



FLUOR DANIEL GTI

ENVIRONMENTAL PROTECTION

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R0480

January 14, 1997

Mr. Dale Klettke, CHMM  
Hazardous Materials Specialist  
Alameda County, Health Care Services Agency  
Environmental Health Services Dept.  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

STD  
1082

remained  
by  
Dale

letter Jan 21, 1997

SUBJECT: Quarterly Groundwater Monitoring and Sampling Report  
Former Sears Store 1058  
2633 Telegraph Avenue, Oakland, California  
Fluor Daniel GTI Project 020200136

Dear Mr. Klettke:

On behalf of Sears, Roebuck and Co., Fluor Daniel GTI, Inc. presents the quarterly monitoring and sampling data collected on December 2, 1996, from the site referenced above. The eight groundwater monitoring wells were gauged to determine depth to groundwater and to check for the presence of separate-phase petroleum hydrocarbons in accordance with correspondence from the Alameda Health Care Services Agency dated May 1, 1996. A very thin layer of separate-phase hydrocarbons was detected in monitoring well MW-3 which is consistent with past measurements. Because only 0.03 feet of separate-phase hydrocarbons was detected in well MW-3, bailing of the product was not feasible during this site visit (attachment 1, figure 1). A summary of groundwater monitoring data is presented in attachment 2, table 1.

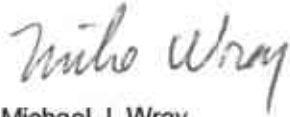
After measuring depth to water, all monitoring wells except MW-3 were purged and sampled. Groundwater monitoring and sample collection protocol, and field data sheets are presented in attachment 3. The groundwater samples were analyzed for total petroleum hydrocarbons (TPH)-as-motor oil by modified EPA method 8015 (GC/FID) for benzene, toluene ethyl-benzene, xylenes (BTEX)/methyl tert-butyl ether (MTBE) and for TPH-as-gasoline by EPA methods 8020/modified 8015. A summary of the groundwater analytical results is presented in table 2. A distribution map of dissolved benzene, TPH-as-gasoline and TPH-as-motor-oil concentrations is presented in figure 2. Laboratory reports and chain-of-custody records are included in attachment 4.

Concentrations of petroleum constituents remain consistent with historical results reported in the groundwater samples collected from wells MW-1, MW-2, MW-3, MW-4 and MW-8. The results of analytical testing of groundwater samples show that there are no detections above California Maximum Contaminant (MCLs) except the 6.2 ug/l concentration of benzene in well EW-1. At this time Fluor Daniel GTI

recommends passive product recovery in well MW-3 and continued quarterly groundwater sampling.

If you have any comments or questions, please contact me at (510) 370-3990.

Sincerely,  
**Fluor Daniel GTI, Inc.**



Michael J. Wray  
Project Manager

Attachments

c: Scott M. DeMuth - Sears, Roebuck and Co.

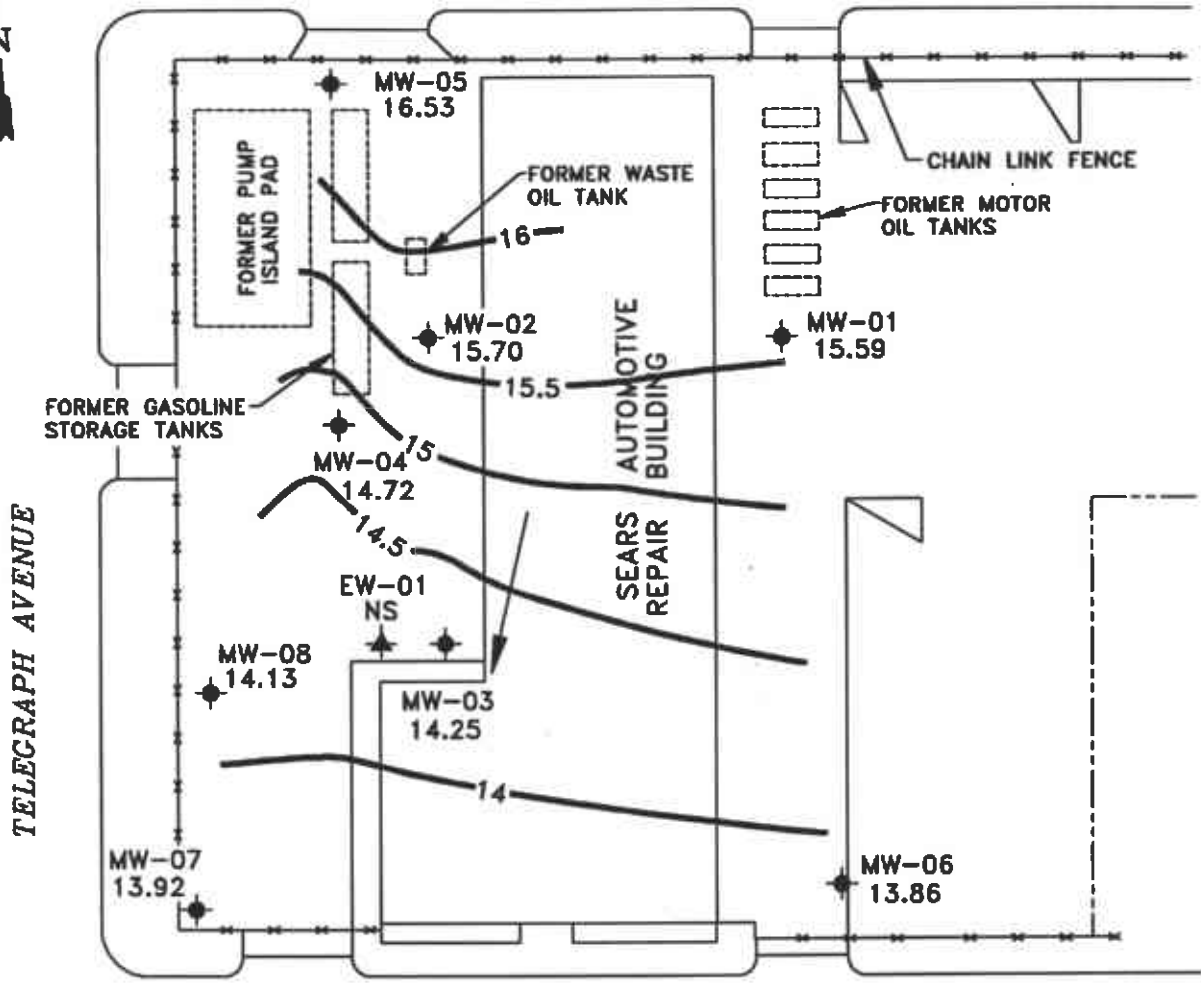
## ATTACHMENT 1

### Figures

1. Potentiometric Surface Map (12/02/96)
2. Concentrations of Benzene, TPH-as-Gasoline and TPH-as-Motor Oil in Groundwater (12/02/96)



27th STREET

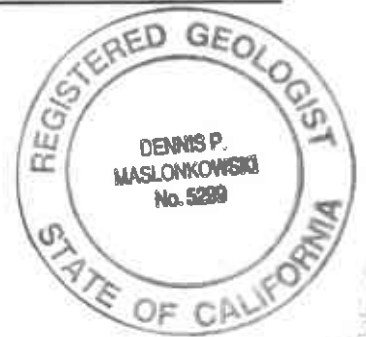


26th STREET

MW-09  
NS

**LEGEND**

- MONITORING WELL
- EXTRACTION WELL
- X.XX** POTENTIOMETRIC SURFACE ELEVATION (FT)
- NS** NOT SURVEYED
- SPH** SEPARATE-PHASE HYDROCARBONS
- POTENTIOMETRIC SURFACE CONTOUR
- GROUNDWATER FLOW DIRECTION



