safety-kleen®

April 10, 1997

Via Certified Mail No. P563448300

Mr. Robert M. Senga, Unit Chief
California Environmental Protection Agency
Department of Toxic Substances Control
Facility Permitting Branch
245 West Broadway, Suite 425
Long Beach, California 90802-4444

Re: **Safety-Kleen Corp. Service Center**
400 Market Street
Oakland, California

Dear Mr. Senga:

Enclosed is the first quarter monitoring and sampling report for 1997, which summarizes the groundwater monitoring and vapor extraction activities conducted at the above-referenced facility. This report covers the period from December 1996 through February 1997. Safety-Kleen is following the modified groundwater sampling schedule as described in the letter submitted on July 13, 1994, and as modified and approved by Alameda County in a response letter dated July 27, 1994. A comparison of laboratory analytical results of groundwater samples collected prior to purging the wells versus the standard post-purge results is also included in the report.

If you have any questions, please call me at (503) 655-2769.

Sincerely,

Chip Prokop
Senior Project Manager - Remediation
Safety-Kleen Corp.

Enclosure

cc: Keith Marcott, Safety-Kleen Corp.
Scott Davies, Safety-Kleen Corp.
Branch Environmental File (7-178-01)
Jennifer Eberle, Alameda County - Department of Environmental Health
Steven Ritchie, California Regional Water Quality Control Board
Greg Hoehn, SECOR

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April 10, 1997
SECOR Job No. 70005-009-07

SECOR
International Incorporated

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ENVIRONMENTAL PROTECTION

QUARTERLY GROUNDWATER MONITORING AND SOIL VAPOR EXTRACTION REPORT SAFETY-KLEEN SERVICE CENTER 400 MARKET STREET OAKLAND, CALIFORNIA 94607

SECOR Job No. 70005-009-07

Site 3279

Prepared For:
Safety-Kleen Corp.
16540 S.E. 130th Avenue
Clackamas, Oregon 97015

Apr: 10 - 97

Submitted By:
SECOR International Incorporated
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April 10, 1997

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

This report presents the results of groundwater monitoring and sampling activities conducted for the quarter of December 1996 through February 1997 at the Safety-Kleen Service Center located at 400 Market Street in Oakland, California (Figures 1 and 2). Also included are the results of soil vapor extraction (SVE) system monitoring and sampling for the period. In addition to the normal quarterly groundwater sampling activities, a second set of groundwater samples were collected during this event to compare the analytical results of groundwater samples collected after completing standard hand bailing purge methods with those of groundwater samples collected prior to purging the wells. A description of the sample methods used is detailed in Section 3.3 and a discussion of the results of the study are included in Section 4.4 of this report.

2.0 PROJECT BACKGROUND INFORMATION

The Safety-Kleen Oakland Service Center is a local distribution center for Safety-Kleen products. Three single-walled underground storage tanks (USTs) were removed and replaced with two new 12,000-gallons double-walled tanks in June and July of 1990. Product and waste mineral spirits are currently stored in the two double-walled USTs at the site. One UST is used to consolidate waste mineral spirits prior to shipment to a Safety-Kleen Recycle Center and one UST is used for storage of product mineral spirits prior to distribution to Safety-Kleen customers.

During the single-walled tank removal, mineral spirits-impacted soil was excavated from the tank pit as allowable by site conditions. Additionally, a product recovery well and a vapor extraction system withdrawal network were installed in the tank pit area. Tank removal and excavation activities are documented in the Report of Underground Storage Tank Replacement Activities dated September 1990. The product pumping system installed in recovery well RW-1 to remove separate-phase product from the water table began operation on January 19, 1993. The product pumping system was removed on November 20, 1995, and replaced with a passive hydrocarbon skimming device which is capable of removing product thickness within the well to a sheen.

The SVE system consists of seven horizontal vapor extraction lines and a vapor extraction and treatment system. A system to extract and treat soil vapor utilizing regenerative polymer adsorption began full-scale operation on June 1, 1993. The SVE system was modified and restarted on November 28, 1995, utilizing the current granular activated carbon (GAC) treatment system. Figure 3 depicts the layout of the vapor extraction lines and the vapor treatment system.

3.0 SCOPE OF WORK

Groundwater monitoring work conducted during this quarter consisted of product recovery and the monitoring of nine groundwater monitoring wells and one recovery well, and the sampling of five groundwater monitoring wells as specified by the quarterly sampling schedule. One well (MW-12) could not be accessed during this event and therefore was not monitored or sampled. SVE activities conducted during this quarter consisted of the operation and maintenance of the SVE system. The following sections provide a description of the work steps conducted.

3.1 Soil Vapor Extraction System

The SVE system consists of two 1,500-pound GAC vessels connected in series to a manifold attached to the seven horizontal vapor extraction lines. While the SVE system is operating, monitoring occurs bi-weekly and consists of measuring influent and effluent concentrations using a photo-ionization detector (PID) or a flame-ionization detector (FID). SVE system influent and effluent vapor samples are collected monthly. During this quarter, SVE system influent and effluent vapor samples were collected on December 18, 1996, January 17, 1997, and February 10, 1997. The vapor samples were submitted to a state-certified analytical laboratory under chain-of-custody manifest and analyzed for total petroleum hydrocarbons as mineral spirits (TPHms) by modified Environmental Protection Agency (EPA) Method 8015 and for volatile organic compounds (VOCs) by EPA Method 8010. The results of the SVE system operation and sampling are presented in Section 4.1.

3.2 Mineral Spirits Recovery

The mineral spirits recovery pump that was located in recovery well RW-1 failed and was replaced by a passive recovery skimmer in November 1995. A passive recovery skimmer was also placed in monitoring well MW-9 (Figure 2) at that time. Mineral spirits recovered from recovery well RW-1 and monitoring well MW-9 is emptied directly to the waste mineral spirits UST at the site and is incorporated into the Safety-Kleen recycling process. The amount of recovered product is recorded each time the skimmer is emptied. The results of mineral spirits recovery are presented in Section 4.2.

3.3 Groundwater Monitoring and Sampling

On January 17, 1997, on- and off-site monitoring wells were monitored for depth-to-water and groundwater samples were collected from monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-8. Monitoring well MW-12 was not accessible during the event because a truck was parked over the wellhead. Monitoring well MW-11 was not monitored because tree roots have grown through the well casing and are obstructing the well.

For this event, two sets of groundwater samples were collected in order to compare the results of laboratory analytical results of samples collected using standard purge methods with those of samples collected prior to purging the wells. Blind duplicate samples were collected from monitoring well MW-8 for quality assurance and quality control purposes. The duplicate samples are labeled as MW-8A on the attached laboratory reports and chain-of-custody documents. Pre-purge and post-purge groundwater samples were collected using the following procedures:

All accessible monitoring wells were monitored for depth-to-water using a water level indicator calibrated to 0.01-foot. During depth-to-water monitoring, care was taken to not splash or over immerse the probe. Depth-to-bottom measurements were not made prior to pre-purge groundwater sample collection. The depth-to-water measurements were used with well survey data to construct a potentiometric surface map (Figure 4).

Subsequent to collecting depth-to-water measurements and prior to purging, monitoring wells MW-2, MW-3, MW-4, and MW-8 were sampled. Groundwater samples were collected from each well using a new disposable bailer which was slowly submerged approximately 36 inches below the water surface taking care not to splash the bailer in the water column. Samples were decanted into laboratory supplied sample vessels from the bottom of the bailer using a VOC-type bottom emptying device. The samples were then labeled, placed on ice in an insulated cooler, and logged onto the chain-of-custody manifest.

Subsequent to collecting the pre-purge samples, the wells were purged by hand-bailing until a minimum of three well volumes of groundwater had been removed or until measurements of pH, temperature, and conductivity had stabilized. Within two hours of completing well purging, the groundwater levels had recovered to at least 80 percent of the original level in the wells and groundwater samples were collected using new single-use disposable samplers as described above. The samples were placed into laboratory supplied sample containers in the same manner as the pre-purge samples, labeled, placed on ice in an insulated cooler, and logged onto the chain-of-custody manifest. Field data sheets that include depth-to-water measurements and well purge data are included in Appendix A.

The groundwater samples were delivered to a state-certified laboratory for analysis under chain-of-custody documentation. The groundwater samples were analyzed for the presence of benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020, for TPHms by modified EPA Method 8015, and for halogenated VOCs by EPA Method 8010.

Prior to use and between each well, all non-single-use equipment was decontaminated by double-washing with a laboratory grade detergent in clean water and triple-rinsed using deionized water. Purge water and decontamination water generated during well purging and sampling was placed in labeled containers pending transport for treatment at a Safety-Kleen facility.

4.0 RESULTS

4.1 Soil Vapor Extraction System

The results of SVE system monitoring conducted through February 25, 1997, are summarized on Table 1. Table 1 presents data on the system flow rate and PID measurements from the SVE system influent, the effluent after each carbon adsorption vessel, and the system effluent. For this quarter, SVE system influent and effluent vapor samples were collected on December 18, 1996, January 17, 1997, and February 10, 1997. Toluene and xylenes were detected in the effluent sample collected on January 17, 1997 at 0.7 $\mu g/\ell$ and 1.2 $\mu g/\ell$, respectively. The laboratory analyses of system influent samples detected TPHms concentrations of 220 $\mu g/\ell$ on December 18, 1996, 69 $\mu g/\ell$ on January 17, 1997, and 98 $\mu g/\ell$ on February 10, 1997. No BTEX or VOCs were detected in any of the influent samples collected during the quarter. No TPHms, benzene, ethylbenzene, or VOC analytes were detected in any of the system effluent samples collected during this quarter. A high PID reading on the system effluent was measured on February 10, 1997. The reading is believed to be anomalous, however, since laboratory analysis of the effluent sample indicated that no BTEX, TPHms, or VOC analytes were present above detection limits. Based on the analytical data, the GAC system is sufficiently removing organic vapors to meet permit requirements. Copies of soil vapor extraction system analytical reports are included as Appendix B. PID/FID readings measured this quarter indicate that the first carbon vessel may be reaching saturation. A sample of the first carbon vessel effluent stream will be submitted for laboratory analysis during the next quarter to verify field PID/FID readings. If necessary, the carbon in the first vessel will be replaced.

The system monitoring data were used to calculate system mineral spirits removal rates and a cumulative mass of mineral spirits removed via vapor extraction. As shown on Table 2, the removal rate for each of the sampling events was estimated to range from 0.63 pounds per day (lbs/day) to 2.37 lbs/day. Data collected through February 10, 1997, indicate 4812.4 pounds of mineral spirits have been removed from the subsurface by the SVE system.

4.2 Mineral Spirits Recovery

Mineral spirits product is collected in monitoring well MW-9 and recovery well RW-1 via passive recovery skimmers and by hand bailing at the time of SVE monitoring and groundwater sampling. No product accumulated in the skimmers during this reporting period. The total volume of mineral spirits product removed from the subsurface to date is approximately 444.25 gallons. The mineral spirits recovery data is shown in Table 3.

4.3 Groundwater Elevations

Groundwater elevations and depth-to-water measurements for the January 17, 1997, event are presented in Table 4. The average water table elevation on January 17, 1997, was 2.89 feet above mean sea level, an increase of 1.86 feet since the November 1996 event. A potentiometric surface map prepared with the February 17, 1997, data is presented as Figure 4.

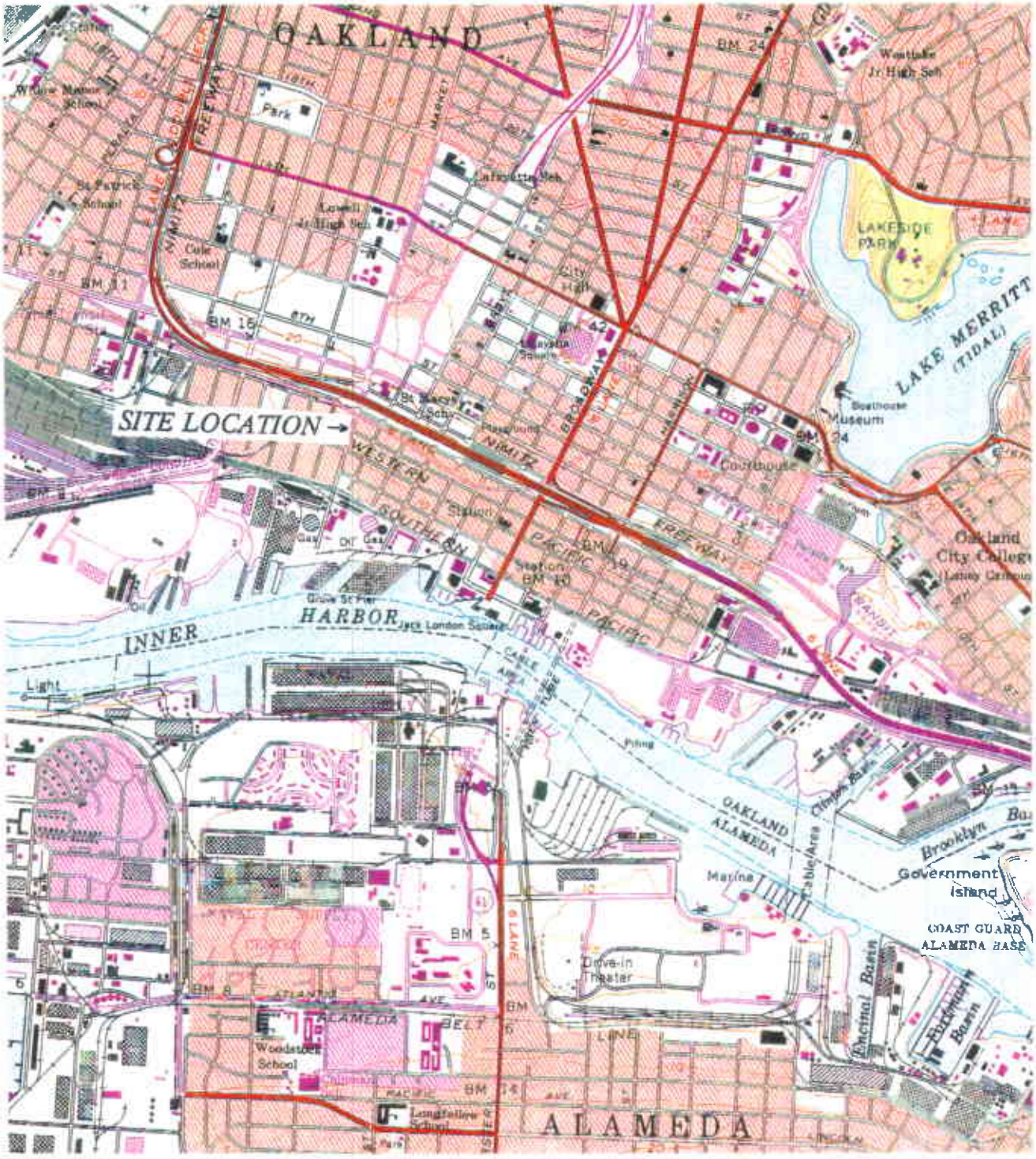
As shown in Figure 4, the groundwater flow direction remains to the southwest, consistent with historic site data. The hydraulic gradient was 0.004 feet/foot (ft/ft) across the site as measured between monitoring wells MW-5 and MW-2. The gradient is consistent with previous data for the site. A summary of groundwater elevations since January 1993 is provided as Table 5.

4.4 Groundwater Conditions

For consistency with historical data, this discussion of groundwater conditions at the site is based on the results of analysis of post-purge samples. A comparison of post-purge versus pre-purge sample analytical data is provided later in this section. No concentrations of TPHms or BTEX were detected above the laboratory detection limits in any of the groundwater samples collected on February 17, 1997. In addition, no VOCs were detected in the groundwater samples from monitoring wells MW-2 and MW-3. Laboratory analyses of post-purge groundwater samples from monitoring wells MW-4 and MW-8 detected several VOCs including: 1,2-dichlorobenzene (DCB), 1,2-dichloroethane (DCA), 1,1-dichloroethene (DCE), *cis*-1,2-DCE, trans-1,2-DCE, 1,1,1-trichloroethane (1,1,1-TCA), trichloroethene (TCE), tetrachloroethene (PCE), chlorobenzene, and chloroform. The distribution of VOCs detected at the site is consistent with historical data. Figure 5 depicts the chemical distribution in the post-purge samples collected on January 17, 1997. A summary of analytical test results showing compounds detected since the April 1993 sampling event are presented in Table 6. Copies of the groundwater laboratory analytical reports are included in Appendix C.

