California

Clayton Project No. 45040.08

Figure 8

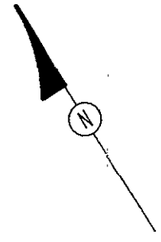
45040-DE-16

Clayton ENVIRONMENTAL CONSULTANTS



LEGEND

~	Isoconcentration Line (Dashed where inferred)
(200)	Concentration
⊕	Existing Monitoring Wells
⊕	New Monitoring Wells
ND	Not detected at or above detection limit



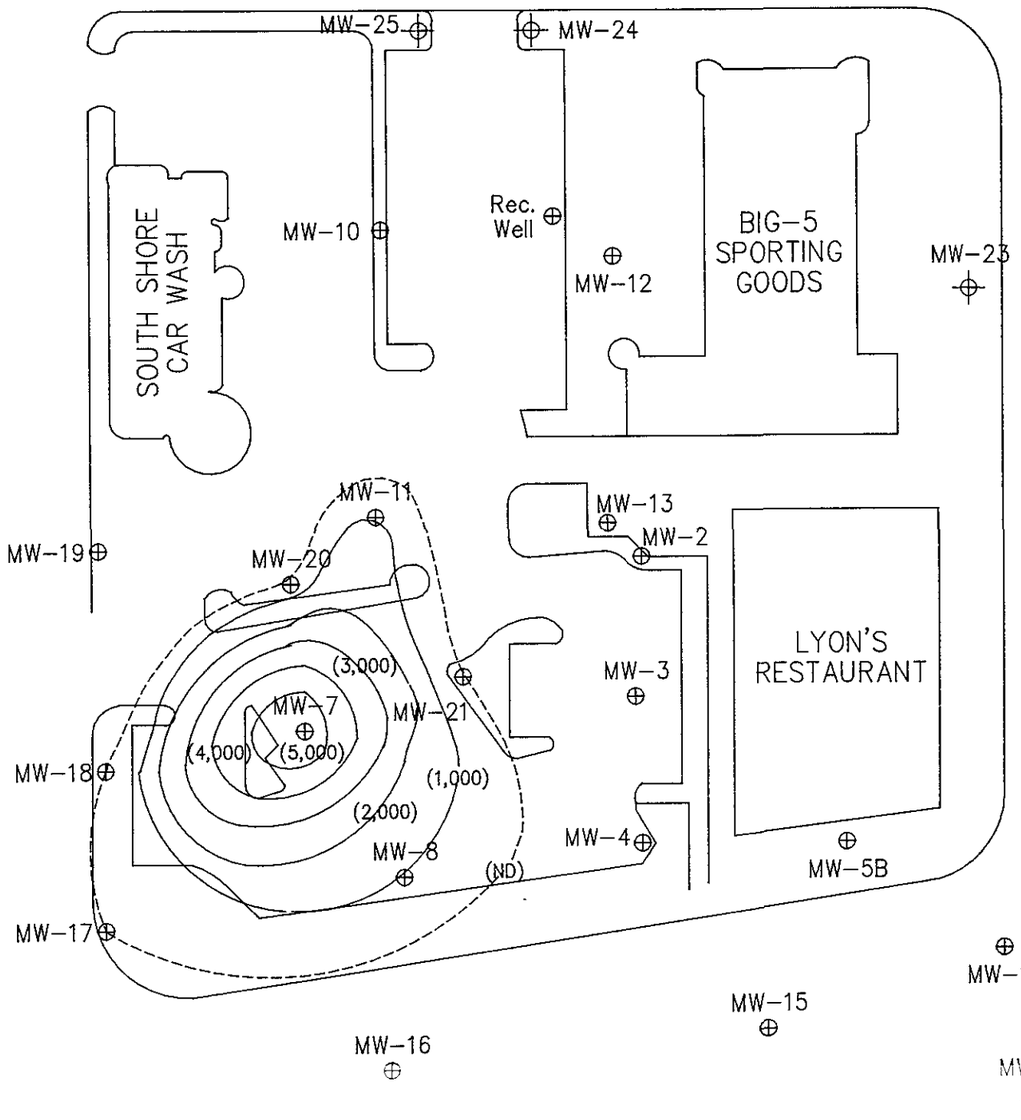
Isoconcentration Map for Trichloroethene
SOUTH SHORE SHOPPING CENTER
Corner of South Shore Drive and Park Street
Alameda, California

Clayton Project No. 45040.08

Figure 9

45040-TC-16

Clayton ENVIRONMENTAL CONSULTANTS



LEGEND

~	Isoconcentration Line (Dashed where inferred)
(200)	Concentration
⊕	Existing Monitoring Wells
⊕	New Monitoring Wells
ND	Not detected at or above detection limit

N

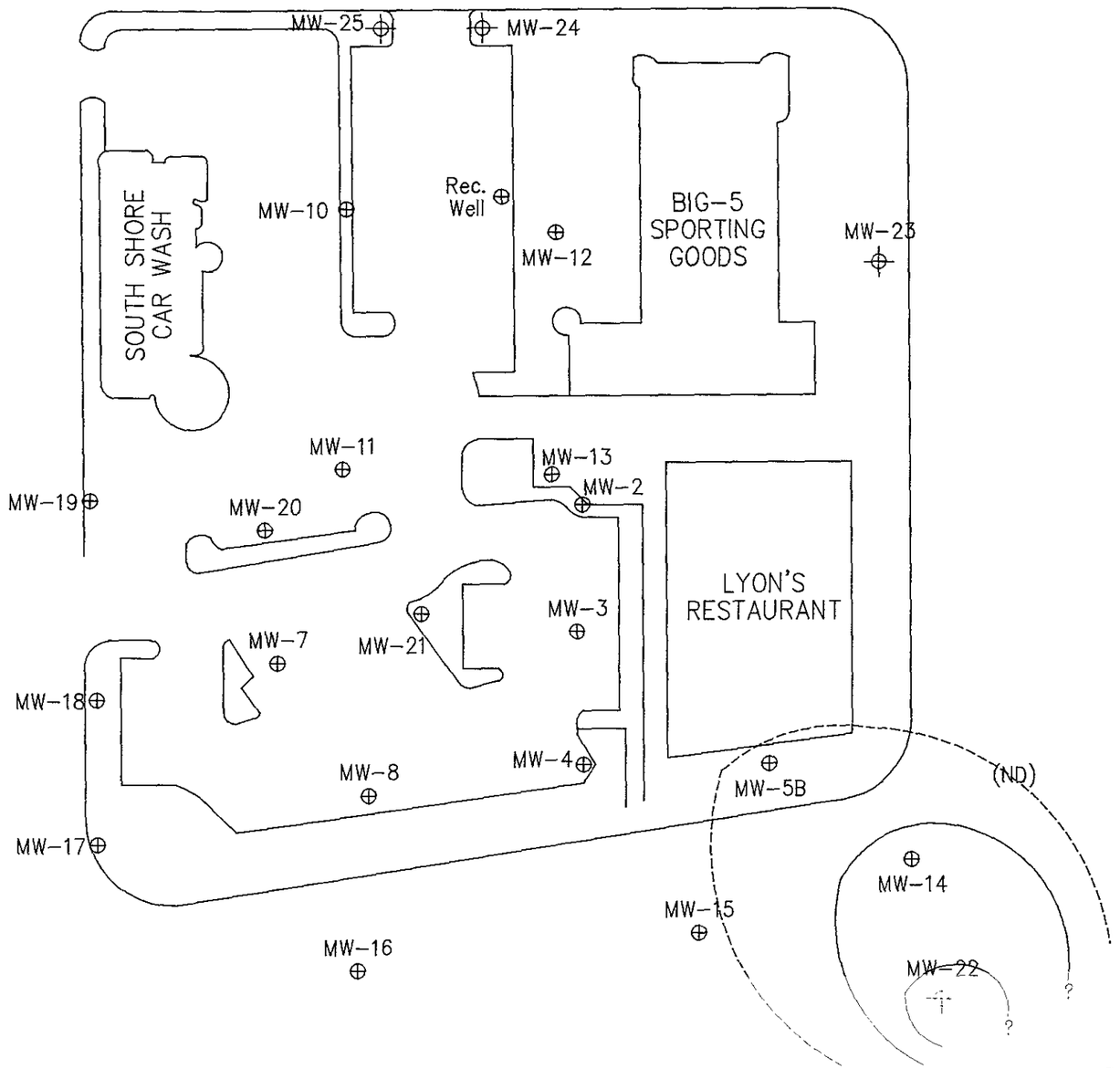
Isoconcentration Map for Tetrachloroethene
SOUTH SHORE SHOPPING CENTER
Corner of South Shore Drive and Park Street
Alameda, California

Clayton Project No. 45040.08

Figure 10

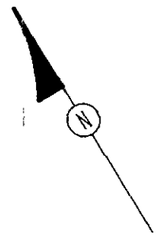
45040-PC-16

Clayton ENVIRONMENTAL CONSULTANTS



LEGEND

~	Isoconcentration Line (Dashed where inferred)
(200)	Concentration
⊕	Existing Monitoring Wells
⊕	New Monitoring Wells
ND	Not detected at or above detection limit



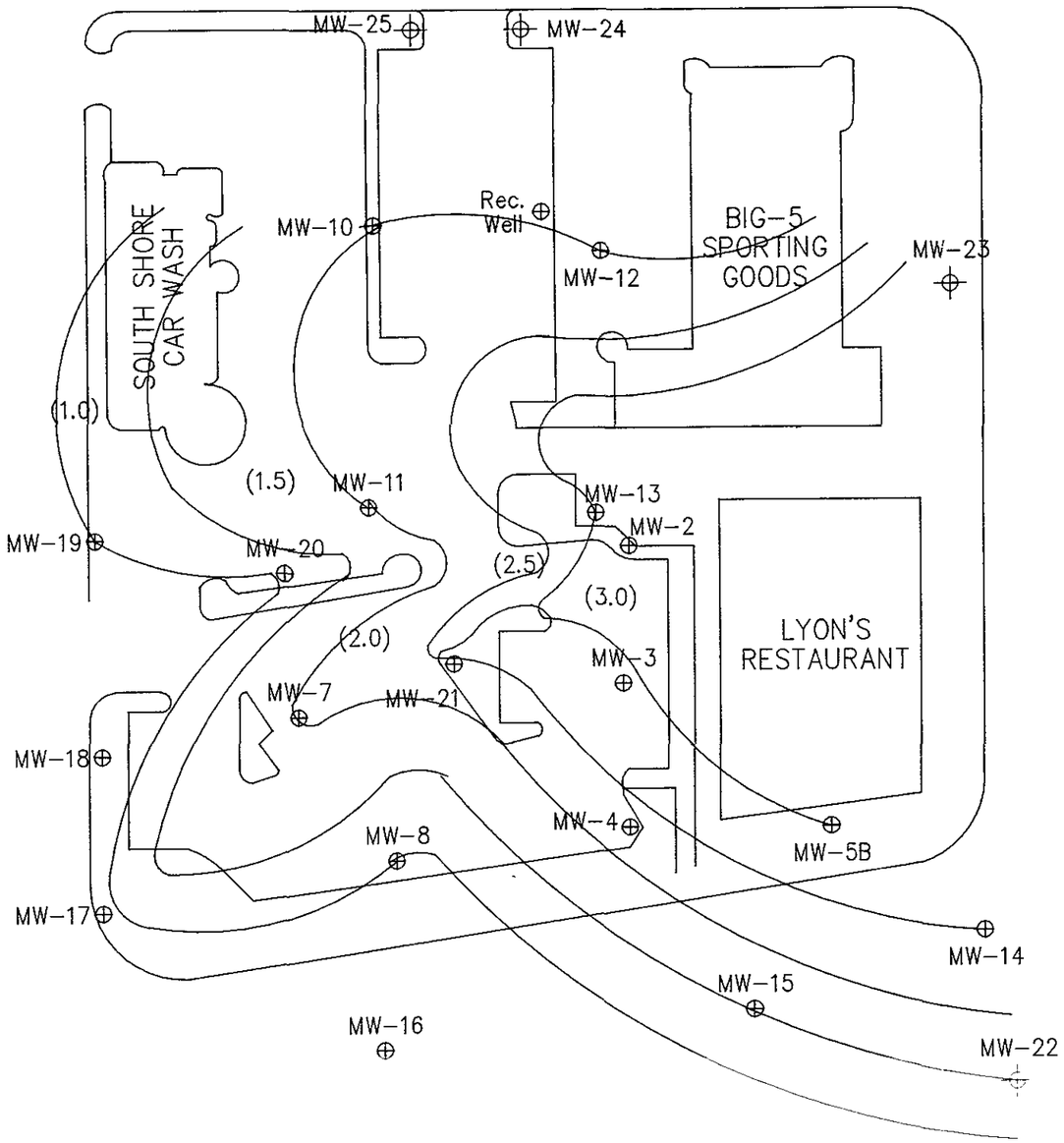
Isoconcentration Map for 1,2-dichloroethane
SOUTH SHORE SHOPPING CENTER
Corner of South Shore Drive and Park Street
Alameda, California

