



92 FEB 21 PM 12:07

February 19, 1992

Mr. William C. Collett  
Treasurer  
Dreyers Grand Ice Cream  
5929 College Avenue  
Oakland, CA 94618

**Subject: Groundwater Investigation  
5929 College Avenue  
Oakland, California  
(ATT Project No. 9126)**

Aqua Terra Technologies  
Consulting Engineers  
& Scientists

2950 Buskirk Avenue  
Suite 120  
Walnut Creek, CA  
94596-2079  
FAX 934-0418  
510 934-4884

Dear Mr. Collett:

The following report, compiled by Aqua Terra Technologies, Inc. (ATT), describes field activities and includes laboratory analyses associated with the groundwater investigation conducted by ATT at the Dreyers Grand Ice Cream Corporate Headquarters, at 5929 College Avenue in Oakland, California. The groundwater investigation was conducted in accordance with the March 13, 1990, ATT Workplan approved by the Alameda County Health Care Services Agency (ACHCSA). The investigation included the drilling of three exploratory soil borings and their subsequent completion as groundwater monitoring wells, and the collection and analysis of soil and groundwater samples.

## **SUMMARY**

### **SITE CHARACTERISTICS**

#### **Site Setting**

The subject site is located in the City of Oakland, California, approximately 0.25 miles north of California Highway 24 and approximately 0.25 miles south of the Berkeley City limits (Plate 1, Attachment A). The Property is bounded by Claremont Avenue to the northwest, College Avenue to the east, and Chabot Road to the south (Plate 2, Attachment A).

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### **Site Geology and Hydrogeology**

The subject property is in the Oakland Upland and Alluvial Plain which consists of alluvial fan deposits of clay, silt, and sand interbedded with coarser gravels.

The following data is from ATT's drilling logs and groundwater monitoring well water level measurements recorded during the subject investigation. The shallow site geology, below the asphalt or landscaped surface, consists of a gravel base or planter-mix backfill to approximately 1.5 feet below grade (B.G.), silty to sandy clay ranging to a depth of approximately 10.0 feet B.G., and sandy - gravelly clay to clayey sand ranging to approximately 30.0 feet B.G. (the deepest soil boring drilled by ATT).

On August 26, 1991, depth to groundwater ranged from approximately 13 to 16 feet B.G., the shallow, unconfined groundwater flow was toward the south-southwest with a gradient of approximately 0.005 feet/foot (Plate 3, Attachment A). Groundwater flow was towards the west on December 4, 1991, as determined by recorded groundwater depths in wells MW1, MW2, and MW3 (Plate 4, Attachment A). Groundwater elevation data are summarized on Table 1 (Attachment B), and drilling logs are in Attachment C. The soil borings were logged using the Unified Soil Classification System (USCS - Attachment C).

### **SITE HISTORY**

On December 13, 1989, Petroleum Engineering, Inc. removed one 1,000-gallon and one 8,000-gallon gasoline underground storage tank (UST) and two 4,000-gallon diesel USTs from the southwest corner of the property. Two 1,000-gallon waste oil USTs were removed from the western part of the property. Soil samples, from the gasoline/diesel UST excavation and the waste oil UST excavation, were collected on December 14, 1989 by Pace Laboratories, Inc.

Subsequent soil sample analyses by Pace Laboratories, Inc., from the bottom of the gasoline/diesel UST excavation, indicated that total petroleum hydrocarbon (TPH - quantified as gasoline and diesel) concentrations were below 1,000 mg/Kg (equal to parts per million or ppm). The San Francisco Bay Region of the Regional Water Quality Control Board (RWQCB) Staff

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Recommendations for Initial Evaluation and Investigation of Underground Fuel Storage Tanks, California Leaking Underground Fuel Tank (LUFT) Task Force (LUFT Field Manual, October 1989) guidelines, and the California Department of Health Services (DHS) regulations as outlined in Title 22 and Title 23 of the California Code of Regulations (CCR) allow soil below 1,000 mg/Kg TPH to remain in-place.

On February 6, 1990, ATT, in accordance with ACHCSA requirements, excavated approximately 80 to 100 cubic yards of oil and grease contaminated soil from the waste oil UST excavation. Analyses from soil samples collected by ATT subsequent to soil excavation, indicated that the soil could be transported to a Class II-I landfill. Soil offhaul, in accordance with the appropriate regulations, was completed on February 20, 1990.

On February 12, 1990, the onsite contractor cleaned the gasoline/diesel UST excavation by removing approximately 400 to 450 cubic yards of soil from the bottom of the excavation (removal was required because the loose soil could not be properly compacted). The contractor noticed a slight gasoline odor from the soil and subsequently contacted ATT. Analytical results, from soil samples collected by ATT, indicated that the average TPH gasoline concentrations in the excavated soil was 170 mg/Kg.

On February 27, 1990, ATT initiated a soil aeration program with the approval of the Bay Area Air Quality Management District (BAAQMD) and local agencies. The tank excavations were subsequently backfilled with clean imported material, the site regraded, and a new office building constructed.

## **SITE INVESTIGATION**

### **Drilling Procedures & Monitoring Well Construction/Development**

Prior to drilling, all soil boring locations were cleared for underground utilities, by the onsite contractor and by Underground Service Alert (USA). Gregg Drilling Company of Concord, California was contracted to provide drilling services. Drilling and monitoring well installation activities began on July 16, 1991 and were completed by July 18, 1991.

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A Mobile B-61 truck mounted rig was utilized for all drilling, soil sampling, and monitoring well installations. Monitoring well boreholes were drilled using eight-inch or 10-inch outside diameter (O.D.) hollow-stem augers. All subsurface drilling equipment was steam cleaned prior to use and between each borehole.

On July 16, 1991, ATT installed groundwater monitoring well MW1 to a completed depth of 30 feet B.G. using two-inch inside diameter (I.D.) PVC casing. Monitoring well MW2 was installed on July 17, 1991, to a completed depth of 28 feet B.G., and monitoring well MW3 was installed on July 18, 1991, to a completed depth of 27 feet B.G.. Monitoring wells MW2 and MW3 were constructed with four-inch I.D. casing and screen. Pilot boreholes for wells MW2 and MW3 were initially drilled with six-inch O.D. auger to facilitate soil sample collection; these borings were then overdrilled with 10-inch auger for the installation of four-inch diameter wells.

Groundwater monitoring well MW1 was placed in the northern part of the property; this monitoring well will be used to determine background groundwater quality. Monitoring well MW2 was placed in the vicinity of the backfilled waste oil tank excavation, and monitoring well MW3 was placed in the vicinity of the former gasoline/diesel tank excavation (Plate 2, Attachment A). The completed monitoring wells were developed by ATT field personnel on July 29, 1991. Monitoring well construction details and development records are in Attachment C. Drilling procedures and groundwater monitoring well construction and development were in accordance with regulatory agency requirements and guidelines using the protocol in Attachment D.

#### **Soil and Groundwater Sample Collection**

Soil samples were collected, during drilling operations, using a California modified split-spoon sampler. The two-inch I.D. by 18-inch sampler was driven, through the hollow-stem augers, using a 140 pound hammer with a 30-inch drop. For each sample drive, the sampler was lined with three, six-inch by two-inch O.D. brass tubes. The sampler and tubes were cleaned, before each sample drive, by scrubbing in a solution of trisodium phosphate (TSP) and purified water, followed by two purified water rinses.

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On August 5, August 26, and December 4, 1991, ATT field personnel collected groundwater samples from the completed and developed monitoring wells. Soil and groundwater samples were submitted to a DHS certified laboratory under chain of custody documentation. Sample collection records are in Attachment C; soil and groundwater samples were collected in accordance with regulatory agency requirements and guidelines using the protocol in Attachment D.

## **LABORATORY SAMPLE ANALYSIS**

### **Soil Sample Analytical Methods**

Soil samples were analyzed for total petroleum hydrocarbons as gasoline (TPH/g) using U.S. Environmental Protection Agency (EPA) Method 5030, total petroleum hydrocarbons as diesel (TPH/d) using EPA Method 3550, and benzene, toluene, ethylbenzene, total xylenes (BTEX) using EPA Method 8020. Soil sample MW2-10 was also analyzed for total oil and grease (TOG) using EPA Method 9071, and volatile organic compounds (VOCs) using EPA Method 8240.

### **Soil Sample Analytical Results**

A summary of soil sample analyses is listed on Table 2 (Attachment B), and the signed laboratory analytical report and chain of custody record are in Attachment E. There was no detectable TPH/g, TPH/d, or BTEX in the soil samples from boring MW1. The soil sample collected from boring MW2 contained 25 mg/kg TPH/g, 23 mg/Kg TPH/d, and 0.083, 0.280, 0.320, and 1.7 mg/Kg BTEX, respectively. EPA Method 8240 analyses, in the MW2 soil sample, indicated that 0.130 mg/Kg acetone, and 0.095, 0.250, 0.230, and 1.5 mg/Kg BTEX, respectively were present (TOG was not detected in the MW2 soil sample). The soil sample collected from boring MW3 contained 490 mg/Kg TPH/g, 110 mg/Kg TPH/d, and 0.390, <0.0025, 2.1, and 2.2 mg/Kg BTEX, respectively.

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### **Groundwater Sample Analytical Methods**

Groundwater samples were analyzed for TPH/g (EPA Method 5030), and BTEX (EPA Method 602). Groundwater samples collected from monitoring wells MW2 and MW3 were also analyzed for TPH/d (EPA Method 3510). Groundwater samples collected from monitoring well MW2 were also analyzed for TOG (EPA Method 9070) and VOCs (EPA Method 624). Groundwater samples collected from monitoring wells MW1 and MW2 for samples collected on August 26, 1991, were analyzed for: cadmium (EPA Method 7130), chromium (EPA Method 7190), lead (EPA Method 7420), nickel (EPA Method 7520), and zinc (EPA Method 7950). All groundwater samples collected on December 4, 1991, were analyzed for TPH/g, TPH/D, and BTEX only.

Analysis, for the five metals listed above, were previously performed on groundwater samples collected from monitoring well MW2 (for samples collected on August 5, 1991). However, the analytical results were considered inaccurate because the laboratory provided ATT's field technician with sample vials that included nitric acid for sample preservation. The acid preservatives stripped the metals from the soil sediments suspended in the water samples; therefore, the laboratory analytical results represented metal concentrations in soil not groundwater (the metals were super-concentrated and were consequently artificially higher than would be expected in the subsurface soils). Groundwater samples, collected on August 26, 1991, were not collected in acid preserved containers, were delivered to the laboratory immediately after collection, and were filtered in the laboratory. Therefore, the analytical results are more representative of metal concentrations in the groundwater.

### **Groundwater Sample Analytical Results**

A summary of groundwater sample analyses is presented in Table 3 (Attachment B); the signed laboratory analytical reports and chain of custody records are in Attachment E. Groundwater samples collected on August 5, 1991, from monitoring well MW1 contained 1.1 ug/L benzene; TPH/g, toluene, ethylbenzene, and total xylenes were not detected. Groundwater samples collected from monitoring well MW2 contained 38,000 ug/L TPH/g, 1,900 ug/L TPH/d, and 8,300, 8,200, 2,300, and 13,000 ug/L BTEX, respectively. Groundwater samples collected from monitoring well

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MW2 also contained the following BTEX concentrations of 8,200, 8,900, 2,500, and 38,000 ug/L, respectively (TOG was not detected). Groundwater samples collected from monitoring well MW3 contained 3,300 ug/L TPH/g, 800 ug/L TPH/d, and 3,900, 160, 95, and 150 ug/L BTEX, respectively. Cadmium, chromium, lead, nickel, and zinc were not detected in groundwater samples collected from Monitoring wells MW1 and MW2 at or above the method detection limits.

Groundwater samples collected on December 4, 1991, from well MW1 did not contain any detectable concentrations of TPH/g, TPH/d, or BTEX. Groundwater samples collected from well MW2 contained 91,000 ug/L TPH/g, and 6,900, 6,800, 3,200, and 23,000 ug/L BTEX, respectively. Groundwater samples collected from well MW3 contained 10,000 ug/L TPH/g, and 3,300, 88, 80, and 130 ug/L BTEX, respectively. TPH/d was not detected in wells MW2 and MW3.

## CONCLUSIONS

Groundwater wells MW1, MW2, and MW3 should continue to be sampled quarterly, samples should be analyzed for TPH/d, TPH/g, and BTEX. Groundwater levels should be recorded monthly to determine seasonal fluctuations in groundwater flow direction and gradient; the flow direction appears to fluctuate from south to west. A limited Phase I Site Assessment, consisting of a Leaking Underground Storage Tank-LUST file search, should be conducted to determine if there are nearby, upgradient sources of groundwater contamination which may be impacting the subject property.

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Please contact us if you have any questions or comments regarding the contents of this report.

Sincerely,


**AQUA TERRA TECHNOLOGIES, INC.**



Benjamin Berman  
Project Scientist



Terrance E. Carter  
Project Manager



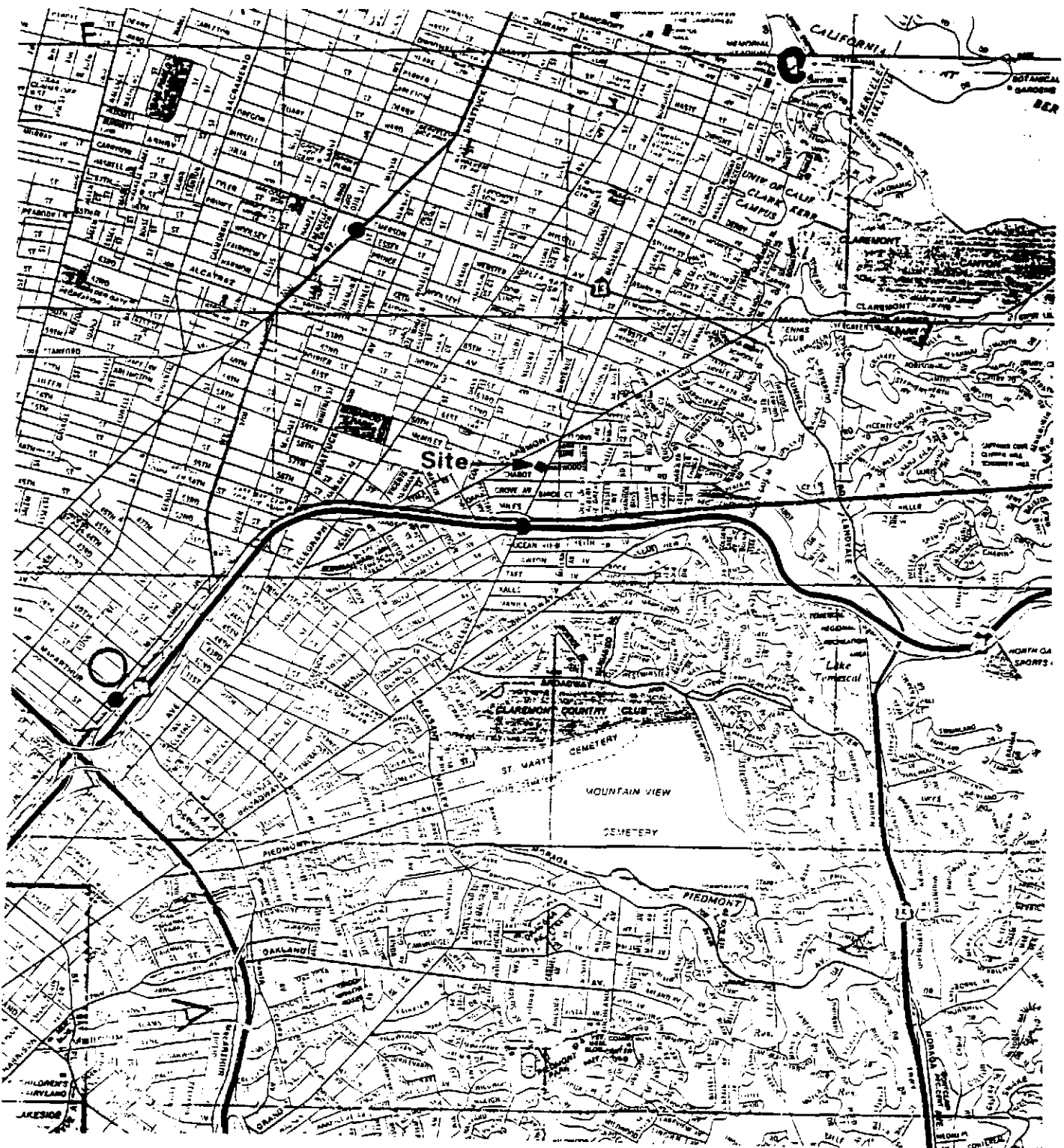
William E. Motzer, Ph.D.  
Senior Hydrogeologist  
California Registered Geologist No. 4202  
(Expires 6/30/92)