Two sets of groundwater samples were collected during this event in order to compare the results of laboratory analytes of pre-purge and post-purge groundwater samples. The results of analysis of pre-purge and post-purge samples are summarized in Table 7. The table lists the analytes detected in each sample and shows a relative percent difference (RPD) calculation for each sample pair. As shown in the table, the types and concentrations of analytes are consistent in most cases. Of the 14 detection pairs, 12 of the post-purge detections contained higher concentrations as compared to pre-purge detections. Of the ten compounds detected, four compounds were only detected in the post-purge samples and not in the pre-purge samples. Last quarter 59 percent of the pre-purge detections contained higher concentrations as compared to the post-purge detections (Table 6). Consistent with last quarter, the relative percent difference between sample pairs was high in several data pairs from monitoring well MW-8. A more thorough analysis of the statistical significance of pre-purge and post-purge sample pair analyses will be presented after several sample events have been performed.

OAKLAND WEST QUADRANGLE
California
7.5 Minute Series (Topographic)



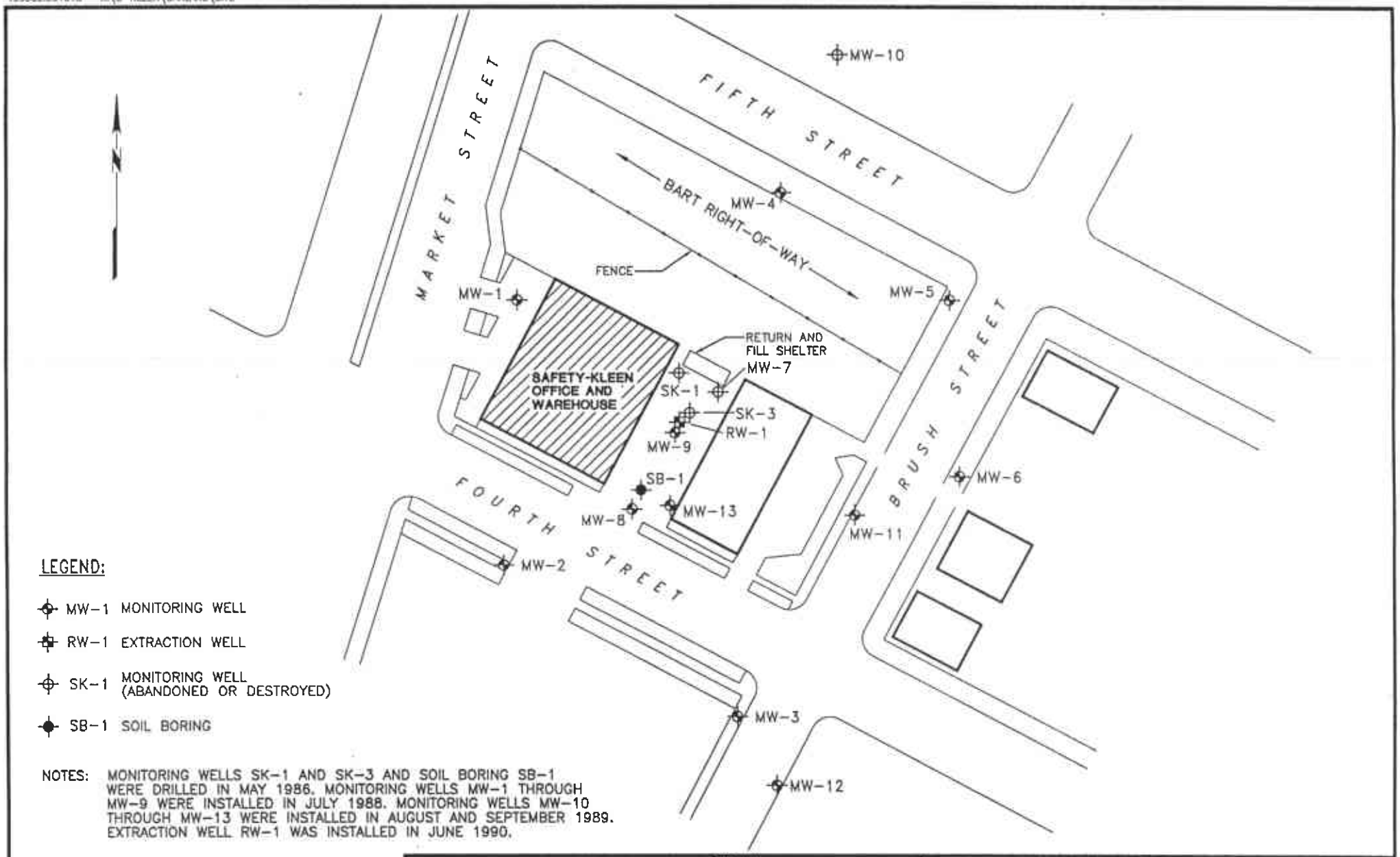
SCALE 1:24 000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

DRAFTED BY: TS	CHECKED BY: GDH	PROJECT NO. 70005-009	FIGURE 1	*SECOR* 1390 Willow Pass Road Suite 360 Concord, CA 94520
DWG. DATE: 04-05-94	REV. DATE: 06-15-95	Safety-Kleen Corp. 400 Market Street Oakland, California	Site Location Map	
FILE NAME: Oakland7.F01				

199509.061018 X:\S-KLEEN\OAKLAND\SITE



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INCORPORATED

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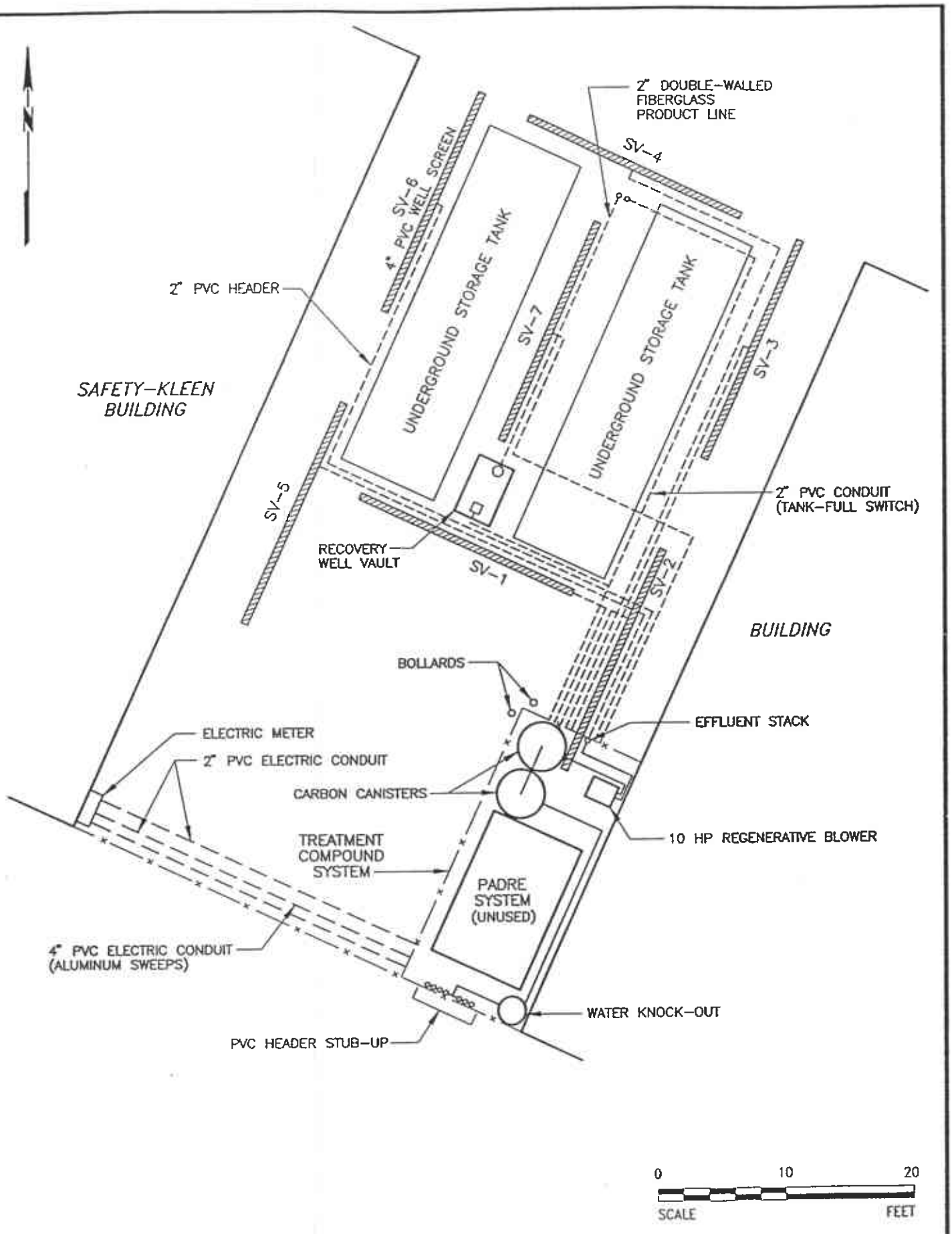
DATE	03JUN96
JOB NO.	70005-009

FIGURE 2
SAFETY-KLEEN SERVICE CENTER
400 MARKET STREET
OAKLAND, CALIFORNIA

SITE PLAN



SECOR INTERNATIONAL INCORPORATED	DRAWN: CCR APPR: GH DATE: 08DEC95 JOB NO.: 70005-009	FIGURE 3 SAFETY-KLEEN SERVICE CENTER 400 MARKET STREET OAKLAND, CALIFORNIA **SOIL VAPOR EXTRACTION SYSTEM LAYOUT**

199512.071928 X:\S-KLEEN\OAKLAND\SITE2

199703.311213 X:\S-KLEEN\OAKLAND\SURFACE8

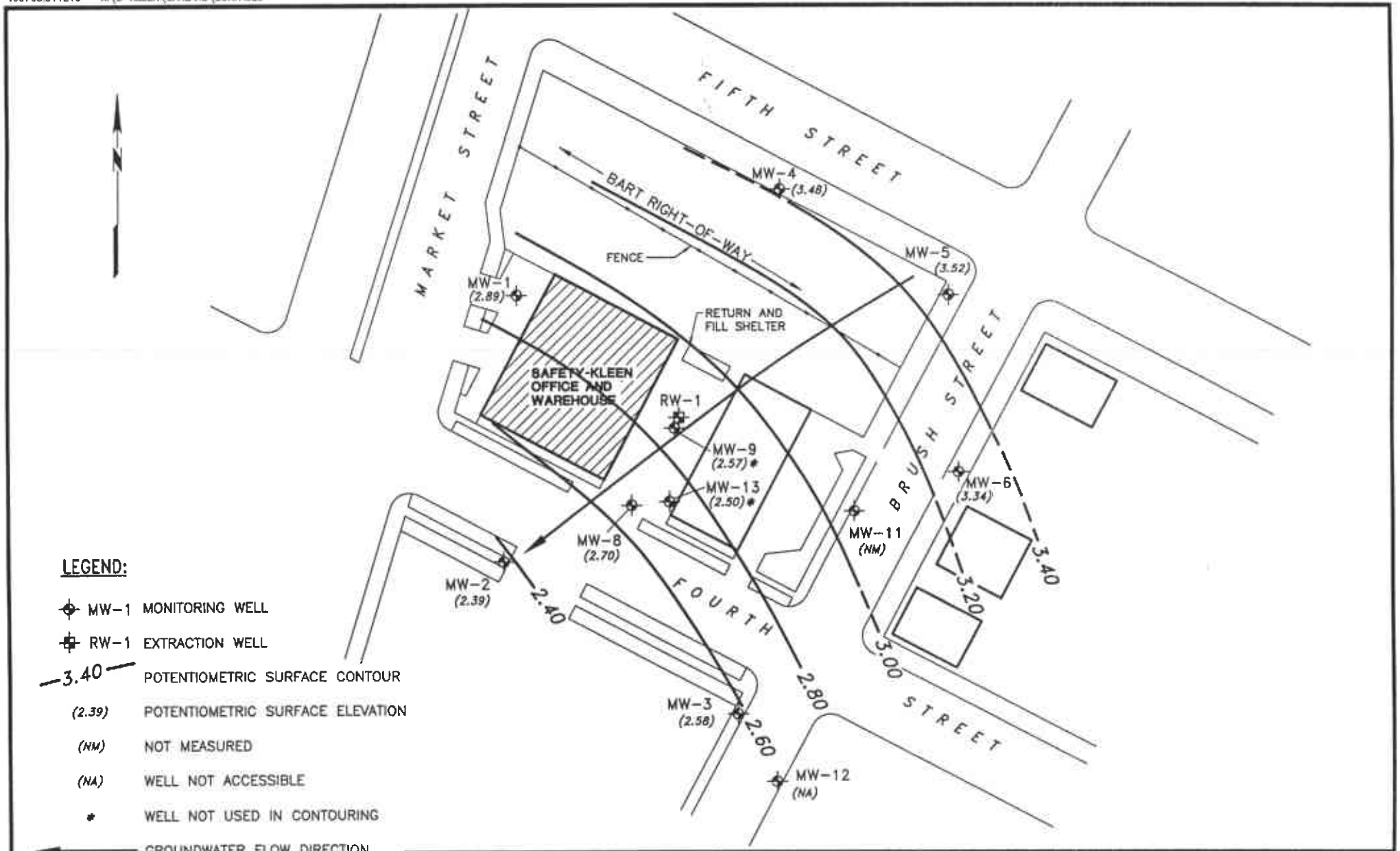


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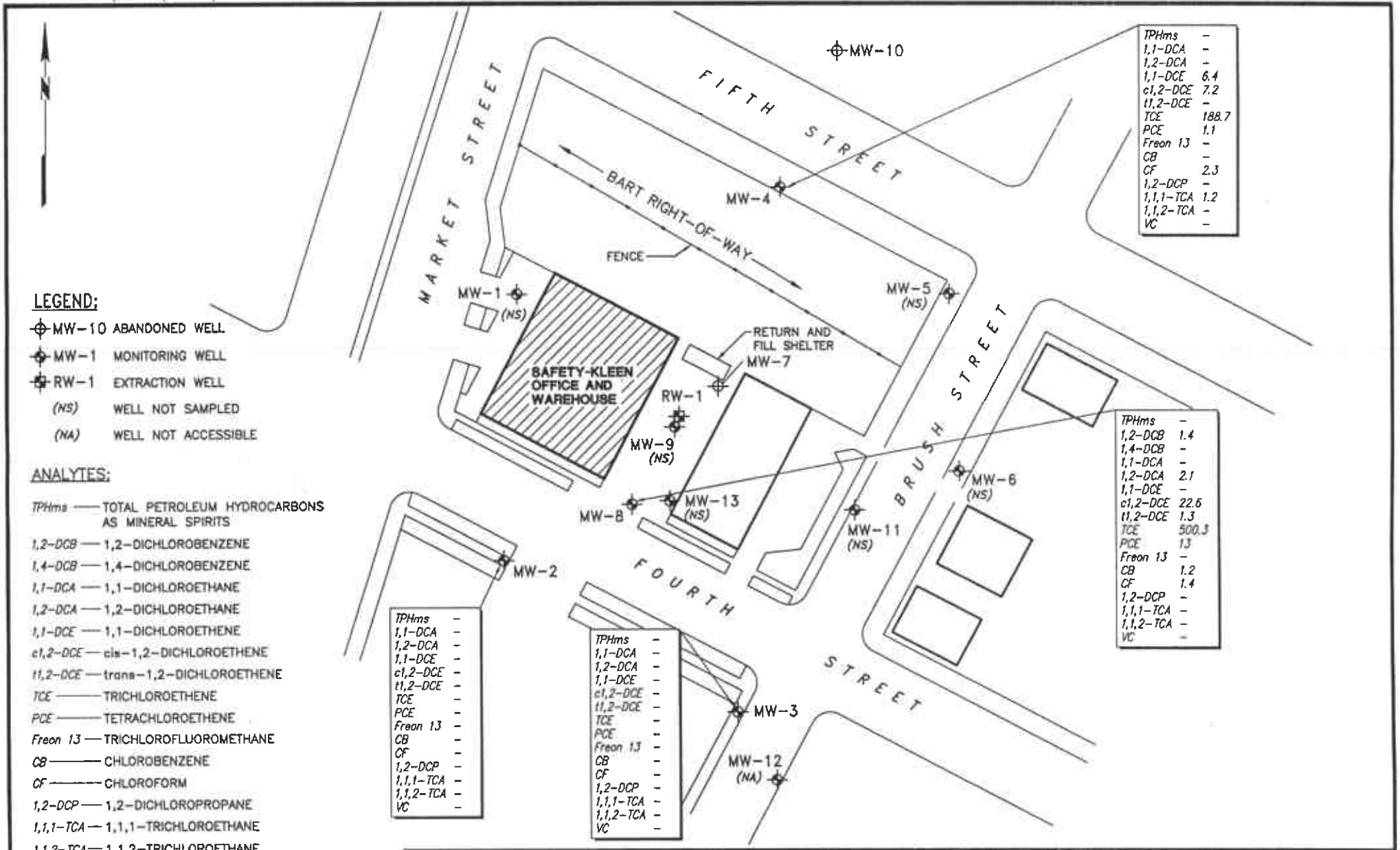
FIGURE 4
SAFETY-KLEEN SERVICE CENTER
400 MARKET STREET
OAKLAND, CALIFORNIA