Clayton Project No. 45040.08

Figure 11

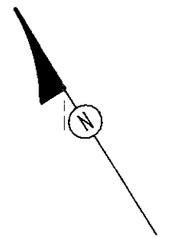
45040-DA-16

Clayton ENVIRONMENTAL CONSULTANTS



LEGEND

~	Line of Equi Potential
(200)	Groundwater Elevation
⊕	Existing Monitoring Wells
⊕	New Monitoring Wells



Groundwater Elevations
SOUTH SHORE SHOPPING CENTER
Corner of South Shore Drive and Park Street
Alameda, California

Clayton Project No. 45040.08

Figure 12

45040-WA-16

Clayton ENVIRONMENTAL CONSULTANTS

TABLES

Table 1

Laboratory Analysis for Groundwater Samples Collected in February 1993

Sample I.D.	TPH-G	BTEX	TPH-D	Halogenated Hydrocarbons	O&G	TDS
MW-5B	■	■		■		■
MW-7B				■		■
MW-8B				■		■
MW-10	■	■		■		
MW-11				■		■
MW-12	■	■	■	■	■	
MW-14	■	■	■	■		■
MW-15	■	■	■	■		■
MW-16	■	■	■	■		■
MW-17				■		■
MW-18				■		■
MW-22	■	■	■	■		■
MW-23	■	■	■	■	■	■
MW-24	■	■		■		
MW-25	■	■		■		

Shaded box represents sample analysis

Table 2

Analytical Summary for Groundwater Samples Collected in February 1993
All Concentrations in Micrograms per Liter (µg/l)

Sample I.D.	PCE	TCE	1,2-DCA	1,2-DCE	Benzene	Toluene	Xylenes	Ethylbenzene	Gas	Diesel	Oil & Grease	TDS	DTW	W.E.	C.E.
MW-5B	ND	3.4	0.4	5.0	210	4.2	2.0	1.9	640	2,400	NA	1,400	2.42	+2.66	5.08
MW-7B	5,800	540	ND	150	NA	NA	NA	NA	NA	NA	NA	1,100	3.33	+2.19	5.52
MW-8B	5.0	14	ND	9.0	NA	NA	NA	NA	NA	NA	NA	930	4.92	+1.23	6.15
MW-10	ND	9.5	ND	ND	210	480	1,200	510	66,000	NA	NA	NA	6.04	+2.06	8.10
MW-11	5.8	2.0	ND	ND	NA	NA	NA	NA	NA	NA	NA	630	4.95	+2.26	7.01
MW-12	ND	2.4	ND	ND	620	1,900	6,000	2,200	330,000	NA	3,900	NA	5.92	+2.41	8.33
MW-13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.75	+2.70	7.45
MW-14	ND	ND	3.4	ND	ND	ND	ND	ND	ND	660	NA	2,000	3.42	+2.35	5.77
MW-15	ND	ND	ND	ND	ND	ND	ND	ND	ND	200	NA	880	3.50	+0.96	4.46
MW-16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	24,000	0.42	+3.10	3.52
MW-17	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	18,000	2.50	+0.82	3.32
MW-18	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	19,000	4.38	+0.34	4.72
MW-19	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.46	+0.82	5.28
MW-20	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.71	+0.95	6.66
MW-21	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.48
MW-22	ND	ND	22	ND	ND	ND	ND	ND	ND	120	NA	2,100	6.33	NA	NA
MW-23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	160	3.42	NA	NA
MW-24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
MW-25	ND	11	ND	ND	100	230	500	270	33,000	NA	NA	NA	NA	NA	NA
MCL	5	5	0.5	6.0	1.0	NP	1,750	680	NP	NP	NP	---	---	---	---

- ND Not detected at or above analytical detection limits
- NA Not analyzed
- NP Not published by regulatory agencies
- PCE Tetrachloroethene
- DCA Dichloroethane
- MCL Drinking Water Maximum Concentration Levels
- DTW Depth to water
- W.E. Water elevation
- C.E. Casing elevation
- TCE Trichloroethene
- DCE Dichloroethene

APPENDIX A

BORING LOGS

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 45040.00 **Date:** February 16, 1993
Client: Harsch
Location: Corner of Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** Great Sierra

BORING NO. MW-22
Sheet 1 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 20' screened, 2" PVC casing (0.01), 5' solid, 2' sand, 2' bentonite, 2' concrete

Water Level						
Time						
Date						

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (USCS)	Litho-graphic Symbol	DESCRIPTION
		1				Sand, little to no silt or clay, yellowish brown (10 YR, 5/6), moist
		2				
	000	3				
		4				
		5				
						Shell fragments
	000	6		SP		
		7				
		8			▽	
6	000					
9		9	X			
12						Wet, free water
		10				
		11				
		12				
		13				
		14				
		15				
		16				
		17				
		18				Fine sand with very little silt, gray (7.5 YR, 5/N5), wet

Clayton
ENVIRONMENTAL
CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 45040.00 **Date:** February 16, 1993
Client: Harsch
Location: Corner of Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** Great Sierra

BORING NO. MW-22

Sheet 2 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 20' screened, 2" PVC casing (0.01), 5' solid, 2' sand, 2' bentonite, 2' concrete

Water Level						
Time						
Date						

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
		19		SP		
		20				
		21				
		22				
		23				
		24				
		25				TD = 25'
		26				
		27				
		28				
		29				
		30				
		31				
		32				
		33				
		34				
		35				
		36				

Clayton
ENVIRONMENTAL
CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 45040.00 **Date:** February 16, 1993
Client: Harsch
Location: Corner of Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** Great Sierra

BORING NO. MW-23
Sheet 1 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 15' screened, 2" PVC casing (0.01), 4' solid, 16' sand, 1' bentonite, 2' concrete

Water Level					
Time					
Date					

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
						Top soil for plants and landscaping, dark brown to black
		1				
		2				
		3				Sand, little to no silt, yellowish brown (10 YR, 5/6), moist
		4				
			X		▽	
		5				
		6				
		7				
		8				
		9		SP		
		10				
						Sand, gray (7.5, YR, 5/N5/), shell fragments
		11				
		12				
		13				
		14				
		15				
		16				
		17				
		18				

Clayton
ENVIRONMENTAL
CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 45040.00 **Date:** February 16, 1993
Client: Harsch
Location: Corner of Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** Great Sierra

BORING NO. MW-23
Sheet 1 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 15' screened, 2" PVC casing (0.01), 4' solid, 16' sand, 1' bentonite, 2' concrete

Water Level						
Time						
Date						

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
		19		SP		Fine sand with little silt, very dark gray (7.5 YR, 3/N3/), shell fragments
		20				TD = 20.5'
		21				
		22				
		23				
		24				
		25				
		26				
		27				
		28				
		29				
		30				
		31				
		32				
		33				
		34				
		35				
		36				

APPENDIX B

DRILLING, WELL CONSTRUCTION, AND SAMPLING PROTOCOLS FOR BOREHOLE/MONITORING WELL INSTALLATION

DRILLING, WELL CONSTRUCTION, AND SAMPLING PROTOCOLS FOR BOREHOLE/MONITORING WELL INSTALLATION

BOREHOLE INSTALLATION

Clayton Environmental Consultants, Inc. acquires the proper governmental agency permits to bore, drill, or destroy all proposed boreholes and monitoring wells that intersect with groundwater aquifers and writes a health and safety plan.

Clayton subcontracts only with drillers who possess a current C-57 water well contractor's license issued by the State of California and whose personnel have attended the OSHA 40-hour Hazardous Materials Safety Training. Prior to starting work, a "tailgate" safety meeting including discussion of the safety hazards and precautions relevant to the particular job will be held with all personnel working on the job. Well drillers are identified on permit applications.

Borings are drilled dry by hollow- or solid-stem, continuous flight augers. Augers, drill rods, and other working components of the drilling rig are steam-cleaned before arriving onsite to prevent the introduction of contaminants. These components are also steam-cleaned between borings away from boring locations. Cleaned augers, rods, and other components are stored, and/or covered when not in use.

Our bore logs include a detailed description of subsurface stratigraphy. Clayton examines the soil brought to the surface by drilling operations, and samples undisturbed soil every 5 feet or as otherwise specified. Soil cuttings are screened for hydrocarbon contamination using a photoionization detector. Boring logs are filled out in the field by a professional geologist, civil engineer, engineering geologist who is registered by the State of California, or a technician who is trained and working under the supervision of one of the previously mentioned persons, using the Unified Soil Classification System.

SOIL SAMPLING

Soil samples are taken every 5 feet, at areas of obvious contamination, or as otherwise specified, with a California modified split-spoon sampler that is lined with three six-inch brass tubes. The sampler and rod are inserted into the borehole to the current depth and a hammer of known weight and height above the sampler are allowed to free-fall onto the rod, advancing the assembly 18 inches into undisturbed soil. Clayton uses the number of blows necessary to drive the sampler into the ground to help evaluate the consistency of materials encountered. The sampler is then pulled from the borehole and disassembled, and the three brass tubes are separated for inspection and labeling.

Clayton uses new brass liners or liners cleaned with a trisodium phosphate (TSP) solution, double rinsed with clean tap water, and air dried prior to each sampling. The sampler is also cleaned with TSP and rinsed with tap water between sampling events.
Soil samples selected for laboratory analysis are left in the brass liners, sealed with aluminum foil and plastic caps, taped for air tightness, labeled, and immediately placed into a pre-cooled ice chest chilled to less than 4°C. Labels contain the following information: site name, date and time sampled, borehole number and depth, and the sampler's initials. The samples are transported under chain-of-custody to a state-certified laboratory. The laboratory analyzes soil samples within the prescribed holding time, storing them at temperatures below 4°C at all times.

Pending results of laboratory analysis, excess drilling and sampling cuttings are placed into Department of Transportation (DOT)-approved drums, labeled with the name of the site, address, and well number, and left at the site. Uncontaminated soil may be disposed of by the client. Soil found to contain levels of contaminants above local or state action levels will require that the client dispose of it in accordance with hazardous waste regulations. At the client's request, we will assist with the disposal of contaminated soil.

WELL CONSTRUCTION

Boreholes are converted to monitoring wells by placing 2-inch or 4-inch diameter well casing with flush-threaded joints and slotted screen into the borehole. Construction materials include polyvinyl chloride (PVC), stainless steel, or low carbon steel. The most suitable material for a particular installation will depend on the parameters to be monitored. All screens and casings used are in a contaminant-free condition when placed in the ground. No thread lubrication is used, other than teflon tape, for connecting the casing segments.

Wells extend at least 10 feet into the upper saturated zone, but do not extend through any clay layers greater than 5 feet that are below the shallow water table. The standard practice for wells installed at hydrocarbon contamination sites is to construct a well with a 20-foot long perforated interval extending 15 feet below and 5 feet above the water table in an unconfined aquifer. The top of the well is solid casing. The annular space of the borehole is backfilled with washed, kiln-dried sand to a point at least 1 foot above the slotted screen. A seal above the filter pack is formed by placing a 1- to 2-foot layer of bentonite pellets on top of the sand. The bentonite pellets are moistened by pouring clean tap water down the hole so that they can expand and seal the annulus. A neat cement grout is placed above the bentonite seal and brought to the ground surface.

Well casings are protected from surface contamination, accidental damage, and unauthorized entry or tampering with water-tight locking caps on the well casings. The caps are usually surrounded by a concrete vault. Wells are clearly identified with a metal tag or other device where the following information is recorded: well number, depth to water, depth of well, casing data including location of screened interval.

WELL DEVELOPMENT

The well seal in newly developed wells must set up for 48 to 72 hours prior to development. Since development of the well can volatilize contaminants present, the well must also settle for at least 48 to 72 hours between development and the first purging/sampling incident.

All monitoring wells are initially developed to clean the well and stabilize sand, gravel, and disturbed aquifer materials around the screened internal perforations. Wells are developed by pumping (or bailing) and surging until water turbidity and specific conductance stabilize. In some cases, where wells are installed in low permeability formations and the wells purge dry, the well is allowed to recover and is purged dry three times. Clean tap water is introduced into the well if it does not recover rapidly enough.

Pending results by laboratory analysis, purge water from well development and sampling is placed into DOT-approved drums, labeled with the name of the site, address, well number, and left at the site. Uncontaminated water may be disposed of by the client. Water found to contain levels of contaminants above local or state action levels requires that the client dispose of it in accordance with hazardous waste requirements. At the client's request, we can assist with the disposal of contaminated purge water.