BB/TEC/WEM:mp

Attachments

cc: Dennis J. Byrne, Alameda County Health Care Services Agency





0 1/2 1 mile  
SCALE



**Property Location Map**

<b>Dreyer's Grand Ice Cream, Inc.</b>		<b>PLATE</b>  1
<b>JOB NUMBER</b> 9126	<b>DATE</b> 8/91	

**ATT** Aqua Terra Technologies  
Consulting Engineers  
& Scientists

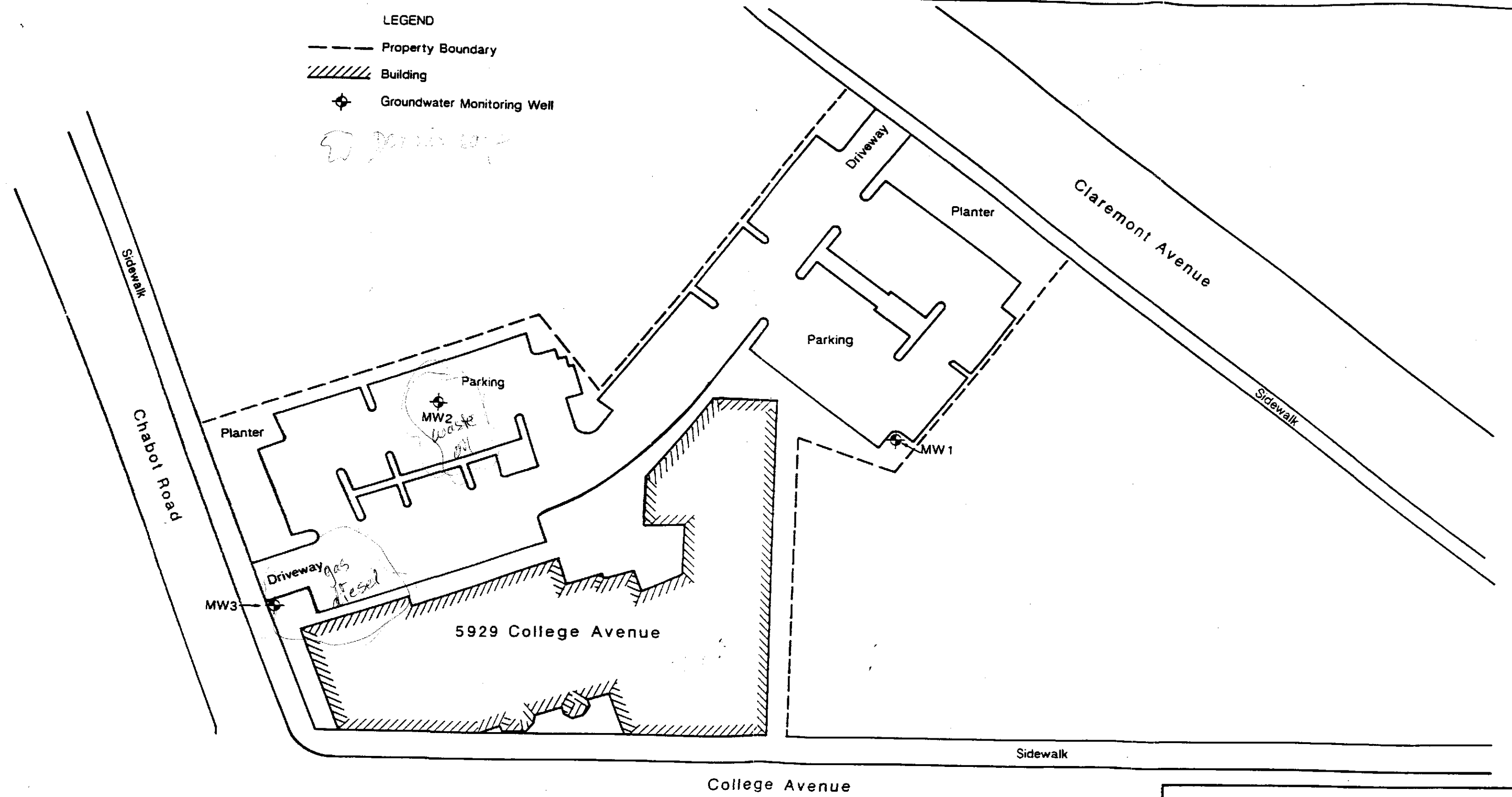
LEGEND

- Property Boundary
- //// Building
- ⊕ Groundwater Monitoring Well

*Yard*

*gas  
diesel*

*Waste*







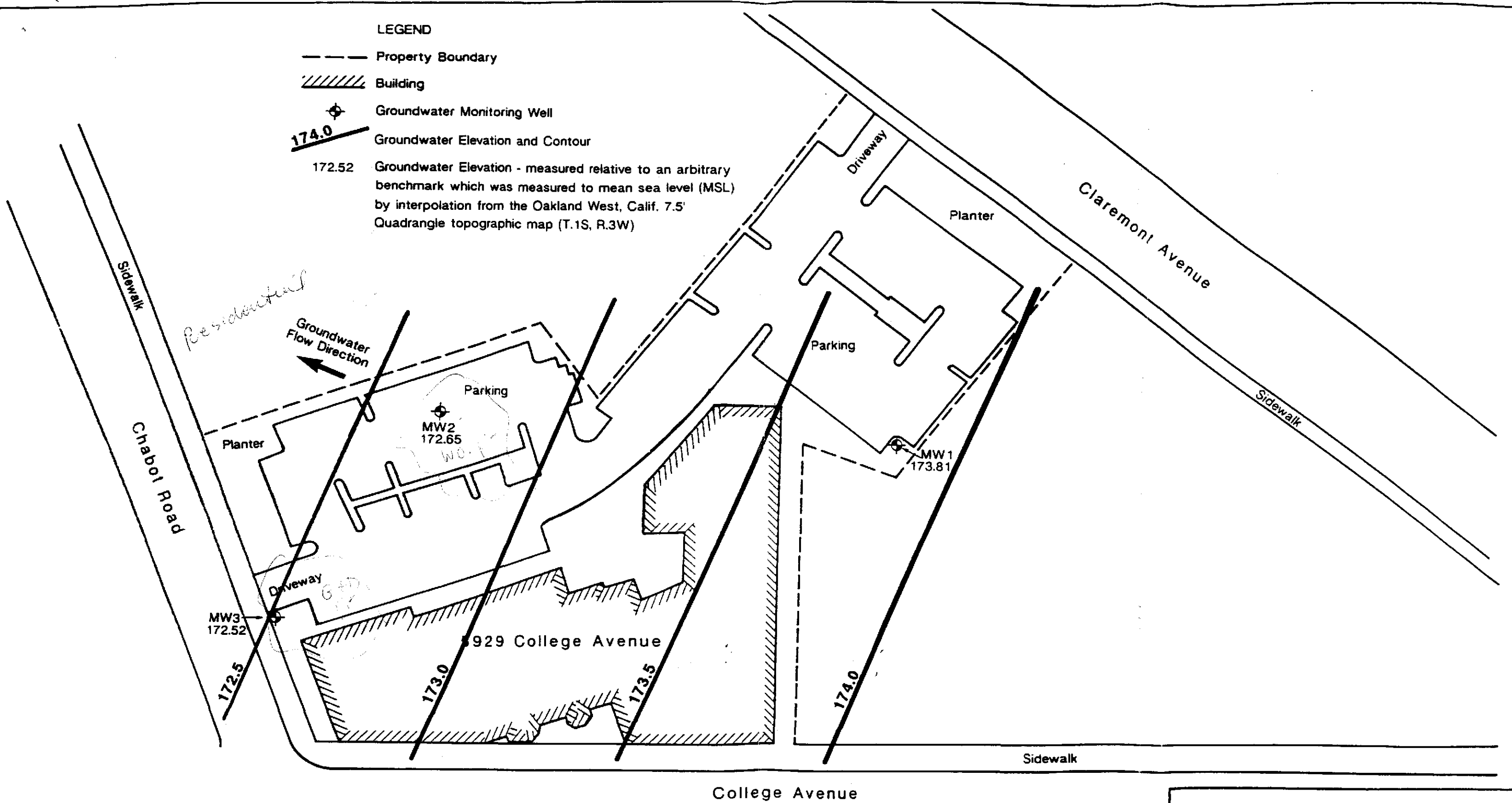
0 50 feet  
SCALE

<b>Site Map</b>		
<b>Dreyer's Grand Ice Cream, Inc.</b>		<b>PLATE</b>  2
<b>JOB NUMBER</b> 9126	<b>DATE</b> 9/91	

**ATT** Aqua Terra Technologies  
Consulting Engineers  
& Scientists

LEGEND

-  Property Boundary
-  Building
-  Groundwater Monitoring Well
-  Groundwater Elevation and Contour
- 172.52 Groundwater Elevation - measured relative to an arbitrary benchmark which was measured to mean sea level (MSL) by interpolation from the Oakland West, Calif. 7.5' Quadrangle topographic map (T.1S, R.3W)



0 50 feet  
SCALE

Groundwater Elevations and Contours 8/26/91		PLATE 3
Dreyer's Grand Ice Cream, Inc.		
JOB NUMBER 9126	DATE 9/91	

**ATT** Aqua Terra Technologies  
Consulting Engineers  
& Scientists

LEGEND

--- Property Boundary

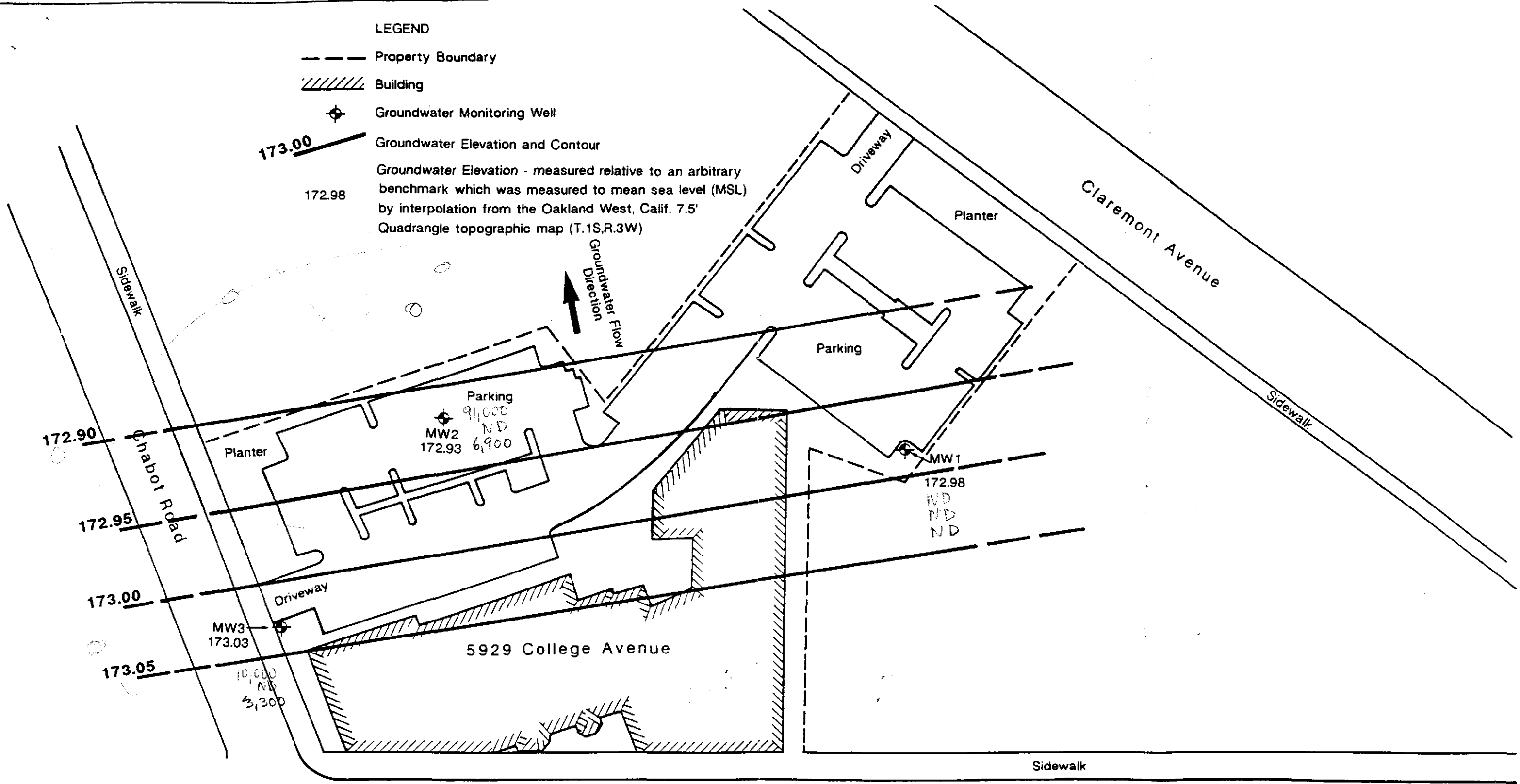
/// Building

⊕ Groundwater Monitoring Well

173.00 Groundwater Elevation and Contour

172.98  
Groundwater Elevation - measured relative to an arbitrary benchmark which was measured to mean sea level (MSL) by interpolation from the Oakland West, Calif. 7.5' Quadrangle topographic map (T.1S,R.3W)

↑ Groundwater Flow Direction



College Avenue



0 50 feet  
SCALE

TPH-g (ppb) 12-4-91  
TPH-d (ppb) "  
Benzene (ppb) "

**ATT** Aqua Terra Technologies  
Consulting Engineers  
& Scientists

**Groundwater Elevations and Contours  
12/04/91**

**Dreyer's Grand Ice Cream, Inc.**

PLATE

JOB NUMBER  
9126

DATE  
12/91

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**ATTACHMENT B**

**Tables**

Table 1. Groundwater Elevation Summary  
 Dreyer's Grand Ice Cream, Inc.  
 5929 College Avenue  
 Oakland, California

Well No.	TOC Elevation <sup>a</sup> (feet)	Date	Groundwater Depth <sup>b</sup> (feet)	Groundwater Elevation <sup>c</sup> (feet)
MW-1	189.14	08/05/91	14.81	174.33 ✓
		08/12/91	14.86	174.28 ✓
		08/26/91	15.33	173.81 ✓
		12/04/91	16.16	172.98
MW-2	185.23	08/05/91	12.53	172.70 ✓
		08/12/91	12.26	172.97
		08/26/91	12.58	172.65 ✓
		12/04/91	12.30	172.93
MW-3	184.68	08/05/91	11.72	172.96 ✓
		08/12/91	11.73	172.95 ✓
		08/26/91	12.16	172.52 ✓
		12/04/91	11.65	173.03

- a. TOC = top of well casing, measured relative to an arbitrary bench mark which was measured to mean sea level (MSL) by interpolation from the Oakland West, California 7.5' quadrangle 7.5' topographic map (T.1S, R.3W).
- b. Measured from TOC with an electronic well sounder.
- c. Groundwater elevation is equal to the difference between TOC elevation and groundwater depth.

