Environmental
Science &
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2260

TO: Alameda County Health Care Services
Department of Environmental Health
80 Swan Way, #200
Oakland, CA 94621

DATE: December 31, 1992

ATTN: Mr. Barney Chan

JOB NUMBER: 6-91-5228

SUBJECT: Hertz Rent A Car, No. 1 Airport Drive, Oakland, Alameda County, California

WE ARE TRANSMITTING THE FOLLOWING:

Fourth Quarter 1992 Monitoring and Subsurface Report

CC: Ms. Patty Woods, Hertz

DIST:
LB
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ORIGINATOR

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

BY Michael E. Quillin

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FOURTH QUARTER 1992
GROUND WATER MONITORING AND
SUBSURFACE INVESTIGATION REPORT

HERTZ SERVICE CENTER
#1 AIRPORT DRIVE
OAKLAND
ALAMEDA COUNTY
CALIFORNIA

Prepared For:

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

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PROJECT NO. 6-91-5228

December 9, 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:

Kerry Lefever — 12/15/92

Kerry Lefever
Senior Staff Geologist

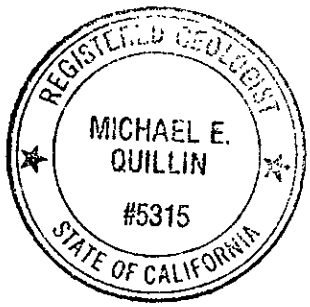
DATE

UNDER THE PRIMARY REVIEW AND SUPERVISION OF:

Michael E Quillin — 12/15/92

Michael E. Quillin, RG 5315
Senior Hydrogeologist

DATE



PROJECT NO. 6-91-5228

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1.0 INTRODUCTION

This report presents the results of additional subsurface investigation and the Fourth Quarter 1992 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 and sampling of two borings and the installation of two ground water monitoring wells (MW-5 and MW-6; Figure 1). Ground water monitoring activities included the collection of depth to ground water measurements and ground water samples from the existing and new wells. 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 onsite ground water monitoring wells by installing one additional onsite well (well MW-5) in the extreme southwestern portion of the site, and one offsite well (MW-6), located south of the site.

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 (MW-4) at the site, were summarized in the February 1992 Quarterly Monitoring Report (ESE, 1992). ESE has conducted quarterly monitoring activities at the site since August 1991.

2.0 INSTALLATION OF ADDITIONAL GROUND WATER MONITORING WELLS

2.1 Permitting

ESE obtained permits from Alameda County Flood Control and Water Conservation District to install two additional ground water monitoring wells at the site. Well MW-5 is located in the extreme southwestern portion of the site. ESE obtained permission from the Port of Oakland to install offsite well MW-6, located approximately twenty feet south of the Hertz facility (Figure 1). These well locations were selected to assess the extent of petroleum hydrocarbons in soil and ground water in the southwest portion of the site and offsite to the south.

2.2 Soil Borings and Soil Sampling

On October 26, 1992, ESE supervised the drilling of soil borings MW-5 and MW-6 to depths of 13 feet below ground surface (bgs) according to 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 5.5 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 unsaturated zone immediately above the occurrence of ground water (at depths of approximately five 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 for analyses of Total Petroleum Hydrocarbons as Gasoline (TPH-G) and as Diesel (TPH-D) by EPA Method 5030/8015 (modified) and for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) by EPA Method 8020.

During drilling activities, ESE located two apparent fill ports immediately west of the Hertz facility. Mr. Tom LaBasco, with the Port of Oakland, confirmed the presence of an 8,000-gallon underground storage tank (UST) used to store diesel. The diesel UST is oriented in a northerly direction which parallels the configuration of the road located west of the subject site (See Figure 1). The existence of the UST and its approximate orientation was confirmed with a drawing obtained from Mr. LaBasco. However, an as-built drawing of the tank and its associated piping was not available.

Soil cuttings generated during drilling activities were contained in Department of Transportation (DOT-rated) 55-gallon drums. In addition, rinse water generated as a result of decontamination of drilling and soil sampling equipment, as described in ESE's SOP No. 1, was contained in 55-gallon DOT-rated drums.

2.3 Well Construction and Development

Soil borings MW-5 and MW-6 were converted to ground water monitoring wells following ESE SOP No. 2 (Appendix A). Wells MW-5 and MW-6 were constructed of new 2-inch diameter, 0.02-inch slotted, schedule 40 Polyvinyl Chloride (PVC) screen from 13 to 4 feet bgs and blank PVC casing from 4 feet bgs to the surface. The well annulus was packed with No. 3 Monterey sand from 13 feet to 3.5 feet, hydrated bentonite pellets from 3.5 to 3 feet, and cement grout from 3 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 was 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 DOT 55-gallon drums.

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 November 5, 1992, ESE measured the static water levels in the six wells 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

Ground water samples were collected 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 Curtis & Tompkins, Ltd. for TPH-Gas and BTEX using EPA Method 5030/8015 (modified) and 8020, respectively. Due to presence of the diesel UST located west of the Hertz site (Figure 1), ground water samples from wells MW-5 and MW-6 were also analyzed for TPH-D and TPH as Kerosene (TPH-K) using EPA Method 5030/8015 (modified).

