May 1989

PHASE I SITE CHARACTERIZATION REPORT

FOR

ALAMEDA COUNTY/ ALCOPARK FACILITY

165 13th STREET
OAKLAND, CALIFORNIA

Performed for:

Alameda County
General Services Agency -
Building Maintenance Department
4400 MacArthur Boulevard
Oakland, California

Performed by:

HUNTER/GREGG, Inc.
597 Center Avenue, Suite 350
Martinez, California

02-276-010

May 1989

165 13th Street Oakland 94612

Timesheet for County hours spent to Alco pk UST rem

6/26/91 review closure & called Pat Galvin re deficiencies

0.5 0.5 × 67 = 33.50

7/8/91 reviewed closure amendments & approved

1.0 0.5 × 67 = 33.50

12/12/91 meet w/ Pat Galvin ESE re: monitoring Plan UST's Alco

2.5 10:30 – 12:00 1.5 $100.50

3.0 12/13 meet w/ Jim De Voss re Alco .5

3.25 217.75 12/19/92 meet w/ Jim De Voss 0.25

3.75 35.5 2/5/92 review phone conv w/ Kerry Lefever / Pat Galvin approved plan 0.5

4.25 35.5 2/7/92 phone conv. Pat Galvin, & Jim DeVoss 0.5

Call Jim De Voss re: Quarterly Reports Alco

double check on unauthorized release rpt 392.–

Check on whether inst of M...

2/13/92 Tank removal 1 – 6 pm 5×71.00 = $355.

1/28/92 phone conv. w/ Kerry LeFever re: closure 0.5/35.50

2/5/92 Alco Park review & approval 0.5 35.50

2/7/92 phone conv. Jim De Voss 0.5 35.50

2/10/92 Alco Park tank removal discussion Ed, Rafat 0.5 33.50

3/5/92 Review Cases For LOP 0.5 35.50

This report, including all related activities, was prepared or conducted by Hunter/Gregg staff under the direct supervision of James P. Bryson, Staff Engineering Geologist, and Susan S. Wickham, Project Hydrogeologist. Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other hydrogeologists and engineers practicing in this field. No other warranty, expressed or implied, is made as to the professional advice in this report.

James P. Bryson

Date 5/26/89

James P. Bryson

Susan S. Wickham

Date 5/26/89

Susan S. Wickham
California Registered Geologist No. 3851

ROUTING SLIP

DB?

Date 1/9/90

To Tom Peacock, Env. Health QIC 20601

From Paul LeCheminant

Department Building Maintenance QIC 21303

- [ ] Action
- [ ] As You Requested
- [x] For Your Information
- [ ] For Your Signature
- [ ] Initial and Forward to
- [ ] Note and Return
- [ ] Please Post
- [ ] Comments
- [ ] Please See Me Re Attached

90 JAN 12 AM 11:42

Message Has Env. Health ever received a copy of this report? If not, I apologize for the delay. If so, do whatever you would like with this copy.

GENERAL SERVICES AGENCY • COUNTY OF ALAMEDA

- tank removal - waste oil Mco Park
- S.T security measures
- Stockpiled material storage/sampling
- piping
- turn around time on samples 1 week turn around

6/26/91

Called & left message with above for Pat Galvin will respond. also requested to look @ at monitoring plan for fuel USTs

7/2 called Galvin said he sent rev.

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1.0 INTRODUCTION

Hunter/Gregg, Inc. performed a Phase I Site Characterization for the Alameda County/Alcopark parking structure in Oakland, California on March 20, 21, and 22, 1989. The original scope of work included drilling three ground-water monitoring wells, two vapor monitoring wells, and three soil borings to assess subsurface conditions. It was determined during the characterization study that only one vapor monitoring well was necessary to monitor the piping. In accordance with the Phase I Site Characterization plan, a geologist from Hunter/Gregg supervised the drilling of three ground-water wells, one vapor well, and three soil borings. Soil samples were collected at five foot intervals during the drilling of the wells and soil borings. Ground-water samples were collected, following the completion and development of the wells, for laboratory analysis. The purpose of the wells and soil borings was to assess the lateral and vertical extent of petroleum hydrocarbons in the soil materials adjacent to the pump island that had a leak in the vapor recovery piping and to evaluate the impact of this leak on ground water below the site. The wells were installed in a manner that they could be retro-fitted with ground-water and vapor monitors to satisfy the Alameda County Health Department requirements for underground tank monitoring. This section of the report describes the site background.

1.1 Background

A geologist from Hunter/Gregg was on site January 24, 1989, to supervise the excavation of soil around the tank piping for the purpose of locating a possible piping leak. During a line integrity test performed by the Scott Company of Oakland, California, on January 24, 1989, a leak was found in the vapor recovery line below the unleaded gasoline dispenser. The leak was repaired by the Scott Company and an unauthorized release form was filed by the County of Alameda-General Services Agency. After the location of the leak was determined the geologist from Hunter/Gregg completed a hand-augered boring to a depth of nine feet directly below where the piping leak was found. Soil samples were taken at depths of three and nine feet below the ground surface and were analyzed for Total Petroleum Hydrocarbons (TPH) using EPA Method 8015 and for Benzene, Toluene, Ethyl Benzene, and Total Xylenes (BTEX) using EPA Method 8020. A sample of the excavated

soil was also analyzed for TPH. The results of these laboratory analyses are shown on Table 1 - Laboratory Results On Soil From Preliminary Site Investigation For Alameda County/Alcopark. As a result of the initial hand boring performed by Hunter/Gregg, Hunter/Gregg recommended that a Phase I Site Characterization be performed. Hunter/Gregg was retained by the County of Alameda-General Services Agency in March of 1989 to perform a Phase I Site Characterization.

Table 1. Laboratory Results From Preliminary Site Investigation For Alameda County/Alcopark

SAMPLE ID	SAMPLE DEPTH (ft)	TPH (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	TOTAL XYLENES (ppb)
AP-1	3	630	1,500	11,000	4,500	33,000
AP-1	9	ND < 10	110	130	32	140
AP-Soil Pile	-	3,700	-	-	-	-

Note: ft - feet
ppm - Parts per million or milligrams per kilogram (mg/kg)
ppb - Parts per billion or micrograms per kilogram (ug/kg)
ND < 10 - Not-detected at a detection limit of 10 ppm