Table 2. Chemical Data Summary - Soil  
 Dreyer's Grand Ice Cream, Inc.  
 5929 College Avenue  
 Oakland, CA

Analytical Method <sup>a</sup>	Sample No.	Sampling Date	Sample Depth <sup>b</sup> (feet)	Results (mg/Kg) <sup>c</sup>
5030:TPH/g <sup>d</sup>	MW1-10	07/16/91	10	<1
	MW1-15	07/16/91	15	<1
	MW2-10	07/17/91	10	<del>25</del>
	MW3-10	07/18/91	10	<del>490</del>
3550:TPH/d <sup>e</sup>	MW1-10	07/16/91	10	<1
	MW1-15	07/16/91	15	<1
	MW2-10	07/17/91	10	<del>23</del>
	MW3-10	07/18/91	10	<del>110</del>
8020:B <sup>f</sup> /T <sup>f</sup> /E <sup>f</sup> /X <sup>f</sup>	MW1-10	07/16/91	10	<0.0025/ <0.0025/ <0.0025/ <0.0025
	MW1-15	07/16/91	15	<0.0025/ <0.0025/ <0.0025/ <0.0025
	MW2-10	07/17/91	10	<del>0.088/0.280/0.320/1.1</del>
	MW3-10	07/18/91	10	<del>0.050/ &lt;0.0025/ 2.1/2.2</del>
9071:TOG <sup>g</sup>	MW2-10	07/17/91	10	<50
8240: VOC's <sup>h</sup>	MW2-10	07/17/91	10	
	Acetone			0.130
	Benzene			0.095
	Toluene			0.250
	Ethylbenzene			0.230
	Xylenes, total			1.5

- a. U.S. Environmental Protection Agency Analytical Methods
- b. Depth of sample collection below grade
- c. mg/Kg - milligrams per kilogram, equal to parts per million (ppm)
- d. TPH/g = total petroleum hydrocarbons as gasoline
- e. TPH/d = total petroleum hydrocarbons as diesel
- f. B = benzene, T = toluene, E = ethylbenzene, X = total xylenes
- g. TOG = total oil and grease
- h. VOC's = volatile organic compounds; only VOC's indicating concentrations above method detection limits are presented in this summary table.

Table 3. Chemical Data Summary - ~~Water~~  
 Dreyer's Grand Ice Cream, Inc.  
 5929 College Avenue  
 Oakland, CA

Analytical Method <sup>a</sup>	Sample ID/ Well No.	Sampling Date	Results ( $\mu\text{g/L}$ ) <sup>b</sup>
5030:TPH/g <sup>c</sup>	MW1	08/05/91	< 50
	MW1	12/04/91	< 50
	MW2	08/05/91	<del>18000</del>
	MW2	12/04/91	<del>9700</del>
	MW3	08/05/91	<del>3300</del>
	MW3	12/04/91	<del>10000</del>
3510:TPH/d <sup>d</sup>	MW1	---	---
	MW1	12/04/91	< 50
	MW2	08/05/91	<del>1900</del>
	MW2	12/04/91	< 50
	MW3	08/05/91	<del>200</del>
	MW3	12/04/91	< 50
602:B <sup>e</sup> /T <sup>e</sup> /E <sup>e</sup> /X <sup>e</sup>	MW1	08/05/91	<del>100</del> / < 0.5 / < 0.5 / < 0.5
	MW1	12/04/91	< 0.5 / < 0.5 / < 0.5 / < 0.5
	MW2	08/05/91	<del>8,500/8,200/2,300/13,000</del>
	MW2	12/04/91	<del>6,900/6,800/3,300/25,000</del>
	MW3	08/05/91	<del>3,500/160/95/150</del>
	MW3	12/04/91	<del>3,300/80/80/130</del>
9070:TOG <sup>f</sup>	MW2	08/05/91	< 5000
8240: VOCs <sup>g</sup> Benzene Toluene Ethylbenzene Xylenes, total	MW2	08/05/91	<del>3,200</del>
			<del>8,900</del>
			<del>2,500</del>
			<del>38,000</del>
Metals, total			
7130: Cadmium	MW1	08/26/91	< 5
	MW2	08/26/91	< 5
7190: Chromium	MW1	08/26/91	< 50
	MW2	08/26/91	< 50
7420: Lead	MW1	08/26/91	< 50
	MW2	08/26/91	< 50
7520: Nickel	MW1	08/26/91	< 40
	MW2	08/26/91	< 40
7950: Zinc	MW1	08/26/91	< 5
	MW2	08/26/91	< 5

- a. U.S. Environmental Protection Agency (EPA) Analytical Methods
- b.  $\mu\text{g/L}$  - micrograms per liter, equal to parts per billion (ppb)
- c. TPH/g = total petroleum hydrocarbons as gasoline
- d. TPH/d = total petroleum hydrocarbons as diesel
- e. B = benzene, T = toluene, E = ethylbenzene, X = total xylenes
- f. TOG = total oil and grease
- g. VOCs = volatile organic compounds; only VOCs indicating concentrations above method detection limits are presented in this summary table
- h. Petroleum hydrocarbon as diesel result is due to a petroleum hydrocarbon that is lighter than diesel



**ATTACHMENT C**

**Drilling Logs  
Unified Soil Classification System  
Well Construction Details  
Well Development Records  
Sample Collection Records**

AQUA TERRA TECHNOLOGIES INC.

Log of Exploratory Boring

Project: Dryers Ice Cream Job No.: 9126

Location: 5929 College Avenue, Oakland, CA Date: 07/16/91

Boring No.: MW1 Driller: Gregg Drilling Page 1 of 2

Logged by: Bruce Berman Proj. Mgr. Terry Carter Reviewed by: \_\_\_\_\_

Penetration 0.5 Feet	Depth (feet)	U.S.C.S. Soil Class.	Field Description		
	0				
	1	Fill	0'-1' Redwood chip-bark and soil backfill (planter)		
	2	CL	1'-8' Silty clay; black (10YR 2/1); stiff; slightly damp. Gradational color change to very dark grayish brown (10YR 3/2), minor component of very fine sand beginning at 5'.		
	3				
	4				
	5				
	6				
	7				
	8			CL	8'-18' Sandy clay; dark yellowish brown (10YR 4/4); 10% to 20% very fine sand; stiff to very stiff; slightly damp. Gradational increase in fine sand content and moisture content; minor iron staining and micro pores beginning at ≈ 15'.
	9				
7,9,14,	10		10' Sample		
	11				
	12				
	13				
	14				
5,17,12	15			15' Sample	
	16				
	17				

AQUA TERRA TECHNOLOGIES INC.

Field Drilling and Sampling Log

Job No: 9126

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Penetration (0.5 Ft)	Depth (feet)	U.S.C.S. Soil Class.	MW1 Field Description	
	18	CL	18'-30' Sandy-gravelly clay to clayey sand; 20% very fine sand, 10% medium to coarse sand, 20% fine to medium gravel (semi-round sandstone to 1/2-inch diameter); thin lenses of clean gravel (< 6-inches) diminish with depth.	18' First water
	19			
6, 16, 22	20	GC-CL		20' Sample saturated, not retained.
	21			
	22			
	23			
	24			
	25			
	26			
	27			
	28			
	29			
	30			
	31			
	32			
	33			
	34			
	35			
	36			
	37			
	38			
	39			

AQUA TERRA TECHNOLOGIES INC.

Log of Exploratory Boring

Project: Dryers Ice Cream Job No.: 9126

Location: 5929 College Avenue, Oakland, CA Date: 07/17/91

Boring No.: MW2 Driller: Gregg Drilling Page 1 of 2

Logged by: Bruce Berman Proj. Mgr. Terry Carter Reviewed by: \_\_\_\_\_

Penetration 0.5 Feet	Depth (feet)	U.S.C.S. Soil Class.	Field Description		
	0				
	1	Asphalt, baserock	0'-1.5' Asphalt and gravel base-rock		
	2	CL	1.5-10' Silty clay; very dark grayish brown (10YR 3/2); stiff; medium plasticity; slightly damp to damp. Gradational color change to dark brown (10YR 4/3).		
	3				
	4				
	5				
	6				
	7				
	8				
	9				
6, 10, 12	10			CL	10'-28' Sandy clay; dark brown (10YR 4/3); 10% to 20% very fine to fine sand; stiff; damp to moist; minor rust staining; minor blue-green aged hydrocarbon discoloring. Gradational increase in fine sand content and moisture content.
	11				
	12				
	13				
	14				
4, 9, 12	15				
	16				
	17				

15' First  
water,  
15' sample  
slipped

AQUA TERRA TECHNOLOGIES INC.

Field Drilling and Sampling Log

Job No: 9126

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Penetration 0.5 Feet	Depth (feet)	U.S.C.S. Soil Class.	MW2 Field Description				
	18	CL		out of sampler, saturated, not recovered. Hydrocarbon odor in water dripping from sampler. Hydrocarbon odor in drill cuttings below 15'.			
	19						
	20						
	21						
	22						
	23						
	24						
	25						
	26						
	27						
	28				B.O.H. @ 28'.		
	29						
	30						
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						

AQUA TERRA TECHNOLOGIES INC.

Log of Exploratory Boring

Project: Dryers Ice Cream Job No.: 9126

Location: 5929 College Avenue, Oakland, CA Date: 07/18/91

Boring No.: MW3 Driller: Gregg Drilling Page 1 of 2

Logged by: Bruce Berman Proj. Mgr. Terry Carter Reviewed by: \_\_\_\_\_

Penetration 0.5 Feet	Depth (feet)	U.S.C.S. Soil Class.	Field Description	
	0	Fill	0'-1.5- Soil fill materials (planter area)	
	1			
	2	CL- Fill?	1.5'-27' Sandy clay; black (10YR 2/1); 10% to 20% very fine sand; moist.  5'; lens of fine sand; dark yellow- ish brown (10YR 4/4); 3-inches thick; damp. Soil just above and below sand lens has minor blue-green aged hydro- carbon discoloring. Gradational increase in moisture and fine sand content with increased depth. Major blue-green aged hydrocarbon discoloring below 10'.	3' Hydro- carbon odor in drill cuttings
	3			
	4			
	5			
2,2,4	6			
	7			
	8			
	9			
	10			
4,4,5	11			
	12		5' sampler driven for lithologic description only (with- out tubes), sample not retained, hydrocarbon odor	
	13			
	14			
	15		10' Sample, strong hydrocarbon odor	
3,5,10	16		14' <del>First</del> water, strong hydrocarbon odor in water drip-	
			15'; wood chips in good condition, not decomposed (brought up in sampler).	

AQUA TERRA TECHNOLOGIES INC.

Field Drilling and Sampling Log

Job No: 9126

Page 2 of 2

Penetration 0.5 Feet	Depth (feet)	U.S.C.S. Soil Class.	MW3 Field Description			
	—					
	17	CL	17'; Drillers observation; augers encountered stiffer material similar to drilling conditions in native material in the other two boreholes. (possibly in tank excavation backfilled with excavated soil to 17', native material below 17'?).	ping from end of drill rod, sheen		
	18					
	19					
	20					
	21					
	22					15' Incomplete sample recovery, saturated soil, sample not retained
	23					
	24					Strong hydrocarbon odor, sheen on drill cuttings and auger below 15'
	25					
	26					
	27				B.O.H. @ 27'	
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					
	36					
	37					
	38					

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

ATT

Field/Laboratory Identification Divisions		Criteria For Visual Identification			Group Symbol	Typical Names
COARSE-GRAINED SOILS	GRAVELS > 50% of coarse fraction is larger than No. 4 sieve size (about 1/4 inch)	Clean Gravels (<5% of material smaller than No. 200 sieve size)	Wide range in grain size and substantial amounts of all intermediate particle sizes		GW	Well graded gravels, gravel-sand mixtures, little or no fines.
		Gravels with Fines (>12% of material smaller than No. 200 sieve size*)	Predominantly one size (uniformly graded) or a range of sizes with some intermediate sizes missing (gap graded)		GP	Poorly graded gravels, gravel-sand mixtures, little or no fines.
			Non-plastic fines or fines of low plasticity (see ML below for identification procedures)	GM	Silty gravels, poorly graded gravel-sand-silt mixtures.*	
	SANDS > 50% of coarse fraction is smaller than No. 4 sieve size (about 1/4 inch)	Clean Sands (<5% of material smaller than No. 200 sieve size)	Wide range in grain sizes and substantial amounts of all intermediate particle sizes		SW	Well graded sands, gravelly sands, little or no fines.*
			Predominantly one size (uniformly graded) or a range of sizes with some intermediate sizes missing (gap graded)		SP	Poorly graded sands and gravelly sands, little or no fines.*
		Sands with Fines (>12% of material, smaller than No. 200 sieve size)*	Non-plastic fines or fines of low plasticity (see ML below for identification procedures)		SM	Silty sands, poorly graded sand-silt mixtures.
Plastic fines (see CL below for identification procedures)			SC	Clayey sands, poorly graded sand-clay mixtures.		
Field/ Lab Divisions	Dry Strength	Dilatancy	Toughness	Group Symbol	Typical Names (Fraction < No. 40 Sieve)	
FINE-GRAINED SOILS	SILTS AND CLAYS (Liquid Limit <50%)	None to slight	Quick to slow	None to slight	ML	Inorganic silts, very fine sands, silty or clayey fine sands with slight plasticity, and rock flour.
		Medium to high	None to very slow	Medium	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		Slight to medium	Slow	Slight	OL	Organic silts and organic silt-clays of low plasticity.
SILTS AND CLAYS (Liquid Limit >50%)	Slight to medium	Slow to none	Slight to medium	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts.	
		None	High	CH	Inorganic clays of high plasticity, fat clays.	
	High to very high	None to very slow	Slight to medium	OH	Organic clays of medium to high plasticity.	
Medium to high						
HIGHLY ORGANIC SOILS		Identified by color, odor, spongy feel, and frequently by fibrous texture			Pt	Peat, muck, and other highly organic soils.