As a measure of field quality assurance and quality control (QA/QC), ESE collected a duplicate sample from well MW-4 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.

4.0 RESULTS

4.1 Soil Samples

The boring logs for wells MW-5 and MW-6 (Appendix B) show that the native soil from approximately 1 to 10 feet bgs consists of poorly-graded, fine-grained, silty sand, grading into clayey sand and clay to total boring depth.

Soil samples collected from borings MW-5 and MW-6 were analyzed by Sequoia for TPH-G, TPH-D, and BTEX by EPA Methods 8030/8015 (modified) and 8020, respectively. No detectable concentrations of TPH-G, TPH-D or BTEX were reported for the soil samples collected from borings MW-5 and MW-6. 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 that for the current monitoring event. Ground water elevations for the current monitoring event are contoured in Figure 2 - Ground Water Elevations. The overall direction of ground water flow was observed to be to the west-southwest with a gradient of approximately 160 feet/mile (0.03 ft/ft), which is generally consistent with the gradient noted in September 1992 (140 feet/mile or 0.026 ft/ft). In the vicinity of the fueling island and wells MW-4, MW-5, and MW-6, the ground water gradient is shown to be oriented in a more southerly direction.

During the process of verifying the well survey data, a reporting error for the elevation of the top of casing for well MW-4 was found. The corrected elevation of the top of casing for MW-4 is 7.11 feet. The corrected ground water elevation data for well MW-4 is reflected in Table 1.

4.3 Ground Water Chemistry

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 E - Analytical Results for Ground Water Samples.

As presented in Table 1, the concentrations of petroleum hydrocarbons in Well MW-4 decreased by a factor of three to five relative to September 1992 findings. Historically, petroleum hydrocarbon concentrations in ground water samples collected from well MW-4 have increased since monitoring was initiated in that well in February 1992, with a high observed in September 1992. TPH-G or BTEX were not detected in samples from MW-1, MW-2, or MW-3. Whereas TPH-G, TPH-K, or BTEX were not detected in the sample from MW-5, petroleum hydrocarbons in the diesel range were reported. TPH-Gas, Benzene, Ethylbenzene, and petroleum hydrocarbons in the Kerosene range were detected in the sample from MW-6. TPH in the diesel range was not detected in MW-6.

The overall findings tend to confirm that the origin of petroleum hydrocarbons in ground water is in the vicinity of the Hertz fuel dispensers and former product lines. However, the findings for MW-5 suggest a relationship between the Port of Oakland diesel tank and ground water near the well. The results for MW-6 confirm that petroleum hydrocarbons have migrated offsite in ground water, but are present in concentrations approximately an order of magnitude lower than noted in onsite well MW-4.

5.0 CONCLUSIONS

- Petroleum hydrocarbons were not found in soil samples collected from wells MW-5 and MW-6, indicating that shallow soil generally downgradient of the site's fueling island and former USTs has not been impacted.

- The general direction of ground water flow beneath the site on November 5, 1992 was towards the west-southwest with a gradient of approximately 160 feet per mile, which is generally consistent with historical data. In the vicinity of the site's fueling island and wells MW-4, MW-5, and MW-6, the direction of flow is generally to the south.

- The detection of petroleum hydrocarbons in ground water from well MW-6 indicates that the plume in ground water beneath the site and its vicinity has not been completely defined.

- The occurrence of petroleum hydrocarbons in the diesel range in ground water from well MW-5 suggests that the Port of Oakland's diesel UST may be a source of those hydrocarbons.

