

# LETTER OF TRANSMITTAL

20-401  
MAR 28 2002

To:	<i>Eva Chu</i>	Date:	<i>March 25, 2002</i>
	<i>Environmental Health</i>		
	<i>QIC 30440</i>	Subject:	<i>Groundwater Monitoring Report</i>
			<i>165 13<sup>th</sup> Street, Oakland, CA</i>

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Attached       Under separate cover

via:       US Mail       Overnight/FedEx       Hand carried       Messenger

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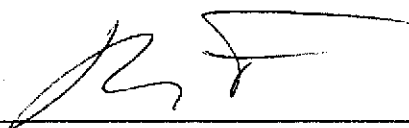
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1	3/22/02	<i>Groundwater Monitoring Report, AlcoPark, Oakland, CA</i>

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 Oakland, CA 94612  
 Tel. (510) 208-9522

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MAR 28 2002

**GROUNDWATER MONITORING REPORT  
FIRST QUARTER, 2002  
ALCOPARK FUELING FACILITY  
OAKLAND, CALIFORNIA**

Prepared for

**ALAMEDA COUNTY GENERAL SERVICES AGENCY**  
1401 Lakeside Drive, 11<sup>th</sup> Floor  
Oakland, California

Prepared by

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March 22, 2002  
575-0G041

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TABLE 1           GROUNDWATER ELEVATION AND ANALYTICAL DATA  
                    SUMMARY, SITE NO.2

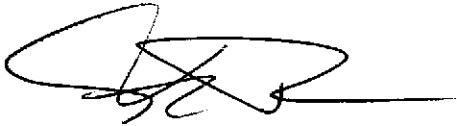
FIGURE 1         SITE LOCATION  
FIGURE 2         GROUNDWATER ELEVATION – 02/18/02

APPENDIX A       FIELD PROCEDURES & WATER ELEVATIONS  
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## STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

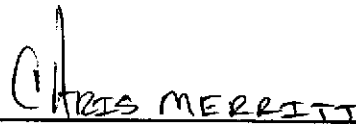
Information provided in this report, prepared by Professional Service Industries, Inc. (PSI), is intended exclusively for the use of Alameda County General Services Agency (AGSA), for the evaluation of subsurface conditions as it pertains to the subject site. The professional services provided have been 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 AGSA is responsible for ensuring that the information contained herein is brought to the attention of the appropriate regulatory agency.



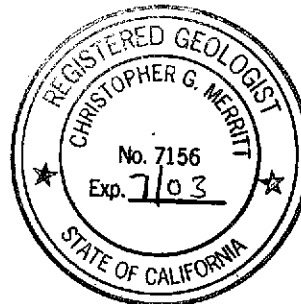
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Frank R. Poss, REA  
Senior Hydrogeologist



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Chris Merritt, RG  
Project Geologist



## **1. INTRODUCTION**

Professional Service Industries, Inc. (PSI) was retained by the Alameda County General Services Agency (ACGSA) to perform groundwater monitoring at the ACGSA Alcopark Fueling Facility-Site No. 2 located at 165 13<sup>th</sup> Street, Oakland, California. The site location is presented on Figure 1.

The groundwater monitoring was prompted by a request by the Alameda County Health Care Services Agency (ACHCSA), which requested additional information on the extent of petroleum hydrocarbon impacted groundwater (ACHCSA, 1997a).

### **1.1 SCOPE OF WORK**

The scope of work consisted of the following tasks:

- Measure the depth to water in the site wells and prepare a groundwater elevation map.
- Determine the groundwater flow direction and gradient.
- Collect and chemically analyze groundwater samples from wells MW-1, MW-6 and MW-7.
- Prepare a report documenting the field procedures, analytical results, and conclusions regarding the site condition.

### **1.2 SITE BACKGROUND**

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).

By letter dated May 30, 1997, the ACHCSA instructed GSA to resume groundwater monitoring at Alcopark (ACHCSA, 1997b). Sampling resumed in July 1997. Analytical data from that sampling event indicated elevated TPH-G and BTEX concentrations in the downgradient well. MTBE was also detected. Additional samples collected in October

1997 provided similar results (GSA, 1997). By a letter dated September 11, 1997, the HCSA directed GSA to investigate the extent and stability of the plume.

