MAY 1992 QUARTERLY MONITORING REPORT
FOR
HERTZ SERVICE CENTER
#1 AIRPORT DRIVE
OAKLAND
ALAMEDA COUNTY
CALIFORNIA

R057

Prepared For:

THE HERTZ CORPORATION
225 BRAE BOULEVARD
PARK RIDGE, NEW JERSEY 07656-0713

#2260

Prepared By:

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.
4090 NELSON AVENUE, SUITE J
CONCORD, CALIFORNIA 94520

PROJECT NO. 6-91-5228

June 4, 1992

This report has been prepared by Environmental Science & Engineering, Inc. for the exclusive use of The Hertz Corporation as it pertains to their site located at #1 Airport Drive, Oakland, California. Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other geologists and engineers practicing in this field. No other warranty, express or implied, is made as to professional advice in this report.

REPORT PREPARED BY:

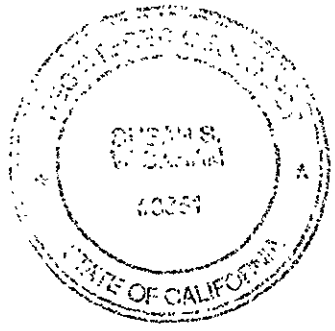
Michael E. Quillin
Senior Project Hydrogeologist

6/8/92
DATE

UNDER THE PRIMARY REVIEW AND SUPERVISION OF:

Susan S. Wickham, RG 3851
Senior Geologist

6-8-92
DATE



PROJECT NO. 6-91-5228

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1.0 INTRODUCTION

This report presents the results of quarterly ground water monitoring and sampling conducted on May 13, 1991 by Environmental Science & Engineering, Inc. (ESE) at the Hertz Service Center, No. 1 Airport Drive, Oakland, Alameda County, California. The site is an active rental car service and fueling facility located at the Oakland International Airport (See Figure 1 - Site Plan).

ESE Summarized Site Investigation background in the August 1991 Quarterly Monitoring Report (ESE, 1991a) and the November 1991 Quarterly Monitoring Report (ESE, 1991b). The results of additional site investigation conducted by ESE, which included installation of a fourth ground water monitoring well at the site, were summarized in the February 1992 Quarterly Monitoring Report (ESE, 1992).

2.0 MAY 1992 MONITORING AND SAMPLING RESULTS

2.1 Ground Water Elevations

ESE measured ground water levels in site wells and calculated ground water elevations relative to mean sea level (MSL). The results are presented in Table 1 - Summary of Ground Water Elevation and Analytical Data. These data show that ground water elevations rose in three of the four wells (MW-2, MW-3, and MW-4) by as much as 0.8 feet relative to the previous monitoring event. Field documentation for water level measurements, including well purging results, are presented Appendix A - Well Purging and Sampling Data.

Ground water elevations for the current monitoring event are contoured in Figure 2 - Ground Water Elevations. These results demonstrate that the ground water gradient is oriented generally southwest in the vicinity of well MW-2, shifting to a more westerly direction along the southwestern site margin in the vicinity of wells MW-1, MW-3, and MW-4. Overall, the site gradient is oriented generally west-southwest, with an approximate

magnitude of 80.6 feet/mile (0.015 ft/ft). These findings are generally consistent with historical results.

2.2 Ground Water Chemistry

Ground water samples were collected from each of the wells after they were purged of approximately four casing volumes (See Appendix A). Samples were analyzed by Curtis & Tompkins, Ltd. for Total Petroleum Hydrocarbons as Gasoline (TPH-Gas) and Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) using EPA Method 5030/8020 (modified). Current analytical results are summarized with historical data in Table 1 and graphically presented in Figure 3 - Concentrations of Petroleum Hydrocarbons in Ground Water. The laboratory report and chain of custody documentation are presented as Appendix B - Analytical Results and Chain of Custody documentation. The data presented in Table 1 show that concentrations of petroleum hydrocarbons in Well MW-4 increased significantly relative to February 1992 findings. The concentration of TPH-Gas increased almost 10-fold and the Benzene concentrations increase by a factor of almost four during the interval. Concentrations of petroleum hydrocarbons remained at their historically nondetectable levels for wells MW-1, MW-2, and MW-3. These findings tend to confirm that the origin of petroleum hydrocarbons in ground water is in the vicinity of the fuel dispensers and former product lines, and indicate that hydrocarbons may have been flushed from the capillary zone due to the noted increases in ground water levels near well MW-4. These findings also suggest that, based on the historical preferred direction of ground water flow, there is the potential for off-site migration to the west.