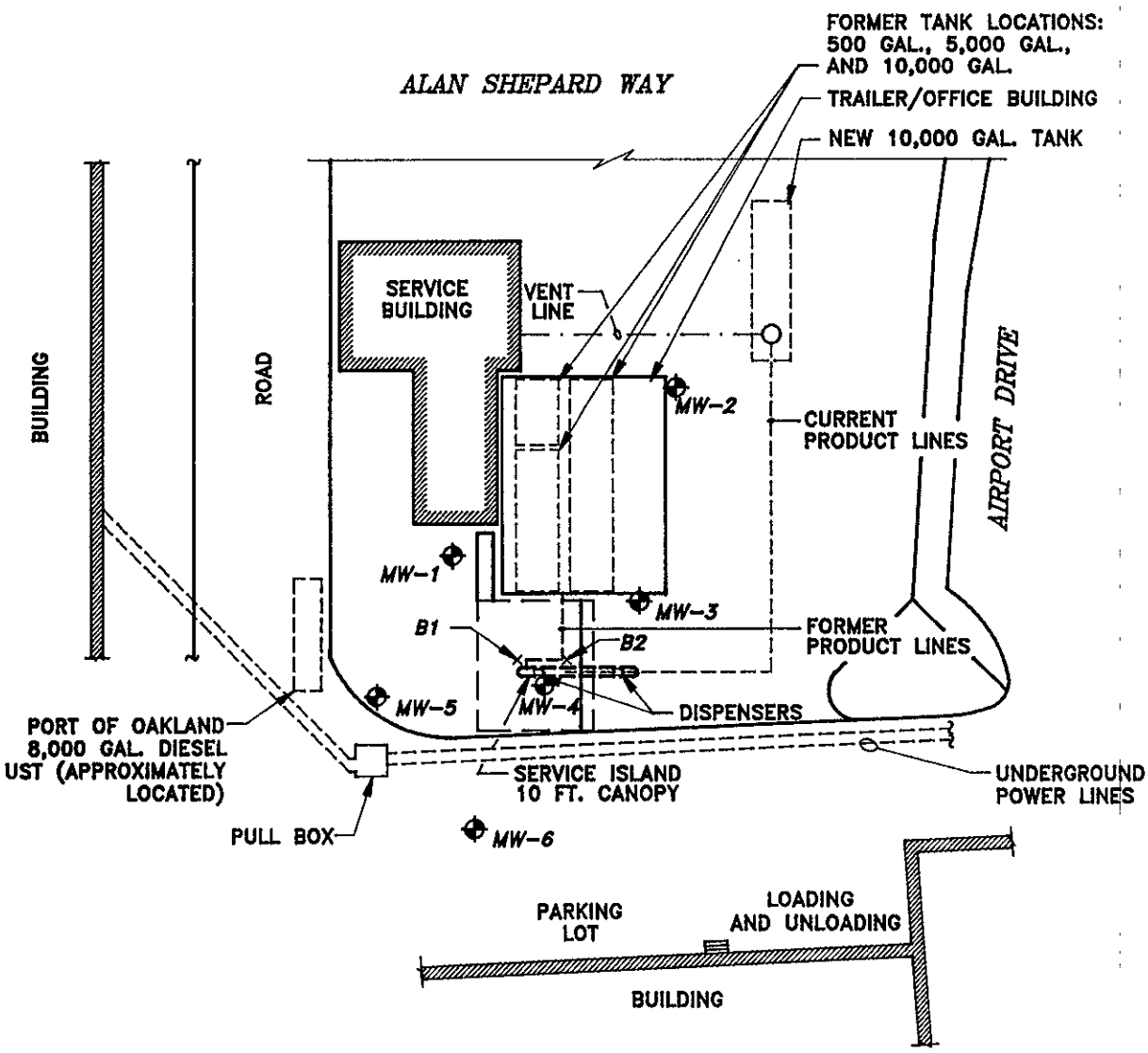
- Petroleum hydrocarbons in ground water appear to have migrated offsite to the south, as evidenced by the detection of petroleum hydrocarbons in ground water from well MW-6.

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.

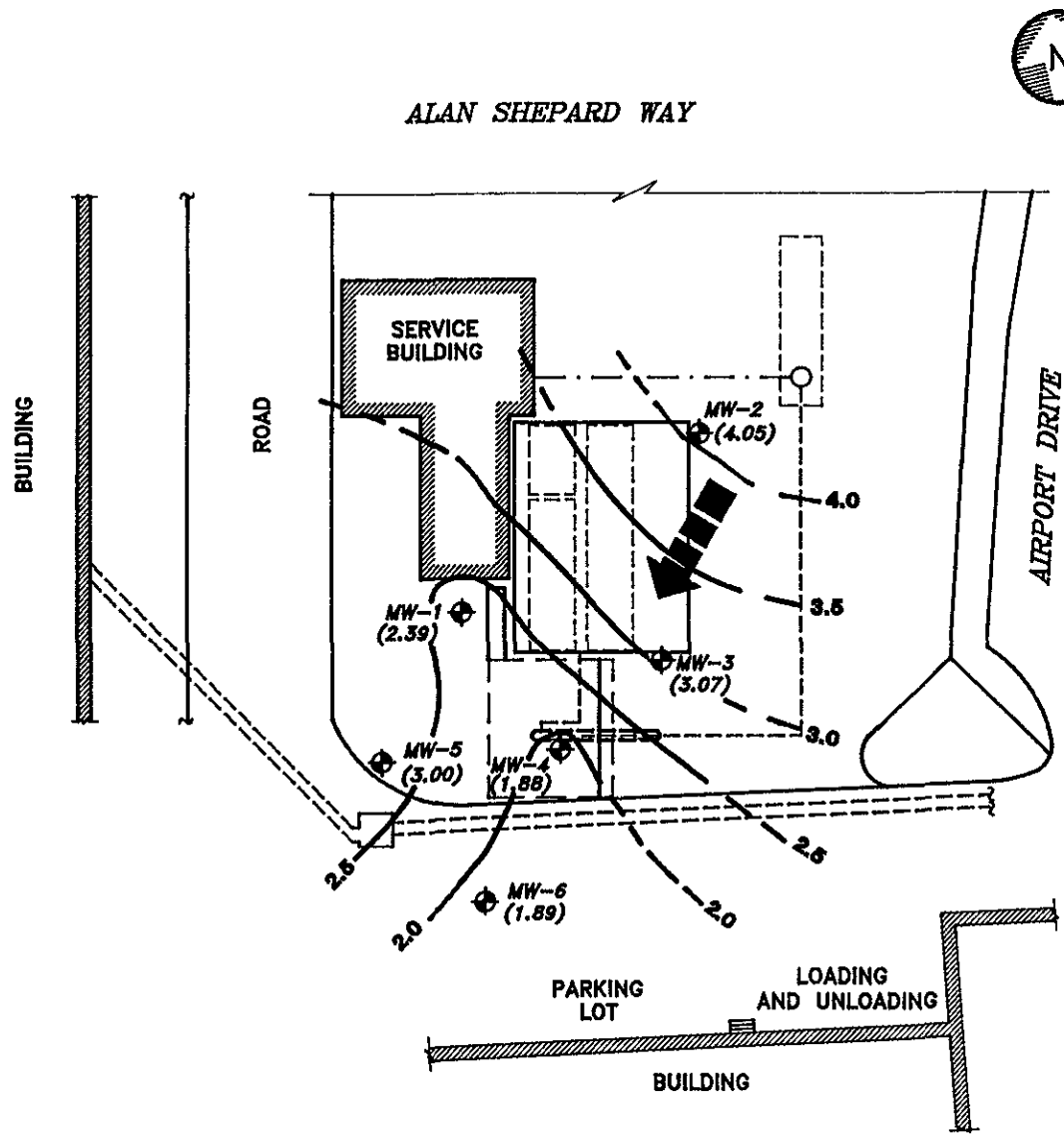
——— 1992, February 1992 Quarterly Monitoring Report for Hertz Service Center, #1 Airport Drive, Oakland, Alameda County, California, March 24, 1992.