POTENTIOMETRIC SURFACE MAP JANUARY 17, 1997

199703.311214 X:\S-KLEEN\OAKLAND\CHEMCW05



LEGEND:

- MW-10 ABANDONED WELL
- MW-1 MONITORING WELL
- RW-1 EXTRACTION WELL
- (NS) WELL NOT SAMPLED
- (NA) WELL NOT ACCESSIBLE

ANALYTES:

- TPHms — TOTAL PETROLEUM HYDROCARBONS AS MINERAL SPIRITS
- 1,2-DCB — 1,2-DICHLOROBENZENE
- 1,4-DCB — 1,4-DICHLOROBENZENE
- 1,1-DCA — 1,1-DICHLOROETHANE
- 1,2-DCA — 1,2-DICHLOROETHANE
- 1,1-DCE — 1,1-DICHLOROETHENE
- c1,2-DCE — cis-1,2-DICHLOROETHENE
- t1,2-DCE — trans-1,2-DICHLOROETHENE
- TCE — TRICHLOROETHENE
- PCE — TETRACHLOROETHENE
- Freon 13 — TRICHLOROFLUOROMETHANE
- CB — CHLOROBENZENE
- CF — CHLOROFORM
- 1,2-DCP — 1,2-DICHLOROPROPANE
- 1,1,1-TCA — 1,1,1-TRICHLOROETHANE
- 1,1,2-TCA — 1,1,2-TRICHLOROETHANE
- VC — VINYL CHLORIDE

NOTE: CONCENTRATIONS IN MICROGRAMS PER LITER (ug/l).

0 80 160

SCALE FEET

SECOR
INTERNATIONAL INCORPORATED

DRAWN	CCR
APPR	RR/GH
DATE	31MAR97
JOB NO.	70005-009

FIGURE 5

SAFETY-KLEEN SERVICE CENTER
400 MARKET STREET
OAKLAND, CALIFORNIA

CHEMICAL DISTRIBUTION IN GROUNDWATER
POST PURGE JANUARY 17, 1997

Table 1
Soil Vapor Extraction System Monitoring Data
Safety-Kleen Service Center
400 Market Street
Oakland, California

Date	Elapsed Time*	Well Extraction Vacuum	KO Vacuum	Extraction Flow Rate		System Influent	#1 Carbon Effluent	#2 Carbon Effluent	System Effluent	Notes
	(hours)	(inches H20)	(inches H20)	(ft/min)	(scfm)	(PID/FID units)	(PID/FID units)	(PID/FID units)	(PID/FID units)	
12/08/95	362.6	6.5	22	5000	107	413	3.1	4.6	6.4	* System restarted using carbon adsorption on 11/28/95.
12/21/95	677.2	6	20	5000	107	79.5	36.2	1.2	1.2	Influent and Effluent samples collected
01/09/96	1134.2	9	22	5000	106	169	42.4	2.8	1.7	Influent and Effluent samples collected
01/24/95	1488.75	5.5	17	2200	47	43	43.2	24.2	6.1	
02/06/96	1803.3	5	16	6000	129	63.4	61.1	33.4	16.1	Influent and Effluent samples collected
02/21/96	2157.55	8	20	5500	117	60.1	48	38.2	8.4	
03/08/96	2540.1	10	23	5000	106	183.7	52.3	44.8	15.5	Influent and Effluent samples collected
03/20/96	2635.2	12	23	5000	106	430	362.1	311.4	22.4	
04/03/96	2905.9	12	25	5000	106	290	45	32	2	FID used, Influent and Effluent samples collected, Carbon changed.
04/18/96	3267.7	11	24	5000	106	500	30	9	3	FID used.
05/02/96	3594	NA	24	5000	109	109.3	44.5	0.2	0.2	Influent and Effluent samples collected
05/16/96	3934.3	NA	23	5000	109	117.3	150.9	3.2	1	
05/31/96	4289.2	0.15	25	5000	109	53.7	61	0.7	0	Influent and Effluent samples collected
07/01/96	5038.8	11	23	5000	106	325	150	75	37	Influent and Effluent samples collected
07/17/96	5421.7	10	24	5000	106	159	160	163	33	System shut down for carbon replacement
08/20/96	5423.6	7	17	3200	68	300	0	0	0	System restarted with new carbon
08/22/96	5469.5	7	17	3000	64	300	1.4	1.4	0	Influent and Effluent samples collected
09/03/96	5760.1	0.15	16	3500	76	131.2	0	0	0	
09/26/96	6315.5	8	15	3550	76	165	30	1.2	2.2	Influent and Effluent samples collected
10/03/96	6478.1	8	15	3000	64	231	70	42	13	
10/10/96	6644.7	8	15	3500	75	269.4	189	20.5	12.5	Influent and Effluent samples collected
10/22/96	6938.9	7	15	3000	64	480	442	1.8	1.2	Influent and Effluent samples collected
10/29/96	71040	8	16	4000	85	148.8	142.7	7.5	1.2	
11/13/96	7466.6	8	16	3500	75	120	90	40	8	Influent and Effluent samples collected
12/03/96	7943.7	0.19	25	5000	109	60.3	52.6	0	0	
12/18/96	8299.1	0.14	26	5500	120	50.5	55.1	5	4.7	Influent and Effluent samples collected
01/06/97	8684.2	24	38	4000	82	40	17	6	4	
01/17/97	8949.7	24	36	4000	82	147	153	83	7	Influent and Effluent samples collected
01/30/97	9258.9	24	37	3000	61	20	7	7	2	
02/10/97	9522.7	24	35	3500	72	192	306.4	111.2	3.6	Influent and Effluent samples collected
02/25/97	9887.3	22	34	3500	72	50	20	10	2	

Notes: ft/min = feet per minute
scfm = standard cubic feet per minute assuming ambient temperature and ideal gas
NA = not available

Table 2
Soil Vapor Extraction System
Mineral Spirits Removal
Safety-Kleen Service Center
400 Market Street
Oakland, California

Sample Date	Elapsed Time (hours)	Run Time This Period (hours)	Exctraction Flow Rate (scfm)	TPHms Influent (ug/L)	Removal Rate (lbs./day)	TPHms Removed (lbs.)	Notes
11/28/95	Carbon adsorbtion system start-up					1798.4	TPHms removed by prior system.
12/21/95	677.2	677.2	109.1	823	8.07	2026.0	
01/09/96	1134.2	457	109.1	1116	10.95	2234.5	
02/06/96	1803.3	669.1	130.9	999	11.75	2562.1	
03/08/96	2540.1	736.8	109.1	1821	17.86	3110.5	
04/03/96	2905.9	365.8	109.1	1116	10.95	3277.4	
05/02/96	3594	688.1	109.1	1586	15.56	3723.4	
05/31/96	4289.2	695.2	109.1	1234	12.10	4073.9	
07/01/96	5038.8	749.6	109.1	82	0.81	4099.1	
08/22/96	5469.5	430.7	65.4	500	2.94	4151.9	
09/26/96	6315.5	846	77.4	1300	9.05	4470.7	
10/10/96	6644.7	329.2	76.4	880	6.04	4553.6	
10/22/96	6938.9	294.2	65.4	670	3.94	4601.9	
11/13/96	7466.6	527.7	109.1	460	4.51	4701.1	
12/18/96	8299.1	832.5	120.0	220	2.37	4783.5	
01/17/97	8949.7	650.6	82.0	69	0.51	4797.2	
02/10/97	9522.7	573	72.0	98	0.63	4812.4	

Notes:
cfm = cubic feet per minute
ug/L = micrograms per liter
lbs = pounds

Table 3
Free Product Recovery System
Mineral Spirits Removal Summary

Safety-Kleen Service Center
400 Market Street
Oakland, California

Date	Product Recovery		
	This Period	Total	
	(gallons)	(gallons)	(pounds)
01/01/89	15	30.0	196.5
01/31/89	15	45.0	294.8
03/02/89	15	60.0	393.0
04/01/89	15	75.0	491.3
05/01/89	15	90.0	589.5
05/31/89	15	105.0	687.8
06/30/89	15	120.0	786.0
07/30/89	15	135.0	884.3
08/29/89	15	150.0	982.5
09/28/89	15	165.0	1080.8
10/28/89	15	180.0	1179.0
11/27/89	15	195.0	1277.3
12/27/89	15	210.0	1375.5
01/26/90	15	225.0	1473.8
02/25/90	15	240.0	1572.0
03/27/90	15	255.0	1670.3
04/26/90	15	270.0	1768.5
05/26/90	15	285.0	1866.8
06/25/90	15	300.0	1965.0
01/19/93	0	300	1965.0
02/25/93	6.5	306.5	2007.6
05/20/93	4.3	310.8	2035.7
08/27/93	0	310.8	2035.7
10/24/93	10.3	321.1	2103.2
02/28/94	22.6	343.7	2251.2
05/31/94	16.6	360.3	2360.0
08/31/94	16.4	376.7	2467.4
11/30/94	16.2	392.9	2573.5
02/28/95	16	408.9	2678.3
05/31/95	16.6	425.5	2787.0
08/31/95	16.6	442.1	2895.8
11/30/95	0	442.1	2895.8
01/09/96	0.75	442.85	2900.7
03/20/96	0.75	443.6	2905.6
05/02/96	0.03	443.63	2905.8
05/16/96	0.55	444.18	2909.4
05/31/96	0.05	444.23	2909.7
07/01/96	0.02	444.25	2909.8
09/03/96	0	444.25	2909.8
10/10/96	0	444.18	2909.4
10/29/96	0	444.18	2909.4
11/01/96	0	444.18	2909.4
12/18/96	0	444.25	2909.8
01/17/97	0	444.25	2909.8
02/10/97	0	444.25	2909.8

Note: Data shown in smaller text is estimated based on previous reports.

Table 4
Groundwater Monitoring Data
January 17, 1997
Safety-Kleen Service Center
400 Market Street
Oakland, California

Well I.D.	TOC Elevation (ft msl)	DTW (ft)	DTP (ft)	PT (ft)	Adjusted Elevation (ft msl)
MW-1	7.99	5.10	-	-	2.89
MW-2	8.20	5.81	-	-	2.39
MW-3	6.66	4.08	-	-	2.58
MW-4	10.32	6.84	-	-	3.48
MW-5	10.28	6.76	-	-	3.52
MW-6	8.97	5.63	-	-	3.34
MW-8	7.80	5.10	-	-	2.70
MW-9	8.21	5.64	-	-	2.57
MW-10*	-	-	-	-	-
MW-11	7.91	DRY	-	-	-
MW-12	6.74	NM	-	-	-
MW-13	8.08	5.58	-	-	2.50
RW-1	-	4.19	4.18	0.01	-

Notes:
TOC = Top of casing
DTW = Depth-to-water
DTP = Depth-to-product
PT = Product thickness
ft msl = Feet (ft) relative to mean sea level (msl)
* Well destroyed in July 1995
NM = Well not accessible

Table 5
Historical Summary of Groundwater Elevations
Safety-Kleen Service Center
400 Market Street
Oakland, California

Date	Well Identification											
	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13
Jan-93	1.29	1.00	0.86	1.57	1.48	1.27	1.08	1.15	1.73	1.16	0.44	0.58
Apr-93	1.09	0.51	0.38	1.52	1.42	1.08	0.74	0.95	1.85	0.90	0.10	0.40
Jul-93	0.27	-0.23	-0.27	0.68	0.62	0.37	-0.01	-0.68	0.99	0.20	-0.72	-0.15
Oct-93	-0.02	-0.51	-0.66	0.32	0.17	-0.12	-0.35	0.14	0.62	-0.22	-0.91	-0.57
Jan-94	-0.01	-0.52	-0.77	0.33	0.48	-0.10	-0.37	-0.49	0.60	-0.14	-1.05	-0.65
Apr-94	0.55	0.05	-0.09	0.85	0.74	0.46	0.22	0.33	-	0.34	-0.76	-0.09
Jul-94	0.25	-0.20	-0.31	0.62	0.55	0.23	-0.03	0.08	0.90	0.09	-0.70	-0.22
Oct-94	0.08	-0.33	-0.44	0.41	0.38	0.12	-0.15	0.01	-	0.01	-0.59	-0.33
Jan-95	1.95	1.53	1.64	2.41	2.49	2.24	1.79	1.85	-	2.06	1.44	1.33
Apr-95	3.09	2.46	2.49	3.71	3.73	3.42	2.79	2.95	-	3.18	2.22	1.98
Jul-95	2.04	1.53	1.53	2.54	2.50	2.26	1.76	1.93	-	2.01	1.33	1.53
Oct-95	1.38	0.94	1.01	1.81	1.27	1.56	1.15	1.32	-	1.42	0.94	1.06
Jan-96	1.82	1.40	0.64	2.21	2.21	2.04	1.61	1.54	-	1.85	-	1.51
Apr-96	2.81	2.40	2.46	3.33	3.36	3.17	2.58	2.51	-	2.91	2.24	2.38
Jul-96	2.16	1.70	1.75	2.67	2.63	2.35	1.90	1.93	-	2.18	-	1.84
Nov-96	1.09	0.70	0.75	1.47	1.47	1.18	0.90	0.86	-	-	-	0.78
Jan-97	2.89	2.39	2.58	3.48	3.52	3.34	2.70	2.57	-	-	-	2.50

Notes:
Groundwater elevations are realative to mean sea-level datum
- = Not measured

Table 6
Summary of Groundwater Analytical Results
Detected Compounds
Safety-Kleen Service Center
400 Market Street
Oakland, California

Well No.		MW-1																		
Date		04-93	07-93	10-93	01-94	04-94	07-94	10-94	01-95	04-95	07-95	10-95	01-96	04-96	07-96	11-96		1-97	
Compound	MCL	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)**	(ug/l)	(ug/l)**	(ug/l)
TPH-mineral spirits	NE	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
Benzene	1	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
Toluene	150	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
Ethyl-benzene	700	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
Xylenes	1750	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
1,1-Dichloroethene	6	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
1,1-Dichloroethane	5	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
1,2-Dichloroethane	0.5	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
cis-1,2-Dichloroethene	6	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
trans-1,2-Dichloroethene	10	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
Chloroform	NE	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
1,1,1-Trichloroethane	200	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
Trichloroethene	5	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
Tetrachloroethene	5	-	-	-	-	-	NS	-	NS	0.7	NS	-	NS	-	NS	-	-	NS	NS
Chlorobenzene	70	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
1,2-Dichloropropane	5	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
1,2-Dichlorobenzene	600	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
1,4-Dichlorobenzene	5	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
Trichlorofluoromethane	150	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
Dichlorodifluoromethane	NE	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS
Vinyl chloride	0.5	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	-	-	NS	NS