For project quality assurance and quality control (QA/QC) purposes, ESE collected a duplicate sample from well MW-4 and a trip (travel) blank and had them analyzed for TPH-Gas and BTEX. Results for sample MW-4 and its duplicate (DUP; Table 1) can be compared using relative percent differences (RPDs). For TPH-Gas, Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX), the RPDs between the two samples were 1.6, 2.9, 0.0, 7.3, and 0.0, respectively. These results are considered excellent agreement between ground water samples, and indicative that ESE's sample collection procedures were consistent and in accordance with standard practices. The trip blank (TRIP; Table 1),

collected as a means of evaluating sample handling and transport procedures, showed nondetectable concentrations for all analytes. This indicates that general sample handling had transport methodology used by ESE and Curtis & Tompkins did not result in contamination of samples with petroleum hydrocarbons.

3.0 REFERENCES

Environmental Science & Engineering, Inc. (ESE), 1991, August 1991 Quarterly Monitoring Report for Hertz Service Center, #1 Airport Drive, Oakland, Alameda County, California, September 16, 1991.

——— 1991, November 1991 Quarterly Monitoring Report for Hertz Service Center, #1 Airport Drive, Oakland, Alameda County, California, December 11, 1991.

——— 1992, February 1992 Quarterly Monitoring Report for Hertz Service Center, #1 Airport Drive, Oakland, Alameda County, California, March 24, 1992.

TABLE 1

SUMMARY OF GROUND-WATER ELEVATION AND ANALYTICAL DATA
HERTZ/OAKLAND AIRPORT, OAKLAND, CALIFORNIA

GROUND WATER		Ground-Water Elevation (feet above MSL)	Metals (ppm)					Oil & Grease (ppm)	Total Petroleum Hydrocarbons (ppb)							Purgeable Halocarbons (EPA 8010) (ppb)	Semi-Volatile Organics (EPA 8270) (ppb)
Date	Well		Cd	Cr	Pb	Ni	Zn		as Gasoline	as Kerosene	as Diesel	B	T	E	X		
05/13/92	MW-1	2.93	Not Analyzed					--	ND	--	--	ND	ND	ND	ND	--	--
	MW-2	4.66						--	ND	--	--	ND	ND	ND	ND	--	--
	MW-3	3.64						--	ND	--	--	ND	ND	ND	ND	--	--
	MW-4	3.57						--	62,000	--	--	3400	5200	990	5200	--	--
	DUP	--						--	61,000	--	--	3300	5200	920	5200	--	--
	TRIP	--						--	ND	--	--	ND	ND	ND	ND	--	--
02/18/92	MW-1	3.06	Not Analyzed					--	ND	--	ND	ND	ND	ND	ND	--	--
	MW-2	3.86						--	ND	--	ND	ND	ND	ND	ND	--	--
	MW-3	2.92						--	ND	--	ND	ND	ND	ND	ND	--	--
	MW-4	3.43						--	6,600	--	ND	910	1900	280	1700	--	--
11/12/91	MW-1	3.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	all ND	all ND
	MW-2	3.86	ND	ND	ND	ND	ND	ND	ND	ND	52†	ND	ND	ND	ND	all ND	all ND
	MW-3	2.92	7.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	all ND	all ND
08/20/91	MW-1	2.30	all ND					ND	ND	ND	ND	ND	ND	ND	ND	all ND	all ND
	MW-2	4.09	all ND					ND	ND	ND	ND	ND	ND	ND	ND	all ND	all ND
	MW-3	3.06	all ND					ND	ND	ND	ND	ND	ND	ND	ND	all ND	all ND
12/22/89	MW-1	2.9 est.	--					--	ND	--	ND	ND	ND	ND	ND	all ND	all ND *
	MW-2	3.6 est.	--					--	ND	--	ND	ND	ND	ND	ND	all ND	all ND *
	MW-3	2.7 est.	--					--	ND	--	ND	ND	ND	ND	ND	all ND	all ND *
11/25/88	Water Sample A5 from excavation							--	7,400	--	--	63	570	250	1900	--	--