ESE A GILCORP COMPANY	Environmental Science & Engineering, Inc.
HERTZ/OAKLAND AIRPORT OAKLAND, CALIFORNIA	
FIGURE 1 SITE PLAN	

DRAWN BY	APPROVED BY	REVISED
CVS		DWR 5/92

DATE	FILE NAME	PROJ. NO.
8/91	52284001	6-91-5228



WELL	WELL ELEV(ft)	GW DEPTH(ft)	GW ELEV(ft)
MW-1	7.45	5.06	2.39
MW-2	8.09	4.04	4.05
MW-3	7.66	4.59	3.07
MW-4	7.11	5.23	1.88
MW-5	7.76	4.76	3.00
MW-6	7.17	5.28	1.89

SCALE
0 40 FEET

LEGEND

- EXISTING MONITORING WELLS (6)
- INTERPRETED DIRECTION OF GROUND WATER FLOW (11/92)
- 2.0 — GROUND WATER ELEVATION CONTOUR (IN FEET ABOVE MSL)

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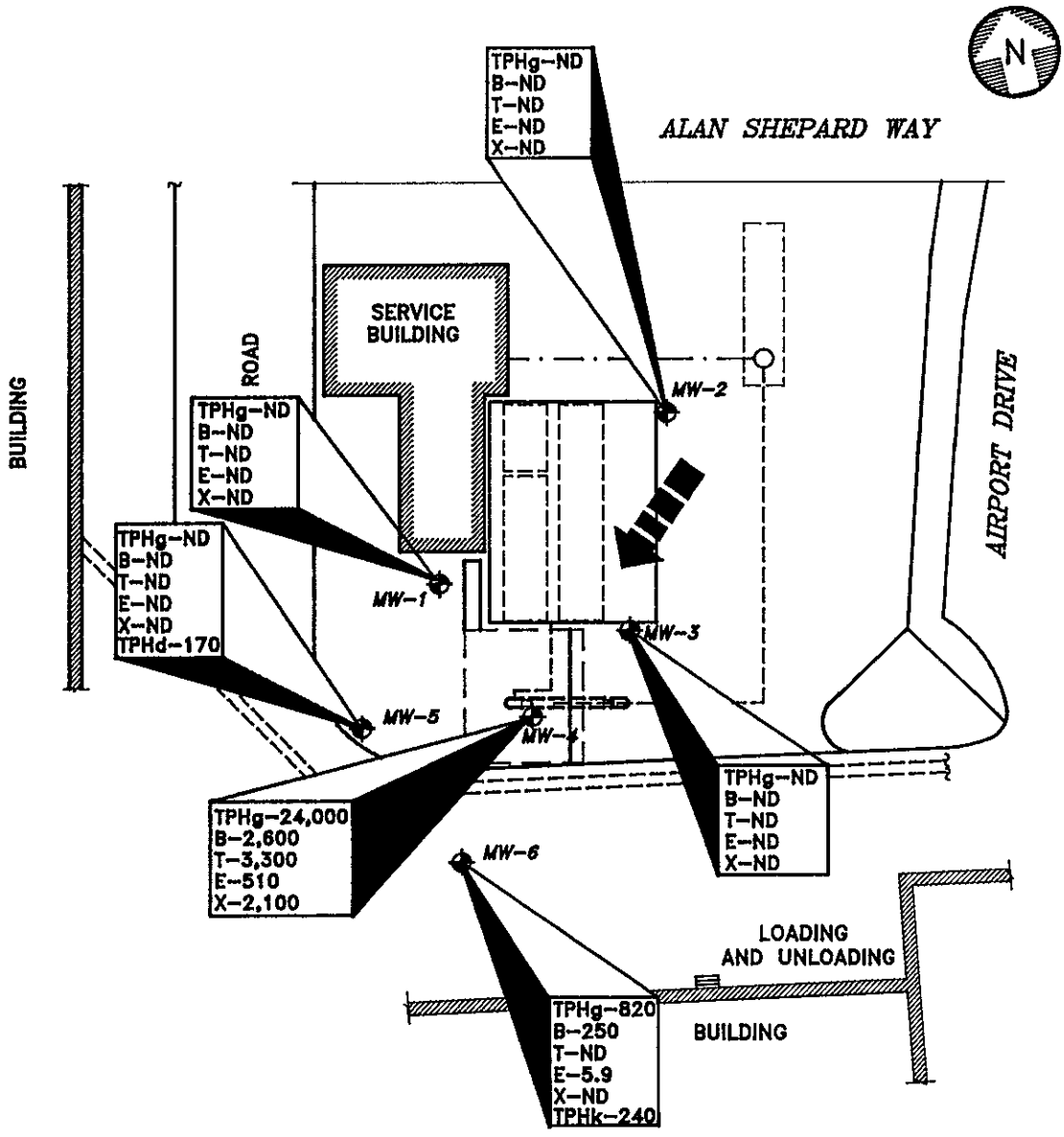
Environmental Science & Engineering, Inc.

