

99 OCT 15 AM 9:41

October 14, 1999

*Waste WBE in
well water confirmed
W 8268? - yes*

Mr. Rod Freitag, P.E.
Environmental Program Manager
County of Alameda
Technical Services Department
1401 Lakeside Drive, 11th Floor
Oakland, CA 94612

RE: Final Report, Soil and Groundwater Investigations
Alcopark Fueling Facility, Oakland, California

Dear Mr. Freitag:

As requested, Professional Service Industries is transmitting the Final Report, Soil and Groundwater Investigation for the Alcopark Fueling Facility at 165 13th Street, Oakland, California. In accordance with your instructions, the report is also being transmitted to the Alameda Health Care Services Agency. Please call me with any comments or questions on this report at (510) 785-1111.

Sincerely,



Timothy R. O'Brien, RG/CEG/CHG
Senior Geologist

Enclosure

Eva Chu, Alameda Health Care Services Agency

psi Information
To Build On
Engineering • Consulting • Testing

approx 11/1/00

All MWS on semi-annual sampling
except Mt-7 which is to be
sampled quarterly.

After 2 add'l event, decide if
MTBE delineation still necessary.

STD 3909

**FINAL REPORT
SOIL AND GROUNDWATER INVESTIGATION
ALCOPARK FUELING FACILITIES
OAKLAND, CALIFORNIA**

465 - 13th St. Oak Oct 1999

prepared for

ALAMEDA COUNTY GENERAL SERVICES AGENCY
1401 Lakeside Drive, 11th Floor
Oakland, California

prepared by

Professional Service Industries, Inc.
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October 14, 1999
575-9G028

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STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

Information provided in this report, prepared by Professional Service Industries, Inc. (PSI), is intended exclusively for the use of County of Alameda, General Services Agency (GSA) for the evaluation of subsurface conditions as it pertains to the subject site. The professional services provided have been performed in accordance with practices generally accepted by other geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. As with all subsurface investigations, there is no guarantee that the work conducted will identify any or all sources or locations of contamination.

This Report is issued with the understanding that GSA is responsible for ensuring that the information contained herein is brought to the attention of the appropriate regulatory agency. This Report has been reviewed by a geologist who is registered in the State of California and whose signature and license number appear below.

Chris Merritt

Chris Merritt
Project Geologist

Timothy R. O'Brien

Timothy R. O'Brien, RG/CEG/CHG
Senior Geologist



1. INTRODUCTION

Professional Service Industries, Inc. (PSI) has been retained by the County of Alameda, General Services Agency (GSA) to perform additional soil and groundwater characterization for two separate sites located at the Alcopark parking garage.

Site Number 1 contains closed in-place USTs, located at the corner of 12th and Jackson Streets; Site Number 2 contains active USTs, located at the corner of 13th and Jackson Streets. The site locations are presented on Figures 1 and 2.

The scope of work consisted of the following tasks:

- Prepare a site specific Health and Safety Plan.
- Obtain City of Oakland encroachment and excavation (drilling) permits. Obtain a Alameda Department of Public Works drilling permit.
- Mark the drilling locations and notify Underground Service Alert 72 hours prior to initiating drilling activities. A private utility locating company was also employed to clear the boring locations.
- Drill one hand auger boring at Site No. 1 adjacent and downgradient of the former fuel dispenser location to collect soil and groundwater samples.
- Drill one Geoprobe soil boring at Site No. 2 to obtain soil samples. Use a PID to screen the soil samples collected in the borings. Install a small diameter groundwater monitoring well in the Geoprobe soil boring. Develop and sample the groundwater monitoring well.
- Sample Wells MW-1, MW-6, and MW-7 for chemical analysis.
- Transport soil and groundwater samples to McCampbell Analytical of Pacheco, California, a California State certified laboratory.
- Analyze soil and groundwater samples for Total Petroleum Hydrocarbons as Gasoline (TPH-G) by EPA Method 8015M; Benzene, Toluene, Ethylbenzene, total Xylenes (BTEX), and Methyl Tertiary Butyl Ether (MTBE) by EPA Method 8020.
- Prepare a report summarizing the findings of the investigation, an evaluation of the groundwater plume stability, and suitability of the sites for administrative closure.

1.1 SITE BACKGROUND

1.1.1 Site Location No. 1, Northeast Corner of 12th and Jackson Streets

GSA closed two 10,000 gallon USTs in-place at the site in 1994. The USTs previously stored gasoline. The USTs were located outside the building adjacent to the City street. Piping extended from the USTs to dispensers located in the maintenance garage.

The tanks had not been used since the early 1980s (GSA, 1999). Soil and groundwater samples collected in support of in-place closure indicated low concentrations of petroleum hydrocarbons in soil and measurable concentrations of petroleum hydrocarbons in groundwater (ESE, 1993).

The Alameda County Environmental Health Department (ACEHD) requested additional investigation of the site. That investigation was performed by PSI in January, 1999. A limited amount of petroleum hydrocarbon contamination was detected (PSI, 1999). Subsequent to that investigation, the ACEHD requested the fuel delivery piping be investigated (ACEHD, 1999c).

1.1.2 Site Location No. 2, Southeast Corner of 13th and Jackson Streets

GSA operates two 10,000-gallon USTs to fuel County vehicles. Three groundwater monitoring wells were installed at the Alcopark fueling station in March, 1989 to assess environmental conditions subsequent to the repair of a line leak at Dispenser No. 1. Initial sample results indicated the presence of BTEX in the groundwater. Subsequent sample results indicated the presence of TPH-G. Based on the analytical data, it was surmised that contaminants detected on-site were emanating from a source area located upgradient of the site. Sampling activities were halted in 1992 pending investigation of an upgradient source (GSA, 1997).

In May, 1997 the ACEHD instructed GSA to resume groundwater monitoring at the facility (ACEHD, 1997b). Sampling resumed in July, 1997. Analytical data from that sampling event indicated elevated TPH-G, BTEX, and MTBE. ACEHD directed GSA to investigate the extent and stability of the plume (ACEHD, 1997b). To better define groundwater conditions downgradient of the USTs, two borings were drilled in March, 1998. Based on groundwater monitoring events performed since March, 1998, the ACEHD directed GSA to better define the extent of groundwater contamination (ACEHD, 1999c).

1.1.2.1 Storage Tank System Upgrades

In September of 1992, overfill protection, spill containment, and automatic tank gauging were installed on the two underground tanks. In July and August of 1996, additional upgrade work was done to comply with Title 23 of the California Code of Regulations.

This included replacement of underground single-walled steel piping with double-wall fiberglass piping, and installation of dispenser sumps, piping sumps, and sump leak sensors (GSA, 1997).

1.2 PROJECT OBJECTIVES

The objective of the project at Site No. 1 is to determine if soil or groundwater quality has been impacted immediately downgradient of the former dispenser and piping location. Because the exact location of the piping is unknown, and is impossible to determine accurately, soil and groundwater samples collected downgradient of the former dispenser location will provide data for the evaluation.

The objective of the project at Site No. 2 is to better define groundwater quality downgradient of the USTs.

2. PRE-FIELD ACTIVITIES

This section describes the tasks performed prior to implementing the drilling program. The tasks included:

- Prepare a Soil and Groundwater Investigation Workplan for submittal to the ACDEH for approval.
- Obtain a Well Construction Permit from the Alameda County Public Works Department.
- Obtain City of Oakland encroachment and excavation (drilling) permits.
- Prepare a site specific health and safety plan.
- Notify the ACEHD of the drilling and sampling schedule.
- Mark the borehole locations on-site and inform Underground Service Alert of the planned drilling activities.

2.1.1 Soil and Groundwater Investigation Workplan

PSI prepared a Soil and Groundwater Investigation Workplan which was submitted to Ms. Eva Chu of the ACEHD for approval. The workplan was approved on April 20, 1999 (ACEHD, 1999d).

2.1.2 Well Construction Permit Application

In accordance with well construction requirements in Alameda County, a well construction permit was obtained from the Alameda County Public Works Department. The Public Works Department was informed of the drilling schedule to be on-site to inspect the annular seal and boring grout placement.

2.1.3 City of Oakland Encroachment and Excavation Permits

In accordance with City of Oakland requirements for constructing wells in the City street. PSI obtained City of Oakland Encroachment and Excavation Permits and scheduled an on-site inspection with the City of Oakland personnel. A copy of the permits are included in Appendix A.

2.1.4 Preparation of Site Specific Health and Safety Plan

Prior to the commencement of field activities at the site, a site-specific Health and Safety Plan (HSP) was prepared in compliance with 29 CFR 1910.120. The HSP addressed potentially hazardous materials and physical hazards that might have been encountered during field activities at the site.

2.1.5 Utility Clearance

PSI marked the drilling locations with white paint. Underground Service Alert (USA) was contacted to identify subsurface utilities in the areas of investigation. In addition, the boring locations were cleared by a private underground utility locating service.

3. SUBSURFACE INVESTIGATION

This section describes the soil and groundwater investigation performed.

3.1 SOIL BORINGS

Two soil borings were drilled to further investigate the soil and groundwater conditions. The borings were drilled far enough to allow collection of a grab groundwater sample in Boring SB-8, and install a groundwater monitoring well in the boring for Well MW-7.

Soil borings were logged by a PSI geologist using the Unified Soil Classification System (USCS). The work was performed under the supervision of a State of California Registered Geologist.

3.1.1 Soil Boring at Site No. 1

Boring SB-8 was drilled using a hand auger to collect soil and groundwater samples for chemical analysis. The boring was located as shown on Figure 2. The boring location was selected to provide information on the soil and groundwater quality downgradient of the former fuel dispensers, which were located in the Alcopark maintenance garage.

The boring was drilled by a PSI geologist using a hand auger. Soil samples were collected in the boring for lithologic logging and evaluation of the presence of volatile organic compounds. A soil boring log is presented in Appendix B.

Samples for chemical analysis were collected in stainless steel sleeves using a drive sampler. The sleeves were capped using Teflon sheet, plastic end caps, and duct tape. Samples were labeled using a permanent ink marking pen. Samples were stored in a cooler containing ice and maintained under chain of custody protocol.

Representative sample material was collected from the hand auger at three foot intervals, placed in plastic Ziploc bags, and labeled. The soil gas was allowed to equilibrate in the bag for at least 10 minutes. A hole was punched through the sample bags using the steel probe of the PID to allow collection of a soil gas VOC concentration measurement. The PID measurements are recorded on the boring log.

3.1.1.1 Selection of Soil Sample for Chemical Analysis

One soil sample was selected for the chemical analyses described in Section 4. The sample for chemical analysis was selected based on field measured PID readings. Because no measurable VOCs were detected in the soil boring, a sample from the capillary fringe was collected for chemical analysis.

3.1.1.2 Grab Groundwater Sampling

Upon completion of the boring, a grab groundwater sample was collected. The grab groundwater sample was collected using a disposable Teflon bailer. Field work for groundwater sampling was conducted in accordance with the procedures described in the project work plan (PSI, 1999). The sample was stored in a cooler containing ice and maintained under chain of custody protocol.

Upon collection of the groundwater sample, the boring was grouted with neat cement and capped with concrete to match the existing concrete slab.

3.1.2 Soil Boring at Site No. 2

Boring MW-7 was drilled to collect soil samples for chemical analysis and to install a groundwater monitoring well. The boring was located as shown on Figure 2. The boring location was selected to provide information on the downgradient extent of impacted groundwater.

The boring was drilled using the direct push Geoprobe drilling technique. Fisch Environmental Services of Apple Valley, California provided drilling services. The boring was logged by a PSI geologist using the Unified Soil Classification System.