\* Materials with 5 to 12 percent smaller than No. 200 sieve are borderline cases, designated: GW-GM, SW-SC, etc.



MW1

Well Designation:

Site Location:  
5929 College Avenue,  
Oakland, CA.

Date Installed: 7-16-91

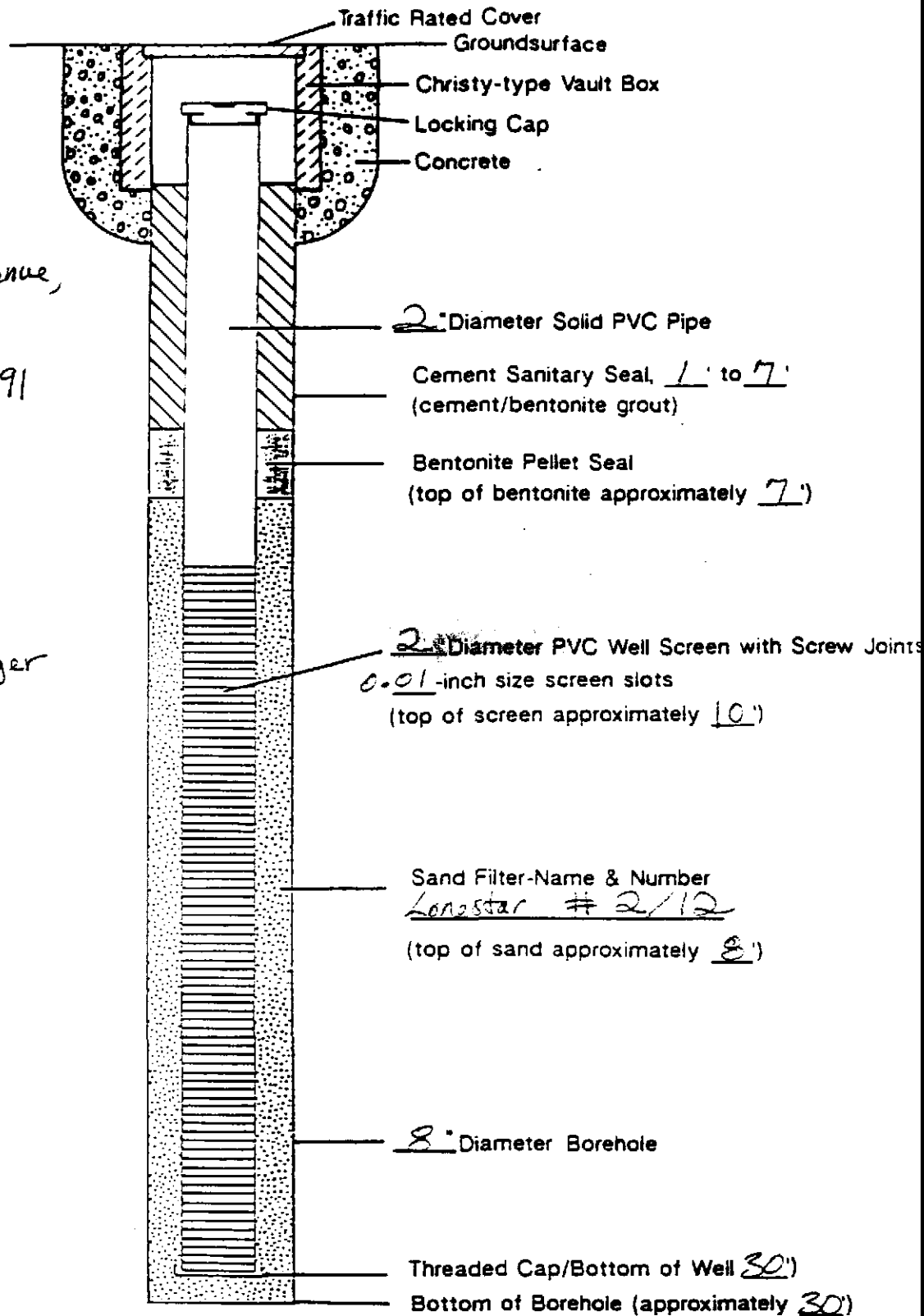
Drilling Company:  
Gregg Drilling

Driller: Chris

Drilling Method:  
Hollow-stem auger

Logged By: BB

Notes:



Not to Scale

**Groundwater Monitoring Well  
Construction Details**

Dryers Ice Cream

PLATE

JOB NUMBER

DATE

MW1

9126

**ATT**

Aqua Terra Technologies  
Consulting Engineers  
& Scientists

MW2  
Well Designation:

Site Location:  
5929 College Avenue,  
Oakland, CA.

Date Installed: 7-17-91

Drilling Company:  
Gregg Drilling

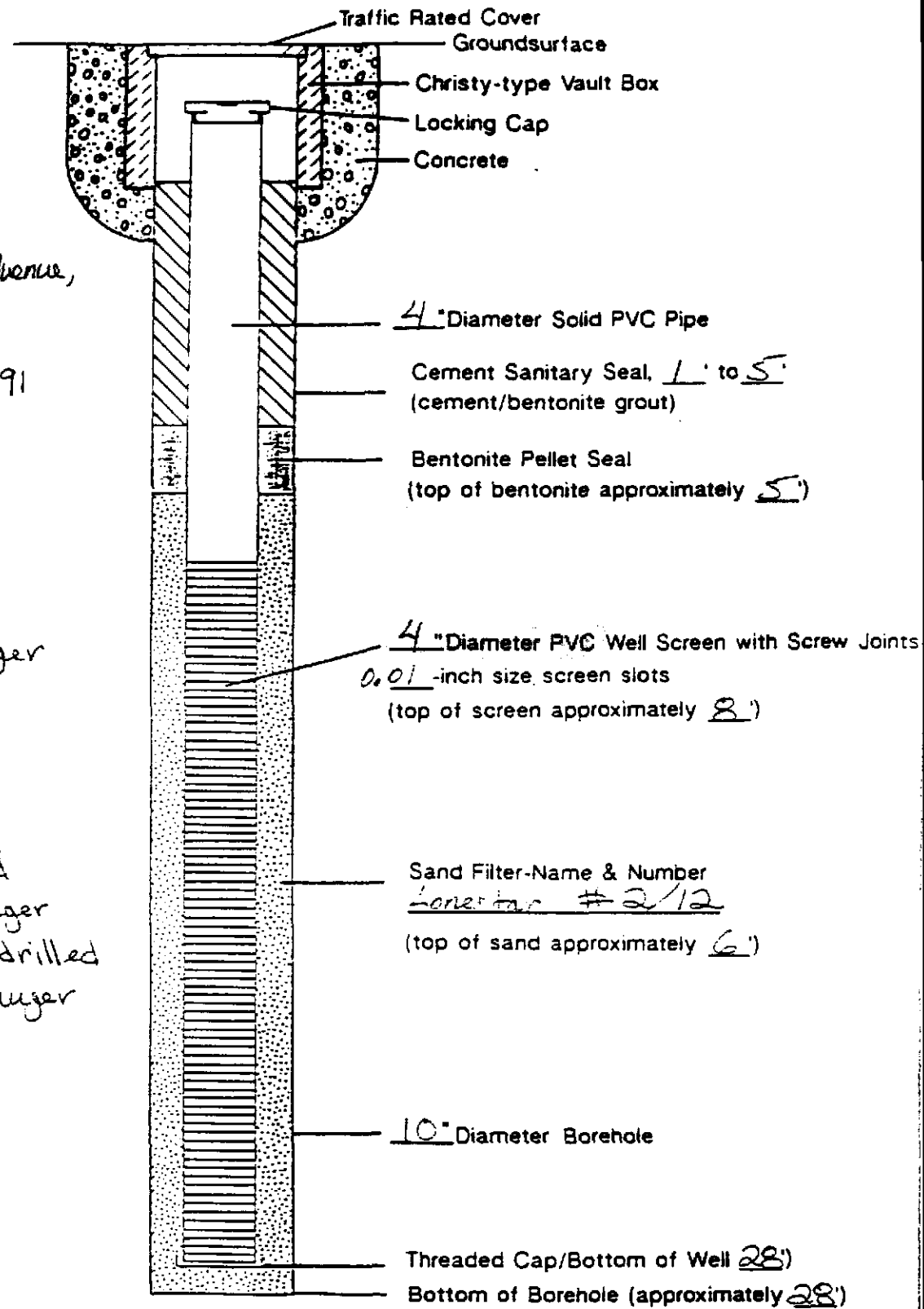
Driller: Chris

Drilling Method:  
Hollow-stem auger

Logged By: BB

Notes:

Pilot hole drilled  
with 6-inch auger  
to 15 feet, overdrilled  
with 10-inch auger



Not to Scale

**Groundwater Monitoring Well  
Construction Details**

Dryers Ice Cream		PLATE MW2
JOB NUMBER 9126	DATE	

**ATT** Aqua Terra Technologies  
Consulting Engineers  
& Scientists

MW3

Well Designation:

Site Location:

5929 College Avenue,  
Oakland, CA.

Date Installed: 7-18-91

Drilling Company:

Gregg Drilling

Driller: Chris

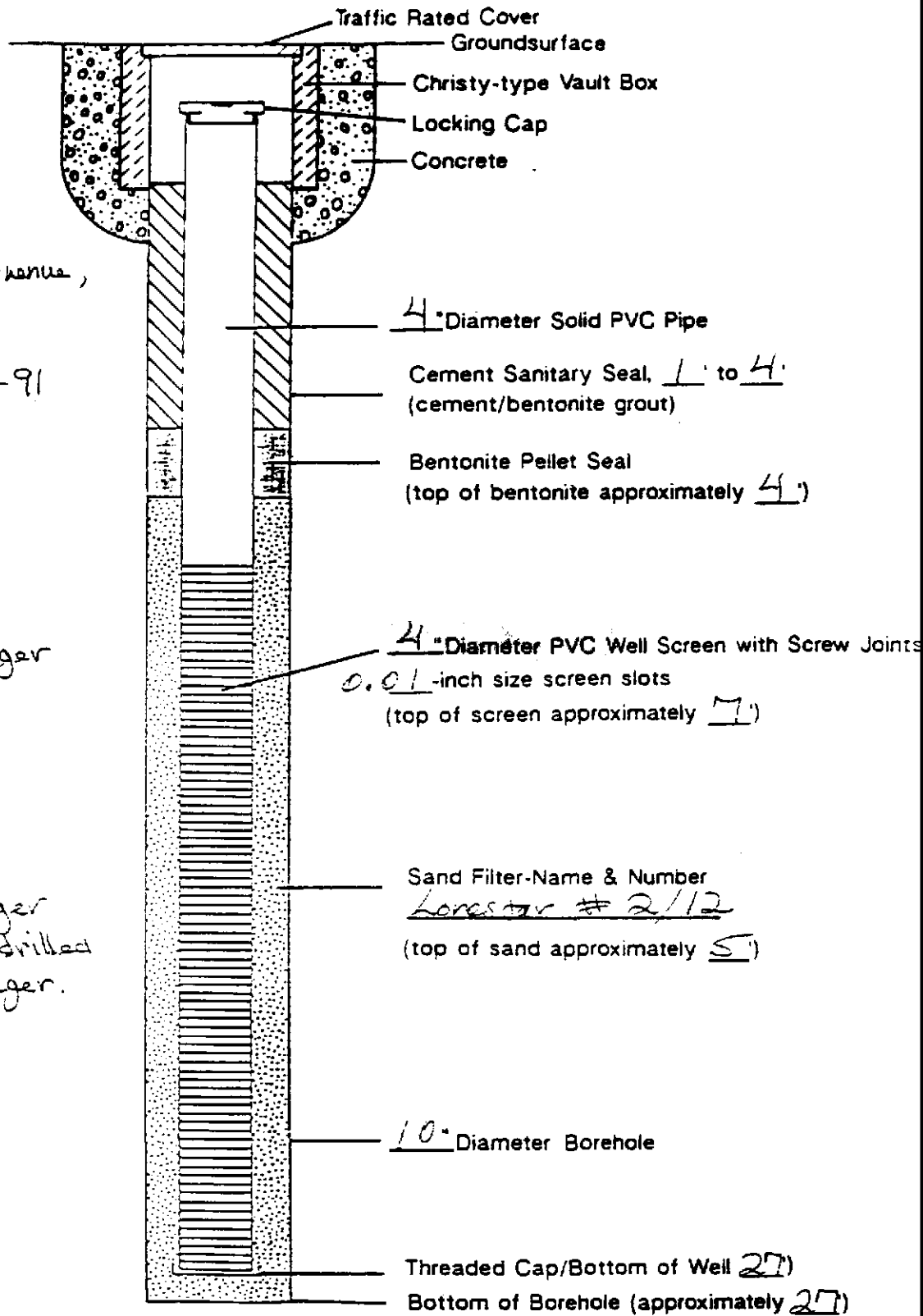
Drilling Method:

Hollow-stem auger

Logged By: BB

Notes:

Pilot hole drilled  
with 6-inch auger  
to 15-feet, overdrilled  
with 10-inch auger.