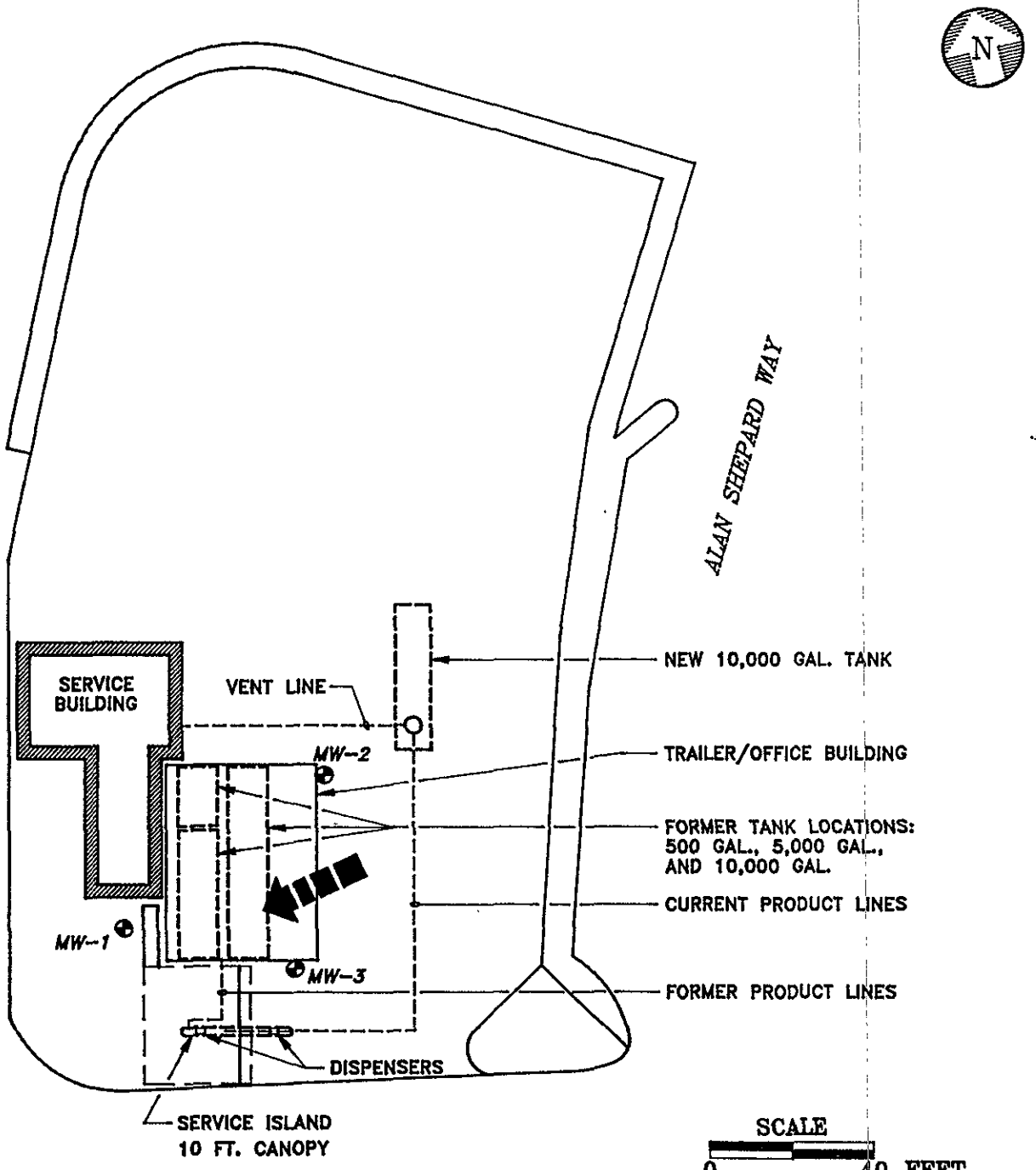
NOTES:

ND = Not detected. -- = Not Analyzed or reported. ppm = parts per million (mg/L) ppb = parts per billion (ug/L)

B = Benzene T = Toluene E = Ethylbenzene X = Xylenes

† = Detection limit for TPH as Diesel is 50 ppb. Duplicate sample analyzed contained ND<50 ppb.