**NOTE:**  
1. CONTOURS REPRESENT APPROXIMATE ELEVATIONS ABOVE MEAN SEA LEVEL.



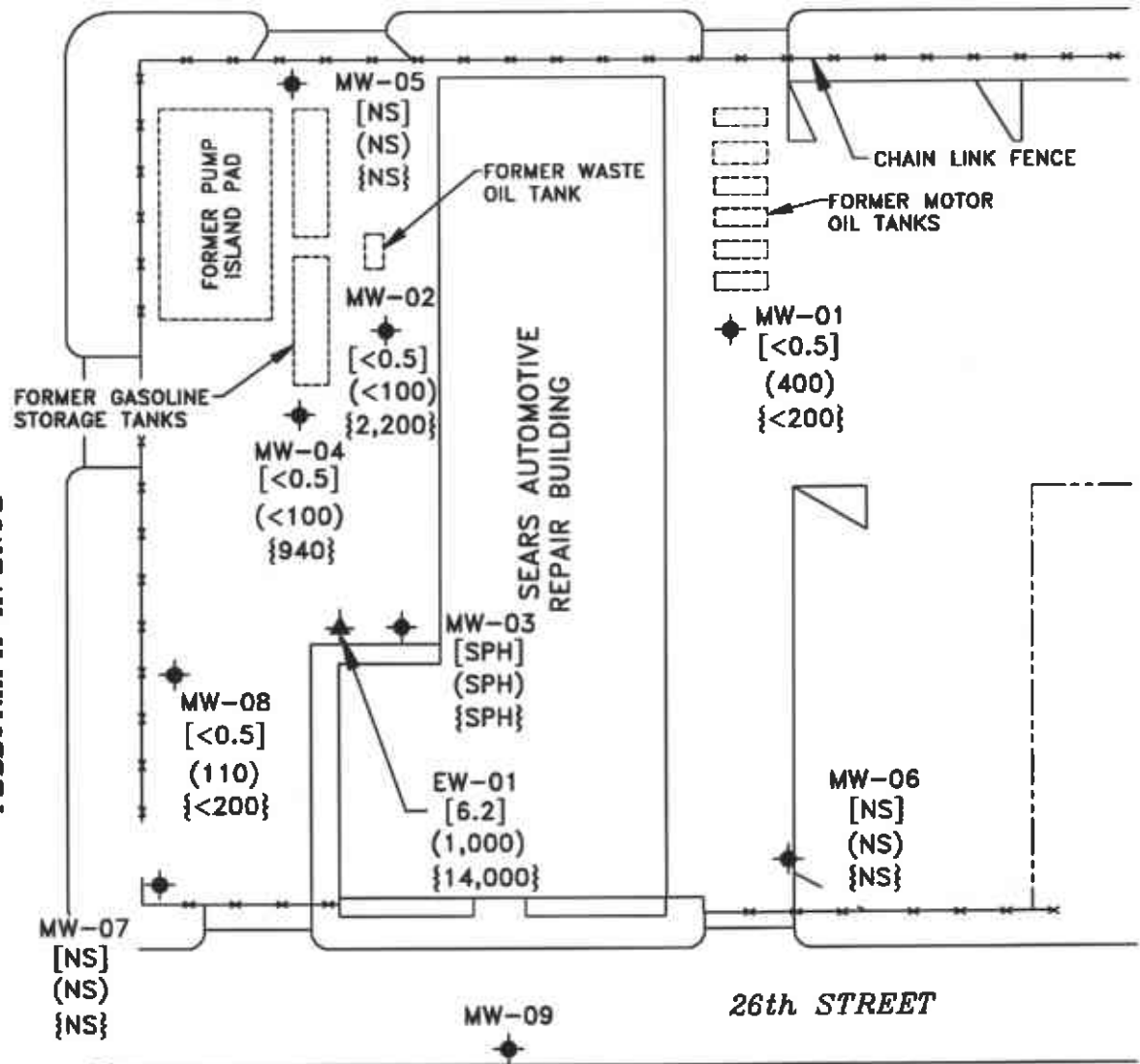
**POTENTIOMETRIC SURFACE MAP (12/2/96)**

CLIENT: SEARS, ROEBUCK AND CO. SITE NO. 1058	FILE: S996PSM, (1:40)	PROJECT NO.: 020200136	PM	PE/RG
	REV.		FIGURE: <b>1</b>	
LOCATION: 2633 TELEGRAPH AVENUE OAKLAND, CALIFORNIA	DES. SS	DET. SS	DATE: 12/30/96	



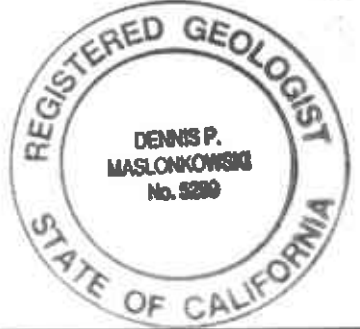
27th STREET

TELEGRAPH AVENUE



**LEGEND**

- ◆ MONITORING WELL
- ▲ EXTRACTION WELL
- SPH SEPARATE-PHASE HYDROCARBONS
- NS NOT SAMPLED
- [ ] BENZENE CONCENTRATIONS [ug/l]
- ( ) TPH-AS-GASOLINE (ug/l)
- { } TPH-AS-MOTOR OIL {ug/l}



**FLUOR DANIEL GTI**



**CONCENTRATIONS OF BENZENE, TPH-AS GASOLINE & TPH-AS-MOTOR OIL IN GROUNDWATER (12/2/96)**

CLIENT: SEARS, ROEBUCK AND CO. SITE NO. 1058	FILE: BEN996	PROJECT NO.: 020200136	PM	PE/RG
	REV.			FIGURE: <b>2</b>
LOCATION: 2633 TELEGRAPH AVENUE OAKLAND, CALIFORNIA	DES. SS	DET. SS	DATE: 12/30/96	

## **ATTACHMENT 2**

### **Tables**

1. Summary of Historical Groundwater Monitoring Data
2. Summary of Historical Groundwater Sample Analyses

**TABLE 1**  
**Summary of Historical Groundwater Monitoring Data**  
 (All measurements are in feet; all elevations are in feet above mean sea level)

Sears Store 1058  
 2633 Telegraph Avenue, Oakland, California

Well ID	Casing Elev.	Date	Depth to Water	Depth to Product	Product Thickness	Groundwater Elev.	
MW-1	26.20	12/30/92	10.60	--	--	15.60	
		02/26/93	10.14	--	--	16.06	
		03/24/93	10.48	--	--	15.72	
		04/27/93	11.30	--	--	14.90	
		05/28/93	11.43	--	--	14.77	
		06/21/93	11.71	--	--	14.49	
		07/22/93	11.87	--	--	14.33	
		08/13/93	11.94	--	--	14.26	
		09/16/93	12.05	--	--	14.15	
		10/22/93	12.00	--	--	14.20	
		11/03/93	12.10	--	--	14.10	
		11/24/93	11.97	--	--	14.23	
		12/01/93	11.46	--	--	14.74	
		12/27/93	11.58	--	--	14.62	
		01/05/94	11.69	--	--	14.51	
		02/08/94	11.87	--	--	14.33	
		03/09/94	11.08	--	--	15.12	
		04/01/94	11.47	--	--	14.73	
		05/10/94	10.77	--	--	15.43	
		06/30/94	11.82	--	--	14.38	
		07/28/94	11.90	--	--	14.30	
		08/31/94	11.94	--	--	14.26	
		09/27/94	12.04	--	--	14.16	
		10/28/94	12.06	--	--	14.14	
		11/15/94	10.02	--	--	16.18	
		12/01/94	10.61	--	--	15.59	
		01/04/95	9.93	--	--	16.27	
		02/01/95	9.56	--	--	16.64	
		03/08/95	10.51	--	--	15.69	
		04/03/95	NM		NM	NA	NA
		05/18/95	10.80	--	--	15.40	
		06/09/95	11.18	--	--	15.02	
		07/13/95	11.27	--	--	14.93	
		08/03/95	11.48	--	--	14.72	
		08/29/95	11.56	--	--	14.64	
		09/15/95	11.71	--	--	14.49	
		10/20/95	11.80	--	--	14.40	
		11/15/95	11.61	--	--	14.59	
		01/15/96	11.21	--	--	14.99	
		03/05/96	9.35	--	--	16.85	
04/19/96	10.60	--	--	15.60			
05/10/96	11.18	--	--	15.02			
06/03/96	10.90	--	--	15.30			
09/04/96	11.31	--	--	14.89			
12/02/96	10.61	--	--	15.59			

**TABLE 1**  
**Summary of Historical Groundwater Monitoring Data**  
 (All measurements are in feet; all elevations are in feet above mean sea level)

