SECOND QUARTER 1993
GROUND WATER MONITORING AND
SUBSURFACE INVESTIGATION REPORT

HERTZ SERVICE CENTER
#1 AIRPORT DRIVE
OAKLAND
ALAMEDA COUNTY
CALIFORNIA

Prepared For:

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PROJECT NO. 6-91-5228

July 1, 1993

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:

FOR

August 9, 1993

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DATE

UNDER THE PRIMARY REVIEW AND SUPERVISION OF:

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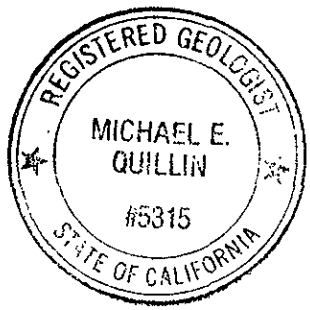

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SECOND QUARTER 1993 GROUND-WATER MONITORING AND SUBSURFACE INVESTIGATION REPORT FOR HERTZ SERVICE CENTER, #1 AIRPORT DRIVE, OAKLAND, CALIFORNIA

1.0 INTRODUCTION

This report presents the results of additional subsurface investigation and Second Quarter 1993 ground-water monitoring activities conducted by Environmental Science & Engineering, Inc. (ESE) at the Hertz Service Center, No. 1 Airport Drive, Oakland, Alameda County, California ("site"). The site is an active rental car service and fueling facility located at the Oakland International Airport (Figure 1 - Site Plan). Subsurface investigation activities included the drilling, installation, and sampling of three ground-water monitoring wells (MW-7, MW-8, and MW-9; Figure 1). Ground-water monitoring activities included the collection of depth to ground-water measurements and ground-water samples from the new wells and existing wells MW-1 through MW-6 (Figure 1). The purpose of additional subsurface investigation described in this report was to define the extent of petroleum hydrocarbons in soil and ground water downgradient (south and west) of the existing ground-water monitoring wells by installing additional wells on Port of Oakland property downgradient of the site.

In association with additional subsurface investigation and Second Quarter 1993 ground-water monitoring, ESE used electronic locating equipment to find well MW-5, which had been paved over earlier this year, and cleared the asphalt so that ground-water samples could be collected. No samples were collected from the well during First Quarter 1992 monitoring.

ESE summarized site investigation background in the August 1991 (ESE, 1991a) and November 1991 (ESE, 1991b) Quarterly Monitoring Reports for the subject site. The results of additional site investigation conducted by ESE, which included installation of a fourth ground-water monitoring well (MW-4) at the site, were summarized in the February 1992

Quarterly Monitoring Report (ESE, 1992a). The results of additional site investigation, which included installing two wells, one onsite (MW-5) and the other offsite (MW-6), were summarized in the Fourth Quarter 1992 Ground-Water Monitoring and Subsurface Investigation Report (ESE, 1992b). ESE has conducted quarterly monitoring activities at the site since August 1991.

At the time wells MW-5 and MW-6 were installed, ESE identified an underground storage tank complex on Port of Oakland property immediately south and west of the site. ESE learned from a Port of Oakland contact that there are two tanks present at this location. One is a 1,000-gallon capacity diesel tank operated by the Federal Aviation Administration (FAA) for emergency generator use. The second is an 8,000-gallon diesel tank operated by the Port of Oakland for emergency use. Whereas soil samples from wells MW-4 and MW-5 reported no detectable petroleum hydrocarbons, a ground-water sample collected from the well nearest the diesel tank complex (MW-5) reported detectable hydrocarbons in the diesel fuel range. Ground water sampled from well MW-6 reported detectable hydrocarbons in the gasoline range. These results suggest the possible influence of multiple hydrocarbon sources on ground water generally downgradient of the Hertz site, and are the primary motivation for additional investigation presented in this report.

2.0 INSTALLATION OF ADDITIONAL GROUND-WATER MONITORING WELLS

2.1 PERMITTING

ESE obtained permits from the Alameda County Flood Control and Water Conservation District to install three additional ground-water monitoring wells at the site. Right of entry to install the new wells on Port of Oakland property was coordinated between the Port of Oakland and Hertz.

2.2 SOIL BORINGS AND SOIL SAMPLING

On May 24, 1993, ESE supervised the drilling of soil borings MW-7, MW-8, and MW-9 to depths of 13 feet below ground surface (bgs) in accordance with ESE Standard Operating Procedure (SOP) No. 1 (Appendix A). The drilling was performed by Soils Exploration Services, Inc. (SES) of Vacaville, California using a limited-clearance hollow stem auger drill rig. Soil boring locations are shown on Figure 1. Ground water was observed during drilling at approximately 4.5 feet bgs. A graphical presentation of the soil borings, logged by an ESE geologist, are presented in Appendix B - Boring Logs.

During drilling, one soil sample from each boring was collected from the approximate unsaturated zone/ground-water interface (at depths of approximately four feet bgs). Soil sample collection and handling procedures are described in ESE's SOP No. 1. Soil samples were transported and submitted under chain of custody to Sequoia Analytical Laboratory (Sequoia) of Concord, California, where they were analyzed for Total Petroleum Hydrocarbons as Gasoline (TPH-g) and as Diesel (TPH-d) by EPA Method 5030/8015 (modified) and for benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Method 8020.

Soil cuttings generated during drilling activities and rinse water generated as a result of drilling and soil sampling equipment decontamination were contained in Department of Transportation (DOT)-rated 55-gallon drums pending appropriate profiling and disposal.

2.3 WELL CONSTRUCTION AND DEVELOPMENT

Soil borings MW-7, MW-8, and MW-9 were converted to ground-water monitoring wells in accordance with ESE SOP No. 2 (Appendix A). The new wells were constructed of new 2-inch diameter, 0.02-inch slotted, schedule 40 polyvinyl chloride (PVC) screen from 13 to 3 feet bgs and blank PVC casing from 3 feet bgs to the surface. The well annulus was packed with No. 3 Monterey sand from 13 feet to 2.0 feet, hydrated bentonite pellets from 2.0 to 1.5 feet, and cement grout from 1.5 feet to a traffic-rated well box at the surface. Well completion details are presented on the geologic boring logs (Appendix B).

The new wells were developed prior to placement of the grout by mechanical surging and bailing as described in ESE SOP No. 2. Approximately 10 gallons of ground water were removed from each well during this process. The well development process serves the purpose of adjusting the sand pack around the well, which improves the filtering and flow properties of the sand pack; improving the communication between the aquifer and the well; and removing fine sediments from the well casing. Well development equipment was decontaminated as described in ESE's SOP No. 2. Well purge water and equipment rinse water were stored onsite in 55-gallon DOT-rated drums pending disposal.

The top of the PVC casing for each new well was marked and surveyed by ESE relative to existing on-site wells, which were surveyed relative to an arbitrary site datum at the time they were installed. The mark on the top of casing for each well will be used as the reference datum for the measurement of the depth to ground water for each well.

3.0 GROUND-WATER MONITORING

3.1 GROUND-WATER ELEVATIONS

On May 27, 1993, ESE measured the static water levels in wells MW-1 through MW-9 using an electric water level tape. Measurements were made relative to the surveyed datum for each well. ESE calculated relative ground-water elevations for the purpose of preparing a ground-water elevation contour map, from which ESE estimated the general direction and magnitude of the ground-water gradient. No free phase product was observed in any of the wells. Field documentation for water level measurements, including well purging results, are presented in Appendix C - Well Purging and Sampling Data.

3.2 GROUND-WATER SAMPLING AND ANALYSIS

On May 27, 1993, ESE collected ground-water samples from each of the wells after they were purged of approximately four casing volumes in accordance with ESE SOP No. 3 (Appendix A). Samples were analyzed by Sequoia Analytical for TPH-g and TPH-d using EPA Method 5030/8015 (modified) and for BTEX using EPA Method 5030/8020.

As a measure of field quality assurance and quality control (QA/QC), ESE collected a duplicate sample from well MW-9 as a means of evaluating sample homogeneity and to provide a check on ESE's sample collection procedures. The duplicate sample also serves as check on analytical laboratory procedures. ESE also collected a trip blank from the lab and had it analyzed for TPH-g and BTEX as a check on laboratory cleanliness and ESE transport procedures.

4.0 RESULTS

4.1 SOIL SAMPLES

The boring logs for wells MW-7, MW-8, and MW-9 (Appendix B) show that the native soil from approximately 1 to 10 feet bgs consists of poorly-graded, fine-grained sands.

Soil samples collected from borings MW-7, MW-8, and MW-9 were analyzed by Sequoia for TPH-g, TPH-d, and BTEX by EPA Methods 5030/8015 (modified) and 8020, respectively. No detectable concentrations of TPH-g, TPH-d or BTEX were reported for the soil samples. The laboratory report and chain of custody documentation are presented as Appendix D - Analytical Results for Soil Samples.

4.2 GROUND-WATER ELEVATIONS

Table 1 presents a historical summary of ground-water elevation data, including the current monitoring event. Ground-water elevations for the current monitoring event are contoured in Figure 2 - Ground-Water Elevations, May 27, 1993. The overall direction of ground-water flow was observed to be to the west-southwest with a gradient of approximately 115 feet/mile (0.022 ft/ft), which is generally consistent with the gradient of 160 feet/mile (0.03 ft/ft) noted in the First Quarter 1993 ground-water monitoring report. In the vicinity of MW-5, there exists an anomalously high water elevation that could reflect influence by backfill materials associated with the Port of Oakland/FAA diesel tank complex or trenching for underground power lines (see Figure 1). In this area, the ground-water gradient is oriented toward the southeast.

4.3 GROUND-WATER SAMPLES

Current analytical results are summarized with historical data in Table 1. Current analytical data are graphically presented in Figure 3 - Concentrations of Petroleum Hydrocarbons in Ground Water (May 27, 1993). The laboratory report and chain of custody documentation are presented as Appendix E - Analytical Results for Ground-Water Samples.

With respect to on-site wells (MW-1 through MW-5), only well MW-4 showed detectable TPH-g and BTEX constituents. TPH-g was reported at 48,000 micrograms per liter (μg/L), and BTEX concentrations to 7,200 μg/L were reported. TPH-d was detected in MW-4 at 4,900 μg/L. In addition, TPH-d was detected in wells MW-3 and MW-5 at 55 and 75 μg/L, respectively.