Well No.		MW-2																	
Date		04-93	07-93	10-93	01-94	04-94	07-94	10-94	01-95	04-95	07-95	10-95	01-96	04-96	07-96	11-96		1-97	
Compound	MCL	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)**	(ug/l)	(ug/l)**	(ug/l)
TPH-mineral spirits	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethyl-benzene	700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes	1750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Well No.		MW-3																	
Date		04-93	07-93	10-93	01-94	04-94	07-94	10-94	01-95	04-95	07-95	10-95	01-96	04-96	07-96	11-96		1-97	
Compound	MCL	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)**	(ug/l)	(ug/l)**	(ug/l)
TPH-mineral spirits	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethyl-benzene	700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes	1750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	6	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	5	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	1.6	4.9	-	-
Tetrachloroethene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	150	-	-	-	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Well No.		MW-4																	
Date		04-93	07-93	10-93	01-94	04-94	07-94	10-94	01-95	04-95	07-95	10-95	01-96	04-96	07-96	11-96		1-97	
Compound	MCL	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)**	(ug/l)	(ug/l)**	(ug/l)
TPH-mineral spirits	NE	-	-	* 400	* 270	* 760	* 200	* 330	-	-	-	-	-	-	-	-	-	-	-
Benzene	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	150	-	-	-	-	-	-	-	-	1.2	-	-	-	-	-	-	-	-	-
Ethyl-benzene	700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes	1750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	6	-	-	-	-	-	-	-	0.7	0.8	5.2	4	3	6	4.8	5.1	5	5.7	6.4
1,1-Dichloroethane	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	6	-	-	-	-	-	-	-	-	-	11.8	-	17	10	11.3	5.1	9.2	4.4	7.2
trans-1,2-Dichloroethene	10	-	53	0.6	1.1	1.7	-	-	1.4	1	3.2	3	4	1.7	1.2	-	1.2	-	-
Chloroform	NE	7.6	-	1.9	-	5.0	-	-	-	-	-	3	6	1.3	1.8	1.6	1.8	1.9	2.3
1,1,1-Trichloroethane	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.1	-	1.2	1.2
Trichloroethene	5	2400	1100	-	790	1600	410	650	700	440	247	207	157	140	224	242.4	269	156.2	188.7
Tetrachloroethene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.1
Chlorobenzene	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	-	-	-
1,2-Dichloropropane	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	0.5	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-

Well No.		MW-5																	
Date		04-93	07-93	10-93	01-94	04-94	07-94	10-94	01-95	04-95	07-95	10-95	01-96	04-96	07-96	11-96		1-97	
Compound	MCL	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)**	(ug/l)	(ug/l)**	(ug/l)
TPH-mineral spirits	NE	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Benzene	1	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Toluene	150	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Ethyl-benzene	700	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Xylenes	1750	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,1-Dichloroethene	6	1.5	0.6	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,1-Dichloroethane	5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,2-Dichloroethane	0.5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	6	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	10	-	-	-	4.3	3.5	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Chloroform	NE	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	1.4	NS	NS	NS	NS	NS
1,1,1-Trichloroethane	200	4	6	12	-	7.2	NS	NS	NS	9.1	NS	NS	NS	-	NS	NS	NS	NS	NS
Trichloroethene	5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	8.7	NS	NS	NS	NS	NS
Tetrachloroethene	5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Chlorobenzene	70	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,2-Dichloropropane	5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,2-Dichlorobenzene	600	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,4-Dichlorobenzene	5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Trichlorofluoromethane	150	18	19	-	-	7.9	NS	NS	NS	-	NS	NS	NS	4.5	NS	NS	NS	NS	NS
Dichlorodifluoromethane	NE	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Vinyl chloride	0.5	-	-	-	-	-	NS	NS	NS	16	NS	NS	NS	-	NS	NS	NS	NS	NS

Well No.		MW-6																	
Date		04-93	07-93	10-93	01-94	04-94	07-94	10-94	01-95	04-95	07-95	10-95	01-96	04-96	07-96	11-96		1-97	
Compound	MCL	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)**	(ug/l)	(ug/l)**	(ug/l)
TPH-mineral spirits	NE	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Benzene	1	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Toluene	150	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Ethyl-benzene	700	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Xylenes	1750	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,1-Dichloroethene	6	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,1-Dichloroethane	5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,2-Dichloroethane	0.5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	6	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	10	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Chloroform	NE	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,1,1-Trichloroethane	200	-	5	1.3	-	1	NS	NS	NS	0.4	NS	NS	NS	-	NS	NS	NS	NS	NS
Trichloroethene	5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Tetrachloroethene	5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Chlorobenzene	70	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,2-Dichloropropane	5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,2-Dichlorobenzene	600	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,4-Dichlorobenzene	5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Trichlorofluoromethane	150	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Dichlorodifluoromethane	NE	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Vinyl chloride	0.5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS

Well No.		MW-8																	
Date		04-93	07-93	10-93	01-94	04-94	07-94	10-94	01-95	04-95	07-95	10-95	01-96	04-96	07-96	11-96		1-97	
Compound	MCL	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)**	(ug/l)	(ug/l)**	(ug/l)
TPH-mineral spirits	NE	-	-	-	* 60	-	NS	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	1	-	-	-	-	-	NS	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	150	-	-	-	-	-	NS	-	-	-	-	-	-	-	-	-	-	-	-
Ethyl-benzene	700	-	-	-	-	-	NS	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes	1750	-	-	-	-	-	NS	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	6	-	-	-	-	-	NS	-	-	-	3.5	7	19	7.2	-	3.2	1.3	-	-
1,1-Dichloroethane	5	3.4	-	-	8.6	3.7	NS	5.5	-	-	6.2	5	7	2.9	-	16.7	4.3	-	-
1,2-Dichloroethane	0.5	7.4	5	5.2	11	7.1	NS	-	-	-	9.8	10	11	5.1	-	9.5	6	-	2.1
cis-1,2-Dichloroethene	6	-	-	-	-	-	NS	-	-	-	25.57	63	56	63	-	44.5	60.6	1.2	22.6
trans-1,2-Dichloroethene	10	-	1	-	-	-	NS	-	-	-	2.3	6	4	2.9	-	1.1	2.9	-	1.3
Chloroform	NE	-	-	-	-	-	NS	-	-	-	-	-	13	-	-	1.7	3.9	-	1.4
1,1,1-Trichloroethane	200	-	-	-	2.5	1.5	NS	-	-	-	-	-	-	-	1.3	2.5	-	-	-
Trichloroethene	5	14	31	15	22	18	NS	23	2.6	15	163	557	486	569	1352	339.2	1156.8	2.9	500.3
Tetrachloroethene	5	1.8	-	-	2	0.8	NS	-	-	0.4	3.2	2	2	1.1	2	3.4	1.6	22.5	13
Chlorobenzene	70	11	-	5.4	16	-	NS	2.4	1.2	-	6.9	4	6	3.3	-	23.3	5.8	-	1.2
1,2-Dichloropropane	5	0.6	-	-	-	0.8	NS	-	-	-	-	-	-	-	-	3	-	-	-
1,2-Dichlorobenzene	600	2.6	-	-	4.8	-	NS	-	-	-	3.8	3	5	2	-	24.4	5.7	-	1.4
1,4-Dichlorobenzene	5	-	-	-	-	-	NS	-	-	-	-	-	-	-	1.1	3.9	1.1	-	-
Trichlorofluoromethane	150	-	-	-	-	-	NS	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane	NE	-	-	-	-	-	NS	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	0.5	-	-	-	-	-	NS	-	-	-	2.6	4	5	1.6	6.3	9.8	3.5	-	-

Well No.		MW-10		(Abandoned)															
Date		04-93	07-93	10-93	01-94	04-94	07-94	10-94	01-95	04-95	07-95	10-95	01-96	04-96	07-96	11-96		11-96	
Compound	MCL	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)**	(ug/l)	(ug/l)**	(ug/l)
TPH-mineral spirits	NE	-	-	-	-	NS	NS	NS	NS	NS	NS	Well Destroyed July 1995							
Benzene	1	-	-	-	-	NS	NS	NS	NS	NS	NS								
Toluene	150	-	-	-	-	NS	NS	NS	NS	NS	NS								
Ethyl-benzene	700	-	-	-	-	NS	NS	NS	NS	NS	NS								
Xylenes	1750	-	-	-	-	NS	NS	NS	NS	NS	NS								
1,1-Dichloroethene	6	-	2	-	-	NS	NS	NS	NS	NS	NS								
1,1-Dichloroethane	5	-	-	-	-	NS	NS	NS	NS	NS	NS								
1,2-Dichloroethane	0.5	-	-	-	-	NS	NS	NS	NS	NS	NS								
cis-1,2-Dichloroethene	6	-	-	-	-	NS	NS	NS	NS	NS	NS								
trans-1,2-Dichloroethene	10	-	17	3	0.4	NS	NS	NS	NS	NS	NS								
Chloroform	NE	1.2	0.5	-	-	NS	NS	NS	NS	NS	NS								
1,1,1-Trichloroethane	200	-	0.8	-	-	NS	NS	NS	NS	NS	NS								
Trichloroethene	5	45	54	42	67	NS	NS	NS	NS	NS	NS								
Tetrachloroethene	5	-	-	-	-	NS	NS	NS	NS	NS	NS								
Chlorobenzene	70	-	-	-	-	NS	NS	NS	NS	NS	NS								
1,2-Dichloropropane	5	-	-	-	-	NS	NS	NS	NS	NS	NS								
1,2-Dichlorobenzene	600	-	-	-	-	NS	NS	NS	NS	NS	NS								
1,4-Dichlorobenzene	5	-	-	-	-	NS	NS	NS	NS	NS	NS								
Trichlorofluoromethane	150	-	-	-	-	NS	NS	NS	NS	NS	NS								
Dichlorodifluoromethane	NE	-	-	-	-	NS	NS	NS	NS	NS	NS								
Vinyl chloride	0.5	-	-	-	-	NS	NS	NS	NS	NS	NS								

Well No.		MW-11																	
Date		04-93	07-93	10-93	01-94	04-94	07-94	10-94	01-95	04-95	07-95	10-95	01-96	04-96	07-96	11-96		1-97	
Compound	MCL	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)**	(ug/l)	(ug/l)**	(ug/l)
TPH-mineral spirits	NE	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzene	1	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
Toluene	150	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ethyl-benzene	700	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
Xylenes	1750	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethene	6	-	2	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethane	5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-Dichloroethane	0.5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	6	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	10	-	3	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chloroform	NE	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1,1-Trichloroethane	200	-	2	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene	5	9.1	36	11	2.6	3.1	NS	NS	NS	3.4	NS	NS	NS	NS	NS	NS	NS	NS	NS
Tetrachloroethene	5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chlorobenzene	70	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-Dichloropropane	5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-Dichlorobenzene	600	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,4-Dichlorobenzene	5	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichlorofluoromethane	150	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dichlorodifluoromethane	NE	-	-	-	-	-	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS
Vinyl chloride	0.5	-	-	-	-	-	NS	NS	NS	1.4	NS	NS	NS	NS	NS	NS	NS	NS	NS

Well No.		MW-12																	
Date		04-93	07-93	10-93	01-94	04-94	07-94	10-94	01-95	04-95	07-95	10-95	01-96	04-96	07-96	11-96		1-97	
Compound	MCL	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)**	(ug/l)	(ug/l)**	(ug/l)
TPH-mineral spirits	NE	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	NS	NS	NS	NS
Benzene	1	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	NS	NS	NS	NS
Toluene	150	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	NS	NS	NS	NS
Ethyl-benzene	700	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	NS	NS	NS	NS
Xylenes	1750	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	NS	NS	NS	NS
1,1-Dichloroethene	6	-	-	-	-	-	NS	-	NS	-	NS	2	NS	-	NS	NS	NS	NS	NS
1,1-Dichloroethane	5	2.6	2	-	2.3	1.7	NS	1.6	NS	3.8	NS	4	NS	2.9	NS	NS	NS	NS	NS
1,2-Dichloroethane	0.5	-	2	-	1.2	1.9	NS	-	NS	-	NS	3	NS	1.6	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	6	-	-	-	-	-	NS	-	NS	-	NS	5	NS	-	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	10	-	3	-	-	-	NS	-	NS	-	NS	2	NS	-	NS	NS	NS	NS	NS
Chloroform	NE	-	-	-	-	-	NS	-	NS	-	NS	-	NS	1.1	NS	NS	NS	NS	NS
1,1,1-Trichloroethane	200	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	NS	NS	NS	NS
Trichloroethene	5	17	30	34	11	44	NS	24	NS	59	NS	95	NS	7.5	NS	NS	NS	NS	NS
Tetrachloroethene	5	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	NS	NS	NS	NS
Chlorobenzene	70	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	NS	NS	NS	NS
1,2-Dichloropropane	5	-	-	-	-	-	NS	-	NS	-	NS	2	NS	-	NS	NS	NS	NS	NS
1,2-Dichlorobenzene	600	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	NS	NS	NS	NS
1,4-Dichlorobenzene	5	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	NS	NS	NS	NS
Trichlorofluoromethane	150	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	NS	NS	NS	NS
Dichlorodifluoromethane	NE	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	NS	NS	NS	NS
Vinyl chloride	0.5	-	-	-	-	-	NS	-	NS	-	NS	-	NS	-	NS	NS	NS	NS	NS

Well No.		MW-13																	
Date		04-93	07-93	10-93	01-94	04-94	07-94	10-94	01-95	04-95	07-95	10-95	01-96	04-96	07-96	11-96		1-97	
Compound	MCL	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)**	(ug/l)	(ug/l)**	(ug/l)
TPH-mineral spirits	NE	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Benzene	1	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Toluene	150	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Ethyl-benzene	700	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Xylenes	1750	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,1-Dichloroethene	6	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,1-Dichloroethane	5	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,2-Dichloroethane	0.5	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	6	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	10	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Chloroform	NE	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,1,1-Trichloroethane	200	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Trichloroethene	5	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Tetrachloroethene	5	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Chlorobenzene	70	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,2-Dichloropropane	5	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,2-Dichlorobenzene	600	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
1,4-Dichlorobenzene	5	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Trichlorofluoromethane	150	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Dichlorodifluoromethane	NE	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS
Vinyl chloride	0.5	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	-	NS	NS	NS	NS	NS

LEGEND

MCL = Maximum contaminant level for primary drinking water constituents

NE = Not Established

NS = Not Sampled

- = Not Detected

* The TPH as mineral spirits result is the result of an unknown hydrocarbon consisting of a single peak.

** This sample was collected prior to purging the monitor well.

NOTE

Only compounds detected in one or more samples are included. See the laboratory reports for a complete list of analytes.