Sears Store 1058  
 2633 Telegraph Avenue, Oakland, California

Well ID	Casing Elev.	Date	Depth to Water	Depth to Product	Product Thickness	Groundwater Elev.
MW-2	26.50	12/30/92	10.65	--	--	15.85
		02/26/93	10.56	--	--	15.94
		03/24/93	10.52	--	--	15.98
		04/27/93	11.17	--	--	15.33
		05/28/93	11.12	--	--	15.38
		06/21/93	11.41	--	--	15.09
		07/22/93	11.50	--	--	15.00
		08/13/93	11.54	--	--	14.96
		09/16/93	11.62	--	--	14.88
		10/22/93	11.57	--	--	14.93
		11/03/93	11.65	--	--	14.85
		11/24/93	11.52	--	--	14.98
		12/01/93	11.08	--	--	15.42
		12/27/93	11.27	--	--	15.23
		01/05/94	11.39	--	--	15.11
		02/08/94	11.49	--	--	15.01
		03/09/94	11.06	--	--	15.44
		04/01/94	11.25	--	--	15.25
		05/10/94	10.83	--	--	15.67
		06/30/94	11.44	--	--	15.06
		07/28/94	11.48	--	--	15.02
		08/31/94	11.56	--	--	14.94
		09/27/94	11.61	--	--	14.89
		10/28/94	11.65	--	--	14.85
		11/15/94	9.65	--	--	16.85
		12/01/94	10.71	--	--	15.79
		01/04/95	10.11	--	--	16.39
		02/01/95	10.38	--	--	16.12
		03/08/95	10.80	--	--	15.70
		04/03/95	10.61	--	--	15.89
		05/18/95	10.95	--	--	15.55
		06/09/95	11.13	--	--	15.37
		07/13/95	11.15	--	--	15.35
		08/03/95	11.26	--	--	15.24
		08/29/95	11.32	--	--	15.18
		09/15/95	11.42	--	--	15.08
10/20/95	11.42	--	--	15.08		
11/15/95	11.37	--	--	15.13		
01/15/96	11.10	--	--	15.40		
03/05/96	10.24	--	--	16.26		
04/19/96	10.84	--	--	15.56		
05/10/96	11.13	--	--	15.37		
06/03/96	10.94	--	--	15.56		
09/04/96	11.24	--	--	15.26		
12/02/96	10.80	--	--	15.70		



**TABLE 1**  
**Summary of Historical Groundwater Monitoring Data**  
 (All measurements are in feet; all elevations are in feet above mean sea level)

Sears Store 1058  
 2633 Telegraph Avenue, Oakland, California

Well ID	Casing Elev.	Date	Depth to Water	Depth to Product	Product Thickness	Groundwater Elev.
MW-3	26.34	12/30/92	12.43	--	--	13.91
		02/26/93	12.21	--	--	14.13
		03/24/93	12.36	--	--	13.98
		04/27/93	12.70	--	--	13.64
		05/28/93	12.72	--	--	13.62
		06/21/93	12.87	--	--	13.47
		07/22/93	12.92	--	--	13.42
		08/13/93	12.96	--	--	13.38
		09/16/93	13.01	12.97	0.04	13.36
		10/22/93	NM	12.96	NA	NA
		11/03/93	13.13	13.02	0.11	13.30
		11/24/93	12.94	12.92	0.02	13.42
		12/01/93	12.71	12.69	0.02	13.65
		12/27/93	12.77	12.73	0.04	13.60
		01/05/94	12.85	12.83	0.02	13.51
		02/08/94	12.37	--	--	13.97
		03/09/94	12.53	--	--	13.81
		04/01/94	12.64	--	--	13.70
		05/10/94	12.32	--	--	14.02
		06/30/94	12.84	12.82	0.02	13.51
		07/28/94	12.93	12.89	0.04	13.44
		08/31/94	13.04	13.01	0.03	13.32
		09/27/94	13.13	13.02	0.11	13.30
		10/28/94	13.30	13.08	0.22	13.22
		11/15/94	11.05	11.02	0.03	15.31
		12/01/94	11.90	11.88	0.02	14.46
		01/04/95	11.80	11.76	0.01	14.55
		02/01/95	12.00	11.98	0.02	14.36
		03/08/95	12.35	12.30	0.05	14.03
		04/03/95	12.09	12.05	0.04	14.28
		05/18/95	12.43	12.40	0.03	13.93
		06/09/95	12.60	12.58	0.02	13.76
		07/13/95	12.55	12.46	0.09	13.87
		08/03/95	12.64	12.61	0.03	13.73
		08/29/95	12.65	12.62	0.03	13.71
		09/15/95	13.00	12.86	0.14	13.45*
		10/20/95	12.86	12.03	0.03	13.50*
		11/15/95	12.81	12.74	0.07	13.59*
		01/15/96	12.60	12.47	0.13	13.84*
		03/05/96	11.68	11.64	0.04	14.69
04/19/96	12.36	12.34	0.02	14.00		
05/10/96	11.93	11.91	0.02	14.43		
06/03/96	12.93	12.50	0.43	13.75		
09/04/96	12.60	12.55	0.05	13.79		
12/02/96	12.11	12.08	0.03	14.25		

\* Corrected elevations. Review of calculations indicated that these elevations were incorrect in past reports.

**TABLE 1**  
**Summary of Historical Groundwater Monitoring Data**  
 (All measurements are in feet; all elevations are in feet above mean sea level)

Sears Store 1058  
 2633 Telegraph Avenue, Oakland, California

Well ID	Casing Elev.	Date	Depth to Water	Depth to Product	Product Thickness	Groundwater Elev.
MW-4	26.17	12/30/92	11.53	--	Sheen	14.64
		02/26/93	11.35	--	--	14.82
		03/24/93	11.46	--	--	14.71
		04/27/93	11.74	--	--	14.43
		05/28/93	11.77	--	--	14.40
		06/21/93	11.92	--	--	14.25
		07/22/93	11.95	--	--	14.22
		08/13/93	12.01	--	--	14.16
		09/16/93	12.08	--	--	14.09
		10/22/93	12.03	--	--	14.14
		11/03/93	12.10	--	--	14.07
		11/24/93	12.02	--	--	14.15
		12/01/93	11.78	--	--	14.99
		12/27/93	11.80	--	--	14.97
		01/05/94	11.91	--	--	14.26
		02/08/94	11.85	--	--	14.32
		03/09/94	11.61	--	--	14.56
		04/01/94	11.73	--	--	14.44
		05/10/94	11.49	--	--	14.68
		06/30/94	11.90	--	--	14.20
		07/28/94	11.97	--	--	14.27
		08/31/94	12.06	--	--	14.11
		09/27/94	12.11	--	--	14.06
		10/28/94	12.18	--	--	13.99
		11/15/94	10.72	--	--	15.45
		12/01/94	11.37	--	--	14.80
		01/04/95	11.20	--	--	14.97
		02/01/95	11.16	--	--	15.01
		03/08/95	11.49	--	--	14.68
		04/03/95	11.35	--	--	14.82
		05/18/95	11.56	--	--	14.61
		06/09/95	11.72	--	--	14.45
		07/13/95	11.72	--	--	14.45
		08/03/95	11.81	--	--	14.36
		08/29/95	11.88	--	--	14.29
		09/15/95	11.99	--	--	14.18
		10/20/95	12.00	--	--	14.17
		11/15/95	11.96	--	--	14.21
		01/15/96	11.71	--	--	14.46
		03/05/96	11.02	--	--	15.15
04/19/96	11.51	--	--	14.46		
05/10/96	11.74	--	--	14.43		
06/03/96	11.60	--	--	14.57		
09/04/96	11.85	--	--	14.32		
12/02/96	11.45	--	--	14.72		

**TABLE 1**  
**Summary of Historical Groundwater Monitoring Data**  
 (All measurements are in feet; all elevations are in feet above mean sea level)

Sears Store 1058  
 2633 Telegraph Avenue, Oakland, California

Well ID	Casing Elev.	Date	Depth to Water	Depth to Product	Product Thickness	Groundwater Elev.
MW-5	26.98	12/30/92	10.50	--	--	16.48
		02/26/93	10.12	--	--	16.86
		03/24/93	10.31	--	--	16.67
		04/27/93	10.75	--	--	16.23
		05/28/93	10.80	--	--	16.18
		06/21/93	10.94	--	--	16.04
		07/22/93	11.01	--	--	15.97
		08/13/93	11.07	--	--	15.91
		09/16/93	11.18	--	--	15.60
		10/22/93	11.19	--	--	15.79
		11/03/93	11.23	--	--	15.75
		11/24/93	12.00	--	--	14.98
		12/01/93	10.84	--	--	16.14
		12/27/93	10.81	--	--	16.17
		01/05/94	10.96	--	--	16.02
		02/08/94	10.94	--	--	16.04
		03/09/94	10.54	--	--	16.44
		04/01/94	10.77	--	--	16.21
		05/10/94	10.44	--	--	16.54
		06/30/94	10.88	--	--	16.10
		07/28/94	10.98	--	--	16.00
		08/31/94	11.07	--	--	15.91
		09/27/94	11.12	--	--	15.86
		10/28/94	11.21	--	--	15.77
		11/15/94	10.05	--	--	16.93
		12/01/94	10.39	--	--	16.59
		01/04/95	10.18	--	--	16.80
		02/01/95	9.93	--	--	17.05
		03/08/95	10.35	--	--	16.63
		04/03/95	10.15	--	--	16.83
		05/18/95	10.43	--	--	16.55
		06/09/95	10.62	--	--	16.36
		07/13/95	10.76	--	--	16.22
		08/03/95	10.82	--	--	16.16
		08/29/95	10.91	--	--	16.07
		09/15/95	11.00	--	--	15.98
		10/20/95	11.02	--	--	15.96
		11/15/95	11.95	--	--	15.03
		01/15/96	10.57	--	--	16.41
		03/05/96	9.81	--	--	17.17
04/19/96	10.32	--	--	16.66		
05/10/96	10.56	--	--	16.40		
06/03/96	10.46	--	--	16.52		
09/04/96	10.86	--	--	16.12		
12/02/96	10.45	--	--	16.53		