Not to Scale

Groundwater Monitoring Well  
Construction Details

ATT

Aqua Terra Technologies  
Consulting Engineers  
& Scientists

Dryers Ice Cream

JOB NUMBER

9126

DATE

PLATE

MW3

## WELL DEVELOPMENT RECORD

Date: 7 - 29 - 91 Well I.D.: MW1 Project No.: 9126  
 Project Name: DIVERS GRAND ICE CREAM Project Manager: \_\_\_\_\_  
 Site location/address: COLLEGE AVE OAKLAND

Pre-development data

W.L. (1/100"): 14.61 Time: 11:54 B.O.W. (1/2): 29.0'  
 W.L. method:  electric well sounder, \_\_\_\_\_ other/\_\_\_\_\_  
 Calculated purge volume (minimum 10 casing volumes): 23 gallons  
 Floating product: Y /  N (if yes, record thickness here: \_\_\_\_\_)  
 Sheen: Y /  N Odor: Y /  N Vapor: \_\_\_\_\_ ppm / % LEL  
 Water description: \_\_\_\_\_ clear, 1 slightly cloudy,  moderate sediment (color: Brown),  
 \_\_\_\_\_ very muddy (color: \_\_\_\_\_)

Development data

Development method:  hand pump, \_\_\_\_\_ bailer, \_\_\_\_\_ other/\_\_\_\_\_  
 Development began: date 7 - 29 - 91 time 12:20

Purge Volume	Time	Temp.	pH	Cond.	Turb.	Yield (GPM)
FIRST: <u>10</u>	<u>12:23</u>	<u>20°C</u>	<u>6.80</u>	<u>0700 us</u>	<u>MED. HEAVY</u>	_____
SECOND: <u>20</u>	<u>12:28</u>	<u>20°C</u>	<u>6.66</u>	<u>0740 us</u>	<u>MED. HEAVY</u>	_____
THIRD: <u>30</u>	<u>12:37</u>	<u>19°C</u>	<u>6.55</u>	<u>0220 us</u>	<u>MED.</u>	_____

Development ended: date 7 - 29 - 91 time 13:52  
 Total water removed during development: 30 gallons  
 Purged water discharged to:  drums, \_\_\_\_\_ tank truck, \_\_\_\_\_ other/\_\_\_\_\_

Post development data

W.L. (1/100"): 14.80 Time: 12:40 B.O.W. (1/2): 29.0'  
 Floating product: Y /  N (if yes, record thickness here: \_\_\_\_\_)  
 Sheen: Y /  N Odor: Y /  N Vapor: \_\_\_\_\_ ppm / % LEL  
 Water description: \_\_\_\_\_ clear, \_\_\_\_\_ slightly cloudy,  moderate sediment (color: Brown),  
 \_\_\_\_\_ very muddy (color: \_\_\_\_\_)

Notes: WELDER IN AREA OF WELL  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Developed by (signature): [Signature] WELLDVRD.PMS

WELL DEVELOPMENT RECORD

Date: 7-29-91 Well I.D.: MW2 Project No.: 9126

Project Name: DEYERS GRAND ICE CREAM Project Manager: \_\_\_\_\_

Site location/address: COLLEGE AVE, OAKLAND

Pre-development data

W.L (1/100'): 12.24 /Time: 13:19 B.O.W. (1/2): 26.0'

W.L. method:  electric well sounder, \_\_\_\_\_ other/\_\_\_\_\_

Calculated purge volume (minimum 10 casing volumes): 89 gallons

Floating product: Y /  (if yes, record thickness here: \_\_\_\_\_)

Sheen: Y /  Odor: Y /  Vapor: \_\_\_\_\_ ppm / % LEL

Water description: \_\_\_\_\_ clear,  slightly cloudy, \_\_\_\_\_ moderate sediment (color: Brown),  
\_\_\_\_\_ very muddy (color: \_\_\_\_\_)

Development data

Development method:  hand pump, \_\_\_\_\_ bailer, \_\_\_\_\_ other/\_\_\_\_\_

Development began: date 7-29-91 time 13:34

Purge Volume	Time	Temp.	pH	Cond.	Turb.	Yield (GPM)
FIRST: <u>30 GAL</u>	<u>13:44</u>	<u>19°C</u>	<u>6.46</u>	<u>0680 US</u>	<u>LIGHT-MED</u>	_____
SECOND: <u>55 GAL</u>	<u>14:11</u>	<u>19°C</u>	<u>6.86</u>	<u>0690 US</u>	<u>LIGHT-MED</u>	_____
THIRD: <u>64 GAL</u>	<u>14:21</u>	<u>19°C</u>	<u>6.76</u>	<u>0680 US</u>	<u>LIGHT-MED</u>	_____

Development ended: date 7-29-91 time 14:21

Total water removed during development: 64 gallons

Purged water discharged to:  drums, \_\_\_\_\_ tank truck, \_\_\_\_\_ other/\_\_\_\_\_

Post development data

W.L (1/100'): 23.20 /time: 14:25 B.O.W. (1/2): 26.0'

Floating product: Y /  (if yes, record thickness here: \_\_\_\_\_)

Sheen: Y /  Odor:  / N Vapor: \_\_\_\_\_ ppm / % LEL

Water description: \_\_\_\_\_ clear, \_\_\_\_\_ slightly cloudy,  moderate sediment (color: Brown),  
\_\_\_\_\_ very muddy (color: \_\_\_\_\_)

Notes: ODOR DETECTED AFTER 25 GAL. PURGED  
40 GAL. 13:48 STOPPED TO RECHARGE - RESTART 14:05  
14:09 STOPPED TO RECHARGE 55 GAL. - RESTART 14:20  
PURGED DRY THIRD TIME 64 GAL 14:21

Developed by (signature): [Signature] WELLDVRD.PM3

WELL DEVELOPMENT RECORD

Date: 7.29.91 Well I.D.: MW3 Project No.: 9126

Project Name: DRYERS GRAND ICE CREAM Project Manager: \_\_\_\_\_

Site location/address: COLLEGE AVE, OAKLAND

Pre-development data

W.L. (1/100"): 11.65 Time: 14:30 B.O.W. (1/2): 26.0'

W.L. method:  electric well sounder, \_\_\_\_\_ other/\_\_\_\_\_

Calculated purge volume (minimum 10 casing volumes): 89 gallons

Floating product: Y /  (if yes, record thickness here: \_\_\_\_\_)

Sheen: Y /  Odor:  / N Vapor: \_\_\_\_\_ ppm / % LEL

Water description: \_\_\_\_\_ clear, \_\_\_\_\_ slightly cloudy,  moderate sediment (color: Brown),  
\_\_\_\_\_ very muddy (color: \_\_\_\_\_)

Development data

Development method:  hand pump, \_\_\_\_\_ bailer, \_\_\_\_\_ other/\_\_\_\_\_

Development began: date 7.29.91 time 14:49

	Purge Volume	Time	Temp.	pH	Cond.	Turb.	Yield (GPM)
FIRST:	<u>30 GAL</u>	<u>14:55</u>	<u>18°C</u>	<u>7.21</u>	<u>1150 µS</u>	<u>MED-HEAVY</u>	_____
SECOND:	<u>41 GAL</u>	<u>15:12</u>	<u>18°C</u>	<u>7.15</u>	<u>1120 µS</u>	<u>MED-HEAVY</u>	_____
THIRD:	<u>46 GAL</u>	<u>15:33</u>	<u>18°C</u>	<u>7.12</u>	<u>0980 µS</u>	<u>MED-HEAVY</u>	_____

Development ended: date 7.29.91 time \_\_\_\_\_

Total water removed during development: 46 gallons

Purged water discharged to:  drums, \_\_\_\_\_ tank truck, \_\_\_\_\_ other/\_\_\_\_\_

Post development data

W.L. (1/100"): 24.42 Time: 15:26 B.O.W. (1/2): 26.0

Floating product: Y /  (if yes, record thickness here: 15:33)

Sheen: Y /  Odor:  / N Vapor: \_\_\_\_\_ ppm / % LEL

Water description: \_\_\_\_\_ clear, \_\_\_\_\_ slightly cloudy,  moderate sediment (color: Brown),  
\_\_\_\_\_ very muddy (color: \_\_\_\_\_)

Notes: 14:57 STOPPED PURGING TO RECHARGE DRY 35 GAL.  
15:10 STARTED - 15:12 PURGED DRY ANOTHER 10 GAL.  
15:30 STARTED - 15:33 PURGED DRY ANOTHER 5 GAL

Developed by (signature): [Signature]

RECORD OF GROUNDWATER LEVEL MEASUREMENTS

Page 1 of 1

Date Measured: 8 - 5 - 91 ATT Job No.: 91260

Site Location: DeVos Ice Cream

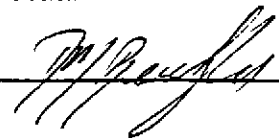
Well location map attached? Yes  No

Method of Measurement:  Electric well sounder,  
 Other: \_\_\_\_\_

Weather/Visibility: OVERCAST, COOL

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Well I.D.	Time (24 hr)	G.W.L. (1/100 ft)	G.W.L. 3x's?	B.O.W. (1/2ft)	Remarks
MW1	12:30	14.81'	-	29.0'	
MW2	12:34	12.53'	✓	27.0'	
MW3	12:39	11.72'	✓	26.0'	

Measured by (Signature): 

SAMPLE COLLECTION RECORD - MONITOR WELL

ATT

Date: 8-5-91 Sample I.D.: MW11 Job No.: 91216

Site Location: Dyers Ice Cream

No. of Containers : 3 / (check one):  Well Samples;

Duplicates from well \_\_\_\_\_;  Travel Blanks;

Field Blanks;  Other (explain)/ \_\_\_\_\_

W.L. (1/100'): 14.81 Time : 12:30 B.O.W. (1/2'): 29.0'

Method:  Electric Well Sounder;  Other/ \_\_\_\_\_

Con./pH meter calibrated:  Y /  N Well Loc. Map:  Y /  N

Calculated Purge Volume (4 casing volumes): 9 gallons

Purging Method:  Disposable Bailer;  Teflon Bailer;

Other/ \_\_\_\_\_

Time Start Purging (24 hr): 12:43, Product: Y /  N  
 Sheen: Y /  N Odor: Y /  N, Vapor: \_\_\_\_\_ ppm / %LEL

Turbidity: N, Color: N

Time Stop Purging (24 hr): 12:55, Product: Y /  N  
 Sheen: Y /  N, Odor: Y /  N, Vapor: \_\_\_\_\_ ppm / %LEL

Turbidity: LIGHT, color: LIGHT BROWN

	Temp.	pH	Cond.	Purge Vol.	Time
First :	<u>19°</u>	<u>6.44</u>	<u>0260us</u>	<u>3</u>	<u>12:47</u>
Second:	<u>18°</u>	<u>6.41</u>	<u>0250us</u>	<u>6</u>	<u>12:49</u>
Final :	<u>18°</u>	<u>6.47</u>	<u>0270us</u>	<u>9</u>	<u>12:55</u>

Sample Collection Time (24 hr): 12:56

Notes: \_\_\_\_\_

\_\_\_\_\_

Collected By (signature): *[Signature]*



SAMPLE COLLECTION RECORD - MONITOR WELL

ATT

Date: 8-5-91 Sample I.D.: MW2 Job No.: 9126

Site Location: DRYERS ICE CREAM

No. of Containers : 11 / (check one):  Well Samples;

Duplicates from well \_\_\_\_\_;  Travel Blanks;

Field Blanks;  Other (explain)/ \_\_\_\_\_

W.L. (1/100'): 17.53 Time : 12:34 B.O.W. (1/2'): 27.0'

Method:  Electric Well Sounder;  Other/ \_\_\_\_\_

Con./pH meter calibrated:  Y / N Well Loc. Map:  Y / N

Calculated Purge Volume (4 casing volumes): 38 gallons

Purging Method:  Disposable Bailer;  Teflon Bailer;

Other/ \_\_\_\_\_

Time Start Purging (24 hr): 13:23, Product: Y /  N  
 Sheen: Y /  N, Odor:  Y / N, Vapor: \_\_\_\_\_ ppm / %LEL

Turbidity: LIGHT, Color: LIGHT BROWN

Time Stop Purging (24 hr): 13:58, Product: Y /  N  
 Sheen:  Y / N, Odor:  Y / N, Vapor: \_\_\_\_\_ ppm / %LEL

Turbidity: LIGHT, Color: LIGHT BROWN

	Temp.	pH	Cond.	Purge Vol.	Time
First :	<u>18°C</u>	<u>6.31</u>	<u>0710 <math>\mu</math>S</u>	<u>13</u>	<u>13:34</u>
Second:	<u>18°C</u>	<u>6.34</u>	<u>0730 <math>\mu</math>S</u>	<u>26</u>	<u>13:47</u>
Final :	<u>18°C</u>	<u>6.30</u>	<u>0740 <math>\mu</math>S</u>	<u>38</u>	<u>13:58</u>

Sample Collection Time (24 hr): 14:10

Notes: SHEEN DEVELOPED AFTER 10 GAL.

Collected By (signature): *J.P. [Signature]*

SAMPLE COLLECTION RECORD - MONITOR WELL

ATT

Date: 8-5-91 Sample I.D.: MW3 Job No.: 9124

Site Location: Dryers Ice Cream

No. of Containers : 5 / (check one):  Well Samples;  
 Duplicates from well \_\_\_\_\_;  Travel Blanks;  
 Field Blanks;  Other (explain)/ \_\_\_\_\_

W.L. (1/100'): 11.72 Time : 12:39 B.O.W. (1/2'): 26.0'

Method:  Electric Well Sounder;  Other/ \_\_\_\_\_

Con./pH meter calibrated:  / N Well Loc. Map:  / N

Calculated Purge Volume (4 casing volumes): 38 gallons

Purging Method:  Disposable Bailer;  Teflon Bailer;  
 Other/ \_\_\_\_\_

Time Start Purging (24 hr): 14:27, Product: Y / N  
 Sheen: Y / N, Odor:  / N, Vapor: \_\_\_\_\_ ppm / %LEL

Turbidity: LIGHT, Color: BROWN

Time Stop Purging (24 hr): 15:00, Product: Y /  N  
 Sheen: Y /  N, Odor:  / N, Vapor: \_\_\_\_\_ ppm / %LEL

Turbidity: MED-HEAVY, Color: BROWN IN COLOR

	Temp.	pH	Cond.	Purge Vol.	Time
First :	<u>18°</u>	<u>6.46</u>	<u>0860us</u>	<u>13</u>	<u>14:36</u>
Second:	<u>18°</u>	<u>6.56</u>	<u>0700us</u>	<u>26</u>	<u>14:45</u>
Final :	<u>18°</u>	<u>6.82</u>	<u>0930us</u>	<u>38</u>	<u>15:00</u>

Sample Collection Time (24 hr): 15:00

Notes: ODOR WAS STRONGER THROUGHOUT PURGING  
PROCESS.

Collected By (signature): [Signature]

RECORD OF GROUNDWATER LEVEL MEASUREMENTS

Page 1 of 1

Date Measured: 8 - 26 - 91 ATT Job No.: 9126

Site Location: Deyers GRAND ICE CREAM

Well location map attached? Yes  No

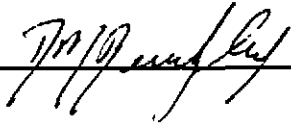
Method of Measurement:  Electric well sounder,

Other: \_\_\_\_\_

Weather/Visibility: OVERCAST, COOL

Notes: \_\_\_\_\_

Well I.D.	Time (24 hr)	G.W.L. (1/100 ft)	G.W.L. 3x's?	B.O.W. (1/2ft)	Remarks
MW1	11:26	15.33	✓	28.5	
MW2	11:53	12.58	✓	26.5	
MW3	12:39	12.16	✓	26	

Measured by (Signature): 

SAMPLE COLLECTION RECORD - MONITOR WELL

ATT

Date: 8-26-91 Sample I.D.: MW1 Job No.: 9126  
 Site Location: Dryers Grand Ice Cream Oakland  
 No. of Containers : 2 / (check one):  Well Samples;  
 Duplicates from well \_\_\_\_\_;  Travel Blanks;  
 Field Blanks;  Other (explain) / \_\_\_\_\_

W.L. (1/100'): 15.33 Time : 11:26 B.O.W. (1/2'): 28.5  
 Method:  Electric Well Sounder;  Other / \_\_\_\_\_  
 Con./pH meter calibrated:  / N Well Loc. Map:  / N  
 Calculated Purge Volume (4 casing volumes): 9 gallons  
 Purging Method:  Disposable Bailer;  Teflon Bailer;  
 Other / \_\_\_\_\_

Time Start Purging (24 hr): 11:30, Product: Y /  N  
 Sheen: Y /  N, Odor: Y /  N Vapor: \_\_\_\_\_ ppm / %LEL  
 Turbidity: N, Color: N

Time Stop Purging (24 hr): 11:43, Product: Y /  N  
 Sheen: Y /  N, Odor: Y /  N, Vapor: \_\_\_\_\_ ppm / %LEL  
 Turbidity: LIGHT, Color: Brown

	Temp.	pH	Cond.	Purge Vol.	Time
First :	<u>19°C</u>	<u>6.52</u>	<u>0200 <math>\mu</math>S</u>	<u>3</u>	<u>13:34</u>
Second:	<u>18°C</u>	<u>6.57</u>	<u>0230 <math>\mu</math>S</u>	<u>6</u>	<u>11:40</u>
Final :	<u>18°C</u>	<u>6.62</u>	<u>0230 <math>\mu</math>S</u>	<u>9</u>	<u>11:43</u>