GROUNDWATER SAMPLING

To collect a representative sample of the groundwater, stagnant water within the well casing and filter material must be purged and fresh aquifer water allowed to replace it. The water is purged from the well by pumping or bailing at least three well volumes. Well volumes are calculated by measuring depth to groundwater to the nearest 0.01 foot upon arrival at the well before any purging has begun. Groundwater samples are collected only after purging has been of sufficient duration for pH, temperature, and electrical conductivity to stabilize. When purging low-yield wells, the wells are purged to dryness. When the well recovers to 80% of the depth measured upon arrival, samples are collected.

Field sampling logs maintained for each well include:

- Monitoring well identification
- Static water level, before and after pumping
- Well depth
- Condition of water prior to purging (e.g., amount of free product)
- Purge rate and volume
- pH, temperature, and conductivity during purging
- Time purged
- Time of sample collection
- Sampling method
- Name of sampler
- Climatic conditions

Water samples are collected using clean teflon bailers. All equipment that contacts samples is thoroughly cleaned before arrival at the site and between sampling events.

Water is collected in clean laboratory-supplied containers, labeled, placed immediately into an ice chest pre-cooled to 4°C, and transported to Clayton's laboratory for analysis. One trip blank will be furnished in accordance with our quality assurance/quality control (QA/QC) program.

All samples are collected in such a manner so as to minimize the volatilization of a sample due to agitation and/or transfer from bailer to sample container. Samples are collected so that contaminants most sensitive to volatilization are sampled first.

Preservatives are not added to any sample, unless instructed. If requested, they are supplied by Clayton's laboratory.

All sample containers are labeled in the field. Labels contain the following information: project name, sample identification number, project number, date and time of collection, and sampler's initials.

Under no circumstances are sealed sample containers opened by anyone other than the laboratory personnel who perform the requested analyses. If it is necessary for samples or sample chests to leave the immediate control of the sampler prior to delivery to the laboratory, for example during shipment by Federal Express, a custody seal is placed on each sample container and/or sample chest to ensure that the samples have not been tampered with during transportation. The custody seal is signed by the sampler, and the date and time that the seal was placed is recorded. The elapsed time between sample collection and delivery to the laboratory never exceeds 48 hours. Water samples are not held for more than 14 days prior to analysis and are kept at 4°C at all times.

To document and trace samples from time of collection, a signed chain-of-custody record is filled out by the sampler and accompanies the samples through the laboratory analyses. The completed chain-of-custody is included with the analytical report from the laboratory.

REFERENCES

Groundwater Monitoring Guidelines, Revised February 1990. Alameda County District Groundwater Protection Program.

Leaking Underground Fuel Tank (LUFT) Field Manual: Guidelines for Site Assessment, Cleanup, and Underground Tank Closure, May 1988. State of California LUFT Task Force.

Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks, Revised November 1989. North Coast, San Francisco Bay, and Central Valley regions of the California State Water Quality Control Board.

Standards for the Construction and Destruction of Wells and Other Deep Excavations in Santa Clara County, Revised June 1989. Santa Clara Valley Water District.

APPENDIX C

GROUNDWATER MONITORING WELL SAMPLING PROTOCOL

CLAYTON GROUNDWATER MONITORING WELL

SAMPLING PROTOCOLS

To collect a representative sample of the groundwater, stagnant water within the well casing and filter material must be purged and fresh aquifer water allowed to replace it. The water is purged from the well by pumping or bailing at least three well volumes. Well volumes are calculated by measuring depth to groundwater to the nearest 0.01 foot upon arrival at the well before any purging has begun.

Groundwater samples are collected only after purging has been of sufficient duration for pH, temperature, and electrical conductivity to stabilize. When purging low-yield wells, the wells are purged to dryness. When the well recovers to 80% of the depth measured upon arrival, samples are collected.

Field sampling logs maintained for each well include:

- Monitoring well identification
- Static water level, before and after pumping
- Well depth
- Condition of water prior to purging (e.g., amount of free product)
- Purge rate and volume
- pH, temperature, and conductivity during purging
- Time purged
- Time of sample collection
- Sampling method
- Name of sampler
- Climatic conditions

Water samples are collected using clean teflon or disposable bailers. All equipment that contacts samples is thoroughly cleaned before arrival at the site and between sampling events.

Water is collected in clean laboratory-supplied containers, labeled, placed immediately into an ice chest pre-cooled to 4°C, and transported to Clayton's laboratory for analysis. One trip blank will be furnished in accordance with our quality assurance/quality control (QA/QC) program.

All samples are collected in such a manner so as to minimize the volatilization of a sample due to agitation and/or transfer from bailer to sample container. Samples are collected so that contaminants most sensitive to volatilization are sampled first.

Preservatives are not added to any sample, unless instructed. If requested, they are supplied by Clayton's laboratory.

All sample containers are labeled in the field. Labels contain the following information: project name, sample identification number, project number, date and time of collection, and sampler's initials.

Under no circumstances are sealed sample containers opened by anyone other than the laboratory personnel who perform the requested analyses. If it is necessary for samples or sample chests to leave the immediate control of the sampler prior to delivery to the

laboratory, for example during shipment by Federal Express, a custody seal is placed on each sample container and/or sample chest to ensure that the samples have not been tampered with during transportation. The custody seal is signed by the sampler, and the date and time that the seal was placed is recorded. The elapsed time between sample collection and delivery to the laboratory never exceeds 48 hours. Water samples are not held for more than 14 days prior to analysis and are kept at 4°C at all times.

To document and trace samples from time of collection, a signed chain-of-custody record is filled out by the sampler and accompanies the samples through the laboratory analyses. The completed chain-of-custody is included with the analytical report from the laboratory.

REFERENCES

Groundwater Monitoring Guidelines, Revised February 1990. Alameda County District Groundwater Protection Program.

Leaking Underground Fuel Tank (LUFT) Field Manual: Guidelines for Site Assessment, Cleanup, and Underground Tank Closure, May 1988. State of California LUFT Task Force.

Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks, Revised November 1989. North Coast, San Francisco Bay, and Central Valley regions of the California State Water Quality Control Board.

APPENDIX D

WATER SAMPLING FIELD SURVEY FORMS

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: **45040.06** *Site*: **Harsch** *Date*: **2/24/93**

Well No: **MW-15** *Sampling Team*: **M. Springman**

Sampling Method: **Disposable bailer/2-inch pump**

Field Conditions: **Clear, cool**

Describe Equipment Decontamination Before Sampling This Well:

Pump washed with soap and rinsed with deionized water

Total Depth of Well: **19.25 ft.** *Time*: **1115** *Depth to Water Before Purging*: **3.5 ft.**

Height of Water Column: **15.7 ft.**	*	*2-inch* .16	*4-inch* .65	=	*Volume* **2.51 gals**	*	*Purge Factor* **4**	=	*Volume To Purge* **10.04 gals.**

Depth Purging From: **6 ft.** *Time Purging Begins*: **1125**

Notes on Initial Discharge:

Time	Volume Purged	pH	Conductivity	T°C	Comments
1130	**3**	**8.5**	**1380**	**16.6**	Clear
1135	6	8.9	882	16.3	Clear
1140	9	9.5	507	16.3	Clear
1145	11	9.5	226	16.6	Clear

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1200**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**9.5**	**9.5**	**9.5**	**9.5**
Conductivity	**250**	**250**	**250**	**250**
T°C	**16.5**	**16.5**	**16.5**	**16.5**

Pre-Sample Collection Gallons Purged: **11**

Time Sample Collection Begins: **1150**

Time Sample Collection Ends: **1155**

Total Gallons Purged: **12**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: **45040.06** *Site*: **Harsch** *Date*: **2/23/93**

Well No: **MW-22** *Sampling Team*: **G. Williams**

Sampling Method: **Disposable bailer/2-inch pump**

Field Conditions: **Cloudy, cool**

Describe Equipment Decontamination Before Sampling This Well:

Pump washed with soap and rinsed with deionized water

Total Depth of Well: **23.75 ft.** *Time*: **0930** *Depth to Water Before Purging*: **6.33 ft.**

Height of Water Column:		*2-inch*	*4-inch*		*Volume*		*Purge Factor*		*Volume To Purge*
17.42 ft.	*	.16	.65	=	**2.78 gals**	*	**4**	=	**11.14 gals.**

Depth Purging From: *Time Purging Begins*:

Notes on Initial Discharge:

Time	Volume Purged	pH	Conductivity	T°C	Comments
0935	**3**	**8.7**	**1490**	**14.8**	**Turbid**
0940	**6**	**8.6**	**1380**	**14.8**	**Turbid**
0945	**9**	**8.6**	**1340**	**14.4**	**Turbid**
1000	12	8.5	1300	14.6	Turbid

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1003**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**8.6**	**8.5**	**8.6**	**8.6**
Conductivity	**1260**	**1280**	**1160**	**1140**
T°C	**14.6**	**14.6**	**14.6**	**14.6**

Pre-Sample Collection Gallons Purged: **12**

Time Sample Collection Begins: **1010**

Time Sample Collection Ends: **1015**

Total Gallons Purged: **13**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: **45040.06** *Site*: **Harsch** *Date*: **2/24/93**

Well No: **MW-23** *Sampling Team*: **G. Williams**

Sampling Method: **Disposable bailer/2-inch pump**

Field Conditions: **Clear, cool**

Describe Equipment Decontamination Before Sampling This Well:

Pump washed with soap and rinsed with deionized water

Total Depth of Well: **18.38 ft.** *Time*: **1440** *Depth to Water Before Purging*: **3.42 ft.**

Height of Water Column:		*2-inch*	*4-inch*		*Volume*		*Purge Factor*		*Volume To Purge*
15 ft.	*	.16	.65	=	**2.4 gals**	*	**4**	=	**9.6 gals.**

Depth Purging From: *Time Purging Begins*:

Notes on Initial Discharge: **Silty**

Time	Volume Purged	pH	Conductivity	T°C	Comments
1450	**3**	**9.1**	**181**	**13.7**	**Turbid**
1453	**6**	**8.7**	**209**	**14.7**	**Turbid**
1458	**9**	**8.6**	**225**	**14.4**	**Turbid**

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1505**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**8.6**	**8.6**	**8.4**	**8.2**
Conductivity	**252**	**265**	**278**	**300**
T°C	**14.4**	**14.2**	**14.6**	**14.6**

Pre-Sample Collection Gallons Purged: **10**

Time Sample Collection Begins: **1520**

Time Sample Collection Ends: **1525**

Total Gallons Purged: **12**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: **45040.06** *Site*: **Harsch** *Date*: **2/25/93**

Well No: **MW-5B** *Sampling Team*: **G. Williams**

Sampling Method: **Disposable bailer/2-inch pump**

Field Conditions: **Clear, cool**

Describe Equipment Decontamination Before Sampling This Well:

Pump washed with soap and rinsed with deionized water

Total Depth of Well: **12.79 ft.** *Time*: **1042** *Depth to Water Before Purging*: **2.42 ft.**

Height of Water Column:		*2-inch*	*4-inch*		*Volume*		*Purge Factor*		*Volume To Purge*
10.25 ft.	*	.16	.65	=	**6.66 gals**	*	**4**	=	**26.65 gals.**

Depth Purging From: *Time Purging Begins*:

Notes on Initial Discharge: **Clear, no odor**

Time	Volume Purged	pH	Conductivity	T°C	Comments
1050	**5**	**8.0**	**976**	**15.4**	**Clear**
1055	**10**	**7.9**	**1187**	**15.5**	**Clear**
1100	**15**	**7.8**	**1640**	**15.6**	**Clear**
1105	20	7.7	1996	15.7	Clear
1110	25	7.6	Off scale	15.9	Clear

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1112**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**7.6**	**7.6**	**7.7**	**7.6**
Conductivity	**Off scale**	**Off scale**	**Off scale**	**Off scale**
T°C	**15.8**	**15.7**	**15.8**	**15.8**

Pre-Sample Collection Gallons Purged: **27**

Time Sample Collection Begins: **1115**

Time Sample Collection Ends: **1120**

Total Gallons Purged: **29**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: **45040.06** *Site*: **Harsch** *Date*: **2/25/93**

Well No: **MW-11** *Sampling Team*: **G. Williams**

Sampling Method: **Disposable bailer**

Field Conditions: **Cloudy, cool**

Describe Equipment Decontamination Before Sampling This Well:

N/A

Total Depth of Well: **11.42 ft.** *Time*: **1220** *Depth to Water Before Purging*: **4.75 ft.**

Height of Water Column:		*2-inch*	*4-inch*		*Volume*		*Purge Factor*		*Volume To Purge*
6.6 ft.	*	.16	.65	=	**1.07 gals**	*	**4**	=	**4.29 gals.**

Depth Purging From: **ft.** *Time Purging Begins*:

Notes on Initial Discharge:

Time	Volume Purged	pH	Conductivity	T°C	Comments
1255	2	8.5	850	14.5	Turbid
1258	4	8.5	830	14.5	Clear
1304	5	8.3	810	14.4	Clear

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1310**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**8.3**	**8.3**	**8.4**	**8.3**
Conductivity	**810**	**800**	**800**	**780**
T°C	**14.4**	**14.6**	**14.6**	**14.8**

Pre-Sample Collection Gallons Purged: **5**

Time Sample Collection Begins: **1315**

Time Sample Collection Ends: **1316**

Total Gallons Purged: **6**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: **45040.06** *Site*: **Harsch** *Date*: **2/24/93**

Well No: **MW-16** *Sampling Team*: **G. Williams**

Sampling Method: **Disposable bailer/2-inch pump**

Field Conditions: **Clear, cool**

Describe Equipment Decontamination Before Sampling This Well:

Pump washed with soap and rinsed with deionized water

Total Depth of Well: **29.42 ft.** *Time*: **1120** *Depth to Water Before Purging*: **0.42 ft.**

Height of Water Column:		*2-inch*	*4-inch*		*Volume*		*Purge Factor*		*Volume To Purge*
29 ft.	*	.16	.65	=	**4.14 gals**	*	**4**	=	**18.56 gals.**

Depth Purging From: *Time Purging Begins*:

Notes on Initial Discharge: **Clear**

Time	Volume Purged	pH	Conductivity	T°C	Comments
1130	5	8.1	Off scale	18.2	Clear
1140	10	8.0	Off scale	19.1	Clear
1155	15	8.0	Off scale	19.0	Clear

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1155**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**8.0**	**8.0**	**8.0**	**8.0**
Conductivity	**Off scale**	**Off scale**	**Off scale**	**Off scale**
T°C	**19.1**	**19.0**	**19.0**	**19.0**

Pre-Sample Collection Gallons Purged: **17.5**

Time Sample Collection Begins: **1158**

Time Sample Collection Ends: **1159**

Total Gallons Purged: **18.5**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: **45040.06** *Site*: **Harsch** *Date*: **2/24/93**

Well No: **MW-14** *Sampling Team*: **G. Williams**

Sampling Method: **Disposable bailer/2-inch pump**

Field Conditions: **Clear, warm**

Describe Equipment Decontamination Before Sampling This Well:

Pump washed with soap and rinsed with deionized water

Total Depth of Well: **14.2 ft.** *Time*: **1245** *Depth to Water Before Purging*: **3.42 ft.**

Height of Water Column:		*2-inch*	*4-inch*		*Volume*		*Purge Factor*		*Volume To Purge*
10.75 ft.	*	.16	.65	=	**6.98 gals**	*	**4**	=	**27.95 gals.**

Depth Purging From: *Time Purging Begins*:

Notes on Initial Discharge:

Time	Volume Purged	pH	Conductivity	T°C	Comments
1250	**5**	**8.2**	**Off scale**	**16.6**	**Clear**
1255	**10**	**8.1**	**Off scale**	**17.2**	**Clear**
1300	**15**	**8.7**	**Off scale**	**16.3**	**Clear**
1305	20	8.7	Off scale	16.3	Clear
1310	25	8.6	Off scale	16.4	Clear

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1312**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**8.7**	**8.7**	**8.6**	**8.7**
Conductivity	**Off scale**	**Off scale**	**Off scale**	**Off scale**
T°C	**16.4**	**16.2**	**16.6**	**16.6**

Pre-Sample Collection Gallons Purged: **28**

Time Sample Collection Begins: **1315**

Time Sample Collection Ends: **1318**

Total Gallons Purged: **29**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: **45040.06** *Site*: **Harsch** *Date*: **2/23/93**

Well No: **MW-18** *Sampling Team*: **G. Williams**

Sampling Method: **Disposable bailer/2-inch pump**

Field Conditions: **Rain, windy, cold**

Describe Equipment Decontamination Before Sampling This Well:

Pump washed with soap and rinsed with deionized water

Total Depth of Well: **24.67 ft.** *Time*: **1445** *Depth to Water Before Purging*: **4.38 ft.**

Height of Water Column:		*2-inch*	*4-inch*		*Volume*		*Purge Factor*		*Volume To Purge*
20.42 ft.	*	.16	.65	=	**3.26 gals**	*	**4**	=	**13.06 gals.**

Depth Purging From: *Time Purging Begins*:

Notes on Initial Discharge:

Time	Volume Purged	pH	Conductivity	T°C	Comments
1255	5	7.5	Off scale	18.6	Clear
1300	10	7.4	Off scale	18.6	Clear
1305	15	7.4	Off scale	18.6	Clear

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1310**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**7.4**	**7.4**	**7.4**	**7.4**
Conductivity	**Off scale**	**Off scale**	**Off scale**	**Off scale**
T°C	**18.6**	**18.6**	**18.6**	**18.6**

Pre-Sample Collection Gallons Purged: **15**

Time Sample Collection Begins: **1315**

Time Sample Collection Ends: **1317**

Total Gallons Purged: **16**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: **45040.06** *Site*: **Harsch** *Date*: **2/23/93**

Well No: **MW-17** *Sampling Team*: **G. Williams**

Sampling Method: **Disposable bailer/2-inch D.C. pump**

Field Conditions: **Rain, cool**

Describe Equipment Decontamination Before Sampling This Well:

Pump washed with soap and rinsed with deionized water

Total Depth of Well: **24.42 ft.** *Time*: **1115** *Depth to Water Before Purging*: **2.5 ft.**

Height of Water Column:		*2-inch*	*4-inch*		*Volume*		*Purge Factor*		*Volume To Purge*
22 ft.	*	.16	.65	=	**3.52 gals**	*	**5**	=	**17.6 gals.**

Depth Purging From: *Time Purging Begins*:

Notes on Initial Discharge:

Time	Volume Purged	pH	Conductivity	T°C	Comments
1125	5	8.3	Off scale	18.4	Turbid
1140	10	8.7	Off scale	18.7	Clearing
1150	15	8.9	Off scale	18.4	Clearing

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1155**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**8.8**	**8.8**	**8.8**	**8.8**
Conductivity	**Off scale**	**Off scale**	**Off scale**	**Off scale**
T°C	**18.3**	**18.2**	**18.2**	**18.2**

Pre-Sample Collection Gallons Purged: **17.5**

Time Sample Collection Begins: **1210**

Time Sample Collection Ends: **1213**

Total Gallons Purged: **19**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: **45040.06** *Site*: **Harsch** *Date*: **2/23/93**

Well No: **MW-8B** *Sampling Team*: **G. Williams**

Sampling Method: **Disposable bailer/2-inch pump**

Field Conditions: **Rain, windy, cool**

Describe Equipment Decontamination Before Sampling This Well:

Pump washed with soap and rinsed with deionized water

Total Depth of Well: **21.92 ft.** *Time*: **1350** *Depth to Water Before Purging*: **4.92 ft.**

Height of Water Column:		*2-inch*	*4-inch*		*Volume*		*Purge Factor*		*Volume To Purge*
17 ft.	*	.16	.65	=	**11.05 gals**	*	**4**	=	**44.2 gals.**

Depth Purging From: *Time Purging Begins*:

Notes on Initial Discharge:

Time	Volume Purged	pH	Conductivity	T°C	Comments
1405	**10**	**8.2**	**Inoperative**	**16.9**	**Clear**
1410	**20**	**8.2**	**Inoperative**	**16.9**	**Clear**
1415	**30**	**8.2**	**Inoperative**	**16.8**	**Clear**
1420	40	8.2	Inoperative	16.7	Clear
1425	45	8.2	Inoperative	16.9	Clear

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1430**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**8.2**	**8.2**	**8.2**	**8.2**
Conductivity	**Off scale**	**Off scale**	**Off scale**	**Off scale**
T°C	**16.9**	**16.9**	**16.9**	**16.9**

Pre-Sample Collection Gallons Purged: **45**

Time Sample Collection Begins: **1435**

Time Sample Collection Ends: **1437**

Total Gallons Purged: **47**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: **45040.06** *Site*: **Harsch** *Date*: **2/23/93**

Well No: **MW-7B** *Sampling Team*: **G. Williams**

Sampling Method: **Disposable bailer/2-inch pump**

Field Conditions: **Rain, cold**

Describe Equipment Decontamination Before Sampling This Well:

Pump washed with soap and rinsed with deionized water

Total Depth of Well: **13.00 ft.** *Time*: **1230** *Depth to Water Before Purging*: **3.33 ft.**

Height of Water Column		*2-inch*	*4-inch*		*Volume*		*Purge Factor*		*Volume To Purge*
9.5 ft.	*	.16	.65	=	**6.17 gals**	*	**4**	=	**24.7 gals.**

Depth Purging From: *Time Purging Begins*:

Notes on Initial Discharge:

Time	Volume Purged	pH	Conductivity	T°C	Comments
1245	**5**	**8.7**	**1037**	**16.8**	**Clear**
1250	**10**	**8.4**	**810**	**16.8**	**Clear**
1252	**15**	**8.3**	**814**	**16.8**	**Clear**
1255	20	8.3	103	17.3	Clear
1257	25	8.3	680	17.9	Clear

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1325**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**8.3**	**8.3**	**8.3**	**8.3**
Conductivity	**640**	**570**	**620**	**624**
T°C	**17.8**	**17.8**	**17.9**	**17.9**

Pre-Sample Collection Gallons Purged: **25**

Time Sample Collection Begins: **1335**

Time Sample Collection Ends: **1340**

Total Gallons Purged: **27**

Comments:

APPENDIX E

PREVIOUS GROUNDWATER SAMPLING RESULTS

Historical Groundwater Analysis Results for Harsch Investment Property in Alameda
for Samples Collected from November 1990 to July 1992
All concentrations in micrograms per liter (µg/L)

Chemical	MW-7B							MW-8B							MW-16							MW-17							Regulatory Guidelines
Sample Date →	11/90	4/91	7/91	11/91	3/92	6/92	10/92	11/90	4/91	7/91	11/91	3/92	6/92	10/92	11/90	4/91	7/91	11/91	3/92	6/92	10/92	11/90	4/91	7/91	11/91	3/92	6/92	10/92	
EPA Method 8015/8020 for:																													
Benzene	<0.4	<0.4	NA	<0.4	<0.4	NA	NA	<0.4	<0.4	NA	<0.4	<0.4	NA	NA	-	-	-	-	<0.4	NA	NA	-	-	-	-	<0.4	NA	NA	1[1]
Toluene	<0.3	<0.3	NA	<0.3	<0.3	NA	NA	<0.3	<0.3	NA	<0.3	<0.3	NA	NA	-	-	-	-	<0.3	NA	NA	-	-	-	-	<0.3	NA	NA	100[2]
Ethylbenzene	<0.3	<0.3	NA	<0.3	<0.3	NA	NA	<0.3	<0.3	NA	<0.3	<0.3	NA	NA	-	-	-	-	<0.3	NA	NA	-	-	-	-	<0.3	NA	NA	680[1]
Xylenes	<0.4	<0.4	NA	<0.4	<0.4	NA	NA	<0.4	<0.4	NA	<0.4	<0.4	NA	NA	-	-	-	-	<0.4	NA	NA	-	-	-	-	<0.4	NA	NA	1,750[1]
Gasoline	<50	<50	NA	<50	<50	NA	NA	<50	<50	NA	<50	<50	NA	NA	-	-	-	-	<50	NA	NA	-	-	-	-	<50	NA	NA	Not app.
EPA Method 3510 for:																													
Diesel	<50	<50	NA	<50	NA	NA	NA	<50	<50	NA	<50	NA	NA	NA	-	-	-	-	NA	NA	NA	-	-	-	-	NA	NA	NA	100[3]
EPA Method 418.1 for:																													
TRPH	<1,000	NA	NA	NA	NA	NA	NA	<1,000	NA	NA	NA	NA	NA	NA	-	-	-	-	NA	NA	NA	-	-	-	-	NA	NA	NA	Not app.
EPA Method 5520 for:																													
Total oil and grease hydrocarbons	NA	<5,000	NA	<5,000	NA	NA	NA	NA	<5,000	NA	<5,000	NA	NA	NA	-	-	-	-	NA	NA	NA	-	-	-	-	NA	NA	NA	Not app.
EPA Method 601 Purgeable Halocarbons for:																													
Cis-1,2-dichloroethene	*440*	*90*	*170*	*140*	<40	*190*	*540*	1.2	6.8	*11*	6.3	7.9	7.0	*20*	-	-	-	-	<0.4	<0.4	<0.4	-	-	-	-	<0.4	<0.4	<0.4	6[1]
Trichloroethene	*520*	*200*	*660*	*700*	*390*	*450*	*1,200*	3.0	7.7	*19*	*12*	*13*	*10*	*23*	-	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	5[1]
Tetrachloroethene	*1,900*	*1,600*	*7,800*	*6,600*	*3,200*	*8,500*	*13,000*	0.9	1.1	0.9	*5*	<0.5	<0.5	<0.5	-	-	-	-	1.1	2.7	<0.5	-	-	-	-	<0.5	<0.5	<0.5	5[1]
1,1-dichloroethene	<20	<5	4.6	<20	<20	3.7	<5*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	<0.2	<0.2	<0.2	-	-	-	-	<0.2	<0.2	<0.2	6[1]
Trans-1,4-dichloroethene	<40	<10	2.6	<40	<40	1.3	<20*	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	-	-	-	-	<0.4	<0.4	<0.4	-	-	-	-	<0.4	<0.4	<0.4	10[1]
1,1,2-trichloroethene	<60	<20	0.8	<60	<60	<0.6	<20*	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	-	-	-	-	<0.6	<0.6	<0.6	-	-	-	-	<0.6	<0.6	<0.6	32[1]
Bromoform	<70	<20	1.7	<70	<70	<0.7	<20*	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	-	-	-	-	<0.7	<0.7	<0.7	-	-	-	-	<0.7	<0.7	<0.7	7[1]
Chlorobenzene	<70	<20	4.8	<70	<70	4.6	<20*	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	-	-	-	-	<0.7	<0.7	<0.7	-	-	-	-	<0.7	<0.7	<0.7	30[1]
TDS	NA	NA	NA	NA	NA	NA	1,000,000	NA	NA	NA	NA	NA	NA	3,800,000	-	-	-	-	-	-	24,000,000	-	-	-	-	-	-	18,000,000	3,000,000 [4]