**TABLE 1**  
**Summary of Historical Groundwater Monitoring Data**  
 (All measurements are in feet; all elevations are in feet above mean sea level)

Sears Store 1058  
 2633 Telegraph Avenue, Oakland, California

Well ID	Casing Elev.	Date	Depth to Water	Depth to Product	Product Thickness	Groundwater Elev.
MW-6	24.32	12/27/93	11.24	--	--	13.08
		01/05/94	11.39	--	--	12.93
		02/08/94	11.15	--	--	13.17
		03/09/94	10.97	--	--	13.35
		04/01/94	11.25	--	--	13.07
		05/10/94	10.78	--	--	13.54
		06/30/94	11.49	--	--	12.83
		07/28/94	11.59	--	--	12.73
		08/31/94	11.56	--	--	12.76
		09/27/94	11.65	--	--	12.67
		10/28/94	11.59	--	--	12.73
		11/15/94	10.24	--	--	14.08
		12/01/94	10.30	--	--	14.02
		01/04/95	9.81	--	--	14.51
		02/01/95	10.01	--	--	14.31
		03/08/95	10.64	--	--	13.68
		04/03/95	10.26	--	--	14.06
		05/18/95	10.81	--	--	13.51
		06/09/95	11.07	--	--	13.25
		07/13/95	10.91	--	--	13.41
		08/03/95	11.15	--	--	13.17
		08/29/95	11.09	--	--	13.23
		09/15/95	11.35	--	--	12.97
		10/20/95	11.32	--	--	13.00
		11/15/95	11.20	--	--	13.12
		01/15/96	10.83	--	--	13.49
		03/05/96	9.60	--	--	14.72
		04/19/96	10.71	--	--	13.61
		05/10/96	11.05	--	--	13.27
		06/03/96	10.91	--	--	13.41
09/04/96	10.84	--	--	13.48		
12/02/96	10.46	--	--	13.86		

**TABLE 1**  
**Summary of Historical Groundwater Monitoring Data**  
 (All measurements are in feet; all elevations are in feet above mean sea level)

Sears Store 1058  
 2633 Telegraph Avenue, Oakland, California

Well ID	Casing Elev.	Date	Depth to Water	Depth to Product	Product Thickness	Groundwater Elev.
MW-7	24.88	12/27/93	11.80	--	--	13.08
		01/05/94	11.53	--	--	13.35
		02/08/94	11.90	--	--	12.98
		03/09/94	11.23	--	--	13.65
		04/01/94	11.34	--	--	13.54
		05/10/94	11.02	--	--	13.86
		06/30/94	11.49	--	--	13.39
		07/28/94	11.58	--	--	13.30
		08/31/94	11.69	--	--	13.19
		09/27/94	11.73	--	--	13.15
		10/28/94	11.77	--	--	13.11
		11/15/94	10.29	--	--	14.59
		12/01/94	10.89	--	--	13.99
		01/04/95	10.77	--	--	14.11
		02/01/95	10.70	--	--	14.18
		03/08/95	11.05	--	--	13.83
		04/03/95	10.88	--	--	14.00
		05/18/95	11.12	--	--	13.76
		06/09/95	11.25	--	--	13.63
		07/13/95	11.15	--	--	13.73
		08/03/95	11.32	--	--	26.79
		08/29/95	11.53	--	--	13.35
		09/15/95	11.65	--	--	13.23
		10/20/95	11.64	--	--	13.24
		11/15/95	11.60	--	--	13.28
		01/15/96	11.07	--	--	13.81
		03/05/96	10.50	--	--	14.38
		04/19/96	12.02	--	--	12.86
05/10/96	11.14	--	--	13.74		
06/03/96	11.10	--	--	13.78		
09/04/96	11.45	--	--	13.43		
12/02/96	10.96	--	--	13.92		

**TABLE 1**  
**Summary of Historical Groundwater Monitoring Data**  
 (All measurements are in feet; all elevations are in feet above mean sea level)

Sears Store 1058  
 2633 Telegraph Avenue, Oakland, California

Well ID	Casing Elev.	Date	Depth to Water	Depth to Product	Product Thickness	Groundwater Elev.
MW-8	26.12	12/27/93	12.45	--	--	13.67
		01/05/94	12.57	--	--	13.55
		02/08/94	12.02	--	--	14.10
		03/09/94	12.22	--	--	13.90
		04/01/94	12.33	--	--	13.79
		05/10/94	12.00	--	--	14.12
		06/30/94	12.52	--	--	13.60
		07/28/94	12.61	--	--	13.51
		08/31/94	12.72	--	--	13.40
		09/27/94	12.80	--	--	13.32
		10/28/94	12.84	--	--	13.28
		11/15/94	11.72	--	--	14.40
		12/01/94	11.87	--	--	14.25
		01/04/95	11.75	--	--	14.37
		02/01/95	11.64	--	--	14.48
		03/08/95	12.04	--	--	14.08
		04/03/95	11.86	--	--	14.26
		05/18/95	12.11	--	--	14.01
		06/09/95	12.34	--	--	13.78
		07/13/95	12.37	--	--	13.75
		08/03/95	12.50	--	--	13.62
		08/29/95	12.55	--	--	13.57
		09/15/95	12.70	--	--	13.42
		10/20/95	12.69	--	--	13.43
		11/15/95	12.67	--	--	13.45
		12/11/95	11.80	--	--	14.32
		01/15/96	12.38	--	--	13.74
		03/05/96	11.44	--	--	14.68
04/19/96	10.80	--	--	15.32		
05/10/96	12.40	--	--	13.72		
06/03/96	12.26	--	--	13.86		
09/04/96	12.51	--	--	13.61		
12/02/96	11.99	--	--	14.13		
MW-9	N/A	12/02/96	11.52	--	--	N/A
EW-1	N/A	12/02/96	12.17	--	--	N/A

Notes: "--" indicates no datum for the cell, including "product not detected"  
 NM = Not monitored  
 NA = Not Available