Soil samples were collected in the boring at four foot intervals for lithologic logging and evaluation of the presence of volatile organic compounds. The boring extended deep enough to install a groundwater monitoring well. The depth of the well is 24 feet below ground surface.

Samples were collected in plastic liners. The samples were capped using Teflon sheet, plastic end caps, and duct tape. Each sample was labeled using a permanent ink marking pen. Samples were stored in a cooler containing ice and maintained under chain of custody protocol.

Representative sample material was collected from the sample interval, placed in plastic Ziploc bags, and labeled. The soil gas was allowed to equilibrate in the bag for at least 10 minutes. Holes were punched through the sample bags using the steel probe of the PID to allow collection of a soil gas VOC concentration measurement. The PID measurements are recorded on the boring log. A soil boring log is presented in Appendix B.

3.1.2.1 Selection of Soil Sample for Chemical Analysis

One soil sample was selected for the chemical analyses described in Section 4. Samples for chemical analysis were selected based on field measured PID readings. Because no

measurable VOC concentration was observed in the soil boring, a sample from the capillary fringe was collected for chemical analysis from the soil boring.

3.1.3 Grab Groundwater Sampling

Because a groundwater well was installed, a grab groundwater sample was not collected from this boring.

3.1.4 Monitoring Well Construction

A one-half inch, inside diameter, polyvinyl chloride well was installed in Boring ~~MW-7~~ using prepacked screen. The **screened interval** of the well extends from **9 to 24 feet** below ground surface (bgs). The screen location allows for the evaluation of the presence of floating product on the water table.

The screened interval of the well consists of factory milled 0.020-inch slots. Sandpack extends slightly above the screen interval. A one-foot bentonite transition seal was installed above the sandpack, and neat cement grouts the annular space to the surface. A tamper resistant wellhead cover was set in concrete slightly above grade to minimize surface water ponding.

3.1.5 Well Development

The well was developed by pumping. The groundwater parameters temperature and electrical conductivity were monitored as development progressed to determine when equilibrium conditions were reached.

3.2 MONITORING WELL SAMPLING

Five groundwater monitoring wells and one vadose zone monitoring well presently at Site No. 2. The ACEHD no longer requires Wells MW-4 and MW-5 to be sampled for chemical analysis (ACHED, 1999c). The remaining wells (MW-1, MW-6, and MW-7) were sampled for chemical analysis. The samples were chemically analyzed as described in Section 4. Groundwater elevations were monitored in all site monitoring wells.

3.2.1 Groundwater Elevation Measurements

Prior to groundwater sampling, depth to groundwater was measured from the top of the well casings in each monitoring well. The Wells MW-1 and MW-6 were then sampled without purging as requested in the ACEHD letter dated September 11, 1997. The groundwater elevation data is presented in Table 2 and Figure 2.

Groundwater elevation contours are presented on Figure 2. The groundwater flow direction is to the east with a hydraulic gradient of 0.0041 foot/foot. The flow direction is consistent with previously measured groundwater flow directions measured at the site. Groundwater elevation data over time is presented on Chart 1, Appendix D.

3.2.2 Groundwater Sample Collection

Groundwater samples were collected with disposable polyethylene tubing equipped with a check valve (Wells MW-6 and MW-7) or a disposable Teflon bailer (Well MW-1). The groundwater samples were collected according to PSI's standard protocol, presented in the project work plan (PSI, 1999c). Groundwater samples were stored in an ice chest at 4 degrees Celsius and maintained under chain of custody protocol.

3.2.3 Decontamination Procedures

To minimize the possibility of contaminant cross-contamination between sampling locations, most of the sampling equipment is disposable. To further minimize the possibility of cross-contamination, all re-usable sampling equipment was cleaned with a non-phosphate detergent and rinsed twice with deionized water prior to use at a new sampling location. Sampling equipment included:

- Stainless-steel sample barrel and tubes,
- Drilling equipment,
- Groundwater sampling equipment
- Sounders, and
- Development equipment.

4. LABORATORY ANALYSIS PROGRAM

The soil and groundwater samples collected during this investigation were submitted to McCampbell Analytical, Inc. of Pacheco, California. McCampbell Analytical is a State of California Department of Health Services certified hazardous waste laboratory (Environmental Laboratory Accreditation Program [ELAP] #1644). A summary of the types of analyses and analytical methods is presented below.

All soil and groundwater samples submitted to the analytical laboratory were analyzed for the following constituents by the indicated methods:

- Total Petroleum Hydrocarbons as Gasoline (TPH-G) in accordance with Environmental Protection Agency (EPA) Method 8015-m.
- BTEX and MTBE by EPA Method 8020.

4.1 ANALYTICAL RESULTS

Soil and groundwater samples were collected and chemically analyzed in accordance with the analytical method requirements and project workplan. The analytical data is summarized in Tables 1, 2, and 3. Table 1 presents the data generated at the former UST location (Site No. 1); Tables 2 and 3 present the data generated at the active UST location (Site No. 2). Laboratory reports are presented in Appendix C. The samples were transported to the laboratory under chain of custody protocol. Copies of the chain of custody forms are included in Appendix C.

4.1.1 Soil Analysis Discussion – Site Number 1

No detectable concentration of TPH-G, BTEX, or MTBE was detected in the soil sample collected in this investigation. The analytical data is summarized in Table 1.

4.1.2 Groundwater Analysis Discussion – Site Number 1

No detectable concentration of TPH-G, BTEX, or MTBE was detected in the groundwater sample collected in this investigation. The analytical data is summarized in Table 1.

4.1.3 Soil Analysis Discussion – Site Number 2

No detectable concentration of TPH-G, BTEX, or MTBE was detected in the soil sample collected in this investigation. The analytical data is summarized in Table 3.

4.1.4 Groundwater Analysis Discussion – Site Number 2

Analytical results reported measurable concentrations of TPH-G, BTEX, and MTBE in groundwater samples from Wells MW-1, MW-6, and MW-7. This is consistent with analytical results from previous sampling events. The analytical data is summarized in Table 2.

- TPH-G was detected in Wells MW-1 (2,400 ug/l), MW-6 (6,600 ug/l), and MW-7 (92 ug/l). The concentration of TPH-G over time is presented on Chart 2, Appendix D.
- Benzene was detected in Wells MW-1 (680 ug/l), MW-6 (2,500 ug/l), and MW-7 (1.6 ug/l). The concentration of benzene over time is presented on Chart 3, Appendix D.
- MTBE was detected in Wells MW-1 (400 ug/l) and MW-6 (3,700 ug/l), and MW-7 (1,200 ug/l). by the analytical method EPA 8020. The concentration of MTBE over time is presented on Chart 4, Appendix D.

5. CONCLUSIONS

Conclusions for each site are presented below:

5.1 SITE NUMBER 1

Based on the information presented in this report, the following conclusions have been reached:

- No TPH-G, BTEX, or MTBE was detected in soil or groundwater samples collected immediately downgradient of the former fuel dispensers.
- Investigations performed previously indicated localized petroleum hydrocarbon contamination at Boring SB-6.

Based on the results of PSI's soil and groundwater investigations presented in this and a previous report, PSI does not recommend additional investigation of the former Alcopark USTs (PSI, 1999). This recommendation is based on the lack of MTBE in site soil or groundwater, and published guidance which recommends natural bioremediation of low concentration spills (RWQCB, 1996). PSI recommends site closure for Site Number 1.

5.2 SITE NUMBER 2

Based on the information presented in this report, the following conclusions have been reached:

- Groundwater exists approximately 17.5 feet below the ground surface.
- Groundwater flow direction is to the east.
- Groundwater samples collected at the site contained measurable concentrations of TPH-G, BTEX, or MTBE in Wells MW-1, MW-6, and MW-7. Concentrations of TPH-G, and benzene are significantly lower in the downgradient Well MW-7 than in Well MW-6. The concentration of MTBE in Well MW-7 is one-third the concentration reported in Well MW-6.

Based on the results presented in this report, PSI recommends additional groundwater monitoring be performed to determine contaminant trends. Evaluation of the trends will assist in differentiating between a one time leak event (such as might have happened during piping upgrade work) and an ongoing source. It is noted that the Alcopark tank leak monitoring system has not indicated the occurrence of a tank or piping leak (Freitag, personal communication, 1998).

PSI does not recommend further drilling to investigate the extent of the groundwater plume. Further investigation of groundwater conditions would require additional drilling in the public street at a distance of approximately 100 feet downgradient of Well MW-7. Based on the reduction in concentration of contaminants observed between Wells MW-6 and MW-7, a well installed in an available location downgradient is not expected to be impacted by site contaminants and would not provide useful information.

Not necessarily
true for
MTBE

but to protect Marine environ.
Water Quality Objectives
8 ppm for Chronic
14 ppm for Acute

REFERENCES

- ACEHD, 1997a, Workplan Request Letter to Mr. Rodman Freitag, September 11.
- ACEHD, 1997b, Continuation of Groundwater Monitoring Request Letter to Mr. Jim De Voss, May 20.
- ACEHD, 1999a, Workplan Approval for Former Alcopark Fueling Facility, prepared by Ms. Eva Chu, January 27.
- ACEHD, 1999b, Personnel Communication between Ms. Eva Chu of ACEHD and Mr. Timothy O'Brien of PSI concerning additional laboratory analysis request, February 10.
- ACHED, 1999c, Additional Investigation Request Letter, prepared by Ms. Eva Chu, March 2.
- ACEHD, 1999d, Workplan Approval for Soil and Groundwater Investigation, Alcopark Fueling Facilities, prepared by Ms. Eva Chu, April 20.
- ESE, 1993, Subsurface Investigation for USTs at Jackson and 12th Streets, 165 13th Street, Oakland, California, prepared for Alameda County General Services Agency, April 19.
- GSA, 1997, RFP for Groundwater Investigation Services, December 2.
- GSA, 1999, Request For Proposal (RFP) for Groundwater Services, January 8.
- LLNL, 1998, An Evaluation of MTBE Impacts to California Groundwater Resources, prepared for California State Water Resources Control Board, June 11.
- PSI, 1998a, Soil and Groundwater Investigation, Alcopark Fueling Facility, prepared for Alameda GSA, April 17.
- PSI, 1998b, Groundwater Monitoring Report, Second Quarter, 1998, Alcopark Fueling Facility, prepared for Alameda GSA, August 12.
- PSI, 1998c, Groundwater Monitoring Report, Third Quarter, 1998, Alcopark Fueling Facility, prepared for Alameda GSA, November 16.
- PSI, 1999, Soil and Groundwater Investigation, Former Alcopark Fueling Facility, prepared for Alameda GSA, February 25.
- PSI, 1999c, Workplan, Soil and Groundwater Investigation, Alcopark Fueling Facilities, prepared for Alameda GSA, April 8, 1999.
- USGS, 1980, Oakland West, California, topographic map.