Table 7

Comparison of Pre-Purge and Post-Purge Groundwater Analytical Data

January 17, 1997

Safety-Kleen Service Center
400 Market Street
Oakland, California

Sample Name	Analyte														
	TPHms	1,2-DCB	1,4-DCB	1,1-DCA	1,2-DCA	1,1-DCE	c1,2-DCE	t1,2-DCE	1,1,1-TCA	TCE	PCE	CB	1,2-DCP	VC	CF
	(ug/L)	*(ug/L)*	*(ug/L)*	*(ug/L)*	*(ug/L)*	*(ug/L)*	*(ug/L)*	*(ug/L)*	*(ug/L)*	*(ug/L)*	*(ug/L)*	*(ug/L)*	*(ug/L)*	*(ug/L)*	*(ug/L)*
MW-2 Pre-Purge	<50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1
MW-2 Post Purge	<50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1
RPD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
MW-3 Pre-Purge	<50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1
MW-3 Post Purge	<50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1
RPD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
MW-4 Pre-Purge	<50	<1	<1	<1	<1	**5.7**	**4.4**	<1	**1.2**	**156.2**	<1	<1	<1	<2	**1.9**
MW-4 Post Purge	<50	<1	<1	<1	<1	**6.4**	**7.2**	<1	**1.2**	**188.7**	**1.1**	<1	<1	<2	**2.3**
RPD	0%	0%	0%	0%	0%	**-12%**	**-48%**	0%	0%	**-19%**	**-10%**	0%	0%	0%	**-19%**
MW-8 Pre-Purge	<50	<1	<1	<1	<1	<1	**1.2**	<1	<1	**2.9**	**22.5**	<1	<1	<2	<1
MW-8 Post Purge	<50	**1.4**	<1	<1	**2.1**	<1	**22.6**	**1.3**	<1	**500.3**	**13**	**1.2**	<1	<2	**1.4**
RPD	0%	**-33%**	0%	0%	**-71%**	0%	**-180%**	**-26%**	0%	**-198%**	**54%**	**-18%**	0%	0%	**-33%**
DUPLICATES:															
MW-8A Pre-Purge	<50	<1	<1	<1	<1	<1	**1.3**	<1	<1	**3.0**	**27.3**	<1	<1	<1	<1
MW-8A Post Purge	<50	**1.5**	<1	<1	**2.3**	<1	**25.2**	**1.9**	<1	**494.9**	**14.1**	**1.3**	<1	<1	**1.4**

Notes:
TPHms = Total Petroleum Hydrocarbons as Mineral Spirits
DCB = Dichlorobenzene
DCA = Dichloroethane
DCE = Dichloroethene
TCA = Trichloroethane
TCE = Trichloroethene
PCE = Tetrachloroethene
CB = Chlorobenzene
DCP = Dichloropropane
VC = Vinyl Chloride
CF = Chloroform
RPD = Relative Percent Difference = [(A-B) / { (A+B) / 2 }] * 100

SECOR

HYDROLOGIC DATA SHEET

PROJECT:	SAFETY-KLEEN 400 MARKET STREET OAKLAND, CALIFORNIA	**PROJECT NO.:** 70005-009-07 **TASK:** 001	
DATE: 1-17-97	**TIME START:** 7:50	**TIME END:** 9:00	
EVENT:	QUARTERLY/SEMI-ANNUAL/ANNUAL MONITORING AND SAMPLING	**PERSONNEL:**	

WELL ID	TOC	DTW	DTP	PT	TD	ELEV.	COMMENTS
MW-1	7.99	5.10	-	-			2"
✓ MW-2	8.20	5.81	-	-	29.40		2"
✓ MW-3	6.66	4.08	-	-	28.98		2"
✓ MW-4	10.32	6.84	-	-	25.31		2"
MW-5	10.28	6.76	-	-			2"
MW-6	8.97	5.63	-	-			2"
✓ MW-8 dup	7.80	5.10	-	-	29.20		2"
MW-9	8.21	5.64	None	—			4"
MW-11	7.91	Dry	-	-			2"
MW-12	6.74	can over	-	-			2"
MW-13	8.08	5.58	-	-			4"(deep well)
RW-1	-	4.19	4.18	.01			10"

NOTES: S-K Laboratory P.O. Number - E11819

TOC = TOP OF CASING (FEET RELATIVE TO MEAN SEA LEVEL)
DTW = DEPTH TO WATER (FEET)
DTP = DEPTH TO PRODUCT (FEET)
PT = PRODUCT THICKNESS (FEET)
TD = TOTAL DEPTH (FEET)
ELEV. = GROUNDWATER ELEVATION (FEET RELATIVE TO MEAN SEA LEVEL)

SECOR International Inc.

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 70005-009 | PURGED BY: GC | WELL I.D.: MW-3

CLIENT NAME: SARH Klein | SAMPLED BY: GC | SAMPLE I.D.: MW-3

LOCATION: Oakland CA | QA SAMPLES: None

DATE PURGED 1-17-97 | START (2400hr) 10:35 | END (2400hr) 11:15

DATE SAMPLED 1-17-97 | SAMPLE TIME (2400hr) 11:20

SAMPLE TYPE: Groundwater X | Surface Water ___ | Treatment Effluent ___ | Other ___

CASING DIAMETER:	2"	3"	4"	5"	6"	8"	Other
Casing Volume: (gallons per foot)	X (0.17)	___ (0.38)	___ (0.67)	___ (1.02)	___ (1.50)	___ (2.60)	___ ( )

DEPTH TO BOTTOM (feet) = 28.98

DEPTH TO WATER (feet) = 4.08

WATER COLUMN HEIGHT (feet) = 24.90

CASING VOLUME (gal) = 4.23

CALCULATED PURGE (gal) = 12.69

ACTUAL PURGE (gal) = 13.00

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY ~~(NTU)~~ (visual)
1-17	10:45	4.5	56.7	324	7.39	BRN	Hvy
1-17	10:57	9.0	59.9	299	7.07	BRN	Hvy
1-17	11:15	13.0	58.9	293	7.72	BRN	Hvy

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: —

SAMPLE TURBIDITY: —

80% RECHARGE: X YES ___ NO

ANALYSES: TPH As MS BTEX, 8010 VOC

ODOR: None

SAMPLE VESSEL / PRESERVATIVE: 8 HCL VOAs

PURGING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
X Bailer (Teflon)
___ Bailer (PVC)
___ Bailer (Stainless Steel)
Y Dedicated Def

Other: ___

Pump Depth: ___

SAMPLING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
___ Bailer (Teflon)
Y Bailer (___ PVC or X disposable)
___ Bailer (Stainless Steel)
___ Dedicated ___

Other: ___

WELL INTEGRITY: Good

LOCK#: 3210

REMARKS: Pre: 10:35
Post: 11:20

SIGNATURE: GRC

SECOR International Inc.

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 70005-009-07 | PURGED BY: GC | WELL I.D.: MW-4

CLIENT NAME: Safety Kleen | SAMPLED BY: GC | SAMPLE I.D.: MW-4

LOCATION: ~~[illegible]~~ Oakland | QA SAMPLES: None

DATE PURGED 1-17-97 | START (2400hr) 9:00 | END (2400hr) 9:20

DATE SAMPLED 1-17-97 | SAMPLE TIME (2400hr) 9:25

SAMPLE TYPE: Groundwater X | Surface Water ___ | Treatment Effluent ___ | Other ___

CASING DIAMETER:	2"	3"	4"	5"	6"	8"	Other
Casing Volume: (gallons per foot)	X (0.17)	___ (0.38)	___ (0.67)	___ (1.02)	___ (1.50)	___ (2.60)	___ ( )

DEPTH TO BOTTOM (feet) = 25.31 | CASING VOLUME (gal) = 3.13

DEPTH TO WATER (feet) = 6.84 | CALCULATED PURGE (gal) = 9.41

WATER COLUMN HEIGHT (feet) = 18.47 | ACTUAL PURGE (gal) = 10.00

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY ~~(NTU)~~ (visual)
1-17-97	9:07	3.0	57.0	338	7.69	BRN	High
1-17-97	9:15	6.5	59.7	325	7.44	BRN	High
1-17-97	9:20	10.0	59.3	340	7.48	BRN	High

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: — | SAMPLE TURBIDITY: —

80% RECHARGE: X YES ___ NO | ANALYSES: TPH As MS, BTEX VOC 8010

ODOR: None | SAMPLE VESSEL / PRESERVATIVE: 8 HCL VOAs

PURGING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
X Bailer (Teflon)
___ Bailer (PVC)
___ Bailer (Stainless Steel)
X Dedicated DSP

Other: ___

Pump Depth: ___

SAMPLING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
___ Bailer (Teflon)
X Bailer (___ PVC or X disposable)
___ Bailer (Stainless Steel)
___ Dedicated ___

Other: ___

WELL INTEGRITY: Good | LOCK#: Master

REMARKS: Pre: 9:00
post: 9:25

SIGNATURE: GRC

SECOR International Inc.

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 70005-004-07 | PURGED BY: GC | WELL I.D.: MW-8

CLIENT NAME: SA Ferry Wheel | SAMPLED BY: GC | SAMPLE I.D.: MW-8

LOCATION: Oakland | QA SAMPLES: MW-8A

DATE PURGED 1-17-97 | START (2400hr) 12:00 | END (2400hr) 12:40

DATE SAMPLED 1-17-97 | SAMPLE TIME (2400hr) 12:50

SAMPLE TYPE: Groundwater X | Surface Water ___ | Treatment Effluent ___ | Other ___

CASING DIAMETER:	2"	3"	4"	5"	6"	8"	Other
Casing Volume: (gallons per foot)	X (0.17)	___ (0.38)	___ (0.67)	___ (1.02)	___ (1.50)	___ (2.60)	___ ( )

DEPTH TO BOTTOM (feet) = 29.20 | CASING VOLUME (gal) = 4.09

DEPTH TO WATER (feet) = 5.10 | CALCULATED PURGE (gal) = 12.29

WATER COLUMN HEIGHT (feet) = 24.10 | ACTUAL PURGE (gal) = 12.50

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY ~~(NTU)~~ (visual)
1-17	12:10	4	61.0	282	7.99	Cloudy	High
1-17	12:25	9	64.6	287	7.87	Tan	High
1-17	12:40	12.5	64.8	300	7.83	Tan	High

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: — | SAMPLE TURBIDITY: —

80% RECHARGE: X YES ___ NO | ANALYSES: TPH As MS BTEX, 8010 VOC

ODOR: None | SAMPLE VESSEL / PRESERVATIVE: 16 HCL VOAs

PURGING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
X Bailer (Teflon)
___ Bailer (PVC)
___ Bailer (Stainless Steel)
X Dedicated DSP

Other: ___

Pump Depth: ___

SAMPLING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
___ Bailer (Teflon)
X Bailer (___ PVC or X disposable)
___ Bailer (Stainless Steel)
___ Dedicated ___

Other: ___

WELL INTEGRITY: Good | LOCK#: Master

REMARKS: SA PRE: 12:10 | 8 PRE: 12:00

SA Post: 12:55 | 8 Post: 12:50

SIGNATURE: GRC

SECOR International Inc.

WATER SAMPLE FIELD DATA SHEET

OJECT #: 70005-004-07 | PURGED BY: GC | WELL I.D.: MW-2

IENT NAME: Safety Kleen | SAMPLED BY: GC | SAMPLE I.D.: MW-2

KCATION: Oakland | QA SAMPLES: None

ATE PURGED 1-17-97 | START (2400hr) 9:40 | END (2400hr) 10:10

ATE SAMPLED 1-17-97 | SAMPLE TIME (2400hr) 10:15

AMPLE TYPE: Groundwater ___ Surface Water ___ Treatment Effluent ___ Other ___

ASING DIAMETER: 2" ___ (0.17) 3" ___ (0.38) 4" ___ (0.67) 5" ___ (1.02) 6" ___ (1.50) 8" ___ (2.60) Other ___ ( )

asing Volume: (gallons per foot)

EPTH TO BOTTOM (feet) = 29.40 | CASING VOLUME (gal) = 4.01

EPTH TO WATER (feet) = 5.81 | CALCULATED PURGE (gal) = 12.03

VATER COLUMN HEIGHT (feet) = 23.59 | ACTUAL PURGE (gal) = 12.50

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU) Visual
1-17	9:50	4	55.7	370	7.92	BRN	High
1-17	10:00	8	54.3	341	7.99	BRN	High
1-17	10:10	12.5	58.6	353	7.69	BRN	High

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: ___ | SAMPLE TURBIDITY: ___

80% RECHARGE: X YES ___ NO | ANALYSES: TPH As MS, BTEX, 8010 VOC

ODOR: None | SAMPLE VESSEL / PRESERVATIVE: 8 HCl VOAs

PURGING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
Y Bailer (Teflon)
___ Bailer (PVC)
___ Bailer (Stainless Steel)
X Dedicated Disp.
Other: ___
Pump Depth: ___

SAMPLING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
___ Bailer (Teflon)
X Bailer (___ PVC or X disposable)
___ Bailer (Stainless Steel)
___ Dedicated ___
Other: ___

WELL INTEGRITY: Good | LOCK#: None

REMARKS: Pre - 9:40
Post: 10:15

SIGNATURE: DRC

APPENDIX B

Laboratory Reports - Soil Vapor Extraction System Samples

Superior Analytical Laboratory

SECOR
1390 WILLOW PASS RD, STE. 360
CONCORD, CA 94520

Attn: GREG HOEHN

Date: January 7, 1997

Laboratory Number : 22227

Project Number/Name : 70005-009
Facility/Site : SAFETY KLEEN

Dear GREG HOEHN:

Attached is Superior Analytical Laboratory report for the samples received on December 18, 1996. This report has been reviewed and approved for release. Following the cover letter is the Case Narrative detailing sample receipt and analysis. Also enclosed is a copy of the original Chain-of-Custody record confirming receipt of samples.

Please note that any unused portion of the sample will be discarded after January 17, 1997, unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please contact our Laboratory at (510) 313-0850.

Sincerely,

Afsaneh Salimpour
Project Manager

Superior
Analytical Laboratory

CASE NARRATIVE

SECOR
Project Number/Name: 70005-009
Laboratory Number: 22227

Sample Receipt

Two air samples were received by
Superior Analytical Laboratory on December 18, 1996.

Cooler temperature was R.T.°C

No abnormalities were noted with sample recieving.

Sample Analysis

The samples were analysed for methods 8010, 8015M and 8020.o

Superior
Analytical Laboratory

S R
Attn: GREG HOEHN

Project 70005-009
Reported on December 23, 1996

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

Chronology

Laboratory Number 22227

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
EFF	12/18/96	12/18/96	12/20/96	12/20/96	CL201.06	01
INF	12/18/96	12/18/96	12/20/96	12/20/96	CL201.06	02

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
CL201.06-01	Method Blank	MB	Water	12/20/96	12/20/96
CL201.06-02	Laboratory Spike	LS	Water	12/20/96	12/20/96
CL201.06-03	Laboratory Spike Duplicate	LSD	Water	12/20/96	12/20/96
CL201.06-04	P42-B-4W	MS 22211-01	Water	12/20/96	12/20/96
CL201.06-05	P42-B-4W	MSD 22211-01	Water	12/20/96	12/20/96

Superior Analytical Laboratory

SECOR
Attn: GREG HOEHN

Project 70005-009
Reported on December 23, 1996

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
22227-01	EFF	Air	1.0	-
22227-02	INF	Air	1.0	-

RESULTS OF ANALYSIS

Compound	22227-01 Conc. PPB (V/V)	RL	22227-02 Conc. PPB (V/V)	RL
Chloromethane	ND	480	ND	480
Vinyl Chloride	ND	390	ND	390
Bromomethane	ND	250	ND	250
Chloroethane	ND	270	ND	270
Trichlorofluoromethane	ND	88	ND	88
1,1-Dichloroethene	ND	120	ND	120
[illegible]chloromethane	ND	140	ND	140
[illegible],2-Dichloroethene	ND	120	ND	120
1,1-Dichloroethane	ND	120	ND	120
c-1,2-Dichloroethene	ND	120	ND	120
Chloroform	ND	100	ND	100
1,1,1-Trichloroethane	ND	90	ND	90
Carbon tetrachloride	ND	78	ND	78
1,2-Dichloroethane	ND	120	ND	120
Trichloroethene	ND	92	ND	92
c-1,3-Dichloropropene	ND	110	ND	110
1,2-Dichloropropane	ND	110	ND	110
t-1,3-Dichloropropene	ND	110	ND	110
Bromodichloromethane	ND	68	ND	68
1,1,2-Trichloroethane	ND	90	ND	90
Tetrachloroethene	ND	73	ND	73
Dibromochloromethane	ND	58	ND	58
Chlorobenzene	ND	110	ND	110
Bromoform	ND	48	ND	48
1,1,2,2-Tetrachloroethane	ND	72	ND	72
1,3-Dichlorobenzene	ND	82	ND	82
1,2-Dichlorobenzene	ND	82	ND	82
1,4-Dichlorobenzene	ND	82	ND	82
>> Surrogate Recoveries (%) <<				
Bromochloromethane	97		98	

Superior
Analytical Laboratory

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

Quality Assurance and Control Data

Laboratory Number: 22227
Method Blank(s)

CL201.06-01

	Conc. ug/L	RL
Chloromethane	ND	0.5
Vinyl Chloride	ND	0.5
Bromomethane	ND	0.5
Chloroethane	ND	0.5
Trichlorofluoromethane	ND	0.5
1,1-Dichloroethene	ND	0.5
Dichloromethane	ND	0.5
t-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
c-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
[illegible]rbon tetrachloride	ND	0.5
2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
c-1,3-Dichloropropene	ND	0.5
1,2-Dichloropropane	ND	0.5
t-1,3-Dichloropropene	ND	0.5
Bromodichloromethane	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5

>> Surrogate Recoveries (%) <<

Bromochloromethane	96

Superior Analytical Laboratory

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

Quality Assurance and Control Data

Laboratory Number: 22227

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L)						
CL201.06 02 / 03 - Laboratory Control Spikes						
1,1-Dichloroethene		20	21/23	105/115	50-189	9
Trichloroethene		20	18/19	90/95	53-161	5
Chlorobenzene		20	19/20	95/100	57-171	5
>> Surrogate Recoveries (%) <<						
Bromochloromethane				91/99	50-125	
For Water Matrix (ug/L)						
CL201.06 04 / 05 - Sample Spiked: 22211 - 01						
1,1-Dichloroethene	ND	20	21/23	105/115	50-189	9
Trichloroethene	ND	20	19/19	95/95	53-161	0
Chlorobenzene	ND	20	20/20	100/100	57-171	0
>> Surrogate Recoveries (%) <<						
Bromochloromethane				99/98	50-125	