* An open scan reported two "tentatively identified compounds": (iodomethyl) benzene at 30 ppb in MW-1 and 40 ppb in MW-3; and 4-4' butylidenebis [2-(1,1-dimethyl -ethyl) 5-methyl] phenol at 20 ppb in MW-2 and MW-3. The identity and concentrations of these compounds are not considered reliable.



LEGEND

- APPROXIMATE LOCATION OF MONITORING WELLS
- APPROXIMATE GROUND-WATER FLOW DIRECTION – 2/92

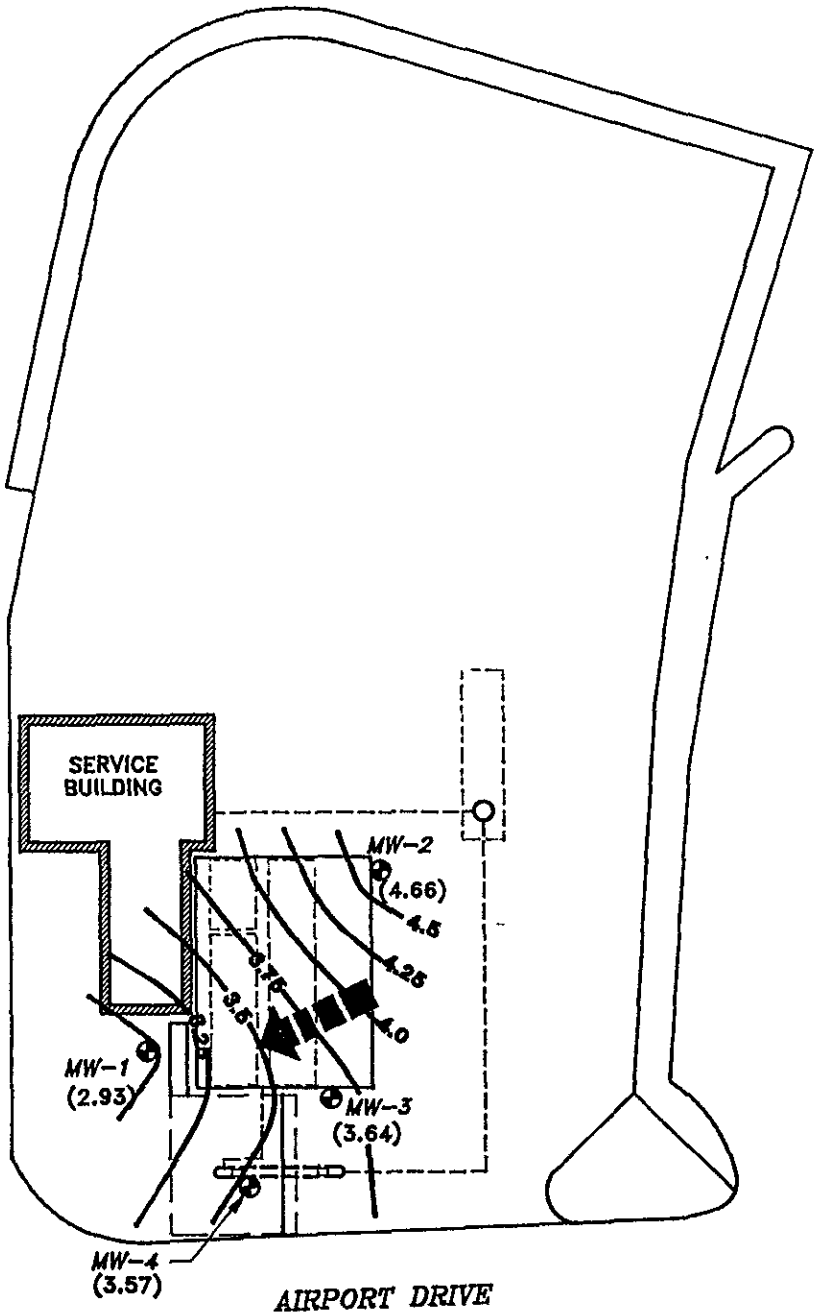
ESE A CH2M HILL COMPANY
Environmental Science & Engineering, Inc.