TABLE 1
SUMMARY OF ANALYTICAL DATA, SITE NO. 1
FORMER ALCOPARK FUELING FACILITY
12TH and JACKSON STREETS, OAKLAND, CA

<i>All concentrations in mg/kg (PPM).</i>										
Soil Boring	Sample Depth	Date	Matrix	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	Lead
SB-1	15	10/27/92	Soil	<1	NA	0.019	0.019	0.011	0.042	NA
SB-1	21.5	10/27/92	Soil	6.3	NA	0.41	0.68	0.1	0.70	NA
SB-2	15	10/27/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-2	22	10/27/92	Soil	1.8	NA	0.21	0.19	0.034	0.20	NA
SB-3	15	10/28/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-3	22	10/28/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-4	15	10/28/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-4	22	10/28/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-5	25	2/10/99	Soil	<1	<0.005	<0.005	<0.005	<0.005	<0.005	NA
SB-6	25	2/10/99	Soil	<1	<0.005	0.047	0.022	0.024	0.026	<3.0
SB-7	25	2/10/99	Soil	<1	<0.005	<0.005	<0.005	<0.005	<0.005	NA
SB-8*	6	9/3/99	Soil	<1	<0.005	<0.005	<0.005	<0.005	<0.005	NA
<i>All concentrations in mg/l (PPM).</i>										
Soil Boring	Sample Depth	Date	Matrix	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	Lead
SB-1	NA	10/27/92	Groundwater	51	NA	2.4	9.4	1.4	8.4	NA
SB-2	NA	10/27/92	Groundwater	8.2	NA	0.56	0.93	0.36	0.62	NA
SB-3	NA	10/28/92	Groundwater	0.072	NA	0.00071	<0.0005	0.0005	0.0024	NA
SB-4	NA	10/28/92	Groundwater	<0.050	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA
SB-5	25	2/10/99	Groundwater	<0.050	<0.005	0.00063	0.00076	<0.0005	0.00067	NA
SB-6	25	2/10/99	Groundwater	5.0	<0.015	0.58	0.58	0.16	0.87	NA
SB-7	25	2/10/99	Groundwater	<0.050	<0.005	<0.0005	0.0011	<0.0005	0.002	NA
SB-8*	7	9/3/99	Groundwater	<0.050	<0.001	<0.001	<0.001	<0.001	<0.001	NA

Notes:

TPH-G denotes Total Petroleum Hydrocarbons as Gasoline.

MTBE denotes Methyl Tert Butyl Ether.

mg/kg denotes milligrams per kilogram (ppm).

< denotes less than detection limit.

NA denotes Not Analyzed.

Sample Depth reported in feet below ground surface. Sample SB-8 collected inside Alcopark basement garage.

Data collected in 1992 from ESE Report of Findings dated April 19, 1993 prepared for Alameda GSA.

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA, SITE NO. 2
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

<i>All concentrations in ug/l (PPB).</i>								
Well	Date	Groundwater Elevation	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
W-MW1	3/21/89	12.2	ND	NA	21	3.9	0.4	4.5
W-MW1	7/26/90	12.3	1,400	NA	200	45	ND	53
W-MW1	10/25/90	12.1	1,200	NA	ND	7.3	2.2	46
W-MW1	1/25/91	11.9	270	NA	23	1.5	ND	3.1
W-MW1	4/25/91	11.8	230	NA	ND	ND	ND	ND
W-MW1	8/27/91	11.8	8,300	NA	370	64	ND	120
W-MW1	11/25/91	11.7	810	NA	9.3	ND	7.8	32
W-MW1	6/11/92	12.85	2,600	NA	810	16	21	42
W-MW1	7/16/97	14.36	19,000	ND (150)	1,400	2,800	500	2,600
W-MW1	10/21/97	13.92	14,000	29	1,200	1,000	590	2,800
W-MW1	3/11/98	17.14	NS	NS	NS	NS	NS	NS
W-MW1	4/1/98	17.14	ND (50)	6.3	5.4	ND (0.5)	ND (0.5)	0.82
W-MW1	7/15/98	16.41	71	57	31	ND (0.5)	ND (0.5)	3.1
W-MW1	10/22/98	15.62	5,100	360	520	140	250	950
W-MW1	9/9/99	15.42	2,400	400	680	140	130	370
W-MW4	3/21/89	12.4	ND	NA	13	1.4	1.0	ND
W-MW4	7/26/90	12.5	NA	NA	0.8	ND	ND	ND
W-MW4	10/25/90	12.2	NA	NA	120	1.2	1.1	0.9
W-MW4	1/25/91	12.0	NA	NA	230	2.8	1.2	2.0
W-MW4	4/25/91	13.0	170	NA	12	ND	ND	2.3
W-MW4	8/27/91	11.8	ND	NA	87	1.3	0.8	0.8
W-MW4	11/25/91	11.8	1,400	NA	ND	1.7	8.6	3.6
W-MW4	6/11/92	12.93	560	NA	150	1.8	1.8	1.1
W-MW4	7/16/97	14.46	50	ND	ND	ND	ND	ND
W-MW4	10/21/97	14.10	ND	ND	ND	ND	ND	ND
W-MW4	3/11/98	17.39	NS	NS	NS	NS	NS	NS
W-MW4	4/1/98	17.40	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW4	7/15/98	16.92	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW4	10/22/98	15.75	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW4	9/9/99	15.57	NS	NS	NS	NS	NS	NS
W-MW5	3/21/89	12.2	ND	NA	ND	ND	ND	ND
W-MW5	7/26/90	12.4	670	NA	0.8	ND	ND	ND
W-MW5	10/25/90	12.1	120	NA	13	ND	ND	ND
W-MW5	1/25/91	11.9	120	NA	3.2	ND	ND	ND
W-MW5	4/25/91	12.3	ND	NA	ND	ND	ND	ND
W-MW5	8/27/91	11.5	ND	NA	20	ND	0.5	ND
W-MW5	11/25/91	11.7	190	NA	2.7	ND	0.8	2.5
W-MW5	6/11/92	12.85	150	NA	37	ND	ND	ND
W-MW5	7/16/97	14.33	ND	22	ND	ND	ND	ND
W-MW5	10/21/97	13.88	ND	14	ND	ND	ND	ND
W-MW5	3/11/98	17.14	NS	NS	NS	NS	NS	NS
W-MW5	4/1/98	17.14	ND (50)	11	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW5	7/15/98	16.43	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW5	10/22/98	15.60	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW5	9/9/99	15.44	NS	NS	NS	NS	NS	NS

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA, SITE NO. 2
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

<i>All concentrations in ug/l (PPB).</i>								
Well	Date	Groundwater Elevation	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
W-MW6	4/1/98	NA	740	4,600	9.8	3.2	3.0	15
W-MW6	7/15/98	NA	6,200	11,000	280	43	180	350
<i>W-MW6</i>	<i>7/15/98</i>	<i>NA</i>	<i>NA</i>	<i>13,000</i>	<i>ND (500)</i>	<i>ND (500)</i>	<i>ND (500)</i>	<i>ND (500)</i>
W-MW6	10/22/98	NA	4,700	9,600	450	13	200	200
* <i>W-MW6</i>	<i>10/22/98</i>	<i>NA</i>	<i>NA</i>	<i>9,100</i>	<i>470</i>	<i>ND (250)</i>	<i>ND (250)</i>	<i>ND (250)</i>
W-MW6	9/9/99	NA	6,600	3,700	2,500	43	310	250
W-MW7	9/9/99	NA	92	1,200	1.6	ND (0.5)	ND (0.5)	ND (0.5)
W-B1	3/23/98	NA	3,100	4,200	250	18	160	290

Notes:

TPH-G denotes Total Petroleum Hydrocarbons as Gasoline. MTBE denotes Methyl tert-Butyl Ether.
 NA denotes Not Analyzed. NS denotes Not Sampled. ND denotes Not Detected. () denotes detection limit.
 Data collected prior to 1998 was reported in Alameda County Request for Proposal dated December 2, 1997.
 Duplicate results presented in italics performed by EPA method 8260.

* MTBE confirmed w/ 8260

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYTICAL DATA, SITE NO. 2
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

<i>All concentrations in ug/kg (PPB).</i>							
Boring Name	Date	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
B-1-14'	3/23/98	ND (1,000)	ND (50)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
B-2-14'	3/23/98	ND (1,000)	ND (50)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
B-7-18	9/3/99	ND (1,000)	ND (50)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)

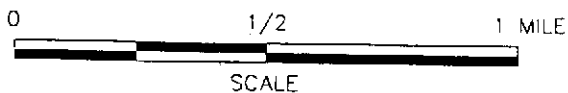
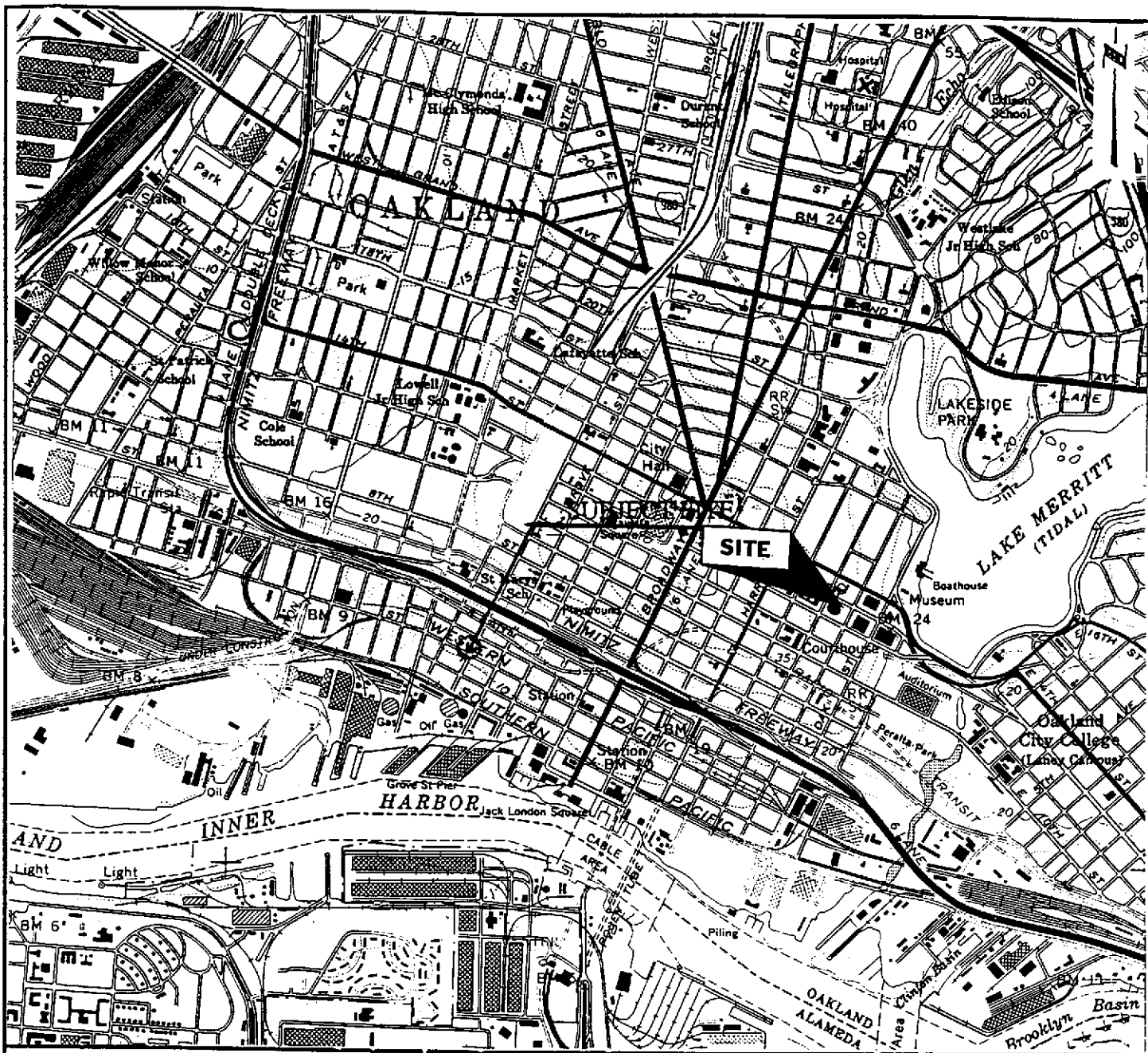
Notes:

TPH-G denotes Total Petroleum Hydrocarbons as Gasoline

MTBE denotes Methyl tert-Butyl Ether

ND denotes not detected (detection limit shown in parentheses).

Boring B-1 grouted, Well MW-6 constructed in Boring B-2, Well MW-7 constructed in Boring B-7.