To better define groundwater conditions downgradient of the UST, two borings were drilled on March 23, 1998. A grab groundwater sample was collected from one of the borings, and Well MW-6 was installed in the other boring. One more small diameter groundwater monitoring well (MW-7) was installed by PSI in September 1999 and the analytical results are presented in the PSI's report dated October 14, 1999.

### **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).

## **2. GROUNDWATER MONITORING ACTIVITIES**

A PSI representative performed groundwater-monitoring activities on February 18, 2002. The activities were performed in accordance with PSI standard procedures presented in Appendix A, and procedures described in a ACHCSA letter describing collection of samples without purging the wells (ACHCSA, 1997a).

### ***2.1 Groundwater Elevation and Flow Direction***

Prior to groundwater sampling, depth to groundwater was measured from the top of the well casings in each monitoring well. The groundwater measurements were converted to groundwater elevation and the data plotted on a groundwater elevation map. A groundwater elevation map was prepared for February 18, 2002. The map is presented as Figure 2. The groundwater elevation data are presented in Table 1 and Appendix A.

Interpretation of the groundwater elevation map indicates the groundwater is flowing to the south under a hydraulic gradient of 0.006. The flow direction to the south is not consistent with the measured flow direction in previous quarterly monitoring events. PSI will closely observe the flow direction in the next sampling event to determine whether the southerly flow direction is anomalous or is an actual change in flow direction. Groundwater elevation is generally higher than the previous quarter.

### ***2.2 Groundwater Sampling***

Monitoring wells MW-1, MW-6, and MW-7 were sampled without purging, as requested in the ACHCSA letter dated September 11, 1997. The groundwater samples were collected with disposable polyethylene tubing equipped with a check valve. The groundwater samples were collected according to PSI's standard protocol, included in Appendix A and were stored in an iced cooler at 4 degrees Celsius and maintained under Chain-of-Custody protocol.

To minimize the possibility of cross-contamination between sampling locations, most of the sampling equipment used is disposable. To further minimize the possibility of cross-contamination, the water sounder and all other reusable sampling equipment were cleaned with a non-phosphate detergent and rinsed twice with deionized water prior to use in the next well.

### 3. LABORATORY ANALYSIS PROGRAM

The 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 analytical methods is presented below.

The groundwater samples collected at the site this quarter 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-Modified.
- Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX) and Methyl Tertiary Butyl Ether (MTBE) by EPA Method 8020.

The samples were transported to the laboratory under Chain-of-Custody protocol. Copies of the chain of custody forms are included in Appendix B.

#### 3.1 ANALYTICAL RESULTS

The groundwater samples were collected and chemically analyzed in accordance with the analytical method requirements. The analytical data is summarized in Table 1. Laboratory reports are presented in Appendix B.

TPH-G, BTEX and/or MTBE were detected in groundwater samples from all groundwater-monitoring wells sampled for this monitoring event.

- TPH-G was detected only in Wells MW-1 (1,500 ug/l) and MW-6 (1,500 ug/l).
- Benzene was detected in Wells MW-1 (260 ug/l) and MW-6 (260 ug/l). The benzene concentrations have decreased in MW-1 since the previous sampling event.
- MTBE was detected in Wells MW-6 (570 ug/l) and MW-7 (200 ug/l). The MTBE concentrations have decreased since the previous sampling event. MTBE concentrations have generally declined in all of the wells at the site since groundwater monitoring commenced.



#### 4. CONCLUSIONS

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

- Groundwater elevation at the site ranges from approximately 14.94 to 15.08 feet above msl.
- Groundwater flow direction is to the south with a gradient of 0.006.
- The groundwater sample collected from wells MW-1, MW-6 and/or MW-7 contained measurable concentrations of TPH-G, BTEX, and MTBE. Concentrations are generally lower than the previous sampling event.