HERTZ/OAKLAND AIRPORT
OAKLAND, CALIFORNIA

FIGURE 2
GROUND WATER ELEVATIONS
NOVEMBER 5, 1992

DRAWN BY	APPROVED BY	REVISED
CVS		DWR 12/92

DATE	FILE NAME	PROJ. NO.
8/91	52284002	6-91-5228



SCALE

0 40 FEET

LEGEND

◈ EXISTING MONITORING WELLS (6)

TPHg – TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (ppb)
B – BENZENE (ppb)
T – TOLUENE (ppb)
E – ETHYLBENZENE (ppb)
X – TOTAL XYLENES (ppb)
TPHd – TOTAL PETROLEUM HYDROCARBONS AS DIESEL (ppb)
TPHk – TOTAL PETROLEUM HYDROCARBONS AS KEROSENE (ppb)

APPROXIMATE DIRECTION OF GROUND WATER FLOW

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HERTZ/OAKLAND AIRPORT
OAKLAND, CALIFORNIA

FIGURE 3
CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUND WATER
NOVEMBER 5, 1992

DRAWN BY	APPROVED BY	REVISED
CVS		DWR 12/92

DATE	FILE NAME	PROJ. NO.
8/91	52284003	6–91–5228

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		
11/05/92	MW-1	2.39	Not Analyzed					--	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						--	24,000	--	--	2600	3300	510	2100	--	--
	MW-5	3.00						--	ND	ND	170	ND	ND	ND	ND	--	--
	MW-6	1.89						--	820	240	D	250	ND	5.9	ND	--	--
	DUP (MW-4)	--						--	14,000	--	--	2100	1400	370	1100	--	--
09/01/92	MW-1	2.55	Not Analyzed					--	ND	--	--	ND	ND	ND	ND	--	--
	MW-2	4.15						--	56	--	--	2.0	3.0	0.8	3.1	--	--
	MW-3	3.21						--	ND	--	--	1.1	1.6	ND	1.9	--	--
	MW-4	3.14						--	120,000	--	--	8800	14000	2100	11000	--	--
	DUP (MW-2)	--						--	68	--	--	2.8	4.2	1.0	4.3	--	--
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 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.
D = Diesel range not reported - quantified as kerosene range.

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.

APPENDIX B

BORING LOGS

Environmental Science & Engineering, Inc.
A CILCORP Company

BORING LOG AND WELL COMPLETION SUMMARY

MW-5

Page 1 of 1

WELL COMPLETION

Completion Depth:

Size/Type	From	To
Casing: 2" Diam. Sched. 40 PVC	4 Feet	0 Feet
Screen: 2" Diam. Sched. 40 Slotted (0.02") PVC	13 Feet	4 Feet
Filter: #3 Monterey Sand	13 Feet	3.5 Feet
Seal: Bentonite Pellets	3.5 Feet	3 Feet
Cement Grout	3 Feet	0 Feet

Well Cap or Box: Locking Well Box (3 -9/16" Bolts), flush mount, traffic rated

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

Driller: SES
Method: HSA-Access II
Hole Diameter: 8" Total Depth: 13 Feet
Ref. Elevations: 7.76 Ft. (relative)
Logged By: Kerry Lefever

Dates:
Start: 10-26-92
Finish: 10-26-92

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 - 2"						Hand auger to 4.5 feet 12:30
	FILL - Subbase gravel, silty, cobbles 1/2-1".	GP					
1	ALLUVIUM - SAND, brown, fine grained, poorly graded, slightly moist, no odor.						
2			2				
3			2				
4			3				
5			5			19	Sample @ 5 FEET 13:45
	SAND, grey-green, fine grained, poorly graded, wet, no odor.	SP					Ground Water @ 5.5 FEET
6							
7							
8							
9							
10	CLAYEY SAND, grey, fine grained, poorly graded, wet, no odor.	SC					
11	CLAY, grey, soft, moderate plasticity.	CL					
12							
13							TOTAL DEPTH = 13 FEET

Environmental Science & Engineering, Inc.