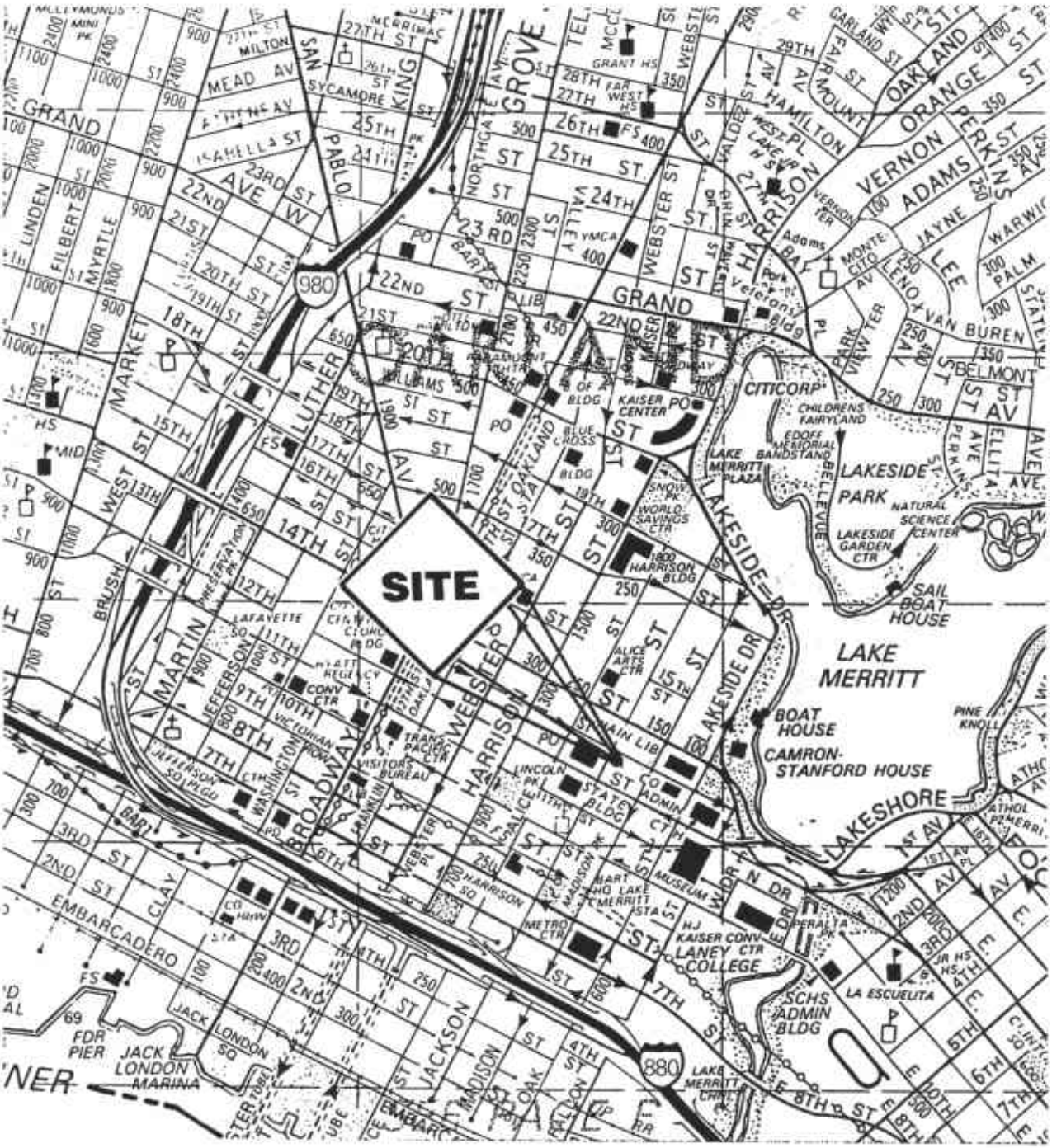
2.0 FINDINGS

2.1 Site Description

The Alameda County/Alcopark facility is located at 165 13th Street, Oakland, California as shown on Figure 1 - Site Location Map. The Alcopark facility is a county parking and vehicle maintenance facility. The northern corner of the site is used for fueling county vehicles. There are presently two underground storage tanks on the northern corner of the property, one 10,000 gallon capacity regular leaded gasoline storage tank and one 10,000 gallon capacity unleaded gasoline storage tank. There is a single pump island with two dispensers as shown on Figure 2 - Site Map. The site is approximately 33 feet above mean sea level and is about 1/3 mile due west of Lake Merritt. The ground surface around the tanks and pump island is concrete. Surface drainage on the site is northward toward 13th Street.

2.2 Geology

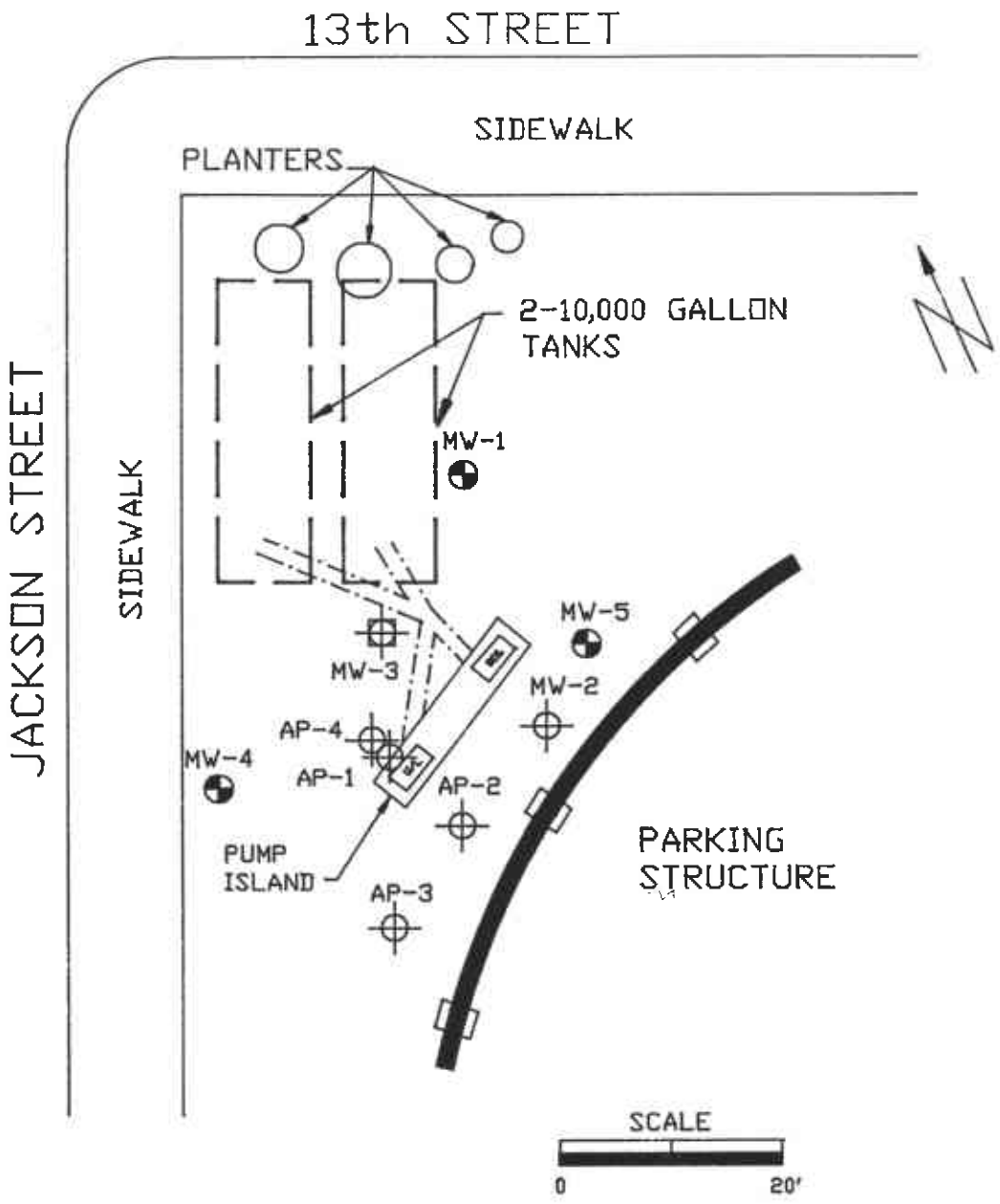
The Alcopark facility is located in Oakland approximately three miles due east of the San Francisco Bay. The geologic materials in the vicinity are reported to be predominantly Quaternary alluvial deposits which consist of unconsolidated clays, silts, sands, and gravels. The source of these alluvial deposits is the Berkeley Hills approximately two miles to the east.