* = detection limit increased due to dilution necessary for quantitation
NA = not analyzed
\- = not in place
TRPH = total recoverable petroleum hydrocarbons
< = less than the limit of detection
800 = above regulatory guidelines
800 = detected, but less than regulatory guidelines

[1] Maximum contaminant level (MCL) for drinking water standards (DHS)
[2] California State Action Level (DHS)
[3] Health Advisor or Suggested No-Adverse-Response Levels (EPA) (DHS)
[4] State Water Resources guideline for potential drinking water sources
Regulatory guidelines are taken from Jon B. Marshack's "A Compilation of Water Quality Goals, October 1990," published by Regional Water Quality Control Board Central Valley Region

42864-02.tbl

Historical Groundwater Analysis Results for Harsch Investment Property in Alameda
for Samples Collected from November 1990 to November 1991
All Concentrations in milligrams per liter (µg/l)

Chemical	MW-2				MW-3				MW-4				MW-5B				MW-9B				MW-14				Regulatory Guidelines
Sample Date →	11/90	4/91	7/91	11/91	11/90	4/91	7/91	11/91	11/90	4/91	7/91	11/91	11/90	4/91	7/91	11/91	11/90	4/91	7/91	11/91	11/90	4/91	7/91	11/91	
EPA Method 8015/8020 for:																									
Benzene	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	*800*	*1,300*	*3.1*	*21*	<0.4	<0.4	<0.4	<0.4		*2.9*	**0.8**	*2.2*	1[1]
Toluene	<0.3	<0.3	<0.3	<0.3	*0.5*	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	12	45	3.7	4.6	<0.3	<0.3	<0.3	<0.3		<0.3	*0.8*	<0.3	100[2]
Ethylbenzene	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	320	370	13	10	<0.3	<0.3	<0.3	<0.3		<0.3	<0.3	<0.3	680[1]
Xylenes	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	66	100	2.2	2.2	<0.4	<0.4	<0.4	<0.4		0.5	**0.8**	1.8	1,750[1]
Gasoline	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	*2,900*	*4,000*	*400*	*700*	<50	<50	<50	<50		<50	<50	50	Not available
EPA Method 3510 for:																									
Diesel	<50	<50	NA	<50	<50	<50	NA	<50	<50	<50	NA	<50	(a) *<800*	(a) *<500*	(a) *<400*	*220*	<50	<50	NA	<50		*230*	*180*	*140*	100[3]
EPA Method 418.1 for:																									
TRPH	*1,000*	NA	NA	NA	<1,000	NA	NA	NA	<1,000	NA	NA	NA	*2,000*	NA	NA	NA	*1,000*	NA	NA	NA		NA	NA	NA	Not available
EPA Method 5520 for:																									
Total oil and grease hydrocarbons	NA	<5,000	NA	<5,000	NA	<5,000	NA	<5,000	NA	<5,000	NA	<5,000	NA	<5,000	<5,000	<5,000	NA	<5,000	NA	<5,000		<5,000	<5,000	<5,000	Not available
EPA Method 601 Purgeable Halocarbons for:																									
Cis-1,2-dichloroethene	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4		<0.4	<0.4	<0.4	6[1]
1,2-dichloroethane	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		*4.6*	*6.6*	*1.5*	0.5[1]
Trichloroethene	<0.3	<0.3	<0.3	<0.3	**0.5**	<0.3	<0.3	<0.3	**0.5**	<0.3	<0.3	<0.3	<0.3	<3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		**0.4**	<0.3	<0.3	5[1]
Tetrachloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	3	<0.5	1.3	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	1.5	3.3	<0.5	<0.5		*16*	<0.5	<0.5	5[1]
1,1-dichloroethene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		**0.5**	<0.2	<0.2	6[1]
Trans-1,4-dichloroethene	<0.4	<0.4	<0.4	<0.4	**0.4**	<0.4	<0.4	<0.4	**0.4**	<0.4	<0.4	<0.4	<0.4	<4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4		<0.4	<0.4	<0.4	10[1]
1,1,2-trichloroethene	<0.6	<0.6	<0.6	<0.6	**0.6**	<0.6	<0.6	<0.6	**0.6**	<0.6	<0.6	<0.6	<0.6	<6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6		<0.6	<0.6	<0.6	32[1]
Bromoform	<0.7	<0.7	<0.7	<0.7	**0.7**	<0.7	<0.7	<0.7	**0.7**	<0.7	<0.7	<0.7	<0.7	<7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7		<0.7	<0.7	<0.7	7[1]
Chlorobenzene	<0.7	<0.7	<0.7	<0.7	**0.7**	<0.7	<0.7	<0.7	**0.7**	<0.7	<0.7	<0.7	<0.7	<7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7		<0.7	<0.7	<0.7	30[1]

NA = not analyzed
(a) = detection limit increased due to the presence of gasoline in the sample
TRPH = total recoverable petroleum hydrocarbons
< = less than the limit of detection
800 = above regulatory guidelines
800 = detected, but less than regulatory guidelines

(1) Maximum contaminant level (MCL) for drinking water standards (DHS)
(2) California State Action Level (DHS)
(3) Health Advisor or Suggested No-Adverse-Response Levels (EPA) (DHS)

Regulatory guidelines are taken from Jon B. Marshack's "A Compilation of Water Quality Goals, October 1990," published by Regional Water Quality Control Board Central Valley Region

42864-02.tbl

APPENDIX F

CLAYTON LABORATORY ANALYTICAL RESULTS

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

March 5, 1993

Mr. Dariush Dastmalchi
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref. 45040.01
Clayton Project No. 93022.69

Dear Mr. Dastmalchi:

Attached is our analytical laboratory report for the samples received on February 23, 1993. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Silvera, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/tb
Attachments

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.69

Sample Identification: MW-7B
Lab Number: 9302269-01A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/23/93
Date Received: 02/23/93
Date Analyzed: 03/02/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	60
Bromomethane	74-83-9	ND	70
Vinyl chloride	75-01-4	ND	50
Chloroethane	75-00-3	ND	50
Methylene chloride	75-09-2	ND	200
1,1-Dichloroethene	75-35-4	ND	20
1,1-Dichloroethane	75-35-3	ND	40
Trans-1,2-Dichloroethene	156-60-5	ND	40
Cis-1,2-Dichloroethene	156-59-2	150	40
Chloroform	67-66-3	ND	50
1,2-Dichloroethane	107-06-2	ND	30
1,1,1-Trichloroethane	71-55-6	ND	50
Carbon tetrachloride	56-23-5	ND	60
Bromodichloromethane	75-27-4	ND	70
1,2-Dichloropropane	78-87-5	ND	50
Cis-1,3-Dichloropropene	10061-01-5	ND	50
Trichloroethene	79-01-6	540	30
Dibromochloromethane	124-48-1	ND	60
1,1,2-Trichloroethane	79-00-5	ND	60
Trans-1,3-Dichloropropene	10061-02-6	ND	60

ND Not detected at or above limit of detection
-- Information not available or not applicable

Note: Detection limits increased due to dilution necessary for quantitation

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.69

Sample Identification: MW-7B
Lab Number: 9302269-01A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/23/93
Date Received: 02/23/93
Date Analyzed: 03/02/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	100
Bromoform	75-25-2	ND	70
Tetrachloroethene	127-18-4	5,800	50
1,1,2,2-Tetrachloroethane	79-34-5	ND	50
Chlorobenzene	108-90-7	ND	70
1,3-Dichlorobenzene	541-73-7	ND	200
1,2-Dichlorobenzene	95-50-1	ND	400
1,4-Dichlorobenzene	106-46-7	ND	400
Dichlorodifluoromethane	75-71-8	ND	100
Trichlorofluoromethane	75-69-4	ND	40
Freon 113	76-13-1	ND	60

Surrogates		Recovery (%)	QC Limits (%) LCL - UCL
Bromochloromethane	74-97-5	90	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Note: Detection limits increased due to dilution necessary for quantitation

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.69

Sample Identification: MW-8B
Lab Number: 9302269-02A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/23/93
Date Received: 02/23/93
Date Analyzed: 02/25/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	9.0	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	14	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.69

Sample Identification: MW-8B
Lab Number: 9302269-02A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/23/93
Date Received: 02/23/93
Date Analyzed: 02/25/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	5.0	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

Surrogates		Recovery (%)	QC Limits (%) LCL - UCL
Bromochloromethane	74-97-5	104	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.69

Sample Identification: MW-17
Lab Number: 9302269-03A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/23/93
Date Received: 02/23/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.69

Sample Identification: MW-17
Lab Number: 9302269-03A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/23/93
Date Received: 02/23/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

Surrogates		Recovery (%)	QC Limits (%) LCL - UCL
Bromochloromethane	74-97-5	93	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.69

Sample Identification: MW-18
Lab Number: 9302269-04A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/23/93
Date Received: 02/23/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.69

Sample Identification: MW-18
Lab Number: 9302269-04A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/23/93
Date Received: 02/23/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

Surrogates		Recovery (%)	QC Limits (%) LCL UCL
Bromochloromethane	74-97-5	97	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.69

Sample Identification: METHOD BLANK
Lab Number: 9302269-06A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: --
Date Received: --
Date Analyzed: 02/25/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.69

Sample Identification: METHOD BLANK
Lab Number: 9302269-06A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: --
Date Received: --
Date Analyzed: 02/25/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	91	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.69

Sample Matrix/Media: WATER
Analysis Method: EPA 160.1

Date Received: 02/23/93
Date Analyzed: 03/04/93

Lab Number	Sample Identification	Date Sampled	Total Dissolved Solids (mg/L)	Detection Limit (mg/L)
01C	MW-7B	02/23/93	1,100	10
02C	MW-8B	02/23/93	930	10
03C	MW-17	02/23/93	18,000	10
04C	MW-18	02/23/93	19,000	10
06A	METHOD BLANK	--	<10	10

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

Clayton
ENVIRONMENTAL CONSULTANTS
A Marsh & McLennan Company

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only | Page 1 of 1
Project No. 45040.01
Batch No. 9302269
Ind. Code | W.P.
Date Logged In 2/24/93 | By TS

REPORT RESULTS TO
Name D. DALSIMACHI | Title
Company CEC | Dept. EE
Mailing Address
City, State, Zip
Telephone No. | Telefax No.

Purchase Order No. | Client Job No.

SEND INVOICE TO
Name
Company HARSCH | Dept.
Address
City, State, Zip ALAMEDA

Date Results Req.: STANDARD
Rush Charges Authorized? ☐ Yes ☒ No
Phone / Fax Results ☐ ☐

Special Instructions: (method, limit of detection, etc.)