With respect to off-site wells, MW-6 was the only one for which detectable TPH-g and BTEX were reported. Samples from new wells MW-7, MW-8, and MW-9 reported only detectable TPH-d at concentrations ranging from 72 to 79 ppm.

Based on these findings for ground-water samples, ESE presents the interpreted extent of TPH-g and TPH-d in ground water in Figure 4 - Approximate Extent of Petroleum Hydrocarbons in Ground Water (May 27, 1993). TPH-g in ground water appears to be of limited extent relative to TPH-d. The generally low concentrations of TPH-d noted for wells MW-7, MW-8 and MW-9 suggest these wells are near the downgradient extent of the plume of dissolved diesel fuel in ground water.

5.0 CONCLUSIONS

Based on the findings of current and past subsurface investigation in conjunction with quarterly ground-water monitoring, ESE makes the following conclusions regarding the Hertz site:

- Soil samples from new wells MW-7, MW-8, and MW-9, and from the remaining offsite well MW-6, reported no detectable petroleum hydrocarbons, indicating that shallow soil downgradient of the Hertz site has not been impacted by fuel release.

- Although the direction of ground-water flow beneath the site is generally consistent with historical findings (west-southwest with a gradient of approximately 115 feet/mile), the anomalously high ground-water elevation noted in well MW-5 and the associated southeast direction of gradient may have resulted in migration of dissolved diesel fuel in ground water toward Hertz site wells MW-3, MW-4 and MW-5.

- The occurrence of TPH-g in ground water is significantly less extensive than that of TPH-d, and the additional subsurface investigation described herein has defined an approximate nondetectable concentration line for TPH-g. The low concentrations of TPH-d noted in downgradient wells suggest that the wells approximate the downgradient extent of the plume, but complete definition of the TPH-d plume has not been accomplished. However, additional investigation using borings and/or wells will not be possible due to space constituents.

- TPH-d detected in ground water may be present due to a release from the Port of Oakland and/or FAA tanks rather than activities at the Hertz site. Testing of the tanks for integrity should be conducted, and investigation of soil and ground water in the immediate area of the tanks should be initiated to determine if an off-site source exists for diesel fuel in the subsurface.

- Pending the outcome of additional investigation associated with the diesel tank, as appropriate, Hertz should initiate evaluation of remedial options for TPH-Gasoline in ground water via a feasibility study in accordance with applicable county and state guidelines.

6.0 REFERENCES

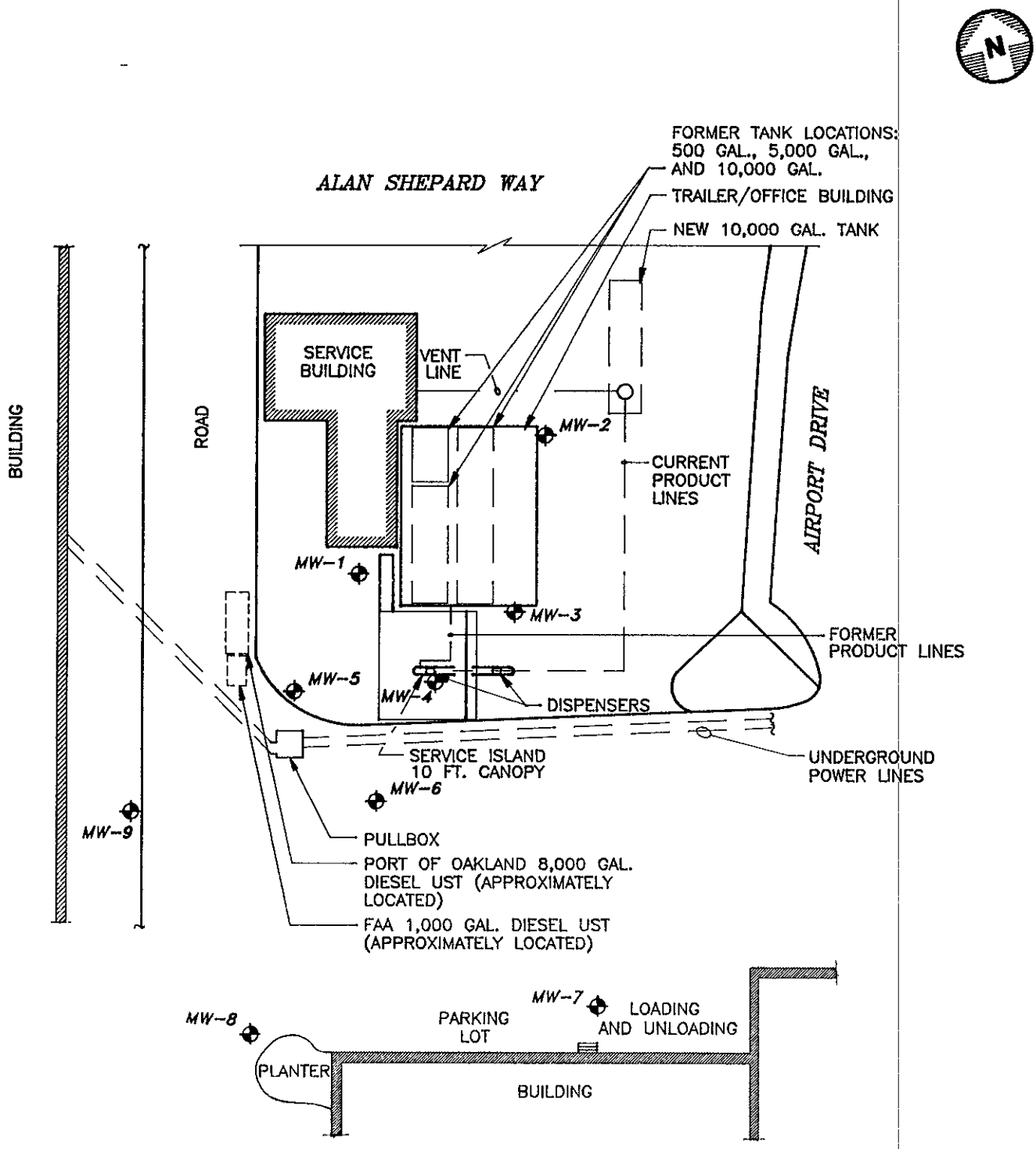
Environmental Science & Engineering, Inc. (ESE), 1991, August 1991 Quarterly Monitoring Report for Hertz Service Center, #1 Airport Drive, Oakland, Alameda County, California, September 16, 1991.

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

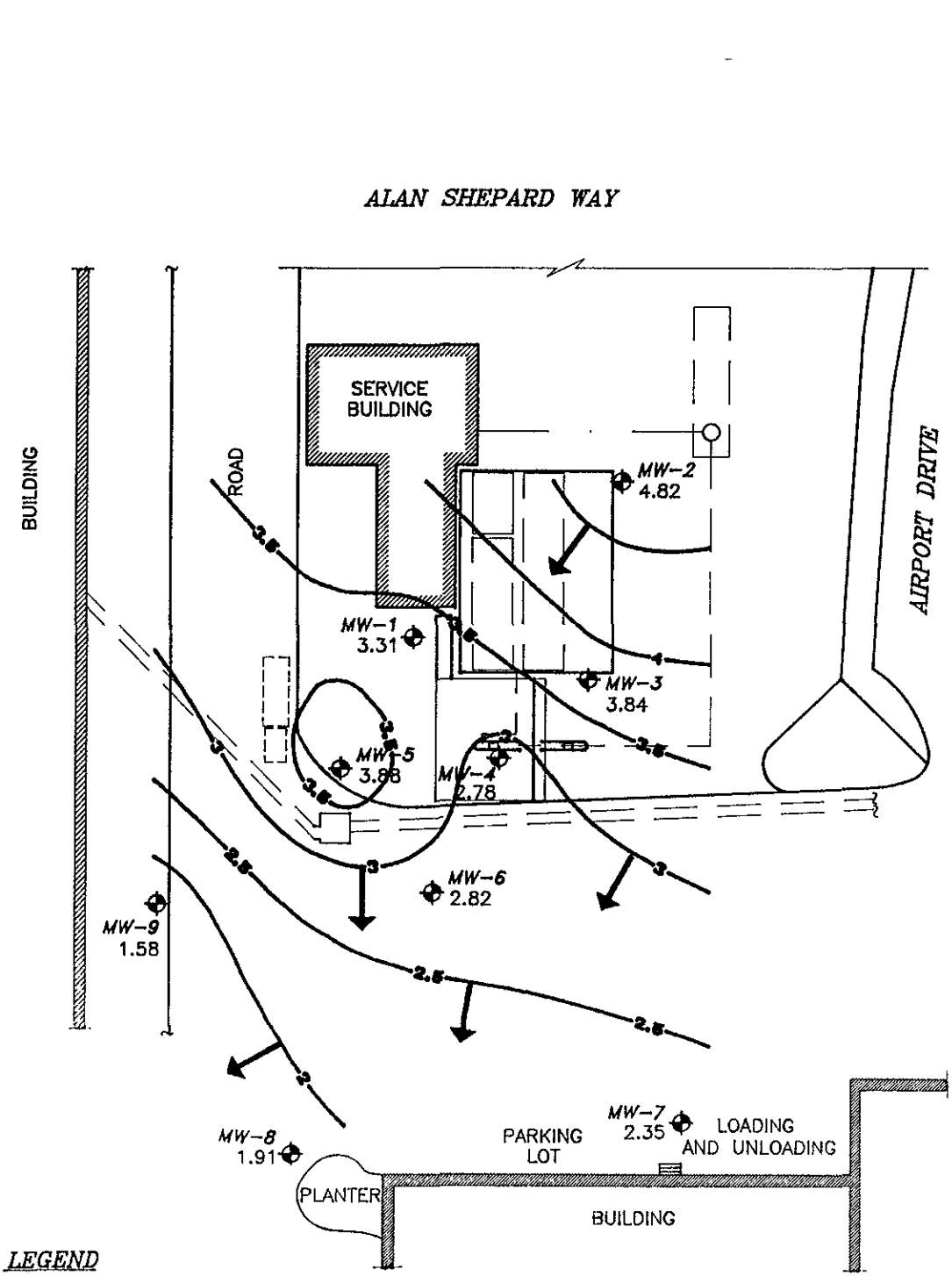
——— 1992, February 1992 Quarterly Monitoring Report for Hertz Service Center, #1 Airport Drive, Oakland, Alameda County, California, March 24, 1992.

——— 1992, Fourth Quarter 1992 Ground Water Monitoring and Subsurface Investigation Report for Hertz Service Center, #1 Airport Drive, Oakland, Alameda County, California, December 9, 1992.