Definitions:

ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Superior
Analytical Laboratory

SE..R
Attn: GREG HOEHN

Project 70005-009
Reported on January 7, 1997
Revised on January 7, 1997

Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

Chronology

Laboratory Number 22227

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
EFF	12/18/96	12/18/96	12/19/96	12/19/96	CL192.37	01
INF	12/18/96	12/18/96	12/19/96	12/19/96	CL192.37	02

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
CL192.37-01	Method Blank	MB	Water	12/19/96	12/19/96
CL192.37-02	Laboratory Spike	LS	Water	12/19/96	12/19/96
CL192.37-03	Laboratory Spike Duplicate	LSD	Water	12/19/96	12/19/96
CL192.37-04	EB-1	MS 22198-03	Water	12/19/96	12/19/96
CL192.37-05	EB-1	MSD 22198-03	Water	12/19/96	12/19/96

Superior Analytical Laboratory

SE..OR
Attn: GREG HOEHN

Project 70005-009
Reported on January 7, 1997
Revised on January 7, 1997

Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
22227-01	EFF	Air	1.0	-
22227-02	INF	Air	1.0	-

RESULTS OF ANALYSIS

Compound	22227-01 Conc. ug/L	RL	22227-02 Conc. ug/L	RL
Benzene	ND	0.5	ND	0.5
Toluene	ND	0.5	ND	0.5
Ethyl Benzene	ND	0.5	ND	0.5
Xylenes	ND	0.5	ND	0.5
>> Surrogate Recoveries (%) <<				
Fluorotoluene (SS)	108		111	

Superior
Analytical Laboratory

Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

Quality Assurance and Control Data

Laboratory Number: 22227
Method Blank(s)

	CL192.37-01 Conc. ug/L	RL
Benzene	ND	0.5
Toluene	ND	0.5
Ethyl Benzene	ND	0.5
Xylenes	ND	0.5
>> Surrogate Recoveries (%) <<		
Trifluorotoluene (SS)	108	

Superior Analytical Laboratory

Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

Quality Assurance and Control Data

Laboratory Number: 22227

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L)						
CL192.37 02 / 03 - Laboratory Control Spikes						
Benzene		20	20/21	100/105	65-135	5
Toluene		20	21/21	105/105	65-135	0
Ethyl Benzene		20	21/21	105/105	65-135	0
Xylenes		60	63/64	105/107	65-135	2
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				105/105	50-150	
For Water Matrix (ug/L)						
CL192.37 04 / 05 - Sample Spiked: 22198 - 03						
Benzene	ND	20	20/19	100/95	65-135	5
Toluene	ND	20	21/20	105/100	65-135	5
Ethyl Benzene	ND	20	21/20	105/100	65-135	5
Xylenes	0.9	60	63/60	104/99	65-135	5
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				103/99	50-150	

Definitions:

ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Superior
Analytical Laboratory

S. JR
Attn: GREG HOEHN

Project 70005-009
Reported on January 7, 1997
Revised on January 7, 1997

Total Volatile Petroleum Hydrocarbons by EPA SW-846 5030/8015M

Chronology

Laboratory Number 22227

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
EFF	12/18/96	12/18/96	12/19/96	12/19/96	CL192.37	01
INF	12/18/96	12/18/96	12/19/96	12/19/96	CL192.37	02

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
CL192.37-06	Method Blank	MB	Water	12/19/96	12/19/96
CL192.37-07	Laboratory Spike	LS	Water	12/19/96	12/19/96
CL192.37-08	Laboratory Spike Duplicate	LSD	Water	12/19/96	12/19/96
CL192.37-09	EB-1	MS 22198-03	Water	12/19/96	12/19/96
CL192.37-10	EB-1	MSD 22198-03	Water	12/19/96	12/19/96

Superior
Analytical Laboratory

SL ,R
Attn: GREG HOEHN

Project 70005-009
Reported on January 7, 1997
Revised on January 7, 1997

Total Volatile Petroleum Hydrocarbons by EPA SW-846 5030/8015M

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
22227-01	EFF	Air	1.0	-
22227-02	INF	Air	1.0	-

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

Compound	22227-01 Conc. ug/L	RL	22227-02 Conc. ug/L	RL
Mineral Spirits	ND	50	220	50
>> Surrogate Recoveries (%) <<				
Trifluorotoluene (SS)	116		117	

Superior
Analytical Laboratory

Total Volatile Petroleum Hydrocarbons by EPA SW-846 5030/8015M

Quality Assurance and Control Data

Laboratory Number: 22227
Method Blank(s)

	CL192.37-06 Conc. ug/L	RL
Mineral Spirits	ND	50
>> Surrogate Recoveries (%) <<		
Trifluorotoluene (SS)	117	

Superior Analytical Laboratory

Total Volatile Petroleum Hydrocarbons by EPA SW-846 5030/8015M

Quality Assurance and Control Data

Laboratory Number: 22227

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L) CL192.37 07 / 08 - Laboratory Control Spikes						
Gasoline		2000	1800/1800	90/90	65-135	0
For Water Matrix (ug/L) CL192.37 09 / 10 - Sample Spiked: 22198 - 03						
Gasoline	ND	2000	1700/1700	85/85	65-135	0

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Chain-of Custody Number: 2227

SECOR Chain-of Custody Record

Field Office: CONCORD
Address: 1390 WILLOW PASS RD.
CONCORD, CA. 94520

☐ Additional documents are attached, and are a part of this Record.

Job Name: SAFETY KLEEN
Location: 400 MARKET ST.
OAKLAND, CA.

Project # 70005-009 Task # 1
Project Manager GREG HOGAN
Laboratory SUPERIOR
Turnaround Time STANDARD

Sampler's Name R. TAVERO
Sampler's Signature

Sample ID	Date	Time	Matrix
EFF	12/8/96	8:00	AIR
INF	"	9:00	"

Analysis Request

HCID	TPHg/BTEX/WTPH-G 8015 (modified)/8020	TPHd/WTPH-D 8015 (modified)	TPH 418.1/WTPH 418.1	Aromatic Volatiles 602/8020	Volatile Organics 624/8240 (GC/MS)	Halogenated Volatiles 601/8010	Semi-volatile Organics 625/8270 (GC/MS)	Pesticides/PCBs 608/8080	Total Lead 7421	Priority Pollutant Metals (13)	TCLP Metals	TPH as Mineral Spirits	BTEX	Comments/ Instructions	Number of Containers
						X						X	X		2
						X						X	X		2

Please Initial: PT
Samples Stored in Ice: NO
Appropriate containers: YES
Samples preserved: NA
VOA's without headspace: NA
Comments: T = 18°C

Special Instructions/Comments:

Relinquished by: SECOR
Sign
Print R. TAVERO
Company SECOR
Time 9:30 Date 12/8/96

Relinquished by:
Sign
Print
Company
Time Date

Received by:
Sign
Print
Company
Time Date

Received by:
Sign
Print Paul S. Tubio
Company SAL
Time 9:30 Date 12/18/96

Sample Receipt
Total no. of containers:
Chain of custody seals:
Rec'd. in good condition/cold:
Conforms to record:

Client: SECOR
Client Contact: GREG HOGAN
Client Phone: (510)686-9780

SECOR CUSTREC Rev. 1/95

Date: 12/18/96 Page 1 of 1

Superior Analytical Laboratory

SECOR
1390 WILLOW PASS RD, STE. 360
CONCORD, CA 94520

Attn: GREG HOEHN

Date: February 5, 1997

Laboratory Number : 22325

Project Number/Name : 70005-009
Facility/Site : SAFETY KLEEN
400 MARKET ST
OAKLAND, CA

Dear GREG HOEHN:

Attached is Superior Analytical Laboratory report for the samples received on January 17, 1997. This report has been reviewed and approved for release. Following the cover letter is the Case Narrative detailing sample receipt and analysis. Also enclosed is a copy of the original Chain-of-Custody record confirming receipt of samples.

Please note that any unused portion of the sample will be discarded after February 16, 1997, unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please contact our Laboratory at (510) 313-0850.

Sincerely,

Afsaneh Salimpour
Project Manager

Customer Service: (800) 521-6109 • Laboratory: (510) 313-0850 • Facsimile: (510) 229-0916
Post Office Box 2648 • 835 Arnold Drive • Suite #106 • Martinez, California 94553
1555 Burke Street • Suite A • San Francisco, California 94124

Superior
Analytical Laboratory

CASE NARRATIVE

SECOR
Project Number/Name: 70005-009
Laboratory Number: 22325

Sample Receipt

Two air samples were received by
Superior Analytical Laboratory on January 17, 1997.

Cooler temperature was NA°C

No abnormalities were noted with sample recieving.

Sample Analysis

The samples were analysed for methods 8010, 8015M and 8020.

Customer Service: (800) 521-6109 • Laboratory: (510) 313-0850 • Facsimile: (510) 229-0916
Post Office Box 2648 • 835 Arnold Drive • Suite #106 • Martinez, California 94553
1555 Burke Street • Suite A • San Francisco, California 94124

Superior
Analytical Laboratory

SEC
Attn: GREG HOEHN

Project 70005-009
Reported on February 4, 1997
Revised on February 5, 1997

Total Volatile Petroleum Hydrocarbons by EPA SW-846 5030/8015M

Chronology

Laboratory Number 22325

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
EFF	01/17/97	01/17/97	01/17/97	01/17/97	DA172.37	01
INF	01/17/97	01/17/97	01/17/97	01/17/97	DA172.37	02

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
DA172.37-05	Method Blank	MB	Water	01/17/97	01/17/97
DA172.37-06	Laboratory Spike	LS	Water	01/17/97	01/17/97
DA172.37-07	MW-1	MS 22307-01	Water	01/17/97	01/17/97
DA172.37-08	MW-1	MSD 22307-01	Water	01/17/97	01/17/97

Superior
Analytical Laboratory

SECOR
Attn: GREG HOEHN

Project 70005-009
Reported on February 4, 1997
Revised on February 5, 1997

Total Volatile Petroleum Hydrocarbons by EPA SW-846 5030/8015M

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
22325-01	EFF	Air	1.0	-
22325-02	INF	Air	1.0	-

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

Compound	22325-01 Conc. ug/L	RL	22325-02 Conc. ug/L	RL
Mineral Spirits	ND	50	69	50
>> Surrogate Recoveries (%) <<				
Trifluorotoluene (SS)	98		97	

Superior
Analytical Laboratory

Total Volatile Petroleum Hydrocarbons by EPA SW-846 5030/8015M

Quality Assurance and Control Data

Laboratory Number: 22325
Method Blank(s)

	DA172.37-05	
	Conc.	RL
Mineral Spirits	ND	50
>> Surrogate Recoveries (%) <<		
Trifluorotoluene (SS)		

Superior
Analytical Laboratory

Total Volatile Petroleum Hydrocarbons by EPA SW-846 5030/8015M

Quality Assurance and Control Data

Laboratory Number: 22325

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L) DA172.37 06 / - Laboratory Control Spikes						
Gasoline		2000	2100	105	65-135	
For Water Matrix (ug/L) DA172.37 07 / 08 - Sample Spiked: 22307 - 01						
Gasoline	ND	2000	2100/2100	105/105	65-135	0

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Superior
Analytical Laboratory

SE
Att. GREG HOEHN

Project 70005-009
Reported on February 4, 1997
Revised on February 4, 1997

Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

Chronology

Laboratory Number 22325

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
EFF	01/17/97	01/17/97	01/17/97	01/17/97	DA172.37	01
INF	01/17/97	01/17/97	01/17/97	01/17/97	DA172.37	02

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
DA172.37-01	Method Blank	MB	Water	01/17/97	01/17/97
DA172.37-02	Laboratory Spike	LS	Water	01/17/97	01/17/97
DA172.37-03	MW-1	MS 22307-01	Water	01/17/97	01/17/97
DA172.37-04	MW-1	MSD 22307-01	Water	01/17/97	01/17/97

Superior
Analytical Laboratory

SE
Att..: GREG HOEHN

Project 70005-009
Reported on February 4, 1997
Revised on February 4, 1997

Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
22325-01	EFF	Air	1.0	-
22325-02	INF	Air	1.0	-

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

Compound	22325-02 Conc. ug/L	RL	22325-01 Conc. ug/L	RL
Benzene	ND	0.5	ND	0.5
Toluene	0.7	0.5	ND	0.5
Ethyl Benzene	ND	0.5	ND	0.5
Xylenes	1.2	0.5	ND	0.5
>> Surrogate Recoveries (%) <<				
Tr[illegible]luorotoluene (SS)	105		104	

Superior
Analytical Laboratory

Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

Quality Assurance and Control Data

Laboratory Number: 22325
Method Blank(s)

	DA172.37-01 Conc. ug/L	RL
Benzene	ND	0.5
Toluene	ND	0.5
Ethyl Benzene	ND	0.5
Xylenes	ND	0.5
>> Surrogate Recoveries (%) <<		
Trifluorotoluene (SS)	97	

Superior Analytical Laboratory

Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

Quality Assurance and Control Data

Laboratory Number: 22325

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L)						
DA172.37 02 / - Laboratory Control Spikes						
Benzene		20	21	105	65-135	
Toluene		20	21	105	65-135	
Ethyl Benzene		20	21	105	65-135	
Xylenes		60	63	105	65-135	
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				103	50-150	
For Water Matrix (ug/L)						
DA172.37 03 / 04 - Sample Spiked: 22307 - 01						
Benzene	1.1	20	23/22	110/105	65-135	5
Toluene	ND	20	22/21	110/105	65-135	5
Ethyl Benzene	ND	20	21/21	105/105	65-135	0
Xylenes	ND	60	63/63	105/105	65-135	0
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				106/105	50-150	

Definitions:

ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Superior
Analytical Laboratory

SEC
Att: GREG HOEHN

Project 70005-009
Reported on January 21, 1997

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

Chronology

Laboratory Number 22325

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
EFF	01/17/97	01/17/97	01/20/97	01/20/97	DA201.06	01
INF	01/17/97	01/17/97	01/20/97	01/20/97	DA201.06	02

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
DA201.06-01	Method Blank	MB	Water	01/20/97	01/20/97
DA201.06-02	Laboratory Spike	LS	Water	01/20/97	01/20/97
DA201.06-03	Laboratory Spike Duplicate	LSD	Water	01/20/97	01/20/97
DA201.06-04	BC-14B	MS 22314-01	Water	01/20/97	01/20/97
DA201.06-05	BC-14B	MSD 22314-01	Water	01/20/97	01/20/97

Superior Analytical Laboratory

Sl .
Attn: GREG HOEHN

Project 70005-009
Reported on January 21, 1997

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
22325-01	EFF	Air	1.0	-
22325-02	INF	Air	1.0	-

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

Compound	22325-01 Conc. PPB (V/V)	RL	22325-02 Conc. PPB (V/V)	RL
Chloromethane	ND	480	ND	480
Vinyl Chloride	ND	390	ND	390
Bromomethane	ND	250	ND	250
Chloroethane	ND	270	ND	270
Trichlorofluoromethane	ND	88	ND	88
1,1-Dichloroethene	ND	120	ND	120
Dichloromethane	ND	140	ND	140
t 2-Dichloroethene	ND	120	ND	120
1,1-Dichloroethane	ND	120	ND	120
c-1,2-Dichloroethene	ND	120	ND	120
Chloroform	ND	100	ND	100
1,1,1-Trichloroethane	ND	90	ND	90
Carbon tetrachloride	ND	78	ND	78
1,2-Dichloroethane	ND	120	ND	120
Trichloroethene	ND	92	ND	92
c-1,3-Dichloropropene	ND	110	ND	110
1,2-Dichloropropane	ND	110	ND	110
t-1,3-Dichloropropene	ND	110	ND	110
Bromodichloromethane	ND	68	ND	68
1,1,2-Trichloroethane	ND	90	ND	90
Tetrachloroethene	ND	73	ND	73
Dibromochloromethane	ND	58	ND	58
Chlorobenzene	ND	110	ND	110
Bromoform	ND	48	ND	48
1,1,2,2-Tetrachloroethane	ND	72	ND	72
1,3-Dichlorobenzene	ND	82	ND	82
1,2-Dichlorobenzene	ND	82	ND	82
1,4-Dichlorobenzene	ND	82	ND	82
>> Surrogate Recoveries (%) <<				
Bromochloromethane	94		91	

Superior
Analytical Laboratory

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

Quality Assurance and Control Data

Laboratory Number: 22325
Method Blank(s)

	DA201.06-01 Conc. ug/L	RL
Chloromethane	ND	0.5
Vinyl Chloride	ND	0.5
Bromomethane	ND	0.5
Chloroethane	ND	0.5
Trichlorofluoromethane	ND	0.5
1,1-Dichloroethene	ND	0.5
Dichloromethane	ND	0.5
t-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
c-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	0.5
1 Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
c-1,3-Dichloropropene	ND	0.5
1,2-Dichloropropane	ND	0.5
t-1,3-Dichloropropene	ND	0.5
Bromodichloromethane	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
>> Surrogate Recoveries (%) <<		
Bromochloromethane	92	

Superior
Analytical Laboratory

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

Quality Assurance and Control Data

Laboratory Number: 22325

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L)						
DA201.06 02 / 03 - Laboratory Control Spikes						
1,1-Dichloroethene		20	25/23	125/115	50-189	8
Trichloroethene		20	19/18	95/90	53-161	5
Chlorobenzene		20	20/19	100/95	57-171	5
>> Surrogate Recoveries (%) <<						
Bromochloromethane				93/86	50-125	
For Water Matrix (ug/L)						
DA201.06 04 / 05 - Sample Spiked: 22314 - 01						
1,1-Dichloroethene	ND	20	26/26	130/130	50-189	0
Trichloroethene	ND	20	19/20	95/100	53-161	5
Chlorobenzene	ND	20	20/21	100/105	57-171	5
>> Surrogate Recoveries (%) <<						
Bromochloromethane				94/95	50-125	

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Chain-of Custody Number: 22325

SECOR Chain-of Custody Record

Field Office: SECOR

Address: 1390 willow Pass Road Suite 360
Concord, CA 94519

☐ Additional documents are attached, and are a part of this Record.