## REFERENCES

- GSA, 1997, Request For Proposal (RFP) for Groundwater Services, December 2.
- HCSA, 1997a, Workplan Request Letter to Mr. Rodman Freitag, September 11.
- HCSA, 1997b, Continuation of Groundwater Monitoring Request, Letter to Mr. Jim DeVos, May 20.
- HCSA, 1998, Quarterly Groundwater Monitoring Report Approval Letter, June 22.
- Lawrence Livermore National Laboratory, 1995a, *Recommendations to Improve the Cleanup Process for California's Leaking Underground Fuel Tanks*, prepared for California State Water Resources Control Board, October 16.
- Lawrence Livermore National Laboratory, 1995b, *California Leaking Underground Fuel Tank Historical Case Analyses*, prepared for California State Water Resources Control Board, November 16.
- Lawrence Livermore National Laboratory, 1998, *An Evaluation of MTBE Impacts to California Groundwater Resources*, prepared for California State Water Resources Control Board, June 11.
- Personal Communication, 1998, Mr. Rod Freitag of the Alameda General Services Agency, Discussion of the leak detection system at the Alcopark facility, April 15.
- PSI, 2000, Quarterly Report, Alcopark Fueling Facility, prepared for Alameda GSA March 15, 2001.
- USGS, 1980, Oakland West, California, topographic map.

**TABLE 1**  
**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-MW1	1/18/00	14.49	4,100	180	420	11	210	350
W-MW1	5/4/00	16.19	NS	NS	NS	NS	NS	NS
W-MW1	8/22/00	15.34	9,400	410	1,200	130	410	920
W-MW1	2/8/01	14.53	NS	NS	NS	NS	NS	NS
W-MW1	7/20/01	14.60	9,600	ND (50)	1,000	300	350	2,000
W-MW1	2/18/02	15.08	1,500	ND (100)	260	6.5	2.8	49
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-MW4	1/18/00	14.32	NS	NS	NS	NS	NS	NS
W-MW4	5/4/00	16.34	NS	NS	NS	NS	NS	NS
W-MW4	8/22/00	15.47	NS	NS	NS	NS	NS	NS
W-MW4	2/8/01	14.73	NS	NS	NS	NS	NS	NS
W-MW4	7/20/01	14.72	NS	NS	NS	NS	NS	NS
W-MW4	2/18/02	15.05	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)

**TABLE 1**  
**GROUNDWATER ELEVATION AND ANALYTICAL DATA, SITE NO. 2**  
**ALCOPARK FUELING FACILITY**  
**OAKLAND, CALIFORNIA**

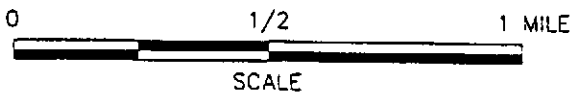
<i>All concentrations in ug/l (PPB).</i>								
Well	Date	Groundwater Elevation	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
W-MW5	9/9/99	15.44	NS	NS	NS	NS	NS	NS
W-MW5	1/18/00	14.67	NS	NS	NS	NS	NS	NS
W-MW5	5/4/00	16.18	NS	NS	NS	NS	NS	NS
W-MW5	8/22/00	15.32	NS	NS	NS	NS	NS	NS
W-MW5	2/8/01	14.53	NS	NS	NS	NS	NS	NS
W-MW5	7/20/01	14.59	NS	NS	NS	NS	NS	NS
W-MW5	2/18/02	14.94	NS	NS	NS	NS	NS	NS
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
W-MW6	7/15/98	NA	NA	13,000	ND (500)	ND (500)	ND (500)	ND (500)
W-MW6	10/22/98	NA	4,700	9,600	450	13	200	200
W-MW6	10/22/98	NA	NA	9,100	470	ND (250)	ND (250)	ND (250)
W-MW6	9/9/99	NA	6,600	3,700	2,500	43	310	250
W-MW6	1/18/00	NA	3,500	4,600	800	ND (5.0)	40	13
W-MW6	5/4/00	NA	NS	NS	NS	NS	NS	NS
W-MW6	8/22/00	NA	1,400	1,700	370	4.8	12	35
W-MW6	2/8/01	NA	NS	NS	NS	NS	NS	NS
W-MW6	7/20/01	NA	1,100	800	240	2.9	2.3	3.4
W-MW6	2/18/02	NA	1,500	570	260	ND (2.0)	11	4.3
W-MW7	9/9/99	NA	92	1,200	1.6	ND (0.5)	ND (0.5)	ND (0.5)
W-MW7	1/18/00	NA	ND	2,100	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW7	5/4/00	NA	140	1,100	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW7	8/22/00	NA	160	830	0.62	ND (0.5)	ND (0.5)	ND (0.5)
W-MW7	2/8/01	NA	130	650	ND (0.5)	0.53	ND (0.5)	ND (0.5)
W-MW7	7/20/01	NA	56	400	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW7	2/18/02	NA	ND (50)	200	ND (0.5)	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.