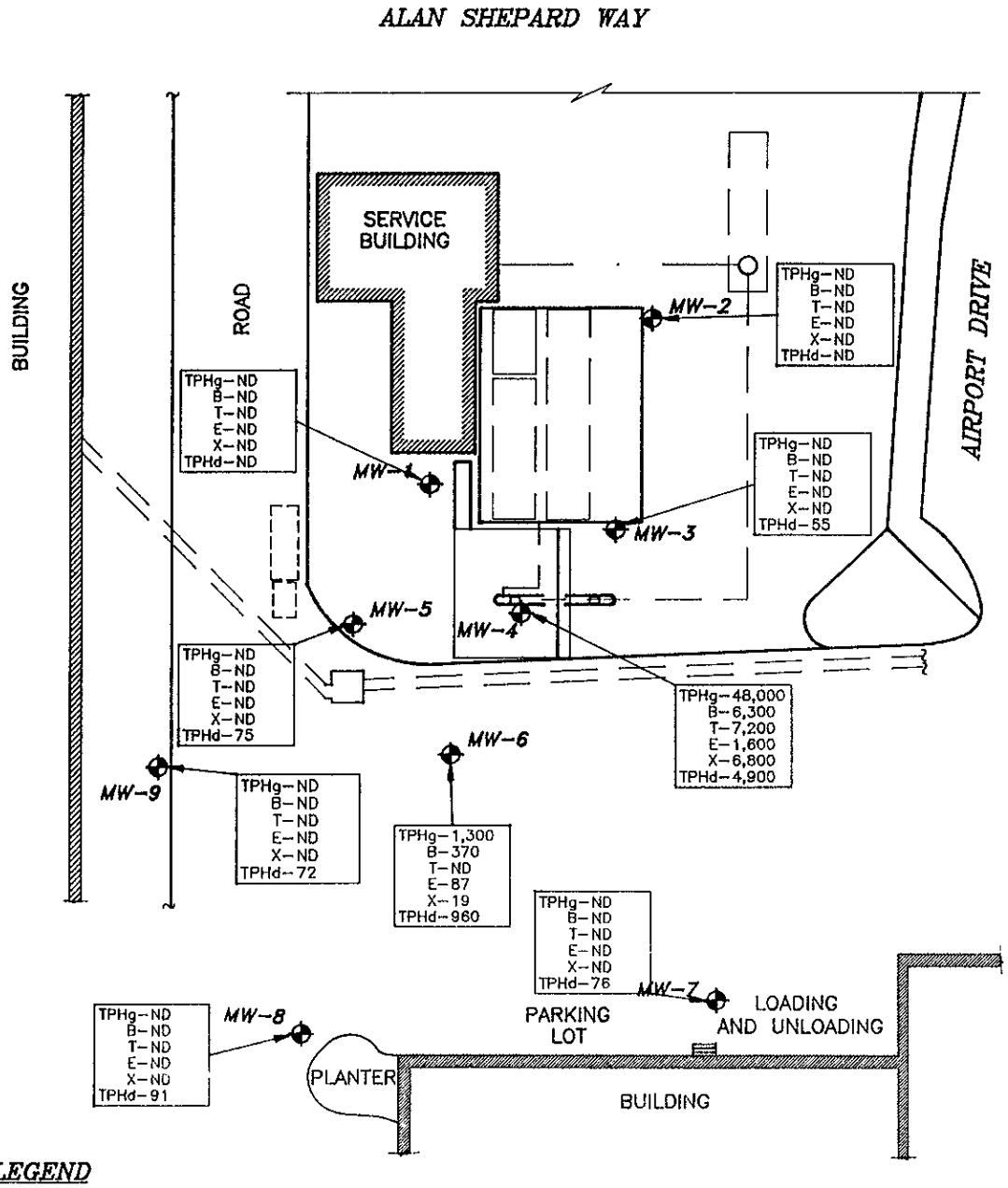
FIGURES



Environmental Science & Engineering, Inc. (A CILCORP Company)	DATE 8/91	SITE PLAN	FIGURE NO. 1
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	REVISED 8/93 MEQ	HERTZ/OAKLAND AIRPORT OAKLAND, CALIFORNIA	PROJ. NO. 6-92-5228
	CAD FILE 52284001		



Environmental Science & Engineering, Inc. A CICORP Company	DATE 6/93 REVISED 8/93 MEQ	GROUND WATER ELEVATIONS MAY 27, 1993	FIGURE NO. 2
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	CAD FILE 52284004	HERTZ/OAKLAND AIRPORT OAKLAND, CALIFORNIA	PROJECT 6-91-5228

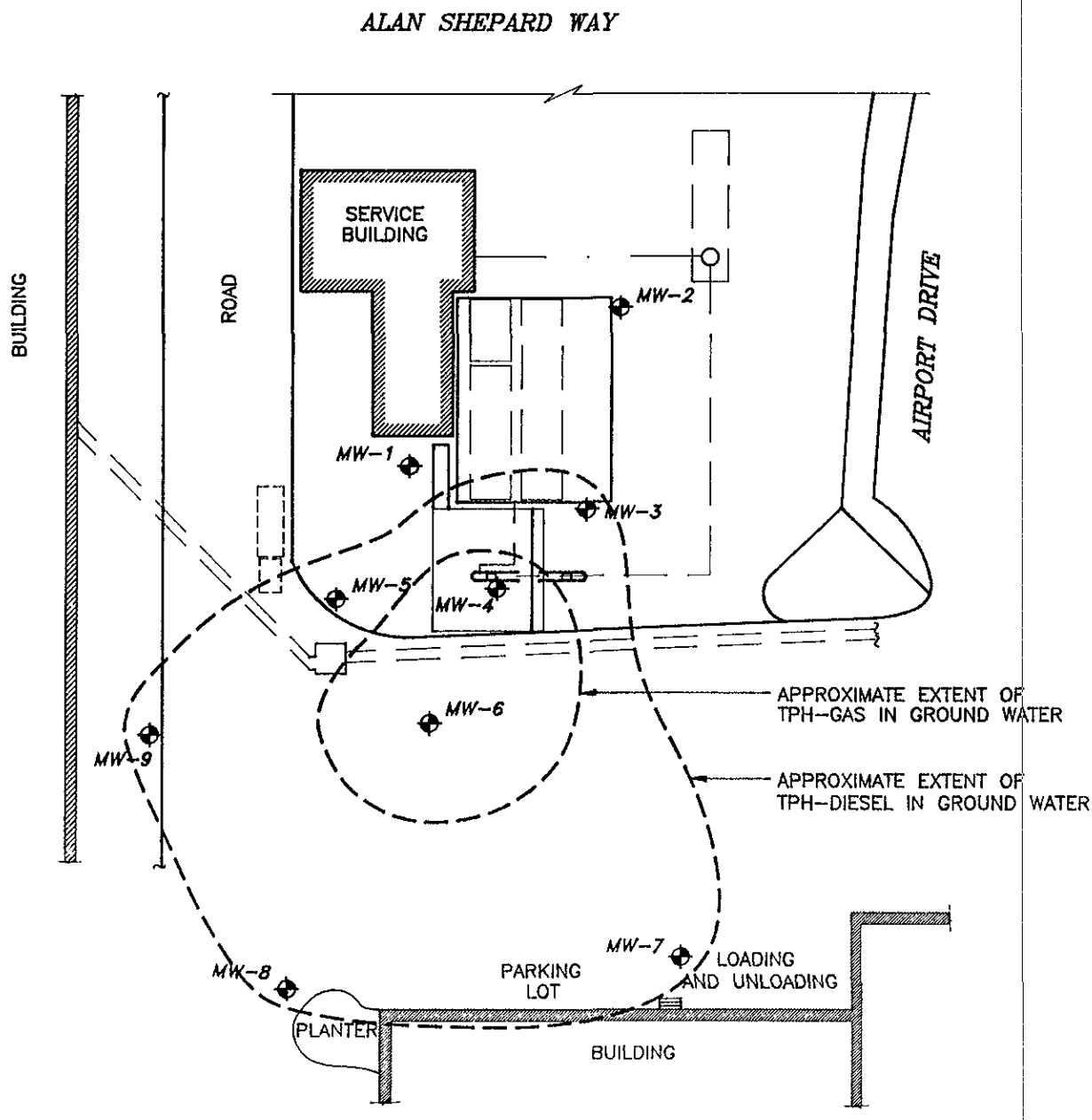


LEGEND

⊕	EXISTING MONITORING WELLS
TPHg	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (ppb)
B	BENZENE (ppb)
T	TOLUENE (ppb)
E	ETHYLBENZENE (ppb)
T	TOTAL XYLENES (ppb)
TPHd	TOTAL PETROLEUM HYDROCARBONS AS DIESEL (ppb)

SCALE
0 40 FEET

Environmental Science & Engineering, Inc. A CILCORP Company	DATE 6/93 REVISED 8/93 MEQ	CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUND WATER MAY 27, 1993	FIGURE NO. 3
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	CASE 52284005	HERTZ/OAKLAND AIRPORT OAKLAND, CALIFORNIA	PROJECT 6-91-5228



Environmental Science & Engineering, Inc. (A CILCORP Company)	DATE 7/93	APPROXIMATE EXTENT OF PETROLEUM HYDROCARBONS IN GROUND WATER MAY 27, 1993	FIGURE NO. 4
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	REVISED 8/93 MEQ	HERTZ/OAKLAND AIRPORT OAKLAND, CALIFORNIA	PROJECT 6-91-5228
	DATA FILE 52284006		