HERTZ/OAKLAND AIRPORT
OAKLAND, CALIFORNIA

FIGURE 1
SITE PLAN

DRAWN BY	APPROVED BY	REVISED
CVS		DWR 6/92

DATE	FILE NAME	PROJ. NO.
8/91	F1SP40	6-91-5228



SCALE

0 40 FEET

WELL	WELL ELEV(ft)	GW DEPTH(ft)	GW ELEV(ft)
MW-1	7.45	4.52	2.93
MW-2	8.09	3.43	4.66
MW-3	7.66	4.02	3.64
MW-4	8.23	4.66	3.57

CONTOUR INTERVAL: 0.50 FEET

LEGEND

- APPROXIMATE LOCATION OF MONITORING WELLS (4)
- 3.25 — GROUND WATER ELEVATION CONTOUR (IN FEET ABOVE MSL)
- APPROXIMATE DIRECTION OF GROUND WATER FLOW

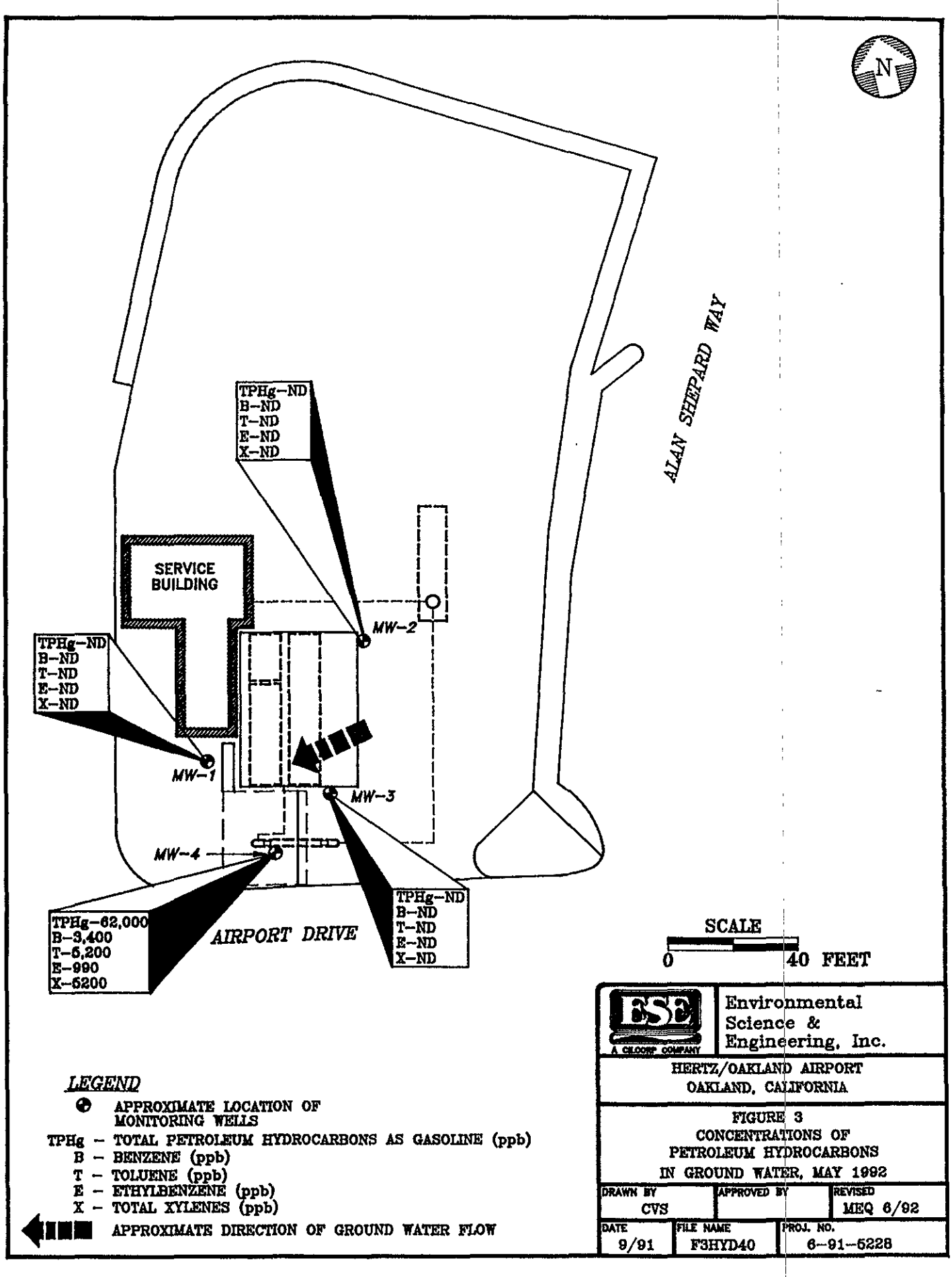
Environmental Science & Engineering, Inc.
A CH2MHILL COMPANY