NORTH

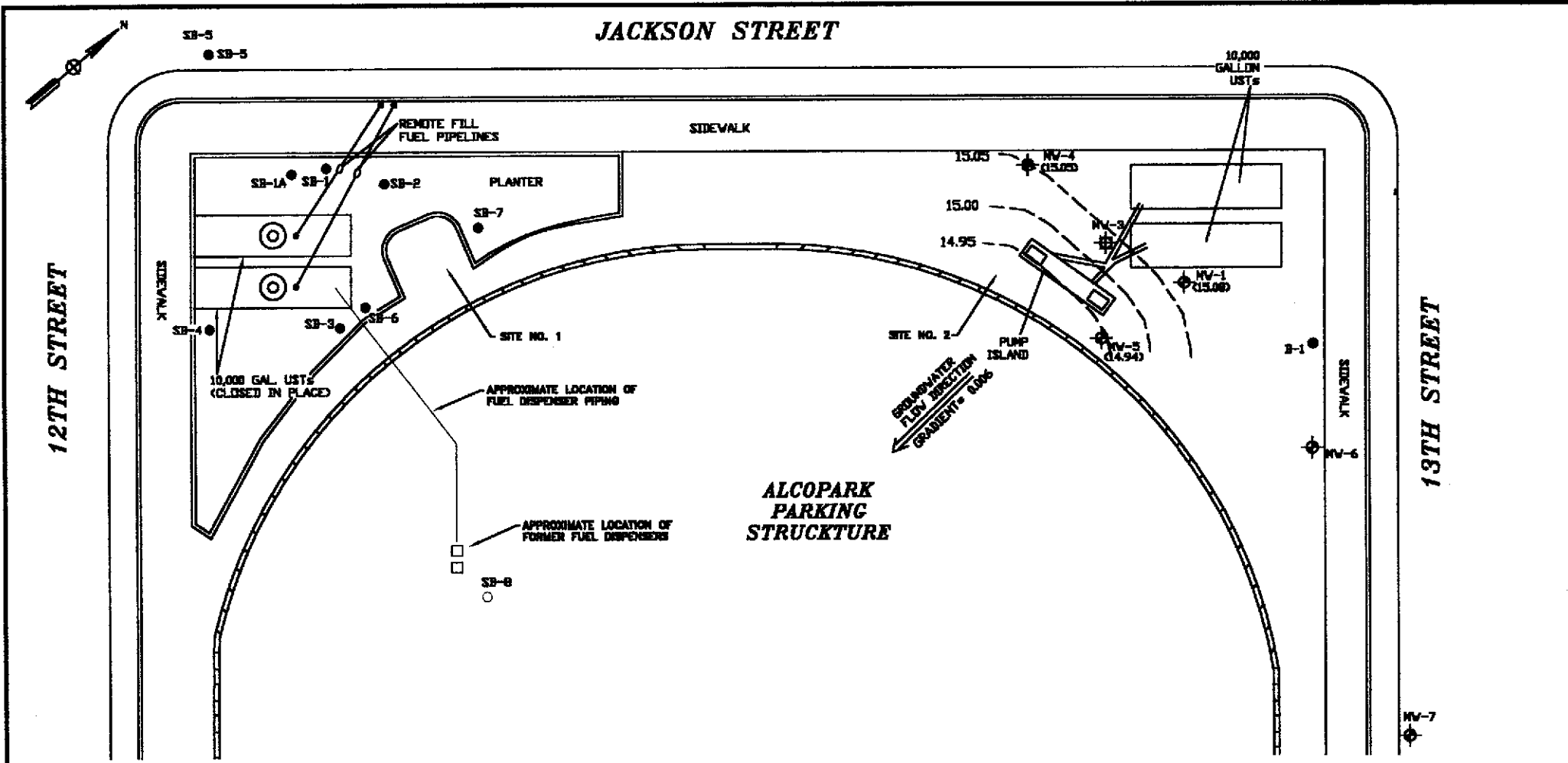


REFERENCE:  
 U.S.G.S. OAKLAND WEST, CALIFORNIA, 1959  
 PHOTOREVISED 1980

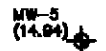
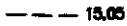