A GILCORP Company

BORING LOG AND WELL COMPLETION SUMMARY

MW-6

Page 1 of 1

WELL COMPLETION

Completion Depth:

Size/Type	From	To
Casing: 2" Diam. Sched. 40 PVC	4 Feet	0 Feet
Screen: 2" Diam. Sched. 40 Slotted (0.02") PVC	13 Feet	4 Feet
Filter: #3 Monterey Sand	13 Feet	3.5 Feet
Seal: Bentonite Pellets	3.5 Feet	3 Feet
Cement Grout	3 Feet	0 Feet

Well Cap or Box: Locking Well Box (3 -9/16" Bolts)

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

Location: 1 Airport Drive
Oakland Airport

Driller: SES
Method: HSA-Access II
Hole Diameter: 8" Total Depth: 13 Feet
Ref. Elevations: 7.17 Ft. (relative)
Logged By: Kerry Lefever

Dates:
Start: 10-26-92
Finish: 10-26-92

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 at surface - 1"						Hand auger to 3 feet 9:00
	FILL - Subbase - silty gravel, brown, cobbles 1/2-1" diam.	GP					
1	ALLUVIUM - 6" SAND, brown, fine grained, poorly graded, slightly moist, no odor.						
2	SAND, brown, fine grained, poorly graded, slightly moist, no odor.						
3			14			12	Continuous sampling 3-6.5 feet.
			21			15	Used 2 foot sampler 3-5 feet. (2" RINGS)
4	SAND, moist.		28			13	
			36			12	
5	SAND, grey-green, wet, no odor. Thin lense of clayey sand (1" thick) at top of ring.	SP	7				HNU = 5 ppm - downhole
			17				Used 1-1/2 foot sampler 5-6.5 feet. (1-1/2" RING)
6			25				Sample @ 5.5 FEET 9:30
	SAND, grey-green, wet, slight odor.					14	Ground Water @ 5.5 FEET
7						16	
8							
9							
10							HNU = 5 ppm - downhole
	CLAYEY SAND, grey, fine grained, poorly graded, wet.	SC					
11							
12	CLAY, grey-green, soft, moderate plasticity.	CL					
13							TOTAL DEPTH = 13 FEET

APPENDIX C

WELL PURGING AND SAMPLING DATA

WELL SAMPLING FIELD LOG

PROJECT NAME: Hertz
PROJECT MANAGER: Mike Q
SAMPLER: P.M. / C.V.
GROUNDWATER: Yes
OTHER:
DATE: 11-5-92
CLIENT: Hertz
SAMPLE LOCATION I.D. MW-1
START TIME:

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

DEPTH TO WATER (FT): 5.06'
DEPTH OF WELL (FT): 14.86'
DIFFERENCE (FT): 9.80'

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

ACTUAL PURGE VOLUME (GAL): 8gal
MINIMUM PURGE VOLUME (3 x WV):

FIELD MEASUREMENTS

TIME	Volume (GAL)	pH (Units)	E.C.	Temp.	Clarity & Color	Other
					Brown	

PURGE METHOD

__Pneumatic Displacement Pump X Other
__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 DATE: 11/5/92
PROJECT MANAGER: MP CLIENT:
SAMPLER: PM/CV SAMPLE LOCATION I.D. MW-2
GROUNDWATER: ~ OTHER: START TIME:

CASING ELEVATION (FT):_____ DATUM:_____ CASING DIAMETER: 2" X 4"__ OTHER__

DEPTH TO WATER (FT): 4.04 DEPTH OF WELL (FT): 14.10' DIFFERENCE (FT): 10.06

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

ACTUAL PURGE VOLUME (GAL): 6 MINIMUM PURGE VOLUME (3 x WV): 4.5

FIELD MEASUREMENTS

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

PURGE METHOD

__Pneumatic Displacement Pump X Other
__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
PROJECT MANAGER: JMQ
SAMPLER: PM/CW
GROUNDWATER: ✓
DATE: 11/5/92
CLIENT:
SAMPLE LOCATION I.D. MW-3
OTHER:
START TIME:

CASING ELEVATION (FT):
DATUM:
CASING DIAMETER: 2" X 4" OTHER
DEPTH TO WATER (FT): 4.59'
DEPTH OF WELL (FT): 14.45'
DIFFERENCE (FT): 9.86
WATER ELEVATION (FT):
CALCULATED WELL VOLUME (GAL):
ACTUAL PURGE VOLUME (GAL): 60 Gal
MINIMUM PURGE VOLUME (3 x WV):