TABLES

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		
05/27/93	MW-1	3.31						--	ND	--	ND	ND	ND	ND	ND	--	--
	MW-2	4.82						--	ND	--	ND	ND	ND	ND	ND	--	--
	MW-3	3.84						--	ND	--	55	ND	ND	ND	ND	--	--
	MW-4	2.78						--	48,000	--	4,900	6,300	7,200	1,600	6,800	--	--
	MW-5	3.88			Not			--	ND	--	75	ND	ND	ND	ND	--	--
	MW-6	2.82			Analyzed			--	1,300	--	960	370	ND	87	19	--	--
	MW-7	2.35						--	ND	--	76	ND	ND	ND	ND	--	--
	MW-8	1.91						--	ND	--	91	ND	ND	ND	ND	--	--
	MW-9	1.58						--	ND	--	72	ND	ND	ND	ND	--	--
	DUP (MW-9)	--						--	ND	--	85	ND	ND	ND	ND	--	--
02/03/93	MW-1	3.34						--	ND	--	--	ND	ND	ND	ND	--	--
	MW-2	4.84						--	ND	--	--	ND	ND	ND	ND	--	--
	MW-3	4.03						--	ND	--	--	ND	ND	ND	ND	--	--
	MW-4	2.89			Not			--	50,000	--	--	4,700	5,000	1,500	6,600	--	--
	MW-5	--			Analyzed			--	--	--	--	--	--	--	--	--	--
	MW-6	2.90						--	330	--	--	120	2.8	19	5.3	--	--
	DUP (MW-6)	--						--	2,100	--	--	110	5.2	19	14	--	--
11/05/92	MW-1	2.39						--	ND	--	--	ND	ND	ND	ND	--	--
	MW-2	4.05						--	ND	--	--	ND	ND	ND	ND	--	--
	MW-3	3.07						--	ND	--	--	ND	ND	ND	ND	--	--
	MW-4	1.88			Not			--	24,000	--	--	2,600	3,300	510	2,100	--	--
	MW-5	3.00			Analyzed			--	ND	ND	170	ND	ND	ND	ND	--	--
	MW-6	1.89						--	820	240	D	250	ND	5.9	ND	--	--
	DUP (MW-4)	--						--	14,000	--	--	2,100	1,400	370	1,100	--	--
09/01/92	MW-1	2.55						--	ND	--	--	ND	ND	ND	ND	--	--
	MW-2	4.15						--	56	--	--	2.0	3.0	0.8	3.1	--	--
	MW-3	3.21			Not			--	ND	--	--	1.1	1.6	ND	1.9	--	--
	MW-4	3.14			Analyzed			--	120,000	--	--	8,800	14,000	2,100	11,000	--	--
	DUP (MW-2)	--						--	68	--	--	2.8	4.2	1.0	4.3	--	--

TABLE 1 (Continued...)
SUMMARY OF GROUND WATER ELEVATION AND ANALYTICAL DATA
HERTZ/OAKLAND AIRPORT, OAKLAND, CALIFORNIA

Date	Well	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)
			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	--	--	3,400	5,200	990	5,200	--	--
	DUP	--						--	61,000	--	--	3,300	5,200	920	5,200	--	--
	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	1,900	280	1,700	--	--
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	MD	ND	ND	All ND	All ND
Historical Data Archived in ESE Report of March 1993																	

Notes:

MSL = Mean Sea Level
ND = Not detected
-- = Not analyzed
ppm = Parts per million
ppb = Parts per billion
B = Benzene
T = Toluene
E = Ethylbenzene
X = Total Xylenes
+ = Detection limit for TPH-D is 50 ppb. Duplicate sample analyzed contained ND or <50 ppb.
D = Diesel range not reported. Quantified as kerosene range.

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APPENDIX A

ESE STANDARD OPERATING PROCEDURES

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.
CONCORD, CALIFORNIA OFFICE

STANDARD OPERATING PROCEDURE NO. 1
FOR SOIL BORINGS AND SOIL SAMPLING WITH HOLLOW-STEM AUGERS IN UNCONSOLIDATED FORMATIONS

Environmental Science & Engineering, Inc. (ESE) typically drills soil borings using a truck-mounted, continuous-flight, hollow-stem auger drill rig. The drill rig is owned and operated by a drilling company possessing a valid State of California C-57 license. The soil borings are conducted under the direct supervision and guidance of an experienced ESE geologist. The ESE geologist logs each borehole during drilling in accordance with the Unified Soil Classification System (USCS). Additionally, the ESE geologist observes and notes the soil color, relative density or stiffness, moisture content, odor (if obvious) and organic content (if present). The ESE geologist will record all observations on geologic boring logs.

Soil samples are collected during drilling at a minimum of five-foot intervals by driving an 18-inch long Modified California Split-spoon sampler (sampler), lined with new, thin-wall brass sleeves, through the center of and ahead of the hollow stem augers, thus collecting a relatively undisturbed soil sample core. The brass sleeves are typically 2-inches in diameter and 6-inches in length. The sampler is driven by dropping a 140-pound hammer 30-inches onto rods attached to the top of the sampler. Soil sample depth intervals and the number of hammer blows required to advance the sampler each six-inch interval are recorded by the ESE geologist on geologic boring logs. The ends of one brass sleeve are covered with Teflon sheeting, then covered with plastic end caps. The end caps are sealed to the brass sleeve using duct tape. Each sample is then labeled and placed on ice in a cooler for transport under chain of custody documentation to the designated analytical laboratory. A portion of the remaining soil in the sampler is placed in either a new Ziploc® bag or a clean Mason Jar® and set in direct sunlight to enhance the volatilization of any Volatile Organic Compounds (VOCs) present in the soil. After approximately 15-minutes that sample is screened for VOCs using a photoionization detector (PID). The PID measurements will be noted on the geologic boring logs. The PID provides qualitative data for use in selecting samples for laboratory analysis. Soil samples from the saturated zone (beneath the ground-water table) are collected as described above, are not screened with the PID, and are not submitted to the analytical laboratory. The samples from the saturated zone are used for descriptive purposes. Soil samples from the saturated zone may be retained as described above for physical analyses (grain size, permeability and porosity testing).

If the soil boring is not going to be completed as a well, then the boring is typically terminated upon penetrating the saturated soil horizon or until a predetermined interval of soil containing no evidence of contamination is penetrated. This predetermined interval is typically based upon site specific regulatory or client guidelines. The boring is then backfilled using either neat cement, neat cement and bentonite powder mixture (not exceeding 5% bentonite), bentonite pellets, or a sand and cement mixture (not exceeding a 2:1 ratio of sand to cement). However, if the boring is to be completed as a monitoring well, then the boring is continued until either a competent, low estimated-permeability, lower confining soil layer is found or 10 to 15-feet of the saturated soil horizon is penetrated, whichever occurs first. If a low estimated-permeability soil layer is found, the soil boring will be advanced approximately five-feet into that layer to evaluate its competence as a lower confining layer, prior to the termination of that boring.

All soil sampling equipment is cleaned between each sample collection event using an Alconox® detergent and tap water solution followed by a tap water rinse. Additionally, all drilling equipment and soil sampling equipment is cleaned between borings, using a high pressure steam cleaner, to prevent cross-contamination. All wash and rinse water is collected and contained onsite in Department of Transportation approved containers (typically 55-gallon drums) pending laboratory analysis and proper disposal/recycling.

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.
CONCORD, CALIFORNIA OFFICE

STANDARD OPERATING PROCEDURE NO. 2
FOR MONITORING WELL INSTALLATION AND DEVELOPMENT
PAGE 1

Environmental Science & Engineering, Inc. (ESE) typically installs ground-water monitoring wells in unconsolidated sediments drilled using a truck-mounted hollow-stem auger drill rig. The design and installation of all monitoring wells is performed and supervised by an experienced ESE geologist. Figure A - Typical ESE Monitoring Well Construction Diagram (attached) graphically displays a typical ESE well completion. Prior to the construction of the well, the portion of the borehole that penetrates a lower confining layer (if any) is filled with bentonite pellets. The monitoring well is then constructed by inserting polyvinylchloride (PVC) pipe through the center of the hollow stem augers. The pipe (well-casing) is fastened together by joining the factory threaded pipe ends. ESE typically uses two-inch or four-inch diameter pipe for ground-water monitoring wells. The diameter of the borehole is typically 6-inches greater than that of the diameter of the well-casing, but is at least four-inches greater than that of the well casing. The lowermost portion of the well-casing will be factory perforated (typically having slot widths of 0.010-inch or 0.020-inch). The slotted portion of the well-casing will extend from the bottom of the boring up to approximately five-feet above the occurrence of ground water. A PVC slip or threaded cap will be placed at the bottom end of the well-casing, and a locking expandable well cap will be placed over the top (or surface) end of the well-casing. A sand pack (typically No. 2/12 or No. 3 Monterey sand) will be placed in the borehole annulus, from the bottom of the well-casing up to one to two-feet above the top of the slotted portion, by pouring the clean sand through the hollow stem augers. One to two-feet of bentonite pellets will be placed on top of the sand pack. The bentonite pellets will then be hydrated with three to four-gallons of potable water, to protect the sand pack from intrusion during the placement of the sanitary seal. The sanitary seal (grout) will consist of either neat cement, a neat cement and bentonite powder mixture (containing no more than 5% bentonite), or a neat cement and sand mixture (containing no more than a 2:1 sand to cement ratio). If, the grout seal is to be greater than 30-feet in depth or if standing water is present in the boring on top of the bentonite pellet seal, then the grout mixture will be tremied into the boring from the top of the bentonite seal using either a hose, pipe or the hollow-stem augers, which serve as a tremie. The well will be protected at the surface by a water tight utility box. The utility box will be set into the grout mixture so that it is less than 0.1-foot above grade, to prevent the collection of surface water at the well head. If the well is set within the public right of way, then the utility box will be Department of Transportation (DOT) traffic rated, and the top of the box will be set flush to grade. If the well is constructed in a vacant field a brightly painted metal standpipe may be used to protect the well from traffic. If a standpipe is used, it will be held in place with a grout mixture and will extend one to two-feet above ground surface. All well completion details will be recorded by the ESE geologist on the geologic boring logs.

Subsequent to the solidification of the sanitary seal of the well (a minimum of 72 hours), the new well will be developed by an ESE geologist or field technician. Well development will be performed using surging, bailing and overpumping techniques. Surging is performed by raising and lowering a surge block through the water column within the slotted interval of the well casing. The surge block utilized has a diameter just smaller than that of the well casing, thus, forcing water flow through the sand pack due to displacement and vacuum caused by the movement of the surge block. Bailing is performed by lowering a bailer to the bottom of the well and gently bouncing the bailer off of the well end cap, then removing the full bailer and repeating the procedure. This will bring any material (soil or PVC fragments) that may have accumulated in the well into suspension for removal. Overpumping is performed by lowering a submersible pump to the bottom of each well and pumping at the highest sustainable rate without completely evacuating the well casing. Effective well development will settle the sand pack surrounding the well-casing, which will improve the filtering properties of the sand pack and allow water to flow more easily through the sand pack; improve the communication between the aquifer and the well by aiding the removal of any smearing of fine sediments along the borehole penetrating the aquifer; and, remove fine sediments and any foreign objects (PVC fragments) from the well casing. The ESE geologist or

technician will monitor the ground water purged from the well during development for clarity, temperature, pH and conductivity. Development of the well will proceed until the well produces relatively clear, sand-free water with stable temperature, pH and conductivity measurements. At a minimum, 10 well-casing volumes of ground water will be removed during the development process. Measurements of temperature, conductivity, pH and volume of the purged water and observations of purge water clarity and sediment content will be recorded on the ESE Well Development Data Forms. All equipment used during the well development procedure will be cleaned using an Alconox® detergent and tap water solution followed by a tap water rinse prior to use in each well. All ground water purged during the well development process and all equipment rinse water will be collected and contained onsite in DOT approved containers (typically 55-gallon drums) pending analytical results and proper disposal or recycling.