Sample Collection Time (24 hr): 11:45

Notes: \_\_\_\_\_

Collected By (signature): *[Signature]*

SAMPLE COLLECTION RECORD - MONITOR WELL

ATT

Date: 8-26-91 Sample I.D.: MW2 Job No.: 9126

Site Location: DEYERS GRAND ICE CREAM OAKLAND

No. of Containers : 2 / (check one):  Well Samples;  
 Duplicates from well \_\_\_\_\_;  Travel Blanks;  
 Field Blanks;  Other (explain) / \_\_\_\_\_

W.L. (1/100'): 12.58 Time : 11:53 B.O.W. (1/2'): 26.5'

Method:  Electric Well Sounder;  Other / \_\_\_\_\_

Con./pH meter calibrated:  / N Well Loc. Map:  / N

Calculated Purge Volume (4 casing volumes): 34 gallons

Purging Method:  Disposable Bailer;  Teflon Bailer;  
 Other / \_\_\_\_\_

Time Start Purging (24 hr): 11:56, Product: Y /  N  
 Sheen: Y /  N, Odor:  / N, Vapor: \_\_\_\_\_ ppm / %LEL

Turbidity: N, Color: N

Time Stop Purging (24 hr): 12:22, Product: Y /  N  
 Sheen:  / N, Odor:  / N, Vapor: \_\_\_\_\_ ppm / %LEL

Turbidity: LIGHT, Color: BROWN

	Temp.	pH	Cond.	Purge Vol.	Time
First :	<u>18°C</u>	<u>6.42</u>	<u>0630 <math>\mu</math>S</u>	<u>11</u>	<u>12:03</u>
Second:	<u>17°C</u>	<u>6.49</u>	<u>0670 <math>\mu</math>S</u>	<u>22</u>	<u>12:12</u>
Final :	<u>17°C</u>	<u>6.51</u>	<u>0670 <math>\mu</math>S</u>	<u>34</u>	<u>12:22</u>

Sample Collection Time (24 hr): 12:25

Notes: TAR KETTLE NEXT DOOR, STRONG ODOR

Collected By (signature): [Signature]

RECORD OF GROUNDWATER LEVEL MEASUREMENTS

Page 1 of 1  
9313

Date Measured: 12 - 4 - 91 ATT Job No.: 9126-2

Site Location: DRYERS ICE CREAM

Well location map attached? Yes    No   

Method of Measurement:    ✓ Electric well sounder,  
   Other:   

Weather/Visibility: Sunny, Clear, Cool

Notes:     
    
  

Well I.D.	Time (24 hr)	G.W.L. (1/100 ft)	G.W.L. 3x's?	B.O.W. (1/2ft)	Remarks
MW1	11:05	16.16	✓	29.0'	
MW2	10:25	12.30	✓	26.5'	
MW3	8:40	11.65	✓	26.0'	

Measured by (Signature): *[Signature]*

ATT

Date: 12-4-91 Sample I.D.: MW1 Job No.: 9313  
9126-2

Site Location: DEYERS GRAND ICE CREAM DANLAND

No. of Containers : 5 / (check one):  Well Samples;  
 Duplicates from well \_\_\_\_\_;  Travel Blanks;  
 Field Blanks;  Other (explain)/ \_\_\_\_\_

W.L. (1/100'): 16-16 Time : 11:05 B.O.W. (1/2'): 29.0

Method:  Electric Well Sounder;  Other/ \_\_\_\_\_

Con./pH meter calibrated:  Y / N Well Loc. Map:  Y / N

Calculated Purge Volume (4 casing volumes): 8 gallons

Purging Method:  Disposable Bailer;  Teflon Bailer;  
 Other/ \_\_\_\_\_

Time Start Purging (24 hr): 11:10, Product: Y /  N  
 Sheen: Y /  N, Odor: Y /  N, Vapor: \_\_\_\_\_ ppm / %LEL

Turbidity: LIGHT, Color: BROWN

Time Stop Purging (24 hr): 11:23, Product: Y /  N  
 Sheen: Y /  N, Odor: Y /  N, Vapor: \_\_\_\_\_ ppm / %LEL

Turbidity: LIGHT, Color: BROWN

	Temp.	pH	Cond.	Purge Vol.	Time
First :	<u>17°C</u>	<u>6.51</u>	<u>0290 <math>\mu</math>S</u>	<u>3</u>	<u>11:15</u>
Second:	<u>17°C</u>	<u>6.44</u>	<u>0240 <math>\mu</math>S</u>	<u>6</u>	<u>11:19</u>
Final :	<u>17°C</u>	<u>6.42</u>	<u>0240 <math>\mu</math>S</u>	<u>8</u>	<u>11:23</u>

Sample Collection Time (24 hr): 11:25

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Collected By (signature): JMP

9313

Date: 12-4-91 Sample I.D.: MW2 Job No.: 9126-2  
 Site Location: Dreyfus Grand Ice Cream  
 No. of Containers: 7 (check one):  Well Samples;  
 Duplicates from well \_\_\_\_\_;  Travel Blanks;  
 Field Blanks;  Other (explain)/ \_\_\_\_\_

W.L. (1/100'): 12.30 Time: 10:25 B.O.W. (1/2'): 26.5'  
 Method:  Electric Well Sounder;  Other/ \_\_\_\_\_  
 Con./pH meter calibrated:  Y / N Well Loc. Map:  Y / N  
 Calculated Purge Volume (4 casing volumes): 36 gallons  
 Purging Method:  Disposable Bailer;  Teflon Bailer;  
 Other/ \_\_\_\_\_

Time Start Purging (24 hr): 10:30, Product: Y /  N  
 Sheen:  Y / N, Odor:  Y / N, Vapor: \_\_\_\_\_ ppm / %LEL  
 Turbidity: LIGHT, Color: BROWN

Time Stop Purging (24 hr): 10:52, Product: Y /  N  
 Sheen:  Y / N, Odor:  Y / N, Vapor: \_\_\_\_\_ ppm / %LEL  
 Turbidity: VERY LIGHT, Color: LIGHT BROWN

	Temp.	pH	Cond.	Purge Vol.	Time
First :	<u>18°C</u>	<u>6.27</u>	<u>NO70 µS</u>	<u>12</u>	<u>10:37</u>
Second:	<u>18°C</u>	<u>6.24</u>	<u>0660 µS</u>	<u>24</u>	<u>10:45</u>
Final :	<u>18°C</u>	<u>6.24</u>	<u>0660 µS</u>	<u>36</u>	<u>10:52</u>

Sample Collection Time (24 hr): 10:55

Notes: 4" WELL - 2 BAILERS USED

Collected By (signature): *[Signature]*



ATT

9313

Date: 12-4-91 Sample I.D.: MW3 Job No.: 9126-2

Site Location: DRYERS GRAND ICE CREAM

No. of Containers : 5 / (check one):  Well Samples;  
 Duplicates from well \_\_\_\_\_;  Travel Blanks;  
 Field Blanks;  Other (explain)/ \_\_\_\_\_

W.L. (1/100'): 11.65 Time : 8:40 B.O.W. (1/2'): 26.0'

Method:  Electric Well Sounder;  Other/ \_\_\_\_\_

Con./pH meter calibrated:  / N Well Loc. Map:  / N

Calculated Purge Volume (4 casing volumes): 36 gallons

Purging Method:  Disposable Bailer;  Teflon Bailer;  
 Other/ \_\_\_\_\_

Time Start Purging (24 hr): 8:47, Product: Y /  N  
 Sheen: Y /  N, Odor:  / N, Vapor: \_\_\_\_\_ ppm / %LEL

Turbidity: LIGHT, Color: LIGHT BROWN

Time Stop Purging (24 hr): 9:14, Product: Y /  N  
 Sheen: Y /  N, Odor:  / N, Vapor: \_\_\_\_\_ ppm / %LEL

Turbidity: LIGHT, Color: LIGHT BROWN

	Temp.	pH	Cond.	Purge Vol.	Time
First :	<u>18°C</u>	<u>6.16</u>	<u>0780 µS</u>	<u>12</u>	<u>8:57</u>
Second:	<u>18°C</u>	<u>6.39</u>	<u>0800 µS</u>	<u>24</u>	<u>9:05</u>
Final :	<u>18°C</u>	<u>6.48</u>	<u>0800 µS</u>	<u>36</u>	<u>9:14</u>

Sample Collection Time (24 hr): 9:16

Notes: 4" WELL - TWO BAILERS USED

Collected By (signature): *[Signature]*

**ATTACHMENT D**

**Drilling Procedures  
Well Construction & Development Protocol  
Soil & Groundwater Sample Collection Protocol**

## ATTACHMENT D

### DRILLING PROCEDURES & GROUNDWATER MONITORING WELL CONSTRUCTION/DESIGN

#### DRILLING AND SAMPLING PROCEDURES

All borings for well construction were drilled using eight-inch diameter or larger hollow stem auger equipment. A California Registered Geologist or Professional Engineer directed or supervised the collection of undisturbed samples of the soils encountered and the preparation of detailed logs for each boring.

Soil sampling was conducted using a modified California split-spoon sampler, a standard penetration sampler, or a five-foot continuous sampler. Samples were retained in two-inch to three-inch diameter, six-inch long, clean, brass or stainless steel tubes. The samples were retained for verification of soil classification and for chemical laboratory analytical testing, as appropriate. Teflon sheeting was placed between the soil sample and the cap, and the cap was sealed with PVC tape.

Where access limitations did not allow drilling with truck mounted equipment, either a trailer mounted drilling rig, portable power driven, or manually operated soil sampling equipment was utilized. If soil samples were to be retained for analysis, they were collected in clean brass tubes fitted within a thin walled drive sampler. The soil samples were capped and sealed as described above.

All down hole sampling, drilling, and well construction equipment and materials, including augers, casing, and screens were steam cleaned prior to their initial use. The sampling equipment was cleaned prior to each assembly by washing with a trisodium phosphate solution (TSP), rinsing with purified water, and allowing to air dry. The auger flights, drill bit, and sampler were steam cleaned at each boring location.

#### MONITORING WELL CONSTRUCTION

Monitoring wells were constructed in accordance with applicable local water district or California Department of Water Resources guidelines. The specific completion details for each well were determined in the field at the time of drilling by a California Registered Geologist or Professional Engineer experienced in groundwater monitoring system design and installation.

Monitoring wells consist of two or four-inch diameter, Schedule 40 PVC casing and screens with flush, threaded joints. No PVC glue was used. The screened sections are machine slotted with either 0.010-inch (0.255 mm) or 0.020-inch (0.51 mm) openings. The smaller slot size was used where the wells are screened within fine-grained sandy soils, and the larger slots were used where coarse sand or gravels are encountered. The slotted sections were fitted with a slip-on cap and placed opposite the water-bearing strata in the boring. The blank pipe was connected to the perforated pipe and extends to just below the ground surface.

The annulus between the side of the borehole and the slotted section was filled with a clean sand pack to variable depths, but not less than one or two feet above the perforated pipe. The annulus was packed with either Lonestar No. 1/20 (where 0.010-inch slotted pipe is used) or No. 3 (where 0.020-inch slotted pipe is used), or equivalent, washed sand filter material. The gradation of the filter material is summarized below:

U.S. Sieve No.	Opening (mm)	Percent Passing (No. 3)	Percent Passing (No. 1/20)
6	3.35	100	
8	2.36	99 - 100	
12	1.70	62 - 78	
16	1.18	15 - 33	100
20	0.85	0 - 8	90 - 100
30	0.60	0 - 4	14 - 40
40	0.425		0 - 5

A seal of bentonite pellets approximately 0.5 to 1.0 foot thick was placed above the sand pack to reduce the risk of grout penetration into the sand. The bentonite pellets were hydrated with purified water to form a tight plug. A cement/bentonite grout was placed above the bentonite plug to a depth of approximately 0.5 to 2.0 feet below the ground surface. The grout was pumped into the boreholes using a tremie pipe when it was required by local guidelines or regulations. A flush mounted traffic box or aboveground security enclosure was set in concrete above the cement/bentonite mixture.

At most sites in sedimentary formations, it is not practical to "rationally design" a filter pack based on sieve analyses. From experience, Lonestar No.

1/20 or No. 3 washed sand as a filter material was selected for use in wells. The 0.010-inch and 0.020-inch slot sizes were selected to retain 100 percent of the filter material.

The completed wells were enclosed in a traffic rated enclosure placed flush with grade or in an above-ground metal enclosure, and were fitted with a locking cap. Well head elevations were determined by a level survey, and well coordinates were determined by a traverse survey. The level/traverse survey was referenced to a bench mark of known or assigned elevation, and known coordinates. Once water levels stabilized, water levels in all wells were measured.

After the wells had been completed, they were developed by pumping and surging to clean and stabilize the soils around the screens. A manually operated, positive displacement surge pump and teflon bailer, surge block, and/or centrifugal pump was used for development. A minimum of 10 well casing volumes of water was removed during development; however, development continued until turbidity or sediment content had stabilized. All development equipment was steam cleaned or triple rinsed in a solution of purified water and tri-sodium phosphate (TSP) prior to its initial use in each well. A well development record was maintained which included 1) a description of development water characteristics at frequent intervals, 2) the quantity of water removed during development, and 3) flow rates during development.

Soil cuttings generated during drilling were stored in 55-gallon drums or wrapped in plastic sheeting, and water generated during well development and sampling was retained in secured 55-gallon drums until chemical analytical data from samples were received.

## ATTACHMENT D

### SOIL & GROUNDWATER SAMPLE COLLECTION & HANDLING PROTOCOL

#### INTRODUCTION & PURPOSE

Because reliable and representative test results must be generated from soil and groundwater samples, it is essential to establish a sampling procedure which assures that all samples are:

- Collected by approved and repeatable methods
- Representative of the materials(s) at the desired location and depth
- Uncontaminated by container and sampling equipment

The following sampling protocol was designed to be a guide to the sampling and handling procedures for soil and groundwater samples. Based on conditions which may be encountered in the field, some modifications to this protocol may be required to fit the needs of an individual site.

#### SAMPLING PROCEDURES

##### Groundwater Sampling

Prior to collecting groundwater samples, monitoring wells were purged by bailing until pH, conductivity, and temperature levels stabilize. A minimum of four well casing volumes was purged from each well. Wells were purged and groundwater samples were obtained using a teflon bailer, or disposable polyethelene bailer, and nylon rope. New nylon rope is used for each well.

The appropriate number of sample containers and type were used for each sample collected, in accordance with the analytical laboratory requirements and EPA protocol. The bottles were filled using the bailer. All sample bottles were pre-cleaned by the supplier according to EPA protocols.

To prevent cross contamination of groundwater samples by the sampling equipment, all reusable equipment used in sampling was washed with a trisodium phosphate solution (TSP), triple rinsed with purified water, and

allowed to air dry prior to each use. A sample of the purified water was retained for analysis as part of sample quality assurance.

### **Soil Sampling**

After the soil sampler was driven to the desired depth and the samples were retrieved, each end of the tube containing the soil sample retained for laboratory analysis was sealed with teflon sheeting, covered with plastic end caps, and sealed with PVC tape. All sample containers (tubes) were steamed cleaned (or washed with TSP, as above) and air dried prior to use. The soil sample recovered in the tube just above the sample retained for chemical analysis was examined in the field for visual and olfactory indications of chemical contamination and used for lithologic description.