Job Name: SAFEWAY KLEEN

Location: 400 MARKET ST.
OAKLAND CA

Project # 70005-009 Task # _____

Project Manager Greg Hoehn

Laboratory Superior

Turnaround Time STANDARD

Sampler's Name GARY CLIFT

Sampler's Signature [signature]

Analysis Request

Sample ID	Date	Time	Matrix	HCID	TPHg/BTEX/WTPH-G 8015 (modified)/8020	TPHd/WTPH-D 8015 (modified)	TPH 418.1/WTPH 418.1	Aromatic Volatiles 602/8020	Volatile Organics 624/8240 (GC/MS)	Halogenated Volatiles 601/8010	Semi-volatile Organics 625/8270 (GC/MS)	Pesticides/PCBs 608/8080	Total Lead 7421	Priority Pollutant Metals (13)	TCLP Metals	tph as MS BTEX		Comments/ Instructions	Number of Containers
EFF	1-17	2:00	AIR							X						X			1
INF	1-17	2:10	AIR							X						X			1

Special Instructions/Comments:

Relinquished by: SECOR
Sign [signature]
Print GARY R CLIFT
Company SECOR
Time 1415 Date 1-17-97

Received by: Superior
Sign [signature]
Print [signature]
Company Superior
Time 1415 Date 1-17-97

Relinquished by: _____
Sign _____
Print _____
Company _____
Time _____ Date _____

Received by: _____
Sign _____
Print _____
Company _____
Time _____ Date _____

Sample Receipt

Total no. of containers:	2
Chain of custody seals:	
Rec'd. in good condition/cold:	
Conforms to record:	

Client: SECOR

Client Contact: Greg Hoehn

Client Phone: (510) 686-9780

SECOR CUSTREC Rev. 1/95

Date: 1/17/97 Page 1 of 1

Superior Analytical Laboratory

SECOR
1390 WILLOW PASS RD, STE. 360
CONCORD, CA 94520

Attn: GREG HOEHN

Date: February 21, 1997

Laboratory Number : 22409

Project Number/Name : 70005-009-
Facility/Site : SAFETY KLEEN
400 MARKET ST.
OAKLAND, CA.

Dear GREG HOEHN:

Attached is Superior Analytical Laboratory report for the samples received on February 10, 1997. This report has been reviewed and approved for release. Following the cover letter is the Case Narrative detailing sample receipt and analysis. Also enclosed is a copy of the original Chain-of-Custody record confirming receipt of samples.

Please note that any unused portion of the sample will be discarded after March 12, 1997, unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please contact our Laboratory at (510) 313-0850.

Sincerely,

Afsaneh Salimpour
Project Manager

Customer Service: (800) 521-6109 • Laboratory: (510) 313-0850 • Facsimile: (510) 229-0916
Post Office Box 2648 • 835 Arnold Drive • Suite #106 • Martinez, California 94553
1555 Burke Street • Suite A • San Francisco, California 94124

Superior
Analytical Laboratory

CASE NARRATIVE

SECOR
Project Number/Name: 70005-009- TASK# 00
Laboratory Number: 22409

Sample Receipt

Two air samples were received by
Superior Analytical Laboratory on February 10, 1997.

Cooler temperature was R.T.°C

No abnormalities were noted with sample recieving.

Sample Analysis

The samples were analysed for methods 8010, 8015M and 8020.o

Customer Service: (800) 521-6109 • Laboratory: (510) 313-0850 • Facsimile: (510) 229-0916
Post Office Box 2648 • 835 Arnold Drive • Suite #106 • Martinez, California 94553
1555 Burke Street • Suite A • San Francisco, California 94124

Superior

Analytical Laboratory

SEC
Attn: GREG HOEHN

Project 70005-009- TASK# 00
Reported on February 21, 1997

Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

Chronology

Laboratory Number 22409

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
INF	02/10/97	02/10/97	02/10/97	02/10/97	DB102.37	01
EFF	02/10/97	02/10/97	02/10/97	02/10/97	DB102.37	02

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
DB102.37-01	Method Blank	MB	Water	02/10/97	02/10/97
DB102.37-02	Laboratory Spike	LS	Water	02/10/97	02/10/97
DB102.37-03	1630 EFF020797	MS 22406-01	Water	02/10/97	02/10/97
DB102.37-04	1630 EFF020797	MSD 22406-01	Water	02/10/97	02/10/97

Superior Analytical Laboratory

SECOR
Attn: GREG HOEHN

Project 70005-009- TASK# 00
Reported on February 21, 1997

Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
22409-01	INF	Air	1.0	-
22409-02	EFF	Air	1.0	-

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

Compound	22409-01 Conc.	RL	22409-02 Conc.	RL
	ug/L		ug/L	
Benzene	ND	0.5	ND	0.5
Toluene	ND	0.5	ND	0.5
Ethyl Benzene	ND	0.5	ND	0.5
Xylenes	ND	0.5	ND	0.5
>> Surrogate Recoveries (%) <<				
Trifluorotoluene (SS)	101		103	

Superior

Analytical Laboratory

Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

Quality Assurance and Control Data

Laboratory Number: 22409
Method Blank(s)

	DB102.37-01 Conc. ug/L	RL
Benzene	ND	0.5
Toluene	ND	0.5
Ethyl Benzene	ND	0.5
Xylenes	ND	0.5
>> Surrogate Recoveries (%) <<		
Trifluorotoluene (SS)	94	

Superior
Analytical Laboratory

Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

Quality Assurance and Control Data

Laboratory Number: 22409

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
		For Water Matrix (ug/L)				
		DB102.37 02 / - Laboratory Control Spikes				
Benzene		20	20	100	65-135	
Toluene		20	20	100	65-135	
Ethyl Benzene		20	20	100	65-135	
Xylenes		60	59	98	65-135	
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				99	50-150	
		For Water Matrix (ug/L)				
		DB102.37 03 / 04 - Sample Spiked: 22406 - 01				
Benzene	ND	20	20/19	100/95	65-135	5
Toluene	ND	20	20/19	100/95	65-135	5
Ethyl Benzene	ND	20	20/19	100/95	65-135	5
Xylenes	ND	60	60/56	100/93	65-135	7
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				100/99	50-150	

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Superior Analytical Laboratory

SI
Attn: GREG HOEHN

Project 70005-009- TASK# 00
Reported on February 21, 1997

Total Volatile Petroleum Hydrocarbons by EPA SW-846 5030/8015M

Chronology

Laboratory Number 22409

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
INF	02/10/97	02/10/97	02/10/97	02/10/97	DB102.37	01
EFF	02/10/97	02/10/97	02/10/97	02/10/97	DB102.37	02

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
DB102.37-01	Method Blank	MB	Water	02/10/97	02/10/97
DB102.37-07	Laboratory Spike	LS	Water	02/10/97	02/10/97
DB102.37-08	1630 EFF020797	MS 22406-01	Water	02/10/97	02/10/97
DB102.37-09	1630 EFF020797	MSD 22406-01	Water	02/10/97	02/10/97

Superior Analytical Laboratory

SECOR
Attn: GREG HOEHN

Project 70005-009- TASK# 00
Reported on February 21, 1997

Total Volatile Petroleum Hydrocarbons by EPA SW-846 5030/8015M

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
22409-01	INF	Air	1.0	-
22409-02	EFF	Air	1.0	-

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

Compound	22409-01 Conc: ug/L	RL	22409-02 Conc. ug/L	RL
Gasoline	ND	50	ND	50
Mineral Spirits	98	50	ND	50
>> Surrogate Recoveries (%) <<				
Trifluorotoluene (SS)	65		67	

Superior
Analytical Laboratory

Total Volatile Petroleum Hydrocarbons by EPA SW-846 5030/8015M

Quality Assurance and Control Data

Laboratory Number: 22409
Method Blank(s)

	DB102.37-01	
	Conc.	RL
	ug/L	
Gasoline	ND	50
Mineral Spirits		
>> Surrogate Recoveries (%) <<		
Trifluorotoluene (SS)	94	

Superior Analytical Laboratory

Total Volatile Petroleum Hydrocarbons by EPA SW-846 5030/8015M

Quality Assurance and Control Data

Laboratory Number: 22409

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L) DB102.37 07 / - Laboratory Control Spikes						
Gasoline		2000	1900	95	65-135	
>> Surrogate Recoveries (%) << Trifluorotoluene (SS)				139	50-150	
For Water Matrix (ug/L) DB102.37 08 / 09 - Sample Spiked: 22406 - 01						
Gasoline	ND	2000	1900/1900	95/95	65-135	0
>> Surrogate Recoveries (%) << Trifluorotoluene (SS)				145/139	50-150	

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Superior Analytical Laboratory

SECOR
Attn: GREG HOEHN

Project 70005-009- TASK# 00
Reported on February 18, 1997

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

Chronology

Laboratory Number 22409

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
INF	02/10/97	02/10/97	02/11/97	02/11/97	DB112.06	01
EFF	02/10/97	02/10/97	02/11/97	02/11/97	DB112.06	02

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
DB112.06-01	Method Blank	MB	Water	02/11/97	02/11/97
DB112.06-02	Laboratory Spike	LS	Water	02/11/97	02/11/97
DB112.06-03	EW-3B	MS 22408-04	Water	02/11/97	02/11/97
DB112.06-04	EW-3B	MSD 22408-04	Water	02/11/97	02/11/97
DB112.06-05	Method Blank	MB	Air	02/11/97	02/11/97

Superior
Analytical Laboratory

SECOR
Attn: GREG HOEHN

Project 70005-009- TASK# 00
Reported on February 18, 1997

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
22409-01	INF	Air	1.0	-
22409-02	EFF	Air	1.0	-

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

Compound	22409-01 Conc. PPB (V/V)	RL	22409-02 Conc. PPB (V/V)	RL
Chloromethane	ND	480	ND	480
Vinyl Chloride	ND	390	ND	390
Bromomethane	ND	250	ND	250
Chloroethane	ND	270	ND	270
Trichlorofluoromethane	ND	88	ND	88
1,1-Dichloroethene	ND	120	ND	120
D[illegible]hloromethane	ND	140	ND	140
t 2-Dichloroethene	ND	120	ND	120
1,1-Dichloroethane	ND	120	ND	120
c-1,2-Dichloroethene	ND	120	ND	120
Chloroform	ND	100	ND	100
1,1,1-Trichloroethane	ND	90	ND	90
Carbon tetrachloride	ND	78	ND	78
1,2-Dichloroethane	ND	120	ND	120
Trichloroethene	ND	92	ND	92
c-1,3-Dichloropropene	ND	110	ND	110
1,2-Dichloropropane	ND	110	ND	110
t-1,3-Dichloropropene	ND	110	ND	110
Bromodichloromethane	ND	68	ND	68
1,1,2-Trichloroethane	ND	90	ND	90
Tetrachloroethene	ND	73	ND	73
Dibromochloromethane	ND	58	ND	58
Chlorobenzene	ND	110	ND	110
Bromoform	ND	48	ND	48
1,1,2,2-Tetrachloroethane	ND	72	ND	72
1,3-Dichlorobenzene	ND	82	ND	82
1,2-Dichlorobenzene	ND	82	ND	82
1,4-Dichlorobenzene	ND	82	ND	82
>> Surrogate Recoveries (%) <<				
Bromochloromethane	110		99	

Superior
Analytical Laboratory

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

Quality Assurance and Control Data

Laboratory Number: 22409
Method Blank(s)

	DB112.06-01		DB112.06-05	
	Conc.	RL	Conc.	RL
	ug/L		PPB (V/V)	
Chloromethane	ND	0.5	ND	480
Vinyl Chloride	ND	0.5	ND	390
Bromomethane	ND	0.5	ND	250
Chloroethane	ND	0.5	ND	270
Trichlorofluoromethane	ND	0.5	ND	88
1,1-Dichloroethene	ND	0.5	ND	120
Dichloromethane	ND	0.5	ND	140
t-1,2-Dichloroethene	ND	0.5	ND	120
1,1-Dichloroethane	ND	0.5	ND	120
c-1,2-Dichloroethene	ND	0.5	ND	120
Chloroform	ND	0.5	ND	100
1,1,1-Trichloroethane	ND	0.5	ND	90
C hon tetrachloride	ND	0.5	ND	78
1, -Dichloroethane	ND	0.5	ND	120
Trichloroethene	ND	0.5	ND	92
c-1,3-Dichloropropene	ND	0.5	ND	110
1,2-Dichloropropane	ND	0.5	ND	110
t-1,3-Dichloropropene	ND	0.5	ND	110
Bromodichloromethane	ND	0.5	ND	68
1,1,2-Trichloroethane	ND	0.5	ND	90
Tetrachloroethene	ND	0.5	ND	73
Dibromochloromethane	ND	0.5	ND	58
Chlorobenzene	ND	0.5	ND	110
Bromoform	ND	0.5	ND	48
1,1,2,2-Tetrachloroethane	ND	0.5	ND	72
1,3-Dichlorobenzene	ND	0.5	ND	82
1,2-Dichlorobenzene	ND	0.5	ND	82
1,4-Dichlorobenzene	ND	0.5	ND	82
>> Surrogate Recoveries (%) <<				
Bromochloromethane	122		122	

Superior
Analytical Laboratory

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

Quality Assurance and Control Data

Laboratory Number: 22409

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L) DB112.06 02 / - Laboratory Control Spikes						
1,1-Dichloroethene		20	26	130	50-189	
Trichloroethene		20	26	130	53-161	
Chlorobenzene		20	26	130	57-171	
>> Surrogate Recoveries (%) <<						
Bromochloromethane				109	50-125	
For Water Matrix (ug/L) DB112.06 03 / 04 - Sample Spiked: 22408 - 04						
1,1-Dichloroethene	ND	20	23/24	115/120	50-189	4
Trichloroethene	ND	20	24/18r	120/90	53-161	29
Chlorobenzene	ND	20	21/17r	105/85	57-171	21
>> Surrogate Recoveries (%) <<						
Bromochloromethane				101/125	50-125	

r-%RPD for TCE and chlorobenzene is >20% on MS/MSD.

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Chain-of Custody Number: 7407

SECOR Chain-of Custody Record

Field Office: SECOR

Address: 1390 willowpass Road Suite 360
Concord, CA 94520

☐ Additional documents are attached, and are a part of this Record.