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.
CONCORD, CALIFORNIA OFFICE

STANDARD OPERATING PROCEDURE NO. 3
FOR GROUND-WATER MONITORING AND SAMPLING FROM MONITORING WELLS

Environmental Science & Engineering, Inc. (ESE) typically performs ground-water monitoring at project sites on a quarterly basis. As part of the monitoring program an ESE staff member will first gauge the depth to water and free product (if present) in each well, then collect ground-water samples from each well. Depth to water measurements are taken by lowering an electric fiberglass tape measure into the well and recording the occurrence of water in feet below a fixed datum set on the top of the well-casing. If free-phase liquid hydrocarbons (free product) are known or suspected to be present in the well, then an electric oil/water interface probe is used to determine the depth to the occurrence of ground-water and the free product in feet below the fixed datum on the top of the well-casing. Depth to water and depth to product measurements are measured and recorded within an accuracy of 0.005-foot. The electric tape and the electric oil/water interface probe are washed with an Alconox® detergent and tap water solution then rinsed with tap water between uses in different wells.

Ground-water samples are collected from a well subsequent to purging a minimum of three to four well-casing volumes of ground water from the well, if the well bails dry prior to the removal of the required minimum volume, then the samples are collected upon the recovery of the ground water in that well to 80% of its initial static level. Ground water is typically purged from monitoring wells using either a hand-operated positive displacement pump, constructed of polyvinylchloride (PVC); a new (precleaned), disposable polyethylene bailer; or, a variable-flow submersible pump, constructed of stainless steel and Teflon®. The hand pumps and the submersible pumps are cleaned between each use with an Alconox® detergent and tap water solution followed by a tap water rinse. During the well purging process the conductivity, pH and temperature of the ground water are monitored by the ESE staff member. Ground-water samples are collected from the well subsequent to the stabilization of the of the conductivity, pH and temperature of the purge water, and the removal of four well-casing volumes of ground-water (unless the well bails dry). The parameters are deemed to have stabilized when two consecutive measurements are within 10% of each other, for each respective parameter. The temperature, pH, conductivity and purge volume measurements, and observations of water clarity and sediment content will be documented by the ESE staff member on ESE Ground-Water Sampling Data Forms.

Ground-water samples are collected by lowering a new (precleaned), disposable polyethylene bailer into the well using new, disposable nylon cord. The filled bailer is retrieved, emptied, then filled again. The ground water from this bailer is decanted into appropriate laboratory supplied glassware and/or plastic containers (if sample preservatives are required, they are added to the empty containers at the laboratory prior to the sampling event). The containers are filled carefully so that no headspace is present to avoid volatilization of the sample. The filled sample containers are then labeled and placed in a cooler with ice for transport under chain of custody documentation to the designated analytical laboratory. The ESE staff member will document the time and method of sample collection, and the type of sample containers and preservatives (if any) used. These facts will appear on the ESE Ground-Water Sampling Data Forms. ESE will collect a duplicate ground-water sample from one well for every ten wells sampled at each site. The duplicate will be a blind sample (its well designation will be unknown to the laboratory). The duplicate sample is for Quality Assurance and Quality Control (QA/QC) purposes, and provides a check on ESE sampling procedures and laboratory sample handling procedures. When VOCs are included in the laboratory analyses, ESE will include a trip blank, if required, in the cooler with the ground-water samples for analysis for the identical VOCs. The trip blank is supplied by the laboratory and consists of deionized water. The trip blank is for QA/QC purposes and provides a check on both ESE and laboratory sample handling and storage procedures. Since disposable bailers are used for sample collection, and are not reused, no equipment blank (rinsate) samples are collected.

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.
CONCORD, CALIFORNIA OFFICE

STANDARD OPERATING PROCEDURE NO. 4
FOR SOIL SAMPLING WITH HAND AUGERS
IN UNCONSOLIDATED FORMATIONS

When collecting shallow soil samples or soil samples from limited access areas, Environmental Science & Engineering, Inc. (ESE) typically uses a manually operated bucket-type auger (hand auger) The augering is conducted by an experienced ESE geologist. The ESE geologist documents all soils retrieved as cuttings or core in accordance with the Unified Soil Classification System (USCS). Additionally, the ESE geologist observes and notes the soil color, relative density or stiffness, moisture content, odor (if obvious) and organic content (if present).

Soil samples are collected during hand-augering at selected intervals by driving a 6-inch long punch auger sample tube (sampler), lined with a new, thin-wall brass or stainless steel sleeve (sleeve), into undisturbed soil. The sleeve is typically 2-inches in diameter and 6-inches in length. The sampler is advanced into the soil by manually dropping a weighted handle onto a rod attached to the sampler. Soil sample depth intervals are recorded by the ESE geologist on geologic boring logs. The ends of the sleeve containing sampled soil are covered with Teflon® sheeting, then covered with plastic end caps. The end caps are sealed to the sleeve using organically inert duct tape known to not contain any Volatile Organic Compounds (VOCs). Each sample is then labeled and placed on ice in a cooler for transport under chain of custody documentation to the designated analytical laboratory. Excess soil collected in the sampler may be placed in either a new Ziploc® bag or a clean Mason Jar® and set in direct sunlight to enhance the volatilization of any VOCs present in the soil. After approximately 15-minutes that sample is screened for VOCs using a photoionization detector (PID). The PID measurements will be noted on the geologic boring logs. The PID provides qualitative data for use in selecting samples for laboratory analysis. Soil samples from the saturated zone (beneath the ground-water table) may be collected but are not screened with the PID, and are not submitted to the analytical laboratory. The samples from the saturated zone are used for descriptive purposes, and may be retained for physical analyses (grain size, permeability and porosity testing).

Upon completion, the boring is backfilled using either neat cement, neat cement and bentonite powder mixture (not exceeding 5% bentonite), bentonite powder or pellets, or a sand and cement mixture (not exceeding a 2:1 ratio of sand to cement).

Hand auger buckets are cleaned between use in each borehole and all soil sampling equipment is cleaned between each sample collection event to prevent cross-contamination. Equipment is washed using an Alconox® detergent and tap water solution followed by a tap water rinse. All wash and rinse water is collected and contained onsite in Department of Transportation approved containers (typically 55-gallon drums) pending laboratory analysis and proper disposal/recycling.

APPENDIX B

BORING LOGS

Environmental Science & Engineering, Inc.
A CILCORP Company

BORING LOG AND WELL COMPLETION SUMMARY

MW-7

Page 1 of 1

WELL COMPLETION

Completion Depth: 13 Feet

Size/Type	From	To
Casing: 2" Diam. Sched. 40 PVC	0 Feet	3 Feet
Screen: 2" Diam. Sched. 40 Slotted (0.02") PVC	3 Feet	13 Feet
Filter: #3 Monterey Sand	2 Feet	13 Feet
Seal: Bentonite Pellets	1.5 Feet	2 Feet
Cement Grout	0 Feet	1.5 Feet

Well Cap or Box: 8" Universal Traffic-rated Flush-Mounted Well Box

Project Name: Hertz - Oakland Project No: 6-91-5228
Location: 1 Airport Drive
Oakland, CA

Driller: Soils Exploration Services, Inc.
Method: Hollow Stem Auger
Hole Diameter: 10" Total Depth: 13 Feet
Ref. Elevations:
Logged By: Chris Valcheff

Dates:
Start: 5-24-93
Finish: 5-24-93

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks (Water, drilling/completion, summary, sample type)
0	ASPHALT						
	SANDY SILT with gravel, red, damp, 10-20% fine to medium grained sand, stiff, no odor.	SM					
1							
	SAND, light brown, dense, damp, no odor.	SP					
2							
3	Same as above, grey, moist.						
4							
	Same as above, wet.						▼ Ground Water @ 4.5 FEET
5						24	Sample @ 5 FEET
6							
7	Same as above, dark grey.						
8							
9							
10							
11							
12							
13							TOTAL DEPTH = 13 FEET

REGISTERED GEOLOGIST
MICHAEL E. QUILLIN
#5315
STATE OF CALIFORNIA

Environmental Science & Engineering, Inc.
A CILCORP Company

BORING LOG AND WELL COMPLETION SUMMARY

MW-8

Page 1 of 1

WELL COMPLETION

Completion Depth: 13 Feet

Size/Type	From	To
Casing: 2" Diam. Sched. 40 PVC	0 Feet	3 Feet
Screen: 2" Diam. Sched. 40 Slotted (0.02") PVC	3 Feet	13 Feet
Filter: #3 Monterey Sand	2 Feet	13 Feet
Seal: Bentonite Pellets	1.5 Feet	2 Feet
Cement Grout	0 Feet	1.5 Feet

Well Cap or Box: 8" Universal Traffic-rated Flush-Mounted Well Box

Project Name: Hertz - Oakland *Project No: 6-91-5228*

Location: 1 Airport Drive
Oakland, CA

Driller: Soils Exploration Services, Inc.
Method: Hollow Stem Auger
Hole Diameter: 10" Total Depth: 13 Feet
Ref. Elevations:
Logged By: Chris Valcheff

Dates:
Start: 5-24-93
Finish: 5-24-93

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks: Water, drilling/completion, summary, sample type
0	ASPHALT						
	GRAVELLY SILT, light brown, loose to stiff, damp, no odor.	GM					
1							
	SAND, brown, dense, fine to medium grained, no odor.	SP					
2							
3							
4							
	Same as above, moist to wet.						▼ Ground Water @ 4.5 FEET
5						35	Sample @ 5 FEET
6							
7	Same as above, grey, no odor.						
8							
9							
10							
11							
12							
13							TOTAL DEPTH = 13 FEET

REGISTERED GEOLOGIST
MICHAEL E. QUILLIN
#5315
STATE OF CALIFORNIA

Environmental Science & Engineering, Inc.