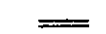
**PSI** ENVIRONMENTAL  
 GEOTECHNICAL  
 CONSTRUCTION  
 CONSULTING • ENGINEERING • TESTING

SITE LOCATION  
 ALCO PARK FUELING STATION  
 165 13TH STREET  
 OAKLAND, CALIFORNIA  
 PROJECT NUMBER: 575-9G028


DATE:	CKD BY:	FIGURE NO: 1
FILE NO: 9G028 -1		DRAWN BY: A. CONSTANTINESCU



**LEGEND:**

-  MW-5 (14.94) - MONITORING WELL LOCATION WITH GROUNDWATER ELEVATION INDICATED IN FEET MSL
-  15.05 - GROUNDWATER CONTOUR (ELEVATION INDICATED IN FEET MSL)
-  MV-3 - VADOSE MONITORING WELL LOCATION
-  P-1 - SOIL BORING
-  - UNDERGROUND PIPING

0 10 20  
 APPROXIMATE SCALE  
 (FEET)

		
GROUNDWATER ELEVATION MAP - 2/18/02 ALCOPARK PARKING FACILITY INTERSECTION OF JACKSON AND 13TH STREETS OAKLAND, CALIFORNIA PROJECT NUMBER: 575-9G028		
DATE: 3/02	CKD BY: F.P.	FIGURE NO.: 2
FILE NO.: 99028-03		DRAWN BY: B. BURFIELD

**APPENDIX A**

**GROUNDWATER SAMPLING FIELD PROCEDURES & WATER ELEVATIONS**

## APPENDIX A

### GROUND-WATER SAMPLING

The following procedures will be used for ground water sampling:

1. All equipment shall be washed prior to entering the well with an Alconox solution, followed by two tap water rinses and a deionized water rinse.
2. Prior to purging wells, depth-to-water will be measured using an electronic sounder with an accuracy of approximately 0.01 foot. The measurements will be made to the top of the well casing on the north side.
4. Free floating product thickness and depth-to-ground water will be measured in wells containing free floating product using a Solinst oil-water interface probe to an accuracy of approximately 0.003 meters (0.01 foot). The measurements will be made to the top of the well casing on the north side.
5. Water samples will be collected with a Teflon disposable bailer. In the case of grab groundwater sampling, samples will be collected with a disposable Teflon lined plastic tube equipped with a check valve. The water collected will be immediately decanted into laboratory-supplied vials and bottles. The containers will be overfilled, capped, labeled, and placed in a chilled cooler, prior to delivery to the laboratory for analysis.
6. Chain of custody procedures, including chain of custody forms, will be used to document water sample handling and transport from collection to delivery to the laboratory for analysis.
7. Ground-water samples will be delivered to a State-certified hazardous waste laboratory within approximately 24 hours of collection.



# FLUID MEASUREMENT FIELD DATA

SHEET: 1 OF 1

DATE: 2/18/02 PROJECT NAME: ALBA ALCO PARK PROJECT NO: 06041  
 WATER LEVEL MEASUREMENT INSTRUMENT: SOLINST SERIAL NO:  
 PRODUCT DETECTION INSTRUMENT: SERIAL NO:

EQUIP. DECON:  ALCONOX WASH  DIST/DEION 1 RINSE  ISOPROPANOL  ANALYTE FREE FINAL RINSE  TAP WATER FINAL RINSE  
 TAP WATER WASH  LIQUINOX WASH  DIST/DEION 2 RINSE  OTHER SOLVENT  DIST/DEION FINAL RINSE  AIR DRY

WELL NUMBER	GROUND SURFACE ELEVATION	TOP OF CASING ELEVATION	DEPTH TO PRODUCT BELOW TOC	DEPTH TO WATER BELOW TOC	WELL DEPTH BELOW TOC	PRODUCT THICKNESS	WATER TABLE ELEVATION	ACTUAL TIME
MW-1		33.00		17.92				1430
MW-4		33.63		18.58				1426
MW-5		33.01		18.07				1433
MW-6				NA				1500
MW-7				NA				1510