HUNTER	ALAMEDA CO. ALCOPARK

FIGURE 1
SITE LOCATION MAP

5/89 02-276-010



LEGEND

- SOIL BORING
- GROUND WATER MONITORING WELL
- VADOSE MONITORING WELL
- UNDERGROUND PIPING

HunTer	ALAMEDA COUNTY ALCOPARK

FIGURE 2
SITE MAP

5/89 02-276-010

2.3 Field Procedures

On March 20, 21, and 22, 1989, Wells MW-1 through MW-5, and Borings AP-2 through AP-4 were completed using a truck mounted Mobile Drill B-53 hollow-stem auger drill rig. The auger flights were five feet in length and had an outside diameter ranging from 7.5 to 10.25 inches, and an inside diameter ranging from 4.25 to 6.50 inches. A retractable plug prevented soil from entering into the auger flights during the boring process. The plug, located at the end of a 140-pound drive hammer, was inserted into and retrieved from the hollow-stem auger by a wire line. Soil samples were retrieved through the auger stem with a Modified California Sampler lined with two six inch long brass rings. After the sampler was driven to the desired depth and retrieved, the rings were removed from the sampler.

The lower ring contained the soil sample to be used for laboratory analysis and the upper ring was used to describe the soil. The soil in the upper ring was examined in the field for olfactory indications of petroleum hydrocarbons and an indication of preliminary hydrocarbon levels with a Thermo Environmental Instruments, Model 580A, Organic Vapor Meter (OVM) photoionization detector. The soil from the upper ring was described on the boring log. The grain size, color, moisture, and other pertinent Unified Soil Classification System (USCS) properties along with the OVM readings were described on field boring logs by the geologist from Hunter/Gregg. The boring logs are included in Appendix A - Boring Logs.

The ends of the lower ring were sealed with aluminum foil, capped, and secured with duct tape. The samples were then labeled and placed in an ice chest for cold storage during transportation. At the completion of field work the samples were delivered under chain-of-custody to Superior Analytical Laboratories, Inc., of San Francisco, California, for analysis.

Before the Modified California Sampler and rings were assembled and used for further sampling, they were cleaned to avoid cross-contamination of samples. The equipment was washed with a trisodium phosphate solution, rinsed with tap water, and then allowed to air dry. The augers were steam cleaned prior to arrival at the site and only clean augers were used to drill each boring.

At the completion of drilling and sampling the three soil borings were backfilled with a bentonite/cement mixture to a depth of four feet and were then sealed with four feet of concrete to the surface to prevent the infiltration of surface water.

The three ground-water wells (MW-1, MW-4, and MW-5) and one vapor well (MW-3) were installed using either two or four inch OD schedule 40 PVC well casing with 0.02 inch slotted perforations. The well annulus was filled with #3 Lonestar sand, and a bentonite and cement seal. The wells were finished at the ground surface with water tight 12 inch diameter well boxes. Specific information on well installation can be found on the respective boring logs in Appendix A.

2.4 Field Observations

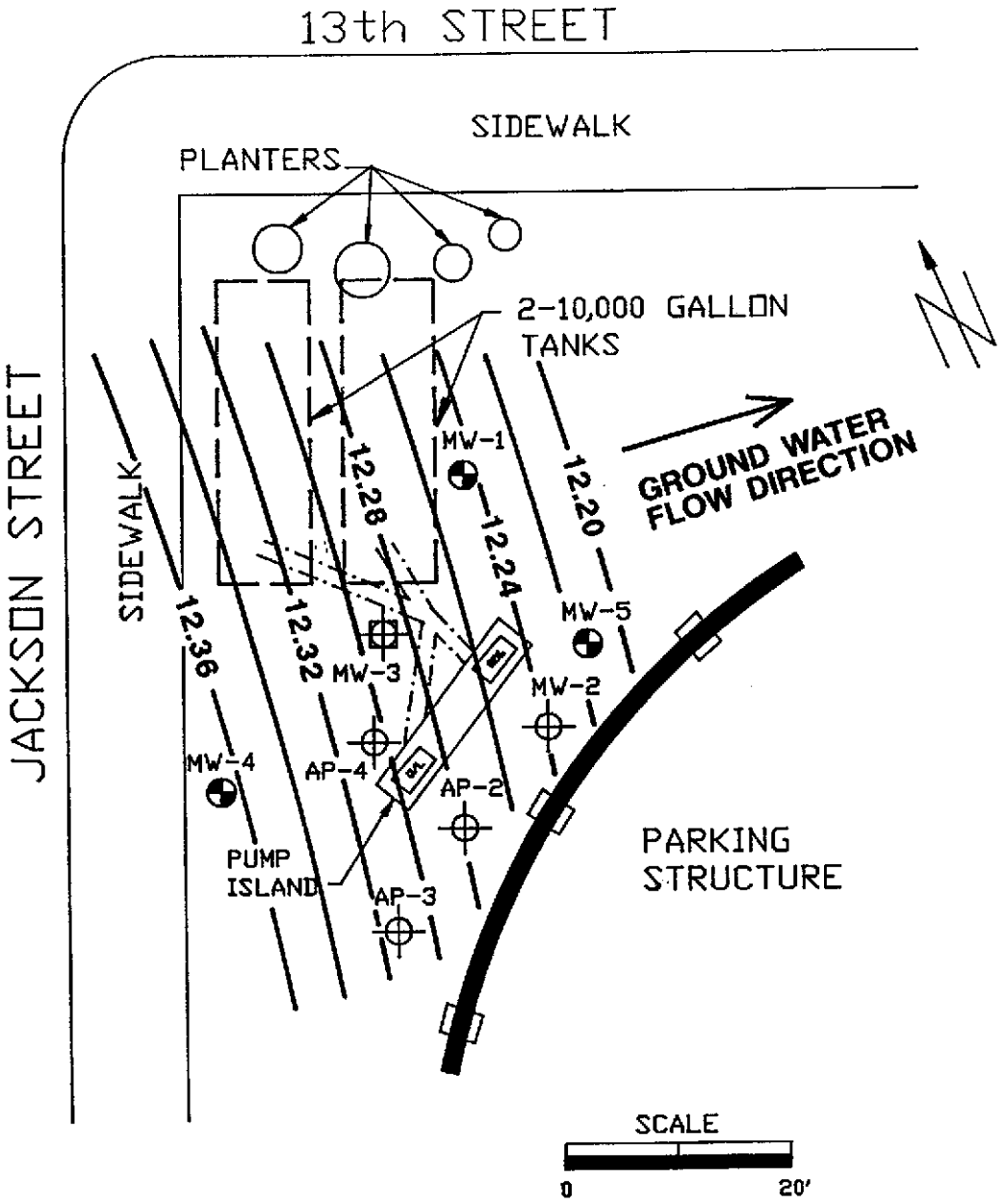
Monitoring wells MW-1 through MW-5 (Figure 2) were drilled first to assess the extent of petroleum hydrocarbons in the soil materials and to sample ground water. MW-1, MW-4, and MW-5 were drilled to a total depth of 35 feet. MW-2 was proposed as a ground-water monitoring well down gradient from the pump island, but was abandoned during drilling due to auger refusal at 15 feet. The auger refusal was due to contact with a building footing 15 feet below the surface. MW-3, the vapor well, was drilled to a total depth of 24 feet and backfilled to 16 feet for well installation. Soil borings AP-2 through AP-4 (Figure 2) were drilled to a total depth of 25 feet to assess the lateral and vertical extent of petroleum hydrocarbons in the soil materials adjacent to the pump island.

2.4.1 Soil

Materials observed during drilling indicate that the site is underlain by a relatively homogeneous, brown, moderately dense, poorly graded, fine grained sand to a depth of 35 feet. The unsaturated zone had petroleum odors and OVM readings above background levels in Wells MW-1, 3, 4, and 5; and Borings AP-2 and AP-4. The highest levels were found in Borings AP-2 and AP-4 which are the borings closest to the spill (Figure 2). In both borings the odors and OVM readings decreased downwards. MW-1 had strong petroleum odors and OVM readings in the 15 and 20 foot soil samples; however, MW-5, the down gradient well, had only a trace of odors and a moderate OVM reading in the 20 foot soil sample. The OVM readings and other field observations can be found in Appendix A.