**TABLE 2**  
**Summary of Historical Groundwater Sample Analyses**  
 (All results expressed in parts per billion)

Sears Store 1058  
 2633 Telegraph Avenue, Oakland, California

Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH as Gasoline	TPH as Motor Oil	TPH (mg/l)	Dissolved Metals	MTBE
MW-1	12/30/92	1	1	2	2	--	--	1	--	--
	03/24/93	0.4	1	0.3	10	--	--	1	--	--
	06/21/93	<0.3	1	2	6	--	**<100	--	--	--
	09/16/93	<0.3	0.7	<0.3	7	--	**<100	--	--	--
	12/01/93	0.4	1	2	7	--	--	--	--	--
	12/30/93	--	--	--	--	--	<100	--	--	--
	03/09/94	<0.3	<0.3	1	4.2	--	<100	--	--	--
	06/30/94	0.6	0.7	2.4	15	--	<100	--	--	--
	09/27/94	0.9	0.5	1.4	10	--	*<250	--	--	--
	12/01/94	0.4	0.4	<0.3	6.6	--	*<250	--	--	--
	03/08/95	<0.3	0.6	<0.3	2.7	--	*<250	--	--	--
	06/09/95	<0.3	1.4	4.7	5.6	--	*<250	--	--	--
	08/29/95	0.3	0.9	3.9	2.8	--	*<250	--	--	--
	11/15/95	<0.5	<0.5	<0.5	27	--	*<200	--	--	--
	03/05/96	<0.5	<1.0	<1.0	<2.0	--	*<200	--	--	--
06/03/96	<0.5	<1.0	<1.0	3.4	340	*<200	--	--	--	
09/04/96	<0.5	<1.0	3.7	<2.0	390	310	--	--	<10	
12/02/96	<0.5	<1.0	<1.0	2.7	400	<200	--	--	10	
MW-2	12/30/92	0.7	<0.3	<0.3	3	190	--	1	*ND	--
	03/24/93	0.6	<0.3	<0.3	2	120	--	<1	*ND	--
	06/21/93	0.3	<0.3	<0.3	0.7	82	**<100	--	*ND	--
	09/16/93	<0.3	<0.3	<0.3	<0.5	28	**<100	--	*ND	--
	12/01/93	<0.3	<0.3	<0.3	1	68	--	--	*ND	--
	12/30/93	--	--	--	--	--	310	--	--	--
	03/09/94	<0.3	<0.3	<0.3	<0.5	47	<100	--	ND	--
	06/30/94	<0.3	<0.3	<0.3	<0.5	<10	100	--	ND	--
	09/27/94	<0.3	<0.3	<0.3	<0.5	<10	*<250	--	*15	--
	12/01/94	<0.3	<0.3	<0.3	<0.5	54	1,300	--	*6	--
	03/08/95	<0.3	<0.3	<0.3	<0.5	<10	3,000	--	ND	--
	06/09/95	<0.3	<0.3	<0.3	<0.5	<50	2,000	--	ND	--
	08/29/95	<0.3	<0.3	<0.3	<0.5	<50	4,300	--	*20	--
	11/15/95	<0.5	<0.5	<0.5	<0.5	<50	6,100	--	ND	--
	03/05/96	<0.5	<1.0	<1.0	<2.0	<100	3,200	--	ND	--
06/04/96	<0.5	<1.0	<1.0	<2.0	<100	3,800	--	ND	--	
09/04/96	<0.5	<1.0	<1.0	<2.0	<100	3,100	--	--	<10	
12/02/96	<0.5	<1.0	<1.0	<2.0	<100	2,200	--	--	<10	
MW-3	12/30/92	11	0.9	<0.3	2	910	SPH	20	*ND	--
	03/24/93	28	0.7	1	8	3,300	SPH	28	**15	--
	06/21/93	21	5	2	19	**2,600	32,000	26	**5	--
	09/16/93	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	--
	12/01/93	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	--
	03/09/94	2	1.4	4.5	13	2,000	**5,700	**63	*ND	--
	06/30/94	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	--
	09/27/94	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	--
	12/01/94	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	--
	03/08/95	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	--
	06/09/95	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	--
	08/29/95	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	--
	11/15/95	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	--
	03/05/96	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	--
	06/03/96	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	--
09/04/96	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	<10	
12/02/96	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	



**TABLE 2**  
**Summary of Historical Groundwater Sample Analyses**  
 (All results expressed in parts per billion)

Sears Store 1058  
 2633 Telegraph Avenue, Oakland, California

Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH as Gasoline	TPH as Motor Oil	TPH (mg/l)	Dissolved Metals	MTBE
MW-4	12/30/92	2	<0.3	1	<0.5	1,200	--	<1	*ND	--
	03/24/93	<0.3	<0.3	<0.3	<0.5	750	--	2	**7	--
	06/21/93	<0.3	2	<0.3	0.5	660	19,000	--	*ND	--
	09/16/93	0.3	<0.3	2	3	410	2,500	--	*ND	--
	12/01/93	<0.3	<0.3	<0.3	<0.5	150	390	--	*ND	--
	03/09/94	0.7	0.8	2	3.6	1,500	780	--	*ND	--
	06/30/94	<0.3	1.7	0.5	1.0	450	130	--	ND	--
	09/27/94	0.5	<0.3	<0.3	<0.5	110	1,100	--	ND	--
	12/01/94	0.6	0.5	0.3	0.8	290	580	--	*<5	--
	03/08/95	<0.3	<0.3	<0.3	<0.5	360	1,000	--	*<5	--
	06/09/95	<0.3	0.4	<0.3	<0.5	64	1,100	--	*<5	--
	08/29/95	<0.3	<0.3	<0.3	<0.5	<50	1,200	--	*<5	--
	11/15/95	<0.5	<0.5	<0.5	<0.5	<50	2,100	--	*ND	--
	03/05/96	<0.5	<1.0	<1.0	<2.0	<100	590	--	*ND	--
	06/03/96	<0.5	<1.0	<1.0	<2.0	<100	860	--	ND	--
09/04/96	<0.5	<1.0	<1.0	<2.0	<100	600	--	.	<10	
12/02/96	<0.5	<1.0	<1.0	<2.0	<100	940	--	--	<10	
MW-5	12/30/92	<0.3	<0.3	<0.3	<0.5	37	--	<1	bc5	--
	03/24/93	<0.3	<0.3	<0.3	0.5	19	--	2	**341	--
	06/21/93	<0.3	<0.3	<0.3	<0.5	<10	<100	--	*ND	--
	09/16/93	0.3	<0.3	<0.3	1	<10	<100	--	*ND	--
	12/01/93	<0.3	<0.3	<0.3	1	17	--	--	*ND	--
	12/30/93	--	--	--	--	--	<100	--	--	--
	03/09/94	<0.3	<0.3	<0.3	<0.5	22	<100	--	*ND	--
	06/30/94	<0.3	<0.3	<0.3	<0.5	<10	<100	--	ND	--
	09/27/94	0.5	0.4	<0.3	<0.5	<10	560	--	ND	--
	12/01/94	<0.3	<0.3	<0.3	<0.5	<10	<250	--	ND	--
	03/08/95	<0.3	<0.3	<0.3	<0.5	<10	<250	--	ND	--
	06/09/95	<0.3	<0.3	<0.3	<0.5	<50	<250	--	*7	--
	08/29/95	<0.3	<0.3	<0.3	<0.5	<50	<250	--	*36	--
	11/15/95	<0.5	<0.5	<0.5	<0.5	<50	<200	--	ND	--
	03/05/96	<0.5	<1.0	<1.0	<2.0	<100	<200	--	ND	--
06/03/96	NS	NS	NS	NS	NS	NS	NS	NS	--	
09/04/96	<0.5	<1.0	<1.0	<2.0	<100	310	--	--	<10	
12/02/96	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-6	12/27/93	<0.3	<0.3	<0.3	<0.5	<10	<100	<1	*70	--
	03/09/94	<0.3	<0.3	<0.3	<0.5	15	<100	--	*ND	--
	06/30/94	<0.3	<0.3	<0.3	<0.5	<10	<100	--	ND	--
	09/27/94	<0.3	<0.3	<0.3	<0.5	<10	<250	--	*8	--
	12/01/94	<0.3	<0.3	<0.3	<0.5	<10	<250	--	*32	--
	03/08/95	<0.3	<0.3	<0.3	<0.5	<10	<250	--	ND	--
	06/09/95	<0.3	<0.3	<0.3	<0.5	<50	<250	--	ND	--
	08/29/95	<0.3	<0.3	<0.3	<0.5	<50	<250	--	*24	--
	11/15/95	<0.5	<0.5	<0.5	<0.5	<50	<200	--	*31	--
	03/05/96	<0.5	<1.0	<1.0	<2.0	<100	<200	--	ND	--
	06/03/96	NS	NS	NS	NS	NS	NS	NS	NS	--
	09/04/96	<0.5	<1.0	<1.0	<2.0	<100	230	--	--	<10
12/02/96	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-7	12/27/93	<0.3	<0.3	1	2	140	<100	<1	*40	--
	03/09/94	<0.3	<1.0	1.5	4.1<	620	<100	--	*ND	--
	06/30/94	<0.3	<0.3	<0.3	0.5	33	<100	--	ND	--
	09/27/94	<0.3	<0.3	0.4	0.7	52	*<250	--	ND	--
	12/01/94	<0.3	<0.3	<0.3	1.1	<10	*<250	--	*28	--
	03/08/95	<0.3	<0.3	<0.3	<0.5	<10	*<250	--	ND	--
	06/09/95	<0.3	<0.3	<0.3	<0.5	<50	<250	--	ND	--
	08/29/95	<0.3	<0.3	<0.3	<0.5	<50	<250	--	*13	--
	11/15/95	<0.5	<0.5	<0.5	<0.5	<50	<200	--	ND	--
	03/05/96	<0.5	<1.0	<1.0	<2.0	<100	270	--	ND	--
	06/03/96	NS	NS	NS	NS	NS	NS	NS	NS	--
	09/04/96	<0.5	<1.0	<1.0	<2.0	<100	310	--	--	<10
12/02/96	NS	NS	NS	NS	NS	NS	NS	NS	NS	