* Explanation of Preservative:

Samples are: (check if applicable)
☐ Drinking Water
☐ Collected in the State of New York

ANALYSIS REQUESTED (Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added. *)

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	601	TDS	HOLD							FOR LAB USE ONLY
MW-7B	2-23-93	H2O	40ML	2	X									01A,B
	"	"	236ml P1	1		X								↓C
MW-8B	"	"	40ML	2	X									02A,B
	"	"	236ml P1	1		X								↓C
MW-17	"	"	40 ML	2	X									03A,B
	"	"	236ml P1	1		X								↓C
MW-18	"	"	40ml	2	~~X~~ TS									04A,B
			236ml P1	1		~~X~~ TS								C
TRIP BLANKS (001693)			40ML	2			X							05A,B

CHAIN OF CUSTODY
Collected by: G. WILLIAMS (print) | Collector's Signature: [signature]
Relinquished by: G. WILLIAMS | Date/Time 2-23-93 1730 | Received by: | Date/Time
Relinquished by: | Date/Time | Received at Lab by: [signature] | Date/Time 2/23/93 @ 5:30pm
Method of Shipment: | Sample Condition Upon Receipt: ☒ Acceptable ☐ Other (explain)

Authorized by: ______________ Date ______________
(Client Signature Must Accompany Request)

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive, Novi, MI 48375, (313) 344-1770
Raritan Center, 160 Fieldcrest Ave., Edison, NJ 08837, (908) 225-6040
400 Chastain Center Blvd., N.W., Suite 490, Kennesaw, GA 30144, (404) 499-7500
1252 Quarry Lane, Pleasanton, CA 94566, (510) 426-2657

DISTRIBUTION:
WHITE - Clayton Laboratory
YELLOW - Clayton Accounting
PINK - Client Retains

2/92

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

March 9, 1993

Mr. Dariush Dastmalchi
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref. 45040.06
Clayton Project No. 93022.92

Dear Mr. Dastmalchi:

Attached is our analytical laboratory report for the samples received on February 25, 1993. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Silvera, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/caa
Attachments

Results of Analysis
for
Harsch Investments

Client Reference: 45040.06
Clayton Project No. 93022.92

Sample Identification:	MW-22	Date Sampled:	02/25/93
Lab Number:	9302292-01A	Date Received:	02/25/93
Sample Matrix/Media:	WATER	Date Prepared:	03/01/93
Preparation Method:	EPA 5030	Date Analyzed:	03/01/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
p,m-Xylenes	--	ND	0.4
o-Xylene	95-47-6	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	109	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.06
Clayton Project No. 93022.92

Sample Identification:	MW-5B	Date Sampled:	02/25/93
Lab Number:	9302292-02A	Date Received:	02/25/93
Sample Matrix/Media:	WATER	Date Prepared:	03/01/93
Preparation Method:	EPA 5030	Date Analyzed:	03/01/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	210	0.4
Toluene	108-88-3	4.2	0.3
Ethylbenzene	100-41-4	1.9	0.3
p,m-Xylenes	--	1.4	0.4
o-Xylene	95-47-6	0.6	0.4
Gasoline	--	640	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	122	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.06
Clayton Project No. 93022.92

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9302292-06A	Date Received:	--
Sample Matrix/Media:	WATER	Date Prepared:	03/01/93
Preparation Method:	EPA 5030	Date Analyzed:	03/01/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
p,m-Xylenes	--	ND	0.4
o-Xylene	95-47-6	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	111	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.06
Clayton Project No. 93022.92

Sample Identification:	MW-22	Date Sampled:	02/25/93
Lab Number:	9302292-01E	Date Received:	02/25/93
Sample Matrix/Media:	WATER	Date Analyzed:	03/01/93
Analytical Method:	EPA 601		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	22	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.06
Clayton Project No. 93022.92

Sample Identification: MW-22
Lab Number: 9302292-01E
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/25/93
Date Received: 02/25/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

Surrogates		Recovery (%)	QC Limits (%) LCL UCL
Bromochloromethane	74-97-5	102	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.06
Clayton Project No. 93022.92

Sample Identification: MW-5B
Lab Number: 9302292-02E
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/25/93
Date Received: 02/25/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	5.0	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	0.4	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	3.4	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.06
Clayton Project No. 93022.92

Sample Identification: MW-5B
Lab Number: 9302292-02E
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/25/93
Date Received: 02/25/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

Surrogates		Recovery (%)	QC Limits (%) LCL UCL
Bromochloromethane	74-97-5	80	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.06
Clayton Project No. 93022.92

Sample Identification: MW-11
Lab Number: 9302292-03A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/25/93
Date Received: 02/25/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	2.0	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.06
Clayton Project No. 93022.92

Sample Identification: MW-11
Lab Number: 9302292-03A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/25/93
Date Received: 02/25/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	5.8	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

Surrogates		Recovery (%)	QC Limits (%) LCL - UCL
Bromochloromethane	74-97-5	108	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.06
Clayton Project No. 93022.92

Sample Identification: METHOD BLANK
Lab Number: 9302292-06A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: --
Date Received: --
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.06
Clayton Project No. 93022.92

Sample Identification: METHOD BLANK
Lab Number: 9302292-06A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: --
Date Received: --
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	95	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.06
Clayton Project No. 93022.92

Sample Matrix/Media: WATER
Analysis Method: EPA 160.1
Date Received: 02/25/93
Date Analyzed: 03/05/93

Lab Number	Sample Identification	Date Sampled	Total Dissolved Solids (mg/L)	Detection Limit (mg/L)
01G	MW-22	02/25/93	2,100	10
02G	MW-5B	02/25/93	1,400	10
03C	MW-11	02/25/93	630	10
06A	METHOD BLANK	--	<10	10

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.06
Clayton Project No. 93022.92

Sample Matrix/Media: WATER
Preparation Method: EPA 3510
Analysis Method: EPA 8015

Date Received: 02/25/93
Date Prepared: 02/26/93
Date Analyzed: 03/01/93

Lab Number	Sample Identification	Date Sampled	Diesel (ug/L)	Detection Limit (ug/L)
01C	MW-22	02/25/93	120a	50
02C	MW-5B	02/25/93	2,400a	50
06A	METHOD BLANK	--	ND	50

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

a The hydrocarbons detected in these samples appear to be intermediate between diesel and motor oil: quantitation was based on diesel standards

Clayton
ENVIRONMENTAL CONSULTANTS
A Marsh & McLennan Company

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only	Page 1 of 1
Project No. 45840.06	
Batch No. 9302292	
Ind. Code	W.P.
Date Logged In 2/25/93	By T. ALTON

REPORT RESULTS TO
Name: D. DARESTMAGHI — Title:
Company: CEC — Dept. EE
Mailing Address:
City, State, Zip:
Telephone No.: — Telefax No.:

Purchase Order No.: — Client Job No.:

SEND INVOICE TO
Name:
Company: HARSCH — Dept.:
Address:
City, State, Zip: ALAMEDA

Date Results Req.: STANDARD
Rush Charges Authorized? ☐ Yes ☒ No
Phone / Fax Results ☐ ☐

Samples are: (check if applicable)
☐ Drinking Water
☐ Collected in the State of New York

Special Instructions: (method, limit of detection, etc.)
* Explanation of Preservative: HCl ON BTEX + DIESEL

ANALYSIS REQUESTED (Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added. *)

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	5030/8015-8020 GAS/BTEX	3510/8015 DIESEL	601	TDS		HOLD				FOR LAB USE ONLY
MW-22	2-25-93	H2O	40ML	2	X					TRIP BLANKS (4) 2W/HCl				01A,B
"	"	"	1 LITER	2		X								C,D
"	"	"	40ML	2			X							E,F
"	"	"	100ML	1				X						G
MW-5B	"	"	40ML	2	X									02 A,B
"	"	"	1 LITER	2		X								C,D
"	"	"	40ML	2			X	X (crossed out)						E,F
"	"	"	100ML	1				X						G
MW 11	"	"	40ML	2			X							03A,B
"	"	"	100ML	1				X						C

* 04A,B 05A,B

CHAIN OF CUSTODY
Collected by: G WILLIAMS (print) — Collector's Signature: [signature]
Relinquished by: G WILLIAMS — Date/Time 2-25-93 1630 — Received by: — Date/Time
Relinquished by: — Date/Time — Received at Lab by: Tammi R Alton — Date/Time 2/25/93 4:30pm
Method of Shipment — Sample Condition Upon Receipt: ☒ Acceptable ☐ Other (explain)

Authorized by: ____________ Date ________
(Client Signature Must Accompany Request)

TRIP BLANKS - 04A,B - 0020593 HCl
05A,B - 0020593

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive, Novi, MI 48375, (313) 344-1770
Raritan Center, 160 Fieldcrest Ave., Edison, NJ 08837, (908) 225-6040
400 Chastain Center Blvd., N.W., Suite 490, Kennesaw, GA 30144, (404) 499-7500
1252 Quarry Lane, Pleasanton, CA 94566, (510) 426-2657

2/92

DISTRIBUTION:
WHITE - Clayton Laboratory
YELLOW - Clayton Accounting
PINK - Client Retains

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

February 26, 1993

Mr. Dariush Dastmalchi
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref. 45040.04
Clayton Project No. 93021.90

Dear Mr. Dastmalchi:

Attached is our analytical laboratory report for the samples received on February 16, 1993. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Silvera, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/tb
Attachments

Results of Analysis
for
Clayton Environmental Consultants, Inc.

Client Reference: 45040.04
Clayton Project No. 93021.90

Sample Identification:	MW-22-8.5	Date Sampled:	02/16/93
Lab Number:	9302190-01A	Date Received:	02/16/93
Sample Matrix/Media:	SOIL	Date Prepared:	02/18/93
Preparation Method:	EPA 5030	Date Analyzed:	02/23/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	0.007	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	ND	0.3

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	91	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Clayton Environmental Consultants, Inc.

Client Reference: 45040.04
Clayton Project No. 93021.90

Sample Identification:	MW-23-4.5	Date Sampled:	02/16/93
Lab Number:	9302190-02A	Date Received:	02/16/93
Sample Matrix/Media:	SOIL	Date Prepared:	02/18/93
Preparation Method:	EPA 5030	Date Analyzed:	02/23/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	ND	0.3

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	90	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Clayton Environmental Consultants, Inc.

Client Reference: 45040.04
Clayton Project No. 93021.90

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9302190-03A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	02/18/93
Preparation Method:	EPA 5030	Date Analyzed:	02/23/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	ND	0.3
Surrogates		Recovery (%)	QC Limits (%) LCL UCL
a,a,a-Trifluorotoluene	98-08-8	103	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Clayton Environmental Consultants, Inc.

Client Reference: 45040.04
Clayton Project No. 93021.90

Sample Identification:	MW-23-4.5	Date Sampled:	02/16/93
Lab Number:	9302190-02A	Date Received:	02/16/93
Sample Matrix/Media:	SOIL	Date Prepared:	02/18/93
Preparation Method:	EPA 5030	Date Analyzed:	02/23/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Clayton Environmental Consultants, Inc.

Client Reference: 45040.04
Clayton Project No. 93021.90

Sample Identification:	MW-23-4.5	Date Sampled:	02/16/93
Lab Number:	9302190-02A	Date Received:	02/16/93
Sample Matrix/Media:	SOIL	Date Prepared:	02/18/93
Preparation Method:	EPA 5030	Date Analyzed:	02/23/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL - UCL
Bromochloromethane	74-97-5	95	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Clayton Environmental Consultants, Inc.

Client Reference: 45040.04
Clayton Project No. 93021.90

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9302190-03A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	02/18/93
Preparation Method:	EPA 5030	Date Analyzed:	02/23/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Clayton Environmental Consultants, Inc.

Client Reference: 45040.04
Clayton Project No. 93021.90

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9302190-03A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	02/18/93
Preparation Method:	EPA 5030	Date Analyzed:	02/23/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	110	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Clayton Environmental Consultants, Inc.

Client Reference: 45040.04
Clayton Project No. 93021.90

Sample Matrix/Media: SOIL
Preparation Method: EPA 3550
Analysis Method: EPA 8015

Date Received: 02/16/93
Date Prepared: 02/18/93
Date Analyzed: 02/18/93

Lab Number	Sample Identification	Date Sampled	Diesel (mg/kg)	Detection Limit (mg/kg)
02A	MW-23-4.5	02/16/93	ND	1
03A	METHOD BLANK	--	ND	1

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

Results are reported on a wet weight basis, as received

Results of Analysis
for
Clayton Environmental Consultants, Inc.