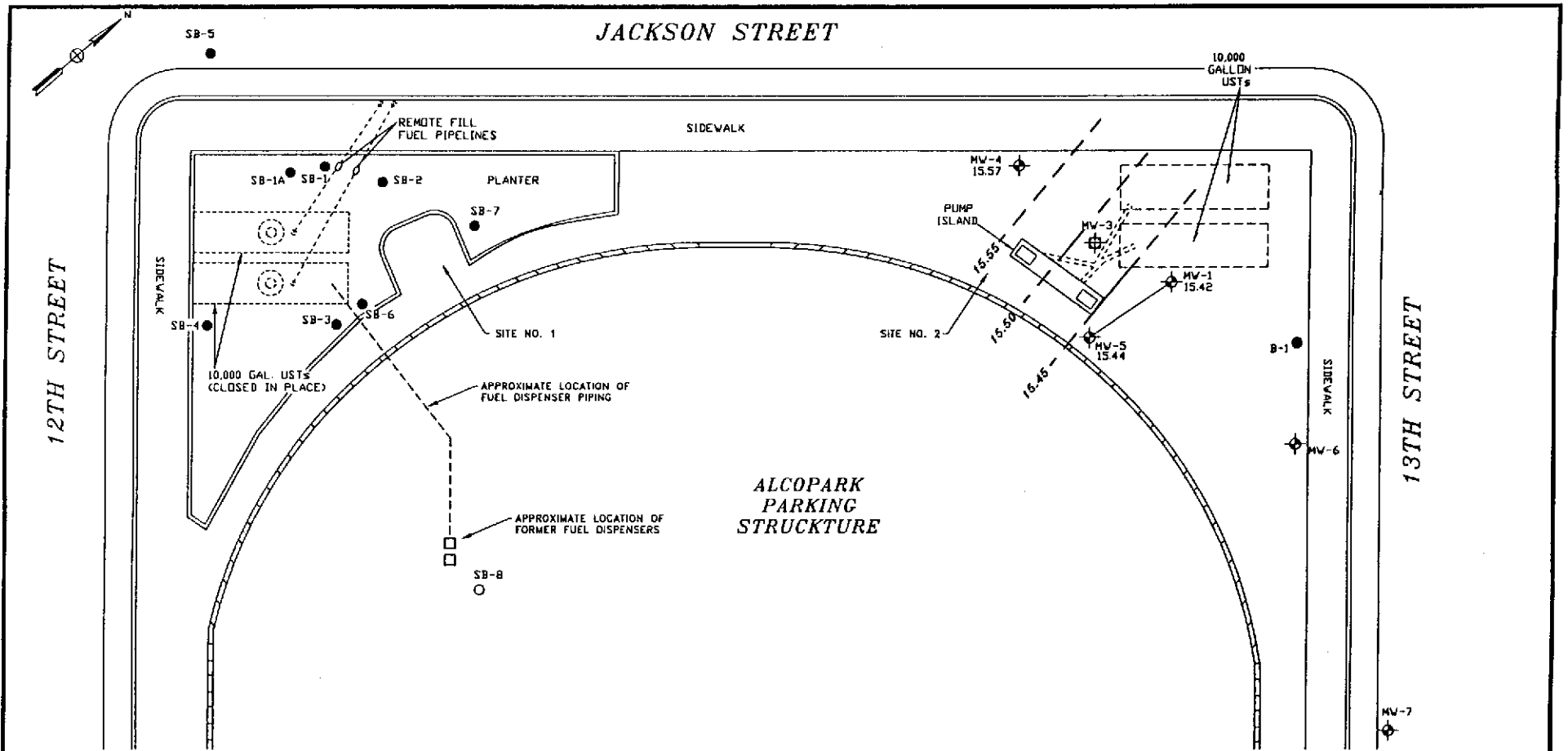


REFERENCE:
 U.S.G.S. OAKLAND WEST, CALIFORNIA, 1959
 PHOTOREVISIO 1980

psi ENVIRONMENTAL
 GEOTECHNICAL
 CONSTRUCTION
 CONSULTING-ENGINEERING-TESTING

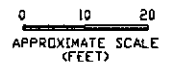
SITE LOCATION
 ALCOPARK FUELING STATION
 165 13TH STREET
 OAKLAND, CALIFORNIA
 PROJECT NUMBER: 575-80004


DATE: 1/14/98	CKD BY: <i>AD</i>	FIGURE NO. 1
FILE NO: 80004 -1		DRAWN BY: S.BOWERS



LEGEND

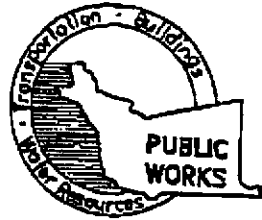
- PROPOSED SOIL BORING
- ⊕ PROPOSED GROUNDWATER MONITORING WELL
- MW-1 GROUNDWATER MONITORING WELL
- MW-3 VADOSE MONITORING WELL LOCATION
- B-1 SOIL BORING
- ⋯ UNDERGROUND PIPING



 ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION <small>CONSULTING-ENGINEERING-TESTING</small>		
GROUNDWATER ELEVATION MAP - 9/9/99 ALCOPARK PARKING FACILITY INTERSECTION OF JACKSON AND 13TH STREETS OAKLAND, CALIFORNIA PROPOSAL NUMBER: 575-9084		
DATE: 3/18/99	CKD BY:	FIGURE NO.: 2
FILE NO.: FLBLK-2		DRAWN BY: S.BOWERS

APPENDIX A

WELL INSTALLATION PERMITS



ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION

951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5575 ANDREAS GODFREY FAX (510) 670-6262
(510) 670-5248 ALVIN KAN

96028

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 165 13th Street
Oakland, California

California Coordinates Source CCN Accuracy ft
APN 121-001-001-001 R. CCF 121-001-001-001 ft

CLIENT Name Alameda Co. GSA Mr. Rod Freitag
Address 1401 Lakeside Dr. Phone 510 208 9522
City Oakland, CA Zip 94612

APPLICANT Name Professional Services Industry
via DTB Inc Fax 510 785 1192
Address 1320 W. Winter Ave Phone 510 785 1111
City Hayward, CA Zip 94545

TYPE OF PROJECT

Well Construction Geotechnical Investigation
Cathodic Protection General
Water Supply Contamination
Monitoring Well Destruction

PROPOSED WATER SUPPLY WELL USE

New Domestic Replacement Domestic
Municipal Irrigation
Industrial Other

DRILLING METHOD:

Mud Rotary Air Rotary Auger
Cable Other Direct Push

DRILLER'S LICENSE NO. CS7 683865

WELL PROJECTS

Drill Hole Diameter 2 in. Maximum
Casing Diameter 1 1/2 in. Depth 30 ft.
Surface Seal Depth 8 ft. Number 1

GEOTECHNICAL PROJECTS

Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 6/10/99
ESTIMATED COMPLETION DATE 6/10/99

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [Signature] DATE 5/18/99

FOR OFFICE USE

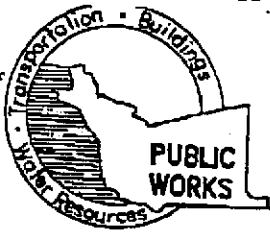
PERMIT NUMBER 99WR225
WELL NUMBER _____
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

- A. GENERAL**
 1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
 2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
 3. Permit is void if project not begun within 90 days of approval date.
- B. WATER SUPPLY WELLS**
 1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
- C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS**
 1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
 2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
- D. GEOTECHNICAL**
Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.
- E. CATHODIC**
Fill hole above anode zone with concrete placed by tremie.
- F. WELL DESTRUCTION**
See attached.
- G. SPECIAL CONDITIONS** SEE ATTACHED INFORMATION.

APPROVED [Signature] DATE 5-18-99



ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION

951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651

PHONE (510) 670-5575 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5248 ALVIN KAN

WATER RESOURCES SECTION GROUNDWATER PROTECTION ORDINANCE For Monitoring Well at Clean or Contaminated Site

Destruction Requirements:

1. Drill out the well so that the casing, seal, and gravel pack are removed to the bottom of the well.
2. Sound the well as deeply as practicable and record for your report.
3. Using a tremie pipe, fill the hole to 2 feet below the lower of finished grade or original ground with neat cement.
4. After the seal has set, backfill the remaining hole with compacted material.



EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL ENGINEERING

PAGE 2 of 2

PERMIT NUMBER X 9900659		SITE ADDRESS/LOCATION 165 13th St
APPROX. START DATE	APPROX. END DATE	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number)
CONTRACTOR'S LICENSE # AND CLASS 716703		CITY BUSINESS TAX #

ATTENTION:

- 1) State law requires that the contractor/owner call *Underground Service Alert (USA)* two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1 (800) 642-2444. UNDERGROUND SERVICE ALERT (USA) #: _____
- 2) **48 hours prior to starting work, YOU MUST CALL (510) 238-3651 TO SCHEDULE AN INSPECTION.**

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than \$500):

I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period. (Sec. 7044 Business and Professions Code).

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project. (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).

I am exempt under Sec. _____, B&PC for this reason _____

WORKER'S COMPENSATION

I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # _____ Company Name _____

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars (\$100) or less).

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Title 12 Chapter 12.12 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

Chris Merrett (PSI) 8/31/99

Signature of Permittee Agent for Contractor Owner Date

DATE STREET LAST RESURFACED	SPECIAL PAVING DETAIL REQUIRED? <input type="checkbox"/> YES <input type="checkbox"/> NO	HOLIDAY RESTRICTION? (NOV. 1 - JAN. 1) <input type="checkbox"/> YES <input type="checkbox"/> NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) <input type="checkbox"/> YES <input type="checkbox"/> NO
ISSUED BY Na	DATE ISSUED 8/31/99		

Recording requested by
City of Oakland

When Recorded Mail to:
City of Oakland
Community & Econ. Develop. Agency
Building Services, Eng. info.
250 Frank H. Ogawa Plaza, 2nd Fl.
Oakland, CA 94612

TAX ROLL PARCEL NUMBER
(ASSESSOR'S REFERENCE NUMBER)

2	081	01	-
MAP	BLOCK	PARCEL	SUB

SPACE ABOVE FOR RECORDER'S USE ONLY

Address: 165-13th Street, Oakland

MINOR ENCROACHMENT PERMIT AND AGREEMENT

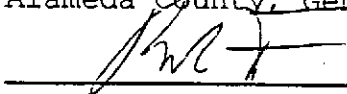
Alameda County, General Services Agency, is hereby granted a Conditional Revocable Permit to encroach into the public right-of-way area of 13th Street, adjacent to the property commonly known as 165-13th Street, Oakland with one monitoring well. The location of said encroachments shall be as delineated in Exhibit 'A' attached hereto and made a part hereof.

The permittee agrees to comply with and be bound by the conditions for granting an Encroachment Permit attached hereto and made a part hereof.

This agreement shall be binding upon the permittees described above, and their successors in interest thereof.

In witness whereof, I have set my signature this 12TH day of AUGUST, 1999.