A CILCORP Company

BORING LOG AND WELL COMPLETION SUMMARY

MW-9

Page 1 of 1

WELL COMPLETION

Completion Depth: 13 Feet

	Size/Type	From	To
Casing:	2" Diam. Sched. 40 PVC	0 Feet	3 Feet
Screen:	2" Diam. Sched. 40 Slotted (0.02") PVC	3 Feet	13 Feet
Filter:	#3 Monterey Sand	2 Feet	13 Feet
Seal:	Bentonite Pellets	1.5 Feet	2 Feet
	Cement Grout	0 Feet	1.5 Feet

Well Cap or Box: 8" Universal Traffic-rated Flush-Mounted Well Box

Project Name: Hertz - Oakland Project No: 6-91-5228

Location: 1 Airport Drive
Oakland, CA

Driller: Solls Exploration Services, Inc.
Method: Hollow Stem Auger
Hole Diameter: 10" Total Depth: 13 Feet
Ref. Elevations:
Logged By: Chris Valcheff

Dates:
Start: 5-24-93
Finish: 5-24-93

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks: Water, drilling/completion, summary, sample type
0	ASPHALT						
	SAND, light brown, dense, damp, fine to medium grained, no odor.	SP					
2	GRAVELLY SILTY SAND, red, dense, fine to medium grained, 10-20% silts, no odor.	SM					
3	SAND, dark brown, dense, medium grained, moist, no odor.	SP					
5	Same as above, wet.					30	▼ Ground Water @ 4.5 FEET Sample @ 5 FEET
6	*Same as above, grey.*						
13	Same as above.						TOTAL DEPTH = 13 FEET

REGISTERED GEOLOGIST
MICHAEL E. QUILLIN
#5315
STATE OF CALIFORNIA

APPENDIX C

WELL PURGING AND SAMPLING DATA

Environmental Science & Engineering, Inc.

A CALCORP Company

SAMPLE COLLECTION LOG

PROJECT NAME: HERTZ - OAKLAND
PROJECT NO.: 6-91-5228
DATE: 5-27-93

SAMPLE LOCATION I.D.: MW-1
SAMPLER: CHRIS VACCHECE
PROJECT MANAGER: MIKE QUILLIN

CASING DIAMETER

2" X
4"
Other

SAMPLE TYPE

Ground Water X
Surface Water
Treat. Influent
Treat. Effluent
Other

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: NA (ft.)
DEPTH TO WATER: 4.14 (ft.)
DEPTH OF WELL: 14.88 (ft.)

PRODUCT THICKNESS: NA (ft.)
WATER COLUMN: 10.74 (ft.)
WELL CASING VOLUME: 1.75 (gal)

MINIMUM PURGE VOLUME (3 or 4 WCV): 4.01 (gal)
ACTUAL VOLUME PURGED: 10 (gal)

TIME	Volume (GAL)	pH (Units)	E.C. (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other

INSTRUMENT CALIBRATION

pH/COND./TEMP.:	TYPE HYDAC	UNIT#	DATE: 5/27/93	TIME: 0630	BY: CHV
TURBIDITY:	TYPE	UNIT#	DATE:	TIME:	BY:

PURGE METHOD

___ Displacement Pump
X Bailer (Teflon/PVC/SS)
___ Other
___ Submersible Pump

SAMPLE METHOD

___ Bailer (Teflon/PVC/SS)
X Bailer (Disposable)
___ Dedicated
___ Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	MW-1	1420	5/27/93	SEQUOIA ANALYTICAL	TPH-G, TPH-D, BTEX
DUPLICATE					
SPLIT					
FIELD BLANK					

COMMENTS: HYDAC BECAME SATURATED FROM RAINSTORM WAS NOT WORKING PROPERLY

SAMPLER: [signature]

PROJECT MANAGER: [signature]

Environmental Science & Engineering, Inc.

A CALCORP Company

SAMPLE COLLECTION LOG

PROJECT NAME: HERTZ-OAKLAND
PROJECT NO.: 6-91-5228
DATE: 5-27-93

SAMPLE LOCATION I.D.: MW-2
SAMPLER: CHRIS VALCHEFF
PROJECT MANAGER: MIKE QUILLIN

CASING DIAMETER

2" X
4"
Other

SAMPLE TYPE

Ground Water X
Surface Water
Treat. Influent
Treat. Effluent
Other

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: NA (ft.)
DEPTH TO WATER: 3.27 (ft.)
DEPTH OF WELL: 14.12 (ft.)

PRODUCT THICKNESS: NA (ft.)
WATER COLUMN: 10.85 (ft.)
WELL CASING VOLUME: 1.77 (gal)

MINIMUM PURGE VOLUME (3 or (4) WCV): 4.08 (gal)
ACTUAL VOLUME PURGED: 10 (gal)

TIME	Volume (GAL)	pH (Units)	E.C. (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other

INSTRUMENT CALIBRATION

pH/COND./TEMP.: TYPE_____ UNIT#_____ DATE:_____ TIME:_____ BY:_____
TURBIDITY: TYPE_____ UNIT#_____ DATE:_____ TIME:_____ BY:_____

PURGE METHOD

___Displacement Pump
X Bailer (Teflon/PVC/SS)
___Other
___Submersible Pump

SAMPLE METHOD

___Bailer (Teflon/PVC/SS)
X Bailer (Disposable)
___Dedicated
___Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	MW-2	1432	5-27-93	SEQUOIA ANALYTICAL	TPH-D, TPH-G, BTEX
DUPLICATE					
SPLIT					
FIELD BLANK					

COMMENTS:_____

SAMPLER: C. H. Valcheff

PROJECT MANAGER: J. M. Quillin

Environmental Science & Engineering, Inc.

SAMPLE COLLECTION LOG

PROJECT NAME: HERTZ - OAKLAND
PROJECT NO.: 6-91-5228
DATE: 5-27-93

SAMPLE LOCATION I.D.: MW-3
SAMPLER: CHRIS VALCHEFF
PROJECT MANAGER: MIKE QUILLIN

CASING DIAMETER

2" X
4"
Other

SAMPLE TYPE

Ground Water X
Surface Water
Treat. Influent
Treat. Effluent
Other

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: NA (ft.)
DEPTH TO WATER: 3.82 (ft.)
DEPTH OF WELL: 14.45 (ft.)

PRODUCT THICKNESS: NA (ft.)
WATER COLUMN: 10.63 (ft.)
WELL CASING VOLUME: 1.74 (gal)

MINIMUM PURGE VOLUME (3 or (4) WCV): 6.94 (gal)
ACTUAL VOLUME PURGED: 10 (gal)

TIME	Volume (GAL)	pH (Units)	E.C. (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other

INSTRUMENT CALIBRATION

pH/COND./TEMP.: TYPE_____ UNIT#_____ DATE:_____ TIME:_____ BY:_____
TURBIDITY: TYPE_____ UNIT#_____ DATE:_____ TIME:_____ BY:_____

PURGE METHOD

___Displacement Pump
X Bailer (Teflon/PVC/SS)
___Other
___Submersible Pump

SAMPLE METHOD

___Bailer (Teflon/PVC/SS)
X Bailer (Disposable)
___Dedicated
___Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	MW-3	1430	5-27-93	SEQUOIA ANALYTICAL	TPH-G, TPH-D, BTEX
DUPLICATE					
SPLIT					
FIELD BLANK					

COMMENTS:_____

SAMPLER _____ PROJECT MANAGER _____

Environmental Science & Engineering, Inc.
A CALCORP Company

SAMPLE COLLECTION LOG

PROJECT NAME: HERTZ - OAKLAND
PROJECT NO.: 6-91-5228
DATE: 5-27-93

SAMPLE LOCATION I.D.: MW-4
SAMPLER: CHRIS VALCHEFF
PROJECT MANAGER: MIKE QUILLIN

CASING DIAMETER

2" X
4"
Other

SAMPLE TYPE

Ground Water X
Surface Water
Treat. Influent
Treat. Effluent
Other

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: NA (ft.)
DEPTH TO WATER: 4.33 (ft.)
DEPTH OF WELL: 7.83 (ft.)

PRODUCT THICKNESS: NA (ft.)
WATER COLUMN: 3.50 (ft.)
WELL CASING VOLUME: 0.60 (gal)

MINIMUM PURGE VOLUME (3 or (4) WCV): 2.40 (gal)
ACTUAL VOLUME PURGED: 5 (gal)

TIME	Volume (GAL)	pH (Units)	E.C. x1000 (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other
1033	0.75	7.37	1.74	67.9	—	ODOR
1037	1.50	6.57	1.73	66.6		ODOR - SILTY
1042	2.25	6.09	1.65	66.4	↓	↓

INSTRUMENT CALIBRATION

pH/COND./TEMP.: TYPE HYDAC UNIT#____ DATE: 5-27-93 TIME: 0630 BY: CHV
TURBIDITY: TYPE____ UNIT#____ DATE:____ TIME:____ BY:____

PURGE METHOD

___Displacement Pump
_X_Bailer (Teflon/PVC/SS)
___Other
___Submersible Pump

SAMPLE METHOD

___Bailer (Teflon/PVC/SS)
_X_Bailer (Disposable)
___Dedicated
___Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	MW-4	1445	5-27-93	SEQUOIA ANALYTICAL	TPH-D, TPH-G, BTEX
DUPLICATE					
SPLIT					
FIELD BLANK					

COMMENTS: WELL IS BAILED DRY - WAITED UNTIL 80% RECOVERY BEFORE SAMPLING.

SAMPLER Chris Valcheff

PROJECT MANAGER JM Quillin

Environmental Science & Engineering, Inc.

A CALCOMP Company

SAMPLE COLLECTION LOG

PROJECT NAME: HERTZ - OAKLAND
PROJECT NO.: 6-91-5228
DATE: 5-27-93

SAMPLE LOCATION I.D.: MW-5
SAMPLER: CHRIS VALCHEFF
PROJECT MANAGER: MIKE QUILLIN

CASING DIAMETER

2" X
4"
Other

SAMPLE TYPE

Ground Water X
Surface Water
Treat. Influent
Treat. Effluent
Other

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: NA (ft.)
DEPTH TO WATER: 3.86 (ft.)
DEPTH OF WELL: 10.82 (ft.)