The Unified Soil Classification System (USCS) was used to log and describe the soil by the onsite geologist. These logs also include details of the sampling process such as depth, apparent odors, discoloration, and any other factors which may be required to evaluate the presence of contamination at the site.

### **POST SAMPLING PROCEDURES**

One field/travel blank consisting of one sample bottle filled with purified water accompanied soil and groundwater sample containers at all times, including during transport to and from the site. Purified water field/travel blanks were analyzed according to the appropriate EPA Methods corresponding to the soil/groundwater sample analyses.

Sample containers were labeled with sample number, project number, date, and the initials of the person collecting the sample. A separate sample collection record was maintained for each groundwater sample collected.

Soil and groundwater samples collected were analyzed by an analytical laboratory certified by the California Department of Health Services (DHS). Quality assurance documentation accompanied all analytical reports generated by the laboratory.

The samples were placed in a cooler with dry ice (for soil samples) or bagged ice (for water samples) immediately following collection, and remained in the cooler until refrigerated at the analytical laboratory. The samples were delivered to the laboratory direct by courier or overnight freight within 48 hours of time of collection. Appropriate chain of custody forms were used for all samples.

**ATTACHMENT E**

**Laboratory Analytical Reports  
Chain of Custody Records**





®

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Bruce Berman  
Aqua Terra Tech., Inc.  
2950 Buskirk Ave., Ste 120  
Walnut Creek, CA 94596


Date: 07-31-91  
NET Client Acct. No: 435.2  
NET Pacific Log No: 8743  
Received: 07-20-91 1115

Client Reference Information

Job: 9126

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

  
\_\_\_\_\_  
Jules Skamarack  
Laboratory Manager

Enclosure(s)



NET Pacific, Inc

Client Acct: 435.2  
Client Name: Aqua Terra Tech., Inc.  
NET Log No: 8743

Date: 07-31-91  
Page: 2

Ref: Job: 9126

SAMPLE DESCRIPTION: MW1-10 07-16-91 0850  
LAB Job No: (-92284 )

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS				
VOLATILE (SOIL)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-25-91	
METHOD GC FID/5030				
as Gasoline			1	mg/Kg
METHOD 8020			1	
DILUTION FACTOR *			1	
DATE ANALYZED			07-25-91	
Benzene			2.5	ug/Kg
Ethylbenzene			2.5	ug/Kg
Toluene			2.5	ug/Kg
Xylenes, total			2.5	ug/Kg
PETROLEUM HYDROCARBONS				
EXTRACTABLE (SOIL)				
DILUTION FACTOR *			1	
DATE EXTRACTED			07-22-91	
DATE ANALYZED			07-23-91	
METHOD GC FID/3550				
as Diesel			1	mg/Kg
as Motor Oil			10	mg/Kg

8020



NET Pacific, Inc

Client Acct: 435.2  
Client Name: Aqua Terra Tech., Inc.  
NET Log No: 8743

Date: 07-31-91  
Page: 3

Ref: Job: 9126

SAMPLE DESCRIPTION: MW1-15      07-16-91      0900  
LAB Job No: (-92285 )

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (SOIL)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			07-24-91	
METHOD GC FID/5030			--	
as Gasoline		1	ND	mg/Kg
METHOD 8020			--	
DILUTION FACTOR *			1	
DATE ANALYZED			07-24-91	
Benzene		2.5	ND	ug/Kg
Ethylbenzene		2.5	ND	ug/Kg
Toluene		2.5	ND	ug/Kg
Xylenes, total		2.5	ND	ug/Kg
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (SOIL)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			07-22-91	
DATE ANALYZED			07-23-91	
METHOD GC FID/3550			--	
as Diesel		1	ND	mg/Kg
as Motor Oil		10	ND	mg/Kg



NET Pacific, Inc

Client Acct: 435.2  
@Client Name: Aqua Terra Tech., Inc.  
NET Log No: 8743

Date: 07-31-91  
Page: 4

Ref: Job: 9126

SAMPLE DESCRIPTION: MW3-10 07-18-91 0830  
LAB Job No: (-92286 )

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (SOIL)			--	
DILUTION FACTOR *			100	
DATE ANALYZED			07-24-91	
METHOD GC FID/5030			--	
as Gasoline		1	490	mg/Kg
METHOD 8020			--	
DILUTION FACTOR *			100	
DATE ANALYZED			07-24-91	
Benzene		2.5	390	ug/Kg
Ethylbenzene		2.5	2,100	ug/Kg
Toluene		2.5	ND	ug/Kg
Xylenes, total		2.5	2,200	ug/Kg
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (SOIL)			--	
DILUTION FACTOR *			10	
DATE EXTRACTED			07-22-91	
DATE ANALYZED			07-23-91	
METHOD GC FID/3550			--	
as Diesel		1	110	mg/Kg
as Motor Oil		10	ND	mg/Kg



NET Pacific, Inc

Client Acct: 435.2  
Client Name: Aqua Terra Tech., Inc.  
NET Log No: 8743

Date: 07-31-91  
Page: 5

Ref: Job: 9126

SAMPLE DESCRIPTION: MW2-10 07-17-91 0830  
LAB Job No: (-92287 )

Parameter	Method	Reporting Limit	Results	Units
Oil & Grease(Total)	EPA9071	50	ND	Mg/Kg
PETROLEUM HYDROCARBONS			--	
VOLATILE (SOIL)			--	
DILUTION FACTOR *			20	
DATE ANALYZED			07-24-91	
METHOD GC FID/5030			--	
as Gasoline	1		25	mg/Kg
METHOD 8020			--	
DILUTION FACTOR *			20	
DATE ANALYZED			07-24-91	
Benzene		2.5	83	ug/Kg
Ethylbenzene		2.5	320	ug/Kg
Toluene		2.5	280	ug/Kg
Xylenes, total		2.5	1,700	ug/Kg
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (SOIL)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			07-22-91	
DATE ANALYZED			07-23-91	
METHOD GC FID/3550			--	
as Diesel	1		23	mg/Kg
as Motor Oil	10		ND	mg/Kg

**NET**

NET Pacific, Inc

Client Acct: 435.2  
Client Name: Aqua Terra Tech., Inc.  
NET Log No: 8743Date: 07-31-91  
Page: 6

Ref: Job: 9126

SAMPLE DESCRIPTION: MW2-10 07-17-91 0830  
LAB Job No: (-92287 )

Parameter	Method	Reporting Limit	Results	Units
-----------	--------	-----------------	---------	-------

## METHOD 8240

DATE ANALYZED			07-23-91	
DILUTION FACTOR *			5	
Benzene		5	95	ug/Kg
Acetone		10	130	ug/Kg
Bromodichloromethane		5	ND	ug/Kg
Bromoform		5	ND	ug/Kg
Bromomethane		5	ND	ug/Kg
2-Butanone		10	ND	ug/Kg
Carbon disulfide		5	ND	ug/Kg
Carbon tetrachloride		5	ND	ug/Kg
Chlorobenzene		5	ND	ug/Kg
Chloroethane		5	ND	ug/Kg
2-Chloroethyl Vinyl Ether		10	ND	ug/Kg
Chloroform		5	ND	ug/Kg
Chloromethane		5	ND	ug/Kg
Dibromochloromethane		5	ND	ug/Kg
1,2-Dichlorobenzene		5	ND	ug/Kg
1,3-Dichlorobenzene		5	ND	ug/Kg
1,4-Dichlorobenzene		5	ND	ug/Kg
1,1-Dichloroethane		5	ND	ug/Kg
1,2-Dichloroethane		5	ND	ug/Kg
1,1-Dichloroethene		5	ND	ug/Kg
trans-1,2-Dichloroethene		5	ND	ug/Kg
1,2-Dichloropropane		5	ND	ug/Kg
cis-1,3-Dichloropropene		5	ND	ug/Kg
trans-1,3-Dichloropropene		5	ND	ug/Kg
Ethylbenzene		5	230	ug/Kg
2-Hexanone		10	ND	ug/Kg
Methylene chloride		5	ND	ug/Kg
4-Methyl-2-pentanone		10	ND	ug/Kg
Styrene		5	ND	ug/Kg
1,1,2,2-Tetrachloroethane		5	ND	ug/Kg
Tetrachloroethene		5	ND	ug/Kg
Toluene		5	250	ug/Kg
1,1,1-Trichloroethane		5	ND	ug/Kg
1,1,2-Trichloroethane		5	ND	ug/Kg
Trichloroethene		5	ND	ug/Kg
Trichlorofluoromethane		5	ND	ug/Kg
Vinyl acetate		10	ND	ug/Kg
Vinyl chloride		5	ND	ug/Kg
Xylenes, total		5	1500	ug/Kg
SURROGATE RESULTS			---	
Toluene-d8			100	% Rec.
Bromofluorobenzene			102	% Rec.
1,2-Dichloroethane-d4			89	% Rec.



NET Pacific, Inc

Client Acct: 435.2  
Client Name: Aqua Terra Tech., Inc.  
NET Log No: 8743

Date: 07-31-91

Page: 7

Ref: Job: 9126

## QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Diesel	1	mg/Kg	105	ND	68	83	16
Motor Oil	10	mg/Kg	104	ND	N/A	N/A	N/A

## QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Gasoline	1	mg/Kg	98	ND	92	98	6.3
Benzene	2.5	ug/Kg	115	ND	95	100	5.1
Toluene	2.5	ug/Kg	113	ND	97	100	3.0
Gasoline	1	mg/Kg	94	ND	95	104	11
Benzene	2.5	ug/Kg	104	ND	106	114	6.9
Toluene	2.5	ug/Kg	104	ND	106	113	6.7

COMMENT: Blank Results were ND on other analytes tested.

## QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Benzene	5	ug/Kg	93	ND	109	109	<1
Chlorobenzene	5	ug/Kg	101	ND	105	105	<1
1,1-DCE	5	ug/Kg	99	ND	89	98	9.9
Toluene	5	ug/Kg	99	ND	101	103	2.0
TCE	5	ug/Kg	92	ND	111	111	<1

COMMENT: Blank Results were ND on other analytes tested.

## QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
O & G (Total)	50	mg/Kg	100	ND	108	93	15



NET Pacific, Inc.

## KEY TO ABBREVIATIONS and METHOD REFERENCES

- < : Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
- \* : Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
- ICVS : Initial Calibration Verification Standard (External Standard).
- mean : Average; sum of measurements divided by number of measurements.
- mg/Kg (ppm) : Concentration in units of milligrams of analyte per kilogram of sample, (parts per million).
- mg/L : Concentration in units of milligrams of analyte per liter of sample.
- mL/L/hr : Milliliters per liter per hour.
- MPN/100 mL : Most probable number of bacteria per one hundred milliliters of sample.
- N/A : Not applicable.
- NA : Not analyzed.
- ND : Not detected; the analyte concentration is less than applicable listed reporting limit.
- NTU : Nephelometric turbidity units.
- RPD : Relative percent difference,  $100 \text{ [Value 1 - Value 2] / mean value}$ .
- SNA : Standard not available.
- ug/Kg (ppb) : Concentration in units of micrograms of analyte per kilogram of sample, (parts per billion).
- ug/L : Concentration in units of micrograms of analyte per liter of sample.
- umhos/cm : Micromhos per centimeter.

### Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.



**Aqua Terra Technologies, Inc.**

2950 Buskirk Avenue, Ste. 120  
Walnut Creek, CA 94596  
Tel. (415) 934-4884  
Fax. (415) 934-0418

8743

**ATT**

**CHAIN OF SAMPLE CUSTODY RECORD**

(original document, please return)

Page 1 of 1

Sampled By: Bruce Berman

Date Sampled: 7-16, 7-17, 7-18-91

Signature: Bruce Berman

ATT Job #: 9126

Lab Name: NET

Results To Be Sent To: Bruce Berman

Contact: Linda or Nora

Results Needed By: 7-25-91

Phone #: (707) 526-7200

Fax Results ASAP

Lab Job #: \_\_\_\_\_

Sample Collection				Sample Preservation			Sample Containers			Analysis/EPA Method No.					Remarks	
Sample I.D.	Time (24 hr)	Matrix (e.g. Water, Soil)	Number of Containers	Ice	HCL	Dry Ice	Leakage	Other	Other	TPH	TPH Fine	TPH Digest	BTEX	TOB		80410
MW1-10	8:50		1	✓			✓			XX	X					7-16-91
MW1-15	9:00		1	✓			✓			XX	X					7-16-91
MW2-10	8:30		1	✓			✓			XX	XX	XX				7-17-91
MW3-10	8:30		1	✓			✓			XX	X					7-18-91
<p><b>CUSTODY SEALED</b> 7/19/91 @ 1950 NW 4th Ave. Walnut Creek, CA</p>																

Notes: 5-day turnaround time

Relinquished by/ Company Affiliation	Date	Time	Received by: Company Affiliation	Date	Time
<u>Bruce Berman</u> ATT	7-19-91	9:21 am	<u>M. L. Tinsley</u>	7/19/91	9:24 AM
<u>M. L. Tinsley</u>	7/19/91				
<u>A. Lopez</u>	7-20-91	1115			



®

NATIONAL  
ENVIRONMENTAL  
TESTING, INC.

NET Pacific, Inc.  
435 Tesconi Circle  
Santa Rosa, CA 95401  
Tel: (707) 526-7200  
Fax: (707) 526-9623

Bruce Berman  
Aqua Terra Technology  
2950 Buskirk Ave., Ste 120  
Walnut Creek, CA 94596

Date: 08-28-91  
NET Client Acct. No: 435  
NET Pacific Log No: 9088  
Received: 08-07-91 0800

Client Reference Information

Job: 9126

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

A handwritten signature in black ink, appearing to read "Jules Skamarack", is written over a horizontal line. Below the line, the name and title are printed.

Jules Skamarack  
Laboratory Manager

Enclosure(s)



NET Pacific, Inc.

Client Acct: 435  
Client Name: Aqua Terra Technology  
NET Log No: 9088

Date: 08-28-91  
Page: 2

Ref: Job: 9126

SAMPLE DESCRIPTION: MW-1 08-05-91 1256  
LAB Job No: (-93847 )

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (WATER)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			08-09-91	
METHOD GC FID/5030			--	
as Gasoline			0.05	mg/L
METHOD 602			--	
DILUTION FACTOR *			1	
DATE ANALYZED			08-09-91	
Benzene			0.5	ug/L
Ethylbenzene			0.5	ug/L
Toluene			0.5	ug/L
Xylenes, total			0.5	ug/L



NET Pacific, Inc.

Client Acct: 435  
®Client Name: Aqua Terra Technology  
NET Log No: 9088

Date: 08-28-91  
Page: 3

Ref: Job: 9126

SAMPLE DESCRIPTION: FB 08-05-91 1243  
LAB Job No: (-93848 )

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (WATER)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			08-09-91	
METHOD GC FID/5030			--	
as Gasoline		0.05	ND	mg/L
METHOD 602			--	
DILUTION FACTOR *			1	
DATE ANALYZED			08-09-91	
Benzene		0.5	ND	ug/L
Ethylbenzene		0.5	ND	ug/L
Toluene		0.5	ND	ug/L
Xylenes, total		0.5	ND	ug/L



NET Pacific, Inc.