Alameda County, General Services Agency



ROD FREITAS, ENVIRONMENTAL PROGRAM MANAGER

BELOW FOR OFFICIAL USE ONLY

CITY OF OAKLAND

Dated _____ By: _____

CALVIN N. WONG
Director of Building Services
For
WILLIAM E. CLAGGETT
Executive Director, Community &
Economic Development Agency

APPENDIX B

SOIL BORING LOGS AND WELL DIAGRAM

SOIL BORING LOG

BORING NO:	B-7	
SHEET	1 OF 2	
PROJECT NAME:	Alcopark Site No. 2	
PROJECT NO:	575-9G028	
DATE	9/3/99	
DRILLING COMPANY:	FISCH ENVIRONMENTAL	
DRILLING METHOD:	DIRECT PUSH - GEOPROBE	
BORING DIMENSIONS:	2 INCH DIAMETER DEPTH: 24 ft.	
GROUNDWATER LEVELS		
DATE	COMMENTS	DEPTH BGS
9/3/99	initial	18.0
9/3/99	stabilized	16.9

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
1					Sand with some silt, fine to medium grained sand, brown, moist, no odor.		SP	Concrete Surface
2								
3								
4								
5		16				0		
6								
7								Color change to green.
8								
9								
10		18				0		
11								
12								
13								
14								
15		20				0		
16								
17								
18								groundwater encountered.
19		19						
20					Log continues downward	0		

LOGGED BY: Chris Merritt

SOIL BORING LOG

BORING NO:	B-7
SHEET	2 OF 2
PROJECT NAME:	Alcopark Site No. 2
PROJECT NO:	575-9G028
DATE	9/3/99
DRILLING COMPANY:	FISCH ENVIRONMENTAL
DRILLING METHOD:	DIRECT PUSH - GEOPROBE
BORING DIMENSIONS:	2 INCH DIAMETER
DEPTH:	24 FT

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
21					Silty sand as described above.		SP	
22								
23								
24		24				0		Groundwater encountered at 18 feet. Total Depth = 24 feet. Boring terminated at depth sufficient for well installation. Well MW-7 installed in boring.
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

LOGGED BY: Chris Merritt

SOIL BORING LOG

BORING NO: SB-8		
SHEET 1 OF 1		
PROJECT NAME: Alcopark Site No. 1	PROJECT NO: 575-9G028	
DATE 9/3/99		
DRILLING COMPANY: PSI		
DRILLING METHOD: Hand Auger		
BORING DIMENSIONS: 2.5 inch hand auger		DEPTH: 8 ft.
GROUNDWATER LEVELS		
DATE	COMMENTS	DEPTH BGS
9/3/99	initial	7.0
9/3/99	stabilized	7.0

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
1					Sand with some silt, fine to medium grained sand, brown, moist, no odor.		SP	Concrete Surface
2								
3						0		PID from soil cuttings.
4								
5						0		PID from soil cuttings.
6								
7		6				0		groundwater encountered.
8								Total depth = 8 feet.
9								Boring terminated at depth sufficient for investigation.
10								Boring grouted with neat cement and capped with 8-10 inches of concrete.
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

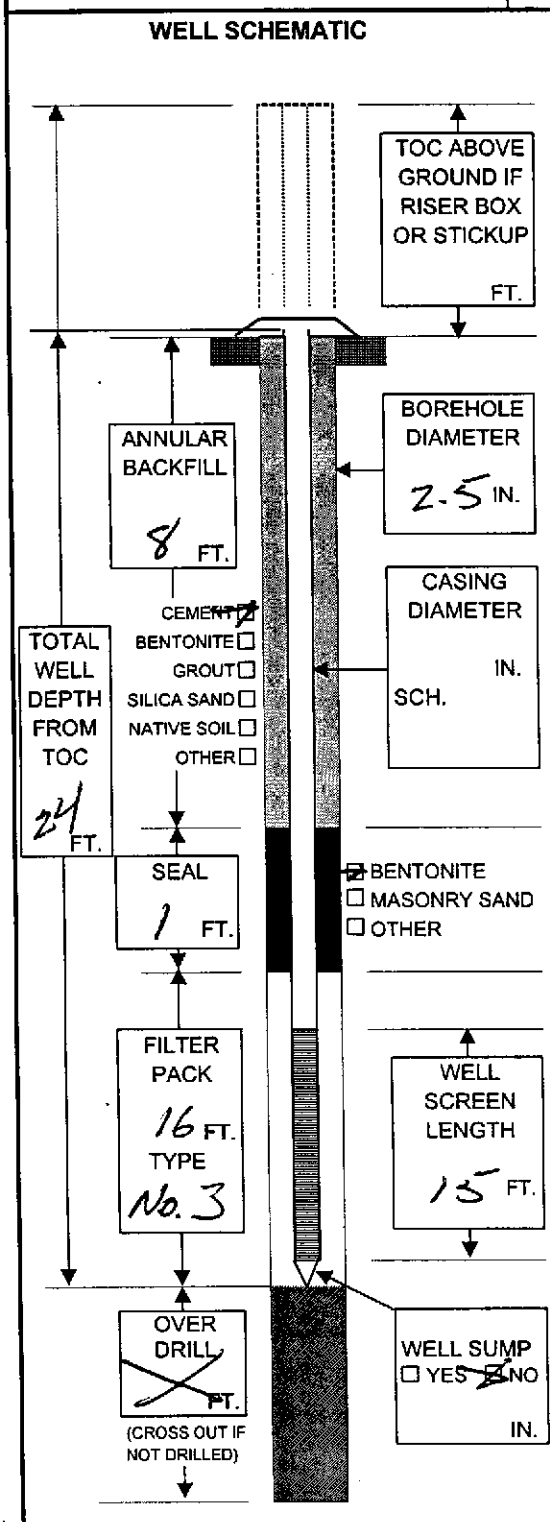
LOGGED BY: Chris Merritt

MONITORING WELL CONSTRUCTION DATA

WELL/BORING NO: B7/MW7
 PERMIT NO: _____

DATE: 9/3/99 PROJECT NAME: Alcopack Site #2 PROJECT NO: 96028

WELL SITE LOCATION PLAN: _____ SEC: _____ TWN: _____ RGE: _____ LAT: _____ LONG: _____
 DRILLING CO: Fisch Environmental
 DRILL CREW: Dave Fisch
 WELL TYPE: SHALLOW SINGLE CASED MONITORING
 PERMANENT INTERMEDIATE DOUBLE CASED RECOVERY
 TEMPORARY DEEP OTHER OTHER



INSTALLATION DATA

DECON. STEAM CLEAN HIGH PRESSURE WASH
 SOAP WASH OTHER _____

CASING TYPE: PVC STAINLESS TEFLON OTHER
 JOINTS: THREADED WELDED COUPLED
 SCREWED OTHER Prepack

PIT CASING: YES NO DESCRIBE _____

WELL SCREEN: PVC STAINLESS TEFLON OTHER
 DIAMETER: 2" 4" 6" OTHER _____ IN
 SLOT: 0.010 0.020 OTHER _____ IN

DRILLING METHOD: SOLID STEM HOLLOW STEM MUD ROTARY
 AIR ROTARY DIRECT PUSH HAND AUGER
 OTHER _____

BIT SIZE: 2.5" 4" 6" 8" 12" OTHER _____ IN

DRILLING MUD: NONE WATER BENTONITE
 OTHER _____

CENTRALIZER: YES NO

COMPLETION: FLUSH MOUNT STICKUP RISER BOX
 LOCK TYPE: DOLPHIN MASTER KEY NO. _____
 OTHER _____

PAD: 2'X2' 4'X4' OTHER _____

CUTTINGS: DRUMMED NUMBER OF DRUMS _____
 SPREAD OTHER None generated

DEVELOPMENT METHOD: NONE BAILING PUMPING AIR LIFT
 SURGE & BLOCK OTHER _____

TIME: 10 MIN 20 MIN OTHER 30 MIN
 AMOUNT: 5 GAL 10 GAL OTHER _____ GAL

WATER BEFORE: SILTY TURBID OPAQUE CLEAR
 WATER AFTER: SILTY TURBID OPAQUE CLEAR
 EVIDENT ODOR: YES NO TYPE _____

DEVELOPMENT WATER: DRUMMED NUMBER OF DRUMS _____
 SPREAD TREATED POTW OTHER _____

WATER LEVEL: INITIAL _____ FT. BTOC BGS
 DATE: _____ FT BELOW TOC
 DATE: _____ FT BELOW TOC

NOTES: (DESCRIBE ALL NON-STANDARD METHODS & MATERIALS)

APPENDIX C

ANALYTICAL LABORATORY REPORT



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

Professional Service Industries 1320 West Winton Avenue Hayward, CA 94545	Client Project ID: #9G028; Alameda GSA-Alcopark	Date Sampled: 09/03/99
		Date Received: 09/03/99
	Client Contact: Tim O'Brien	Date Extracted: 09/03/99
	Client P.O:	Date Analyzed: 09/03/99

09/10/99

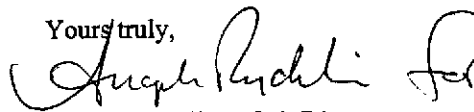
Dear Tim:

Enclosed are:

- 1). the results of 3 samples from your #9G028; Alameda GSA-Alcopark project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,



Edward Hamilton, Lab Director



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

Professional Service Industries 1320 West Winton Avenue Hayward, CA 94545	Client Project ID: #9G028; Alameda GSA-Alcopark	Date Sampled: 09/03/99
	Client Contact: Tim O'Brien	Date Received: 09/03/99
	Client P.O:	Date Analyzed: 09/04-09/07/99
		Date Extracted: 09/03/99


Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*
EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)*	MTBE	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
18598	B8-6.0	S	ND	---	---	---	---	---	96
18603	B7-18.0	S	ND	---	---	---	---	---	96
18605	WB-8	W	ND,i	---	---	---	---	---	104
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W	50 ug/L	5.0	0.5	0.5	0.5	0.5	0.5	
	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

* cluttered chromatogram; sample peak coelutes with surrogate peak

*The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

 Edward Hamilton, Lab Director



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	Client P.O:	Date Extracted: 09/03/99
		Date Analyzed: 09/04-09/08/99

Volatile Organics By GC/MS

EPA method 8260

Lab ID	18598		
Client ID	B8-6.0		
Matrix	S		
Compound	Concentration*	Compound	Concentration*
Acetone ^(b)	ND<20	trans-1,3-Dichloropropene	ND
Benzene	ND	Ethylene dibromide	ND
Bromobenzene	ND	Ethylbenzene	ND
Bromochloromethane	ND	Hexachlorobutadiene	ND
Bromodichloromethane	ND	Iodomethane	ND
Bromoform	ND	Isopropylbenzene	ND
Bromomethane	ND	p-Isopropyl toluene	ND
n-Butyl benzene	ND	Methyl butyl ketone ^(d)	ND
sec-Butyl benzene	ND	Methylene Chloride ^(e)	ND
tert-Butyl benzene	ND	Methyl ethyl ketone ^(f)	ND
Carbon Disulfide	ND	Methyl isobutyl ketone ^(g)	ND
Carbon Tetrachloride	ND	Methyl tert-Butyl Ether (MTBE)	---
Chlorobenzene	ND	Naphthalene	ND
Chloroethane	ND	n-Propyl benzene	ND
2-Chloroethyl Vinyl Ether ^(e)	ND	Styrene ⁽ⁱ⁾	ND
Chloroform	ND	1,1,1,2-Tetrachloroethane	ND
Chloromethane	ND	1,1,2,2-Tetrachloroethane	ND
2-Chlorotoluene	ND	Tetrachloroethene	ND
4-Chlorotoluene	ND	Toluene ^(m)	ND
Dibromochloromethane	ND	1,2,3-Trichlorobenzene	ND
1,2-Dibromo-3-chloropropane	ND	1,2,4-Trichlorobenzene	ND
Dibromomethane	ND	1,1,1-Trichloroethane	ND
1,2-Dichlorobenzene	ND	1,1,2-Trichloroethane	ND
1,3-Dichlorobenzene	ND	Trichloroethene	ND
1,4-Dichlorobenzene	ND	Trichlorofluoromethane	ND
Dichlorodifluoromethane	ND	1,2,3-Trichloropropane	ND
1,1-Dichloroethane	ND	1,2,4-Trimethylbenzene	ND
1,2-Dichloroethane	ND	1,3,5-Trimethylbenzene	ND
1,1-Dichloroethene	ND	Vinyl Acetate ^(b)	ND
cis-1,2-Dichloroethene	ND	Vinyl Chloride ^(e)	ND
trans-1,2-Dichloroethene	ND	Xylenes, total ^(j)	ND
1,2-Dichloropropane	ND	Comments:	
1,3-Dichloropropane	ND	Surrogate Recoveries (%)	
2,2-Dichloropropane	ND	Dibromofluoromethane	97
1,1-Dichloropropene	ND	Toluene-d8	110
cis-1,3-Dichloropropene	ND	4-Bromofluorobenzene	109

*water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / SPLX extracts in ug/L
 Reporting limits unless otherwise stated: water samples 1 ug/L; vapor samples 0.5 ug/L; solid and sludge samples 5 ug/kg; wipes 0.2ug/wipe
 ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

(b) 2-propanone or dimethyl ketone; (c) (2-chloroethoxy) ethene; (d) 2-hexanone; (e) dichloromethane; (f) 2-butanone; (g) 4-methyl-2-pentanone or isopropylacetone; (h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content; (k) ethenylbenzene; (l) methylbenzene; (m) aceticacid ethenyl ester; (n) chloroethene; (o) dimethylbenzenes.