PRODUCT THICKNESS: NA (ft.)
WATER COLUMN: 6.96 (ft.)
WELL CASING VOLUME: 1.14 (gal)

MINIMUM PURGE VOLUME (3 or 4 WCV): 4.54 (gal)
ACTUAL VOLUME PURGED: 10 (gal)

TIME	Volume (GAL)	pH (Units)	E.C. (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other

INSTRUMENT CALIBRATION

pH/COND./TEMP.: TYPE_____ UNIT#_____ DATE:_____ TIME:_____ BY:_____
TURBIDITY: TYPE_____ UNIT#_____ DATE:_____ TIME:_____ BY:_____

PURGE METHOD

___Displacement Pump
X Bailer (Teflon/PVC/SS)
___Other
___Submersible Pump

SAMPLE METHOD

___Bailer (Teflon/PVC/SS)
X Bailer (Disposable)
___Dedicated
___Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	MW-5	1421	5-27-93	SEQUOIA ANALYTICAL	TPH-G, TPH-D, BTEX
DUPLICATE					
SPLIT					
FIELD BLANK					

COMMENTS: WELL BOX RE-SET ABOVE-GRADE

SAMPLER Chris Valcheff

PROJECT MANAGER Jim Quillin

Environmental Science & Engineering, Inc.

A CK CORP Company

SAMPLE COLLECTION LOG

PROJECT NAME: HERTZ - OAKLAND
PROJECT NO.: 6-91-3228
DATE: 5-27-93

SAMPLE LOCATION I.D.: MW-6
SAMPLER: CHRIS VALCHEFF
PROJECT MANAGER: MIKE QUILLIN

CASING DIAMETER

2" X
4"
Other

SAMPLE TYPE

Ground Water X
Surface Water
Treat. Influent
Treat. Effluent
Other

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: NA (ft.)
DEPTH TO WATER: 4.35 (ft.)
DEPTH OF WELL: 11.85 (ft.)

PRODUCT THICKNESS: NA (ft.)
WATER COLUMN: 7.50 (ft.)
WELL CASING VOLUME: 1.22 (gal)

MINIMUM PURGE VOLUME (3 or 4 WCV): 4.90 (gal)
ACTUAL VOLUME PURGED: 10 (gal)

TIME	Volume (GAL)	pH (Units)	E.C. (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other

INSTRUMENT CALIBRATION

pH/COND./TEMP.: TYPE_____ UNIT#_____ DATE:_____ TIME:_____ BY:_____
TURBIDITY: TYPE_____ UNIT#_____ DATE:_____ TIME:_____ BY:_____

PURGE METHOD

___Displacement Pump ___Other
X Bailer (Teflon/PVC/SS) ___Submersible Pump

SAMPLE METHOD

___Bailer (Teflon/PVC/SS) ___Dedicated
X Bailer (Disposable) ___Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	MW-6	2:41	5-27-93	SEQUOIA ANALYTICAL	TPH-D, TPH-G, BTEX
DUPLICATE					
SPLIT					
FIELD BLANK					

COMMENTS:

SAMPLER Chris Valcheff

PROJECT MANAGER Mike Quillin

Environmental Science & Engineering, Inc.

SAMPLE COLLECTION LOG

PROJECT NAME: HERTZ - OAKLAND
PROJECT NO.: 6-91-5228
DATE: 5-27-93

SAMPLE LOCATION I.D.: MW-7
SAMPLER: CHRIS VALCHEFF
PROJECT MANAGER: MIKE QUILLIN

CASING DIAMETER

2" X
4"
Other

SAMPLE TYPE

Ground Water X
Surface Water
Treat. Influent
Treat. Effluent
Other

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: NA (ft.)
DEPTH TO WATER: 4.58 (ft.)
DEPTH OF WELL: 10.49 (ft.)

PRODUCT THICKNESS: NA (ft.)
WATER COLUMN: 5.91 (ft.)
WELL CASING VOLUME: 0.96 (gal)

MINIMUM PURGE VOLUME (3 or 4 WCV): 3.86 (gal)
ACTUAL VOLUME PURGED: 5 (gal)

TIME	Volume (GAL)	pH (Units)	E.C. (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other

INSTRUMENT CALIBRATION

pH/COND./TEMP.: TYPE_____ UNIT#_____ DATE:_____ TIME:_____ BY:_____
TURBIDITY: TYPE_____ UNIT#_____ DATE:_____ TIME:_____ BY:_____

PURGE METHOD

___Displacement Pump
X Bailer (Teflon/PVC/SS)
___Other
___Submersible Pump

SAMPLE METHOD

___Bailer (Teflon/PVC/SS)
X Bailer (Disposable)
___Dedicated
___Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	MW-7	3:32	5-27-93	SEQUOIA ANALYTICAL	TPH-D, TPH-G, BTEX
DUPLICATE					
SPLIT					
FIELD BLANK					

COMMENTS: SURGE BLOCK STILL STUCK IN BOTTOM OR NEAR BOTTOM OF WELL

SAMPLER C. K. Valcheff

PROJECT MANAGER M. Quillin

Environmental Science & Engineering, Inc.
A CH2M HILL Company

SAMPLE COLLECTION LOG

PROJECT NAME: HERTZ - OAKLAND
PROJECT NO.: 6-91-5228
DATE: MAY 27, 1993

SAMPLE LOCATION I.D.: MW-8
SAMPLER: CHRIS VALCHEFF
PROJECT MANAGER: MIKE QUILLIN

CASING DIAMETER

2" X
4"
Other

SAMPLE TYPE

Ground Water X
Surface Water
Treat. Influent
Treat. Effluent
Other

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: NA (ft.)
DEPTH TO WATER: 4.84 (ft.)
DEPTH OF WELL: 11.55 (ft.)

PRODUCT THICKNESS: NA (ft.)
WATER COLUMN: 6.71 (ft.)
WELL CASING VOLUME: 1.10 (gal)

MINIMUM PURGE VOLUME (3 or 4 WCV): 4.40 (gal)
ACTUAL VOLUME PURGED: 5 (gal)

TIME	Volume (GAL)	pH (Units)	x1000 E.C. (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other
1102	1.00	6.75	5.96	70.1	—	LT BROWN - SANDY
1107	2.00	6.81	3.92	70.8		
1111	3.00	6.93	3.64	71.1		
1115	4.00	6.93	3.60	71.5	↓	↓

INSTRUMENT CALIBRATION

pH/COND./TEMP.: TYPE HYDAC UNIT#_____ DATE: 5/27/93 TIME: 0630 BY: CHV
TURBIDITY: TYPE_____ UNIT#_____ DATE:_____ TIME:_____ BY:_____

PURGE METHOD

___Displacement Pump ___Other
X Bailer (Teflon/PVC/SS) ___Submersible Pump

SAMPLE METHOD

___Bailer (Teflon/PVC/SS) ___Dedicated
X Bailer (Disposable) ___Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	MW-8	1:35	5/27/93	SEQUOIA ANALYT.	TPH-G, TPH-D, BTEX
DUPLICATE					
SPLIT					
FIELD BLANK					

COMMENTS:

SAMPLER C. Valcheff PROJECT MANAGER M. Quillin

Environmental Science & Engineering, Inc.

A CILCORP Company

SAMPLE COLLECTION LOG

PROJECT NAME: HERTZ - OAKLAND
PROJECT NO.: 6-91-8228
DATE: MAY 27, 1993

SAMPLE LOCATION I.D.: MW-9
SAMPLER: CHRIS VALCHEFF
PROJECT MANAGER: MIKE QUILLIN

CASING DIAMETER

2" X
4"
Other

SAMPLE TYPE

Ground Water X
Surface Water
Treat. Influent
Treat. Effluent
Other

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: NA (ft.)
DEPTH TO WATER: 4.99 (ft.)
DEPTH OF WELL: 9.73 (ft.)

PRODUCT THICKNESS: NA (ft.)
WATER COLUMN: 4.96 (ft.)
WELL CASING VOLUME: 0.78 (gal)

MINIMUM PURGE VOLUME (3 or 4 WCV): 3.11 (gal)
ACTUAL VOLUME PURGED: 15 (gal)

TIME	Volume (GAL)	pH (Units)	E.C. x1000 (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other
1128	0.75	7.11	1.96	74.4	—	GREY GREEN-SAND
1132	1.50	7.39	1.16	74.6	↓	
1155	5.00	7.42	0.69	74.3		
1215	15.00	7.39	0.72	72.1	↓	

INSTRUMENT CALIBRATION

pH/COND./TEMP.:	TYPE HYDAC	UNIT#	DATE: 5/27/93	TIME: 0630	BY: CHV
TURBIDITY:	TYPE	UNIT#	DATE:	TIME:	BY:

PURGE METHOD

___Displacement Pump
X Bailer (Teflon/PVC/SS)
___Other
___Submersible Pump

SAMPLE METHOD

___Bailer (Teflon/PVC/SS)
X Bailer (Disposable)
___Dedicated
___Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	MW-9	1414	5/27/93	SEQUOIA ANAL.	TPH-D, TPH-G, BTEX
DUPLICATE	DUP	1414	5/27/93	SEQUOIA ANAL.	"
SPLIT					
FIELD BLANK					

COMMENTS:

SAMPLER: [signature]

PROJECT MANAGER: [signature]

APPENDIX D

ANALYTICAL RESULTS FOR SOIL SAMPLES

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.	Client Project ID:	Hertz-Oakland/ #6-91-5228	Sampled:	May 24, 1993
4090 Nelson Ave., Ste J	Sample Matrix:	Soil	Received:	May 25, 1993
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Jun 9, 1993
Attention: Mike Quillin	First Sample #:	305-1318		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 305-1318 MW-7-5	Sample I.D. 305-1319 MW-9-5	Sample I.D. 305-1320 MW-8-5'
Purgeable Hydrocarbons	1.0	N.D.	N.D.	N.D.
Benzene	0.005	N.D.	N.D.	N.D.
Toluene	0.005	N.D.	N.D.	N.D.
Ethyl Benzene	0.005	N.D.	N.D.	N.D.
Total Xylenes	0.005	N.D.	N.D.	N.D.
Chromatogram Pattern:		--	--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0
Date Analyzed:	6/4/93	6/4/93	6/4/93
Instrument Identification:	HP-4	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	97	92	92

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.	Client Project ID:	Hertz-Oakland/ #6-92-5228
4090 Nelson Ave., Ste J	Matrix:	Soil
Concord, CA 94520		
Attention: Mike Quillin	QC Sample Group	3051318-20