Client Reference: 45040.04
Clayton Project No. 93021.90

Sample Matrix/Media: SOIL
Preparation Method: EPA 3550
Analysis Method: EPA 8015

Date Received: 02/16/93
Date Prepared: 02/18/93
Date Analyzed: 02/18/93

Lab Number	Sample Identification	Date Sampled	TPH as Motor Oil (mg/kg)	Detection Limit (mg/kg)
02A	MW-23-4.5	02/16/93	ND	4
03A	METHOD BLANK	--	ND	4

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

Results are reported on a wet weight basis, as received

Clayton
ENVIRONMENTAL CONSULTANTS
A Marsh & McLennan Company

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only	Page 1 of 1
Project No. 45040.04	
Batch No. 9302190	
Ind. Code	W.P.
Date Logged In 2/17/93	By TS

REPORT RESULTS TO
Name: Darnish Dastmalchi | Title:
Company: | Dept.:
Mailing Address:
City, State, Zip:
Telephone No: | Telefax No.:

Purchase Order No.: | Client Job No.:

SEND INVOICE TO
Name: Harsch
Company: | Dept.:
Address:
City, State, Zip:

Date Results Req: Routine
Rush Charges Authorized? ☐ Yes ☒ No
Phone / Fax Results ☐ ☐

Samples are: (check if applicable)
☐ Drinking Water
☐ Collected in the State of New York

Special Instructions: (method, limit of detection, etc.)

* Explanation of Preservative

ANALYSIS REQUESTED (Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added. *)

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/MEDIA	AIR VOLUME (specify units)	Number of Containers	Hold 80	TPHG/BTEX	TPH-G/BTEX	TPH-Diesel	TPH-M. Oil	8010 "				FOR LAB USE ONLY
MW-22-8.5	2-16/93	Soil	B.C.	1	α	X								01A
MW-23-4.5	↓	↓	↓	1	α		X	X	X	X				02A

CHAIN OF CUSTODY
Collected by: Darnish Dastmalchi (print)
Collector's Signature:
Relinquished by: Darnish Dastmalchi | Date/Time: 2/16/93
Received by: [signature] | Date/Time: 2/16/93 7:05P
Relinquished by: | Date/Time:
Received at Lab by: | Date/Time:
Method of Shipment:
Sample Condition Upon Receipt: ☐ Acceptable ☐ Other (explain)

Authorized by ______________ Date ______________
(Client Signature Must Accompany Request)

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive, Novi, MI 48375, (313) 344-1770
Raritan Center, 160 Fieldcrest Ave., Edison, NJ 08837, (908) 225-6040
400 Chastain Center Blvd., N.W., Suite 490, Kennesaw, GA 30144, (404) 499-7500
1252 Quarry Lane, Pleasanton, CA 94566, (510) 426-2657

2/92

DISTRIBUTION:
WHITE - Clayton Laboratory
YELLOW - Clayton Accounting
PINK - Client Retains

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

March 9, 1993

Mr. Dariush Dastmalchi
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref. 45040.01
Clayton Project No. 93022.80

Dear Mr. Dastmalchi:

Attached is our analytical laboratory report for the samples received on February 24, 1993. On March 2, 1993, you cancelled analysis of samples for metals and EPA Method 8270. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Silvera, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Henriette A. Peters for

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/tb
Attachments

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Identification:	MW-23	Date Sampled:	02/24/93
Lab Number:	9302280-01A	Date Received:	02/24/93
Sample Matrix/Media:	WATER	Date Prepared:	03/01/93
Preparation Method:	EPA 5030	Date Analyzed:	03/01/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
p,m-Xylenes	--	ND	0.4
o-Xylene	95-47-6	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	115	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Identification:	MW-15	Date Sampled:	02/24/93
Lab Number:	9302280-04A	Date Received:	02/24/93
Sample Matrix/Media:	WATER	Date Prepared:	03/01/93
Preparation Method:	EPA 5030	Date Analyzed:	03/01/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
p,m-Xylenes	--	ND	0.4
o-Xylene	95-47-6	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	110	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Identification:	MW-14	Date Sampled:	02/24/93
Lab Number:	9302280-05A	Date Received:	02/24/93
Sample Matrix/Media:	WATER	Date Prepared:	03/01/93
Preparation Method:	EPA 5030	Date Analyzed:	03/01/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
p,m-Xylenes	--	ND	0.4
o-Xylene	95-47-6	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	113	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9302280-06A	Date Received:	--
Sample Matrix/Media:	WATER	Date Prepared:	03/01/93
Preparation Method:	EPA 5030	Date Analyzed:	03/01/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
p,m-Xylenes	--	ND	0.4
o-Xylene	95-47-6	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	111	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Identification: MW-23
Lab Number: 9302280-01C
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/24/93
Date Received: 02/24/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Identification: MW-23
Lab Number: 9302280-01C
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/24/93
Date Received: 02/24/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	86	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Identification:	MW-16	Date Sampled:	02/24/93
Lab Number:	9302280-03A	Date Received:	02/24/93
Sample Matrix/Media:	WATER	Date Analyzed:	03/01/93
Analytical Method:	EPA 601		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Identification: MW-16
Lab Number: 9302280-03A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/24/93
Date Received: 02/24/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

Surrogates		Recovery (%)	QC Limits (%) LCL UCL
Bromochloromethane	74-97-5	85	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Identification: MW-15
Lab Number: 9302280-04E
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/24/93
Date Received: 02/24/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Identification: MW-15
Lab Number: 9302280-04E
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/24/93
Date Received: 02/24/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	104	50	150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Identification: MW-14
Lab Number: 9302280-05E
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/24/93
Date Received: 02/24/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	3.4	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Identification: MW-14
Lab Number: 9302280-05E
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 02/24/93
Date Received: 02/24/93
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	104	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Identification: METHOD BLANK
Lab Number: 9302280-06A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: --
Date Received: --
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Identification: METHOD BLANK
Lab Number: 9302280-06A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: --
Date Received: --
Date Analyzed: 03/01/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

Surrogates		Recovery (%)	QC Limits (%) LCL - UCL
Bromochloromethane	74-97-5	95	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Matrix/Media: WATER
Preparation Method: SM 5520B
Analysis Method: SM 5520F

Date Received: 02/24/93
Date Prepared: 03/01/93
Date Analyzed: 03/02/93

Lab Number	Sample Identification	Date Sampled	Hydrocarbons (mg/L)	Detection Limit (mg/L)
01H	MW-23	02/24/93	ND	5
06A	METHOD BLANK	--	ND	5

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Matrix/Media: WATER
Analysis Method: EPA 160.1

Date Received: 02/24/93
Date Analyzed: 03/04/93

Lab Number	Sample Identification	Date Sampled	Total Dissolved Solids (mg/L)	Detection Limit (mg/L)
01J	MW-23	02/24/93	160	10
03C	MW-16	02/24/93	24,000	10
04G	MW-15	02/24/93	880	10
05G	MW-14	02/24/93	2,000	10
06A	METHOD BLANK	--	<10	10

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 45040.01
Clayton Project No. 93022.80

Sample Matrix/Media: WATER
Preparation Method: EPA 3510
Analysis Method: EPA 8015

Date Received: 02/24/93
Date Prepared: 02/26/93
Date Analyzed: 03/01/93

Lab Number	Sample Identification	Date Sampled	Diesel (ug/L)	Detection Limit (ug/L)
01F	MW-23	02/24/93	ND	50
04C	MW-15	02/24/93	200 [a]	50
05C	MW-14	02/24/93	660 [a]	50
06A	METHOD BLANK	--	ND	50

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

[a]Note: The hydrocarbons detected in these samples appear to be intermediate between diesel and motor oil: quantitation was based on diesel standards.

Clayton ENVIRONMENTAL CONSULTANTS

A Marsh & McLennan Company

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only	Page 1 of 2
Project No.	4510.01
Batch No.	9302280
Ind. Code	W.P.
Date Logged In 2/25/93	By TS

REPORT RESULTS TO

Name D. DALESSANDRO | Title
Company EEC | Dept. EE
Mailing Address
City, State, Zip
Telephone No. | Telefax No.

SEND INVOICE TO

Purchase Order No. | Client Job No.
Name
Company HARSCH | Dept.
Address
City, State, Zip ALAMEDA

Date Results Req.: STANDARD | Rush Charges Authorized? ☐ Yes ☒ No | Phone / Fax Results ☐ ☐

Special Instructions: (method, limit of detection, etc.)
* - Cd, Cr, Pb, Zn, Ni
Explanation of Preservative * HCl, HNO3

Samples are: (check if applicable)
☐ Drinking Water
☐ Collected in the State of New York

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	ANALYSIS REQUESTED (Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added. *)	FOR LAB USE ONLY
					5030/8015-8020 GAS BTEX / 601 / 6010 METALS * / 3510/8015 DIESEL / 5520 O/G HEM / TDS / 8270 + PCB's / H2S	
MW-23 w/HCl	2-24-93	H2O	40ML	2	XP	01A,B
"	"	"	40ML	2	X	C,D
" w/HNO3	"	"	500ML	1	XP	E
" w/HCl	"	"	1L	2	XP	F,G
" w/HCl	"	"	1L	2	XP	H,I
"	"	"	500ML	1	X	J
"	"	"	1L	2	X	K,L
TRIP W/O PRES.	"	"	40ml*	2	XP	02AB
TRIP W/PRES HCl	"	"	↓	2	XP	C,D

CHAIN OF CUSTODY

Collected by G. WILLIAMS (print) | Collector's Signature: G. Williams
Relinquished by G. WILLIAMS | Date/Time 2-24-93 1800 | Received by: | Date/Time
Relinquished by: | Date/Time | Received at Lab by: Lacy B Burkett | Date/Time 2/24/93 6:00
Method of Shipment:
Sample Condition Upon Receipt: ☒ Acceptable ☐ Other (explain)

Authorized by _____ Date _____
(Client Signature Must Accompany Request)

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive, Novi, MI 48375, (313) 344-1770
Raritan Center, 160 Fieldcrest Ave., Edison, NJ 08837, (908) 225-6040
400 Chastain Center Blvd., N.W., Suite 490, Kennesaw, GA 30144, (404) 499-7500
1252 Quarry Lane, Pleasanton, CA 94566, (510) 426-2657

2/92

DISTRIBUTION:
WHITE - Clayton Laboratory
YELLOW - Clayton Accounting
PINK - Client Retains

Clayton
ENVIRONMENTAL CONSULTANTS
A Marsh & McLennan Company

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only | Page 2 of 3
Project No. 45040.01
Batch No. 9302280
Ind. Code | W.P.
Date Logged In 2/25/93 | By TS

REPORT RESULTS TO
Name D. DALSTRACHT | Title
Company CEC | Dept. EE
Mailing Address
City, State, Zip
Telephone No. | Telefax No.

Purchase Order No. | Client Job No.

SEND INVOICE TO
Name
Company HARSCH | Dept.
Address
City, State, Zip ALAMEDA

Date Results Req.: STANDARD
Rush Charges Authorized? ☐ Yes ☒ No
Phone / Fax Results ☐ ☐

Samples are: (check if applicable)
☐ Drinking Water
☐ Collected in the State of New York

Special Instructions: (method, limit of detection, etc.)

* Explanation of Preservative:

ANALYSIS REQUESTED (Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added. *)

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	601	TDS	EPA 5030/8015-8020 GAS BTEX	3510/8015 DIESEL							FOR LAB USE ONLY
MW-16	2-24-93	H2O	40 ML	2	X										03A,B
MW-16	"	"	250 ML	1		X									C
MW-15	"	"	40 ML	2			X								04A,B
MW-15	"	"	1 LITER	2				XP							C,D
MW-15	"	"	40 ML	2	X										E,F
MW-15	"	"	250 ML	1		X									G
MW-14	"	"	40 ML	2			X								05A,B
MW-14	"	"	1 LITER	2				XP							C,D
MW-14	"	"	40 ML	2	X										E,F
MW-14	"	"	250 ML	1		X									G

CHAIN OF CUSTODY
Collected by: G WILLIAMS (print) | Collector's Signature: [signature]
Relinquished by: G WILLIAMS | Date/Time 2-24-93 1800 | Received by: | Date/Time
Relinquished by: | Date/Time | Received at Lab by: [signature] | Date/Time 2/24/93 1600
Method of Shipment. | Sample Condition Upon Receipt: ☒ Acceptable ☐ Other (explain)

Authorized by: ____________ Date ________
(Client Signature Must Accompany Request)

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive
Novi, MI 48375
(313) 344-1770

Raritan Center
160 Fieldcrest Ave.
Edison, NJ 08837
(908) 225-6040

400 Chastain Center Blvd., N.W.
Suite 490
Kennesaw, GA 30144
(404) 499-7500

1252 Quarry Lane
Pleasanton, CA 94566
(510) 426-2657

DISTRIBUTION:
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Clayton
ENVIRONMENTAL CONSULTANTS
A Marsh & McLennan Company

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only	Page 3 of 3
Project No. 45040.01	
Batch No. 9302280	
Ind. Code	W.P.
Date Logged In 2/25/93	By TS

REPORT RESULTS TO	Name D. DALYMACHT	Title
	Company UEC	Dept. EE
	Mailing Address	
	City, State, Zip	
	Telephone No.	Telefax No.

Purchase Order No. | Client/Job No.