DHS Certification No. 1644

Edward Hamilton Edward Hamilton, Lab Director



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		Date Analyzed: 09/04-09/08/99

Volatile Organics By GC/MS

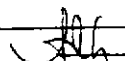
EPA method 8260

Compound	Concentration*	Compound	Concentration*
Acetone ^(b)	ND<20	trans-1,3-Dichloropropene	ND
Benzene	ND	Ethylene dibromide	ND
Bromobenzene	ND	Ethylbenzene	ND
Bromochloromethane	ND	Hexachlorobutadiene	ND
Bromodichloromethane	ND	Iodomethane	ND
Bromoform	ND	Isopropylbenzene	ND
Bromomethane	ND	p-Isopropyl toluene	ND
n-Butyl benzene	ND	Methyl butyl ketone ^(d)	ND
sec-Butyl benzene	ND	Methylene Chloride ^(e)	ND
tert-Butyl benzene	ND	Methyl ethyl ketone ^(f)	ND
Carbon Disulfide	ND	Methyl isobutyl ketone ^(g)	ND
Carbon Tetrachloride	ND	Methyl tert-Butyl Ether (MTBE)	---
Chlorobenzene	ND	Naphthalene	ND
Chloroethane	ND	n-Propyl benzene	ND
2-Chloroethyl Vinyl Ether ^(h)	ND	Styrene ⁽ⁱ⁾	ND
Chloroform	ND	1,1,1,2-Tetrachloroethane	ND
Chloromethane	ND	1,1,2,2-Tetrachloroethane	ND
2-Chlorotoluene	ND	Tetrachloroethene	ND
4-Chlorotoluene	ND	Toluene ^(m)	ND
Dibromochloromethane	ND	1,2,3-Trichlorobenzene	ND
1,2-Dibromo-3-chloropropane	ND	1,2,4-Trichlorobenzene	ND
Dibromomethane	ND	1,1,1-Trichloroethane	ND
1,2-Dichlorobenzene	ND	1,1,2-Trichloroethane	ND
1,3-Dichlorobenzene	ND	Trichloroethene	ND
1,4-Dichlorobenzene	ND	Trichlorofluoromethane	ND
Dichlorodifluoromethane	ND	1,2,3-Trichloropropane	ND
1,1-Dichloroethane	ND	1,2,4-Trimethylbenzene	ND
1,2-Dichloroethane	ND	1,3,5-Trimethylbenzene	ND
1,1-Dichloroethene	ND	Vinyl Acetate ^(j)	ND
cis-1,2-Dichloroethene	ND	Vinyl Chloride ^(k)	ND
trans-1,2-Dichloroethene	ND	Xylenes, total ^(l)	ND
1,2-Dichloropropane	ND	Comments:	
1,3-Dichloropropane	ND	Surrogate Recoveries (%)	
2,2-Dichloropropane	ND	Dibromofluoromethane	89
1,1-Dichloropropene	ND	Toluene-d8	111
cis-1,3-Dichloropropene	ND	4-Bromofluorobenzene	114

*water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / SPLP extracts in ug/L
 Reporting limits unless otherwise stated: water samples 1 ug/L; vapor samples 0.5 ug/L; solid and sludge samples 5 ug/kg; wipes 0.2ug/wipe
 ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

(b) 2-propanone or dimethyl ketone; (c) (2-chloroethoxy) ethene; (d) 2-hexanone; (e) dichloromethane; (f) 2-butanone; (g) 4-methyl-2-pentanone or isopropylacetone; (h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content; (k) ethenylbenzene; (l) methylbenzene; (m) acetic acid ethenyl ester; (n) chloroethene; (o) dimethylbenzenes.

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Volatile Organics By GC/MS

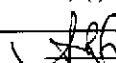
EPA method 8260

Lab ID	18605		
Client ID	WB-8		
Matrix	W		
Compound	Concentration*	Compound	Concentration*
Acetone ^(b)	ND	trans-1,3-Dichloropropene	ND
Benzene	ND	Ethylene dibromide	ND
Bromobenzene	ND	Ethylbenzene	ND
Bromochloromethane	ND	Hexachlorobutadiene	ND
Bromodichloromethane	ND	Iodomethane	ND
Bromoform	ND	Isopropylbenzene	ND
Bromomethane	ND	p-Isopropyl toluene	ND
n-Butyl benzene	ND	Methyl butyl ketone ^(d)	ND
sec-Butyl benzene	ND	Methylene Chloride ^(e)	ND
tert-Butyl benzene	ND	Methyl ethyl ketone ^(f)	ND
Carbon Disulfide	ND	Methyl isobutyl ketone ^(g)	ND
Carbon Tetrachloride	ND	Methyl tert-Butyl Ether (MTBE)	---
Chlorobenzene	ND	Naphthalene	ND
Chloroethane	ND	n-Propyl benzene	ND
2-Chloroethyl Vinyl Ether ^(c)	ND	Styrene ^(h)	ND
Chloroform	ND	1,1,1,2-Tetrachloroethane	ND
Chloromethane	ND	1,1,2,2-Tetrachloroethane	ND
2-Chlorotoluene	ND	Tetrachloroethene	ND
4-Chlorotoluene	ND	Toluene ^(m)	ND
Dibromochloromethane	ND	1,2,3-Trichlorobenzene	ND
1,2-Dibromo-3-chloropropane	ND	1,2,4-Trichlorobenzene	ND
Dibromomethane	ND	1,1,1-Trichloroethane	ND
1,2-Dichlorobenzene	ND	1,1,2-Trichloroethane	ND
1,3-Dichlorobenzene	ND	Trichloroethene	ND
1,4-Dichlorobenzene	ND	Trichlorofluoromethane	ND
Dichlorodifluoromethane	ND	1,2,3-Trichloropropane	ND
1,1-Dichloroethane	ND	1,2,4-Trimethylbenzene	ND
1,2-Dichloroethane	ND	1,3,5-Trimethylbenzene	ND
1,1-Dichloroethene	ND	Vinyl Acetate ⁽ⁱ⁾	ND
cis-1,2-Dichloroethene	ND	Vinyl Chloride ^(j)	ND
trans-1,2-Dichloroethene	ND	Xylenes, total ^(k)	ND
1,2-Dichloropropane	ND	Comments: i	
1,3-Dichloropropane	ND	Surrogate Recoveries (%)	
2,2-Dichloropropane	ND	Dibromofluoromethane	93
1,1-Dichloropropene	ND	Toluene-d8	106
cis-1,3-Dichloropropene	ND	4-Bromofluorobenzene	110

*water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / SPLP extracts in ug/L
 Reporting limits unless otherwise stated: water samples 1 ug/L; vapor samples 0.5 ug/L; solid and sludge samples 5 ug/kg; wipes 0.2ug/wipe
 ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

(b) 2-propanone or dimethyl ketone; (c) (2-chloroethoxy) ethene; (d) 2-hexanone; (e) dichloromethane; (f) 2-butanone; (g) 4-methyl-2-pentanone or isopropylacetone; (h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content; (k) ethenylbenzene; (l) methylbenzene; (m) acetic acid ethenyl ester; (n) chloroethene; (o) dimethylbenzenes.

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	Client Contact: Tim O'Brien	Date Received: 09/03/99
	Client P.O:	Date Extracted: 09/03/99
		Date Analyzed: 09/04-09/08/99

Oxygenated Volatile Organics By GC/MS

EPA method 8260 modified

Lab ID	18598	18603	18605	Reporting Limit	
Client ID	B8-6.0	B7-18.0	WB-8	S	W
Matrix	S	S	W	S	W
Compound	Concentration*			ug/kg	ug/L
Di-isopropyl Ether (DIPE)	ND	ND	ND	5.0	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	ND	ND	5.0	1.0
Methyl-tert Butyl Ether (MTBE)	ND	ND	ND	5.0	1.0
tert-Amyl Methyl Ether (TAME)	ND	ND	ND	5.0	1.0
tert-Butanol	ND	ND	ND	25	5.0

Surrogate Recoveries (%)

Dibromofluoromethane	97	89	93	
Comments:			i	

* water samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L
 ND means not detected above the reporting limit; N/A means surrogate not applicable to this analysis
 (h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

DHS Certification No. 1644

 Edward Hamilton, Lab Director

QC REPORT FOR HYDROCARBON ANALYSES

Date: 09/03/99-09/04/99

Matrix: WATER

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		
	Sample (#18261)	MS	MSD		MS	MSD	RPD
TPH (gas)	0.0	119.1	118.7	100.0	119.1	118.7	0.3
Benzene	0.0	8.6	8.3	10.0	86.0	83.0	3.6
Toluene	0.0	9.2	9.0	10.0	92.0	90.0	2.2
Ethyl Benzene	0.0	9.8	9.5	10.0	98.0	95.0	3.1
Xylenes	0.0	29.5	28.5	30.0	98.3	95.0	3.4
TPH(diesel)	0.0	7694	7598	7500	103	101	1.3
TRPH (oil & grease)	0	22500	22400	23700	95	95	0.4

* Rec. = (MS - Sample) / amount spiked x 100

RPD = ((MS - MSD) / (MS + MSD)) x 2 x 100

QC REPORT FOR HYDROCARBON ANALYSES

Date: 09/03/99-09/04/99

Matrix: SOIL

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		RPD
	Sample (#12144)	MS	MSD		MS	MSD	
TPH (gas)	0.000	2.060	2.068	2.03	101	102	0.4
Benzene	0.000	0.202	0.198	0.2	101	99	2.0
Toluene	0.000	0.204	0.202	0.2	102	101	1.0
Ethylbenzene	0.000	0.208	0.202	0.2	104	101	2.9
Xylenes	0.000	0.588	0.578	0.6	98	96	1.7
TPH(diesel)	0	331	336	300	110	112	1.5
TRPH (oil and grease)	0.0	21.0	21.7	20.8	101	104	3.3

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = ((\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD})) \times 2 \times 100$$

QC REPORT FOR VOCs (EPA 8240/8260)

Date: 09/03/99-09/04/99

Matrix: WATER

Analyte	Concentration (ug/kg, u Sample (#18180)			Amount Spiked	% Recovery		RPD
	MS	MSD			MS	MSD	
1,1-Dichloroethe	0	108	112	100	108	112	3.6
Trichloroethene	0	96	98	100	96	98	2.1
EDB	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene	0	119	122	100	119	122	2.5
Benzene	0	117	117	100	117	117	0.0
Toluene	0	108	121	100	108	121	11.4

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

QC REPORT FOR VOCs (EPA 8240/8260)

Date: 09/03/99-09/04/99

Matrix: SOIL

Analyte	Concentration (ug/kg, u Sample (#08229)			Amount Spiked	% Recovery		RPD
	MS	MSD	MSD		MS	MSD	
1,1-Dichloroethe	0	124	127	100	124	127	2.4
Trichloroethene	0	98	100	100	98	100	2.0
EDB	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene	0	109	112	100	109	112	2.7
Benzene	0	102	105	100	102	105	2.9
Toluene	0	109	110	100	109	110	0.9

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$



Centrum Analytical Laboratories, Inc.