2.4.2 Ground Water

Ground water in the vicinity is typically between 15 to 25 feet below the ground surface. Tidal influence on the ground water was not observed at the site. Ground water was found during drilling at a depth of approximately 24 feet below the ground surface, and was measured at approximately 21 feet below the ground surface after well development. The water levels in the three ground-water wells (MW-1, MW-4, and MW-5) were measured by a geologist from Hunter/Gregg on March 23, 1989, and the three wells were surveyed by Hunter/Gregg personnel on April 10, 1989. This information was used to evaluate the ground-water gradient at the site, which is to the east as shown on Figure 3 -Ground Water Gradient.



LEGEND

- SOIL BORING
- GROUND WATER MONITORING WELL
- VADOSE MONITORING WELL
- UNDERGROUND PIPING
- 12.2 GROUNDWATER ELEVATION CONTOUR (3/23/89)

CONTOUR INTERVAL = 0.02 FEET

Hunter

ALAMEDA COUNTY
ALCOPARK

FIGURE 3
GROUNDWATER GRADIENT

5/89

02-276-010

2.5 Laboratory Analysis

Laboratory analyses of the soil and water samples were performed by Superior Analytical Laboratories, Inc., a State-Certified, independent testing laboratory, located in San Francisco, California. Selected soil samples from the four monitoring wells, MW-1, MW-3, MW-4, and MW-5, and all soil samples from the soil borings, AP-2, AP-3, and AP-4, were analyzed for Total Petroleum Hydrocarbons (TPH) using Environmental Protection Agency (EPA) Method 8015, and for Benzene, Toluene, Ethyl Benzene, and Total Xylenes (BTEX) using EPA Method 8020. The results of the laboratory analyses for the Phase I Site Characterization are summarized in Table 2 - Laboratory Results On Soil Samples For Alameda County/Alcopark and Table 3 - Laboratory Results On Water Samples For Alameda County/Alcopark. Copies of the laboratory results and Chain-of-Custody manifests are included in Appendix B - Laboratory Results and Chain-of-Custody.

2.5.1 Soil

Laboratory analysis of the soil samples from the monitoring wells, MW-1, MW-3, MW-4, and MW-5, were all non-detectable for TPH at a detection limit of 10 parts per million (ppm) or milligrams per kilogram (mg/kg). The BTEX analyses on these samples all reported Benzene levels that were above the State of California - Department of Health Services (DHS) action level for Benzene in water which is 0.7 parts per billion (ppb) or micrograms per kilogram (ug/kg), except the 5 foot sample in MW-5 which was non-detectable at a detection limit of 3.3 ppb (Table 1). DHS action levels for water are used here for comparison because action levels for soil have not been established. The Toluene analysis for the monitoring wells reported levels that were all below the DHS action level of 100 ppb except the 15 foot sample in MW-1 which was 190 ppb. The Ethyl Benzene and Total Xylene levels reported for the four monitoring wells were all below the DHS action levels of 680 and 620 ppb, respectively (Table 2).

The TPH analyses for the soil borings, AP-2, AP-3, and AP-4, were all non-detectable at a detection limit of 10 ppm except the 5 foot sample in Boring AP-3 which had a TPH level of 31 ppm. Benzene levels in Boring AP-2 at 5, 10, and 15 feet were 53, 45, and 76 ppb,

TABLE 2 - LABORATORY RESULTS OF SOIL SAMPLES FOR ALAMEDA COUNTY/ALCOPARK II

SAMPLE NUMBER	DATE SAMPLED	TOTAL PETROLEUM HYDROCARBONS (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	TOTAL XYLENES (ppb)
MW-1-5'	3/20/89	ND < 10	22	18	7.7	ND < 3.0
MW-1-15'	3/20/89	ND < 10	150	190	53	250
MW-1-20'	3/20/89	ND < 10	63	23	6.5	ND < 3.0
MW-1-25'	3/20/89	ND < 10	-	-	-	-
MW-3-5'	3/20/89	ND < 10	32	25	ND < 3.0	ND < 3.0
MW-3-15'	3/20/89		12	25	ND < 3.0	27
MW-4-5'	3/21/89	ND < 10	-	-	-	-
MW-4-15'	3/21/89	ND < 10	7.5	29	ND < 3.1	ND < 3.1
MW-4-25'	3/21/89	ND < 10	-	-	-	-
MW-5-5'	3/21/89	ND < 10	ND < 3.3	34	ND < 3.3	ND < 3.3
MW-5-15'	3/21/89	ND < 10	4.9	12	ND < 3.0	ND < 3.0
MW-5-25'	3/21/89	ND < 10	-	-	-	-
AP-2-5'	3/21/89	ND < 10	53	69	9.5	150
AP-2-10'	3/21/89	ND < 10	45	95	23	110
AP-2-15'	3/21/89	ND < 10	76	100	30	130
AP-2-20'	3/21/89	ND < 10	ND < 3.0	16	ND < 3.0	ND < 3.0
AP-2-25'	3/21/89	ND < 10	-	-	-	-
AP-3-5'	3/22/89	31	ND < 3.0	31	ND < 3.0	ND < 3.0
AP-3-10'	3/22/89	ND < 10	ND < 3.0	31	4.5	ND < 3.3
AP-3-15'	3/22/89	ND < 10	ND < 3.0	50	ND < 3.0	ND < 3.0
AP-3-20'	3/22/89	ND < 10	ND < 3.0	40	ND < 3.1	ND < 3.1
AP-3-25'	3/22/89	ND < 10	-	-	-	-
AP-4-5'	3/22/89	ND < 10	38	23	3.6	ND < 3.0
AP-4-10'	3/22/89	ND < 10	5.5	44	3.2	22
AP-4-15'	3/22/89	ND < 10	3.7	10	3.3	ND < 3.1
AP-4-20'	3/22/89	ND < 10	ND < 3.0	40	ND < 3.0	ND < 3.0
AP-4-25'	3/22/89	ND < 10				

Notes: ppm - parts per million or milligrams per kilogram (mg/kg)
ppb - parts per billion or micrograms per kilogram (ug/kg)
ND < 10 - not detected at indicated detection limit

TABLE 3 - LABORATORY RESULTS OF WATER SAMPLES FOR ALAMEDA COUNTY/ALCOPARK

SAMPLE NUMBER	DATE SAMPLED	TOTAL PETROLEUM HYDROCARBONS (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	TOTAL XYLENES (ppb)
MW-1-W	3/23/89	ND < 1	21	3.9	0.4	4.5
MW-4-W	3/22/89	ND < 1	13	1.4	1.0	ND < 0.3
MW-5-W	3/23/89	ND < 1	ND < 0.3	ND < 0.3	ND < 0.3	ND < 0.3

Notes: ppm - parts per million or milligrams per kilogram (mg/kg)
ppb - parts per billion or micrograms per kilogram (ug/kg)
ND < 10 - not detected at indicated detection limit

respectively which are all above the DHS action level for Benzene of 0.7 ppb. The 20 foot sample in AP-2 was non-detectable for Benzene at a detection limit of 3 ppb. Toluene was below the DHS action level for all the samples except the 15 foot sample in AP-2 which was 100 ppb. The Ethyl Benzene and Total Xylene levels in all the soil borings were below the DHS action levels of 680 and 620 ppb, respectively (Table 2).