SAMPLE TIME  
 1439  
 1500  
 1510

REMEMBER TO CORRECT PRODUCT THICKNESS FOR DENSITY BEFORE CALCULATING WATER TABLE ELEVATION PREPARED BY:

**APPENDIX B**

**LABORATORY REPORT AND CHAIN OF CUSTODY**



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](mailto:main@mccampbell.com)

Professional Service Industries 4703 TideWater Ave, Suite B Oakland, CA 94601	Client Project ID: #0G041; ALCO PARK	Date Sampled: 02/18/02
		Date Received: 02/18/02
	Client Contact: Frank Poss/Rod Frieg	Date Extracted: 02/18/02
	Client P.O:	Date Analyzed: 02/18/02

02/25/02

Dear Frank & Rod:

Enclosed are:

- 1). the results of 3 samples from your #0G041; ALCO PARK 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



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Professional Service Industries 4703 TideWater Ave, Suite B Oakland, CA 94601	Client Project ID: #0G041; ALCO PARK	Date Sampled: 02/18/02
		Date Received: 02/18/02
	Client Contact: Frank Poss/Rod Frieag	Date Extracted: 02/21-02/22/02
	Client P.O:	Date Analyzed: 02/21-02/22/02

**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) <sup>+</sup>	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	% Recovery Surrogate
90609	MW-1	W	1500,a	ND<100	260	6.5	2.8	49	105
90610	MW-6	W	1500,a	570	260	ND<2.0	11	4.3	99
90611	MW-7	W	ND	200	ND	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.



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## QC REPORT

### EPA 8015m + 8020

Date: 02/21/02

Extraction: EPA 5030

Matrix: Water

Compound	Concentration: ug/L			%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	

SampleID: 22002

Instrument: GC-3

Surrogate1	ND	105.0	106.0	100.00	105	106	0.9
Xylenes	ND	35.0	33.4	30.00	117	111	4.7
Ethylbenzene	ND	11.6	11.1	10.00	116	111	4.4
Toluene	ND	11.4	11.0	10.00	114	110	3.6
Benzene	ND	11.1	10.7	10.00	111	107	3.7
MTBE	ND	9.3	8.9	10.00	93	89	4.4
TPH (gas)	ND	91.9	89.9	100.00	92	90	2.2

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{AmountSpiked}} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

30119 2PSI 20

**McCAMPBELL ANALYTICAL INC.**

110 2<sup>nd</sup> AVENUE SOUTH, #D7  
PACHECO, CA 94553-5560

Telephone: (925) 798-1620

Fax: (925) 798-1622

**CHAIN OF CUSTODY RECORD**

**TURN AROUND TIME**

RUSH   
  24 HR   
  48 HR   
  72 HR   
  5 DAY

Report To: FRANK POSS / ROD FRIETAG Bill To: ROD FRIETAG - ALAMEDA ESA

Company: PSI  
4703 TIDEWATER AVE. SUITE B  
OAKLAND, CA 94601

Tele: (510) 434-9200 Fax: (510) 434-7676

Project #: 06041 Project Name: ALCO PARK

Project Location: OAKLAND

Sampler Signature: CHRIS MERRITT

**Analysis Request**

**Other**

**Comments**

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 (7240/7421/239.2/6010)	
RCI	
pH	
TSS	
Specific Conductivity	

✓  
+2  
+2

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED						
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other			
MW-1		2/18/02	1439	4	VOA	X					X	X		X			
MW-6			1500			X					X	X		X			
MW-7			1510			X					X	X		X			

90609  
90610  
90611

Relinquished By: <u>CHRIS MERRITT</u>	Date: <u>2/18/02</u>	Time: <u>1553</u>	Received By: <u>Shirley Hailer</u>	Date: <u>2/18/02</u>	Time: <u>15:50</u>
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

ICE/°

GOOD CONDITION

HEAD SPACE ABSENT

PRESERVATION APPROPRIATE

CONTAINERS

VOAS  O&G  METALS  OTHER

VM