FIELD MEASUREMENTS

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

PURGE METHOD

__Pneumatic Displacement Pump X Other
__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
PROJECT MANAGER: MD
SAMPLER: PH/CV
GROUNDWATER: ✓
DATE: 11/5/92
CLIENT:
SAMPLE LOCATION I.D. MW-4
OTHER:
START TIME:

CASING ELEVATION (FT):_____ DATUM:_____ CASING DIAMETER: 2" X 4"__ OTHER__

DEPTH TO WATER (FT): 5.23 DEPTH OF WELL (FT): 7.81 DIFFERENCE (FT): 2.58

WATER ELEVATION (FT):_____ CALCULATED WELL VOLUME (GAL): 1/2 GAL = 0.5

ACTUAL PURGE VOLUME (GAL): 3 GAL MINIMUM PURGE VOLUME (3 x WV): 1.5 GAL

FIELD MEASUREMENTS

TIME	Volume (GAL)	pH (Units)	E.C.	Temp.	Clarity & Color	Other
					BLACK	SILTY - ODOR AND SHEEN

PURGE METHOD

__Pneumatic Displacement Pump X Other
__Bailer (Teflon/PVC/SS) __Submersible Pump

SAMPLE METHOD

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

WELL INTEGRITY:_____

REMARKS: WELL HAD STRONG ODOR - CLEARED UP AFTER 1.5 GALS. BUT STILL HAD ODOR

SIGNATURE: [signature] CHECKED BY: [signature]

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 DATE: 11-5-92
PROJECT MANAGER: MO. CLIENT: HERTZ
SAMPLER: Paul M/Carus J. SAMPLE LOCATION I.D. MW-5
GROUNDWATER: YES OTHER: START TIME:

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

DEPTH TO WATER (FT): 4.76 DEPTH OF WELL (FT): 10.86 DIFFERENCE (FT): 6.10

WATER ELEVATION (FT): CALCULATED WELL VOLUME (GAL): 1.22

ACTUAL PURGE VOLUME (GAL): 5.00 MINIMUM PURGE VOLUME (3 x WV): 3.66

FIELD MEASUREMENTS

TIME	Volume (GAL)	pH (Units)	E.C. x1000	Temp.	Clarity & Color	Other
	0	8.12	2.20	72.4	Brown	Silty

PURGE METHOD

__Pneumatic Displacement Pump X Other
__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 - DATE: 11-5-92
PROJECT MANAGER: MB CLIENT: HERTZ
SAMPLER: PAUL M./CHRIS V. SAMPLE LOCATION I.D. MW-6
GROUNDWATER: YES OTHER: START TIME:

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

DEPTH TO WATER (FT): 5.28' DEPTH OF WELL (FT): 11.88' DIFFERENCE (FT): 6.6'

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

ACTUAL PURGE VOLUME (GAL): 4 MINIMUM PURGE VOLUME (3 x WV):

FIELD MEASUREMENTS

TIME	Volume (GAL)	pH (Units)	E.C.	Temp.	Clarity & Color	Other
			Yrodd			
	Ø	7.76	5.06	74.7	Brown	5.14
	1	7.45	7.44	75.5		
	2	7.07	9.63	75.2		
	3	2.36	5.59	75.6		

PURGE METHOD

__Pneumatic Displacement Pump __Other
__Bailer (Teflon/PVC/SS) X 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

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:	#6-91-5228 / Hertz, Oakland	Sampled: Oct 26, 1992
4090 Nelson Ave., Suite J	Sample Matrix:	Soil	Received: Oct 27, 1992
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported: Nov 10, 1992
Attention: Mike Quillin	First Sample #:	210-0864	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 210-0864 MW6@5'	Sample I.D. 210-0865 MW5@5'
Purgeable Hydrocarbons	1.0	N.D.	N.D.
Benzene	0.005	N.D.	N.D.
Toluene	0.005	N.D.	N.D.
Ethyl Benzene	0.005	N.D.	N.D.
Total Xylenes	0.005	N.D.	N.D.
Chromatogram Pattern:		--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	10/28/92	10/28/92
Instrument Identification:	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	104	105

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.
4090 Nelson Ave., Suite J
Concord, CA 94520
Attention: Mike Quillin

Client Project ID: #6-91-5228 / Hertz, Oakland

QC Sample Group: 2100864-865

Reported: Nov 10, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Diesel
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA8015
Analyst:	J.F.	J.F.	J.F.	J.F.	K.Wimer
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	Oct 28, 1992	Oct 28, 1992	Oct 28, 1992	Oct 28, 1992	Nov 6, 1992
QC Sample #:	210-0622	210-0622	210-0622	210-0622	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	0.40	0.40	0.40	1.2	10
Conc. Matrix Spike:	0.37	0.40	0.41	1.3	9.3
Matrix Spike % Recovery:	93	100	103	111	93
Conc. Matrix Spike Dup.:	0.37	0.40	0.41	1.3	9.0
Matrix Spike Duplicate % Recovery:	93	100	103	110	90
Relative % Difference:	0.0	0.0	0.0	1.0	3.3