2.5.2 Ground Water

The water samples from the three ground-water monitoring wells, MW-1, MW-4, and MW-5, showed non-detectable TPH levels. Benzene was reported at 21 ppb in MW-1, 13 ppb in MW-4, and was non-detectable at a detection limit of 0.3 ppb in MW-5. Toluene, Ethyl Benzene, and Total Xylenes in the water samples from all three ground-water wells were reported to be below the respective DHS action levels listed above. The results of the laboratory analyses on the ground-water samples are summarized in Table 3.

3.0 CONCLUSIONS

Geologic materials beneath the site consist of relatively homogeneous, moderately dense, fine-grained sand with a thin (approximately three foot thick) clay layer at a depth of 26 feet in the area of Monitoring Wells MW-1 and MW-5 (Figure 2). The ground-water surface was measured in the monitoring wells at approximately 21 feet below the ground surface. No free phase product was found in any of the ground-water wells. The local ground-water gradient was determined to be in an easterly direction based on well surveying conducted at the site (Figure 3).

The Total Petroleum Hydrocarbons (TPH) analyses on soil and water samples from the soil borings and monitoring wells were all non-detectable except for one sample from Boring AP-3 (31 ppm), which demonstrates that there is not a large quantity of gasoline in the soil and groundwater at the site.

In the 5, 10, and 15 foot samples from Borings AP-2 and AP-4, Benzene ranged from 3.7 to 76 parts per billion (ppb), Toluene ranged from 10 to 100 ppb, Ethyl Benzene ranged from non-detectable to 30 ppb, and Total Xylenes ranged from non-detectable to 150 ppb. The soil samples at 20 feet in AP-2 and AP-4 were non-detectable for Benzene, Ethyl Benzene, and Total Xylenes, and had low concentrations of Toluene, (16 and 40 ppb, respectively) delineating the vertical extent of BTEX in the area of AP-2 and AP-4 at approximately 20 feet below the surface.

The low to non-detectable BTEX results on soil samples from AP-3 helps to delineate the lateral extent of gasoline in the soil below the pump island. Based on field observations and laboratory results from the soil borings and the soil samples from the monitoring wells there appears to be an area of soil with low gasoline concentrations approximately 20 feet deep and 10 to 15 feet in radius around Boring AP-4 (Figure 2).

Due to the apparently localized hydrocarbon concentrations in the soil around Monitoring Well MW-1 and the proximity of MW-1 to the underground tank field, the hydrocarbons

in the soil are probably due to overspill problems associated with the underground storage tanks.

The TPH analyses on the water samples from the three ground-water wells were all non-detectable at a detection limit of 10 ppm. The Benzene levels in water samples from MW-1 and MW-4 were 21 and 13 ppb, respectively; which are both above the DHS action level of 0.7 ppb for Benzene. The Toluene, Ethyl Benzene, and Total Xylene levels in ground water from MW-1 and MW-4 were all well below DHS action levels. The BTEX results on the water sample for MW-5, the down gradient well, were all non-detectable at a detection limit of 0.3 ppb.

The BTEX levels in the water samples from MW-4, the up gradient well, and MW-1 could also be attributed to an underground storage tank across the street that was closed, by cementing in place, in March of 1989. The closure of the tank was witnessed by the Hunter/Gregg geologist on site in March, 1989.

The ground-water well down-gradient from the previous piping leak, MW-5, showed non-detectable laboratory results for TPH and BTEX in the water sample. These non-detectable results show that ground water in the area of MW-5 has not been adversely impacted at this time due to the leak below the unleaded gasoline dispenser.

4.0 RECOMMENDATIONS

Based on the findings of the Phase I Site Characterization, Hunter/Gregg recommends that the three ground-water wells, MW-1, MW-4, and MW-5, be sampled on a quarterly basis with quarterly reports submitted to the Alameda County Health Department to confirm Total Petroleum Hydrocarbon (TPH) and Benzene, Toluene, Ethyl Benzene, and Total Xylene (BTEX) levels in ground water beneath the site and to trace any possible migration of dissolved petroleum constituents into the ground water.

Hunter/Gregg does not believe the level of hydrocarbons in the unsaturated zone warrants further action. Hunter/Gregg also recommends that overspill protection be installed for the three existing underground storage tanks to minimize the possibility of introducing hydrocarbons into soil and ground water in the area of the underground tanks.

APPENDIX A
BORING LOGS

HUNTER
ENVIRONMENTAL SERVICES, INC.
597 Center Avenue, Suite 350
Martinez, California 94553
415-372-3637

LOG OF BORING NO. MW-1

PROJECT NO: 02-276-010
DATE: 3/21/89
CLIENT: Alameda County
REF. ELEV. –
SITE LOCATION: 165 13th St., Oakland
METHOD: Hollow-stem auger, Mobile Drill B-53
BORING LOCATION: 5' East of pump Island
HOLE DIA: 10.25"
DRILLER: Gregg Drilling and Testing
LOGGED BY: J.Bryson
SUPERVISOR: S.Wickham R.G #3851

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						4" Concrete at Surface	
2					SP	SAND, brown, silty, fine-grained, medium dense, slightly moist, no odor	
4		30	47	RING @ 5'	SP	As Above	
6							
8							
10		38	ND	RING @ 10'	SP	As Above, moist, trace of odor	
12							
14		40	300	RING @ 15'	SP	SAND, brown, fine-grained, medium dense, moist, strong odor	
16							
18							
20		50+	260	RING @ 20'	SP	SAND, brown, medium-grained, moist, slight odor	
22							
24						Water found at 23' ▽	

HUNTER
ENVIRONMENTAL SERVICES, INC.
597 Center Avenue, Suite 350
Martinez, California 94553
415–372–3637

LOG OF BORING NO. MW–1 PAGE 2 of 2

PROJECT NO: DATE:
CLIENT: REF. ELEV.
SITE LOCATION: METHOD:
BORING LOCATION: HOLE DIA:
DRILLER:
LOGGED BY:
SUPERVISOR:

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
24		–	–	RING @ 25'	SP	As above, silty, no odor	
26					CL	CLAY, light-brown, sandy, silty, firm, moist, no odor	
28							
30					SP	SAND, brown, gravelly, fine to medium-grained, very dense, moist, no odor	
32							
34							
36						TOTAL DEPTH–35'	

Well Construction: 35'-14', 0.02" slotted 4" PVC; 14'-0', blank 4" PVC. #3 Lonestar sand 35'-13'; 3/8" bentonite pellets 13'-11.5'; holeplug 11.5'-4'; concrete 4'-0'. 12" water-proof well box.

HUNTER
ENVIRONMENTAL SERVICES, INC.
597 Center Avenue, Suite 350
Martinez, California 94553
415–372–3637

LOG OF BORING NO. MW–2 PAGE 1 of 1

PROJECT NO: 02–276–010 DATE: 3/20/89
CLIENT: Alameda County REF. ELEV. –
SITE LOCATION: 165 13th St., Oakland METHOD: Hollow–stem auger, Mobile Drill B–53
BORING LOCATION: 6' S.E. of pump Island HOLE DIA: 10.25"
DRILLER: Gregg Drilling and Testing
LOGGED BY: J.Bryson
SUPERVISOR: S.Wickham, R.G. #3851

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						4" Concrete at surface	
2		22	ND	RING @ 5'	SP	SAND, silty, clayey, fine–grained, medium dense, slightly moist, no odor	
4							
6							
8							
10		17	ND	RING @ 10'	SP	As above	
12							
14		36	43	RING @ 15'	SP	As above, dark brown	
						TOTAL DEPTH – 15.5'	
16							
18							
20							
22							
24							

HUNTER
ENVIRONMENTAL SERVICES, INC.