SEND INVOICE TO	Name	
	Company HARSCH	Dept.
	Address	
	City, State, Zip	

Date Results Req: STANDARD | Rush Charges Authorized? ☐ Yes ☑ No | Phone / Fax Results ☐ ☐

Samples are: (check if applicable)
☐ Drinking Water
☐ Collected in the State of New York

Special Instructions: (method, limit of detection, etc.)

* Explanation of Preservative: HCl

ANALYSIS REQUESTED (Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added. *)

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	HOLD										FOR LAB USE ONLY
~~MW-22~~															
TRIP BLANK W/PRES HCl	2-24-93	H_2O	40ML	2	X										02E,F
" " W/O PRES	"	"	40ML	2	X										↓G,H

CHAIN OF CUSTODY

Collected by: E WILLIAMS (print)		Collector's Signature: [signature]	
Relinquished by: E WILLIAMS	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received at Lab by: [signature]	Date/Time 2/24/93 1600
Method of Shipment.		Sample Condition Upon Receipt: ☐ Acceptable ☐ Other (explain)	

Authorized by: ______________ Date ______________
(Client Signature Must Accompany Request)

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive
Novi, MI 48375
(313) 344-1770

Raritan Center
160 Fieldcrest Ave.
Edison, NJ 08837
(908) 225-6040

400 Chastain Center Blvd., N.W.
Suite 490
Kennesaw, GA 30144
(404) 499-7500

1252 Quarry Lane
Pleasanton, CA 94566
(510) 426-2657

2/92

DISTRIBUTION:
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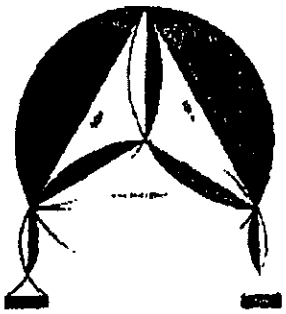
YELLOW - Clayton Accounting
PINK - Client Retains

APPENDIX G

KAMUR INDUSTRIES ANALYTICAL RESULTS



SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266

DATE: 3/15/93 TIME: _____

TO: Clayton Environmental

ATTN: Mr. Darius

RE: _____

FAX: 510-426-0106

---

11 PAGES
(INCLUDING COVER PAGE)

FROM: Frank Hamedi - Ford

C/O: Soil Tech Engineering

OUR FAX: 408-988-3342

NOTE: _____

PLEASE CALL OUR OFFICE IF YOU DO NOT RECEIVE ALL THE PAGES.

PRIORITY ENVIRONMENTAL LABS

PEL # 110?002

February 04 1993

SOIL TECH ENGINEERING

Attn: Noori Ameli
Re: Two soil samples for Gasoline/BTEX analysis.

Project name: 2351 Shoreline Dr., - Alameda
Project number: 8-90-418-SI

Date sampled: Feb 02, 1993
Date extracted: Feb 03, 1993

Date submitted: Feb 03, 1993
Date analyzed: Feb 03, 1993

RESULTS

SAMPLE I.D.	Gasoline (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)
STMW-5-5	N.D.	N.D.	N.D.	N.D.	N.D.
STMW-6-5	N.D.	N.D.	N.D.	N.D.	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	101.8%	98.3%	103.2%	94.6%	105.7%
Detection limit	1.0	5.0	5.0	5.0	5.0
Method of Analysis	5030 / 8015	8020	8020	8020	8020

David Duong
Laboratory Director

CHAIN OF CUSTODY RECORD

PEL

PROJ. NO.	NAME
8-91-418-5I	2351 Shoreline Dr. ALAMEDA

SAMPLERS (Signature)

NO.	DATE	TIME	SOIL	WATER	LOCATION	NO. OF CONTAINERS	ANALYSES REQUESTED (2) TPH G / BTEX 8010						
1	2/2/93	11[15]	✓		STMW-5-5	1	✓	✓					
2	2/2/93	14[35]	✓		STMW-6-5	1	✓	✓					

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Receive by: (Signature)
N. Amek	2/3/93 9[41]				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266

PRIORITY ENVIRONMENTAL LABS

February 17, 1993 PEL # 9302017

SOIL TECH ENGINEERING, INC.

Attn: Noori Ameli
Re: Four water samples for Gasoline/BTEX, Diesel, and Oil & Grease analyses.

Project name: 2351 Shoreline Dr., - Alameda
Project number: 8-90-418-SI

Date sampled: Feb 08, 1993 Date submitted: Feb 09, 1993
Date extracted: Feb 09-11, 1993 Date analyzed: Feb 09-11, 1993

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)	Oil & Grease (mg/L)
STMW-1	66000	---	210	480	510	1200	-
STMW-3	330000	N.D.	620	1900	2200	6000	3.9
STMW-5	N.D.	---	N.D.	N.D.	N.D.	N.D.	-
STMW-6	33000	---	100	230	270	500	-
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	101.8%	91.6%	98.3%	103.2%	94.6%	105.7%	
Duplicate Spiked Recovery	97.6%	---	90.4%	94.2%	89.5%	97.0%	
Detection limit	50	50	0.5	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	3510 / 8015	602	602	602	602	5520 E

David Duong
Laboratory Director

1764 Hoover Court Milpitas, CA. 95035 Tel: 408-946-9636 Fax: 408 946-9663

PRIORITY ENVIRONMENTAL LABS

February 17, 1993 PEL #: 9302017

SOIL TECH ENGINEERING, INC. Attn: Noori Ameli
Project name: 2351 Shoreline Dr.-Alameda Project number: 8-90-418-SI

Sample I.D.: STMW-1

Date Sampled: Feb 08, 1993 Date Submitted: Feb 09, 1993
Date Analyzed: Feb 09-10, 1993

Method of Analysis: EPA 601 Detection limit: 0.5 ug/L

COMPOUND NAME	CONCENTRATION (ug/L)	SPIKE RECOVERY (%)
Chloromethane	N.D.	----
Vinyl Chloride	N.D.	83.2
Bromomethane	N.D.	----
Chloroethane	N.D.	----
Trichlorofluoromethane	N.D.	----
1,1-Dichloroethene	N.D.	91.4
Methylene Chloride	N.D.	----
1,2-Dichloroethene (TOTAL)	N.D.	----
1,1-Dichloroethane	N.D.	----
Chloroform	N.D.	92.8
1,1,1-Trichloroethane	N.D.	----
Carbon Tetrachloride	N.D.	----
1,2-Dichloroethane	N.D.	----
Trichloroethene	9.5	----
1,2-Dichloropropane	N.D.	----
Bromodichloromethane	N.D.	----
2-Chloroethylvinylether	N.D.	----
Trans-1,3-Dichloropropene	N.D.	----
Cis-1,3-Dichloropropene	N.D.	----
1,1,2-Trichloroethane	N.D.	94.7
Tetrachloroethene	N.D.	----
Dibromochloromethane	N.D.	----
Chlorobenzene	N.D.	----
Bromoform	N.D.	----
1,1,2,2-Tetrachloroethane	N.D.	----
1,3-Dichlorobenzene	N.D.	----
1,4-Dichlorobenzene	N.D.	----
1,2-Dichlorobenzene	N.D.	----

David Duong
Laboratory Director

1764 Houret Court Milpitas, CA. 95035 Tel: 408-946-9636 Fax: 408-946-9663

PRIORITY ENVIRONMENTAL LABS

February 17, 1993 PEL #: 9302017

SOIL TECH ENGINEERING, INC. Attn: Noori Ameli
Project name:2351 Shoreline Dr.-Alameda Project number: 8-90-418-SI

Sample I.D.: STMW-3

Date Sampled: Feb 08, 1993 Date Submitted: Feb 09, 1993
Date Analyzed: Feb 09-10, 1993

Method of Analysis: EPA 601 Detection limit: 0.5 ug/L

COMPOUND NAME	CONCENTRATION (ug/L)	SPIKE RECOVERY (%)
Chloromethane	N.D.	----
Vinyl Chloride	N.D.	83.2
Bromomethane	N.D.	----
Chloroethane	N.D.	----
Trichlorofluoromethane	N.D.	----
1,1-Dichloroethene	N.D.	91.4
Methylene Chloride	N.D.	----
1,2-Dichloroethene (TOTAL)	N.D.	----
1,1-Dichloroethane	N.D.	----
Chloroform	N.D.	92.8
1,1,1-Trichloroethane	N.D.	----
Carbon Tetrachloride	N.D.	----
1,2-Dichloroethane	N.D.	----
Trichloroethene	2.4	----
1,2-Dichloropropane	N.D.	----
Bromodichloromethane	N.D.	----
2-Chloroethylvinylether	N.D.	----
Trans-1,3-Dichloropropene	N.D.	----
Cis-1,3-Dichloropropene	N.D.	----
1,1,2-Trichloroethane	N.D.	94.7
Tetrachloroethene	N.D.	----
Dibromochloromethane	N.D.	----
Chlorobenzene	N.D.	----
Bromoform	N.D.	----
1,1,2,2-Tetrachloroethane	N.D.	----
1,3-Dichlorobenzene	N.D.	----
1,4-Dichlorobenzene	N.D.	----
1,2-Dichlorobenzene	N.D.	----

David Duong
Laboratory Director

1764 Houret Court Milpitas, CA. 95035 Tel 408-946-9636 Fax 408-946-9663

PRIORITY ENVIRONMENTAL LABS

February 12, 1993 PEL #: 9102017

SOIL TECH ENGINEERING, INC. Attn: Noori Ameli
Project name:2351 Shoreline Dr.-Alameda Project number: 8-90-418-SI

Sample I.D.: STMW-5

Date Sampled: Feb 08, 1993 Date Submitted: Feb 09, 1993
Date Analyzed: Feb 09-10, 1993

Method of Analysis: EPA 601 Detection limit: 0.5 ug/L

COMPOUND NAME	CONCENTRATION (ug/L)	SPIKE RECOVERY (%)
Chloromethane	N.D.	-----
Vinyl Chloride	N.D.	83.2
Bromomethane	N.D.	-----
Chloroethane	N.D.	-----
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	91.4
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	-----
1,1-Dichloroethane	N.D.	-----
Chloroform	N.D.	92.8
1,1,1-Trichloroethane	N.D.	-----
Carbon Tetrachloride	N.D.	-----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	N.D.	-----
1,2-Dichloropropane	N.D.	-----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	-----
Cis-1,3-Dichloropropene	N.D.	-----
1,1,2-Trichloroethane	N.D.	94.7
Tetrachloroethene	N.D.	-----
Dibromochloromethane	N.D.	-----
Chlorobenzene	N.D.	-----
Bromoform	N.D.	-----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	-----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	-----

David Duong
Laboratory Director

PRIORITY ENVIRONMENTAL LABS

February 12, 1993 PEL #: 9302017

SOIL TECH ENGINEERING, INC. Attn: Noori Ameli
Project name: 2351 Shoreline Dr.-Alameda Project number: 8-90-418-SI

Sample I.D.: STMW-6

Date Sampled: Feb 08, 1993 Date Submitted: Feb 09, 1993
Date Analyzed: Feb 09-10, 1993

Method of Analysis: EPA 601 Detection limit: 0.5 ug/L

COMPOUND NAME	CONCENTRATION (ug/L)	SPIKE RECOVERY (%)
Chloromethane	N.D.	----
Vinyl Chloride	N.D.	83.2
Bromomethane	N.D.	-----
Chloroethane	N.D.	-----
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	91.4
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	----
1,1-Dichloroethane	N.D.	----
Chloroform	N.D.	92.8
1,1,1-Trichloroethane	N.D.	----
Carbon Tetrachloride	N.D.	----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	11	----
1,2-Dichloropropane	N.D.	----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	----
Cis-1,3-Dichloropropene	N.D.	---
1,1,2-Trichloroethane	N.D.	94.[illegible]
Tetrachloroethene	N.D.	-----
Dibromochloromethane	N.D.	------
Chlorobenzene	N.D.	-----
Bromoform	N.D.	----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	----

David Duong
Laboratory Director

1764 Houret Court Milpitas, CA. 95035 Tel 408-946-9636 Fax 408-946-9663

CHAIN OF CUSTODY RECORD

PEL

PROJ. NO.	NAME
8-90-419-SI	2351 Shoreline Dr. ALAMEDA

SAMPLERS (Signature): [signature]

ANALYSES REQUESTED (2): TPH G, BTEX, O & G, TPH D

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	TPH G	BTEX					REMARKS
1	2/8/93	13:52		✓	STMW-1	2	✓	✓					
2	2/8/93	16:10		✓	STMW-3	4	✓	✓	✓	✓			
3	2/8/93	13:14		✓	STMW-5	2	✓	✓					
4	2/8/93	12:25		✓	STMW-6	2	✓	✓					

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	2/9/93 10:20	[signature]			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
		THANH LAM			
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
	2/9/93 ?:20	[signature]			

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266