Centrum Job #

290 TENNESSEE STREET

(909) 798-9336 • (800) 798-9336

Chain of Custody Record

Page 1 of 1

REDLANDS, CA 92373

FAX (909) 793-1559

www.centrum-labs.com

lab@centrum-labs.com

16601ZPS19.doc

Project No: 96028	Project Name: ALAMEDA GSA - ALCO PARK
--------------------------	--

Project Manager: TIM O'BRIEN	Phone: 510-785-1111	Fax: 510-785-1192
-------------------------------------	----------------------------	--------------------------

Client Name: BILL: ROO FRIETAG ALAMEDA GSA REPORT: TIM O'BRIEN PSI	Address: BILL TO ALAMEDA GSA REPORT TO 1320 W. WINTON AVE HAYWARD, CA 94545
---	--

Please Circle Analyses Requested

8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gas Only	8021B: BTEX/MIBE ONLY	418.1 (TRPH), 413.2	† OXYGENATES 8021B, 624, 524.2	GCMS: MBE Conf. Only	GCMS: 8270C, 625	8080: Pesticides, PCBs, Pest/PCB	Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity	Flashpoint, Hex Cr
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Turn-Around Time

24 Hr. RUSH*

48 Hr. RUSH*

Normal TAT

*Requires PRIOR approval, additional charges apply

Requested due date: _____

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gas Only	8021B: BTEX/MIBE ONLY	418.1 (TRPH), 413.2	† OXYGENATES 8021B, 624, 524.2	GCMS: MBE Conf. Only	GCMS: 8270C, 625	8080: Pesticides, PCBs, Pest/PCB	Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity	Flashpoint, Hex Cr	Remarks/Special Instructions
	B8-2.5	9/3/99	1210	SOIL		ISSL												H 18596
	B8-4.0		1219			↓												H 18597
	B8-6.0		1231			↓		X			X							H 18598
	B7-4A					PETF												H 18599
	B7-8.0					↓												H 18600
	B7-12.0					↓												H 18601
	B7-16.0					↓		X			X							H 18602
	B7-18.0					↓												H 18603
	B7-24.0					↓												H 18604
5+	WB-8		1253	H ₂ O		GJDA		X			X							H 18605

1) Relinquished by: (Sampler's Signature) CHRIS MERRETT	Date: 9/3/99	Time: 1437	3) Relinquished by: SEA	Date:	Time:	To be completed by Laboratory personnel: Samples chilled? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> From Field Custody seals? <input type="checkbox"/> Yes <input type="checkbox"/> No All sample containers intact? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Courier <input type="checkbox"/> UPS/Fed Ex <input type="checkbox"/> Hand carried
2) Received by: CHRIS MERRETT	Date: 9/3/99	Time: 1437	4) Received by:	Date:	Time:	
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.			5) Relinquished by: CHRIS MERRETT	Date: 9/3/99	Time: 1437	
Laboratory Notes: ICEN GOOD CONDITION HEAD SPACE ABSENT			6) Received for Laboratory by: Maria Venegas	Date: 9/3	Time:	

RESERVATION APPROPRIATE CONTAINERS

Sample Locator No. _____



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Professional Service Industries 1320 West Winton Avenue Hayward, CA 94545	Client Project ID: Alcopark	Date Sampled: 09/09/99
		Date Received: 09/10/99
	Client Contact: Tim O'Brien	Date Extracted: 09/10/99
	Client P.O:	Date Analyzed: 09/10/99

09/17/99

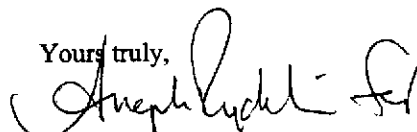
Dear Tim:

Enclosed are:

- 1). the results of 3 samples from your Alcopark project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,


Edward Hamilton, Lab Director



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-3560
Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

Professional Service Industries 1320 West Winton Avenue Hayward, CA 94545	Client Project ID: Alcopark	Date Sampled: 09/09/99
		Date Received: 09/10/99
	Client Contact: Tim O'Brien	Date Extracted: 09/13-09/14/99
	Client P.O:	Date Analyzed: 09/13-09/14/99

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*
EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g) ⁺	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	% Recovery Surrogate
19023	MW-1	W	2400,a	400	680	140	130	370	105
19025	MW-6	W	6600,a	3700	2500	43	310	250	99
19024	MW-7	W	92,f,i	1200	1.6	ND	ND	ND	103
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W		50 ug/L	5.0	0.5	0.5	0.5	0.5	
	S		1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L.

* cluttered chromatogram; sample peak coelutes with surrogate peak

*The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

QC REPORT FOR HYDROCARBON ANALYSES

Date: 09/12/99-09/13/99

Matrix: WATER

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		RPD
	Sample (#18261)	MS	MSD		MS	MSD	
TPH (gas)	0.0	103.5	101.2	100.0	103.5	101.2	2.2
Benzene	0.0	10.2	9.8	10.0	102.0	98.0	4.0
Toluene	0.0	10.5	9.7	10.0	105.0	97.0	7.9
Ethyl Benzene	0.0	10.0	9.8	10.0	100.0	98.0	2.0
Xylenes	0.0	31.2	29.8	30.0	104.0	99.3	4.6
TPH(diesel)	0.0	7727	7737	7500	103	103	0.1
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = ((\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD})) \times 2 \times 100$$

16096 ZPSI10.doc

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
 PACHECO, CA 94553-5560

Telephone: (925) 798-1620

Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME

RUSH 24 HOUR 48 HOUR 5 DAY

Report To *TIM O'BREEN*

Bill To: *ALAMEDA GSA*

Company: PSI

1320 W. Winton Ave

Hayward, CA 94549

Tele: (510) 785-1111

Fax: (510) 785-1192

Project #:

Project Name:

Project Location: *ALCOPARK*

Sampler Signature: *CHRIS MERRITT*

+
 MW-7
 MW-6
 MW-1

Analysis Request

Other

Comments

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				BTEX & TPH as Gas (602/8020 + 8015) MTBE TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/739.2/6010)	RCI										
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO ₃	Other																								
MW-1		9/9/99		6	VOA	X					X	X																									19023	
MW-6		↓		6	↓	X					X	X																									19024	
MW-7		↓		6	↓	X					X	X																									19025	

GOOD CONDITION
 HEADSPACE ABSENT
 PRESERVATION APPROPRIATE
 CONTAINERS
 VOAS O&G METALS OTHER

Relinquished By: <i>CHRIS MERRITT</i>	Date: <i>9/10/99</i>	Time: <i>1353</i>	Received By: <i>Bill Butth</i>
Relinquished By: <i>Bill Butth</i>	Date: <i>9-10-</i>	Time: <i>14:45</i>	Received By: <i>VINCE VINTA</i>
Relinquished By:	Date:	Time:	Received By:

Remarks:
 Call Chris to confirm MTBE & GAS HITS w/
 oxygenates 8260
T.B.M.V

APPENDIX D

ANALYTICAL DATA CHARTS

CHART 1
GROUNDWATER ELEVATION
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

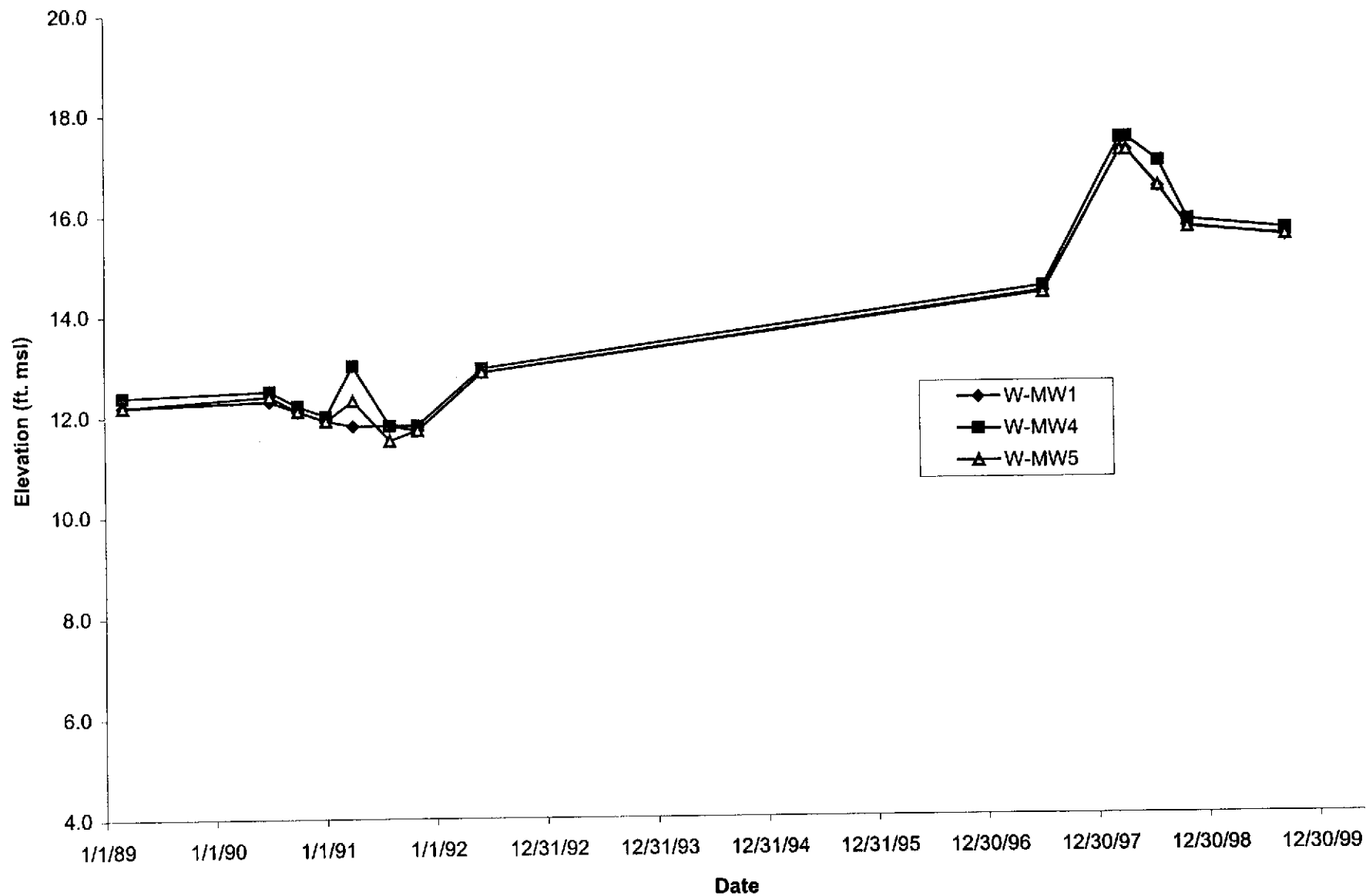
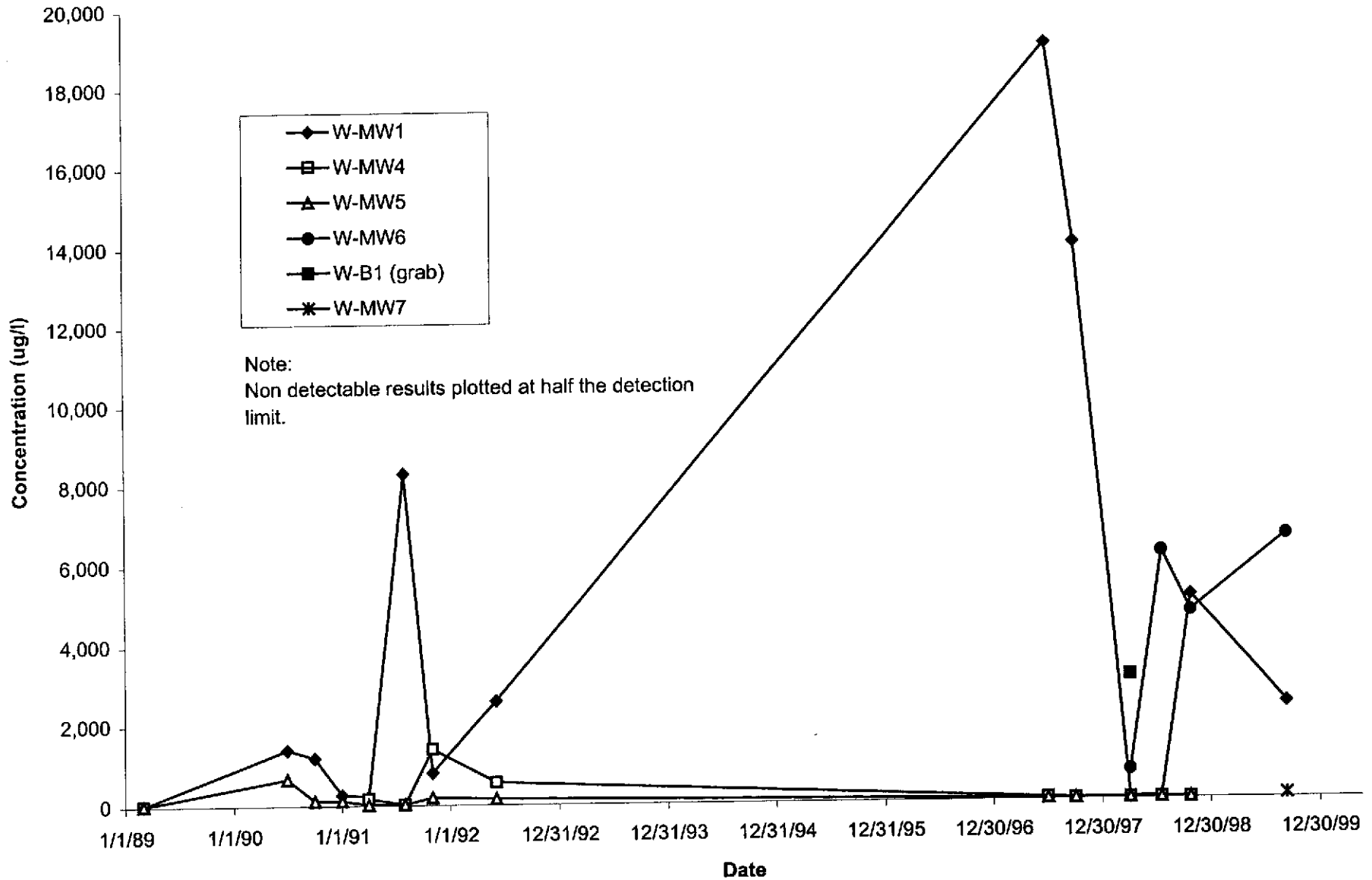