597 Center Avenue, Suite 350
Martinez, California 94553
415–372–3637

LOG OF BORING NO. MW–3 PAGE 1 of 1

PROJECT NO: 02–276–010 DATE: 3/20/89
CLIENT: Alameda County REF. ELEV. –
SITE LOCATION: 165 13th St., Oakland METHOD: Hollow–stem auger, Mobile Drill B–53
BORING LOCATION: 5' N.W. of pump island HOLE DIA: 10.25"
DRILLER: Gregg Drilling and Testing
LOGGED BY: J.Bryson
SUPERVISOR: S.Wickham, R.G. #3851

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						8" Concrete at surface	
2							
4		33	16	RING @ 5'	SP	SAND, brown, silty, fine–grained, medium dense, slighty moist, no odor	
6							
8							
10		22	35	RING @ 10'	SP	As above	
12							
14		50+	160	RING @ 15'	SP	As above, slight odor	
16						Well Construction: 15'-5', 0.02" slotted 2" PVC; 5'-0', blank 2" PVC. Holeplug 24'-22'; 3/8" bentonite pellets 22'-21'; holeplug 21'-16'; #3 Lonestar sand 16'-4'; 3/8" bentonite pellets 4'-3'; concrete 3'-0'. 12" water-proof well box.	
18							
20			ND	RING @ 20'		As above	
22						▽ Water found at 23'	
24						TOTAL DEPTH – 24'	

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LOG OF BORING NO. MW–4 PAGE 1 of 2

PROJECT NO: 02–276–010 DATE: 3/21/89
CLIENT: Alameda County REF. ELEV. –
SITE LOCATION: 02–276–010 METHOD: Hollow–stem Auger, Mobile Drill B–53
BORING LOCATION: 20' West of pump Island HOLE DIA: 8.25"
DRILLER: Gregg Drilling and Testing
LOGGED BY: J.Bryson
SUPERVISOR: S.Wickham R.G. #3851

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION
0						4" Concrete at Surface
4		4	ND	RING @ 5'	SP	SAND, brown, some silt, fine-grained, loose, slighty moist, no odor
10		25	ND	RING @ 10'	SP	As above, medium dense
14		35	133	RING @ 15'	SP	As above, slight odor
20		50+	15	RING @ 20'	SP	SAND, brown, fine-grained, dense, moist, no odor
23						▽ Water found at 23'
24						

WELL CONSTRUCTION

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LOG OF BORING NO. MW-4 PAGE 2 of 2

PROJECT NO: 02-276-010 DATE: 3/21/89
CLIENT: REF. ELEV.
SITE LOCATION: METHOD:
BORING LOCATION: HOLE DIA:
DRILLER:
LOGGED BY:
SUPERVISOR:

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
24		–	ND	RING @ 25'	SP	As above, saturated	
26							
28							
30							
32							
34							
36						TOTAL DEPTH–35'	

Well Construction: 35'-15', 0.02" slotted 2" PVC; 15'-0', blank 2" PVC. #3 Lonestar sand 35'-13'; 3/8" bentonite pellets 13'-11'; holeplug 11'-4'; concrete 4'-0'. 12" water-proof well box.

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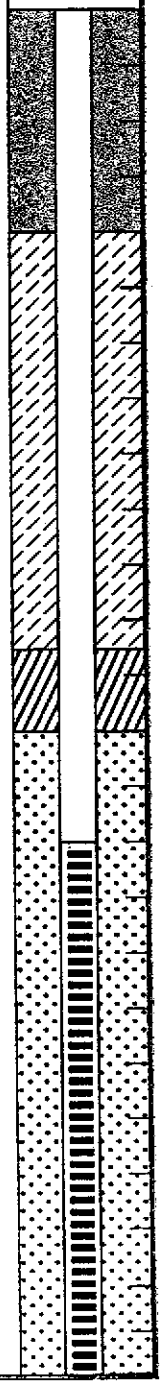
415-372-3637

LOG OF BORING NO. MW-5

PROJECT NO: 02-276-010
DATE: 3/21/89
CLIENT: Alameda County
REF. ELEV. -
SITE LOCATION: 165 13th St.,Oakland
METHOD: Hollow-stem auger, Mobile Drill B-53
BORING LOCATION: 5' East of pump island
HOLE DIA: 10.25"
DRILLER: Gregg Drilling and Testing
LOGGED BY: J.Bryson
SUPERVISOR: S.Wickham R.G #3851

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION
0						6" Concrete at Surface
4		18	ND	RING @ 5'	SP	SAND, light-brown, silty, fine-grained, medium dense, slightly moist, no odor
10		22	ND	RING @ 10'	SP	As above
14		46	10	RING @ 15'	SP	SAND, gray-brown, fine-grained, medium dense, slightly moist, no odor
20		50+	110	RING @ 20'	SP	As above, trace of odor
24						▽ Water found at 24'

WELL CONSTRUCTION



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Martinez, California 94553
415-372-3637

LOG OF BORING NO. MW-5 PAGE 2 of 2

PROJECT NO: DATE:
CLIENT: REF. ELEV.
SITE LOCATION: METHOD:
BORING LOCATION: HOLE DIA:
DRILLER:
LOGGED BY:
SUPERVISOR:

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
24		-	-	RING @ 25'	SP	▽ RING @ 25'	
26							
28					CL	CLAY, light-brown, sandy, silty, fine-grained, medium dense, saturated	
30							
32					SP	SAND, brown, silty, fine-grained, medium dense, saturated	
34							
36						TOTAL DEPTH-35'	

Well Construction: 35'-15', 0.02" slotted 4" PVC; 15'-0', blank 4" PVC. #3 Lonestar sand 35'-13'; 3/8" bentonite pellets 13'-11.5'; holeplug 11.5'-4'; concrete 4'-0'. 12" water-proof well box.

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Martinez, California 94553
415–372–3637

LOG OF BORING NO. AP–2

PAGE 1 of 1

PROJECT NO: 02–276–010
DATE: 3/21/89
CLIENT: Alameda County
REF. ELEV. –
SITE LOCATION: 165 13th St.,Oakland
METHOD: Hollow–stem auger, Mobile Drill B–53
BORING LOCATION: 8' S.E. of pump island
HOLE DIA: 7.5"
DRILLER: Gregg Drilling and Testing
LOGGED BY: J. Bryson
SUPERVISOR: S.Wickham R.G. #3851

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						6" Concrete at Surface	
4		15	563	RING @ 5'	SP	SAND, gray-brown, fine-grained, medium dense, slightly moist, slight odor	
10		23	27	RING @ 10'	SP	SAND, brown, medium dense, silty, fine-grained slightly moist, no odor	
14		39	92	RING @ 15'	SP	SAND, gray, fine-grained, medium dense, slighty moist, no odor	
20		50+	ND	RING @ 20'	SP	SAND, brown, fine-grained, dense, moist, no odor	
24		50+	ND	RING @ 25'	SP	▽ As above, saturated	Water found at 24' TOTAL DEPTH-25'

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LOG OF BORING NO. AP-3 PAGE 1 of 1

PROJECT NO: 02-276-010 DATE: 3/22/89
CLIENT: REF. ELEV.
SITE LOCATION: METHOD:
BORING LOCATION: 10' South of pump island HOLE DIA: 7.5"
DRILLER:
LOGGED BY:
SUPERVISOR:

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						6" Concrete at Surface	
2							
4		23	7	RING @ 5'	SP	SAND, brown, silty, fine-grained, medium dense, slightly moist, no odor	
6							
8							
10		28	ND	RING @ 10'	SP	As above, trace of odor	
12							
14		45	100	RING @ 15'	SP	As above, no silt	
16							
18							
20		50+	6	RING @ 20'	SP	SAND, brown, fine-grained, medium dense, wet, no odor	
22							
24		50+	ND	RING @ 25'	SP	▽ As above, saturated	

Water found at 24'
TOTAL DEPTH-25'