Job Name: SAFETY Kleen

Location: 400 MArket Street
oAkland, CA

Project # 70005-0004 Task # 00

Project Manager Greg Hoehn

Laboratory Superior

Turnaround Time STandard

Sampler's Name GARY RCLIFT

Sampler's Signature [signature]

Analysis Request

Sample ID	Date	Time	Matrix	HCID	TPHg/BTEX/WTPH-G 8015 (modified)/8020	TPHd/WTPH-D 8015 (modified)	TPH 418.1/WTPH 418.1	Aromatic Volatiles 602/8020	Volatile Organics 624/824D (GC/MS)	Halogenated Volatiles 601/8010	Semi-volatile Organics 625/827D (GC/MS)	Pesticides/PCBs 608/8080	Total Lead 7421	Priority Pollutant Metals (13)	TCLP Metals	TPH AS M.S. BTEX		Comments/ Instructions	Number of Containers
INF	2/10	10:45	AIR							X						X			1
EFF	2/10	10:15	AIR							X						X			1

Special Instructions/Comments:
Please Initial:
Samples Stored in ice. Yes - R.T
Appropriate containers Yes
Samples preserved NO
VOA's [illegible] headspace N/A

Relinquished by: SECOR
Sign [signature]
Print GARY R CLIFT
Company SECOR
Time 13:25 Date 2-10-97

Received by: Superior
Sign [signature]
Print Polly Farrell
Company Superior
Time 13:25 Date 2-10-97

Relinquished by:
Sign
Print
Company
Time Date

Received by:
Sign
Print
Company
Time Date

Sample Receipt
Total no. of containers: 2
Chain of custody seals:
Rec'd. in good condition/cold:
Conforms to record:

Client: SECOR
Client Contact: Greg Hoehn
Client Phone: (510) 686-9180

SECOR CUSTREC Rev. 1/95

Date: 2/10/97 Page 1 of 1

APPENDIX C

Laboratory Reports - Groundwater Samples

safety-kleen ®

Allan A. Manteuffel Technical Center

January 29, 1997

Mr. Greg Hoehn
Secor International
1390 Willow Pass Road
Suite 360
Concord, CA 94520

Re: SK Lab Project #97-024
Project ID Name: Oakland, CA

Dear Greg:

Enclosed please find the analytical results for the sample received by SK Environmental Laboratory on 1/21/97.

A formal Quality Control/Quality Assurance program is maintained by Safety-Kleen, which is designed to meet or exceed the EPA requirements. This information is available upon request.

If you have any questions concerning this analysis, or if we can be of further assistance, please contact me at 773-825-7351.

Sincerely,

Richard H. Cook
Environmental Lab Manager

P.O. Box 92050
Elk Grove Village, IL
60009-2050

12555 W. Old Higgins Road
Elk Grove Village, IL 60007
Telephone: 773/694-2700
Fax: 773/825-7850

Project ID Name: Oakland, CA

SK Lab Project #: 97-024

Date Reported: 1/29/97

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Mineral Spirits in Water

Modified EPA Method 8015

Reporting Limit: 50.0

Work Order #	Collector's Sample #	Date Sampled	Date Analyzed	Concentration µg/L
01	Trip Blank	1/17/97	1/27/97	<50
02	Pre MW-2	1/17/97	1/27/97	<50
03	Post MW-2	1/17/97	1/27/97	<50
04	Pre MW-3	1/17/97	1/27/97	<50
05	Post MW-3	1/17/97	1/27/97	<50
06	Pre MW-4	1/17/97	1/27/97	<50
07	Post MW-4	1/17/97	1/27/97	<50
08	Pre MW-8	1/17/97	1/27/97	<50
09	Pre MW-8A	1/17/97	1/27/97	<50
10	Post MW-8	1/17/97	1/27/97	<50
11	Post MW-8A	1/17/97	1/27/97	<50

Analytical Review / Date: 1/29/97

Project ID Name: Oakland, CA

SK Lab Project #: 97-024

Date Reported: 1/29/97

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8010

Work Order #		01	02	03	04	05	06
Collector's Sample #		Trip Blank	Pre MW-2	Post MW-2	Pre MW-3	Post MW-3	Pre MW-4
Date Sampled		1/17/97	1/17/97	1/17/97	1/17/97	1/17/97	1/17/97
Date Analyzed		1/23/97	1/21/97	1/21/97	1/22/97	1/22/97	1/22/97
Dilution Factor		1	1	1	1	1	1
Analyte	Report Limit µg/L	Concentration µg/L					
Benzyl Chloride	1	<1	<1	<1	<1	<1	<1
Bromobenzene	1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	1	<1	<1	<1	<1	<1	<1
Bromoform	2	<2	<2	<2	<2	<2	<2
Bromomethane	2	<2	<2	<2	<2	<2	<2
C n Tetrachloride	1	<1	<1	<1	<1	<1	<1
Chlorobenzene	1	<1	<1	<1	<1	<1	<1
Chloroethane	1	<1	<1	<1	<1	<1	<1
Chloroform	1	<1	<1	<1	<1	<1	1.9
Chloromethane	1	<1	<1	<1	<1	<1	<1
Chlorotoluene	2	<2	<2	<2	<2	<2	<2
Dibromochloromethane	2	<2	<2	<2	<2	<2	<2
Dibromomethane	1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethylene	1	<1	<1	<1	<1	<1	5.7
ci -Dichloroethylene	1	<1	<1	<1	<1	<1	4.4
trans-1,2-Dichloroethylene	1	<1	<1	<1	<1	<1	<1

Project ID Name: Oakland, CA

SK Lab Project #: 97-024

Date Reported: 1/29/97

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8010

Work Order #	01	02	03	04	05	06
Collector's Sample #	Trip Blank	Pre MW-2	Post MW-2	Pre MW-3	Post MW-3	Pre MW-4
Date Sampled	1/17/97	1/17/97	1/17/97	1/17/97	1/17/97	1/17/97
Date Analyzed	1/23/97	1/21/97	1/21/97	1/22/97	1/22/97	1/22/97
Dilution Factor	1	1	1	1	1	1
Analyte	Report Limit µg/L	Concentration µg/L					
Dichloromethane	2	<2	<2	<2	<2	<2	<2
1,2-Dichloropropane	1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropylene	1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	2	<2	<2	<2	<2	<2	<2
1,1,1,2-Tetrachloroethane	1	<1	<1	<1	<1	<1	<1
T hloroethylene	1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	1	<1	<1	<1	<1	<1	1.2
1,1,2-Trichloroethane	1	<1	<1	<1	<1	<1	<1
Trichloroethylene	1	<1	<1	<1	<1	<1	156.2 *
Trichlorofluoromethane	1	<1	<1	<1	<1	<1	<1
Trichloropropane	2	<2	<2	<2	<2	<2	<2
Vinyl Chloride	2	<2	<2	<2	<2	<2	<2

* 1:25 Dilution

A tical Review / Date: 1/24/97

Project ID Name: Oakland, CA

SK Lab Project #: 97-024

Date Reported: 1/29/97

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8020

Work Order #		01	02	03	04	05	06
Collector's Sample #		Trip Blank	Pre MW-2	Post MW-2	Pre MW-3	Post MW-3	Pre MW-4
Date Sampled		1/17/97	1/17/97	1/17/97	1/17/97	1/17/97	1/17/97
Date Analyzed		1/23/97	1/21/97	1/21/97	1/22/97	1/22/97	1/22/97
Dilution Factor		1	1	1	1	1	1
Analyte	Report Limit µg/L	Concentration µg/L					
Benzene	1	<1	<1	<1	<1	<1	<1
Ethylbenzene	1	<1	<1	<1	<1	<1	<1
Toluene	1	<1	<1	<1	<1	<1	<1
Xylenes	1	<1	<1	<1	<1	<1	<1

A tical Review / Date: 1/29/97

Project ID Name: Oakland, CA

SK Lab Project #: 97-024

Date Reported: 1/29/97

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8010

Work Order #		07	08	09	10	11
Collector's Sample #		Post MW-4	Pre MW-8	Pre MW-8A	Post MW-8	Post MW-8A
Date Sampled		1/17/97	1/17/97	1/17/97	1/17/97	1/17/97
Date Analyzed		1/22/97	1/22/97	1/23/97	1/24/97	1/24/97
Dilution Factor		1	1	1	1	1
Analyte	Report Limit µg/L	Concentration µg/L				
Benzyl Chloride	1	<1	<1	<1	<1	<1
Bromobenzene	1	<1	<1	<1	<1	<1
Bromodichloromethane	1	<1	<1	<1	<1	<1
Bromoform	2	<2	<2	<2	<2	<2
Bromomethane	2	<2	<2	<2	<2	<2
C n Tetrachloride	1	<1	<1	<1	<1	<1
Chlorobenzene	1	<1	<1	<1	1.2	1.3
Chloroethane	1	<1	<1	<1	<1	<1
Chloroform	1	2.3	<1	<1	1.4	1.4
Chloromethane	1	<1	<1	<1	<1	<1
Chlorotoluene	2	<2	<2	<2	<2	<2
Dibromochloromethane	2	<2	<2	<2	<2	<2
Dibromomethane	1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	1	<1	<1	<1	1.4	1.5
1,3-Dichlorobenzene	1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	1	<1	<1	<1	<1	<1
1,1-Dichloroethane	1	<1	<1	<1	<1	<1
1,2-Dichloroethane	1	<1	<1	<1	2.1	2.3
1,1-Dichloroethylene	1	6.4	<1	<1	<1	<1
cis-1,2-Dichloroethylene	1	7.2	1.2	1.3	22.6 **	25.2 **
trans-1,2-Dichloroethylene	1	<1	<1	<1	1.3	1.9

Project ID Name: Oakland, CA

SK Lab Project #: 97-024

Date Reported: 1/29/97

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8010

Work Order #	07	08	09	10	11
Collector's Sample #	Post MW-4	Pre MW-8	Pre MW-8A	Post MW-8	Post MW-8A
Date Sampled	1/17/97	1/17/97	1/17/97	1/17/97	1/17/97
Date Analyzed	1/22/97	1/22/97	1/23/97	1/24/97	1/24/97
Dilution Factor	1	1	1	1	1
Analyte	Report Limit µg/L	Concentration µg/L				
Dichloromethane	2	<2	<2	<2	<2	<2
1,2-Dichloropropane	1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropylene	1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	2	<2	<2	<2	<2	<2
1,1,1,2-Tetrachloroethane	1	<1	<1	<1	<1	<1
T. hloroethylene	1	**1.1**	**22.5 ****	**27.3 ****	**13.0 ****	**14.1 ****
1,1,1-Trichloroethane	1	**1.2**	<1	<1	<1	<1
1,1,2-Trichloroethane	1	<1	<1	<1	<1	<1
Trichloroethylene	1	**188.7 ***	**2.9**	**3.0**	**500.3 *****	**494.9 *****
Trichlorofluoromethane	1	<1	<1	<1	<1	<1
Trichloropropane	2	<2	<2	<2	<2	<2
Vinyl Chloride	2	<2	<2	<2	<2	<2

* 1:25 Dilution

** 1:5 Dilution

*** 1:50 Dilution

A. tical Review / Date: 1/29/97

Project ID Name: Oakland, CA

SK Lab Project #: 97-024

Date Reported: 1/29/97

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8020

Work Order #		07	08	09	10	11
Collector's Sample #		Post MW-4	Pre MW-8	Pre MW-8A	Post MW-8	Post MW-8A
Date Sampled		1/17/97	1/17/97	1/17/97	1/17/97	1/17/97
Date Analyzed		1/22/97	1/22/97	1/23/97	1/24/97	1/24/97
Dilution Factor		1	1	1	1	1
Analyte	Report Limit µg/L	Concentration µg/L				
Benzene	1	<1	<1	<1	<1	<1
Ethylbenzene	1	<1	<1	<1	<1	<1
Toluene	1	<1	<1	<1	<1	<1
Xylenes	1	<1	<1	<1	<1	<1

A tical Review / Date: [signature] 1/29/97

(110A) (74-007) copy

Chain-of Custody Number:

SECOR Chain-of Custody Record

Additional documents are attached, and are a part of this Record.

Field Office: SECOR

Address: 1390 Willowpass Road Suite 360
Concord CA 94519

Job Name: Safety Kleen

Location: 400 Market St.
Oakland, CA

Project # 70005-009-07 Task # 001

Project Manager Greg Hoehn

Laboratory Safety Kleen

Turnaround Time Standard

Sampler's Name Gary Clift

Sampler's Signature [signature]

Analysis Request

	Sample ID	Date	Time	Matrix	HCID	TPHg/BTEX/WTPH-G 8015(modified)/8020	TPHd/WTPH-D 8015 (modified)	TPH 418.1/WTPH 418.1	Aromatic Volatiles 602/8020	Volatile Organics 624/8240 (GC/MS)	Halogenated Volatiles [redacted]/8010	Semi-volatile Organics 625/8270 (GC/MS)	Pesticides/PCBs 608/8080	Total Lead 7421	Priority Pollutant Metals (13)	TCLP Metals	TPH as ms Method 8015 by Purge & Trap	BTEX 8020	Comments/ Instructions ALL VOA'S	Number of Containers
01	Trip Blank	—	—	H2O							X						X	X	9700357	1
02	Pre MW-2	1-17	9:40	H2O							X						X	X	355	4
03	Post MW-2	1-17	10:15	H2O							X						X	X	359	4
04	Pre MW-3	1-17	10:35	H2O							X						X	X	360	4
05	Post MW-3	1-17	11:20	H2O							X						X	X	361	4
06	pre MW-4	1-17	9:00	H2O							X						X	X	362	4
07	Post MW-4	1-17	9:25	H2O							X						X	X	363	4
08	Pre MW-8	1-17	12:00	H2O							X						X	X	364	4
09	pre MW-8A	1-17	12:10	H2O							X						X	X	365	4
10	Post MW-8	1-17	12:50	H2O							X						X	X	366	4

Special Instructions/Comments:

Relinquished by: SECOR
Sign [signature]
Print Gary Clift
Company SECOR
Time 10:00 Date 1-20-97

Received by: J Cook
Sign [signature]
Print
Company FED EX
Time 1115 Date 1-20-97

Relinquished by:
Sign
Print
Company
Time Date

Received by: C Amick
Sign
Print 5°C
Company
Time 11AM Date 1/21/97

Sample Receipt

Total no. of containers:	37
Chain of custody seals:	
Rec'd. in good condition/cold:	
Conforms to record:	

Client: SECOR

Client Contact: Greg Hoehn

Client Phone:

SECOR CUSTREC Rev. 1/95

All Samples Recieved acidic
Tm 1/22/97

Date: 1/20/97 Page 1 of 2

Chain-of Custody Number:

SECOR Chain-of Custody Record

Field Office: SECOR

Address: 1390 Willow Pass Road Suite 360
Concord, CA 94519

☐ Additional documents are attached, and are a part of this Record.

Job Name: SAFETY Klean

Location: 400 Market St
Oakland, CA

Project # 70005-009-07 Task #

Project Manager Greg Hoehn

Laboratory SAFETY Klean

Turnaround Time Standard

Sampler's Name GREG CLIFT

Sampler's Signature

Analysis Request

	Sample ID	Date	Time	Matrix	HCID	TPHg/BTEX/MTPH-G 8015 (modified)/8020	TPHd/MTPH-D 8015 (modified)	TPH 418.1/MTPH 418.1	Aromatic Volatiles 602/8020	Volatile Organics 624/8240 (GC/MS)	Halogenated Volatiles 601/8010	Semi-volatile Organics 625/8270 (GC/MS)	Pesticides/PCBs 608/8080	Total Lead 7421	Priority Pollutant Metals (13)	TCLP Metals	TPH as MS Method 8015 by Purge & Trap	BTEX 8020	Comments/ Instructions	Number of Containers
11	post MW-8A	1-17	12:55	H2O							X						X	X	9700367	4

Special Instructions/Comments:

Relinquished by: SECOR
Sign
Print GARY CLIFT
Company SECOR
Time 10:00 Date 1-20-97

Received by: T Cook
Sign T Cook
Print
Company FED EX
Time 11:15 Date 1-20-97

Relinquished by:
Sign
Print
Company
Time Date

Received by:
Sign
Print
Company
Time Date

Sample Receipt

Total no. of containers:	4
Chain of custody seals:	
Rec'd. in good condition/cold:	
Conforms to record:	

Client: SECOR

Client Contact: Greg Hoehn

Client Phone: (510) 686-9780

SECOR CUSTREC Rev. 1/95

Date: 1, 20, 97 Page 2 of 2