CHART 2
 TOTAL PETROLEUM CONCENTRATIONS
 ALCOPARK FUELING FACILITY
 OAKLAND, CALIFORNIA



**CHART 3
 BENZENE CONCENTRATIONS
 ALCOPARK FUELING FACILITY
 OAKLAND, CALIFORNIA**

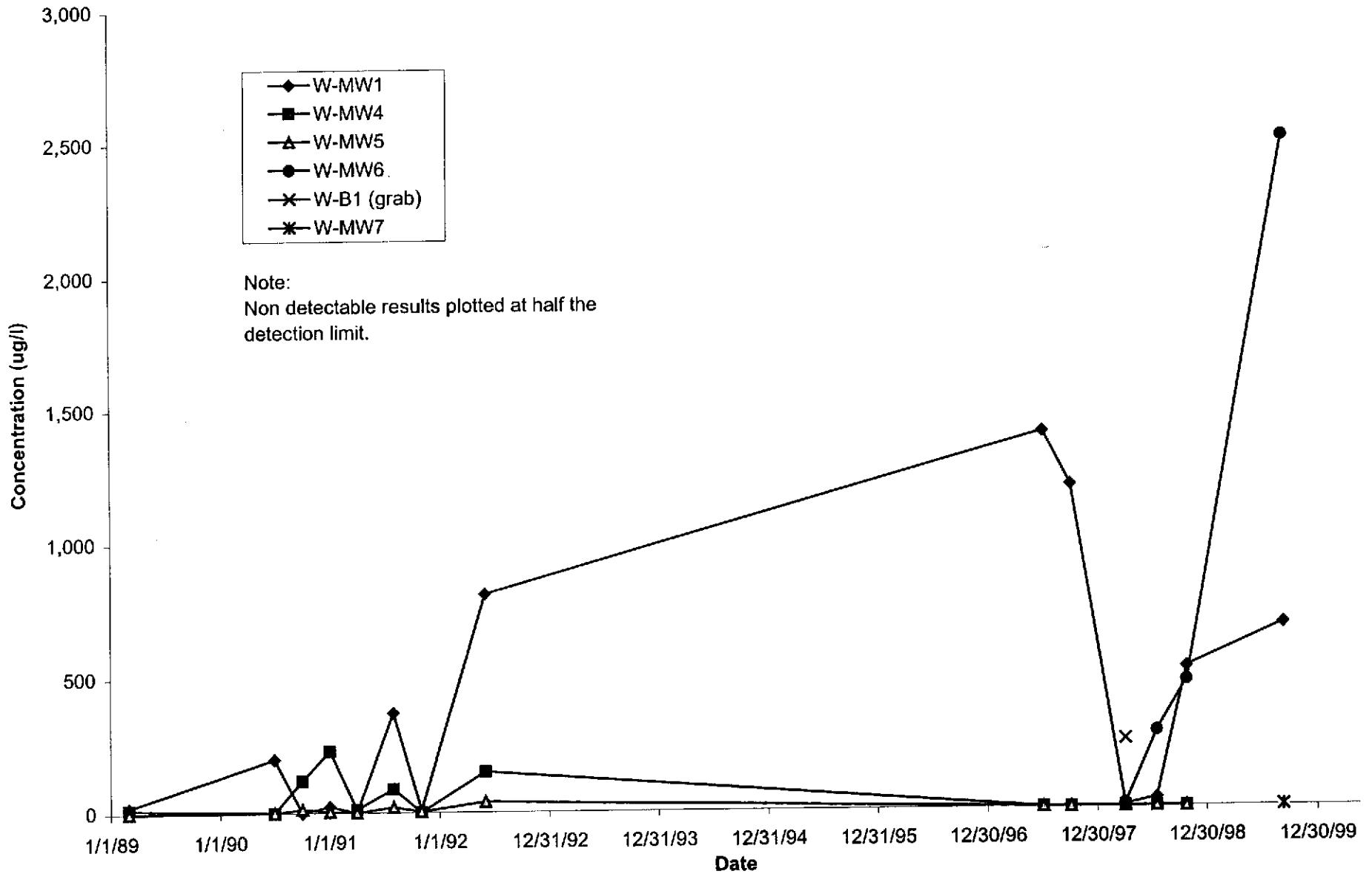
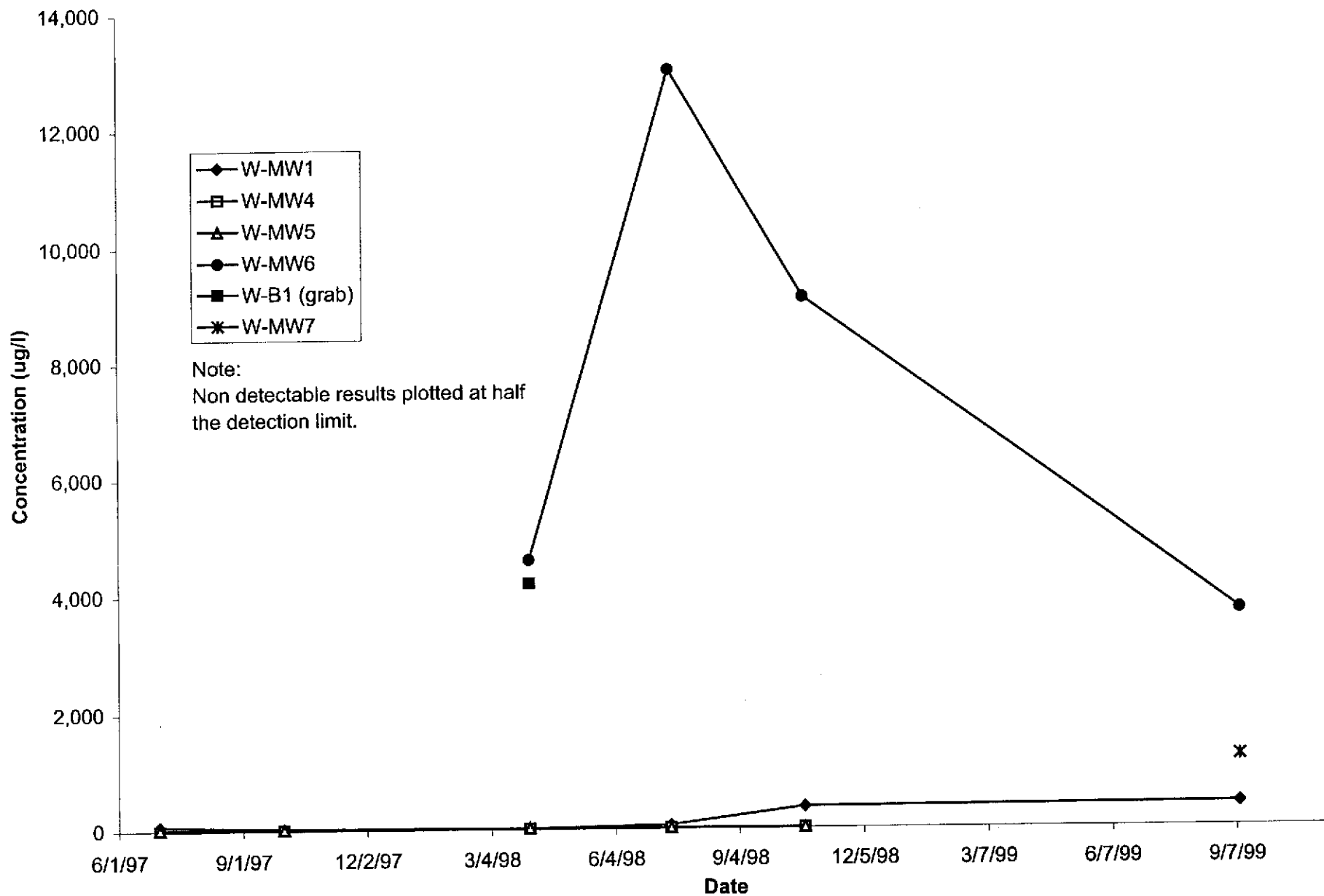


CHART 4
MTBE CONCENTRATIONS
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA



Note:
Non detectable results plotted at half
the detection limit.