HERTZ/OAKLAND AIRPORT
OAKLAND, CALIFORNIA

FIGURE 2
GROUND WATER ELEVATIONS
MAY 13, 1992

DRAWN BY	APPROVED BY	REVISED
CVS		MEQ 6/92

DATE	FILE NAME	PROJ. NO.
9/91	F2GWE40	6-91-5228


N
ALAN SHEPARD WAY
SERVICE BUILDING
TPHg–ND
B–ND
T–ND
E–ND
X–ND
MW–2
TPHg–ND
B–ND
T–ND
E–ND
X–ND
MW–1
MW–3
MW–4
TPHg–62,000
B–3,400
T–5,200
E–990
X–6200
AIRPORT DRIVE
TPHg–ND
B–ND
T–ND
E–ND
X–ND
SCALE
0
40 FEET
LEGEND
APPROXIMATE LOCATION OF MONITORING WELLS
TPHg – TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (ppb)
B – BENZENE (ppb)
T – TOLUENE (ppb)
E – ETHYLBENZENE (ppb)
X – TOTAL XYLENES (ppb)
APPROXIMATE DIRECTION OF GROUND WATER FLOW
ESE
A CH2MHILL COMPANY
Environmental Science & Engineering, Inc.
HERTZ/OAKLAND AIRPORT
OAKLAND, CALIFORNIA
FIGURE 3
CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUND WATER, MAY 1992
DRAWN BY CVS
APPROVED BY
REVISED MEQ 6/92
DATE 9/91
FILE NAME F3HYD40
PROJ. NO. 6–91–5228

APPENDIX A

WELL PURGING AND SAMPLING DATA

WELL SAMPLING FIELD LOG

PROJECT NAME: Hertz Oakland
PROJECT MANAGER: Mike Quillin
SAMPLER:
GROUNDWATER: OTHER:

DATE:
CLIENT: Hertz
SAMPLE LOCATION I.D. MW-1
START TIME:

CASING ELEVATION (FT): DATUM: CASING DIAMETER: 2" ✓ 4" OTHER

DEPTH TO WATER (FT): 4.52' DEPTH OF WELL (FT): 14.85 DIFFERENCE (FT): 10.33

WATER ELEVATION (FT): CALCULATED WELL VOLUME (GAL): 1.7

ACTUAL PURGE VOLUME (GAL): MINIMUM PURGE VOLUME (3 x WV): 5 Gals.

FIELD MEASUREMENTS

TIME	Volume (GAL)	pH (Units)	E.C.	Temp.	Clarity & Color	Other
2					Cloudy	
9					Cloudy/Black	

PURGE METHOD

__Pneumatic Displacement Pump __Other
X Baller (Teflon/PVC/SS) __Submersible Pump

SAMPLE METHOD

__Baller (Teflon/PVC/SS) __Dedicated
X Baller (Disposable) __Other

WELL INTEGRITY:

REMARKS:

SIGNATURE: CHECKED BY:

SELECTED WELL CASING DIAMETERS VOLUMES PER UNIT LENGTH

WELL CASING I.D. (inches)	GAL/FT	CUBIC FT/FT
2.0	0.1632	0.0218
4.0	0.6528	0.0873
6.0	1.4690	0.1963

CONVERSION FACTORS

TO CONVERT	INTO	MULTIPLY
Feet of Water	Lbs/Sq. Inch	0.4335
Lbs/Sq. Inch	Feet of Water	2.3070
Cubic Feet	Gallons	7.4800
Gallons	Liters	3.7850
Feet	Meters	0.3048
Inches	Centimeters	2.5400