**TABLE 2**  
**Summary of Historical Groundwater Sample Analyses**  
 (All results expressed in parts per billion)

Sears Store 1058  
 2633 Telegraph Avenue, Oakland, California

Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH as Gasoline	TPH as Motor Oil	TPH (mg/l)	Dissolved Metals	MTBE
MW-8	12/27/93	0.4	4	0.4	1	390	<100	<1	*18	--
	03/09/94	0.6	0.8	0.5	1.5	420	<100	--	*ND	--
	06/30/94	0.9	<0.3	<0.3	1.1	250	<100	--	ND	--
	09/27/94	<0.3	<0.3	<0.3	<0.5	210	*<250	--	<sup>a</sup> 9	--
	12/01/94	5.4	<0.3	0.7	1.3	230	*<250	--	<sup>e</sup> ND	--
	03/08/95	<0.3	<0.3	<0.3	<0.5	230	*<250	--	ND	--
	06/09/95	<0.3	<0.3	<0.3	<0.5	<50	*<250	--	ND	--
	08/29/95	0.9	0.4	<0.3	0.8	200	*<250	--	<sup>h</sup> 15	--
	11/15/95	0.58	<0.5	<0.5	0.54	120	--	--	<sup>g</sup> 21	--
	12/11/95	--	--	--	--	--	*<200	--	--	--
	03/05/96	0.6	<1.0	<1.0	<2.0	<100	*<200	--	ND	--
	06/03/96	<0.5	<1.0	<1.0	<2.0	100	--	--	--	--
	09/04/96	<0.5	<1.0	<1.0	<2.0	110	<200	--	--	<10
	12/02/96	<0.5	<1.0	<1.0	<2.0	110	<200	--	--	<10
MW-9	12/02/96	<0.5	<1.0	<1.0	<2.0	210	250	--	--	<10
EW-1	09/04/96	<0.5	<1.0	<1.0	<2.0	1100	1700	--	--	<10
	12/02/96	6.2	<1.0	<1.0	<2.0	1000	14000	--	--	21

Source: GTEL Environmental Laboratories

Notes: "--" indicates no datum for the cell, including "not analyzed for this constituent". Values beginning with "<" indicate the compound was not detected above the laboratory reporting limits.

- mg/l = Milligrams per liter
- TPH = Total petroleum hydrocarbons
- ND = Non-detectable (detection limits for each metal is listed in laboratory reports, included in attachment 4)
- SPH = Separate phase hydrocarbon
- NS = Not sampled
- \* = Water samples were not filtered, analytical results represent total metals present, not dissolved concentrations.
- \*\* = Uncategorized hydrocarbon compound not included in this hydrocarbon concentration.
- <sup>a</sup> = Dissolved lead
- <sup>b</sup> = Dissolved lead only analyte detected
- <sup>c</sup> = Dissolved lead, cadmium, total chromium, nickel, and zinc.
- <sup>d</sup> = Cadmium only analyte detected.
- <sup>e</sup> = Hydrocarbon pattern not characteristic of motor oil.
- <sup>f</sup> = Uncategorized compounds included in concentration
- <sup>g</sup> = Zinc only analyte detected
- <sup>h</sup> = Chromium only analyte detected
- MTBE = Methyl tert-butyl ether

**ATTACHMENT 3**  
**Groundwater Monitoring and Sample Collection Protocol**  
**and**  
**Field Data Sheets**

# GROUNDWATER TECHNOLOGY GROUNDWATER MONITORING AND SAMPLE COLLECTION PROTOCOL

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## Groundwater Monitoring

Groundwater monitoring is accomplished using a INTERFACE PROBE™ Well Monitoring System. The INTERFACE PROBE™ Well Monitoring System is a hand held, battery operated device for measuring the depth to separate-phase hydrocarbons and depth to water. The INTERFACE PROBE™ Well Monitoring System consists of a dual-sensing probe which utilizes an optical liquid sensor and electrical conductivity to distinguish between water and petroleum products.

Monitoring is accomplished by measuring from the surveyed top of well casing or grade to groundwater and separate-phase hydrocarbons if present. The static water elevation is then calculated for each well and a potentiometric surface map is constructed. If separate-phase hydrocarbons are detected the water elevation is adjusted by the following calculation:

$$(\text{Product thickness}) \times (0.8) + (\text{Water elevation}) = \text{Corrected water elevation}$$

Groundwater monitoring wells are monitored in order of wells with lowest concentrations of volatile organic compounds to wells with the highest concentrations, based upon historical concentrations. If separate-phase hydrocarbons are encountered in a well, the product is visually inspected to confirm and note color, amount, and viscosity. Monitoring equipment is washed with laboratory grade detergent and rinsed with distilled or deionized water before monitoring each well.

## Groundwater Sampling

Before groundwater samples are collected, sufficient water is purged from each well to ensure representative formation water is entering the well. Wells are purged and sampled in the same order as monitoring, from wells with the lowest concentrations of volatile organic compounds to wells with the highest concentrations. Wells are purged using either a polyvinyl chloride (PVC) bailer fitted with a check valve or with a stainless steel submersible Grundfos pump. The purge equipment is decontaminated before use in each well by washing with laboratory grade detergent and triple rinsing with deionized or distilled water. A minimum of 3 well-casing volumes of water are removed from each well while pH, electrical conductivity, and temperature are recorded to verify that "fresh" formation water is being sampled and the parameters have stabilized. If the well is low yielding, it may be purged dry and sampled before 3 casing volumes are purged. The wells are then allowed to recharge to approximately 80 percent of the initial water level before a sample is collected.

Groundwater samples are collected from each well using a new, prepackaged disposable bailer and string. The water sample is decanted from the bailer into laboratory-provided containers (appropriate for the analyses required) so that there is no headspace in the containers. Samples collected for benzene, toluene, ethylbenzene, xylene, and total petroleum hydrocarbons (TPH)-as-gasoline analyses are collected in 40-milliliter vials fitted with Teflon® septum lids. Samples are preserved with hydrochloric acid (HCL) to a pH of less than 2. Dissolved metals samples are filtered through a 0.45-micron paper filter in the field and preserved as required before submitting to the laboratory for analyses. All samples are labeled immediately upon collection and logged on the chain-of-custody record. Sample label and chain-of-custody recorded information includes the project name and number, sample identification, date and time of collection, analyses requested, and the sampler's name. Sample bottles are placed in plastic bags (to protect the bottles and labels) and on ice (frozen water) in an insulated cooler and are shipped under chain-of-custody protocol to the laboratory.

The chain-of-custody record documents who has possession of the samples until the analyses is performed. Other pertinent information is also noted for the laboratory use on the chain-of-custody record.

Trip blanks (TBLBs) are used for each project as a quality assurance/quality control measure. The TBLBs are prepared by the laboratory and are placed in the insulated cooler and accompany the field samples throughout the sampling event.

**ATTACHMENT 3**  
**Groundwater Monitoring and Sample Collection Protocol**  
**and**  
**Field Data Sheets**

# GROUNDWATER TECHNOLOGY GROUNDWATER MONITORING AND SAMPLE COLLECTION PROTOCOL

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## Groundwater Monitoring

Groundwater monitoring is accomplished using a INTERFACE PROBE™ Well Monitoring System. The INTERFACE PROBE™ Well Monitoring System is a hand held, battery operated device for measuring the depth to separate-phase hydrocarbons and depth to water. The INTERFACE PROBE™ Well Monitoring System consists of a dual-sensing probe which utilizes an optical liquid sensor and electrical conductivity to distinguish between water and petroleum products.

Monitoring is accomplished by measuring from the surveyed top of well casing or grade to groundwater and separate-phase hydrocarbons if present. The static water elevation is then calculated for each well and a potentiometric surface map is constructed. If separate-phase hydrocarbons are detected the water elevation is adjusted by the following calculation:

$$(\text{Product thickness}) \times (0.8) + (\text{Water elevation}) = \text{Corrected water elevation}$$

Groundwater monitoring wells are monitored in order of wells with lowest concentrations of volatile organic compounds to wells with the highest concentrations, based upon historical concentrations. If separate-phase hydrocarbons are encountered in a well, the product is visually inspected to confirm and note color, amount, and viscosity. Monitoring equipment is washed with laboratory grade detergent and rinsed with distilled or deionized water before monitoring each well.

## Groundwater Sampling

Before groundwater samples are collected, sufficient water is purged from each well to ensure representative formation water is entering the well. Wells are purged and sampled in the same order as monitoring, from wells with the lowest concentrations of volatile organic compounds to wells with the highest concentrations. Wells are purged using either a polyvinyl chloride (PVC) bailer fitted with a check valve or with a stainless steel submersible Grundfos pump. The purge equipment is decontaminated before use in each well by washing with laboratory grade detergent and triple rinsing with deionized or distilled water. A minimum of 3 well-casing volumes of water are removed from each well while pH, electrical conductivity, and temperature are recorded to verify that "fresh" formation water is being sampled and the parameters have stabilized. If the well is low yielding, it may be purged dry and sampled before 3 casing volumes are purged. The wells are then allowed to recharge to approximately 80 percent of the initial water level before a sample is collected.