Client Acct: 435  
@Client Name: Aqua Terra Technology  
NET Log No: 9088

Date: 08-28-91  
Page: 4

Ref: Job: 9126

SAMPLE DESCRIPTION: MW-2 08-05-91 1410  
LAB Job No: (-93849 )

Parameter	Method	Reporting Limit	Results	Units
Oil & Grease(Total)	EPA9070	5	ND	mg/L
Cadmium	6010	0.02	ND	mg/L
Chromium, total	6010	0.02	0.17	mg/L
Lead (EPA 7421)	7421	0.002	0.031	mg/L
Nickel	6010	0.05	0.28	mg/L
Zinc	6010	0.02	0.28	mg/L
PETROLEUM HYDROCARBONS			--	
VOLATILE (WATER)			--	
DILUTION FACTOR *			10	
DATE ANALYZED			08-09-91	
METHOD GC FID/5030			--	
as Gasoline		0.05	38	mg/L
METHOD 602			--	
DILUTION FACTOR *			500	
DATE ANALYZED			08-10-91	
Benzene		0.5	8,300	ug/L
Ethylbenzene		0.5	2,300	ug/L
Toluene		0.5	8,200	ug/L
Xylenes, total		0.5	13,000	ug/L
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (WATER)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			08-08-91	
DATE ANALYZED			08-09-91	
METHOD GC FID/3510			--	
as Diesel		0.05	1.9 *	mg/L
as Motor Oil		0.5	ND	mg/L

\* NOTE: Petroleum hydrocarbon as diesel result is due to a petroleum hydrocarbon that is lighter than diesel.



NET Pacific, Inc.

Client Acct: 435  
Client Name: Aqua Terra Technology  
NET Log No: 9088

Date: 08-28-91  
Page: 5

Ref: Job: 9126

SAMPLE DESCRIPTION: MW-2            08-05-91    1410  
LAB Job No: (-93849 )

Parameter	Method	Reporting Limit	Results	Units
-----------	--------	-----------------	---------	-------

METHOD 624

DATE ANALYZED			08-08-91	
DILUTION FACTOR *			500	
Benzene		4.4	8,200	ug/L
Bromodichloromethane		2.2	ND	ug/L
Bromoform		4.7	ND	ug/L
Bromomethane		5.0	ND	ug/L
Carbon tetrachloride		2.8	ND	ug/L
Chlorobenzene		6.0	ND	ug/L
Chloroethane		5.0	ND	ug/L
2-Chloroethyl Vinyl Ether		7.0	ND	ug/L
Chloroform		1.6	ND	ug/L
Chloromethane		5.0	ND	ug/L
Dibromochloromethane		3.1	ND	ug/L
1,2-Dichlorobenzene		6.0	ND	ug/L
1,3-Dichlorobenzene		6.0	ND	ug/L
1,4-Dichlorobenzene		6.0	ND	ug/L
1,1-Dichloroethane		4.7	ND	ug/L
1,2-Dichloroethane		2.8	ND	ug/L
1,1-Dichloroethene		2.8	ND	ug/L
1,2-Dichloroethene (TOTAL)		1.6	ND	ug/L
1,2-Dichloropropane		6.0	ND	ug/L
cis-1,3-Dichloropropene		5.0	ND	ug/L
trans-1,3-Dichloropropene		5.0	ND	ug/L
Ethylbenzene		7.2	2,500	ug/L
Methylene chloride		10	ND	ug/L
1,1,2,2-Tetrachloroethane		6.9	ND	ug/L
Tetrachloroethene		4.1	ND	ug/L
Toluene		6.0	8,900	ug/L
1,1,1-Trichloroethane		3.8	ND	ug/L
1,1,2-Trichloroethane		5.0	ND	ug/L
Trichloroethene		1.9	ND	ug/L
Trichlorofluoromethane		5.0	ND	ug/L
Vinyl chloride		5.0	ND	ug/L
Xylenes, total		5.0	38,000	ug/L
SURROGATE RESULTS			--	
Toluene-d8			101	% Rec.
Bromofluorobenzene			101	% Rec.
1,2-Dichloroethane-d4			101	% Rec.



NET Pacific, Inc.

Client Acct: 435  
Client Name: Aqua Terra Technology  
NET Log No: 9088

Date: 08-28-91  
Page: 6

Ref: Job: 9126

SAMPLE DESCRIPTION: MW-3 08-05-91 1500  
LAB Job No: (-93850 )

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			08-09-91	
METHOD GC FID/5030			--	
as Gasoline		0.05	3.3	mg/L
METHOD 602			--	
DILUTION FACTOR *			50	
DATE ANALYZED			08-10-91	
Benzene		0.5	3,900	ug/L
Ethylbenzene		0.5	160	ug/L
Toluene		0.5	95	ug/L
Xylenes, total		0.5	150	ug/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)				
DILUTION FACTOR *			1	
DATE EXTRACTED			08-08-91	
DATE ANALYZED			08-09-91	
METHOD GC FID/3510			--	
as Diesel		0.05	0.80 *	mg/L
as Motor Oil		0.5	ND	mg/L

\* NOTE: Petroleum hydrocarbon as diesel result is due to a petroleum hydrocarbon that is lighter diesel.



NET Pacific, Inc.

Client Acct: 435  
 @Client Name: Aqua Terra Technology  
 NET Log No: 9088

Date: 08-22-91  
 Page: 7

Ref: Job: 9126

## QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verif Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Diesel	0.05	mg/L	103	ND	75	74	2.1
Motor Oil	0.5	mg/L	100	ND	N/A	N/A	N/A

## QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verif Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Gasoline	0.05	mg/L	114	ND	108	111	2.8
Benzene	0.5	ug/L	109	ND	104	126	19
Toluene	0.5	ug/L	108	ND	97	98	1.2
Benzene	0.5	ug/L	113	ND	101	106	4.8
Toluene	0.5	ug/L	111	ND	98	99	1.0
Benzene	0.5	ug/L	116	ND	102	103	1.2

COMMENT: Blank Results were ND on other analytes tested.

## QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verif Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Benzene	4.4	ug/L	93	ND	96	96	< 1
Chlorobenzene	6.0	ug/L	97	ND	102	103	< 1
1,1-DCE	2.8	ug/L	105	ND	84	85	1.4
Toluene	6.0	ug/L	95	ND	102	99	2.6
TCE	1.9	ug/L	96	ND	105	104	< 1

COMMENT: Blank Results were ND on other analytes tested.





Client Acct: 435  
 Client Name: Aqua Terra Technology  
 NET Log No: 9088

Date: 08-22-91  
 Page: 8

NET Pacific, Inc.

Ref: Job: 9126

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Lead	0.002	mg/L	107	ND	102	99	2.6
Cadmium	0.02	mg/L	105	ND	95	91	4.3
Chromium	0.02	mg/L	103	ND	91	87	3.8
Nickel	0.05	mg/L	108	ND	94	89	4.2
Zinc	0.02	mg/L	104	ND	93	83	8.6

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
O & G (Total)	5	mg/L	105	ND	98	101	3.2



NET Pacific, Inc.

## KEY TO ABBREVIATIONS and METHOD REFERENCES

- < : Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
- \* : Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
- ICVS : Initial Calibration Verification Standard (External Standard).
- mean : Average; sum of measurements divided by number of measurements.
- mg/Kg (ppm) : Concentration in units of milligrams of analyte per kilogram of sample, (parts per million).
- mg/L : Concentration in units of milligrams of analyte per liter of sample.
- mL/L/hr : Milliliters per liter per hour.
- MPN/100 mL : Most probable number of bacteria per one hundred milliliters of sample.
- N/A : Not applicable.
- NA : Not analyzed.
- ND : Not detected; the analyte concentration is less than applicable listed reporting limit.
- NTU : Nephelometric turbidity units.
- RPD : Relative percent difference,  $100 \text{ [Value 1 - Value 2] / mean value}$ .
- SNA : Standard not available.
- ug/Kg (ppb) : Concentration in units of micrograms of analyte per kilogram of sample, (parts per billion).
- ug/L : Concentration in units of micrograms of analyte per liter of sample.
- umhos/cm : Micromhos per centimeter.

### Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

CHAIN OF SAMPLE CUSTODY RECORD

(original document, please return)

Page 1 of 1

Sampled By: DAVID BEARDSLEY

Date Sampled: 8.5.91

Signature: [Signature]

ATT Job #: 9126

Lab Name: NET

Results To Be Sent To: BRUCE BERMAN

Contact: KELLY

Results Needed By: STANDARD TURNAROUND

Phone #: (707) 526-7200

Fax Results ASAP

Lab Job #: \_\_\_\_\_

Sample Collection				Sample Preservation				Sample Containers			Analysis/EPA Method No.						Remarks
Sample I.D.	Time (24 hr)	Matrix (e.g. Water, Soil)	Number of Containers	Ice	HCL	SULFURIC ACID	NITRIC ACID	40 mL/DA	1 L AMBER	600 mL PLASTIC	BTEX	TPH G	TPH D	VEGETABLE ORGANICS (EPA)	METALS *	TOG	
MW1	12:56	WATER	3	-	-			3			-	-					
MW2	14:10	"	11	-	-	-	-	6	4	1	-	-	-	-	-	-	
MW3	15:00	"	5					3	2		-	-	-				
FB	12:43	"	3					3			-	-					

Notes: METALS \* CADMIUM, CHROMIUM, LEAD, ZINC & NICKEL

( CUSTODY SEALED 8/6/91 )  
@ \_\_\_\_\_ Seal intact.

Relinquished by/ Company Affiliation	Date	Time	Received by: Company Affiliation	Date	Time
<u>[Signature]</u>	8.6.91	12:30	<u>[Signature]</u>	8/6/91	12:30
<u>[Signature]</u>	8/6/91	20:00	(VIA MES)		
			15 sample	8/7/91	0820

# CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

August 30, 1991

ChromaLab File No.: 0891233

AQUA TERRA TECHNOLOGIES, INC.

Attn: Bruce Berman

RE: Two water samples for Cadmium, Chromium, Lead, Nickel, and Zinc analyses

Project Number: 9126

Date Sampled: August 26, 1991

Date Submitted: August 26, 1991


Date Extracted: August 30, 1991

Date Analyzed: August 30, 1991

## RESULTS:

<u>Sample No.</u>	<u>Cadmium (mg/l)</u>	<u>Chromium (mg/l)</u>	<u>Lead (mg/l)</u>	<u>Zinc (mg/l)</u>	<u>Nickel (mg/l)</u>
MW-1	N.D.	N.D.	N.D.	N.D.	N.D.
MW-2	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	94.3%	95.1%	93.7%	89.4%	102.6%
DETECTION LIMIT	0.005	0.05	0.05	0.005	0.04
METHOD OF ANALYSIS	7130	7190	7420	7950	7520

ChromaLab, Inc.



David Duong  
Chief Chemist



Eric Tam  
Laboratory Director

**Qua Terra Technologies, Inc.**

2950 Buskirk Avenue, Ste. 120  
Walnut Creek, CA 94596  
Tel. (415) 934-4884  
Fax. (415) 934-0418

**CHAIN OF SAMPLE**  
(original document)

CHROMALAB FILE # 891233  
ORDER # 3280

**ATT**

Page 1 of 1

Sampled By: DAVID BEARDSLEY

Date Sampled: 8-26-91

Signature: [Signature]

ATT Job #: 9126

Lab Name: CHROMALAB

Results To Be Sent To: BEULIE BERMAN

Contact: TARA

Results Needed By: 5 DAY STANDARD TURNAROUND

Phone #: 831-1786

Fax Results ASAP

Lab Job #: \_\_\_\_\_

Sample Collection				Sample Preservation			Sample Containers			Analysis/EPA Method No.				Remarks
Sample I.D.	Time (24 hr)	Matrix (e.g. Water, Soil)	Number of Containers	Ice	HCL	Dry Ice	500 mL BASKET			METALS*				
MW1	11:45	WATER	2	✓			2			✓				
MW2	12:25	"	2	✓			2			✓				

Notes: SAMPLES TO BE FILTERED IN LAB, 5 DAY STANDARD TURNAROUND  
METALS \* CADMIUM, CHROMIUM, LEAD, ZINC, & NICKEL

Relinquished by/ Company Affiliation	Date	Time	Received by: Company Affiliation	Date	Time
<u>[Signature]</u>	<u>8-26-91</u>	<u>13:39</u>	<u>T. J...</u>	<u>8-26-91</u>	<u>13:39</u>

# CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

December 12, 1991

ChromaLab File No.: 1291020

AQUA TERRA TECHNOLOGIES, INC.

Attn: Terry Carter

RE: Three water samples for Gasoline/BTEX and Diesel analyses

Project Number: 9126-2

Date Sampled: Dec. 4, 1991

Date Submitted: Dec. 4, 1991

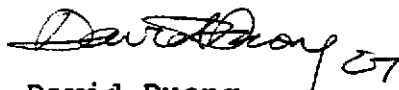
Date Extracted: Dec. 10, 1991

Date Analyzed: Dec. 11, 1991

## RESULTS:

Sample I.D.	Gasoline ( $\mu\text{g/L}$ )	Diesel ( $\mu\text{g/L}$ )	Benzene ( $\mu\text{g/L}$ )	Toluene ( $\mu\text{g/L}$ )	Ethyl Benzene ( $\mu\text{g/L}$ )	Total Xylenes ( $\mu\text{g/L}$ )
MW1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
MW2	91000	N.D.	6900	6800	3200	23000
MW3	10000	N.D.	3300	88	80	130
TB	N.D.	----	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE REC.	97.0%	88.6%	98.0%	97.0%	94.7%	93.6%
DUP SPIKE REC	97.7%	87.5%	95.1%	102.5%	94.2%	93.3%
DET. LIMIT	50	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/ 8015	3510/ 8015	602	602	602	602

ChromaLab, Inc.

  
David Duong  
Chief Chemist

  
Eric Tam  
Laboratory Director

Sampled By: DAVID BEARDSLEY

Date Sampled: 12-4-91

Signature: *David Beardsley*

ATT Job #: 919 9126-2

Lab Name: CHROMALAB

Results To Be Sent To: TERRY CARTER

Contact: JACKIE

Results Needed By: 5 Day STANDARD TURNAROUND

Phone #: 831 1788

Fax Results ASAP

Lab Job #: \_\_\_\_\_

Sample Collection				Sample Preservation			Sample Containers				Analysis/EPA Method No.				Remarks
Sample I.D.	Time (24 hr)	Matrix (e.g. Water, Soil)	Number of Containers	Ice	HCL	Dry Ice	40 mL	100 mL	1 LITER	500 mL	PLASTIC	BTEX	TPH G	TPH D	
MW1	11:25	WATER	5	-	-		3	2				-	-	-	
MW2	10:55	"	7	-	-		3	2	2			-	-	-	SEE NOTES
MW3	9:16	"	5	-	-		3	2				-	-	-	
TB	7:30	"	3	-	-		3					-	-	-	

Notes: TITLE 22 METALS - ALL 17 METALS / MW2 METALS TO BE HELD AT LAB UNTIL NOTIFIED.

Relinquished by/ Company Affiliation	Date	Time	Received by: Company Affiliation	Date	Time
<u><i>David Beardsley</i></u>	<u>12-4-91</u>	<u>12:05</u>	<u><i>Jackie</i></u>	<u>12-4-91</u>	<u>12:05</u>