WELL SAMPLING FIELD LOG

PROJECT NAME: Hesty / Oakland
PROJECT MANAGER: Mike Quillin
SAMPLER: _____
GROUNDWATER: _____ OTHER: _____

DATE: _____
CLIENT: Hesty
SAMPLE LOCATION I.D. MW-2
START TIME: _____

CASING ELEVATION (FT): _____ DATUM: _____ CASING DIAMETER: 2" ✓ 4" __ OTHER __

DEPTH TO WATER (FT): 3.43 DEPTH OF WELL (FT): 14.25 DIFFERENCE (FT): 10.82

WATER ELEVATION (FT): _____ CALCULATED WELL VOLUME (GAL): 1.5

ACTUAL PURGE VOLUME (GAL): _____ MINIMUM PURGE VOLUME (3 x WV): Goal

FIELD MEASUREMENTS

TIME	Volume (GAL)	pH (Units)	E.C.	Temp.	Clarity & Color	Other
2					Clear	
4					Cloudy Yellow	

PURGE METHOD

__Pneumatic Displacement Pump __Other
X Bailer (Teflon/PVC/SS) __Submersible Pump

SAMPLE METHOD

__Bailer (Teflon/PVC/SS) __Dedicated
X Bailer (Disposable) __Other

WELL INTEGRITY: _____

REMARKS: _____

SIGNATURE: _____ CHECKED BY: _____

SELECTED WELL CASING DIAMETERS VOLUMES PER UNIT LENGTH

WELL CASING I.D. (inches)	GAL/FT	CUBIC FT/FT
2.0	0.1632	0.0218
4.0	0.6528	0.0873
6.0	1.4690	0.1963

CONVERSION FACTORS

TO CONVERT	INTO	MULTIPLY
Feet of Water	Lbs/Sq. Inch	0.4335
Lbs/Sq. Inch	Feet of Water	2.3070
Cubic Feet	Gallons	7.4800
Gallons	Liters	3.7850
Feet	Meters	0.3048
Inches	Centimeters	2.5400

WELL SAMPLING FIELD LOG

PROJECT NAME: Hertz / Oakland
PROJECT MANAGER: M. Jo Quillin
SAMPLER: _____
GROUNDWATER: _____ OTHER: _____

DATE: _____
CLIENT: Hertz
SAMPLE LOCATION I.D. MW-3
START TIME: _____

CASING ELEVATION (FT): _____ DATUM: _____ CASING DIAMETER: 2" ✓ 4" __ OTHER __

DEPTH TO WATER (FT): 4.02' DEPTH OF WELL (FT): 14.45 DIFFERENCE (FT): 10.43

WATER ELEVATION (FT): _____ CALCULATED WELL VOLUME (GAL): 1.7

ACTUAL PURGE VOLUME (GAL): _____ MINIMUM PURGE VOLUME (3 x WV): 5.0

FIELD MEASUREMENTS

TIME	Volume (GAL)	pH (Units)	E.C.	Temp.	Clarity & Color	Other
2					Clear	
9					Cloudy/Yellow	

PURGE METHOD

__Pneumatic Displacement Pump __Other
X Bailer (Teflon/PVC/SS) __Submersible Pump

SAMPLE METHOD

__Bailer (Teflon/PVC/SS) __Dedicated
X Bailer (Disposable) __Other

WELL INTEGRITY: _____

REMARKS: _____

SIGNATURE: _____ CHECKED BY: _____

SELECTED WELL CASING DIAMETERS VOLUMES PER UNIT LENGTH

WELL CASING I.D. (inches)	GAL/FT	CUBIC FT/FT
2.0	0.1632	0.0218
4.0	0.6528	0.0873
6.0	1.4690	0.1963

CONVERSION FACTORS

TO CONVERT	INTO	MULTIPLY
Feet of Water	Lbs/Sq. Inch	0.4335
Lbs/Sq. Inch	Feet of Water	2.3070
Cubic Feet	Gallons	7.4800
Gallons	Liters	3.7850
Feet	Meters	0.3048
Inches	Centimeters	2.5400

WELL SAMPLING FIELD LOG

PROJECT NAME: Hertz / Oakland
PROJECT MANAGER: Mike Quillin
SAMPLER: _____
GROUNDWATER: _____ OTHER: _____