Groundwater samples are collected from each well using a new, prepackaged disposable bailer and string. The water sample is decanted from the bailer into laboratory-provided containers (appropriate for the analyses required) so that there is no headspace in the containers. Samples collected for benzene, toluene, ethylbenzene, xylene, and total petroleum hydrocarbons (TPH)-as-gasoline analyses are collected in 40-milliliter vials fitted with Teflon® septum lids. Samples are preserved with hydrochloric acid (HCL) to a pH of less than 2. Dissolved metals samples are filtered through a 0.45-micron paper filter in the field and preserved as required before submitting to the laboratory for analyses. All samples are labeled immediately upon collection and logged on the chain-of-custody record. Sample label and chain-of-custody recorded information includes the project name and number, sample identification, date and time of collection, analyses requested, and the sampler's name. Sample bottles are placed in plastic bags (to protect the bottles and labels) and on ice (frozen water) in an insulated cooler and are shipped under chain-of-custody protocol to the laboratory.

The chain-of-custody record documents who has possession of the samples until the analyses is performed. Other pertinent information is also noted for the laboratory use on the chain-of-custody record.

Trip blanks (TBLBs) are used for each project as a quality assurance/quality control measure. The TBLBs are prepared by the laboratory and are placed in the insulated cooler and accompany the field samples throughout the sampling event.

**SITE VISIT FORM  
GROUNDWATER TECHNOLOGY, INC.**

Project: Sears/Oakland, #2  
Store #: 1058  
Project Manager: Mike Wray

Technician: John Merino  
Schedule:  
Job No. 020200150.030543

**TECHNICIAN'S COMMENTS**

Monitored and sampled all wells  
Site has been resealed (Asphalt)  
MW-6+7 bolts were sealed over, had to clean  
out sealer from bolt holes. One drum inside  
Garage.

TOTAL HOURS ESTIMATED:

HOURS USED: 400

TRAVEL TIME ESTIMATED:

TRAVEL TIME USED: 100

John Merino  
TECHNICIAN

**SITE VISIT FORM  
GROUNDWATER TECHNOLOGY, INC.**

Project: Sears/2633 Telegraph  
Store #: 1058  
Project Manager: Mike Wray

Technician: HECTOR MERINO  
Schedule:  
Job No. 020200136.030543

**WELL WATER SAMPLING - TASK Nr: 030543 [QUARTERLY]**  
Gauge wells for volume of water & bail 3 well Vol.s. DECON  
all equipment & change gloves, string, etc. between each well.

Well  
ID

MW-1:	DTB_21.72	DTW <u>10.61</u>	SAT. THICK ___	#GAL. BAILED ___
MW-2:	DTB_21.79	DTW <u>10.80</u>	SAT. THICK ___	#GAL. BAILED ___
MW-3:	DTB_24.67	DTW <u>12.11</u>	SAT. THICK <u>12.08</u>	#GAL. BAILED ___
MW-4:	DTB_22.97	DTW <u>11.45</u>	SAT. THICK ___	#GAL. BAILED ___
MW-5:	DTB_25.27	DTW <u>10.45</u>	SAT. THICK ___	#GAL. BAILED ___
MW-6:	DTB_22.05	DTW <u>10.46</u>	SAT. THICK ___	#GAL. BAILED ___
MW-7:	DTB_21.70	DTW <u>10.96</u>	SAT. THICK ___	#GAL. BAILED ___
MW-8:	DTB_22.14	DTW <u>11.99</u>	SAT. THICK ___	#GAL. BAILED ___
MW-9:	DTB_20.30	DTW <u>11.52</u>	SAT. THICK ___	#GAL. BAILED ___
EW-1:	DTB_22.30	DTW <u>12.17</u>	SAT. THICK ___	#GAL. BAILED ___

NOTES: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

HOURS ESTIMATED: 600

HOURS USED: 500

**FINAL CHECKS**

Are Wells Locked? (YES) NO Why Not?

Are Manholes Bolted Down? (YES) NO Why Not?

**SITE VISIT FORM  
GROUNDWATER TECHNOLOGY, INC.**

Project: Sears/Telegraph  
Store #: 1058  
Project Manager: Mike Wray

Technician: Hector Merino  
Schedule:  
Job No. 020200136.030543

TECHNICIAN'S COMMENTS

Monitored All wells Sampled Co. MW3  
Has product no sample taken. THERE ARE  
8 WATER DRUMS & 5 SOIL DRUMS.  
All DRUMS NEXT TO FENCE ACROSS FROM MW  
Co.

TOTAL HOURS ESTIMATED: 6.00 HOURS USED: 5.00

TRAVEL TIME ESTIMATED: TRAVEL TIME USED: 1.00

  
\_\_\_\_\_  
TECHNICIAN





Project Name: Sears - #1 Telegraph  
 Site Address: 2633 Telegraph Ave., Oakland  
 Project Number: 020200136.030543

Date: 12/2/96  
 Page 2 of 7  
 Project Manager: Mike Wray

Well ID: MW-1  
 Well Diameter: 2

DTW Measurements:  
 Initial: 10.61 Calc Well Volume: 1.8 gal  
 Recharge: 10-85 Well Volume: X3 5.4 gal  
 DTB: 21.72

Purge Method  
 Peristaltic \_\_\_\_\_  
 Gear Drive \_\_\_\_\_  
 Submersible X

Pump Depth \_\_\_\_\_ ft.  
 Hand Bailed \_\_\_\_\_  
 Air Lift \_\_\_\_\_  
 Other \_\_\_\_\_

Instruments Used  
 YSI: X \_\_\_\_\_ Other: \_\_\_\_\_  
 Hydac: \_\_\_\_\_  
 Omega: \_\_\_\_\_

Time	Temp	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
	<u>X</u> C F					
12:00	21.5		6.74	1	↓	cloudy BROWN
12:01	21.3		6.73	2		
12:02	21.3		6.75	3		
12:03	21.6		6.75	4		
12:04	21.6		6.78	5		

Project Name: Sears - #1 Telegraph  
 Site Address: 2633 Telegraph Ave., Oakland  
 Project Number: 020200136.030543

Date: 12/2/96  
 Page 3 of 7  
 Project Manager: Mike Wray

Well ID: MW-8

DTW Measurements: Initial: 11.99 Calc Well Volume: 116 gal  
 Recharge: 13.77 Well Volume: 35 gal  
 DTB: 22.14

Well Diameter: 2

Purge Method \_\_\_\_\_ Pump Depth \_\_\_\_\_ ft.  
 Peristaltic \_\_\_\_\_ Hand Bailed \_\_\_\_\_  
 Gear Drive \_\_\_\_\_ Air Lift \_\_\_\_\_  
 Submersible  Other \_\_\_\_\_

Instruments Used  
 YSI:  \_\_\_\_\_ Other: \_\_\_\_\_  
 Hydac: \_\_\_\_\_  
 Omega: \_\_\_\_\_

Time	Temp	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
	<input checked="" type="checkbox"/> C <input type="checkbox"/> F					
13:00	19.1	0.69	6.60	1	↓ cloudy Brown	
13:01	19.1	0.70	6.61	2		
13:02	19.1	0.69	6.62	3		
13:03	19.1	0.70	6.63	4		
13:04	19.0	0.69	6.63	5		

Project Name: Sears - #1 Telegraph  
 Site Address: 2633 Telegraph Ave., Oakland  
 Project Number: 020200136.030543

Date: 12/2/96  
 Page 4 of 7  
 Project Manager: Mike Wray

Well ID: MW-2  
 Well Diameter: 2

DTW Measurements: Initial: 10.80 Calc Well Volume: 117 gal  
 Recharge: 10.20 Well Volume: X3 5 gal  
 DTB: 21.79

Purge Method \_\_\_\_\_ Pump Depth \_\_\_\_\_ ft.  
 Peristaltic \_\_\_\_\_ Hand Bailed \_\_\_\_\_  
 Gear Drive \_\_\_\_\_ Air Lift \_\_\_\_\_  
 Submersible \_\_\_\_\_ Other \_\_\_\_\_

Instruments Used  
 YSI: X Other: \_\_\_\_\_  
 Hydac: \_\_\_\_\_  
 Omega: \_\_\_\_\_

Time	Temp	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
	<u>X</u> C ____ F					
13:15	20.1	0.68	6.59	1	↓	cloudy Brown
13:16	20.2	0.66	6.59	2		
13:17	20.2	0.69	6.61	3		
13:18	20.1	0.68	6.61	4		
13:19	20.1	0.68	6.62	5		