Reported: Jun 9, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J.F.	J.F.	J.F.	J.F.
Conc. Spiked:	0.40	0.40	0.40	1.2
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg
LCS Batch#:	2LCS060493	2LCS060493	2LCS060493	2LCS060493
Date Prepared:	6/4/93	6/4/93	6/4/93	6/4/93
Date Analyzed:	6/4/93	6/4/93	6/4/93	6/4/93
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS % Recovery:	88	88	91	91
Control Limits:	70-130	70-130	70-130	70-130
MS/MSD Batch #:	3051318	3051318	3051318	3051318
Date Prepared:	6/4/93	6/4/93	6/4/93	6/4/93
Date Analyzed:	6/4/93	6/4/93	6/4/93	6/4/93
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
Matrix Spike % Recovery:	90	90	92	92
Matrix Spike Duplicate % Recovery:	88	90	92	92
Relative % Difference:	2.2	0.0	0.0	0.0

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results

CHAIN OF CUSTODY RECORD

DATE May 24, 1993 PAGE 1 OF 1

PROJECT NAME HERTZ-OAKLAND

ADDRESS #1 AIRPORT DRIVE
OAKLAND, CA

PROJECT NO. 6-91-5228

SAMPLED BY Chris Valcheff

LAB NAME ~~[redacted]~~ SEQUOIA ANALYTICAL

ESE Environmental Science & Engineering, Inc.
A CH2M HILL Company
1990 Nelson Avenue Suite J
Concord, CA 94520
Phone (510) 685-4053
Fax (510) 685-5323

SAMPLE #	DATE	TIME	LOCATION	ANALYSES TO BE PERFORMED: TPH-G	ANALYSES TO BE PERFORMED: BTEX	MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
MW-7-S	5-24-93	10:15	OAKLAND	X	X	SOIL	1	6" BRASS 305 1318
MW-9-S	↓	11:40	↓	X	X	↓	1	↓ + 1319
MW-8-S'	↓	13:30	↓	X	X	↓	1	↓ + 1320

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. Chris A. Valcheff			
2.			
3.			
4.			
5.			

3 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: MIKE QUILLIN

SPECIAL SHIPMENT REQUIREMENTS

SAMPLE RECEIPT

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

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

T.A. - 10 DAY

APPENDIX E

ANALYTICAL RESULTS FOR GROUND-WATER SAMPLES

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.	Client Project ID:	Hertz-Oakland, #6-91-5228	Sampled: May 27, 1993
4090 Nelson Ave., Ste J	Sample Matrix:	Water	Received: May 28, 1993
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported: Jun 14, 1993
Attention: Mike Quillin	First Sample #:	305-1469	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 305-1469 MW - 1	Sample I.D. 305-1470 MW - 2	Sample I.D. 305-1471 MW - 3	Sample I.D. 305-1472 MW - 4	Sample I.D. 305-1473 MW - 5	Sample I.D. 305-1474 MW - 6
Purgeable Hydrocarbons	50	N.D.	N.D.	N.D.	48,000	N.D.	1,300
Benzene	0.5	N.D.	N.D.	N.D.	6,300	N.D.	370
Toluene	0.5	N.D.	N.D.	N.D.	7,200	N.D.	N.D.
Ethyl Benzene	0.5	N.D.	N.D.	N.D.	1,600	N.D.	87
Total Xylenes	0.5	N.D.	N.D.	N.D.	6,800	N.D.	19
Chromatogram Pattern:		--	--	--	Gasoline	--	Gasoline

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	100	1.0	10
Date Analyzed:	6/7/93	6/4/93	6/4/93	6/4/93	6/7/93	6/7/93
Instrument Identification:	HP-2	HP-5	HP-5	HP-5	HP-2	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	105	104	107	117	101	94

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineeri	Client Project ID:	Hertz-Oakland, #6-91-5228	Sampled: May 27, 1993
4090 Nelson Ave., Ste J	Sample Matrix:	Water	Received: May 28, 1993
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported: Jun 14, 1993
Attention: Mike Quillin	First Sample #:	305-1475	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 305-1475 MW-7	Sample I.D. 305-1476 MW-8	Sample I.D. 305-1477 MW-9	Sample I.D. 305-1478 DUP
Purgeable Hydrocarbons	50	N.D.	N.D.	N.D.	N.D.
Benzene	0.5	N.D.	N.D.	N.D.	N.D.
Toluene	0.5	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.5	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.5	N.D.	N.D.	N.D.	N.D.
Chromatogram Pattern:		--	--	--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0
Date Analyzed:	6/4/93	6/4/93	6/4/93	6/4/93
Instrument Identification:	HP-5	HP-5	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	106	111	108	101

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.	Client Project ID:	Hertz-Oakland, #6-91-5228	Sampled:	May 27, 1993
4090 Nelson Ave., Ste J	Sample Matrix:	Water	Received:	May 28, 1993
Concord, CA 94520	Analysis Method:	EPA 5030/8020	Reported:	Jun 14, 1993
Attention: Mike Quillin	First Sample #:	305-1479		

BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 305-1479 TRIP
Benzene	0.5	ND
Toluene	0.5	N.D.
Ethyl Benzene	0.5	N.D.
Total Xylenes	0.5	N.D.

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Analyzed:	6/4/93
Instrument Identification:	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	108

Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineeri	Client Project ID:	Hertz-Oakland, #6-91-5228	Sampled:	May 27, 1993
4090 Nelson Ave., Ste J	Sample Matrix:	Water	Received:	May 28, 1993
Concord, CA 94520	Analysis Method:	EPA 3510/3520/8015	Reported:	Jun 14, 1993
Attention: Mike Quillin	First Sample #:	305-1469		

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 305-1469 MW-1	Sample I.D. 305-1470 MW-2	Sample I.D. 305-1471 MW-3	Sample I.D. 305-1472 MW-4	Sample I.D. 305-1473 MW-5	Sample I.D. 305-1474 MW-6
Extractable Hydrocarbons	50	N.D.	N.D.	55	4,900	75	960
Chromatogram Pattern:		--	--	Diesel & Discrete Peaks	Diesel & Non Diesel Mixture (<C14)	Diesel & Non Diesel Mixture (<C14) & Discrete Peaks	Diesel & Non Diesel Mixture (<C16)

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	10	1.0	1.0
Date Extracted:	6/2/93	6/2/93	6/2/93	6/2/93	6/2/93	6/2/93
Date Analyzed:	6/7/93	6/7/93	6/7/93	6/8/93	6/7/93	6/7/93
Instrument Identification:	HP-3B	HP-3B	HP-3B	HP-3A	HP-3B	HP-3B

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineeri	Client Project ID:	Hertz-Oakland, #6-91-5228	Sampled: May 27, 1993
4090 Nelson Ave., Ste J	Sample Matrix:	Water	Received: May 28, 1993
Concord, CA 94520	Analysis Method:	EPA 3510/3520/8015	Reported: Jun 14, 1993
Attention: Mike Quillin	First Sample #:	305-1475	

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 305-1475 MW-7	Sample I.D. 305-1476 MW-8	Sample I.D. 305-1477 MW-9	Sample I.D. 305-1478 DUP
Extractable Hydrocarbons	50	76	91	72	85
Chromatogram Pattern:		Diesel & Non Diesel Mixture (<C14) & Discrete Peaks	Diesel & Non Diesel Mixture (<C14 ;>C20) & Discrete Peaks	Diesel & Non Diesel Mixture (<C14 ;>C20) & Discrete Peaks	Diesel & Non Diesel Mixture (<C14) & Discrete Peaks

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0
Date Extracted:	6/2/93	6/2/93	6/2/93	6/2/93
Date Analyzed:	6/7/93	6/7/93	6/7/93	6/7/93
Instrument Identification:	HP-3B	HP-3B	HP-3B	HP-3B

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

3051469 L SE

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.
4090 Nelson Ave., Ste J
Concord, CA 94520
Attention: Mike Quillin

Client Project ID: Hertz-Oakland, #6-91-5228
Matrix: Water
QC Sample Group 3051469-1479

Reported: Jun 14, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Diesel
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015
Analyst:	J.F.	J.F.	J.F.	J.F.	K.Wimer
Conc. Spiked:	20	20	20	60	300
Units:	µg/L	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	1LCS060793	1LCS060793	1LCS060793	1LCS060793	BLK060293
Date Prepared:	6/7/93	6/7/93	6/7/93	6/7/93	6/2/93
Date Analyzed:	6/7/93	6/7/93	6/7/93	6/7/93	6/3/93
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	HP-3A
LCS % Recovery:	100	98	100	102	118
Control Limits:	70-130	70-130	70-130	70-130	80-120
MS/MSD Batch #:	3060105	3060105	3060105	3060105	BLK060293
Date Prepared:	6/7/93	6/7/93	6/7/93	6/7/93	6/2/93
Date Analyzed:	6/7/93	6/7/93	6/7/93	6/7/93	6/3/93
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	HP-3A
Matrix Spike % Recovery:	100	100	100	102	118
Matrix Spike Duplicate % Recovery:	100	95	100	102	113
Relative % Difference:	0.0	5.1	0.0	0.0	4.0

Laboratory blank contained the following analytes: None Detected

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results

DATE MAY 28, 1997 PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

PROJECT NAME HERTZ - OAKLAND

ADDRESS No. 1 AIRPORT DRIVE
OAKLAND, CA

PROJECT NO. 6-91-5228

SAMPLED BY CHRIS VALKHEFF

LAB NAME SEQUOIA ANALYTICAL

ESE Environmental Science & Engineering, Inc.
4080 Nelson Avenue
Suite J
Concord, CA 94520
(415) 685-4053
Fax (415) 685-3121

SAMPLE #	DATE	TIME	LOCATION	TPH-D	TPH-G	BTEX								MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
				ANALYSES TO BE PERFORMED										MATRIX		
MW-1	5/27/93	1420	OAKLAND	X	X	X	3051	1469	AC					H_2O	3	2 VOAs 1 LTR
MW-2		1432						1470	AC						3	
MW-3		1430						1481	AC						3	
MW-4		1445						1472	AC						3	
MW-5		1421						1473	AC						3	
MW-6		2:41						1474	AC						3	
MW-7		3:32						1475	AC						3	
MW-8		1:35						1476	AC						3	
MW-9		1417						1477	AC						3	
DUP		1417						1478	AC						3	
TRIP				X	X	X		1479						H_2O	1	1 VOA

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1.		5/28/93	9:15AM
2.			
3.			
4.			
5.			

31 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: MIKE QUILLIN

SPECIAL SHIPMENT REQUIREMENTS

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

10d TAT

SAMPLE RECEIPT

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