DATE: _____
CLIENT: Hertz
SAMPLE LOCATION I.D. MW-4
START TIME: _____

CASING ELEVATION (FT): _____ DATUM: _____ CASING DIAMETER: 2" ✓ 4" __ OTHER __

DEPTH TO WATER (FT): 4.66 DEPTH OF WELL (FT): 7.83 DIFFERENCE (FT): 3.17

WATER ELEVATION (FT): _____ CALCULATED WELL VOLUME (GAL): 0.5

ACTUAL PURGE VOLUME (GAL): _____ MINIMUM PURGE VOLUME (3 x WV): 2.5 gal.

FIELD MEASUREMENTS

TIME	Volume (GAL)	pH (Units)	E.C.	Temp.	Clarity & Color	Other
1					Black	
3					Black	

PURGE METHOD

__Pneumatic Displacement Pump __Other

__Bailer (Teflon/PVC/SS) __Submersible Pump

SAMPLE METHOD

__Bailer (Teflon/PVC/SS) __Dedicated

__Bailer (Disposable) __Other

WELL INTEGRITY: _____

REMARKS: Duplicate

SIGNATURE: _____ CHECKED BY: _____

SELECTED WELL CASING DIAMETERS VOLUMES PER UNIT LENGTH

WELL CASING I.D. (inches)	GAL/FT	CUBIC FT/FT
2.0	0.1632	0.0218
4.0	0.6528	0.0873
6.0	1.4690	0.1963

CONVERSION FACTORS

TO CONVERT	INTO	MULTIPLY
Feet of Water	Lbs/Sq. Inch	0.4335
Lbs/Sq. Inch	Feet of Water	2.3070
Cubic Feet	Gallons	7.4800
Gallons	Liters	3.7850
Feet	Meters	0.3048
Inches	Centimeters	2.5400

APPENDIX B

ANALYTICAL RESULTS AND CHAIN OF CUSTODY DOCUMENTATION

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 05/13/92
DATE REPORTED: 05/20/92

LABORATORY NUMBER: 107389

CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING

PROJECT ID: 6-91-5228

LOCATION: HERTZ

RESULTS: SEE ATTACHED

Reviewed By

Reviewed By

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 107389
CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
PROJECT ID: 6-91-5228
LOCATION: HERTZ

DATE SAMPLED: 05/12/92
DATE RECEIVED: 05/13/92
DATE ANALYZED: 05/15,18/92
DATE REPORTED: 05/20/92

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
107389-1	MW-1	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
107389-2	MW-2	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
107389-3	MW-3	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
107389-4	MW-4	62,000	3,400	5,200	990	5,200
107389-5	DUP	61,000	3,300	5,200	920	5,200
107389-6	TRIP	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, %	<1
RECOVERY, %	102

10-1387

CHAIN OF CUSTODY RECORD

DATE 11/ay 12/92 PAGE 1 OF 1

PROJECT NAME Hertz

ADDRESS #1 Airport Drive. Oakland

PROJECT NO. 6-91-5228

SAMPLED BY Neil Marsden

LAB NAME Curtis + Tompkins

ESE Environmental Science & Engineering, Inc.

4080 Nelson Avenue
Suite J
Concord, CA 94520

(415) 685-4053

Fax (415) 685-5323

SAMPLE #	DATE	TIME	LOCATION	TPH-gasoline	BTEX	MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
MW-1	5/12	1616	Oakland	X	X	Water	3	VOCs
MW-2	"	1621	"	X	X	"	3	"
MW-3	"	1625	"	X	X	"	3	"
MW-4	"	1628	"	X	X	"	3	"
Dup	"	1633	"	X	X	"	2	"
Trip	"		"	X	X	"	1	"

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. [illegible]	Neil R. Garrett	5/13/92	08:00
2. Neil R. Garrett	Tony E. Wilson	5-13-92	1525
3.			
4.			
5.			

TOTAL NUMBER OF CONTAINERS: 23

REPORT RESULTS TO: Mike Quillin

SPECIAL SHIPMENT REQUIREMENTS

INSTRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):

SAMPLE RECEIPT

CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	✓
CONFORMS TO RECORD	✓