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LOG OF BORING NO. AP-4

PROJECT NO: 02-276-010
DATE: 3/22/89
CLIENT:
REF. ELEV.
SITE LOCATION:
METHOD:
BORING LOCATION: 3' West of pump island
HOLE DIA: 7.5"
DRILLER:
LOGGED BY:
SUPERVISOR:

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						OPEN CUT IN 4" THICK CONCRETE (3'X3')	
4		29	550	RING @ 5'	SP	SAND, brown, silty, fine-grained, medium dense, slightly moist, slight odor	
10		26	25	RING @ 10'	SP	SAND, brown, fine-grained, medium dense, slightly moist, slight odor	
14		41	150	RING @ 15'	SP	As above	
20		50+	150	RING @ 20'	SP	SAND, gray-brown, fine-grained, moist, medium dense, slight odor	
						Water found at 24'	
24		39	5	RING @ 25'	SP	TOTAL DEPTH-25' ▽ SAND, brown, fine-grained, medium dense, saturated, no odor	

APPENDIX B
LABORATORY RESULTS AND CHAIN OF CUSTODY

RECEIVED APR 12 1989

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 50725
CLIENT: Hunter Environmental
CLIENT ID: Alcopark II

DATE RECEIVED: 3/24/89
DATE REPORTED: 3/31/89
JOB NO.: 02-276-010

ANALYSIS FOR VOLATILE PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

	Sample Identification	Concentration (mg/kg) Gasoline Range	Diesel Range
1	MW-1-5' 3/20/89 8:40	ND <10	ND <10
3	MW-1-15' 3/20/89 8:45	ND <10	ND <10
4	MW-1-20' 3/20/89 9:10	ND <10	ND <10
5	MW-1-25'; 3/20/89; 9:30;	ND <10	ND <10
9	MW-3-5 ' 3/20/89 13:30	ND <10	ND <10
11	MW-3-15' 3/20/89 13:40	ND <10	ND <10
13	MW-4- 5'; 3/21/89; 8:30;	ND <10	ND <10
17	MW-4-25'; 3/21/89; 9:05;	ND <10	ND <10
15	MW-4-15' 3/21/89 8:50	ND <10	ND <10
18	MW-5-5' 3/21/89 10:40	ND <10	ND <10
20	MW-5-15' 3/21/89 11:00	ND <10	ND <10
22	MW-5-25'; 3/21/89;11:15;	ND <10	ND <10
23	AP-2-5' 3/21/89 14:30	ND <10	ND <10
24	AP-2-10' 3/21/89 14:40	ND <10	ND <10
25	AP-2-15' 3/21/89 14:55	ND <10	ND <10
26	AP-2-20' 3/21/89 14:55	ND <10	ND <10
27	AP-2-25'; 3/21/89;15:00;	ND <10	ND <10
28	AP-3-5' 3/22/89 7:45	31	ND <10
29	AP-3-10' 3/22/89 8:00	ND <10	ND <10

mg/kg = part per million (ppm)

Minimum Detection Limit for Gasoline and Diesel in Soil: 10mg/kg.

QA/QC SUMMARY:
Daily Standards run at 200 mg/L; RPD Gasoline= 2: Diesel =7.
MS/MSD: Average Gasoline Recovery = 79%: Duplicate RPD = 12.

Les Partridge, Ph.D.
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 50725
CLIENT: Hunter / Gregg
CLIENT JOB NO.: 02-276-010

DATE RECEIVED: 03/24/89
DATE REPORTED: 03/31/89

ANALYSIS FOR TOTAL PERTROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/kg) Gasoline Range	Diesel Range
30	AP-3-15' 3/22/89 8:05	ND <10	ND <10
31	AP-2-20' 3/22/89 8:10	ND <10	ND <10
32	AP-3-25'; 3/22/89; 8:25;	ND <10	ND <10
33	AP-4-5' 3/22/89 8:25	ND <10	ND <10
34	AP-4-10' 3/22/89 8:30	ND <10	ND <10
35	AP-4-15' 3/22/89 8:40	ND <10	ND <10
37	AP-4-25'; 3/22/89; 9:00;	ND <10	ND <10
36	AP-4-20' 3/22/89 8:50	ND <10	ND <10

Minimum Detection Limit for Gasoline and Diesel in Soil: 10mg/kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 14
RPD Diesel = 5
MS/MSD Average Recovery = 79%: Duplicate RPD = 12.

Les Partridge, Ph.D.
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 50725
CLIENT: Hunter Environmental
CLIENT ID: Alcopark II

DATE RECEIVED: 3/24/89
DATE REPORTED: 3/31/89
JOB NO.: 02-276-010

ANALYSIS FOR VOLATILE PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

	Sample Identification	Concentration (mg/L) Gasoline Range	Diesel Range
38	MW-1-W 3/23/89 15:00	ND <1	ND <1
40	MW-4-W 3/22/89 15:00	ND <1	ND <1
41	MW-5-W 3/23/89 15:00	ND <1	ND <1

mg/L = part per million (ppm)

Minimum Detection limit for Gasoline in Water: 1 mg/L.

QA/QC SUMMARY:
Daily Standard run at 200 mg/L: RPD Gasoline= 3.
MS/MSD: Average Recovery = 79%.: Duplicate RPD = 12.

Les Partridge, Ph.D.
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 50725
CLIENT: Hunter Environmental
JOB NO.: 02-276-010

DATE SAMPLED:3/20-3/23/89
DATE ANALYZED:3/24-3/31/89
DATE REPORTED:3/31/89

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

		Concentration (ug/kg)			
LAB#	CLIENT ID	Benzene	Toluene	Ethyl Benzene	Xylenes
1	MW-1-5' 3/20	22	18	7.7	ND<3.0
3	MW-1-15' 3/20	150	190	53	250
4	MW-1-20' 3/20	63	23	6.5	ND<3.0
9	MW-3-5' 3/20	32	25	ND<3.0	ND<3.0
11	MW-3-15' 3/20	12	25	ND<3.0	27
15	MW-4-15' 3/21	7.5	29	ND<3.1	ND<3.1
18	MW-5-5' 3/21	ND<3.3	34	ND<3.3	ND<3.3
20	MW-5-15' 3/21	4.9	12	ND<3.0	ND<3.0
23	AP-2-5' 3/21	53	69	9.5	150
24	AP-2-10' 2/21	45	95	23	110
25	AP-2-15' 3/21	76	100	30	130
26	AP-2-20' 3/21	ND<3.0	16	ND<3.0	ND<3.0
28	AP-3-5' 3/22	ND<3.0	31	ND<3.0	ND<3.0
29	AP-3-10' 3/22	ND<3.0	31	4.5	ND<3.3
30	AP-3-15' 3/22	ND<3.0	50	ND<3.0	ND<3.0
31	AP-3-20' 3/22	ND<3.0	40	ND<3.1	ND<3.1
33	AP-4-5' 3/22	38	23	3.6	ND<3.0
34	AP-4-10' 3/22	5.5	44	3.2	22
35	AP-4-15' 3/22	3.7	10	3.3	ND<3.1
36	AP-4-20' 3/22	ND<3.0	40	ND<3.0	ND<3.0

ug/kg = part per billion (ppb)
Mimimum Detection Limit in Soil: 3ug/kg.

QA/QC SUMMARY:
Daily Standard run at 20 ug/kg: RPD < 15.
MS/MSD: Average Recovery = 71%: Duplicate RPD <5.
Average Surrogate Recovery = 90%.