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}}$	x 100
Relative % Difference:	$\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}}$	x 100

DATE 10/26/92 PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

PROJECT NAME Hertz - Oakland

ADDRESS 1 Airport Dr. Oakland

PROJECT NO. 6-91-5228

SAMPLED BY Kerry Lefever

LAB NAME

ESE Environmental Science & Engineering, Inc

4080 Nelson Avenue Suite J Concord, CA 94520

(415) 685-4053

Fax (415) 685-5323

SAMPLE #	DATE	TIME	LOCATION	ANALYSES TO BE PERFORMED: TPH-G	BTEX	TPH-diesel							MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
MW-6@5'	10/26/92	930	Hertz —	X	X	X	2100864						SOIL	1	Brass Liner
MW-5@5'	10/26/92	1345	Oakland	X	X	X	↓		865				SOIL	1	Brass Liner

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. Kerry Lefever	M. Quillin	10/27/92	0930
2. M. Quillin		10/27/92	0830
3.			
4.			
5.			

2 — TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: Mike Quillin

SPECIAL SHIPMENT REQUIREMENTS

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

Normal TA Time

SAMPLE RECEIPT

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

APPENDIX E

ANALYTICAL RESULTS FOR GROUND WATER SAMPLES

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

DATE RECEIVED: 11/06/92
DATE REPORTED: 11/12/92

LABORATORY NUMBER: 109192

CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING

PROJECT ID: 6-91-5228

LOCATION: NO.1 AIRPORT DRIVE

RESULTS: SEE ATTACHED

Reviewed by

Reviewed by

Curtis & Tompkins Ltd

LABORATORY NUMBER: 109192
CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
PROJECT ID: 6-91-5228
LOCATION: NO.1 AIRPORT DRIVE

DATE SAMPLED: 11/05/92
DATE RECEIVED: 11/06/92
DATE ANALYZED: 11/10/92
DATE REPORTED: 11/12/92

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)
109192-4	MW-4	24,000	2,600	3,300	510	2,100
109192-6	MW-6	820	250	ND(0.5)	5.9	ND(0.5)
109192-7	DUP*	14,000	2,100	1,400	370	1,100

*Voa vials labeled "DUP" were not the same. One vial sampled at 13:10 was ND, the reported vial sampled at 13:15 provided the above results.

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

QA/QC SUMMARY

RPD, %	4
RECOVERY, %	109

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 109192
CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
PROJECT ID: 6-91-5228
LOCATION: NO.1 AIRPORT DRIVE

DATE SAMPLED: 11/05/92
DATE RECEIVED: 11/06/92
DATE ANALYZED: 11/07/92
DATE REPORTED: 11/12/92

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)
109192-1	MW-1	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
109192-2	MW-2	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
109192-3	MW-3	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
109192-5	MW-5	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, %	2
RECOVERY, %	106

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 109192
CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
PROJECT ID: 6-91-5228
LOCATION: NO.1 AIRPORT DRIVE

DATE SAMPLED: 11/05/92
DATE RECEIVED: 11/06/92
DATE EXTRACTED:11/09/92
DATE ANALYZED: 11/11/92
DATE REPORTED: 11/12/92
DATE REVISED: 11/16/92

Extractable Petroleum Hydrocarbons in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	SAMPLE ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT* (ug/L)
109192-5	MW-5	ND	170	50
109192-6	MW-6	240	**	50

ND = Not Detected at or above reporting limit.

* Reporting limit applies to all analytes.

**Diesel range not reported. Quantitated as kerosene range.

QA/QC SUMMARY

RPD, %	2
RECOVERY, %	92

10912

CHAIN OF CUSTODY RECORD

DATE Nov. 5, 92 PAGE 1 OF 1

PROJECT NAME Hertz

ADDRESS No. 1 Airport Drive, Oakland.

PROJECT NO. 6-91-5228

SAMPLED BY Paul Marsden

LAB NAME C.A.T.

Environmental Science & Engineering, Inc.
4090 Nelson Avenue, Suite J, Concord, CA 94520
(415) 685-4053
Fax (415) 685-3219

SAMPLE #	DATE	TIME	LOCATION	ANALYSES TO BE PERFORMED: TPH/GAS	BTEX	TPH/Diesel	MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
MW-1	11/5/92	1302	Oakland	X	X		Water	3	VOAs
MW-2		1305		X	X		"	3	" "
MW-3		1310		X	X		"	3	" "
MW-4		1315		X	X		"	3	" "
MW-5		1255		X	X	X	"	4	1 liter 3 VOAs
MW-6		1245		X	X	X	"	4	" "
Dup.		1312		X	X		"	3	VOAs.
Trip								1	VOA

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1.			
2.		11-6-92	1105
3.			
4.			
5.			

TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: Mike Q.

SPECIAL SHIPMENT REQUIREMENTS

SAMPLE RECEIPT

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

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