Project Name: Sears - #1 Telegraph  
 Site Address: 2633 Telegraph Ave., Oakland  
 Project Number: 020200136.030543

Date: 12/2/96  
 Page 5 of 7  
 Project Manager: Mike Wray

Well ID: MW-9  
 Well Diameter: 2

DTW Measurements:  
 Initial: 11.45 Calc Well Volume: 1.8 gal  
 Recharge: 1006 Well Volume: X3 6 gal  
 DTB: 22.97

Purge Method  
 Peristaltic \_\_\_\_\_  
 Gear Drive \_\_\_\_\_  
 Submersible X  
 Pump Depth \_\_\_\_\_ ft.  
 Hand Bailed \_\_\_\_\_  
 Air Lift \_\_\_\_\_  
 Other \_\_\_\_\_

Instruments Used  
 YSI: X \_\_\_\_\_ Other: \_\_\_\_\_  
 Hydac: X \_\_\_\_\_  
 Omega: \_\_\_\_\_

Time	Temp	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
	<u>X</u> C F					
13:29	22.1	0.66	6.58	1	↓	Cloudy Brown
13:31	22.0	0.66	6.59	2		
13:32	22.2	0.65	6.62	3		
13:33	22.1	0.65	6.60	4		
13:34	22.0	0.66	6.60	5		
13:35	22.1	0.65	6.60	6		



Project Name: Sears - #1 Telegraph  
 Site Address: 2633 Telegraph Ave., Oakland  
 Project Number: 020200136.030543

Date: 12/2/96  
 Page 7 of 7  
 Project Manager: Mike Wray

Well ID: EW-1  
 Well Diameter: 4

DTW Measurements:  
 Initial: 12.17 Calc Well Volume: 6.6 gal  
 Recharge: 12.19 Well Volume: X3 20 gal  
 DTB: 22.30

Purge Method \_\_\_\_\_ Pump Depth \_\_\_\_\_ ft.  
 Peristaltic \_\_\_\_\_ Hand Bailed \_\_\_\_\_  
 Gear Drive \_\_\_\_\_ Air Lift \_\_\_\_\_  
 Submersible \_\_\_\_\_ Other \_\_\_\_\_

Instruments Used  
 YSI: X \_\_\_\_\_ Other: \_\_\_\_\_  
 Hydac: \_\_\_\_\_  
 Omega: \_\_\_\_\_

Time	Temp	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
	<del>X</del> C F					
13:48	22.1	0.81	6.58	5	cloudy	
13:50	22.0	0.87	6.70	10	↓	
13:52	21.9	0.88	6.72	15		
13:54	21.9	0.89	6.69	20		

**ATTACHMENT 4**  
**Laboratory Reports**  
**and Chain-of-Custody Record**





**Midwest Region**  
4211 May Avenue  
Wichita, KS 67209  
(316) 945-2624  
(800) 633-7936  
(316) 945-0506 (FAX)

December 17, 1996

Mike Wray  
Fluor Daniel GTI  
757 Arnold Drive Suite D  
Martinez, CA 94555

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RE: GTEL Client ID: 020200136  
Login Number: W6120039  
Project ID (number): 020200136  
Project ID (name): Sears/1058/Oakland/CA

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Dear Mike Wray:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 12/04/96 under Chain-of-Custody Number(s) 30133.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes. This report is to be reproduced only in full.

NEI/GTEL is certified by the California Department of Health Service under Certification Number 1845.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,  
GTEL Environmental Laboratories, Inc.

*Justin Ward, Project Coordinator for*  
Terry R. Loucks  
Laboratory Director

**ANALYTICAL RESULTS**  
**Total Petroleum Hydrocarbons By GC**

GTEL Client ID: 020200136  
 Login Number: W6120039  
 Project ID (number): 020200136  
 Project ID (name): Sears/1058/Oakland/CA

Method: GC  
 Matrix: Aqueous

GTEL Sample Number	W6120039-01	W6120039-02	W6120039-03	W6120039-04
Client ID	MW-9	MW-1	MW-8	MW-2
Date Sampled	12/02/96	12/02/96	12/02/96	12/02/96
Date Prepared	12/05/96	12/05/96	12/05/96	12/05/96
Date Analyzed	12/10/96	12/10/96	12/10/96	12/10/96
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting		Concentration:			
	Limit	Units				
TPH as Lubricating Oil	200	ug/L	250	< 200	< 200	2200

**Notes:**

**Dilution Factor:**

Dilution factor indicates the adjustments made for sample dilution.

**GC:**

Extraction by EPA Method 3510 (liquid/liquid). ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1. Lubricating oil can not be qualitatively identified by type of oil because of chromatographic likeness of different oil types. Due to non-volatility of certain oils, much of the oil present may not be quantified by this method. Quantitation obtained for lubricating oil by this method should, therefore, be treated as an estimate. This method quantifies lubricating oil against 10-W-30 standards.

**W6120039-02:**

Chromatographic data indicates the presence of material, which is lighter than lubricating oil, in this sample.

**W6120039-04:**

Chromatographic data indicates the presence of material, which is lighter than lubricating oil, in this sample.

ANALYTICAL RESULTS  
Total Petroleum Hydrocarbons By GC

GTEL Client ID: 020200136  
 Login Number: W6120039  
 Project ID (number): 020200136  
 Project ID (name): Sears/1058/Oakland/CA

Method: GC  
 Matrix: Aqueous

GTEL Sample Number	W6120039-05	W6120039-06	--	--
Client ID	MW-4	EW-1	--	--
Date Sampled	12/02/96	12/02/96	--	--
Date Prepared	12/05/96	12/05/96	--	--
Date Analyzed	12/10/96	12/10/96	--	--
Dilution Factor	1.00	4.00	--	--

Analyte	Reporting		Concentration:		--	--
	Limit	Units				
TPH as Lubricating Oil	200	ug/L	940	14000	--	--

Notes:

**Dilution Factor:**

Dilution factor indicates the adjustments made for sample dilution.

**GC:**

Extraction by EPA Method 3510 (liquid/liquid). ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1. Lubricating oil can not be qualitatively identified by type of oil because of chromatographic likeness of different oil types. Due to non-volatility of certain oils, much of the oil present may not be quantified by this method. Quantitation obtained for lubricating oil by this method should, therefore, be treated as an estimate. This method quantifies lubricating oil against 10-W-30 standards.

**ANALYTICAL RESULTS**  
**Volatile Organics**

GTEL Client ID: 020200136  
 Login Number: W6120039  
 Project ID (number): 020200136  
 Project ID (name): Sears/1058/Oakland/CA

Method: EPA 8020A  
 Matrix: Aqueous

GTEL Sample Number	W6120039-01	W6120039-02	W6120039-03	W6120039-04
Client ID	MW-9	MW-1	MW-8	MW-2
Date Sampled	12/02/96	12/02/96	12/02/96	12/02/96
Date Analyzed	12/13/96	12/13/96	12/13/96	12/13/96
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting		Concentration:			
	Limit	Units				
MTBE	10	ug/L	< 10	10	< 10	< 10
Benzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	1.0	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	1.0	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes (total)	2.0	ug/L	< 2.0	2.7	< 2.0	< 2.0
TPH as Gas	100	ug/L	210	400	110	< 100

**Notes:**

**Dilution Factor:**

Dilution factor indicates the adjustments made for sample dilution.

**EPA 8020A:**

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. Analyte list modified to include additional compounds. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update II.

**ANALYTICAL RESULTS**  
**Volatile Organics**

GTEL Client ID: 020200136  
 Login Number: W6120039  
 Project ID (number): 020200136  
 Project ID (name): Sears/1058/Oakland/CA

Method: EPA 8020A  
 Matrix: Aqueous

GTEL Sample Number	W6120039-05	W6120039-06	W6120039-07	W6120039-08
Client ID	MW-4	EW-1	DUP	TB-LB
Date Sampled	12/02/96	12/02/96	12/02/96	
Date Analyzed	12/14/96	12/14/96	12/14/96	12/14/96
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting		Concentration:			
	Limit	Units				
MTBE	10	ug/L	< 10	21	--	--
Benzene	0.5	ug/L	< 0.5	6.2	< 0.5	< 0.5
Toluene	1.0	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	1.0	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes (total)	2.0	ug/L	< 2.0	< 2.0	< 2.0	< 2.0
TPH as Gas	100	ug/L	< 100	1000	--	--

Notes:

**Dilution Factor:**

Dilution factor indicates the adjustments made for sample dilution.

**EPA 8020A:**

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. Analyte list modified to include additional compounds. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update II.