Les Partridge, Ph.D.
Laboratory Manager

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1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 50725
CLIENT: Hunter Environmental
JOB NO.: 02-276-010

DATE SAMPLED: 3/20-3/23/89
DATE ANALYZED: 3/30-3/31/89
DATE REPORTED: 3/31/89

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

Concentration (ug/L)

LAB#	CLIENT ID	Benzene	Toluene	Ethyl Benzene	Xylenes
38	MW-1-W 3/23/89	21	3.9	0.4	4.5
40	MW-4-W 3/22/89	13	1.4	1.0	ND<0.3
41	MW-5-W 3/23/89	ND<0.3	ND<0.3	ND<0.3	ND<0.3

ug/L = part per billion (ppb)

Minimum Detection Limit in Water: 0.3 ug/L.

QA/QC SUMMARY:
Daily Standard run at 20 ug/L: RPD < 15.
MS/MSD: Average Recovery = 71% Duplicate RPD <5.
Average Surrogate Recovery = 102%.

Les Partridge, Ph.D.
Laboratory Manager

HUNTER ENVIRONMENTAL SERVICES, INC.

Northern California Office (415) 372-3637

CHAIN OF CUSTODY RECORD

DATE 3/24/89 PAGE 1 OF 3

NAME Hunter/Gregg, Inc.
ADDRESS 597 Center Ave #350
MARTINEZ, CA. 94553
PROJECT Alameda Co./Alcopark II 02-276-010
SAMPLER'S NAME (print) JAMES P. BRYSON
(signature) James P. Bryson

sample #	date	time	location	PARAMETERS 1 EPA 8015 (TPH)	2 EPA 8020 (BTEX)	3	4	5	6	7	8	9	10	OTHER	TOTAL	OBSERVATION/COMMENTS
MW-1-5'	3/20/89	8:40		X	X										1	
MW-1-10'		8:45				} HOLD SAMPLE									1	* - indicates that if TPH
MW-1-15'		8:50		X	X										1	analysis for that sample is
MW-1-20'		9:10		X	X										1	greater than 100 ppm, analyze
MW-1-25'		9:30		X	*										1	sample for BTEX.
MW-2-5'		11:45				} HOLD SAMPLES									1	
MW-2-10'		12:00													1	
MW-2-15'		12:10													1	
MW-3-5'		13:30		X	*										1	
MW-3-10'		13:40				} HOLD SAMPLE									1	
MW-3-15'		13:50		X	X										1	
MW-3-20'	↓	14:30				} HOLD SAMPLE									1	
MW-4-5'	3/21/89	8:30		X	*										1	
MW-4-10'	↓	8:45				} HOLD SAMPLE									1	

PARAMETER KEY:
1-CAM METALS (18)
2-PR. POLLUTANT METALS (13
3-GENERAL MINERALS
4-OIL & GREASE
5-PETROLEUM HYDROCARBONS
6-BASE/NEU/ACIDS (ORGANICS
7-PESTICIDES
8-VOLATILE ORGANICS (601/602)
9-VOLATILE ORGANICS (624)
10-TOC 0-

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. James P. Bryson	1. [illegible]	3/24	1020
2. [illegible]	2.		
3.	3.		
4.	4.		

DISPATCHED BY: (signature) date time
RECEIVED FOR LAB BY: (sig) date 3/24 time 1100

TOTAL NUMBER OF CONTAINERS THIS SHEET: 14

METHOD OF SHIPMENT:

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS:

HUNTER
ENVIRONMENTAL SERVICES, INC.

Northern California Office (415) 372-3637

CHAIN OF CUSTODY RECORD

DATE 3/24/89 PAGE 2 OF 3

NAME Hunter/Gregg, Inc.
ADDRESS 597 Center Ave. #350
Martinez, CA. 94553
PROJECT Alameda Co. / Macpuk II 02-276-010
SAMPLER'S NAME (print) JAMES P. BYRSON
(signature) James P. Byrson

sample #	date	time	location	1 EPA 8015 (TPH)	2 EPA 8020 (BTEX)	3	4	5	6	7	8	9	10	OTHER	TOTAL	OBSERVATION/COMMENTS
MW-4-15'	3/21/89	8:50		X	X										1	
MW-4-20'		9:00				} HOLD SAMPLE									1	* - indicates that if TPH
MW-4-25'		9:05		X	*										1	analysis for that sample is
MW-5-5'		10:40		X	X										1	greater than 100 ppm, analyze
MW-5-10'		10:50				} HOLD SAMPLE									1	sample for BTEX.
MW-5-15'		11:00		X	X										1	
MW-5-20'		11:10				} HOLD SAMPLE									1	
MW-5-25'		11:15		X	*										1	
AP-2-5'		14:30		X	X										1	
AP-2-10'		14:40		X	X										1	
AP-2-15'		14:50		X	X										1	
AP-2-20'		14:55		X	X										1	
AP-2-25'		15:00		X	*										1	

PARAMETER KEY:
1-CAM METALS (18)
2-PR. POLLUTANT METALS (13
3-GENERAL MINERALS
4-OIL & GREASE
5-PETROLEUM HYDROCARBONS
6-BASE/NEU/ACIDS (ORGANICS
7-PESTICIDES
8-VOLATILE ORGANICS (601/602)
9-VOLATILE ORGANICS (624)
10-TOC

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. James P. Byrson	1.		
2. John Haas	2.	3/24	1600
3.	3.		
4.	4.		
DISPATCHED BY: (signature)	RECEIVED FOR LAB BY: (sig)	3/24	14:00

TOTAL NUMBER OF CONTAINERS THIS SHEET: 13

METHOD OF SHIPMENT:

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS:

Hunter ENVIRONMENTAL SERVICES, INC.

Northern California Office (415) 372-3637

CHAIN OF CUSTODY RECORD

DATE 3/24/89 PAGE 3 OF 3

NAME Hunter/Gregg, Inc.
ADDRESS 597 Center Ave, Suite 350
Martinez, CA. 94553
PROJECT Alameda Co./Alcopark II 02-276-010

SAMPLER'S NAME (print) James P. Bryson
(signature) James P. Bryson

sample #	date	time	location	PARAMETERS 1 EPA 8015 (TPH)	2 EPA 8020 (BTEX)	3	4	5	6	7	8	9	10	OTHER 0	0	0	0	0	0	TOTAL	OBSERVATION/COMMENTS
AP-3-5'	3/22/89	7:45		X	X															1	* - indicates that if TPH
AP-3-10'		8:00		X	X															1	analysis for that sample is
AP-3-15'		8:05		X	X															1	greater than 100 ppm,
AP-3-20'		8:10		X	X															1	analyze sample for BTEX.
AP-3-25'		8:10		X	*															1	
AP-4-5'		8:25		X	X															1	
AP-4-10'		8:30		X	X															1	
AP-4-15'		8:40		X	X															1	
AP-4-20'		8:50		X	X															1	
AP-4-25'	↓	9:00		X	*															1	
MW-1-W	3/23/89	15:00		X	X															2	
MW-3-W	3/20/89	14:30				} HOLD SAMPLE														2	
MW-4-W	3/22/89	15:00		X	X															2	
MW-5-W	3/23/89	15:00		X	X															2	

PARAMETER KEY: 10-TOC
1-CAM METALS (18) 0-
2-PR. POLLUTANT METALS (13 0-
3-GENERAL MINERALS 0-
4-OIL & GREASE 0-
5-PETROLEUM HYDROCARBONS 0-
6-BASE/NEU/ACIDS (ORGANICS 0-
7-PESTICIDES
8-VOLATILE ORGANICS (601/602)
9-VOLATILE ORGANICS (624)

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. James P. Bryson	1. J Haas	3/24	1000
2. John Haas	2.		
3.	3.		
4.	4.		

TOTAL NUMBER OF CONTAINERS THIS SHEET: 18

METHOD OF SHIPMENT:

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS:

DISPATCHED BY: (signature)	date	time	RECEIVED FOR LAB BY: (sig)	date	time
				3/24	14:00